Forest Hills Public Schools
Northern High School Structured Cabling RFP

Appendix D

BUILDING PRINTS

November 2026

Appendix D

Technology Key

Video Surveillance Components

- Single-View
- Dual-View
- Quad-View
- 180-Degree
- Fisheye

Notes:
Blue = Interior
Green = Exterior

Audio/Visual Components

- Interactive Flat Panel (86" unless otherwise noted)
- Non-Interactive Flat Panel
- A — Classroom Audio Amplifier
- T — Teacher Station Location
- Projection Screen
- P — Projector

Door Access Control Components

- C — Card Reader
- C M — Card Reader (mullion mounted)
- K — Keypad Card Reader
- L — Door Release/Lockdown Buttons (Mounted under desk)
- OH — Overhead Door Contact
- Intercom
- Master Intercom
- ADA Operator Button

Public Address & Clocks Components

- S — PA Speaker – Ceiling (Interior)
- W — PA Speaker – Wall (Interior)
- CS — Device with Clock & Speaker Functionality
- C — Clock – Single Sided
- 2 — Clock – Dual Sided
- LC — Large Clock
- PA Horn – Interior
- PA Horn – Exterior
- S — Strobe
- E — Emergency Call Button
- E — Office Emergency Buttons
- PA Control Console

Structured Cabling Components

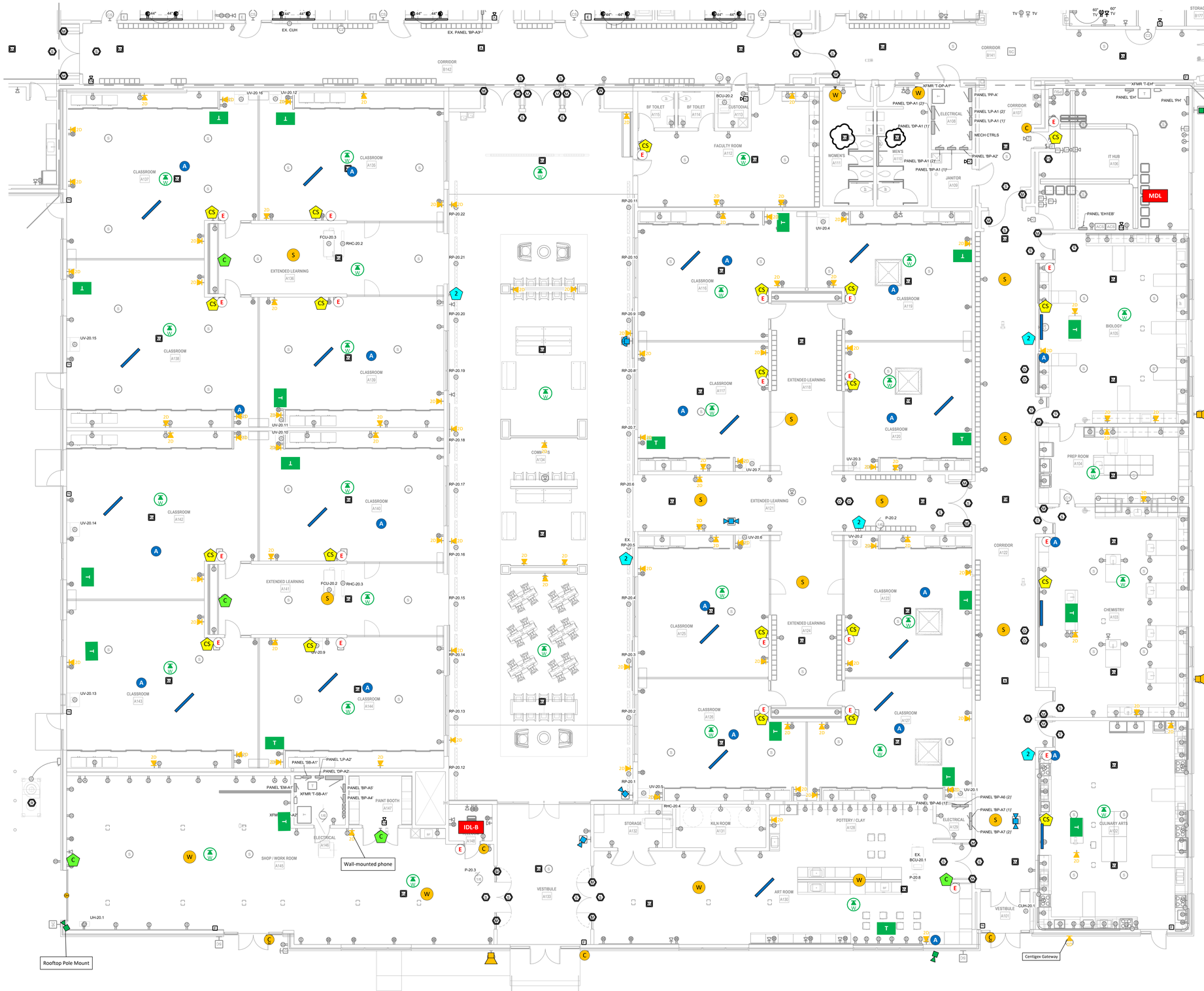
- D — General Data Cable (1 per location unless otherwise noted)
- W — Wireless Access Point Data Cable (2 per location unless otherwise noted)
- A — Audio/Visual Data Cable (1 per location unless otherwise noted)
- D — Data Cable Location to Demolish (1 per location unless otherwise noted)
- S — Security Data Cable (1 per location unless otherwise noted)
- MDL — Main Distribution Location
- IDL — Intermediate Distribution Location

Appendix D

Northern High School

Project NEXT

No cabling work on this unit.

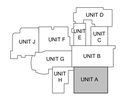


POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.0 01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL GENERAL-USE 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. REFER TO LIGHTING CONTROL SCHEDULES, GENERAL NOTES, AND SPECIFICATIONS FOR AUTOMATIC RECEPTACLE CONTROL REQUIREMENTS.
5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. [REFER TO MECHANICAL/H/VAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.]
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
6. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
7. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
8. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 96". COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

UNIT 'A' POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

KEYPLAN



gmb

NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

ISSUANCES
10.13.2026BIDS & CONSTRUCTION
11.05.2026ADDENDUM 001

DRAWN BJE
REVIEWED PRH

PROJECT NO. 5-6457

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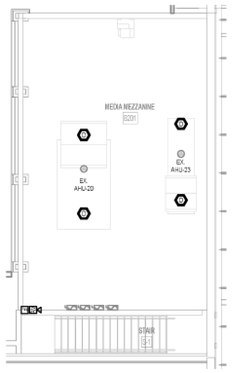
UNIT 'A' POWER & COMMUNICATIONS PLAN

E2.2.1A

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General Low-Voltage Notes

1. New access point. Access point to be provided by the District. two new cables to be provided by cabling contractor (black cable).
2. New security camera. Camera to be provided by District's video surveillance contractor. 1 new cable to be provided by cabling contractor (yellow cable).



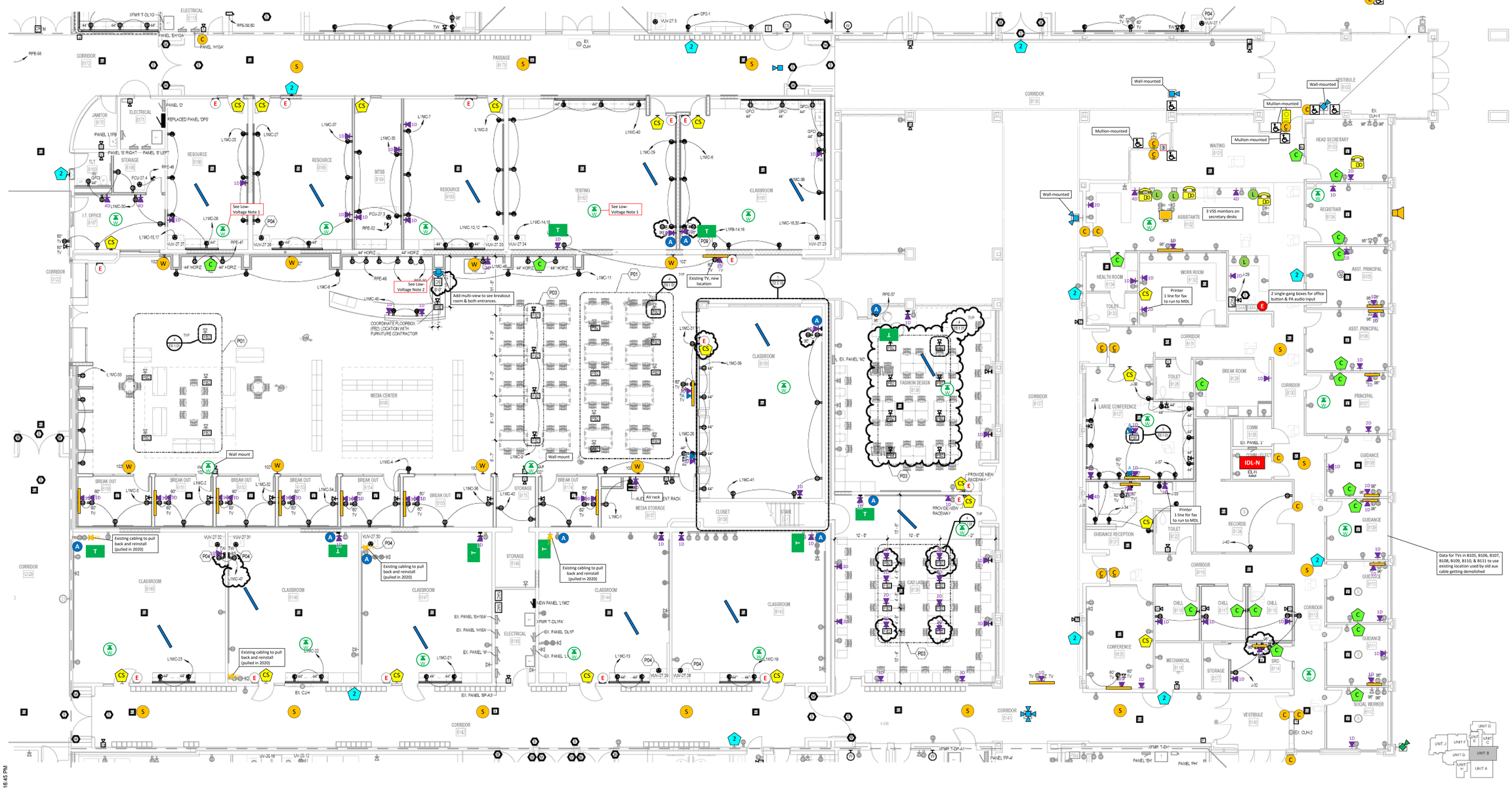
ELECTRICAL KEYNOTES

P01	INSTALL NEW FLOORBOXES 'FB2' IN EXISTING FLOORBOX LOCATION. REWORK AND EXTEND CONDUITS, CONDUCTORS, AND SUPPORTS. PATCH AND REPAIR OPENING UPON REINSTALLATION OF NEW FLOORBOXES. TEST AND VERIFY THAT ALL ELECTRICAL CONNECTIONS ARE WORKING PROPERLY.
P03	INSTALL NEW FLOORBOX 'FB2' IN NEW LOCATIONS SHOWN ON PLANS. (MINIMUM FROM NEAREST WALL TO NEW FLOORBOX LOCATIONS). COORDINATE WITH 'FB2' DETAIL.
P04	RECONNECT ELECTRICAL CONNECTION TO NEW VUH. REWORK AND EXTEND CONDUITS, CONDUCTORS, AND SUPPORTS.
P09	PROVIDE NEW MULTIPOLE RECEPTACLE FOR USE WITH NEW COPY/PRINTER. RWAL EQUIPMENT SIZE, PLUG TYPE, BREAKER SIZE AND LOCATION SHALL BE COORDINATED WITH ARCHITECT AND/OR OWNER DURING CONSTRUCTION. BASIS OF DESIGN IS 208V/1P, 20A CKT BREAKER, NEMA L6-20R.

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.001.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL GENERAL-USE 15- AND 20-AMP/125 VOLT AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE. REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. REFER TO LIGHTING CONTROL SCHEDULES, GENERAL NOTES, AND SPECIFICATIONS FOR AUTOMATIC RECEPTACLE CONTROL REQUIREMENTS.
5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.)
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
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9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 96". COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

1 E2.2.1B — UNIT 'B' MEDIA MEZZANINE POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



UNIT 'B' POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

KEYPLAN

gmb

NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

ISSUANCES
10.13.2026 BIDS & CONSTRUCTION
11.05.2026 ADDENDUM 001

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PROJECT NO. 5-6457

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UNIT 'B' POWER & COMMUNICATIONS PLAN

E2.2.1B

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PHASE 0:

INTENT: CREATE FIVE (5) TEMPORARY CLASSROOMS FOR STUDENTS TO OCCUPY AND UTILIZE DURING THE PHASED CONSTRUCTION. TEMPORARY CLASSROOM TO BE DEMOLISHED AS PART OF PHASE 10 OF THE PROJECT.

B160 MEDIA CENTER– PHASE ZERO SCOPE:

DEMOLISH EXISTING SUSPENDED ACT CEILINGS AS REQUIRED FOR NEW CLASSROOM CONSTRUCTION. REFER TO FLOOR PLAN AND CEILING PLAN FOR CLASSROOM CONSTRUCTION REQUIREMENTS.

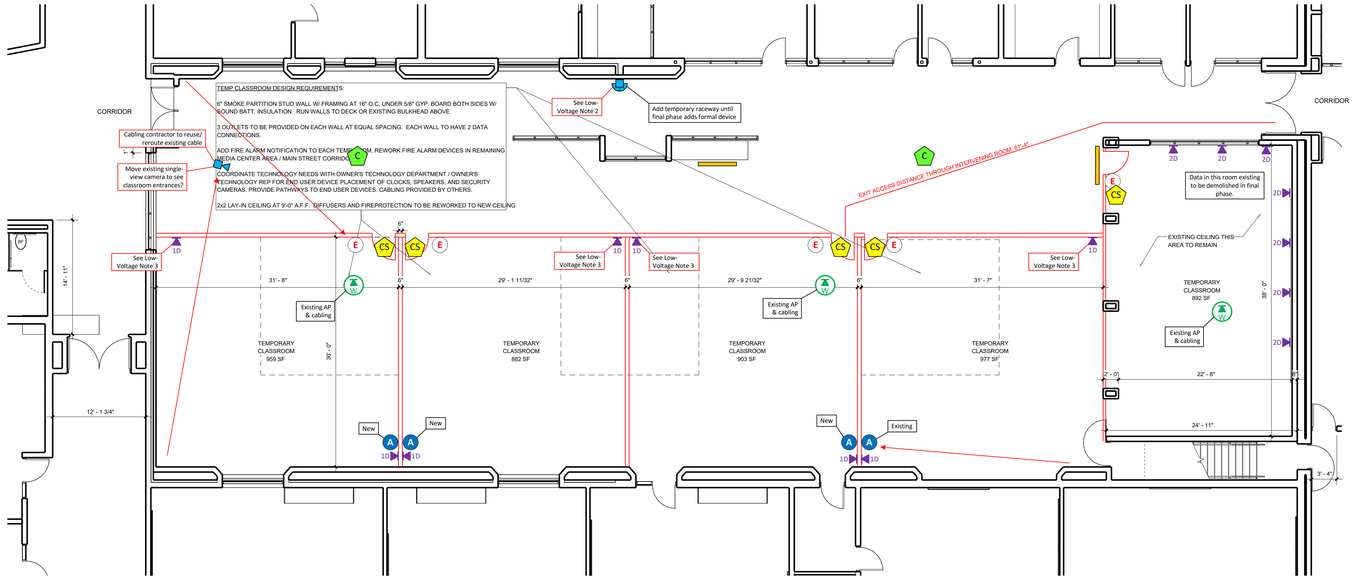
DEMOLISH EXISTING SUPPLY AIR DUCTWORK ONLY IN MEDIA CENTER AS SHOWN. CLEAN AND RETAIN (12) EXISTING 24"x24" LAY-IN CEILING SUPPLY DIFFUSERS FOR REUSE IN TEMPORARY CLASSROOMS.

PROVIDE AND INSTALL (4) NEW VAV BOXES (VAV-27.1, VAV-27.2, VAV-27.3, AND VAV-27.4) AND ASSOCIATED DUCTWORK, PIPING, DAMPERS, AND VALVES AS REQUIRED. DEFER NEW DUCT MOUNTED GRILLES, LINEAR SLOT DIFFUSERS, AND PERMANENT BRANCH DUCTWORK TO FINAL CONSTRUCTION PHASE. RELOCATE (4) EXISTING DIFFUSERS PER TEMPORARY CLASSROOM AND PROVIDE TEMPORARY BRANCH DUCTWORK CONNECTIONS DOWNSTREAM OF VAV BOXES AS REQUIRED; REFER TO ARCHITECTURAL DRAWINGS FOR PHASE ZERO CLASSROOM LOCATIONS AND SCOPE. MAINTAIN EXISTING RETURN AIR DUCTWORK IN OPERATION UNTIL TEMPORARY CLASSROOMS ARE NO LONGER NEEDED. PROVIDE (1) 24"x24" EGGCRATE RETURN AIR GRILLE NEAR ENTRY DOOR AND (1) 24"x18" TRANSFER BOOT ABOVE CEILING IN EACH TEMPORARY CLASSROOM. MAINTAIN A CLEAR AIR PATH FROM EACH EGGCRATE AND TRANSFER BOOT TO EXISTING RETURN AIR DUCT OPENINGS. PROVIDE AND INSTALL TEMPORARY TEMPERATURE SENSORS NEAR ENTRY DOOR FOR EACH VAV BOX SERVING TEMPORARY CLASSROOMS. COORDINATE WORK WITH OTHER TRADES AS REQUIRED.

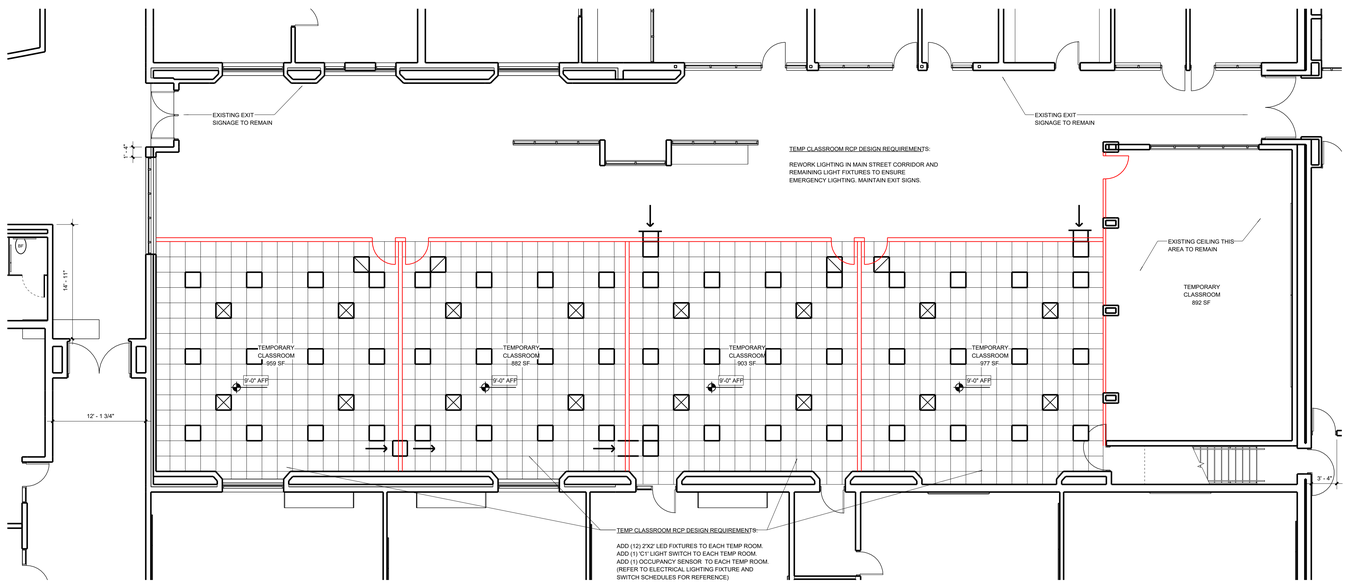
WHEN TEMPORARY CLASSROOMS ARE NO LONGER NEEDED, REMOVE EXISTING RETURN AIR DUCTWORK SERVING TEMPORARY CLASSROOMS AS SHOWN. PROVIDE NEW SUPPLY AIR AND RETURN AIR DUCTWORK, INCLUDING NEW DUCT-MOUNTED GRILLES, AND LINEAR SLOT DIFFUSERS, AS SHOWN IN MEDIA CENTER. SEAL ALL TEMPORARY DUCTWORK OPENINGS CREATED BY PHASE ZERO WORK AS REQUIRED.

General Low-Voltage Notes
1. New access point. Access point to be provided by the District. 2 new cables to be provided by cabling contractor (black cable).
2. New security camera. Camera to be provided by District's video surveillance contractor. 1 new cable to be provided by cabling contractor (yellow cable).
3. Ensure long enough service loop to be moved to final location in final phase.

Temporary Media Center Layout installed Phase 1. See Sheet E2.2.1B for final layout.



PHASE 0 - TEMPORARY CLASSROOM PLAN
1/8" = 1'-0"



PHASE 0 - TEMPORARY CLASSROOM REFLECTED CEILING PLAN
1/8" = 1'-0"

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NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

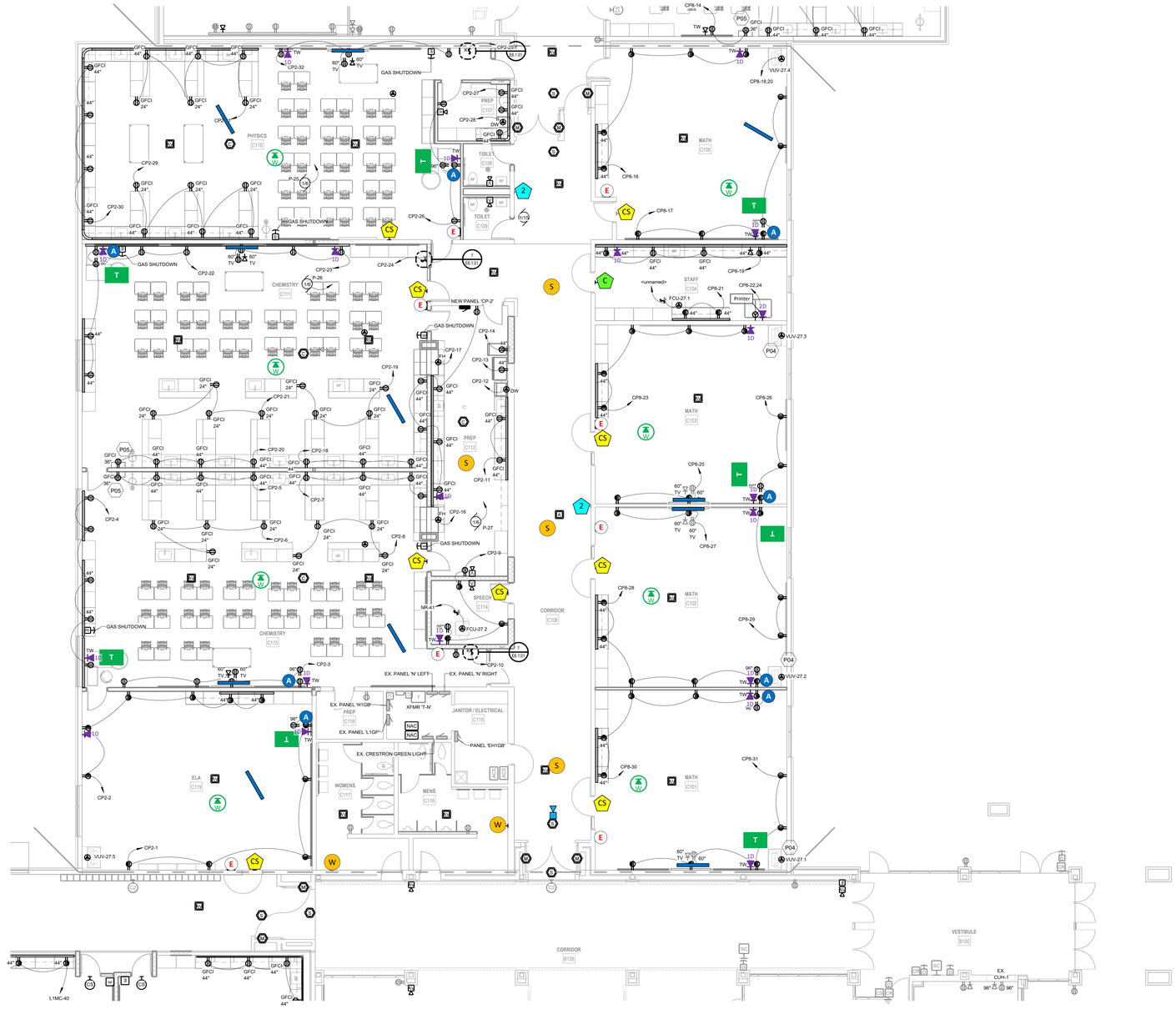
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CODE PLAN - PHASE 0

G1.4.00



UNIT 'C' POWER & COMMUNICATIONS PLAN

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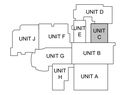
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5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. [REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.]
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
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ELECTRICAL KEYNOTES

P04	RECONNECT ELECTRICAL CONNECTION TO NEW VUV. REWORK AND EXTEND CONDUITS, CONDUCTORS, AND SUPPORTS.
P05	COORDINATE FINAL RECEPTACLE LOCATION WITH UV GOGGLE CABINET PER MANUFACTURER INSTALLATION.

KEYPLAN



gmb

NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

ISSUANCES

10.13.2026BIDS & CONSTRUCTION

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PROJECT NO. 5-6457

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UNIT 'C' POWER & COMMUNICATIONS PLAN

E2.2.1C

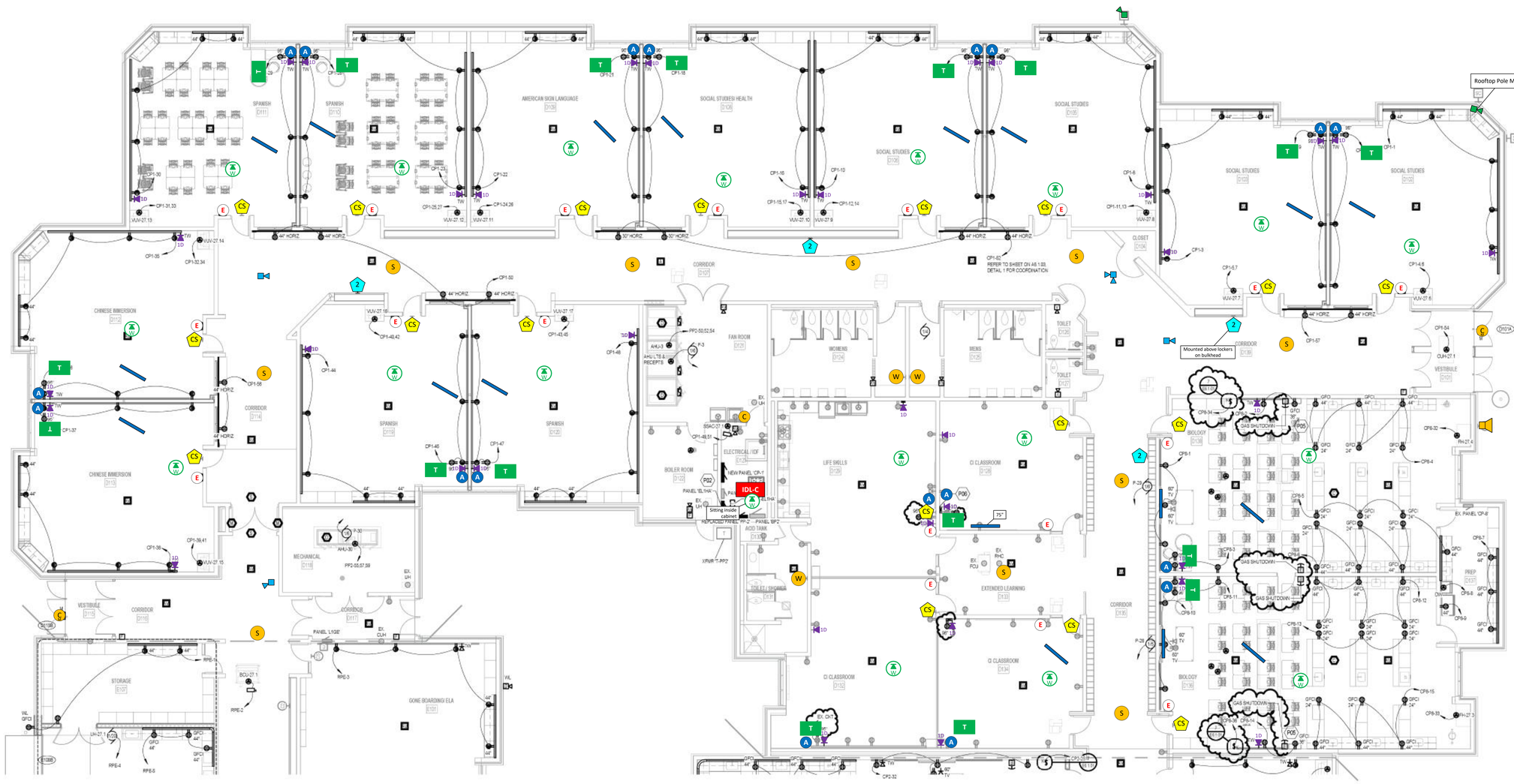
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POWER & COMMUNICATION GENERAL NOTES

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ELECTRICAL KEYNOTES

P02	REINSTALL EX. XMFR 'T' EL SHA' AND PANEL 'EL1HA' IN NEW LOCATION. REWORK AND EXTEND CONDUITS, CONDUCTORS, AND SUPPORTS.
P05	COORDINATE FINAL RECEPTACLE LOCATION WITH UV GOGGLE CABINET PER MANUFACTURER INSTALLATION.
P06	INSTALL NEW RECEPTACLES IN NEW DUAL CHANNEL RACEWAY. RECONNECT EXISTING CIRCUITS AND DATA CABLING. RACEWAY TO MATCH EXISTING CONDITIONS IN ROOM. REWORK AND EXTEND CONDUITS, CONDUCTORS AND SUPPORTS.



UNIT 'D' POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

KEYPLAN

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NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

ISSUANCES
10.13.2026 BIDS & CONSTRUCTION
11.05.2026 ADDENDUM 001

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PROJECT NO. 5-6457

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UNIT 'D' POWER & COMMUNICATIONS PLAN

E2.2.1D

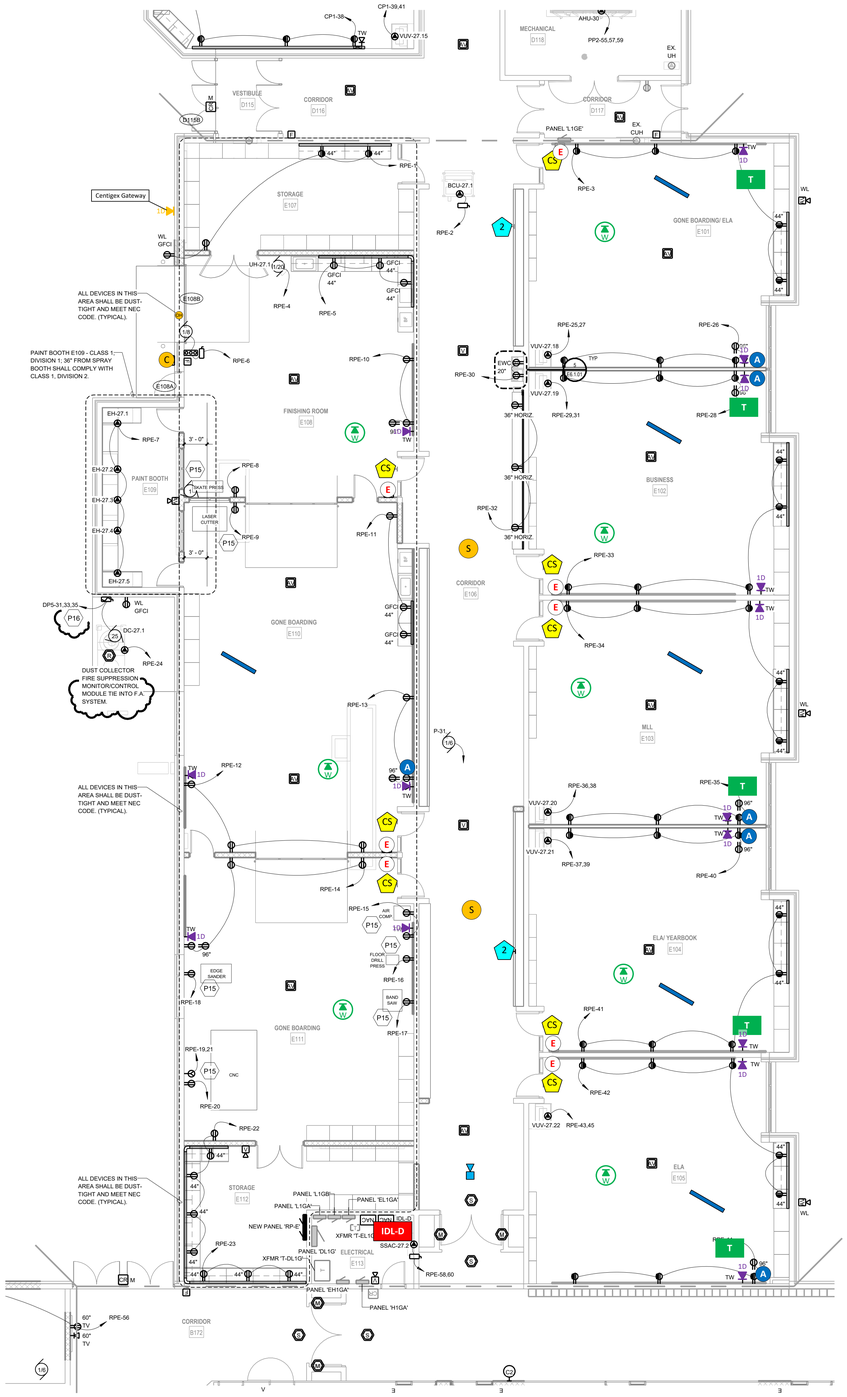
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POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL GENERAL-USE 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. REFER TO LIGHTING CONTROL SCHEDULES, GENERAL NOTES, AND SPECIFICATIONS FOR AUTOMATIC RECEPTACLE CONTROL REQUIREMENTS.
5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. [REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS]
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
6. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
7. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
8. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 96". COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

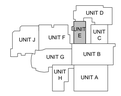
ELECTRICAL KEYNOTES

P15	COORDINATE GONE BOARDING ELECTRICAL REQUIREMENTS WITH OWNER'S SHOP EQUIPMENT. CIRCUITS SHOWN ARE SHOWN FOR BASIS OF DESIGN AND MAY NEED TO BE ADJUSTED. FINAL WITH FINAL EQUIPMENT SELECTION. COORDINATION WILL TAKE PLACE AFTER CONSTRUCTION DOCUMENTS ARE ISSUED.
P16	PROVIDE (1) 480V/3PH 70A OCT BRKR FOR NEW DC-27.1 PANEL 'DPE' LOCATED IN ELECTIC/P E105.



UNIT 'E' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"



KEYPLAN

gmb

NORTHERN HIGH SCHOOL RENOVATIONS

FOREST HILLS PUBLIC SCHOOLS

GRAND RAPIDS, MICHIGAN

ISSUANCES

10.13.2026BIDS & CONSTRUCTION

11.05.2026ADDENDUM 001

DRAWN BJE

REVIEWED PRH

PROJECT NO. 5-6457

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UNIT 'E' POWER & COMMUNICATIONS PLAN

E2.2.1E

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General Low-Voltage Notes

1. New access point. Access point to be provided by the District. two new cables to be provided by cabling contractor (black cable).
2. New security camera. Camera to be provided by District's video surveillance contractor. 1 new cable to be provided by cabling contractor (yellow cable).

WOOD SHOP F150 OWNER PROVIDED EQUIPMENT LIST

EQUIPMENT	QUANTITY	VOLTAGE	PHASE	HP/AMPS
TABLE SAW	2	208	1	3HP
MITER SAW	2	120	1	15A
JOINTER	2	208	1	3HP
PLANER (15")	1	208	1	3HP
PLANER (25")	1	208	3	15HP
DRUM SANDER	1	120	1	1.75HP
SPINDLE/DISC SANDER	1	120	1	1HP
WIDE BELT SANDER	1	208	1	5HP
ROUTER TABLE	2	120	1	15A
DRILL PRESS	1	120	1	15A
CNC ROUTER	1	480	3	
CNC VACCUM	1	208	1	30A
DOVETAIL MACHINE	1	120	1	15A

NOTES: REUSE EXISTING EQUIPMENT CONNECTIONS IN NEW LAYOUT. REWORK AND EXTEND CONDUITS, CONDUCTORS AND SUPPORTS. COORDINATE ELECTRICAL EQUIPMENT LOCATION WITH OWNER AND/OR WOOD SHOP DEPARTMENT DIRECTOR.

NEC ARTICLE 500 HAZARDOUS LOCATION CLASSIFICATION

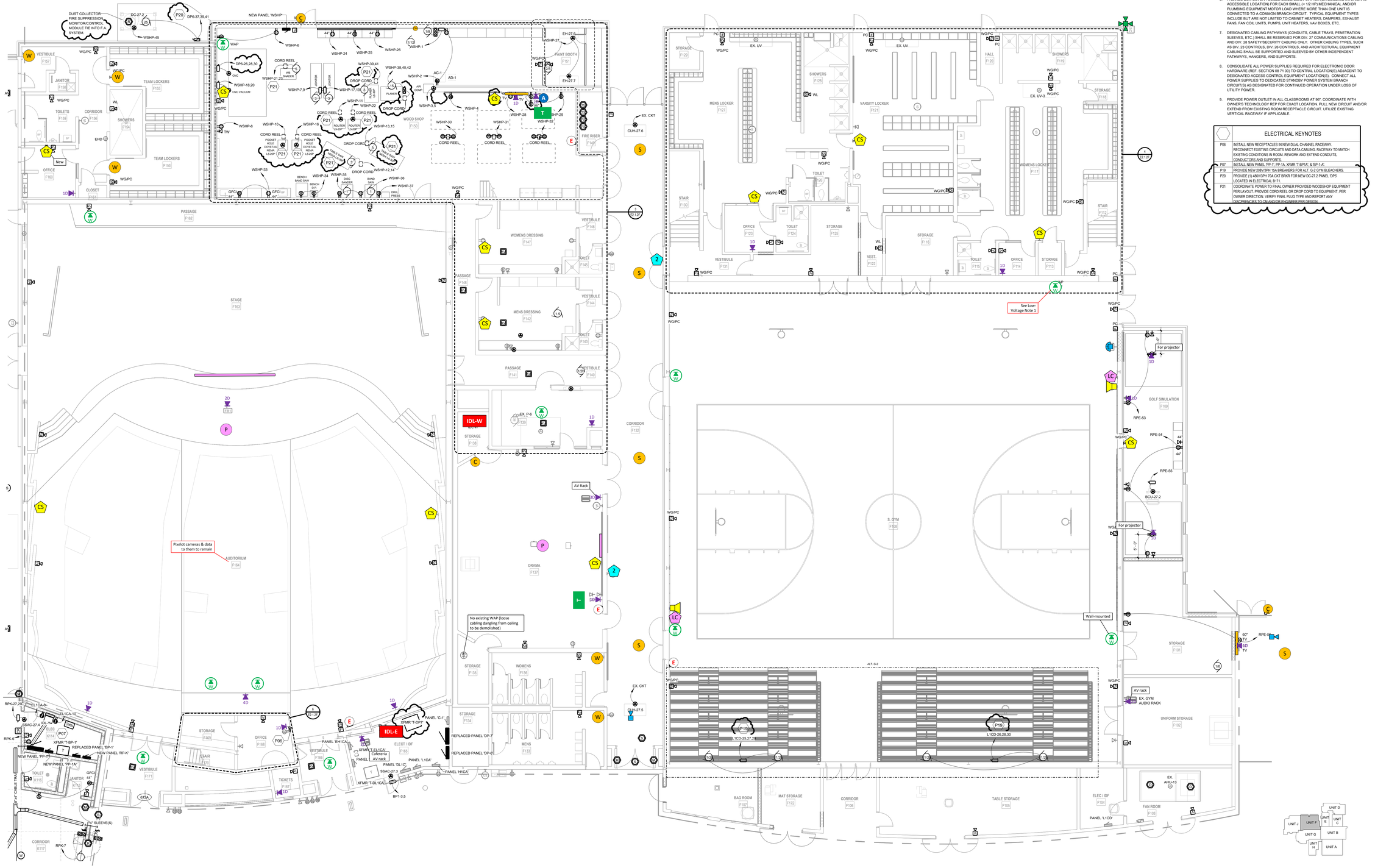
1. WOOD SHOP F150 - ALL DEVICES SHALL COMPLY WITH NEC STANDARDS FOR DUST-TIGHT ELECTRICAL EQUIPMENT.
2. SPRAY ROOM F151 - CLASS 1, DIVISION 1; 36" FROM SPRAY BOOTH SHALL COMPLY WITH CLASS 1, DIVISION II

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ELECTRICAL KEYNOTES

P06	INSTALL NEW RECEPTACLES IN NEW DUAL CHANNEL RACEWAY. RECONNECT EXISTING CIRCUITS AND DATA CABLING. RACEWAY TO MATCH EXISTING CONDITIONS IN ROOM. REWORK AND EXTEND CONDUITS, CONDUCTORS AND SUPPORTS.
P07	INSTALL NEW PANEL 'PP-1'. PP-1A, XFMR 'T-6IP1A', & 'IP-1-K'.
P19	PROVIDE NEW 208V/3PH 15A BREAKERS FOR ALT. G-2 GYM BLEACHERS.
P20	PROVIDE (1) 480V/3PH 70A OCT BRKR FOR NEW DC-27.2 PANEL 'DP5' LOCATED IN ELECTRICAL B171.
P21	COORDINATE POWER TO FINAL OWNER PROVIDED WOODSHOP EQUIPMENT PER LAYOUT. PROVIDE CORD REEL OR DROP CORD TO EQUIPMENT, PER OWNER DIRECTION. VERIFY FINAL PLUG TYPE AND REPORT ANY DISCREPANCIES TO CM AND/OR ENGINEER PER FERSON.



UNIT 'F' POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

KEYPLAN

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NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

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10.13.2026BIDS & CONSTRUCTION
11.05.2026ADDENDUM 001

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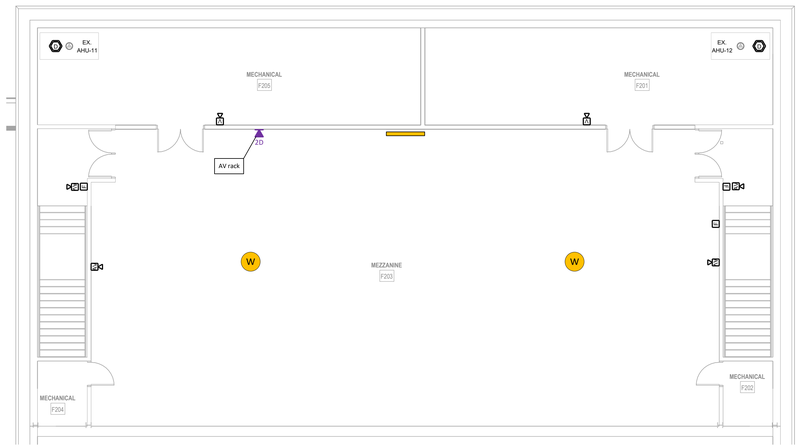
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UNIT 'F' POWER & COMMUNICATIONS PLAN

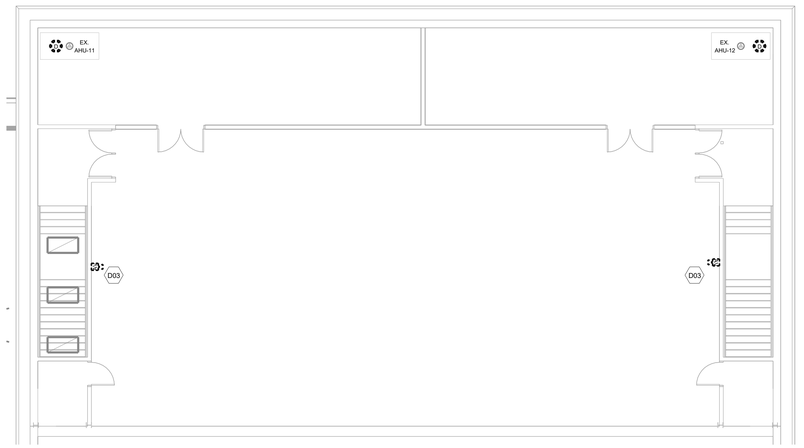
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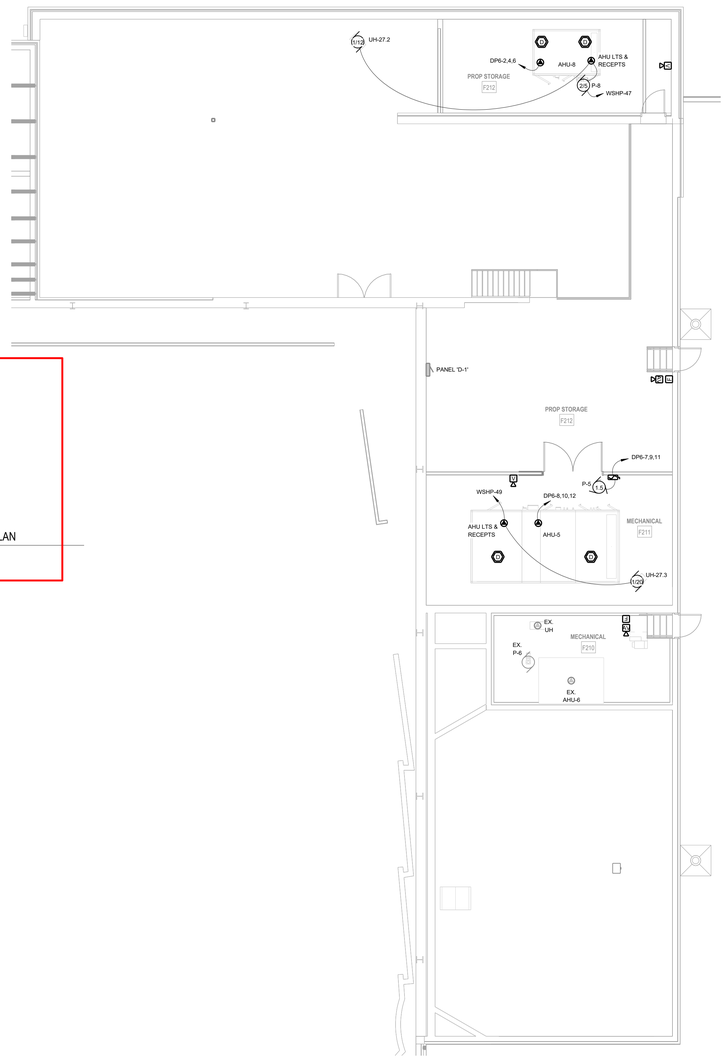
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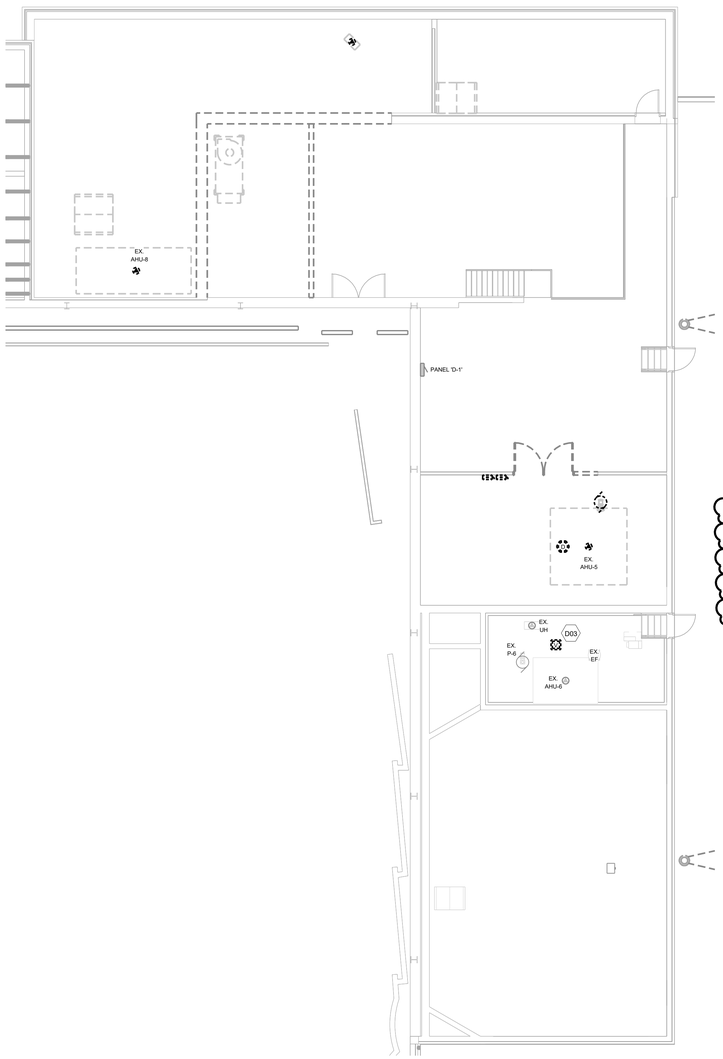
4 E2.1.2F — UNIT 'F' SOUTH GYM MEZZANINE POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



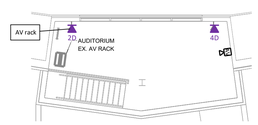
2 E2.1.2F — UNIT 'F' SOUTH GYM MEZZANINE DEMOLITION PLAN
1/8" = 1'-0"



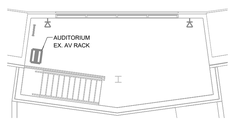
3 E2.1.2F — UNIT 'F' AUDITORIUM MEZZANINE POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



1 E2.1.2F — UNIT 'F' AUDITORIUM MEZZANINE DEMOLITION PLAN
1/8" = 1'-0"



6 E2.1.2F — UNIT 'F' AUDITORIUM SOUND BOOTH POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



5 E2.1.2F — UNIT 'F' AUDITORIUM SOUND BOOTH DEMOLITION PLAN
1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DISCONNECT AND REMOVE EXISTING LEGACY (NON-VOIP) TELEPHONE SYSTEMS EQUIPMENT AND CABLING INFRASTRUCTURE THROUGHOUT THE AREAS OF REMODELING. REMOVE CABLES BACK TO NEAREST POINT OF SPLICING OR TERMINATION. REFER TO SECTION 27 05 05 FOR FURTHER INFORMATION.
15. DISCONNECT AND REMOVE EXISTING CAREHAWK CLOCK/SPEAKER IN AREAS OF REWORK. CLEAN AND STORE IN SAFE LOCATION FOR REUSE.
16. DISCONNECT AND REMOVE EXISTING VIDEO DISTRIBUTION (CATV) SYSTEM, INCLUDING AMPLIFICATION AND HEAD-END PROCESSING EQUIPMENT, TRUNK CABLES, DROP CABLES, AND OUTLETS THROUGHOUT THE ENTIRE BUILDING. REFER TO SECTION 27 05 05 FOR FURTHER INFORMATION.
17. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.
18. DEMOLISH EXISTING FIRE ALARM HEAD END LEGACY SYSTEM. NEW SYSTEM IS INSTALLED. REMOVING LEGACY HEAD END AND ASSOCIATED DEVICES. NEW NOTIFICATION DEVICES SHALL BE TIED BACK TO NEWEST FIRE ALARM PANEL LOCATED IN FRONT OFFICE AREA.
19. DISCONNECT DEMO MECHANICAL EQUIPMENT. REFER TO MECHANICAL PLANS FOR SCOPE OF WORK.

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   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
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ELECTRICAL KEYNOTES

D03	DISCONNECT AND REMOVE EXISTING FIRE ALARM DEVICES COMPLETE BACK TO SOURCE. NEW FIRE ALARM SYSTEM AND DEVICES TO BE INSTALLED. REFER TO NEW PLANS FOR LAYOUT.

KEYPLAN



gmb

NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

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UNIT 'F' AUDITORIUM MEZZANINE ELECTRICAL PLAN

E2.1.2F

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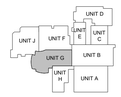


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   A. (REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.)
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
6. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
7. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
8. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 90°. COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

UNIT 'G' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"



KEYPLAN

gmb

NORTHERN HIGH SCHOOL RENOVATIONS

FOREST HILLS PUBLIC SCHOOLS

GRAND RAPIDS, MICHIGAN

ISSUANCES

10.13.2026BIDS & CONSTRUCTION

11.05.2026ADDENDUM 001

DRAWN BJE

REVIEWED PRH

PROJECT NO. 5-6457

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UNIT 'G' POWER & COMMUNICATIONS PLAN

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UNIT 'H' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL GENERAL-USE 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. REFER TO LIGHTING CONTROL SCHEDULES, GENERAL NOTES, AND SPECIFICATIONS FOR AUTOMATIC RECEPTACLE CONTROL REQUIREMENTS.
5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. [REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.]
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
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9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 96". COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

gmb

NORTHERN HIGH SCHOOL RENOVATIONS

FOREST HILLS PUBLIC SCHOOLS

GRAND RAPIDS, MICHIGAN

ISSUANCES

10.13.2026BIDS & CONSTRUCTION

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UNIT 'H' POWER & COMMUNICATIONS PLAN

KEYPLAN



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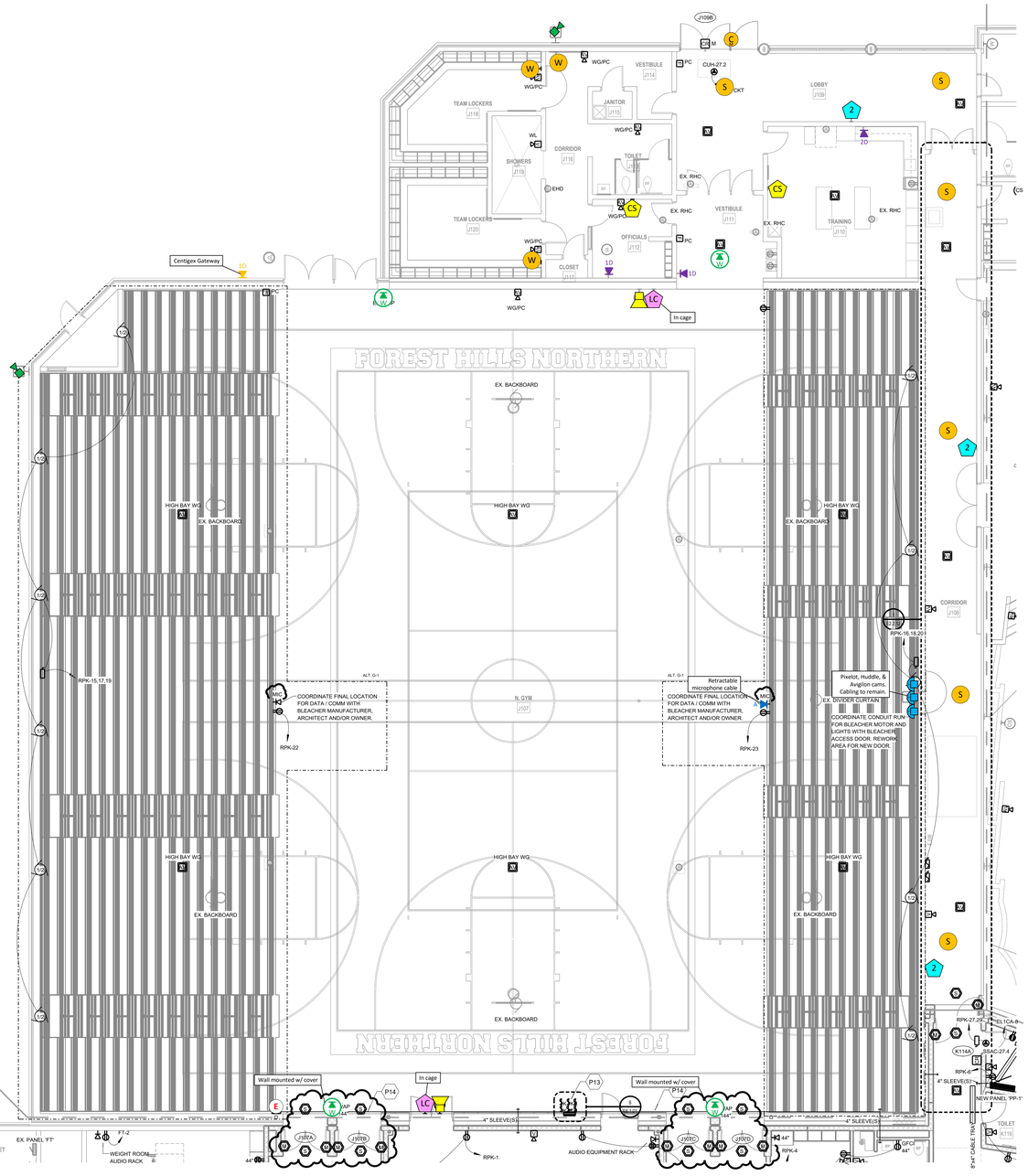
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POWER & COMMUNICATION GENERAL NOTES

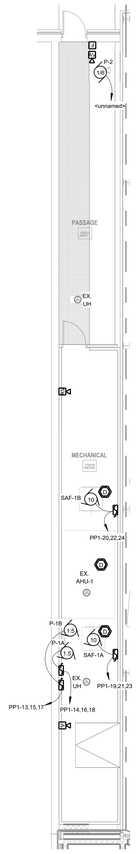
1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES - PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL GENERAL-USE 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. REFER TO LIGHTING CONTROL SCHEDULES, GENERAL NOTES, AND SPECIFICATIONS FOR AUTOMATIC RECEPTACLE CONTROL REQUIREMENTS.
5. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. [REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.]
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
6. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
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8. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
9. PROVIDE POWER OUTLET IN ALL CLASSROOMS AT 96". COORDINATE WITH OWNER'S TECHNOLOGY REP FOR EXACT LOCATION. PULL NEW CIRCUIT AND/OR EXTEND FROM EXISTING ROOM RECEPTACLE CIRCUIT. UTILIZE EXISTING VERTICAL RACEWAY IF APPLICABLE.

ELECTRICAL KEYNOTES

P13	CONTRACTOR TO FIELD INVESTIGATE WALL INTERIOR. IF NO CONFLICTS (PIPING OR OTHER OBSTRUCTIONS - RECESS NEW GYM CONTROL PANEL IN EXISTING CMU WALL. NO SURFACE RACEWAY. ROUTE NEW CONDUIT FROM NEW GYM CONTROL PANEL TO CEILING AND PROVIDE SPLICING TO EXISTING GYM EQUIPMENT (BACKBOARDS, DIVIDER CURTAIN).
P14	INSTALL NEW HORIZONTAL COMMUNICATION CONDUIT(S) TO SERVE COMMUNICATION DEVICES. ROUTE ABOVE DOORS IN A CLEAN MANNER TO DEVICES SHOWN ON PLANS. PAINT TO MATCH WALL.

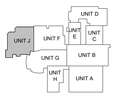


UNIT 'J' POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



UNIT 'J' NORTH GYM MEZZANINE POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

KEYPLAN



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NORTHERN HIGH SCHOOL RENOVATIONS
FOREST HILLS PUBLIC SCHOOLS
GRAND RAPIDS, MICHIGAN

ISSUANCES
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UNIT 'J' POWER & COMMUNICATIONS PLAN

E2.2.1J

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General Low-Voltage Notes

1. New access point. Access point to be provided by the District. two new cables to be provided by cabling contractor (black cable).
2. New security camera. Camera to be provided by District's video surveillance contractor. 1 new cable to be provided by cabling contractor (yellow cable).

POWER & COMMUNICATION GENERAL NOTES

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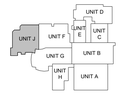
ELECTRICAL KEYNOTES

P07	INSTALL NEW PANEL 'PP-1', PP-1A, XFMR 'T-BP1A', & 'BP-1-K'.
P13	CONTRACTOR TO FIELD INVESTIGATE WALL INTERIOR. IF NO CONFLICTS (PIPING OR OTHER OBSTRUCTIONS - RECESS NEW GYM CONTROL PANEL IN EXISTING CMU WALL. NO SURFACE RACEWAY. ROUTE NEW CONDUIT FROM NEW GYM CONTROL PANEL TO CEILING AND PROVIDE SPLICING TO EXISTING GYM EQUIPMENT (BACKBOARDS, DIVIDER CURTAIN).....
P14	INSTALL NEW HORIZONTAL COMMUNICATION CONDUIT(S) TO SERVE COMMUNICATION DEVICES. ROUTE ABOVE DOORS IN A CLEAN MANNER TO DEVICES SHOWN ON PLANS. PAINT TO MATCH WALL.



UNIT 'K' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"



KEYPLAN

gmb

NORTHERN HIGH SCHOOL RENOVATIONS

FOREST HILLS PUBLIC SCHOOLS

GRAND RAPIDS, MICHIGAN

ISSUANCES

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11.05.2026ADDENDUM 001

DRAWN BJE

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UNIT 'K' POWER & COMMUNICATIONS PLAN

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