ADDENDUM NO. 1

FOR

Greenwood Maintenance Building Addition for: Monroe Housing Commission Greenwood Townhouses

JAMES S. JACOBS ARCHITECTS, PLLC 25 WASHINGTON STREET MONROE, MICHIGAN 48161 DATE: June 23, 2023 PROJECT NO.: 20222

PAGE 1 OF 14

Phone 734-241-7933 Fax 734-241-1181 jimj@jsjacobsarch.com

THIS ADDENDUM IS ISSUED TO MODIFY, CLARIFY, AND ADD TO THE PREVIOUSLY ISSUED CONTRACT DOCUMENTS.

PLEASE ATTACH THIS ADDENDUM THERETO AND INCLUDE COST CHANGES IN THE FINAL BID. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE APPROPRIATE SPACE ON THE PROPOSAL FORM.

DRAWINGS OR SKETCHES ISSUED:

None

SPECIFICATIONS ISSUED:

None

DRAWING CORRECTIONS, REVISIONS, MODIFICATIONS, OR CLARIFICATIONS:

Drawing S-1 – Foundation & Roof Framing Plans & Detail (Drawing Reissued):

REVISE: Building and Post Foundation revisions

Drawing A-1 – Floor Plan & Notes (Drawing Reissued):

REVISE: Remove stone from face of building in alcove and fence location.

ADD: Alcove gate location and size

Drawing A-3 – Exterior Elevations & Detail (Drawing Reissued):

REVISE: Pavillion and Covered Entry post revision

Drawing A-4 – Building Sections (Drawing Reissued):

REVISE: Building and Post Foundation revisions

Drawing A-5 – Building Sections (Drawing Reissued):

REVISE: Building and Post Foundation revisions

Drawing A-6 – Wall Sections (Drawing Reissued):

REVISE: Building and Post Foundation revisions

<u>Drawing A-11 – Door Schedule & Notes (Drawing Reissued):</u>

REVISE: Door finish to types and Door Schedule

ADD: Door Hardware Set to Door Schedule

<u>Drawing A-12 – Room Finish Schedule, Material Specifications, & Notes (Drawing Reissued):</u>

ADD: Hardware Sets

ADD: Material Specification – Interior Schedule

<u>Drawing M-1 – Floor Plan HVAC (Drawing Reissued):</u>

REVISE: The locations of CU-2 and CU-3 as shown.

ADD: Fire dampers in rated walls.

Drawing M-2 – Mechanical Specifications (Drawing Reissued):

ADD: Fire dampers.

<u>Drawing E-3 – Floor Plan - Power (Drawing Reissued):</u>

REVISE: The locations of CU-2 and CU-3 as shown.

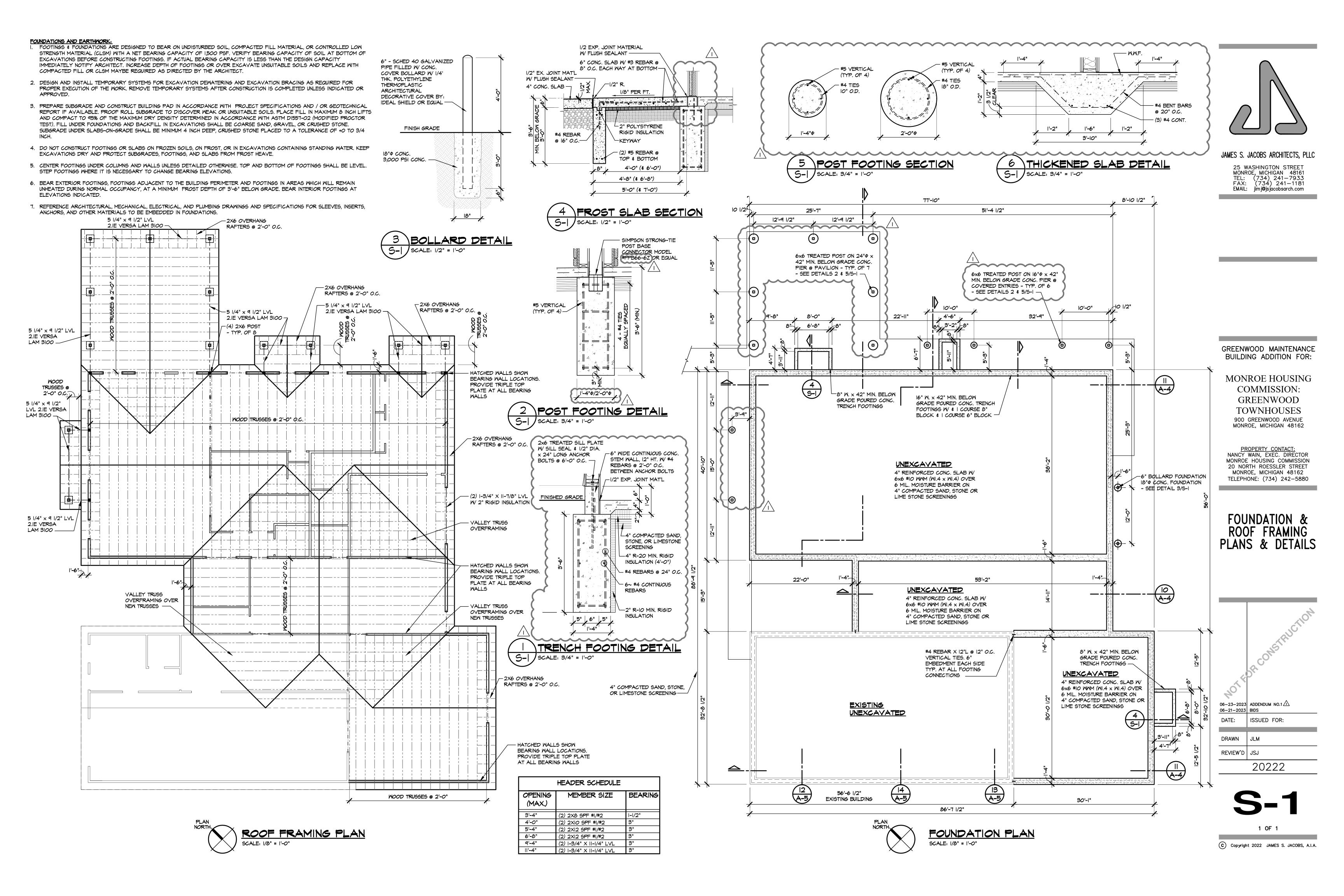
<u>Drawing E-4 – One Line Diagram (Drawing Reissued):</u>

<u>ADD</u>: Step Load Controller for staggering the generator loading as shown.

ADD: Notes as shown.

SPECIFICATION CORRECTIONS, REVISIONS, MODIFICATIONS, OR CLARIFICATIONS: None

END OF ADDENDUM NO. 1



- CONCRETE, CONCRETE PLACEMENT, AND REINFORCING SHALL COMPLY WITH THE LATEST EDITION OF APPLICABLE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING INSTITUTE (CRSI).
- 2. STRUCTURAL CONCRETE BELOW GRADE SHALL BE 3,500 psi COMPRESSIVE STRENGTH MINIMUM @ 28 DAYS. CURBS AND SLABS ON GRADE SHALL BE 4,000 psi COMPRESSIVE STRENGTH MINIMUM @ 28 DAYS WITH 4 TO 6 PERCENT AIR ENTRAINMENT. REFER TO DRAWINGS FOR SIZES AND THICKNESSES.
- 3. PROVIDE EXPANSION JOINTS WITH 1/2 INCH EXPANSION MATERIAL AT LOCATIONS AS NOTED ON DRAWINGS. TOOL CONTROL JOINTS IN SURFACE AT 1/4 THE DEPTH OF THE TOTAL SLAB THICKNESS AT LOCATIONS AS NOTED SHOWN
- 4. ALL CONCRETE NOT OTHERWISE SPECIFIED SHALL BE CONTROLLED STONE, GRAVEL OR SLAG CONCRETE TO TEST AT LEAST 3000 PSI IN STANDARD 6" X 12" CYLINDERS AT 28 DAYS AND HAVE NOT LESS THAN 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE AND NOT OVER 6 1/2 GALLONS OF WATER PER SACK OF CEMENT. MAXIMUM SLUMP SHALL BE 4".
- 5. REINFORCING BARS, UNLESS OTHERWISE SPECIFIED, SHALL MEET ASTM A615, GRADE 60.
- 6. ALL CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST ACI-318-08 CODE. ALL BARS SHALL BE DETAILED, FABRICATED, SUPPORTED IN FORMS AND SPACED WITH ACCESSORIES FOLLOWING THE REQUIREMENTS OF THE "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 318-08)". PLACING OF BARS SHALL CONFORM TO THE LATEST CRSI RECOMMENDED PRACTICES FOR PLACING REINFORCING BARS.
- 7. REBARS THAT COME INTO CONTACT WITH FORM OIL WILL PREVENT THEM FROM PROPERLY BONDING WITH POURED CONCRETE. ALL REBARS THAT HAVE BEEN COMPROMISED AS A RESULT OF IMPROPER OR POOR APPLICATION OF FORM OIL MUST BE SAND BLASTED OR REPLACED TO MAINTAIN STRUCTURAL INTEGRITY OF THE POUR.
- 8. ALL CONCRETE SLABS ON THE GROUND THAT ARE NOT OTHERWISE PROVIDED FOR SHALL HAVE TEMPERATURE REINFORCEMENT CONSISTING OF ONE LAYER OF 6" X 6" WI.4 X WI.4 WELDED WIRE FABRIC
- 9. WIRE FABRIC MUST LAP ONE FULL MESH AT SIDE AND END LAPS AND BE WIRED TOGETHER. MESH SHALL EXTEND WELL INTO SUPPORTING BEAMS AND WALLS FOR ANCHORAGE (UNLESS AN EXPANSION JOINT IS CALLED FOR).
- IO. LAP ALL BAR SPLICES 36 BAR DIAMETERS (UNLESS OTHERWISE CALLED FOR) BUT NOT LESS THAN 15". BEND ALL WALL FOOTING BARS 15" AROUND ALL CORNERS.
- II. MINIMUM CONCRETE COVER ON REINFORCING BARS SHALL BE AS FOLLOMS UNLESS OTHERWISE NOTED:

CONCRETE DEPOSITED AGAINST GROUND: FORMED SURFACES EXPOSED TO WEATHER: | 1/2" FOR #5 & SMALLER OR EARTH: 2" FOR #6 BARS & LARGER

ALL OTHER SURFACES:

SLABS, WALLS, AND JOISTS: BEAMS, GIRDER, AND COLUMNS:

MOOD FRAMING ATTACHMENT NOTES:

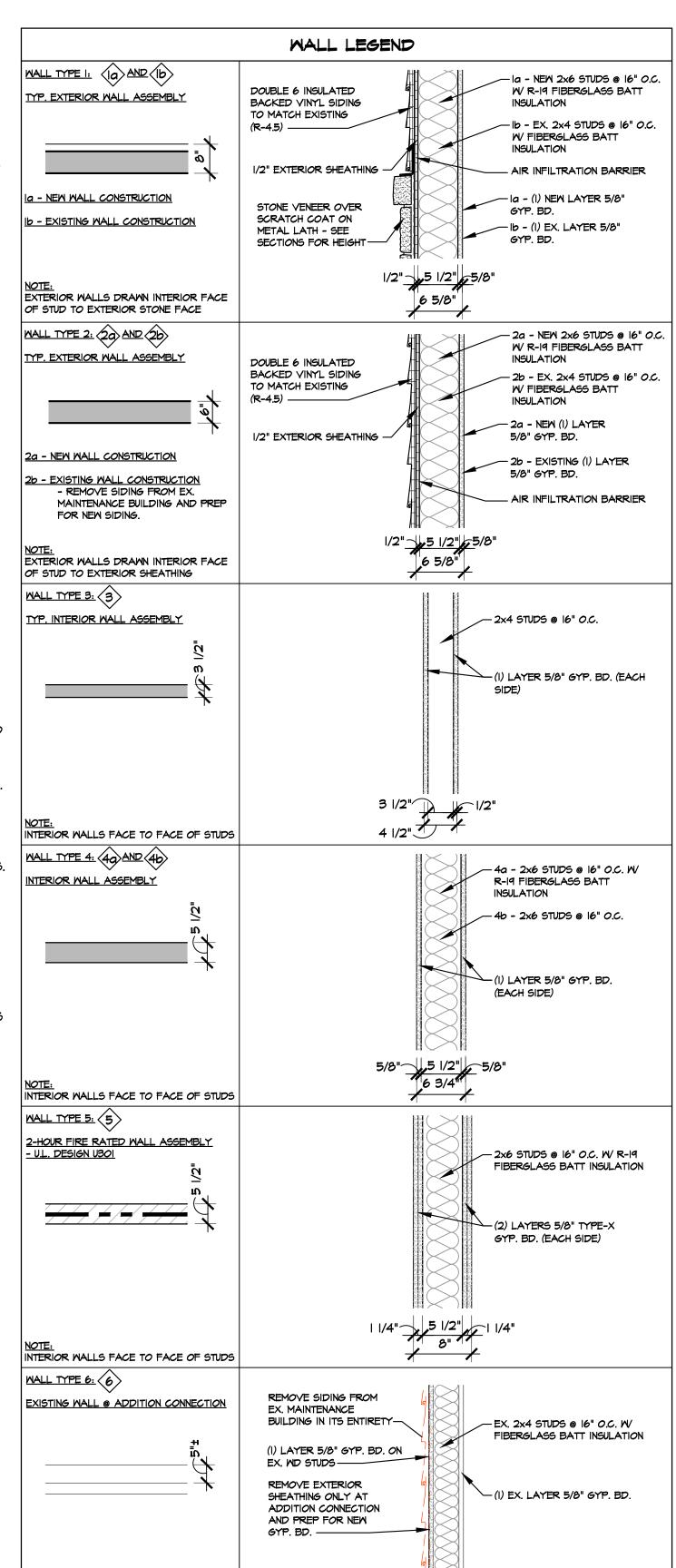
- I. ALL FASTENERS FOR THE FRAMING OF THE FLOOR DECK TO BE "SIMPSON STRONG TIE" FASTENERS OR APPROVED
- 2. ALL METAL FASTENERS OR CONNECTORS INTO OR IN CONTACT WITH MOISTURE TREATED LUMBER SHALL BE STAINLESS STEEL. THIS INCLUDES NAILS, SCREMS, ANCHOR BOLTS, LAG BOLTS, METAL HANGERS, CONNECTORS, ETC.
- 3. WHERE SUPPORTED BY ATTACHMENT TO AN EXTERIOR WALL, DECK SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE AND DESIGNED FOR BOTH VERTICAL AND LATERAL LOADS AS APPLICABLE. SUCH ATTACHMENT SHALL NOT BE ACCOMPLISHED BY THE USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL.
- 4. COLUMN AND POST-END CONNECTIONS SHALL BE FASTENED TO RESIST LATERAL AND NET INDUCED UPLIFT FORCES.
- 5. COLUMNS SHALL BE RESTRAINED TO PREVENT LATERAL DISPLACEMENT AT THE BOTTOM END.
- 6. WHERE POSTS AND BEAM CONSTRUCTION IS USED TO SUPPORT FLOOR FRAMING, POSITIVE CONNECTIONS SHALL BE PROVIDED TO ENSURE AGAINST UPLIFT AND LATERAL.
- 7. THE ENDS OF EACH JOIST OR BEAM SHALL HAVE AT LEAST I 1/2" OF BEARING ON WOOD OR METAL.
- 8. JOISTS FRAMING INTO THE SIDE OF A WOOD BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS.
- 9. HANDRAIL ASSEMBLIES AND GUARDS SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF 200 POUNDS APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP.
- IO. INDIVIDUAL STAIR TREADS SHALL BE ABLE TO RESIST (I) 300 POUND CONCENTRATED LOAD ACTING OVER AN AREA OF 4 SQUARE INCHES.
- II. STAIRCASES MUST BE ABLE TO RESIST 40 POUNDS PER SQUARE FOOT OF TREAD AREA 3'-O" x 5'-O".

MASONRY:

- CONFORM TO THE LATEST EDITION OF SPECIFICATIONS FOR MASONRY STRUCTURES, ACI 530.1.
- 2. COMPRESSIVE STRENGTH OF MASONRY, FM': 1500psi
- 3. REINFORCEMENT: ASTM A615, GRADE 60.
- 4. MORTAR: ASTM C270 TYPE M OR S MADE FROM PORTLAND CEMENT AND HYDRATED LIME.
- 5. PROVIDE LINTELS OVER OPENINGS IN MASONRY WALLS IN ACCORDANCE WITH LINTEL SCHEDULE (IF & WHERE APPLICABLE).
- 6. INSTALL REINFORCEMENT WHERE SHOWN AND GROUT CORES SOLID. PROVIDE WIRE BAR SUPPORTS AND SPACERS TO MAINTAIN PROPER POSITION OF REINFORCEMENT. LAP REINFORCEMENT 48 BAR DIAMETERS.
- 7. PROVIDE 3 COURSES OF SOLID OR GROUTED MASONRY IMMEDIATELY BELOW BEAM AND LINTEL BEARINGS.
- 8. DO NOT CONSTRUCT CHASES OR RISERS WITHIN 2 FEET OF CENTERLINE OF BEAM BEARING OR OTHER CONCENTRATED LOAD.
- 9. CONSTRUCT CORNERS AND WALL INTERSECTIONS IN RUNNING BOND.

MATER & MOISTURE PROTECTION

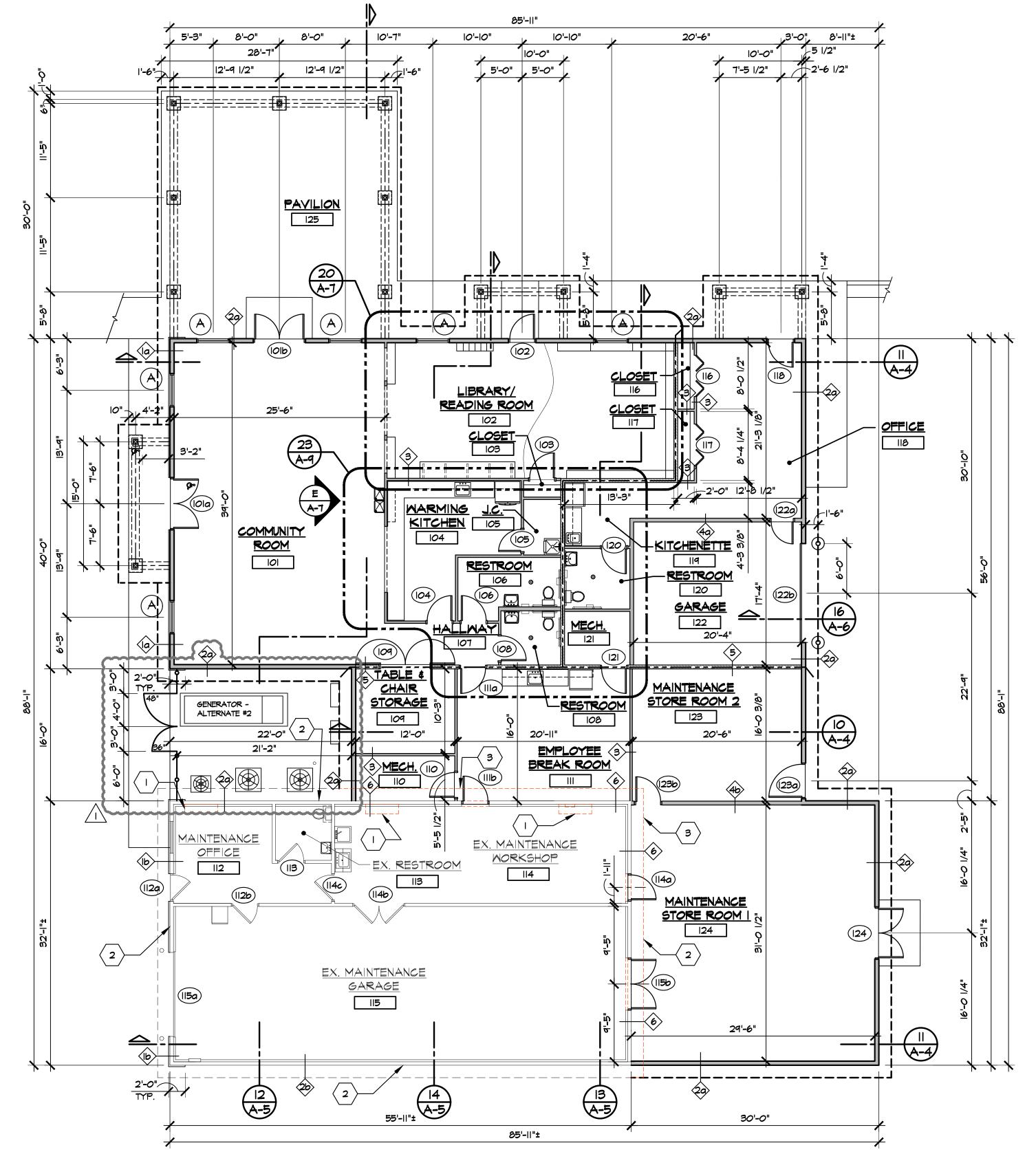
- . PROVIDE FOUNDATION WATERPROOFING WHERE CRAWL \$ / OR BASEMENT WALLS ARE BELOW BELOW GRADE AND INSTALL 4" PERFORATED PLASTIC FOUNDATION DRAINS ONE EACH SIDE OF FOOTINGS WITH CROSS OVERS AT A MINIMUM OF ONE PER WALL. SLOPE DRAINS TO ON-SITE DRY WELL W/ SUMP PUMP OR NATURAL DRAINAGE COURSES.
- 2. ALL EXTERIOR WALLS SHALL HAVE WATER-RESISTIVE BARRIER OF NOT FEWER THAN ONE LAYER OF NO. 15 ASPHALT FELT, COMPLYING WITH ASTM D226 FOR TYPE I FELT OR OTHER APPROVED MATERIALS, (I.E. TYVEK BUILDING WRAP) ATTACHED TO SHEATHING W/ MANUFACTURER'S APPROVED CAP NAILS, OVERLAP ALL SEAMS (HORIZONTAL & VERTICAL) A MIN. OF 6" AND SEAL W/ MANUFACTURER'S APPROVED TAPE. WRAP ALL WINDOWS, DOORS, VENTS, ETC. OPENINGS WITH APPROVED BUILDING AIR INFILTRATION BARRIER PRIOR TO INSTALLATION.
- 3. MOISTURE VAPOR RETARDERS SHALL BE INSTALLED IN ALL FRAMED WALLS, FLOORS, AND ROOF / CEILINGS, COMPRISING ELEMENTS OF THE BUILDING THERMAL ENVELOPE, INSTALLED ON THE WARM-IN-WINTER SIDE OF THE INSULATION. SEALED AT ALL OUTLETS AND PENETRATIONS. CLASS AS SPECIFIED ON PLANS. CLASS I = SHEET POLYETHYLENE, NON-PERFORATED ALUMINUM FOIL WITH A PERM RATING OF LESS THAN OR EQUAL TO O.I
 - CLASS II = KRAFT-FACED FIBERGLASS BATTS OR PAINT WITH A PERM RATING GREATER THAN O.I AND LESS THAN OR EQUAL TO I.O. CLASS III = LATEX OR ENAMEL PAINT WITH A PERM RATING OF GREATER THAN I.O AND LESS THAN OR EQUAL TO 10.0.
- 4. ALL BUILDING EXTERIOR ROOF SURFACE PENETRATIONS WITH POTENTIAL EXPOSURE TO MEATHER SHALL BE FLASHED AND/OR CAULKED AS PER CODE AND/OR INDUSTRY-RECOGNIZIED PROPER CONSTRUCTION TECHNIQUES.
- 5. ALL FLASHING SHALL BE TURNED OUT AT LOWER EDGE TO DIRECT WATER OUT & AWAY FROM STRUCTURE.
- 6. INSULATING MATERIALS, WHERE EXPOSED, SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450.



MOOD FRAMING NOTES:

ALL MAIN FRAMING MEMBERS, JOISTS, RAFTERS, BEAMS, HEADERS, ETC., SHALL BE NO. 2 AND BETTER HEM-FIR, OR EQUAL.

- 2. ALL WALL STUDS SHALL BE STUD GRADE SPRUCE-PINE-FIR. SILL PLATES, ETC., SHALL BE NO. 2 AND BETTER SPRUCE-PINE-FIR (SPF) OR EQUAL
- 3. NON-STRUCTURAL NAILERS, BLOCKING, BRIDGING, ETC., SHALL BE CONSTRUCTION GRADE SPRUCE-PINE-FIR (SPF) OR WHITE WOODS.
- 4. WOODS FOR GLUED LAMINATED BEAM CONSTRUCTION MUST BE OF GRADE 24F WESTERN SPECIES OR BETTER (FB = 2400 PSI, FV = 140 PSI, E = 1,700,000 PSI.)



TREATED LUMBER & CONNECTOR NOTES: I. FOR ALL AWPA PRESSURE TREATED WOOD:

TREATMENT DENSITY, MOISTURE CONTENT IN GRADE BASE VALUES, SOUTHERN YELLOW PINE (SYP) GRADE NO. 2 OR BETTER

- 0.60 CCA (pcf)

MOISTURE TREATED LUMBER, TIMBERS & PLYWOOD FOR ABOVE GROUND USE - 0.25 CCA (pcf) GROUND / FRESH WATER CONTACT - 0.40 CCA (pcf)

STRUCTURAL POLES

2. ALL METAL FASTENERS, CONNECTORS INTO OR IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE STAINLESS STEEL (NAILS. SCREWS, ANCHOR BOLTS, LAG BOLTS, METAL HANGERS, ETC.)



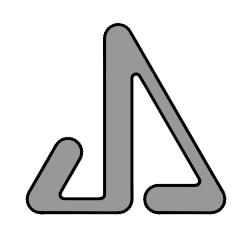
FLOOR PLAN SCALE: 1/8" = 1'-0"

<u>SQUARE FOOTAGES</u>

3,530 S.F. (1,807 EX. + 1,723 PROPOSED) MAINTENANCE: COMMUNITY CENTER: 1,725 S.F. SUBSTATION W/ GARAGE: 877 S.F. TOTAL SQUARE FOOTAGE 6,732 S.F.

DEMOLITION NOTES:

- REMOVE MECHANICAL UNITS IN THEIR ENTIRETY. INFILL OPENING WITH 2X4 MD. STUDS, BATT INSULATION, AND PATCH EXTERIOR SHEATHING PRIOR TO INSTALLATION OF NEW EXTERIOR FINISHES. PATCH GYP. BD. AND PREP TO BE PAINTED.
- REMOVE VINYL SIDING IN ITS ENTIRETY AND PREP FOR NEW EXTERIOR FINISHES.
- CUT BACK OVERHANGS OF EXISTING MAINTENANCE BUILDING AT THE LOCATION OF CONNECTION OF ADDITION.



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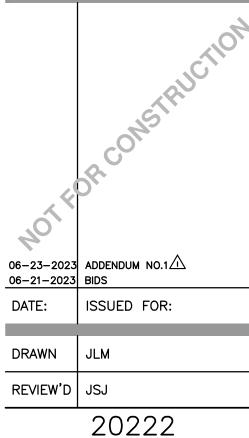
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GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING **COMMISSION:** GREENWOOD TOWNHOUSES 900 GREENWOOD AVENUE MONROE, MICHIGAN 48162

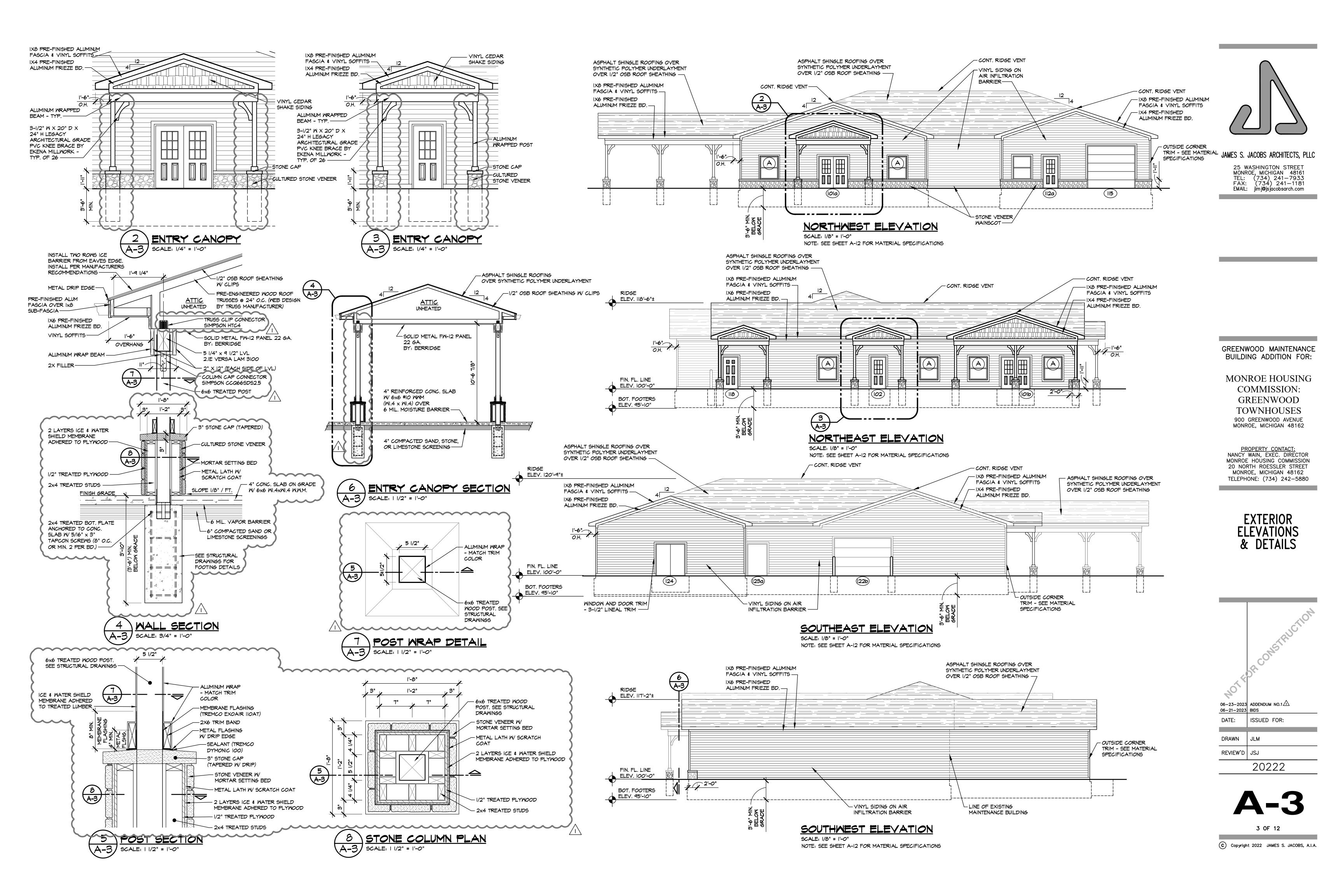
NANCY WAIN, EXEC. DIRECTOR MONROE HOUSING COMMISSION 20 NORTH ROESSLER STREET MONROE, MICHIGAN 48162 TELEPHONE: (734) 242-5880

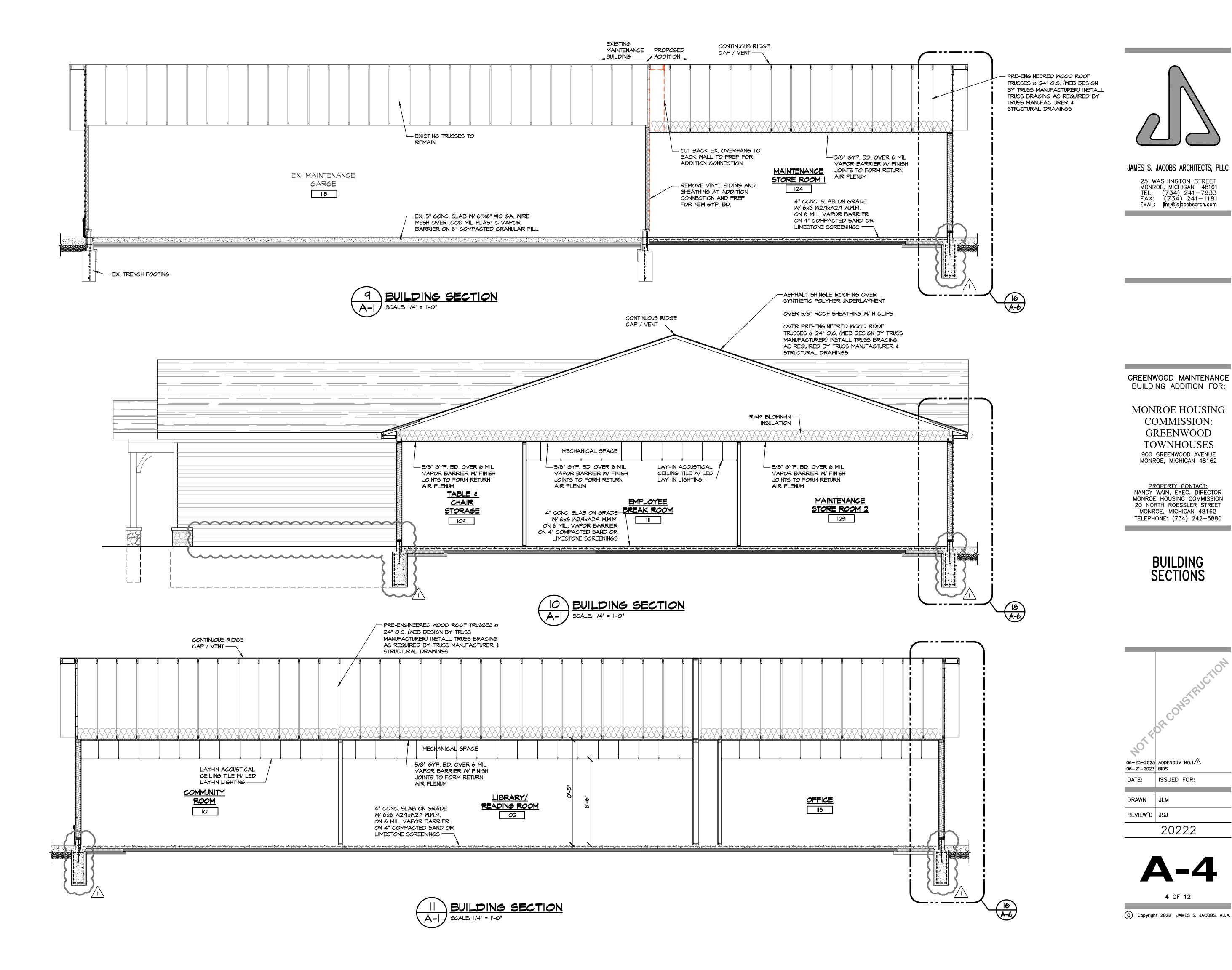
FLOOR PLAN



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1 OF 12



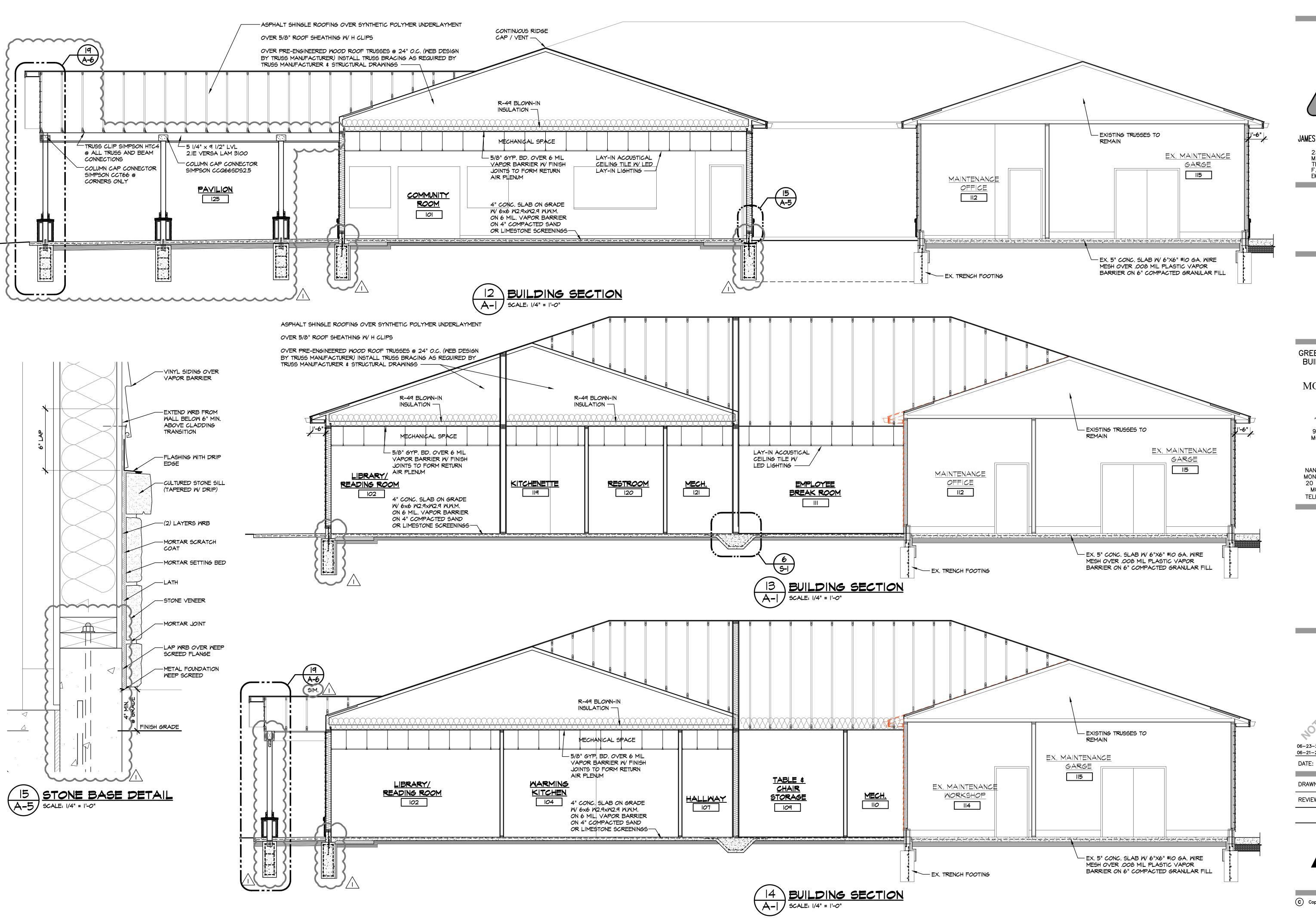


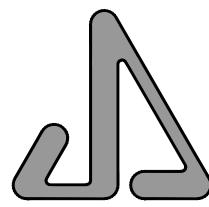
BUILDING SECTIONS

ISSUED FOR:

20222

4 OF 12





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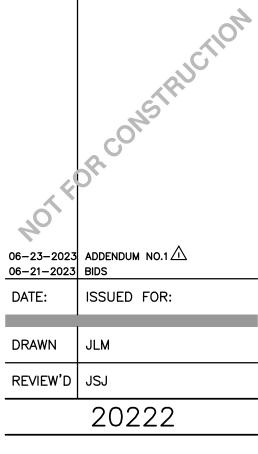
25 WASHINGTON STREET MONROE, MICHIGAN 48161 TEL: (734) 241-7933 FAX: (734) 241-1181 EMAIL: jimj@jsjacobsarch.com

GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING
COMMISSION:
GREENWOOD
TOWNHOUSES
900 GREENWOOD AVENUE
MONROE, MICHIGAN 48162

PROPERTY CONTACT:
NANCY WAIN, EXEC. DIRECTOR
MONROE HOUSING COMMISSION
20 NORTH ROESSLER STREET
MONROE, MICHIGAN 48162
TELEPHONE: (734) 242-5880

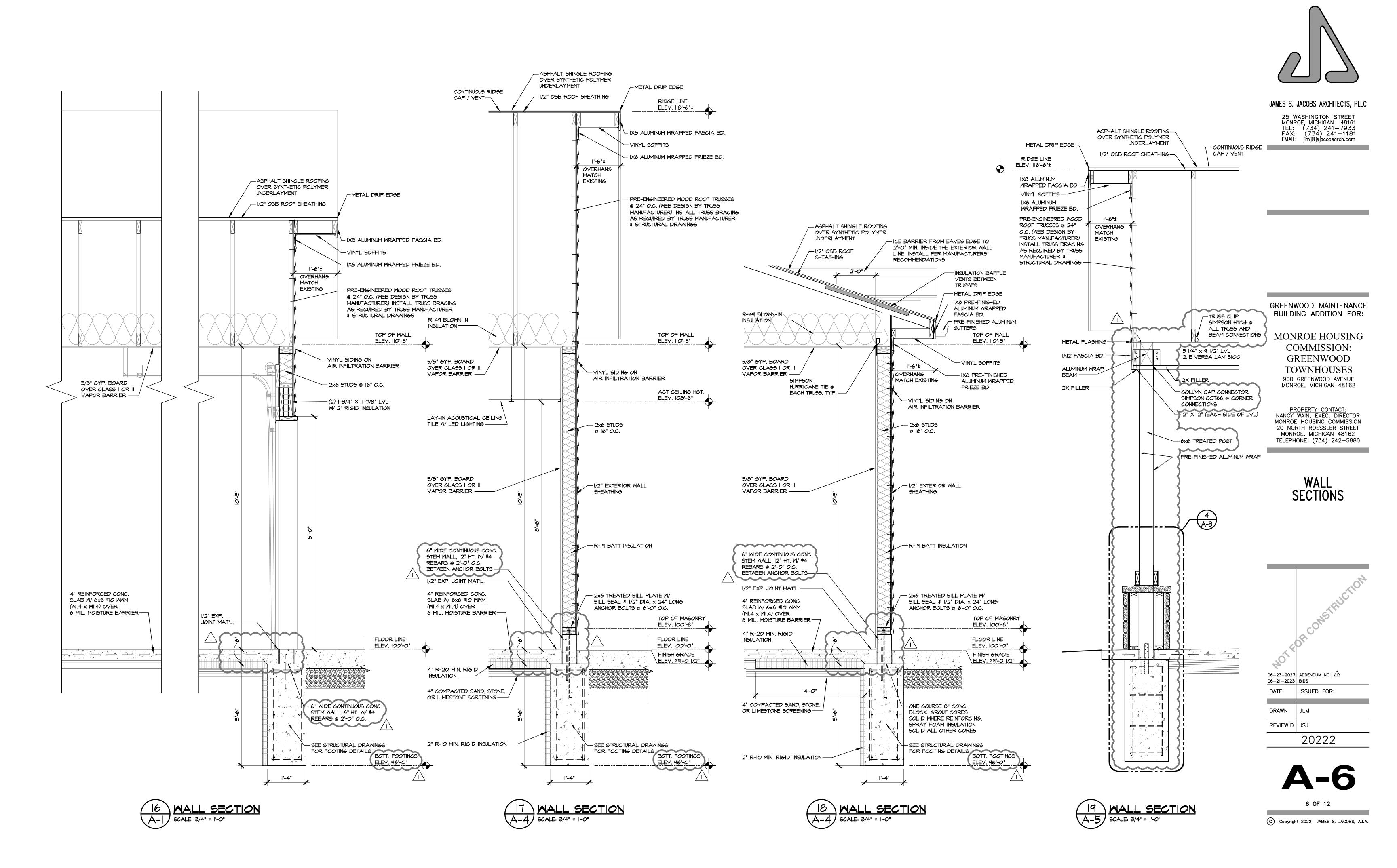
BUILDING SECTIONS

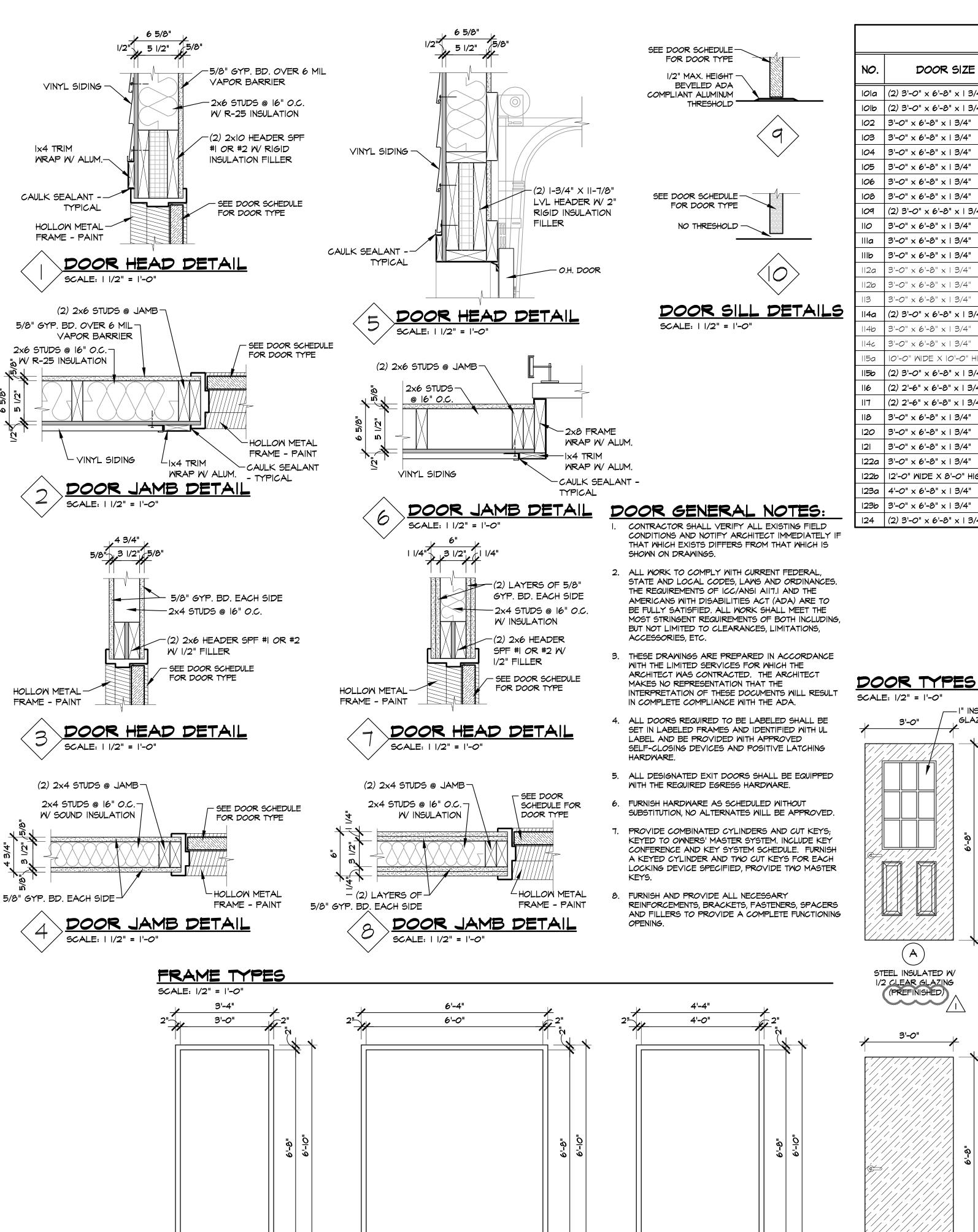


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5 OF 12

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(2)

HOLLOW METAL

INSULATED (PAINT OR PREFINISHED)

HOLLOW METAL INSULATED @ EXTERIOR DOORS

NON-INSULATED @ INTERIOR DOORS
(PAINT OR PREFINISHED)

						DOOR !	SCHE	DULE							
	D008 617E	DO	OR		1	FRAME			DETAILS		FIRE	HAf	RDWARE		
NO.	DOOR SIZE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	TYPE	HEAD	JAMB	SILL	RATING		SET	REMARKS	
101a	(2) 3'-0" × 6'-8" × 3/4"	INSUL. STEEL / GL	PREFINISHED	В	H.M.	PREFINISHED	2	I	2	9		1			
10lb	(2) 3'-0" × 6'-8" × 3/4"	INSUL. STEEL / GL	PREFINISHED	В	H.M.	PREFINISHED	2	I	2	9			2		
102	3'-0" × 6'-8" × 3/4"	INSUL. STEEL / GL	PREFINISHED	Α	H.M.	PREFINISHED	(1	l	2	9			7		
103	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	l	3	4	10			4		
104	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	(1	3	4	10			5		
105	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	K I	3	4	10			I3		
106	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	(1	3	4	10			3		
108	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	K I	3	4	10			3		
109	(2) 3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	D	H.M.	PREFINISHED	2	7	8	9	90 MIN.		12		JAMES S. JACOBS ARCHITECTS, PLLC
110	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	E	H.M.	PREFINISHED	K I	3	4	10			14		25 WASHINGTON STREET
IIIa	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	<i>/</i> c	H.M.	PREFINISHED	/	7	8	9	90 MIN.		9		MONROE, MICHIGAN 48161 TEL: (734) 241-7933 FAX: (734) 241-1181 EMAIL: jimj@jsjacobsarch.com
IIIb	3'-0" × 6'-8" × 3/4"	STEEL /I	PAINT	F	H.M. <u>/ I</u>	PAINT	1	3	4	10			4		FAX: (734) 241—1181
112a	3'-0" × 6'-8" × 3/4"													EXISTING TO REMAIN	EMAIL. Jillijejs jacobsarchi.com
1126	3'-0" × 6'-8" × 3/4"													EXISTING TO REMAIN	
II3	3'-0" × 6'-8" × 3/4"													EXISTING TO REMAIN	
114a	(2) 3'-0" × 6'-8" × 3/4"	STEEL	PAINT	F	H.M.	PAINT	1	3	4	10			4		
1146	3'-0" × 6'-8" × 3/4"													EXISTING TO REMAIN	
1140	3'-0" × 6'-8" × 3/4"													EXISTING TO REMAIN	
115a	10'-0" WIDE X 10'-0" HIGH O.H													EXISTING TO REMAIN	
1156	(2) 3'-0" × 6'-8" × 3/4"	INSUL. STEEL	PAINT	6	H.M.	PAINT	2	l	2	9			10		
116	(2) 2'-6" x 6'-8" x 3/4"	STEEL	PREFINISHED	E		(10			16		
117	(2) 2'-6" × 6'-8" × 3/4"	STEEL /I	PREFINISHED	E	/1	<u> </u>				10			16		
II8	3'-0" × 6'-8" × 3/4"	INUSL. STEEL	PREFINISHED	C	H.M.	PREFINISHED	I		2	9			8		
120	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	<u> </u>	3	4	10			3		
121	3'-0" × 6'-8" × 3/4"	STEEL	PAINT	F	H.M.	PAINT	I	7	8	9	90 MIN.		15		
122a	3'-0" × 6'-8" × 3/4"	STEEL	PREFINISHED	C	H.M.	PREFINISHED	I	3	4	10			6		
122b	12'-0" WIDE X 8'-0" HIGH O.H.	STEEL	PAINT	ı				5	6					HARDWARE SUPPLIED BY OVERHEAD DOOR MANUFACTURER	
123a	4'-0" × 6'-8" × 3/4"	INSUL. STEEL	PAINT	Н	H.M.	PAINT	3		2	9			8		
123b	3'-0" × 6'-8" × 3/4"	STEEL	PAINT	F	H.M.	PAINT	I						5		ODEENIMOOD MAINTENAMOS
124	(2) 3'-0" x 6'-8" x 3/4"	INSUL. STEEL	PAINT	6	H.M.	PAINT	2	I	2	9			II		GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

DOOR HARDWARE SETS

WEATHERSTRIP NATIONAL GUARD

3'-0"

2. SEE SHEET A-12 FOR HARDWARE SETS.

ACCEPTABLE MANUFACTURERS

NORTON 7500 / SARGENT 351 / LCN

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I. CONTRACTOR TO COORDINATE HARDWARE OPERATIONS WITH OWNER.

3'**-0**"

YALE 5400 / BEST 93K

ROCKMOOD / BALDWIN

YALE / SARGENT

BOMMER / HAGER

THRESHOLDS NATIONAL GUARD / ZERO / REESE

6'-0"

MANUFACTURER LISTINGS

PRODUCTS

EXIT DEVICES

LOCKS

HINGES

CLOSER

TRIM

OVERHEAD DOOR SPECS

HAAS, MODEL 2010 OR EQUAL

HEAVY DUTY STEEL INSULATED

COLOR: POLAR WHITE

OVERHEAD DOOR OPENER:

LIFTMASTER #J50IL5, 3/4 HP

WALL CONTROL & TWO REMOTES

3'-0"

(0)

EXTERIOR: STEEL INSULATED

INTERIOR: HOLLOW CORE STEEL (PREFINISHED)

4'-0"

(H)

STEEL INSULATED

(PAINT)

R= 17.66 (U=0.883)

NO GLAZING

6'-0"

STEEL INSULATED W/

1/2 CLEAR GLAZING (PREFINISHED)

6'-0"

 $(\, m{arsigma} \,)$ 

STEEL INSULATED

(PAINT)

3'**-**0"

3'**-**0"

3'-0"

3'-O"

\_\_\_I" INSULATED

3'-0"

3'-0"

HOLLOW CORE STEEL

(PAINT)

3

HOLLOW METAL

INSULATED

(PAINT)

GLAZING TYP.

GREENWOOD MAINTENANCE BUILDING ADDITION FOR: **ABBREVIATIONS** 

**ALUMINUM** 

5'-0"

STEEL - BI-FOI D (PREFINSHED)

2'-6"

ALUM.

ANOD.

GL. M.T.

MTL.

R.S.

2'-6"

12'-0"

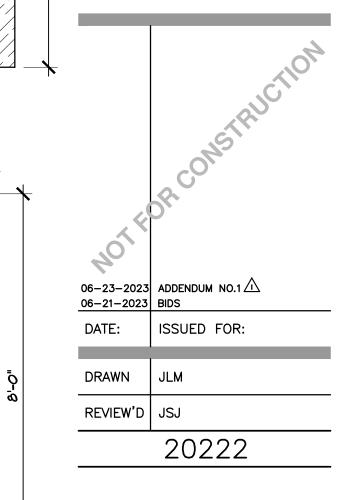
STEEL OVERHEAD DOOR

(MANUFACTURER FINISH)

MONROE HOUSING ANODIZED ALUMINUM THRESHOLD **COMMISSION:** MARBLE THRESHOLD GREENWOOD METAL REDUCER STRIP **TOWNHOUSES** SOLID CORE 900 GREENWOOD AVENUE MONROE, MICHIGAN 48162

> PROPERTY CONTACT:
> NANCY WAIN, EXEC. DIRECTOR MONROE HOUSING COMMISSION 20 NORTH ROESSLER STREET MONROE, MICHIGAN 48162 TELEPHONE: (734) 242-5880

DOOR SCHEDULE & NOTES



11 OF 12

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| HARDWA         | NARE SETS  RE GROUP NO. 1                                   |                                                    |               |                    |                                       | ARE GROUP NO. 10                                       |                                                    |               |             |
|----------------|-------------------------------------------------------------|----------------------------------------------------|---------------|--------------------|---------------------------------------|--------------------------------------------------------|----------------------------------------------------|---------------|-------------|
|                | : ON DOOR #(S):  O a<br>E EACH OPENING WITH THE F(          | OLLOMING:                                          |               |                    |                                       | E ON DOOR #(S): 1156<br>E EACH OPENING WITH THE FO     | OLLOWING:                                          |               |             |
| QTY<br>2 EA    | DESCRIPTION<br>CONT. HINGE                                  | CATALOG NUMBER                                     | FINISH        | MFR                | QTY<br>6 EA                           | DESCRIPTION<br>HINGE                                   | CATALOG NUMBER                                     | FINISH        | MFR         |
| ZEA<br>LEA     | THUMBTURN CYLINDER                                          | 224XY<br>4066                                      | 628<br>130    | IVE<br>ADA         | 2 EA                                  | MANUAL FLUSH BOLT                                      | 5BB  4.5 X 4.5<br>FB358/FB458 (AS REQ'D)           | 646<br>626    | IVE<br>IVE  |
| 4 EA           | SINGLE DUMMY TRIM                                           | TI2 QUA                                            | 619           | FAL                | I EA                                  | DUST PROOF STRIKE                                      | DP2                                                | 626           | IVE         |
| I EA           | DEADLOCK X<br>THRESHOLD BOLT X                              | MSI850S X 4015 X 4085                              | 628           | ADA                | I EA<br>2 EA                          | CLASSROOM LOCK<br>SURF OH STOP                         | W561P6 QUA (*)                                     | 619<br>652    | FAL<br>GLY  |
|                | HEADER BOLT                                                 |                                                    |               |                    | 2 EA                                  | KICK PLATE                                             | 4505<br>8400 8" X I" LDW B-CS                      | 652<br>630    | OL T<br>IVE |
| I EA           | CYLINDER                                                    | AS REQUIRED(*)                                     | 41.4          | -1.4               | I EA                                  | OVERLAPPING ASTRAGAL                                   | _ 139A-S                                           | Α             | ZER         |
| 2 EA<br>I EA   | OH STOP<br>SURFACE CLOSER                                   | 1005<br>SCTIA REG OR PA AS REQ                     | 619<br>689    | <i>G</i> LY<br>FAL | I EA<br>2 EA                          | GASKETING<br>DOOR SWEEP                                | 4885BK PSA<br>39A                                  | BK<br>A       | ZER<br>ZER  |
| I EA           | SURF. AUTO OPERATOR                                         | 9131                                               | ANCLR         | LCN                | I EA                                  | THRESHOLD                                              | 655A                                               | Ä             | ZER         |
| 2 EA           | ACTUATOR, TOUCH                                             | 8310-853T                                          | 630           | LCN                | (*) VERI                              | FY KEYING REQUIREMENTS W                               | ITH OWNER PRIOR TO ORDERING                        |               |             |
| 2 EA<br>EA     | KICK PLATE<br>GASKETING                                     | 8400 8" X I" LDW B-CS<br>429AA-S                   | 630<br>AA     | IVE<br>ZER         | <b>ПТБО</b> М                         | ARE GROUP NO. 11                                       |                                                    |               |             |
| 2 EA           | DOOR SWEEP                                                  | 39A                                                | Α             | ZER                |                                       | E ON DOOR #(S): 124                                    |                                                    |               |             |
| 2 EA<br>  EA   | MEETING STILE SEAL<br>THRESHOLD                             | 8194AA<br>655A                                     | AA<br>A       | ZER<br>ZER         |                                       | E EACH OPENING WITH THE FO                             |                                                    | =1511611      |             |
|                |                                                             | IITH OWNER PRIOR TO ORDERING                       | , ·           |                    | QTY<br>2 EA                           | DESCRIPTION<br>CONT. HINGE                             | CATALOG NUMBER<br>224XY                            | FINISH<br>628 | MFR<br>IVE  |
|                |                                                             | VIA CIAUTOLI                                       |               |                    | I EA                                  | CONST LATCHING BOLT                                    | FB5IP/FB6IP (AS REQ'D)                             | 630           | IVE         |
| AUIO OF        | PERATOR TOGGLED ON/OFF                                      | VIA SMITCH                                         |               |                    | I EA                                  | CLASSROOM LOCK                                         | T56IP6 QUA(*)                                      | 619           | FAL         |
|                | RE GROUP NO. 2                                              |                                                    |               |                    | I EA<br>2 EA                          | COORDINATOR<br>SURFACE CLOSER                          | COR X FL (MB AS REQ'D)<br>SCTIA SSHO               | 628<br>689    | IVE<br>FAL  |
|                | : ON DOOR #(S): IOIb<br>E EACH OPENING WITH THE FO          |                                                    |               |                    | 2 EA                                  | KICK PLATE                                             | 8400 8" X I" LDW B-CS                              | 630           | IVE         |
| ROVIDI<br>QTY  | DESCRIPTION                                                 | CATALOG NUMBER                                     | FINISH        | MFR                | I EA<br>I EA                          | OVERLAPPING ASTRAGAL<br>GASKETING                      | - 139A-S<br>429AA-S                                | A<br>AA       | ZER<br>ZER  |
| 2 EA           | CONT. HINGE                                                 | 224XY                                              | 628           | IVE                | 2 EA                                  | DOOR SWEEP                                             | 8198AA                                             | AA            | ZER         |
| I EA<br>I EA   | PANIC HARDWARE<br>PANIC HARDWARE                            | CD-25-C-L-DT-QUA<br>CD-25-C-L-NL-QUA               | 619<br>619    | FAL<br>FAL         | I EA                                  | THRESHOLD                                              | 655A                                               | A             | ZER         |
| 3 EA           | CYLINDER                                                    | AS REQUIRED(*)                                     | <b>J</b> 1⁻1  | · ^ <b>-</b>       | (*) VERI                              | FY KEYING REQUIREMENTS W                               | ITH OWNER PRIOR TO ORDERING                        |               |             |
| 2 EA           | SURFACE CLOSER                                              | SCTIA SS                                           | 689           | FAL                | HARDWA                                | ARE GROUP NO. 12                                       |                                                    |               |             |
| 2 EA<br>EA     | KICK PLATE<br>GASKETING                                     | 8400 8" X I" LDW B-CS<br>429AA-S                   | 630<br>AA     | IVE<br>ZER         | FOR USE                               | ON DOOR #(S):                                          |                                                    |               |             |
| 2 EA           | MEETING STILE SEAL                                          | 8194AA                                             | AA            | ZER                | 109<br>PROVID                         | E EACH OPENING WITH THE FO                             | OLLOWING.                                          |               |             |
| 2 EA           | DOOR SWEEP                                                  | 8198AA<br>655A                                     | AA            | ZER<br>7ED         | <b>QTY</b>                            | DESCRIPTION                                            | CATALOG NUMBER                                     | FINISH        | MFR         |
| EA<br>*) VERII | THRESHOLD<br>FY KEYING REQUIREMENTS W                       | 655A<br>IITH OWNER PRIOR TO ORDERING               | Α             | ZER                | 6 EA                                  | HINGE                                                  | 5BBI 4.5 × 4.5                                     | 646           | IVE         |
| / 12/5//       | THE TEACHER INTO THE                                        |                                                    |               |                    | I EA<br>I EA                          | AUTO FLUSH BOLT<br>DUST PROOF STRIKE                   | FB3IP/FB4IP (AS REQ'D)<br>DP2                      | 630<br>626    | IVE<br>IVE  |
|                | RE GROUP NO. 3                                              | _                                                  |               |                    | i EA                                  | CLASSROOM LOCK                                         | W561P6 QUA (*)                                     | 619           | FAL         |
|                | : ON DOOR #(S): 106, 108, 120<br>E EACH OPENING WITH THE FO |                                                    |               |                    | I EA                                  | COORDINATOR                                            | COR X FL (MB AS REQ'D)                             | 628           | IVE         |
| RTY            | DESCRIPTION                                                 | CATALOG NUMBER                                     | FINISH        | MFR                | 2 EA<br>2 EA                          | SURFACE CLOSER<br>KICK PLATE                           | SC8IA REG OR PA AS REQ FC<br>8400 8" X I" LDW B-CS | 689<br>630    | FAL<br>IVE  |
| BEA            | HINGE                                                       | 5BBI 4.5 X 4.5                                     | 646           | IVE                | 2 EA                                  | WALL STOP                                              | WS406/407CCV                                       | 619           | IVE         |
| EA<br>EA       | PRIVACY LOCK<br>SURFACE CLOSER                              | M3015 QUA<br>SC81A REG OR PA AS REQ FC             | 619<br>689    | FAL<br>FAL         | ! EA                                  | GASKETING                                              | 488SBK PSA                                         | BK            | ZER         |
| EA             | MOP PLATE                                                   | 8400 4" X I" LDW B-CS                              | 630           | IVE                | I EA                                  | MEETING STILE GASKETIN                                 | 5 80425BK PSA                                      | BK            | ZER         |
| EA             | KICK PLATE                                                  | 8400 8" X 2" LDW B-CS                              | 630           | IVE                | TEMPLA                                | TE CLOSERS TO ALLOW 180                                | DEGREE SWING                                       |               |             |
| EA             | WALL STOP                                                   | W5406/407CCV                                       | 619           | IVE<br>IVE         | /*\\/ <b>=</b> p                      | EV VEVING REQUIREMENTS IN                              | ITH OWNER PRIOR TO ORDERING                        |               |             |
| BEA            | SILENCER                                                    | SR64/SR65 AS REQ'D                                 | GRY           | IVE                | (*) VERI                              | FI RETING REQUIREMENTS M                               | ITH OMNER PRIOR TO ORDERING                        |               |             |
|                | RE GROUP NO. 4                                              |                                                    |               |                    |                                       | ARE GROUP NO. 13                                       |                                                    |               |             |
|                | ON DOOR #(S): 103, 1116, 1140                               |                                                    |               |                    |                                       | E ON DOOR #(S): 105<br>E EACH OPENING WITH THE FO      | OLL CIAINS                                         |               |             |
| YKOVIDI<br>RTY | E EACH OPENING WITH THE FO<br>DESCRIPTION                   | OLLOMING:<br>CATALOG NUMBER                        | FINISH        | MFR                | QTY                                   | DESCRIPTION                                            | CATALOG NUMBER                                     | FINISH        | MFR         |
| BEA            | HINGE                                                       | 5BBI 4.5 X 4.5                                     | 646           | IVE                | 3 EA                                  | HINGE                                                  | 5BBI 4.5 × 4.5                                     | 646           | IVE         |
| EA<br>EA       | CLASSROOM LOCK<br>SURF OH STOP                              | W561P6 QUA(*)<br>450S                              | 619<br>652    | FAL<br><i>G</i> LY | I EA<br>I EA                          | STOREROOM LOCK<br>KICK PLATE                           | M58IP6 QUA (*)<br>8400 8" X 2" LDM B-CS            | 619<br>630    | FAL<br>IVE  |
| BEA            | SILENCER                                                    | SR64/SR65 AS REQ'D                                 | GRY           | IVE                | i EA                                  | WALL STOP                                              | WS406/407CCV                                       | 619           | IVE         |
| *) VERII       | TY KEYING REQUIREMENTS W                                    | IITH OWNER PRIOR TO ORDERING                       |               |                    | 3 EA                                  | SILENCER                                               | SR64/SR65 AS REQ'D                                 | GRY           | IVE         |
| IARDWA         | RE GROUP NO. 5                                              |                                                    |               |                    | (*) VERI                              | FT RETING REQUIREMENTS M                               | ITH OWNER PRIOR TO ORDERING                        |               |             |
|                | ON DOOR #(S): 104, 123b                                     |                                                    |               |                    |                                       | ARE GROUP NO. 14                                       |                                                    |               |             |
|                | E EACH OPENING WITH THE FO                                  |                                                    |               |                    |                                       | E ON DOOR #(S): 110                                    |                                                    |               |             |
| RTY<br>EA      | DESCRIPTION<br>HINGE                                        | CATALOG NUMBER<br>5BBI 4.5 X 4.5                   | FINISH<br>646 | MFR<br>IVE         | ROVID<br>QTY                          | E EACH OPENING WITH THE FO<br>DESCRIPTION              | OLLOMING:<br>CATALOG NUMBER                        | FINISH        | MFR         |
| EA             | CLASSROOM LOCK                                              | M561P6 QUA(*)                                      | 619           | FAL                | 3 EA                                  | HINGE                                                  | 5BBI 4.5 X 4.5                                     | 646           | IVE         |
| EA             | WALL STOP                                                   | W5406/407CCV                                       | 619           | IVE                | I EA                                  | STOREROOM LOCK<br>SURFACE CLOSER                       | M58IP6 QUA(*)                                      | 619<br>680    | FAL         |
| BEA<br>*)∨ERII | SILENCER<br>FY KEYING REQUIREMENTS W                        | SR64/SR65 AS REQ'D<br>IITH OWNER PRIOR TO ORDERING | GRY           | IVE                | I EA<br>I EA                          | SURFACE CLOSER<br>KICK PLATE                           | SC8IA REG OR PA AS REQ FC<br>8400 8" X 2" LDW B-CS | 689<br>630    | FAL<br>IVE  |
|                |                                                             |                                                    |               |                    | I EA                                  | MALL STOP                                              | WS406/407CCV                                       | 619           | IVE         |
|                | RE GROUP NO. 6                                              |                                                    |               |                    | 3 EA<br>(*) √ <b>FR</b> I             | SILENCER  EY KEYING REQUIREMENTS W                     | SR64/SR65 AS REQ'D<br>ITH OWNER PRIOR TO ORDERING  | GRY           | IVE         |
|                | : ON DOOR #(S): 122a<br>E EACH OPENING WITH THE F(          | OLLOWING:                                          |               |                    | (") VERI                              | I I NETINO NEQUIREMENTO M                              | IIII OMEN I NICK IO ORDERING                       |               |             |
| XTY            | DESCRIPTION                                                 | CATALOG NUMBER                                     | FINISH        | MFR                | · · · · · · · · · · · · · · · · · · · | ARE GROUP NO. 15                                       |                                                    |               |             |
| B EA           | HINGE                                                       | 5BBI 4.5 X 4.5                                     | 646           | IVE                |                                       | E ON DOOR #(S):  2 <br>E EACH OPENING WITH THE FO      | OLL OWING.                                         |               |             |
| EA<br>EA       | CLASSROOM LOCK<br>SURF OH STOP                              | M561P6 QUA (*)<br>450S                             | 619<br>652    | FAL<br><i>G</i> LY | QTY                                   | DESCRIPTION                                            | CATALOG NUMBER                                     | FINISH        | MFR         |
| EA             | SURFACE CLOSER                                              | SCOIA REG OR PA AS REQ FC                          | 689           | FAL                | 3 EA                                  | HINGE                                                  | 5BBI 4.5 X 4.5                                     | 646           | IVE         |
| EA<br>EA       | KICK PLATE<br>GASKETING                                     | 8400 8" X 2" LDW B-CS<br>4885BK PSA                | 630<br>BK     | IVE<br>ZER         | I EA<br>I EA                          | STOREROOM LOCK<br>SURFACE CLOSER<br>KICK PLATE         | M581P6 QUA (*)<br>SC81A REG OR PA AS REQ FC        | 619<br>689    | FAL<br>FAL  |
| EA             | DOOR SWEEP                                                  | 4885BK PSA<br>39A                                  | BK<br>A       | ZER                | I EA                                  | KICK PLATE                                             | 8400 8" X 2" LDW B-CS                              | 630           | IVE         |
| EA             | THRESHOLD                                                   | 655A                                               | A             | ZER                | I EA                                  | WALL STOP                                              | M5406/407CCV                                       | 619<br>BY     | IVE         |
| ) VERII        | T KEYING REQUIREMENTS W                                     | IITH OWNER PRIOR TO ORDERING                       |               |                    | I EA<br>(*)√ERI                       | GASKETING<br>FY KEYING REQUIREMENTS W                  | 4885BK PSA<br>ITH OWNER PRIOR TO ORDERING          | BK            | ZER         |
|                | RE GROUP NO. 7                                              |                                                    |               |                    | . ,                                   |                                                        |                                                    |               |             |
| OR USE         | ON DOOR #(S): 102                                           | OL L CIAILLE                                       |               |                    |                                       | ARE GROUP NO. 16                                       |                                                    |               |             |
| PROVIDI<br>RTY | E EACH OPENING WITH THE FO<br>DESCRIPTION                   | OLLOWING:<br>CATALOG NUMBER                        | FINISH        | MFR                |                                       | E ON DOOR #(S): 116, 117<br>E EACH OPENING WITH THE FO | OLLOWING:                                          |               |             |
| EA             | CONT. HINGE                                                 | 224XY                                              | 628           | IVE                | <b>QTY</b>                            | DESCRIPTION                                            | CATALOG NUMBER                                     | FINISH        | MFR         |
| EA             | CLASSROOM LOCK                                              |                                                    | 619<br>689    | FAL                | I EA                                  | BIFOLD HARDWARE                                        | 200FD SERIES                                       | 628           | HOL         |
| EA<br>EA       | SURFACE CLOSER<br>KICK PLATE                                | SCTIA SS<br>8400 8" X 2" LDW B-CS                  | 689<br>630    | FAL<br>IVE         |                                       |                                                        |                                                    |               |             |
| EA             | GASKETING                                                   | 429AA-S                                            | AA            | ZER                |                                       |                                                        |                                                    |               |             |
| EA<br>EA       | DOOR SWEEP<br>THRESHOLD                                     | 8198AA<br>655A                                     | AA<br>A       | ZER<br>ZER         |                                       |                                                        |                                                    |               |             |
| EA<br>*) VERⅡ  |                                                             | 655A<br>IITH OWNER PRIOR TO ORDERING               | ^             | LEK                |                                       |                                                        |                                                    |               |             |
|                |                                                             |                                                    |               |                    |                                       |                                                        |                                                    |               |             |
|                | RE GROUP NO. 8                                              |                                                    |               |                    |                                       |                                                        |                                                    |               |             |
|                | : ON DOOR #(S): 118, 123a<br>E EACH OPENING WITH THE FO     | OLLOWING:                                          |               |                    |                                       |                                                        |                                                    |               |             |
| RTY            | DESCRIPTION                                                 | CATALOG NUMBER                                     | FINISH        | MFR                |                                       |                                                        |                                                    |               |             |
| EA             | CONT. HINGE                                                 | 224XY                                              | 628           | IVE<br>EAL         |                                       |                                                        |                                                    |               |             |
| EA<br>EA       | CLASSROOM LOCK<br>SURFACE CLOSER                            | T561P6 QUA (*)<br>SCTIA REG OR PA AS REQ           | 619<br>689    | FAL<br>FAL         |                                       |                                                        |                                                    |               |             |
| EA             | KICK PLATE                                                  | 8400 8" X 2" LDW B-CS                              | 630           | IVE                |                                       |                                                        |                                                    |               |             |
| EA<br>EA       | WALL STOP<br>GASKETING                                      | MS406/407CCV<br>429AA-S                            | 619<br>AA     | IVE<br>ZER         |                                       |                                                        |                                                    |               |             |
|                |                                                             | at mag                                             |               |                    |                                       |                                                        |                                                    |               |             |

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I EA

I EA

DOOR SWEEP

DESCRIPTION

KICK PLATE

WALL STOP

GASKETING

CLASSROOM LOCK

SURFACE CLOSER

PROVIDE EACH OPENING WITH THE FOLLOWING:

THRESHOLD

HARDWARE GROUP NO. 9 FOR USE ON DOOR #(S): IIIa

CATALOG NUMBER

SC8IA REG OR PA AS REQ FC 689

8400 8" X 2" LDW B-CS

5BBI 4.5 X 4.5

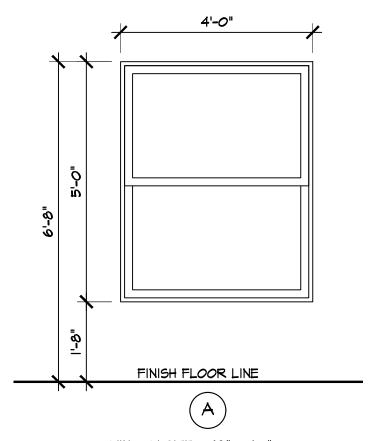
M561P6 QUA (\*)

W5406/407CCV

488SBK PSA

(\*) VERIFY KEYING REQUIREMENTS WITH OWNER PRIOR TO ORDERING

(\*) VERIFY KEYING REQUIREMENTS WITH OWNER PRIOR TO ORDERING



MINDOM SIZE: 48" × 60" R.O: 48.5" × 60.5"

MINDOM TYPE

## MINDOW NOTES:

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

- SOLID VINYL (WHITE)
  FUSION-WELDED FRAME AND SASH
  3/4" INSULATING DUAL PANE GLAZING
- LOW E ARGONU VALUE = 0.30, SHGC = 0.49
- FULL INSECT SCISINGLE HUNG

INTERIOR FINISH CLASSIFICATIONS

INTERIOR WALL AND CEILING FINISHES SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E 84, AND SHALL BE GROUPED IN THE FOLLOWING CLASSES IN ACCORDANCE WITH THEIR FLAME SPREAD AND SMOKE-DEVELOPED INDEXES:

CLASS A: FLAME SPREAD 0-25; SMOKE-DEVELOPED 0-450 CLASS B: FLAME SPREAD 26-75; SMOKE-DEVELOPED 0-450 CLASS C: FLAME SPREAD 76-200; SMOKE-DEVELOPED 0-450

CLASS A FINISH: EXIT ENCLOSURES/PASSAGEWAYS (NON-SPRINKLED)

ROOMS/ENCLOSED SPACES (NON-SPRINKLED)

INTERIOR FLOOR FINISH REQUIREMENTS: MINIMUM CRITICAL RADIANT FLUX NOT

LESS THAN CLASS II, AND SHOULD COMPLY WITH THE DOC FF-I "PILL TEST"

MATERIALS ARE PERMITTED IN ANY AREA WHERE CLASS I MATERIALS ARE

REQUIRED AND MATERIALS COMPLYING WITH THE DOC FF-I "PILL TEST" (CPSC

16 CFR, PART 1630) ARE PERMITTED IN ANY AREA WHERE CLASS II MATERIALS

BUILDINGS EQUIPPED WITH AUTOMATIC SPRINKLER SYSTEM: CLASS II

NOTE: BUILDING IS NOT EQUIPPED WITH AUTOMATIC SPRINKLER SYSTEM.

CLASS B FINISH: EXIT ENCLOSURES/PASSAGEWAYS (SPRINKLED)

CORRIDORS (NON-SPRINKLED)

CORRIDORS (SPRINKLED)

CLASS C FINISH: ROOMS/ENCLOSED SPACES (SPRINKLED)

(CPSC 16 CFR, PART 1630).

ARE REQUIRED.

USE GROUP B (BUSINESS) - SECTION 803, TABLE 803.11

| INSECT<br>LE HUNG | SCREEN | ١ |  |  |
|-------------------|--------|---|--|--|
|                   |        |   |  |  |
|                   |        |   |  |  |

|     |                            | SEALED CONCRETE | LUXURY VINYL TILE | CARPET TILES | MOOD | VINYL BASE | GYPSUM BOARD - PAINT |  | GYPSUM BOARD - PAINT | ACT AND GRID | HEIGHT IN FEET<br>AND INCHES<br>(VERIFY HEIGHT) | <u>LEGEND</u><br>X - EXISTING FINISH MATERIAL<br>● - NEW FINISH MATERIAL |
|-----|----------------------------|-----------------|-------------------|--------------|------|------------|----------------------|--|----------------------|--------------|-------------------------------------------------|--------------------------------------------------------------------------|
| 10  | I COMMUNITY ROOM           |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 2 LIBRARY / READING ROOM   |                 | •                 | •            |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 3 CLOSET                   |                 | •                 |              |      | •          | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| 10  | 4 MARMING KITCHEN          |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 5 JANITOR'S CLOSET (J.C.)  | •               |                   |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 6 RESTROOM                 |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 7 HALLMAY                  |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 8 RESTROOM                 |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 10  | 9 TABLE & CHAIR STORAGE    | •               |                   |              |      | •          | •                    |  |                      | •            | 8'-6"                                           | ALTERNATE #2 - EPOXY FLOORING                                            |
| IId | MECHANICAL                 | •               |                   |              |      |            | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| III | EMPLOYEE BREAK ROOM        |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 112 | EX. MAINTENANCE OFFICE     |                 | ×                 |              |      | ×          | ×                    |  | X                    |              | '- "±                                           |                                                                          |
| 118 | EX. RESTROOM               |                 | ×                 |              |      | ×          | ×                    |  | X                    |              | '- "±                                           |                                                                          |
| 4   | EX. MAINTENANCE WORKSHOP   | ×               |                   |              |      |            | ×                    |  | X                    |              | '- "±                                           |                                                                          |
| 115 | EX. MAINTENANCE GARAGE     | ×               |                   |              |      |            | ×                    |  | X                    |              | '- "±                                           |                                                                          |
| 116 | CLOSET                     |                 | •                 |              |      | •          | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| 11- | CLOSET                     |                 | •                 |              |      | •          | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| 118 | OFFICE                     |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 119 | KITCHENETTE                |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 12  | O RESTROOM                 |                 | •                 |              |      | •          | •                    |  |                      | •            | 8'-6"                                           |                                                                          |
| 12  | I MECHANICAL               | •               |                   |              |      |            | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| 12  | 2 GARAGE                   | •               |                   |              |      |            | •                    |  | •                    |              | 10'-5"                                          |                                                                          |
| 12  | MAINTENANCE STORE ROOM 2   | •               |                   |              |      | •          | •                    |  | •                    |              | 10'-5"                                          | ALTERNATE #2 - EPOXY FLOORING                                            |
| 12  | 4 MAINTENANCE STORE ROOM I | •               |                   |              |      | •          | •                    |  | •                    |              | 10'-5"                                          | ALTERNATE #2 - EPOXY FLOORING                                            |
|     |                            | 1               |                   | I            |      |            |                      |  |                      |              |                                                 |                                                                          |

ROOM FINISH SCHEDULE

CEILING

REMARKS

### GENERAL INTERIOR FINISH NOTES

125 PAVILION

NO.

ROOM NAME

FLOOR

FLR. BASE

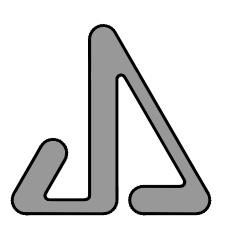
- I. ALL NEW INTERIOR FINISHES ARE TO BE SELECTED BY OWNER AND SHALL COMPLY WITH INTERIOR FINISH CLASSIFICATIONS AS STATED ABOVE. OWNER TO COORDINATE ALL FINISHES AND COLOR SELECTIONS WITH THE CONTRACTOR.
- 2. CONTRACTOR TO PREP ALL SURFACES AS NECESSARY WHICH WILL BE RECEIVING NEW FINISHES.
- 3. TOILET ROOM & JANITOR'S CLOSET WALLS SHOULD HAVE A SMOOTH, HARD, NON-ABSORBENT FINISH PER CODE. PROVIDE EPOXY PAINT AS A MINIMUM ON ALL WALLS.

|                    | MATER                 | rial specification                                                                                                            | is - Exteri          | OR                             |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------|
| ITEM               | BRAND / MANUFACTURER  | MODEL / TYPE                                                                                                                  | COLOR                | REMARKS                        |
| VINYL SIDING       | CERTAINTEED           | CEDARBOARDS INSULATED SIDING<br>- DOUBLE 6" CLAPBOARD                                                                         | SAVANNAH WICKER (59) | - AVAILABLE AT MONROE ALUMINUM |
| SHAKE VINYL SIDING | CERTAINTEED           | CEDAR IMPRESSIONS<br>- TRIPLE 5" STRAIGHT EDGE<br>SAWMILL SHINGLES                                                            | BUCKSKIN             | - AVAILABLE AT MONROE ALUMINUM |
| VINYL TRIM         | CERTAINTEED           | CEDARBOARDS ACCESSORIES - I-I/4" CORNERPOST (51412) - I-I/4" INSIDE CORNERPOST (51446) - 3-I/2" LINEAL W/ FOAM INSERT (54707) | SNOW (31)            | - AVAILABLE AT MONROE ALUMINUM |
| STONE VENEER       | STONECRAFT INDUSTRIES |                                                                                                                               | HERITAGE BUCKTOWN    | - AVAILABLE AT MONROE ALUMINUM |
| ROOF SHINGLES      | GAF                   | TIMBERLINE HDZ SHINGLES                                                                                                       | MEATHERED MOOD       | - AVAILABLE AT MONROE ALUMINUM |

|                                    | MAT                  | erial specifi                             | Cations - In                           | NTERIOR                                                                                                                       |
|------------------------------------|----------------------|-------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ITEM                               | BRAND / MANUFACTURER | MODEL / TYPE                              | COLOR                                  | REMARKS                                                                                                                       |
| CABINETS                           | SHENANDOAH CABINETRY | BRECKENRIDGE<br>SIZE AS SHOWN ON DRAWINGS | PAINTED - SAGE                         | - CUSHIONCLOSE SYSTEM ON DOORS AND DRAWERS<br>- ALL PLYWOOD CONSTRUCTION ONLY<br>- FULL OVERLAY DOORS<br>- AVAILABLE AT LOWES |
| COUNTERTOP                         | FORMICA              |                                           | BASALT SLATE 3690-34<br>SCOVATO FINISH | - PENCIL EDGE<br>- EXPOSED EDGES FINISHED                                                                                     |
| HANDLES / PULLS                    | BRAINERD             | BAR PULL<br>BAR096M-SS-CD                 | STAINLESS STEEL                        | - 3-3/4" CENTER TO CENTER<br>- INSTALL ON BOTH DRAWERS AND DOORS AS SHOW<br>ON ELEVATIONS<br>- AVAILABLE AT LOWES             |
| FAUCET - BREAK ROOM \$ KITCHENETTE | DELTA                | KESSLER - 16932-SSSD-DST                  | STAINLESS                              | - NO SUBSTITUTIONS - SINGLE HOLE INSTALLATION / NO DECK PLATE - NO SOAP DISPENSER - AVAILABLE AT LOWES                        |
| FAUCET<br>- WARMING KITCHEN        | MISENO               | MODEL #MNO28155                           | STAINLESS STEEL                        | - NO SUBSTITUTIONS - SINGLE HOLE INSTALLATION / NO DECK PLATE - NO SOAP DISPENSER - AVAILABLE AT LOWES                        |
| LUXURY VINYL TILE                  | SHAW CONTRACT        | DIFFUSE ECOLOGIX<br>- 24"X24" OR EQUAL    | AS SELECTED BY<br>OWNER/ARCHITECT      | - DIRECT GLUE                                                                                                                 |
| CARPET TILE                        | SHAM CONTRACT        | TERRAIN II 20 MIL.<br>- 6"x48"            | AS SELECTED BY<br>OWNER/ARCHITECT      | - 20 MIL DIRECT GLUE                                                                                                          |
| RUBBER BASE                        | FLEXCO               | VINYL WALL BASE                           | AS SELECTED BY<br>OWNER/ARCHITECT      | - 4" HIGH COVED BASE WITH PRE-MOLDED CORNERS<br>- AVAILABLE AT LOWES                                                          |
| PAINT                              | SHERWIN WILLIAMS     | PROMAR 200                                | AGREEABLE GRAY<br>243-CI               | - EG-SHEL FINISH<br>- SEE NOTE #I                                                                                             |
| CEILING TILE                       | ARMSTRONG            | SCHOOL ZONE FINE FISSURED                 | #1713, SQUARE LAY-IN                   |                                                                                                                               |
| CEILING GRID                       | ARMSTRONG            | "PRELUDE XL"                              | MHITE                                  |                                                                                                                               |
| PLASTIC LAMINATE<br>LIBRARY        | FORMICA              |                                           | MHITE                                  | - EXPOSED EDGES FINISHED                                                                                                      |

I. SHERWIN WILLIAMS - USE MANUFACTURER'S RECOMMENDED PAINT FOR INTERIOR APPLICATIONS. COLOR AS SELECTED BY ARCHITECT/ OWNER. PROVIDE (3) COAT SYSTEM - (I) PRIMER COAT AND (2) FINISH COATS. ALLOW FOR (I) BASE COLOR.

2. MATERIALS LISTED ARE THE BASIS OF DESIGN. SUBSTITUTIONS MUST COMPLY WITH SECTION 012500 - SUBSTITUTION PROCEDURES OF THE SPECIFICATIONS.



JAMES S. JACOBS ARCHITECTS, PLLC

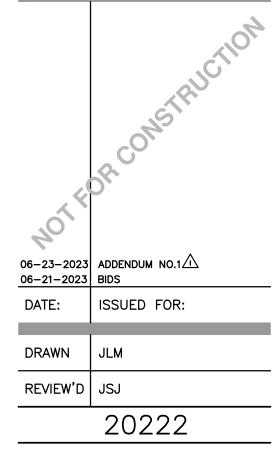
25 WASHINGTON STREET MONROE, MICHIGAN 48161 TEL: (734) 241-7933 FAX: (734) 241-1181 EMAIL: jimj@jsjacobsarch.com

GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING
COMMISSION:
GREENWOOD
TOWNHOUSES
900 GREENWOOD AVENUE
MONROE, MICHIGAN 48162

PROPERTY CONTACT:
NANCY WAIN, EXEC. DIRECTOR
MONROE HOUSING COMMISSION
20 NORTH ROESSLER STREET
MONROE, MICHIGAN 48162
TELEPHONE: (734) 242-5880

ROOM FINISH SCHEDULE, MATERIAL SPECIFICATIONS, & NOTES



**A-12** 

12 OF 12

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|            |                            |     |                   |      |     |                             | FANS                          |                         |        |         |       |                    |  |  |
|------------|----------------------------|-----|-------------------|------|-----|-----------------------------|-------------------------------|-------------------------|--------|---------|-------|--------------------|--|--|
| SCHEDULE I | CHEDULE BASED ON GREENHECK |     |                   |      |     |                             |                               |                         |        |         |       |                    |  |  |
| MARK       | SERVICE                    | CFM | SP<br>IN.<br>W.C. | HP   | RPM | MAX.<br>TIP<br>SPEED<br>FPM | MAX.<br>OUTLET<br>VEL.<br>FPM | MAX.<br>SOUND<br>RATING | DRIVE  | MODEL   | POWER | REMARKS            |  |  |
| F-1        | TOILET EXHAUST             | 75  | 0.375             | 80 W | 769 |                             |                               | 2 SONES                 | DIRECT | SP-B110 | 120   | WITH SPEED CONTROL |  |  |
| F-2        | TOILET EXHAUST             | 75  | 0.375             | 80 W | 769 |                             |                               | 2 SONES                 | DIRECT | SP-B110 | 120   | WITH SPEED CONTROL |  |  |
| F-3        | TOILET EXHAUST             | 75  | 0.375             | 80 W | 769 |                             |                               | 2 SONES                 | DIRECT | SP-B110 | 120   | WITH SPEED CONTROL |  |  |
| F-4        | JANITOR EXHAUST            | 75  | 0.375             | 80 W | 769 |                             |                               | 2 SONES                 | DIRECT | SP-B110 | 120   | WITH SPEED CONTROL |  |  |

|            |                | (                        | GRILLES RE     | GISTERS A      | ND DIFFUSERS              |        |                |
|------------|----------------|--------------------------|----------------|----------------|---------------------------|--------|----------------|
| SCHEDULE E | BASED ON PRICE |                          |                |                |                           |        |                |
| MARK       | USAGE          | STYLE                    | MODEL          | SIZE           | DESCRIPTION<br>OF<br>BLOW | DAMPER | REMARKS        |
| A          | SUPPLY         | SURFACE MOUNT<br>CEILING | SCDA           | 12x12x6"ø NECK | 4-WAY                     | N      |                |
| В          | SUPPLY         | LAY-IN CEILING           | SCDA           | 24x24x8"ø NECK | 4-WAY                     | N      |                |
| С          | SUPPLY         | SIDEWALL                 | 520D           | 8x4            | DOUBLE DEFLECTION         | Y      |                |
| D          | SUPPLY         | SIDEWALL                 | 520D           | 10x6           | DOUBLE DEFLECTION         | Y      |                |
| E          | SUPPLY         | SPIRAL DUCT GRILLE       | SDG GV AS VCS3 | 12x5           | DOUBLE DEFLECTION         | Y      | WITH AIR SCOOP |
| F          | RETURN         | LAY-IN CEILING           | 80             | 12x24          |                           | N      |                |
| G          | RETURN         | SIDEWALL                 | 530            | 12x6           |                           | N      |                |
| Н          | RETURN         | SIDEWALL                 | 530            | 22x10          |                           | N      |                |

## DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT

| SCHEDULE | BASED ON          | TRANE             |                    |                    |                    |                |                      |                  |           |      |                |          |              |
|----------|-------------------|-------------------|--------------------|--------------------|--------------------|----------------|----------------------|------------------|-----------|------|----------------|----------|--------------|
|          |                   |                   |                    |                    |                    |                |                      |                  |           |      |                |          |              |
| MARK     | FAN<br>CFM<br>LOW | FAN<br>CFM<br>MED | FAN<br>CFM<br>HIGH | EAT<br>D.B.<br>• F | EAT<br>W.B.<br>• F | HEATING<br>MBH | COOLING<br>TOTAL MBH | AUXILARY<br>HEAT | MODEL     | MARK | AMBIENT<br>• F | MODEL    | POWER        |
| AC-1     | 320               | 370               | 425                | 80                 | 67                 | N.A.           | 12                   | N.A.             | TPLA0A012 | CU-4 | 95             | TRUZA012 | 208-230/1/60 |
| AC-2     | 320               | 370               | 425                | 80                 | 67                 | N.A.           | 12                   | N.A.             | TPLA0A012 | CU-5 | 95             | TRUZA012 | 208-230/1/60 |

NOTES:

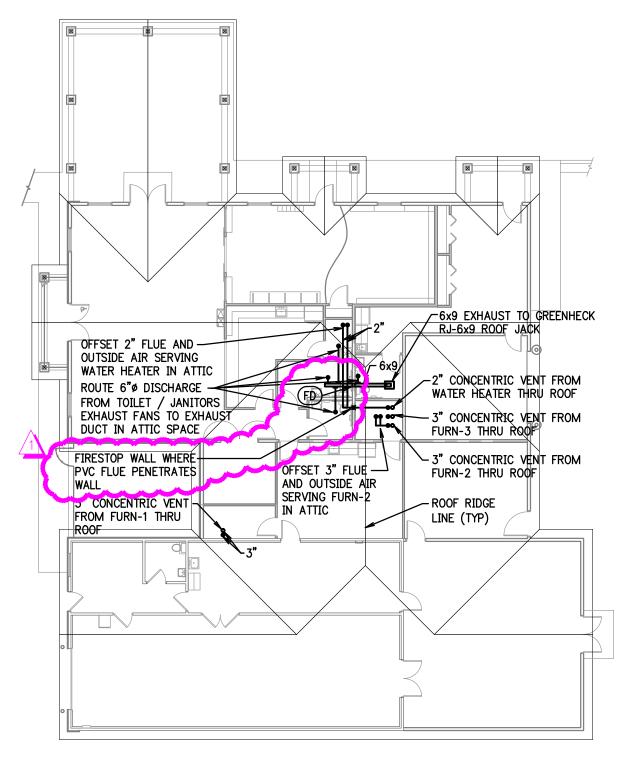
1. OUTSIDE AIR CONNECTION, 40 CFM EACH.

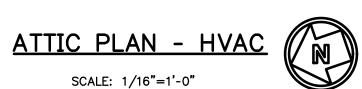
2. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.

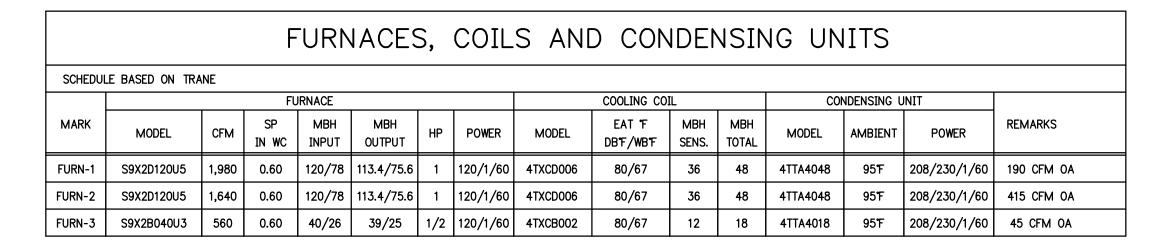
CONTROL TO BE VIA WIRED THERMOSTAT.

INDOOR UNIT SUPPLIED WITH CONDENSATE PUMP. INSTALL REFRIGERANT PIPING FROM OUTDOOR UNIT TO INDOOR UNIT PER MANUFACTURER'S INSTALLATION REQUIREMENTS. INDOOR UNIT IS POWERED FROM THE OUTDOOR UNIT.

|        |                       |         |                | Vent 9            | Summary She | eet        |                   |           |               |                 |       |
|--------|-----------------------|---------|----------------|-------------------|-------------|------------|-------------------|-----------|---------------|-----------------|-------|
| Projec | t Name:               | MHC Gre | enwood Mainten | ance Addition     |             |            | Date:             |           | 4/26/2023     |                 |       |
| Projec | t Number:             | JD23039 |                |                   |             |            | Rev.              |           | none          |                 | -     |
| Rm#    | Room Name             | 1       | Venti          | lation Based on P | eople       | Ven        | tilation Based on | Area      | Adjusted O.A. | Total           | Root  |
|        |                       | A.C.    | No. of People  | CFM/Person        | Vent. CFM   | Floor Area | CFM/Sq. Ft.       | Vent. CFM | CFM           | Ventilation CFM | Exhau |
| 112    | Maintenance Office    | 32      | 1              | 5                 | 5           | 173        | 0.06              | 10        | 15            | 15              | 5     |
| 113    | Maint Toilet          | 8       | 0              | 5                 | 0           | 46         | 0.06              | 3         | 3             | 3               | 3     |
| 114    | Workshop              | 78      | 2              | 5                 | 10          | 426        | 0.06              | 26        | 36            | 36              | 5     |
| 124    | Maint Store Room 1    | 168     | 2              | 5                 | 10          | 915        | 0.06              | 55        | 65            | 65              | 5     |
| 123    | Maint Store Room 2    | 60      | 1              | 5                 | 5           | 328        | 0.06              | 20        | 25            | 25              | 5     |
| 111    | Employee Break        | 61      | 4              | 5                 | 20          | 332        | 0.06              | 20        | 40            | 40              | )     |
| 110    | Mech                  | 12      | 0              | 5                 | 0           | 66         | 0.06              | 4         | 4             | . 4             | ŀ     |
|        | Sub Totals Furnace 1: |         |                |                   | 50          |            |                   | 137       | 188           | 187             | 7     |
|        |                       | '       |                |                   |             |            |                   |           |               |                 |       |
| Rm#    | Room Name             | 1       | Venti          | lation Based on P | eople       | Ven        | tilation Based on | Area      | Adjusted O.A. | Total           | Roor  |
|        |                       | A.C.    | No. of People  | CFM/Person        | Vent. CFM   | Floor Area | CFM/Sq. Ft.       | Vent. CFM | CFM           | Ventilation CFM | Exhau |
| 101    | Community Room        | 195     | 48             | 5                 | 240         | 1,062      | 0.06              | 64        | 304           | 304             | ŀ     |
| 102    | Library / Reading     | 106     | 6              | 5                 | 30          | 578        | 0.06              | 35        | 65            | 65              | 5     |
| 104    | Warming Kitchen       | 39      | 3              | 5                 | 15          | 212        | 0.06              | 13        | 28            | 28              | 3     |
| 105    | Jan Closet            | 6       | 0              | 5                 | 0           | 30         | 0.06              | 2         | 2             | . 2             | 2     |
| 106    | ADA Toilet            | 15      | 0              | 5                 | 0           | 83         | 0.06              | 5         | . 5           | 5               | 5     |
| 108    | Toilet                | 9       | 0              | 5                 | 0           | 47         | 0.06              | 3         | 3             | 3               | 3     |
| 109    | Table & Chair Storage | 23      | 0              | 5                 | 0           | 123        | 0.06              | 7         | 7             | 7               | 7     |
|        | Sub Totals Furnace 2: |         |                |                   | 285         |            |                   | 128       | 414           | 413             | 3 2   |
|        |                       |         |                |                   |             |            |                   |           |               | ,               |       |
| Rm#    | Room Name             | 1       | Venti          | lation Based on P | eople       | Ven        | tilation Based on | Area      | Adjusted O.A. | Total           | Roon  |
|        |                       | A.C.    | No. of People  | CFM/Person        | Vent. CFM   | Floor Area | CFM/Sq. Ft.       | Vent. CFM | CFM           | Ventilation CFM | Exhau |
| 118    | Office                | 58      | 2              | 5                 | 10          | 319        | 0.06              | 19        | 29            | 29              | )     |
| 119    | Kitchenette           | 16      | 0              | 5                 | 0           | 90         | 0.06              | 5         | 5             | 5               | 5     |
| 120    | Restroom              | 11      | 0              | 5                 | 0           | 59         | 0.06              | 4         | 4             | . 4             | ŀ     |
| 121    | Mech                  | 10      | 0              | 5                 | 0           | 52         | 0.06              | 3         | 3             | 3               | 3     |
|        | Sub Totals Furnace 3: |         |                |                   | 10          |            |                   | 31        | 41            | 41              |       |







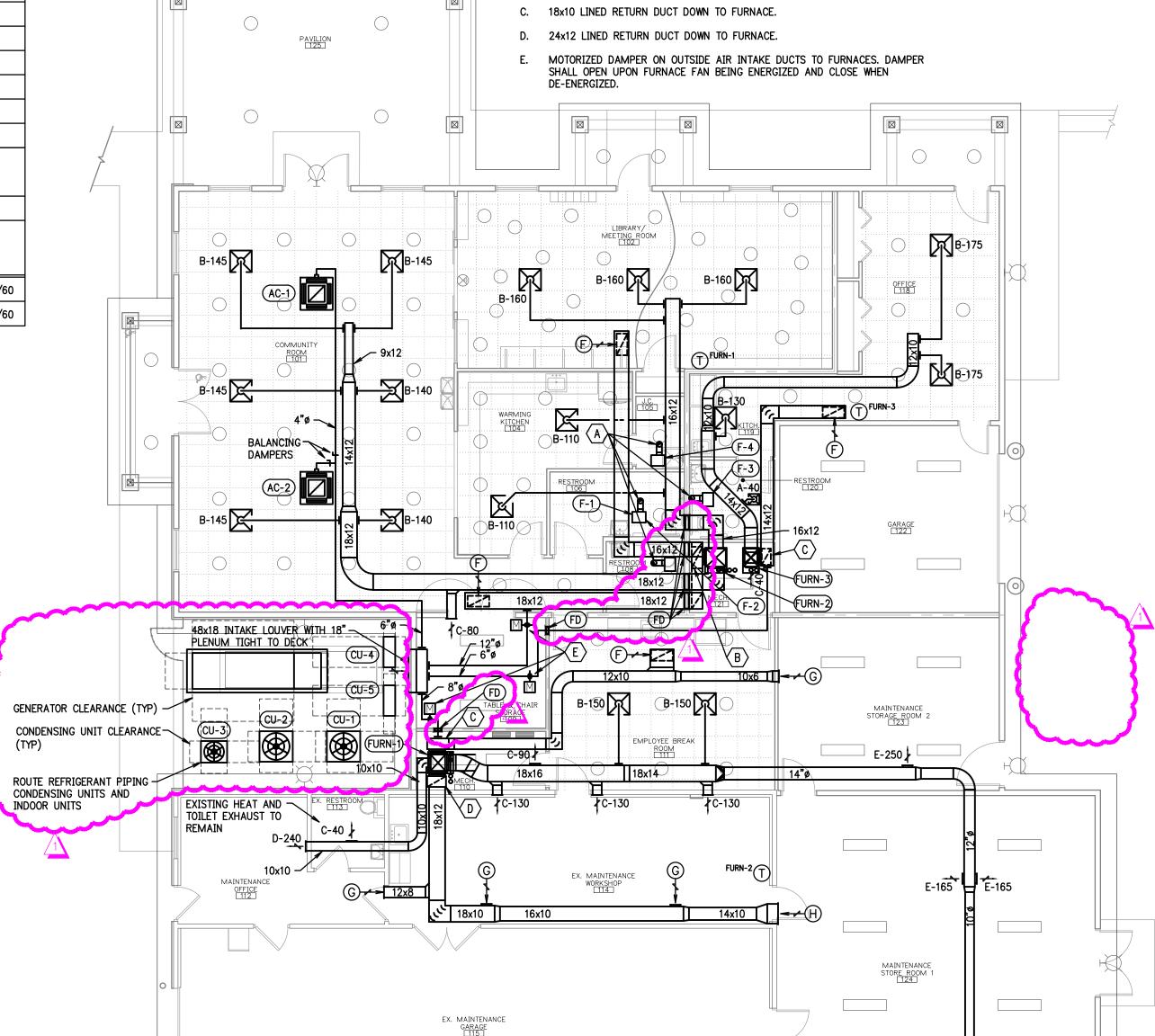
### **GENERAL NOTES:**

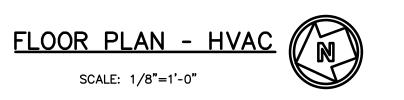
1. RECTANGULAR SUPPLY AIR DUCTWORK SHALL BE INTERNALLY LINED. DUCT SIZES ARE SHEET METAL SIZE AND INCLUDE INSULATION.

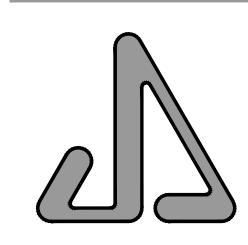
- 2. RECTANGULAR RETURN AIR DUCTWORK IN UNLINED WITH THE EXCEPTION OF THE VERTICAL DROPS TO THE FURNACES WHICH SHALL BE INTERNALLY LINED.
- 3. EXHAUST DUCTWORK SHALL BE UNLINED.

## PLAN NOTES:

- A. ROUTE 6"Ø EXHAUSTS FROM TOILET / JANITOR EXHAUST FANS INTO ATTIC SPACE. SEE ATTIC PLAN THIS SHEET.
- B. 30x14 LINED RETURN DUCT DOWN TO FURNACE.







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JDRM Engineering

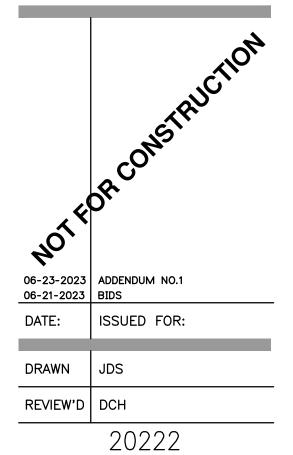
Mechanical Electrical Plumbing Technology Safety 5604 N. Main St. Suite 200 Sylvania, Ohio 43560 PH. (419) 824-2400 FAX (419) 824-2409 www.jdrm.com

GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING COMMISSION: GREENWOOD **TOWNHOUSES** 900 GREENWOOD AVENUE MONROE, MICHIGAN 48162

PROPERTY CONTACT:
NANCY WAIN, EXEC. DIRECTOR MONROE HOUSING COMMISSION 20 NORTH ROESSLER STREET MONROE, MICHIGAN 48162 TELEPHONE: (734) 242-5880

FLOOR PLANS HVAC



#### DIVISION 22 & 23 - BASIC MECHANICAL REQUIREMENTS

These are Outline Specifications and not intended to cover all necessary items, but are to serve only as a guide. It is intended that complete Mechanical Systems as described herein will be furnished and installed.

Contractor shall visit the job site and examine all existing conditions.

All work shall be installed in accordance with local and state codes and regulations and shall receive the approval of the inspection department having

All work specified herein shall carry the Contractor's Warranty for workmanship and materials for a period of one year minimum (or as specified) from the date of final acceptance or beneficial use by the Owner, whichever occurs first. The Contractor shall remedy the defects and reimburse the Owner for all damage to other work, whether caused by the defects or the work of correcting same. Provide an extended four (4) year replacement warranty for the refrigeration compressors after the first year full replacement warranty (parts and labor). The four (4) year warranty shall be for compressor replacement only; all labor charges will be the responsibility of the Owner.

All work shall be done by mechanics skilled in the particular trade involved, under responsible supervision and with the best modern practices.

All materials shall be new and of the grade and quality specified. Only the best material of each class specified shall be used.

In new construction, the General Contractor will provide duct openings and pipe shaft openings where shown on the architectural or structural drawings and also where indicated and sized by this Contractor.

In existing construction, this Contractor shall do all cutting, core drilling, and patchina as required for complete installation unless openings are indicated on the architectural drawings. This Contractor shall hire the General Contractor to do all patching to match existing conditions.

This Contractor shall provide all miscellaneous steel and hardware as required to support, hang and secure all equipment as furnished, relocated or revised by him, unless such materials are specifically called out to be provided by other Contractors.

Manufacturer's directions shall be followed in all cases where the manufacturers of articles used in this Contract furnish directions covering specific points not shown on the drawings or mentioned in the specifications.

All work installed under this contract shall be tested in the presence of and to the satisfaction of the inspecting authority having jurisdiction and the Owner's

Mechanical shop drawings, fixture cuts, and schedules shall be submitted for review, in general, before starting the work involved, and so as to cause no delay in this work or that of any other Contractor or Subcontractor. Shop drawings may be submitted in electronic format utilizing PDF files. The submittal shall be organized by specification section and contain all required information within a PDF document for each specification section. If hard copies of shop drawings are submitted, a minimum of six copies shall be submitted. All shop drawings whether electronic or hard copies shall bear the stamp of approval of the Contractor as evidence that the submittals have been approved by him.

This Contractor shall cooperate fully with the Owner in scheduling and making connections into existing service lines so as to cause the least possible inconvenience and shortest interruption of service. Contractor shall include any time and materials necessary for draining, venting, purging and refilling the existing system to permit connection of the new or removal of existing equipment, piping, etc.

This Contractor to remove all unused ductwork, piping, etc. from the area and remove it from the premises. The Owner shall be given the option of retaining any removed items. The Contractor shall, in general, keep the site clean and free of all debris generated by his work.

Before running any ducts, piping, etc. within the building, this Contractor shall assure himself that they can be installed as contemplated without trapping or interfering with columns, beams, piping, fixtures, etc. Contractor to verify all measurements and conditions at job site before proceeding with the work.

Of necessity, openings, supporting steel, field-built curbs, electrical data, space requirements, etc. were designed ground specific parameters. It shall become the Contractor's responsibility to change as necessary, through the Architect and interested Contractors on the job, all required parameters, so that openings, supporting steel, curbs, electrical data, etc. will fit the equipment supplied. Any additional cost will be the sole responsibility of this Contractor.

Removed material may contain asbestos or lead. Contractor to advise Owner's Representative of any material which he suspects may contain either asbestos or lead. Any costs involved with necessary testing of installed materials will be the Owner's responsibility. Removal of any materials which prove to contain asbestos or lead will be the Owner's responsibility.

Reduction of Lead in Drinking Water Act (PL 111-380): Products intended to dispense water for human consumption through drinking or cooking shall comply with the following:

- A weighted average lead content of not more than 0.25% as determined by NSF/ANSI 372, and NSF/ANSI 61.

- Product shall be certified compliant with these requirements by an American National Standards Institute (ANSI) accredited certification organization. - Acceptable Product Marking: NSF®-61 and NSF®-372 (or NSF®-61-G) or other accepted certifier marks demonstrating third party certification with these requirements.

Clean and disinfect water distribution piping as follows:

- During construction pipe openings shall be plugged to minimize dirt accumulation in the lines.

- Purge new potable water distribution piping systems and parts of existing potable water systems that have been altered, extended or repaired prior to

- Use purging and disinfection procedure prescribed by authority having jurisdiction or, if a method is not prescribed by that authority, the procedure described in either AWWA C651 or AWWA C652 or as described below:

- Flush piping system with clean, potable water until dirty water does not appear - Fill system or part thereof with water/chlorine solution containing at least 50

parts per million of chlorine. Isolate (valve off) and allow to stand for 24

- Drain system or part thereof of previous solution and refill with water/chlorine solution containing at least 200 parts per million of chlorine. Isolate and allow to stand for 3 hours.

- Flush system with clean, potable water until chlorine does not remain in water coming from system following allowed standing time. - Submit water samples in sterile bottles to authority having jurisdiction. Repeat

procedure if biological examination made by the authority shows evidence of contamination. - Prepare and submit reports for purging and disinfecting activities and deliver to

B. Scope of Work:

Plumbing HVAC

C. <u>Electrical:</u>

The Electrical Contractor will provide all power wiring, starters and disconnects unless equipment is provided with starters or disconnect switches as part of the assembly. The Mechanical Contractor shall furnish all special control items, control and interlock wiring, and motors required for the operation of all equipment provided under his sections of work.

In general, all motors under 1/2 horsepower will be 120/1/60. For electrical power characteristics of other motors, see the mechanical drawings and

Motors 1/2 HP and over will be provided with across-the-line starters with overload protection unless otherwise specified. All motors under 1/2 HP shall have integral overload protection. All motors must conform to current NEMA

Where electrical requirements and/or motor horsepowers for the equipment supplied varies from that shown on the mechanical drawings or as specifically called out in the Mechanical Specifications, the Electrical Drawings and Specifications shall govern and be adhered to as to electrical power characteristics for the supplied equipment.

All open drive motors shall be of the high efficiency type with a minimum power factor of 82%.

#### Contract Closeout:

#### Testing and Adjustment:

Contractor shall operate all parts of the entire system, make any and all adjustments and repairs, and shall leave the entire work tested and ready for operation by the Owner and/or operation and final testing and balancing by the Testing and Balancing Contractor.

#### Operating Instructions:

Contractor shall provide four complete manuals in hardbacked binders, each containing all operating, servicing, lubrication, etc. information and parts lists for all equipment installed under his Contract. In addition, each manual shall contain a copy of each approved equipment submittal along with contact information for the supplier. Where diagrams are too large for the binder. arrange manila pockets with reinforced holes to hold folded drawings. Manuals to be submitted for approval at least 30 days before completion of the work.

Contractor shall arrange for technical instruction of the Owner's Maintenance Personnel for such time as is reasonably required to acquaint them with their duties. Instruction period shall be after all systems are in operation, and have been tested, balanced and adjusted.

#### Record Drawings:

Contractor shall keep an accurate record of all deviations from contract drawings. He shall neatly and correctly enter, in colored pencil, any deviations on drawings affected during the progress of the project and shall keep drawings available for inspection. At completion of job and before final acceptance, make any final corrections to drawings and deliver same to the Owner's Representative.

This Contractor shall provide for approval, prior to final acceptance by the Owner's Representative, balancing reports. These reports shall include individual air flow measurements at all outlets, total air quantity handled, motor amperage, and voltage name plate data, actual operating amperage and voltage, and a statement that the control system has been checked and verified for operation.

A qualified Balancing Contractor shall be used to perform these services. Contractor shall use a Balancing Contractor who is a fully certified member of the National Environmental Balancing Bureau or the Associated Air Balance Council or an independent firm whose principals are registered Professional

The above tests and adjustments are made to accomplish the conditions as set forth in the Drawings and Specifications

Mechanical Contractor shall include the cost of balancing in his bid.

## Hangers and Supports for Piping and Equipment:

All piping materials furnished and all procedures followed in fabrication and erection shall comply with the applicable sections of the Local Building code, applicable Pressure Piping Code, and requirement of applicable sections of "Building Services Piping", ASME B31.9, latest revision and addenda.

Contractor shall furnish and install all adjustable hangers, special pipe supports spring hangers, anchors, guides, clamps, rods, miscellaneous iron supports and appurtenances as required to securely and properly hang or support the piping systems. On insulated piping, hangers to be oversized to fit on the outside of insulation with a heavy gauge protection pipe saddle or shield. Vertical lines shall be supported by pipe clamp type supports designed for this purpose at each floor level. Hangers to be equivalent to Anvil International No. 260 clevis type, or for bare copper pipe, Anvil International Fig. CT-99C.

## Steel Pipe Maximum Spacing:

- Thru 1-1/4": 7' Max
- 1-1/2": 9' Max - 2": 10' Max
- Copper Tubing Maximum Spacing

- Thru 3/4": 5' Max - 1": 6' Max

Rigid Pvc Pipe (Up to 140°F) Maximum Spacing:

- Thru 1-1/4": 2-1/2' Max - 1-1/2" & 2": 3' Max

- 2-1/2": 3-1/2' Max

- 3": 3-1/2' Max

- 4": 3-1/2' Max

Pipe: Hanger and Rod Size Shall be as Follows:

3/4" to 2" inclusive: 3/8" rod - 2-1/2" to 3-1/2" inclusive: 1/2" rod 4" and 5": 5/8" rod

Contractor shall do all excavating and backfilling in connection with his work. No pipina shall be laid in water. Backfill within building or under paving exterior to building shall be clean fine sand, as approved by the Owner's Representative, to proper finished grade. Backfill outside of building lines shall be tamped sand to 24 inches above pipe with remaining backfill being clean earth to proper finished grade.

Sleeves shall be installed by Contractor wherever pipes pass through wood, concrete or masonry slabs, walls, floors or ceilings. Openings around exposed and concealed pipes or in sleeves for pipes passing through floor slabs, fire-rated walls, smoke partitions, or fire rated ceilings must be sealed with a noncombustible fire stop material. Seal at both sides of wall. Insulation shall not extend through sleeve. Pack sleeve opening with STI SpecSeal or equivalent. Depth of fill material shall provide same fire rating as floor or wall penetrated. Fiberglass is not acceptable except as a backing for the above materials.

Where a copper pipe connects to a steel pipe, the connection shall be made with a dielectric union or flanges with dielectric bolt sets. Dielectric couplings shall not be used. When connections are made at coils or similar situations which include such items as steel or cast iron balancing cocks, valves, etc. it is suggested that all piping in these areas to be steel with dielectric unions or flanges when connecting to copper mains, and/or a copper header coil. Where copper pipes cross iron pipes and in all similar conditions where isolation is necessary to eliminate electrolysis, the pipe shall be isolated with a PVC

Flashing for vent pipe through membrane roof shall be by Roofing Contractor. Install vent piping penetrating roofed areas to maintain integrity of roof

Sanitary piping shall be cleaned by flushing with water. Domestic water shall be flushed and chlorinated as required by AWWA C-601.

Solder used for connections in copper tubing shall be 95/5 tin antimony or 94/6 or 96/4 tin-silver solder with recommended flux. Escutcheon plate for finished areas shall be chrome-plated escutcheon plates

and for unfinished areas, black iron escutcheon plates are acceptable. F. Roof Curbs and Supports:

Provide a roof curb for each flue, air intake and exhaust vent. Curb shall be constructed to conform to the roof pitch and form a level top surface. Curb shall be of box section design, 18 gauge galvanized steel with continuous welded corner seams and factory installed 1-1/2 x 1-1/2 wood nailer. Curb shall be insulated with 1-1/2 inches, three pound density rigid fiberglass board with internal metal liner.

In general, the top of the installed curb shall be approximately 12 inches above finished roof. Coordinate roof insulation thickness with General Contractor. Curbs for outside air intakes, or equipment with outside air intakes, shall be tall enough to maintain bottom of intake a minimum of 36 inches above finished

For roof mount equipment provide equipment support constructed with 2 x 8 wood nailers, galvanized steel counter flashing, etc. Support to finish approximately 12 inches above finished roof, have a minimum width of 8 inches, and extend beyond the full length of the equipment to bear over the next closest structural support. Equipment installed on curb shall be secured to

For piping passing through roof, provide for the curb an acrylic ABS thermoplastic cap, graduated step neoprene sleeves and adjustable stainless steel bands to make a watertight installation.

Acceptable manufacturers are Pate Manufacturing Company, Custom Curb, Inc., Roof Products and Systems Corporation, Thybar, Vent Products or Shipman.

#### DIVISION 22 - PLUMBING SECTION 22 0523 - GENERAL DUTY VALVES FOR PLUMBING PIPING

Check: Caleffi, Crane, Walworth, Nibco, Stockham or Milwaukee

Lubricated Plug: Homestead or Flowserve Nordstrom Ball: Smith, Crane, Apollo, Watts, Nibco or Milwaukee

Ball - 600 psi, screwed ends, bronze body, brass/S.S. Trim - Nibco T-585-80-LF, 2" and smaller.

Check - 200 psi, screwed ends, bronze body and trim - Nibco T-413-Y-LF, 2" and smaller.

### C. <u>Natural Gas Shutoff:</u>

125 psi, screwed - semi-steel body - Nordstrom 142 or Ball Valve -screwed bronze body - Teflon trim - Nibco T-585-70-UL and T-280-70-UL - 2" and

## SECTION 22 0700 - PLUMBING INSULATION

## A. <u>General:</u>

All work shall be done by experienced insulation applicators in strict accordance with manufacturer's latest recommendations and shall be finished in a neat and workmanlike manner. Thermal conductivity shall not exceed 0.24 BTUH per square foot F\* /inch. Insulation shall be equivalent to Owens-Corning Fiberglass 25 ASJ/SSL.

All insulation shall have a composite rating including insulation adhesives, jacket, etc. as follows. The composite assembly shall have a flame spread rating not over 25 and a smoke developed rating not higher than 50.

25/50 rated PVC insulated fitting cover (pearl gray finish). At hangers and supports of insulated pipe, provide high density insulation

Pipe fittings shall be covered with preformed insulating fittings such as Zeston

(maximum deflection 1/8 inches) and 12 inches long, 22 gauge galvanized sheet metal shields covering 50% of the circumference.

## B. <u>Pipina:</u>

Hot Service:

Domestic Hot Water Piping: - 1-1/4 Inch and Smaller: 1 inch thick

Domestic hot water storage tanks (must comply with energy conservation requirements of ASHRAE Standard 90 latest edition) minimum 2-1/2 inches. All lavatories and sinks with exposed P-trap, hot and cold water angle stops

and supplies shall be insulated with "TrueBro" Handi-Lab-Guard insulation kit,

Cold Service:

Model #102W.

Domestic Cold Water Piping and Valves: - 1 1/4 Inch and Smaller: 1/2 inch

Condensate Drain Lines: 1/2 inch

## SECTION 22 1116 - DOMESTIC WATER PIPING:

A. <u>Domestic Water Inside Building Underground:</u> Copper type "K" soft annealed tubing 3 inches and smaller, no joints if possible. If necessary, joints to be brazed.

B. <u>Domestic Water Inside Building Aboveground:</u>

Copper type "L" hard tempered 1/2 inch through 3 inches with soldered or press-fit joints and wrought copper fittings.

SECTION 22 1119 - DOMESTIC WATER PIPING SPECIALTIES

## A. <u>Wall Hydrant:</u>

WH - Woodford 65 freezeproof with vacuum breaker install approximately 18 inches above grade.

Approved Manufacturers: Woodford, Zurn and Jay R. Smith

## <u>Thermometer:</u>

Adjustable angle, 9 inches long; H. O. Trerice BX9 1403.

### SECTION 22 1316 - SANITARY WASTE & VENT PIPING

A. Sanitary Waste and Vent Inside Building Underground: Asphalt-coated service weight cast iron, hubless end. Joints, "Clamp-All"

Model #125, "Husky" 4000 or "Mission" Heavy Weight. Plastic PVC, Schedule 40 ASTM D2665, DWV with solvent welded socket joints.

## B. <u>Sanitary Waste and Vent Aboveground:</u>

Asphalt-coated service weight cast iron, hubless end. Joints. "Clamp-All" Model #125, "Husky" 4000 or "Mission" Heavy Weight. Asphalt-coated service weight cast iron, hubless end, 3 inches and smaller. Joints, neoprene rubber gasket with stainless steel clamp. Plastic PVC, Schedule 40, ASTM D2665, DWV with solvent welded socket joints. (Not allowable in return air plenums.)

Condensate Drain and Relief Valve Discharge:

Copper type "L" hard tempered with soldered or press-fit joints and wrought copper fittings.

## SECTION 22 1319 - SANITARY WASTE PIPING SPECIALTIES

FD-1 - Zurn ZN-415-6B with 6 inches diameter strainer. Provide with ASSE 1072 compliant barrier-type trap seal protection device.

FD-2 - Zurn Z-415-6B-HD-Y with 6 inches diameter strainer, sediment bucket and heavy duty grate, 3 inches diameter. Provide with ASSE 1072 compliant barrier-type trap seal protection device.

## Approved Manufacturers: Zurn, Josam, Mifab, Jay R. Smith and Wade.

- <u>Cleanouts:</u> CO - Cleanout plug for cast iron hub and spigot shall be screwed brass.
- CO Cleanout plug for cast iron no hub shall be a blind plug.
- CO Cleanout plug for PVC shall be a cleanout adapter with cleanout plug.
- FCO Floor cleanout for carpeted area, Zurn ZN-1400-T-CM.

FCO - Finished floor cleanout, Zurn ZN-1400-T.

- FCO Floor cleanout for PVC pipe, Zurn ZN-1404.

COTG - Exterior cleanout, Zurn Z-1406-HD-VP.

Approved Manufacturers: Zurn, Josam, Mifab, Jay R. Smith and Wade.

## SECTION 22 1600 - NATURAL GAS PIPING

WCO - Wall cleanout, Zurn ZS-1469.

A. Natural Gas Aboveground Less Than 5 PSI:

Black steel, Schedule 40, ASTM A-53, screwed 1/2 inch through 2 inches with 150# malleable iron joints. Black steel, Schedule 40 ASTM A-53, butt welded, standard weight welded fittings - 2-1/2" and larger with 150# welded neck

## B. Natural Gas Underground Service:

Polyethylene ASTM D-2513 with copper tracing strip, approved by gas utility. Heat fusion joints approved by gas utility.

Black steel, Schedule 40, ASTM A-53. butt welded. coated and wrapped X-Tru-Coat with forged steel, Schedule 40, butt welded coated and wrapped

## SECTION 22 4000 - PLUMBING FIXTURES

Supply: Brass Craft SCR-1912-DL-C

A. <u>General:</u>

Fixtures shall be acid resisting and white.

Fixtures shall have supplies with stops with removable keys. Mounting height of fixture shall be as shown on Architectural Drawing.

B. Water Closet, WC-1: - Kohler K-3979 (ADA, floor set, tank type - handle on

Supply: Brass Craft SCR-1912-DL-C Seat: Olsonite 95-SSC

Water Closet, WC-2: - Kohler K-3979-RA (ADA, floor set, tank type - handle on right)

Seat: Olsonite 95-SSC D. <u>Lavatory</u>, <u>LV-1</u>: - Kohler K-2032 (20 inches x 18 inches wall hung) Faucet: Kohler K-15199-4NDRA-CP (single lever type) (0.5 gpm) Supplies: Brass Craft SCR-1912-AC Trap: Dearborn Brass 707-1

Strainer: Kohler K-7129-A Carrier: Zurn Z-1231 Drain and Supplies Insulation Kit: True Bro Model #102W Temperature Control Valve (ASSE 1070): Powers Hydroguard LFe480

E. <u>Electric Water Cooler, EWC-1:</u> - Oasis PG8ACSL (ADA, split level)

#### Trap: Dearborn Brass 707-1 Supply: Brass Craft SCR-1912-AC

Carrier: Zurn Z-1225-BL

Strainer: Elkay LK-35

Strainer: Elkav LK-35

<u>Janitor (Mop) Sink, MS-1:</u> Fiat Products MSB-2424 (24 inches x 24 inches) provided with strainer, vinyl bumper guards on all exposed sides, mop hanger, tailpiece, 30 inches long hose and faucet with vacuum breaker.

Check Valves: Provide on CW and HW supply lines to faucet

Faucet: Chicago 540-LD897-SWXF204CP

G. Sink, SK-1: - Elkay LR-2219 (Single compartment) Faucet: Elkay LKD-2442 (Hi Arc type) Supplies: Brass Craft OCR-1912-AC

Trap: Dearborn Brass 704A-1, 1-1/2 inches - 17 gauge

Trap: Dearborn Brass 704A-1, 1-1/2 inches - 17 gauge

H. Sink, SK-2: - Elkay LR-3122 (Single compartment) Faucet: Elkay LKD-2442 (Hi Arc type)

Supplies: Brass Craft OCR-1912-AC

## I. <u>Water Heater:</u>

Water heater shall be of capacity and characteristics as indicated on the drawings. Tank shall be insulated per ASHRAE 90A-latest edition. Relief valve shall be temperature and pressure ASME type. Unit shall be completely factory wired, piped, tested, approved for installation requiring only connections of water and power source for operation.

## DIVISION 23 - HVAC

SECTION 23 0700 - HVAC INSULATION

## A. General:

All work shall be done by experienced insulation applicators in strict accordance with manufacturer's latest recommendations and shall be finished in a neat and workmanlike manner. Thermal conductivity shall not exceed 0.24 BTUH per square foot F\* /inch. Insulation shall be equivalent to Owens-Corning Fiberglass 25 ASJ/SSL.

All insulation shall have a composite rating including insulation adhesives, jacket, etc. as follows. The composite assembly shall have a flame spread rating not over 25 and a smoke developed rating not higher than 50.

Pipe fittings shall be covered with preformed insulating fittings such as Zeston

25/50 rated PVC insulated fitting cover (pearl gray finish). At hangers and supports of insulated pipe, provide high density insulation (maximum deflection 1/8 inches) and 12 inches long, 22 gauge galvanized sheet metal shields covering 50% of the circumference.

Refrigeration piping insulation material shall be a highly flexible, closed cell EPDM rubber based elastomeric product. Insulation shall be Aerocell SSPT or AC, Armaflex UT/Solaflex or K Flex Solar HT. Thermal conductivity of the insulation shall not exceed 0.245 BTUH square foot F degree/inch at  $75^{\circ}$  mean temperature. Insulation shall have a maximum 25/50 fire/smoke rating and be applied according to manufacturer's instructions. All joints must be sealed and the piping supported with inserts and galvanized exterior shields. Sizing

#### per schedule B. <u>Piping</u>:

Cold Service: Condensate Drain Lines: 1/2 inch

### Refrigerant Piping: 1 inch

Piping insulation exposed to weather shall have insulation thickness increased by 1 inch and be wrapped with a 0.016 inch thick aluminum cover. C. <u>Ductwork:</u>

Externally insulate all outside air intake ductwork with 1-1/2 inches thick

semi-rigid fiberglass insulation with foil reinforced Kraft vapor barrier equivalent Externally insulate all supply ductwork above ceilings and round runouts to diffusers with 1-1/2 inches thick flexible duct wrap with foil reinforced Kraft

vapor barrier equivalent to OCF ED-100-FRK-25.

#### Internally insulated ducts do not require exterior insulation. SECTION 23 0923 - TEMPERATURE CONTROLS

A. Furnish and install as described a complete system of temperature controls as manufactured by Automated Logic, TAC, Johnson Controls, Trane, Siemens or HVAC equipment supplier. This system shall be installed complete in all respects by competent mechanics, regularly employed by the manufacturer of the temperature control equipment.

B. All electrical wiring to be in accordance with the National Electrical Code. The HVAC Contractor is responsible for all control and interlock wiring required for the complete installation that is not shown on the Electrical Drawings.

C. The Control Contractor is responsible for all power wiring for the complete

control system. All 120 volt circuits shall be from the nearest receptacle panel with the maximum load on any single circuit being 1400 watts. D. All exposed temperature control and interlock wiring and all power wiring regardless of voltage, shall at a minimum be run in EMT. Conduit system in Mechanical and Electrical Rooms below eight feet above floor shall be IMC. Provide Myers Hub fittings as required to connect to temperature control equipment. See Electrical Division for additional conduit requirements. Concealed low voltage wiring, such as communication wire, thermostat wire, etc. shall be plenum grade, fastened securely to building structure. See Electrical

shall not be laid directly on the ceiling or be attached to any other electrical conduits. On completion of the job, the Control Contractor shall completely adjust, ready for use, all thermostats and relays provided under his Contract. The Control Contractor shall provide a complete instruction manual covering the function and operation of all control components on the job. This manual shall be furnished to the Owner's operating personnel and a competent technician shall be provided for instruction purposes after the system is substantially complete

Specification for additional low voltage wiring requirements. Low voltage wiring

## SECTION 23 2000 - HVAC PIPING

A. Refrigerant Piping: Type ACR hard copper with streamline fittings and Alco or Sporlan specialties. Bone-dry nitrogen shall be bled into lines while soldering. Extra care shall be taken to insure cleanliness. System shall be pressure and vacuum tested. A good refrigeration solder such as Sil-Fos shall be used in making joints. Install purge, charging and service valves as per manufacturer's recommendations and standards. Refrigeration piping shall in all cases conform to the air conditioning equipment manufacturer's recommendations and standards. Pre-charge refrigerant piping may be used if systems are 5 tons or less and length of

piping is 50 feet or less. After start-up, replace liquid line filter driers, if

Copper type "L" hard tempered with soldered or press-fit joints and wrought

B. <u>Condensate Drain and Relief Valve Discharge</u>:

mastic-plus-embedded-fabric systems or tapes.

## SECTION 23 3000 - AIR DISTRIBUTION SYSTEM

A. Sheet Metal Ductwork: Shall be fabricated and installed in accordance with the latest ASHRAE and SMACNA recommendations and in the best practices of good workmanship. All ductwork shall be constructed of prime hot dip galvanized sheet steel. A joints, longitudinal and transverse seams and connections shall be securely fastened and sealed with welds, gaskets, mastics (adhesives),

While the drawings are to be adhered to as closely as possible, the right is reserved to vary the run and sizes of ducts during the progress of the work as may be found necessary or desirable to avoid local interferences.

Openings around exposed or concealed ductwork passing through walls, or partitions, when not protected by fire dampers or doors properly installed, shall be sealed with a sheet metal collar on both sides of the wall.

On all air handling units, fans, air conditioning units, etc. duct connections

shall be flexible connections using Ventglas 30 ounce, or Durolon 24 ounce material. Canvas will not be acceptable.

For final connections of ductwork operating at pressures below 2" W.G. to supply air distribution items, UL approved pre-insulated flexible duct with exterior vapor barrier may be used. The length of flexible duct shall not exceed 3-1/2 feet and shall not be used for more than a final elbow connection to the unit. Duct to be Wiremold WK Acoustical Duct, or equal as manufactured by Owens-Corning, Johnson, Johns-Manville or Genflex. Secure with adhesive and metal bands. Installation to be in accordance with the latest SMACNA flexible duct installation standards.

Paint inside of ductwork exposed behind all registers and grilles flat black.

Shall be equal to Flexmaster U.S.A. Inc., Type FLDE with balancing damper and air scoop.

## C. <u>Manual Balancing Damper:</u>

Spin-in Fittings:

In square or rectangular ductwork at pressures below 2" W.G., dampers less than 1 sq. ft. in area or less than 12 inches high shall be Titus Model AG-35B or equivalent by Grille, Register and Diffuser Manufacturer. Damper in square or rectangular ductwork larger than the above shall be Ruskin Type CD-35 or equivalent by Vent Products, Air Balance, Pottorff, Louver and Damper, Inc., Greenheck, Cesco or Air Control.

## Motor-Operated Damper:

Register, Grille and Diffuser:

Damper shall be Ruskin Type CD-36 low leakage, opposed blade operation with heavy galvanized steel frame, 16 gauge galvanized steel blades, and self-lubricating bearings. The damper shall be anti-leak construction with aluminum jamb seals and vinyl blade edge seals. Equivalent dampers by above manufacturers are acceptable.

#### containing manual volume control damper. Ceiling unit to have off-white finish, sidewall unit to have prime coat finish. Exhaust register shall be fabricated of

Krueger.

Flue shall be of PVC per furnace manufacture or engineered flue designed for class IV positive pressure, condensing appliances. Provide flue supports, spacers, storm collars, counterflashing cap, etc. to insure a weatherproof and

Units shall be as shown on the drawings with each register and diffuser

all aluminum construction. Unit shall be by Titus, Carnes, Price, Anemostat or

## G. <u>Internal Duct Insulation:</u>

fireproof installation.

Internally insulate all rectangular supply ducts operating at pressures less than 2" W.G. Insulation shall be 1 inches thick and shall meet the Erosion Test Method described in UL Publication No. 181. All linings including coatings and adhesives when tested on a composite basis shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less. External duct dimensions are given and <u>do</u> include an allowance for insulation thickness. Where round ductwork is indicated, dimensions given are internal duct diameter and shall be externally insulated. Insulation shall be a product of Owens-Corning, Johns-Manville, Armstrong, Knauf or Certain-Teed.

## Greenheck Type ESD-403 extruded aluminum with 1/2 inches birdscreen in an

through the damper.

Equivalent louvers by Airolite, Greenheck, Louvers & Dampers, Inc., Construction Specialties, American Warming and Ventilating Company, Ruskin, All-Lite or Pottorff will be acceptable. Paint duct behind louver dull black. <u>Fire Dampers:</u> Fabricate in accordance with NFPA 90A and UL 555, and as indicated. The fire damper shall be constructed of galvanized steel and in full conformance with the requirements of the Underwriter's Laboratories "Standard for Fire Dampers", UL-555 and shall carry the UL label for 1-1/2 hour rating and 160°F

fusible link unless a higher temperature link is required due to location of

by two inches (2 inches) minimum on each side. Where the damper is

damper or temperature of air transported in duct. Damper shall be enclosed

mounted outside the wall, floor or behind a grille, register or diffuser, a 10

through the opening and also contain the damper. Fire dampers shall be

installed in the wall openings utilizing break-away connections, angles and

gauge steel sleeve shall be used. The 10 gauge sleeve shall go continuously

in a 20 gauge steel sleeve that exceeds the depth of the wall or floor opening

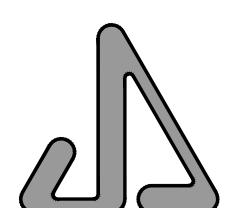
extruded aluminum frame and having a 204-RI etch and anodized aluminum

finish with one coat of lacquer. Louver shall bear the AMCA certified rating

practices required to be in compliance with the manufacturer's UL approved installation instructions. Fire damper in ductwork with velocities below 2000 FPM and pressures up to 2 inches W.G. positive pressure shall be Type B damper with blades out of airstream and have an equivalent free area at least the same as the duct and

Fire damper at a grille, register or diffuser for wall installation shall be Type A damper and be the full size of the grille, register or diffuser. Retaining angle on side of wall which will receive a grille or register may be installed with one side towards the fire damper as long as it does not interfere with the operation and safe closing of fire damper blades. This will provide for a reaister to be flush mounted against wall. All retaining angles which are exposed must have mitered corners.

shall have a maximum pressure drop of 0.1 inch with a 2000 FPM velocity



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GREENWOOD MAINTENANCE

**BUILDING ADDITION FOR:** 

MONROE HOUSING COMMISSION: GREENWOOD TOWNHOUSES 900 GREENWOOD AVENUE

MONROE, MICHIGAN 48162

NANCY WAIN, EXEC. DIRECTOR MONROE HOUSING COMMISSION 20 NORTH ROESSLER STREET MONROE, MICHIGAN 48162 TELEPHONE: (734) 242-5880

**MECHANICAL** 

**SPECIFICATIONS** 

NOT FOR CONSTRUCTION 06-23-2023 ADDENDUM NO.1 06-21-2023 BIDS DATE: ISSUED FOR:

20222

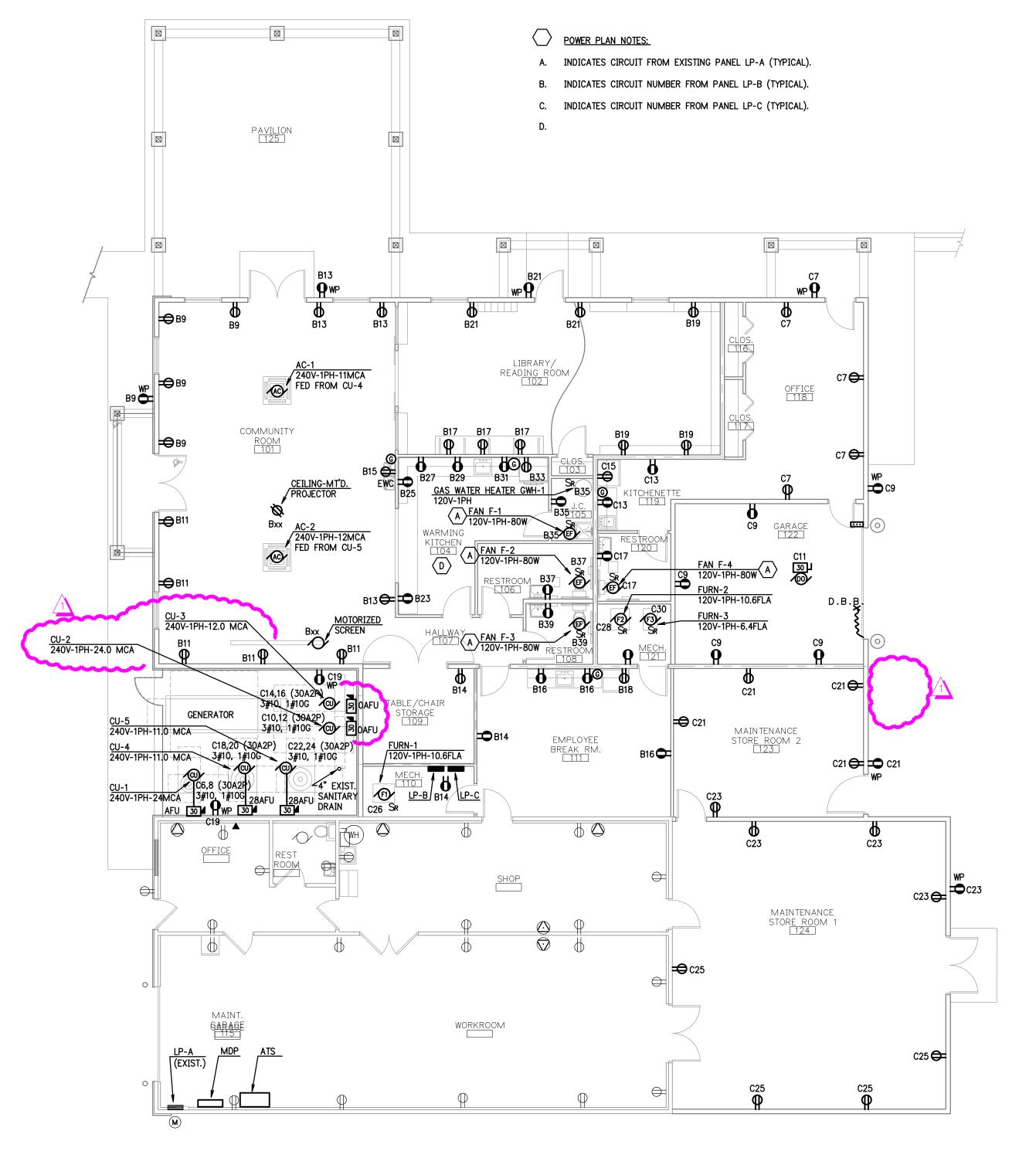
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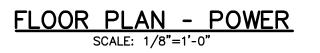
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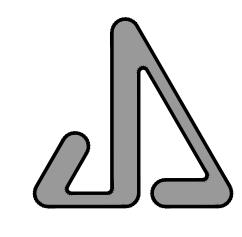






PLAN NOTES:

A. INTERLOCK FAN WITH LIGHTS.



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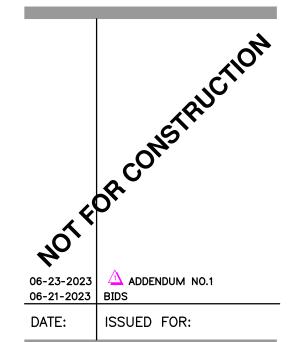
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GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING
COMMISSION:
GREENWOOD
TOWNHOUSES
900 GREENWOOD AVENUE
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FLOOR PLANS LIGHTING & POWER



20222

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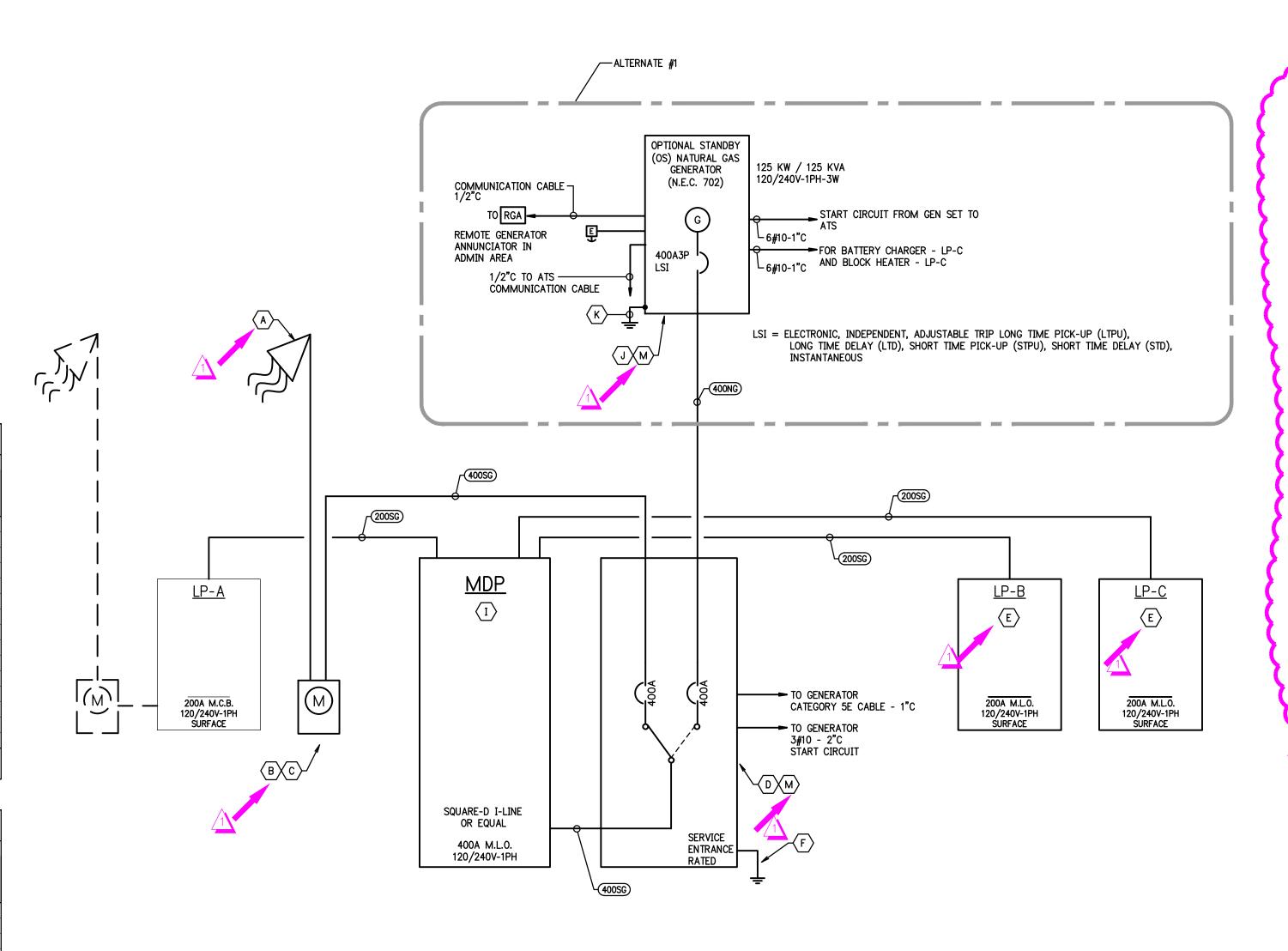
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| Electrica                             | Service       | Loga          | Summa   | ry |       |       |         |       |
|---------------------------------------|---------------|---------------|---------|----|-------|-------|---------|-------|
| Load Description                      | Co            | nnect         | ed Load | 1  | 0     | )emai | nd Load |       |
| Lighting                              |               |               | 5,880   | VA |       |       | 5,880   | VA    |
| Receptacle                            |               |               | 15,720  | VA |       |       | 12,860  | VA    |
| Mechanical                            |               |               | 6,784   | VA |       |       | 6,784   | VA    |
| Heat                                  |               |               | 4,500   | VA |       |       | 4,500   | VA    |
| Air Conditioning                      |               |               | 33,120  | VA |       |       | 33,120  | VA    |
| Equipment                             |               |               | 9,000   | VA |       |       | 9,000   | VA    |
| Kitchen Equipment                     | 3,120         | VA            |         |    | 3,120 | VA    |         |       |
| Grand Total                           |               |               | 78,124  | VA |       |       | 75,264  | VA    |
| SERVICE VOLTAGE:<br>SERVICE AMPACITY: | 120/2<br>400A | <b>40V-</b> 1 | PH-3W   |    |       |       |         |       |
| DEMAND AMPACITY AT SERVICE VOLTAGE:   | 314 A         |               |         |    |       |       | 2023-   | 06-14 |

|       |                              |       | LP         | -A        | <b>(</b> E | XIS       | T.)        |       |                                  |       |
|-------|------------------------------|-------|------------|-----------|------------|-----------|------------|-------|----------------------------------|-------|
|       | 200A                         |       | VOLTA      | AGE: 1    | 20/2       | .40V-1I   | PH-3W      |       | SURFACE                          |       |
| NOTES | USE                          | LOAD  | BKR<br>AMP | BKR<br>No | PH         | BKR<br>No | BKR<br>AMP | LOAD  | USE                              | NOTES |
|       | GARAGE - LIGHTS              | 1,200 | 20         | 1         | Α          | 2         | 20         | 1,120 | OFFICE & WORKROOM - LIGHTS       |       |
|       | GARAGE - RECEPTS.            | 900   | 20         | 3         | В          | 4         | 20         | 720   | WORKROOM EAST - RECEPTS.         |       |
|       | GARAGE - RECEPTS.            | 900   | 20         | 5         | A          | 6         | 20         | 720   | WORKROOM WEST & SOUTH - RECEPTS. |       |
|       | OFFICE & RESTROOM - RECEPTS. | 1,080 | 20         | 7         | В          | 8         | 20         | 360   | GARAGE WEST - RECEPTS.           |       |
|       | AIR COMPRESSOR               | 1,000 | 20         | 9         | А          | 10        | 20         |       | NORTH WORKROOM - HEATER & A/C    |       |
|       | *                            | 1,000 | 2P         | 11        | В          | 12        | 2P         |       | (DEMO)                           |       |
|       | BATH - HEATER                | 1,500 | 20         | 13        | А          | 14        | 20         |       | OFFICE - HEATER & A/C            |       |
|       | WORK ROOM -                  | 1,500 | 20         | 15        | В          | 16        | 2P         |       | (DEMO)                           |       |
|       | ? - HEATER & A/C             | 1,500 | 2P         | 17        | А          | 18        | 30         | 1,500 | WATER HEATER                     |       |
|       | SEWAGE PUMP                  | 1,000 | 20         | 19        | В          | 20        | 2P         | 1,500 | ,                                |       |
|       | ?                            | 1,500 | 30         | 21        | А          | 22        | 30         |       | HEATER AC                        |       |
|       | *                            | 1,500 | 2P         | 23        | В          | 24        | 2P         |       | (DEMO)                           |       |
|       |                              |       |            | 25        | А          | 26        |            |       |                                  |       |
|       |                              |       |            | 27        | В          | 28        |            |       |                                  |       |
|       |                              |       |            | 29        | A          | 30        |            |       |                                  |       |

|       |                                        |                          |            | L         | P- | В         |            |       |                                        |       |  |  |
|-------|----------------------------------------|--------------------------|------------|-----------|----|-----------|------------|-------|----------------------------------------|-------|--|--|
|       | 200A MLO                               | VOLTAGE: 120/240V-1PH-3W |            |           |    |           |            |       | SURFACE                                |       |  |  |
| NOTES | USE                                    |                          | BKR<br>AMP | BKR<br>No | PH | BKR<br>No | BKR<br>AMP | LOAD  | USE                                    |       |  |  |
| _     | A/C-1 - COMMUNITY ROOM 101             | 1,320                    | 30         | 1         | Α  | 2         | 20         |       | SPARE                                  | MOTES |  |  |
|       | •                                      | 1,320                    | 2P         | 3         | В  | 4         | 20         |       | SPARE                                  | T     |  |  |
|       | A/C-2 - COMMUNITY ROOM 101             | 1,440                    | 30         | 5         | Α  | 6         | 20         | 1,840 | LIGHTS - COMMUNITY RM. & LIBRARY       | T     |  |  |
|       | •                                      | 1,440                    | 2P         | 7         | В  | 8         | 20         | 1,120 | LIGHTS - WARMING KIT, RST.RMS,BREAK RM | T     |  |  |
|       | COMMUNITY 101 - RECEPTACLES NE WALL    | 900                      | 20         | 9         | Α  | 10        | 20         | 1,160 | LIGHTS - MAINT. STORERMS & EXTERIOR    |       |  |  |
|       | COMMUNITY 101 - RECEPTACLES NW WALL    | 900                      | 20         | 11        | В  | 12        | 20         |       | SPARE                                  |       |  |  |
|       | COMMUNITY 101 - RECEPTACLES SOUTH WALL | 900                      | 20         | 13        | Α  | 14        | 20         | 1,000 | WARMING KITCHEN 104 - RECEPT. WEST     | T     |  |  |
|       | COMMUNITY RM. 101 - EWC                | 800                      | 20         | 15        | В  | 16        | 20         | 1,000 | WARMING KITCHEN 104 - RECEPT. WEST     | T     |  |  |
|       | LIBRARY 103 - RECEPTACLES WEST WALL    | 900                      | 20         | 17        | Α  | 18        | 20         | 1,000 | WARMING KITCHEN 104 - RECEPT. NORTH    | T     |  |  |
|       | LIBRARY 103 - RECEPTACLES WEST WALL    | 900                      | 20         | 19        | В  | 20        | 20         | 1,000 | WARMING KITCHEN 104 - RECEPT. NORTH    | Ī     |  |  |
|       | LIBRARY 103 - RECEPTACLES EAST WALL    | 540                      | 20         | 21        | Α  | 22        | 20         | 1,000 | WARMING KITCHEN 104 - RECEPT. NORTH    | T     |  |  |
|       | SPARE                                  |                          | 20         | 23        | В  | 24        | 20         | 1,000 | WARMING KITCHEN 104 - REFRIGERATOR     | Ī     |  |  |
|       | SPARE                                  |                          | 20         | 25        | Α  | 26        | 20         | 460   | JAN. CLOS. 105 - RECEPT, FAN, GWHTR.   | T     |  |  |
|       | SPARE                                  |                          | 20         | 27        | В  | 28        | 20         | 520   | RESTROOMS 106,108 - RECEPT. & FAN      | Ī     |  |  |
|       | SPARE                                  |                          | 20         | 29        | Α  | 30        | 20         |       | SPARE                                  | T     |  |  |
|       | SPARE                                  |                          | 20         | 31        | В  | 32        | 20         |       | SPARE                                  | Γ     |  |  |
|       | SPARE                                  |                          | 20         | 33        | Α  | 34        | 20         |       | SPARE                                  | T     |  |  |
|       | SPARE                                  |                          | 20         | 35        | В  | 36        | 20         |       | SPARE                                  | Γ     |  |  |
|       | SPARE                                  |                          | 20         | 37        | Α  | 38        | 20         |       | SPARE                                  | T     |  |  |
|       | SPARE                                  |                          | 20         | 39        | В  | 40        | 20         |       | SPARE                                  | Γ     |  |  |
|       | SPARE                                  |                          | 20         | 41        | Α  | 42        | 20         |       | SPARE                                  | Γ     |  |  |

|       |                                    |       |                          | L         | P- | C         |            |       |         |  |  |
|-------|------------------------------------|-------|--------------------------|-----------|----|-----------|------------|-------|---------|--|--|
|       | 200A MLO                           |       | VOLTAGE: 120/240V-1PH-3W |           |    |           |            |       | SURFACE |  |  |
| NOTES | USE                                | LOAD  | BKR<br>AMP               | BKR<br>No | PH | BKR<br>No | BKR<br>AMP | LOAD  | USE     |  |  |
|       | SPARE                              |       | 20                       | 1         | Α  | 2         | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 3         | В  | 4         | 20         |       | SPARE   |  |  |
|       | PUBLIC SERV - LIGHTS               | 560   | 20                       | 5         | Α  | 6         | 30         | 2,220 | CU-1    |  |  |
|       | OFFICE 118 - RECEPTACLES           | 900   | 20                       | 7         | В  | 8         | 2P         | 2,220 |         |  |  |
|       | GARAGE 122 - RECEPTACLES           | 720   | 20                       | 9         | Α  | 10        | 30         | 2,220 | CU-2    |  |  |
|       | GARAGE 122 - DOOR OPERATOR         | 1,200 | 20                       | 11        | В  | 12        | 2P         | 2,220 |         |  |  |
|       | KITCHENETTE 119 - RECEPTACLES      | 360   | 20                       | 13        | Α  | 14        | 20         | 1,080 | CU-3    |  |  |
|       | KITCHENETTE 119 - REFRIGERATOR     | 1,200 | 20                       | 15        | В  | 16        | 2P         | 1,080 |         |  |  |
|       | RESTROOM 120 - RECEPT. & FAN       | 260   | 20                       | 17        | Α  | 18        | 20         | 1,320 | CU-4    |  |  |
|       | SPARE                              |       | 20                       | 19        | В  | 20        | 2P         | 1,320 |         |  |  |
|       | MAINTENANCE STOREROOM 2 - RECEPTS. | 900   | 20                       | 21        | Α  | 22        | 20         | 1,440 | CU-5    |  |  |
|       | MAINTENANCE STOREROOM 3 - RECEPTS. | 900   | 20                       | 23        | В  | 24        | 2P         | 1,440 |         |  |  |
|       | MAINTENANCE STOREROOM 3 - RECEPTS. | 720   | 20                       | 25        | Α  | 26        | 30         | 1,272 | FURN-1  |  |  |
|       | SPARE                              |       | 20                       | 27        | В  | 28        | 2P         | 1,272 | FURN-2  |  |  |
|       | SPARE                              |       | 20                       | 29        | Α  | 30        | 20         | 768   | FURN-3  |  |  |
|       | SPARE                              |       | 20                       | 31        | В  | 32        | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 33        | Α  | 34        | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 35        | В  | 36        | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 37        | Α  | 38        | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 39        | В  | 40        | 20         |       | SPARE   |  |  |
|       | SPARE                              |       | 20                       | 41        | Α  | 42        | 20         |       | SPARE   |  |  |



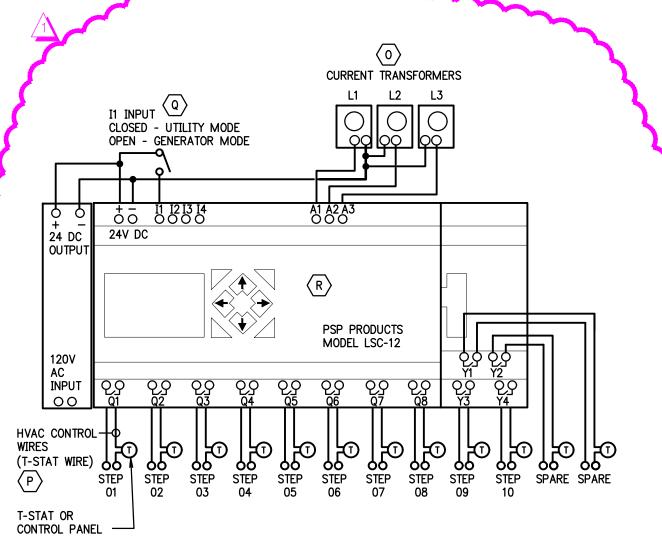
| MARIZ   | 1 PHASE - 2 WIRE WITH GROUND | NABE    | 1 PHASE OR 3 PHASE - 3 WIRE WITH GROUND |                                      |  |  |  |  |
|---------|------------------------------|---------|-----------------------------------------|--------------------------------------|--|--|--|--|
| MARK    | COPPER                       | MARK    | COPPER                                  | COMPACT ALUMINUM                     |  |  |  |  |
| 20SG    | 2#12, 1#12G - 1/2"C          | 20G     | 3#12, 1#12G - 1/2"C                     |                                      |  |  |  |  |
| 30SG    | 2#10, 1#10G - 1/2"C          | 30G     | 3#10, 1#10G - 1/2"C                     |                                      |  |  |  |  |
| (50SG)  | 2#8, 1#10G - 1"C             | 500     | 3#8, 1#10G - 1"C                        |                                      |  |  |  |  |
| 60SG    | 2#6, 1#10G - 1"C             | 606     | 3#6, 1#10G - 1"C                        |                                      |  |  |  |  |
| 80SG    | 2#4, 1#8G - 1"C              | 806     | 3#4, 1#8G - 1"C                         |                                      |  |  |  |  |
| (100SG) | 2#2, 1#8G - 1-1/4"C          | 100G    | 3#2, 1#8G - 1-1/4 <b>"</b> C            | 3#1, 1#6G - 1-1/4"C                  |  |  |  |  |
|         |                              | (125G)  | 3#1, 1#6G - 1-1/4"C                     | 3#2/0, 1#4G - 1-1/2°C                |  |  |  |  |
|         |                              | (150G)  | 3#1/0, 1#6G - 1-1/2"C                   | 3#3/0, 1#4G - 2"C                    |  |  |  |  |
|         |                              | (175G)  | 3#2/0, 1#6G - 1-1/2°C                   | 3#4/0, 1#4G - 2"C                    |  |  |  |  |
|         |                              | 200G    | 3#3/0, 1#6G - 2"C                       | 3#250kcmil, 1#4G -2-1/2"             |  |  |  |  |
|         |                              | 225G    | 3#4/0, 1#4G - 2"C                       | 3#300kcmil, 1#2G - 2-1/2"C           |  |  |  |  |
|         |                              | 250G    | 3#250kcmil, 1#4G - 2-1/2"C              | 3#350kcmil, 1#2G - 2-1/2"C           |  |  |  |  |
|         |                              | 300G    | 3#350kcmil, 1#4G - 2-1/2"C              | 3#500kcmil, 1#2G - 3"C               |  |  |  |  |
|         |                              | 400G    | 3#500kcmil, 1#2G - 3"C                  | 2(3#250kcmil, 1#1G - 2-1/2°C)        |  |  |  |  |
|         |                              | F400G   | 3#600kcmil, 1#2G - 3-1/2"C              | 2(3#250kcmil, 1#1G - 2-1/2°C)        |  |  |  |  |
|         |                              | (500G)  | 2(3#250kcmil, 1#2G - 2-1/2"C)           | 2(3#350kcmil, 1#1/0G - 2-1/2"C)      |  |  |  |  |
|         |                              | 600G    | 2(3#350kcmil, 1#1G - 2-1/2°C)           | 2(3#500kcmil, 1#2/0G - 3"C)          |  |  |  |  |
|         |                              | 800G    | 2(3#500kcmil, 1#1/0G - 3"C)             | 3(3#400kcmil, 1#3/0G - 3"C)          |  |  |  |  |
|         |                              | F800G   | 2(3#600kcmil, 1#1/0G - 3-1/2°C)         | 3(3#400kcmil, 1#3/0G - 3"C)          |  |  |  |  |
|         |                              | (1000G) | 3(3#400kcmil, 1#2/0G - 3"C)             | 3(3#600kcmil, 1#4/0G - 3"C)          |  |  |  |  |
|         |                              | (1200G) | 4(3#350kcmil, 1#3/0G - 2-1/2°C)         | 4(3#500kcmil, 1#250kcmilG - 3"C)     |  |  |  |  |
|         |                              | (1600G) | 4(3#600kcmil, 1#4/0G - 3-1/2°C)         | 6(3#400kcmil, 1#350kcmilG - 3"C)     |  |  |  |  |
|         |                              | (2000G) | 5(3#600kcmil, 1#250kcmilG - 3-1/2°C)    | 6(3#600kcmil, 1#400kcmilG - 3-1/2°C) |  |  |  |  |

## ONE LINE DIAGRAM NOTES:

- A. COORDINATE ALL REQUIREMENTS WITH ELECTRIC UTILITY (D.T.E.) PRIOR TO INSTALLATION.
- B. COORDINATE UTILITY UTILITY SERVICE CONNECTION POINT WITH D.T.E. PRIOR TO ROUGH-IN/INSTALLATION.
- C. COORDINATE METER BASE ARRANGEMENT WITH D.T.E. PRIOR TO ROUGH-IN/INSTALLATION.
- D. GROUND PER D.T.E.. GROUNDING REQUIREMENTS.
- E. SEE PANEL SCHEDULES ON THIS SHEET.
- F. SEE MAIN SERVICE GROUNDING DETAILS ON SHEET E-5.
- G. RESERVED H. RESERVED
- I. PROVIDE LABEL TO PANEL INDICATING "MAXIMUM AVAILABLE FAULT CURRENT OF \_\_\_\_ CALCULATION PERFORMED ON 2-16-2023" PER NEC 2017 ARTICLE 110.24
- J. SEE GENERATOR PAD DETAIL ON SHEET E-2.
- K. SEE GENERATOR GROUNDING DETAIL ON SHEET E-2.
- L. RESERVED
- M. TRANSFER SWITCH U.L. WITHSTAND AND CLOSING RATING SERIES RATED WITH UPSTREAM CURRENT LIMITING FUSE PROTECTION ON NORMAL POWER FEED.
- N. RESERVED
- O. PROVIDE C.T.'s AND INSTALL IN THE MDP. INTEGRATE THE C.T.'S TO THE STEP-LOAD CONTROLLER.
- P. PROVIDE CONTROL WIRING TO THE HVAC EQUIPMENT AS INDICATED BELOW. THIS EQUIPMENT WILL BE STEP-LOADED ONTO THE GENERATOR AFTER THE GENERATOR IS RUNNING. PROVIDE STEP-LOAD RELAYS AS REQUIRED TO INTERFACE THE EQUIPMENT:

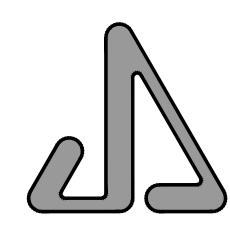
| STEP | 01: | SPARE       | STEP | 07: | AC |
|------|-----|-------------|------|-----|----|
| STEP | 02: | CU-1/FURN-1 | STEP | 08: | AC |
|      |     | CU-2/FURN-2 | STEP | 09: | SP |
| STEP | 04: | CU-3/FURN-3 | STEP | 10: | SP |
| STEP | 05: | CU-4/FURN-4 | STEP | 11: | SP |
| STEP | 06: | CU-5/FURN-5 | STEP | 12: | SP |
|      |     |             |      |     |    |

- Q. INTEGRATE THE STEP LOAD CONTROLLER WITH THE TRANSFER SWITCH FOR INDICATION OF POWER FROM THE
- R. PROGRAM AND COMMISSION THE STEP LOAD CONTROLLER FOR FULL FUNCTION AND OPERATION.



T-STAT OR CONTROL PANEL (TYPICAL)

STEP-LOAD CONTROLLER 'SLC' SCALE: NONE



JAMES S. JACOBS ARCHITECTS, PLLC

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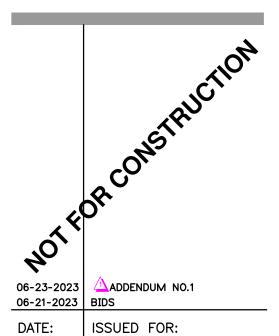
Mechanical Electrical Plumbing Technology Safety 5604 N. Main St. Suite 200 Sylvania, Ohio 43560 PH. (419) 824-2400 FAX (419) 824-2409 www.jdrm.com

GREENWOOD MAINTENANCE BUILDING ADDITION FOR:

MONROE HOUSING COMMISSION: GREENWOOD **TOWNHOUSES** 900 GREENWOOD AVENUE MONROE, MICHIGAN 48162

PROPERTY CONTACT:
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PANEL RISER & PANEL SCHEDULES



20222

DRAWN

REVIEW'D DTK

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