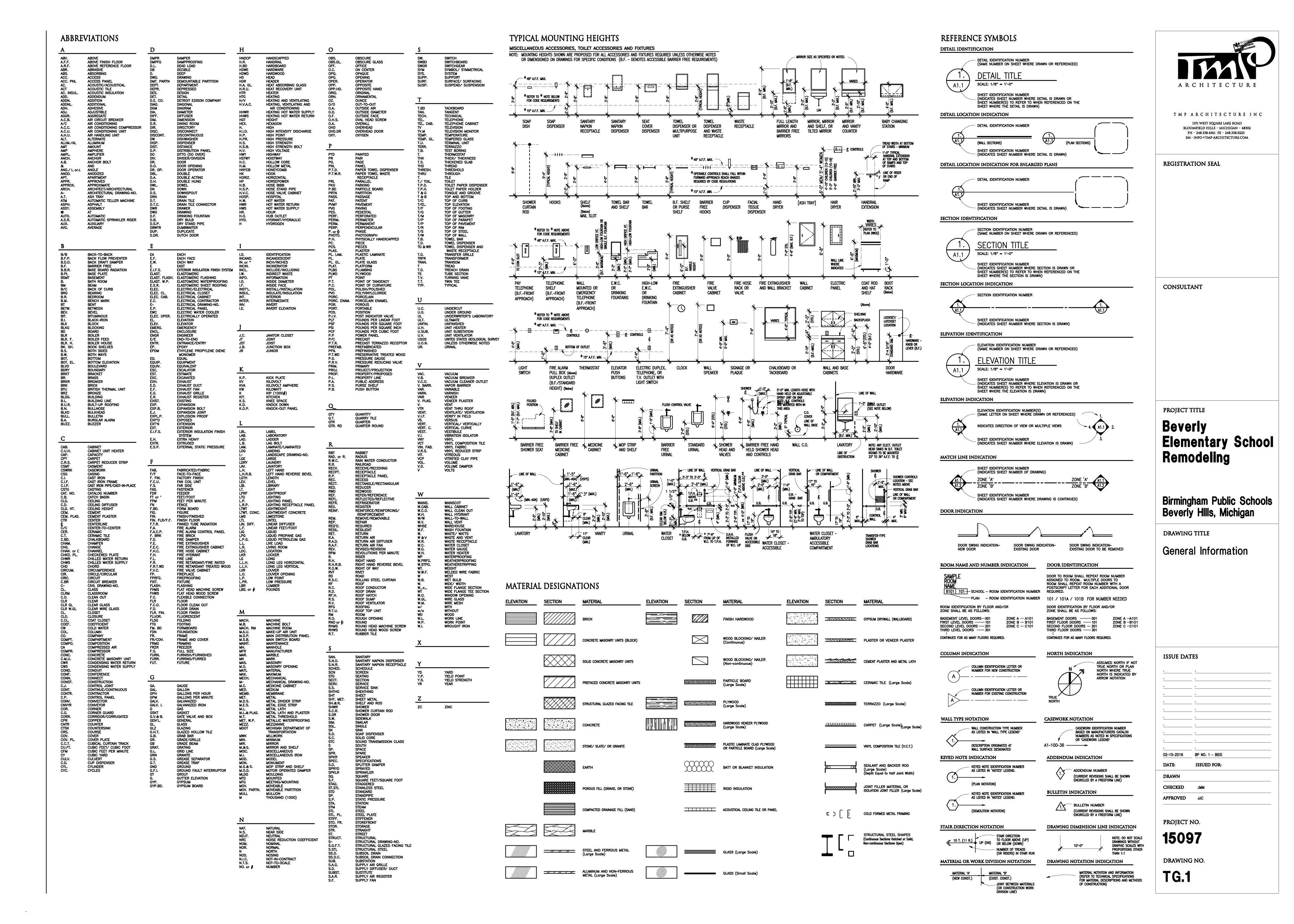
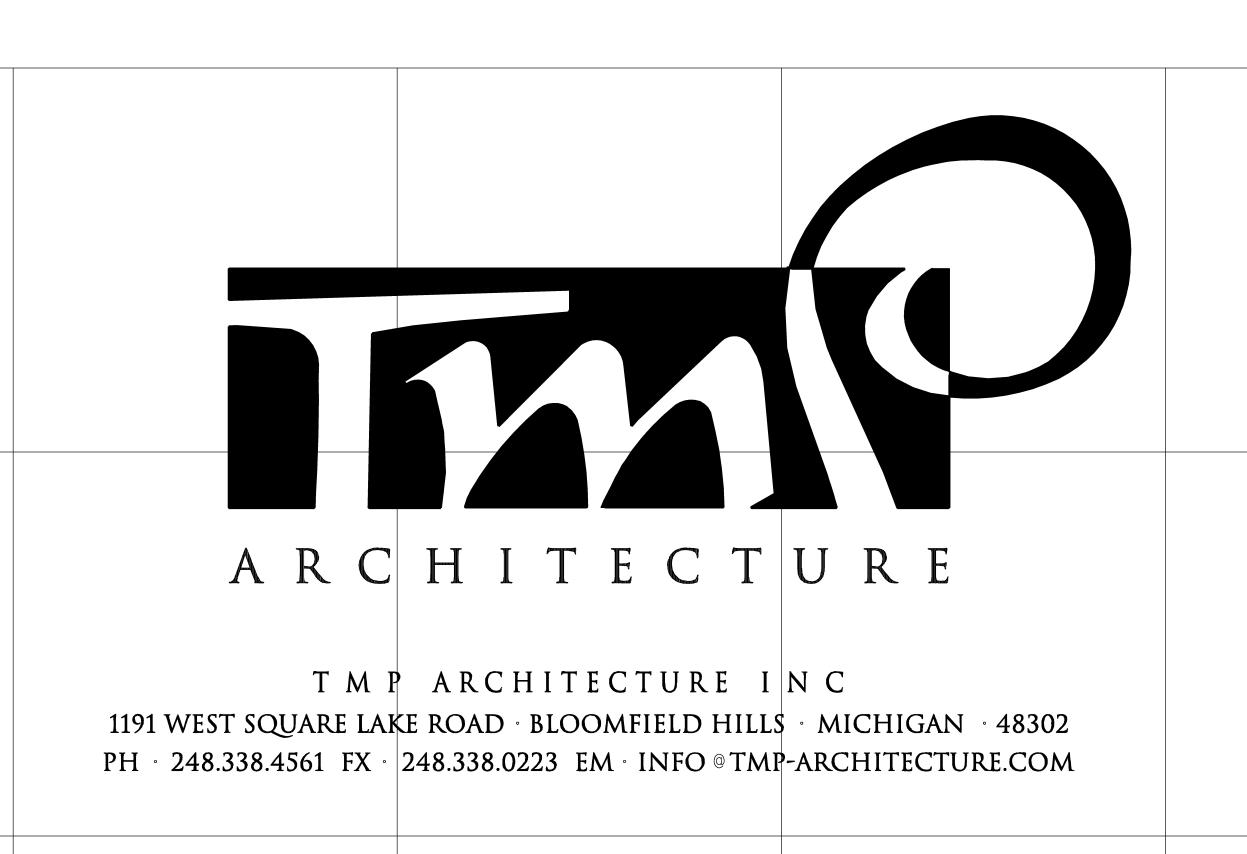
	ARCHITECTURE I  1191 WEST SQUARE LAKE ROAD · BLOOMFIELD HILL  PH · 248.338.4561 FX · 248.338.0223 EM · INFO © TMI	N C S · MICHIGAN · 48302		Extraction of the control of the con
	2016 WC BID PACKAGE BIRMINGHAM PUBLIC BIDS	NO. 1		
CONSULTANTS: ECHANICAL ENGINEER ERBIGLIA ASSOCIATES INSULTING ENGINEERS IO WEST 12 MILE ROAD MINGTON HILLS, MCHIGAN 48331 ME: (248) 489-3161 (248) 489-3161  ECTRICAL ENGINEER  BECTRICAL ENGINEER  FIRBIGLIA ASSOCIATES INSULTING ENGINEERS IOU WEST 12 MILE ROAD MINGTON HILLS, MCHIGAN 48331 MINGTON HILLS, MCH	15098 - Bingham Farms Elementary 15099 - Greenfield Elementary 15100 - Harlan Elementary 15101 - Pembroke Elementary	15103 - Quarton Elementary 15105 - Birmingham Covington 15108 - Groves High School 15109 - Seaholm High School 15111 - Operations 15112 - Transportation		
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# BEVERLY ELEMENTARY SCHOOL REMODELING BIRMINGHAM PUBLIC SCHOOLS

# BEVERLY HILLS, MI 48025 PROJECT NUMBER 15097

BIDS								
CONSULTANTS:		LIST OF DRAWINGS				PROJECT DATA:		
MECHANICAL ENGINEER  BERBIGLIA ASSOCIATES  CONSULTING ENGINEERS  36400 WEST 12 MILE ROAD FARMINGTON HILLS, MICHIGAN 48331 PHONE: (248) 489-3161 FAX: (248) 489-3161  ELECTRICAL ENGINEER  BERBIGLIA ASSOCIATES  CONSULTING ENGINEERS  36400 WEST 12 MILE ROAD FARMINGTON HILLS, MICHIGAN 48331 PHONE: (248) 489-3161 FAX: (248) 489-3161	CONSULTANT	TS.1 COVER SHEET TG.1 GENERAL INFORMATION	ARCHITECTURAL  AC1.1 COMPOSITE FLOOR PLAN  AD1.1 DOOR AND FRAME SCHEDULE  A0.1B FIRST LEVEL DEMOLITION PLAN - ZONE 'B'  A1.1B FIRST LEVEL FLOOR PLAN - ZONE 'B'  A10.1B FIRST LEVEL FINISH PLAN - ZONE 'B'	MECHANICAL  MC1.1 FIRST LEVEL MECHANICAL COMPOSITE PLAN, SHEET INDEX, ABBREVIATION LIST AND SYMBOL LIST  M1.1B FIRST LEVEL MECHANICAL PLAN - ZONE 'B'	ELECTRICAL  EC1.1 FIRST LEVEL ELECTRICAL COMPOSITE PLAN, SHEET INDEX, SYMBOL LIST AND LIGHTING FIXTURE SCHEDULE  E1.1B FIRST LEVEL LIGHTING PLAN - ZONE 'B'  E2.1B FIRST LEVEL POWER AND SYSTEMS PLAN - ZONE 'B'  E3.1 MISCELLANEOUS DETAILS AND WIRING DIAGRAMS  E3.2 MISCELLANEOUS DETAILS AND WIRING DIAGRAMS	BEVERLY ROAD  W. 13 MILE ROAD  BEVERLY HILLS, MI NO SCALE		
CIVIL ENGINEER  SPALDING, DeDECKER ASSOCIATES, II CIVIL ENGINEERS  905 SOUTH BOULEVARD EAST ROCHESTER HILLS MICHIGAN 48307 PHONE: (248) 844-5400 FAX: (248) 844-5404	CONSULTANT NC.					ADDRESS: BEVERLY ELEMENTARY SCHOOL 18305 BEVERLY RD, BEVERLY HILLS, MI 48025		

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#### PROJECT TITLE **Beverly Elementary** School Remodeling

**ISSUED FOR:** 

15097

DRAWING NO.

**TS.1** 

PROJECT NO.

**BUILDING:** 

GOVERNING CODES :

- 1999 SCHOOL FIRE SAFETY RULES

- 2012 MICHIGAN BUILDING CODE 2012 MICHIGAN PLUMBING CODE - 2012 MICHIGAN MECHANICAL CODE - 2009 MICHIGAN UNIFORM ENERGY CODE (ANSI/ASHRAE/IESNA Standard 90.1–2007)

- 2010 MICHIGAN ELEVATOR RULES (ASME A17.1-2010, ASME A18.1-2011) - MICHIGAN BARRIER FREE CODE

- 2013 MICHIGAN BOILER CODE RULES

CONSTRUCTION CLASSIFICATION

FULLY SPRINKLERED

02-15-2016 BP NO. 1 - BIDS

plus 2011a addenda)

HFPA II(000) M.B.C. II B USE GROUP CLASSIFICATION: E (EDUCATION)

FIRE PROTECTION:

BUILDING AREA(S) = 45,100 SQ. FT. (EXISTING)

(1997 Life Safety Code, plus amendments and policy letters)

- 2014 MICHIGAN ELECTRICAL RULES (2014 NEC, plus Part 8 Rules)

(Michigan Building Code 2012 and ICC A117.1-2009)

(ASME Boiler and Pressure Vessel Code, 2010 edition

(National Board Inspection Code [NBIC], 2011 edition)

800 SQ. FT. (EXISTING ALTERED)





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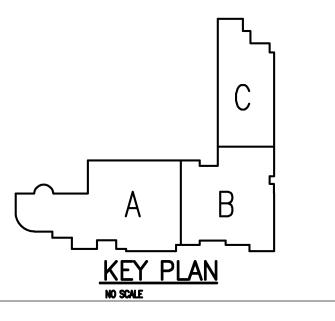
**REGISTRATION SEAL** 

CONSULTANT

Beverly
Elementary School
Remodeling

Birmingham Public Schools Beverly Hills, Michigan

DRAWING TITLE
Composite Floor Plan



DATE: ISSUED FOR:

DRAWN AKW

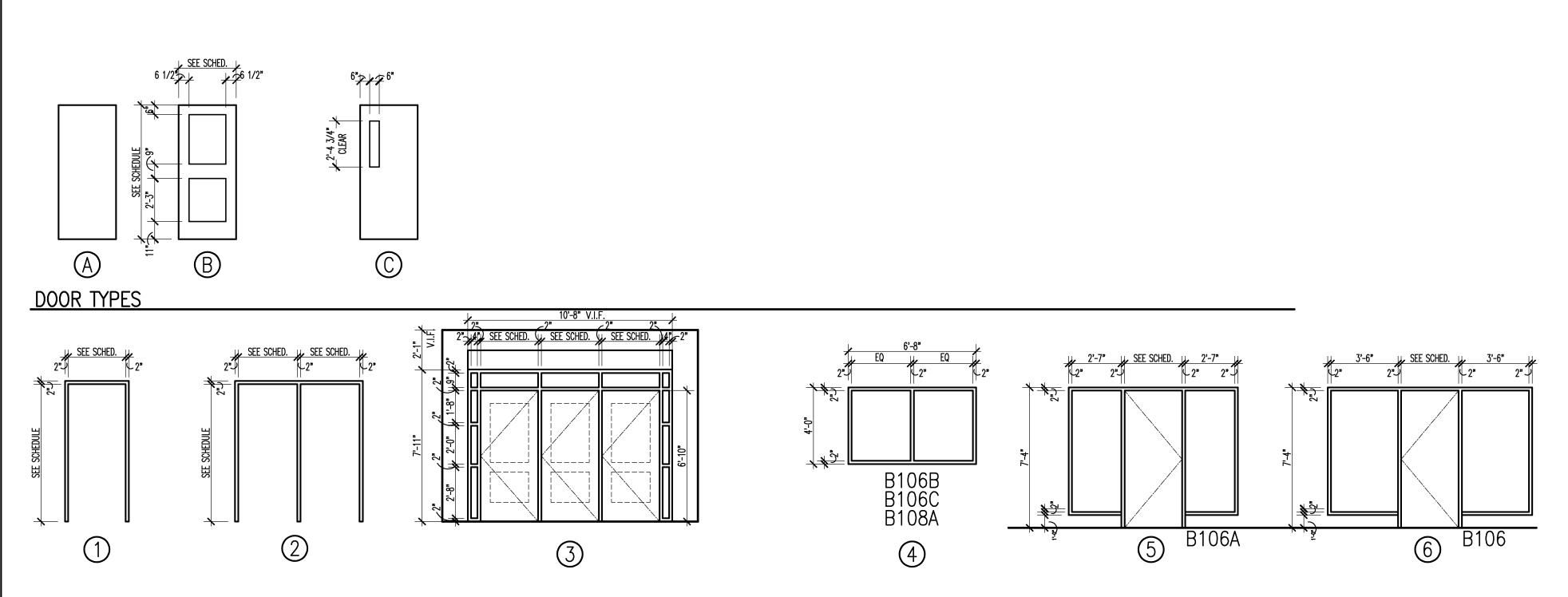
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PROJECT NO.

15097

DRAWING NO.
AC1.1

Ope	ning	D	oor	•		F	ram	е		Details				<u></u>	۳	Remarks	
No.	Opening Size (Width x Height)	Type	Material	Finish	Glass	Type	Material	Finish	Glass	Head	Jamb		Threshold	U.L. Label	Hdwe. Set		
Low	_ower Level - Zone 'B'																
B101A	3'-0" x 7'-2" (V.I.F.) (EXIST)	С	EX. WD	EX.	EX.	EX.	EX. HM	PTD	-	8 / AD1.1	7 / AD1.1				07	ALTERNATE A-3	
B106	3'-0" x 7'-2" (V.I.F.) (EXIST)	С	EX. WD	EX.	EX.	EX.	EX. HM	PTD	EX.	6 / AD1.1	4 & 5 / AD1.1				03	ALTERNATE A-1: PROVIDE GL-3. ALTERNATE A-2: PROVIDE ACCESS CONTROL SYSTEM	
B106A	3'-0" x 7'-2" (V.I.F.) (EXIST)	С	EX. WD	EX.	EX.	EX.	НМ	PTD	EX.*	6 / AD1.1	4 & 5 / AD1.1				04		
B107A	3'-0" x 7'-2" (V.I.F.) (EXIST)	Α	EX. WD	EX.	-	EX.	EX. HM	PTD	-	8 / AD1.1	7 / AD1.1				07	ALTERNATE A-3	
B106B	6'-8" x 4'-0" (V.I.F.) (EXIST)	WIND	OW OPEN	IING		EX.	EX. HM	EX.	EX.*	•					•	ALTERNATE A-1: PROVIDE GL-3	
B106C	6'-8" x 4'-0" (V.I.F.) (EXIST)	WIND	OW OPEN	IING		EX.	EX. HM	EX.	EX.*	•						ALTERNATE A-1: PROVIDE GL-3	
B108A	6'-8" x 4'-0" (V.I.F.) (EXIST)	WIND	OW OPEN	IING		EX.	EX. HM	EX.	EX.*	•						ALTERNATE A-1: PROVIDE GL-3	
B111A	3'-0"x 6'-10"	В	FRP	PFN	GL-1	3	AL	PFN	GL-1	3 / AD1.1	1 & 2 / AD1.1				02	ALTERNATE A-1: PROVIDE GL-3	
B111B	3'-0"x 6'-10""	В	FRP	PFN	GL-1	3	AL	PFN	GL-1	3 / AD1.1	.1 & 2 / AD1.1				02	ALTERNATE A-1: PROVIDE GL-3	
B111C	3'-0"x 6'-10"	В	FRP	PFN	GL-1	3	AL	PFN	GL-1	3 / AD1.1	.1 & 2 / AD1.1				01	ALTERNATE A-1: PROVIDE GL-3	
B125C	3'-0"x 6'-10" (V.I.F.) (EXIST)	EX.	FRP	PFN	EX.*	EX.	EX. AL	EX.	EX.*	•	•				05	ALTERNATE A-1: PROVIDE GL-12	
B125D	3'-0"x 6'-10" (V.I.F.) (EXIST)	EX.	FRP	PFN	EX.*	EX.	EX. AL	EX.	EX.*	•					06	ALTERNATE A-1: PROVIDE GL-12	
B125E	3'-0"x 6'-10" (V.I.F.) (EXIST)	EX.	FRP	PFN	EX.*	EX.	EX. AL	EX.	EX.*	•					06	ALTERNATE A-1: PROVIDE GL-12	
Low	er Level - Zo	ne	'C'														
C111B	PAIR 3'-0"x 6'-10"	A	НМ	PTD	T -	1	НМ	PTD	_	6/AD1.1	5/AD1.1			Ι.	20		
					†									<u> </u>			





(REFER TO SPECIFICATIONS FOR ADDITIONAL DOOR INFORMATION)

#### DOOR SCHEDULE ABBREVIATIONS

ALUMINUM ALGL ALUMINUM AND GLASS HOLLOW METAL SOLID CORE HARDWOOD

PREFINISHED BY MANUFACTURER PAINTED SYNTHETIC MARBLE THRESHOLD METAL THRESHOLD PLASTIC LAMINATE CLAD FRP FIBERGLASS REINFORCED POLYESTER STSTL STAINLESS STEEL STEEL

#### DOOR SCHEDULE GENERAL NOTES 1. GALVANIZED METAL TO BE PROVIDED FOR HOLLOW METAL DOOR AND/OR FRAME AT EXTERIOR LOCATION.

2. DOORS ARE 1-3/4" THICK UNLESS OTHERWISE NOTED.

3. DETAIL NUMBERS NOTED SIM. REFER TO DETAILS SHOWING HEAD, JAMB, AND/ OR SILL DETAILS THAT REPRESENT CONDITIONS SIMILAR TO THOSE NOTED.

4. HOLLOW METAL FRAMES SET IN MASONRY WALLS ARE 5 3/4" WIDE (U.O.N.). 5. HOLLOW METAL FRAMES, SET IN GYPSUM BD. /METAL STUD PARTITIONS, SHALL BE "DOUBLE BACK-BEND" FRAMES WITH A THROAT DIMENSION EQUAL TO THE PARTITION THICKNESS PLUS 9/16" RETURNS ON EACH

6. AN ASTERISK (\*) CALLS ATTENTION TO THE REMARKS COLUMN of the schedule.

SIDE OF THE PARTITION. PROVIDE EQUAL RABBETS.

#### U.L. DOOR LABEL DESIGNATIONS:

U.L. LABEL\*\* MIN. OPENING PROTECTION ASSEMBLY

1-1/2 HR. FIRE RATING

3 HR. FIRE RATING

1 HR. FIRE RATING

3/4 HR. FIRE RATING

1/3 HR. FIRE RATING

\*\* ALL FIRE RATED DOORS SHALL BE SMOKE AND DRAFT

CONTROL LABELED IN ADDITION TO U.L. LABELS INDICATED.

**GLAZING TYPES** (REFER TO SPECIFICATIONS FOR ASSEMBLIES)

GL-1 1/4" CLEAR TEMPERED, MONOLITHIC GLASS GL-2 1/4" LAMINATED GLASS

GL-3 INTERIOR LAMINATED SECURITY GLASS GL-6c 60 & 90 MINUTE FIRE RATED GLASS – DOORS GL-6d 60, 90 OR 120 MIN FIRE RATED GLASS GL-10 TEMPERED INSULATING GLASS - CLEAR

GL-11 TEMPERED INSULATING GLASS - TINTED GL-12 EXTERIOR INSULATING LAMINATED SECURITY GLASS



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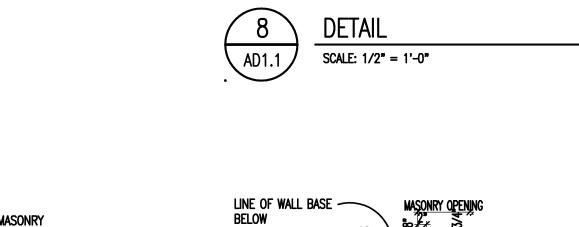
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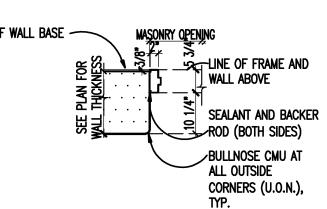
#### PROJECT TITLE **Beverly** Elementary School Remodeling

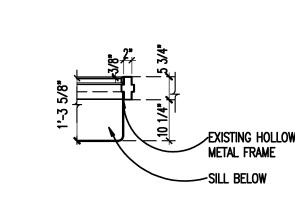
Birmingham Public Schools Beverly Hills, Michigan

Door & Frame Schedule



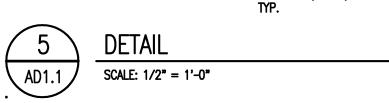
HOLLOW METAL DOOR FRAME (PTD), TYP.

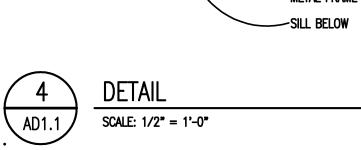




LINE OF FRAME AND WALL ABOVE

HOLLOW METAL DOOR FRAME (PTD), TYP.

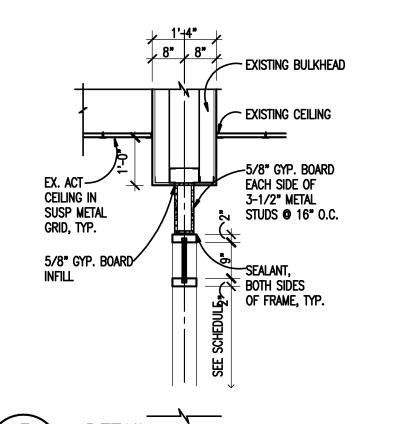


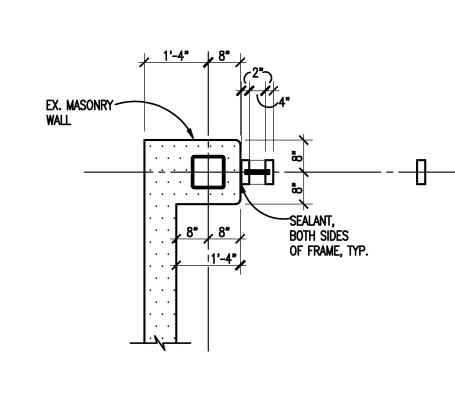


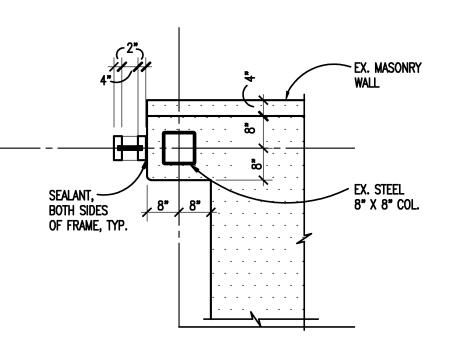
DETAIL

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

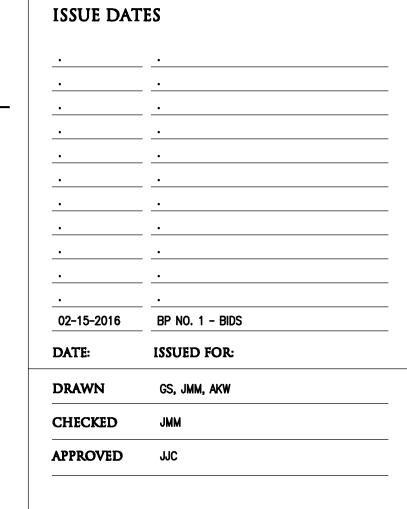
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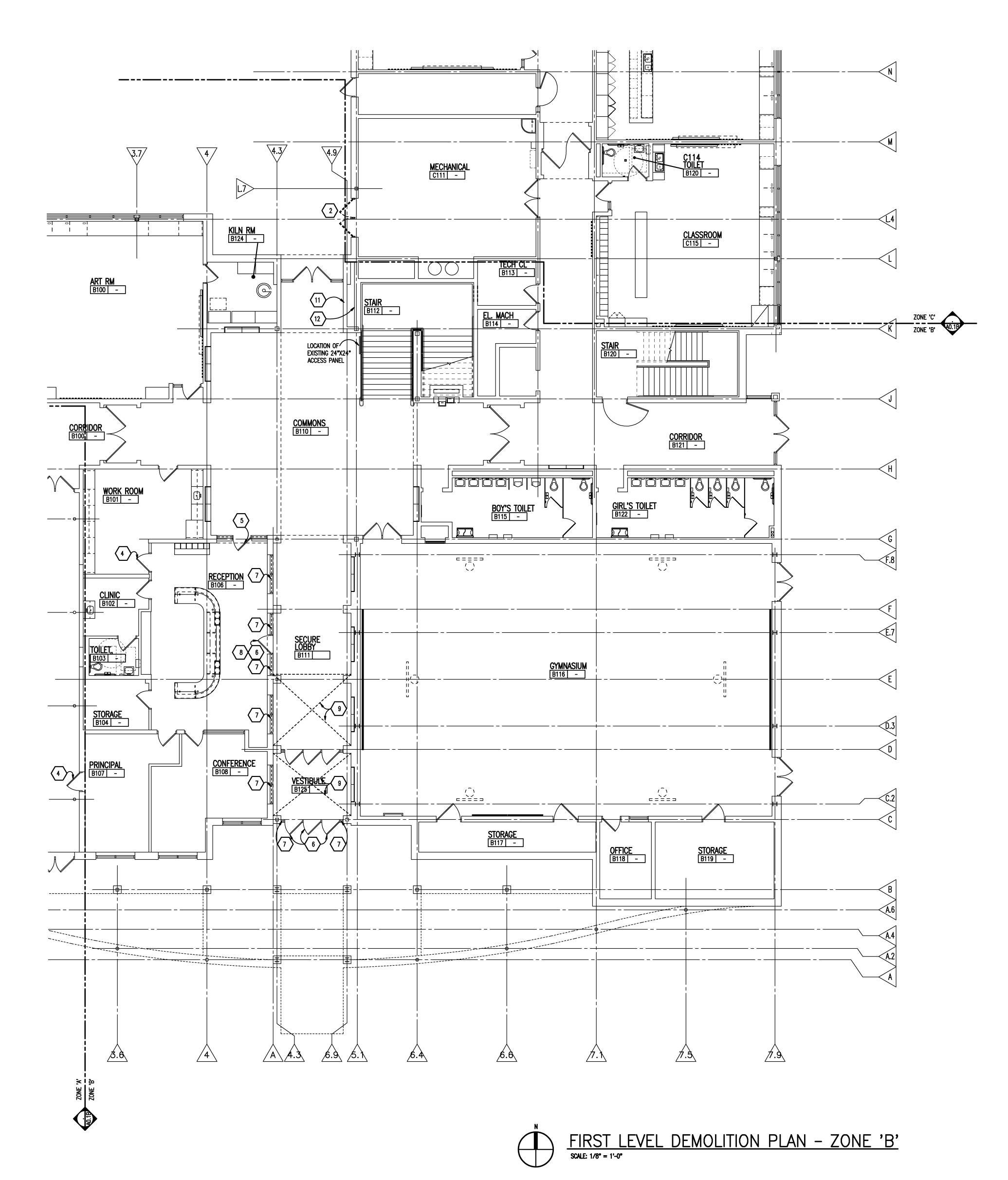


PROJECT NO.

15097

DRAWING NO.

**AD1.1** 



GENERAL NOTES

I. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR RELATED AND ADDITIONAL DEMOLITION AND PATCHING WORK BY MECHANICAL AND ELECTRICAL TRADES.

3. SEE CIVIL DRAWINGS FOR SITE DEMOLITION AND PATCHING WORK.

4. SEE EXTERIOR ELEVATIONS FOR ADDITIONAL DEMOLITION AND PATCHING WORK AT EXTERIOR OF BUILDING, INCLUDING (BUT NOT LIMITED TO) DEMOLITION NOTES RELATED TO WINDOW REPLACEMENT.

. WHERE REMOVAL OF CASEWORK, MILLWORK, CHALKBOARD, TACKBOARD, OR EQUIPMENT, IS INDICATED. FILL HOLES AND PATCH EXISTING WALLS, BASES AND CEILINGS WHICH ARE TO REMAIN EXPOSED.

6. UNLESS OTHERWISE INDICATED, TOOTH NEW MATERIAL INTO EXISTING WHEREVER INFILL REMAINS EXPOSED. 7. SEE SPECIFICATION SECTIONS 01731 AND 01732 FOR ADDITIONAL DEMOLITION AND

PATCHING REQUIREMENTS.

B. REFER ALSO TO ARCHITECTURAL WALL SECTIONS FOR ADDITIONAL SELECTIVE DEMOLITION.

#### DEMOLITION KEYNOTES

- REMOVE MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL NOTES AND DETAILS. PATCH, REPAIR AND/OR FILL EXPOSED ADJACENT SURFACES TO MATCH EXISTING (U.O.N.).
- 2 REMOVE EXTERIOR DOOR(S), FRAMING AND GLAZING, INCLUDING ADJACENT GLAZED-IN PANELS, ALUMINUM THRESHOLDS AND HARDWARE. TURN OVER DOORS AND HARDWARE TO THE OWNER, FOR THEIR STOCK, IF REQUESTED. MASONRY SILL WALLS BELOW TO REMAIN. PREPARE OPENING TO RECEIVE NEW
- GLAZED-IN PANELS, ALUMINUM THRESHOLDS AND HARDWARE. TURN OVER DOORS AND HARDWARE TO THE OWNER, FOR THEIR STOCK, IF REQUESTED. MASONRY SILL WALLS BELOW TO REMAIN. PREPARE OPENING TO RECEIVE NEW 4 REMOVE EXISTING LOCKSET. PREPARE DOOR TO RECEIVE NEW ELECTRONIC

(3) REMOVE INTERIOR DOOR(S), FRAMING AND GLAZING, INCLUDING ADJACENT

LOCKSET, AND RELATED HARDWARE. AS PART OF ALTERNATE NO. A-3. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

5 REMOVE EXISTING LOCKSET. PREPARE DOOR TO RECEIVE NEW ELECTRONIC LOCKSET, AND RELATED HARDWARE. REFER TO ELECTRICAL DRAWINGS FOR

- ADDITIONAL INFORMATION.
- REMOVE GLAZING FROM EXISTING DOOR AND PREPARE OPENING FOR NEW GLAZING AS PART OF ALTERNATE NO. A1.
- 7 REMOVE GLAZING FROM EXISTING FRAME AND PREPARE OPENING FOR NEW GLAZING AS PART OF ALTERNATE NO. A1.
- 8 REMOVE EXISTING FRAME STRIKE AND PREPARE FRAME TO RECEIVE NEW ELECTRONIC STRIKE AS PART OF ALTERNATE NO. A-2 REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE CARPET FLOOR FINISH AND PREPARE SUBSTRATE TO RECEIVE NEW FINISHES SCHEDULED. REFER TO FINISH DRAWINGS.
- REMOVE RESILIENT TILE FLOOR FINISH AND PREPARE SUBSTRATE TO RECEIVE NEW FINISHES SCHEDULED. REFER TO FINISH DRAWINGS.
- REMOVE EXISTING CABINET UNIT HEATER TO PROVIDE ACCESS TO CHASE. STORE UNIT REMEDIAL WORK COMPLETE AND REINSTALL.
- REMOVE LOOSE DEBRIS FROM BOTTOM OF EXISTING CHASE AND FROM EXPOSED CELLS OF MASONRY UNITS.

#### SALVAGED ITEMS

- DOORS AND HARDWARE.



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PROJECT TITLE **Beverly** Elementary School Remodeling

## Birmingham Public Schools Beverly Hills, Michigan

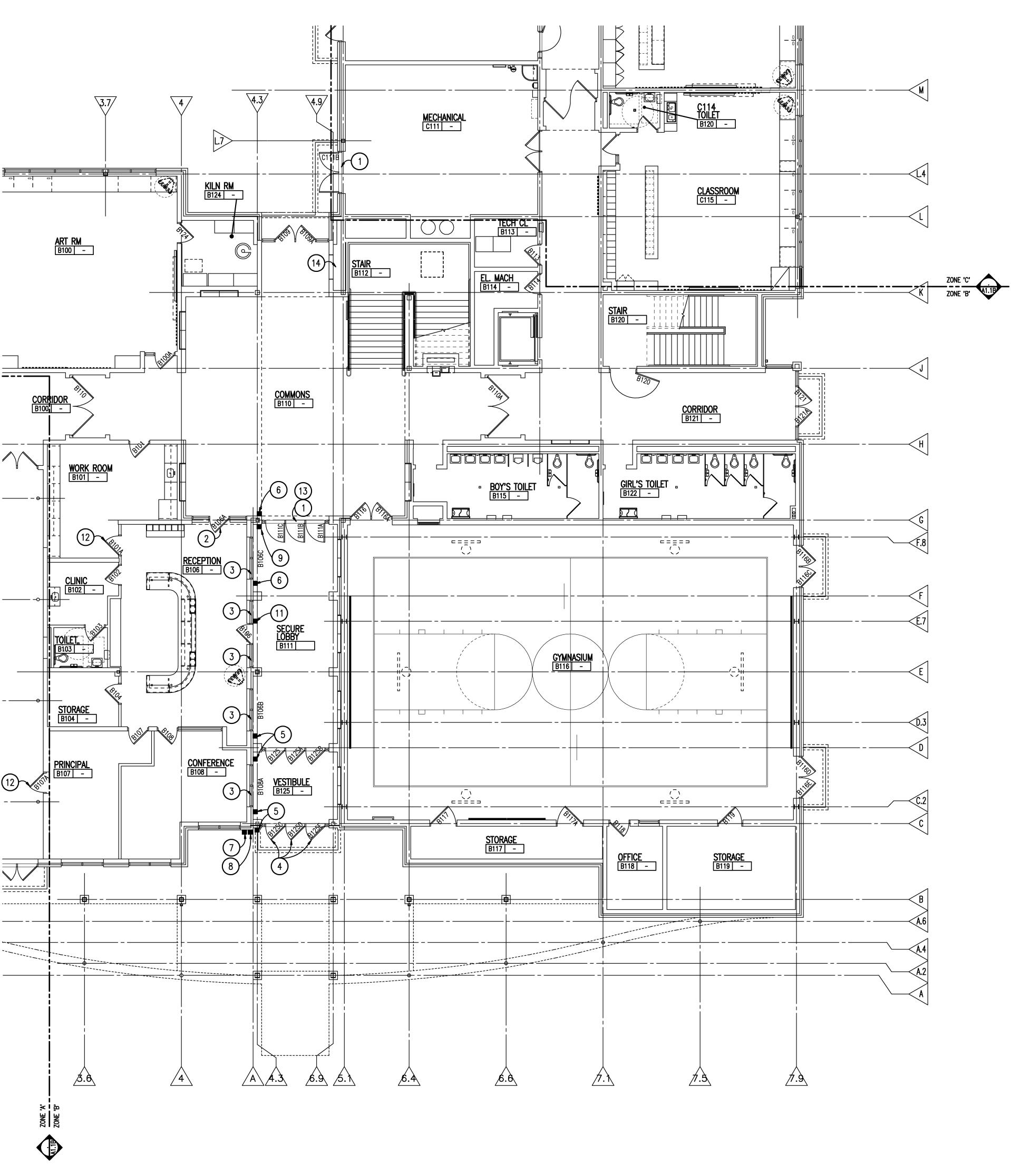
DRAWING TITLE First Level Demolition Plan Zone 'B' KEY PLAN NO SCALE

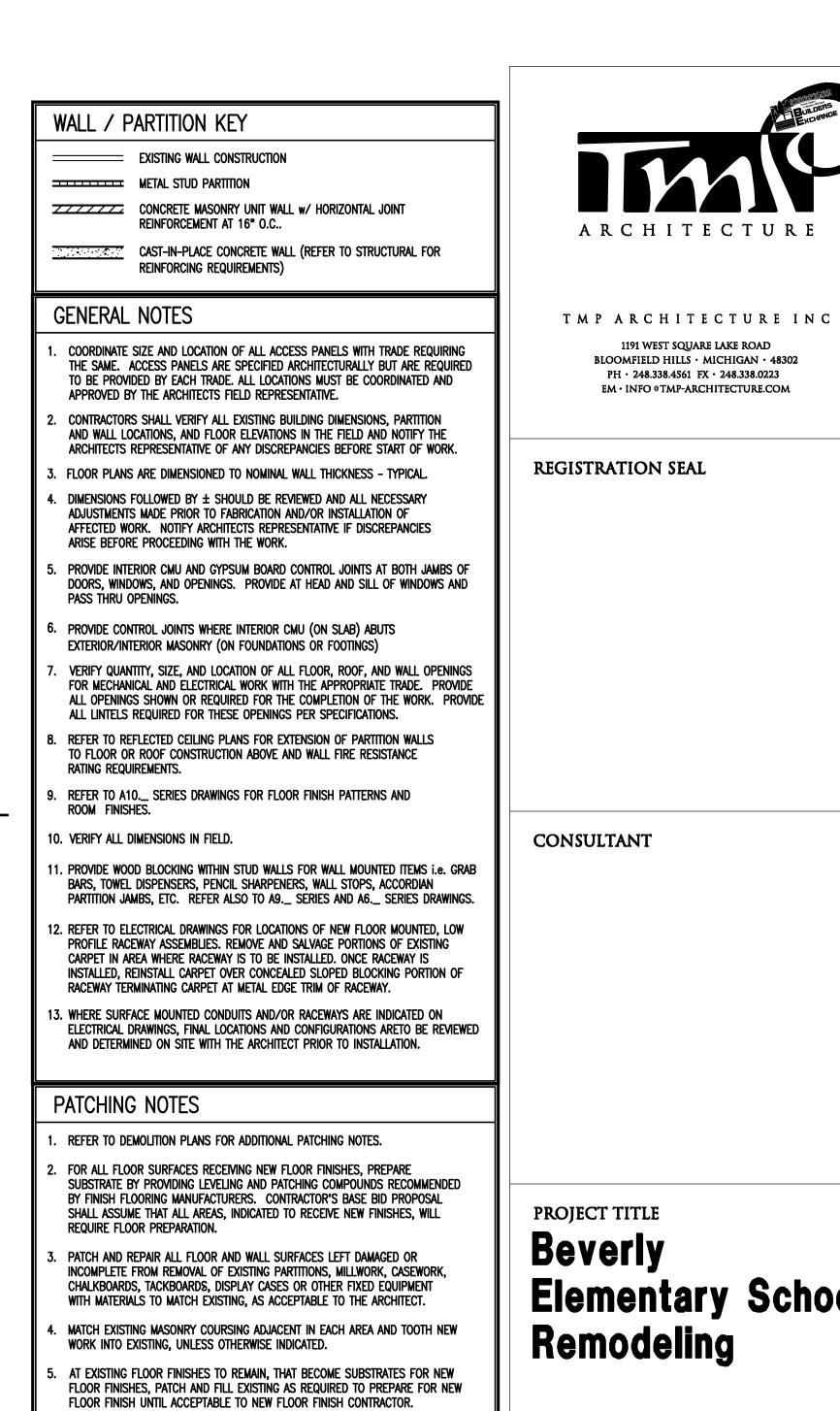
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15097

DRAWING NO. **A0.1B** 





TOOTH-IN MASONRY INTO EXISTING, U.O.N., INCLUDING JAMBS OF DOOR AND OTHER

INSTALL NEW DOORS, FRAMES, GLAZING AND HARDWARE. REFER TO DRAWING AD1.1 FOR ADDITIONAL INFORMATION

INSTALL NEW GLAZING IN EXISTING FRAMES AS PART OF ALTERNATE NO, A1

INSTALL NEW GLAZING IN EXISTING DOORS AS PART OF ALTERNATE NO, A1

NEW PROXIMITY READER AND ELECTRONIC STRIKE (REFER TO ALTERNATE A-2)

PROVIDE NEW SECURITY GLAZING IN LIEU OF SCHEDULED GLAZING IN NEW DOORS AND NEW FRAMING AS PER ALTERNATE NO. A-1.

PROVIDE COMPACTED GRANULAR FILL IN EXISTING CHASE SPACE TO AN ELEVATION 5" BELOW FLOOR SLAB ELEVATION. INSTALL 6 MIL. VAPOR BARRIER OVERFILL. INSTALL 5" CONCRETE TO FLOOR SLAB ELEVATION AND TROWL TO

PROVIDE NEW LOCKSET TIED INTO SECURITY SYSTEM AS PER ALTERNATE NO. A-3.

SMOOTH FINISH. REINSTALL CABINET UNIT HEATER.

EXISTING POWER DOOR OPERATOR ACTUATOR SWITCH TO REMAIN

NEW POWER DOOR OPERATOR ACTUATOR SWITCH

EXISTING KEYPAD/PROXIMITY READER TO REMAIN

7 Existing intercom box to remain

NEW KEYPAD/PROXIMITY READER

NEW PROXIMITY READER

2 Install New Door Hardware. Refer to drawing ad1.1 for additional information.

CONSTRUCTION KEY NOTES

## PROJECT TITLE **Beverly** Elementary School Remodeling

ARCHITECTURE

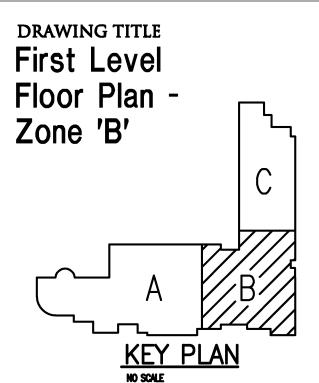
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## Birmingham Public Schools Beverly Hills, Michigan



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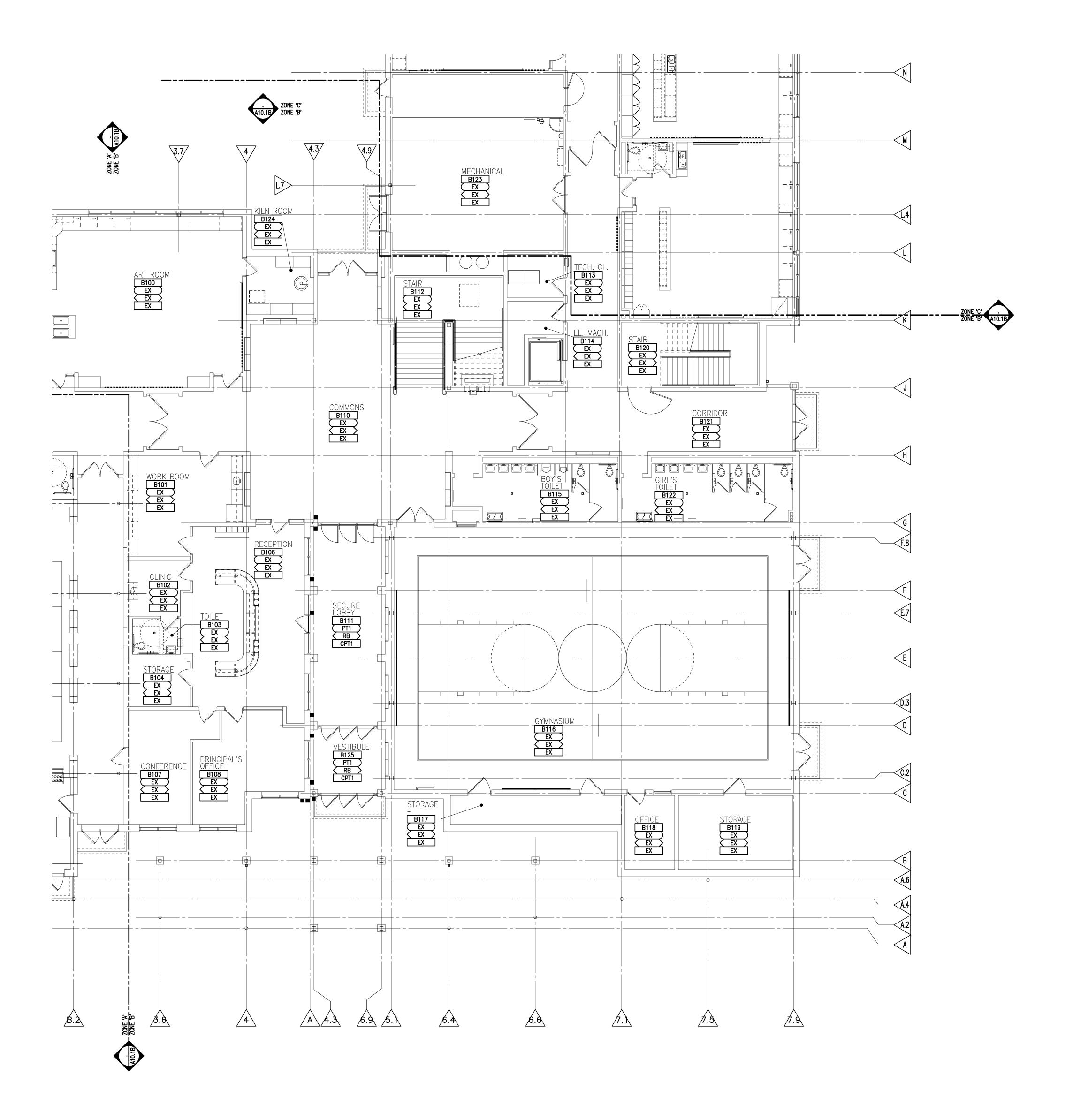
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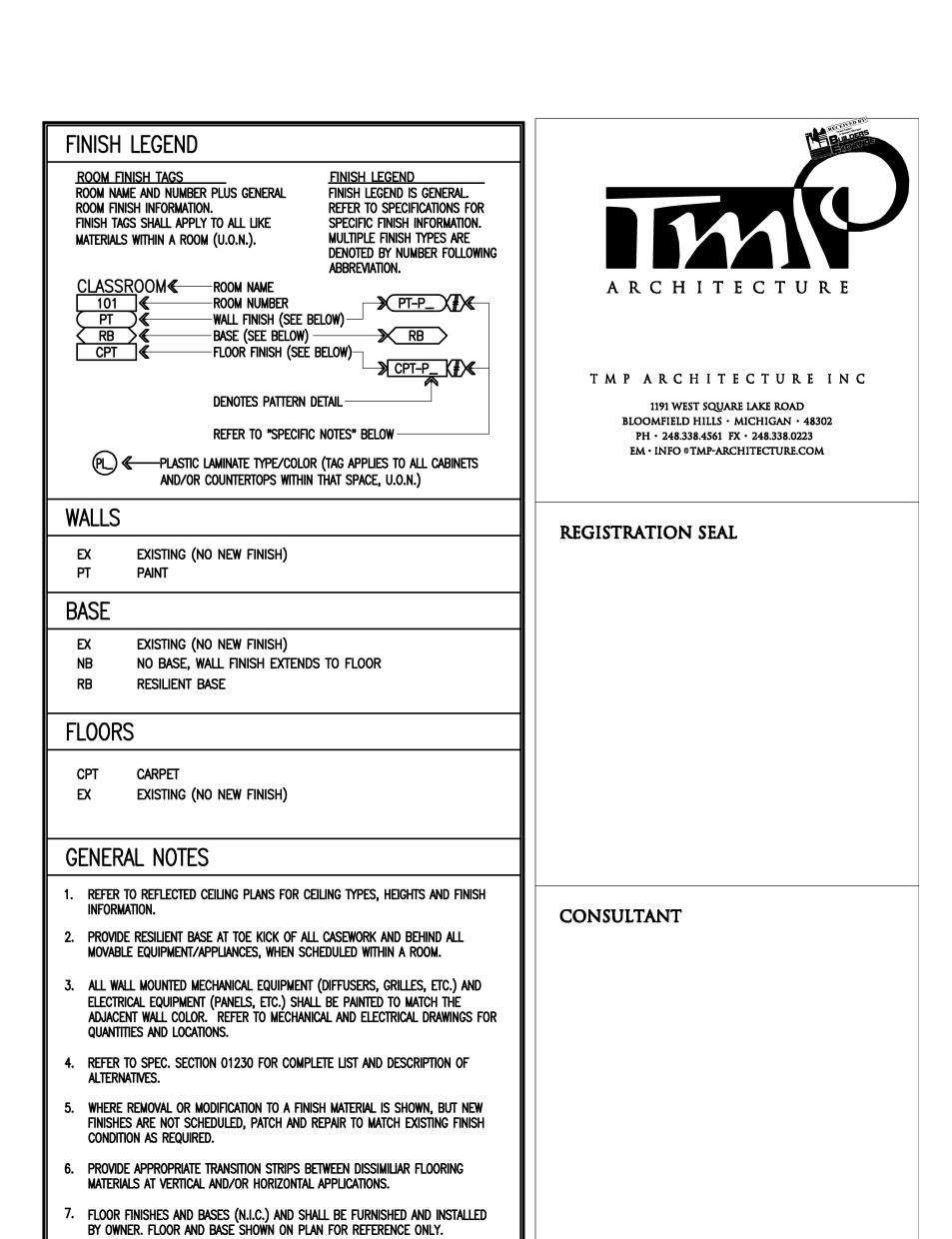
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**A1.1B** 



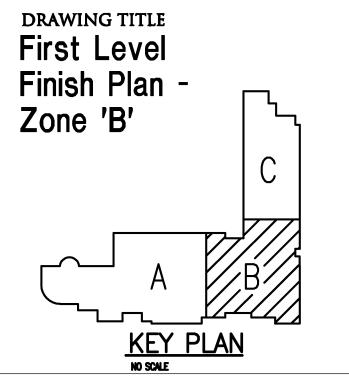




SPECIFIC NOTES

# Beverly Elementary School Remodeling

#### Birmingham Public Schools Beverly Hills, Michigan



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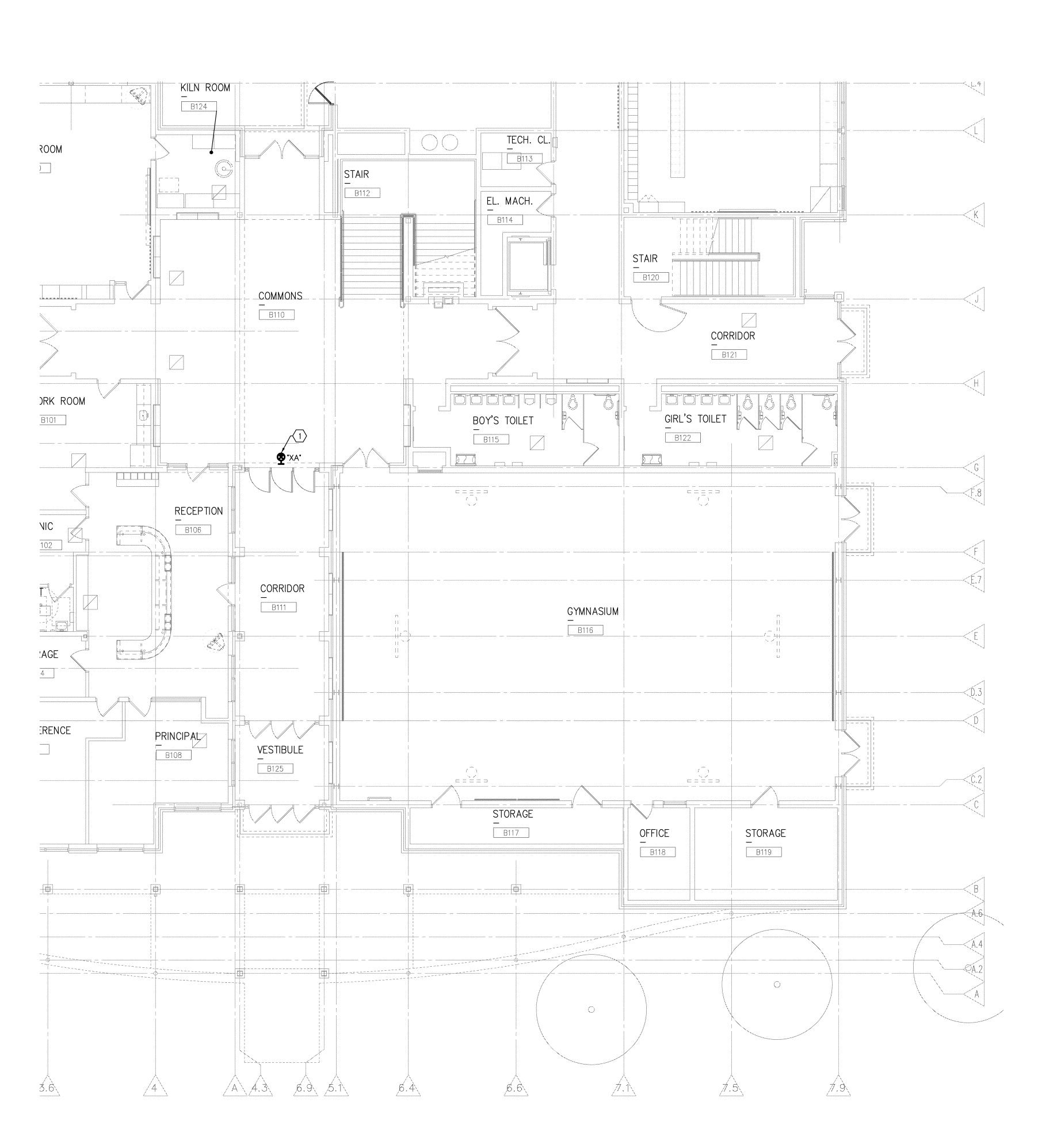
APPROVED JJC

PROJECT NO.

15097

DRAWING NO.

A10.1B



FIRST LEVEL LIGHTING PLAN - ZONE 'B'
SCALE: 1/8' - 1'-0'

#### LIGHTING GENERAL NOTES:

- 1 REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
- 2 REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
- 3 ALL LIGHT FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AND IN ACCORDANCE WITH NEC AND LOCAL REQUIREMENTS.
  - IN ACCORDANCE WITH NEC AND LOCAL REQUIREMENTS.

    ALL LIGHTING TO REMAIN, SERVED ON A CIRCUIT DOWNSTREAM OF LIGHTING OR DEVICES BEING DEMOLISHED OR REVISED SHALL REMAIN OPERATIONAL. PROVIDE

ALL BRANCH CIRCUIT WIRING REVISIONS AS REQUIRED TO MAINTAIN OPERATION

- OF LIGHTING, NOT INTENDED TO BE REVISED.

  5 CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING REQUIREMENTS FOR ALL EXIT LIGHTS PRIOR TO ORDERING.
- 6 ALL CONDUIT AND WIRING SHALL BE CONCEALED IN ALL FINISHED AREAS.
- 7 ALL JUNCTION BOXES SERVING BRANCH CIRCUIT WIRING SHALL BE LABELED WITH CIRCUITS BEING SERVED. USE INDELIBLE MARKER ON BOX COVER.
- 8 CIRCUIT NUMBERS INDICATED ON PLAN DO NOT INDICATE ACTUAL CIRCUIT BREAKER POLE POSITION IN PANEL, BUT REPRESENT ITEMS GROUPED ON SAME

#### LIGHTING KEY NOTES:

 $\langle 1 \rangle$  SERVE FROM THE EXISTING EMERGENCY LIGHTING CIRCUIT SERVING AREA.



T M P A R C H I T E C T U R E I N C

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REGISTRATION SEAL

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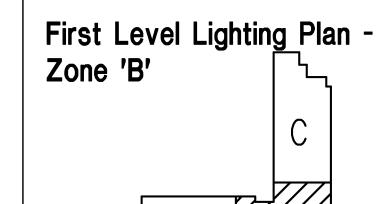


36400 West Twelve Mile Road Farmington Hills, Michigan 48331 (248) 489-3100 • FAX (248) 489-3161 BAI No. 15-1606

Beverly
Elementary School
Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE



NO

ISSUE DATES

02-15-2016 B.P.No. 1 - BIDS

DATE: ISSUED FOR:

DRAWN CC

APPROVED JB

PROJECT NO.

15097

DRAWING NO.
E1.1B

WHEN USING THIS DRAWING - PLOT OR PRINT FULL SIZE TO ENSURE CORRECT SCALE. NOTE REDUCED SIZE DRAWINGS ARE NOT TO SCALE

AREA OF RENOVATION -

~ | **\* \* \*** \* \* \* | **\*** 

FIRST LEVEL KEY PLAN

"IN CARPET" FINISHED RACEWAY REQUIREMENTS

FURNISH AND INSTALL AN "IN CARPET" FINISHED WIREWAY SYSTEM TO SERVE LOW VOLTAGE WIRING AND/OR 120 VOLT POWER WIRING AS INDICATED ON PLAN. INCLUDE ALL COMPONENTS AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION, COORDINATE ALL WORK WITH ARCHITECTURAL TRADES AS REQUIRED FOR A COMPLETE AND FINISHED INSTALLATION. ALUMINUM WIREWAY INSIDE DIMENSIONS SHALL BE 3.15" X 0.65".

INCLUDE ALUMINUM WIREWAY, WIREWAY TOP CAP, MDF SIDE RAMPS, CONSTRUCTION ADHESIVE, WIRE MANAGEMENT CLIPS, CONCRETE ANCHORS, END TRANSITION RAMPS, CORNER KITS, STEEL FLEX CONDUIT FOR 120 VOLT WIRING, WALL TRANSITION FITTING, END TRANSITION FITTING, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION, COORDINATE INSTALLATION INCLUDING WIREWAY LOCATION, LENGTH AND FITTINGS WITH WALL AND FURNITURE PRIOR TO INSTALLATION.

MDF SIDE RAMPS SHALL BE MOISTURE RESISTANT AND SHALL BE SECURED TO THE CONCRETE SLAB WITH CONSTRUCTION ADHESIVE. COORDINATE EXACT SIZE, LOCATION AND MOUNTING WITH ARCHITECTURAL TRADES. ADJUST SIZE AND SHAPE WHERE RAMPS MEET FURNITURE.

WHERE THE 'IN CARPET' WIREWAY MEETS A WALL, USE AN END FITTING TO TRANSITION FROM THE FLOOR TO THE WALL, AT DRYWALL WALL LOCATIONS, ALL WIRING FROM THE FLOOR WIREWAY TO THE CEILING SPACE SHALL BE CONCEALED WITHIN THE WALL CONSTRUCTION. PROVIDE MINIMUM 3/4" CONDUIT FOR LOW VOLTAGE WIRING. UTILIZE THE STEEL FLEXIBLE CONDUIT FOR 120 VOLT WIRING. AT MASONRY WALL LOCATIONS, ALL WIRING FROM THE FLOOR WIREWAY TO THE CEILING SPACE SHALL BE CONCEALED WITHIN A FINISHED SURFACE WIREWAY. WHERE BOTH LOW VOLTAGE AND POWER WIRING ARE REQUIRED. FINISHED SURFACE WIREWAY SHALL BE TWO COMPARTMENT. WHERE THE ROOM ON THE OPPOSITE SIDE OF THE WALL IS UNFINISHED, INSTALL SURFACE CONDUIT IN THE UNFINISHED ROOM WHERE APPROVED BY THE PROJECT ARCHITECT. WHERE "IN CARPET' WIREWAY MEETS A FURNITURE OR MILLWORK PARTITION, USE AN END FITTING TO TRANSITION FROM THE FLOOR TO THE FURNITURE OR MILLWORK PARTITION. CONCEAL ALI VERTICAL WIRING FROM THE FLOOR TO THE WORK SURFACE WITHIN THE FURNITURE OR MILLWORK PARTITION OR UTILIZE A FINISHED SURFACE WIREWAY. WHERE BOTH LOW VOLTAGE AND POWER WIRING ARE REQUIRED, FINISHED SURFACE WIREWAY SHALL BE TWO COMPARTMENT. WIRING INSTALLED HORIZONTALLY AT THE WORK SURFACE MAY BE INSTALLED IN A FLEXIBLE METAL CONDUIT NEATLY CONCEALED UNDER THE WORK SURFACE. CONTRACTOR SHALL WORK CLOSELY WITH THE "IN CARPET" WIREWAY MANUFACTURER AND THE FINISHED SURFACE WIREWAY MANUFACTURER TO IDENTIFY AND SELECT ALL NECESSARY FITTINGS REQUIRED FOR A FINISHED APPEARING INSTALLATION. REFER TO SPECIFICATIONS FOR FINISHED SURFACE WIREWAYS. SUBMIT COMPLETE AND DETAILED SHOP DRAWINGS INCLUDE ALL FITTINGS AND TRANSITION PIECES, ACCESSORIES AND COMPONENTS, FINISHED SURFACE WIREWAYS, RACEWAYS, ETC.

'IN CARPET' FINISHED WIREWAY SYSTEM SHALL BE CONNECTRAC 'IN CARPET' SYSTEM. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE CONNECTRAC INSTALLATION RECOMMENDATIONS AND REQUIREMENTS.

B100

WORK ROOM

B101

CLINIC

(ICR)

E3.1

CONFERENCE

B107

E3.1

\(ACD)

(CON)

#### POWER AND SYSTEMS SPECIAL KEY NOTES:

- ACCESS CONTROLLED DOOR WITH ELECTRIC LOCK AND DOOR POSITION SWITCH OR INDICATOR FURNISHED AND INSTALLED BY DOOR CONTRACTOR, WIRED BY ELECTRICAL TRADES. REFER TO DOOR HARDWARE SPECIFICATIONS AND EQUIPMENT SHOP DRAWINGS.
- IP BASED SECURITY CAMERA, FURNISHED, INSTALLED, AND WIRED BY THE DISTRICTS VIDEO SECURITY VENDOR. FIELD VERIFY EXACT CAMERA MOUNTING LOCATION WITH THE DISTRICTS SECURITY OFFICER PRIOR TO ROUGH-IN. LEAVE A PULL WIRE IN THE EMPTY CONDUIT. STUB THE CONDUIT TO AN ACCESSIBLE CEILING SPACE LOCATION ONLY.
- CONNECTRAC, IN-CARPET WIREWAY FURNISHED, INSTALLED AND WIRED BY ELECTRICAL TRADES TO ACCOMMODATE SERVICES INDICATED OR NOTED. INCLUDE ALL ACCESSORIES REQUIRED FOR INSTALLATION. COORDINATE ALL WORK WITH ARCHITECTURAL TRADES, FIELD VERIFY EXACT MOUNTING LOCATION WITH ARCHITECTURAL TRADES PRIOR TO INSTALLATION. SEE CONNECTRAC REQUIREMENTS THIS SHEET.
- MOTORIZED DOOR OPERATOR, 120 VOLT, FURNISHED AND INSTALLED BY DOOR CONTRACTOR, WIRED BY ELECTRICAL TRADES. PROVIDE LOCAL 120 VOLT DISCONNECT SWITCH AS REQUIRED FOR CODE CONFORMANCE, PROVIDE INSTALLATION AND WIRING OF PUSHBUTTON STATIONS. ALL WIRING TO BE IN ACCORDANCE WITH EQUIPMENT SHOP DRAWINGS. INTERFACE WIRING AND OPERATION WITH CARD ACCESS SYSTEM SO THAT DOOR OPERATOR DOES NOT OPERATE EXCEPT WHEN ACCESS IS APPROVED BY CARD ACCESS SYSTEM.
- EACD EXISTING ACCESS CONTROLLED DOOR. DOOR, POSITION SWITCH, ELECTRIC LOCK, VRINX DOOR CONTROL MODULE, ETC. TO
- DOOR LOCK DOWN PUSH BUTTON, FURNISHED, INSTALLED AND WIRED BY THE ACCESS CONTROL CONTRACTOR. FIELD COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL TRADES AND DISTRICT STAFF PRIOR TO INSTALLATION.
- VANDERBILT INDUSTRIES \*VRINX DOOR CONTROL MODULE IN NEMA ONE ENCLOSURE FURNISHED, INSTALLED, AND WIRED BY ACCESS CONTROL CONTRACTOR. CONCEAL IN CEILING SPACE WHERE FEASIBLE. PROVIDE POWER SUPPLY TO SERVE ONE OR MORE MODULES. INCLUDE ALL 120 VOLT WIRING FOR POWER SUPPLIES.

TECH. CL.

EL. MACH.

|L|L|L||0||*|*||

STORAGE

B117

GYMNASIUM

OFFICE

B118

FIRST LEVEL POWER AND SYSTEMS PLAN - ZONE 'B'

B116

BOY'S TOILET

B115

- PROXIMITY READER, FURNISHED, INSTALLED, AND WIRED BY ACCESS CONTROL CONTRACTOR.
- ROCD PROXIMITY READER CONTROLLED DOOR.

KILN ROOM

B124

MDO)-

ACD ROCD

CORRIDOR

RKCD (ACD)

-0.5' FLEX. CONDUIT WITH SECURITY WITHING

UNDER COUNTER. SEE WIRING DIAGRAM

PRINCIPAL

B108

CAM

PROXIMITY READER WITH INTEGRAL KEYPAD, FURNISHED, INSTALLED, AND WIRED BY ACCESS CONTROL CONTRACTOR.

STAIR

PROXIMITY READER/KEYPAD CONTROLLED DOOR.

#### POWER AND SYSTEMS KEY NOTES:

B121

STORAGE

B119

B122

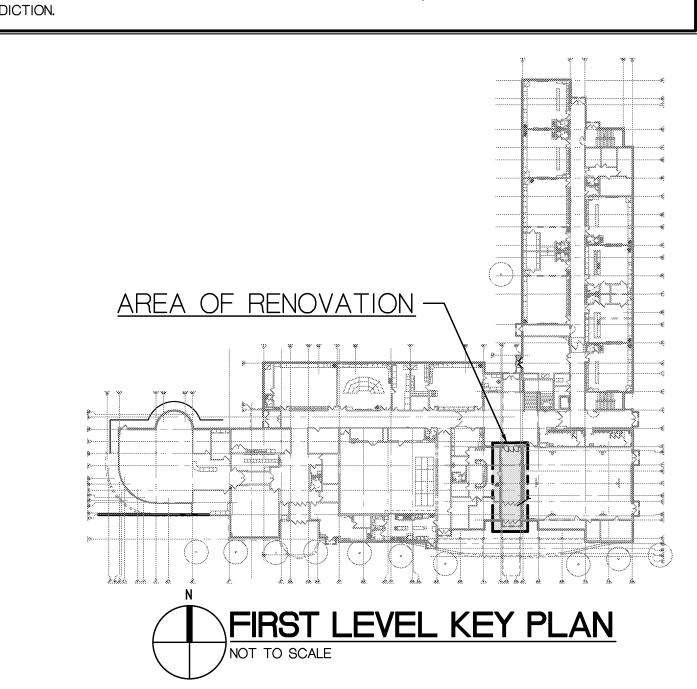
- IN-FLOOR WIREWAY. 0.75" CONDUIT ROUTED CONCEALED IN WALL CAVITY TO ACCESSIBLE CEILING SPACE.
- FLUSH CEILING MOUNTED JUNCTION BOX AND CONCEALED 0.75" CONDUIT. STUB CONDUIT INTO ACCESSIBLE CEILING SPACE, BUSH END OF CONDUIT AND PROVIDE PULL WIRE.
- HOMERUN TO ACP, SEE ACCESS CONTROL DIAGRAMS SHEETS E3.1 AND
- 120-VOLT CIRCUIT, TO NEW OR SPARE 20A-1P. CIRCUIT BREAKER IN NEAREST AVAILABLE NON-TECHNOLOGY RECEPTACLE PANEL. FIELD VERIFY EXISTING CONDITIONS. TWO (2) DOOR OPERATORS MAY BE SERVED WITH ONE 20A CIRCUIT.

#### POWER AND SYSTEMS GENERAL NOTES:

- REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS
- THE DISTRICT UTILIZES A VISITOR NOTIFICATION SYSTEM (VNS). THE VNS UTILIZES A NUMBER OF INTEGRATED BUILDING SYSTEMS INCLUDING CARD ACCESS, VIDEO SECURITY, TELEPHONE/INTERCOM, LOCK DOWN, ETC.
- ALL CARD ACCESS REVISIONS SHALL BE PERFORMED BY A CARD ACCESS SYSTEM CONTRACTOR WHO SHALL BE A SUBCONTRACTOR TO THE ELECTRICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR A LIST OF ACCEPTABLE SUBCONTRACTORS.
- ALL CARD ACCESS SYSTEM REVISIONS SHALL BE COORDINATED WITH DOOR HARDWARE REVISIONS AND ARCHITECTURAL TRADES.
- WIRING, CONNECTIONS AND REVISIONS FOR ALL DOOR HARDWARE COMPONENTS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS, WIRING DIAGRAMS AND INSTALLATION INSTRUCTIONS AND THE EQUIPMENT SHOP DRAWINGS.

REFER TO CARD ACCESS/VNS SYSTEM WIRING DIAGRAMS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

- ALL CARD ACCESS AND/OR VNS SYSTEM REVISIONS SHALL BE TESTED FOR PROPER OPERATION.
- ALL CONDUIT AND WIRING SHALL BE CONCEALED IN ALL FINISHED AREAS. WHERE CONCEALING CONDUIT IS NOT FEASIBLE, A FINISHED SURFACE RACEWAY (WIREMOLD OR EQUAL) MAYBE USED. WHERE A FINISHED SURFACE WIREWAY IS USED, SURFACE MOUNTED JUNCTION BOXES SHALL ALSO BE A FINISHED SURFACE BOX (WIREMOLD OR EQUAL). REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
- REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHT AND LOCATION OF ALL RECEPTACLES AND OUTLETS ABOVE OR BELOW COUNTERS. REFER TO ARCHITECTURAL DRAWINGS, ELEVATIONS AND DETAILS FOR LOCATIONS AND MOUNTING HEIGHTS OF VARIOUS ELECTRICAL RECEPTACLES, OUTLETS AND DEVICES.
- COORDINATE THE EXACT ROUGH-IN LOCATION OF JUNCTION BOXES OR, RECEPTACLES OR OUTLETS, REQUIRED TO SERVE EQUIPMENT BENEATH
- REFER TO ARCHITECTURAL DRAWINGS FOR THE SCOPE OF CEILING SYSTEM REVISIONS INCLUDING CEILINGS BEING REPLACED, RAISED OR LOWERED. INCLUDE ALL ELECTRICAL WORK REQUIRED TO ACCOMMODATE CEILING SYSTEM REVISIONS INCLUDING RE-SUPPORTING OR RELOCATING CONDUIT, BOXES, WIRING, ETC. REQUIRED TO REMAIN, AS REQUIRED FOR CODE CONFORMANCE. INCLUDE ALL CONDUIT, BOX AND WIRING REVISIONS REQUIRED AND COORDINATE ALL WORK WITH ARCHITECTURAL TRADES.
- MAINTAIN SERVICE TO ALL LOADS NOT INTENDED TO BE REVISED. INTERRUPTED OR DEMOLISHED, PROVIDE ALL CONDUIT, BOX AND WIRING REVISIONS REQUIRED TO ACCOMPLISH SAME AND INCLUDE ALL COSTS IN THE ELECTRICAL BID.
- MODIFY EXISTING PANELBOARD CIRCUIT BREAKERS AS REQUIRED TO ACCOMMODATE CIRCUITING REQUIREMENTS INDICATED ON PLAN. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
- LABEL ALL RECEPTACLES. JUNCTION BOXES, DOOR POWER SUPPLIES, ETC. WITH THE PANEL AND CIRCUIT FROM WHICH THEY ARE SERVED. UTILIZE 0.125" HIGH BLACK LETTERS ON A CLEAR BACKGROUND LOCATED ON THE RECEPTACLE OR JUNCTION BOX COVERPLATE. WHERE RECEPTACLE IS SERVED WITH GENERATOR POWER, UTILIZE RED LETTERS. IN ADDITION, NEATLY WRITE WITH AN INDELIBLE MARKER THE PANEL AND CIRCUIT ON THE INSIDE OF THE RECEPTACLE OR JUNCTION BOX COVERPLATE.
- USING AN INDELIBLE MARKER, NEATLY LABEL BY HAND, IN ALL UNFINISHED AREAS, JUNCTION BOXES TO INDICATE THE PANEL AND CIRCUIT(S) WHICH THE BOX SERVES.
- PROVIDE ACCURATE TYPED DIRECTORIES IN ALL PANELBOARDS. TRACE EXISTING CIRCUITS AS REQUIRED TO DETERMINE LOADS SERVED FROM EXISTING CIRCUIT BREAKERS AND COMPLETE PANELBOARD DIRECTORIES ACCORDINGLY.
- ALL 120 VOLT BRANCH CIRCUITS SHALL BE 2\*12 + 1\*12 GROUND 3/4" C SERVED FROM A 20 AMP SINGLE POLE CIRCUIT BREAKER UNLESS OTHERWISE REQUIRED.
- 18 ALL 120 VOLT CIRCUITS GREATER THAN 90 FEET FROM CIRCUIT BREAKER TO LAST LOAD ON CIRCUIT SHALL BE WITH \*10 AWG WIRE.
- REFER TO MECHANICAL HVAC AND PLUMBING DRAWINGS FOR MECHANICAL EQUIPMENT REQUIREMENTS, INCLUDE ALL WORK REQUIRED TO ACCOMMODATE MECHANICAL EQUIPMENT REVISIONS. COORDINATE ALL WORK WITH MECHANICAL TRADES AND INCLUDE ALL COSTS IN THE ELECTRICAL BID AS REQUIRED TO ACCOMMODATE MECHANICAL EQUIPMENT REVISIONS.
- 20 ALL 120-VOLT BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR.
- 21 ALL CONDUIT SERVING WIRING 120 VOLTS OR GREATER SHALL HAVE A GROUND WIRE.
- 22 PROVIDE ACCURATE TYPED DIRECTORIES IN ALL PANELBOARDS.
- 23 BRANCH CIRCUIT WIRING SHALL BE IN STRICT ACCORDANCE WITH NEC ARTICLE 310 AND TABLE 310.15 ADJUSTMENT FACTORS FOR MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A RACEWAY. INSTALL A MAXIMUM OF THREE CIRCUITS IN A SINGLE CONDUIT. DERATE THE AMPACITY PER THE NEC WHERE THE NUMBER OF CONDUCTORS EXCEEDS THREE.
- 24 AS-BUILT DRAWINGS SHALL INDICATE ACTUAL CIRCUITING FOR ALL PROJECT PANELS.
- 25 ALL VOICE AND DATA CABLING WILL BE FURNISHED AND INSTALLED BY THE DISTRICTS TECHNOLOGY CONTRACTOR.
- 26 ALL CAMERA CABLING WILL BE FURNISHED AND INSTALLED BY THE DISTRICTS TECHNOLOGY CONTRACTOR.
- 27 PROVIDE A PULL WIRE IN ALL EMPTY CONDUIT.
- 28 ALL CONDUIT INSTALLED TO SERVE VOICE OR DATA CABLING SHALL HAVE A BUSHED END STUBBED TO AN ACCESSIBLE CEILING LOCATION.
- ALL CONDUIT SERVING THE CARD ACCESS SYSTEM SHALL BE CONCEALED WITHIN BUILDING CONSTRUCTION. UTILIZE A FINISHED SURFACE RACEWAY SUCH AS WIREMOLD WHERE CONCEALING CONDUIT IS NOT FEASIBLE AS A RESULT OF EXISTING MASONRY CONSTRUCTION. IN EXISTING DRYWALL CONSTRUCTION, CONCEAL THE CONDUIT.
- ALL LOW VOLTAGE CARD ACCESS SYSTEM, FIRE ALARM SYSTEM WIRING, AND OTHER INSTALLED BY THIS CONTRACTOR SHALL BE INSTALLED IN CONDUIT OR A FINISHED SURFACE RACEWAY EXCEPT AS FOLLOWS: WHERE INSTALLED ABOVE AN ACCESSIBLE LAY-IN CEILING. WHERE INSTALLED IN A DOOR OR WINDOW FRAME MULLION
- LOW VOLTAGE CABLING SHALL BE INSTALLED AS FOLLOWS OR WHERE THE RACEWAY ONLY IS INSTALLED BY THE ELECTRICAL CONTRACTOR, RACEWAY SHALL BE INSTALLED TO PERMIT CABLING TO BE INSTALLED AS FOLLOWS.
- NOT INSTALLED WITHIN 18 INCHES OF LIGHT FIXTURE BALLASTS OR WITHIN 36 INCHES OF MOTORS OR TRANSFORMERS.
- IN ACCORDANCE WITH MAXIMUM BENDING RADIUS AS RECOMMENDED BY THE MANUFACTURER. INSTALLED PERPENDICULAR TO POWER CONDUIT RUNS UPON THEIR INTERSECTION WHEREVER POSSIBLE.
- WHEN TRANSITIONING FROM CONDUIT TO NO CONDUIT, UTILIZE A BUSHING ON THE END OF THE CONDUIT
- 33 ALL JUNCTION BOXES PROVIDED TO SERVE FIRE ALARM PULL STATIONS, A READER, DOOR OPERATOR PUSHBUTTON, ETC., SHALL BE APPROVED BY THE MANUFACTURER TO SERVE THAT DEVICE AND FOR THE INTENDED PURPOSE. SURFACE BOXES SHALL BE FINISHED, SMOOTH EDGED AND WITHOUT SHARP EDGES. BOX FINISH SHALL MATCH THE CONNECTED RACEWAY. BOXES SERVING FIRE ALARM PULL STATIONS SHALL BE RED.
- INCLUDE ALL CONDUIT SLEEVES THROUGH WALLS AS REQUIRED FOR THE ROUTING OF LOW VOLTAGE CABLING INCLUDING CABLING INSTALLED BY THE DISTRICT. SLEEVES INSTALLED IN EXISTING WALLS SHALL UTILIZE A NEAT HOLE MADE WITH A CORING MACHINE OR HOLE SAW. CORING IN MASONRY SURFACES SHALL BE CONTINUOUS FROM ONE WALL SURFACE TO THE APPOSING WALL SURFACE WITHOUT SPALLING, NO CONDUIT LESS THAN 1" SHALL BE USED FOR SLEEVES.
- 35 FIRE PROOF INSIDE AND OUT ALL CONDUIT SLEEVES.
- 36 LOW VOLTAGE CABLING SHALL BE INSTALLED AS REQUIRED FOR CONFORMANCE WITH THE CABLING RECOMMENDATIONS OF THE CABLE MANUFACTURER. OBTAIN SAME FROM THE MANUFACTURER.
- 37 FIRE ALARM SYSTEM EQUIPMENT, DEVICES AND REVISIONS SHALL BE IN ACCORDANCE WITH CODE REQUIREMENTS.
- 38 THE EXISTING FIRE ALARM SYSTEM IS A NATIONAL TIME AND SIGNAL 902 SERIES ADDRESSABLE SYSTEM.
- 39 ALL FIRE ALARM SYSTEM DEVICES SHALL BE NATIONAL TIME AND SIGNAL, LATEST PRODUCT, COMPATIBLE WITH THE EXISTING SYSTEM.
- 40 WHERE FIRE ALARM SYSTEM REVISIONS ARE MADE, UPDATE THE GRAPHIC ANNUNCIATOR TO REFLECT THE REVISION.
- 41 FIRE ALARM SYSTEM TESTING SHALL INCLUDE THE PERCENTAGE OF EXISTING SYSTEM-UNALTERED DEVICES, WIRING AND EQUIPMENT AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.



WHEN USING THIS DRAWING - PLOT OR PRINT FULL SIZE TO ENSURE CORRECT SCALE. NOTE REDUCED SIZE DRAWINGS ARE NOT TO SCALE



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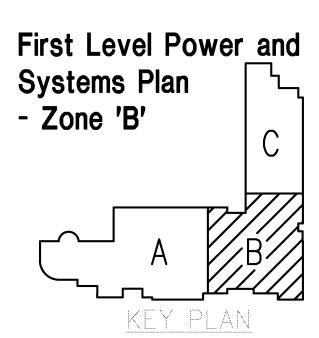
> 36400 West Twelve Mile Road Farmington Hills, Michigan 48331 (248) 489−3100 • FAX (248) 489−3161 BAI No. 15-1606

PROJECT TITLE Beverly Elementary School Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE

**ISSUE DATES** 



02-15-2016 B.P.No. 1 - BIDS

DRAWN

**CHECKED** AZ **APPROVED** JB

PROJECT NO.

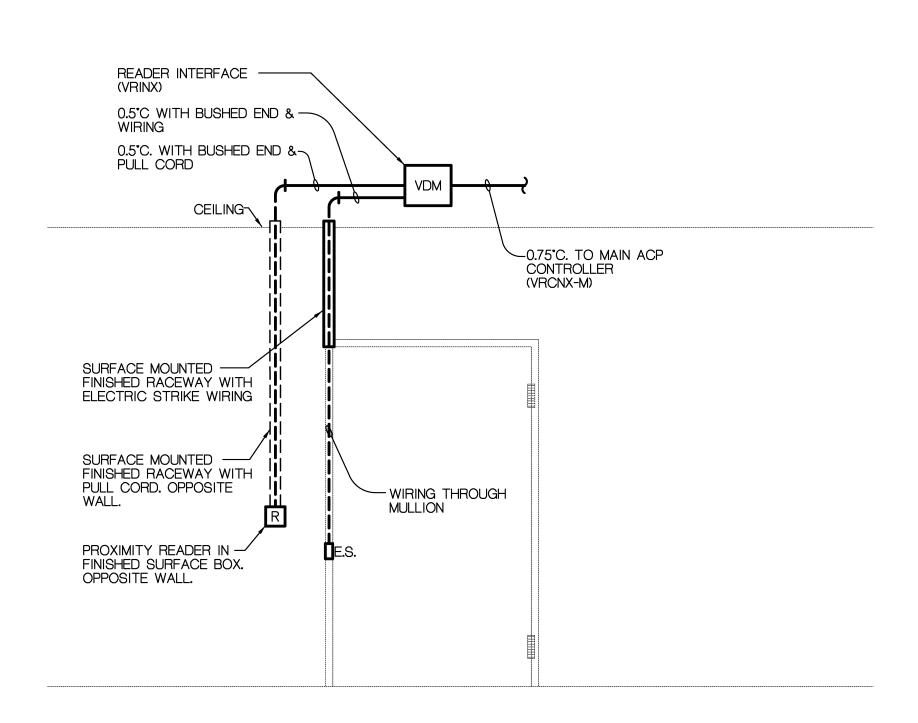
15097

DRAWING NO.

**E2.1B** 

## DOOR DIAGRAM

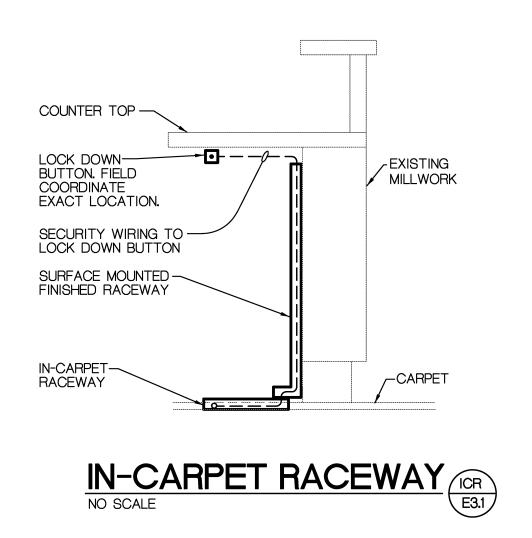
1. SEE DOOR WIRING DIAGRAM SHEET E3.2. 2. SEE FLOOR PLAN FOR ALL OPERATORS. 3. DOORS B111A, B111B, B111C



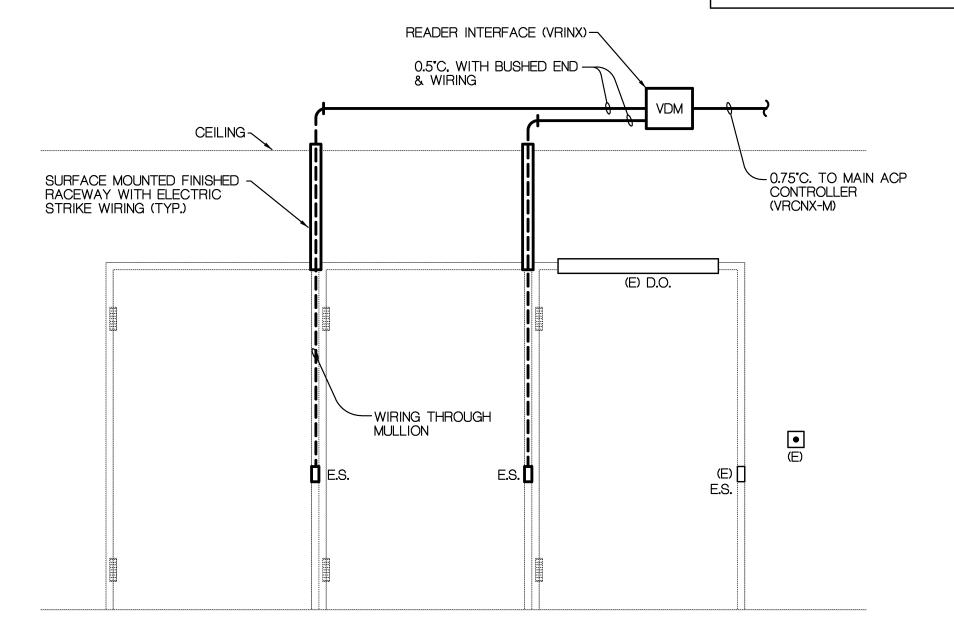
DOOR DIAGRAM 1. SEE DOOR WIRING DIAGRAM SHEET E3.2.

2. SEE FLOOR PLAN FOR ALL OPERATORS.

3. DOOR B106

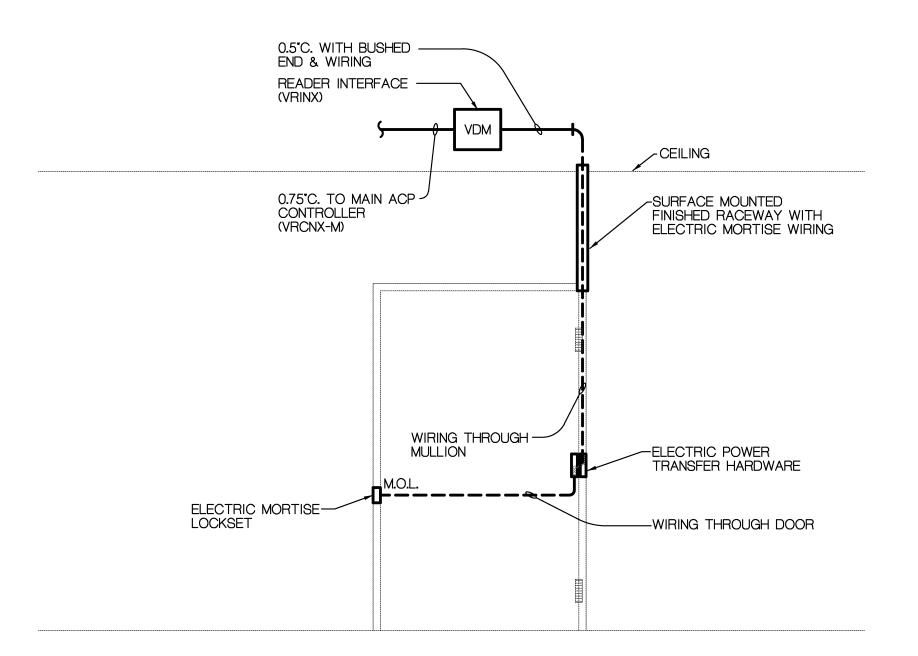


SEE CARD ACCESS/VNS LEGEND SHEET E3.2



#### DOOR DIAGRAM

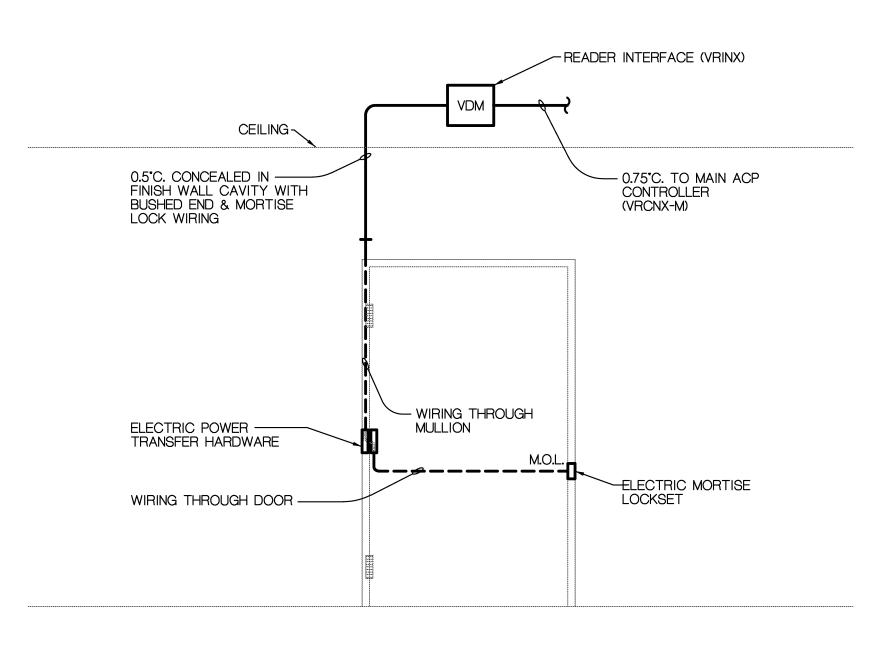
1. SEE DOOR WIRING DIAGRAM SHEET E3.2. SEE FLOOR PLAN FOR ALL OPERATORS. 3. DOORS B125C, B125D, B125E



### DOOR DIAGRAM



1. SEE DOOR WIRING DIAGRAM SHEET E3.2. SEE FLOOR PLAN FOR ALL OPERATORS. DOOR B106A OPPOSITE HAND 4. DOOR B107A



#### DOOR DIAGRAM



1. SEE DOOR WIRING DIAGRAM SHEET E3.2. 2. SEE FLOOR PLAN FOR ALL OPERATORS.

#### CARD ACCESS/VNS SYSTEM GENERAL NOTES:

NAMEPLATE RATING.

WHICH IT IS SERVED.

- REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
- REFER TO POWER AND SYSTEM GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- THE DISTRICT UTILIZES A VISITOR NOTIFICATION SYSTEM (VNS). THE VNS UTILIZES A NUMBER OF INTEGRATED BUILDING SYSTEMS INCLUDING CARD ACCESS, VIDEO SECURITY, TELEPHONE/INTERCOM, LOCK DOWN, ETC.
- ALL CARD ACCESS REVISIONS SHALL BE PERFORMED BY A CARD ACCESS SYSTEM CONTRACTOR WHO SHALL BE A SUBCONTRACTOR TO THE ELECTRICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR A LIST OF ACCEPTABLE SUBCONTRACTORS.
- ALL CARD ACCESS SYSTEM REVISIONS SHALL BE COORDINATED WITH DOOR HARDWARE REVISIONS AND ARCHITECTURAL TRADES.
- REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR THE SEQUENCE OF OPERATION AT EACH DOOR AND A DESCRIPTION OF THE INTENDED DOOR CONTROL SECURITY.
- THE EXACT LOCATION OF ALL READERS, OPERATORS, PUSHBUTTONS, ETC. SHALL BE COORDINATED WITH AND APPROVED BY ARCHITECTURAL TRADES AND DISTRICT STAFF PRIOR TO ROUGH-IN.
- ALL READERS, OPERATORS, PUSHBUTTONS, ETC. SHALL BE LOCATED AT 480 AFF UNLESS OTHERWISE NOTED OR INDICATED.
- WIRING, CONNECTIONS AND REVISIONS FOR ALL DOOR HARDWARE COMPONENTS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS. WIRING DIAGRAMS AND INSTALLATION INSTRUCTIONS AND THE EQUIPMENT SHOP DRAWINGS. INSTALLER SHALL OBTAIN SAME PRIOR TO INSTALLATION.
- 10 ALL CARD ACCESS AND/OR VNS SYSTEM REVISIONS SHALL BE TESTED FOR PROPER OPERATION.
- EXISTING DOOR POWER SUPPLIES MAY BE USED TO SERVE NEW LOAD PROVIDED THE POWER SUPPLY IS NOT LOADED MORE THAN 75% OF IT
- 12 LABEL ALL DOOR POWER SUPPLIES WITH THE PANEL AND CIRCUIT FROM WHICH THEY ARE SERVED. USE AN INDELIBLE MARKER, NEATLY LABEL BY HAND ON THE INSIDE OF THE POWER SUPPLY ENCLOSURE.
- 13 SUBMIT SHOP DRAWINGS ON ALL CARD ACCESS SYSTEM EQUIPMENT AND COMPONENTS. INCLUDE WITH SHOP DRAWINGS THE RATING AND LOADING OF ALL NEW POWER SUPPLIES.
- 14 ALL POWER SUPPLY LOADING SHALL BE BASED ON DOOR HARDWARE SHOP
- 15 ALL POWER SUPPLIES SHALL BE LABELED WITH THE PANEL AND CIRCUIT FROM
- 16 PROVIDE NEW 120 VOLT BRANCH CIRCUIT WIRING TO SERVE ALL NEW DOOR POWER SUPPLIES. EXISTING 120 VOLT CIRCUITS SERVING EXISTING POWER SUPPLIES MAY BE USED TO SERVE NEW POWER SUPPLIES PROVIDED THE EXISTING 120 VOLT CIRCUIT IS NOT LOADED GREATER THAN 14 AMPS.
- 17 ALL NEW 120 VOLT CIRCUITS SERVING DOOR POWER SUPPLIES SHALL ORIGINATE FROM THE CIRCUIT BREAKER PANEL CURRENTLY SERVING POWER SUPPLIES IN THE AREA. TYPICALLY THIS WILL BE A PANELBOARD PROVIDED WITH TRANSIENT VOLTAGE SURGE SUPPRESSION AND SERVED FROM THE GENERATOR. ALL CARD ACCESS SYSTEM POWER MUST BE SERVED FROM A GENERATOR POWERED PANEL.
- 18 CARD ACCESS SYSTEM DETAILS AND DIAGRAMS ARE PROVIDED TO CONVEY THE SYSTEM OPERATION AND DESIGN INTENT. DETAILS AND DIAGRAMS ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE OR TO REFLECT THE FINAL INSTALLATION REQUIREMENTS OR COMPLETE EXISTING CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING CEILING CONSTRUCTION, WALL CONSTRUCTION, ARCHITECTURAL CONDITIONS, ETC. AND ADJUST DETAILS AND DIAGRAMS ACCORDINGLY. PROVIDE ALL ADDITIONAL OR MODIFY EXISTING AS REQUIRED, RACEWAYS, WIRING, DEVICES, BOXES, CONNECTIONS, ETC. AND INCLUDE ALL COSTS FOR SAME. INCLUDE ALL PROGRAMMING, DIP SWITCH SETTINGS, ETC. AS REQUIRED FOR THE INTENDED SECURITY OPERATION AND INCLUDE ALL COSTS FOR SAME. BIDDER SHALL BE RESPONSIBLE FOR ANY ADDITIONAL ENGINEERING OR DESIGN REQUIRED, AND SHALL INCLUDE ALL COSTS FOR SAME AS REQUIRED FOR COMPLETE AND OPERATING SYSTEMS IN ACCORDANCE WITH THE DESIGN INTENT. IN BIDDING THIS PROJECT, BIDDER ACKNOWLEDGES THAT NO ADDITIONAL COSTS WILL BE APPROVED DURING CONSTRUCTION UNLESS A CHANGE IN SCOPE IS REQUESTED BY THE DISTRICT.
- 19 PROVIDE COMPLETE SYSTEM AS BUILT DRAWINGS REFLECTING THE SYSTEM

#### CARD ACCESS/VNS SYSTEM RACEWAYS AND WIRING NOTES:

- REFER TO POWER AND SYSTEM GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- 2 REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
- CONDUITS, BOXES, RACEWAYS, ETC. SHALL BE SUBJECT TO THE REQUIREMENTS OF THE SPECIFICATIONS.
- WIRING, CONNECTIONS AND REVISIONS FOR ALL DOOR HARDWARE COMPONENTS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS, WIRING DIAGRAMS AND INSTALLATION INSTRUCTIONS AND THE EQUIPMENT SHOP DRAWINGS.
- ONE VRINX DOOR MODULE ONBOARD RELAY SHALL SERVE A MAXIMUM OF 0.7 AMPS. RELAYS ARE RATED 1 AMP AT 30 VDC. PROVIDE ADDITIONAL RELAY WHERE REQUIRED TO SERVE MORE THAN 0.7 AMPS.
- ALL CARD ACCESS AND/OR VNS SYSTEM REVISIONS SHALL BE TESTED FOR PROPER OPERATION.
- ALL WIRING SERVING THE CARD ACCESS SYSTEM SHALL BE PLENUM RATED.
- THE COLOR CODING OF ALL WIRING SERVING THE CARD ACCESS SYSTEM SHALL BE THE SAME THROUGHOUT AND SHALL MATCH EXISTING.
- ALL CONDUIT SERVING THE CARD ACCESS SYSTEM SHALL BE CONCEALED WITHIN BUILDING CONSTRUCTION. UTILIZE A FINISHED SURFACE RACEWAY SUCH AS WIREMOLD WHERE CONCEALING CONDUIT IS NOT FEASIBLE AS A RESULT OF EXISTING MASONRY CONSTRUCTION. IN EXISTING DRYWALL CONSTRUCTION, CONCEAL THE CONDUIT.
- 10 ALL CARD ACCESS SYSTEM LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT OR A FINISHED SURFACE RACEWAY EXCEPT AS FOLLOWS. WHERE INSTALLED ABOVE AN ACCESSIBLE LAY-IN CEILING. WHERE INSTALLED IN A DOOR OR WINDOW FRAME MULLION
- LOW VOLTAGE WIRING INSTALLED ABOVE A LAY-IN ACCESSIBLE CEILING AND NOT IN CONDUIT, SHALL BE SUPPORTED ON J-HOOKS INSTALLED AT MAXIMUM 4
- FOOT ON CENTERS. EXISTING J-HOOKS MAYBE USED FOR NEW WIRING. WHEN TRANSITIONING FROM CONDUIT TO NO CONDUIT, UTILIZE A BUSHING ON
- 13 ALL JUNCTION BOXES PROVIDED TO SERVE A READER, DOOR OPERATOR PUSHBUTTON, ETC., SHALL BE APPROVED BY THE MANUFACTURER TO SERVE THAT DEVICE AND FOR THE INTENDED PURPOSE. SURFACE BOXES SHALL BE FINISHED, SMOOTH EDGED AND WITHOUT SHARP EDGES. BOX FINISH SHALL
- INCLUDE ALL CONDUIT SLEEVES THROUGH WALLS AS REQUIRED FOR THE ROUTING OF LOW VOLTAGE CABLING. SLEEVES INSTALLED IN EXISTING WALLS SHALL UTILIZE A NEAT HOLE MADE WITH A CORING MACHINE OR HOLE SAW. CORING IN MASONRY SURFACES SHALL BE CONTINUOUS FROM ONE WALL SURFACE TO THE APPOSING WALL SURFACE WITHOUT SPALLING. NO CONDUIT LESS THAN 10 SHALL BE USED FOR SLEEVES.
- 15 FIRE PROOF INSIDE AND OUT ALL CONDUIT SLEEVES.

THE END OF THE CONDUIT.

MATCH THE CONNECTED RACEWAY.

- 16 LOW VOLTAGE CABLING SHALL BE INSTALLED AS REQUIRED FOR CONFORMANCE WITH THE CABLING RECOMMENDATIONS OF THE CABLE MANUFACTURER. OBTAIN
- SAME FROM THE MANUFACTURER. 17 LOW VOLTAGE CABLING SHALL BE INSTALLED AS FOLLOWS:
- NOT INSTALLED WITHIN 18 INCHES OF LIGHT FIXTURE BALLASTS OR WITHIN
- 36 INCHES OF MOTORS OR TRANSFORMERS. B. IN ACCORDANCE WITH MAXIMUM BENDING RADIUS AS RECOMMENDED BY THE MANUFACTURER.
- INSTALLED PERPENDICULAR TO POWER CONDUIT RUNS UPON THEIR INTERSECTION WHEREVER POSSIBLE.



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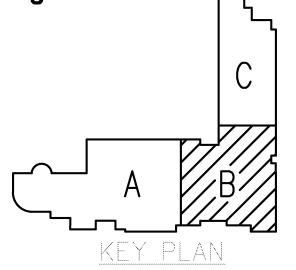
PROJECT TITLE Beverly

Elementary School Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE

Miscellaneous Details and Diagrams



02-15-2016 B.P.No. 1 - BIDS DAIL 1220FD LOK

DRAWN CHECKED

**APPROVED** 

PROJECT NO.

15097

DRAWING NO.

**E3.1** 

DOOR CONTROL SCHEDULE												
15097 - Beverly												
Door Number (s) (refer to architectural drawings)	B125C	B125D, B125E	B111C	B111A, B111B	B106	B106	B106A	B101A, B107A				
Usage	Exterior Entry	Exterior Entry	New Vestibule	New Vestibule	Vestibule to Office	Alternate No.2 Vestibule to Office	Office to School	Alternate No. 3 Office to School				
Control/ Sequence of Operation	Existing Electric Strike, Existing Keypad & Prox Reader and Existing ADA Operator	New Electric Strike on timed locking and opening cycle	New Electric Strike on timed locking and unlocking cycle, Keypad & Prox Reader and ADA Operator	New Electric Strike on timed locking and opening cycle	Existing mechanical lock remains. In Case of new door, new classroom lock function	added	mechanical lock and tied into panic button to lock door from	New electronic lock to replace existing mechanical lock and tied into panic button to lock door from both sides				
Refer to Wiring Diagram Indicated	N/A	1	3	5	N/A	7	8	9				

DOOR CONTROL SCHEDULE								
15097 - Beverly								
Door Number (s) (refer to architectural drawings)	B125C	B125D, B125E	B111C	B111A, B111B	B106	B106	B106A	B101A, B107A
Usage	Exterior Entry	Exterior Entry	New Vestibule	New Vestibule	Vestibule to Office	Alternate No.2 Vestibule to Office	LOffice to School	Alternate No. 3 Office to School
Control/ Sequence of Operation	Existing Electric Strike, Existing Keypad & Prox Reader and Existing ADA Operator	New Electric Strike on timed locking and opening cycle	New Electric Strike on timed locking and unlocking cycle, Keypad & Prox Reader and ADA Operator	New Electric Strike on timed locking and opening cycle	Existing mechanical lock remains. In Case of new door, new classroom lock function		lock to replace existing mechanical lock and tied into panic button to lock door from	New electronic lock to replace existing mechanical lock and tied into panic button to lock door from both sides
Refer to Wiring Diagram	N/A	1	3	5	N/A	7	8	9

#### CARD ACCESS/VNS LEGEND

ACCESS CONTROL PANEL, EXISTING, LOCATED IN TECHNOLOGY HEAD END OR IDF ROOM, VANDERBILT INDUSTRIES VRCNX SERIES POWER SUPPLY 120-24 VOLT DC (NEW OR EXISTING, REFER TO NOTES SHEET E3.1), VANDERBILT INDUSTRIES SMS SERIES, NEMA ONE ENCLOSURE

VANDERBILT INDUSTRIES VRINX DOOR MODULE, NEMA ONE ENCLOSURE ELECTRIC STRIKE, REFER TO DOOR HARDWARE SPECIFICATIONS/SHOP DRAWINGS

MORTISE LOCK, REFER TO DOOR HARDWARE SPECIFICATIONS/SHOP

DOOR OPERATOR

READER

COMBINATION READER KEY PAD

DOCP MOTORIZED DOOR OPERATOR CONTROL PANEL OFFICE PANIC ELECTRIC DOOR LOCK DOWN PUSHBUTTON

NOTE: REFER TO CARD ACCESS/VNS GENERAL AND WIRING NOTES SHEET E3.1

#### WIRING LEGEND

W1 4/C, 18 AWG, TWISTED, SHIELDED, STRANDED

2/C, 18 AWG, TWISTED, SHIELDED, STRANDED

2/C, 18 AWG, TWISTED, SHIELDED, STRANDED. ONE VRINX DOOR MODULE ONBOARD RELAY SHALL SERVE A MAXIMUM OF 0.7 AMPS. RELAYS ARE RATED 1 AMP AT 30 VDC. PROVIDE ADDITIONAL RELAY WHERE REQUIRED TO SERVE

MORE THAN 0.7 AMPS.

W4 NOT USED

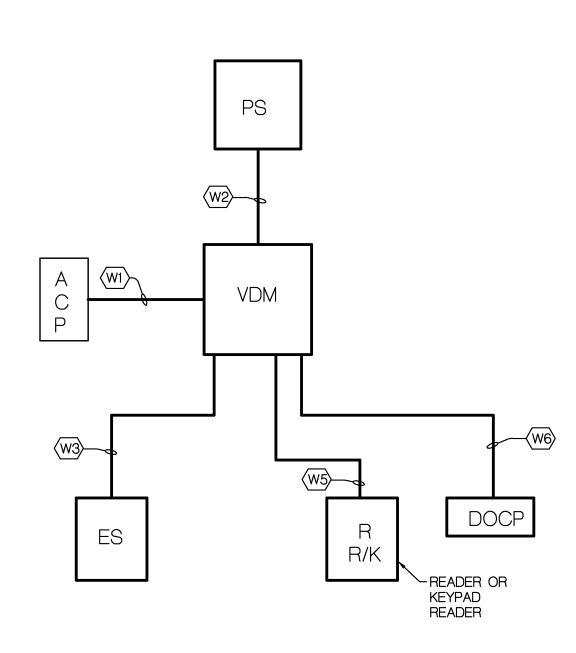
6/C, 18 AWG, TWISTED, SHIELDED, STRANDED 2/C, 18 AWG, TWISTED, SHIELDED, STRANDED

2/C, 18 AWG, TWISTED, SHIELDED, STRANDED

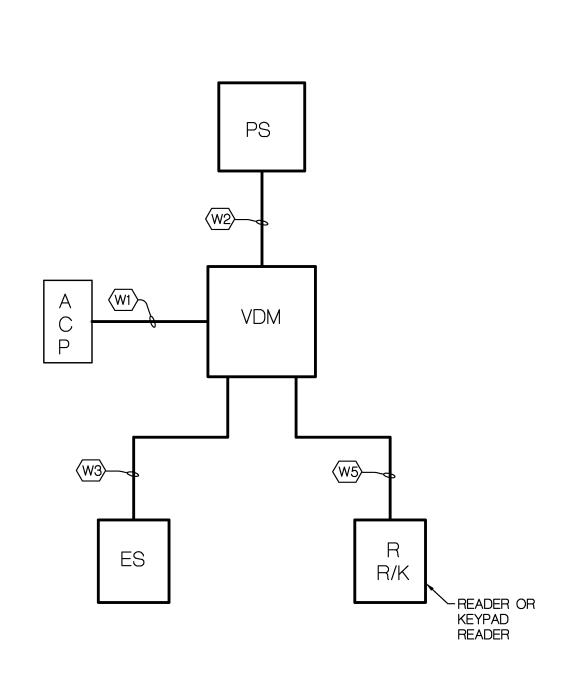
NOTE: REFER TO CARD ACCESS/VNS GENERAL AND WIRING NOTES SHEET E3.1

# DPS

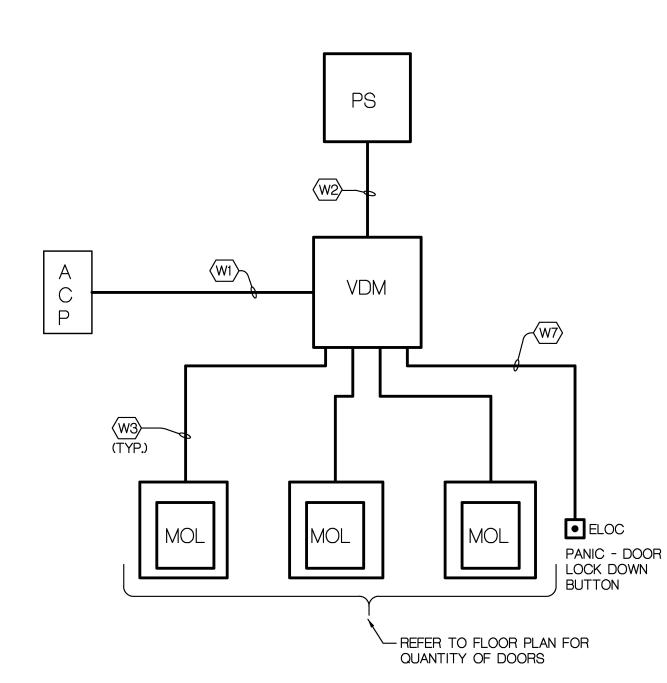
NEW ACCESS CONTROLLED ELECTRIC STRIKE DOOR ON TIMED LOCKING AND OPENING CYCLE WIRING DIAGRAM



NEW ACCESS CONTROLLED ELECTRIC STRIKE DOOR WITH MOTORIZED DOOR OPERATOR WIRING DIAGRAM NO SCALE



NEW ACCESS CONTROLLED ELECTRIC STRIKE DOOR WIRING DIAGRAM



9 OFFICE DOOR LOCK DOWN **WIRING DIAGRAM** 



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PROJECT TITLE

## Beverly Elementary School Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE Miscellaneous Details and

Diagrams

**ISSUE DATES** 

**CHECKED** APPROVED

PROJECT NO.

15097

**E3.2** 

DRAWING NO.

	LIGHTING FIXTURE SCHEDULE							
	LAMP/							
TYPE	SOURCE/	DESCRIPTION	VOLTAGE	MANUFACTURER(S				
	WATTAGE							
XA	LED	LED EXIT SIGN, SINGLE FACE THERMOPLASTIC ALL WHITE	120/277V	LITHONIA LQM SERIES				
		HOUSING AND FACE, UV-STABLE, UNIVERSAL	DUAL	DUAL-LITE, SURE-LITE				
		DIRECTIONAL CHEVRON INSERTS, LETTERS 6" HIGH RED	INPUT	LIGHTALARMS, EMERG				
		LETTERS WITH 3/4" STROKE, UNIVERSAL (TOP-, END-, OR	READY	LITE				
		BACK-) MOUNTING.						

	ELECTRICAL SHEET INDEX
SHEET	DESCRIPTION
EC1.1	FIRST LEVEL ELECTRICAL COMPOSITE PLAN, SHEET INDEX, SYMBOL LIST AND LIGHTING FIXTURE SCHEDULE
E1.1B	FIRST LEVEL LIGHTING PLAN - ZONE 'B'
E2.1B	FIRST LEVEL POWER AND SYSTEMS PLAN - ZONE 'B'
E3.1	MISCELLANEOUS DETAILS AND DIAGRAMS
E3.2	MISCELLANEOUS DETAILS AND DIAGRAMS

SYMBOL	DESCRIPTION
<b>⊗</b>	EXIT LIGHT, (SHADED AREA INDICATED FACE OF FIXTURE), TYPE AS INDICATED
	INTERCOM
•	PUSHBUTTON
<b>D</b> .O.	MOTORIZED DOOR OPERATOR
4	EXISTING PANELBOARD
0	JUNCTION BOX
(E)	EXISTING EQUIPMENT OR DEVICES
E.S.	ELECTRIC STRIKE LOCK
D.O.	DOOR OPERATOR
D.P.S.	DOOR POSITION SWITCH
M.L.	MORTISE LOCKSET
(R)	RELOCATED
ACP	ACCESS CONTROL PANEL, EXISTING, LOCATED IN TECHNOLOGY HEAD END OR IDF ROOM, VANDERBILT INDUSTRIES VRCNX SERIES
PS	POWER SUPPLY 120-24 VOLT DC (NEW OR EXISTING, REFER TO NOTES SHEET E3.1), VANDERBILT INDUSTRIES SMS SERIES, NEMA ONE ENCLOSURE
VDM	VANDERBILT INDUSTRIES VRINX DOOR MODULE, NEMA ONE ENCLOSURE
ES	ELECTRIC STRIKE, REFER TO DOOR HARDWARE SPECIFICATIONS/SHO DRAWINGS
MOL	MORTISE LOCK, REFER TO DOOR HARDWARE SPECIFICATIONS/SHOP DRAWINGS
DO	DOOR OPERATOR
R	READER
R/K	COMBINATION READER KEY PAD
DOCP	MOTORIZED DOOR OPERATOR CONTROL PANEL
ELOC	OFFICE PANIC ELECTRIC DOOR LOCK DOWN PUSHBUTTON

ELECTRICAL SYMBOL LIST



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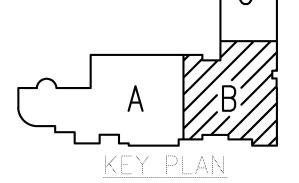
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BAI No. 15-1606

# Beverly Elementary School Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE

First Level Elec. Comp. Plan, Sheet Index, Symbol List and LTG. Fix. Sch.



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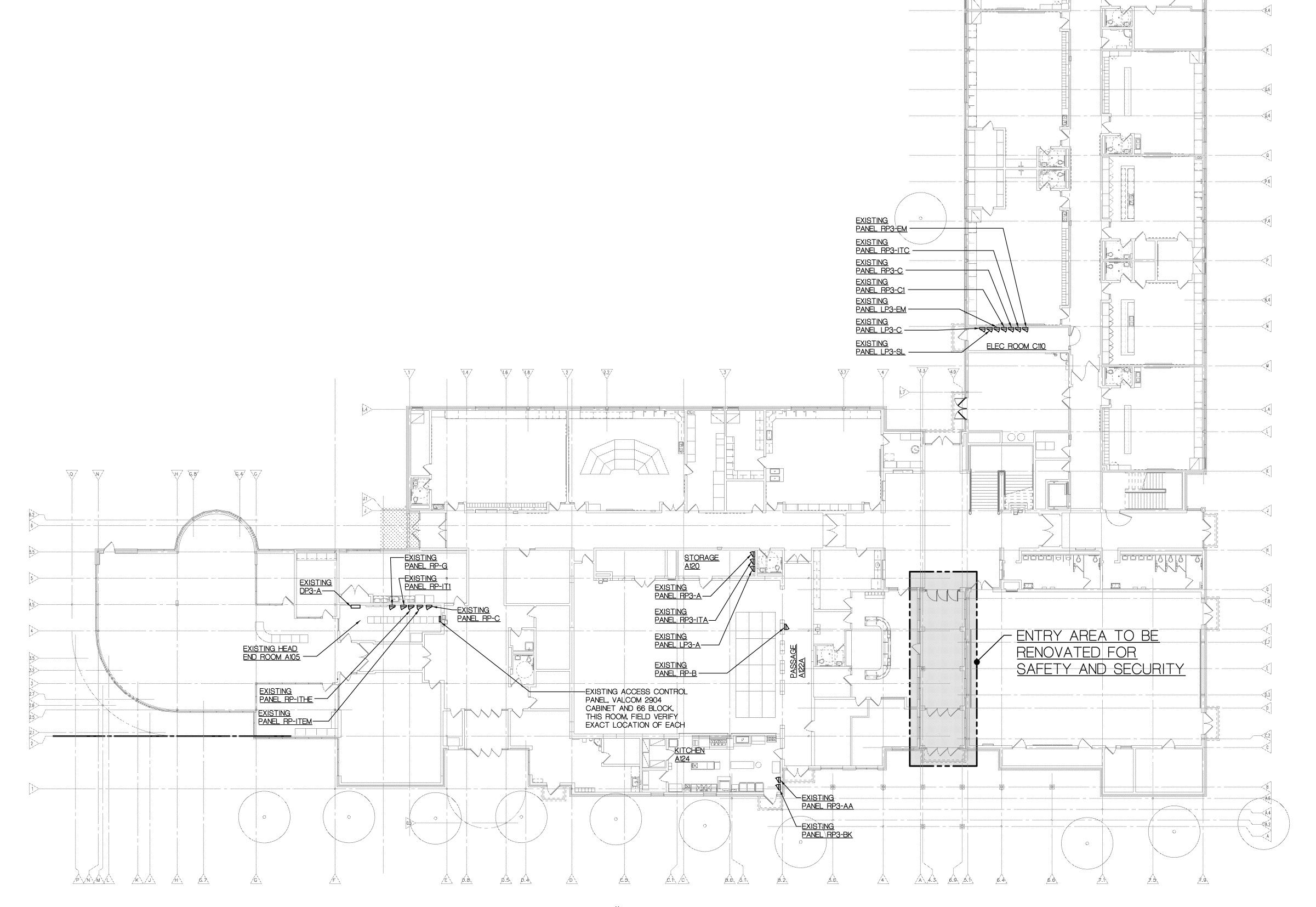
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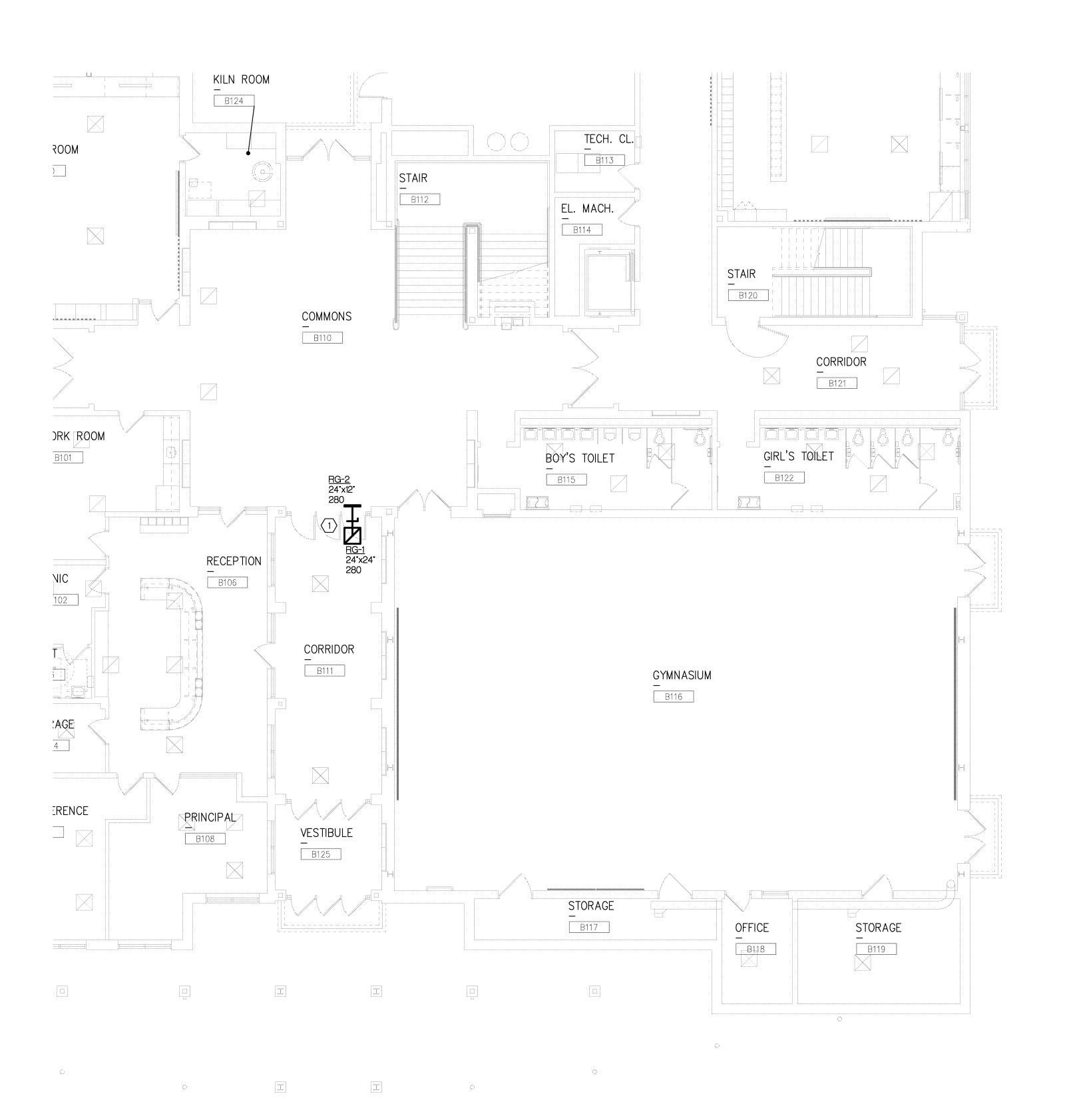
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EC1.1



	DIFFUSER-REGISTER-GRILLE SCHEDULE										
MARK	FLOW RANGE (CFM)	DIFFUSER FACE SIZE (IN)	DIFFUSER NECK SIZE (IN)	FLOW PATTERN	MOUNTING TYPE	COLOR	MATERIAL	ACCESSORY	MANUFACTURER	MODEL NUMBER	NOTES
RG-1	SEE PLANS	SEE PLANS	SEE PLANS	NA	LAY-IN	WHITE	STEEL	NONE	PRICE	PDDR	
RG-2	SEE PLANS	D + 1-3/4	SEE PLANS	NA	SURFACE	WHITE	STEEL	NONE	PRICE	535D	

1. REFER TO REFLECTED CEILING PLANS FOR EXACT LOCATION. PROVIDE ALL FRAMES AND ACCESSORIES AS REQUIRED FOR PROPER INSTALLATION.



FIRST LEVEL MECHANICAL PLAN - ZONE 'B'
SCALE: 1/8" - 1'-0"

MECHANICAL GENERAL NOTES:

- 1. COORDINATE NEW DUCTWORK WITH SITE CONDITIONS. EQUIPMENT MANUFACTURER AND ALL OTHER TRADES TO AVOID INTERFERENCES.
- 2. ALL CORING AND CUTTING THROUGH FLOORS AND WALLS SHALL BE BY MECHANICAL CONTRACTOR.
- COORDINATE DUCTWORK ROUTING WITH OTHER TRADES TO AVOID INTERFERENCES.
- 4. BALANCE ALL AIR SYSTEMS TO INDICATED AIR FLOW RATES.
- 5. DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF EACH. REFER TO GRILLE, REGISTER & DIFFUSER SCHEDULE.
- 6. REFER TO MECHANICAL SPECIFICATION FOR DUCTWORK INSULATION REQUIREMENTS.
- 7. ALL DUCTWORK SHALL BE CONCEALED IN WALLS AND/OR CEILING SPACE, UNLESS OTHERWISE NOTED. REFER TO ARCHITECTURAL PLANS.
- 8. ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE, UNLESS OTHERWISE NOTED. COORDINATE ROUTING WITH OTHER TRADES TO AVOID INTERFERENCES
- 9. SEAL ALL PENETRATIONS THROUGH WALLS PER DETAILS AND SPECIFICATIONS.
- 10. COORDINATE EXACT LOCATIONS OF ALL DIFFUSERS AND RETURN GRILLES WITH ARCHITECTURAL AND ELECTRICAL REFLECTED CEILING PLANS.
- 11. MECHANICAL CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING GRID AND CEILING TILES AS REQUIRED FOR DEMOLITION AND INSTALLATION OF NEW MECHANICAL SYSTEMS. ANY CEILING TILES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH SAME AT NOT ADDITIONAL COST TO OWNER.

#### X MECHANICAL KEY NOTES

1. ROUTE 24"x12" RETURN DUCT AND CONNECT TO <u>RG-1</u> IN CORRIDOR B111 AND <u>RG-2</u> IN COMMONS B110. PROVIDE ELBOWS, TRANSITIONS ETC AS REQUIRED.



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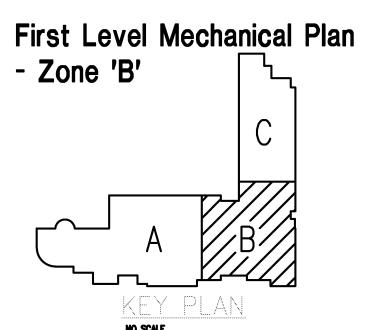


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M1.1B

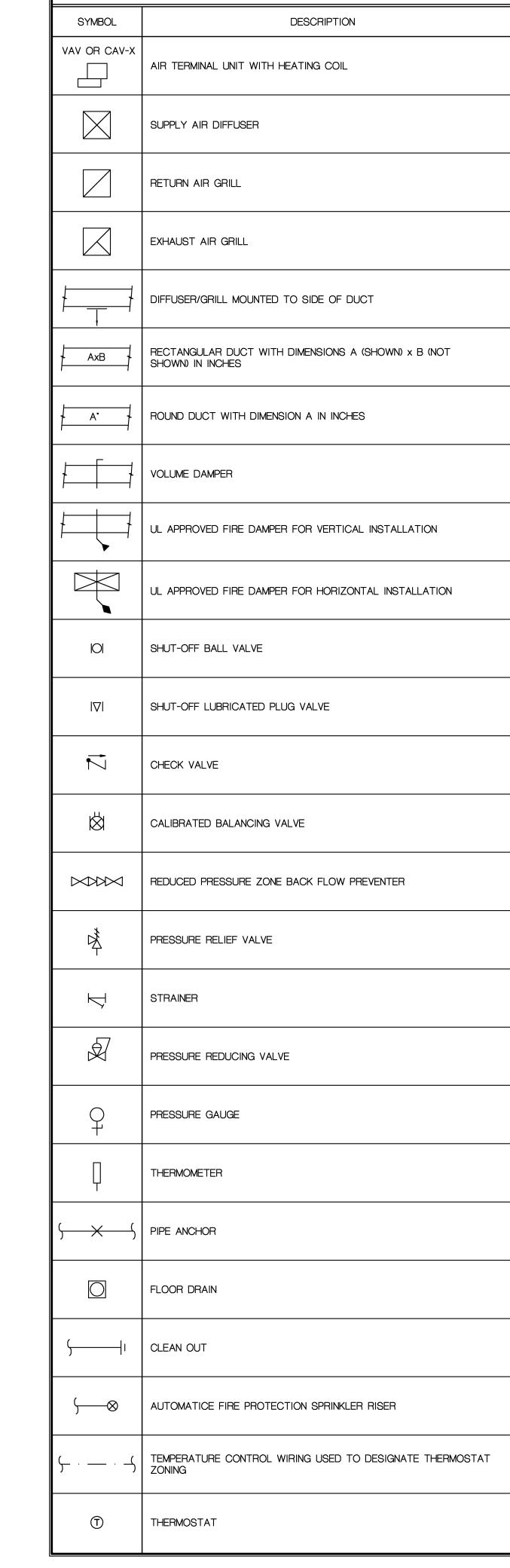
<u>'B'</u>

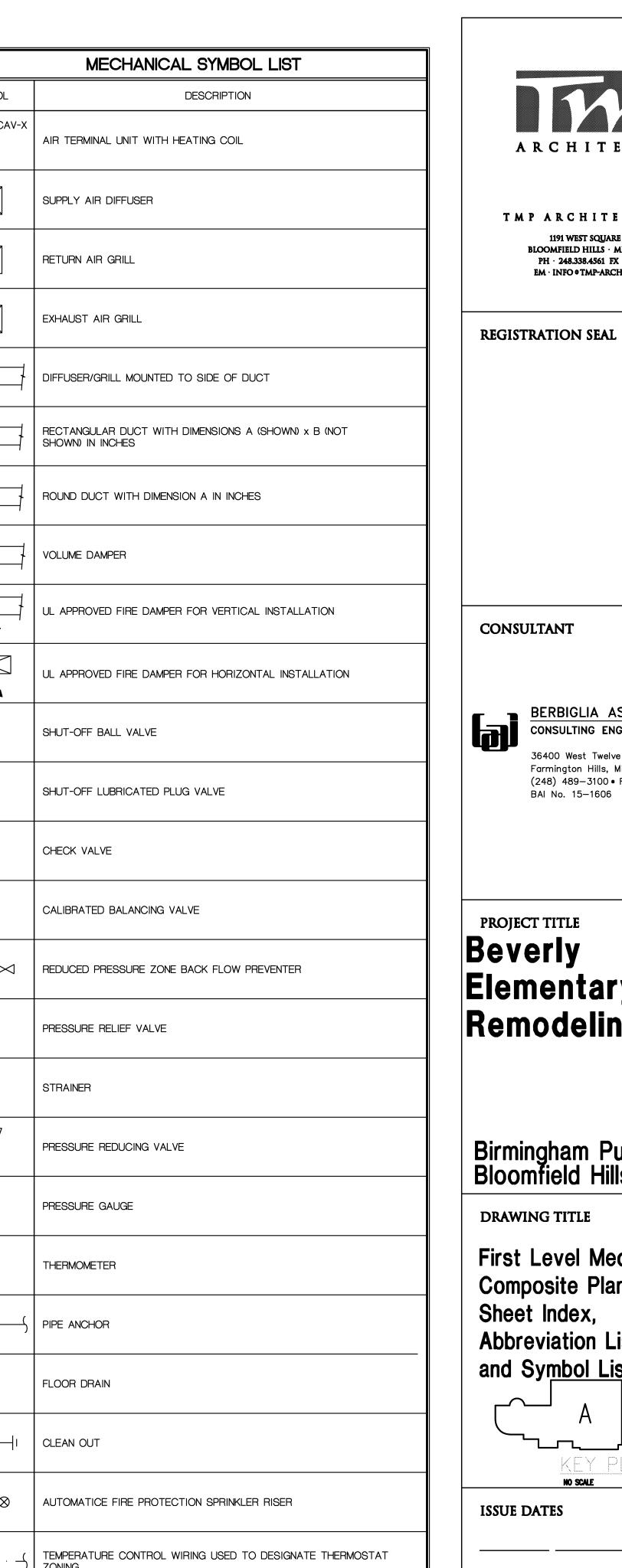
WHEN USING THIS DRAWING - PLOT OR PRINT FULL SIZE TO ENSURE CORRECT SCALE. NOTE REDUCED SIZE DRAWINGS ARE NOT TO SCALE

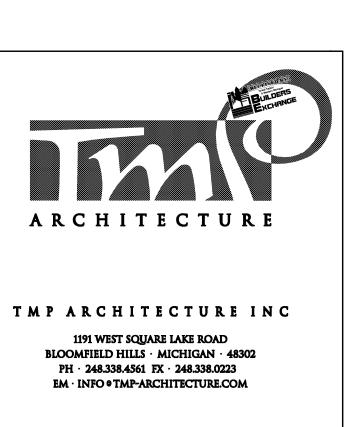
MECHANICAL ABBREVIATION LIST				
ABBREVIATION	DESCRIPTION			
CW	DOMESTIC COLD WATER			
HW	DOMESTIC HOT WATER			
HWR	DOMESTIC HOT WATER RETURN			
SAN	SANITARY DRAINAGE			
V	PLUMBING VENT			
ST	STORM			
COND	CONDENSATE			
NG	NATURAL GAS			
SA	SUPPLY AIR			
RA	RETURN AIR			
EA	EXHAUST AIR			
OA	OUTSIDE AIR			
FP	FIRE PROTECTION			
RG	RETURN GRILLE			
HHWS	HEATING HOT WATER SUPPLY			
HHWR	HEATING HOT WATER RETURN			

MECHANICAL SHEET INDEX					
SHEET	DESCRIPTION				
MC1.1	FIRST LEVEL MECHANICAL COMPOSITE PLAN, SHEET INDEX, ABBREVIATION LIST AND SYMBOL LIST				
M1.1B	FIRST LEVEL MECHANICAL PLAN - ZONE 'B'				

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PROJECT TITLE Beverly Elementary School Remodeling

Birmingham Public Schools Bloomfield Hills, Michigan

DRAWING TITLE

First Level Mechanical Composite Plan, Sheet Index, **Abbreviation List** and Symbol List

	NO	•
SUE	DATES	

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