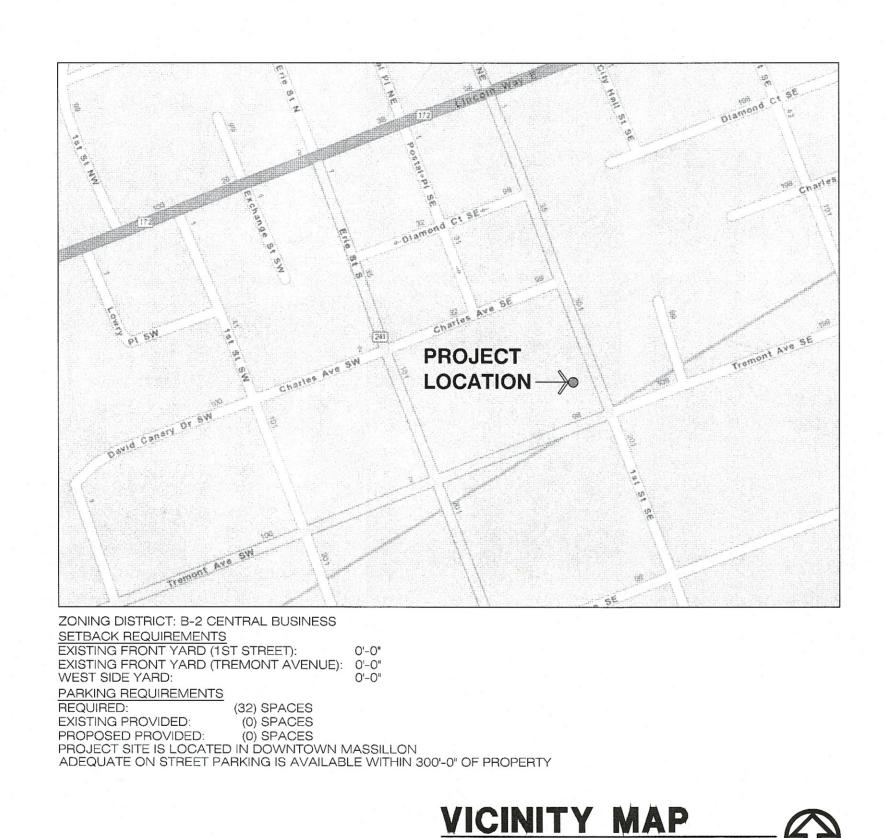
# NEW INDOOR FIRING RANGE AJ HARRIS TACTICAL 143 1ST STREET SE MASSILLON, OHIO 44646

ISSUED FOR PERMITS: AUGUST 3, 2015



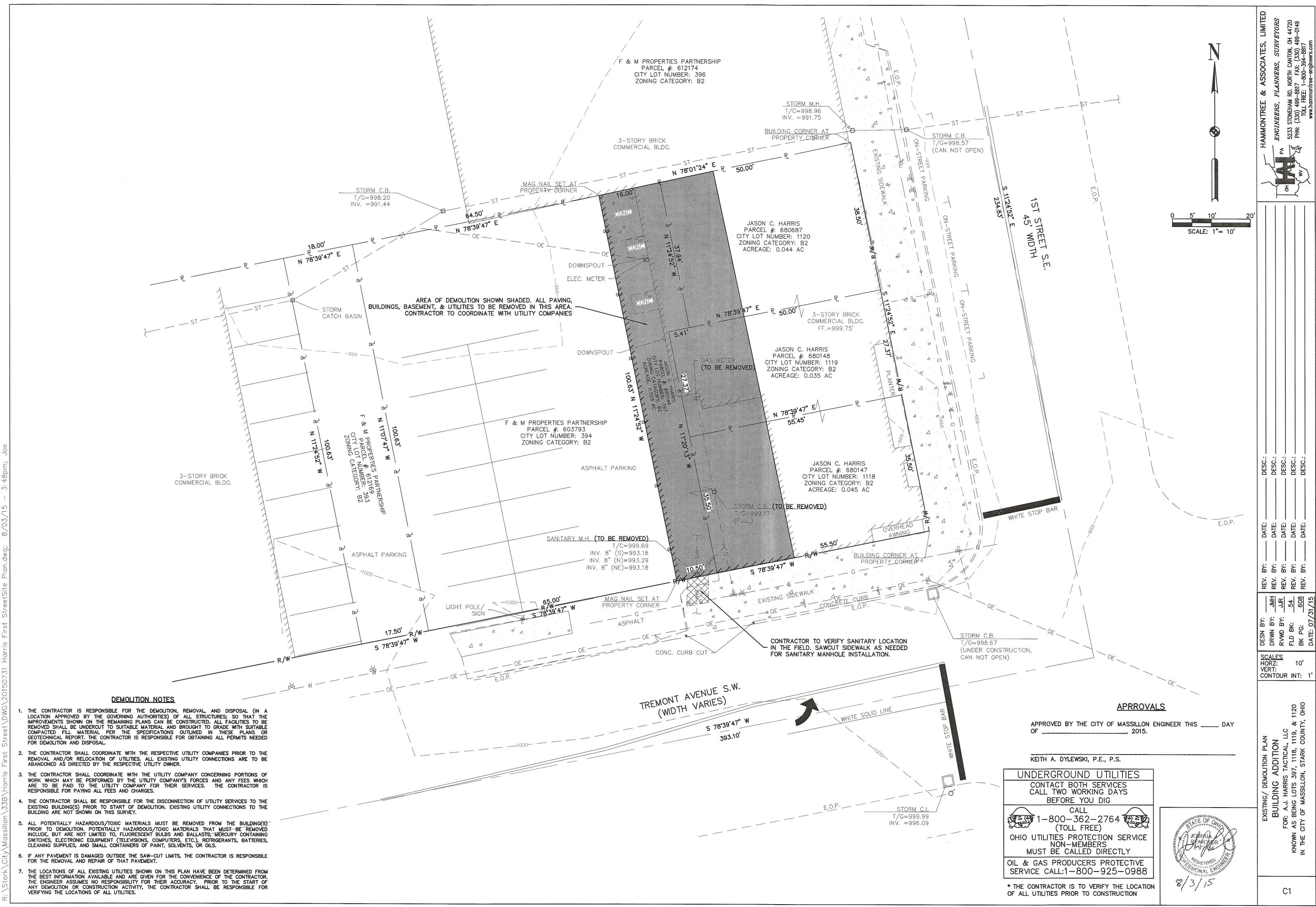


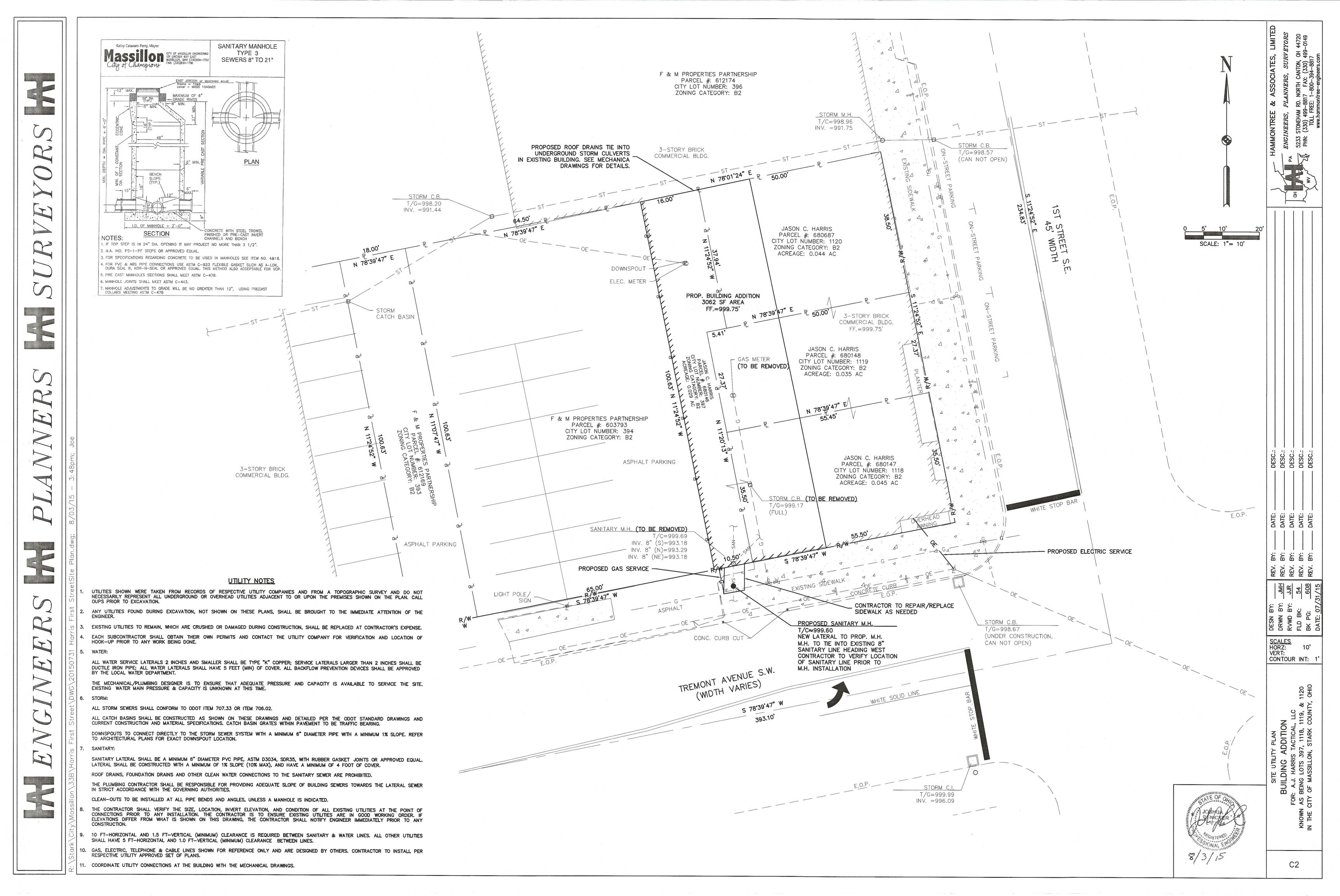
	INDEX TO DRAWINGS
	CIVIL DRAWINGS
C1	EXISTING / DEMOLITION SITE PLAN
C2	SITE UTILITY PLAN
	ARCHITECTURAL DRAWINGS
D1.1	DEMOLITION FLOOR PLANS
CD1.1	CODE FLOOR PLANS; PROJECT DATA
A1.1	FLOOR PLANS; WALL TYPES; CASEWORK ELEVATION; RESTROOM ELEVATION
A2.1	REFLECTED CEILING PLANS; ROOF PLAN
A3.1	EXTERIOR ELEVATIONS; WALL SECTION
A3.2	WALL SECTIONS
A4.1	STAIR SECTIONS; ROOM FINISH SCHEDULE; DOOR SCHEDULE; DOOR TYPES
	STRUCTURAL DRAWINGS
S1.0	GENERAL NOTES
S1.1	FOUNDATION PLAN; MAIN LEVEL FRAMING PLAN
S1.2	UPPER LEVEL FRAMING PLAN; ROOF FRAMING PLAN
S2.1	SECTIONS; TYPICAL DETAILS
S2.2	SECTIONS
	PLUMBING DRAWINGS
P1.1	LOWER LEVEL FLOOR PLAN - DEMOLITION AND SANITARY
	MAIN LEVEL FLOOR PLAN - SANITARY .
	UPPER LEVEL FLOOR PLAN - SANITARY
P1.2	LOWER LEVEL FLOOR PLAN - PLUMBING
	MAIN LEVEL FLOOR PLAN - PLUMBING
	UPPER LEVEL FLOOR PLAN - PLUMBING
P2.1	SANITARY STACK ISOMETRIC; DOMESTIC WATER ISOMETRIC; NATURAL GAS ISOMETRI
P2.2	PLUMBING SCHEDULES; PLUMBING DETAILS; PLUMBING SPECIFICATIONS
	MECHANICAL DRAWINGS
M1.1	LOWER LEVEL FLOOR PLAN - DEMOLITION AND HVAC
	MAIN LEVEL FLOOR PLAN - HVAC
	UPPER LEVEL FLOOR PLAN - HVAC
M2.1	MECHANICAL SCHEDULES; MECHANICAL DETAILS; MECHANICAL SPECIFICATIONS
	ELECTRICAL DRAWINGS
E-1	ELECTRICAL POWER DISTRIBUTION DIAGRAM
E-2	PANEL SCHEDULE
E-3	POWER PLAN
E-4	LIGHTING PLAN
FA-1	FIRE ALARM SYSTEM LEGEND; FIRE ALARM SYSTEM RISER
FA-2	FIRE ALARM SYSTEM DEMOLITION PLAN
FA-3	FIRE ALARM SYSTEM REVISED
FA-4	FIRE ALARM SYSTEM BATTERY CALCULATIONS AND VOLTAGE DROPS



From SMART to FINISH.

# I



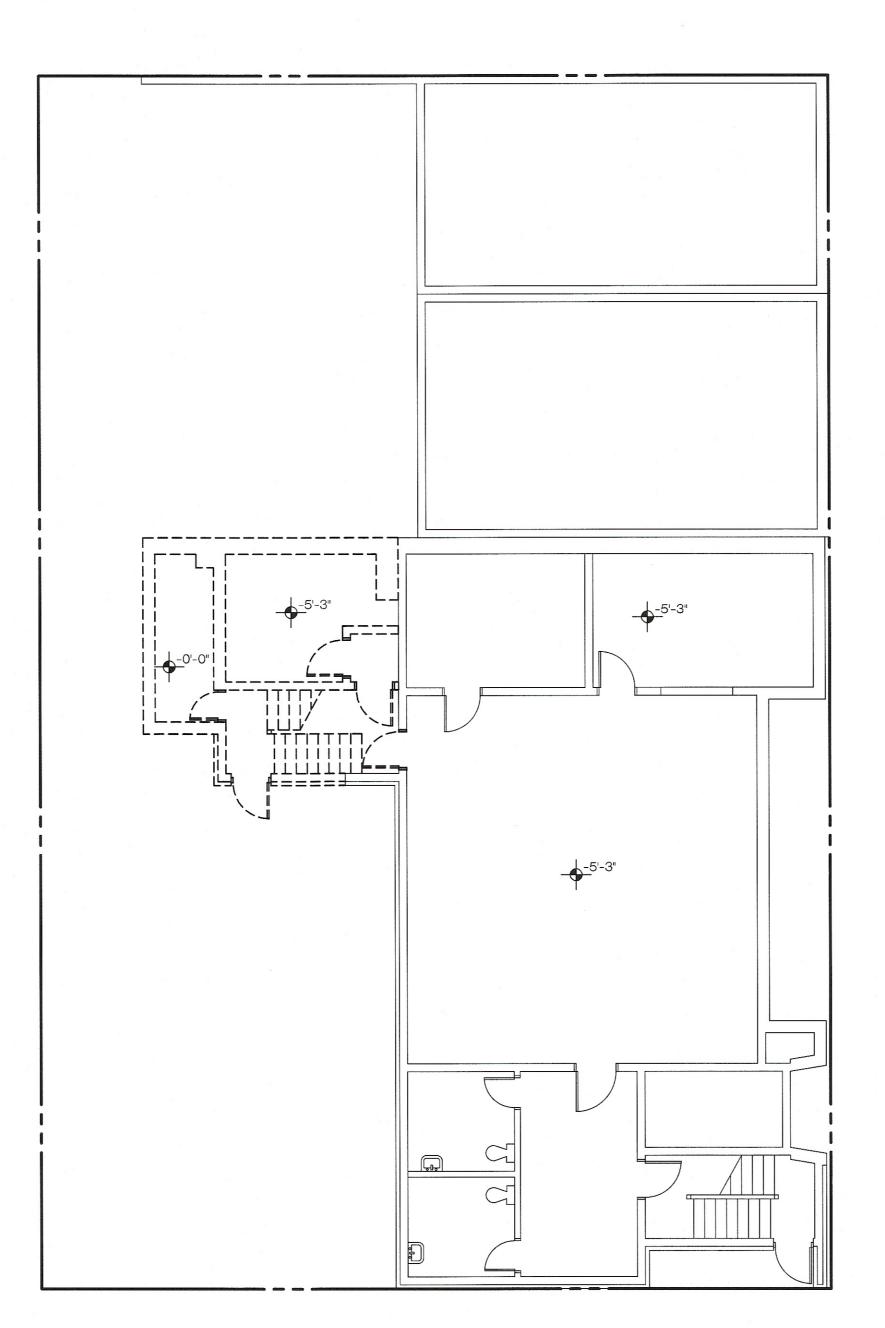


### GENERAL DEMOLITION NOTES

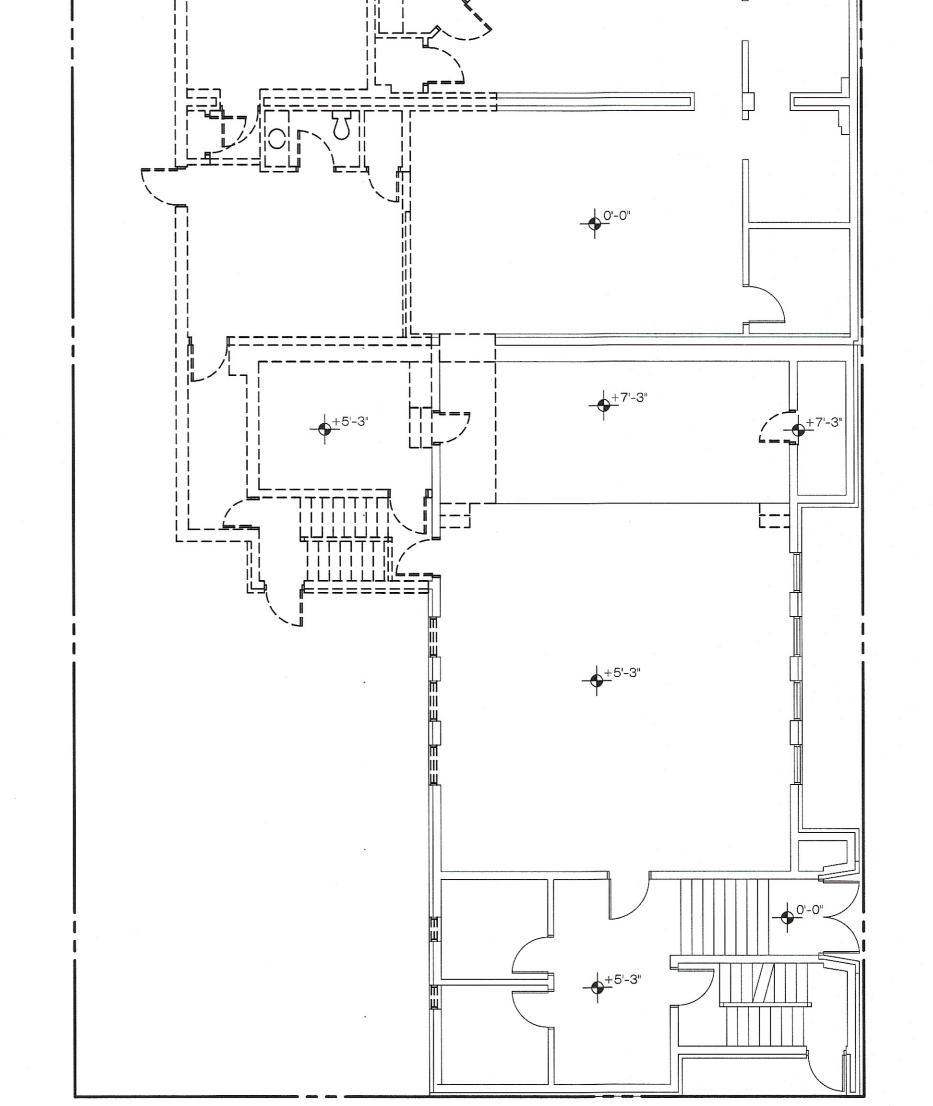
- 1. THE INTENT OF THE DEMOLITION WORK INCLUDED IN THIS PROJECT IS TO COMPLETELY REMOVE ALL EXISTING COMPONENTS INDICATED AND GENERALLY IMPLIED, TO PROVIDE OPENINGS AND ACCESS TO SPACES INDICATED TO RECEIVE REMODELED WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION, REMOVAL FROM SITE, DISPOSAL, PATCHING AND REPAIRING EXISTING BUILDING FOR ITEMS REMOVED IN THEIR RESPECTIVE SCOPE(S) OF WORK
- 3. IF ANY MISCELLANEOUS ITEMS IN THE SPACES HAVE INADVERTENTLY BEEN OMITTED IN THE DEMOLITION DOCUMENTS, IT IS THE INTENT OF THIS PROJECT THAT THE WORK UNDER THIS DEMOLITION CONTRACT IS TO FACILITATE THE CONSTRUCTION OF A COMPLETE, CLEAN, AND READY TO USE SPACE. ANY SUCH ITEM SHOULD BE DEMOLISHED AS REQUIRED
- 4. ALL WORK SHALL BE IN FULL COMPLIANCE WITH APPLICABLE NATIONAL, STATE, AND LOCAL CODES.
- 5. CONTRACTOR SHALL VERIFY EXISTING CONSTRUCTION AND DIMENSIONS, AND NOTIFY ARCHITECT OF ANY DISCREPANCIES, PRIOR TO PROCEEDING WITH WORK.
- 6. GENERAL TRADES CONTRACTOR SHALL PROVIDE TEMPORARY ENCLOSURES, BARRICADES, ETC., AS REQUIRED TO PROTECT ADJACENT OCCUPIED SPACES, COMMON AREAS, ETC., FROM DUST, NOISE, AND DEBRIS ASSOCIATED WITH PERFORMING THE WORK.
- 7. GENERAL TRADES CONTRACTOR SHALL MAINTAIN ALL REQUIRED EGRESS ROUTES FREE OF CONSTRUCTION MATERIALS AND DEBRIS.

INDICATES ITEMS TO BE REMOVED

L----







MAIN LEVEL DEMOLITION PLAN

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

NG RANGE

WINDOOR FIRING RAN

RODNEY W. MEADOWS LICENSE #6781

THIS DWG:
DEMOLITION PLANS

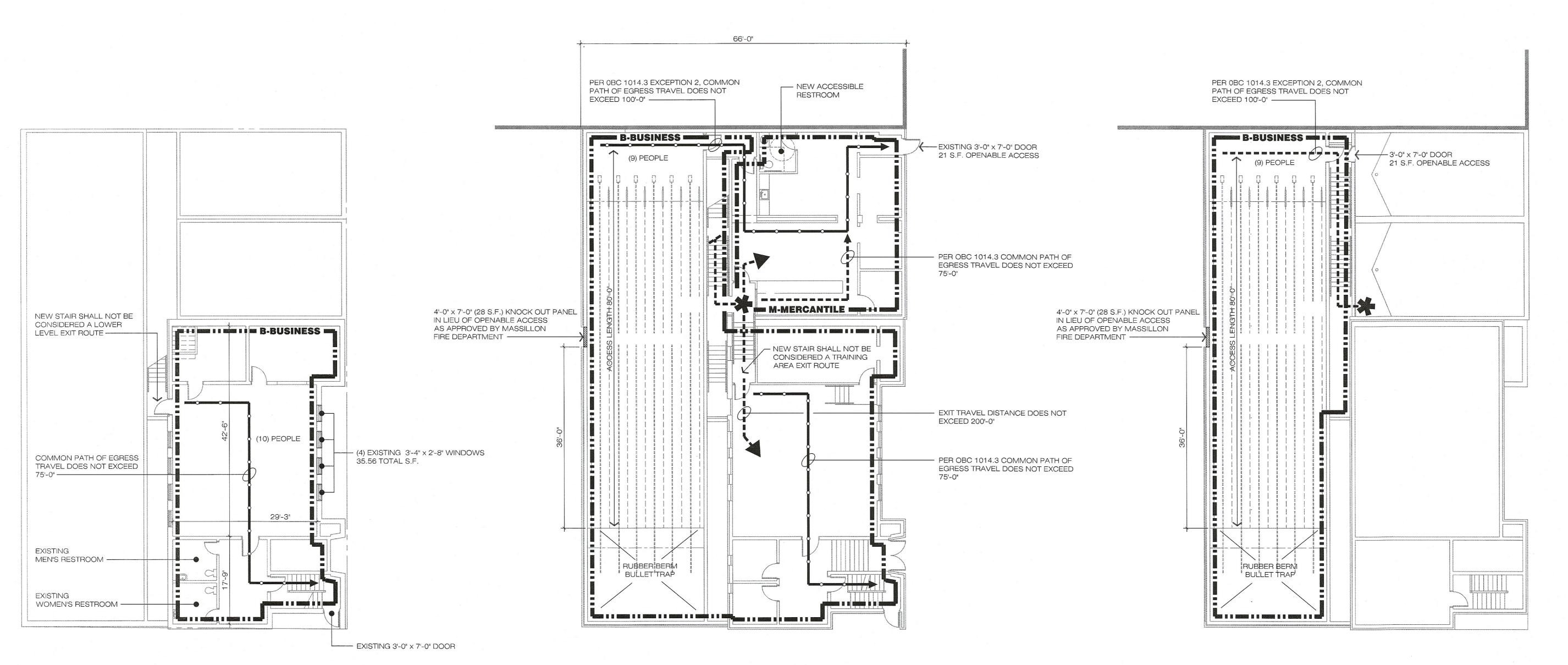
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**DATE** 08-03-2015

DWG

D-1.1



LOWER LEVEL CODE PLAN

MAIN LEVEL CODE PLAN

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



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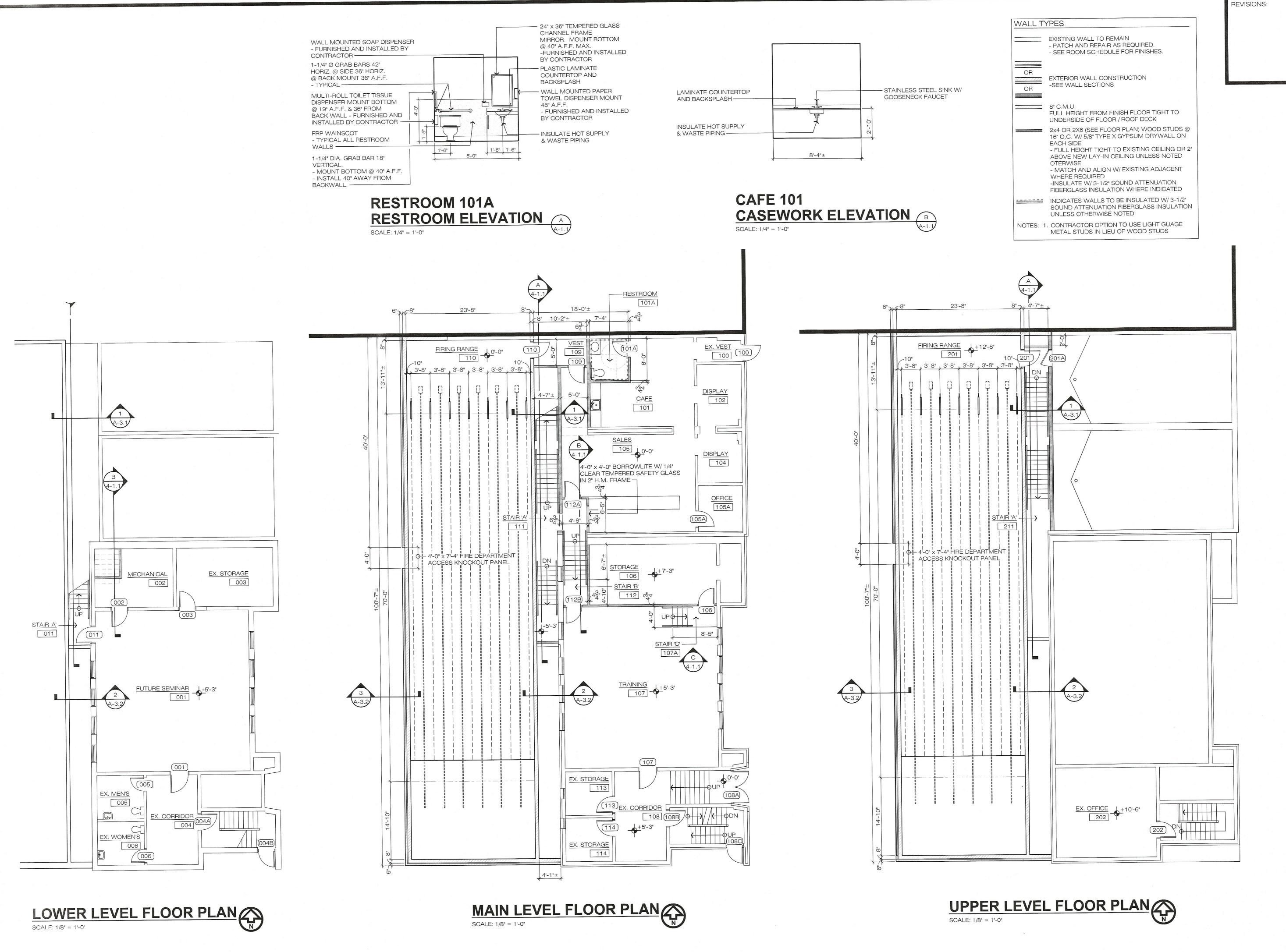
R.W.MEADOWS 6781 RODNEY W. MEADOWS LICENSE #6781

THIS DWG: CODE PLANS PROJECT DATA

EXPIRATION DATE 12-31-2015

COMM

**DATE** 08-03-2015



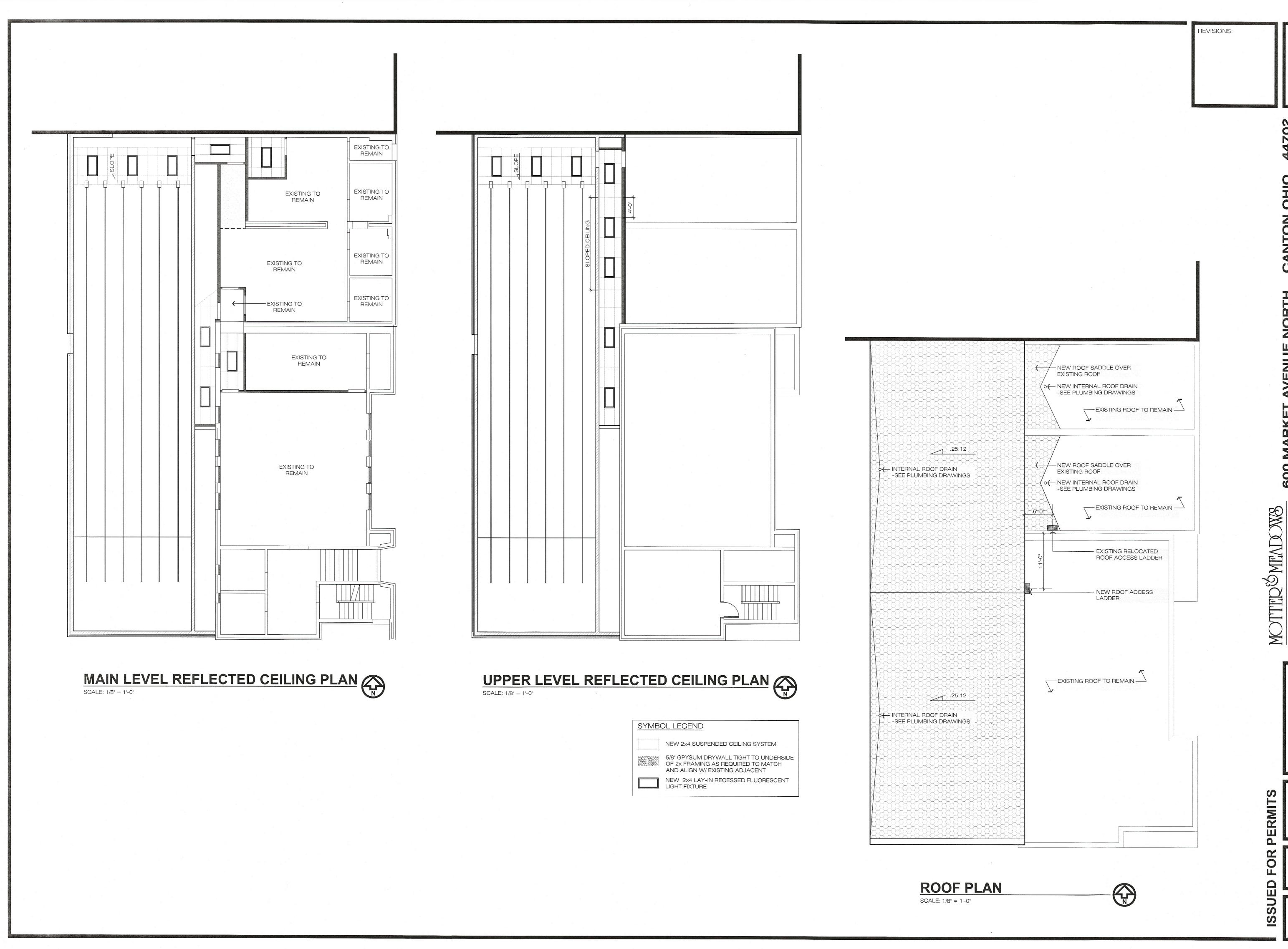
R.W.MEADOWS 6781 RODNEY W. MEADOWS LICENSE #6781 EXPIRATION DATE 12-31-2015

THIS DWG:
FLOOR PLANS
WALL TYPE LEGEND
RESTROOM ELEVATION
CASEWORK ELEVATION

COMM

**DATE** 08-03-2015

**DWG** A-1.1



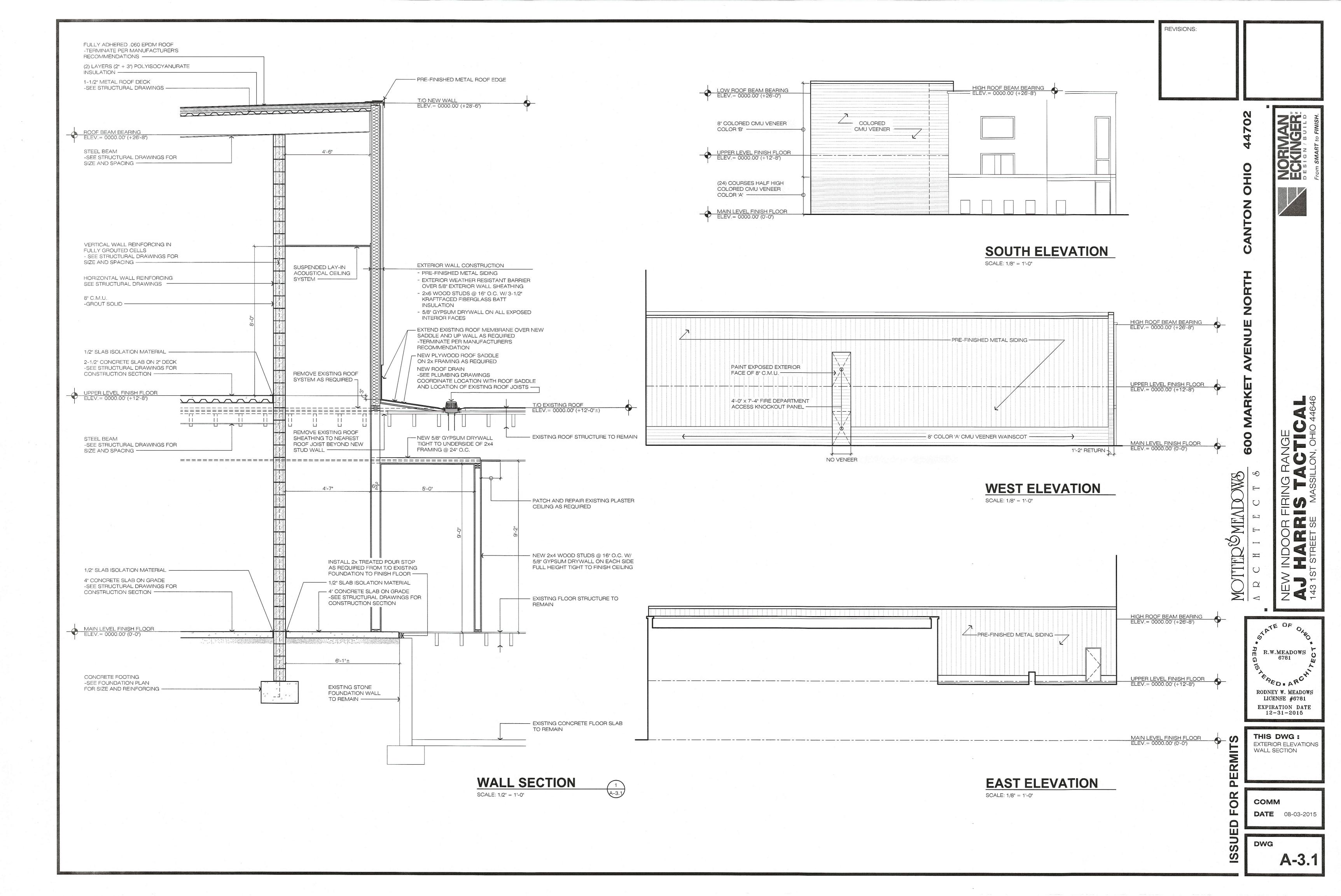
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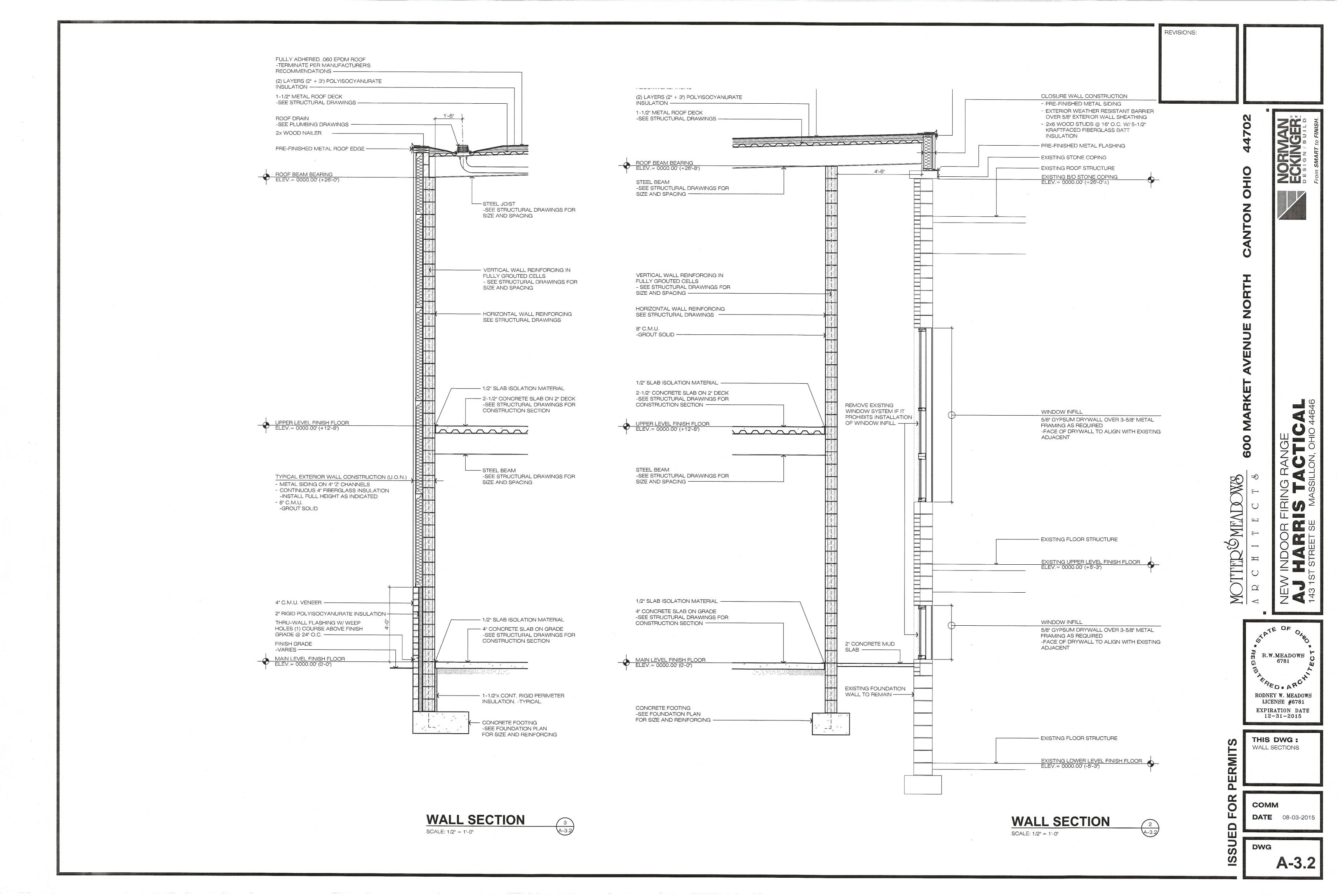
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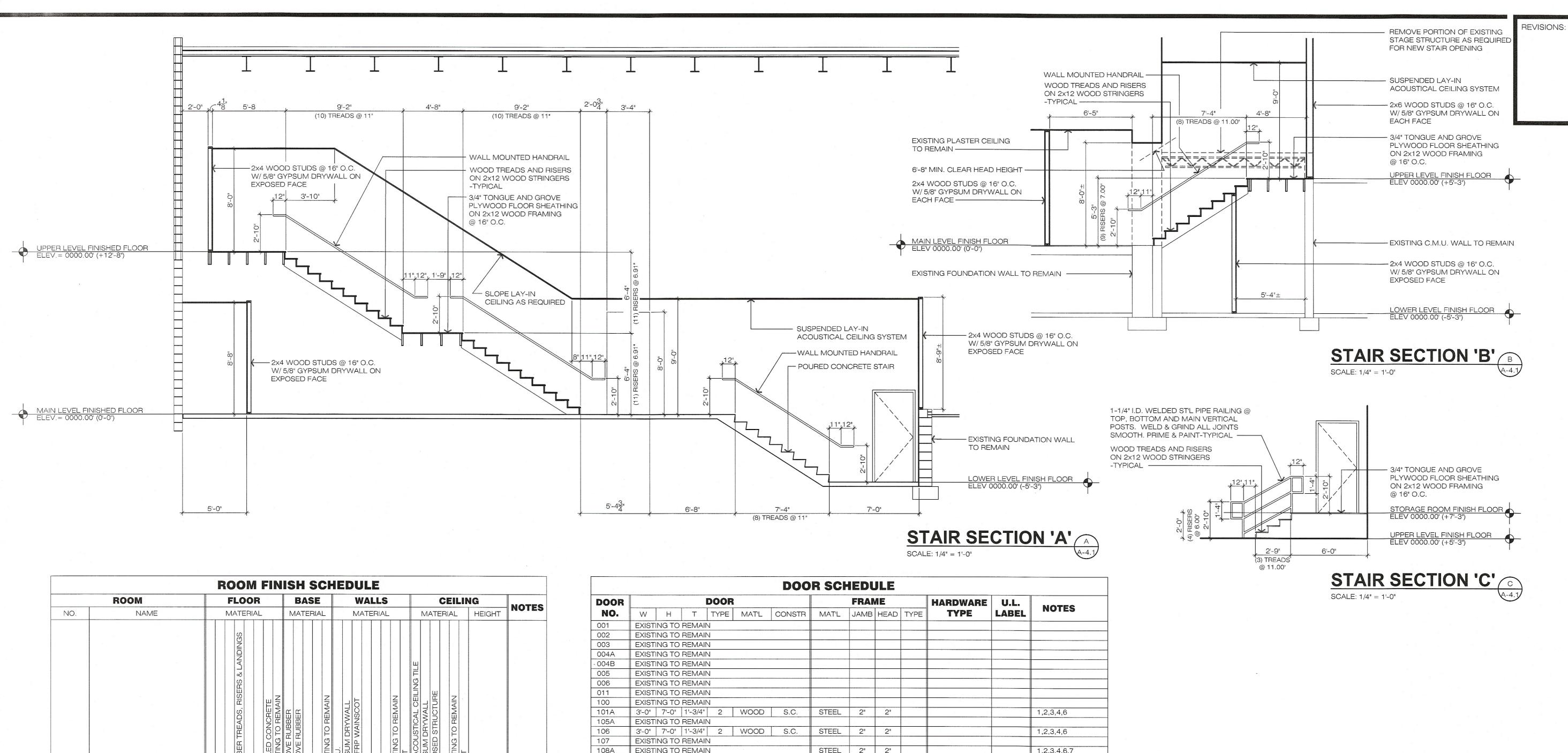
СОММ **DATE** 08-03-2015

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A-2.1







DOOR				DOOR			ä	FRAME HARDWAF		HARDWARE	U.L.	NOTES	
NO.	W	Н	Т	TYPE	MAT'L	CONSTR	MAT'L	JAMB	HEAD	TYPE	TYPE	LABEL	NOTES
001	EXIST	NG TO	REMAI	V								-	
002	EXIST	ING TO	REMAII	V									
003	EXIST	ING TO	REMAII	V									
004A	EXIST	ING TO	REMAII	V					8				
004B	EXIST	ING TO	REMAI	V									
005	EXIST	ING TO	REMAII	V									
006	EXIST	ING TO	REMAII	V			6.5						
011	EXIST	NG TO	REMAII	V									
100			REMAII	V									
101A	3'-0"	7'-0"	1'-3/4"	2	WOOD	S.C.	STEEL	2"	2"				1,2,3,4,6
105A	EXIST		REMAII	V					B	7			
106	3'-0"	7'-0"	1'-3/4"	2	WOOD	S.C.	STEEL	2"	2"				1,2,3,4,6
107	EXIST	ING TO	REMAII	V									
108A			REMAII				STEEL	2"	2"				1,2,3,4,6,7
108B			REMAII				STEEL	2"	2"				1,2,3,4,6,7
108C			REMAII	V									
109	3'-0"	7'-0"	1'-3/4"	1	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
110	3'-0"	7'-0"	1'-3/4"	1	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
112A	3'-0"	7'-0"	1'-3/4"	1	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
112B	3'-0"	7'-0"	1'-3/4"	1	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
113			REMAII										
114			REMAI	V				-		-			
201	3'-0"	7'-0"	1'-3/4"	1	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
201A	3'-0"	7'-0"	1'-3/4"	2	STEEL	INSUL	STEEL	2"	2"				1,2,3,4,6
202	EXIST	ING TO	REMAI	V									

1. ALL DOOR HARDWARE SHALL COMPLY WITH THE OBC CHAPTER 11 AND ICC A117.1 - 2009 EDITION. 2. DOOR HARDWARE SHALL BE STANDARD COMMERCIAL GRADE HARDWARE.

3. DOOR SHALL BE EQUIPPED WITH (3) MEDIUM DUTY HINGES UNLESS OTHERWISE NOTED

4. DOOR SHALL BE EQUIPPED WITH A LEVER-TYPE LOCKSET FUNCTION SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

EGRESS DOORS: ENTRANCE FUNCTION OFFICE FUNCTION

STORAGE: STOREROOM FUNCTION RESTROOMS: PRIVACY FUNCTION

PANIC HARDWARE 6. CLOSER

FUTURE SEMINAR MECHANICAL ROOM

EXISTING STORAGE

EXISTING MEN'S EXISTING WOMEN'S

EXISTING VESTIBULE

EXISTING CORRIDOR

EXISTING STORAGE EXISTING STORAGE

004 EXISTING CORRIDOR

STAIR 'A'

RESTROOM

DISPLAY

DISPLAY

SALES

OFFICE

STORAGE

TRAINING

VESTIBULE

STAIR 'A'

STAIR 'B'

211 STAIR 'A'

FIRING RANGE

FIRING RANGE

EXISTING OFFICE

CAFE

003

005

011

100

101

101A

102

104

105

106

107

108 109

110

111

113

105A

SEE SCHEDULE — 1/4" CLEAR TEMPERED SAFETY GLASS DOOR FRAME - SEE SCHEDULE FOR SIZE AND MATERIAL FLUSH PANEL DOOR -SEE DOOR SCHEDULE FOR SIZE AND MATERIAL

SE	EE SCHEDU	LE T
SEE SCHEDULE	-	C DOOR FRAME - SEE SCHEDULE FOR SIZE AND MATERIAL  FLUSH PANEL DOOR -SEE DOOR SCHEDULE FOR SIZE AND MATERIAL
7	-	-

**DOOR TYPE 1** SCALE: 1/4" = 1'-0"

**DOOR TYPE 2** SCALE: 1/4" = 1'-0"

MOTTED & MEADOWS

TE OF R.W.MEADOWS 6781 RODNEY W. MEADOWS LICENSE #6781 EXPIRATION DATE

> THIS DWG: STAIR SECTIONS ROOM FINISH SCHEDULE DOOR SCHEDULE DOOR TYPES

12-31-2015

COMM

**DATE** 08-03-2015

DWG

A-4.1

Wind exposure category (OBC 1609.4.3) ----- B Internal pressure coefficient (ASCE 7, Fig. 6-5) Encl. ----- GCpi = ± 0.18 Components and cladding Effective Wind Area ----- 20 ft<sup>2</sup> (4) Zone 1 (Roof Interior) ------+10.0, -14.2 psf Zone 2 (Roof Edge) ------+10.0, -21.8 psf Zone 3 (Roof Corner) -----+10.0, -30.5 psf ------ +13.9, -15.1 psf Zone 4 (Wall Interior) -----Zone 5 (Wall Corner) ------ +13.9, -18.2 psf (+) Indicates pressure acting toward the surface (-) Indicates pressure acting away from the surface Edge and corner zones are defined as areas within X'-X" of edge or corners

actual effective wind area per ASCE 7

### Earthquake design data

Seismic importance factor (ASCE 7, Table 11.5-1) Occupancy category (OBC Table 1604.5) Mapped spectral response accelerations		
Short period	$S_s = 0.143 g$	
1-second period	$S_1 = 0.050 g$	
Site class (per Geotechnical Report)	D	
Spectral response coefficients		
Short period	$S_{ds} = 0.153  q$	
1-second period		
Seismic design category	•	
Basic seismic-force-resisting system (ASCE 7, Table 12.2-1)	_	
A.9 Ordinary masonry shear walls		
Design base shear (ASCE 7, 12.8.1)	V = 19 Kips	
Seismic response coefficient (ASCE 7, 12.8.1.1)		
Response modification factor (ASCE 7, Table 12.2-1)		
Analysis procedure		
, many ord production	force procedure	
	10.00 procedure	

(4) Components and cladding engineer may may calculate wind loads based on

Addition complies with all exceptions listed in ASCE 7, Appendix 11B.3. Further analysis and design of the existing structure for seismic force-resistance are not required.

----- f'c = 4,000 psi

# Special loads

Hanging Loads of Sound Baffles-----See Drawings by Action Target

# **DESIGN STRESSES**

Concrete (strength design) minimum compressive strength in 28 days: Footings, Interior slabs on grade, grade beams, and concrete on metal deck -----

	Concrete subject to freezing and thawing	$f_c = 5,000 \text{ psi}$
	Lean concrete, for use with overexcavations or mud slab	$f_c = 1,500 \text{ psi}$
	Reinforcing bars (ASTM A615, Grade 60)	- F <sub>y</sub> = 60,000 psi
	Welded wire reinforcement (ASTM A185)	$f_s = 30,000 \text{ psi}$
	Structural steel W and S shapes	
	(ASTM A992 or ASTM A572/50)	$F_y = 50,000 \text{ psi}$
	Structural steel other shapes (ASTM A36)	$F_v = 36,000 \text{ psi}$
	Anchor rods (F1554, Grade 36) unless otherwise noted	$F_{y} = 36,000 \text{ psi}$
	Metal decks	
	Hollow structural sections (ASTM A500, Grade B)	
	Rectangular	$F_y = 46,000 \text{ psi}$
	Masonry	$f_{m} = 1.500 \text{ psi}$
	Load-bearing CMU (ASTM C55 or C90)	
	Brick (ASTM C216 Grade SW)	
	Mortar (ASTM C270)	Type M or S
	Grout (ASTM C476)	
×	Soil bearing pressure for foundations	
	bearing strata	2,000 psf
		(per Geotech Repor

# TEMPORARY SHORING AND BRACING

Structure is designed to be self-supporting and stable after the building is fully

Each contractor shall be responsible for erection procedures and sequence, shall maintain stability of the building and its component parts, and shall be responsible for adequacy of temporary or incomplete construction and connections during

Contractor shall assume full design responsibility for temporary shoring and bracing, which shall be designed, signed, and sealed by a professional engineer licensed in

the jurisdiction where project is located. Temporary shoring shall be maintained throughout construction and shall be

removed only after completion of all required supporting elements. Remove any remaining temporary shoring after construction is complete.

1. All new construction shall comply with the Contract Documents and the Building

Typical details and general notes apply to all parts of the work except where specifically detailed or unless otherwise noted.

The structural drawings illustrate structural members. Refer to architectural, mechanical, and electrical drawings for non-structural items which require special provisions during the construction of the structural members. Drawings are not to be scaled.

Refer to architectural plans for floor depressions, openings, slopes, drains, curbs, pads, embedded items, non-bearing partitions, etc. Refer to mechanical and electrical plans for sleeves, openings, and hangers for pipes, ducts, and equipment. The Contractor shall verify and be responsible for all dimensions and conditions

which impact the work. Field verify sizes, elevations, hole locations, etc., prior to fabrication.

The Contractor shall carefully review the drawings to identify the scope of work required, visit the site to relate the scope of work to existing conditions and determine the extent to which those conditions and physical surroundings will impact the work.

Existing conditions as shown on these plans are for reference only. The Contractor is required to field verify all existing conditions prior to construction.

The Contractor shall resolve any conflicts on the drawings or in the specifications with the Architect/Engineer before proceeding with the work. 10. Any deviation, modification, or substitution from the approved set of structural drawings shall be submitted to the Owner, Architect, and Engineer for

review/approval prior to its use or inclusion on the shop drawings. 11. The Contractor shall provide all necessary shores, braces, and guys required to support all loads to which the building structure and components, soils, other structures, and utilities may be subjected during construction. Shoring systems shall be designed, signed, and sealed by a professional engineer licensed in the

jurisdiction where the project is located. The Contractor shall provide means, method, techniques, sequence, and procedure of construction as required.

The Contractor shall protect all work, materials, and equipment from damage and shall provide proper storage facilities for materials and equipment during

14. Site visits performed by the Architect/Engineer do not constitute inspections of means and methods of construction performed by the Contractor.

Structural observations performed by the Architect/Engineer during construction are not the continuous and special inspection services and do not waive the responsibility for the inspections required of the Building Department Inspector or the testing agency. Observations also do not guarantee the Contractor's

performance and shall not be considered as supervision of construction. 16. The Contractor shall review shop drawings for completeness and compliance with contract documents. The Contractor shall stamp shop drawings prior to submission

to the Architect and Engineer. 17. Review of the shop drawings by the Architect's Engineers shall not be construed as

an authorization to deviate from the Contract Documents. 18. Shop drawings will not be processed if they are incomplete, lack coordination with relevant portion of contract documents, lack calculations if required, or if deviations, modifications, and substitutions are indicated without prior written approval from the

19. No pipes or ducts shall be embedded into structural members unless so shown on the plans or approved by the Engineer.

### ROOF, FLOOR, OR WALL OPENINGS

1. The Contractor shall verify and coordinate the number, size, and location of all sleeves and openings required for mechanical or electrical items.

Sleeves and openings shall be located in a manner that will maintain the structural integrity of the roof, floor, or wall system.

3. No structural elements are to be cut unless specifically approved by the Engineer.

### STRUCTURAL TESTING AND SPECIAL INSPECTIONS

Special structural testing and inspections are required. The Owner shall hire an approved independent testing agency. The agency shall be designated as the special inspector and shall provide structural testing and special inspections as required by the building code and as noted in the Contract Documents. Reports of inspection and testing shall be sent to the Architect, Engineer, Owner, Contractor, and Building Department. Structural testing and special inspection shall include:

Concrete: mix data, daily pour reports, cylinder tests, slump, entrained air tests, and temperature. See specifications for all testing and inspection requirements.

Reinforcement: placement, type, size, and grade of steel. See specifications for all testing and inspection requirements.

Structural steel: welding and bolting in the shop and field. See specifications for all testing and inspection requirements. Masonry: masonry prisms, size and location of piers, use of proper masonry units, reinforcing placement and grouting operations. See specifications for all testing and

inspection requirements. Foundations: Inspect and test bearing surfaces, soil compactions, fill and backfill materials.

Inspect all excavations and shoring installations and review backfilling procedures.

Earth Fill: certification of all fill material and in-place density tests. See specifications for all testing and inspection requirements.

# FOUNDATIONS AND SLABS ON GROUND

1. Foundations for this project are designed in accordance with the recommendations made by Timmerman Geotechnical Group, Inc., Geotechnical Engineers. All the work regarding site preparation, earth fill construction, backfill requirements. foundation preparations, etc., shall be in strict conformance to the requirements and recommendations of the Geotechnical Engineer's report. The report is part of the Contract Documents.

Footings and grade beams: Elevations given are to bottom of footings and grade

3. Slab on ground: Slab elevations given are to top of structural slab. See Architect's drawings for layout of ramps and steps.

4. All footings must be supported on undisturbed soil capable of achieving the design soil bearing pressure without appreciable settlement. Where additional excavation is required to attain the design bearing pressure, backfill the overexcavated area with lean concrete up to the design bearing elevation.

Unless otherwise noted in the geotechnical report or specifications, compact all fill under slabs on ground to 98% of optimum laboratory density in accordance with ASTM D698 Standard Proctor Method. Place fill in 6" to 8" layers and compact with vibratory tamping equipment.

6. In granular soils (sands and gravel) the soil shall be mechanically tamped to a hard surface immediately prior to placing footing.

Existing foundations: Existing foundations shown on drawings are approximate. Exact conditions must be verified at time of construction

When new footings meet existing footings, they shall be stepped at a ratio of 2 horizontal to 1 vertical. C. Unless otherwise noted, new footings shall not bear below existing footings.

10. Before backfill, all walls must be adequately braced. For backfill requirements, see specifications and/or geotechnical report. 11. Locate existing underground utilities in areas of construction. Coordinate with utility

companies for any shut-off requirements of still active lines. Call the Ohio Utilities Protection Service at 800-362-2764. 12. When excavations approach the ground water level, the water level shall be lowered by an acceptable dewatering system so that the water level is maintained

continuously a minimum of 2'-0" below the excavation. 13. The bottom of foundations shall be protected against freezing until backfill or other permanent protective cover is in place.

### **EARTHWORK SHORING**

Temporary shoring for foundations, full-depth trench footings, and grade beams shall be provided when required by local, state, or OSHA officials or codes at no additional cost to the Owner

Where forces from existing structures, roadways, walks, utility lines, or other encumbrances required for construction come onto shoulders of foundations, footing, or grade beam excavations, the Contractor shall provide shoring of adequate size and strength to resist the combined earth and adjacent surcharge

The Contractor shall be responsible for design and placement of shoring and bracing of temporary earth retaining structures required for foundation and footing construction.

Local, state, and OSHA safety requirements for personnel working in trenches shall be enforced by the Contractor. The Contractor shall hold the Owner, Architect, and Engineers harmless from claims due to injury from violation of safety requirements resulting from work persons or others working in foundations, trench, or grade beam

### CONCRETE CONSTRUCTION

All concrete construction shall be in accordance with the latest Building Code Requirements for Structural Concrete ACI 318 and ACI Detailing Manual, except that construction and removal of forms and reshoring shall be inspected by the

Reinforcing steel shall have the following minimum coverage. Place bars as near to the concrete surface as these minima permit wherever possible, unless noted

Concrete poured against earth: 3"

Formed concrete in contact with earth: 2"

Exterior face of walls: 2" All other slabs: 3/4" (#11 and smaller)

Welded wire reinforcement for slabs on ground shall have a minimum top coverage of 1" and a maximum top coverage of 1 1/2", unless otherwise noted. Reinforcement shall be positively supported and maintained in this position during placement of concrete.

Furnish bar supports where necessary during construction. Provide plastic-coated (not plastic-tipped) or stainless steel chairs in all concrete exposed to view in completed structure.

Provide pipe sleeves and inserts in concrete work where required. See architectural and mechanical drawings.

Obtain approval of Engineer before locating sleeves, holes, or inserts in slabs within 2'-0" of face of columns or anywhere in beams, joists, or columns. Welding of reinforcing bars (including tack welding) is not permitted without permission of Engineer in writing. Where and when permitted, welded rebars shall

comply with ASTM A706 (Fy=60 ksi) and welding shall conform to AWS D1.4. Welding shall be performed by certified welders. Provide horizontal keyways in construction joints in supported slabs and wall footings; minimum 1 1/2" depth with height equal to one-third of member depth,

unless otherwise shown or noted. Unless noted otherwise in project specifications or drawings, all exposed concrete subjected to freezing and thawing shall have a minimum cement content of 610

pounds per yard, a maximum water/cement ratio of 0.40, and 6%±1% of entrained 12. In slab construction, provide a minimum of #4 x 6'-0" long (top) at 12" on center over beams or walls when slabs or joists span parallel to beams or walls.

Slab thickness indicated over steel form deck includes form depth. Provide form deck continuous over at least three supports and weld to each support at minimum 12" intervals. Use decking that will safely support all construction loads, including wet weight of concrete. Limit deflection of decking to 1/240 of span when loaded with the wet weight of concrete and construction loads.

14. At wall and footing corners, innermost reinforcing shall have 1'-0" long hook at far face. For outer reinforcing, provide corner bars with lap length of 36 bar diameters (2'-0" minimum).

15. Key and dowel all areaways and other projecting elements to supporting walls with #4@12" on center extending 1'-0" into supporting wall unless noted.

Horizontal floors supported by deflecting structural members (steel joists, unshored steel beams, etc.) shall be finished level. The slab thickness noted is minimum. Add concrete as necessary to overcome member deflections. Shored construction shall be finished to a constant depth.

17. Drawings show typical reinforcing conditions. Contractor shall prepare detailed placement drawings of all conditions showing quantity, spacing, sizes, clearances, laps, intersections, and coverage required by the structural details, applicable code, and trade standards. Contractor shall notify reinforcing inspector of any adjustments from typical conditions which are proposed in placement drawings to facilitate field placement of reinforcing steel and concrete.

18. Bar bends shall be made cold. Bars shall not be bent after any portion of the bar is encased in concrete.

19. Splices (grade 60 deformed bars):

Lap all compression splices 30 bar diameters of the larger bar. Lap all tension splices in accordance with the following tables. Provide Class

B Tension Lap Splices unless otherwise noted. Increase tension or compression splice lengths by the following factors.

Increases are Cumulative:

Epoxy-coated top bars: 1.3 Epoxy-coated other bars: 1.5

Lightweight concrete: 1.3 Bundled bars (3 bar bundles): 1.2

Bundled bars (4 bar bundles): 1.33 Top bars are defined as horizontal bars with more than 12" of fresh concrete

Mechanical splices shall develop 125% of the yield strength of the bar and are required for tension tie members and splices with #14 or #18 bars. Mechanical splices in adjacent bars shall be staggered at least 30 inches.

		С	lass B Tens	ion Lap Spli	ce	
Bar	f'c = 30	000 psi	f'c = 40	000 psi	f'c = 50	000 psi
Size	Тор	Other	Тор	Other	Тор	Other
#3	28"	22"	24"	19"	22"	17"
#4	37"	29"	33"	25"	29"	23"
#5	47"	36"	41"	31"	36"	28"
#6	56"	43"	49"	37"	43"	34"
#7	81"	63"	71"	54"	63"	49"
#8	93"	72"	81"	62"	72"	56"
#9	105"	81"	91"	70"	81"	63"
#10	118"	91"	102"	79"	92"	70"
#11	131"	101"	113"	87"	102"	78"

	101	101	110	0,	102	10		
		Clas	ss A Develop	oment Lengt	th, ld			
Bar	f'c = 30	000 psi	fc = 4	000 psi	f'c = 50	000 psi		
Size	Тор	Other	Тор	Other	Тор	Other		
#3	22"	17"	19"	15"	17"	13"		
#4	29"	22"	25"	19"	23"	17"		
#5	36"	28"	31"	24"	28"	22"		
#6	43"	33"	37"	29"	34"	26"		
#7	63"	48"	54"	42"	49"	38"		
#8	72"	55"	62"	48"	56"	43"		
#9	81"	62"	70"	54"	63"	48"		
#10	91"	70"	79"	61"	70"	54"		
#11	101"	78"	87"	67"	78"	60"		

### MASONRY CONSTRUCTION

Masonry walls shown on structural drawings have been designed in accordance

with ACI 530, Building Code Requirements for Masonry Structures. Masonry walls shown on structural drawings shall be constructed in accordance with ACI 530.1, Specifications for Masonry Structures, and the project

Determine compressive strength of masonry (f'm) by the unit strength method (Section 1.4, B.2 of ACI 530.1).

A. Mortar shall meet the Property Specifications' requirements of ASTM C270, and shall be field tested according to ASTM C780.

The strength of grout shall be determined by tests in accordance with ASTM

C1019. The use of masonry cement shall not be permitted.

Intersecting bearing walls shall be anchored by one of the following methods (does not apply at control joints or where non-load-bearing partitions abut bearing walls): A. Fifty percent of the units at the intersection shall be laid in an overlapping masonry bonding pattern, with alternate units having a bearing of not less than 3" on the unit below.

B. Walls shall be tied by galvanized steel straps 1 1/2" x 1/4" x 24" with 2" bend at 90° each end. Grout straps solid into cores of block at 24" maximum

vertical spacing. Corners of bearing walls shall be built in running bond.

Provide corner bars in bond beams at wall intersections and corners to match bond Provide a minimum of 24" depth of solid masonry under the bearing ends of all

beams and beam lintels, and 8" of solid masonry under the bearing ends of loose 8. Provide horizontal joint reinforcement per ASTM A82, galvanized, at 16" on center vertically. See specifications. Unless otherwise noted, provide a galvanized ladder

type joint reinforcement. 9. Welding of reinforcing bars (including tack welding) is not permitted without

permission of Engineer in writing. 10. Provide shop drawings which indicate size, spacing, bending details, and type of all reinforcing bars placed in masonry walls.

11. Provide dowels from supporting member (footing, beam, or slab) for all reinforced

walls same size, location, and spacing as wall reinforcing. 12. Wall reinforcing shall be held in position during grouting.

13. For bars at face of wall, maintain 1/2" clearance from inside face of CMU to reinforcing.

14. Splices (grade 60 deformed bars, f'm=1,500psi): Lap all splices in accordance with the following table.

Increase splice length by 50% for epoxy-coated reinforcing. Splice lengths greater than 60" require high lift grouting. The Contractor, at his option, may use open-ended masonry units or mechanical splices for ease of construction.

Mechanical splices shall develop 125% of the tensile capacity of the bar and are required for #10 bars or larger.

Bar	-8	Reinforcing at Face				
Size	6"	8"	10"	12"	16"	of Wall
#3	18"	18"	18"	18"	18"	18"
#4	24"	24"	24"	24"	24"	26"
#5	32"	30"	30"	30"	30"	40"
#6	61"	43"	40"	40"	40"	54"
#7		60"	46"	46"	46"	63"
#8	25	92"	71"	61"	61"	72"
#9			82"	74"	69"	82"

### LOOSE LINTEL SCHEDULE

1. Interior lintels shall be shop painted. Lintels exposed to weather shall be 3/8" minimum thickness and hot-dip galvanized.

2. Bottom plates in beam/plate assemblies shall be 1/2" less in width than the supported masonry wall. Stop bottom plates at face of masonry opening. Weld bottom plates to lintels with continuous fillet welds (each side).

4. Steel lintels and lintel plates in exterior walls shall be fabricated, followed by hot-dip galvanizing of the complete assembly

Lintels shall have minimum bearing at each end of 1" per foot of opening (6" minimum) except as detailed. 6. Lintels shall have 8" minimum solid masonry below bearing points and shall extend

beyond the full bearing area. 7. Lintel bearing plates shall be held back 1/2" minimum from face of masonry at opening. Provide flexible caulk between lintel and masonry at this location. Match

8. The following schedules apply to all non-bearing masonry walls and to bearing walls where lintels are not indicated on the structural drawings. See drawings for other lintels in bearing walls. A. For 4", 8", 12", and 16" walls, provide one angle for each 4" of masonry wall

thickness with 3 1/2" leg horizontal as follows: Angle Size L3 x 3 1/2 x 1/4 0'-0" to 4'-0" 4'-1" to 5'-6" L4 x 3 1/2 x 5/16 5'-7" to 7'-6" L5 x 3 1/2 x 5/16 7'-7" to 9'-6" L6 x 3 1/2 x 3/8 B. For 6" walls provide:

Span Limits 0'-0" to 4'-0" Lintel Size WT5x6 4'-1" to 5'-6" WT5x8.5 5'-7" to 9'-6" WT7x11 (interior) WT7x13 (exterior)

# ADHESIVE AND EXPANSION ANCHORS

vicinity of the anchors prior to drilling.

1. For connections to existing concrete or solid masonry, use wedge type expansion bolts (HILTI KWIK BOLT 3, or other approved) or adhesive anchors (HILTI HAS-E rods or rebar with HILTI HY 150 adhesive, or other approved), with diameter and embedment length as noted on the drawings.

2. For connections to existing hollow masonry or brick, use sleeve anchors (HILTI HLC, or other approved) or adhesive anchors (HILTI HIT-A rods with screen tube with HILTI HY 20 adhesive, or other approved), with diameter and embedment

length as noted on the drawings. 3. Locate existing reinforcing by means of a rebar detector prior to drilling. Adjust the connection as required to avoid damaging any reinforcing.

4. Notify the Architect or Engineer if the existing concrete or masonry is cracked in the

and channels where slope exceeds 1:20. H. Where minimum AISC fillet weld thickness requirement exceeds welds shown on details, or weld size is not specified, provide minimum AISC weld.

G. Provide beveled washers on all connections to sloping flanges of I sections

F. Use standard holes with the following exceptions: oversize holes are

1. Steel detailing, fabrication, and erection shall conform to the AISC Specification for

Structural Steel Buildings and Code of Standard Practice, and the AWS Structural

Stresses occurring during fabrication, shipment, and erection shall be temporary

impaired due to fabrication, shipment, or erection procedures. Throughout the

complete process, the stability of all individual members and assembles shall be

The Contractor shall be responsible for the control of all erection procedures and

All additional steel required for erection purposes shall be provided at no additional

High-strength bolts shall be installed in accordance with "Specifications for

A325SC or A490SC with hardened washers: use for all moment connections,

wind connections, hangers, and other connections as noted on drawings.

D. Provide hardened washers under nuts at all high-strength bolts, except where

A325N or A490N with hardened washers: use for all connections other than

Unless snug tight connections are noted on the drawings as being permitted,

permitted when bolts are loaded in tension; short slotted holes are permitted

Wherever possible, use framed beam connections as listed in Tables 10-1 to

sequences with relation to temperature differentials and weld shrinkage.

cost and shall be removed unless approved by the Owner in writing.

Structural Joints Using ASTM A325 or A490 Bolts".

plate washers are used per AISC Specifications.

for shear loading perpendicular to the slot.

all bolts should be tightened to full pretensioning load.

Connections - welded or high strength bolted:

slip critical connections.

and not excessive. Stresses at all times shall be less than design and allowable

stresses. The full design and load-carrying capacity of the steel work shall not be

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10-3 of AISC Manual of Steel Construction, 13th edition. The length of connection shall not be less than one-half of the T distance of the beam web. Where reaction is noted, develop same. Where not noted, for non-composite

beams, connections shall develop one-half of the total uniform load capacity of the beam; for composite beams, see table listed in typical details. Welding electrodes shall be E70XX except where other electrodes are required for compatibility with material being welded.

Shop drawings are required and shall note type of electrodes, size of all welds, and type and size of all bolts. Shop drawings shall be prepared under the supervision of a professional engineer licensed in the jurisdiction where the project is located.

8. Primer, unless otherwise noted: A. Clean surfaces to remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards: SSPC-SP 2, "Hand Tool Cleaning" for all steel.

Interior steel: Provide chemically active, modified alkyd primer at 2.5 mils dry C. Omit paint at slip critical connections and areas to be welded.

Beams bearing on masonry shall have angle wall anchors and bear a minimum of 8"

onto the wall. Masonry shall be built tightly around beam unless otherwise noted. 11. See all contract drawings for miscellaneous steel requirements. 12. All shop and field welding shall be performed by a recently certified welder.

13. All welding and high strength bolting must be inspected by a qualified testing laboratory. Laboratory shall be approved by the Architect and/or Engineer.

14. At roof beam bearing plates, provide a minimum of 3/4" grout with (2) 3/4" diameter anchor bolts with 1'-0" embedment. 15. Provide 1/4" closure plates at all open ends of HSS members.

16. Miscellaneous hanging loads such as stair stringers, pipes, mechanical units, etc., supported by steel members shall be applied in such a manner that no torsional forces are induced in the steel members, i.e., loads shall pass through the centerline of wide flange sections and through the shear center of channels.

### STEEL DECK

STEEL CONSTRUCTION

Welding Code.

The metal decking shall be of the type and gauge as indicated on the drawings. Decking and all accessories shall be formed from steel sheets conforming to ASTM A653. The steel shall be zinc coated conforming to ASTM A924, Class G60 as required in the specifications. Deck units shall be continuous over three or more spans where possible.

2. Diaphragm action shall be provided for in all areas with welding pattern in

accordance with manufacturer's recommendations.

All welding of metal deck shall be in accordance with AWS D1.3. 4. Hangers supported by metal decking with structural concrete fill shall be installed using ICBO-approved anchorage systems. Such hangers shall be used to support duct work 54" x 16" maximum, 4" diameter pipe maximum, or ceilings. Hangers must be two flutes apart on same deck span. Larger ductwork and piping shall be supported by structural beams or columns (see mechanical drawings).

All metal deck shall be welded to structural steel by qualified welders experienced in welding light-gauge steel, and using prequalified procedures. The erector shall establish a welding procedure for the arc spot welding weld of the steel decking to the structural steel of a particular gauge used. Prior to the start of erection of steel deck, each welder shall be qualified using this procedure and witnessed by the Owner's testing agency.

6. Steel deck and framing will deflect during placement of concrete. These deflections will require placement of concrete in excess of the amount based on nominal dimensions in order to bring the slab within tolerances of a horizontal plane. The Contractor shall provide the excess concrete at no cost to the Owner.

Section properties shall be determined according to the Light Gauge Steel Institute,

Headed studs used as shear connectors shall be 3/4" diameter Nelson studs unless

otherwise noted. Comply with Steel Deck Institute Specifications for deck attachment and connectors. 10. Steel deck shall be erected and fastened in accordance with the manufacturer's

specifications and erection layouts.

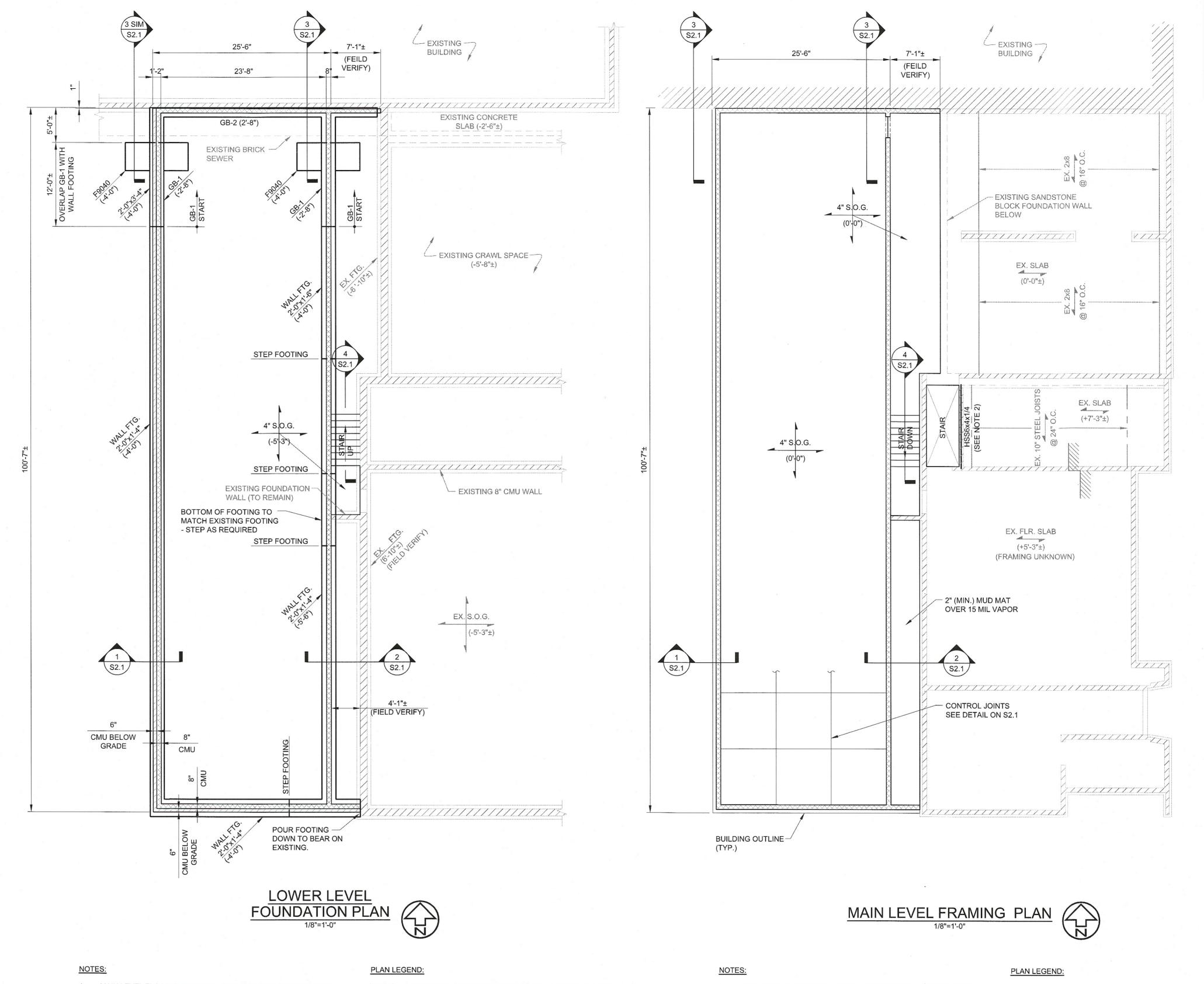
HALIM M. BARBER & HOFFMAN, INC.

TTED & MEAD

THIS DWG: **GENERAL NOTES** 

COMM

**DATE** 07-29-2018



- MAIN LEVEL FLOOR ELEVATION = REFERENCE ELEVATION (0'-0").
- 2. FOOTING ELEVATIONS (-X'-X") GIVEN ARE TO BOTTOM OF FOOTINGS AND ARE REFERENCED FROM FINISHED FIRST FLOOR ELEVATION (0'-0").
- 3. DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF BRICK. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL

DENOTES 8" CMU WALL W/ #5@40" O.C. GROUT ALL CELLS SOLID UNLESS OTHERWISE NOTED.

F9040 DENOTES 9'-0" x 4'-0" x 1'-4" SPREAD FOOTING WITH: (4) #6 BARS - LONG DIRECTION (TOP & BOTT.) (8) #6 BARS - SHORT DIRECTION (TOP & BOTT.)

DENOTES 24"x24" GRADE BEAM W/ (4)#6 TOP AND (4)#6 BOTTOM. CANTILEVER OVER EXISTING BRICK SEWER.

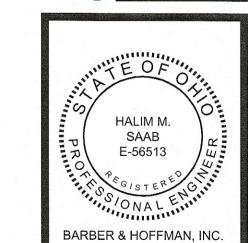
DENOTES 16"x24" GRADE BEAM W/ (3)#6 TOP & BOTTOM.

- 1. MAIN LEVEL FLOOR ELEVATION = REFERENCE ELEVATION (0'-0").
- INSTALL STEEL BEAM TO UNDERSIDE OF EXISTING SLAB ON METAL DECK WITH 1"± GAP AFTER BEAM IS INSTALLED. FILL GAP WITH DRY-PACK GROUT.

4" S.O.G. INDICATES 4" CONCRETE SLAB ON GRADE W/6x6-W2.0 x W2.0 (0'-0") WELDED WIRE REINFORCING.

REVISIONS:

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THIS DWG: UPPER LEVEL FRAMING PLAN AND ROOF FRAMING PLAN

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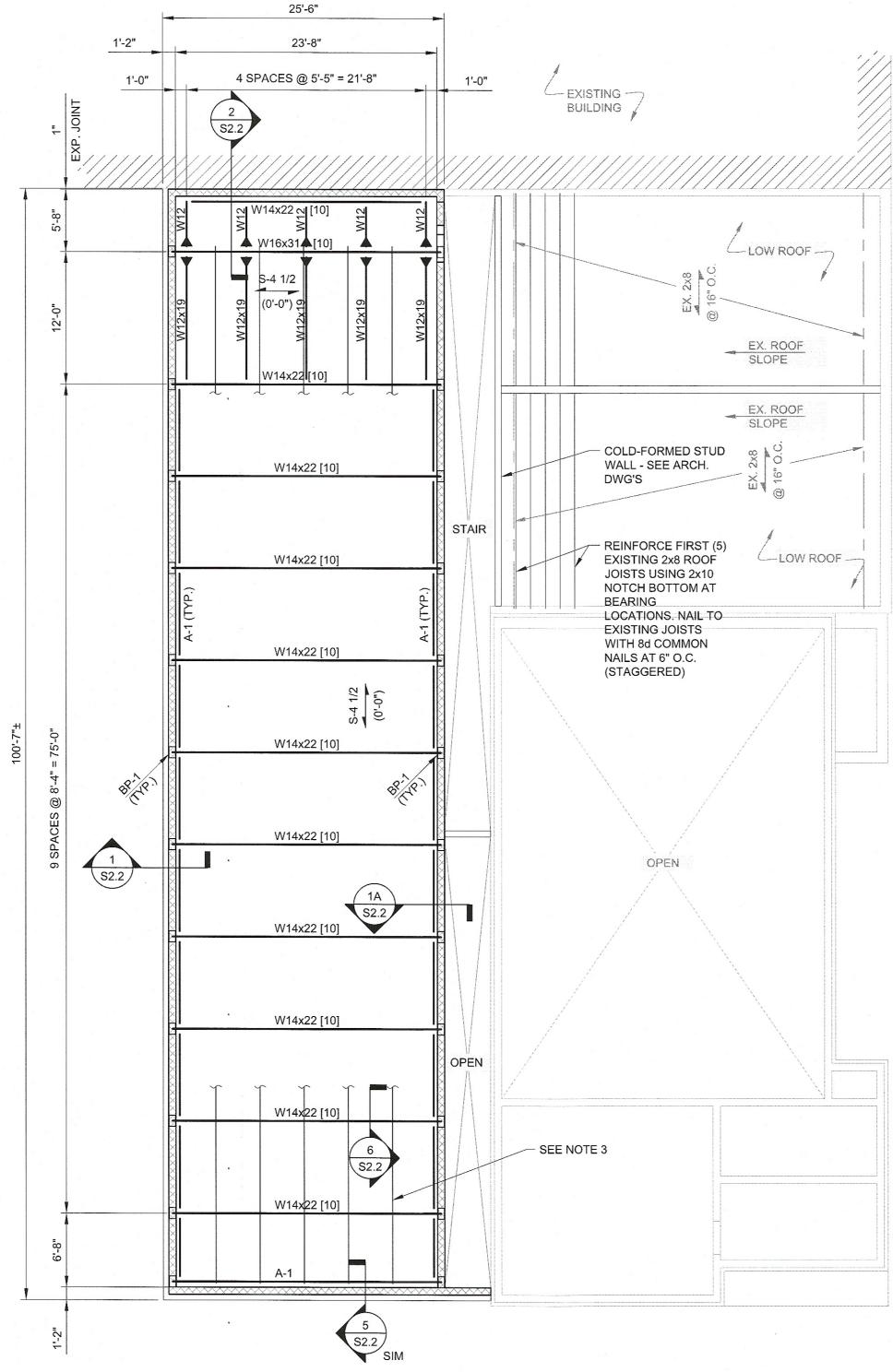
**DATE** 07-29-2015

**S1.1** 

SNOW DRIFT LOADING PLAN

NEW EXISTING
ADDITION BUILDING

NOTE:
DRIFT LOADS SHOWN ARE IN ADDITION TO FLAT ROOF SNOW LOAD INDICATED ON S0.1



# UPPER LEVEL FRAMING PLAN

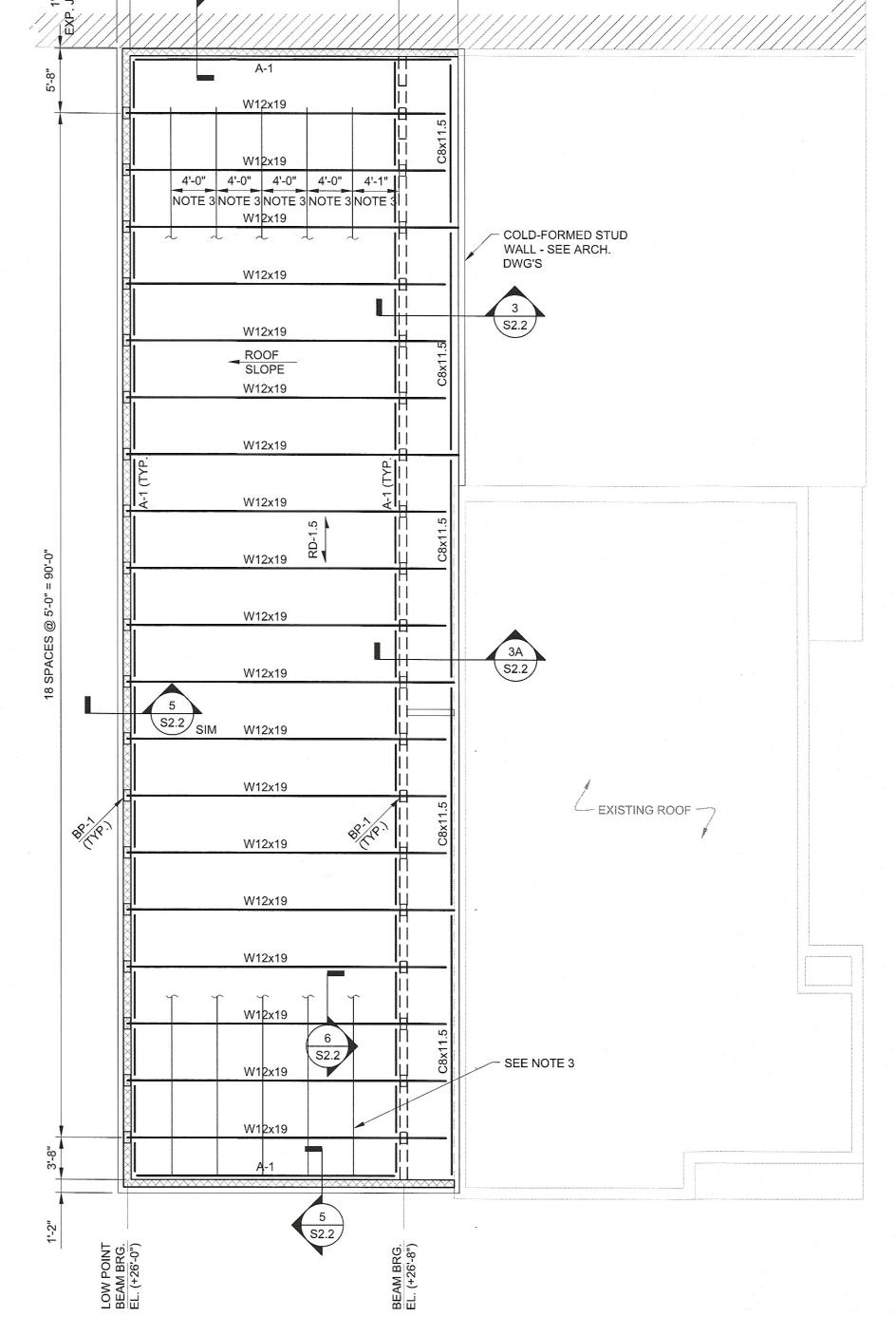
- 1. UPPER LEVEL FLOOR ELEVATION (+12'-8") = REFERENCE ELEVATION (0'-0").
- 2. TOP OF STEEL ELEVATION IS (-4-1/2") BELOW REFERENCE ELEVATION UNLESS OTHERWISE NOTED.
- 3. WHERE NOTED, C5x6.7 CHANNEL SUPPORTED BELOW STEEL BEAMS. COORDINATE CHANNEL LOCATIONS WITH ACTION TARGET BAFFLE HANGER LOCATIONS.
- 4. COORDINATE QUANTITY, LOCATION AND SIZES OF ALL FLOOR OPENINGS WITH ARCHITECTURAL AND MECHANICAL

# PLAN LEGEND:

- S-4 1/2 DENOTES 2 1/2" NORMAL WEIGHT CONCRETE ON 2", 20 GAUGE, TYPE VLI GALVANIZED COMPOSITE DECK (4 1/2" TOTAL) WITH 6x6-W2.9xW2.9 WELDED WIRE REINFORCING.
- DENOTES FULL MOMENT CONNECTION. SEE SECTION ON \$2.2. DENOTES 3/8"x6 1/2"x1'-0" BEARING PLATE WITH (2) 3/4"ø x 10"

LONG ANCHOR BOLTS.

DENOTES L4x3x3/8 (LLV) DECK SUPPORT ANGLE W/ 5/8"ø HILTI KWIK BOLT-3 EXPANSION ANCHORS IN GROUT FILLED CMU WALL @ 2'-0" O.C. W/ 2 3/4" EMBEDMENT.



- EXISTING

BUILDING /

# ROOF FRAMING PLAN

# PLAN NOTES:

 BEAM BEARING TO SLOPE UNIFORMLY BETWEEN ELEVATIONS GIVEN.

23'-8"

- 2. EXISTING CONSTRUCTION SHOWN IS AS INTERPRETED FORM AVAILABLE DRAWINGS AND MAY VARY FROM ACTUAL EXISTING CONDITIONS. CONTRACTOR TO VERIFY ALL EXISTING CONDITION IN THE FIELD AND NOTIFY ARCH./ENG. IF ANY DISCREPANCIES ARE PRESENT.
- 3. C5x9 CHANNEL SUPPORTED BELOW STEEL BEAMS. COORDINATE CHANNEL LOCATIONS WITH ACTION TARGET BAFFLE HANGER LOCATIONS.

# PLAN LEGEND:

RD-1.5 INDICATES 1.5", 20 GAUGE, GALVANIZED METAL ROOF DECK (1.5 TYPE B, BY VULCRAFT OR OTHER APPROVED). ATTACH DECK TO BEAMS W/ 5/8"ø PUDDLE WELDS @ 36/4 PATTERN AND (2)#10 SCREWS SIDE LAP FASTENER PER SPAN. ATTACH DECK @ 6" O.C. @ EDGE CONDITION.

2217 East 9th Street, Suite 3: Cleveland OH 44115-1257 216-875-0100/ (F) 216-875-0 barberhoffman.com

BARBER & HOFFMAN, INC.

**REVISIONS:** 

HALIM M.

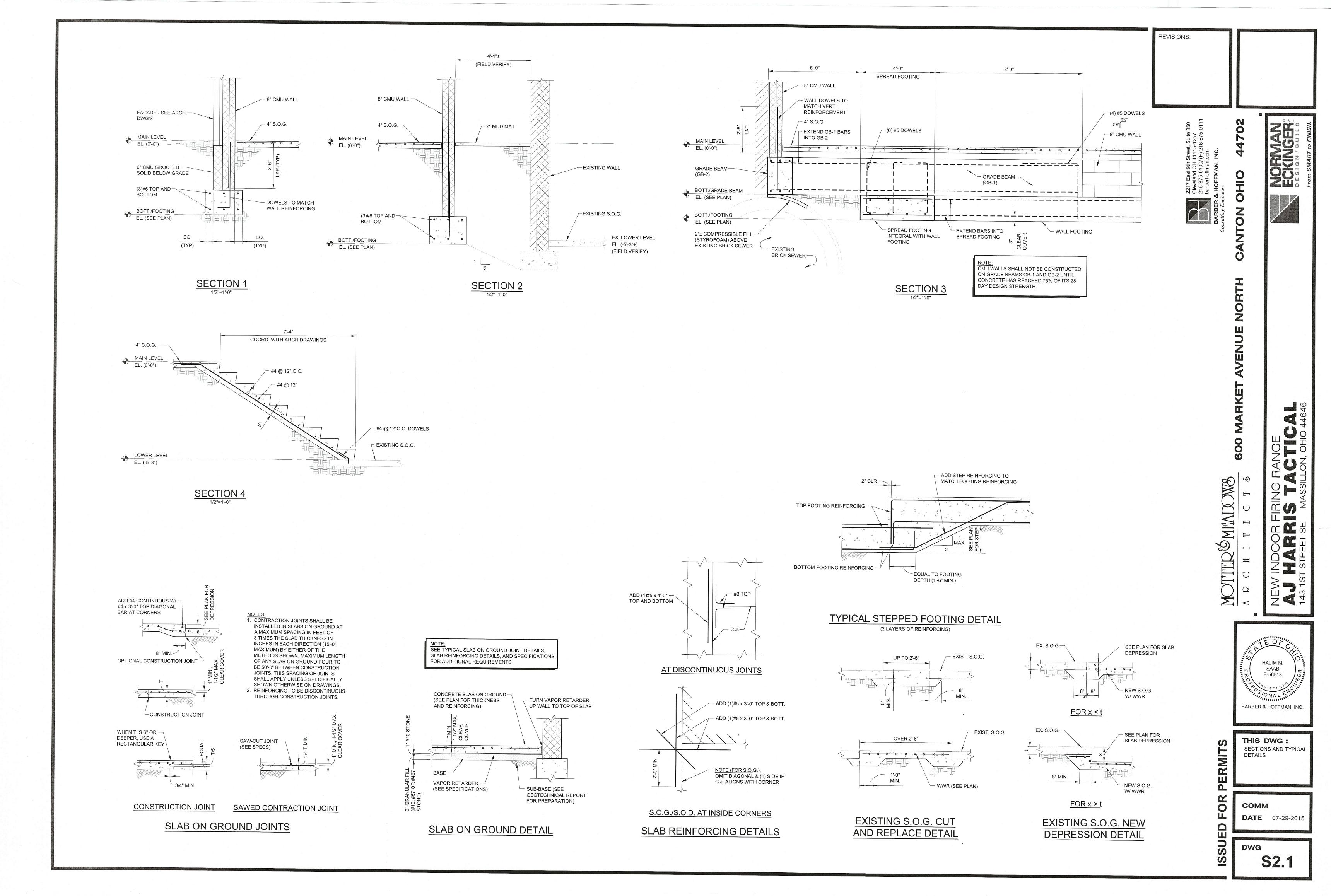
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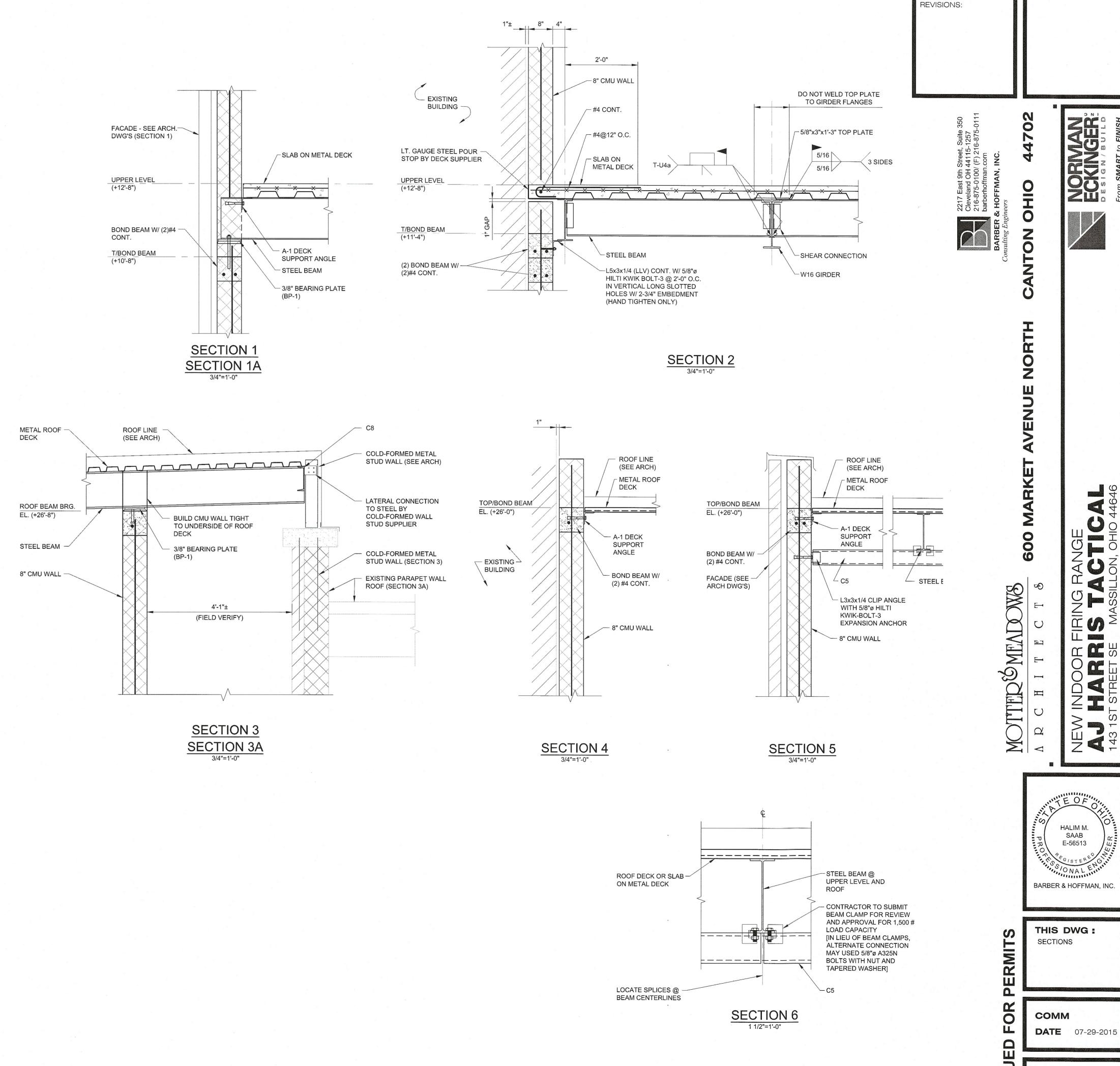
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THIS DWG: UPPER LEVEL FRAMING PLAN AND ROOF FRAMING PLAN

COMM

**DATE** 07-29-2015





CANTILEVER

DIM. "A"

- ADDED TOP BARS.

SEE SCHEDULE

FOR DETAILS

(1)#4 CONT.

EDGE SCREED

CONTRACTOR

(SEE NOTE 5)

EXTEND DECK

**CANTILEVER** 

DIM. "A"

**DETAILS** 

GIRDER

TOP BARS AT CANT.

A≤4"

4"<A≤16"

16"<A≤24"

(1)#4 CONT.

(SEE NOTE 5)

- WWR SUPPORT

REINFORCING

WWR ONLY

#3@12"

#4@12"

ADDED TOP BARS.

**EDGE SCREED BY** METAL DECK CONTR.

SEE SCHEDULE FOR

BY METAL DECK

ADDITIONAL BOTTOM -

3"

TOP BAR CHAIR-

COMPOSITE DECK

**DETAILS OVER BEAMS** 

(PERPENDICULAR TO DECK)

CONT. OVER GIRDER

BEAMS -

DETAILS OVER GIRDERS
(PARALLEL TO DECK)

DETAILS FOR COMPOSITE DECK CONSTRUCTION

- TOP BAR CHAIR-

SUPPORT (EACH END)

WWR SHALL BE

x 5'-0"

SUPPORT (EACH END) /

BARS. SEE PLAN FOR

SIZE AND EXTENTS

THICKNESS OF

CONC. OVER DECK

WWR SUPPORT -

2" CLEAR (SINGLE

5" CLEAR (2 ROWS

GIRDER -

REQUIRED

OF STUDS)

ROW OF STUDS)

FOR COMPOSITE GIRDERS-

NOTED AND PROVIDE

CLOSURE PLATE AS

WITH STUDS, STOP DECK AS

REQUIRED AT TOP REINFORCING ONLY. PROVIDE TOP LAP SPLICE 8" MIN. OR 2 WIRES.

UNSHORED CLEAR SPAN PER SDI.

CONCRETE & CONSTRUCTION LIVE LOADS.

NOTES:

1. WWR MUST BE POSITIVELY SUPPORTED PRIOR TO PLACING

CONCRETE (SEE DETAIL FOR DIMENSIONS). DEPRESS WWR AS

CONSTRUCTION WHERE DECK SPAN EXCEEDS THE MAXIMUM

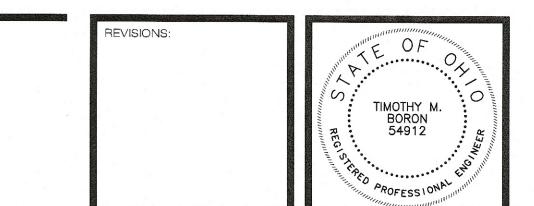
PROVIDE (1) #4 x 4'-0" DIAG. TOP AT ALL RE-ENTRANT CORNERS. MAY

OMIT AT CONSTRUCTION JOINTS. (SIM. TO FLOOR OPENING DETAIL). 4. DECK GAGE SHOWN IS MINIMUM. INCREASE DECK GAGE OR SHORE

FOR "A" GREATER THAN 11", SHORE CANTILEVER, FORM EDGE, OR FURNISH STEEL BENT PLATE. SIZE PLATE TO CARRY WET WEIGHT OF

(SEE NOTE 1)

**S2.2** 



- 4" STORM DOWN THRU FLOOR TO MAIN LEVEL FLOOR.

4" STORM OVERFLOW DOWN

LOW ROOF AREA

STM C4" STM C4" STM C4"

LOW ROOF AREA

MOTTED & MEADOWS

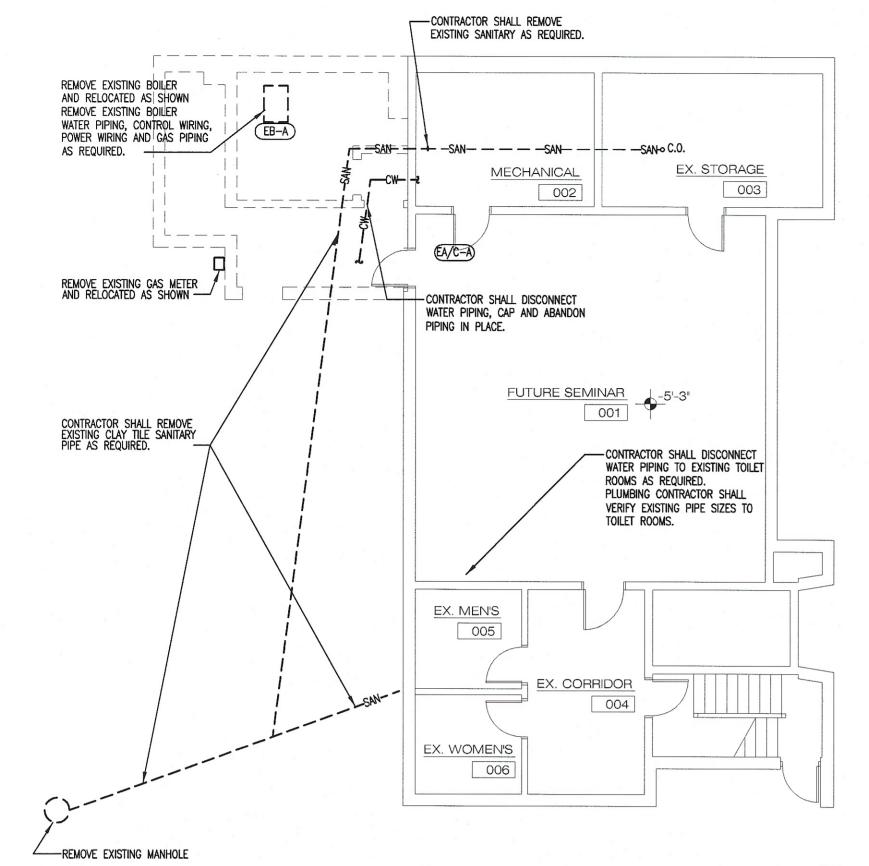
THIS DWG:

(DEMOLITION AND SANITARY) MAIN LEVEL FLOOR PLAN (SANITARY) UPPER LÉVEL FLOOR PLAN (SANITARY)

COMM

**DATE** 07-31-2015

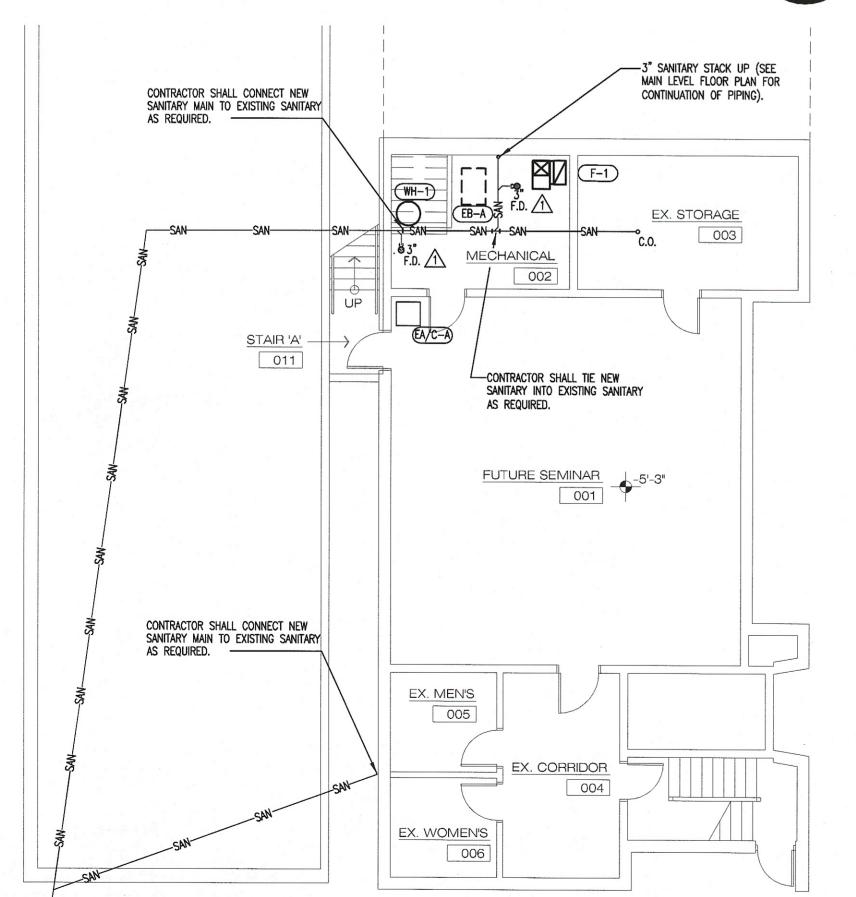
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**LOWER LEVEL FLOOR PLAN - DEMOLITION** 

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

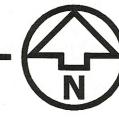


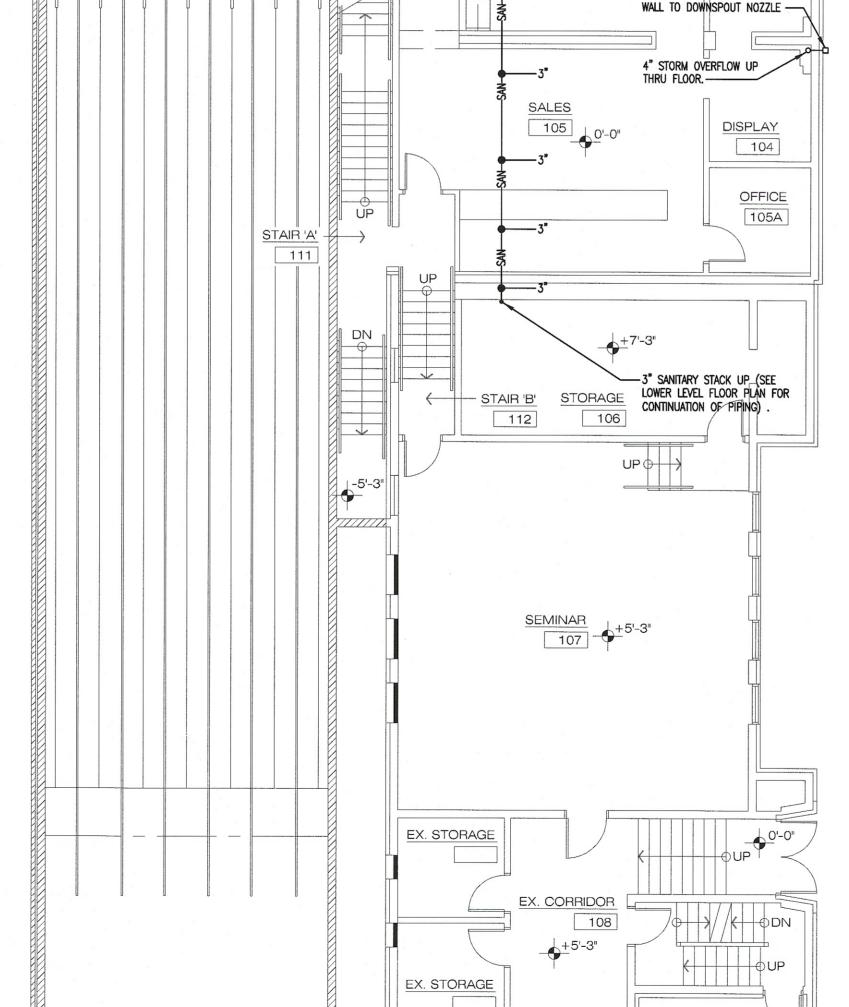


**LOWER LEVEL FLOOR PLAN - SANITARY** 

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

NEW SANITARY MANHOLE





4" STORM DOWN THRU FLOOR TO LOWER LEVEL FLOOR AND CONNECT TO SIPPO CREEK STORM WATER OHIO CANAL CONDUIT BELOW

110 0'-0"

101A

EX. VEST

DISPLAY

4" STORM OVERFLOW THRU

102

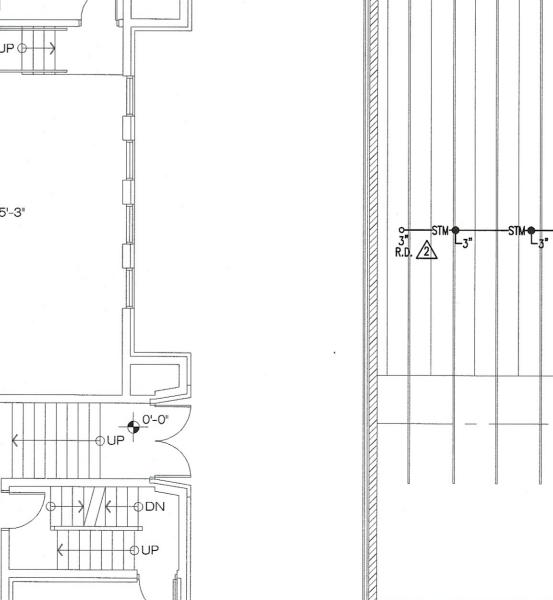
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**MAIN LEVEL FLOOR PLAN - SANITARY** SCALE: 1/8" = 1'-0"



**UPPER LEVEL FLOOR PLAN - SANITARY** SCALE: 1/8" = 1'-0"



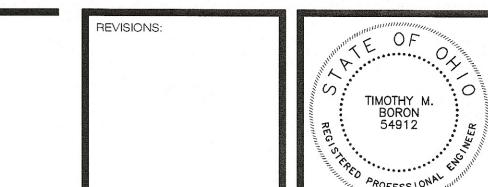


EXISTING RELOCATED AIR COOLED CONDENSING UNIT. 200.0 MBH 200.0 CFH

MAKE UP AIR UNIT (MUA-1)
PROVIDED AND INSTALLED BY OTHERS.——

4" STORM DOWN ALONG WALL TO BELOW LOW ROOF AS REQUIRED.

MUA-1) 640.0 MBH 640.0 CFH



MOTTED MEADOWS

EXISTING RELOCATED AIR COOLED CONDENSING UNIT.

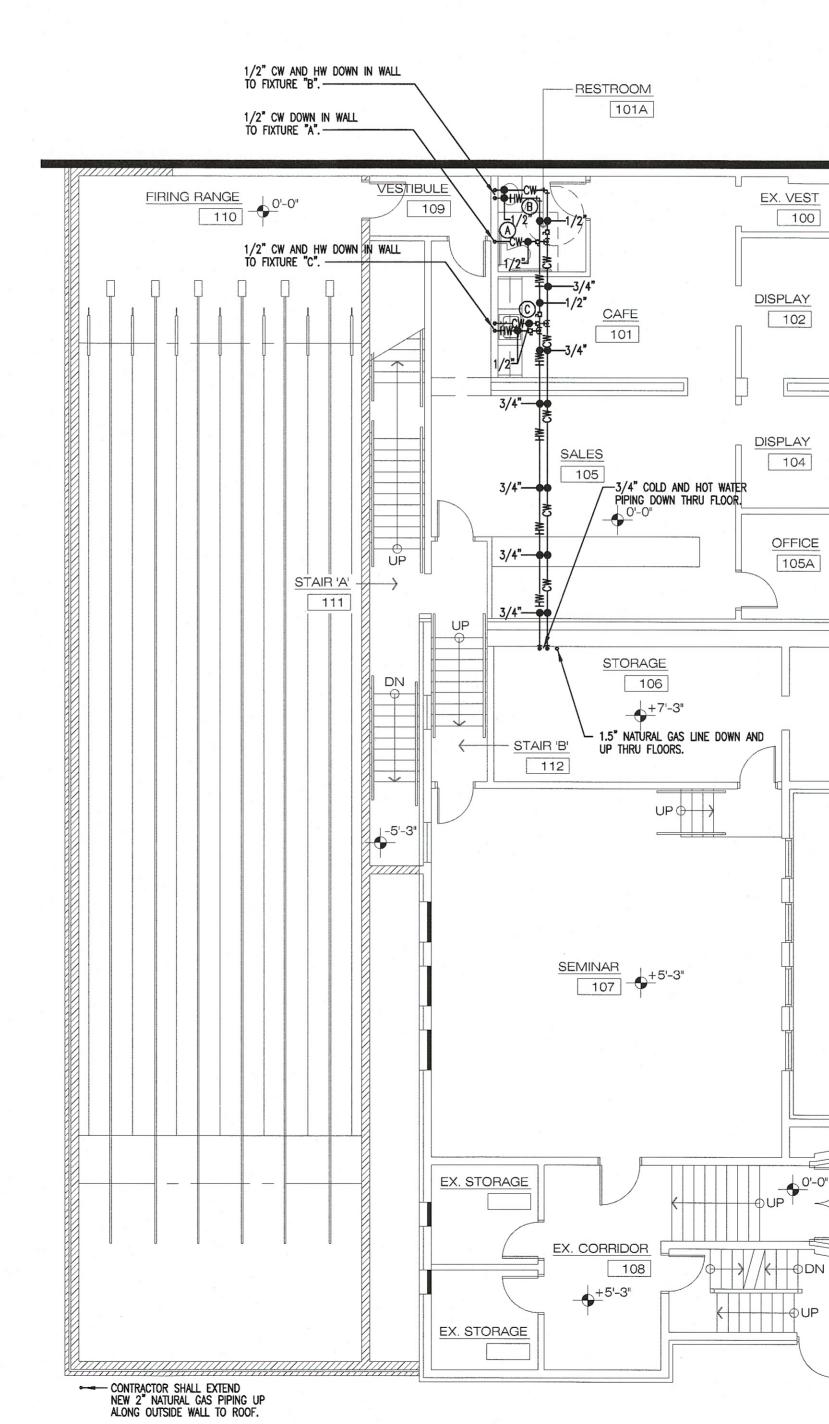
1.25"——" NATURAL GAS LINE DOWN THRU
ROOF "PATE" PIPE SEAL.

THIS DWG: LOWER LEVEL FLOOR PLAN (PLUMBING) MAIN LEVEL FLOOR PLAN (PLUMBING) UPPER LEVEL FLOOR PLAN (PLUMBING)

COMM

**DATE** 07-31-2015

DWG





**UPPER LEVEL FLOOR PLAN - PLUMBING** SCALE: 1/8" = 1'-0"

CONTRACTOR SHALL EXTEND
NEW 2" NATURAL GAS PIPING UP
ALONG OUTSIDE WALL TO ROOF.

STAIR 'A'

# LOWER LEVEL FLOOR PLAN - PLUMBING

-3/4" COLD AND HOT WATER

1.5" NATURAL GAS LINE UP THRU FLOOR.

— 3/4" COLD AND HOT WATER
PIPING EXTEND AND CONNECT
TO EXISTING PIPING AS REQUIRED.
PLUMBING CONTRACTOR SHALL

VERIFY EXISTING PIPE SIZES TO TOILET ROOMS.

1" COLD WATER MAKE-UP
TO EXISTING BOILER "EB-A"
WITH BACKFLOW PREVENTER.

FUTURE SEMINAR
001
-5'-3"

EX. CORRIDOR

004

EX. STORAGE

EXISTING RELOCATED BOILER

CONNECT NEW NATURAL GAS LINE TO BOILER AS REQUIRED.-7

005

EX. WOMEN'S

EB-A

WATER METER WITH BACKFLOW PREVENTER AND DRAIN LINE.—

CONTRACTOR SHALL INSTALL NEW 1.5" COLD WATER LINE IN 4" PVC SLEEVE UNDER NEW BUILDING SLAB.—

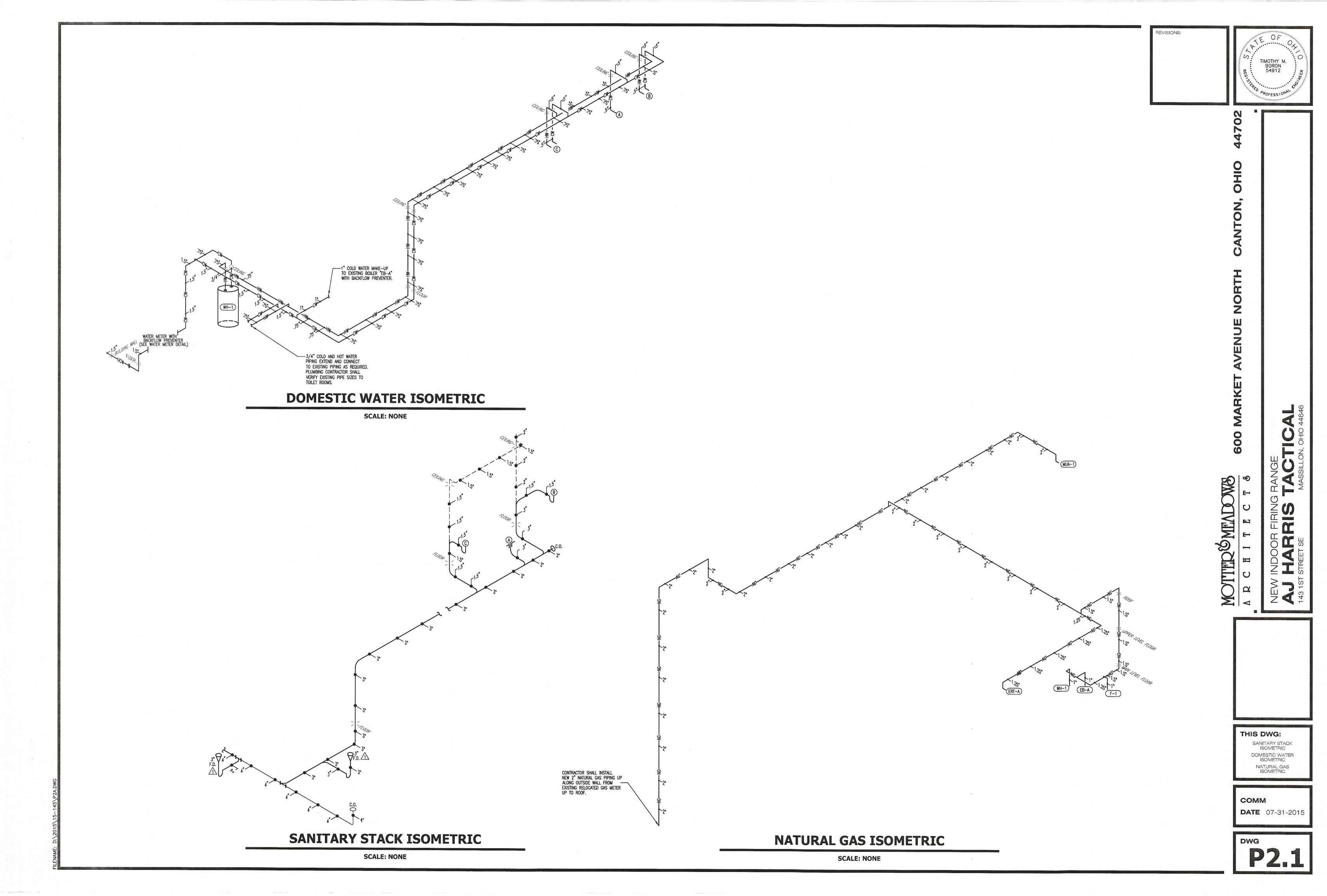
CONTRACTOR SHALL TIE INTO EXISTING WATER MAIN AS REQUIRED. ALONG OUTSIDE WALL TO ROOF.

CONTRACTOR SHALL EXTEND
NEW 2" NATURAL GAS PIPING UP
ALONG OUTSIDE WALL TO ROOF.

EXISTING RELOCATED GAS METER
BY GAS COMPANY, VERIFY CAPACITY
NEW GAS LOAD IS 1200 CFH.

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

MAIN LEVEL FLOOR PLAN - PLUMBING SCALE: 1/8" = 1'-0"



PIPE HANGERS A. PRODUCTS

PIPE HANGERS

# **PLUMBING SPECIFICATIONS**

- b. Hangers: Pipe sizes 2" to 4", adjustable wrought steel clevis. c. Mutiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- a. Provide steel hanger rods, threaded both ends, threaded one end, or continuous threaded.
- Use C-Clamps or Beam Clamps for suspending hangers from steel bar joists or beams. SPACING REQUIREMENTS
- 1. Support horizontal steel and copper piping as follows: <u>Hanger Rod</u> <u>Diameter (inch)</u> 1/2 3/4 to 1 1/2
- 3 and 4 2. Install hangers to provide minimum 1/2" clear space between finished covering and adjacent work.
- 4. Use hangers which are vertically adjustable 1 1/2" minimum after
- Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.

Install a hanger within one foot of each horizontal elbow.

# A. SUBMITTALS

and  $2 \frac{1}{2}$ 

- 1. Furnish Shop Drawings for all water heaters, plumbing fixtures, cleanouts, and expansion tanks
- 2. Submit detailed Shop Drawings clearly indicating make, model, location, type, and size. DOMESTIC WATER HEATER
- 1. Provide water heaters shown on Drawings: a. Factory insulated and steel jacketed storage tank with baked
- b. Temperature/Pressure relief valve, ASME rated.
- c. Glass lined storage tank with anode rod. d. 150 psi working pressure.
- e. 100% automatic shutoff upon pilot failure.
- f. Copper immersion heating elements, factory wired with fused
- Adjustable immersion stat and high temperature cutout.
- Water Heater to be Bradford White as described on Drawings. A.O. Smith, Lochinvar, or Rheem hot water heaters of equal size are acceptable.
- Water heater shall be covered by a 6-year limited warranty against tank failure due to corrosion or due to metal failure or overheating caused by buildup of sand, sediment, or sludge.
- Furnish and install floor and roof drains where specified on plans. In general, Smith drains are specified. Similar approved drains as manufactured by Zurn, Watts, or Wade will be accepted.
- 1. Run all drainage and vent piping as direct as possible. Actual location of drains, soil and waste piping shall meet the various building conditions. Do any work necessary to conceal piping.
- Slope branch soil and waste pipes at an incline of at least 1/4" per foot of run. Make changes in direction of drainage piping by means of "Y" branches and 1/4, 1/8, or 1/16 bends except that sanitary
- Provide cleanouts at base of all stacks, at changes of direction and as shown on Drawings. Cleanouts on undergroundlines shall extend up flush with finished floor or grade. Provide cleanouts not over 50 ft. o.c. along straight runs. Cleanouts shall be size of pipe to which it is installed up to 4" in diameter. Pipe over 4" in diameter shall have a 4" cleanout.
- Terminate vent pipes at least 12" above roof. Make each vent terminal water-tight with the roof by using sheet lead (4 psf) with full height of pipe and turned down 2" inside of pipe.
- 5. Lay all sanitary sewers with full length of each section resting on a solid bed. Lay pipe starting at upgrade with spigot end of pipe pointing in direction of flow. All sanitary sewers shall be collected separately as shown on Drawings DOMESTIC WATER SUPPLY SYSTEMS
- Install water system as shown on Drawings with hot and cold water being supplied and connected to all fixtures and equipment. 2. Provide unions at all equipment valves, strainer, etc., to facilitate
- removal for repair or replacement without disturbing adjacent piping. Provide temporary water service to area of construction for use of all trades. Plumbing Contractor shall be responsible for maintaining uninterrupted temporary water service throughout construction.
- Chlorinate all domestic water systems. Flush out domestic system then hold a solution mixture of 50 ppm of chlorine in the system for a period of 24 hours. Drain and flush system until chlorine residual of Chlorination shall be repeated if necessary and conform to AWWA Specifications C601-54 and be accepted by Local Health Dept.
- PLUMBING FIXTURES AND EQUIPMENT Provide plumbing fixtures shown on Drawings and listed in Fixture Schedule. Fixtures as manufactured by Mansfield, Kohler, or Eljer are approved
- 2. All countertop sinks to be individually valved under sinks using Wolverine Ball Valves.
- Faucets and Flush Valves to have renewable seats and discs and chrome plated trim. Delany and Watrous flush valves and Delta Faucets are acceptable on Base Bid.
- All fixtures to be supported as indicated on Fixture Schedule. After installation, all connecting piping to be flushed and valves properly adjusted. Labels, plaster, stains and other foreign material to be removed from all fixtures so they are acceptable in

and operation. Caulk all Fixtures at wall and floors.

- Fixtures set to height as shown in schedule and in location shown on Drawings, plumb, level and substantially supported. Immediately after the setting of any fixture, fitting or piping, protect it adequately without extra cost to the Owner. At all stages of the installation, pipe openings must be protected against the entrance of foreign
- Exposed piping to plumbing fixtures shall be chromium plated, iron pipe size, brass pipe and chromium plated stop valves where exposed
- All fixtures shall be furnished and installed according to schedules on the Drawings. However, the Plumbing Contractor shall ascertain the correct amount of fixtures required by the plans as he will be held strictly responsible for furnishing and installing all items shown.
- Contractor shall inform himself fully regarding peculiarities and limitations of space available for installation of all material and equipment to be installed under this Contract, and see that all equipment to be reached periodically for operation and maintenance is made easily accessible.

Joints & Fittings

ASTM D2665 With

ASTM D2665 With

Solvent Weld (ASTM D2564)

Solvent Weld (ASTM D2564)

Cement) PVC Fittings

Cement) PVC Fittings

Soldered (Grade 95TA)

Soldered (Grade 95TA)

Malleable Iron

Class 150

a. Hangers: Pipe sizes 1/2" to 1 1/2", adjustable wrought steel

 Sanitary, Waste, and Vent Piping: All sanitary, storm, and water piping shall be tested per State Plumbing Code and/or requirements of Local Authority.

### **INSULATION** A. SUBMITTALS

1. Submit detailed Shop Drawings or descriptive literature for all insulation products to be used.

All insulation and accessories shall have composite (insulation, jacket, and adhesive) fire and smoke hazard ratings as tested under procedure ASTM-E-84, NFPA 255 and UL 723, not exceeding a flame spread of 25 and smoke developed 50. All calcium silicate shall be asbestos free to comply with OSHA regulations. The above requirements apply to pipe insulation and coverings used in plenums and shafts which act as active air ducts. All other areas shall have a 25 flame spread rating and 150 smoke developed as tested above. No polyethylene

### 3. Materials: All insulation work shall conform to the following schedule: Thickness Cons. & Exp. Size

<u>Service</u> 1" VB A.S.J. 1 1/2" VB A.S.J. Domestic Hot 2" and Water under

1" VB A.S.J. Domestic Cold ALL

TYPES OF COVERING ASJ - All Service Jacket VB - Vapor Barrier

TYPES OF INSULATION TYPE I

OFG — Owens—Corning One Piece Fiberglass Pipe Insulation, K=.23, Density =  $4.0\#/ft^3$ .

JFG — Johns-Manville "Micro-Lok" Fiberglass Pipe Insulation, K = .23, Density =  $4.0 \#/ft^3$ . KFG - Knauf Fiberglass Pipe Insulation, K = .23, Heavy Density.

APF – Armstrong Armaflex AP Pipe Insulation, K = .27 (1/2) on Domestic Hot and Cold Water Piping).

# **PLUMBING GENERAL NOTES**

1.) PLUMBING CONTRACTOR SHALL SLOPE ALL SANITARY AND STORM PIPING (2" AND SMALLER) AT A MINIMUM SLOPE OF 1/4" PER FOOT AS REQUIRED. 2.) PLUMBING CONTRACTOR SHALL SLOPE ALL SANITARY AND STORM PIPING (3" AND LARGER) AT A MINIMUM SLOPE OF 1/8" PER FOOT AS REQUIRED. 3.) PLUMBING CONTRACTOR SHALL SLOPE ALL VENT PIPING AT A MINIMUM SLOPE OF 1/4"
PER FOOT AS REQUIRED. 4.) PLUMBING CONTRACTOR SHALL INSULATE ALL HOT AND COLD WATER PIPING (REFER TO PLUMBING SPECIFICATIONS) AS REQUIRED.

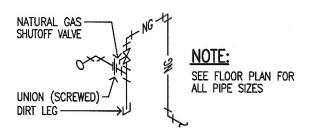
PLUMB:	ING LEGEND
	EQUIPMENT SYMBOL
0	FIXTURE SYMBOL
	DRAIN SYMBOL
	SANITARY PIPING BELOW FLOOR/GRADE
SAN	SANITARY PIPING ABOVE FLOOR/GRADE
STM	STORM PIPING BELOW FLOOR/GRADE
	STORM PIPING ABOVE FLOOR/GRADE
	VENT PIPING ABOVE FLOOR/GRADE
UCW	COLD WATER PIPING BELOW FLOOR/GRADE
	COLD WATER PIPING ABOVE FLOOR/GRADE
	HOT WATER PIPING ABOVE FLOOR/GRADE
NG	NATURAL GAS PIPING ABOVE FLOOR/GRADE
<u>б</u>	BALL VALVE
——————	GATE VALVE
——————————————————————————————————————	NATURAL GAS VALVE
	UNION (SCREWED)
	THERMOMETER
茶	TEMPERATURE/PRESSURE RELIEF VALVE
C.O.	CLEANOUT
F.D.	FLOOR DRAIN
R.D.	ROOF DRAIN
V.T.R.	VENT THRU ROOF

			WATER HEATER SCHEDULE
SYM.	MFR.	MODEL NO.	DESCRIPTION
WH-1	BRADFORD WHITE	M-I-40T6FBN	GAS FIRED, ATMOSPHERIC, GLASS LINED WATER HEATER, 40 GALLON CAPACITY, 40,000 BTU/HR INPUT, 42 GALLON RECOVERY AT 90°F RISE, 3/4" HOT AND COLD WATER CONNECTIONS WITH FACTORY INSTALLED DIELECTRIC FITTINGS AND HEAT TRAPS 1/2" NATURAL GAS CONNECTION, DRAFT DIVERTER WITH 3"Ø FLUE CONNECTION, 6—YEAR WARRANTY WEIGHT: 120 LBS. (SHIPPING)

SYM.	DESCRIPTION		CONN	ECTIONS (IN IN	CHES)	
JIM.	DESCRIPTION	HW	CW	TRAP	SAN	MT. HT.
A	AMERICAN STANDARD MODEL NO. 215AA.005.020 "CADET PRO" WATER CLOSET (AMERICAN STANDARD MODEL NO. 4188A.005.020 TANK WITH TRIP LEVER ON RIGHT SIDE AND AMERICAN STANDARD MODEL NO. 3517A.101.020 ELONGATED BOWL WITH AMERICAN STANDARD MODEL NO. 5901.110.020 OPEN FRONT SEAT), HANDICAPPED, WATERSAVER (1.6 GPF), VITREOUS CHINA, CLOSE COUPLED, SIPHON JET, KEENEY MODEL NO. 2780PCLF (3/8") ANGLED HANDWHEEL STOP, KEENEY MODEL NO. K20288 ESCUTCHEON PLATE, KEENEY MODEL NO. PP23805 12" LONG (3/8") BRAIDED STAINLESS STEEL SUPPLY LINE, HERCULES MODEL NO. 90243 "JOHNI-RING" EXTRA THICK WAX RING, AND HERCULES MODEL NO. 90124 "JOHNI-BOLT" BRASS TOILET BOLTS		1/2	3	3	FLOOR (16½" RII
В	AMERICAN STANDARD MODEL NO. 0475.020.020 "AQUALYN" (20x17) LAVATORY, HANDICAPPED, VITREOUS CHINA, SELF RIMMING, 3—HOLE CAST FOR AMERICAN STANDARD MODEL NO. 6540.117.002 "MONTERREY" GOOSENECK FAUCET WITH VANDAL RESISTANT WRIST BLADE HANDLES AND VANDAL RESISTANT (0.5 GPM) AERATOR, KEENEY MODEL NO. 5700PCCR (1—1/4") CAST BRASS OPEN GRID STRAINER WITH OFFSET TAILPIECE, KEENEY MODEL NO. 5303PC (1—1/4") CAST BRASS P—TRAP WITH CLEANOUT, KEENEY MODEL NO. 2780PCLF (3/8") ANGLED HANDWHEEL STOP (QTY. 2), KEENEY MODEL NO. K20288 ESCUTCHEON PLATE (QTY. 2), KEENEY MODEL NO. PP23809LF 12" LONG (3/8") BRAIDED STAINLESS STEEL SUPPLY LINE (QTY. 2), WATTS MODEL NO. LFUSG—B—M2 (ORDER NO. 0204143) THERMOSTATIC MIXING VALVE (ASSE 1070 CERTIFIED), KEENEY MODEL NO. PP23801LF 12" LONG (3/8") BRAIDED STAINLESS STEEL SUPPLY LINE (QTY. 2), AND TRUEBRO MODEL NO. 103EZ "LAV GUARD 2" UNDERSINK SUPPLY AND DRAINAGE INUSLATION KIT	1/2	1/2	1-1/4	1-1/2	WALL (34" RIM
С	JUST MODEL NO. SL-2125-A-GR "STYLIST" (25x21) SINGLE COMPARTMENT SINK, 18 GAUGE (TYPE 304) STAINLESS STEEL, SELF RIMMING, 3-HOLE PUNCHED FOR AMERICAN STANDARD MODEL NO. 6409.170.002 "MONTERREY" GOOSENECK FAUCET WITH VANDAL RESISTANT WRIST BLADE HANDLES AND VANDAL RESISTANT (1.5 GPM) AERATOR, KEENEY MODEL NO. 1438PC (1-1/2") CAST BRASS CRUMB CUP STRAINER, KEENEY MODEL NO. 140PC (1-1/2") CAST BRASS FLANGED TAILPIECE, KEENEY MODEL NO. 5307PC (1-1/2") CAST BRASS P-TRAP WITH CLEANOUT, KEENEY MODEL NO. 2780PCLF (3/8") ANGLED HANDWHEEL STOP (QTY. 2), KEENEY MODEL NO. K20288 ESCUTCHEON PLATE (QTY. 2), AND KEENEY MODEL NO. PP23802LF 16" LONG (3/8") BRAIDED STAINLESS STEEL SUPPLY LINE (QTY. 2)	1/2	1/2	1-1/2	1-1/2	COUNTEF (36" RIM

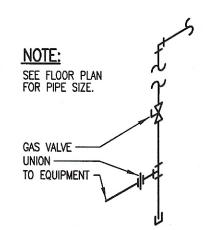
$\triangle$	DRAIN SCHEDULE							
SYM.	DESCRIPTION	GRATE TYPE	DRAIN TYPE					
1	SMITH MODEL NO. 2110L03-NB CAST IRON FLOOR DRAIN WITH FLASHING COLLAR, SPEEDI SET (PVC) OUTLET CONNECTION, AND SMITH MODEL NO. 2692-03 INLINE TRAP SEALER (ASSE 1072 CERTIFIED)	NICKEL BRONZE	GENERAL					
2	SMITH MODEL NO. 1010C03-C-R CAST IRON ROOF DRAIN WITH UNDERDECK CLAMP, SUMP RECEIVER, GRAVEL STOP, AND CAULK OUTLET CONNECTION	POLYETHYLENE DOME	ROOF (PRIMARY)					
3	SMITH MODEL NO. 1070C03-C-R CAST IRON OVERFLOW ROOF DRAIN WITH UNDERDECK CLAMP, SUMP RECEIVER, GRAVEL STOP, AND CAULK OUTLET CONNECTION	Polyethylene Dome	ROOF (SECONDARY)					

			EXPANSION TANK SCHEDULE	
SYM.	MFR.	MODEL NO.	DESCRIPTION	
ET-1	AMTROL	ST-5	THERMAL DIAPHRAGM EXPANSION TANK, 2.0 GAL. VOLUME, 0.9 GAL. ACCEPTANCE @ 40 PSI, 8" DIA. x 13" 150 PSI MAXIMUM WORKING PRESSURE, 200°F MAXIMUM ALLOWABLE WORKING TEMPERATURE, 3/4" SYSTEM WEIGHT: 5 LBS. (SHIPPING)	' HIGH TANK CONNECTION



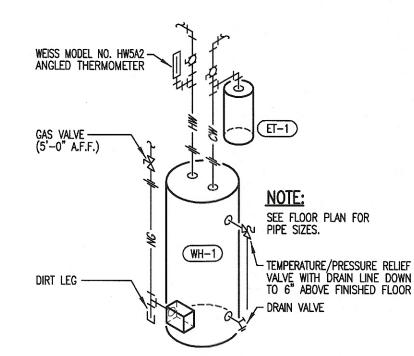
# ROOFTOP **NATURAL GAS CONNECTION DETAIL**

**NOT TO SCALE** 



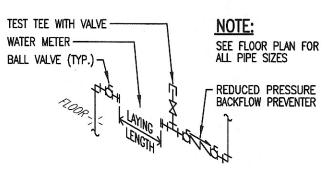
# **FURNACE AND BOILER NATURAL GAS CONNECTION DETAIL**

**NOT TO SCALE** 



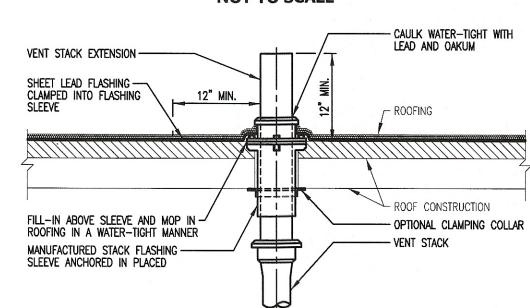
# WATER HEATER DETAIL

NOT TO SCALE



# WATER METER DETAIL

NOT TO SCALE



# **VENT TERMINATION DETAIL**

**NOT TO SCALE** 



TIMOTHY M.

54912

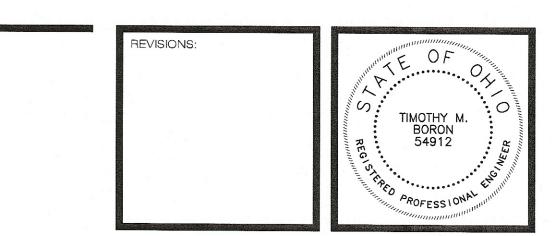
PROFESSIONAL

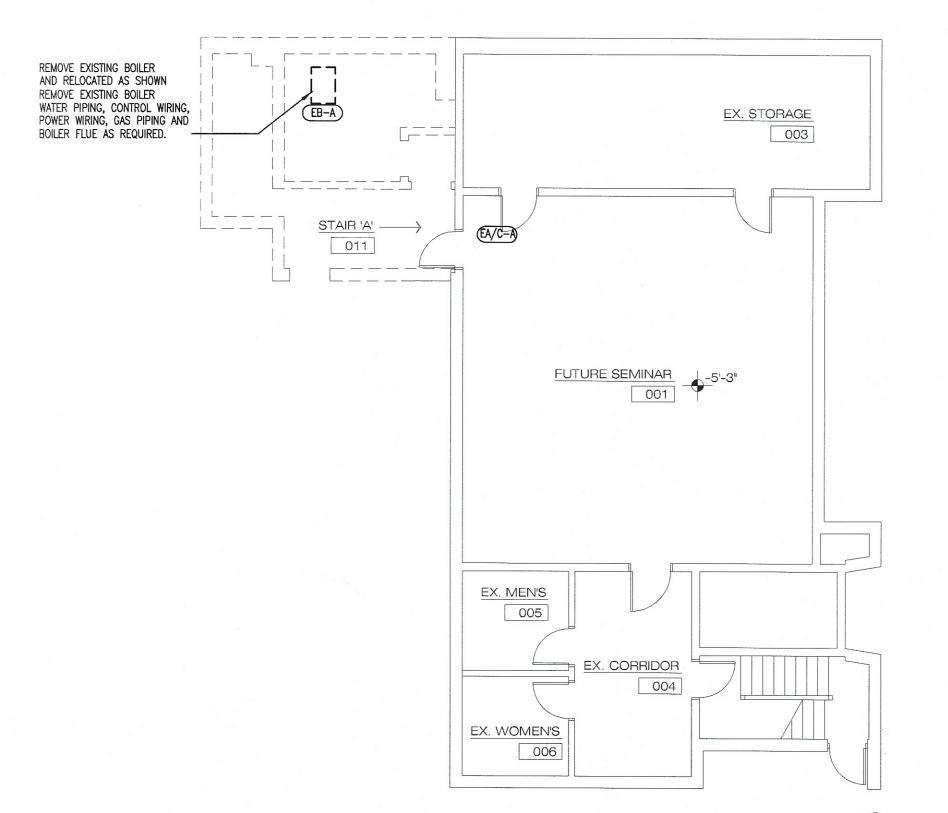
REVISIONS:

THIS DWG: PLUMBING SCHEDULES PLUMBING **DETAILS** PLUMBING **SPECIFICATIONS** 

COMM **DATE** 07-31-2015

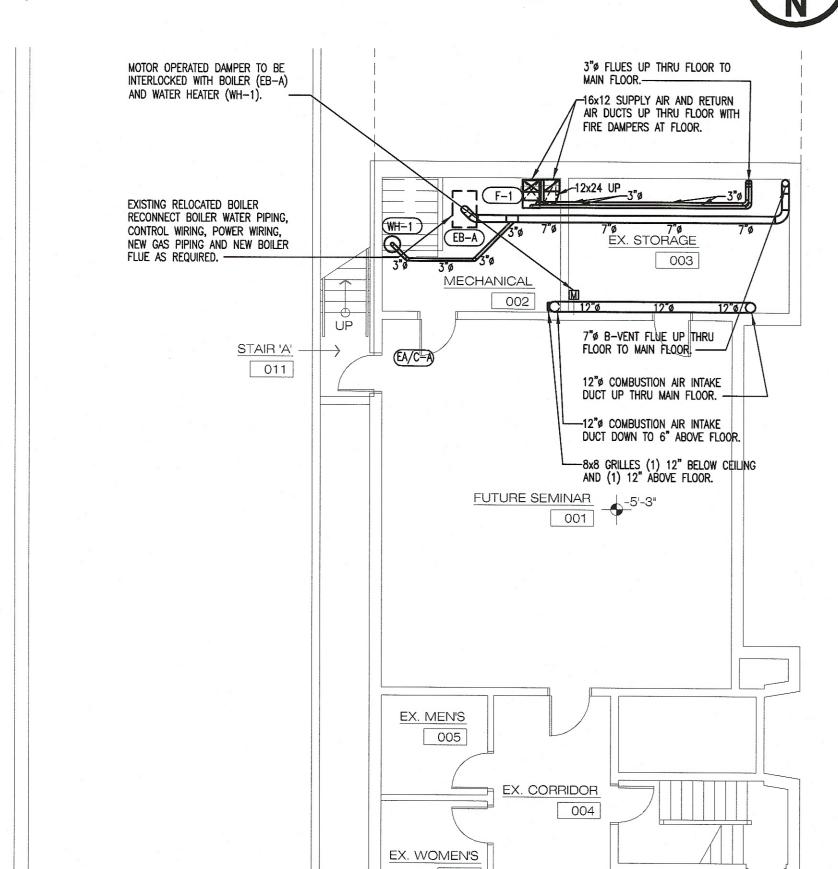
DWG





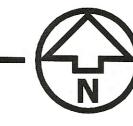
# **LOWER LEVEL FLOOR PLAN - DEMOLITION**

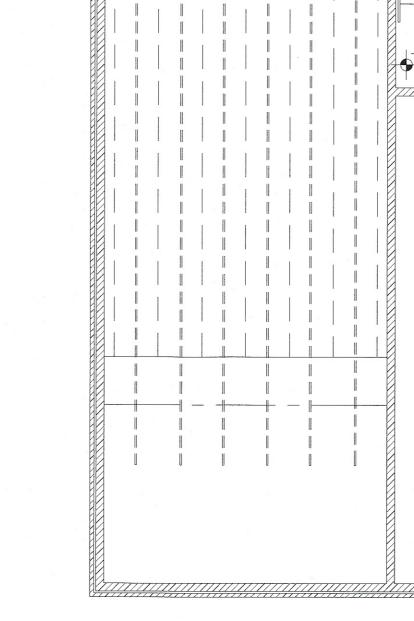
SCALE: 1/8" = 1'-0"

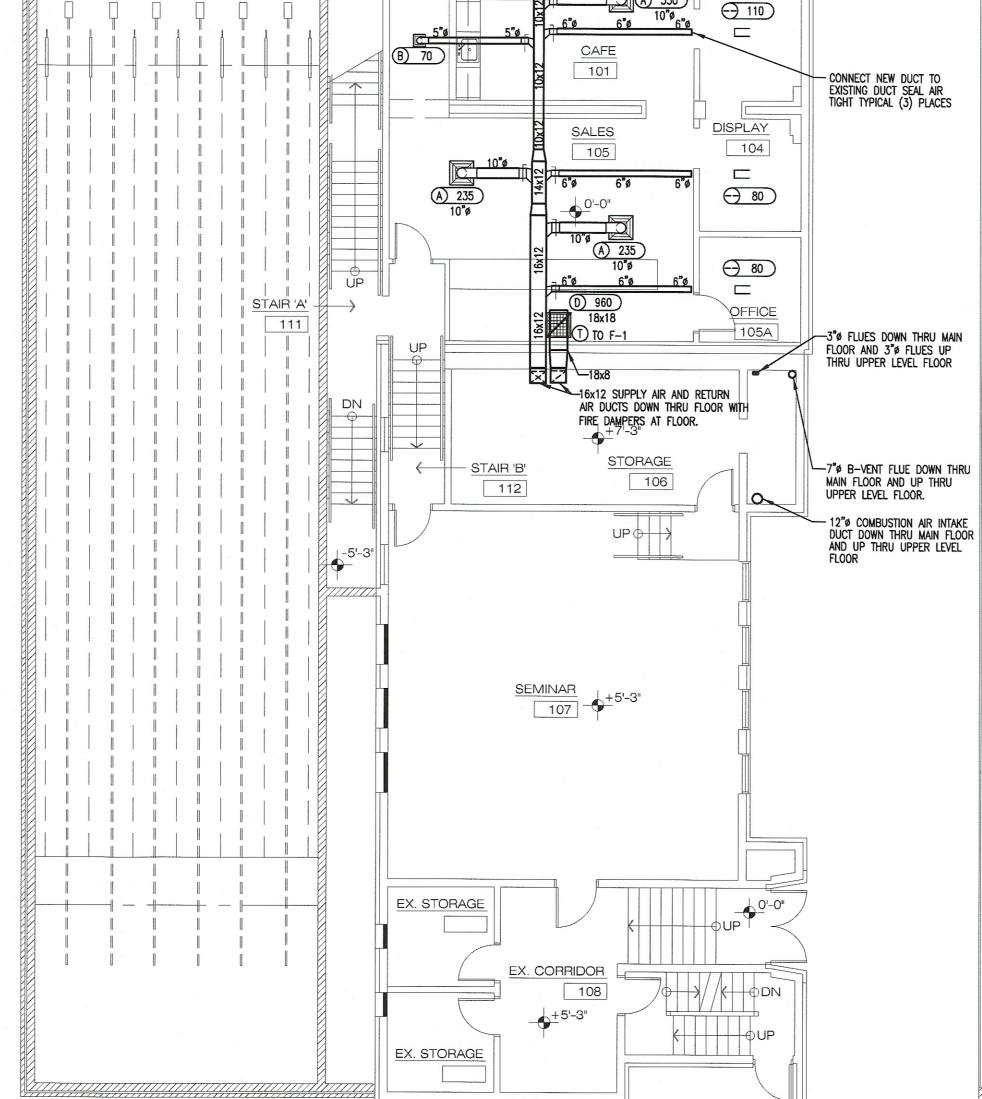


LOWER LEVEL FLOOR PLAN - HVAC

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

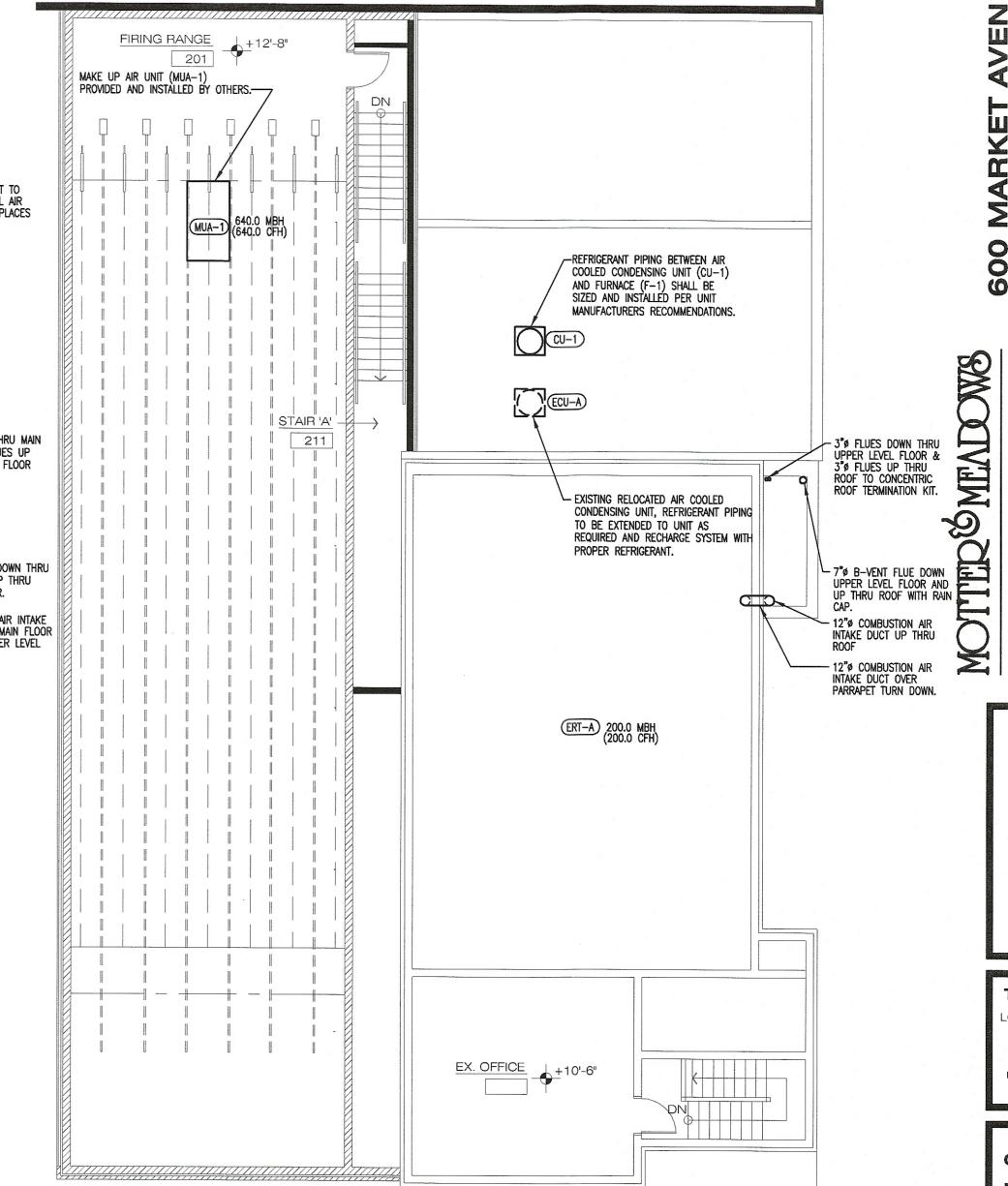






-RESTROOM 101A

6"Ø EXHAUST DUCT UP THRU ROOF TO CURB CAP.



**MAIN LEVEL FLOOR PLAN - HVAC** 

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



**UPPER LEVEL FLOOR PLAN - HVAC** 

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



COMM **DATE** 07-31-2015

THIS DWG:

LOWER LEVEL FLOOR PLANS (DEMOLITION AND HVAC) MAIN LEVEL FLOOR PLAN

UPPER LEVEL FLOOR PLAN (HVAC)

DWG