

# KLINGNER & ASSOCIATES, P.C.

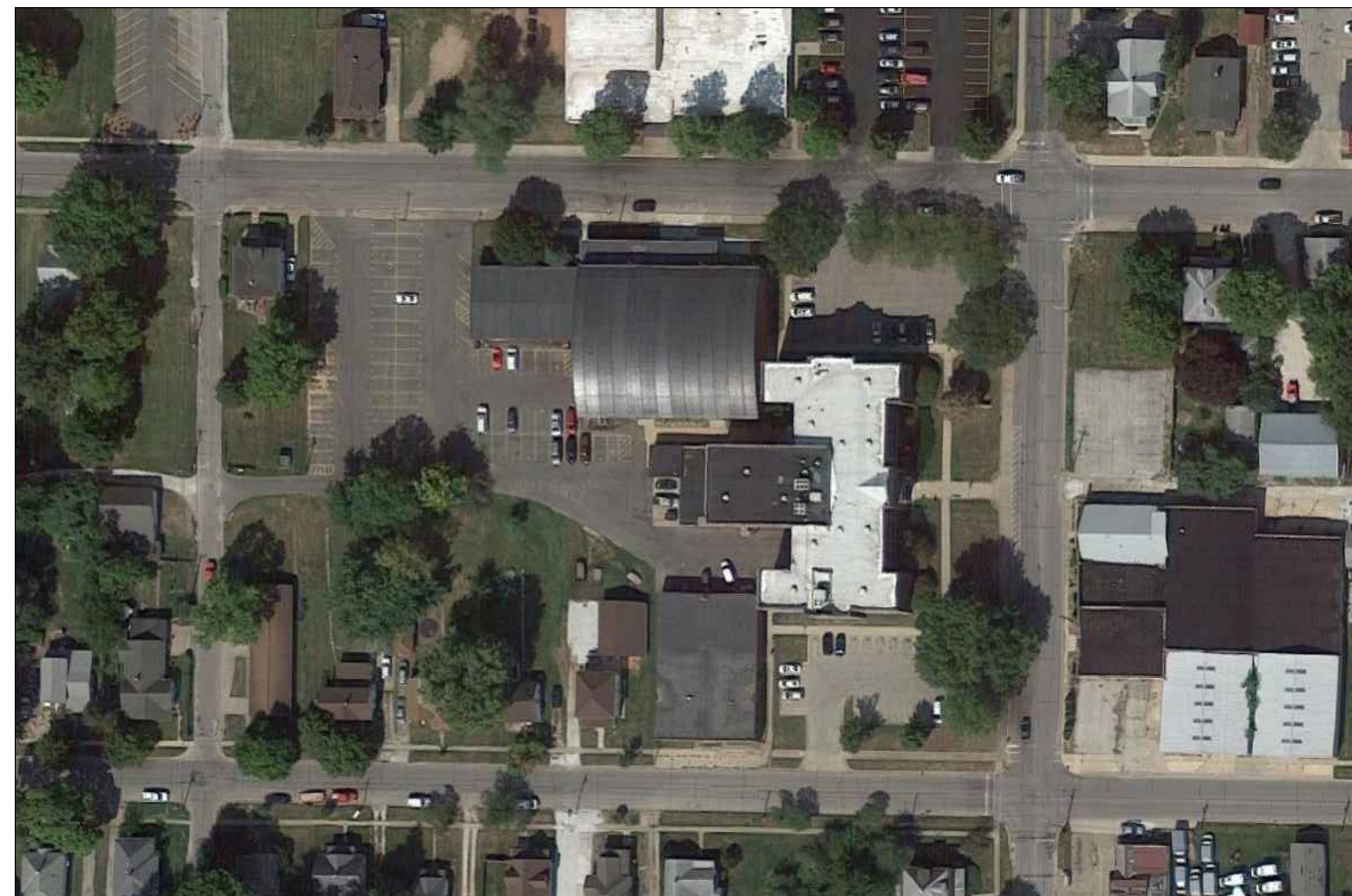
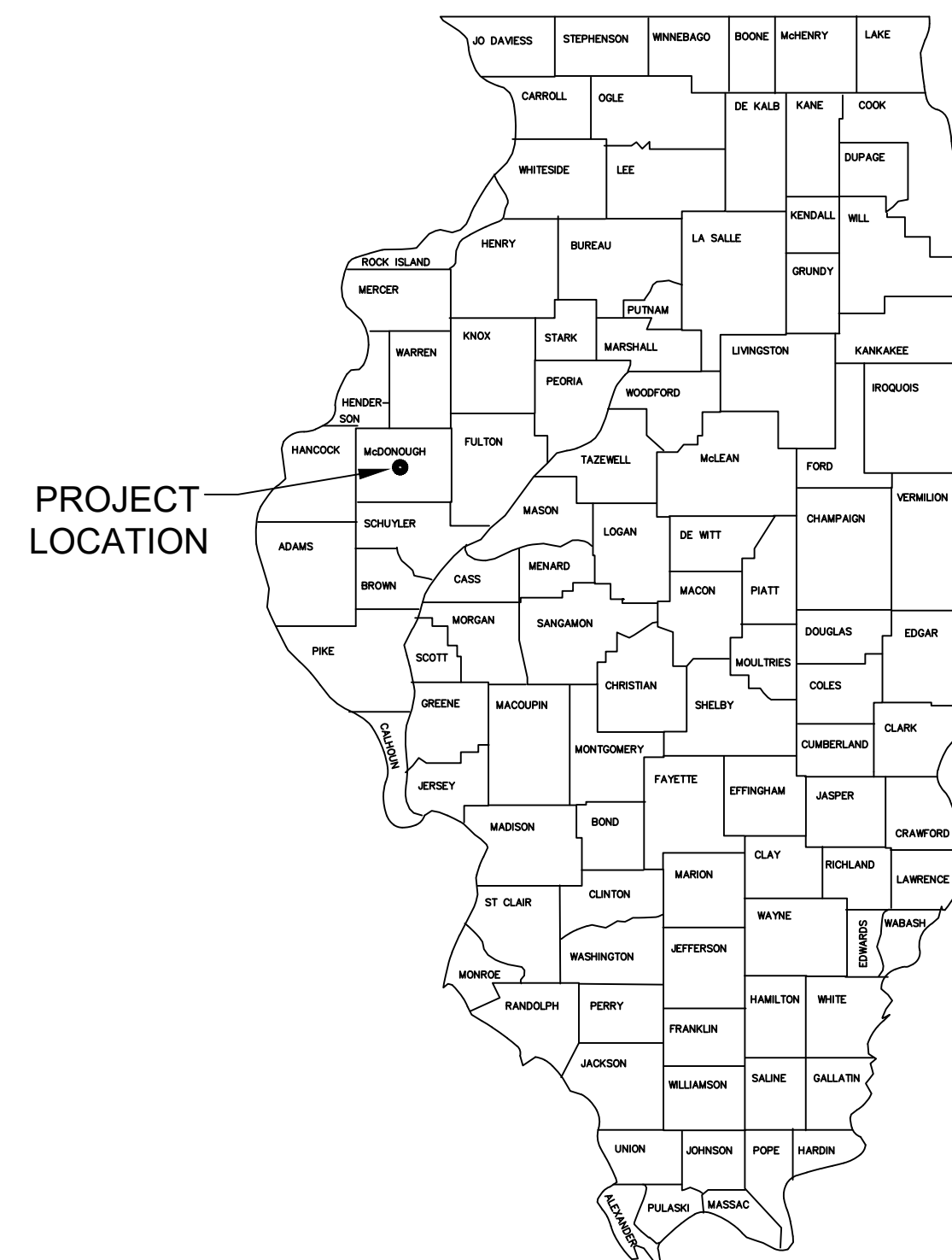
Engineers • Architects • Surveyors

■ 616 North 24th Street, Quincy, IL Ph (217)223-3670 - Fax (217)223-3603  
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 Internet Address: www.klingner.com

# MACOMB CUSD 185

## HVAC & ELECTRICAL IMPROVEMENTS TO WASHINGTON ST. GYM 323 W WASHINGTON ST, MACOMB, IL 61455

AUGUST 1, 2022



SITE MAP



### PROJECT LOCATION

323 W WASHINGTON ST  
MACOMB, IL 61455

### PROJECT STATUS

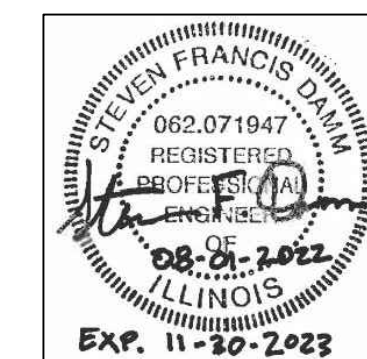
BID SET

PROJECT NO. 21-0155

### INDEX OF SHEETS

|      |   |
|------|---|
| G001 | COVER SHEET                             |
| D101 | MECHANICAL & ELECTRICAL DEMOLITION PLAN |
| M101 | MECHANICAL PLAN                         |
| M501 | MECHANICAL SCHEDULES AND DETAILS        |
| E101 | ELECTRICAL PLAN                         |
| E201 | ELECTRICAL SITE PLAN                    |

MECHANICAL / ELECTRICAL ENGINEER



STEVEN F. DAMM  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF ILLINOIS LICENSE NO. 062.071947  
LICENSE EXPIRES 11/30/2023

08/01/2022  
DATE

**KLINGNER & ASSOCIATES, P.C.**  
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 Davenport, IA, Hannibal, MO, Columbia, MO

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HVAC & ELECTRICAL IMPROVEMENTS  
 TO WASHINGTON ST. GYM  
 MACOMB CUSD 185  
 MACOMB, IL 61455

Non-Reduced Sheet Size: 24" x 36"

Full sized plans have been prepared using standard scales. Reduced size plans may not conform to standard scales.

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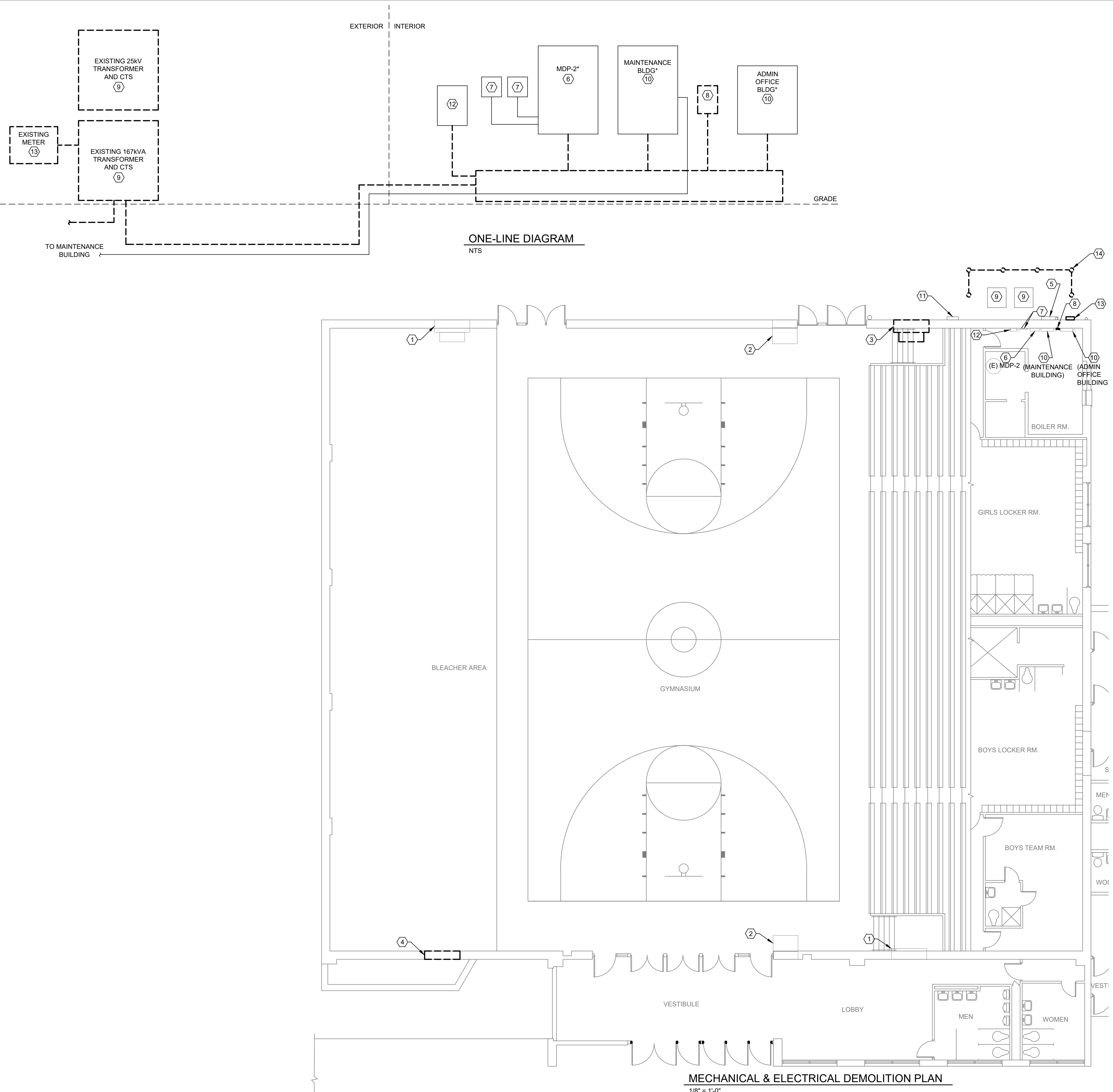
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SHEET TITLE  
COVER SHEET

PROJECT NO.  
21-0155

DRAWING ISSUED DATE:  
08/01/2022

SHEET  
**G001**



**EXISTING ELECTRICAL ELEVATION**  
NO SCALE

**MECH / ELEC KEY NOTES** (AS NOTED ON THIS SHEET)

- ① EXISTING VENTILATION EXHAUST FAN AND ASSOCIATED INTAKE LOUVER DAMPER TO REMAIN.
- ② EXISTING HEATING ONLY AHU TO REMAIN.
- ③ EXISTING VENTILATION EXHAUST FAN TO BE REMOVED. PREPARE FOR NEW WORK. ELECTRICAL CONTRACTOR TO DISCONNECT FAN AND REMOVE CONDUIT / WIRING.
- ④ EXISTING INTAKE LOUVER TO BE REMOVED. PREPARE FOR NEW WORK.
- ⑤ EXISTING GAS METER. PREPARE FOR NEW TIE-IN LOCATIONS.
- ⑥ EXISTING ELECTRICAL PANEL TO REMAIN. FEEDERS TO PANEL TO BE REMOVED. PREPARE FOR NEW WORK.
- ⑦ EXISTING FUSED DISCONNECT SWITCH TO REMAIN.
- ⑧ REMOVE EXISTING FUSED SERVICE DISCONNECT SWITCH AND ASSOCIATED SYSTEM IN ITS ENTIRETY.
- ⑨ EXISTING TRANSFORMER TO REMAIN UNTIL NEW SERVICE IS INSTALLED. COORDINATE STAGING OF NEW WORK WITH AMEREN AND OWNER TO MINIMIZE DOWNTIME.
- ⑩ EXISTING FUSED DISCONNECT SWITCH TO REMAIN. FEEDERS SERVING DISCONNECT SWITCH TO BE REMOVED. PREPARE FOR NEW WORK.
- ⑪ EXISTING DEMARCATION PANEL(S) TO REMAIN.
- ⑫ EXISTING DISCONNECT SWITCH SERVING WATER HEATER TO REMAIN. FEEDERS SERVING SWITCH TO BE REMOVED. PREPARE FOR NEW WORK.
- ⑬ EXISTING ELECTRICAL METER TO BE REMAIN. COORDINATE STAGING OF NEW WORK WITH AMEREN AND OWNER TO MINIMIZE DOWNTIME.
- ⑭ REMOVE EXISTING BOLLARD SYSTEM TO PREPARE FOR NEW ELECTRICAL AND HVAC WORK. PROVIDE TEMPORARY VEHICLE PROTECTION UNTIL NEW BOLLARD SYSTEM IS INSTALLED.

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**HVAC & ELECTRICAL IMPROVEMENTS TO WASHINGTON ST. GYM**  
**MACOMB CUSD 185**  
**MACOMB, IL 61455**

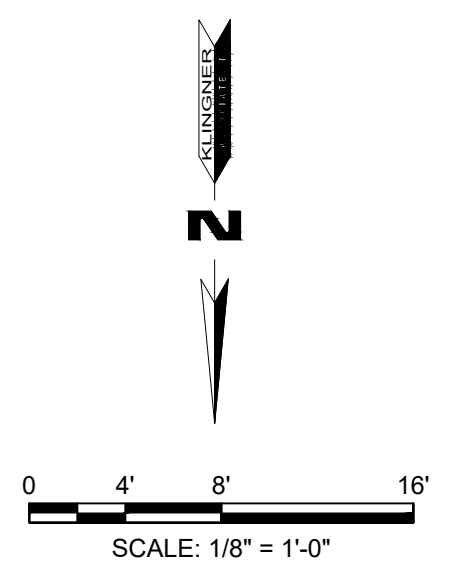
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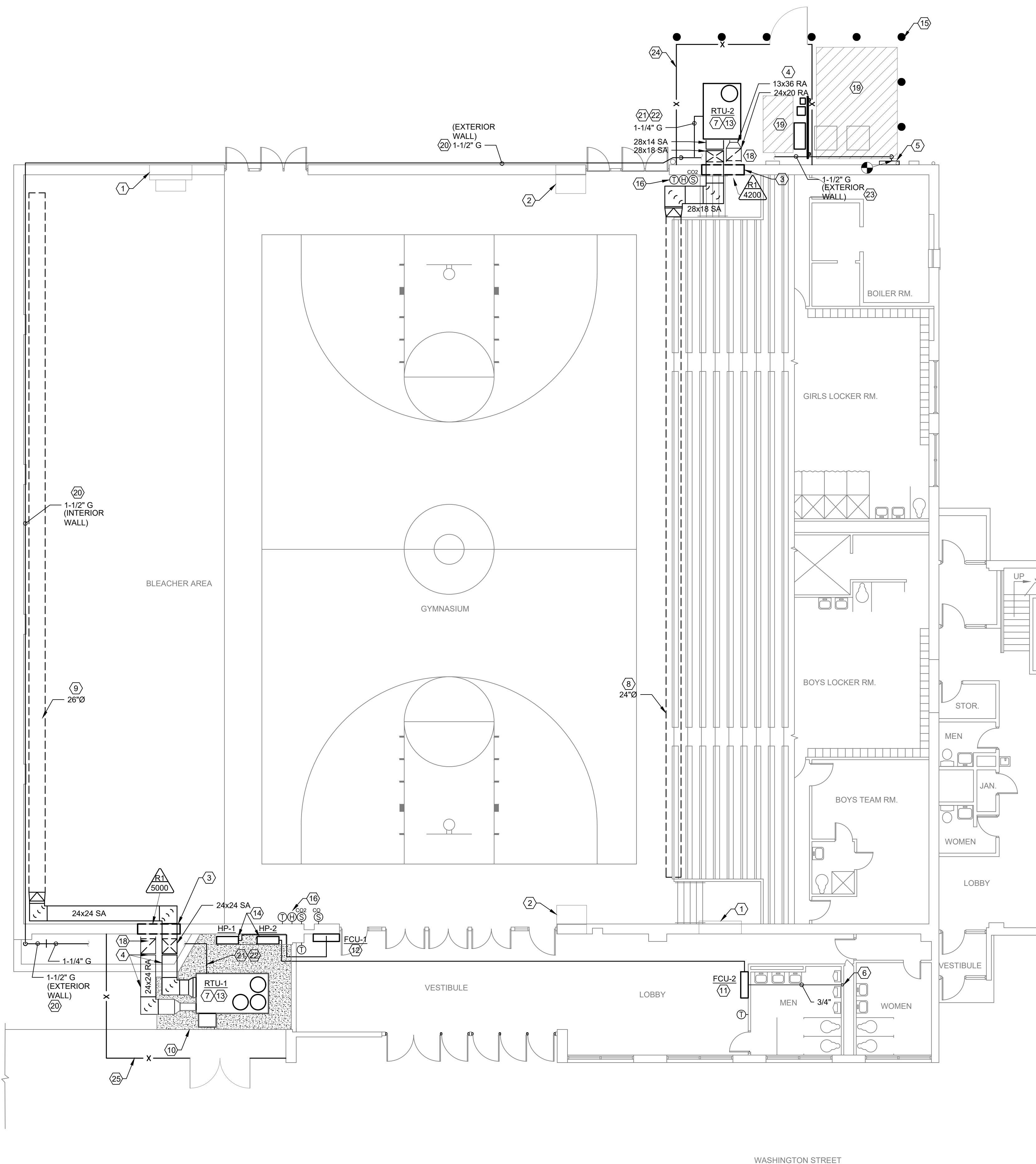
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SHEET TITLE  
**MECHANICAL & ELECTRICAL DEMOLITION PLAN**

PROJECT NO.  
21-0155  
DRAWING ISSUED DATE:  
09/01/2022

SHEET  
**D101**





MECHANICAL PLAN  
1/8" = 1'-0"

**MECHANICAL NOTES:**

1. APPLICABLE STANDARDS: NFPA 90A, NFPA 90B, SMACNA, ASHRAE, AND ALL OTHER STATE AND LOCAL CODES. DEVICES, APPARATUS, SYSTEMS, AND INSTALLATIONS SHALL BE ENTIRELY SUITABLE AND SAFE FOR EACH INTENDED APPLICATION AND BE IN FULL COMPLIANCE WITH APPLICABLE STANDARDS, REQUIREMENTS, RULES, REGULATIONS, CODES, STATUTES, ORDINANCES, ETC. OF MUNICIPAL, COUNTY, AND STATE GOVERNMENTS, OWNER'S INSURANCE COMPANY, LOCAL UTILITIES, AND LABOR REGULATIONS. ALL MECHANICAL INSTALLATIONS SHALL ALSO COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS/INSTRUCTIONS.
2. LOW PRESSURE DUCTWORK SHALL COMPLY WITH THE LATEST APPLICABLE SHEET METAL AND AIR CONDITIONING CONTRACTORS ASSOCIATION (SMACNA) STANDARDS AND RECOMMENDATIONS.
3. RECTANGULAR DUCTS, TURNING VANES AND VOLUME DAMPERS SHALL BE GALVANIZED STEEL METAL INDOORS UNLESS NOTED OTHERWISE.
4. INSTALL TEST HOLES IN LOCATIONS REQUIRED FOR AIR BALANCING.
5. ALL JOINTS AND SEAMS SHALL BE SEALED WITH TAPE AND MASTIC.
6. INSTALLATION OF MECHANICAL DEVICES SHALL BE COORDINATED WITH THE BUILDING STRUCTURE, LIGHTING FIXTURES, PIPING, CONDUIT, S.A.T. CEILING AND OTHER TRADES AS NECESSARY.
7. FINISHES: FURNISH ALL SUPPLY, RETURN, AND EXHAUST AIR DIFFUSERS, LOUVERS, AND GRILLES WITH PRIME COATED AND WHITE BAKED ENAMEL FINISH COAT, UNLESS SPECIFIED OTHERWISE.
8. MECHANICAL EQUIPMENT SUCH AS RTUs, ETC. SHALL BE FURNISHED AS INDICATED IN EQUIPMENT SCHEDULES.
9. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MECHANICAL WIRING, INCLUDING CONTROLS FOR STATS, RTUs, DAMPERS, ETC.
10. UPON COMPLETION OF CONSTRUCTION, REPLACE ALL FILTERS.
11. ALL 90 DEGREE BENDS IN AIR DUCTS SHALL HAVE TURNING VANES. VANES SHALL BE DOUBLE THICKNESS WITH RADIUS = 2.25" AND SPACING = 4".
12. ALL MAIN AND BRANCH DUCTS SHALL BE RECTANGULAR GALV. STEEL SIZED AS NOTED ON THE PLANS. SIZE SHALL REFER TO UNOBSTRUCTED INTERNAL AIRFLOW AREA.
13. A FLEXIBLE CONNECTION BETWEEN MECHANICAL UNITS AND BOTH SUPPLY AND RETURN AIR DUCTWORK IS REQUIRED FOR VIBRATION ISOLATION AND NOISE REDUCTION.
14. TESTING AND BALANCING SHALL BE PERFORMED BY AN INDEPENDENT TAB CONTRACTOR WITH AT LEAST FIVE YEARS OF EXPERIENCE AND UNDER THE SUPERVISION OF A LICENSED ENGINEER.
15. HVAC CONTROL CONTRACTOR FOR SCHOOL DISTRICT IS ECSI. CONTACT IS JOHN EVANS AT JEVANS@ECSI-ALC.COM.

**MECHANICAL KEY NOTES (AS NOTED ON THIS SHEET)**

1. EXISTING VENTILATION EXHAUST FAN AND ASSOCIATED INTAKE LOUVER DAMPER TO REMAIN.
2. EXISTING HEATING ONLY AHU TO REMAIN.
3. NEW SUPPLY AND RETURN DUCTWORK TO UTILIZE EXTERIOR WALL OPENING WHERE LOUVER WAS REMOVED. PROVIDE WEATHERPROOF PRE-INSULATED METAL PANEL SYSTEM TO INTEGRATE NEW SUPPLY AND RETURN DUCTWORK.
4. EXTERIOR DUCTWORK TO BE THERMADUCT OR EQUAL. DUCT TO BE ANCHORED TO UNISTRUT FLOOR AND WALL SUPPORT SYSTEM.
5. EXISTING GAS METER (7" W.C. DELIVERY PRESSURE).
6. PROVIDE HUB DRAIN PER CONDENSATE WET VENT DETAIL ON SHEET M501
7. INSTALL RTU ON CURB ANCHORED TO GRADE.
8. INSTALL DUCTSOX FABRIC DUCTWORK SYSTEM ALONG EXISTING TIE-ROD SUPPORT. PROVIDE STANDARD LINEAR VENT PERFORATIONS TO PROVIDE UNIFORM 4200 CFM THROUGH LENGTH OF DUCTWORK. PROVIDE ORANGE FABRIC DUCTWORK.
9. INSTALL DUCTSOX FABRIC DUCTWORK SYSTEM TO WALL ANCHORS. PROVIDE STANDARD LINEAR VENT PERFORATIONS TO PROVIDE UNIFORM 5000 CFM THROUGH LENGTH OF DUCTWORK. PROVIDE ORANGE FABRIC DUCTWORK.
10. EXTEND CONCRETE PAD WITHIN AREA SHOWN HATCHED. PROVIDE 4" THICK CONCRETE SLAB WITH #4S @ 18" O.C., E.W., CENTERED IN SLAB, ON 6" COMPACTED AGGREGATE. PROVIDE 12" THICKENED EDGE.
11. INSTALL FAN COIL UNIT AS HIGH AS POSSIBLE ON WALL. ROUTE CONDENSATE PIPING TO WET VENT. SEE DETAIL.
12. INSTALL FAN COIL UNIT AS HIGH AS POSSIBLE ON WALL. ROUTE CONDENSATE PIPING TO SPILL ON GRADE.
13. PROVIDE CONDENSATE TRAP PER MANUFACTURERS RECOMMENDATIONS.
14. INSTALL CONDENSING UNIT ON GROUND SUPPORT. RECTORSEAL BIGFOOT, OR EQUAL.
15. PROVIDE BOLLARD AT 6'-0" ON CENTER. SEE DETAIL. COORDINATE PLACEMENT OF BOLLARDS WITH ELECTRICAL CONTRACTOR.
16. PROVIDE NEW SENSORS LOCATED ON EXTERIOR WALL ON AN INSULATED BASE. PROVIDE PROTECTIVE COVER FOR NEW THERMOSTATS.
17. NOT USED.
18. TRANSITION AS REQUIRED TO RETURN AIR GRILLE. ALL EXPOSED SURFACES TO EXTERIOR SHALL BE PROVIDED WITH MINIMUM R-19 INSULATED PANELS.
19. MAINTAIN ELECTRICAL EQUIPMENT CLEARANCES. REFER TO ELECTRICAL DRAWINGS.
20. ANCHOR PIPING TO WALL. PAINT TO MATCH EXISTING WALL.
21. ROUTE PIPING ON GROUND MOUNTED SUPPORTS.
22. REFER TO GAS CONNECTION DETAIL ON SHEET M501.
23. COORDINATE COMPLETE ROUTING OF GAS PIPING WITH EXISTING AND NEW SYSTEMS.
24. 6' HIGH NOMINAL 16' X 18' ENCLOSURE CHAIN LINK FENCE 5' SINGLE GATE. VERIFY GATE LOCATION WITH SERVICE SIDE OF UNIT.
25. 6' HIGH NOMINAL 16' X 24' ENCLOSURE, 8' DOUBLE GATE, BLACK VINYL COVER, BLACK VISION SLATS.

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**HVAC & ELECTRICAL IMPROVEMENTS TO WASHINGTON ST. GYM**  
MACOMB CUSD 185  
MACOMB, IL 61455

|            |            |
|------------|------------|
| DESIGNED   | APW        |
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| PROJECT NO.          | 21-0155    |
| DRAWING ISSUED DATE: | 08/01/2022 |
| SHEET                | M101       |



| ROOF TOP UNIT SCHEDULE |              |          |          |            |     |     |       |           |      |              |                |          |                   |      |                  |             |                   |                   |                  |        |      |            |     |      |       |
|------------------------|--------------|----------|----------|------------|-----|-----|-------|-----------|------|--------------|----------------|----------|-------------------|------|------------------|-------------|-------------------|-------------------|------------------|--------|------|------------|-----|------|-------|
| MARK                   | MANUFACTURER | MODEL    | SERVES   | SUPPLY FAN |     |     |       |           |      | DX COOLING   |                |          |                   |      |                  | GAS HEATING |                   |                   |                  | WEIGHT |      | ELECTRICAL |     |      | NOTES |
|                        |              |          |          | FLOW       | ESP | TSP | MOTOR | MOTOR BHP | FAN  | AMBIENT TEMP | CAPACITY (MBH) |          | ENTERING AIR TEMP |      | LEAVING AIR TEMP |             | CAPACITY IN / OUT | ENTERING AIR TEMP | LEAVING AIR TEMP | STAGES | LBS  | VOLTAGE    | MCA | MCOP |       |
|                        |              |          |          | CFM        | WG  | WG  | HP    | HP        | TYPE | "F           | TOTAL          | SENSIBLE | DB                | WB   | DB               | WB          | MBH               | DB                | DB               |        |      |            |     |      |       |
| RTU-1                  | CARRIER      | 48TCEE16 | GYM-WEST | 5000       | 1.4 | 3   | 5     | 3.3       | FC   | 95           | 179.1          | 126.1    | 80                | 67   | 56.6             | 56.1        | 240 / 195         | 65                | 101.1            | 2      | 1167 | 240/60/3   | 72  | 80   | 1 - 9 |
| RTU-2                  | CARRIER      | 48TCEE14 | GYM-EAST | 4200       | 1.4 | 3   | 5     | 3.4       | FC   | 95           | 145.4          | 98.7     | 80.9              | 67.6 | 59.1             | 58.6        | 224 / 184         | 65                | 105.6            | 2      | 1380 | 240/60/3   | 65  | 80   | 1 - 9 |

1. PROVIDE SINGLE ZONE VAV UNIT
2. PROVIDE VFD SUPPLY FAN WITH SHAFT GROUNDING
3. PROVIDE CONDENSER COIL HAIL GUARD
4. PROVIDE (2) STAGE COOLING WITH HUMIDIFIER
5. PROVIDE TEMP HUMIDITY AND CO2 SENSOR. COORDINATE WITH TEMPERATURE CONTROL CONTRACTOR.
6. PROVIDE UNIT MOUNTED NEMA 3R NON-FUSED DISCONNECT SWITCH
7. PROVIDE POWERED CONVENIENCE OUTLET
8. PROVIDE ECONOMIZER
9. PROVIDE 20" TALL ROOF CURB TO BE ANCHORED TO GRADE.
10. PROVIDE WITH AIR PURIFICATION GPS - GLOBAL PLASMA SOLUTIONS MODEL: IMOD. UL 2998 OZONE FREE.

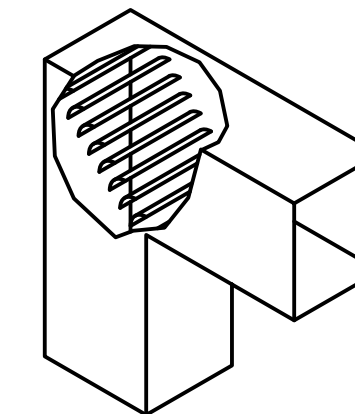
| HEAT PUMP SCHEDULE |              |                 |       |                          |                         |                          |                         |             |             |                   |         |       |     |            |             |          |
|--------------------|--------------|-----------------|-------|--------------------------|-------------------------|--------------------------|-------------------------|-------------|-------------|-------------------|---------|-------|-----|------------|-------------|----------|
| MARK               | MANUFACTURER | MODEL           | COMB% | COOLING DESIGN TEMP (F°) | COOLING CAPACITY (BTUH) | HEATING DESIGN TEMP (F°) | HEATING CAPACITY (BTUH) | SOUND (dBA) | PIPING (FT) | REFRIGERANT (LBS) | PHASE   |       |     |            |             | COMMENTS |
|                    |              |                 |       |                          |                         |                          |                         |             |             |                   | VOLTAGE | PHASE | MCA | RUN (AMPS) | MCOP (AMPS) |          |
| HP-1               | CARRIER      | RAV-SP240AT2-UL | 100   | 100                      | 25,000                  | 5                        | 26,400                  | 50          | -           | -                 | 240     | 1Ø    | 30  | -          | 40          | 1,2      |
| HP-2               | CARRIER      | RAV-SP240AT2-UL | 100   | 100                      | 25,000                  | 5                        | 26,400                  | 50          | -           | -                 | 240     | 1Ø    | 30  | -          | 40          | 1,2      |

1. POWER FAN COIL UNIT FROM OUTDOOR HEAT PUMP.
2. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.

| FAN COIL UNIT SCHEDULE |              |                 |               |                               |                                  |                               |             |              |                 |          |  |
|------------------------|--------------|-----------------|---------------|-------------------------------|----------------------------------|-------------------------------|-------------|--------------|-----------------|----------|--|
| MARK                   | MANUFACTURER | MODEL           | AIRFLOW (CFM) | TOTAL COOLING CAPACITY (BTUH) | SENSIBLE COOLING CAPACITY (BTUH) | TOTAL HEATING CAPACITY (BTUH) | SOUND (dBA) | WEIGHT (LBS) | CONDENSATE PUMP | COMMENTS |  |
| FCU-1                  | CARRIER      | RAV-SP240KRT-UL | 530           | 25,000                        | 25,000                           | 26,400                        | 50          | 31           | YES             | 1,2,3,4  |  |
| FCU-2                  | CARRIER      | RAV-SP240KRT-UL | 530           | 25,000                        | 25,000                           | 26,400                        | 50          | 31           | YES             | 1,2,3,4  |  |

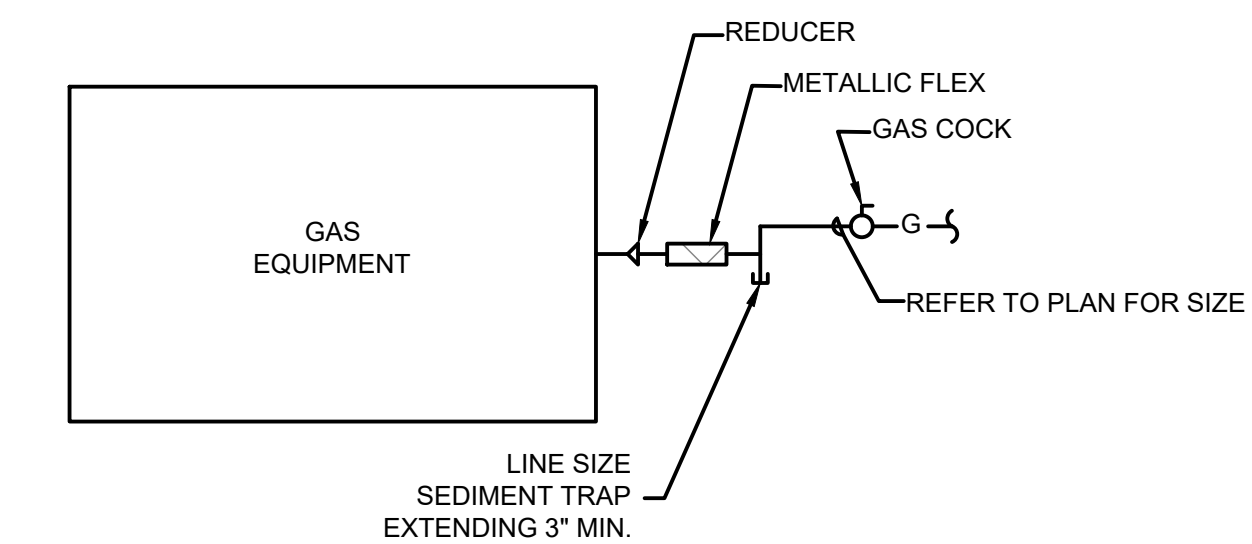
1. POWER FAN COIL UNIT FROM OUTDOOR VRF HEAT PUMP.
2. PROVIDE WITH AIR PURIFICATION GPS - GLOBAL PLASMA SOLUTIONS, MODEL: GPS-FC-2. UL 2998 OZONE FREE.
3. PROVIDE WIRED CONTROLLER RBC-AMT3ZUL.
4. SIZE REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS.

| MECHANICAL DIFFUSER/GRILLE SCHEDULE |                                  |              |              |                |         |         |            |            |         |        |                      |
|-------------------------------------|----------------------------------|--------------|--------------|----------------|---------|---------|------------|------------|---------|--------|----------------------|
| CALLOUT                             | TYPE                             | MANUFACTURER | MODEL NUMBER | MAX FLOW (CFM) | DUCT    | FACE    | FRAME SIZE | FRAME TYPE | MAX NC. | FINISH | COMMENTS             |
| R1                                  | HEAVY DUTY RETURN GRILLE - STEEL | TITUS        | 33RL         | 5000           | 48"x48" | 50"x50" | -          | SURFACE    | 20      | WHITE  | VERIFY SIZE IN FIELD |

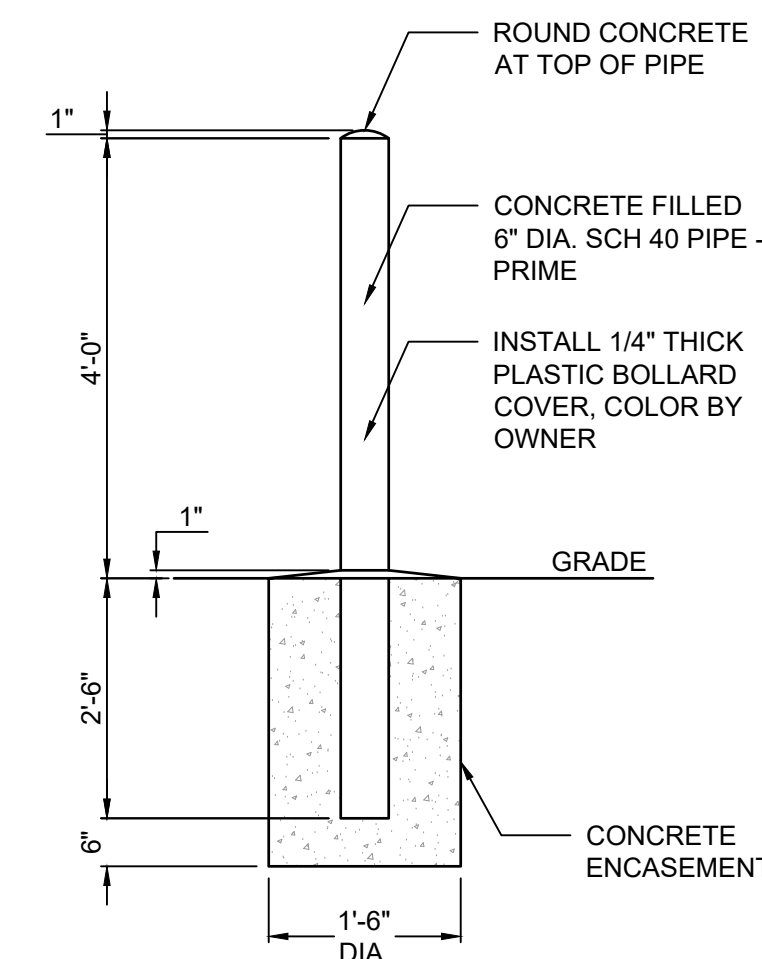


NOTE:  
ALL DUCT 90° ELBOWS SHALL BE RADIUS ELBOWS UNLESS CLEARANCES REQUIRE A SQUARE RADIUS. ALL SQUARE RADIUS ELBOWS SHALL INCLUDE TURNING VANES.

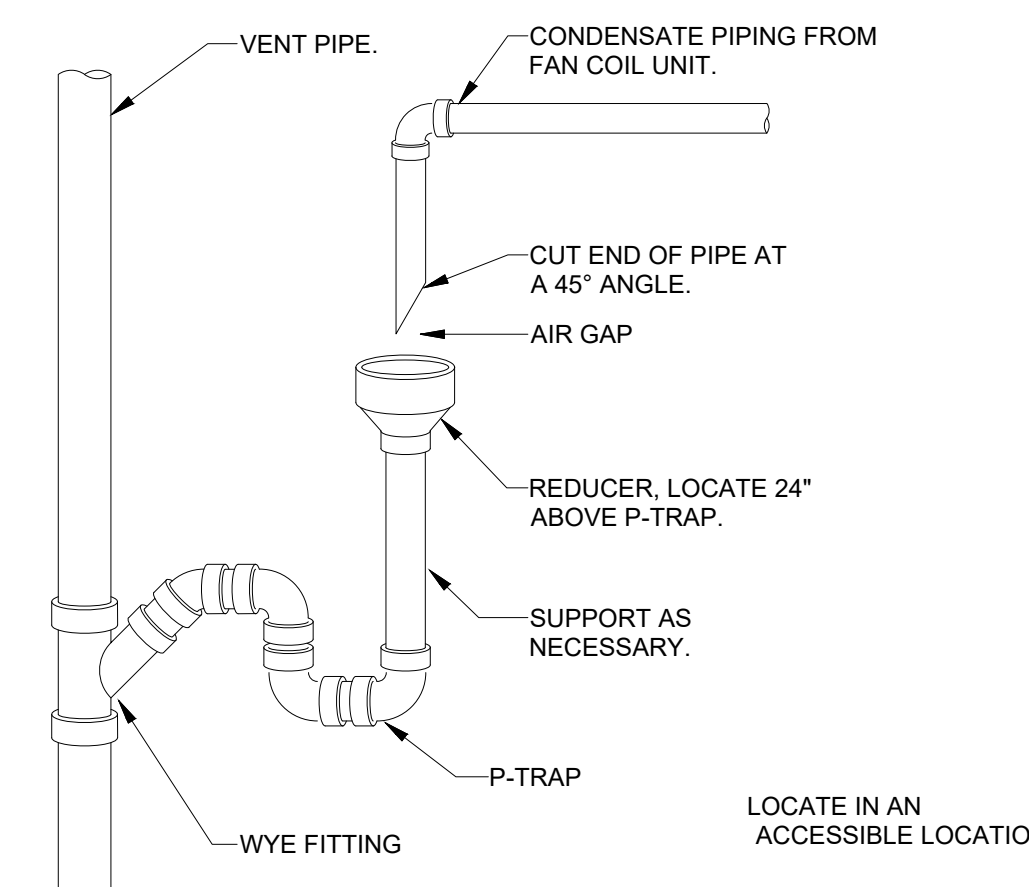
SQUARE THROAT ELBOW WITH VANES (TYP)  
N.T.S.



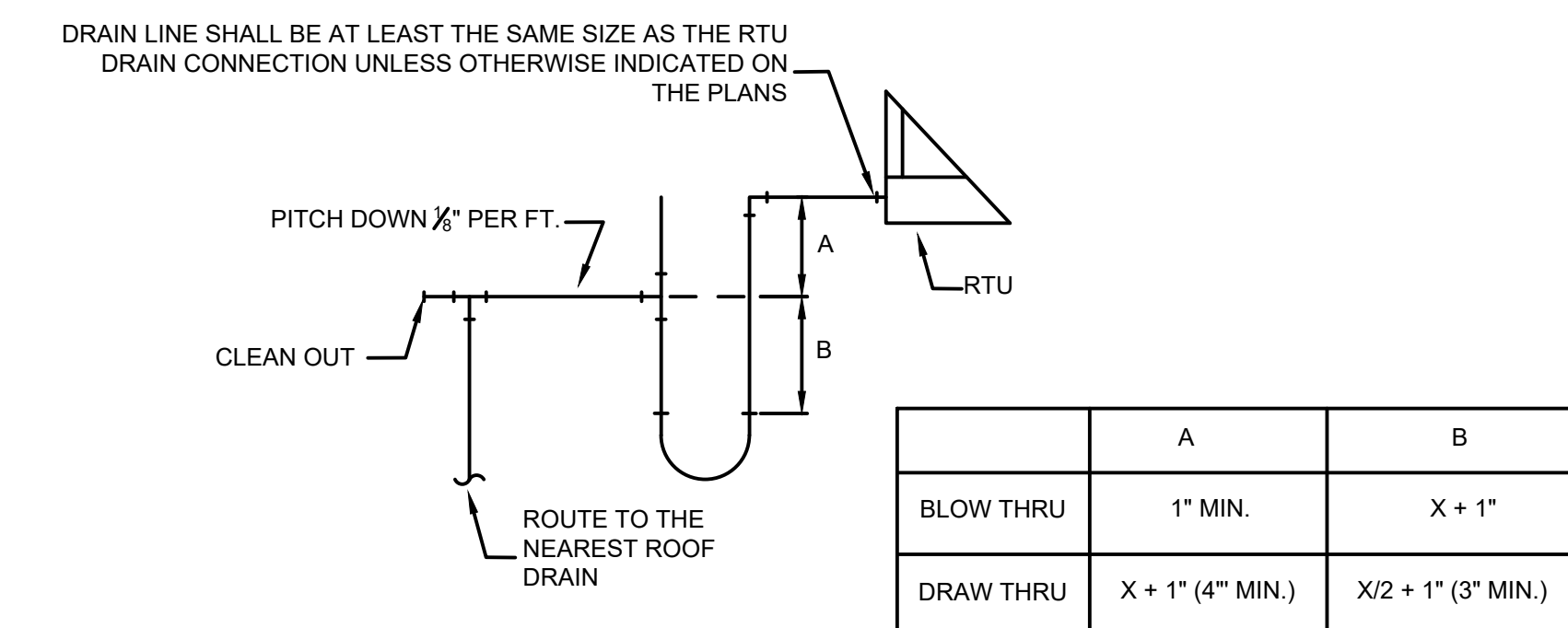
GAS CONNECTION  
N.T.S.



CONCRETE BOLLARD  
N.T.S.



CONDENSATION WET VENT  
N.T.S.



ROOF TOP UNIT CONDENSATE DRAIN TRAP DETAIL  
N.T.S.

|           | A                | B                  |
|-----------|------------------|--------------------|
| BLOW THRU | 1" MIN.          | X + 1"             |
| DRAW THRU | X + 1" (4" MIN.) | X/2 + 1" (3" MIN.) |

NOTES: X= TOTAL STATIC PRESSURE OF AHU SUPPLY FAN. REFER TO SCHEDULE.

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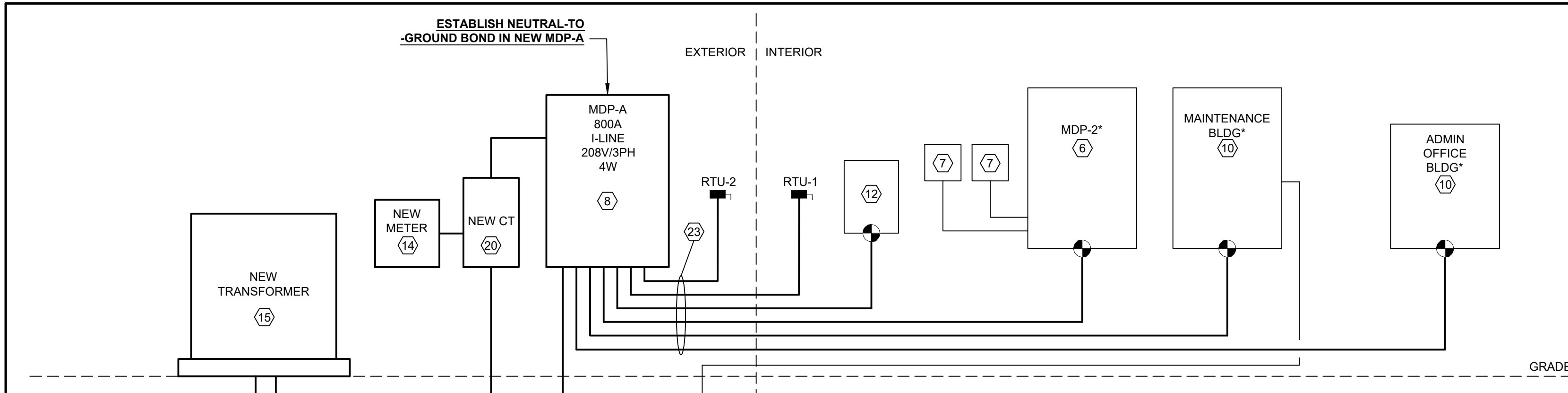
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| SFD      | 07/29/2022 |

SHEET TITLE  
**MECHANICAL SCHEDULES AND DETAILS**

PROJECT NO.  
21-0155  
DRAWING ISSUED DATE:  
08/01/2022

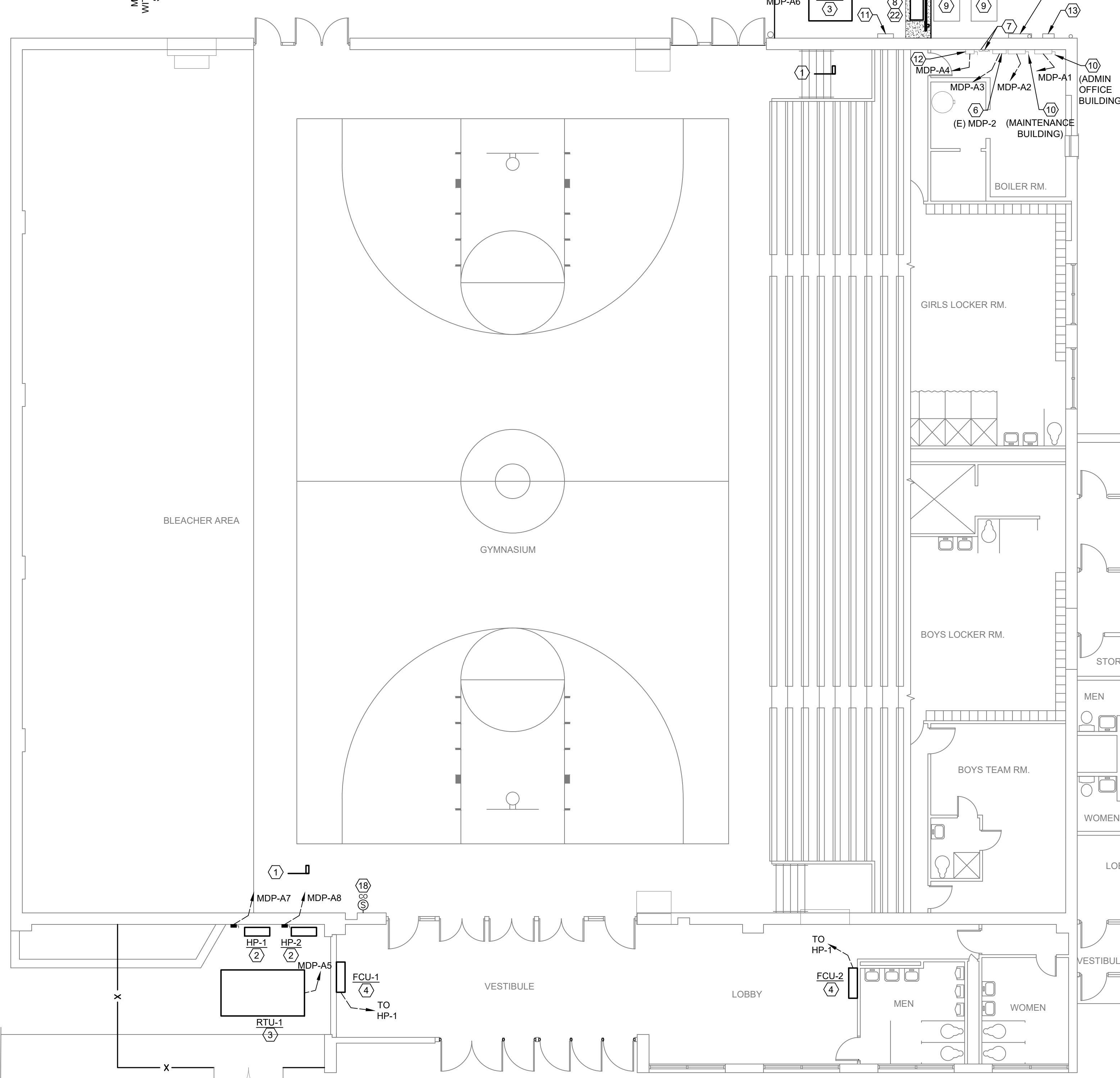
SHEET  
**M501**



**ONE-LINE DIAGRAM**  
NTS

| PANELBOARD SCHEDULE             |                                   | LOCATION: OUTDOORS |            |                 | VOLTS: 120/208 |     |         | PANEL TYPE: MAIN CB |  |
|---------------------------------|-----------------------------------|--------------------|------------|-----------------|----------------|-----|---------|---------------------|--|
| MAIN DISTRIBUTION PANEL "MDP-A" |                                   | MOUNTING: SURFACE  |            |                 | PHASES: 3      |     |         | MAINS RATING: 800 A |  |
|                                 |                                   | ENCLOSURE: NEMA 3  |            |                 | WIRES: 4       |     |         | MAIN BREAKER: 800 A |  |
| ITEM NO.                        | PURPOSE                           | # OF POLES         | FRAME SIZE | CIRCUIT BREAKER | WIRE           | GND | CONDUIT | REMARKS             |  |
| 1                               | EXISTING ADMIN OFFICES            | 3                  | 400        | 250             | **             | **  | PER NEC |                     |  |
| 2                               | EXISTING MAINTENANCE BUILDING     | 3                  | 400        | 400             | **             | **  | PER NEC |                     |  |
| 3                               | EXISTING GYM AREA (MDP-2)         | 2                  | 400        | 400             | **             | **  | PER NEC |                     |  |
| 4                               | EXISTING ELECTRIC WATER HEATER    | 3                  | 400        | 150"            | **             | **  | PER NEC |                     |  |
| 5                               | RTU-1                             | 3                  | 125        | 80"             | 3/0            | 8   | 1"      |                     |  |
| 6                               | RTU-2                             | 3                  | 125        | 80"             | 3/0            | 8   | 1"      |                     |  |
| 7                               | HP-1                              | 2                  | -          | 40"             | 8              | 10  | 0.75"   |                     |  |
| 8                               | HP-2                              | 2                  | -          | 40"             | 8              | 10  | 0.75"   |                     |  |
| 9                               | SPARE                             | 3                  | 400        | 250             |                |     |         |                     |  |
| 10                              | ADDITIONAL SPACES (QUANTITY OF 4) | 3                  | 400        |                 |                |     |         |                     |  |

\* VERIFY BREAKER SIZE WITH ACTUAL EQUIPMENT SUBMITTED.  
\*\* VERIFY EXISTING FEEDER SIZE(S) AND SET(S). REPLACE FEEDERS FROM NEW MDP-A WITH NEW TO MATCH EXISTING FEEDER SIZE(S) AND SET(S).



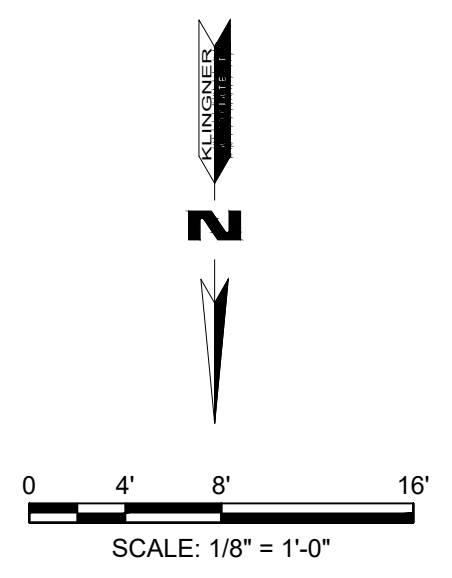
**ELECTRICAL PLAN**  
1/8" = 1'-0"

**ELECTRICAL NOTES**

- APPLICABLE STANDARDS: NFPA-70, NFPA-101, STATE BUILDING CODES, AND THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1971 AND ALL AMENDMENTS THERETO; EQUIPMENT, DEVICES, APPARATUS, SYSTEMS, AND INSTALLATIONS SHALL BE ENTIRELY SUITABLE AND SAFE FOR EACH INTENDED APPLICATION AND BE IN FULL COMPLIANCE WITH APPLICABLE STANDARDS, REQUIREMENTS, RULES, REGULATIONS, CODES, STATUTES, ORDINANCES, ETC., OF MUNICIPAL, COUNTY, AND STATE GOVERNMENTS, OWNER'S INSURANCE COMPANY, LOCAL UTILITIES, AND LABOR REGULATIONS. NOTHING CONTAINED IN THESE PLANS AND SPECIFICATIONS SHALL BE CONSTRUED TO CONFLICT WITH THESE LAWS, CODES, AND ORDINANCES.
- DRAWINGS ARE SCHEMATIC AND SHOW APPROXIMATE LOCATIONS OF ELECTRICAL EQUIPMENT. EXACT LOCATIONS SHALL BE COORDINATED BY THE CONTRACTOR AND VERIFIED IN THE FIELD PRIOR TO ROUGH-IN.
- INSTALLATIONS WHICH INCLUDE ELECTRICAL FIXTURES, DEVICES, CONDUIT, SWITCHES, PANELS, HANGERS, WIRE, CABLE, STANDARDS, ETC., MUST BE ENTIRELY SUITABLE FOR TEMPERATURES, HUMIDITY, DAMP AREAS, VOLTAGE, FREQUENCY, AND ALL INSTALLATION CONDITIONS ENCOUNTERED.
- INSTALLATION MUST BE ENTIRELY SAFE IN EVERY RESPECT, AND MUST NOT CREATE ANY CONDITIONS OF ANY KIND WHICH WILL BE HARMFUL TO ANY OCCUPANT OF THE BUILDING. IF CONTRACTOR BELIEVES THAT INSTALLATION WILL NOT BE SAFE FOR ALL PEOPLE, HE/SHE SHALL SO REPORT IN WRITING TO ENGINEER BEFORE ANY EQUIPMENT IS PURCHASED OR WORK IS INSTALLED, GIVING EXACT RECOMMENDATIONS, AND REASONS FOR THEM.
- GROUNDING: ALL GROUNDING SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).
- INSTALLATION OF ELECTRICAL DEVICES SHALL BE COORDINATED WITH OTHER TRADES AS NECESSARY TO PREVENT ANY CONFLICTS DURING CONSTRUCTION.
- LOW VOLTAGE CONDUIT AND JUNCTION BOXES SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
- EQUIPMENT GROUNDING CONDUCTORS SHALL BE PULLED WITH ALL BRANCH CIRCUITS. CONDUIT SHALL NOT BE USED AS A GROUND U.N.O.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS, ACCESSORIES, TOOLS, EQUIPMENT, TRANSPORTATION, LABOR, SERVICES AND OPERATIONS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM.
- ELECTRICAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ARRANGE FOR ALL INSPECTIONS REQUIRED BY STATE OR LOCAL AUTHORITIES.
- MATERIALS MUST BE NEW, IN FIRST CLASS CONDITION.
- CONDUIT SHALL BE SEPARATELY HUNG AND ANCHORED, FREE TO EXPAND AND CONTRACT QUIETLY, WITHOUT IMPOSING STRAINS ON STRUCTURE, DEVICES, AND EQUIPMENT. CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.
- CONTRACTOR SHALL PERFORM EXCAVATION REQUIRED TO INSTALL HIS WORK.

**ELECTRICAL KEY NOTES** (AS NOTED ON THIS SHEET)

- INTEGRATE DUCT MOUNTED SMOKE DETECTOR TO FIRE ALARM SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.
- DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.
- DISCONNECT SWITCH BY EQUIPMENT MANUFACTURER. COORDINATE WITH MECHANICAL CONTRACTOR.
- PROVIDE TOGGLE DISCONNECT SWITCH FOR FAN COIL UNIT.
- EXISTING GAS METER SHOWN FOR REFERENCE.
- EXISTING ELECTRICAL PANEL TO REMAIN. REPLACE NEW FEEDERS TO PANEL FROM NEW MDP-A TO MATCH EXISTING. INSTALL IN RIGID CONDUIT PER NEC.
- EXISTING FUSED DISCONNECT SWITCH TO REMAIN.
- MAINTAIN SERVICE CLEARANCES FOR NEW PANEL.
- AMEREN TO REMOVE TRANSFORMER AFTER NEW SERVICE IS OPERATIONAL. CAP EXISTING CONDUIT AFTER REMOVAL AND PATCH PAVEMENT.
- EXISTING FUSED DISCONNECT SWITCH TO REMAIN. REPLACE NEW FEEDERS TO PANEL FROM NEW MDP-A TO MATCH EXISTING. INSTALL IN CONDUIT PER NEC.
- EXISTING DEMARCATION PANEL(S) TO REMAIN.
- EXISTING DISCONNECT SWITCH SERVING WATER HEATER TO REMAIN. REPLACE NEW FEEDERS TO PANEL FROM NEW MDP-A TO MATCH EXISTING. INSTALL IN CONDUIT PER NEC.
- AMEREN TO REMOVE EXISTING CT CABINET AFTER NEW SERVICE IS OPERATIONAL. PATCH WALL.
- NEW METER BY AMEREN.
- NEW TRANSFORMER BY AMEREN. MAINTAIN SERVICE CLEARANCES PER AMEREN. COORDINATE PLACEMENT OF BOLLARDS WITH GENERAL CONTRACTOR.
- PROVIDE BACKBOARD SUPPORT FOR NEW ELECTRICAL GEAR.
- SEE SHEET E201 FOR CONTINUATION.
- CARBON MONOXIDE SENSOR PER ILLINOIS PUBLIC ACT 099-0470. CO SENSOR TO BE ADDRESSABLE TYPE TO COMMUNICATE WITH BUILDING FIRE ALARM SYSTEM.
- SAW CUT PAVEMENT TO PREPARE FOR NEW ELEVATED PAD. EXTEND CONCRETE PAD WITHIN AREA SHOWN HATCHED. PROVIDE 4" THICK CONCRETE SLAB WITH #4S @ 18" O.C., E-W, CENTERED IN SLAB, ON 6" COMPACTED AGGREGATE. PROVIDE 12" THICKENED EDGE. PAD TO COMPLY WITH AMEREN REQUIREMENTS.
- NEW CT CABINET BY AMEREN.
- PRIOR TO POURING CONCRETE PAD, PROVIDE RECTANGULAR BLOCK-OUT TO ALLOW SPACE FOR NEW AND FUTURE UNDERGROUND CONDUIT PENETRATIONS. VERIFY EXACT LOCATION WITH AMEREN.
- PROVIDE NEW GROUNDING AT NEW SERVICE. SEE ONE-LINE DIAGRAM.
- REFER TO PANEL SCHEDULE FOR FEEDER SIZING.

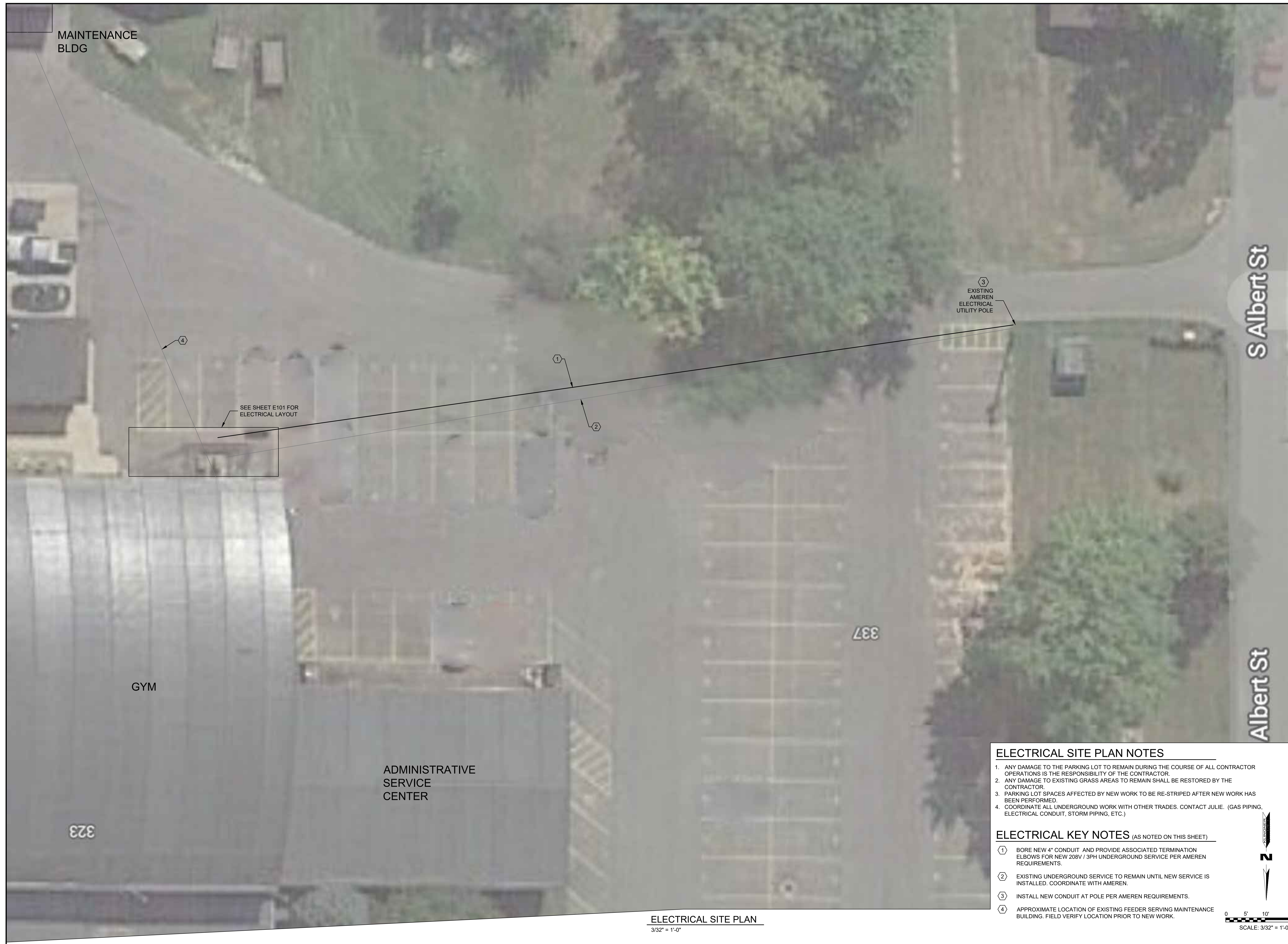


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|                  |             |      |      |

**HVAC & ELECTRICAL IMPROVEMENTS TO WASHINGTON ST. GYM**  
MACOMB CUSD 185  
MACOMB, IL 61455

|   |            |
|---|------------|
| Non-Reduced Sheet Size: 24" x 36"   |            |
| Full sized plans have been prepared using standard scales. Reduced size plans may not conform to standard scales. |            |
| DESIGNED: SFD   | DRAWN: APW |
| CHECKED: SFD  | FIELD BOOK |
| CHECK DATE: 07/29/2022  |            |
| SHEET TITLE   |            |
| ELECTRICAL PLAN   |            |
| PROJECT NO. 21-0155   |            |
| DRAWING ISSUED DATE: 09/01/2022   |            |
| SHEET   |            |
| E101  |            |



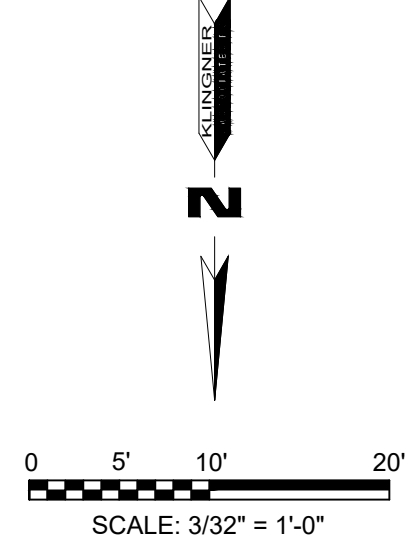
**ELECTRICAL SITE PLAN**  
3/32" = 1'-0"

**ELECTRICAL SITE PLAN NOTES**

1. ANY DAMAGE TO THE PARKING LOT TO REMAIN DURING THE COURSE OF ALL CONTRACTOR OPERATIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. ANY DAMAGE TO EXISTING GRASS AREAS TO REMAIN SHALL BE RESTORED BY THE CONTRACTOR.
3. PARKING LOT SPACES AFFECTED BY NEW WORK TO BE RE-STRIPED AFTER NEW WORK HAS BEEN PERFORMED.
4. COORDINATE ALL UNDERGROUND WORK WITH OTHER TRADES. CONTACT JULIE. (GAS PIPING, ELECTRICAL CONDUIT, STORM PIPING, ETC.)

**ELECTRICAL KEY NOTES (AS NOTED ON THIS SHEET)**

- ① BORE NEW 4" CONDUIT AND PROVIDE ASSOCIATED TERMINATION ELBOWS FOR NEW 208V / 3PH UNDERGROUND SERVICE PER AMEREN REQUIREMENTS.
- ② EXISTING UNDERGROUND SERVICE TO REMAIN UNTIL NEW SERVICE IS INSTALLED. COORDINATE WITH AMEREN.
- ③ INSTALL NEW CONDUIT AT POLE PER AMEREN REQUIREMENTS.
- ④ APPROXIMATE LOCATION OF EXISTING FEEDER SERVING MAINTENANCE BUILDING. FIELD VERIFY LOCATION PRIOR TO NEW WORK.



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**HVAC & ELECTRICAL IMPROVEMENTS TO WASHINGTON ST. GYM**

MACOMB CUSD 185  
MACOMB, IL 61455

Non-Reduced Sheet Size: 24" x 36"  
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|                 |                          |
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| DESIGNED<br>SFD | DRAWN<br>APW             |
| FIELD           | FIELD BOOK               |
| CHECKED<br>SFD  | CHECK DATE<br>07/29/2022 |

|  |
|--|
| SHEET TITLE<br><b>ELECTRICAL SITE PLAN</b> |
| PROJECT NO.<br>21-0155                     |
| DRAWING ISSUED DATE:<br>09/01/2022         |
| SHEET<br><b>E201</b>                       |