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# ORCHARD VIEW SCHOOL DISTRICT

DESCRIPTION

BID PACKAGE - WINDOWS

BID PACKAGE #1 - BIDS

BID PACKAGE #1 - PERMITS

BID PACKAGE #1 - ADDENDUM #1

BID PACKAGE #1 - OWNER REVIEW

DATE

12/14/2022

1/24/2023

2/7/2023

2/15/2023

# COMMUNITY EDUCATION CENTER

RENOVATIONS - BID PACKAGE NO. 1 1765 ADA AVENUE MUSKEGON, MI 49442

2/15/2023

## PROJECT CONTACT LIST

- OWNER:
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## PROJECT LOCATION MAP



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**G000** 

a. TYPE A: TUBELITE T14000 (4-1/2" DEPTH FRAME). b. TYPE B: TUBELITE TU24650 (6-1/2" DEPTH FRAME).

C. FRAMING MEMBERS: EXTERIOR FRAMING TO BE THERMALLY BROKEN. INTERIOR VESTIBULE FRAMING TO BE NONTHERMAL

D. FINISH: EXTERIOR TO BE COLOR ANODIC FINISH AAMA 611, AA-M12C22A42/A44, CLASS 1, MINIMUM 0.7 MIL THICKNESS, DARK BRONZE, INTERIOR VESTIBULE TO BE CLEAR ANODIC FINISH AAMA 611, AA-M12C22A41, CLASS II, MINIMUM 0.4 MIL THICKNESS.

E. INFILL: 1" AT EXTERIOR AND 1/4" AT INTERIOR.

F. FABRICATION METHOD: FIELD FABRICATED STICK SYSTEM

### 2. ALUMINUM FRAMED OPERABLE WINDOWS - PER OWNER AGREEMENT WITH VOS GLASS

A. MANUFACTURER: TUBELITE.

B. PRODUCT: CW3700 PROJECT OUT CASEMENT WINDOW

C. FRAMING MEMBERS: EXTRUSIONS ARE 2" IN DEPTH WITH 2-3/4" SIGHTLINE. FRAMES HAVE SCREW-SPLINE CONNECTIONS, MITERED

D. FINISH: COLOR ANODIC FINISH AAMA 611, AA-M12C22A42/A44, CLASS 1, MINIMUM 0.7 MIL THICKNESS, DARK BRONZE.

E. HARDWARE: HEAVY DUTY SURFACE HINGES AND ROTO-CRANK OPERATED. EMERGENCY EGRESS HINGE HARDWARE.

F. SCREENS: FIBERGLASS WITH ALUMINUM FRAME, FINISH TO MATCH WINDOWS

G. INFILL: 1" AT EXTERIOR.

### 3. ALUMINUM DOORS - PER OWNER AGREEMENT WITH VOS GLASS

A. MANUFACTURER: TUBELITE

B. PRODUCT: THERMLBLOCK, MEDIUM STILE WITH 5" VERTICAL STILES, 4" TOP RAIL, AND 10" BOTTOM RAIL.

C. DOOR CONSTRUCTION: a. 1-3/4" OVERALL THICKNESS, WITH MIN. 0.125" THICK EXTRUDED ALUMINUM TUBULAR MEMBERS. MECHANICALLY FASTEN WITH

b. TOP /BOTTOM OF DOOR TO RECEIVE 1/8" THICK CAP FOR FURTHER SEAL AND TO TRIM THE TOP AND BOTTOM OF THE DOOR. c. GLAZING STOPS AND GASKETS: SQUARE, SNAP-ON, EXTRUDED ALUMINUM STOPS AND PREFORMED GASKETS. NONREMOVABLE AT

d. EXTERIOR DOORS: AT PAIRS OF DOORS PROVIDE SLIDING-TYPE WEATHER STRIPPING RETAINED IN ADJUSTABLE STRIP AND

D. FINISH: EXTERIOR TO BE COLOR ANODIC FINISH AAMA 611, AA-M12C22A42/A44, CLASS 1, MINIMUM 0.7 MIL THICKNESS, DARK BRONZE. INTERIOR VESTIBULE TO BE CLEAR ANODIC FINISH AAMA 611, AA-M12C22A41, CLASS II, MINIMUM 0.4 MIL THICKNESS.

E. INFILL: 1" AT EXTERIOR AND 1/4" AT INTERIOR.

### 4. **GLAZING**

A. GLAZING FOR ALUMINUM COMPONENTS NOTED ABOVE TO BE PER OWNER AGREEMENT WITH VOS GLASS.

B. MONOLITHIC GLASS:

a. HEAT STRENGTHENED FULLY TEMPERED FLOAT GLASS. b. MINIMUM 6 MM THICK.

c. LOCATION: INTERIOR, NON-FIRE RATED LOCATIONS UNLESS OTHERWISE NOTED.

C. FIRE-RESISTANCE-RATED GLAZING

a. LISTED AND LABELED BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE-RESISTANCE RATINGS INDICATED, BASED ON TESTING IN ACCORDANCE WITH ASTM E119 OR UL 263.

b. FRAMING AND DOORS: FIRE-RESISTANCE-RATED GLAZING WITH 60, 90, 120-MINUTE RATINGS REQUIRES FRAMING AND DOORS FROM GLASS SUPPLIER. TESTED AS AN ASSEMBLY COMPLYING WITH ASTM E119 OR UL 263.

c. LAMINATED GLASS WITH INTUMESCENT INTERLAYERS: LAMINATED GLASS MADE FROM MULTIPLE PLIES OF UNCOATED, CLEAR FLOAT GLASS; WITH INTUMESCENT INTERLAYERS; COMPLYING WITH 16 CFR 1201, CATEGORY II. MANUFACTURERS: PILKINGTON NORTH AMERICA, SAFTI FIRST FIRE RATED GLAZING SOLUTIONS, TECHNICAL GLASS PRODUCTS

OR VETROTECH SAINT-GOBAIN. d. GLAZING ACCESSORIES: GLAZING GASKETS, GLAZING SEALANTS, GLAZING TAPES, SETTING BLOCKS, SPACERS, EDGE BLOCKS, AND OTHER GLAZING ACCESSORIES THAT ARE COMPATIBLE WITH GLAZING PRODUCTS AND EACH OTHER AND ARE APPROVED BY

TESTING AGENCIES THAT LISTED AND LABELED FIRE-RESISTANT GLAZING PRODUCTS WITH WHICH PRODUCTS ARE USED FOR APPLICATIONS AND FIRE-PROTECTION RATINGS INDICATED. e. GLAZING SEALANTS FOR FIRE-RATED GLAZING PRODUCTS: NEUTRAL-CURING SILICONE GLAZING SEALANT COMPLYING WITH ASTM

C920, TYPE S. GRADE NS. CLADD 50, USE NT. MANUFACTURERS: GE CONSTRUCTION SEALANTS, THE DOW CHEMICAL COMPANY OR TREMCO INCORPORATED.

D. INSULATED GLASS - VISION

a. CONFORMANCE: ASTM E 2190. b. BASIS OF DESIGN: GUARDIAN GLASS, SUNGUARD SN 68.

c. OVERALL THICKNESS: 1 INCH. d. MINIMUM THICKNESS OF EACH GLASS LITE: 6 MM.

e. OUTDOOR LITE: HEAT-STRENGTHENED FLOAT GLASS. INTERSPACE CONTENT: AIR OR ARGON AS REQUIRED TO MEET SPECIFIED U-FACTOR.

. INDOOR LITE: CLEAR FLOAT GLASS. n. LOW-E COATING: SPUTTERED ON NO. 2 SURFACE.

WINTER NIGHTTIME U-FACTOR: 0.29 MAXIMUM.

SUMMER DAYTIME U-FACTOR: 0.28 MAXIMUM. VISIBLE LIGHT TRANSMITTANCE: 68 PERCENT I. LOCATIONS: EXTERIOR UNLESS OTHERWISE INDICATED.

E. INSULATED GLASS - SPANDREL

a. CONFORMANCE: ASTM E 2190.

b. BASIS OF DESIGN: GUARDIAN GLASS, SUNGUARD SN 68. c. OVERALL THICKNESS: 1 INCH.

d. MINIMUM THICKNESS OF EACH GLASS LITE: 6 MM.

e. OUTDOOR LITE: HEAT-STRENGTHEN FLOAT GLASS. f. INTERSPACE CONTENT: AIR OR ARGON AS REQUIRED TO MEET SPECIFIED U-FACTOR.

g. INDOOR LITE: CLEAR FLOAT GLASS. LOW-E COATING: SPUTTERED ON NO. 2 SURFACE.

i. GUARDIAN DECO HT IN WARM GRAY ON NO. 4 SURFACE. LOCATIONS: EXTERIOR WHERE INDICATED.

## 5. HOLLOW METAL FRAMES

A. FIRE-RATED, BORROWED-LITE ASSEMBLIES: ASSEMBLIES COMPLYING WITH NFPA 80 AND LISTED AND LABELED BY A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE-PROTECTION RATINGS INDICATED, BASED ON TESTING ACCORDING TO NFPA 257 OR UL9.

## 6. **FLUSH WOOD DOORS**

A. ACCEPTABLE MANUFACTURERS: EGGERS INDUSTRIES, OSHKOSH DOOR COMPANY, AND VT INDUSTRIES.

B. INTERIOR DOORS: SOLID-CORE FIVE-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH.

a. PERFORMANCE GRADE: ANSI/WDMA I.S. 1A EXTRA HEAVY DUTY. b. FACES: PLAIN SLICED RED OAK, CENTER-BALANCE MATCH.

c. EXPOSED VERTICAL AND TOP EDGES: SAME SPECIES AS FACES, ARCHITECTURAL WOODWORK STANDARDS EDGE TYPE A.

d. FIRE RATED DOORS: PROVIDE EDGE CONSTRUCTION WITH INTUMESCENT SEALS CONCEALED BY OUTER STILE. e. CORE FOR FIRE-RATED DOORS: AS REQUIRED TO ACHIEVE FIRE-PROTECTION RATING INDICATED ON SCHEDULE.

C. FINISH: FACTORY FINISH, TRANSPARENT, SATIN, STAIN COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD

### 7. HARDWARE SETS

A. MANUFACTURERS/PRODUCTS

a. HINGES: IVES 5BB SERIES. ALSO ACCEPTABLE: HAGER BB1191/1279 SERIES OR MCKINNEY TB SERIES. b. CYLINDRICAL LOCKS: GRADE 1, SCHLAGE ND SERIES, NO SUBSTITUTION.

c. EXIT DEVICES: VON DUPRIN 98/35A SERIES, NO SUBSTITUTION d. POWER SUPPLIES: SCHLAGE/VON DUPRIN PS900, NO SUBSTITUTION.

e. CYLINDERS: CORBIN-RUSSWIN, NO SUBSTITUTION. ALL CYLINDERS/CORES AND KEYING SHALL BE PURCHASED THROUGH ARCHITECTURAL HARDWARE COMPANY, MUSKEGON, MI AND INCLUDED IN BASE BID.

f. DOOR CLOSERS: LCN 4040XP, NO SUBSTITUTION. g. ELECTRO-HYDRAULIC AUTOMATIC OPERATOR: LCN 4600 SERIES, NO SUBSTITUTION.

DOOR TRIM: IVES. ALSO ACCEPTABLE BURNS AND ROCKWOOD. PROTECTION PLATES: IVES. ALSO ACCEPTABLE BURNS AND ROCKWOOD.

OVERHEAD STOPS: GLYNN-JOHNSON. NO SUBSTITUTION. DOOR STOPS: IVES. ALSO ACCEPTABLE BURNS AND ROCKWOOD

THRESHOLDS, SEALS, GASKETING: ZERO INTERNATIONAL. ALSO ACCEPTABLE NATIONAL GUARD AND REESE m. SILENCERS: IVES. ALSO ACCEPTABLE BURNS AND ROCKWOOD.

B. KEYING

a. CONSTRUCTION KEYING:

1. PROVIDE CONSTRUCTION CORES THAT PERMIT VOIDING CONSTRUCTION KEYS WITHOUT CYLINDER REMOVAL, FURNISHED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

2. SPLIT KEY OR LOST BALL CONSTRUCTION KEYING SYSTEM 3. 3 CONSTRUCTION CONTROL KEYS, AND EXTRACTOR TOOLS OR KEYS AS REQUIRED TO VOID CONSTRUCTION KEYING.

4. 12 CONSTRUCTION CHANGE (DAY) KEYS. OWNER OR OWNER'S REPRESENTATIVE WILL VOID OPERATION OF TEMPORARY CONSTRUCTION KEYS.

1. PROVIDE PERMANENT CYLINDERS/CORES KEYED BY THE MANUFACTURER ACCORDING TO THE FOLLOWING KEY SYSTEM A. MASTER KEYING SYSTEM AS DIRECTED BY THE OWNER. 2. FORWARD BITTING LIST AND KEYS SEPARATELY FROM CYLINDERS. BY MEANS AS DIRECTED BY OWNER, FAILURE TO COMPLY WITH FORWARDING REQUIREMENTS WILL BE CAUSE FOR REPLACEMENT OF CYLINDERS/CORES INVOLVED AT NO ADDITIONAL

COST TO OWNER. 3. PROVIDE KEYS WITH THE FOLLOWING FEATURES:

A. MATERIAL: NICKEL SILVER; MINIMUM THICKNESS OF .107-INCH (2.3MM) B. PATENT PROTECTION: KEYS AND BLANKS PROTECTED BY ONE OR MORE UTILITY PATENT(S).

4. IDENTIFICATION:

b. PERMANENT KEYING:

A. MARK PERMANENT CYLINDERS/CORES AND KEYS WITH APPLICABLE BLIND CODE FOR IDENTIFICATION. DO NOT PROVIDE

BLIND CODE MARKS WITH ACTUAL KEY CUTS. B. IDENTIFICATION STAMPING PROVISIONS MUST BE APPROVED BY THE ARCHITECT AND OWNER. C. STAMP CYLINDERS/CORES AND KEYS WITH OWNER'S UNIQUE KEY SYSTEM FACILITY CODE AS ESTABLISHED BY THE MANUFACTURER; KEY SYMBOL AND EMBOSSED OR STAMPED WITH "DO NOT DUPLICATE" ALONG WITH THE "PATENTED" OR

D. FAILURE TO COMPLY WITH STAMPING REQUIREMENTS WILL BE CAUSE FOR REPLACEMENT OF KEYS INVOLVED AT NO ADDITIONAL COST TO OWNER. E. FORWARD PERMANENT CYLINDERS/CORES TO OWNER, SEPARATELY FROM KEYS, BY MEANS AS DIRECTED BY OWNER.

5. QUANTITY: FURNISH IN THE FOLLOWING QUANTITIES.

A. CHANGE (DAY) KEYS: 3 PER CYLINDER/CORE. B. MASTER KEYS: 7.

PATENT NUMBER TO ENFORCE THE PATENT PROTECTION.

6. KEYING FOR DOOR 100A: KEYED SEPARATELY FROM REMAINDER OF BUILDING. PROVIDE 7 KEYS.

C. HARDWARE SET #01 (DOOR 101C)

a. (3) HINGES - 5BB1 4.5 X 4.5 NRP - FINISH 652 - MFR IVE b. (1) CLASSROOM LOCK - ND70LD RHO - FINISH 626 - MFR SCH

c. (1) K-I-L CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R

d. (1) WALL STOP - WS406/407CCV - FINISH 630 - MFR IVE e. (3) SILENCER - SR64 - FINISH GRY - MFR IVE

D. HARDWARE SET #02 (DOOR 101D)

a. (3) HINGES - 5BB1 4.5 X 4.5 NRP - FINISH 652 - MFR IVE b. (1) CLASSROOM LOCK - ND70LD RHO - FINISH 626 - MFR SCH

c. (1) K-I-L CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R

d. (1) OH STOP - 410S - FINISH 630 - MFR GLY e. (3) SILENCER - SR64 - FINISH GRY - MFR IVE

E. HARDWARE SET #04 (DOOR 102)

a. (3) HINGES - 5BB1 4.5 X 4.5 - FINISH 652 - MFR IVE

b. (1) CLASSROOM LOCK - ND70LD RHO - FINISH 626 - MFR SCH c. (1) K-I-L CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R

d. (1) SURFACE CLOSER - 4040XP RW/PA PULL SIDE - FINISH 689 - MFR LCN e. (1) KICK PLATE - 8400 10" X 2" LDW B-CS - FINISH 630 - MFR IVE

(1) WALL STOP - WS406/407CCV - FINISH 630 - MFR IVE g. (1) GASKETING - 488S - FINISH BK - MFR ZER

a. (3) HINGES - 5BB1 4.5 X 4.5 NRP - FINISH 652 - MFR IVE b. (1) CLASSROOM LOCK - ND70LD RHO - FINISH 626 - MFR SCH

c. (1) K-I-L CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R d. (1) SURFACE CLOSER - 4040XP SCUSH - FINISH 689 - MFR LCN

e. (1) KICK PLATE - 8400 10" X 2" LDW B-CS - FINISH 630 - MFR IVE

f. (1) GASKETING - 488S - FINISH BK - MFR ZER

G. HARDWARE SET #06 (DOOR 100B) a. (1) CONT. HINGE - 112HD - FINISH 628 - MFR IVE

b. (1) CONT. HINGE - 112HD EPT - FINISH 628 - MFR IVE c. (1) POWER TRANSFER - EPT10 - FINISH 689 - MFR VON

d. (1) REMOVABLE MULLION - KR4954 STAB - FINISH 689 - MFR VON

. (1) PANIC HARDWARE - 98-EO - FINISH 626 - MFR VON (1) ELEC PANIC HARDWARE - HD-QEL-98-NL-OP-110MD - RHRA - FINISH 626 - MFR VON

(1) RIM CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R

(1) MORTISE CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R (2) DOOR PULL - BF157 - FINISH 628 - MFR ROC

(2) OVERHEAD STOP - 100S - FINISH 630 - MFR GLY (1) SURFACE CLOSER - 4040XP EDA - FINISH 689 - MFR LCN

(1) SURFACE AUTO OPERATOR - 4642 WMS - FINISH 689 - MFR LCN m. (1) PA MOUNTING PLATE - 4040XP-18PA (AS REQ'D) - FINISH 689 - MFR LCN

n. (1) BLADE STOP SPACER 4040XP-61 (AS REQ'D) - FINISH 689 - MFR LCN o. (2) ACTUATOR, WALL MOUNT - 8310-853T - FINISH 630 - MFR LCN

p. (2) SURFACE MOUNT BOX - 8310-867S - MFR LCN q. (1) CARD READER - PROVIDED BY SECURITY CONTRACTOR

(1) DOOR RELEASE BUTTON - 660-PB - FINISH 628 - MFR SCE

s. (1) POWER SUPPLY - PS902 900-4RL - COORDINATE POWER SUPPLY REQUIREMENTS W/SECURITY PROVIDER - MFR VON WEATHERSTRIP BY DOOR/FRAME MANUFACTURER.

u. OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS W/OWNER, ARCHITECT AND RELATED v. DOORS NORMALLY CLOSED AND LOCKED. PRESENTING A VALID CREDENTIAL TO THE READER OR PRESSING DOOR RELEASE BUTTON

AT RECEPTION DESK WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS AND MOMENTARILY ENABLE THE EXTERIOR ACTUATOR BUTTON. PUSHING THE ENABLED EXTERIOR ACTUATOR BUTTON WILL CAUSE THE AUTOMATIC OPERATOR TO MOMENTARILY OPEN THE DOOR. THE INTERIOR ACTUATOR BUTTON TO BE ENABLED AT ALL TIMES. PUSHING THE INTERIOR ACTUATOR BUTTON WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH AND CAUSE THE AUTOMATIC OPERATOR TO

MOMENTARILY OPEN THE DOOR. DOORS TO REMAIN LOCKED WITH LOSS OF POWER. FREE EGRESS AT ALL TIMES.

H. HARDWARE SET #07 (DOOR 100A) a. (2) CONT. HINGE - 112HD - FINISH 313AN - MFR IVE b. (1) REMOVABLE MULLION - KR4954 STAB - FINISH 695 - MFR VON

c. (1) PANIC HARDWARE - 98-EO - FINISH 313 - MFR VON d. (1) PANIC HARDWARE - 98-NL-OP-110MD - RHRA - FINISH 313 - MFR VON e. (1) RIM CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 613 - MFR C-R (1) MORTISE CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 613 - MFR C-R

. (2) DOOR PULL - BF157 - FINISH 313 - MFR ROC (2) OVERHEAD STOP - 100S - FINISH 695 - MFR GLY (1) SURFACE CLOSER - 4040XP EDA - FINISH 695 - MFR LCN (1) SURFACE AUTO OPERATOR - 4642 WMS - FINISH 695 - MFR LCN

(1) PA MOUNTING PLATE - 4040XP-18PA (AS REQ'D) - FINISH 695 - MFR LCN (1) BLADE STOP SPACER - 4040XP-61 (AS REQ'D) - FINISH 695 - MFR LCN m. (1) WEATHER RING - 8310-801 - MFR LCN

n. (2) ACTUATOR, WALL MOUNT - 8310-853T - FINISH 630 - MFR LCN o. (2) SURFACE MOUNT BOX - 8310-867S - MFR LCN p. (1) MULLION SEAL - 8780N - FINISH BK - MFR ZER

RETRACTED POSITION). FREE EGRESS AT ALL TIMES.

q. (2) DOOR SWEEP - 8192D - FINISH D - MFR ZER r. (1) THRESHOLD - 655A - FINISH A - MFR ZER

s. WEATHERSTRIP BY DOOR/FRAME MANUFACTURER. t. OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS W/OWNER, ARCHITECT AND RELATED u. BOTH ACTUATOR BUTTONS ARE ENABLED WHEN THE OPERATOR IS TURNED ON. PUSHING EITHER ENABLED ACTUATOR BUTTON WILL

CAUSE THE AUTOMATIC OPERATOR TO MOMENTARILY OPEN THE DOOR WHEN THE PANIC DEVICES ARE DOGGED DOWN (LATCHES IN

J. HARDWARE SET # 08 (DOOR 105) a. (1) DOOR RELEASE BUTTON - 660-PB - FINISH 628 - MFR SCE

b. BALANCE OF HARDWARE TO REMAIN.

K. HARDWARE SET #09 (DOORS 101A AND 101B) a. (1) MORTISE CYLINDER - KEYED TO EXISTING SYSTEM, COORDINATE W/OWNER - FINISH 626 - MFR C-R

c. NOTE: VERIFY CYLINDER COMPATIBILITY W/DOOR MANUFACTURER PRIOR TO ORDER.

8. FIBER-CEMENT SIDING

A. MANUFACTURER: NICHIHA CORPORATION, WWW.NICHIHA.COM.

B. PRODUCT: VINTAGE WOOD.

a. COLOR: CEDAR. b. PROFILE: WOOD PLANK TEXTURE W/THREE, 3/8" GROOVES RUNNING LENGTHWISE, SPACED 5-5/8" APART

a. MANUFACTURED CORNERS WITH 3-1/2" RETURNS FOR EACH PROFILE COLOR.

b. ALUMINUM TRIM OPTIONS: CORNER KEY, OPEN OUTSIDE CORNER, H-MOLD, J-MOLD, COMPRESSION JOINT, INSIDE CORNER c. ESSENTIAL FLASHING SYSTEM: STARTER, OVERHANG.

FINISH: MATTE BLACK.

D. DIMENSIONS: a. AWP-1818: 455MM (17-7/8") (H) X 1,818 MM (71-9/16") (L).

b. PANEL THICKNESS: 16MM (5/8") WEIGHT: 35.27 LBS. PER PANEL

d. COVERAGE: 8.88 SQ FT PER PANEL e. FACTORY SEALED ON SIX (6) SIDES

E. INSTALLATION COMPONENTS a. ULTIMATE CLIP SYSTEM

STARTER TRACK:

1. HORIZONTAL PANEL INSTALLATIONS - FA 700 - 3,030 MM (L) GALVALUME COATED STEEL PANEL CLIPS: JEL 778 "ULTIMATE CLIP II" (10 MM RAINSCREEN FOR 16 MM AWP) - ZINC-ALUMINUM-MAGNESIUM ALLOY COATED

1. JOINT TAB ATTACHMENTS (INCLUDED) - USED AT ALL PANEL TO PANEL VERTICAL JOINTS. CORNER CLIPS: JE 777C (10 MM RAINSCRÉEN FOR 5/8" AWP MANUFACTURED CORNERS) - ZINC-ALUMINUM-MAGNESIUM ALLOY

 SINGLE FLANGE SEALANT BACKER - FHK 1015 R (10 MM) - 6.5' (L) FLUORINE COATED GALVALUME DOUBLE FLANGE SEALANT BACKER - FH 1015 R (10 MM) - 10' (L) FLUORINE COATED GALVALUME.

 CORRUGATED SPACER - FS 1005 (5 MM), FS 1010 (10 MM) - 4' (L). ALUMINUM TRIM (OPTIONAL): PAINT PRIMED TRIM AS SPECIFIED IN FINISH SCHEDULE.

ESSENTIAL FLASHING SYSTEM (OPTIONAL):

• STARTER- MAIN SEGMENTS (3,030 MM), INSIDE CORNERS, OUTSIDE CORNERS OVERHANG - MAIN SEGMENTS (3,030 MM), INSIDE CORNERS, OUTSIDE CORNERS, JOINT CLIPS d. FASTENERS: CORROSION RESISTANT FASTENERS, SUCH AS HOT-DIPPED GALVANIZED SCREWS APPROPRIATE TO LOCAL BUILDING CODES AND PRACTICES MUST BE USED. USE STAINLESS STEEL FASTENERS IN HIGH HUMIDITY AND HIGH-MOISTURE REGIONS. PANEL MANUFACTURER IS NOT LIABLE FOR CORROSION RESISTANCE OF FASTENERS. DO NOT USE ALUMINUM FASTENERS, STAPLES, OR

FASTENERS THAT ARE NOT DESIGNED FOR INTENDED USE. SEE MANUFACTURER;S INSTRUCTIONS FOR APPROPRIATE FASTENERS

FOR CONSTRUCTION METHOD USED. e. FLASHING: FLASH ALL AREAS SPECIFIED IN MANUFACTURER'S INSTRUCTIONS. DO NOT USE RAW ALUMINUM FLASHING. FLASHING

MUST BE GALVANIZED, ANODIZED, OR PVC COATED. f. SEALANT: SEALANT SHALL COMPLY WITH ASTM C920, CLASS 35.

## 9. ALUMINUM METAL PLATE WALL PANELS

A. MANUFACTURER: DRI-DESIGN, WWW.DRI-DESIGN.COM

B. PRODUCT: EN-V

C. FINISH: SUPERIOR PERFORMANCE ORGANIC COATING SYSTEM

a. COMPLY WITH NAAMM'S - METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS, FOR RECOMMENDATIONS OF DESIGNATING FINISHES.

b. AAMA 2605 MULTIPLE COAT, THERMALLY CURED POLYVINYLIDENE FLUORIDE (PVDF) RESIN SYSTEM TWO-COAT FLUOROPOLYMER:

1. AAMA 2605, FLUOROPOLYMER FINISH CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN COLOR COAT. PREPARE, PRE-TREAT, AND APPLY COATING TO EXPOSED METAL SURFACES TO COMPLY WITH COATING AND RESIN MANUFACTURERS' INSTALLATION INSTRUCTIONS. TWO-COAT MICA FLUOROPOLYMER:

1. AAMA 2605, FLUOROPOLYMER FINISH WITH SUSPENDED MICA FLAKES CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN

BY WEIGHT IN COLOR COAT. PREPARE, PRE-TREAT, AND APPLY COATING TO EXPOSED SURFACES TO COMPLY WITH COATING AND RESIN MANUFACTURERS' INSTALLATION INSTRUCTIONS. c. FIELD TOUCH-UP MATERIALS: AS RECOMMENDED BY COATING MANUFACTURER FOR FIELD APPLICATION.

a. DARK BRONZE ANODIZED (OR SIMILAR - DARK BRONZE EN-V-007) b. CLEAR ANODIZED (OR SIMILAR - SILVER EN-V-025)

c. CUSTOM COLOR: SHERWIN-WILLIAMS SW 6314 LUXURIOUS RED

E. ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE METAL PLATE WALL PANEL ASSEMBLY INCLUDING TRIM, COPINGS, FASCIA, MULLIONS, SILLS, CORNER UNITS, FLASHINGS, AND SIMILAR ITEMS. MATCH MATERIALS AND FINISH OF PANELS UNLESS OTHERWISE INDICATED

a. PROVIDE INTEGRAL DRAINAGE SYSTEM AND MANUFACTURERS' STANDARD EXTRUSIONS AT TERMINATION OF DISSIMILAR MATERIALS. b. FLASHING AND TRIM: MATCH MATERIAL, FINISH, AND COLOR OF ADJACENT WALL PANELS. THICKNESS: AT LEAST 0.040 INCH. c. PANEL FASTENERS: DESIGNED TO WITHSTAND DESIGN LOADS. WITH AT LEAST 7/16 INCH DIAMETER HEAD AND NEOPRENE WASHER.

 ALUMINUM WALL PANEL MATERIAL: PROVIDE STAINLESS STEEL FASTENERS, OR COATED FASTENER APPROVED BY PANEL MANUFACTURER OR PROJECT WALL CONSULTANT.

d. SUB-GIRTS: GALVANIZED, PROVIDE SIZE AND GAGE IN ACCORDANCE WITH PROJECT REQUIREMENTS. • FURRING CHANNEL: PROVIDE HATE, C, U, OR Z TYPE AS RECOMMENDED BY MANUFACTURER.

 FLAT STRAP: AT LEAST 14 GAUGE, 0.0747 INCH (1.90 MM) THICK. e. SUBSTRATE WALL SHEATHING: PLYWOOD, PS 1, GRADE C-D, EXPOSURE I, AT LEAST 5/8 INCH THICK. WEATHER BARRIERS: PROVIDE CLIMATE SPECIFIC WEATHER BARRIER WITH PERFORMANCE CHARACTERISTICS FOR AIR

PENETRATION, WATER VAPOR TRANSMISSION, AND WATER PENETRATION RESISTANCE.

10. INTERIOR ALUMINUM PARTITIONS

A. MANUFACTURER: WILSON PARTITIONS OR APPROVED COMPARABLE PRODUCT AND MANUFACTURER.

B. PRODUCT: SNAP-ON TRIM PROFILE FLUSH SLIDER, SERIES 500.

C. FRAMES: RECTILINEAR DESIGN, 1-1/2" TRIM, 4-7/8" THROAT, TRACK, FASCIA, AND FLOOR GUIDE INCLUDED, SOFT OPEN/CLOSE ROLLERS RATED UP TO 260 LBS, LOCKING HARDWARE.

F. SEALANTS: AS RECOMMENDED BY METAL PANEL MANUFACTURER FOR OPENINGS WITHIN WALL PANELS AND PERIMETER CONDITIONS.

D. DOORS: 1-3/4" DOORS, TUBULAR DESIGN, 1/2" GLASS STOPS FOR 1/4" GLASS, 3-1/2" MEDIUM STILE, 3-1/4" TOP AND 10" BOTTOM RAIL. E. GLAZING: PER GLAZING SPECIFICATION.

F. FINISH: CLEAR ANODIC COATING, COMPLY WITH AAMA 611, AAM12C22A21 ANODIZED COATING.

## 11. SHELF STANDARDS AND BRACKETS

A. MANUFACTURER: KNAPE & VOGT, WWW.KV.COM

B. PRODUCT: 82 SERIES STANDARDS AND 182 SERIES BRACKETS.

a. STANDARDS: 1-1/16" W. X 11/16" D. X 94" L., 14 GA. STEEL. b. BRACKETS: 14-1/2" D. FOR 16" D. SHELVES, 16 GA. STEEL, VERTICALLY ADJUSTABLE IN 1-1/4" INCREMENTS. c. FINISH: TITANIUM.

d. ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION. 12. MULLION TRIM CAPS

A. MANUFACTURER: MULL-IT-OVER PRODUCTS.

B. PRODUCT: CLASSIC SOUND BARRIER MULLION TRIM CAP, STC 60.

3. OPEN ALUMINUM MCM PANEL SUNSCREEN

A. MANUFACTURER: ATAS INTERNATIONAL

**B.** PRODUCT: STERRACORE COMPOSITE PANELS, DARK BRONZE ANODIZED.

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Date Revised

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Discipline Lead Project Manager **B HUYLER** Designer Reviewer D HOLTROP Date Issued Project Number

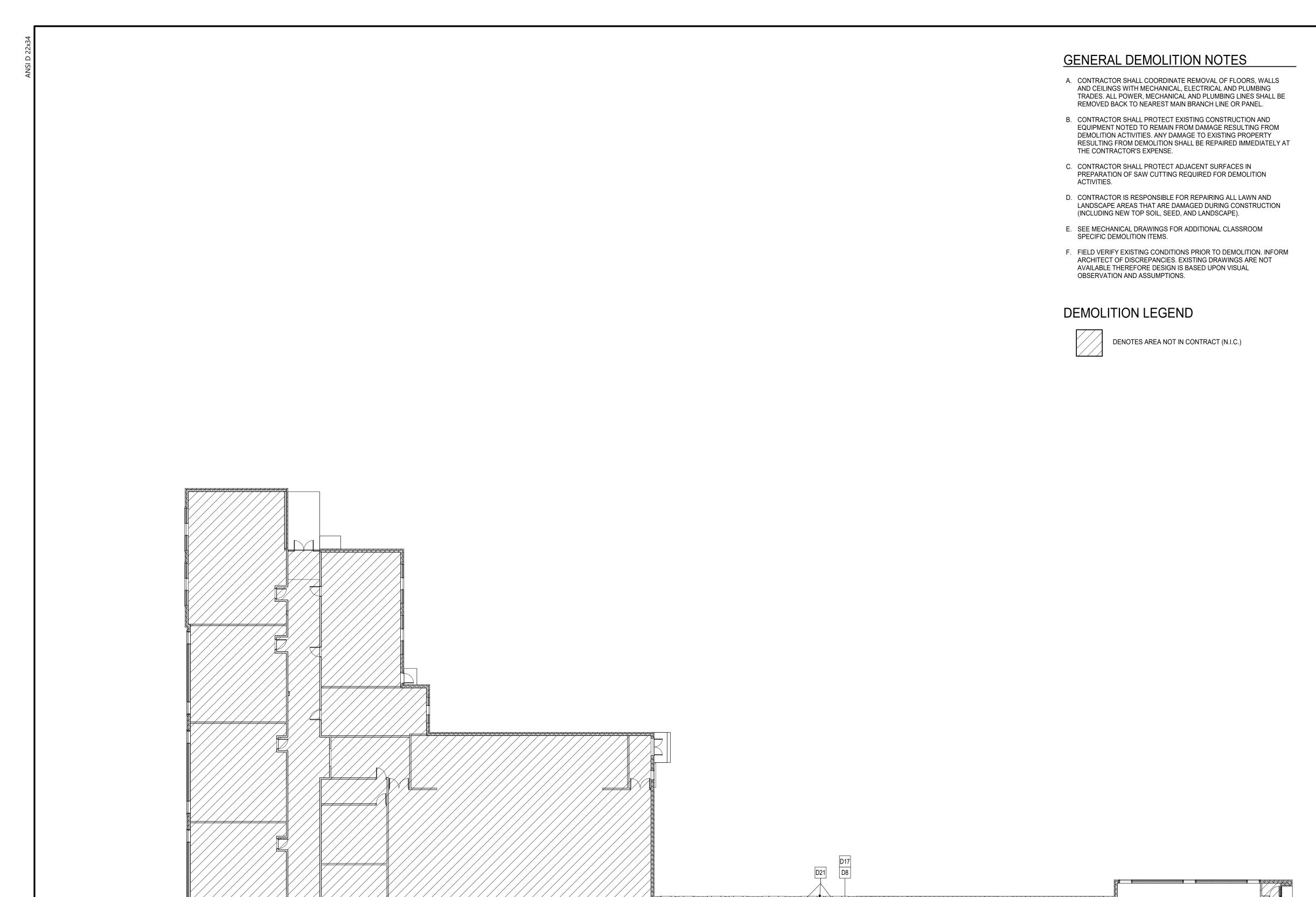
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Landscape Architects & Surveyors, D.P.C.

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DEMO BRICK EXG. BRICK

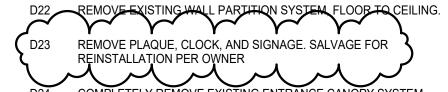
EXG. BRICK DEMO BRICK

## KEYNOTES #

- DEMO EXISTING WALL AS REQUIRED FOR NEW CONSTRUCTION. REPAIR EXISING WALLS AND FLOOR INDICATED TO REMAIN AS REQUIRED.
- DEMO EXISTING DOOR, FRAME, AND HARDWARE & ALL ASSOCIATED COMPONENTS.
- REMOVE EXISTING CASEWORK, COUNTERTOP, SUPPORTS, AND
- DEMO EXISTING DOOR. PREPARE AREA FOR INFILL TO MATCH
- REMOVE EXISTING PLUMBING.
- REMOVE EXISTING EXTERIOR CONCRETE STOOP, STAIRS, RAMP
- REMOVE EXISTING UNIT VENTILATOR & ALL ADJACENT CASEWORK.
- REMOVE EXISTING CARPET. PREPARE FLOOR FOR NEW FLOOR
- REMOVE EFIS & STUD INFILL, WINDOWS, WOOD STOOL. PREPARE
- REMOVE EXISTING BRICK VENEER FULL HEIGHT, INCLUDING ABOVE

OPENING FOR NEW CONSTRUCTION AS INDICATED.

- & BELOW OPENINGS. BREAK OFF TIES FLUSH WITH BACK-UP. COMPLETELY REMOVE EXISTING ENTRY SYSTEM, FULL HEIGHT
- INCLUDING DOORS, SIDELIGHTS, TRANSOMS, TRIM, AND ALL ASSOCIATED COMPONENTS.
- SAW CUT & REMOVE PORTION OF EXISTING CMU WALL AS REQUIRED FOR NEW OPENING. SHORE EXISTING OVERHEAD STRUCTURE AS REQUIRED FOR INSTALLATION OF NEW LINTEL WHERE INDICATED.
- DEMO EXISTING PASSAGE FRAME AND SIDELIGHTS TO WALL. PREPARE OPENING FOR NEW DOOR AND SIDELIGHTS.
- REMOVE AND PREPARE TO RELOCATE EXISTING MINI-SPLIT. SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- DEMO BENCH SEATING AND RAISED BASE.
- REMOVE EXISTING WALL TILE. DISCONNECT & REMOVE EXSTING WALL MOUNTED DEVICES (SWITCHES, FIRE ALARM PULLS, ETC.) & PREPARE FOR EXTENSION TO NEW WALL FINISH.
- D17 COMPLETELY REMOVE EXISTING WALL BASE IN ROOM.
- REMOVE BULLETIN DISPLAY AND FRAME. PREP OPENING FOR INFILL TO MATCH EXISTING.
- REMOVE EXISTING WALL FINISHES (CERAMIC TILE, ACOUSTI TILES, ETC). AND WOOD TRIM DOWN TO SUBSTRATE. PREAPRE AS REQUIRED FOR NEW FINISHES.
- DEMO RAISED FLOOR TO BE LEVEL WITH THE REST OF THE ROOM AND CORRIDOR.
- D21 REMOVE WALL PANELING, PATCH WALL AND PREP FOR NEW PAINT.



- DEMO EX MASONRY WALL/PIER.
- REMOVE EXISTING CONCRETE WALK
- EXG. VCT TO BE REMOVED BY OWNER. PREPARE SUBSTARTE AS REQUIRED FOR NEW FLOORING

EXISTING OPENING. PREPARE SURFACE AS REQUIRED FOR NEW

REMOVE FIRE EXTINGUISHER AND ASSOCIATED HANGER HARDWARE, RETURN TO OWNER.

REMOVE EXISTING CASEWORK, CABINETS, SUPPORTS, AND SHELVING BACK TO EXISTING MASONRY WALL. THERE IS DUCTWORK RUNNING ABOVE CABINETS. VERIFY DUCTWORK RETURN WITHIN CABINETS AND REMOVE. COORDINATE WITH MECHANICAL. PATCH AND REPAIR ADJACENT WALLS/CEILING.

REMOVE AND REINSTALL REFRIGERATOR PER OWNER.

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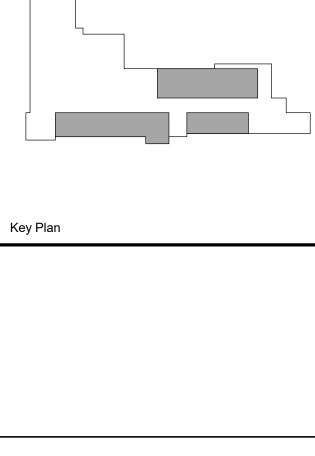
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Designer	Reviewer
E POST	R KEUNEKE
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Sheet Name

FIRST FLOOR DEMOLITION PLAN

Drawing Number

**AD101** 



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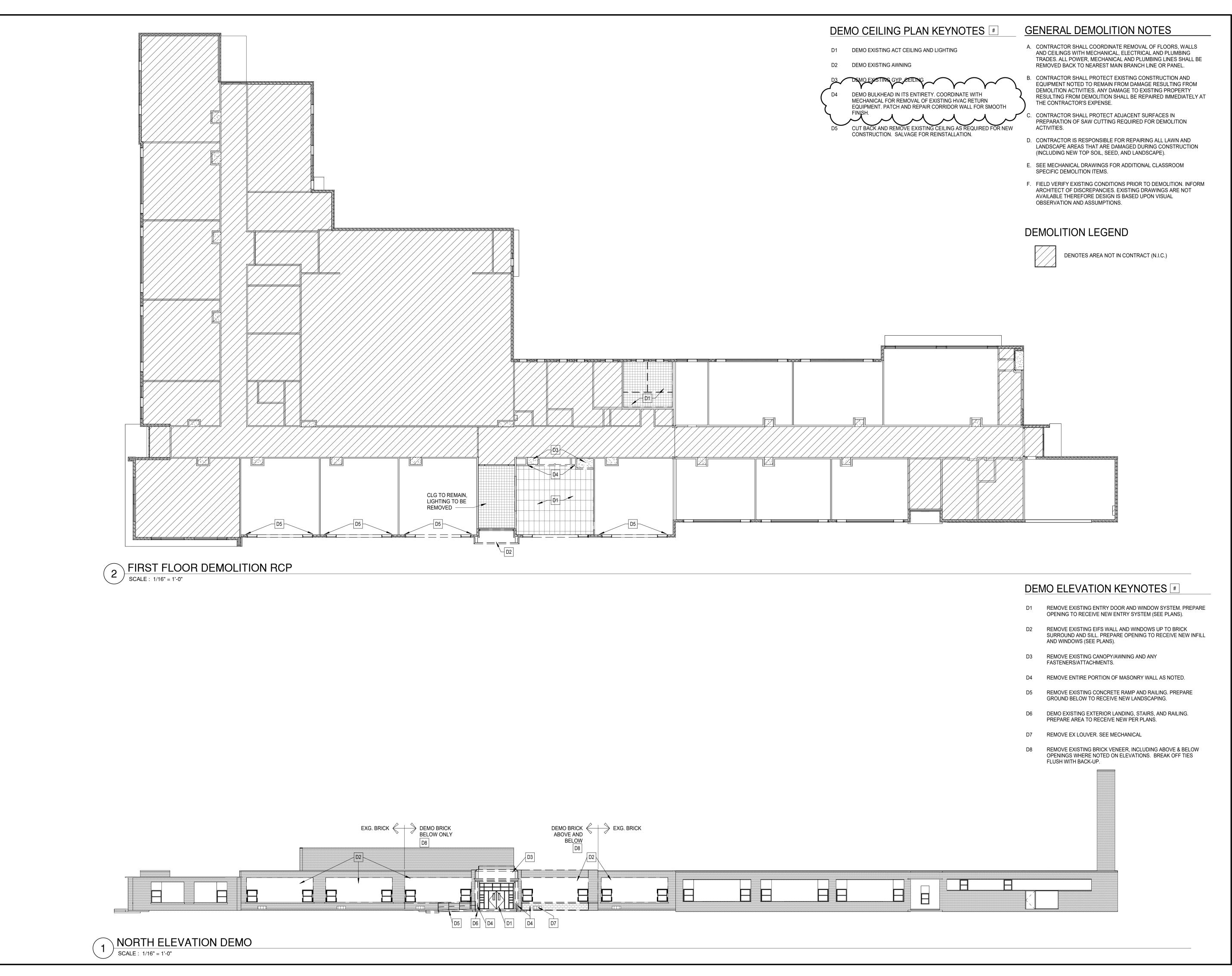
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FIRST FLOOR DEMOLITION PLAN

SCALE: 1/16" = 1'-0"





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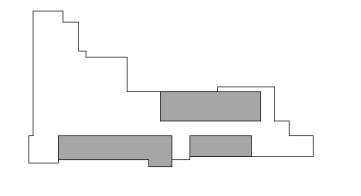
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Key Plan

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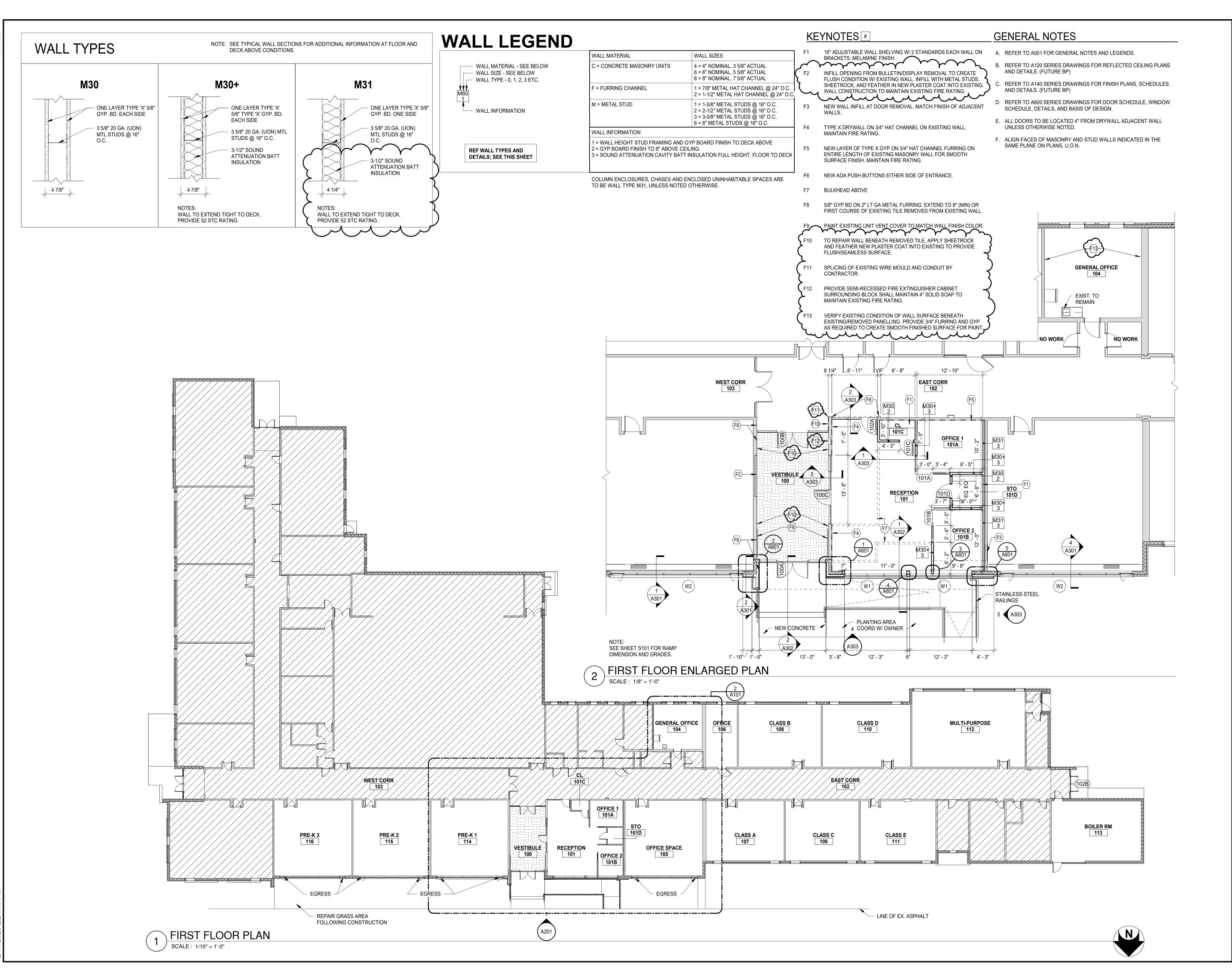
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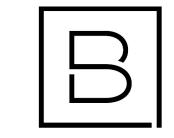
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FIRST FLOOR DEMOLITION
CEILING PLAN AND
EXTERIOR ELEVATION

Drawing Number

**AD121** 





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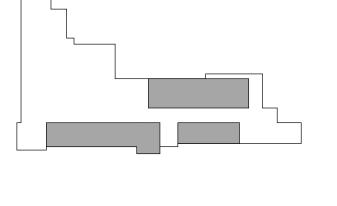
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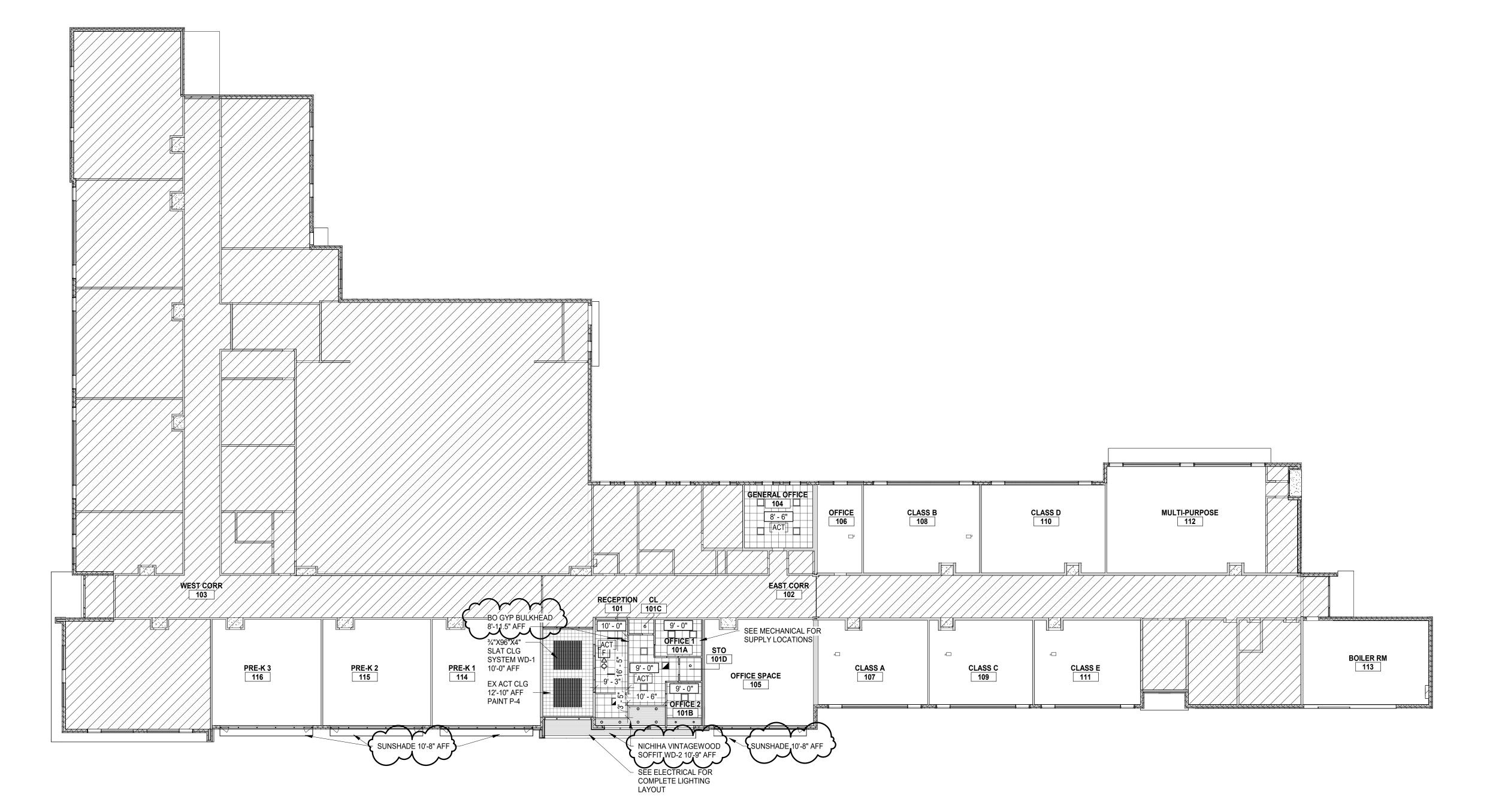
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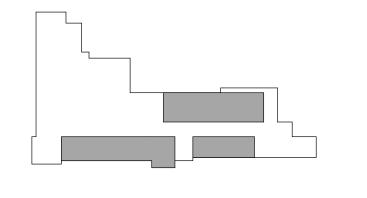
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FIRST FLOOR CEILING PLAN

Drawing Numb

NOTE:

096513 RESILIENT BASE RB-1: RESILIENT WALL BASE; 4" H MANUFACTURER: JOHNSONITE

TRADITIONAL 4" DC STYLE: COLOR: 48 GREY TOE STYLE: COVE NOTE:

096813 TILE CARPET CPT-1: CARPET TILE; 18" x 36"

MANUFACTURER: SHAWCONTRACT COLLECTION: COLOR AT WORK II STYLE: CHROMATONE TILE COLOR: CHARCOAL TAUPE ASHLAR PATTERN, LENGTH EAST-WEST NOTE:

CPT-2: CARPET TILE; 18" x 36" MANUFACTURER: SHAWCONTRACT COLLECTION: COLOR AT WORK II STYLE: CHROMATONE TILE COLOR: CRIMSON TAUPE NOTE: ASHLAR PATTERN, LENGTH EAST-WEST

FULL TILE ACCENT PER DRAWINGS

066116 SOLID SURFACE SS-1: SOLID SURFACE

MANUFACTURER:

COLOR: SORREL FINISH: NOTE: WINDOW INTERIOR SILLS

CORIAN

098433 INTERIOR PAINT P-1: FIELD - INTERIOR PAINT MANUFACTURER: SHERWIN-WILLIAMS COLOR: FINISH: LOCATION: P-2: ACCENT - INTERIOR PAINT MANUFACTURER: SHERWIN-WILLIAMS SW7071 GRAY SCREEN
PER PAINT SPECT
OFFICE CORRIDOR BUMP OUT COLOR: FINISH: LOCATION: ACCENT - HM DOOR FRAMES

COLOR: FINISH: FIELD - CEILING MANUFACTURER: SHERWIN-WILLIAMS SW6258 TRICORN BLACK PER PAINT SPECT VESTIBULE CEILING TILES COLOR: FINISH:

MANUFACTURER: SHERWIN-WILLIAMS

LOCATION:

COLOR:

NOTE:

124813 ENTRANCE MATS & GRIDS WOF: VINYL GRID SYSTEMS W/ CARPET MANUFACTURER: PORTICO SYSTEMS SNAP TRAX PLUS TILE COLLECTION: COLOR: LOCATION: VESTIBULE

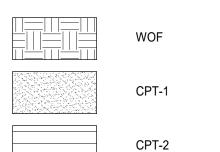
NOTE: 196400 SPECTALTY CETCHIGS WD-1: SLAT CEILING PANEL SYSTEM MANUFACTURER: ARMSTRONG WOODWORKS GRILLE - FORTE VENEERED COLLECTION:

QUARTERED WALNUT COLOR: TRIM: VENEERED FRPB TRIM QUARTERED WALNUT LOCATION: VESTIBULE ITEM 6334 L8 S17 NQW MANUFACTURER: NICHIHA

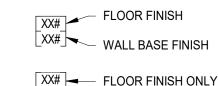
COLLECTION: VINTAGEWOOD LOCATION: RECEPTION CEILING AND EXTERIOR PER ELEVATIONS

ROOM FINISH SCHEDULE **WALLS** ROOM NUMBER NORTH SOUTH **WEST** CEILING REMARKS **ROOM NAME FLOOR EAST** FINISHED FLOOR 100 VESTIBULE P-4/WD-1 WOF 101 ACT-1/WD-2 RECEPTION CPT-1/CPT-2 RB-1 101A OFFICE 1 CPT-2 ACT-1 101B P-1 P-1 ACT-1 OFFICE 2 CPT-2 P-1 P-1 101C CPT-1 RB-1 P-1 P-1 P-1 P-1 ACT-1 101D STO CPT-1 P-1 ACT-1 P-1 P-1 102 EAST CORR EXIST EXIST EXIST EXIST EXIST EXIST EXIST NO RENO PHASE 1 EXIST EXIST NO RENO WEST CORR **EXIST** EXIST EXIST **EXIST EXIST** PHASE 1 GENERAL OFFICE CPT-1 RB-1 P-1 ACT-1

## FINISH HATCH LEGEND



## FINISH SYMBOL LEGEND



(X#) GENERAL WALL FINISH

- A. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR

- EXCEED CODE REQUIREMENTS.
- RAISING THE NAP OF PAPER
- DO NOT PERFORM PAINTING AND OTHER FINISHING WORK UNDER CONDITIONS UNSUITABLE FOR EXECUTION OF PAINTING WORK. AIR SHALL BE FREE FROM DUST AND DIRT TO PREVENT LODGING OF FOREIGN MATTER IN FRESH PAINT. FLOORS MUST BE BROOM CLEAN BEFORE PAINTING IS STARTED.
- G. EDGES OF PAINT ADJOINING OTHER COLORS OR MATERIALS TO BE SHARP AND CLEAN WITHOUT OVERLAP.
- H. EXAMINE SURFACES TO RECEIVE PAINT CAREFULLY FOR DEFECTS. DO NOT PROCEED WITH WORK UNTIL DEFECTS ARE CORRECTED.
- I. WHENEVER NECESSARY TO OBTAIN REQUIRED RESULTS, REFINISH AN ENTIRE WALL RATHER THAN SPOT FINISHING WHERE A PORTION
- FOLLOWING:
- K. PROVIDE SELF LEVELING TROWELABLE UNDERLAYMENT WHERE
- M. INSTALL TILE PER THE TILE COUNCIL OF NORTH AMERICA'S
- N. PROVIDE THE REQUIRED TRANSITIONS BASED ON TYPES IDENTIFIED

## PAINT SPECIFICATION

- A. BASIS OF DESIGN MANUFACTURER: SHERWIN WILLIAMS. ALSO ACCEPTABLE: BENJAMIN MOORE AND PPG PAINTS.
- a. GYPSUM BOARD AND PLASTER: NEW & PREVIOUSLY PAINTED.
- INTERMEDIATE COAT: MATCH TOPCOAT.
- TOPCOAT: PROMAR 200 ZERO VOC INTERIOR LATEX EG-SHEL, B20.
- c. HOLLOW METAL FRAMES
- INTERMEDIATE COAT: MATCH TOPCOAT.
- TOPCOAT: PRO INDUSTRIAL PRE CATALYZED WATERBASED EPOXY SEMI-GLOSS, K46 SERIES.
- d. EXISTING VESTIBULE CEILING TILES
- INTERMEDIATE COAT: MATCH TOPCOAT.
- COLORS: REFER TO INTERIOR FINISH SCHEDULE



- PREPARING AND INSTALLING FINISHES.
- B. PROTECT ADJACENT WORK BY SUITABLY COVERING DURING WORK.
- C. REMOVE ADHESIVE OR PAINT SPOTS FROM FINISHED FLOORS. WALLS, GLASS OR OTHER SURFACES. FINISHES TO MEET OR
- D. INSTALL MATERIALS USING MANUFACTURER'S APPROVED ADHESIVES AND METHODS, U.O.N.
- E. FILL MINOR DRYWALL IRREGULARITIES WITH SPACKLING COMPOUND AND SAND TO A SMOOTH LEVEL SURFACE. EXERCISE CARE TO AVOID

- OF THE FINISH HAS BEEN DAMAGED OR IS UNSATISFACTORY. J. PREPARE FLOOR SURFACES INCLUDING, BUT NOT LIMITED TO, THE
- A. PREPARE/PROPERLY REPAIR AND PATCH SUBFLOORS TO A SMOOTH AND LEVEL FINISH. B. FLASH PATCH AS REQUIRED, READY TO RECEIVE NEW FINISH.
- REQUIRED TO OBTAIN FINISH MANUFACTURER'S REQUIRED SUBFLOOR CONDITION.
- L. FOLLOW THE CARPET AND RUG INSTITUTE METHODS OF INSTALLATION.
- INSTALLATION SPECIFICATIONS.
- ON DRAWINGS AT EACH FINISH TRANSITION LOCATION
- O. CENTER FLOOR MATERIAL TRANSITIONS ON DOOR ABOVE.
- P. FINISHED FLOORS EXTEND INTO TOE SPACES, CLOSETS, DOOR REVEALS AND SIMILAR OPENINGS.
- Q. REFER TO REFLECTED CEILING PLANS FOR CEILING FINISHES.

- PRIMER: PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER, B28 SERIES.
- b. CMU: PREVIOUSLY PAINTED.
- LOXON CONCRETE AND MASONRY PRIMER LX02 SERIES • INTERMEDIATE COAT: MATCH TOPCOAT.
- TOPCOAT: PROMAR 200 ZERO VOC INTERIOR LATEX EG-SHEL, B20.
- PRO INDUSTRIAL PRO CRYL UNIVERSAL PRIMER, B66 SERIES.
- PRIMER: PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER, B28 SERIES.
- TOPCOAT: PROMAR 200 ZERO VOC INTERIOR LATEX FLAT, B30 SERIES.



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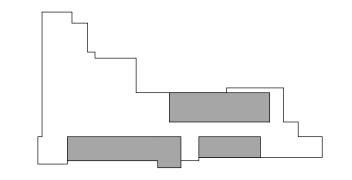
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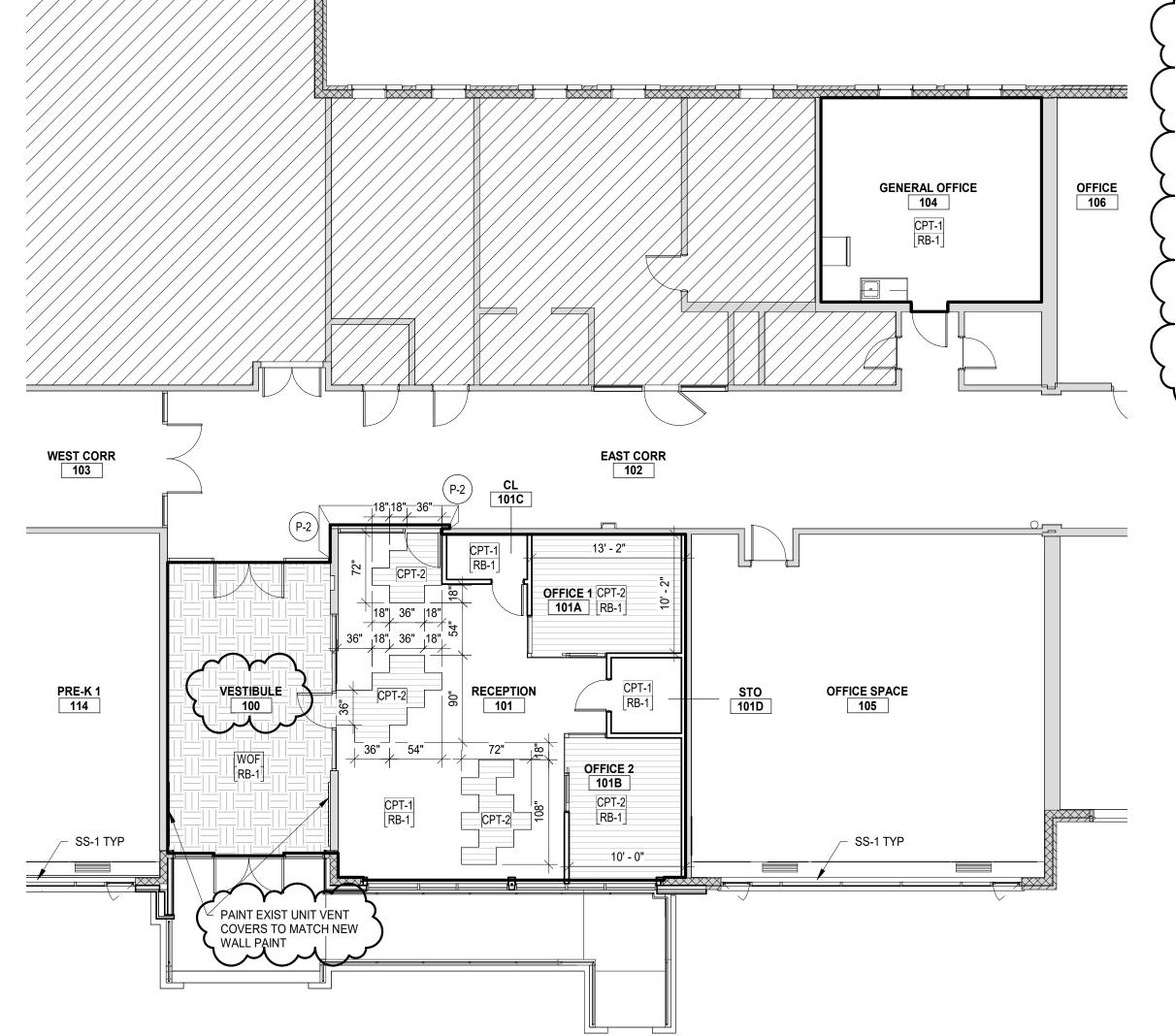
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Designer	Reviewer
E POST	R KEUNEKE
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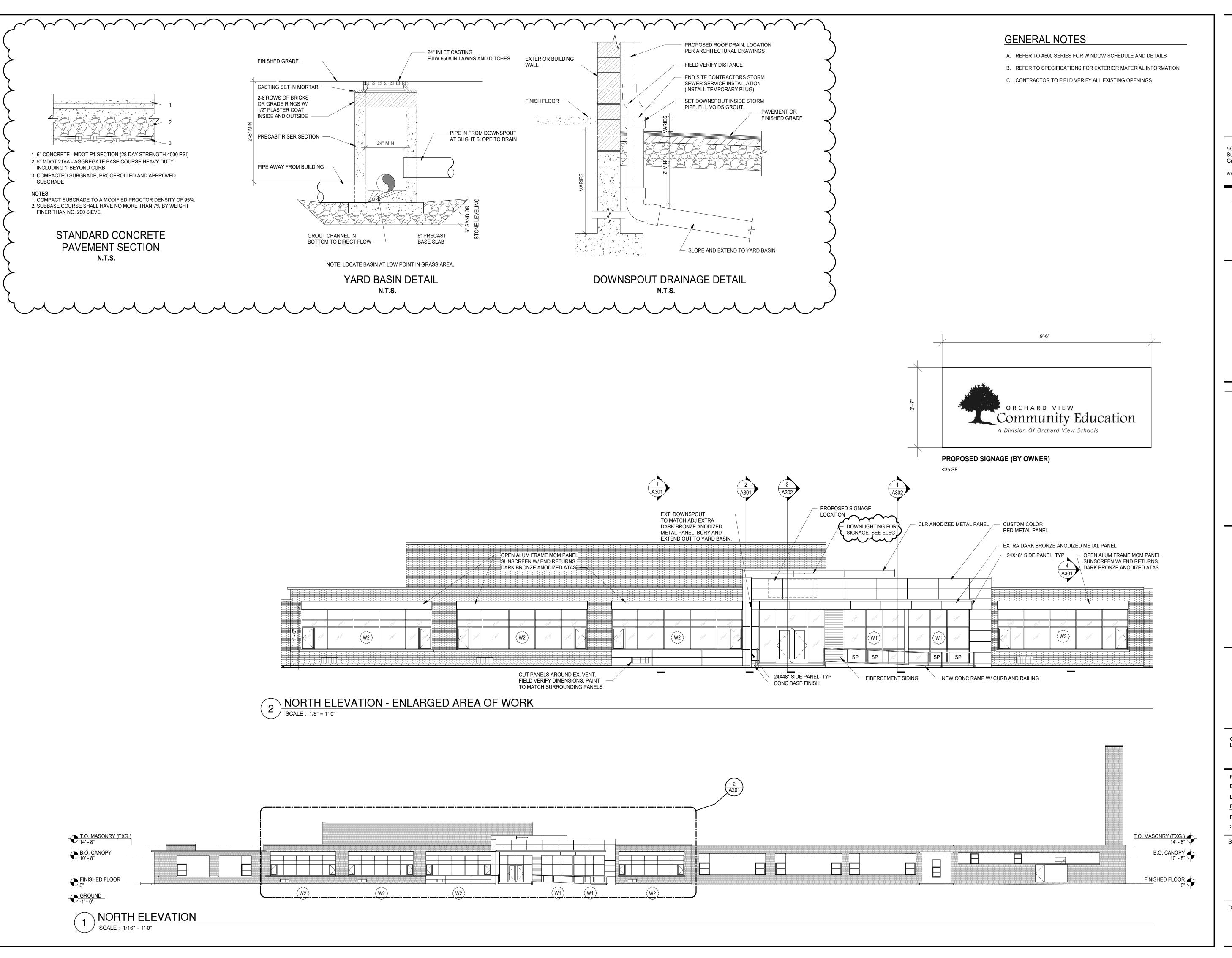
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FIRST FLOOR FINISH PLAN

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FIRST FLOOR FINISH PLAN - AREA OF WORK SCALE: 1/8" = 1'-0"



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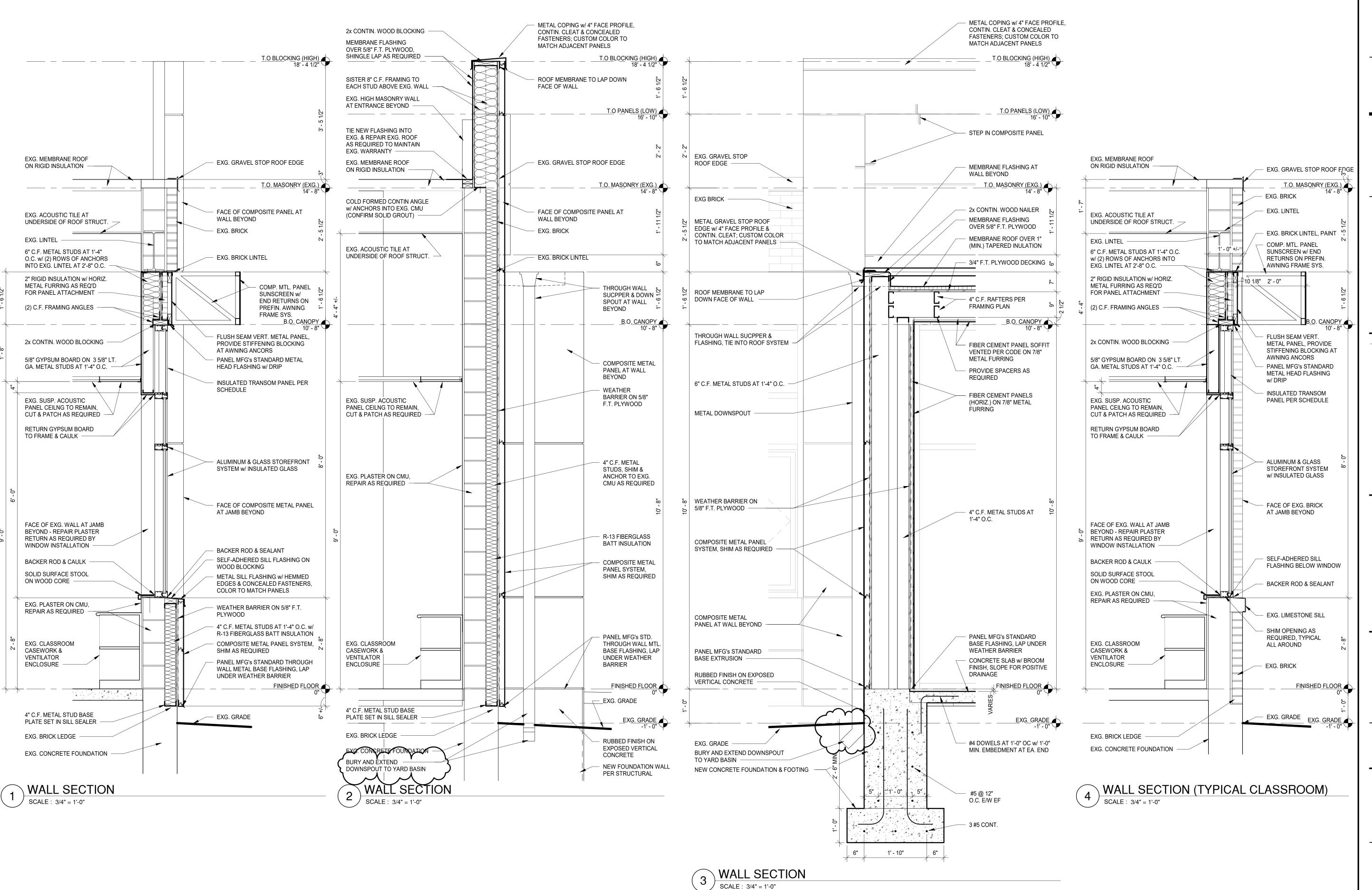
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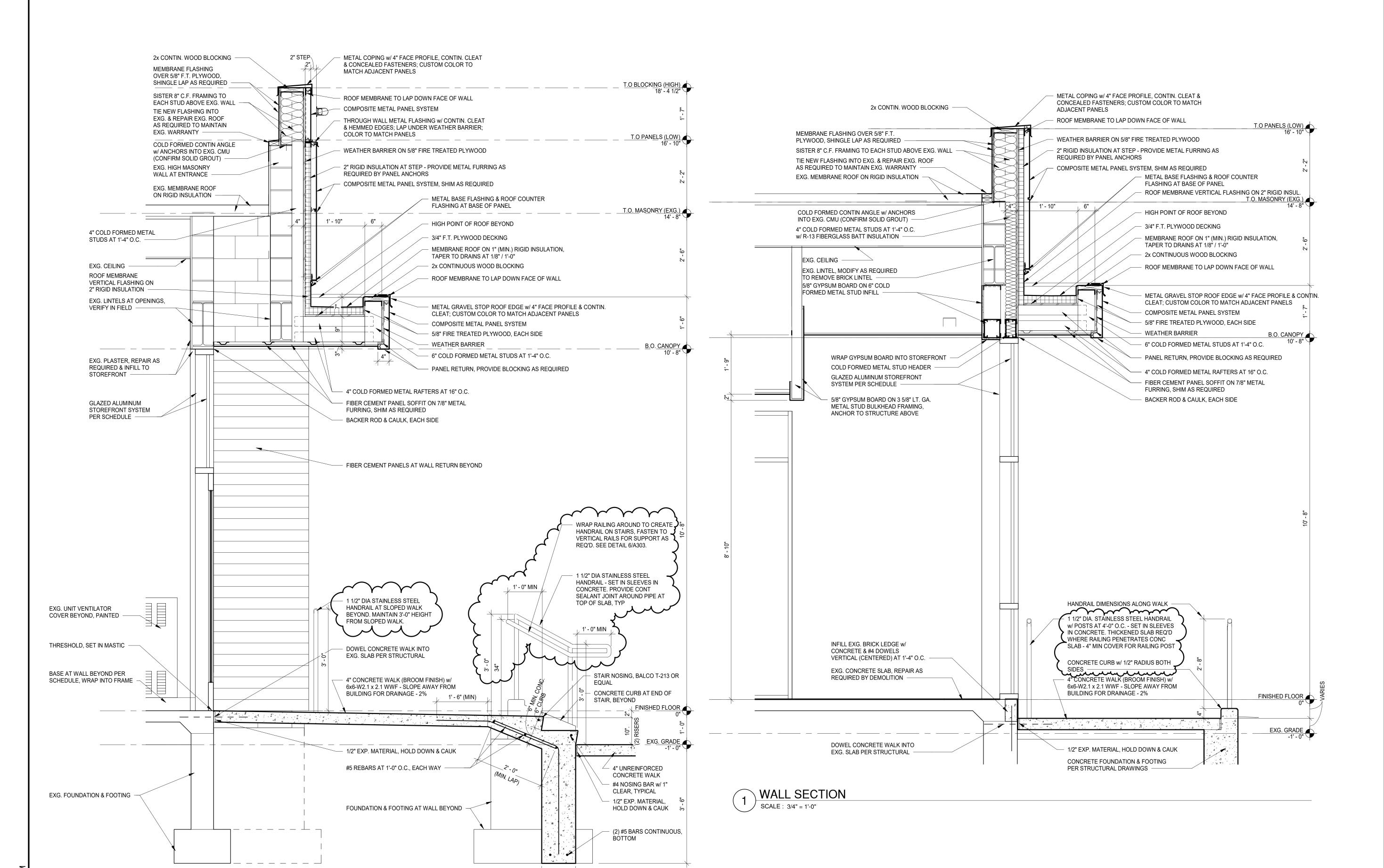
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WALL SECTION

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1' - 0"



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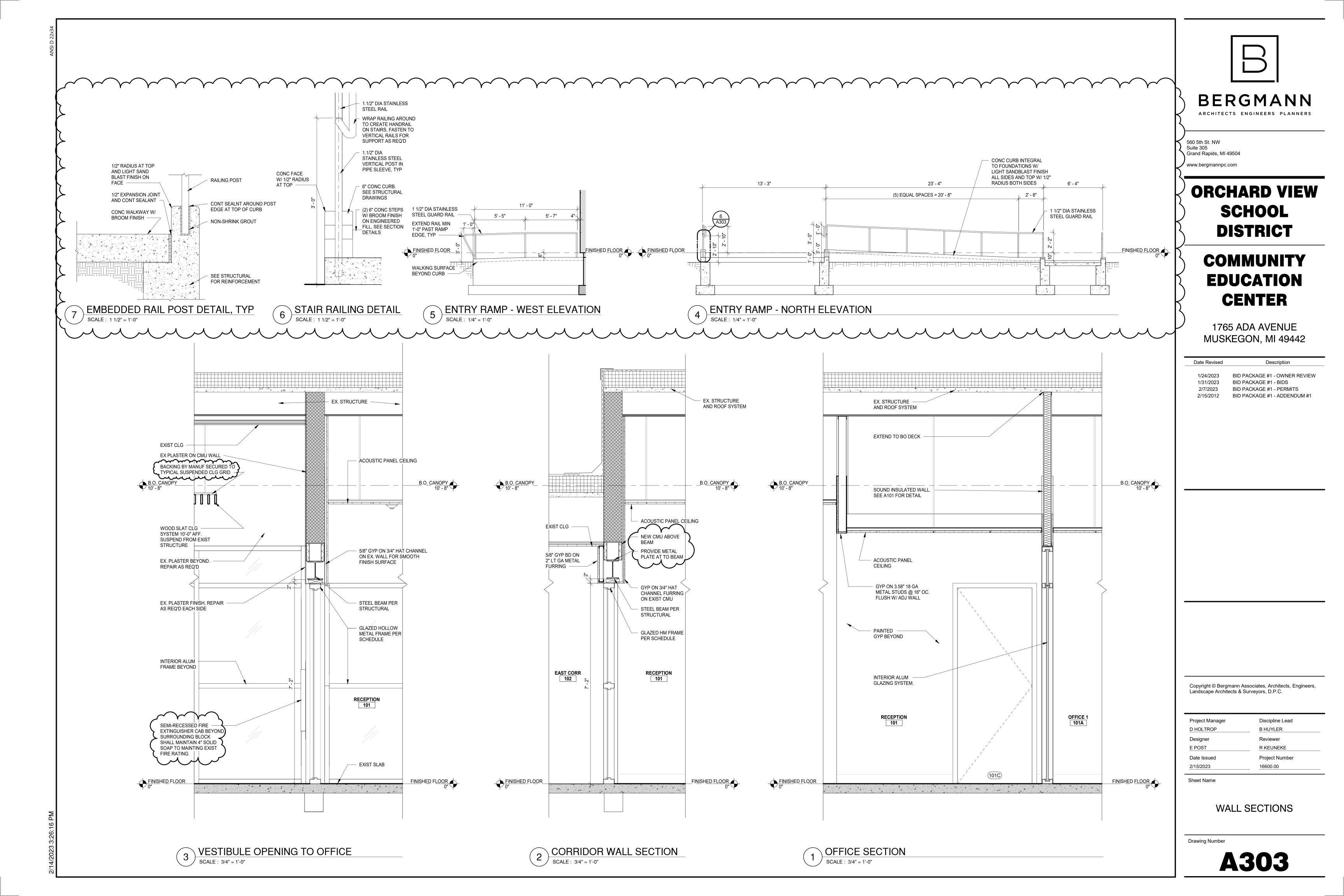
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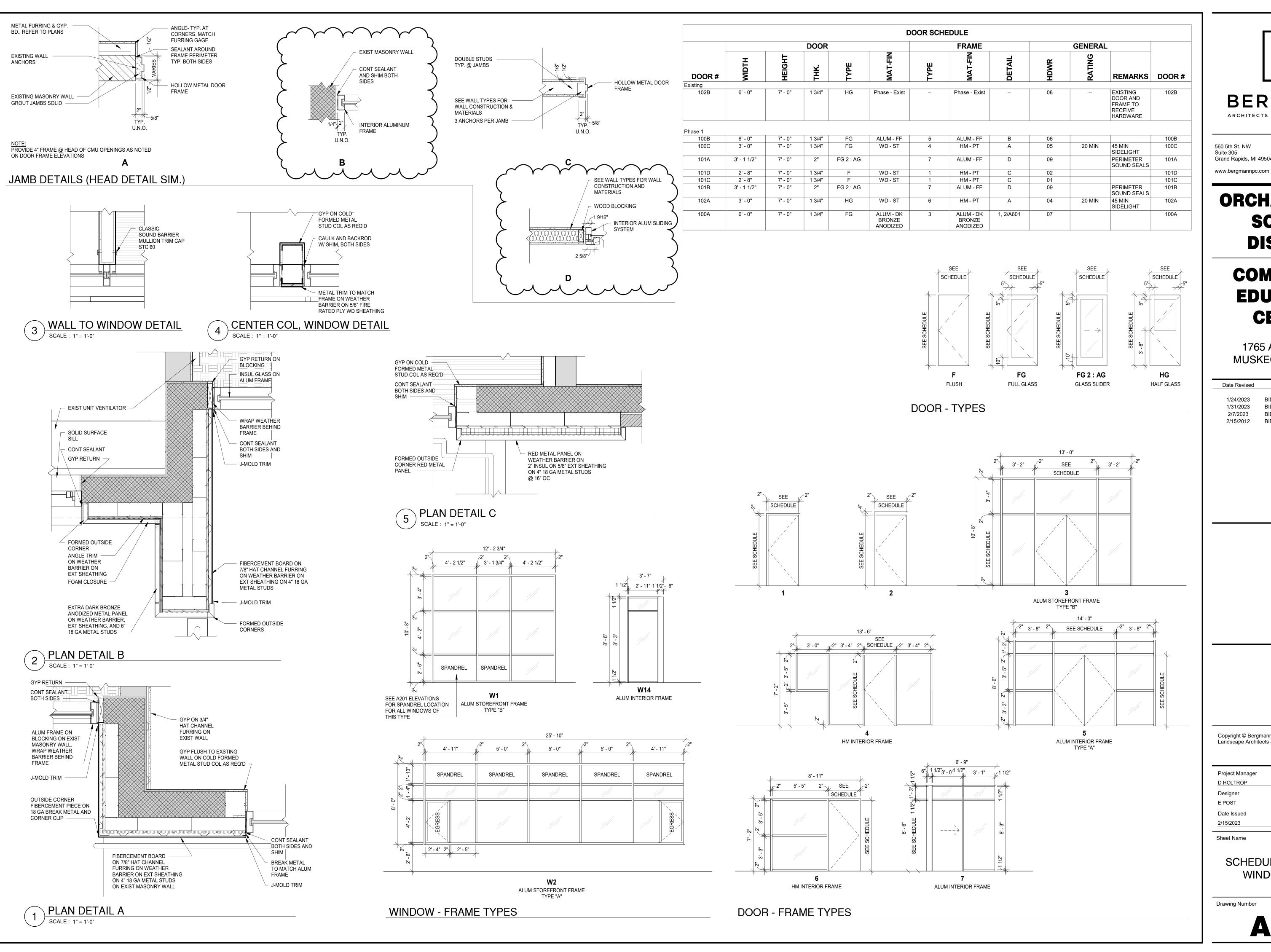
Project Manager	Discipline Lead
D HOLTROP	B HUYLER
Designer	Reviewer
R KEUNEKE	R KEUNEKE
Date Issued	Project Number
2/15/2023	16600.00

Sheet Name

WALL SECTIONS

Drawing Number





## BERGMANN ARCHITECTS ENGINEERS PLANNERS

560 5th St. NW Grand Rapids, MI 49504

## **ORCHARD VIEW SCHOOL DISTRICT**

# COMMUNITY **EDUCATION CENTER**

1765 ADA AVENUE MUSKEGON, MI 49442

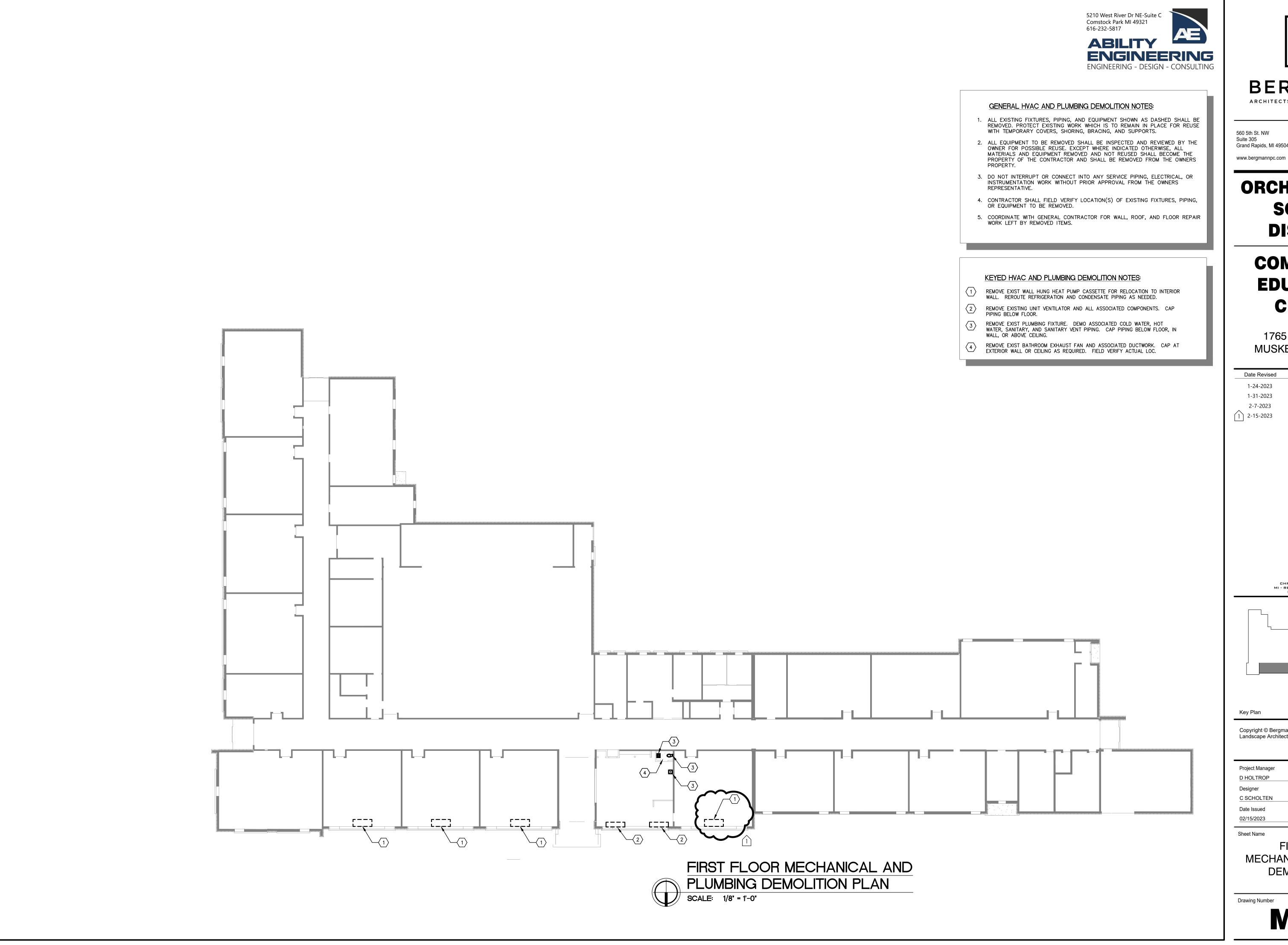
Date Revised	Description						
1/24/2023	BID PACKAGE #1 - OWNER REVIEW						
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2/15/2012	BID PACKAGE #1 - ADDENDUM #1						

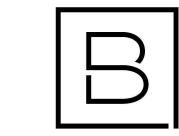
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Project Manager	Discipline Lead
D HOLTROP	B HUYLER
Designer	Reviewer
E POST	R KEUNEKE
Date Issued	Project Number
2/15/2023	16600.00

Sheet Name

SCHEDULES, DOOR AND WINDOW DETAILS





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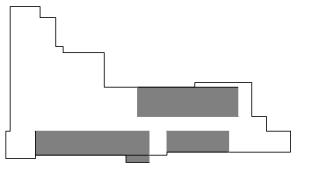
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CHRISTOPHER J. NOLAN, P.E. MI - REGISTRATION# 6201043863 EXP. DATE# 4/14/2023



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Project Manager	Discipline Lead
D HOLTROP	B HUYLER
Designer	Reviewer
C SCHOLTEN	<u>C NOLAN</u>
Date Issued	Project Number
02/15/2023	22013309A

Sheet Name

FIRST FLOOR MECHANICAL & PLUMBING **DEMOLITION PLAN** 

MD01

	HEAT PUMP CONDENSING UNIT SCHEDULE																
MARK	SERVICE	SERVICE MODEL	NOM TONS	DX REFRIG	CLG MBH	SEER	SEER HTG MBH	LHPSEL	ELECTRICAL		CONTROLS		DISCONNECT		REMARKS		
			10110	TYPE	ווטווו			IVIDITI	IVIDIT	ЭП	VOLT	MCA	MOCP	TYPE	BY	TYPE	BY
HPCU-1	HP-1	AJ020BXS3CH/AA	1.5	R-410A	21		2,200		208-230V/1PH	25.5	30	NOTE 3	DIV 23	NFDS WP	DIV 26	4., 2.	
HPCU-3	HP-3	AC024BXADCH/AA	2	R-410A	24	19.5	27	8.5	208-230V/1PH	24.1	30	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	
HPCU-4	HP-4	AC024BXADCH/AA	2	R-410A	24	19.5	27	8.5	208-230V/1PH	24.1	30	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	
HPCU-5	HP-5	AC036BXADCH/AA	3	R-410A	36	19.2	40	8.5	208-230V/1PH	24.5	35	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	
HPCU-6	HP-6	AC018BXADCH/AA	1.5	R-410A	18	20.1	20	8.1	208-230V/1PH	20.1	25	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	
HPCU-7	HP-7	AC018BXADCH/AA	1.5	R-410A	18	20.1	20	8.1	208-230V/1PH	20.1	25	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	
HPCU-8	HP-8	AC018BXADCH/AA	1.5	R-410A	18	20.1	20	8.1	208-230V/1PH	20.1	25	NOTE 3	DIV 23	NFDS WP	DIV 26	1., 2.	

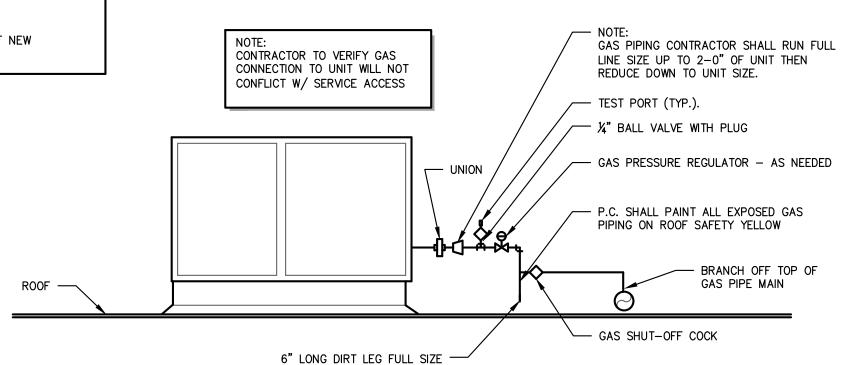
- BASED ON SAMSUNG SINGLE ZONE AIR COOLED HEAT PUMP W/ WIRED THERMOSTAT, INVERTER DRIVE COMPRESSOR
- POWER FOR INDOOR UNIT DERIVED FROM OUTDOOR UNIT, DIV 26 TO PROVIDE LOCAL DISCONNECT AS REQUIRED BY NEC REFER TO INDOOR UNIT SCHEDULE FOR CONTROLS NOTES.
- BASED ON SAMSUNG MULTI-ZONE AIR COOLED HEAT PUMP W/ WIRED THERMOSTAT, INVERTER DRIVE COMPRESSOR

	HEAT PUMP CASSETTE SCHEDULE											
MADK	LOCATION	LOCATION MODEL	NOM	CFM	DX REFR	NOMINAL COOLING	NOMINAL HEATING	CONTROL MEANS		DISCONNECT		REMARKS
WANK	LOCATION	WODEL	TONS	OI W	TYPE	CAPACITY (MBTUH)	CAPACITY (MBTUH)	TYPE	BY	TYPE	BY	NEWANKS
HP-1-1	OFFICE	AR09BSFCMWKNCV	3/4	353/335/300	R410A	9	11	NOTE 3.	DIV 23	NOTE 2.	DIV 26	4.
HP-1-2	OFFICE	AR09BSFCMWKNCV	3/4	353/335/300	R410A	9	11	NOTE 3.	DIV 23	NOTE 2.	DIV 26	4.
HP-3	CLASSROOM	AC024BNADCH/AA	2	629/537/466	R410A	24	27	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.
HP-4	CLASSROOM	AC024BNADCH/AA	2	629/537/466	R410A	24	27	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.
HP-5	CLASSROOM	AC036BNTDCH/AA	3	830/752/699	R410A	36	40	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.
HP-6	CLASSROOM	AC018BNADCH/AA	1.5	615/540/441	R410A	18	20	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.
HP-7	CLASSROOM	AC018BNADCH/AA	1.5	615/540/441	R410A	18	20	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.
HP-8	CLASSROOM	AC018BNADCH/AA	1.5	615/540/441	R410A	18	20	NOTE 3.	DIV 23	NOTE 2.	DIV 26	1.

- BASED ON SAMSUNG HEATING & COOLING SINGLE ZONE DUCTLESS WALL MOUNTED CASSETTE UNIT, PAIRED WITH OUTDOOR CONDENSER
- INDOOR UNIT POWER DERIVED FROM OUTDOOR UNIT; PROVIDE LOCAL DISCONNECT AS REQUIRED BY NEC
- . CONTROLLER PROVIDED WITH UNIT; PROVIDE ADDITIONAL HARD WIRED THERMOSTAT W/ INTEGRATION FOR FUTURE CONNECTION TO BMCS
- BASED ON SAMSUNG HEATING & COOLING MULTI-ZONE DUCTLESS WALL MOUNTED CASSETTE UNIT, PAIRED WITH OUTDOOR CONDENSER.

HVAC	LEGEND
<b>OR</b> ← →	DUCTWORK
OR E	RECTANGULAR DUCTWORK SUPPLY AIR ELBOW DOWN
OR ←	RECTANGULAR DUCTWORK SUPPLY AIR ELBOW UP
OR ←	RECTANGULAR DUCTWORK RETURN AIR, EXHAUST AIR, OR OUTSIDE AIR ELBOW DOWN
OR ←	RECTANGULAR DUCTWORK RETURN AIR, EXHAUST AIR, OR OUTSIDE AIR ELBOW UP
24x12	RECTANGULAR DUCT SIZE. FIRST NUMBER INDICATES SIZE FOR SIDE SHOWN.
24 <b>"</b> ø	ROUND DUCT SIZE
$\boxtimes$	CEILING DIFFUSER (ROUND NECK)
	RETURN/EXHAUST GRILLE
<b>-</b> å	EXHAUST/RETURN AIRFLOW ARROW
<b>→</b>	SUPPLY AIRFLOW ARROW
	THERMOSTAT/SENSOR
QUANTITY  AIR DEVICE TAG  876  150 FA  NECK SIZE  AIR FLOW CFM	AIR DEVICE DESIGNATION
<del>•</del>	CONNECTION OF NEW ONTO EXISTING

### **HVAC ABBREVIATIONS** HEATING VENTILATING AND AIR AIR COOLED CONDENSING UNIT CONDITIONING ACOUSTICALLY LINED **APPROX** HOT WATER HEATING SUPPLY **ARCHITECTURAL** HOT WATER HEATING RETURN CLG LEAVING AIR TEMPERATURE CONC CONCRETE LAT CONN CONNECTION MECHANICAL CONTRACTOR COORD COORDINATION MECHANICAL CONDENSATE PUMP MANUFACTURER DB DRY BULB MANUAL MOTOR STARTER NONFUSED DISCONNECT SWITCH DN DOWN NFDS DWG DRAWING OA **OUTSIDE AIR** EA **EACH** RA RETURN AIR EAT ENTERING AIR TEMPERATURE RMROOM RTU **ROOF TOP UNIT** ELECTRICAL CONTRACTOR **EQUIP EQUIPMEN** SA SUPPLY AIR **ESP** EXTERNAL STATIC PRESSURE SHT SHEET **EXIST** STOR STORAGE **FDS** FUSED DISCONNECT SWITCH TYPICAL FINISHED FLOOR WITH FLEX WITHOUT FLR **FLOOR WET BULB FPM** FEET PER MINUTE **GALV** GALVANIZED



UNIT GAS CONNECTION DETAIL NOT TO SCALE

OF BRANCH SIZE.

### DIFFUSER, REGISTER & GRILLE SCHEDULE MARK MODEL CONTROL FINISH REMARKS SERVICE **DAMPER** CEILING ROUND NECK, 24x24 LAY-IN CD-1 TMS NO STANDARD WHITE UNLESS NOTED OTHERWISE SUPPLY DIFFUSER STANDARD WHITE YES SUPPLY DIFFUSER STANDARD WHITI 1/2" x 1/2" x 1/2", 24"x24" LAY-IN EGGCRAT RG-1 80 UNLESS NOTED OTHERWISE RETURN RG-2 350RL 3/4" SPACING, 45° FIXED, SURI YES BAKED ENAME

5210 West River Dr NE-Suite C Comstock Park MI 49321 616-232-5817 **ABILITY ENGINEERING ENGINEERING - DESIGN - CONSULTING** 

BERGMANN ARCHITECTS ENGINEERS PLANNERS

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CHRISTOPHER J. NOLAN, P.E. MI - REGISTRATION# 6201043863 EXP. DATE# 4/14/2023

Project Manager	Discipline Lead
D HOLTROP	B HUYLER
Designer	Reviewer
C SCHOLTEN	C NOLAN
Date Issued	Project Number

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Sheet Name

02/15/2023

**GENERAL MECHANICAL** INFORMATION

22013309A

### ROOFTOP AIR CONDITIONER UNIT SCHEDULE CEMI SP I HP |EER| POWER | KW | MCA SERVES TONS MODEL AIR DAMPER REMARKS OUTPUT INPUT/ FUSE OA SETTING **MBH** OUTPUT $\sim\sim$ ADMIN/VEST YSC036E3R0MA\*\*B000B6 1200 0.7" 0.75 37.0 81/65 MBH 12 208-230V/3PH 1., 2., 3., 600 LBS 15%

BASED ON TRANE PRECEDENT DOWNFLOW UNIT WITH SINGLE COMPRESSOR AND HOT GAS REHEAT, 2-STAGE MEDIUM GAS HEAT, STANDARD EFFICIENCY, 0-50% MOTORIZED FRECH AIR DAMPER W/ BAROMETRI RELIEF, STANDARD SERVICE PANELS, 2" MERV 8 FILTERS, STANDARD CONDENSER COIL, UNIT MOUNTED CIRCUIT BREAKER, 7-DAY PROGRAMMABLE T-STAT, & POWERED CONVENIENCE OUTLET. TOMBLE PROVINGED MOTHER THE OFFICE CONTROL OF THE PROVINGED AND TH

PROVIDE WITH BACNET CARD FOR INTEGRATION WITH FUTURE BMCS CONTROLS

\_\_\_\_\_

					VE	NTILA	TION	SUM	ИМА	RY: F	RTU-	1					
ROOM NAME	ROOM#	CLASSIFICATION	AREA (SF)		OCCUPAN T DENSITY #/1000SF	#OCCUPANTS	CFM OA PER OCCUPAN	Rp VENT CFM	CFM OA PER SF AREA	Ra VENT FCM	BASE OA CFM	Ez	TOTAL REQ'D OA CFM	DESIGN SA CFM	PERCENT OA AT UNIT	DESIGN OA CFM	MEETS TABLE 403.3 REQUIREMENT
VESTIBULE		CORRIDOR	345	9	0.0	0.0	0	0.0	0.06	20.7	20.7	1.0	20.7	350	9%	32	YES
ADMIN AREA	101	OFFICE	880	9	5.0	4.4	5	22.0	0.06	52.8	74.8	1.0	74.8	850	9%	75	YES
			1225			4.4					95.5		95.5	1200	9%	106	YES
1. ALL VENTILATION	AIR PROVIDED	BY FRESH AIR DAM	IPER ON RTU	J-1: UNITS	OPERATE WI	TH FAN ON CONT	TINUSOUSLY	DURING OC	CUPIED PERI	ODS				•	•		

## MECHANICAL (DIVISION 23) SPECIFICATION:

ELBOWS.

GENERAL REQUIREMENTS

PROVIDE EQUIPMENT AND COMPONENTS INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM. CONTRACTOR WILL BE RESPONSIBLE FOR RECEIVING. RIGGING AND INSTALLING ALL EQUIPMENT PROVIDED PART OF THEIR WORK CATEGORY

BASED ON TITUS.

UNI

NO

RTU-1

DEFINITIONS: FURNISH MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION. INSTALL MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE. PROVIDE MEANS TO FURNISH AND INSTALL. COMPLETE AND READY FOR INTENDED USE. RECEIVE MEANS TO COORDINATE AND ACCEPT DELIVERY OF EQUIPMENT AT JOBSITE.

MECHANICAL EQUIPMENT IDENTIFICATION: PROVIDE ENGRAVED PLASTIC LAMINATE LABEL FOR EACH MAJOR ITEM OF MECHANICAL EQUIPMENT & EACH OPERATIONAL DEVICE. LETTERS TO BE A MINIMUM OF 1/2" HIGH.

OPERATIONS AND MAINTENANCE MANUALS (O&M): AT COMPLETION OF PROJECT PROVIDE A MINIMUM OF TWO O&M MANUALS IN THREE RING BINDERS TO THE OWNER/TENANT. MANUALS SHALL HAVE TABS LABELED WITH ALL SECTIONS SEPARATED WITH A CLEAR INDEX AT THE FRONT. PROVIDE A WARRANTY LETTER AT THE FRONT OF THE MANUAL STATING DATES OF WARRANTY (START DATE AND | INSTALLATION, AS REQUIRED. END DATE) AND CONTACTS WITH PHONE NUMBERS FOR WARRANTY WORK. PROVIDE A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE INCLUDING RECOMMENDED SETPOINTS. MANUALS SHALL INCLUDE SUBMITTALS OF COATED FIBERGLASS FABRIC DUCT CONNECTORS AT DUCT CONNECTIONS TO ALL ALL EQUIPMENT, SIZE AND OPTIONS SELECTED. PROVIDE ALL BALANCING REPORTS. PROVIDE MANUFACTURER LITERATURE FOR OPERATIONS AND MAINTENANCE FOR ALL THE EQUIPMENT ON THE PROJECT. ALL PERIODIC AND ROUTINE MAINTENANCE SHALL BE CLEARLY IDENTIFIED. PROVIDE A CONTROLS SECTION LISTING SYSTEM OPERATING AND CONTROL INSTRUCTIONS, MAINTENANCE, CALIBRATION, WIRING DIAGRAMS, SCHEMATICS AND CONTROL SEQUENCE DESCRIPTIONS.

TESTING AND BALANCING: TEST AND ADJUST ALL MECHANICAL SYSTEMS AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH THE MOST CURRENT NEBB OR AABC, AND ASHRAE STANDARDS. ELIMINATE OBJECTIONABLE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. BALANCING CONTRACTOR SHALL BE AN INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR, WITH NEBB OR AABC CERTIFICATION. SUBMIT COMPLETED AND CERTIFIED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCE ALL SYSTEMS TO WITHIN 5% OF AIR FLOWS AND WATER FLOWS INDICATED ON THE DRAWINGS.

## GENERAL DUCT REQUIREMENTS

DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" AND MATCHING MATERIAL OF DUCT SYSTEM. PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING, SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

**DUCT INSULATION:** INDOOR: PROVIDE INSULATION FOR ALL CONCEALED SUPPLY & OA DUCTWORK PROVIDE MINIMUM 1.5" THICK BLANKET TYPE FIBERGLASS INSULATION COMPLYING WITH ASTM C-553, TYPE II, WITH FACTORY APPLIED KRAFT BONDED TO ALUMINUM FOIL, REINFORCED WITH FIBERGLASS VAPOR BARRIER/JACKET. JACKET SHALL CONFORM TO ASTM C-1136, TYPE II. INSTALLED R-VALUE SHALL BE 4.2 OR HIGHER WITH A 3/4 PCF DENSITY -OR- PROVIDE MINIMUM 1" THICKNESS INTERNAL ACOUSTIC DUCT LINER (R3.5). INTERNAL DUCT LINER TO BE EQUAL TO JOHNS MANSVILLE LINACOUSTIC RC. NOTE: ALL RECTANGULAR RA & SA DUCTWORK TO BE

DUCT SEALANT: PROVIDE WATER BASED SYNTHETIC LATEX EMULSION PERMANENTLY FLEXIBLE HIGH VELOCITY DUCT SEALANT, DUCTMATE INDUSTRIES, INC. PRO SEAL OR EQUIVALENT. SEALANT TO BE LOW VOC LEED COMPLIANT CAPABLE OF 15" W.G., NFPA 90A AND 90B APPROVED, UL 181B-M LISTED AND UL 723 CLASSIFIED. INSTALL PER MANUFACTURER INSTRUCTIONS. SEALANT SHALL BE APPROVED FOR PLENUM INSTALLATIONS AND MEET FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS FOR PLENUM APPLICATIONS.

## SHEET METAL DUCT

LINED WITHIN 15' OF EQUIPMENT.

SHEETMETAL DUCTWORK: PROVIDE SHEETMETAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 2" W.G. PRESSURE CLASS, SEAL CLASS "A" (UNLESS OTHERWISE INDICATED ON DUCT SYSTEM SCHEDULE). SHEETMETAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G60 ZINC COATING. SHEET STEEL SHALL COMPLY WITH

GENERAL DUCT REQUIREMENTS CONTINUED ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEETMETAL, ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES AT ALL 90°

RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALV STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM 1/2" HEXAGONAL AXLE, MOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT, LINKAGES SHALL BE CONCEALED IN THE FRAME, OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

ROUND VOLUME DAMPERS: PROVIDE ROUND MANUAL BALANCING DAMPER AT ALL RUN OUTS TO CEILING SUPPLY AIR DIFFUSERS. PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEETMETAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL

FLEXIBLE DUCT CONNECTORS: PROVIDE U.L. LABELED 30 OUNCE NEOPRENE VIBRATING EQUIPMENT.

## PIPING REQUIREMENTS

NATURAL GAS PIPING:

NATURAL GAS PIPING: ALL NATURAL GAS PIPING SHALL BE SCH 40 STEEL PIPE ASTM A53, WITH SCREWED JOINTS AND 150 LB MALLEABLE IRON FITTINGS FOR NPS 2" AND SMALLER, AND SCH 40 WELDED JOINTS AND FITTINGS FOR NPS 2-1/2" AND LARGER. PRESSURE TEST NEW GAS PIPE SYSTEMS TO 5 PSI FOR 30 MINUTES WITH NO LOSS OF PRESSURE BEFORE PLACING INTO SERVICE. LEAK TEST ALL GAS PIPE SCREWED JOINTS AND UNIONS BEFORE PLACING INTO SERVICE.

SHUTOFF/STOP VALVES: CWP RATED 125 PSIG BRONZE OR CAST IRON PLUG

APPLIANCE GAS VALES: CWP RATED 125 PSIG BRONZE OR CAST IRON PLUG VALVE.

APPLIANCE PRESSURE REGULATORS: CAST IRON OR DIE CAST ALUMINUM BODY SPRING DIAPHRAGM TYPE, ANSI Z21.18, REFER TO PLANS FOR CAPACITY AND PRESSURE TURNDOWN REQUIREMENTS, STAINLESS STEEL VENT SCREEN, INSTALL IN ORIENTATION THAT PREVENTS WATER INTRUSION INTO VENT OPENING PER MFGR INSTRUCTIONS.

PROVIDE ADJUSTABLE CLEVIS STYLE HANGER FOR INDIVIDUAL HORIZONTAL PIPING LESS THAN 20 FT LONG. SUPPORT PIPE HANGERS WITH TREADED HANGER RODS: 1/4" THREADED HANGER RODS FOR PIPE SIZES UP TO 1-1/2". EXTERIOR PIPE SUPPORTS ON ROOF SHALL BE RUBBER BLOCK BASE STYLE WITH GALVANIZED STRUT WITH SLIP SHEET OF ROOFING MEMBRANE MATERIAL BETWEEN BASE AND ROOF; ATTACH PIPE TO UNISTRUT RAIL USING CUSHIONED PIPE/TUBE CLAMPS.

ALL BUILDING CONNECTIONS SHALL BE WITH BEAM CLAMPS TO TOP OF STRUCTURAL JOIST/TRUSS, OR TO BOTTOM FLANGE OF SOLID BEAM SHAPES.

REFRIGERANT PIPING: ALL REFRIGERATION PIPING SHALL BE TYPE ACR COPPER TUBE, ASTM B-88, WITH BRAZED OR FLARED JOINTS AND FITTINGS, INSTALLED PER MFG'S INSTRUCTION.

SERVICE AND ISOLATION VALVES, FORGED BRASS BODY AND CAP, PTFE SEATS & GASKETS, MALE SAE FLARE X FEMALE SAE FLARE, FULL PORT UNI-BODY DESIGN, 700 PSIG RATED, EQUIPPED WITH ACCESS FITTING FOR REFRIGERATION SERVICE. CAPABLE OFF VALVE OPERATION WITHOUT REMOVAL OF SEAL CAP.

PROVIDE AP ARMAFLEX BLACK LAPSEAL PRE-FORMED PIPE FLEXIBLE CLOSED CELL INSULATION FOR ALL INTERIOR AND EXTERIOR REFRIGERATION PIPING.

EXTERIOR PIPE INSULATION SHALL BE PROTECTED WITH EITHER: VENTURE-CALD JACKETING 2. BRUSH APPLIED ARMAFLEX WB WHITE UV RESISTANT COATING. INSTALLATION OF SYSTEM IN COMPLIANCE WITH 2015

MICHIGAN MECHANICAL CODE (MMC), ASHRAE 90.1-2013. AND ALL OTHER APPLICABLE STATE AND LOCAL CODES. FOR CLASSROOMS AND OFFICES WITH NEW DUCTLESS SPLIT HEAT PUMP SYSTEM, ALL VENTILATION TO BE

CLASSROOM UNIT VENTILATOR. MC TO VERIFY

PROVIDED BY MECHANICAL MEANS USING EXISTING

OPERATION OF EXISTING SYSTEMS IN AREAS OF NEW

MECH CODE COMPLIANCE NOTES:

CONTRACTOR SHALL BE RESPONSIBLE FOR

VENTILATION FOR ADMIN AND VESTIBULE SPACE PROVIDED BY ROOFTOP UNIT WITH MOTORIZED FRESH AIR DAMPER, RATES PER 2015 MICHIGAN MECHANICAL CODE (MMC), REFER VENTILATION SCHEDULE ON THIS

SYSTEMS AS DESIGNED AND EQUIPMENT AS SPECIFIED MEET OR EXCEED THE MINIMUM PRESCRIPTIVE REQUIREMETNS OF THE MICHIGAN ENERGY CODE ASHRAE

NO NEW HVAC SYSTEM ABOVE 2000 CFM; NO DUCT SMOKE DETECTORS WILL BE PROVIDED FOR HVAC SYSTEMS WITH CAPACITIES LESS THAN 2000 CFM PER 2015 MMC 606.2.1.

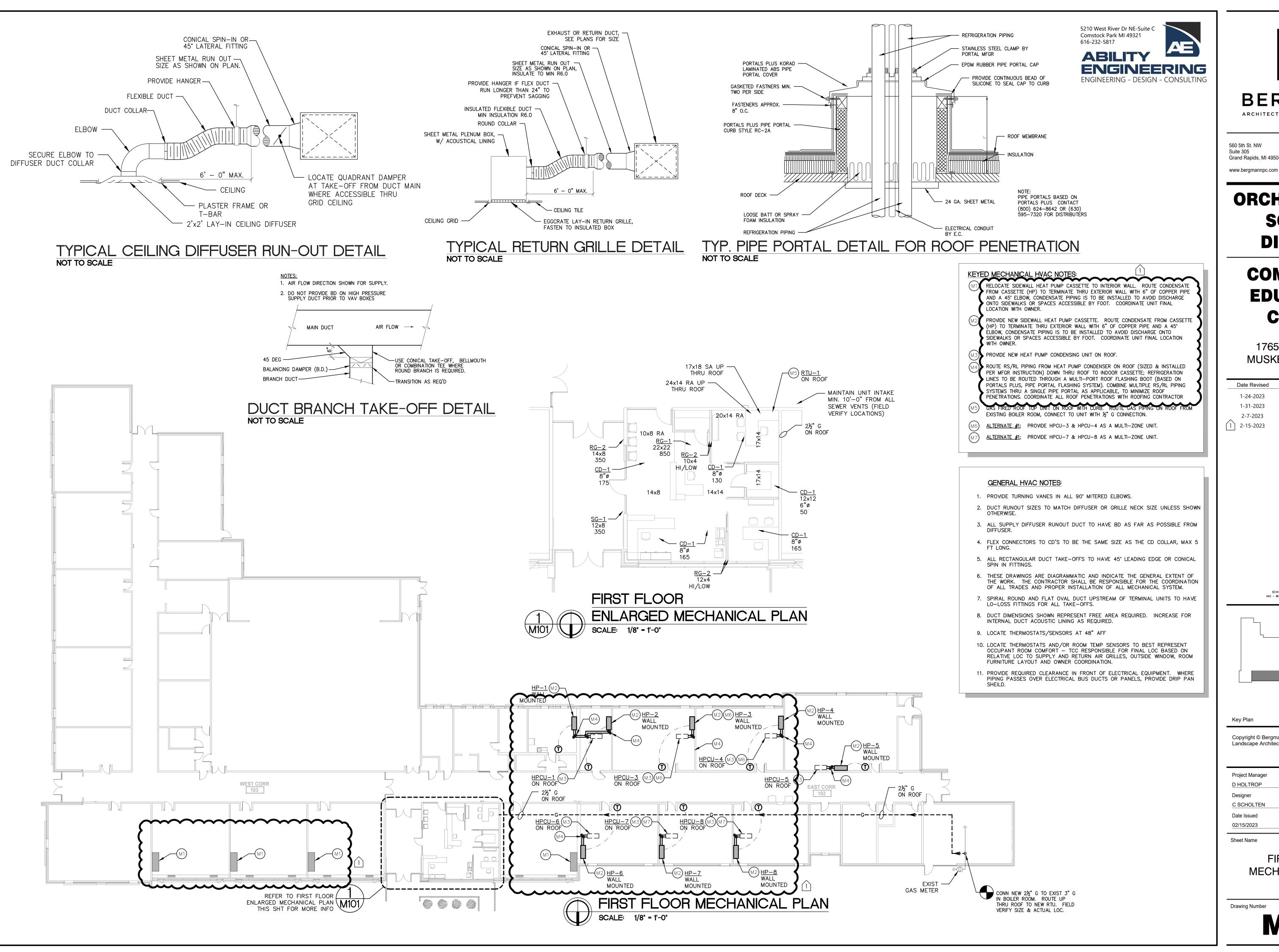
90.1-2013.

ALL NEW NATURAL GAS PIPING HAS BEEN SIZED BASED ON THE BRANCH LENGTH METHOD OF 2018 INTERNATIONAL FUEL GAS CODE (IFGC); CONTRACTOR SHALL INSTALL GAS PIPING SYSTEM SHOWN IN ACCORDANCE WITH 2015 IFGC. (SEE PLANS)

## **GENERAL NOTES:**

- CONTRACTOR SHALL INCLUDE ALL APPLICABLE SALES AND USE TAXES FOR MATERIAL AND EQUIPMENT PROVIDED AS REQUIRED.
- CONTRACTOR RESPONSIBLE FOR CREATING OPENINGS THRU ANY ROOFS, CEILINGS AND WALLS FOR THEIR DUCT AND PIPING SYSTEMS; OVERSIZE OPENING AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION. UTILIZE PIPE ROOF JACK FOR ROOF PIPE PENETRATIONS THROUGH ROOF AND SEAL WEATHERTIGHT.
- ALL DUCTWORK IS TO BE INSTALLED PER LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE".
- 4. DUCTWORK DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
- ROUTE ALL DUCTWORK AND PIPE AT RIGHT ANGLES TO WALLS, INSTALL HORIZONTAL PIPE DEAD LEVEL UNLESS IDENTIFIED OTHERWISE.
- CONTRACTOR SHALL FURNISH & INSTALL HANGERS AND BUILDING ATTACHMENTS AS REQUIRED FOR ALL
- ALL DUCT, PIPE AND CONDUIT PENETRATIONS OF THE
- OFFICE AREA WALLS AND CEILINGS SHALL BE SEALED AIRTIGHT WITH ZERO LIGHT TRESPASS AROUND OPENING.
  - 8. PROVIDE 1 YEAR WARRANTY ON WORKMANSHIP.

DUCTWORK AND PIPING SYSTEMS.





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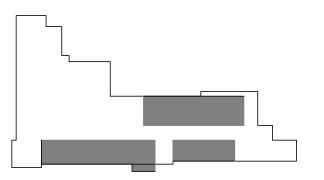
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1 2-15-2023	BID PACKAGE #1 - ADDENDUM #1

CHRISTOPHER J. NOLAN, P.E. MI - REGISTRATION# 6201043863 EXP. DATE# 4/14/2023

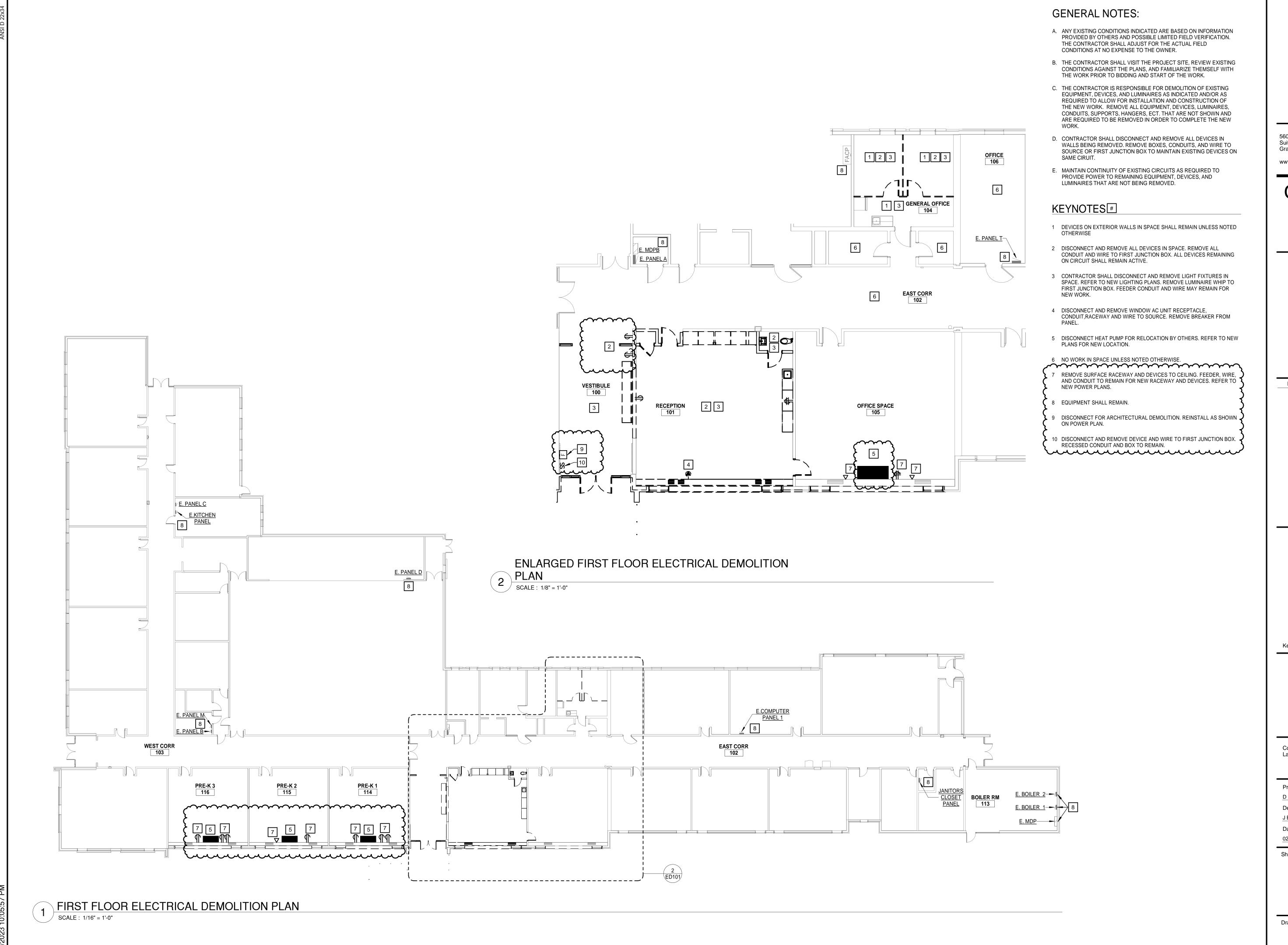


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Project Manager	Discipline Lead
D HOLTROP	B HUYLER
Designer	Reviewer
C SCHOLTEN	C NOLAN
Date Issued	Project Number
02/15/2023	22013309A

FIRST FLOOR MECHANICAL PLANS

M101





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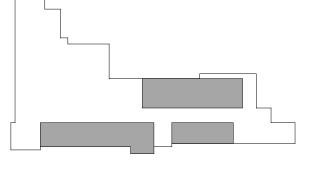
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Key Plan

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Project Manager	Discipline Lead
D HOLTROP	A ROBINSON
Designer	Reviewer
J BOIK	A ROBINSON
Date Issued	Project Number
02/15/2023	16600.00

Sheet Name

ELECTRICAL DEMOLITION PLAN

Drawing Number

ED101

1 FIRST FLOOR PLAN - POWER

SCALE: 1/16" = 1'-0"

- 1 PROVIDE 30A/3P NON-FUSED NEMA 3R DISCONNECT ON ROOF AND MOUNT ON SEPARATE SUPPORTS. PROVIDE POWER FEED DOWN TO FAN UNIT IN 3/4" CONDUIT. SEAL ALL PENETRATIONS TO MAINTAIN ROOF SYSTEM. PENETRATIONS AND EXPOSED CONDUIT SHALL BE RIGID CONDUIT WITH LFNC FOR FINAL CONNECTION.
- 2 RELOCATED SIDEWALL HEAT PUMP CASSETTE. EXTEND CONDUIT, WIRE, AND CONTROLS AS REQUIRED.
- 3 CIRCUIT NEW RECEPTACLES TO EXISTING CIRCUIT SERVING PREVIOUS RECEPTACLES IN SPACE.
- 4 ALTERNATE 1: DO NOT PROVIDE HCPU-3 AND HPCU-4 SPLIT SYSTEMS. INSTEAD PROVIDE A 240V-1PH, 40A CIRCUIT FROM PANEL RPA. PROVIDE A 40A/2P BREAKER, 2#8,#10EGC IN 3/4-INCH CONDUIT TO ALTERNATE EQUIPMENT.
- 5 ALTERNATE 1: DO NOT PROVIDE HCPU-7 AND HPCU-8 SPLIT SYSTEMS. INSTEAD PROVIDE A 240V-1PH, 40A CIRCUIT FROM PANEL RPA. PROVIDE A 40A/2P BREAKER, 2#8,#10EGC IN 3/4-INCH CONDUIT TO ALTERNATE EQUIPMENT.
- 7 PROVIDE 30A/3P NON-FUSED NEMA 3R DISCONNECT ON ROOF AND MOUNT ON SEPARATE SUPPORTS. PROVIDE 2#10,1#10GEC IN 3/4-INCH CONDUIT. PROVIDE POWER FEED DOWN TO FAN UNIT IN 3/4-INCH CONDUIT. SEAL ALL PENETRATIONS TO MAINTAIN ROOF SYSTEM. PENETRATIONS AND EXPOSED CONDUIT SHALL BE RIGID CONDUIT WITH LFNC FOR FINAL CONNECTION.
- 8 PROVIDE 60A/3P NON-FUSED NEMA 3R DISCONNECT ON ROOF AND MOUNT ON SEPARATE SUPPORTS. PROVIDE 2#8,1#10GEC IN 3/4-INCH CONDUIT. PROVIDE POWER FEED DOWN TO FAN UNIT IN 3/4-INCH CONDUIT. SEAL ALL PENETRATIONS TO MAINTAIN ROOF SYSTEM. PENETRATIONS AND EXPOSED CONDUIT SHALL BE RIGID CONDUIT WITH LFNC FOR FINAL CONNECTION.
- 9 PROVIDE 30A/3P NON-FUSED NEMA 3R DISCONNECT SWITCH

  10 PROVIDE STEEL WIREMOLD DUAL CHANNEL 4000 SERIES RACEWAY.
  PROVIDE ALL COMPONENTS NECESSARY FOR A NEAT AND CLEAN
  INSTALLATION. PROVIDE DEVICES AND CIRCUITS SHOWN. EXTEND
  EXISTING CIRCUITS FROM REMOVED DEVICES.
- 11 PROVIDE STEEL WIREMOLD DUAL CHANNEL 4000 SERIES RACEWAY. PROVIDE ALL COMPONENTS NECESSARY FOR A NEAT AND CLEAN INSTALLATION. PROVIDE DEVICES AND CIRCUITS SHOWN.

12 REINSTALL FIRE ALARM DEVICE



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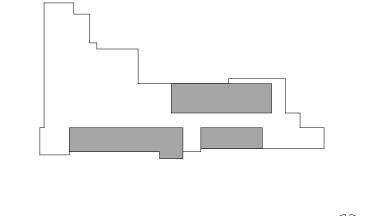
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POWER PLAN

Drawing Number

E101

KEYNOTES (#) RECEPTION 101 ⊮ <u>E. PANEL C</u> 2 ENLARGED FIRST FLOOR LIGHTING PLAN

SCALE: 1/8" = 1'-0" E.KITCHEN PANEL E. PANEL D E. MDPB E.COMPUTER PANEL 1 E. PANEL T NEW PANEL RPA E. BOILER 2 E. BOILER 1/ E. MDP FIRST FLOOR LIGHTING PLAN SCALE: 1/16" = 1'-0"

1 REUSE EXISTING LIGHTING CIRCUIT SERVING SPACE.

2 PROVIDE LIGHTING CONTROL PANEL WITH 4-RELAYS AND ASTROCLOCK EQUAL TO BLUEBOX LT.



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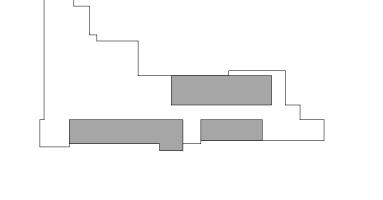
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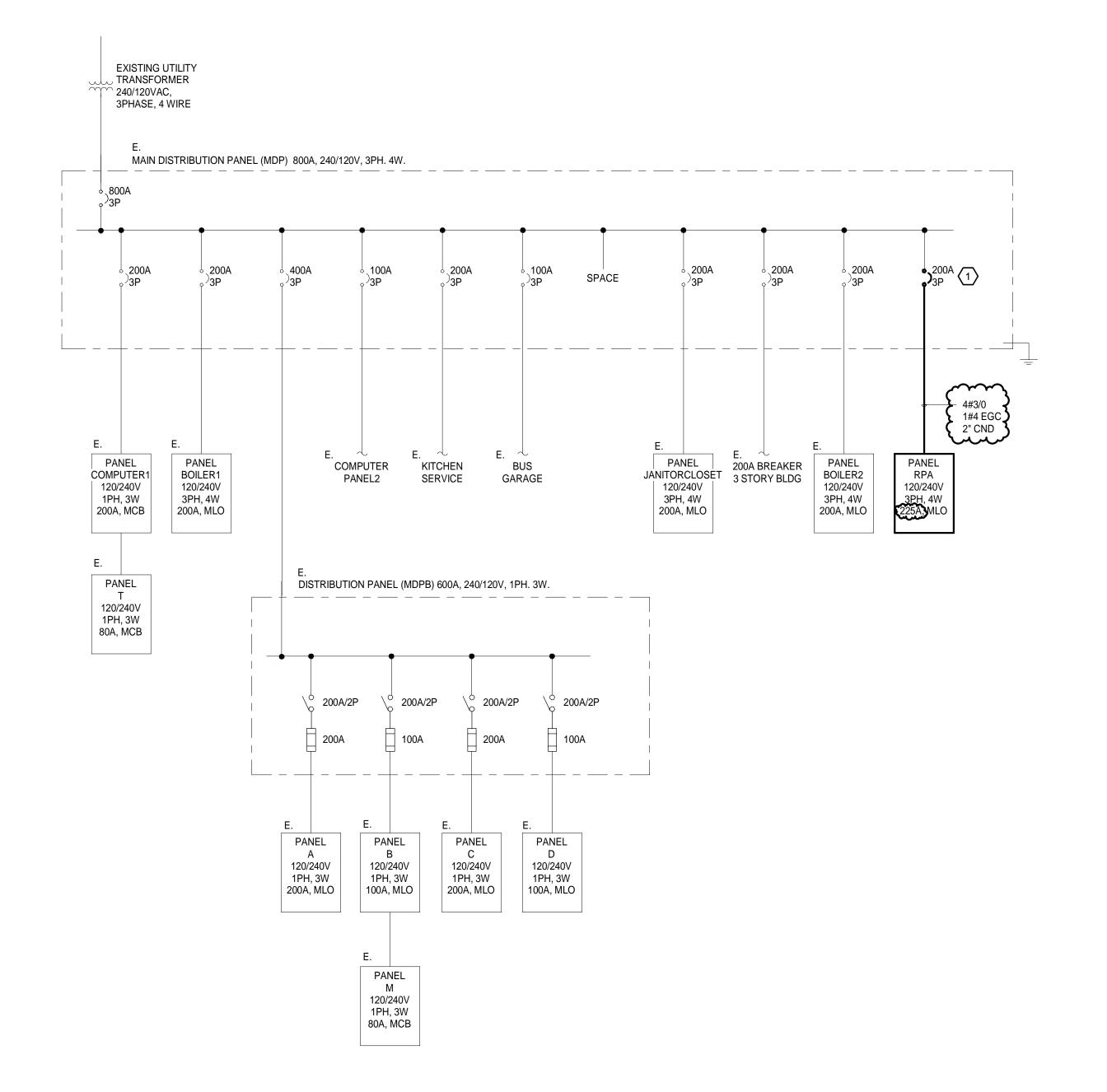
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Designer	Reviewer
J BOIK	A ROBINSON
Date Issued	Project Number
02/15/2023	16600.00

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LIGHTING PLAN

**Drawing Number** 

ANSI D 22x3.



EXISTING ONE LINE DIAGRAM
SCALE: N.T.S.

SINGLE LINE DIAGRAM NOTES:

A. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

B. ALL GEAR, CONDUIT AND WIRE SHALL REMAIN UNLESS NOTED

KEYNOTES (#)

1 PROVIDE NEW 200A/3P BREAKER IN EXISTING SQAURE D I-LINE DISTRIBUTION PANEL

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NEC ELECTRICAL LOAD SUMMARY - 800A Service CONNECTED LOADS DEMAND LOADS LARGEST **PANEL** MECH/MOTOR LIGHTING RECEPT. KITCHEN OTHER MOTOR MECH LIGHTING RECEPT. KITCHEN OTHER Existing Peak Demand 6240.0 28143.0 HPCU-1 2148.0 HPCU-2 2148.0 HPCU-3 4632.0 HPCU-4 4632.0 HPCU-5 HPCU-6 HPCU-7 3864.0 HPCU-8 3864.0 TOTAL 28143.0 SYSTEM PHASE SYSTEM VOLTAGE CONNECTED: 128335.0 **VA** DEMAND: 129583.0 **VA** CONNECTED: 309.1 **A** 312.1 **A** 

PEAK DEMAND PROVIDED BY UTILITY COMPANY; 9520 kWh

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Project Manager
Discipline Lead

DHOLTROP

Designer

Reviewer

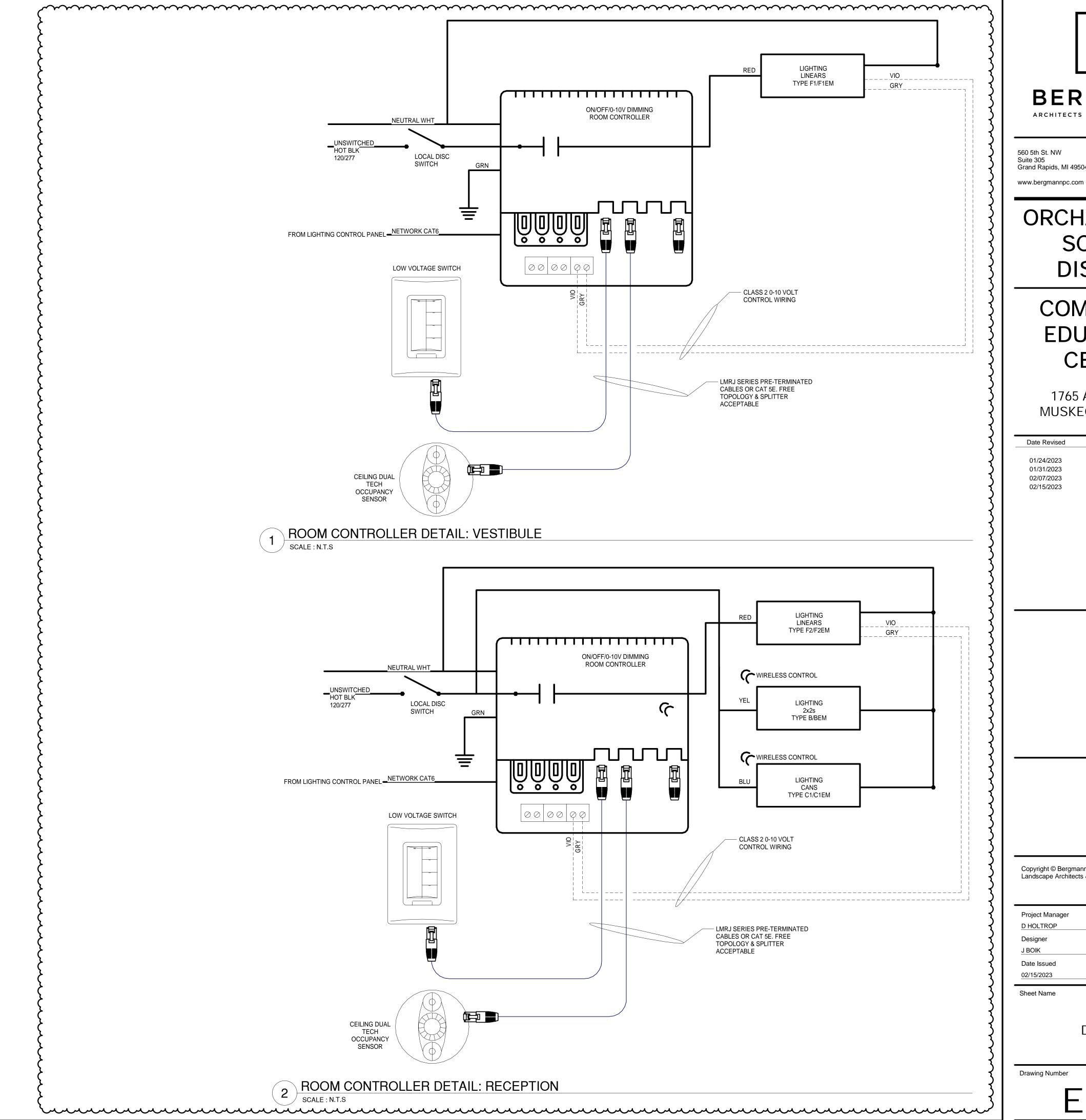
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ONE-LINE DIAGRAM

Drawing Number

E601





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**DETAILS** 

Drawing Number

SEQUENCE OF OPERATION:

1. LIGHTING CONTROL INTENTION IS TO USE LIGHT FIXTURES WITH INTEGRATED CONTROLS AND ASSOCIATED LOW VOLTAGE SWITCHES, UNLESS NOTED OTHERWISE WITH ROOM CONTROLLERS. DEVIATION FROM THIS SOLUTION SHALL MEET CONTROL INTENTIONS AND COORDINATED WITH ELECTRICAL CONTRACTOR FOR ADDITIONAL WIRING AND INSTALLATION. 2. ALL SWITCHES WITH "LV#" ARE LOW VOLTAGE WIRED CONTROL STATIONS. PROVIDE ON/OFF BUTTONS, PRE-PROGRAMMED SCENES. NETWORK ROOM CONTROLLER AND INTREGRATED CONTROLS TO SYSTEM FOR TIME OF DAY FEATURES 3. LV1: ENCLOSED OFFICE: A. LIGHTING COME ON AUTOMATICALLY AT 50% UPON ENTRANCE TO SPACE. B. LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF. C. LOCAL OVERRIDE STATIONS SHALL INCLUDE BUTTONS (LABEL: PROGRAMMING): a. ON: LUMINAIRES 100%. b. 50%: LUMINAIRES AT 50% d. DIM DOWN e. OFF: LUMINAIRES ALL OFF 4. LV2: OPEN OFFICE: A. LIGHTING COME ON AUTOMATICALLY AT 50% UPON ENTRANCE TO SPACE. B. LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF. C. PROVIDE QUANTITY OF ROOM CONTROLLERS AND OCCUPANCY SENSORS PER MANUFACTURER REQUIREMENTS D. LOCAL OVERRIDE STATIONS SHALL INCLUDE BUTTONS (LABEL: PROGRAMMING): a. ON: LUMINAIRES 100%. b. 50%: LUMINAIRES AT 50% d. DIM DOWN e. OFF: LUMINAIRES ALL OFF 6. LV4: CORRIDORS/VESTIBULE: A. LIGHTING COME ON AUTOMATICALLY AT 50% DURING NORMAL OCCUPIED TIMES. B. OCCUPANCY SENSOR SHALL DIM LIGHTS TO 100% UPON AREA OCCUPANCY C. OCCUPANCY SENSOR SHALL DIM LIGHTS TO 50% UPON 30 MINUTES OF NO AREA OCCUPANCY D. NETWORK TO SYSTEM FOR TIME OF DAY. SYSTEM SHALL TURN LIGHTING OFF DURING NON-OCCUPIED TIMES. E. EMERGENCY FIXTURE TO REMAIN ON AS NIGHTLIGHT. F. PROVIDE QUANTITY OF ROOM CONTROLLERS AND OCCUPANCY SENSORS PER MANUFACTURER REQUIREMENTS G. LOCAL OVERRIDE STATIONS SHALL INCLUDE BUTTONS (LABEL: PROGRAMMING): a. ON: LUMINAIRES 100%. b. 50%: LUMINAIRES AT 50% d. DIM DOWN e. OFF: LUMINAIRES ALL OFF 7. LV5: STORAGE:

A. PROVIDE SWITCH STYLE OCCUPANCY SENSOR.
B. LV7 STATIONS SHALL INCLUDE BUTTONS

A. ON B. OFF

			T	LUMINAIRE SCHEDULE			T	
TYPE	LAMP	MANUFACTURER	MODEL NUMBER	BALLAST/DRIVER	MOUNTING	INPUT WATTAGE	DESCRIPTION	NOTE
		METALUX	24CZ2-40-UNV-L835-CD1-SWPD1					
Α	4000 LUMEN, 3500K, LED	COLUMBIA	LCAT-24-40-HL-G-ED-U-NXES	0-10V	RECESED GRID CEILING	29W	2x4 TROFFER. PROVIDE INTEGRAL OCCUPANCY SENSOR	
	3300K, EED	LITHONIA	2BLT4-40L-ADSMT-EZ1-LP835-N100-NESPDT7ADCX		CEILING			
		DAYBRITE	2EVO-G-43L-835-4-D-UNV-DIM-SWZG2					
		METALUX	24CZ2-40-UNV-L835-EL7W-CD1-SWPD1					
ΑEM	4000 LUMEN, 3500K, LED	COLUMBIA	LCAT-24-40-HL-G-ED-U-NXES-ELL14	0-10V	RECESED GRID CEILING	29W	2x4 TROFFER. PROVIDE INTEGRAL OCCUPANCY SENSOR AND 7W EMERGENCY BATTERY.	
	3300K, LLD	LITHONIA	2BLT4-40L ADSM- EZ1-LP835-N100-NESPDT7ADCX EL7L		CEILING			
		DAYBRITE	2EVO-G-43L-835-4-D-UNV-DIM-EMLED-SWZG2					
		METALUX	22CZ2-32HE-UNV-L835-SWPD1-SWPD1-CD1					
В	3100 LUMEN, 3500K, LED	COLUMBIA	LCAT-22-35-ML-G-ED-U-NXES	0-10V	RECESSED CEILING GRID	23.5W	2x2 TROFFER. PROVIDE INTEGRAL OCCUPANCY SENSOR	
	3500K, LED	LITHONIA	2BLT2-33L-ADSMT-EZ1-LP835-N100-NESPDT7ADCX		CEILING GRID			
		DAYBRITE	2EVO-G-45L-835-2-D-UNV-DIM-SWZG2					
		METALUX	22CZ2-32HE-UNV-L835-EL7W-CD1-SWPD1					
BEM	3100 LUMEN,	COLUMBIA	LCAT-22-35-ML-G-ED-U-NXES-ELL14	0-10V	RECESSED	23.5W	2x2 TROFFER, PROVIDE INTEGRAL OCCUPANCY SENSOR AND 7W EMERGENCY BATTERY.	
J_1V1	3500K, LED	LITHONIA	2BLT2-33L-ADSMT-EZ1-LP835-N100-NESPDT7ADCX-EL7L		CEILING GRID	20.000	ZZE TROTTER. TROTTEE INTEGRALE GOOGLANG FOR GENERAL AND THE ENGLISH BATTERY.	
		DAYBRITE	2EVO-G-45L-835-2-D-UNV-DIM-EMLED-SWZG2					
		PRESCOLITE	LTR-6RD-SL-10L-DM1-NXE-LTR-6RD-T-SL-35K-8-MD-SS-WT-B24					
C1	2000 LUMEN,	GOTHAM	EVO6-35/10-AR-LSS-MD-120-EZ1-NLT-TRW	0-10V	RECESSED	22.1W	6" RECESSED CAN.	
O I	3500K, LED	PORTFOLIO	LD6B-10-D010-EU6B-1020-80-35-6LB-M-0-H-HB26	U-10V	CEILING GRID	ZZ. I VV	NECECOLD ONN.	
		CALCULITE	6R-N-C6L-10-8-35-M-Z10-U-C6-R-DL-CL					
		PRESCOLITE	LTR-6RD-H-ML-DM1-NXE-EMR-LTR-6RD-T-ML-35K-8-MD-SS-WT-B24					
C1EM	2000 LUMEN,	GOTHAM	EVO6-35/10-AR-LSS-MD-120-EZ1-NLT-TRW-EL	0-10V	RECESSED	22.414/	6" RECESSED CAN. PROVIDE REMOTE TEST SWITCH AND 10W EMERGENCY BATTERY.	
J I ⊏IVI	3500K, LED	PORTFOLIO	LD6B-20-D010-EU6B-1020-80-35-6LB-M-0-H-HB26	U-10V	CEILING GRID	22.1W	6 RECESSED CAN. PROVIDE REMOTE TEST SWITCH AND TOW EMERGENCY BATTERY.	
		CALCULITE	6R-N-EM-C6L-20-8-35-M-Z10-U-C6-R-DL-CL					
		PRESCOLITE	LTR-4RD-H-SL-DM1-NXE-LTR-4RD-T-SL-35K-8-MD-SS-WT-B24					
C2	1100 LUMEN, 3500K, LED	GOTHAM	EVO4-35/10-AR-LSS-MD-120-EZ1-NLT-TRW	0-10V	RECESSED CEILING GRID	12.7W	4" RECESSED CAN. PROVIDE INTEGRAL OCCUPANCY SENSOR.	
	,	PORTFOLIO	LD4B-10-D010-EU4B-1020-80-35-4LB-M-1-H-HB26					
		CALCULITE	4R-N-C4L-10-8-35-M-Z10-U-C4-R-DL-CL					
		PRESCOLITE	LTR-4SQD-H-SL-DM1-NXE-LTR-4SQD-T-SL-35K-8-MD-SS-WT-B24					
C2EM	1100 LUMEN,	GOTHAM	EVO4SQ-35-10-AR-LSS-MVOLT-EZ1-NLT-EL	0-10V	RECESSED	12.7W	4" RECESSED SQUARE CAN. PROVIDE INTEGRAL OCCUPANCY SENSOR. PROVIDE PORT	
JZLIVI	3500K, LED	PORTFOLIO			CEILING GRID	12.7 **	TO COMMUNICATE WITH ROOM FIXTURES WITH INTEGRAL SENSORS	
~~	$\sim\sim$	CHECOLIFE	\@#\$#\O\\#13\\@3\\#Z\\#O\\#O\\	$\sim\sim\sim\sim$	$\sim\sim$	$\sim\sim\sim$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\sim$
		JLC-TECH	TBLX-MW-HO-4-24-DW-A-W-UNV					
F1	875 LUMEN/FT,			0-10V	SUSPENDED 10'	38	4' X 2.25" SUSPENDED LINEAR	
' '	3500K, LED			0-10 V	AFF	30	4 X 2.20 GOOT ENDED LINEAR	
		ORACLE						
		JLC-TECH	TBLX-MW-HO-4-24-DW-A-W-UNV-TBEM-XS-12-UNV					
-4514	875 LUMEN/FT,			0.401/	SUSPENDED 10'	20	ALVIO OF CHORENDED LINEAR DROWING COMPATIBLE EMERGENCY DATTERY	
1EM	3500K, LED			0-10V	AFF	38	4' X 2.25" SUSPENDED LINEAR. PROVIDE COMPATIBLE EMERGENCY BATTERY.	
		ORACLE						
		JLC-TECH	TBLX-MW-HO-4-24-DW-U-W-UNV					
	1075 LUMEN/FT,							
F2	3500K, LED			0-10V	GRID BAR	38	4' X 2.25" T-BAR LINEAR	
		ORACLE	4-LB-LED-2600L-DIM10-MVOLT-35K-85-TB-1516-FT					
		JLC-TECH	TBLX-MW-HO-4-24-DW-U-W-UNV-TBEM-XS-12-UNV					
	1075 LUMEN/FT,	020 12011	ISSA MITT TO TET STOOM ONE IDEM ACTIZ-CITY					
2EM	3500K, LED			0-10V	GRID BAR	38	4' X 2.25" T-BAR LINEAR. PROVIDE COMPATIBLE EMERGENCY BATTERY.	
		ORACLE	4-LB-LED-2600L-DIM10-MVOLT-35K-85-TB-1516-FT					
		SPI LIGHTING	SEW12145-4FT-28W-120-277V-4000K		EVTEDIOS			
G	711 LUMEN/FT, 2500K, LED	I2	V2355-A-4-1-BBD	0-10V	EXTERIOR WALL MOUNT 17'8"	56W	4-FOOT EXTERIOR WALL BRACKET MOUNTED LIGHT FIXTURE,	
		ELLIPTIPAR	S-151-R04L-08-M-00-0-840-ZX-HGC					
M	mm	mmm	······································	mmm	www	mmm	······································	m
		EVENLITE	CHY-AB-CN					
Χ	LED	LITHONIA	LESG-ELN		UNIVERSAL	1W	DIE CAST ALUMINUM, BLACK HOUSING WITH BRUSHED ALUMINUM FACE, AND GREEN LETTERS.	
		SURE-LITES	CX7G				LETTENO.	
		00110100	005005		[			
		COMPASS	CCESGE					

				NE	W PA	ANEL	L"LCP"			
	IMMER RELAY									
DIMME	R/ RELAY	DESCRIPTION	PANELB	OARD		LOAD		ON/OFF	NOTES	
#	ZONE	N	NAME CIR:		LOAD	TYPE	DIMMABLE	SWITCHING	LIGHTING CONTROL STATION	RELAY RATING
1	1	EXTERIOR CAN LIGHTS			67W	LED		Х	ASTROCLOCK	30A
2	2	EXTERIOR SIGN LIGHT			56W	LED		Х	ASTROCLOCK	30A
3		SPARE								
4		SPARE								



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D HOLTROP	A ROBINSON
Designer	Reviewer
J BOIK	A ROBINSON
Date Issued	Project Number
02/15/2023	16600.00

Sheet Name

SCHEDULES

Drawing Number

E801

						PAN	ELF	3 O A	R D	s c	HEC	) U L I	E						
		VOLTS:	VOLTS:				A.I.C. R						OCATIO	DN:					
	EX. MDPB	PHASE:		1	MCB:			BRKR S	PACE	:			5	SOURCE	:			-	-
		WIRE:	WIRE:		MLO:		MTG./N	MTG./NEMA #:				F	EEDER	:					
	LOAD	LOAD															SUBTOT	AL CON	NECTED KVA
CKT	DESCRIPTION	LTS	REC	MECH	OTHER	KIT	OCPD	Р	PH					LTS	REC	MOTOR	OTHER	KIT	
1		2900	6100				200	2	Α					2.9	6.1	0.0	36.0	0.0	PHASE A CONNECTE
2	PANEL A	2200	4500		400		-	-	В					2.2	4.5	0.0	36.4	0.0	PHASE B CONNECTE
3							-	-	С					0.0	0.0	0.0	0.0	0.0	PHASE C CONNECTE
4					12000		200	2	Α							0.0			25% OF LARGEST MC
5	PANEL B				12000		-	-	В										
6							-	-	С					LC	DAD SUI	MMARY &	FEEDER	CALCU	LATION
7					12000		200	2	А	L	_TS	REC N	MOTOR	OTHER	KIT	SUB	SPARE	TOTAL	
8	PANEL C				12000		-	-	В		5.1	10.6	0.0	72.4	0.0	88.1	25%		CONNECTED KVA
9							-	-	С	1.0		#1	1.0	1.0	1.0				DEMAND FACTOR
10					12000		200	2	Α		5.1	10.3	0.0	72.4	0.0	87.8	22.0	109.8	DEMAND KVA
11	PANEL D				12000		-	-	В									264.0	DEMAND AMPS
12							-	-	С		1.25	1.0	1.0	1.0	1.0		1.0		CONTINUOUS/NONCO
												<u> </u>				-		267.4	MIN OVERCURRENT

							N L L	ВОА			00	11 L D	ULE							
	<b>5</b>	VOLTS:		240	MAINS	RATING:		A.I.C. R		_				LOCATION						4
	EX. A	PHASE:		1	MCB:			BRKR S						SOURCE						_
		WIRE:   3   MLO:   200   MTG./N		MTG./N	EMA	#:				FEEDER	:				1	_				
	LOAD	LOAD		1										LOAD		1			LOAD	L
CKT	DESCRIPTION	LTS	REC	MOTOR	OTHER	KIT	OCPD	Р	CKT	PH	CKT	Р	OCPD	LTS	REC	MOTOR	OTHER	KIT	DESCRIPTION	
	MAIN OFFICE		720				20	1	1	Α	2	1	20	720					E. 103 LIGHTS	S
3 E.	101 LIGHTS	720					20	1	3	В	4	1	20	720					E. 101 LIGHTS	S
5 E.	102 LIGHTS	720					20	1	5	Α	6	1	20	720					E. 102 LIGHTS	S
7 E.	MASTER CLOCK				360		20	1	7	В	8	1	20	720					E. LOBBY + OUTSID	E
9 E.	CLINIC EAST		720				20	1	9	Α	10	1	20	720					E. MAIN OFFIC	E
11 E.	WEST GYM OUTLET		180				20	1	11	В	12	1	20						E. ROOM 1	0
13 E.	OFFICE COMPUTER		720				20	1	13	Α	14	1	20			720			E. HEATING	G
15 E.	OFFICE RECEP.		720				20	1	15	В	16	1	20	720					E. 103 LIGHTS	s
17 E.	LOUNGE		720				20	1	17	Α	18	1	20		180				E. JANTIORS CLOSET RECEI	P
9 E.	LOUNGE/COFFEE/FRIDGE		1200				20	1	19	В	20	1	20			180			E. FANS	s
21 E.	SAFE RECEP		180				20	1	21	Α	22	1	20		1200				NEW COPIE	R
23 E.	SAFE RECEP		280				20	1	23	В	24	1	20		1200				NEW PRINTE	R
25 E.	CLINIC RECEP		180				20	1	25	Α	26	1	20		180				E. N. WALL OF GYM RECER	Р
27 E.	CLINIC RECEP		180				20	1	27	В	28	1	20		720				NEW FURNITURE POWE	R
29 NE	W FURNITURE POWER		720				20	1	29	Α	30	1	20		720				NEW DOOR HARDWAR	E
31 NO	OT USEABLE						20	1	31	В	32	1	20						NOT USEABLE	E
33 NO	OT USEABLE						20	1	33	Α	34	1	20						NOT USEABLE	E
35 NO	OT USEABLE						20	1	35	В	36	1	20						NOT USEABLE	E
37 NO	OT USEABLE						20	1	37	Α	38	1	20						NOT USEABLE	E
39 NO	OT USEABLE						20	1	39	В	40	1	20						NOT USEABLE	E
41 NO	OT USEABLE						20	1	41	Α	42	1	20						NOT USEABLE	E
								_												
	SUI	BTOTAL COM	NECTE	D KVA						<u> </u>				LO	AD SUM	IMARY &	FEEDER	CALCL	JLATION	
		LTS	REC	MOTOR	OTHER	KIT	TOTAL			LT	гs	REC	MOTOR	OTHER	KIT	SUBTOT	SPARE	TOTAL		
PH	IASE A CONNECTED KVA	2.9	6.2	0.7	0.0	0.0	9.8	1			5.8	10.7	0.9	0.4	0.0	17.7	25%		CONNECTED KVA	
PH	IASE B CONNECTED KVA	2.9	4.5	0.2	0.4	0.0	7.9				1.0	#1	1.0	1.0	1.0				DEMAND FACTOR	
25	% OF LARGEST MOTOR			0.0		l	0.0				5.8	10.4	0.9	0.4	0.0	17.4	4.3	21.7	DEMAND KVA	
					4			1										90.5	DEMAND AMPS	
								_			1.25	1.0	1.0	1.0	1.0		1.0	.,,,,	CONTINUOUS/NONCONT FACTOR	
pr	CEPTACLE DEMAND FACTOR:															J		96.5	MIN. OVERCURRENT DEVICE AMPS	

0.0 PHASE A CONNECTED KVA 0.0 PHASE B CONNECTED KVA 0.0 PHASE C CONNECTED KVA 25% OF LARGEST MOTOR

CONTINUOUS/NONCONT FACTOR 267.1 MIN. OVERCURRENT DEVICE AMPS

		VOLTS:		240	MAINS R	ATING:		A.I.C. F	RATING:				LOCATIO	N:	<b>BOILER F</b>	ROOM		
	EX. MDP	PHASE:		3	MCB:	800		BRKR S	SPACE:				SOURCE	:				
		WIRE:		4	MLO:			MTG./N	IEMA #:		FEEDER:							
	LOAD	LOAD												ı		SUBTOTA	AL CON	NECTED KVA
<b>KT</b>	DESCRIPTION	LTS	REC	MECH	OTHER	KIT	OCPD	Р	PH				LTS	REC	MOTOR	OTHER	KIT	
1			4000				200	2	Α				2.9	17.2	22.0	3.6	4.0	PHASE A CONNECTED KVA
2	COMPUTER PANEL 1		4000						В				2.2	14.5	22.0	3.6	4.0	PHASE B CONNECTED KVA
3									С				0.0	6.0	22.0	0.0	4.0	PHASE C CONNECTED KVA
1			1080	14000					Α				'		0.0	'		25% OF LARGEST MOTOR
5	NEW RPA			14000					В			-		'				
3				14000					С				LC	DAD SUN	MARY &	FEEDER	CALCU	LATION
7			1000	4000			200	3	Α	LTS	REC	MOTOR	OTHER	KIT	SUB	SPARE	TOTAL	
3	BOILER PANEL 1		1000	4000					В	5.1	37.7	66.0	7.2	12.0	128.0	25%		CONNECTED KVA
9			1000	4000					С	1.0	#1	1.0	1.0	1.0				DEMAND FACTOR
0		2900.0	6100.0	0.0	3600.0		400	3	Α	5.1	23.8	66.0	7.2	12.0	114.2	28.5	142.7	DEMAND KVA
1	MDPB	2200.0	4500.0	0.0	3640.0				В	'				'			343.3	DEMAND AMPS
2									С	1.25	1.0	1.0	1.0	1.0		1.0		CONTINUOUS/NONCONT FACTOR
3			4000				100	3	Α	1	'	'	'	·			346.4	MIN. OVERCURRENT DEVICE AMPS
4	COMPUTER PANEL		4000						В									
5			4000						С									
6						4000	200	3	Α									
7	KITCHEN SERVICE					4000			В									
8						4000			С									
9							100	3	Α									
.0	BUS GARAGE								В									
1									С									
2									Α									
3	SPACE								В									
24									С									
25							200	3	Α									
26	JANITOR CLOSET PANEL								В									
27									С									
28							200	3	А									
29	3 STORY BUILDING								В									
30									С									
31			1000	4000			200	3	Α									
2	BOILER PANEL 2		1000	4000					В									
3			1000	4000					С									
4									Α									
5									В									

		VOLTS:		240	MAINS	RATING:		A.I.C. I	RATIN	G:				LOCATION	ON:	BOILER	ROOM			
	NEW RPA	PHASE	:	3	MCB:			BRKR	SPAC	E:				SOURC	E:	MDP				
		WIRE:		4	MLO:	200		MTG./I	NEMA	#:				FEEDER	₹:					
	LOAD	LOAD												LOAD					LOAD	
KT	DESCRIPTION	LTS	REC	MOTOR	OTHER	KIT	OCPD	Р	CKT	PH	СКТ	Р	OCPD	LTS	REC	MOTOR	OTHER	KIT	DESCRIPTION	С
1				997	7		20	3	1	Α	2	2	30			924			NEW HPCU-1	.1
3	NEW RTU-1			997	7		-	-	3	В	4	-	-			924			NEW III 00-1	
5				997	,		-	-	5	С	6	2	30						- SPARE	F
7	NEW HPCU-7			1932	2		25	2	7	Α	8	-	-						OI /IIILE	
9	NEW 111 00 7			1932	2		-	-	9	В	10	2	30			2316			NEW HPCU-3	.3
11	NEW HPCU-8			1932	2		25	2	11	С	12	-	-			2316			11211 111 00 0	1
3	NEW 111 00 0			1932	2		-	-	13	Α	14	2	30			2316			NEW HPCU-4	ًٰ ₄ ً
15	SPARE						20	2	15	В	16	-	-			2316			11211 111 00 1	1
17	OT / III C						-	-	17	С	18	2	35			2496			NEW HPCU-5	.5
19	SPARE						30	2	19	Α	20	-	-			2496			NEW III 00 0	2
21	OT TIME						-	-	21	В	22	2	25			1932			NEW HPCU-6	.6 2
23	NEW HCPU CONV RCPTS	~~	1080	~~	~~	$\sim$	20	1	23	С	24	-	-			1932			NEW III 00 0	2
25	NEW EXTERIOR LIGHTING	132		ļ. ,		ļ · · ·	20	1	325		26	$2^{1}$	~ <sup>20</sup> ~	~~	~~	<b>~~</b>	500		NEW LCP	P 2
27	SPARE						20	1	27	В	28	1	20		<b>V</b> · <b>V</b> ·	V . V .	V · V	<b>,</b> , ,	SPARE	E 2
29	SPARE						20	1	29	С	30	1	20						SPARE	E 3
31	SPARE						20	1	31	Α	32	1	20						SPARE	E 3
33	SPARE						20	1	33	В	34	1	20						SPARE	E 3
35	SPARE						20	1	35	С	36	1	20						SPARE	E 3
37	SPARE						20	1	37	Α	38	1	20						SPARE	E 3
39	SPARE						20	1	39	В	40	1	20						SPARE	E 4
11_	SPARE						20	1	41	С	42	1	20						SPARE	E 4
~														~~						<u>~</u>
	SUBT	TOTAL CO	NNECTE	D KVA										LC	DAD SUN	MARY &	FEEDE	R CALCU	JLATION	
		LTS	REC	MOTOR	OTHER	KIT	TOTAL			L1	ΓS	REC	MOTOR	OTHER	KIT	SUBTOT	SPARE	TOTAL		
	PHASE A CONNECTED KVA	0.1	0.0	10.6	0.5	0.0	11.2	2			0.1	1.1	30.7	0.5	0.0	32.4	25%		CONNECTED KVA	
	PHASE B CONNECTED KVA	0.0	0.0	10.4	0.0	0.0	10.4	ļ.			1.25	#1	1.0	1.0	1.0				DEMAND FACTOR	
	PHASE C CONNECTED KVA	0.0	1.1	9.7	7 0.0	0.0	10.8	3			0.2	1.1	30.7	0.5	0.0	32.4	8.1	40.5	DEMAND KVA	
	25% OF LARGEST MOTOR			0.0														97.6	DEMAND AMPS	
											1.25	1.0	1.0	1.0	1.0		1.0		CONTINUOUS/NONCONT FACTOR	
	RECEPTACLE DEMAND FACTOR:																	97.6	MIN. OVERCURRENT DEVICE AMPS	



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ORCHARD VIEW SCHOOL DISTRICT

# COMMUNITY **EDUCATION** CENTER

1765 ADA AVENUE MUSKEGON, MI 49442

Date Revised	Description
01/24/2023	BID PACKAGE #1 - OWNER REVIEW
01/31/2023	BID PACKAGE #1 - BIDS
02/07/2023	BID PACKAGE #1 - PERMITS
02/15/2023	BID PACKAGE #1 - ADDENDUM #1

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Project Manager Discipline Lead A ROBINSON Designer Reviewer A ROBINSON Date Issued Project Number 02/15/2023 16600.00

Sheet Name

SCHEDULES

Drawing Number