

## WARREN WOODS PUBLIC SCHOOLS HAWTHORN EARLY CHILDHOOD CENTER - RENOVATIONS

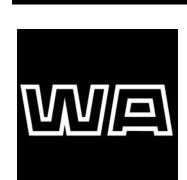
12900 FRAZHO ROAD WARREN, MI 48089 586.439.4417

ISSUED FOR: BIDS

DATE: FEBRUARY 23, 2015

PROJECT NO.: 141596

## ARCHITECT:



WAKELY ASSOCIATES, INC./ARCHITECTS 30500 VAN DYKE AVE., SUITE M-7, WARREN, MI 48093, 586.573.4100

## STRUCTURAL ENGINEER:



DESAI NASR

6765 DALY RD., WEST BFLD TWP, MI 48322, 248.932.2010

## MECHANICAL ENGINEER:



MLS ENGINEERING, INC.

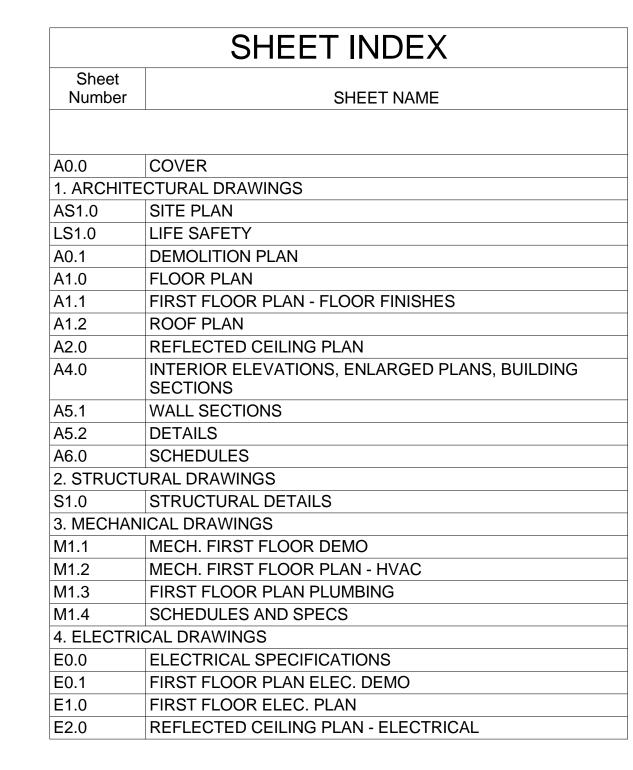
43494 WOODWARD AVE. STE. 207, BFLD HILLS, MI 48302, 248.742.9348

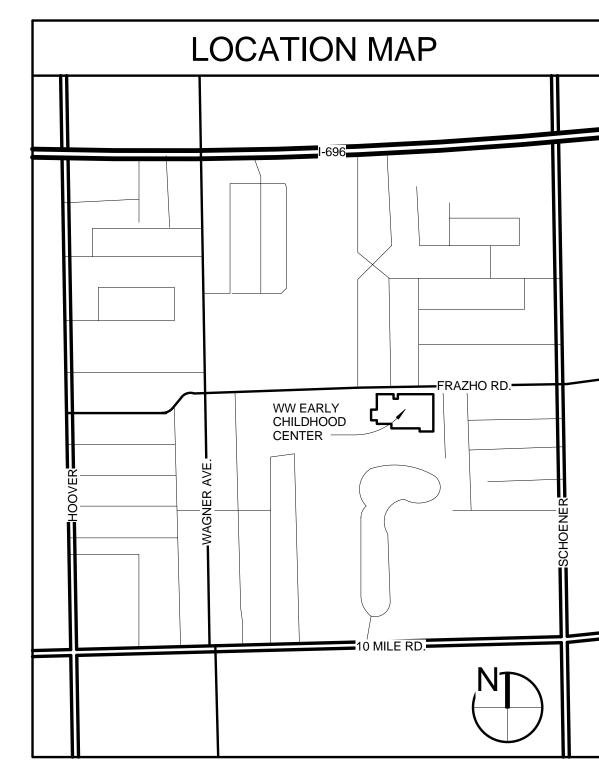
## ELECTRICAL ENGINEER:

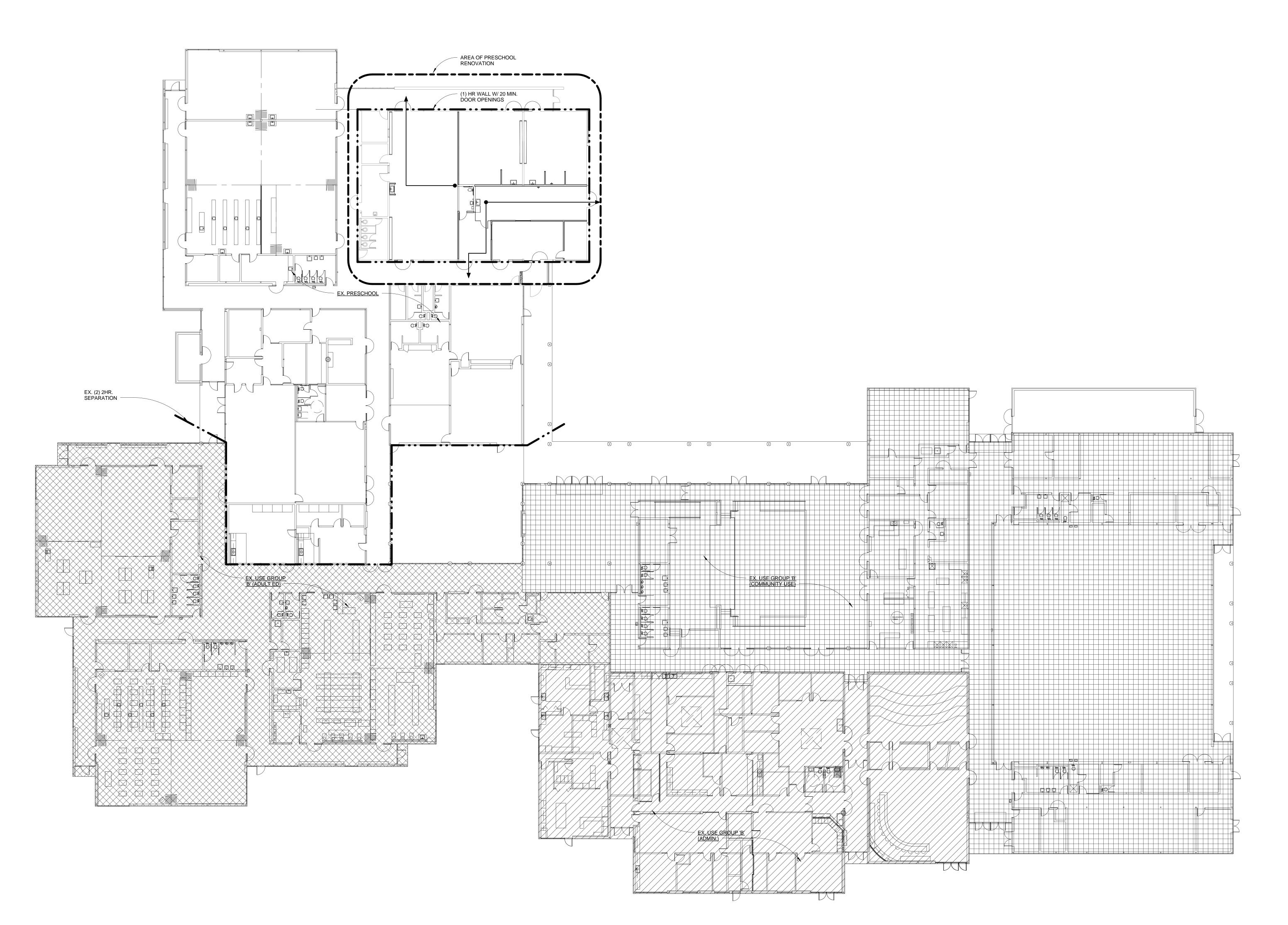


CURRENT DESIGN, LLC.

1290 BROOK LANE, ROCHESTER HILLS, MI 48306, 248.651.3681









## BUILDING CODE SUMMARY:

PROJECT: WARREN WOODS EARLY CHILDHOOD CENTER RENOVATIONS ADDRESS: 12900 FRAZHO ROAD, WARREN, MI 48089 PROPOSED USE: BUSINESS USE GROUP / PRESCHOOL REFERENCE CODES: BUILDING: 2012 MBC, STATE OF MICHIGAN LICENSING RULES FOR CHILD CARE CENTERS NFPA 101, 1997 EDITION MECHANICAL: MICHIGAN MECHANICAL CODE 2012 EDITION MICHIGAN PLUMBING CODE 2012 EDITION ELECTRICAL: 2011 NATIONAL ELECTRIC CODE BUILDING DATA: USE GROUP B BUSINESS CONSTRUCTION TYPE: MBC TYPE 2B (NFPA 101 11-000) SPRINKLER SYSTEM: NON-SPRINKLED BUILDING HEIGHT: PERMITTED: 2-STORY, 55 FEET ACTUAL: 1-STORY, 15 FEET MEZZANINE: NO HIGH RISE: NO GROSS BUILDING AREA: (EXISTING) GRADE LEVEL: 90,622 SQ. FT. EX. PRESCHOOL WING: 25,924 SQ. FT. EX. BUSINESS USE GROUP WINGS: 64,698 SQ. FT. TOTAL GROSS AREA: 90,622 SQ. FT. GROSS BUILDING AREA: (RENOVATION) TOTAL EXISTING RENOVATED PRESCHOOL GROSS AREA: 6,180 SQ. FT. AREA MODIFICATION APPLIED: NO PERIMETER MODIFICATIONS APPLIED: YES 2009 MBCALLOWABLE TABULAR AREA (TABLE 503 If - % INCREASE FOR OPEN PERIMETER (506.2) Is - % INCREASE FOR AUTOMATIC SPRINKLERS (506.3)  $Aa = \{At + [At \times If] + [At \times Is]\}$ Aa = 23,000 S.F. + [23,000 S.F. x 0] + [17,500 S.F. x 0]} Aa = 40,250 SQ. FT. = ALLOWABLE BUILDING AREA NFPA 101 1997 EDITION: TOTAL BUILDING AREA = 90,622 SQ. FT. > 40,250 SQ. FT. THEREFORE, MAINTAIN EXISTING PRESCHOOL FIRE SEPARATION AREA OF 25,924 SQ. FT. BUILDING PREVIOUSLY SEPARATED INTO 25,924 SQ. FT. FIRE

SEPARATION ZONE BETWEEN PRESCHOOL AND REST OF FACILITY FIRE RESISTANCE RATINGS PROVIDED HOURLY RATING (1) PARTY/FIREWALLS: EXTERIOR BEARING WALLS NORTH WEST SOUTH EXTERIOR NON-BEARING WALLS NORTH WEST SOUTH INTERIOR WALLS BEARING NON-BEARING FIRE SEPARATION ASSEMBLIES EXIT ENCLOSURES **CEILING-FLOORS ASSEMBLY** COLUMNS CEILING-ROOF ASSEMBLY VERTICAL SHAFTS MIXED OCCUPANCY SEPARATION 1 (PER MICH. LICENSING RULES FOR CHILDCARE CENTERS) TENANT SEPARATION EXIT ACCESS CORRIDORS

## LIFE SAFETY SYSTEMS:

EMERGENCY LIGHTING AND EXIT SIGNS(X) REQUIRED () PROVIDED FIRE ALARMS (X) REQUIRED () PROVIDED SMOKE DETECTIONS SYSTEMS (X) REQUIRED () PROVIDED (X) REQUIRED () PROVIDED PANIC HARDWARE FIRE SUPPRESSION SYSTEM () REQUIRED () PROVIDED STANDPIPE SYSTEM () REQUIRED () PROVIDED

## EXIT REQUIREMENTS:

DEAD END LIMIT-MAXIMUM CONDITION - ALLOWED 20 FT. ACTUAL = 0
TRAVEL DISTANCE TO EXIT-MAXIMUM CONDITION ALLOWED 50 FT. FOR AGES 0-23 MONTHS
100 FT. FOR 24 MONTHS +
ACTUAL: 44'-0" < 50'-0" FOR AGES 0-23 MONTHS
53'-0" < 100'-0" FOR 24 MONTHS + NOTE: INFANT/CRIB AREA HAS DIRECT EXITING

## DESIGN LOADS: (SEE STRUCTURAL DRAWINGS) ROOF LIVE LOAD

20 PSF 75 MPH, 21 PSF 100 PSF 1ST FLOOR CORRIDORS, 1000# CONCENTRATED 40 PSF CLASSROOMS WITH 20 PSF PARTITION ALLOWANCE, 1000# CONCENTRATED

Av = 0.055Aa = 0.055LATERAL DESIGN: SOIL BEARING CAPACITIES:



ARCHITECTS

30500 VAN DYKE AVENUE SUITE M-7 WARREN, MICHIGAN 48093 PH: 586.573.4100 FX: 586.573.0822 www.wakelyaia.com

LIFE SAFETY

**DESIGN DEVELOPMENT** CONSTRUCTION

FINAL RECORD

CHECKED BY: **REVISIONS:** 

SHEET NO.:

LS1.0

1 SITE PLAN A4.0 1" = 20'-0"



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SITE PLAN

PRELIMINARY
DESIGN DEVELOPMENT
CONSTRUCTION
FINAL RECORD

CONSTRUCTION

FINAL RECORD

DRAWN BY:

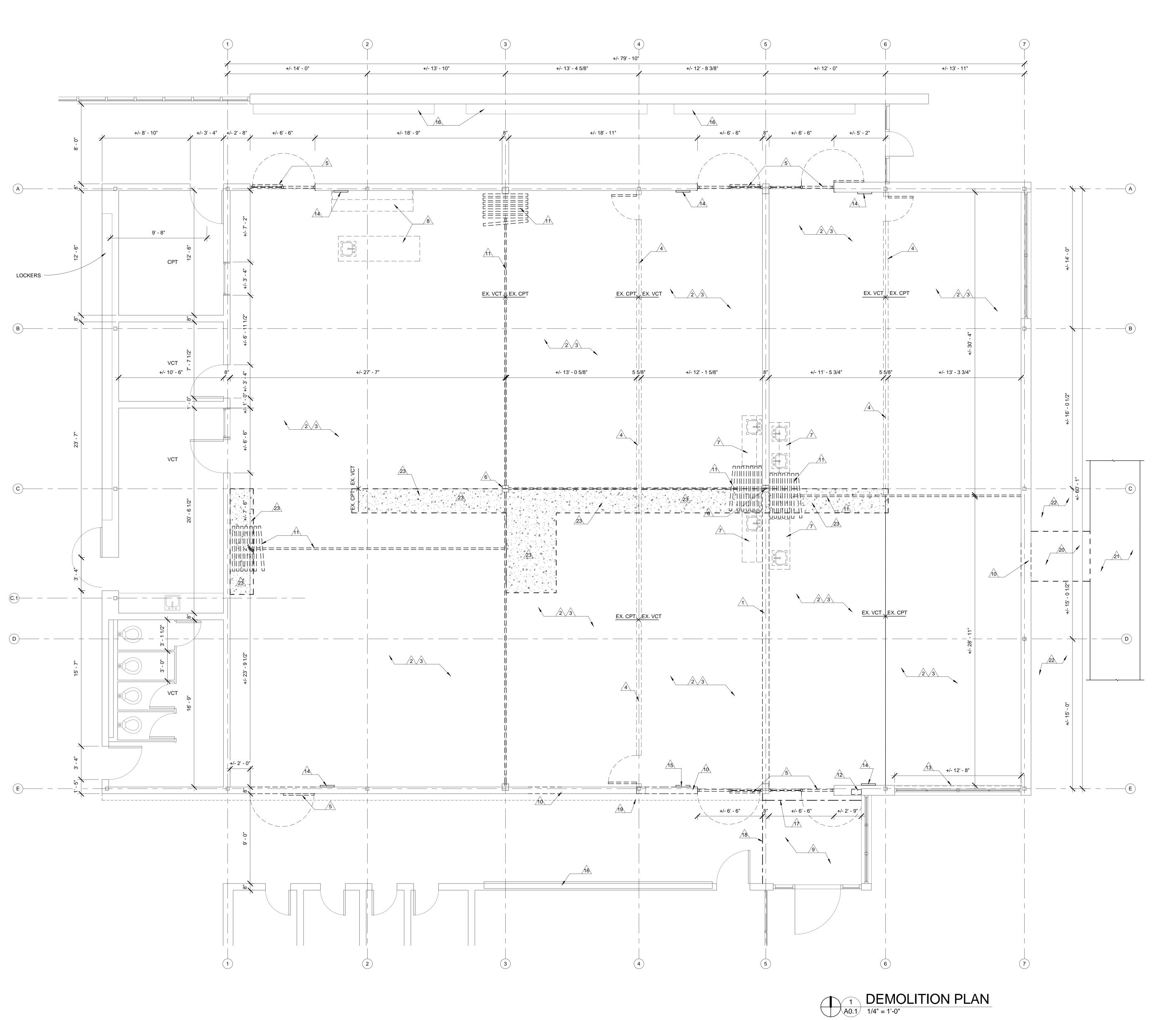
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RA

CHECKED BY: F

DATE: 02.23
SHEET NO.:

AS1.0



DEMOLITION PLAN NOTES

REMOVE EXISTING 8" CMU WALL - PATCH CONC. FLOOR

REMOVE EXISTING CEILING COMPLETE (LAY-IN OR GYP. BOARD) INCLUDING LIGHTS, DIFFUSERS, GRILLES, ETC.

REMOVE EXISTING FLOORING (CARPET, CERAMIC TILE OR VINYL TILE FLOORING AND RESILIENT BASE COMPLETE IN ENTIRE ROOM

REMOVE EXISTING PARTIAL HT. WALL, GATE AND ALL ASSOC. MATERIALS

REMOVE EXISTING DOOR AND FRAME ASSEMBLY COMPLETE EXISTING STEEL COLUMN TO REMAIN

REMOVE EXISTING SINK, CASEWORK, WALL CHASE AND CAP

REMOVE EXISTING CASEWORK AND SINK COMPLETE AND CAP 9 REMOVE EXISTING CEILING AND GRID COMPLETE AT NEW VESTIBULE. ALTER EX. GRID TO REMAIN AS REQUIRED.

REMOVE EXISTING MASONRY WALL (SHORE AS REQUIRED) FOR NEW DOOR OPENING

REMOVE EXISTING OPERABLE PARTITION, FLOOR TRACK AND CEILING CLOSURE/DROP COMPLETE COMPLETE (TYP.)

REMOVE EXISTING FIRE EXTINGUISHER CABINET AND ALL ASSOC.

REMOVE EXISTING SHADE WALL CLOCK TO REMAIN

WALL CLOCK TO BE REMOVED

EX. LOCKERS TO REMAIN

REMOVE EXISTING STRIP LIGHTING AND SCREEN IN CORRIDOR AS REQUIRED FOR NEW CONSTRUCTION. ALTER EXISTING AS

/18 EX. CEILING GRID TO REMAIN

EX. STRIP LIGHTING TO REMAIN

REMOVE EX. LANDSCAPING, TOPSOIL AND EARTH AS REQUIRED TO INSTALL NEW CONCRETE SUPPORTED SLAB

EX. CONCRETE WALK EX. LANDSCAPE BD

SAW CUT FLOOR FOR NEW SANITARY LINE (REFER TO MECH. DRAWINGS)

DEMOLITION PLAN

WAKELY ASSOCIATES, INC. ARCHITECTS

30500 VAN DYKE AVENUE

WARREN, MICHIGAN 48093

SUITE M-7

PH: 586.573.4100

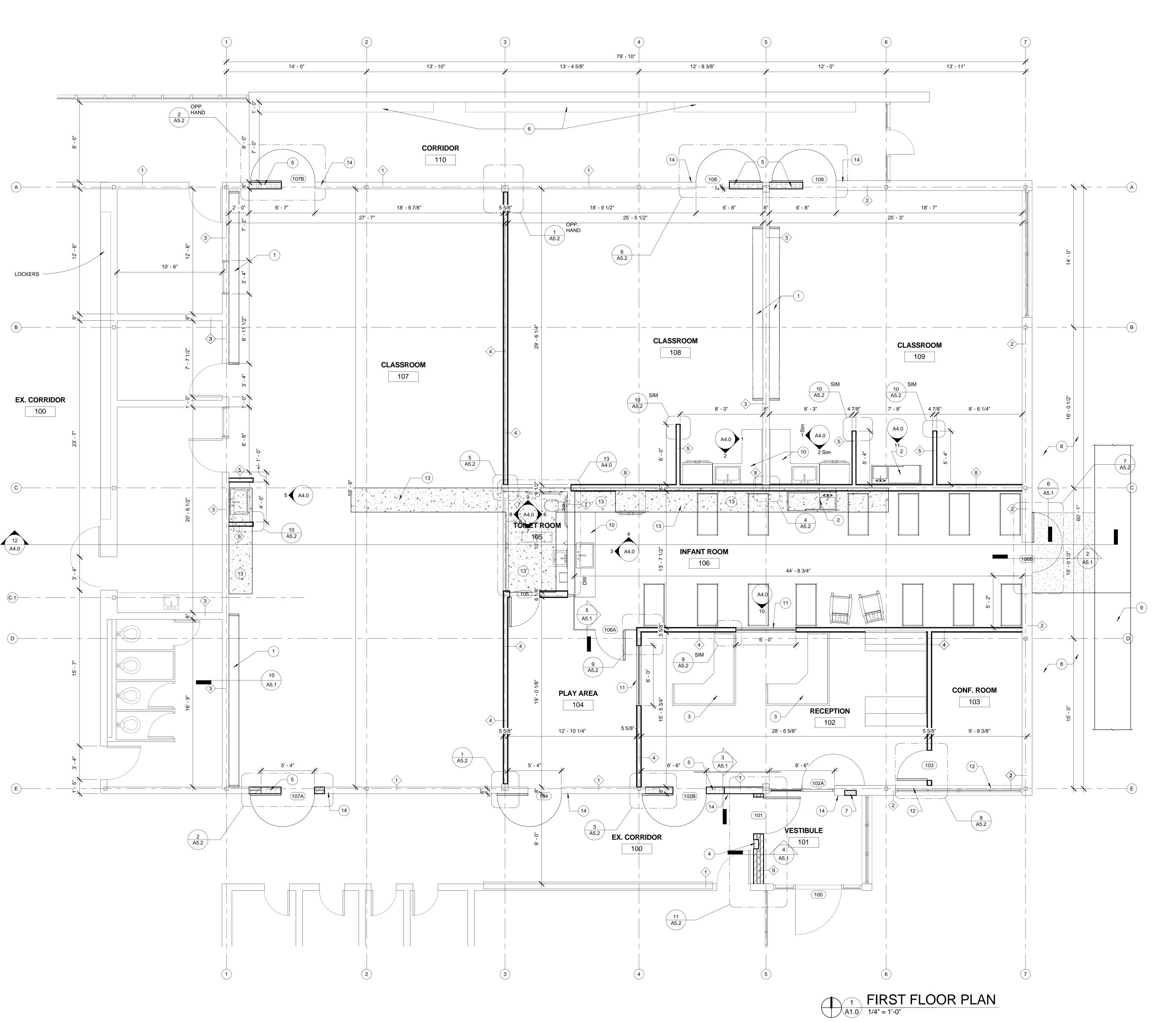
FX: 586.573.0822 www.wakelyaia.com

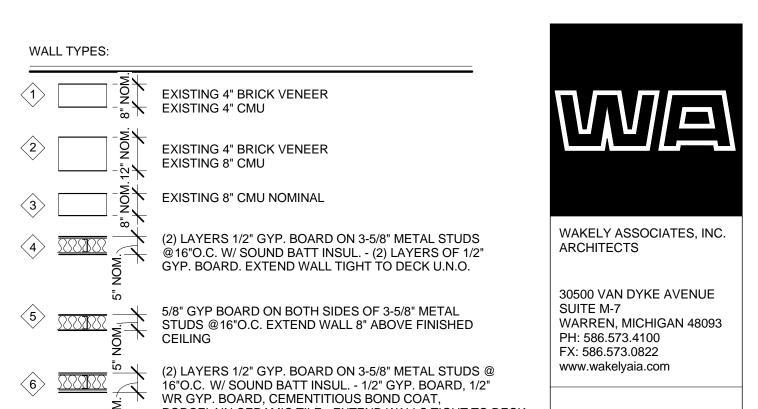
FINAL RECORD CHECKED BY: REVISIONS:

SHEET NO.:

A0.1

**KEY PLAN** 





(2) LAYERS 1/2" GYP. BOARD ON 6" METAL STUDS @ 16"O.C.W/ SOUND BATT INSUL. - (2) LAYERS 1/2" GYP. BOARD, WATER RESISTANT CEMENTITIOUS BOND COAT, PORCELAIN CERAMIC TILE - EXTEND WALLS TO DECK

PORCELAIN CERAMIC TILE - EXTEND WALLS TIGHT TO DECK

(2) LAYERS 1/2" GYP. BOARD ON 6" METAL STUDS @ 16"O.C. W/ SOUND BATT INSUL. - (2) LAYERS 1/2" GYP. BOARD - EXTEND WALLS TIGHT TO DECK

NOTE: PROVIDE NON-COM SOLID WOOD BLOCKING IN GYP. BOARD WALLS TO FACILITATE ANCHORING OF TOILET ACCESSORIES AND CASEWORK

## PLAN NOTES: NEW CUBBIES PROVIDED BY OWNER NEW CHANGING STATION NEW CUBICLE/RECEPTION DESK NEW FEC LOCATION NEW FIRE-RATED GLASS BLOCK

WALL TYPES:

EX. LOCKERS

INFILL FEC LOCATION WITH NEW BRICK EX. LANDSCAPING BED

EX. CONCRETE WALK

NEW KITCHENETTE CASEWORK BY STEVENS, REFRIGERATOR PROVIDED BY OWNER (SEE INTERIOR ELEVATIONS A4.0)

NEW BORROWED LIGHTS (6'-0"x4'-0") REMOVE EXISTING WINDOW BLINDS AND ASSOCIATED HARDWARE PREPARE EXISTING WALL SURFACE FOR INSTALLATION OF NEW SHADES. FIELD VERIFY ALL DIMENSIONS. SEE SPECS FOR SHADE INFORMATION.

4" CONCRETE W1.4 x W1.4 WWF ON 15 MIL VAPOR BARRIER ON 4" COMP. GRANULAR MATERIAL. SLOPE NEW CONC. TO NEW FLOOR DRAIN

REMOVE EXISTING AND INSTALL NEW DOOR SIGNAGE (SEE SPECS)

NOTE: REFER TO A1.1 FOR FINISH FLOORING PATTERNS REFER TO M1.3 FOR SANITARY LINE LOCATIONS

**KEY PLAN** 

JOB NO.: 141596

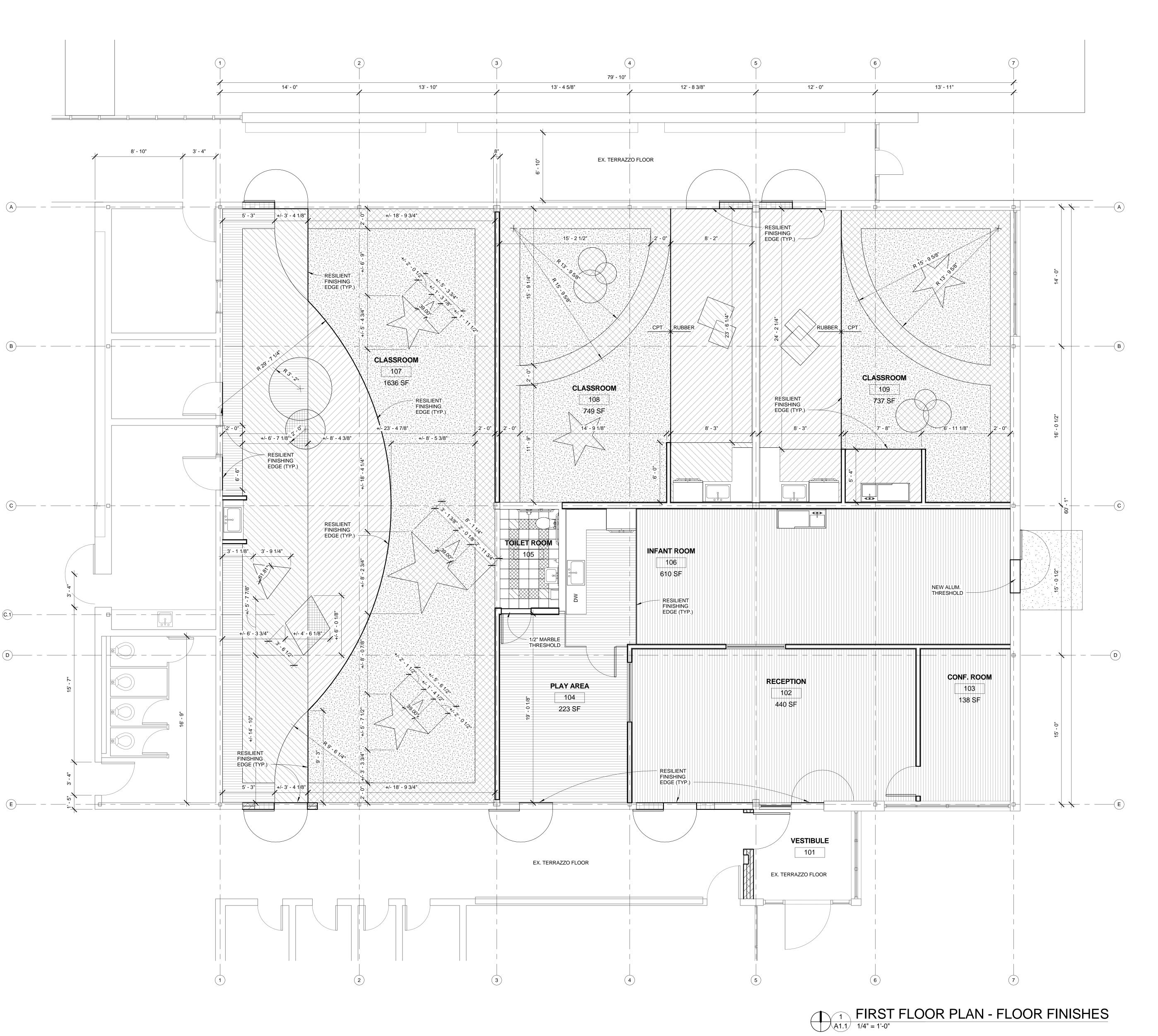
FLOOR PLAN

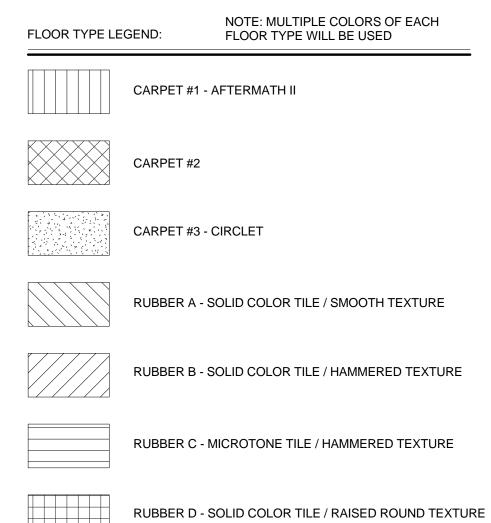
DESIGN DEVELOPMENT

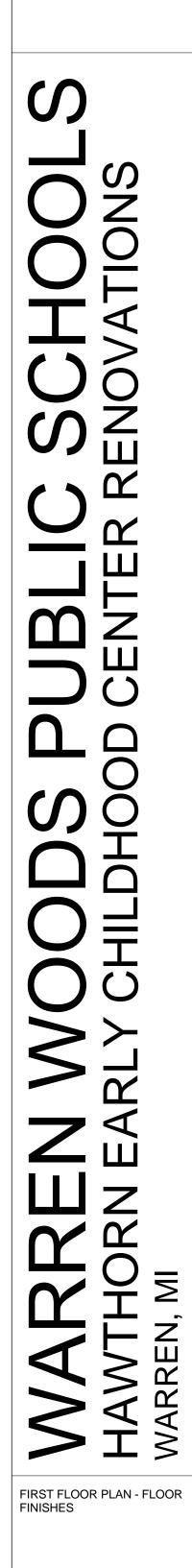
FINAL RECORD

REVISIONS:

SHEET NO.:







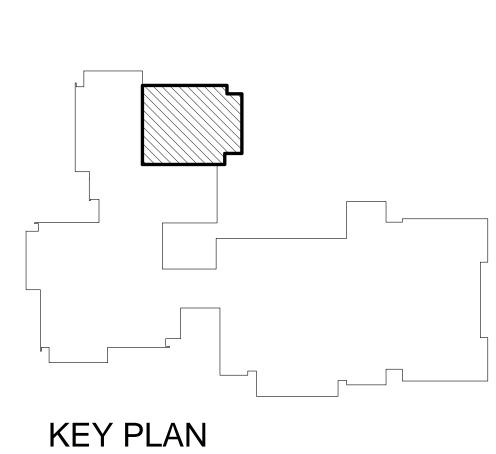
DESIGN DEVELOPMENT

CONSTRUCTION

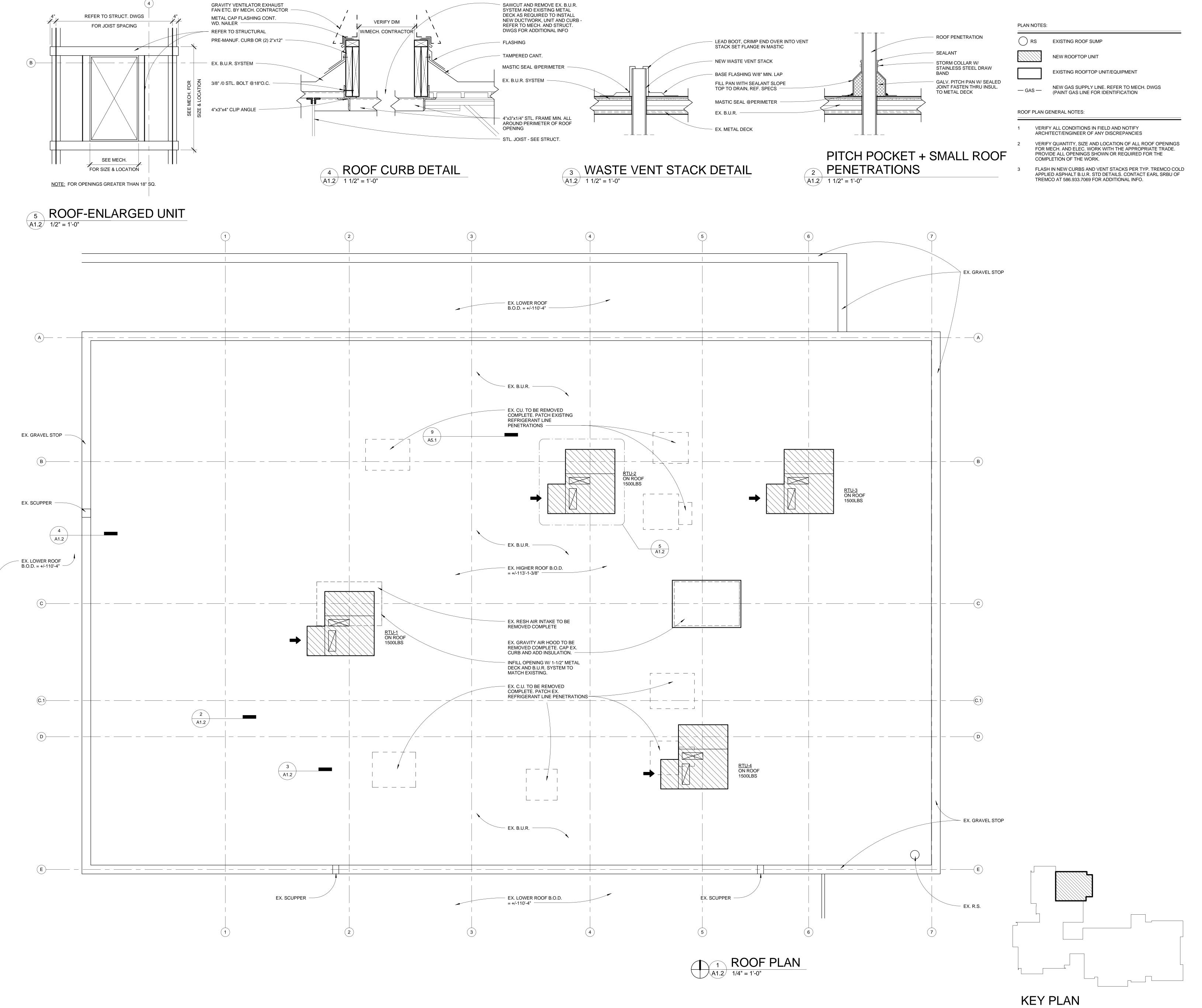
FINAL RECORD

WAKELY ASSOCIATES, INC. ARCHITECTS

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**ROOF PLAN** 

PRELIMINARY

DESIGN DEVELOPMENT

CONSTRUCTION

FINAL RECORD 

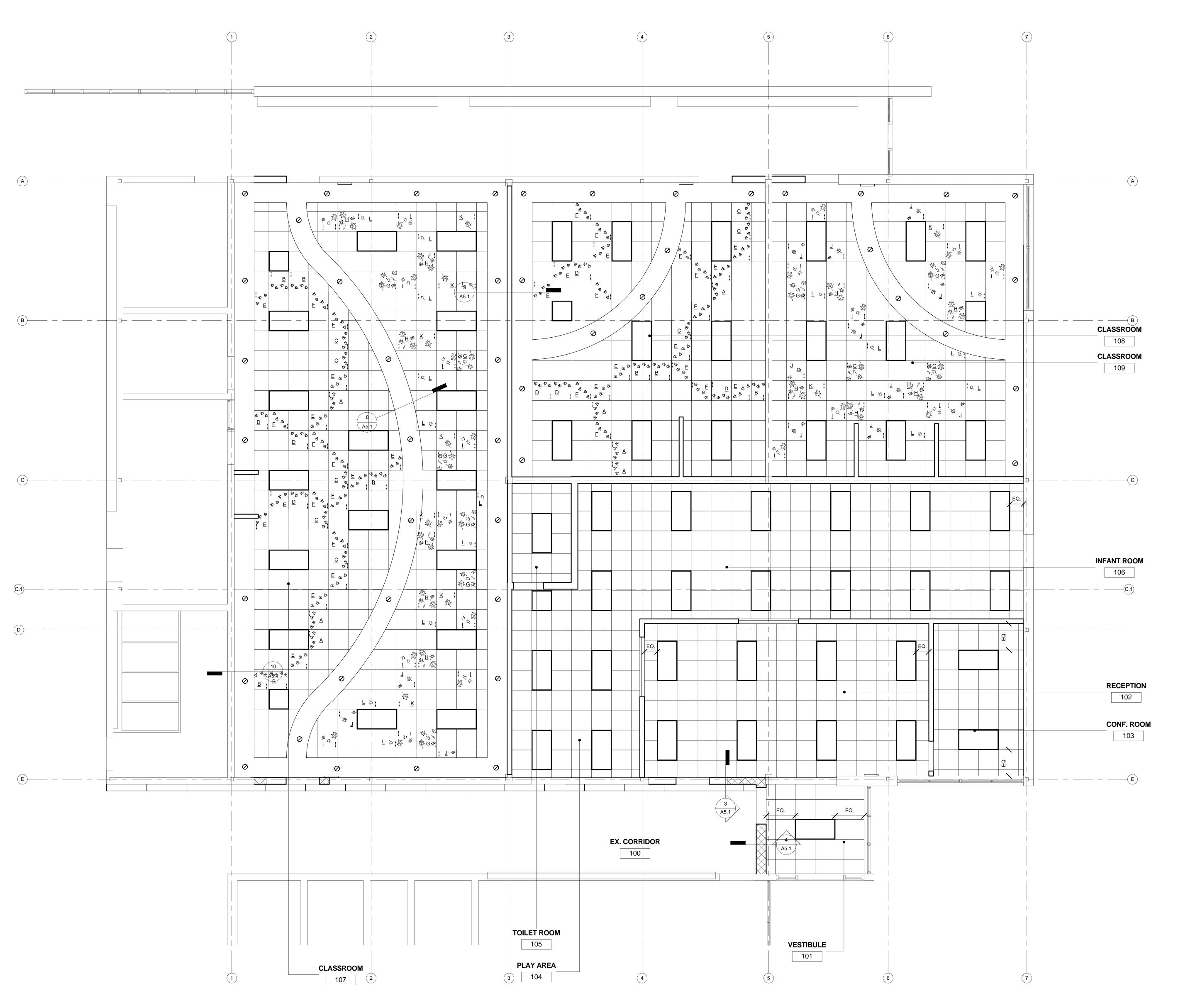
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REVISIONS:

DATE: 02.23.

A1.2



1 REFLECTED CEILING PLAN
A2.0 1/4" = 1'-0"

**CEILING PLAN NOTES:** 

1 COORDINATE ALL CEILING WORK WITH MECHANICAL & ELECTRICAL PLANS

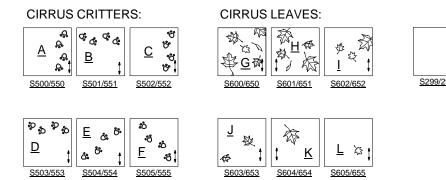
2 CENTER ALL CEILING TILES AND GRID EQUALLY WITHIN EACH INDIVIDUAL ROOM

CEILING PLAN LEGEND:

| ·   |
|---|
| 2'x4' LAY-IN FLUORESCENT LIGHT FIXTURE IN<br>ACOUSTICAL CEILING SYSTEM - REFER TO ELEC.   |
| INCAND. FLUORESCENT LED OR HID LIGHT FIXTURE RECESSED OR CEILING MOUNTED - REFER TO ELEC. |
| 25" SUSPENDED SOFT BAY FIXTURE - REFER TO ELEC.   |
| 2'x2' CEILING TILE IN EXP. METAL TEE GRID   |
| GYPSUM CEILING / SOFFIT   |
| DIFFUSER  |
| RETURN AIR REGISTER   |
| RADIANT PANEL   |
|   |

CEILING PLAN TILES: MFR. ARMSTRONG

**KEY PLAN** 



REFLECTED CEILING PLAN

WAKELY ASSOCIATES, INC. ARCHITECTS

30500 VAN DYKE AVENUE

WARREN, MICHIGAN 48093

SUITE M-7

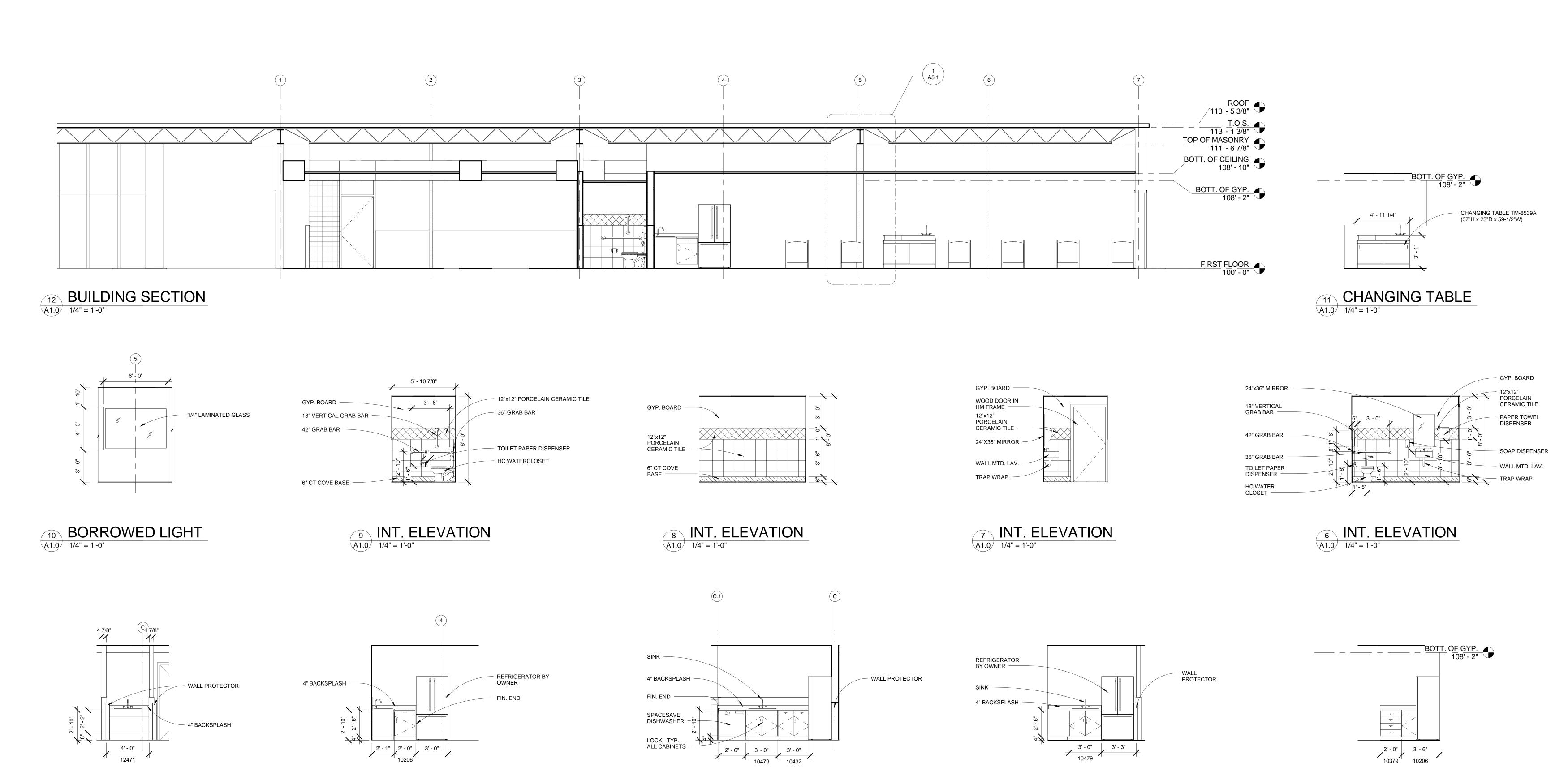
PH: 586.573.4100 FX: 586.573.0822 www.wakelyaia.com

FINAL RECORD

CHECKED BY: **REVISIONS:** 

02.23.2015 DATE: SHEET NO.:

1 INT. ELEVATION
A1.0 1/4" = 1'-0"



3 INT. ELEVATION A1.0 1/4" = 1'-0"

2 INT. ELEVATION A1.0 1/4" = 1'-0"

4 INT. ELEVATION
A1.0 1/4" = 1'-0"

5 INT. ELEVATION A1.0 1/4" = 1'-0"

WAKELY ASSOCIATES, INC. ARCHITECTS

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UBLI CENTEI WOODS PI NEAR! RNI ORNI INTERIOR ELEVATIONS, ENLARGED PLANS, BUILDING SECTIONS

PRELIMINARY DESIGN DEVELOPMENT CONSTRUCTION FINAL RECORD DRAWN BY:

CHECKED BY: REVISIONS:

DATE: 02.23.2015 SHEET NO.:

A4.0

141596

## =

WALL SECTIONS

PRELIMINARY DESIGN DEVELOPMENT CONSTRUCTION

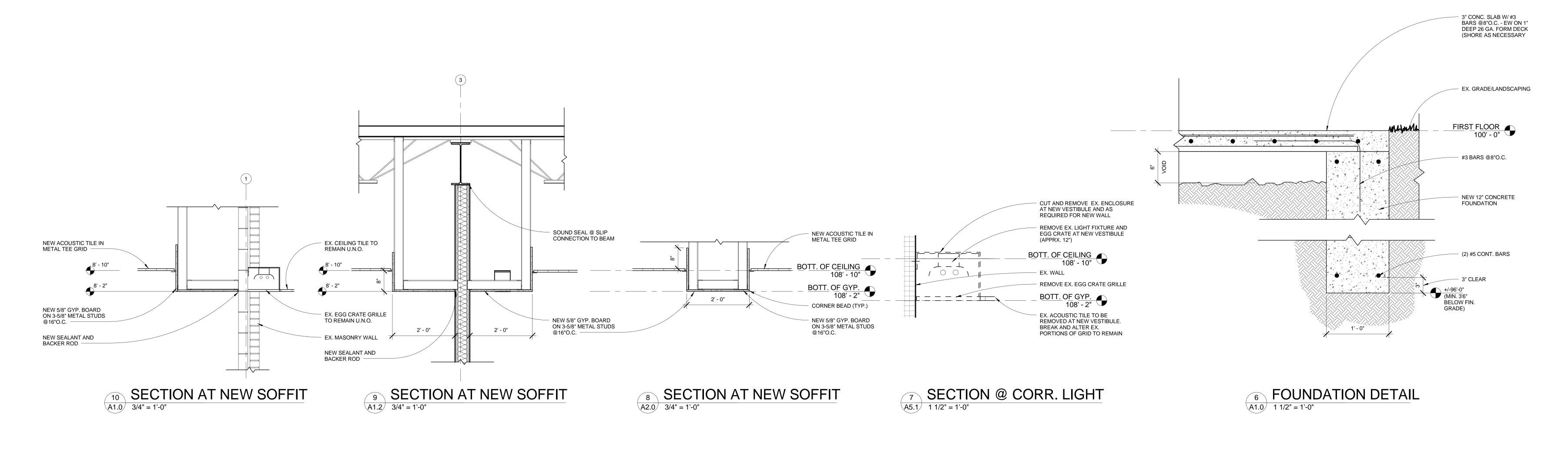
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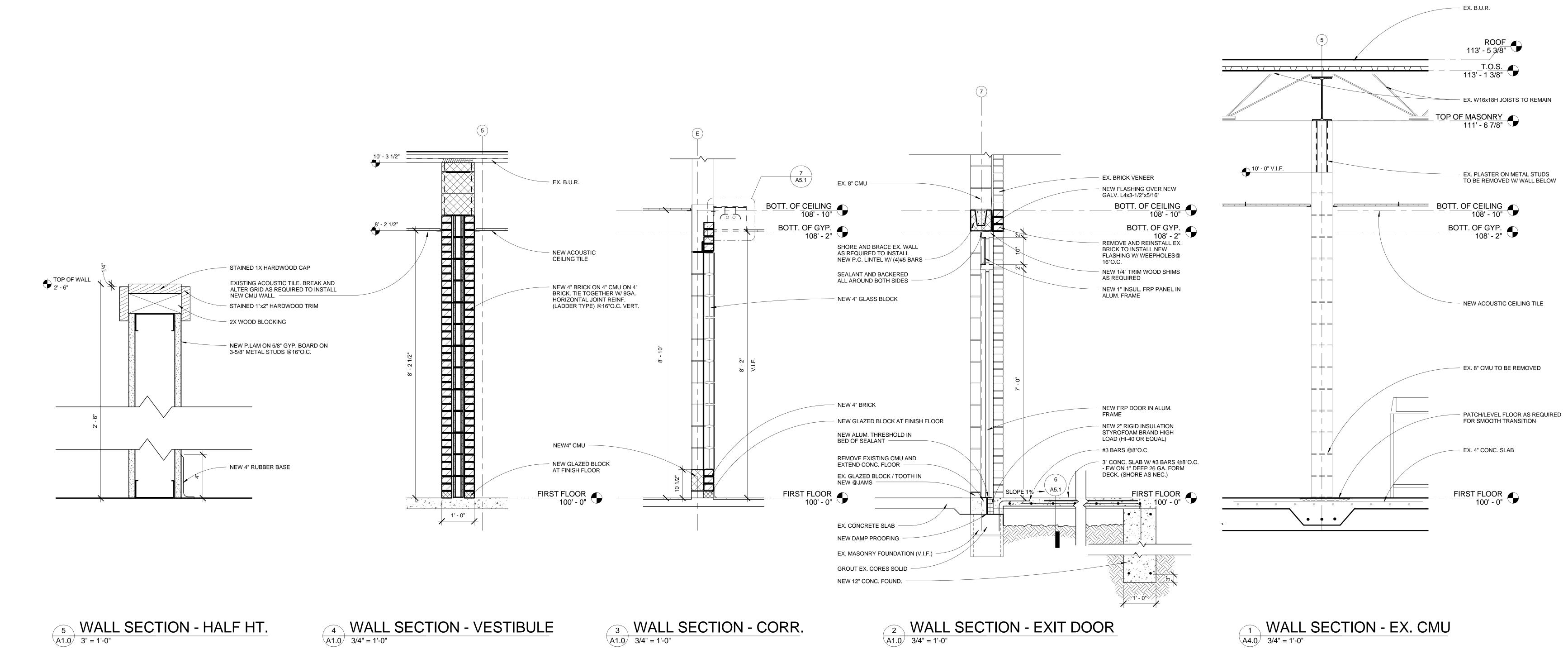
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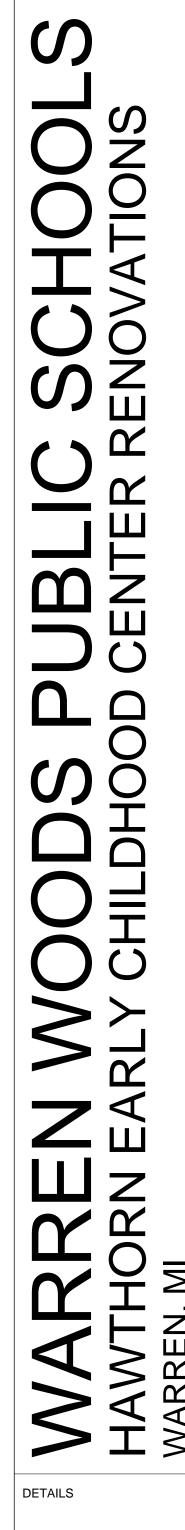
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A5.1

141596







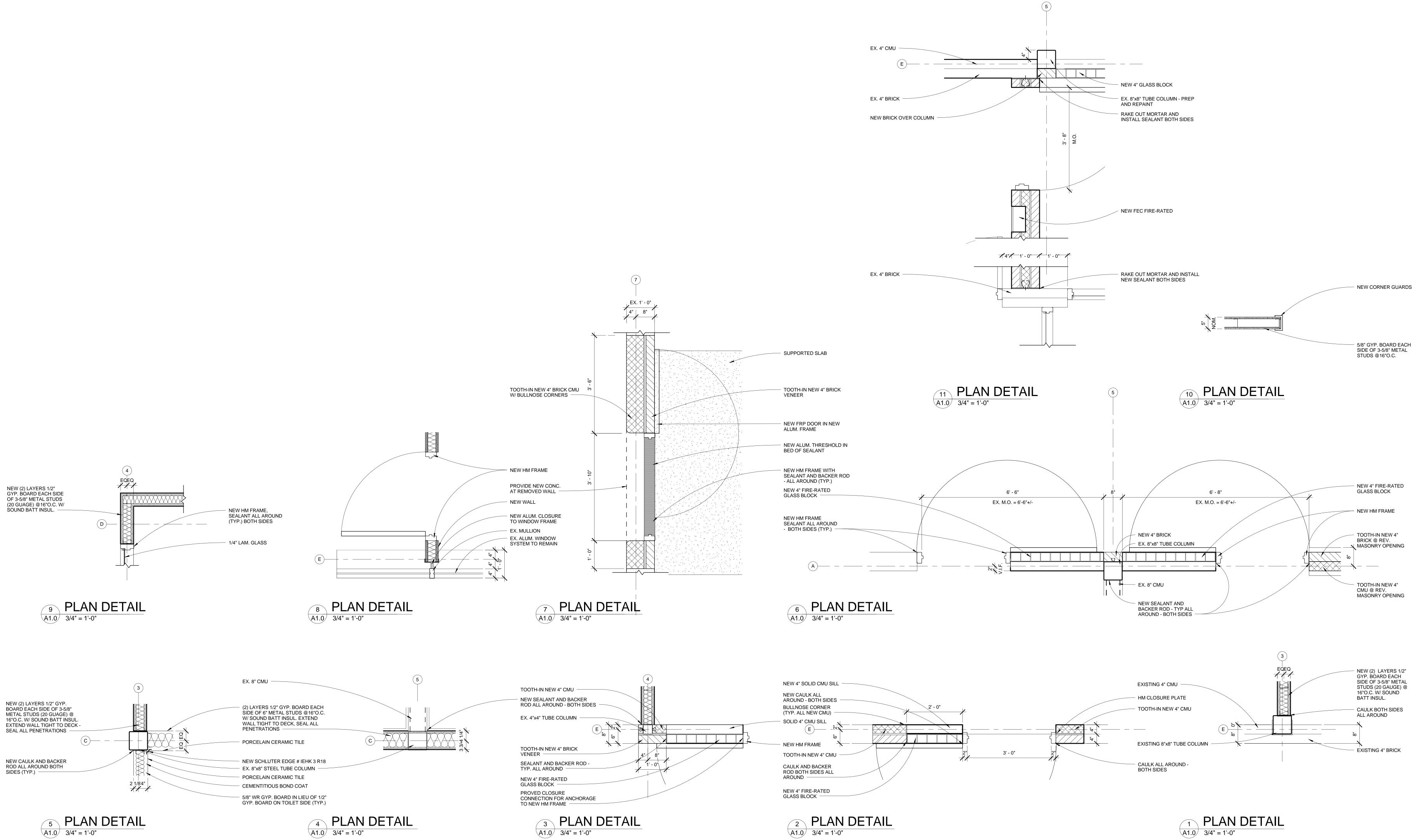
PRELIMINARY DESIGN DEVELOPMENT CONSTRUCTION FINAL RECORD

CHECKED BY: **REVISIONS:** 

DATE: 02.23.2015 SHEET NO.:

A5.2

141596



|     |              |         | ROOM FINISH SCH          | HEDULE - FIRS | T FLOOR |          |          |           |
|-----|--------------|---------|--------------------------|---------------|---------|----------|----------|-----------|
|     |              |         |                          |               | WALL    | CEIL     |          |           |
| NO. | ROOM NAME    | FLOOR   | BASE                     | WALL MAT      | FINISH  | MATERIAL | HEIGHT   | REMARKS   |
| 100 | EX. CORRIDOR | ETR     | ETR                      | EX. BRICK     | -       | EX. ACT  | 8'-2"+/- | 1,3,4     |
| 101 | VESTIBULE    | EX. TRZ | EX. NEW<br>/GLAZED BRICK | EX. BRICK     | -       | ACT      | 8'2"     |           |
| 102 | RECEPTION    | CPT     | RB                       | CMU/GB        | PTD     | ACT      | 8'10"    | 5,9       |
| 103 | CONF. ROOM   | CPT     | RB                       | CMU/GB        | PTD     | ACT      | 8'10"    | 9         |
| 104 | PLAY AREA    | RF      | RB                       | CMU/GB        | PTD     | ACT      | 8'10"    | 5         |
| 105 | TOILET ROOM  | PCT     | PCT                      | GB            | PCT/PTD | ACT      | 8'10"    |           |
| 106 | INFANT ROOM  | CPT     | RB                       | CMU/GB        | PTD     | ACT      | 8'10"    | 5         |
| 107 | CLASSROOM    | CPT/RF  | RB                       | CMU/GB        | PTD     | ACT      | VARIES   | 2,5,6,7,8 |
| 108 | CLASSROOM    | CPT/RF  | RB                       | CMU/GB        | PTD     | ACT      | VARIES   | 5,7,8     |
| 109 | CLASSROOM    | CPT/RF  | RB                       | CMU/GB        | PTD     | ACT      | VARIES   | 5,7,8,9   |
| 110 | CORRIDOR     | ETR     | ETR                      | EX. BRICK     | -       | EX. ACT  | 8'-2"+/- | 1,3       |

## ROOM FINISH SCHEDULE REMARKS (APPLIES TO ALL ROOMS)

- SEE FLOOR PLAN FOR FLOOR TILE AND CARPET ACCENTS, BORDER SIZES, AND LOCATIONS
- SEE ELEVATIONS & DETAILS FOR GYP BD SOFFIT HEIGHTS & SIZES
- PAINT ALL EXPOSED COMPONENTS IN ROOMS CALLING FOR PAINT

## **ROOM FINISH SCHEDULE ABBREVIATIONS**

ACOUSTICAL CEILING TILE IN METAL GRID CARPET - SEE SPECIFICATIONS EXISTING TO REMAIN

GB **GYPSUM BOARD** PORCELAIN CERAMIC TILE

PAINT 4" RESILIENT COVE BAS RUBBER FLOORING

TERRAZZO VINYL COMPOSITE TILE

REFER TO ENLARGED FIN. PLAN OF ROOM REFER TO REFLECTED CEILING PLAN FOR GYP. BOARD AND ACOUSTIC CLG HTS.

REQUIRED TO INSTALL NEW WALL

**ROOM FINISH SCHEDULE NOTES** 

CORRIDOR

CLASSROOMS

PAINT EX. COLUMN

PREP AND REPAINT EX. FIN. TUBE RADIATION

PAINT NEW AND EXISTING DOOR FRAMES IN

PAINT NEW AND EXISTING DOOR FRAMES IN

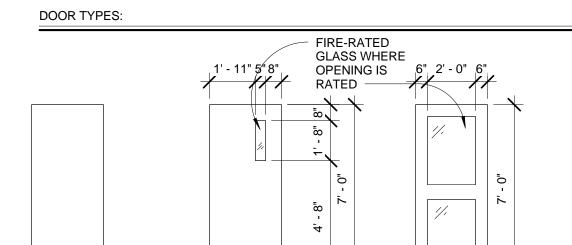
BREAK/ALTER EXISTING ACOUSTIC GRID AS

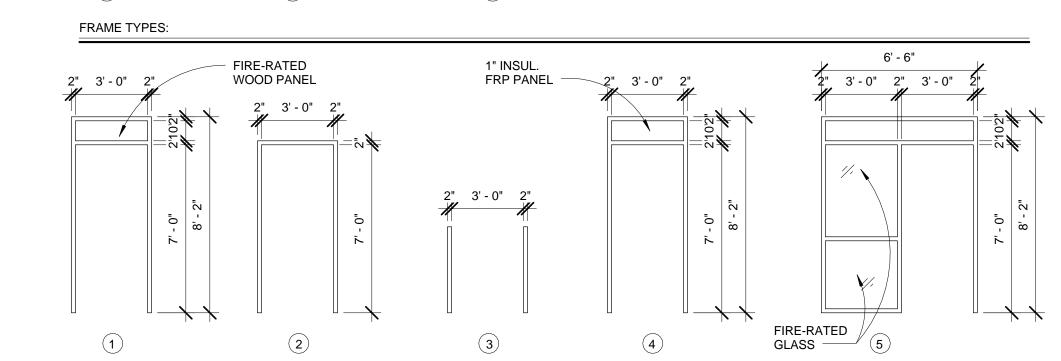
4' WAINSCOT OF PORCELAIN CERAMIC TILE

REFER TO DETAILS/SECTIONS FOR BRICK AND BASE

|      |          |        |      |       | DOOR   | SCHED | ULE - FI | RST FLO | OR          |     |     |                             |
|------|----------|--------|------|-------|--------|-------|----------|---------|-------------|-----|-----|-----------------------------|
|      | DOOR     |        |      |       |        | FRAME |          |         |             | HW  |     |                             |
| No.  | WIDTH    | HEIGHT | TYPE | MAT'L | FINISH | TYPE  | MAT'L    | FINISH  | THRESHOLD   | UL  | SET | REMARKS                     |
|      |          |        |      |       |        |       |          |         |             |     |     |                             |
| 100  | 3'-6"EX. | 7'-0"  |      |       |        |       |          |         |             |     |     | EX. DOOR FRAME<br>TO REMAIN |
| 101  | 3'-6"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | -   |     |                             |
| 102A | 3'-6"    | 7'-0"  | С    | WD    | STN    | 5     | НМ       | PTD     |             | 20M |     |                             |
| 102B | 3'-6"    | 7'-0"  | В    | WD    | STN    | 2     | НМ       | PTD     |             | 20M |     |                             |
| 103  | 3'-0"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             |     |     |                             |
| 104  | 3'-6"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | 20M |     |                             |
| 105  | 3'-0"    | 7'-0"  | Α    | WD    | STN    | 2     | НМ       | PTD     | 1/2" MARBLE | -   |     |                             |
| 106A | 3'-6"    | 2'-6"  | Α    | WD    | STN    | 3     | НМ       | PLAM    |             |     |     | PLAM GATE                   |
| 106B | 3'-6"    | 7'-0"  | Α    | FRP   | KYNAR  | 4     | AL       | KYNAR   | ALUM        |     |     |                             |
| 107A | 3'-0"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | 20M |     |                             |
| 107B | 3'-0"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | 20M |     |                             |
| 108  | 3'-0"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | 20M |     |                             |
| 109  | 3'-0"    | 7'-0"  | В    | WD    | STN    | 1     | НМ       | PTD     |             | 20M |     |                             |

|   | REMARKS - DOOR SCHEDULE                                      |
|---|--|
| 1 | EXISTING DOOR AND FRAME TO REMAIN. RE-STAIN ALL COMPONENTS   |
| 2 | PROVIDE TEMPERED GLASS IN DOOR AND FRAME OPENINGS            |
| 3 | PROVIDE FIRE RATED GLAZING IN DOOR AND FRAME OPENINGS        |
| 4 | PROVIDE NEW DOOR AND FRAME IN EXISTING WALL OPENING (V.I.F.) |
| 5 | PROVIDE KEYED REMOVABLE CENTER MULLION                       |
|   |  |







WAKELY ASSOCIATES, INC. ARCHITECTS

30500 VAN DYKE AVENUE WARREN, MICHIGAN 48093 PH: 586.573.4100 FX: 586.573.0822 www.wakelyaia.com

# WARREN, MI WARREN, MI

SCHEDULES

FINAL RECORD

RAS

A6.0

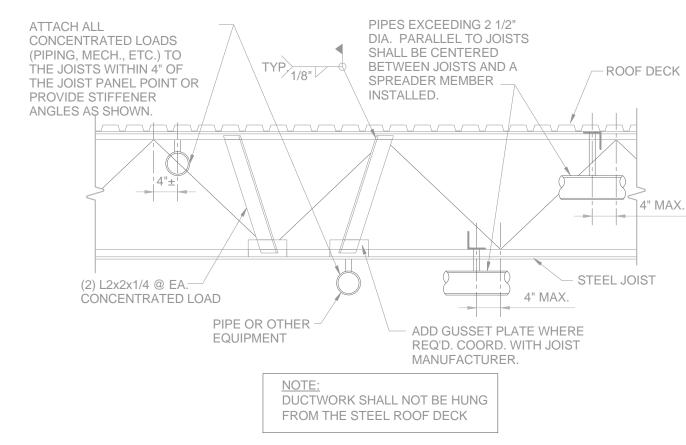
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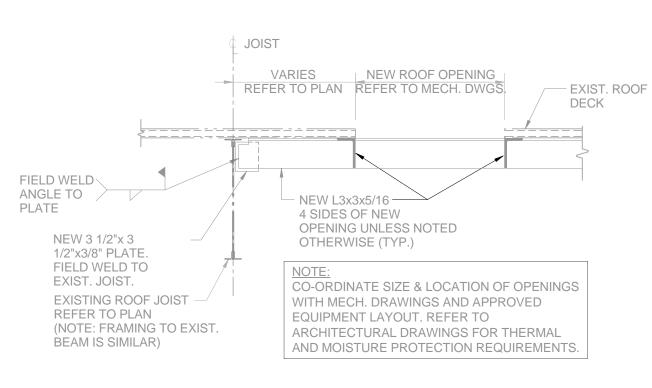
TYPICAL JOIST REINF. AT CONCENTRATED LOAD

AT EXISTING JOIST

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

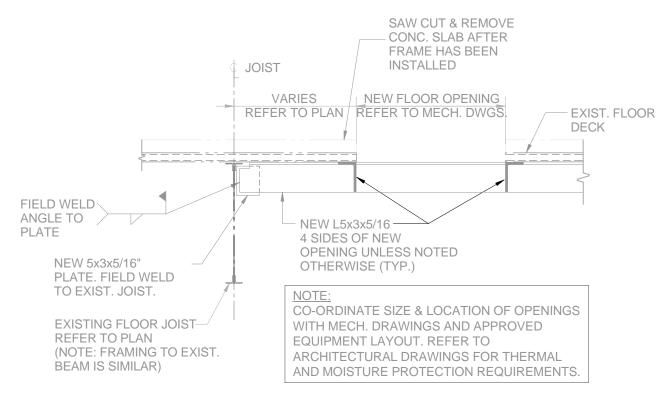
JOIST REINF. @ MECH. PIPING

3/4" = 1'-0"



. NEW ROOF OPENING @ EXIST. JOIST

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



. NEW FLOOR OPENING @ EXIST. JOIST

. Scale: 3/4" = 1'-0"

S1.0

STRUCTURAL DETAILS

PRELIMINARY

CONSTRUCTION

FINAL RECORD

CHECKED BY:

DRAWN BY:

REVISIONS:

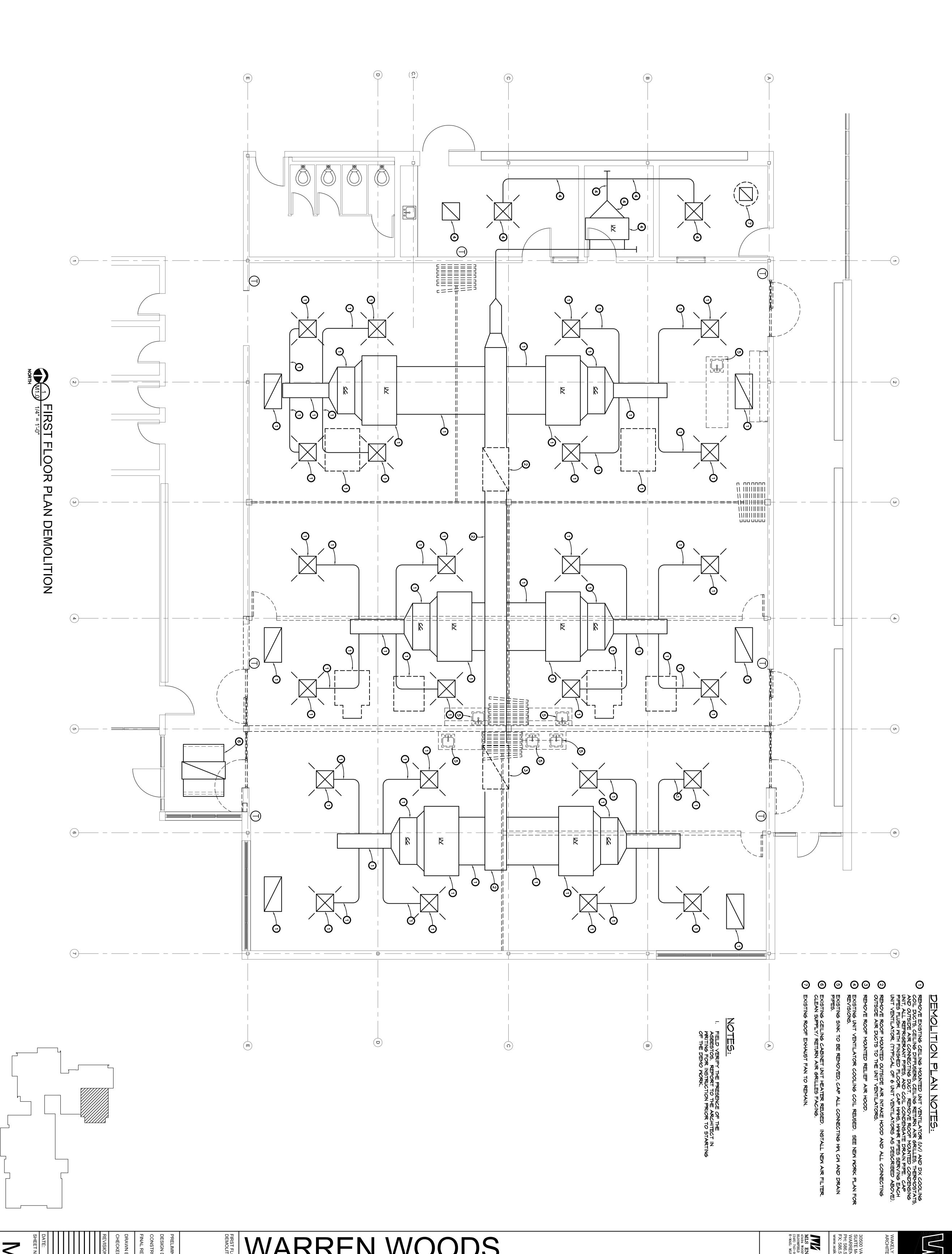
DATE:

SHEET NO.:

DESIGN DEVELOPMENT

Checker

02/24/15



M1.1 141596

ESIGN DEVELOPMENT

ONSTRUCTION

NAL RECORD

RAWN BY:

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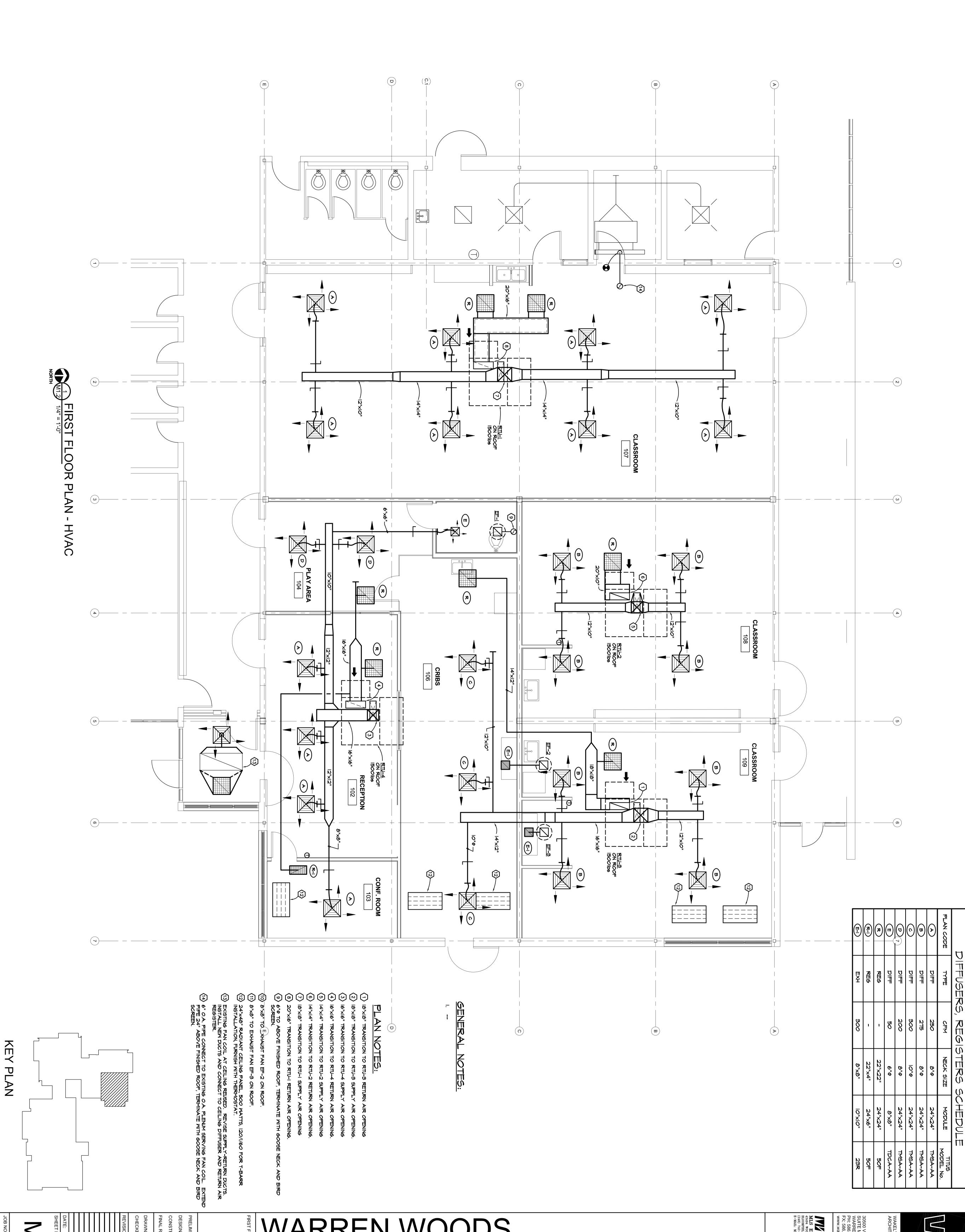
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EVISIONS:

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PRIST FLOOR PLANWARREN, MI

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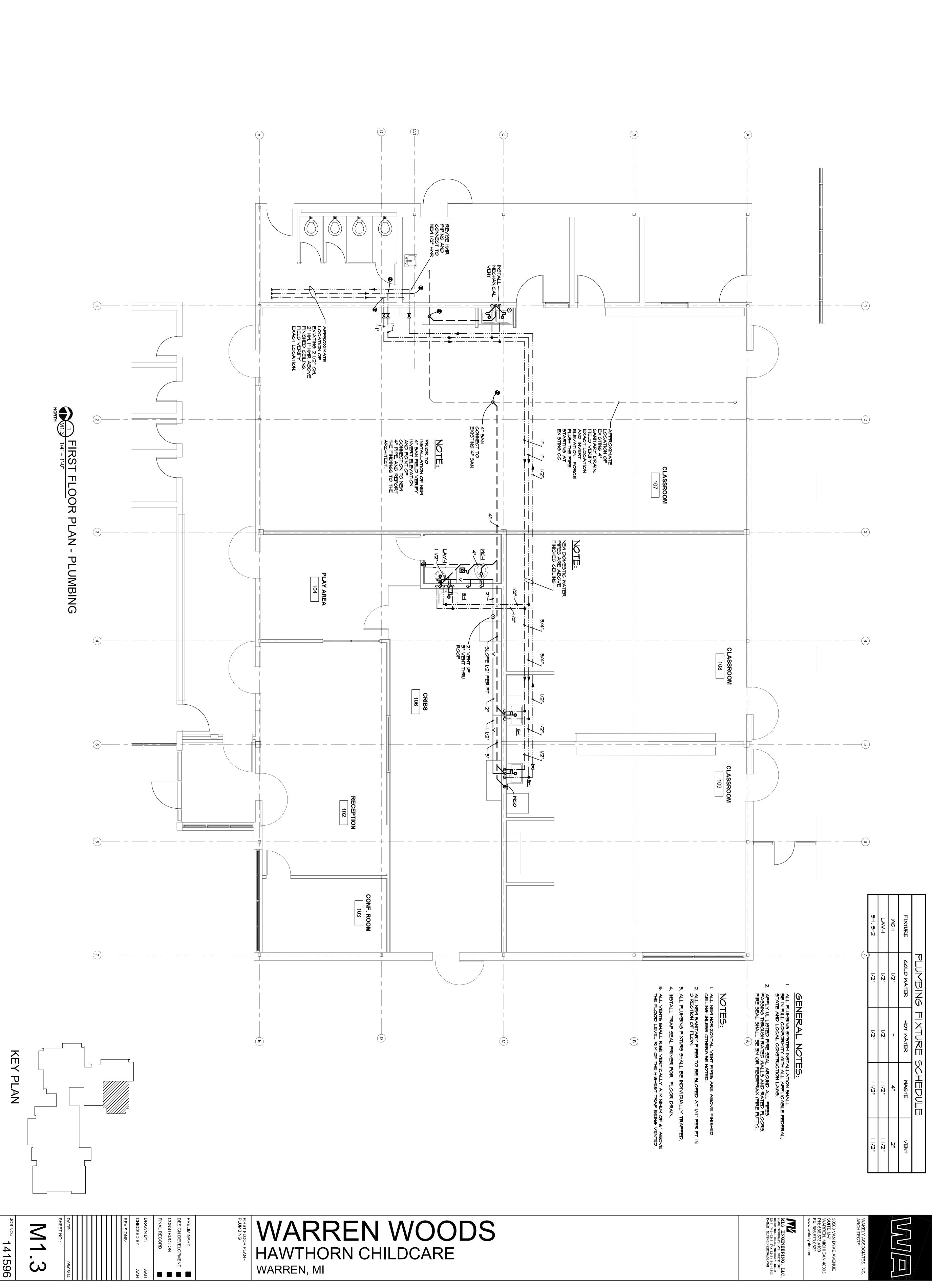
WAKELY ASSOCIATES, I ARCHITECTS ARCHITECTS 30500 VAN DYKE AVENU 30500 VAN DYKE AVENU SUITE M-7 WARREN, MICHIGAN 480 PH: 586.573.4100 FX: 586.573.0822 www.wakelyaia.com



OB NO.: 141596

WARREN WOODS
HAWTHORN CHILDCARE

WARREN, MI



|   | RTU-3 20             | RTU-2   12           | RTU-I 20             | CODE                                   | PLAN CFM |                   |
|---|----------------------|----------------------|----------------------|--|----------|-------------------|
| 2   | 2000                 | 1200                 | 2000                 |  |          |                   |
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| 64/96/120   | 64/96/120            | 64/96/120            | 64/96/120            | OUTPUT                                 | HEATING  | 70 ± 00           |
| ប <u>ា</u>  | <u>5-</u>            | <u>5-</u>            | 2-1                  | MOD                                    | TING     | IND PC            |
| _   | 1                    | 1                    | 1                    | EXHAUST                                |          | ROOF TOP UNIT SCH |
| \text{7 \\ 4 0\text{\tin}\text{\tetx{\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\text{\ti}\text{\text{\text{\text{\text{\text{\ti}\tittt{\text{\text{\ti}\text{\text{\texi}\text{\texi{\text{\texi}\text{\text{\ti | R 410A               | R 410A               | R 410A               | REFRIGERANT                            |          | EDULE             |
| 70D   | MOD                  | MOD                  | MOD                  | TYPE                                   |          | (RTU)             |
| 23  | 2.3                  | 2.3                  | 2.3                  | BLOWER<br>MOTOR<br>HP                  |          |                   |
| 460/3/60  | 460/3/60             | 460/3/60             | 460/3/60             | ELECTRICITY                            |          |                   |
| <u>u</u>  | ā                    | 12                   | ٦                    | MCA                                    |          |                   |
| DPS-003   | DPS-006              | DPS-003              | DPS-006              | MODEL                                  |          |                   |
| 1 <del>5</del> 00   | 1500                 | 1500                 | 1500                 | MEIGHT<br>lbs                          |          |                   |
| DOMN  | DOMN                 | DOMN                 | DOMN                 | DISCHARGE                              | <u>≯</u> |                   |

FURNISH ROOF TOP UNITS WITH:

I. DDC CONTROLS FOR INTEGRA

- RETURN AIR TEMPERATURE

- SUPPLY AIR TEMPERATURE

REMOTE START/STOP HEATING STATUS

REMOTE COOLING ENABLE/DIS, REMOTE HEAT ENABLE/DISABI

- DISCHARGE AIR TEMPERATURE - FAN STATUS

3. TWO STAGE MODULATING 5:1 GAS BURNER 4. OUTSIDE AIR, EXHAUST HOODS WITH BIRD WIRED CONVINIENCE OUTLET.

7. DISCONNECT SMITCH. 6. HINGED ACCES DOORS.

7. CONDENSER COIL REHEAT. IRN AIR SMOKE DETE

IO. EVAPORATOR COIL FREEZE PROTECTION STAT. II. STAINLESS STEEL HEAT EXCHANGER.

12. OUTSIDE CONDENSER COIL HAIL GUAR 13. ROOF CURB WITH SPRING ISOLATORS.

14. FILTER RACK WITH 2" THICK FILTER. 15. UNIT HEAT EXCHANGERS SHALL BE WARRANTED PARTS, E WARRANTED PART ON DAIKIN MODEL (

UNIT SELECTION ARE BASED SYSTEMS.

- INSULATION WITH OVER-L
- INSTALL I" SCHEDULE (K.) COPPER CONDENSTAE DRAIN PIPE MITH TRAPEXTEND PIPES TO OVER ROOF SUMPS. FOR ALL RTU'S.
- EXPOSED TO MEATHER GAS PIPES SHALL BE MAUNTED ON PIPE STAND MITH ROLLER AND STRAP 6'-O" ON CENTER.

- SILITY OF THE
- THE PLANS AND SPECIFICATIONS ARE INTENDED TO INCLUDE ALL MORK AND MATERIALS FOR ENTIRE COMPLETION OF THE MORK. ANY ITEM OF MATERIAL, LABOR OR DETAIL REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE MORK AND OMITTED FROM EITHER THE PLANS AND SPECIFICATIONS OR BOTH, BUT OBVIOUSLY UNDERSTOOD, SHALL BE FURNISHED AS PART OF THE CONTRACT MITHOUT ADDITIONAL COST.
- VE THE FINISHED

- ALL WORK SHALL BE IN STRICT CONFORMITY WITH BOCA, OSHA, MIOSHA, AND REGULATIONS AND CODES APPLICABLE TO THE TRADE AFFECTED.

- THE CONTRACTOR, ON HIS OWN BEHALF, SHALL ISSUE A WRITTEN GUARANTEE COVERING THE MORK UNDER THIS CINCLUDE THE GUARANTEES OF THIS SUB-CONTRACTORS, ALL OF WHICH HE SHALL BE HELD RESPONSIBLE FOR. ALL GUARANTEES SHALL BE FOR THE OWNER'S PROTECTION AGAINST DEFECTIVE WORKMANSHIP, AND/OR MECHANICAL DEFECTS IN EQUIPMENT AND MATERIALS.
- SE AND DIRT,

- THIS CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING WORK CAUSED BY THIS WORK OR BY THE NEGLIGENCE OF HIS WORKMAN. ALL DAMAGED WORK SHALL BE REPAIRED BY MEN SKILLED IN THE TRADES AFFECTED BY THE CONTRACTOR SHALL BE REQUIRED TO PAY THE COST OF SAME.
- WORK HOURS SHALL BE AS SCHEDULED AND AS DIRECTED BY THE OWNER.

- WHENEVER TRAVEL BY MORKMEN IS NECESSARY IN PART OF THE EXISTING BUILDING OC RUNWAYS, AND PROTECTION SHALL BE PROVIDED AND ALL SUCH PARTS KEPT CLEAN.

## NEW WORK NOTES

- CEILING AREAS AFFECTED BY NEW BE REPAIRED TO MATCH EXISTING.

- UNIONS FOR CONNECTING

THE DRAWINGS ARE NOT INTENDED TO BE SCALED FOR ROUGHING IN OR TO SERVE AS SHOP DRAWINGS. IF DR REQUIRED FOR THIS PURPOSE OR HAVE TO BE MADE FROM FIELD MEASUREMENTS, IT SHALL BE THE RESPONSIB CONTRACTOR TO PREPARE SUCH DRAWINGS.

UPON COMPLETION OF THE CONTRACT, THE OWNER SHALL RECEIVE THROUGH THE ENGINEER, A COMPLETE SET OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS AND PARTS LISTS WITH NUMBERS AND DESCRIPTIONS FOR EACH PIECE OF EQUIPMENT. AT THE COMPLETION OF THE JOB, THE CONTRACTOR SHALL PREPARE A PRINTED SET OF OPERATING INSTRUCTIONS FOR ALL MECHANICAL SYSTEMS AND EQUIPMENT FOR USE BY THE OWNER'S MAINTENANCE PERSONNEL. THE CONTRACTOR SHALL ALSO PROVIDE THE OWNER'S PERSONNEL WITH INSTRUCTIONS IN THE OPERATIONAL USE OF ALL SYSTEMS AND EQUIPMENT.

SHOP DRAMINGS, PORTFOLIOS AND/OR CATALOGUES ON ALL ITEMS OF MECHANICAL EQUIPMENT SPECIFIED HEREIN SHALL BE SUBMITTED TO THE ENGINEER FOR MRITTEN APPROVAL BY THE ENGINEER. NO EQUIPMENT SHALL BE DELIVERED TO THE JOB SITE UNTIL SAID APPROVAL IS ISSUED.

AT THE END OF THE JOB, CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR THE OWNER, PARTS ALL ITEMS OF MECHANICAL EQUIPMENT. IMUM OF SEVEN (5) COP

THE CONTRACTOR SHALL MAKE APPLICATION FOR ALL PERMITS AND LICENSES NECESSARY FOR THE PROSECUT AND SHALL PAY ALL FEES, INSPECTIONS, ETC., AND COMPLY MITH ALL LAWS, ORDINANCES, RULES AND REGULAT GOVERNING THE INSTALLATION OF HIS WORK.

THIS CONTRACTOR SHALL REMOVE ALL RUBBISH, AND DIRT RESULTING FROM HIS MORK, FROM THE BUILDING, AND SUCH RUBBISH, AND DIRT SHALL BE REMOVED NOT ONLY ON COMPLETION OF THE MORK, BUT ALSO AT SUCH OTHEI THE RUBBISH MAY ACCUMULATE TO THE EXTENT OF INTERFERING MITH THE CONSTRUCTION MORK, AND/OR MITH THE OPERATING OF THE EXISTING BUILDING.

GUARANTEE SHALL BE EFFECTIVE FOR A PERIOD OF ONE (I) YEAR FROM DATE OF FINAL CERTIFICATE. SEE EQUIN SPECIFICATIONS FOR EXTENDED MARRANTY.

SHOULD ANY DEFECTS APPEAR DURING THE PERIOD OF THE GUARANTEE, THE CONTRACTOR SHALL MAKE GOOD DEFECTS, REPLACING ALL MATERIALS EFFECTED THEREBY, AND MAKE GOOD ANY DAMAGE TO WORK AND MATER HIM UNDER HIS CONTRACT. ERIALS INSTA

AT THE COMPLETION OF HIS WORK, THE MECHANICAL CONTRACTOR SHALL REMOVE ALL DEMO EQUIPMENT, REFU MAKE ANY AND ALL ADJUSTMENTS REQUIRED, AND LEAVE HIS WORK IN CLEAN AND PROPER WORKING ORDER. ALL NEW HEATING WATER PIPES SHALL BE PRESSURE TESTED WITH 125 PSI WATER PRESSURE PRIOR TO PIPE INSI

## EXISTING BUILDING NOTES

BEFORE SUBMITTING PROPOSALS FOR THE WORK, EACH BIDDER SHALL BE HELD TO HAVE EXAMINED THE PREMISES, AND SATISFIED HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO WORK IN PERFORMING HIS PART OF THE WORK. NO EXTRAS WILL BE ALLOWED THE CONTRACTOR ON ACCOUNT OF HIS FAILURE TO MAKE THE ABOVE MENTIONED EXAMINATION OR NEGLECT TO INCLUDE ALL MATERIALS, AND LABOR REQUIRED TO COMPLETE THE WORK.

INS ARE MADE TO EXISTING SYSTEMS, THEY SHALL BE ACCOMPLISHED AT TIMES WHEN THE SHUTDOWN THIDENOWN AND AND LINE OF SYSTEMS, THEY SHALL BE ACCOMPLISHED AT TIMES WHEN THE SHUTDOWN

WHERE IT IS NECESSARY TO MAKE ALTERATIONS THROUGH WALLS OR FLOORS OF THE EXISTING BUILDING,

ALL WORK IN, AND ABOUT THE EXISTING BUILDING SHALL BE CARRIED ON AT SUCH TIMES, AND IN A MANNER MHI CAUSE AS LITTLE INCONVENIENCE AS PRACTICABLE TO THE OMNER, IN HIS OCCUPANCY, AND USE OF THE FACILITIES INSTANCES MHERE THE WORK WILL CAUSE INTERFERENCE WITH THE USE OF CERTAIN FACILITIES, ARRANGEMENTS MADE WITH THE OMNER IN ADVANCE, AND THE WORK DONE AT SUCH TIME OR TIMES AS AGREED UPON.

HORIZONTAL PIPES SHALL BE SUPPORTED PER TABLE 308.5 OF THE MICHIGAN PLUMBING

GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL, WITH WELDED FITTINGS. SHALL BE PAINTED WITH TWO LAYER OF ANTICORROSION PAINT. EXPOSED SHALL BE PAINTED WITH YELLOW PAINT.

DRAIN PIPES SHALL BE PVC SCHEDULE 40.

VENT PIPES SHALL BE GALVANIZED PIPES.

NOTES:
FURNISH ALL EXHAUST FANS EF-2, EF-3 MITH RO
FURNISH EXHAUST FAN EF-1 MITH INTEGRAL GRILL

LUMBING SYSTEM

ALL SUPPLY/RETURN AIR DEFLEXIBLE DUCTS SHALL BEEXCEED 4'-0".

EATING, AIR CONDITIONING

GAS FIRED ROOF TOP UNITS.

SEE THIS DRAWING FOR EXHAUS.

CEILING EXHAUST FANS

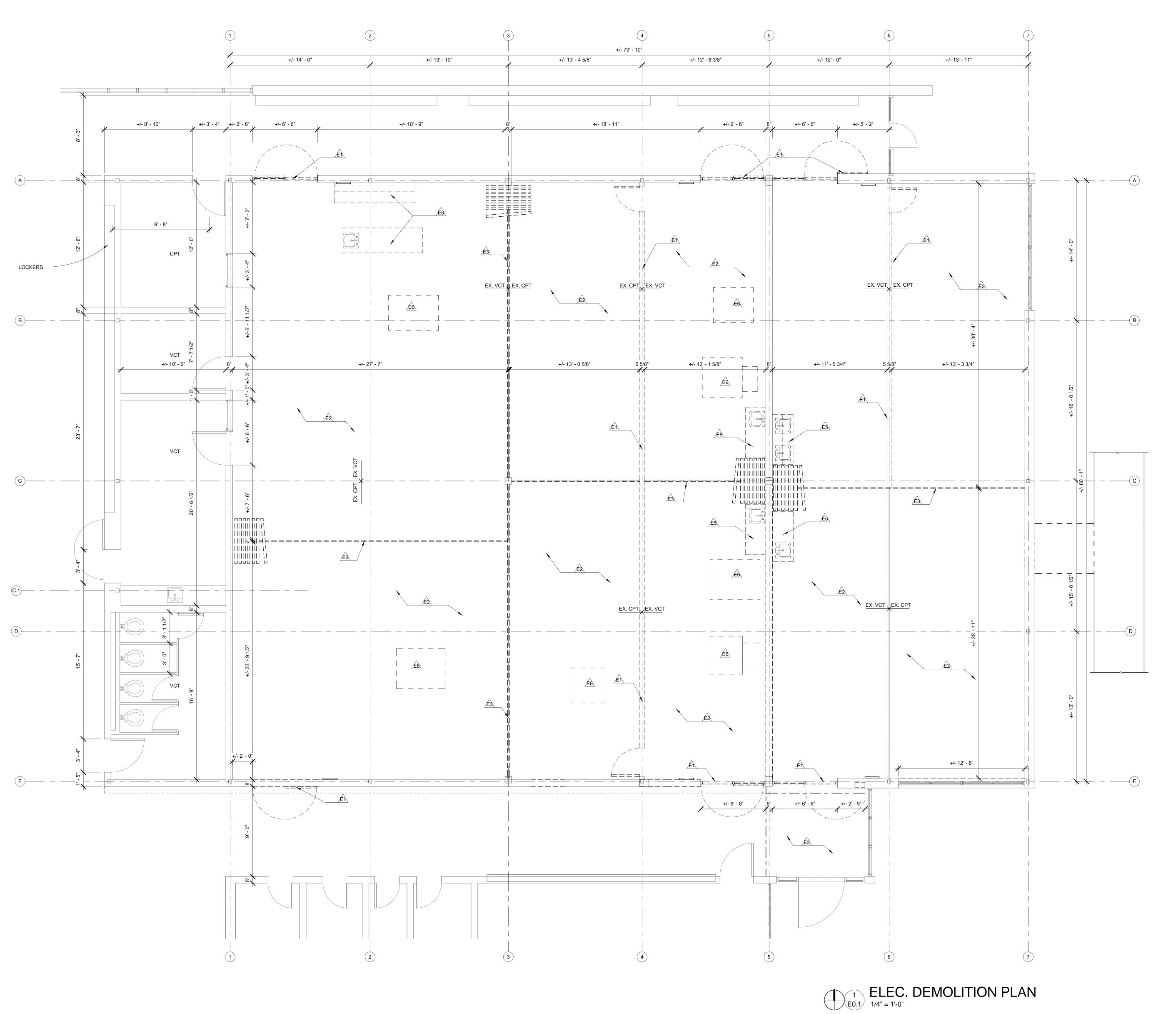
WARREN WOODS

HAWTHORN CHILDCARE

WARREN, MI

141596

KEY PLAN



ELECTRICAL DEMOLITION PLAN NOTES

- REMOVE EXISTING RECEPTACLES, LOW VOLTAGE DEVICES, FIRE ALARM DEVICES, CLOCKS AND SIMILAR EQUIPMENT ON WALLS TO BE REMOVED. ALL EQUIPMENT IS NOT NECESSARILY SHOWN. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING LIGHTING, DETECTORS AND SIMILAR ELECTRICAL EQUIPMENT AT CEILINGS TO BE REMOVED
- REMOVE POWER SOURCES AND CONTROLS FOR EXISTING OPERABLE PARTITIONS, WHICH ARE TO BE REMOVED
- REMOVE ALL ELECTRICAL BRANCH CIRCUITS SERVING EXISTING MECHANICAL EQUIPMENT, TO BE REMOVED, BACK TO SOURCE. SEE MECHANICAL DOCUMENTS FOR ADDITIONAL INFORMATION.
- REMOVE ALL ELECTRICAL OUTLETS AND ASSOCIATED BRANCH CIRCUITS AND LOW VOLTAGE DEVICES AND RACEWAY AT CASEWORK TO BE REMOVED.
- DISCONNECT MECHANICAL UNIT AND WIRING BACK TO SOURCE. REMOVE ASSOCIATED STARTERS, SWITCHES, ETC. SEE MECHANICAL PLANS FOR ADDITIONAL INFORMATION

DEMOLITION GENERAL NOTES:

- REMOVE ALL WIRING SERVING EXISTING REMOVED ELECTRICAL DEVICES, LIGHTING, LOW VOLTAGE DEVICES, FIRE ALARM DEVICES, CLOCKS AND SIMILAR EQUIPMENT BACK TO SOURCE. EXISTING RACEWAYS, WHICH ARE NOT EXPOSED, MAY BE REUSED IF SUITABLE AND INSTALLED PER NEC.
- ALL NEW RECEPTACLES TO BE TAMPER PROOF TYPE. REPLACE ALL EXISTING RECEPTACLES TO REMAIN IN OCCUPIED AREAS TO TAMPER PROOF TYPE. NOT ALL EXISTING RECEPTACLES ARE NECESSARILY

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ARCHITECTS

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## FIRST FLOOR PLAN ELEC.

FINAL RECORD

CHECKED BY: **REVISIONS:** 

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## **ELECTRICAL SPECIFICATIONS:**

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTION FOR WORK HEREIN SPECIFIED. THE COST OF SUCH PERMITS AND CERTIFICATES SHALL BE INCLUDED IN HIS BID PROPOSAL.

2. THE CONTRACTOR SHALL COMPLY WITH AND ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS AS WELL AS THE RULES AND STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, THE NATIONAL ELECTRIC CODE, THE NEMA, AIEE, OSHA, AND ADA.

3. ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. SHOULD ANY FIELD CONDITIONS PREVENT RUNNING OF CONDUIT, ETC., AS SHOWN ON THE PLANS, THE CONTRACTOR IS REQUIRED TO MAKE ANY MINOR DEVIATIONS THEREFROM AS DETERMINED BY THE ARCHITECT WITHOUT ADDITIONAL COST. CONTRACTOR SHALL BEAR COSTS FOR ALL NECESSARY CUTTING AND PATCHING OF EXISTING WALLS AND FLOORS. SUCH REPAIRS TO BE DONE BY SPECIFIC TRADE INVOLVED.

4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE GENERAL CONTRACTOR AND WITH OTHER SUBCONTRACTORS ON THE JOB AND SHALL CHECK WITH ARCHITECT PRIOR TO PLACING OF ANY FLUSH PANELS, DEVICES OR OTHER FOL

5. THE ELECTRICAL DRAWING SHOWS THE ARRANGEMENTS, GENERAL DESIGN AND INTENT OF THE WIRING SYSTEM ONLY. THE CIRCUIT RUNS ARE DIAGRAMMATIC; HOWEVER, THE DRAWING MAY INCLUDE DETAILS GIVING SPECIFIC DATA. PULL BOXES OR JUNCTION BOXES, THOUGH NOT SHOWN ON THE PLANS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. ELECTRICAL WORK INDICATED ON THE PLANS BUT NOT COVERED BY THIS SPECIFICATIONS OR VICE VERSA, SHALL BE PROVIDED AND INSTALLED BY THIS CONTRACTOR. THE DRAWINGS ARE NOT INTENDED TO BE USED FOR ROUGH-IN DIMENSIONS.

6. PROVIDE AND INSTALL AND REMOVE UPON COMPLETION OF PROJECT, A COMPLETE TEMPORARY ELECTRIC SERVICE AND DISTRIBUTION SYSTEM FOR CONSTRUCTION IN FULL ACCORDANCE WITH "GENERAL REQUIREMENTS" AND OSHA AND AS REQUIRED TO MAINTAIN SERVICE DURING OPERATIONAL HOURS AND MECHANICAL SYSTEMS AND ALARM SYSTEMS AFTER HOURS. SHUT DOWN OF POWER MUST BE COORDINATED WITH THE OWNER. WORK, WHEN REQUIRED, WILL BE DONE AFTER NORMAL WORKING HOURS.

## 7. WORK INCLUDED:

A. COMPLETE EXTENSION OF SECONDARY SERVICE INCLUDING PANEL REVISIONS AND BRANCH CIRCUIT WIRING.

B. COMPLETE CONNECTIONS ALL NEW MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

C. COMPLETE LIGHTING AND SWITCHING.

D. COMPLETE FIRE ALARM SYSTEM EXTENSION.

E. COMPLETE TEMPORARY SERVICE AS REQUIRED FOR CONSTRUCTION.

F. COMPLETE GROUNDING SYSTEM.

G. COMPLETE CO-ORDINATION AND AS-BUILT DRAWINGS.

H. COMPLETE TESTING.

## 8. MOTOR STARTERS

## A. THREE PHASE MOTOR STARTERS:

1) SHALL BE ARRANGED TO OPERATE ON 480 OR 208 VOLTS, 3 PHASE (ACROSS-THE-LINE) AND SHALL BE OF MAGNETIC TYPE WITH INVERSE TIME DELAY THERMAL OVERLOAD ELEMENTS IN 3 PHASE LINES. PROVIDE 120 VOLT CONTROL TRANSFORMER.

2) SHALL BE AS MANUFACTURED BY SQUARE D.

3) CONTROL DEVICE FOR AUTOMATICALLY CONTROLLED MOTORS SHALL BE "MANUAL-OFF-AUTO" SELECTOR SWITCHES. CONTROL DEVICE FOR MANUALLY CONTROLLED MOTORS SHALL BE "START-STOP" PUSH BUTTONS. DEVICES SHALL BE MOUNTED IN STARTER COVER. VERIFY AUXILIARY CONTACT REQUIREMENTS WITH MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL REMOTE CONTROL DEVICES WHERE INDICATED OR AS REQUIRED BY MECHANICAL TRADES CONTRACTOR.

## B. SINGLE PHASE MOTOR STARTERS:

1) SHALL BE ARRANGED TO OPERATE ON A 120 VOLT, SINGLE PHASE CIRCUIT AND SHALL HAVE AN INVERSE TIME DELAY THERMAL OVERLOAD ELEMENT HOUSED IN A NEMA TYPE 1 ENCLOSURE COMPLETE WITH PILOT LIGHT. STARTERS TO BE FLUSH WALL MOUNTED IN FINISHED AREAS

2) STARTERS SHALL BE AS MANUFACTURED BY SQUARE D, WESTINGHOUSE OR CUTLER HAMMER.

C. THE CONTRACTOR SHALL FURNISH COMBINATION STARTERS WHERE FUSED SWITCHES ARE REQUIRED AT SAME LOCATION.

## 9. DISCONNECT SWITCHES

A. DISCONNECT SWITCHES SHALL BE NEMA HEAVY DUTY (HD) FUSED OR UNFUSED AS NOTED ON THE DRAWINGS, QUICK-MAKE, QUICK-BREAK, VISIBLE BLADE TYPE WITH FULL COVER INTERLOCK. SWITCHES RATED 200 AMPERES OR LESS SHALL BE HORSEPOWER RATED. ENCLOSURE SHALL BE NEMA 1 UNLESS OTHERWISE NOTED. MEANS FOR PADLOCKING THE OPERATING HANDLE IN THE "OPEN" OR "CLOSED" POSITION SHALL BE PROVIDED. SWITCHES SHALL BE THREE-POLE, SINGLE THROW, UNLESS OTHERWISE NOTED. SWITCHES SHALL BE OF THE VOLTAGE RATINGS AND CURRENT CARRYING CAPACITIES INDICATED ON THE DRAWINGS. SWITCHES SHALL BE AS MANUFACTURED BY SQUARE D, WESTINGHOUSE OR CUTLER HAMMER.

## 10. PANELBOARDS (EXISTING):

A. PANELBOARDS ARE 480/277V OR 120/208V, THREE PHASE, 4-WIRE, SOLID NEUTRAL WITH MAIN LUGS ONLY OR MAIN BREAKER AND CIRCUIT BREAKER BRANCHES OF THE SIZE AND NUMBER AS INDICATED ON THE PLANS. PROVIDE NEW BREAKERS TO ACCOMMODATE NEW EQUIPMENT.

B. CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH EXISTING PANELS. TWO AND THREE POLE BREAKERS SHALL HAVE A COMMON OPERATING HANDLE AND COMMON TRIP MECHANISM. TRIP RATING SHALL BE AS INDICATED ON THE DRAWINGS AND A MINIMUM INTERRUPTING CAPACITY SHALL BE 10,000 AMPERES SYMMETRICAL FOR 120 VOLTS AND 14,000 AMPERES FOR 277 VOLT.

C. LOCK-ON DEVICES SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS FEEDING ELECTRIC CLOCKS, EXIT LIGHTING, NIGHT LIGHTING, EMERGENCY LIGHTING, TELEPHONE POWER AND CONTROL CIRCUITS.

## 11. DIRECTORIES

A. PROVIDE AND INSTALL IN EACH PANEL USED FOR THIS PROJECT, A NEAT TYPEWRITTEN CARD, IN CARD HOLDER PROVIDED FOR SAME, DESIGNATING THE CIRCUIT EACH BREAKER OR SWITCH FEEDS. PROVIDE NAMEPLATES FOR ALL NEW SWITCHES AND SIMILAR EQUIPMENT. NAMEPLATES TO BE PHENOLIC PLASTIC BLACK WITH WHITE LETTERING. NAMEPLATES TO IDENTIFY EQUIPMENT AND VOLTAGE OF EQUIPMENT.

## 12. FUSES

A. FUSES SHALL BE OF THE DUAL ELEMENT TYPE WITH THERMAL CUTOUT THAT OPENS AT 280 DEGREES F AND WITH COPPER FUSE LINK ELEMENTS FOR SHORT CIRCUIT PROTECTION.

B. ELECTRICAL TRADES SHALL REPLACE ALL FUSES BLOWN DURING CONSTRUCTION AND TESTING AND SHALL PROVIDE A COMPLETE SPARE SET OF FUSES FOR ALL FUSE HOLDERS IN PANELS, SWITCHES, STARTERS AND ANY OTHER DEVICES REQUIRING THEM. FUSES IN PANELS SHALL BE INSTALLED OF THE CORRECT SIZE TO PROTECT THE BRANCH CIRCUIT WIRE AS INDICATED AND SCHEDULED ON THE PLANS. FUSES IN SWITCHES AND STARTERS FEEDING MOTORS SHALL BE SELECTED TO PROVIDE MOTOR RUNNING PROTECTION IN ADDITION TO AND AS BACK-UP PROTECTION FOR THERMAL RELAYS ALREADY PROVIDED.

C. FUSES SHALL BE AS MANUFACTURED BY BUSSMAN MANUFACTURING COMPANY, "FUSETRONS" DUAL ELEMENT TYPE R AND HI-CAP TYPE, OR APPROVED EQUAL BY GOULD OR RELIANCE.

## 13. LIGHTING FIXTURES

A. THE CONTRACTOR SHALL PROVIDE, INSTALL AND CONNECT ALL LIGHTING FIXTURES, COMPLETE WITH LAMPS.

B. ALL FIXTURES SHALL BEAR THE UNDERWRITER'S LABEL.

C. ALL FIXTURES SHALL BE NEW AND UNDAMAGED.

D. PROVIDE RETAINER CLIPS FOR ALL LAY-IN FIXTURES.

E. ALL FLUORESCENT FIXTURE LENSES MUST BE OF VIRGIN ACRYLIC PLASTIC AS MANUFACTURED BY ROHM AND HAAS, HOLOPHANE OR EQUAL AND SHALL BE

FIXTURES WHERE REQUIRED, FLANGE OR GRID FIXTURES WHERE REQUIRED, ETC.

MICHIGAN STATE FIRE MARSHAL APPROVED AND CERTIFIED. SUBMIT CERTIFICATION WITH SHOP DRAWING.

F. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ORDERING PROPER TYPE RECESSED FIXTURES FOR THE TYPE OF CEILING BEING USED IN THE VARIOUS AREAS. THE CONTRACTOR SHALL CHECK WITH ARCHITECTURAL DRAWINGS AND ORDER THE PROPER TYPE; I.E., THERMALLY PROTECTED

## 14. LAMPS

## A. FLUORESCENT

1) FLUORESCENT LAMPS TO BE GENERAL ELECTRIC, PHILLIPS, OSRAM/SYLVANIA OR APPROVED EQUAL

2) COMPACT FLUORESCENT AND 2D LAMPS (5 WATT THROUGH 50 WATT) SHALL BE TRI-PHOSPHOR 3500K (UNLESS OTHERWISE NOTED) WITH MINIMUM CRI OF 80.

LAMPS SHALL BE 4 PIN QUAD OR TRIPLE COMPACT TYPE. PROVIDE SEPARATE

ELECTRONIC BALLAST FOR EACH LAMP (DIMMING OR STANDARD; SEE PLAN).

3) ALL FLUORESCENT 2', 4', 8' LAMPS SHALL BE T-8, 265 MA 3500K (UNLESS OTHERWISE NOTED) WITH MINIMUM CRI OF 75.

4) ALL FLUORESCENT LAMPS TO BE OF ONE MANUFACTURER TO ASSURE COLOR

## 15. BALLASTS

A. UNLESS OTHERWISE NOTED, ALL FLUORESCENT BALLASTS SHALL BE 277 VOLT RAPID START ELECTRONIC WITH THE FOLLOWING CHARACTERISTICS:

1) HIGH POWER FACTOR - 95% MINIMUM.

2) SOUND RATING - "A" AND FREE OF AUDIBLE NOISE.

3) TOTAL HARMONIC DISTORTION - 10% MAXIMUM.

4) FREE OF RADIO INTERFERENCE.

5) UL LISTED CLASS P.

6) CREST FACTOR - 1.5 OR LESS WITH T8 LAMP.

7) FLICKER - 2% MAXIMUM WITH T8 LAMP.

8) TEMPERATURE RISE - 25 DEGREE C RISE OVER 40 DEGREE C AMBIENT.

9) PRODUCE FULL LIGHT OUTPUT CAPABLE OF OPERATING ALL 40W, 35 W AND FE 40W LAMPS.

A. BALLASTS TO BE ADVANCE MARK V, MOTOROLA LIGHTING OR APPROVED EQUAL.

## 16. WIRE AND CABLE (600 VOLT)

A. ALL WIRE AND CABLE SHALL BE 98% CONDUCTIVE COPPER CONDUCTORS, A MINIMUM OF NO. 12 AWG UNLESS OTHERWISE NOTED, SINGLE CONDUCTOR AS FOLLOWS.

1) TYPE THW OR THHN.

2) NO 10. AWG AND SMALL WILL BE SOLID.

3. NO 8 AWG AND LARGER SHALL BE STRANDED.

B. ALL WIRING TO BE INSTALLED IN CONDUITS.

C. ALL BRANCH WIRING SHALL BE "COLOR CODED".

D. MC CABLE IS NOT PERMITTED EXCEPT FROM BOX TO FIXTURE, 6" MAX.

## 17. CONDUITS

A. CONDUITS 1-1/2" AND SMALLER SHALL BE GALVANIZED "THINWALL" TYPE UNLESS OTHERWISE INDICATED ON THE PLANS. CONDUITS 2" AND LARGER, BELOW OR IN SLAB OR EXPOSED OUTDOORS SHALL BE HOT DIPPED GALVANIZED TYPE OR SHERARDIZED RIGID TYPE. ALL CONDUITS BELOW GRADE AND OUT OF DOORS SHALL BE RIGID PLASTIC PVC WITH GROUND WIRE. "IMC" MAYBE USED WHERE APPROVED BY LOCAL AUTHORITIES.

B. FLEXIBLE METALLIC CONDUIT MAY BE USED WHERE THINWALL CONDUIT IS IMPRACTICAL AND AT MOTOR CONNECTIONS AND ALL TRANSFORMER CONNECTIONS.

C. ALL CONDUITS SHALL BE RUN CONCEALED WHEREVER POSSIBLE. EXPOSED CONDUITS WILL BE PERMITTED IN UNFINISHED AREAS IN MECHANICAL AND ELECTRICAL ROOMS AND UTILITY AREAS.

D. UNLESS OTHERWISE SPECIFIED, SWITCH AND RECEPTACLE OUTLETS FOR CONCEALED WORK SHALL BE GALVANIZED STEEL BOXES WITH SWITCH RINGS FOR THE NUMBER OF DEVICES REQUIRED.

E. BACK TO BACK OR "THROUGH" WALL BOXES WILL NOT BE PERMITTED.

## 18. PULL BOXES AND JUNCTION BOXES

A. PROVIDE AND INSTALL CODE GAUGE, GALVANIZED STEEL PULL BOXES AND JUNCTION BOXES AS INDICATED ON THE PLANS OR AT LOCATIONS REQUIRED FOR THE PROPER PULLING OR NESTING OF WIRES AND CABLES. THEY SHALL HAVE REMOVABLE SCREW-ON COVERS USING BRASS SCREWS TO HOLD COVER 19. WIRIN PLACE. PULL BOXES SHALL BE PROVIDED WITHOUT KNOCKOUTS WHICH SHALL BE CUT IN THE FIELD AS REQUIRED.

## A. DEVICES IN CONCEALED CONDUIT SYSTEMS SHALL BE INSTALLED IN SINGLE OR MULTIPLE GANG PRESSED STEEL BOXES WITH GANG PLATES AS SPECIFIED.

B. RECEPTACLES SHALL HAVE A SEPARATE POLE FOR EQUIPMENT GROUNDING.

C. RECEPTACLES IN GENERAL SHALL BE GROUNDING TYPE, AND SHALL CONFORM TO NEMA PERFORMANCE STANDARDS.

1) DUPLEX AND SINGLE RECEPTACLES SHALL BE GROUNDING TYPE, RATED 20 AMPERES, 125 VOLT, 3-WIRE, P & S CATALOG NO. 5362 AND 5361 RESPECTIVELY, ARROW HART OR HUBBELL. COLOR TO BE SELECTED BY ARCHITECT.

## D. SPECIAL RECEPTACLES

1) ALL RECEPTACLES TO BE TAMPERPROOF

## E. TOGGLE SWITCHES

1) SWITCHES SHALL BE OF HEAVY DUTY CONSTRUCTION WITH TOTALLY ENCLOSED BAKELITE BASE AND COVER. TERMINALS SHALL BE FOR SIDE OR BACK WIRING. CONTACTS SHALL BE DOUBLE WIPING PHOSPHOR BRONZE ONLY.

2) SWITCHES FOR LOCAL CONTROL OF LIGHTING UNITS, OR FOR OTHER SPECIFIED PURPOSES, SHALL BE QUIET TYPE, SPECIFICATION GRADE, WITH PHENOLIC MATERIAL TOGGLE HANDLES RATED 20 AMPERES, 120/277 VOLT. PROVIDE PERMANENT BARRIERS BETWEEN ADJACENT SWITCHES IN SAME BOX WHEN VOLTAGE BETWEEN SUCH SWITCHES EXCEEDS 300 VOLTS. COLOR OF SWITCHES TO BE SELECTED BY ARCHITECT.

## F. AUTOMATIC SWITCHES OR REMOTE DEVICES SHALL BE LOCATED FOR MAXIMUM COVERAGE AND TO BE SENSOR SWITCH, WATT STOPPER OR LUTRON DUAL TECHNOLOGY TYPE COMPLETE WITH ALL APPURTENANCE, SUCCESSFUL MANUFACTURER SHALL PROVIDE COMPLETE LAYOUT DRAWING AND SHALL INCLUDE ANY ADDITIONAL DEVICES OR CONTROL UNITS REQUIRED FOR A COMPLETE WORKING SYSTEM. INFORMATION SHOWN IS FOR GENERAL LAYOUT PURPOSES AND DOES NOT, NECESSARILY, INCLUDE ALL EQUIPMENT REQUIRED.

## G. DEVICE PLATES

1) UNLESS OTHERWISE NOTED, ALL PLATES IN FINISHED AREAS FOR SWITCHES, RECEPTACLES AND TELEPHONE OUTLETS SHALL BE 0.04" THICK, SATIN FINISH STAINLESS STEEL PLATES.

2) ALL PLATES FOR OUTLETS LOCATED ON UNFINISHED WALLS OR ON CONDUIT TYPE FITTINGS SHALL BE ZINC OR CADMIUM COATED STEEL WITH ROUNDED CORNERS AND/OR BEVELED EDGES.

3) ALL PLATES SHALL HAVE FULL CONTACT WITH THE WALL AND BOXES; EDGES SHALL BE PARALLEL TO THE FINISHED WALLS AND CEILINGS.

4) NARROW PLATES SHALL BE USED WHERE REQUIRED BY JAMB SIZE OR DOOR AND WALL CONSTRUCTION. WHEN NARROW PLATES ARE REQUIRED, SWITCHES AND RECEPTACLES SHALL BE INTERCHANGEABLE TYPE, SIMILAR IN CONSTRUCTION AND RATINGS TO THE SWITCHES AND RECEPTACLES SPECIFIED HEREIN.

## 20. BRANCH CIRCUITS

AN ACCEPTABLE GROUND PATH.

CIRCUITS WITH ELECTRONIC BALLASTS.

A. INSTALL MAXIMUM OF 3 BRANCH CIRCUITS (7 CONDUCTORS) IN A 3/4"C.

B. ALL BRANCH CIRCUITS SHALL HAVE AN INSULATED GROUND CONDUCTOR. THE CONDUIT SYSTEM IS NOT

## C. EACH GROUP OF (3) 120 VOLT BRANCH CIRCUITS SERVING LIGHTING, RECEPTACLES AND MISCELLANEOUS POWER SHALL CONSIST OF (3) HOT LEGS, (1) GROUND, (5) TOTAL CONDUCTORS.

D. EACH 120 VOLT BRANCH CIRCUIT SERVING RECEPTACLES OR MOTOR CIRCUITS TO CONSIST OF ONE (1) HOT LEG, ONE (1) NEUTRAL AND ONE (1) GROUND.

F. BRANCH CIRCUIT CONDUITS TO BE SIZED TO ACCEPT A MINIMUM ONE (1) ADDITIONAL FUTURE CIRCUIT CONDUCTORS.

G. PROVIDE OVERSIZED NEUTRAL CONDUCTOR (#10 MINIMUM) FOR ALL RECEPTACLE CIRCUITS AND LIGHTING

E. CONTRACTOR TO REDUCE AMPACITY RATING OF CONDUCTORS PER N.E.C. AND ADJUST WIRE SIZES ACCORDINGLY

## 21. GROUNDING

A. THE CONTRACTOR SHALL PROVIDE, INSTALL AND CONNECT A COMPLETE SYSTEM OF GROUNDING FOR ALL EQUIPMENT AND STRUCTURES. A GOOD MECHANICAL AND ELECTRICAL CONNECTION SHALL

BE MADE WITH CODE APPROVED GROUNDING CONNECTORS.

B. SERVICE GROUNDS AND GROUNDING OF EQUIPMENT AND SERVICE TO BE MINIMUM PER N.E.C.

250 WITH ADDITIONAL GROUNDING NOTED ON THE DRAWINGS.C. PROVIDE SEPARATE GROUND WIRE FOR EACH RACEWAY.

## 22. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS IRON THAT HE MAY REQUIRE FOR HIS WORK.

## 23. ON COMPLETION OF HIS WORK, THE INSTALLATION SHALL BE ENTIRELY FREE FROM GROUNDS OR SHORT CIRCUITS. ALL CIRCUITS SHALL BE RUNG OUT AND PROPERLY TICKETED.

24. THE CONTRACTOR SHALL GUARANTEE AGAINST MECHANICAL AND ELECTRICAL DEFECTS OF ANY AND ALL EQUIPMENT MATERIALS, AND WORKMANSHIP COVERED BY THESE SPECIFICATIONS AND SHALL MAKE GOOD, REPAIR OR REPLACE AT HIS OWN EXPENSE ANY DEFECTIVE EQUIPMENT, MATERIALS OR WORK OR PART WHICH MAY SHOW ITSELF WITHIN A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF THE WORK.

## 25. FIRE ALARM SYSTEM SPECIFICATION

A. SCOPE:THE ELECTRICAL CONTRACTOR SHALL EXTEND EXISTING

B. ALL EQUIPMENT TO MATCH THOSE PRESENTLY USED

C. PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN OF NEW ROOF TOP UNITS

D. ALL WIRING SHALL BE IN INSTALLED IN CONDUIT.

A/E IN WRITING FOR REVIEW.

E. SUBMITTALS SHALL BE PROVIDED TO A/E FOR PREVIEW PRIOR TO START TO ROUGH. PROVIDE EQUIPMENT DATA SHEETS, RISER DIAGRAM INDICATING ALL DEVICES AND THEIR LOCATION AND BATTERY STANDBY CALCULATIONS. AS-BUILT DRAWINGS SHALL BE PROVIDED TO THE OWNER AND FIRE ALARM SYSTEM SUPPLIER UPON FINAL CERTIFICATION.

F. PLANS SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION FOR COMPLETE REVIEW WITHIN TWO WEEKS OF CONTRACT AWARD. ALL ASSOCIATED PERMIT AND PLAN REVIEW FEES SHALL BE INCLUDED IN BID.

G. FINAL INSPECTION: UPON COMPLETION, A COMPLETE INSPECTION OF THE SYSTEM SHALL BE CONDUCTED PER NFPA 72 REQUIREMENTS. VERIFICATION AND RESULTS OF THIS INSPECTION SHALL BE FORWARDED TO THE

H. ALL WIRING TO BE PER MANUFACTURER'S RECOMMENDATIONS



WAKELY ASSOCIATES, INC. ARCHITECTS

30500 VAN DYKE AVENUE SUITE M-7 WARREN, MICHIGAN 48093 PH: 586.573.4100 FX: 586.573.0822

www.wakelyaia.com

## MARREN, MILLINGOD CENTER RENOVATIONS ARREN, MI

FINAL RECORD [
DRAWN BY: M

DESIGN DEVELOPMENT

SPECIFICATIONS

**PRELIMINARY** 

CHECKED BY:

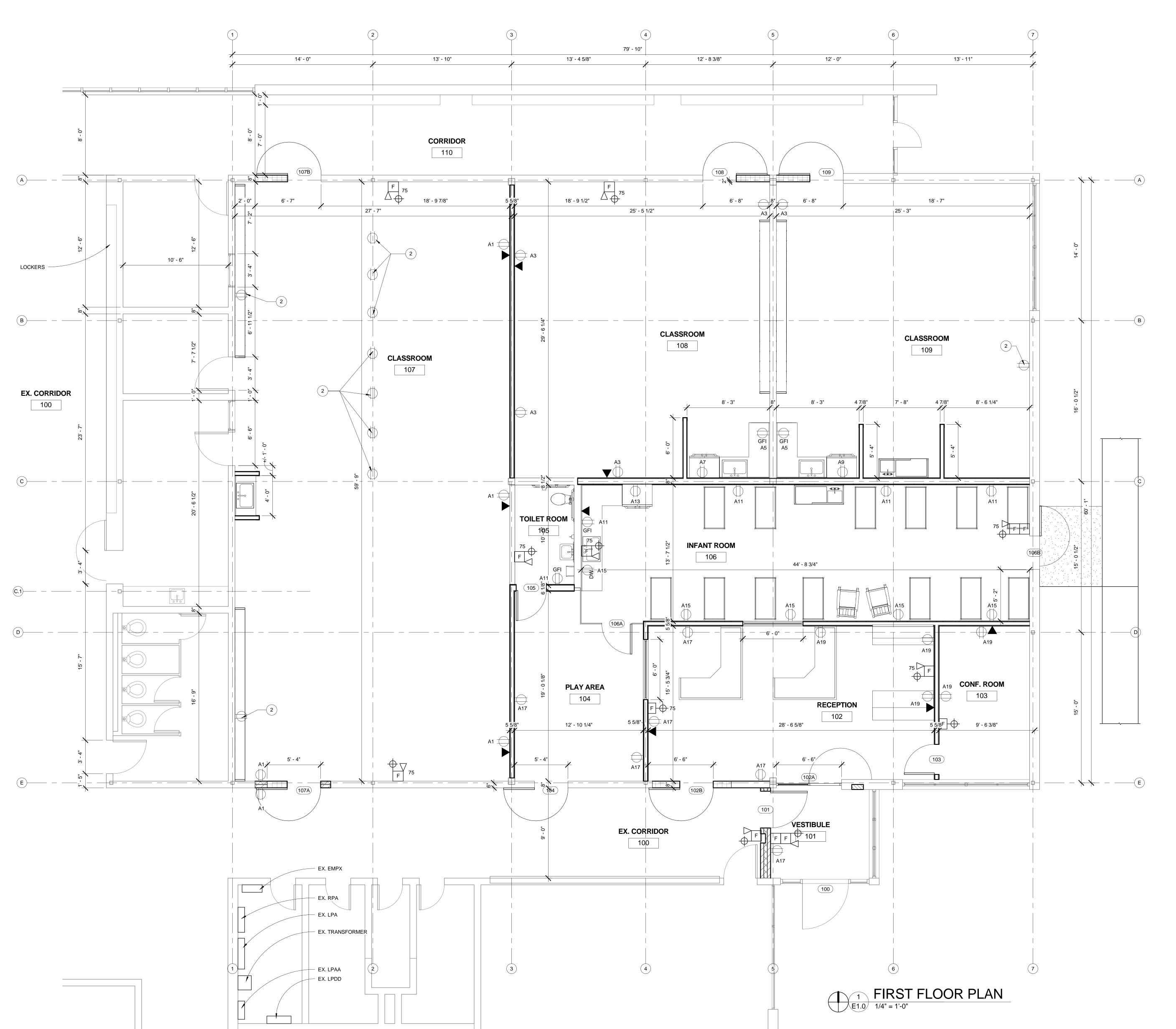
CONSTRUCTION

REVISIONS:

DATE: 02/23/15
SHEET NO.:

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ELECTICAL SYMBOLS:

| SYMBOL | DESCRIPTION            |
|--------|------------------------|
|        | DUPLEX OUTLET          |
| •      | TECHNOLOGY OUTLET      |
| F      | FIRE ALARM HORN/STROBE |
| F      | FIRE ALARM STROBE      |

ELECTRICAL PLAN NOTES:

- 1 APPROX. LOCATION OF EXISTING WALL RECEPTACLE. PROVIDE NEW TAMPERPROOF DEVICES.
- 2 APPROX. LOCATION OF EXISTING FLOOR OUTLETS. PROVIDE NEW TAMPERPROOF DEVICES (V.I.F.).

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WARREN MILITARIA STANDON CENTER RENOVATIONS
WARREN MI

FIRST FLOOR ELEC. PLAN

PRELIMINARY

DESIGN DEVELOPMENT

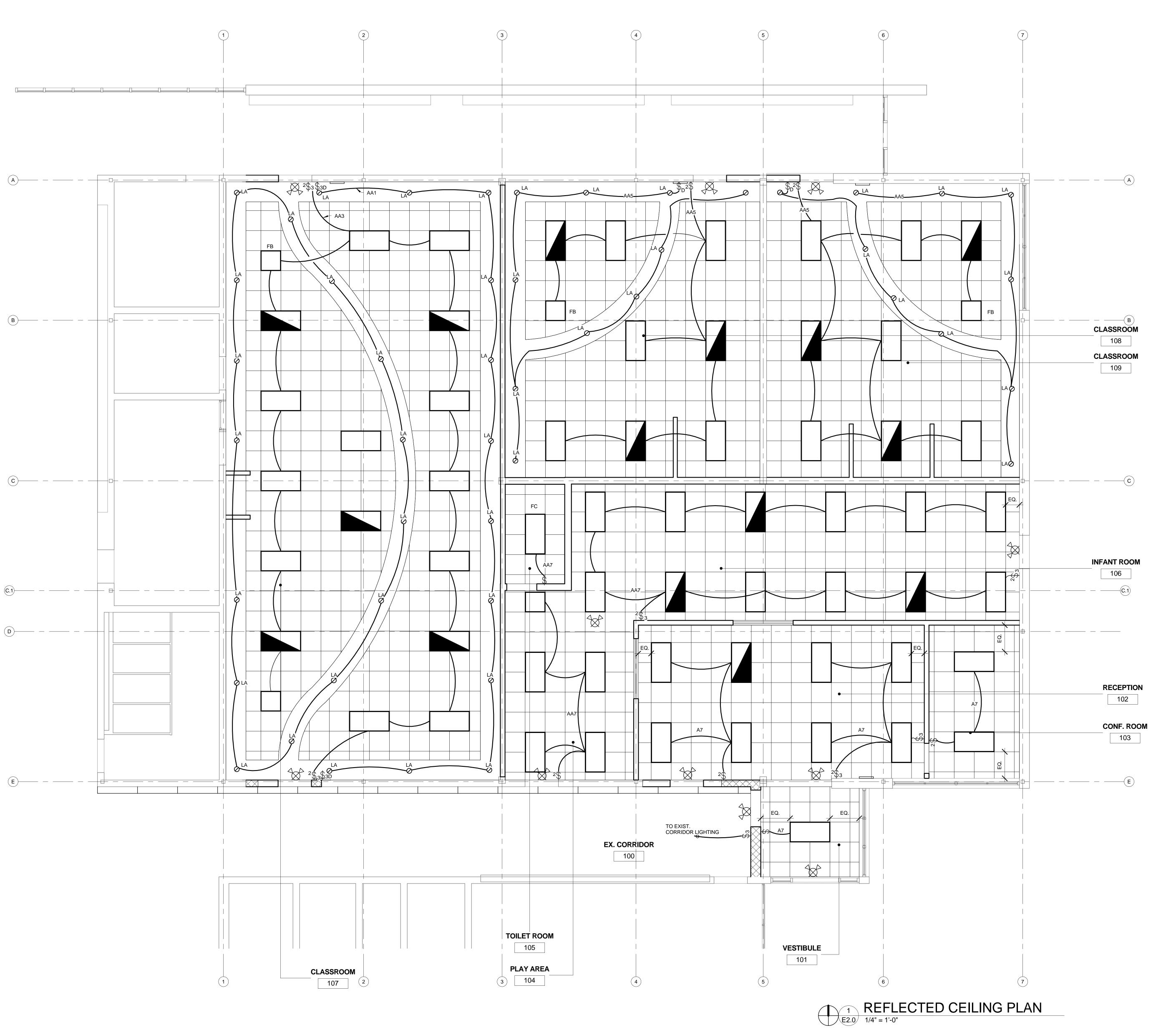
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## CEILING PLAN LEGEND:

|                              | 2'x4' LAY-IN FLUORESCENT LIGHT FIXTURE IN<br>ACOUSTICAL CEILING SYSTEM - REFER TO ELEC.                |
|------------------------------|--|
| 0                            | INCAND. FLUORESCENT LED OR HID LIGHT FIXTURE RECESSED OR CEILING MOUNTED - REFER TO ELEC.              |
| •                            | 25" SUSPENDED SOFT BAY FIXTURE - REFER TO ELEC.  |
|                              | 2'x2' CEILING TILE IN EXP. METAL TEE GRID  |
|                              | GYPSUM CEILING / SOFFIT  |
| ×                            | DIFFUSER   |
|                              | RETURN AIR REGISTER  |
|                              | RADIANT PANEL  |
|                              | EMERGENCY FIXTURE - W/ 1800 LUMEN BATTERY UNIT IN FIXTURE FOR 2 LAMPS CONN. BATTERY AHEAD OF SWITCHING |
| $\bigotimes$                 | EXIT LIGHT 2/ 2 HEAD (SIDE MOUNTED) AND BATTERY  |
| <sup>2</sup> \$ <sub>3</sub> | (2) TWO SWITCHES. FIRST FOR ONE INNER ROW LAMP AND SECOND FOR 2 OUTER ROW LAMPS                        |
| \$ <sub>3D</sub>             | RECESSED WALL BOX DIMMER FOR LED LIGHTING  |
| \$,                          | DIMMER SWITCH FOR LED LIGHTING   |
|                              |  |

## LIGHTING FIXTURE SCHEDULE:

| TYPE | LAMPS        | DESCRIPTION  | REMARKS                                  |
|------|--------------|--|--|
| FA   | 3-32W<br>T8  | 2'x4' LAY-IN, PRISMATIC<br>ACRYLIC .125 LENS,<br>ELECTRONIC <10%THD<br>BALLAST, DAYBRITE, LITHONIA | PROVIDE<br>BATTERY UNI<br>WHERE<br>SHOWN |
| FB   | 2-17W<br>T8  | 2'x2' LAY-IN, PRISMATIC<br>ACRYLIC .125 LENS,<br>ELECTRONIC <10%THD<br>BALLAST, DAYBRITE, LITHONIA |  |
| FC   | 2-32W<br>T8  | 2'x4' LAY-IN, PRISMATIC<br>ACRYLIC .125 LENS,<br>ELECTRONIC <10%THD<br>BALLAST, DAYBRITE, LITHONIA |  |
| LA   | LED<br>3500K | 6" DIA. RECESSED LED FIXTURE<br>LIGHTOLIER C6L SERIES,<br>LITHONIA                                 |  |
|      |              | EXIT LIGHTING FIXTURE WITH<br>(2) HEADS, RED LETTERS ON<br>WHITE LIGHTOLIER, LITHONIA              | CEILING OR<br>WALL<br>MOUNTED            |

1. ALL 2'x4' FIXTURES TO BE TYPE FA UNLESS OTHERWISE NOTED 2. ALL 2'x2' FIXTURES TO BE TYPE FB UNLESS OTHERWISE NOTED

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REFLECTED CEILING PLAN -ELECTRICAL

DESIGN DEVELOPMENT CONSTRUCTION

FINAL RECORD DRAWN BY:

CHECKED BY: REVISIONS:

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