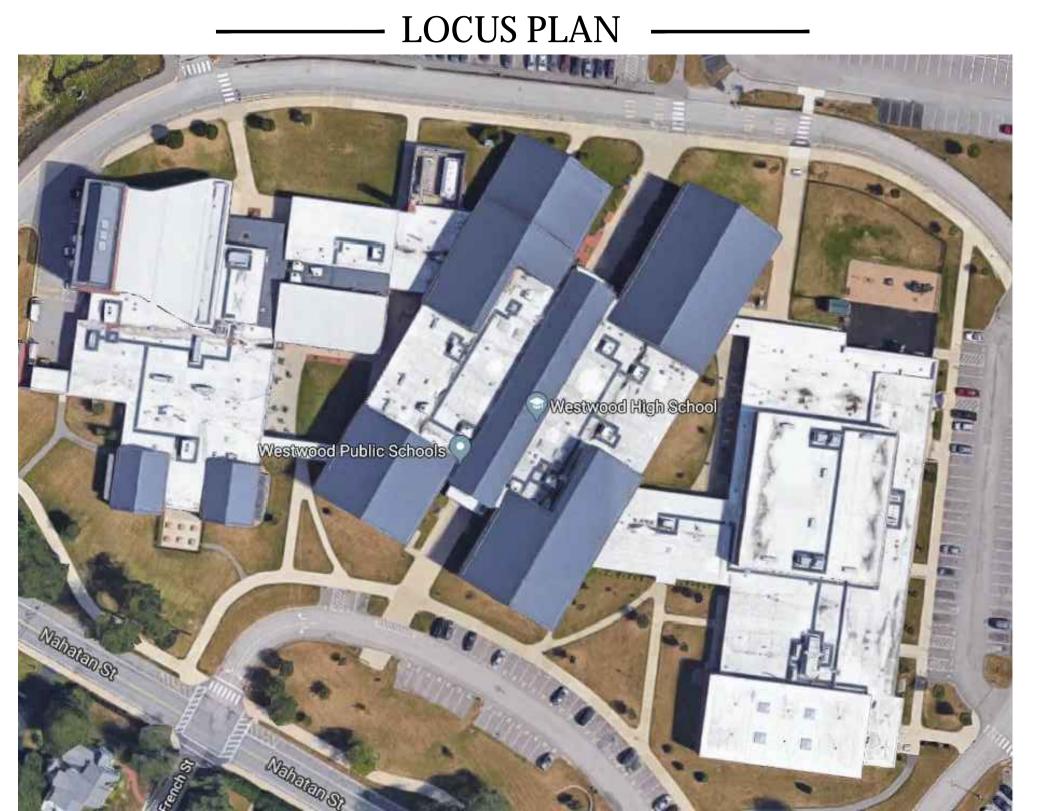
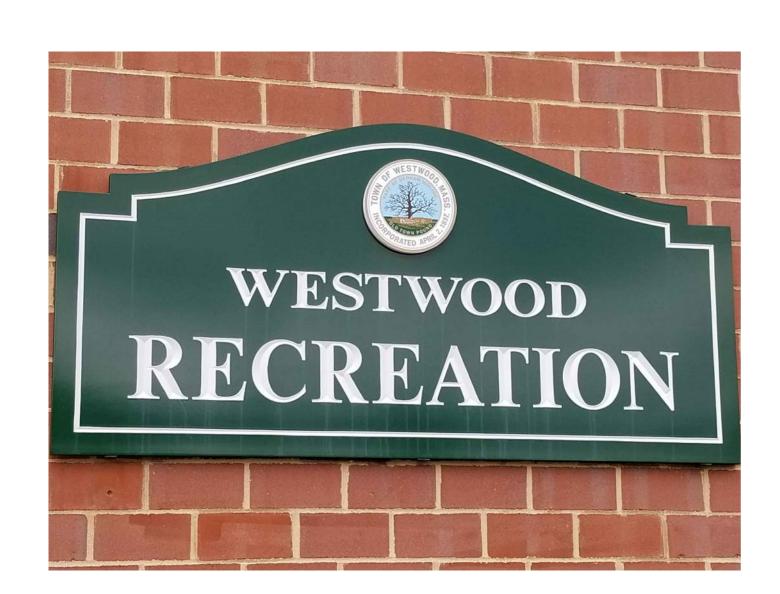
WESTWOOD RECREATION DEPT.

POOL AHU PROJECT 240 NAHATAN ST WESTWOOD, MA 02090

#REC-20-B-005







| | DRAWING LIST — |
|--------------|---------------------------------------|
| Sheet Number | Sheet Title |
| TITLE SHEET | |
| T0.0 | TITLE SHEET |
| HVAC | |
| H100 | HVAC LEGENDS, NOTES AND ABBREVIATIONS |
| HD200 | HVAC FIRST FLOOR DEMOLITION WORK PLAN |
| HD201 | HVAC ROOF DEMOLITION WORK PLAN |
| H200 | HVAC FIRST FLOOR NEW WORK PLAN |
| H201 | HVAC ROOF NEW WORK PLAN |
| H700 | HVAC CONTROLS |
| H800 | HVAC SCHEDULES AND DETAILS |



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REVISIONS

DATE CHK DESCRIPTION

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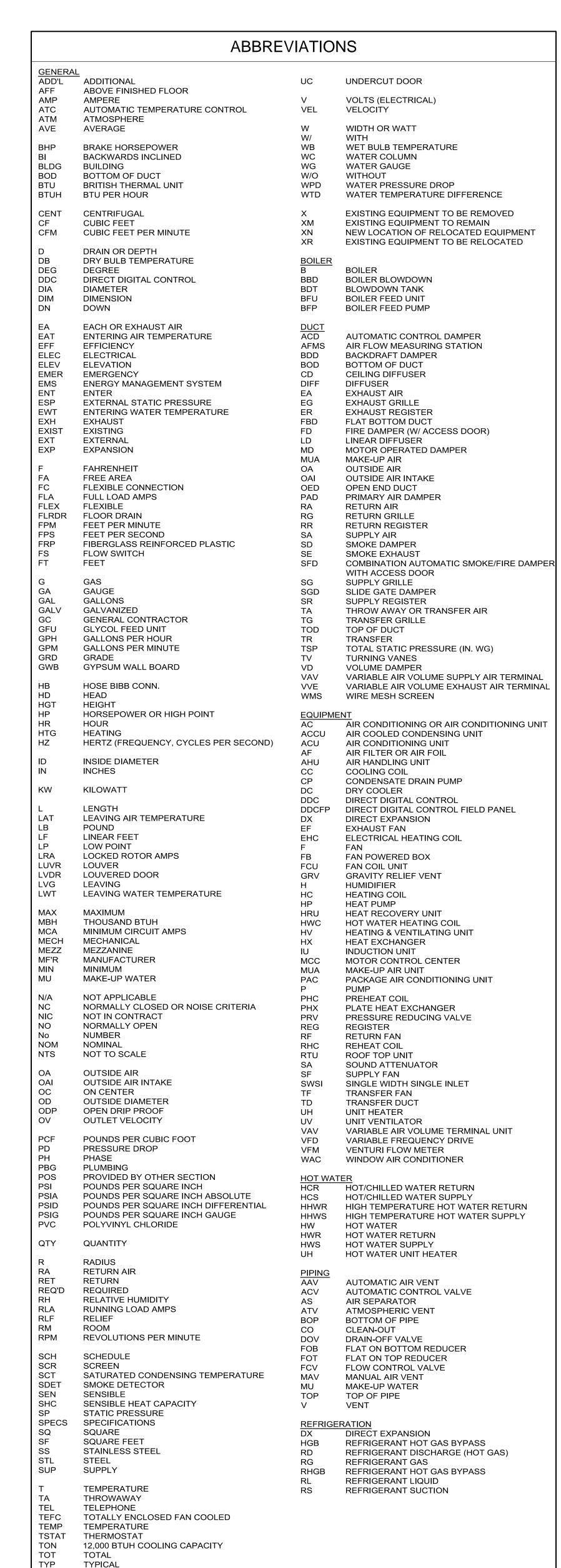
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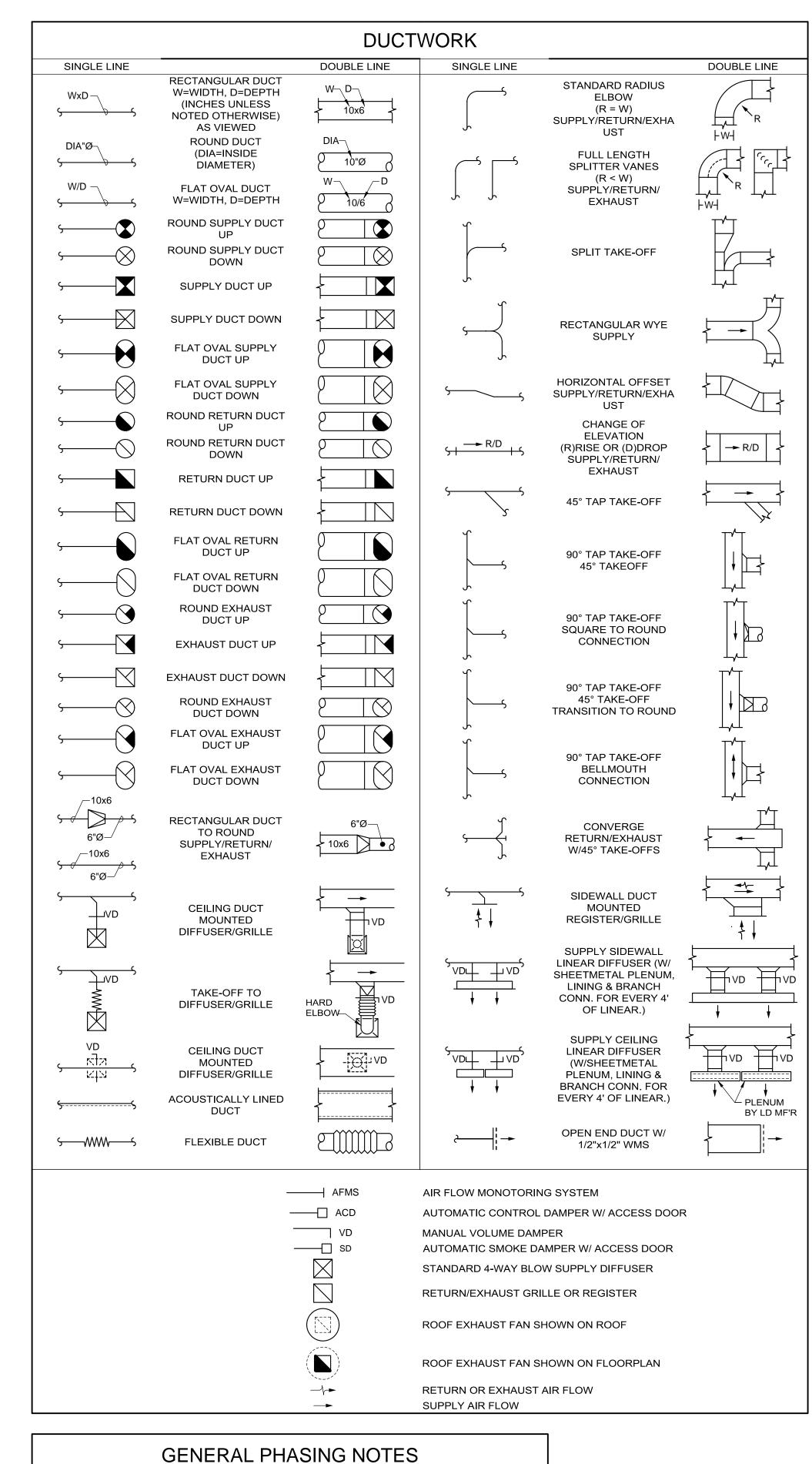
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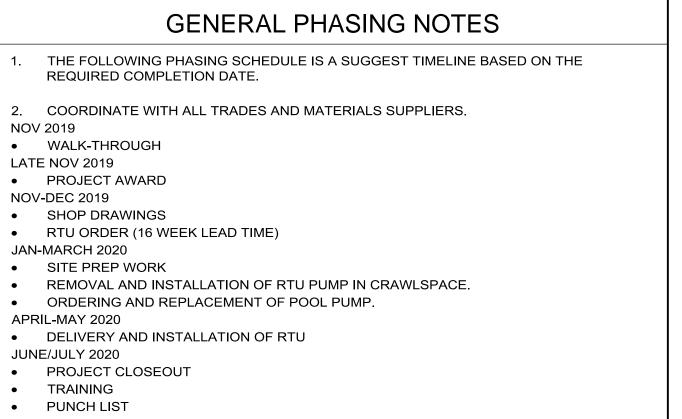
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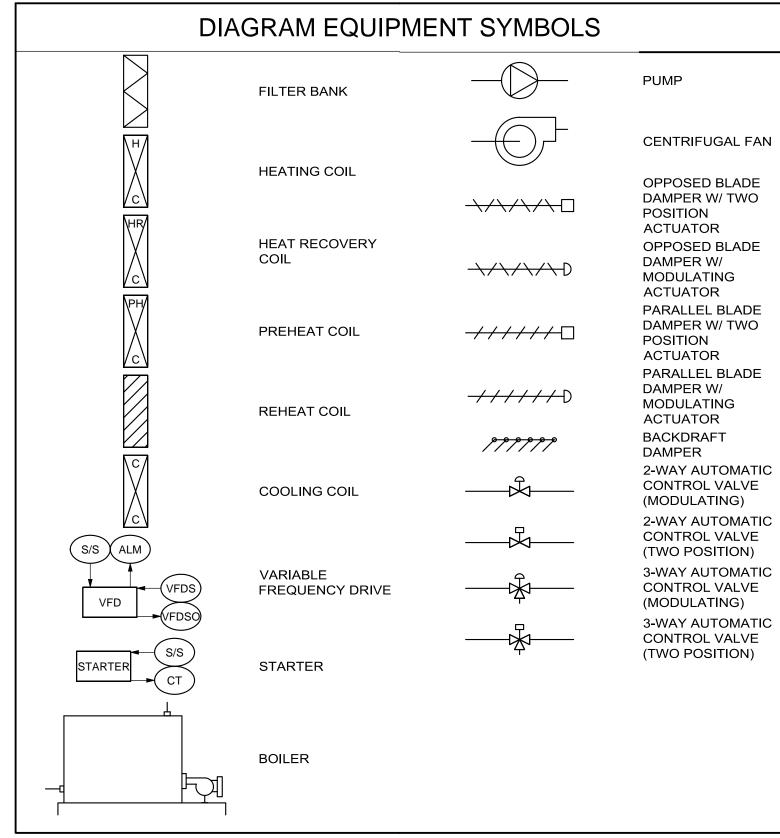


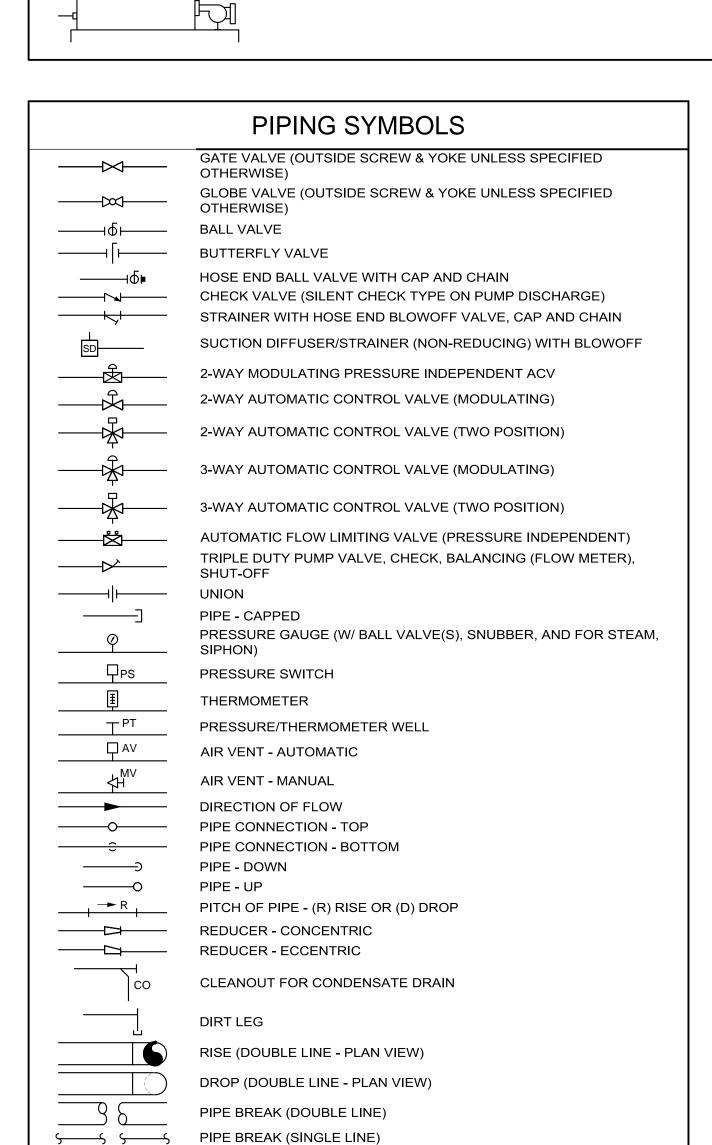




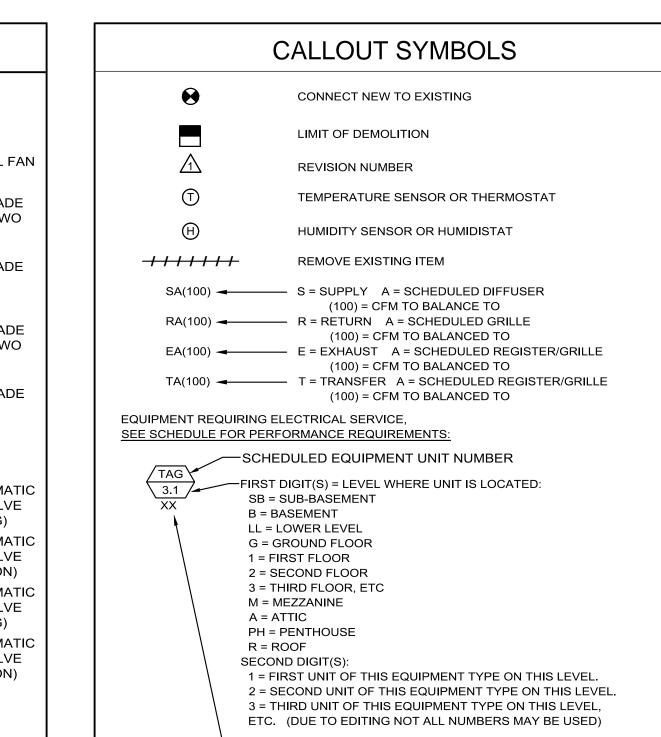
RIGGING SHALL BE ON THE WEEKEND AND COORDINATED WITH OWNER, STRUCTURAL

ENGINEER AND EXISTING ROOF CONTRACTOR (COORDINATE WITH OWNER).

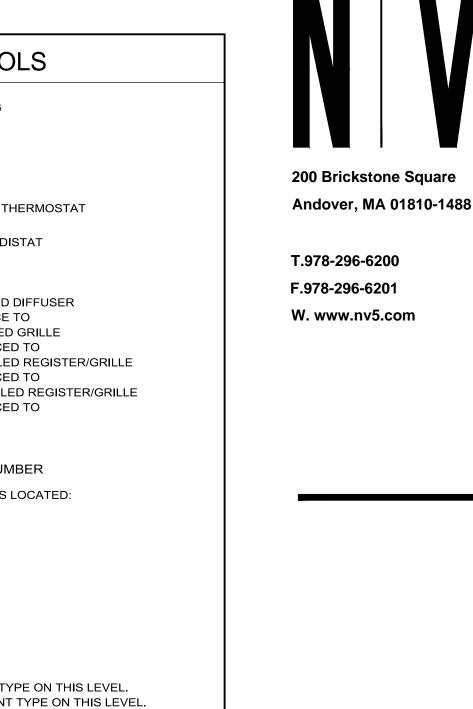




| | PIPING ABBREVIATIONS |
|--------------------------------------|----------------------------|
| D | DRAIN |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| RG | REFRIGERANT GAS |
| RHGB | REFRIGERANT HOT GAS BYPASS |
| RL | REFRIGERANT LIQUID |
| RS | REFRIGERANT SUCTION |
| /// (NAME) /// | REMOVE EXISTING PIPING |



— EQUIPMENT REUSE



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REVISIONS

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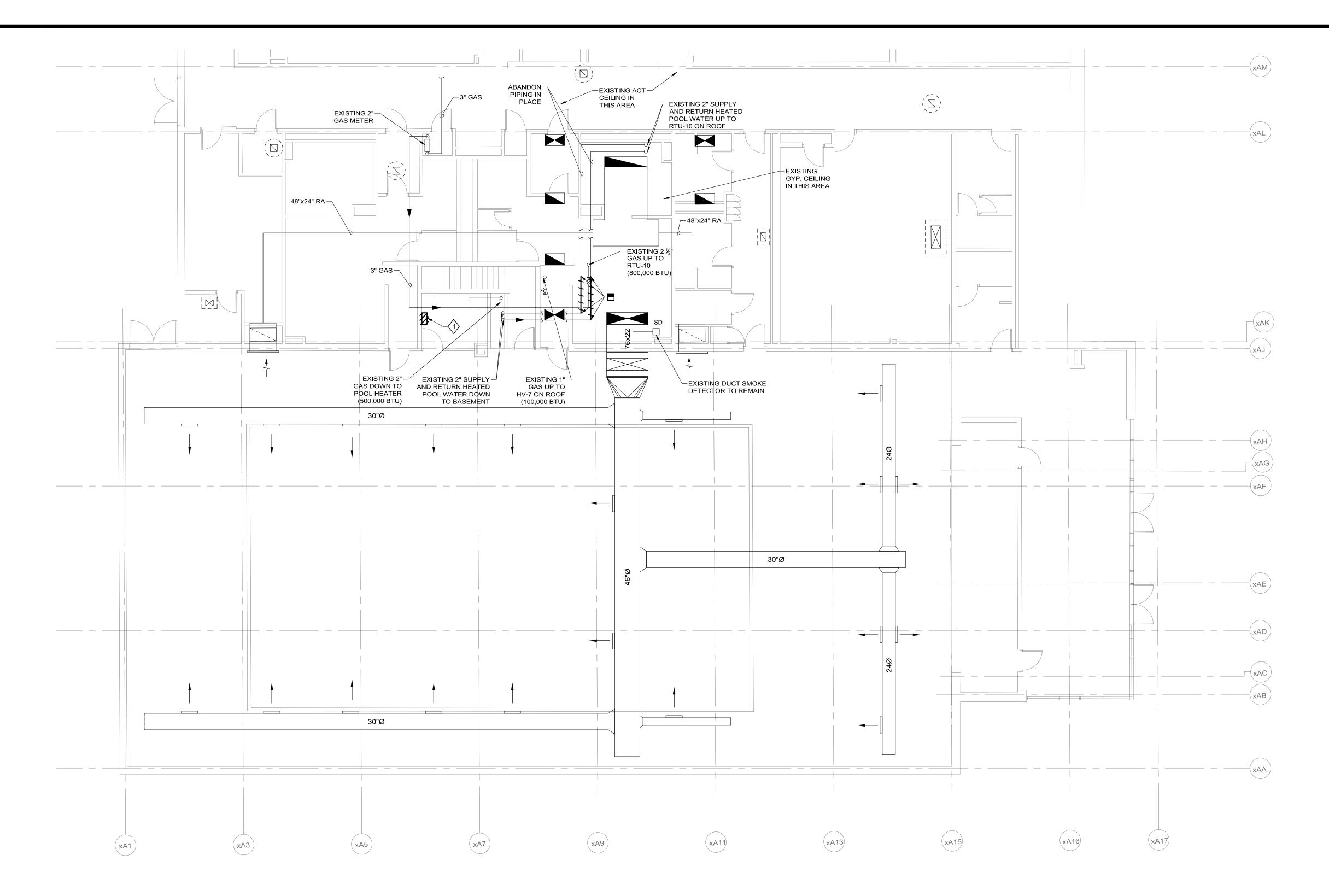


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WESTWOOD RECREATION
DEPT. POOL RTU
#REC-20-B-005

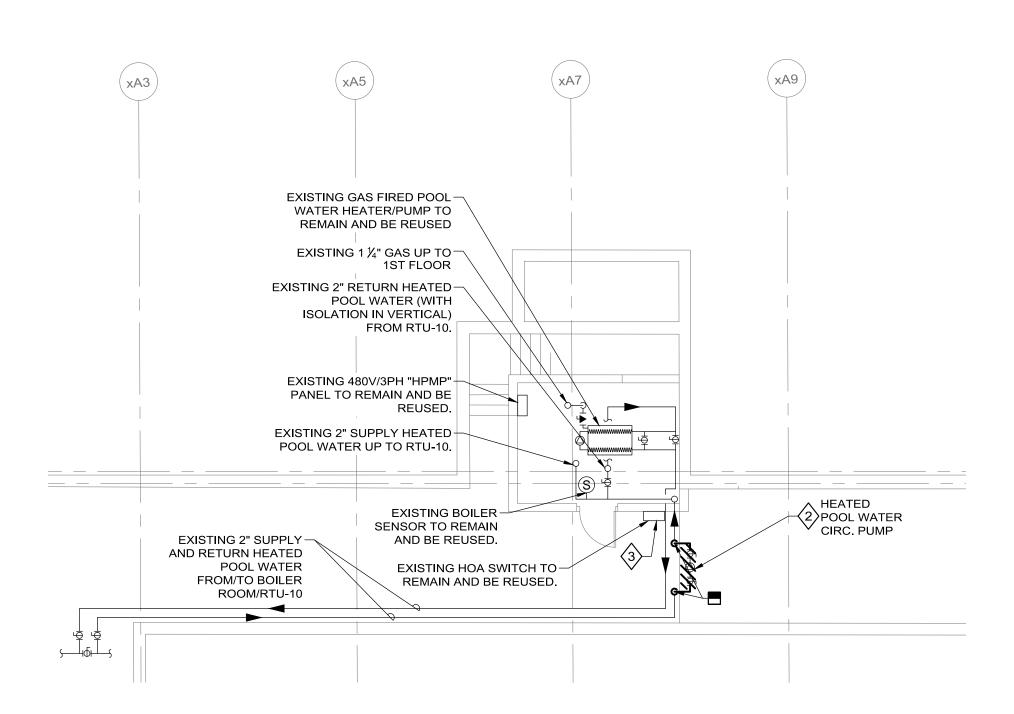
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HVAC LEGENDS, NOTES AND ABBREVIATIONS



FLOOR PLAN - POOL MAIN LEVEL

SCALE: 1/8"= 1'-0"



FLOOR PART PLAN - POOL BASEMENT
SCALE: 1/8"= 1'-0"

HVAC DEMOLITION NOTES

- THE DEMOLITION PLANS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED.
- THE LOCATIONS OF EXISTING EQUIPMENT INCLUDING PIPING, DUCTWORK, EQUIPMENT, CONDUITS, ETC ARE SHOWN IN AN APPROXIMATE WAY ONLY. VISIT THE SITE PRIOR TO SUBMISSION OF THE BIDS AND COMMENCEMENT OF WORK TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF THE WORK.
- TRACE AND LABEL ALL EXISTING SYSTEMS WITHIN THE DEMOLITION AREA AND BEYOND PRIOR TO DISCONNECTION AND REMOVAL TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION AREA IS AFFECTED. REVIEW IN DETAIL WITH ALL PARTIES AND OWNER WHAT IS TO BE REMOVED AND REMAIN PRIOR TO WORK COMMENCING THE DEMOLITION. THERE SHALL BE NO INTERRUPTION OF SERVICES OUTSIDE THE

DEMOLITION AREA WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE.

- COORDINATE EQUIPMENT REMOVAL WITH ALL PARTIES TO PROVIDE DISCONNECTION. REMOVE EQUIPMENT BY UNFASTENING AT THE SUPPORTS OR ATTACHMENTS. ALSO REMOVE THE ATTACHMENTS FROM THE BUILDING, LEAVING NO COMPONENT OF THE ORIGINAL INSTALLATION.
- EXERCISE CARE WITH EQUIPMENT THAT IS TO BE RELOCATED OR TURNED OVER TO THE OWNER. EXAMINE THE EQUIPMENT BEFORE REMOVAL IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE TO DETERMINE ITS CONDITION. DELIVER OWNER-RETAINED EQUIPMENT TO AN ON-SITE LOCATION DESIGNATED BY THE OWNER AND OBTAIN ACKNOWLEDGMENT OF RECEIPT IN ORIGINAL CONDITION.
- INSTALL RELOCATED EQUIPMENT IN ORIGINAL CONDITION ENSURING NO DAMAGE.
- PROMPTLY REPAIR ANY DAMAGE CAUSED DURING/BY THE EXECUTION OF WORK. DAMAGE INCLUDES BUT IS NOT LIMITED TO DESTRUCTION OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
- NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING THE DEMOLITION.
- ALL ITEMS REMOVED SHALL BE OFFERED TO THE OWNER FOR SALVAGE. IF THE OWNER DOES NOT TAKE POSSESSION, DISPOSE OF THE ITEMS IN A SAFE AND LEGAL MANNER. ALL ITEMS CLASSIFIED AS HAZARDOUS SHALL BE DISPOSED AS HAZARDOUS WASTES AND A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PROVIDED TO THE
- ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGED PROPERTY TO THE CONDITION BEFORE BEING DAMAGED. TAKE EFFECTIVE MEASURES TO PREVENT WINDBLOWN DUST.
- 11. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS PIPE INTERIORS OR SHAFTS. VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.
- 12. DRAIN, PURGE, OR OTHERWISE REMOVE, COLLECT, AND PROPERLY DISPOSE OF CHEMICALS, LIQUIDS, GASES, EXPLOSIVES, ACIDS, FLAMMABLES, OR OTHER DANGEROUS MATERIALS BEFORE PROCEEDING WITH DEMOLITION OPERATIONS.
- 13. PROPERLY LABEL ALL UNLABLED PIPES THAT REMAIN WITH COLOR PIPE MARKERS AND VALVE TAGS. MOUNT A VALVE AND SERVICE CHART IN THE AREA OF DEMOLITION THAT IDENTIFIES ALL LABELED SERVICES. TURN ONE COPY OF SAME OVER TO THE
- 14. ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE WIRING FOR CONTROLS AND ASSOCIATED INTERLOCKS SHALL BE INCLUDED IN THIS CONTRACT

KEYNOTES

- \backslash REMOVE THE EXISTING POOLPAK CONTROLLER AND CONTROL WIRING IN THEIR ENTIRET ackprime BACK TO THE ROOFTOP UNIT SERVED.
- REMOVE THE EXISTING 480V HEATED POOL WATER CIRCULATOR PUMP, PRESSURE GAUGES AND ASSOCIATED ISOLATION VALVES BACK TO POINT SHOWN. REMOVE THE WIRING BACK TO THE HAND-OFF-AUTO SWITCH.
- DISCONNECT THE EXISTING 480V/3PH HAND-OFF-AUTO SWITCH SERVING THE POOL > f I HEATING CIRCULATOR PUMP. EXISTING 480V/3PH HAND-OFF-AUTO SWITCH TO REMAIN AND f IBE REUSED. PROVIDE NEW LOCKABLE DISCONNECT ON THE LINE SIDE



PHOTOGRAPH NO. 1 REMOVE THE EXISTING POOL CIRCULATING PUMP.



PHOTOGRAPH NO. 2 EXISTING HAND-OFF-AUTO SWITCH FOR THE EXISTING POOL CIRCULATING PUMP TO REMAIN AND BE REUSED. PROVIDE NEW LOCKABLE DISCONNECT ON THE LINE SIDE

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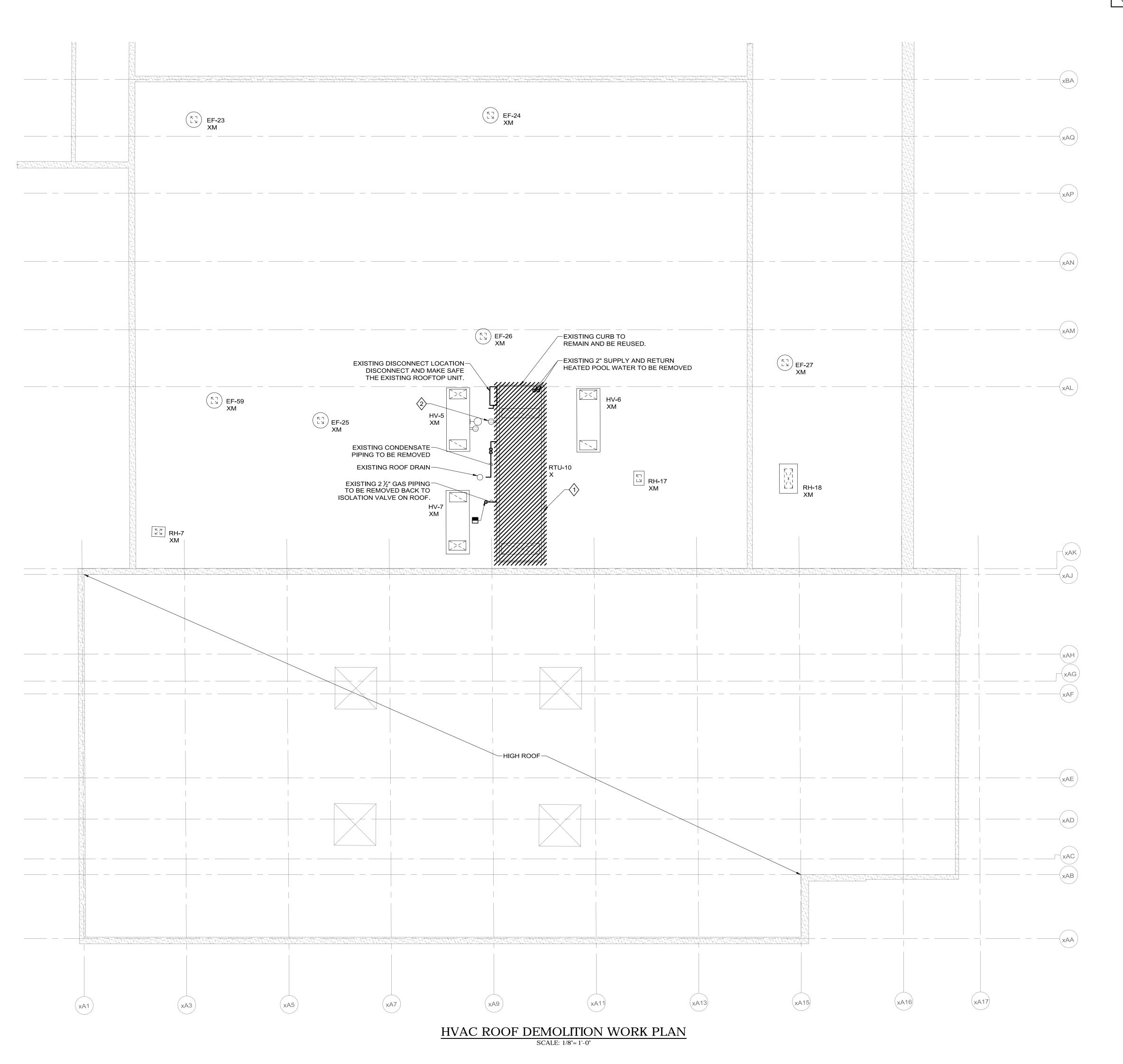
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DATE-01/08/2020

WESTWOOD RECREATION DEPT. POOL RTU #REC-20-B-005

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> HVAC FIRST FLOOR DEMOLITION WORK PLAN



KEYNOTES

- REMOVE THE EXISTING ROOFTOP UNIT IN ITS ENTIRETY. REMOVE ASSOCIATED CONDENSATE PIPING AND SLEEPERS. REMOVE GAS PIPING BACK TO ISOLATION VALVE ON THE ROOF. REMOVE THE CONTROL WIRING BACK TO THE REMOTE CONTROLLER. THE EXISTING CURB IS TO REMAIN AND BE REUSED. REMOVE THE EXISTING SUPPLY AND RETURN POOL HEATING WATER PIPING BACK TO POINT
- SHOWN ON HD200.

 TEMPORARILY DISCONNECT AND REMOVE THE EXISTING ELECTRICAL SERVICE RECEPTACLE AND CONDUIT SERVING THE SERVICE OUTLETS AND LIGHT MOUNTED TO HV-5.



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PROJECT

NUMBER —

DATE 01/08/2020

WESTWOOD RECREATION DEPT. POOL RTU #REC-20-B-005

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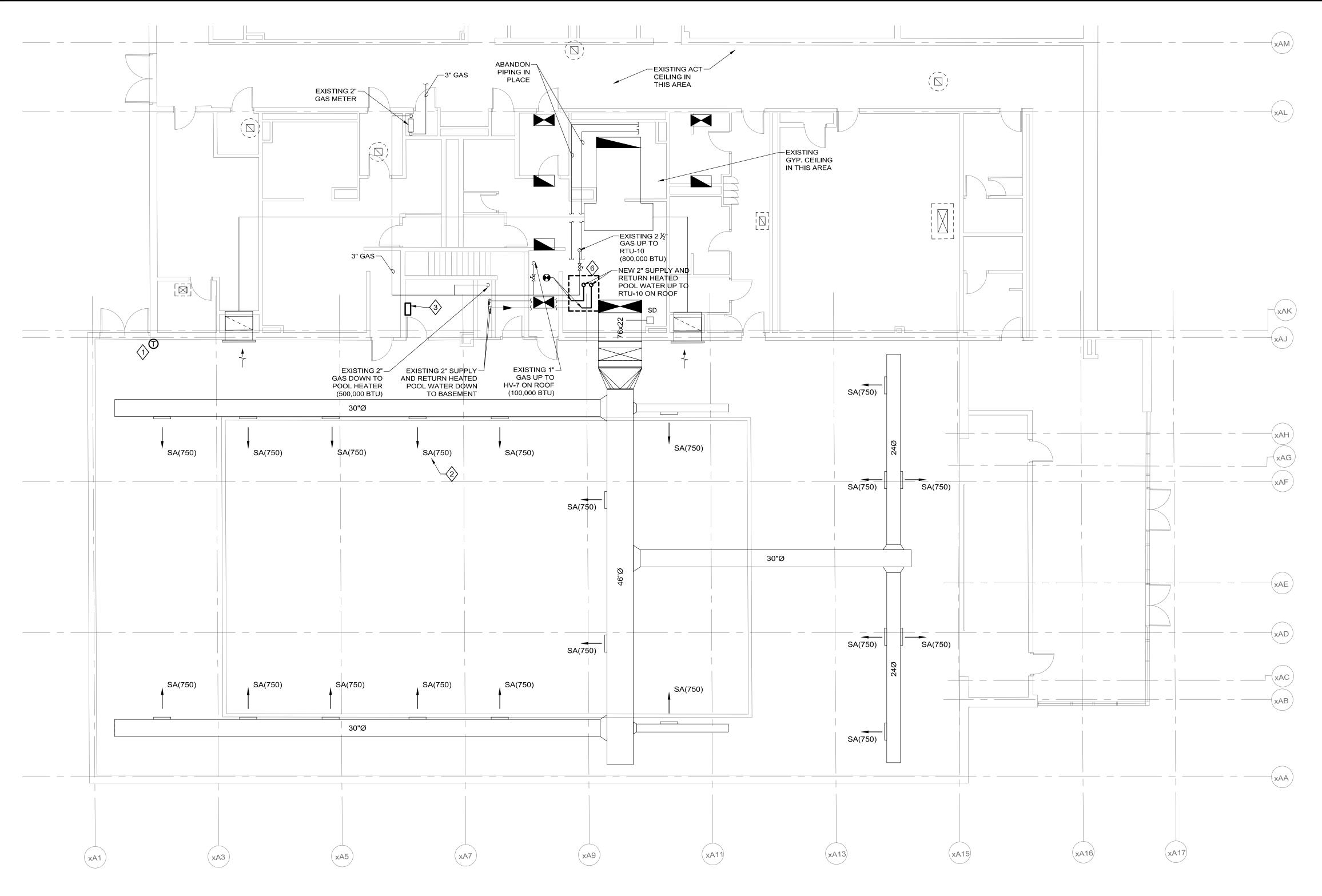
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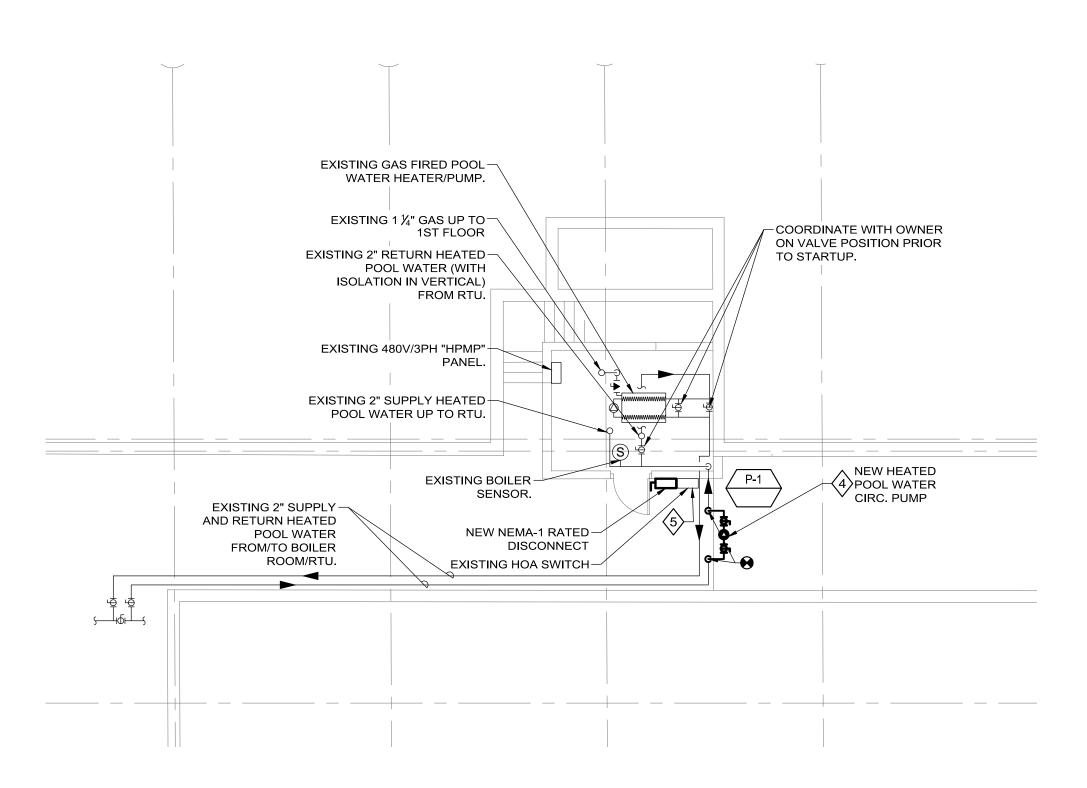
SCALE—

1/8"=1'-0"

HVAC ROOF DEMOLITION WORK PLAN



FLOOR PLAN - POOL MAIN LEVEL



FLOOR PART PLAN - POOL BASEMENT
SCALE: 1/8"= 1'-0"

HVAC GENERAL NOTES

- GENERAL NOTES APPLY TO ALL DRAWINGS.
- THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR EXISTING CONDITIONS VISIBLE OR REASONABLY INFERABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.
- THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. POTENTIAL PROBLEM AREAS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- 4. THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE ROUTING OF THE VARIOUS SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.
- CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- 6. SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND BUILDING OWNER. THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST ONE WEEK IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.
- 7. DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
- 8. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- 9. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
- 10. ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.
- 11. THE FIRE PROOFING OF THE BUILDING STRUCTURE IS NOT TO BE REMOVED FOR THE INSTALLATION OF HANGERS, SUPPORTS, DUCTWORK, ETC. IF FIRE PROOFING IS DAMAGED, IT SHALL BE REPAIRED AT THE EXPENSE OF THE TRADE.
- 12. CONTRACTOR SHALL TEST AND CALIBRATE ALL CONTROLS AND VERIFY ALL ARE FULLY FUNCTIONAL AND SUBMIT DOCUMENTATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 13. CONTRACTOR SHALL PROVIDE AND SUBMIT DOCUMENTATION FOR TESTING AND BALANCING OF ALL AIR AND WATER SYSTEMS, DUCT AND PIPING PRESSURE AND LEAKAGE TESTS, OPERATING AND MAINTENANCE MANUALS, AND AS BUILT DRAWINGS SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 14. REFER TO THE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS
- 15. MANY EQUIPMENT SCHEDULES DO NOT LIST QUANTITIES. CONTRACTOR SHALL REFER TO ALL DRAWINGS AND PROVIDE THE REQUIRED QUANTITIES FOR ALL COMPONENTS.
- 16. EXISTING ROOF SHALL BE THOROUGHLY PROTECTED TO PREVENT DAMAGE FROM CONSTRUCTION AND/OR RIGGING. ANY ROOF DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE BUILDING OWNER WITHOUT ANY ADDITIONAL COST TO THE
- 17. FIELD VERIFY RIGGING REQUIREMENTS PRIOR TO SUBMITTING A PROPOSAL. COORDINATE ALL RIGGING WITH EXISTING CONDITIONS (INCLUDING ON STREET CONDITIONS AND PARKING). COORDINATE ALL RIGGING WITH THE BUILDING OWNER. PAY FOR ALL POLICE DETAILS (IF CRANE IS LOCATED ON TOWN PROPERTY OR STREETS). PROVIDE 72 HOUR WRITTEN NOTICE TO BUILDING OWNER PRIOR TO START OF RIGGING.
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE BUILDING DURING RIGGING OF THE UNIT TO ENSURE SAFETY OF THE BUILDING OCCUPANTS. PROVIDE ALL REQUIRED RIGGING EQUIPMENT.
- 19. PROVIDE ADEQUATE WEATHER PROTECTION (AGAINST WIND, RAIN, SNOW, ETC.) FOR
- ALL ROOF OPENINGS DURING CONSTRUCTION. 20. THE EXISTING ROOF IS UNDER WARRANTY. THE MISCELLANEOUS ROOF WORK SHALL BE COORDINATED THROUGH THE MANUFACTURER OF THE EXISTING ROOF AND THE BUILDING OWNER TO INSURE THE ROOF WARRANTY REMAINS INTACT. THIS CONTRACTOR SHALL CARRY ALL COSTS ASSOCIATED WITH THE ROOF WORK IN THEIR
- CONTRACT PROPOSAL. 21. RIGGING SHOULD BE DONE OVER A WEEKEND (I.E. SATURDAY AND SUNDAY) / LONG
- WEEKEND. PREPARATION WORK IS ALLOWABLE PRIOR TO RIGGING. 22. THE PAVEMENT IN THE PARKING LOT NEAR THE BUILDING IS NEW. THE CONTRACTOR HAS TO REVIEW THE AREA PRIOR TO RIGGING. ANY PAVEMENT DAMAGE FROM CONSTRUCTION AND/OR RIGGING SHALL BE REPAIRED TO THE SATISFACTION OF THE
- BUILDING OWNER WITHOUT ANY ADDITIONAL COST TO THE CONTRACT. 23. THE CONTRACTOR SHALL OWN ALL PERMITS FOR THE WORK CONSTRUCTION

(RIGGING, ELECTRICAL, GAS, PLUMBING, SHEET METAL, ETC ...).

KEYNOTES

- PROVIDE NEW COLD SURFACE TEMPERATURE SENSOR. COORDINATE FINAL LOCATION WITH
- OWNER AND RTU MANUFACTURER. PAINT ALL EXPOSED CONDUIT IN POOL AREA TO MATCH EXISTING WALLS/CONDUIT. REBALANCE NEW RTU-10 TO CFM SHOWN. IF BALANCING DAMPERS ARE NOT PRESENT, TRAVERSE BALANCING AT RTU-10 IS ACCEPTABLE.
- PROVIDE NEW CONTROLLER AND CONTROL WIRING BACK TO THE NEW ROOFTOP UNIT.
- PROVIDE NEW HEATED POOL WATER CIRCULATOR PUMP AND ASSOCIATED ISOLATION VALVES. BALANCE THE NEW PUMP TO 45 GPM.
- PROVIDE NEW NEMA-1 RATED DISCONNECT (480V/3PH) ON LINE VOLTAGE SIDE FOR NEW POOL
- HEATER PUMP P-1. CONNECT IT TO EXISTING HOA. REMOVE AND PROVIDE NEW GYP. CEILING (AS NECESSARY) IN THE AREAS ABOVE THE SHOWERS

(BELOW THE RTU-10) AS SHOWN FOR THE DEMOLITION AND NEW WORK BELOW THE RTU-10. PATCH AND PAINT THE OPENINGS TO MATCH EXISTING AFTER WORK HAS BEEN COMPLETED. 200 Brickstone Square

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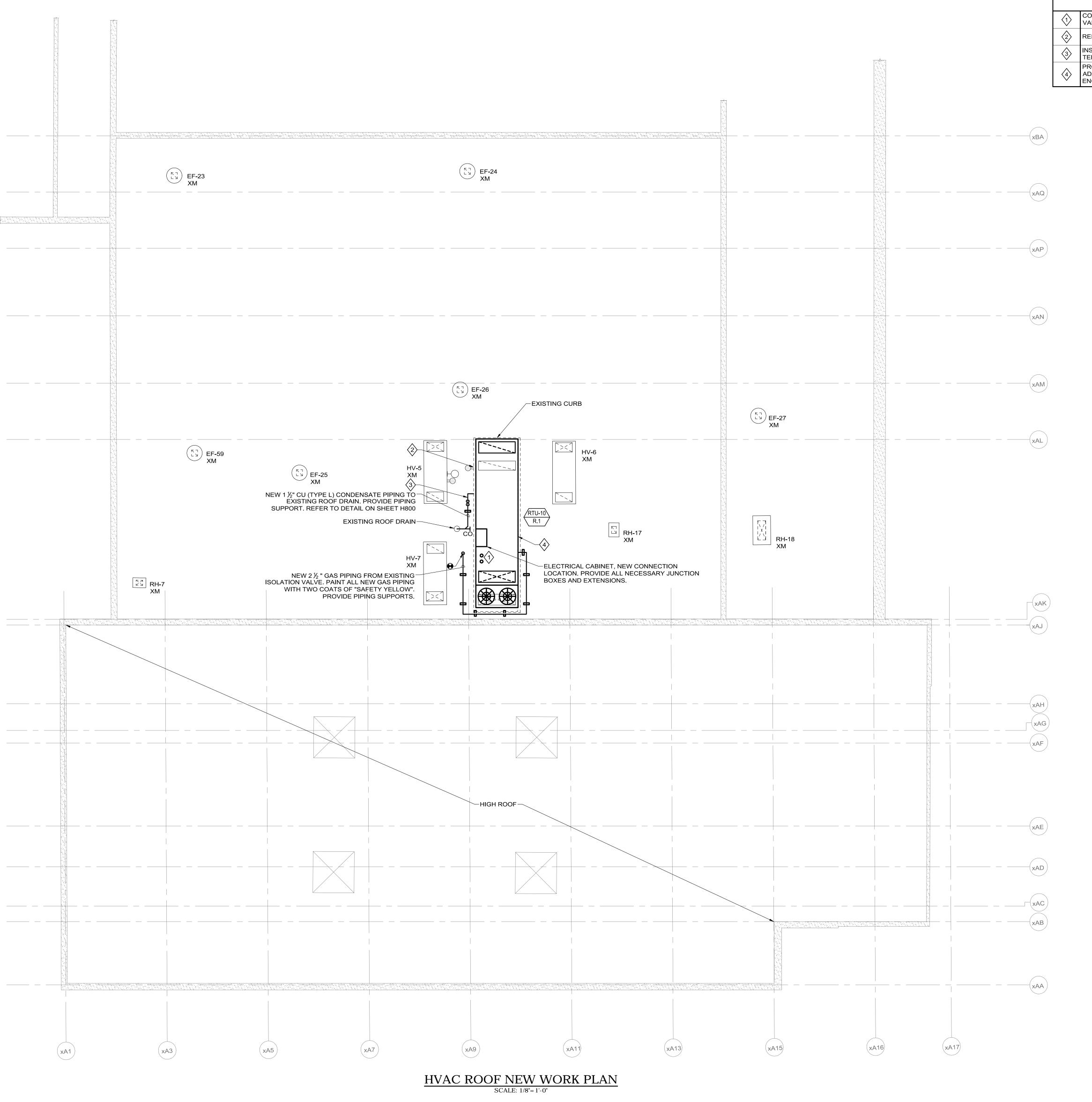
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DRAWING

CHECKED BY

SCALE-1/8"=1'-0"

HVAC FIRST FLOOR **NEW WORK PLAN**



KEYNOTES

- CONNECT NEW POOL DEHUMIDIFIER UNIT TO SUPPLY AND RETURN HEATED POOL WATER PIPING. PROVIDE LINE SIZED ISOLATION BALL VALVES (FOR SUPPLY AND RETURN) AT UNIT. PROVIDE HIGH POINT VACUUM BREAKER ON PIPING FOR DRAINING UNIT.
- REINSTALL THE CONVENIENCE OUTLET, CONDUIT AND SLEEPERS.
- INSULATE CONDENSATE PIPING. PROVIDE WITH WEATHERPROOF HEAT TRACE/CONTROLLER. ACTIVATE HEAT TRACE WHEN AMBIENT TEMPERATURE DROPS BELOW 38°F. PROVIDE NEW PIPING SUPPORTS.
- PROVIDE NEW POOL DEHUMIDIFIER UNIT AS SCHEDULED. MOUNT UNIT ON EXISTING CURB AND PROVIDE INSULATED CURB TRANSITION ADAPTER. PROVIDE NEW CONTROL WIRING BACK TO SOURCE. THE UNIT IS TO BE RIGGED ON A WEEKEND WITH THE STRUCTURAL ENGINEER (MCBRIE LLC - 978-646-0097) AND EXISTING ROOFING CONTRACTOR (COORDINATE WITH OWNER).

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1/8"=1'-0"

HVAC ROOF NEW WORK PLAN

CONTROL POINT DESCRIPTOR LEGEND



CONTROL DEVICE FURNISHED BY ELECTRICAL OR PLUMBING CONTRACTOR BUT INTERFACED TO DDC SYSTEM BY ATC CONTRACTOR

ATC CONTRACTOR PROVIDED

DDC POINT AND HARDWARE



ATC CONTRACTOR INTERFACE TO EQUIPMENT MANUFACTURER'S



PLBG

HARDWARE ATC CONTRACTOR PROVIDED LOCAL CONTROL POINT

CONTROL ABBREVIATIONS

AUTOMATIC CONTROL DAMPER ACV AUTOMATIC CONTROL VALVE

AFMS AIR FLOW MEASURING STATION ALM ALARM ATC

AUTOMATIC TEMPERATURE CONTROL CURRENT TRANSFORMER (STATUS FEEDBACK)

COOLING COIL CONTROL VALVE

DISCHARGE AIR TEMPERATURE SENSOR DDC DIRECT DIGITAL CONTROL DDCFP DIRECT DIGITAL CONTROL FIELD PANEL

DIFFERENTIAL PRESSURE SWITCH DPT DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER

EAD EXHAUST AIR DAMPER END SWITCH

FAULT ALARM

FLOW SWITCH FREEZESTAT

HUMIDITY SENSOR

HGBP HOT GAS BYPASS HHL HIGH HUMIDITY LIMIT SENSOR

HLH HIGH/LOW HUMIDITY LIMIT SENSOR HOA HANDS-OFF AUTOMATIC SWITCH

LEAVING AIR TEMPERATURE SENSOR MIXED AIR TEMPERATURE SENSOR

NORMALLY CLOSED (ON LOSS OF POWER)

NORMALLY OPEN (ON LOSS OF POWER)

OUTSIDE AIR DAMPER OUTSIDE AIR HUMIDITY SENSOR (FOR WET BULB READING) OAH OUTSIDE AIR TEMPERATURE SENSOR (DRY BULB)

OAT

RETURN AIR DAMPER RAH RETURN AIR HUMIDITY SENSOR

RETURN AIR TEMPERATURE SENSOR RELATIVE HUMIDITY

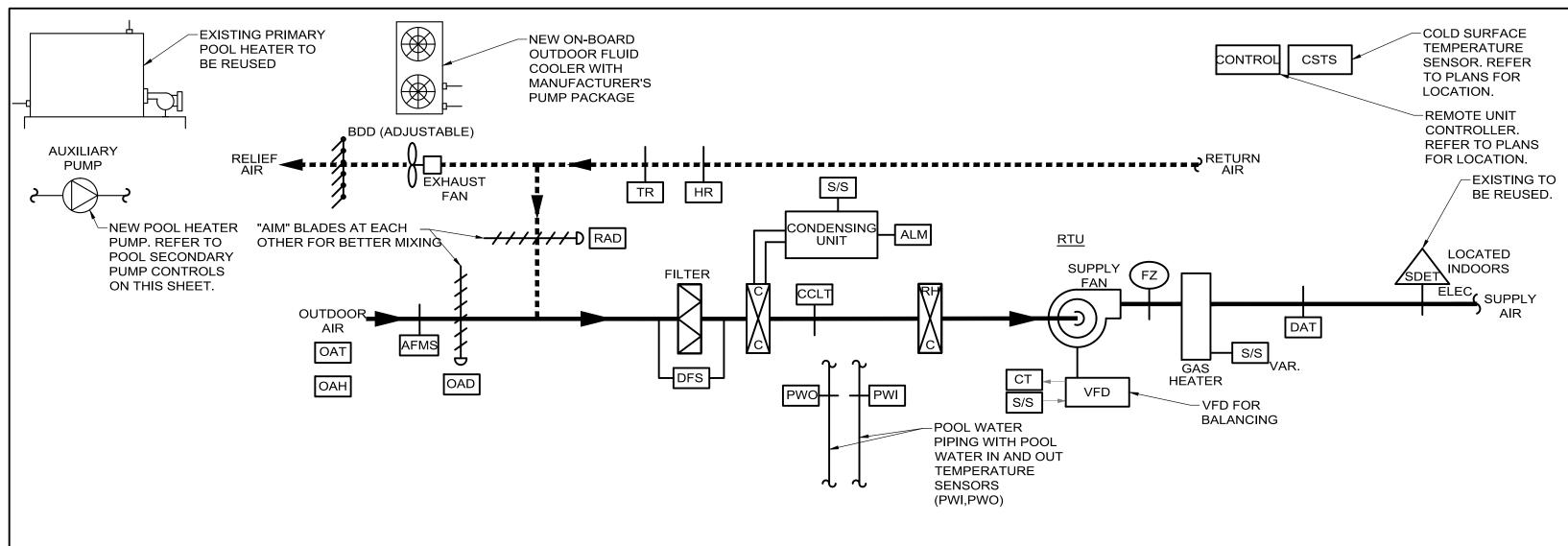
SPEED CONTROL START/STOP

TEMPERATURE SENSOR/THERMOSTAT

VARIABLE FREQUENCY DRIVE SPEED VARIABLE FREQUENCY DRIVE SPEED OUTPUT (FEEDBACK)

WATER COLUMN

REMOVE EXISTING ITEM



ROOFTOP UNIT CONTROL SEQUENCES

ROOF TOP UNIT CONTROLS

GENERAL

ROOFTOP UNIT SHALL BE STARTED AND STOPPED VIA LOCAL THERMOSTAT CONTROL AND ON-BOARD MANUFACTURES CONTROLS. COORDINATE OCCUPIED AND UNOCCUPIED SCHEDULES WITH OWNER. ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC.

ALL TEMPERATURES LISTED ARE FAHRENHEIT.

ALL TEMPERATURE SENSORS IN THE UNIT AND DUCTWORK SHALL BE AVERAGING TYPE EXCEPT FOR FREEZESTATS WHICH SHALL BE LOW POINT READING TYPE.

PROVIDE APPROPRIATE ANTI-RECYCLE TIME DELAYS AND SAFETIES ON COMPRESSOR AND GAS HEATER STAGING.

FAN CONTROL

THE SUPPLY FAN AND RETURN FAN SHALL RUN CONTINUOUSLY AT THE SCHEDULED AIRFLOW. THE OAD AND RAD SHALL BE SET TO THE SCHEDULED OUTDOOR AIR POSITION. THE RETURN AIR FAN SHALL BE BALANCED TO MEET THE SHEDULED EXHAUST AIRFLOW.

OCCUPIED HEATING CONTROL

UPON A DROP IN ROOM TEMPERATURE BELOW THE ROOM HEATING SETPOINT OF 84°F, GAS HEATER SHALL BE STAGED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REVERSE SHALL OCCUR

ON A RISE IN SPACE TEMPERATURE.

OCCUPIED\UNOCCUPIED RH CONTROL

OCCUPIED COOLING CONTROL UPON A RISE IN ROOM TEMPERATURE ABOVE THE ROOM COOLING SETPOINT OF 84°F, THE COOLING CYCLE SHALL BE ACTIVATED.

THE UNIT SHALL USE ON-BOARD LOGIC CONTROLS TO MAINTAIN AN OCCUPIED RH SETPOINT OF 60%RH DURING OCCUPIED MODE AND 50% RH UNOCCUPIED (+- 2%).

2. THE MODULATING REHEAT COIL AND COMPRESSORS SHALL BE STAGED AS NECESSARY VIA ON-BOARD MANUFACTURE'S CONTROLS.

3. IF THE COLD SURFACE TEMPERATURE SENSOR (CSTS) DETECTS A SURFACE TEMPERATURE NEAR DEWPOINT, THE MANUFACTURER'S ON-BOARD CONTROLS SHALL RESET THE HUMIDITY SETPOINT.

POOL HEATING CONTROL

ON-BOARD MANUFACTURER'S CONTROLS.

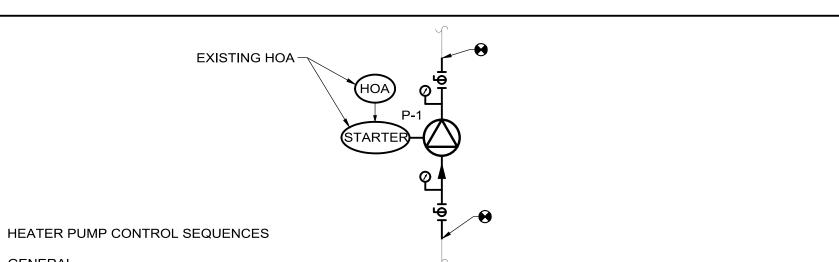
- IF THE POOL RETURN WATER TEMPERATURE IS BELOW THE SETPOINT (82°F): 1. IF THE COMPRESSOR IS ALREADY OPERATING, THE RTU SHALL HEAT THE WATER USING THE
- 2. IF THERE IS NO PRE-EXISTING DEMAND FOR COMPRESSOR OPERATION, THE RTU DO NOTHING. THE EXITING BOILER SHALL MAINTAIN THE SETPOINT USING EXISTING CONTROLS.
- 3. WHEN THE POOL WATER SETPOINT IS REACHED, EXCESS HEAT SHALL BE REJECTED TO ATMOSPHERE VIA THE FLUID COOLER.

1. THE FOLLOWING SAFETIES SHALL SHUT DOWN THE UNIT VIA HARDWARE.

- a. ANY FREEZESTAT (FZ) SHALL SHUTDOWN THE UNIT WHENEVER THE TEMPERATURE IS LESS THAN
- b. WHEN ANY SMOKE DETECTOR (SDET) IS ACTIVATED THE UNIT SHALL SHUT DOWN. THE ATC CONTRACTOR SHALL WIRE THE UNIT TO THE EXISTING DUCT MOUNTED SMOKE DETECTOR.
- 1. IF EITHER THE SUPPLY OR EXHAUST FAN FAILS OR IF ANY SAFETY IS TRIPPED, THE UNITS SHALL
- IF THE FILTER CHANGE TIMER HAS LAPSED, OR THE DIRTY FILTER SWITCH (DFS) DETECTS A DIRTY FILTER THE UNIT SHALL INDICATE AN ALARM.

ROOFTOP UNIT CONTROL SEQUENCES

HC001



GENERAL 1. THE HEATING SYSTEM PUMP SHALL BE STARTED AND STOPPED MANUALLY VIA THE HAND-OFF-AUTO SWITCH.

THE PUMP SHALL RUN CONTINUOUSLY.

PUMP CONTROL

NEW POOL HEATER PUMP CONTROLS

REPLACED BY THE NEW.

HC002

GENERAL ATC NOTES

ALL ATC CONTROLS SHALL BE HARDWIRED. NO WIRELESS TECHNOLOGY SHALL BE ALLOWED. ALL EXPOSED WIRING SHALL BE INSTALLED IN MINIMUM ½ INCH GALVANIZED EMT CONDUIT. ALL EXPOSED WIRING LOCATED IN THE POOL AREA SHALL BE INSTALLED IN EMT CONDUIT AND PAINTED TO MATCH EXISTING.

THE CONTRACTOR SHALL THE NECESSARY HOURS OF ADDITIONAL ON-SITE PROGRAMMING TO ALLOW FOR FIELD MODIFICATIONS THAT MAY BE NEEDED TO OPTIMIZE THE VARIOUS SYSTEMS TO FULLY CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, SEQUENCE OF CONTROLS AND WORK WITH THE ACTUAL OPERATING CONDITIONS AS INSTALLED. THIS WORK SHALL BE DONE AT NO ADDITIONAL COST.

- ON-SITE TRAINING SHALL ALSO INCLUDE A MINIMUM OF 4 HOURS OF HANDS ON INSTRUCTION GEARED TOWARD OPERATION AND MAINTENANCE OF THE SYSTEMS, PRIOR TO TRAINING, THE NECESSARY LESSON PLANS, TRAINING DOCUMENTS, HANDOUTS, ETC. SHALL BE PROVIDED WITH THE CURRICULUM OUTLINE.
- PROVIDE WIRING FROM ELECTRICAL SOURCE TO MISCELLANEOUS ATC DEVICES.
- PROVIDE DEMOLITION OF EXISTING CONTROL COMPONENTS WHICH ARE BEING

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change orders or owner claims, in connection with [NAME OF DELIVERABLE].

0190207

01/08/2020

WESTWOOD RECREATION DEPT. POOL RTU #REC-20-B-005

DRAWING DRAWN BY

CHECKED BY CH

HVAC CONTROLS

PROVIDE AD-ALT PRICING FOR THIS OPTION.

| | | | | | | | | | <u></u> | ~~~~~~ | | | | POOL DEH | HUMIDIFIER | UNIT SCHEDUL | <u> </u> | | | | | | | | | | | | | | | |
|------|-------------|------------------------|------------|--------------------|--------------------|---------------|--------------------|--------------------------|-----------|-----------------------------|------------|---------|----------------|---------------------|--------------------|--------------|----------|------|-------------------|---------------------------|---------------|------------------|----------|----------|------------|------------|-----|---------------|---|---------------|---|-------------|
| | REFRIGERANT | MINI O A CONDITIONS | ROOM | | SUPPLY FAN | | ı | EXHAUST FAN | | PURGE FAN | СФМЕ | RESSORS | EVAPORAT | OR COIL | REHEA | T COIL GLYCO | L | POOL | HEATING COIL | | GAS HEA | TING SECTION | | AIR | FLUID COOL | ER | ELE | ECTRICAL DATA | | | | |
| TAG | 9 | MIN. O.A. CONDITIONS | CONDITIONS | CFM | CAPACITY STAT PRES | C S. MOTOR | CFM CAPACIT CONTRO | STATIC PRESS. MC (IN.WG) | TOR CFM | STATIC PRESS. (IN.WG) | MOTOR | | CAPACITY (MBH) | MOISTURE REMOVAL | TOTAL HEAT | CONTROL LIB | CAPACITY | Y | HOT WATER DATA | C/ | APACITY (MBH) | AIR DATA | CAPACITY | CAPACITY | МОТ | ORS | | MCA MOCP | WEIGHT (LBS) EXCLUDII CURB BREAKER ADAPTE | EXISTING UNIT | MANUFACTURER AND MODEL NUMBER (AS STANDARD) | REMARKS |
| | TYPE | CFM DB WB DB (°F) (°F) | DB RH (%) | TOTAL MIN. O.A. | TYPE EXT | HP FL | A TOTAL RANGE TY | PE EXTERNAL HP | FLA TOTAI | EXTERNAL HF | P FLA | | TOTAL SENS. | LBS/H | REJECTION (MBH) | TYPE HP | (MBH) | GPM | EWT (°F) LWT (°F) | P.D. INPUT (FT.) (MBH) | OUTPUT MIN. E | EFF EAT LAT (°F) | CONTROL | (MBH) | NO HI | P FLA (A) | PH | (A) (A) | BREAKER (A) | (LDG) | | |
| RTU- | 10 R-410A | 4075 90.8 73.3 12.4 | 84 60 | 15000 4075 | VFD 1.5 | 20 25. | .9 4775 4775 E | CM 0.5 3.9 | 3.7 10925 | .5 5.3 | 3 4.7 SCRO | _L 2 | 395.1 199.4 | 181.1 | 493.9 | MOD75 | 273 | 45 | 82 94.1 | 13.86 800 | 640 80 | 61 100 | MOD. | 493.9 | 2 3. | .4 4.2 460 |) 3 | 101 125 | 150 9600 | 11000 | POOLPAK MODEL PPK 120 | 0 SEE NOTES |

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REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE WITH MANUFACTURER PRIOR TO PURCHASING UNIT SO SUPPLY AND RETURN LOCATION/ARRANGEMENT MATCHES THE EXISTING ROOFTOP UNIT. PROVIDE CURB TRANSITION ADAPTER AS REQUIRED. CONFIRM COIL PULL, CONDENSATE PIPING, GAS PIPING AND SERVICE SIDE HANDING PRIOR TO ORDERING. CABINET SHALL INCLUDE FULL PERIMETER BASE RAILS FOR SHIPPING AND RIGGING. FACTORY DAMPERS SHALL BE INSULATED LOW LEAKAGE TYPE.

PROVIDE DOUBLE WALL CONSTRUCTION GALVANIZED STEEL, FULLY INSULATED CABINET WITH 2" OF INSULATION. PROVIDE HINGED ACCESS DOORS WITH SINGLE LEVER LATCH MECHANISM AND DOOR HOLDER. INTERIOR PANELS SHOULD BE SUITABLE FOR CHLORINE AND POOL CHEMICAL RESISTANCE. EXTERIOR PANELS SHOULD BE DESIGNED FOR OUTDOOR INSTALLATION. PROVIDE NON CORRODING PROTECTIVE MESH SCREENS ON ALL AIR INTAKE OPENINGS.

PROVIDE UNIT WITH REMOTE CONTROL PANEL AND COLD WALL SENSOR AS INDICATED ON PLANS. ADDITIONALLY, PROVIDE UNIT WITH AIR FLOW SWITCH, FREEZE-STAT, AND DIRTY FILTER SWITCH. UNIT TO BE SINGLE POINT POWER CONNECTION. PROVIDE WITH FACTORY INSTALLED DISCONNECT. PROVIDE FACTORY PHASE FAILURE/UNDER VOLTAGE PROTECTION.

PROVIDE FACTORY INTERNAL FILTER RACK (NON-METALLIC), 2", 30% MERV 8 ON SUPPLY AIR, EXHAUST AIR AND OUTSIDE AIR. PROVIDE WITH AIR FLOW MONITORING STATIONS AND ALL CONTROLS AND SENSORS AS SHOWN ON H700.

PROVIDE FACTORY START-UP OF ROOFTOP UNIT. . PROVIDE PREMIUM EFFICIENCY VFD FAN MOTORS WITH SHAFT GROUNDING.

PROVIDE WITH 90-DAY COMPLETE UNIT WARRANTY (PARTS AND LABOR), 2 YEAR PARTS WARRANTY, AND 5 YEAR COMPRESSOR WARRANTY. B. THE NEW RTU IS TO HAVE LESS THAN 10 PERCENT INCREASE IN TOTAL OPERATING WEIGHT OVER EXISTING UNIT (INCLUDING ANY REQUIRED CURB ADAPTERS).

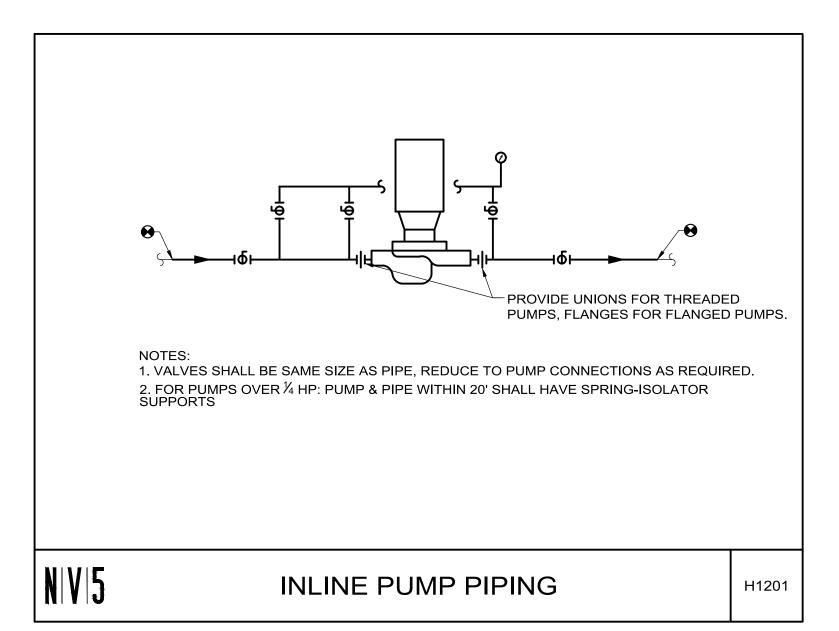
4. THE NEW RTU IS TO HAVE LESS THAN OR EQUAL TO THE EXISTING MAXIMUM OVER CURRENT PROTECTION RATINGS.

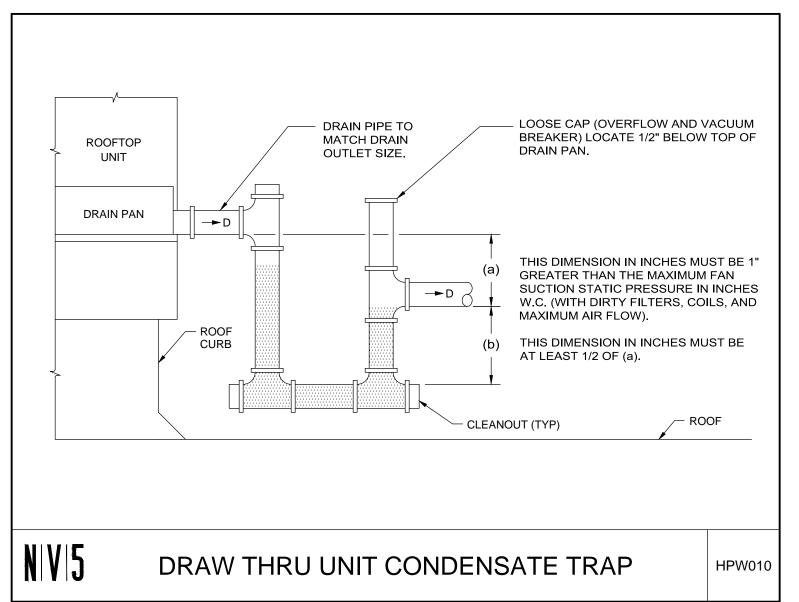
15. PROVIDE HEAT TRACE FOR CONDENSATE PIPING. 16. ALL CONTROLS ARE TO BE OPEN. ALL REPAIRABLE PARTS SHALL BE REASONABLY AVAILABLE LOCALLY, BY LOCAL WHOLESALERS IN THE U.S.

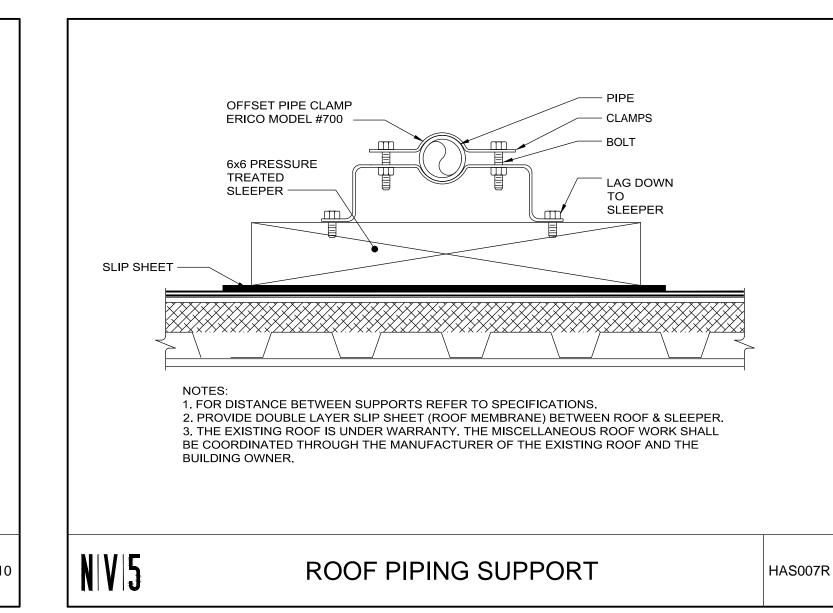
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | | | | | | | | | | | | | | | | |
|--|---------|---------------|--------------|-------|------------|-----|-------|----|--------|----------|------|-----|-------|-----|----|-------------------------------|-----------|
| TAG SERVICE LOCATION CASING TYPE TYPE TEMP (°F) GPM (FT.) RPM HEAD (FT.) SIZE (IN.) RPM BHP HP V PH (AS STANDARD) | | | | | | | | | PUMP S | CHEDULE | | | | | | | |
| TAG SERVICE LOCATION TYPE THE THE GPM (FT.) (FT.) HEAD (FT.) SIZE (IN.) RPM BHP HP V PH (AS STANDARD) | | | 0.4.011.10 | FLU | IID | | NDCHD | | | IMPELLED | | N | иотог | ₹ | | MANUEACTURED AND MOREL NUMBER | |
| | SERVICE | VICE LOCATION | | TYPE | ' '- ' ' ' | GPM | | | | | | ВНР | HP | > | PH | | REMARKS |
| P-1 POOL BASEMENT CAST IRON WATER 85 45 4.3 50 55 7 1725 1 2 460 3 BELL AND GOSSETT E-90 1.5AB | POOL | OL BASEMENT | CAST IRON | WATER | 85 | 45 | 4.3 | 50 | 55 | 7 | 1725 | 1 | 2 | 460 | 3 | BELL AND GOSSETT E-90 1.5AB | SEE NOTES |

REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION. PROVIDE ALL NECESSARY FITTINGS, COUPLINGS AND STANDS FOR A COMPLETE INSTALLATION. PROVIDE WITH DISCONNECT. INTEGRATE WITH EXISTING HAND-OFF-AUTO SWITCH/STARTER/THERMAL OVERLOAD.

4 PROVIDE WITH 2HP THREE PHASE MOTOR. THE CONTRACTOR SHALL CONFRIM WITH THE MANUFACTURER THE USE OF PUMP WITH CHLORINATED WATER.







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WESTWOOD RECREATION DEPT. POOL RTU #REC-20-B-005

DRAWING DRAWN BY CHECKED BY СН HVAC

SCHEDULES AND DETAILS

H800