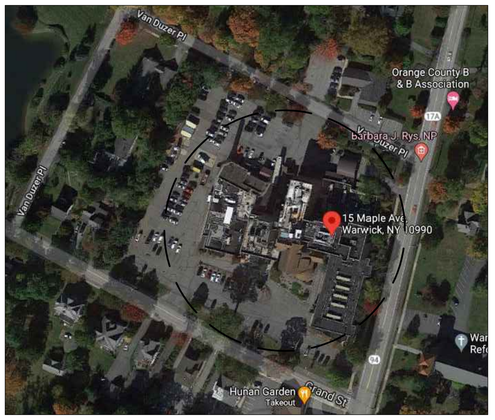
HIGHLAND
ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com



LOCATION MAP

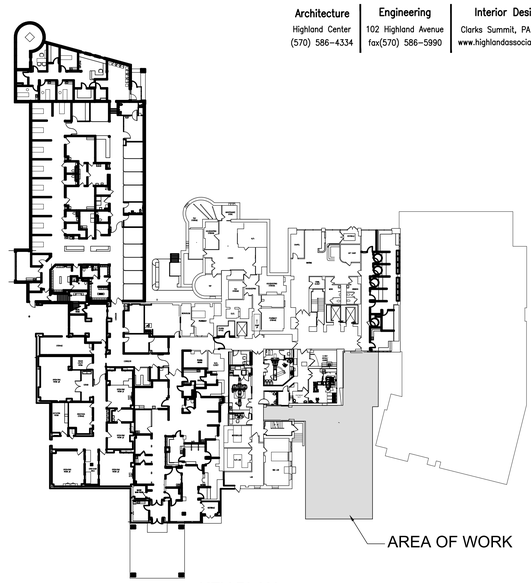
St. Anthony Community Hospital

A member of the Bon Secours Charity Health System

15 Maple Ave,
Warwick, NY 10990

Radiology Suite Phase II

HA–PN: 2021–069



KEY PLAN

LIST OF DRAWINGS

CS–1 COVER SHEET

CIVIL

C–1 RADIOLOGY ADDITION EXISTING CONDITIONS & DEMOLITION PLANS
C–2 RADIOLOGY ADDITION PROPOSED SITE LAYOUT AND UTILITIES
C–3 RADIOLOGY ADDITION PROPOSED GRADING AND DRAINAGE PLAN
C–4 RADIOLOGY ADDITION DETAILS
C–5 RADIOLOGY ADDITION DETAILS

ARCHITECTURAL

GN–1.1 GENERAL NOTES & ABBREVIATIONS
LS–1.1 GROUND FLOOR LIFE SAFETY PLAN
AD–1.1 PARTIAL DEMOLITION PLANS AND NOTES
A–1.1 PARTIAL GROUND FLOOR AND FIRST FLOOR NEW PLANS
A–1.2 PARTIAL CEILING PLAN, SECTIONS AND ROOF DETAILS

MECHANICAL

MD–1.0 PARTIAL DUCTWORK DEMOLITION
MD–1.1 PARTIAL PIPING DEMOLITION
M–1.0 NEW DUCTWORK PLAN
M–1.1 NEW PIPING PLAN
M–2.0 MECHANICAL SCHEDULES
M–2.1 MECHANICAL DETAILS
M–2.2 MECHANICAL SPECIFICATIONS
M–2.3 MECHANICAL SPECIFICATIONS
M–2.4 MECHANICAL SPECIFICATIONS

PLUMBING / FIRE PROTECTION

PD–1.1 PARTIAL 1 ST. FLOOR PLUMBING DEMOLITION
P–1.1 PARTIAL 1 ST. FLOOR PLUMBING RENOVATION
P–2.1 PLUMBING LEGEND / SPECIFICATIONS

FD–1.1 PARTIAL 1 ST. FLOOR FIRE PROTECTION DEMOLITION PLAN
F–1.1 PARTIAL 1 ST. FLOOR FIRE PROTECTION RENOVATION PLAN
F–2.1 FIRE PROTECTION SPECIFICATIONS

ELECTRICAL

E–0.00 ELECTRICAL SYMBOL LEGEND
ES–1.00 OVERALL ELECTRICAL SITE DEMOLITION PLAN
ES–2.0 DUCTBANK DETAILS
ES–2.01 ELECTRICAL DETAILS
ED–1.0 PARTIAL ELECTRICAL DEMOLITION PLAN
ED–1.1 PARTIAL ELECTRICAL DEMOLITION ROOF PLAN
E–1.00 PARTIAL ELECTRICAL PLAN
E–2.00 ELECTRICAL ROOF PLAN
E–3.00 ENLARGED SCALE PLANS
E–4.00 NORMAL POWER ONE–LINE DIAGRAM
E–5.00 PANEL BOARD SCHEDULES
E–5.01 PANEL BOARD SCHEDULES
E–6.00 GENERATOR SPECIFICATIONS

90% Issued For Bid
07/21/2023

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL NOTIFY DIG SAFELY NEW YORK NOT LESS THAN THREE DAYS PRIOR TO ANY SUBSURFACE CONSTRUCTION AT (800)962–7692.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS, GRADES, QUANTITIES, AND FIELD CONDITIONS PRIOR TO BIDDING THE WORK OR ORDERING THE MATERIALS.

3. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN MAPPED FROM DATA OBTAINED BY FIELD SURVEY, PREVIOUS MAPS, OR RECORDS, THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN TO THE UNDERSIGNED. SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION.

4. ALL EXISTING TOPOGRAPHIC FEATURES WHICH INCLUDE BUT ARE NOT LIMITED TO, WALKS, WALLS, CURBS, STEPS, TREES, SHRUBS, AND UTILITIES ADJACENT TO THE WORK SHALL BE MAINTAINED IN THEIR CURRENT CONDITION, UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF THESE ITEMS IN THE FIELD PRIOR TO STARTING WORK. ANY ITEMS FOUND TO CONFLICT WITH THE WORK REQUIRED AS PART OF THIS CONTRACT SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE ENGINEER. THE CONTRACTOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS. ANY ELEVATION DISCREPANCIES WHICH AFFECT THE WORK REQUIRED AS PART OF THE THE CONTRACT DOCUMENTS SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE ENGINEER AND DEVELOPER. COMMENCEMENT OF WORK WITHOUT THIS WRITTEN NOTIFICATION SHALL CONSTITUTE CONTRACTOR ACCEPTANCE OF THE EXISTING TOPOGRAPHY INDICATED ON THE DRAWINGS AS ACCURATE. NO ADJUSTMENT TO THE CONTRACT WILL BE MADE FOR DISCREPANCIES BROUGHT TO THE ATTENTION OF THE ENGINEER AFTER THE WORK HAS BEGUN.

5. THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE LIMITS OF DEMOLITION REQUIRED TO COMPLETE THE WORK. TOP 18" OF MATERIALS SHALL BE REMOVED FROM THE ENTIRE SITE BEFORE BEGINNING ANY CONSTRUCTION. PURPOSE IS TO REMOVE ANY FOREIGN AND ORGANIC MATTER BEFORE CONSTRUCTION. ANY FILL MATERIAL REQUIRED FOR CONSTRUCTION SHALL BE APPROVED CRUSHER RUN.

6. THE CONTRACTOR SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION GUIDELINES FOR URBAN EROSION AND SEDIMENTATION CONTROL.

7. THE NEW ASPHALT DRIVEWAY SHALL BE CONSTRUCTED WITH A FULL–DEPTH PAVEMENT SECTION AS DETAILED ON SHEET C–4. ALL ASPHALT SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATIONS SECTION 403. EXCAVATION AND REMOVAL OF EXISTING SPOIL AND UNSUITABLE MATERIAL SHALL COMPLY WITH NYSDOT STANDARD SPECIFICATIONS SECTION 200 AND SHALL BE PROPERLY DISPOSED OF OFF SITE. ALL NEW TACK COAT SHALL COMPLY WITH NYSDOT ITEM #407.0101 AND NYSDOT STANDARD SPECIFICATIONS SECTION 407.

8. ALL PAVEMENT MARKINGS SHALL BE PAINTED WITH NYSDOT APPROVED PAVEMENT MARKING REFLECTORIZED EPOXY PAINT AND SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURER AND SHALL COMPLY WITH NYSDOT STANDARD SPECIFICATIONS SECTION 685.

9. ALL ADA PARKING SPACES AND ACCESS AISLES SHALL HAVE SIGNS AND PAVEMENT MARKINGS PLACED IN ACCORDANCE WITH NYSDOT STANDARD DETAIL SHEET M608–4R1. THE INTERNATIONAL ACCESS SYMBOL SHALL BE STENCILED IN EACH ADA DESIGNATED PARKING SPACE.

10. ALL DISTURBED AREAS ADJACENT TO EXISTING LAWN AREAS SHALL RECEIVE 4" OF TOPSOIL, SEED AND MULCH AS REQUIRED TO RESTORE THE PROJECT SITE. ALL TOPSOIL SHALL COMPLY WITH NYSDOT STANDARD SPECIFICATIONS SECTION 613 AND ALL SEEDING AND MULCH SHALL COMPLY WITH NYSDOT STANDARD SPECIFICATIONS SECTION 610.

11. ALL UTILITY CONNECTIONS INCLUDING NEW WATER SERVICE, SANITARY SEWER, ELECTRICAL, ETC. SHALL BE COORDINATED WITH UTILITY OWNER(S) AND INSTALLED IN ACCORDANCE WITH THEIR STANDARDS AND/OR UNDER THEIR DIRECT SUPERVISION AS REQUIRED.

12. NEW CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. ALL PORTLAND CEMENT SHALL COMPLY WITH ASTM C150, TYPE IIA AND SHALL HAVE 6.5% ENTRAINED AIR AND THE WATER–CEMENT RATIO SHALL NOT EXCEED 0.40. ALL NEW CONCRETE CURBS AND SIDEWALKS SHALL COMPLY WITH NYSDOT CLASS A CONCRETE AND SHALL HAVE A LIGHT BROOM FINISH. ALL CONCRETE SHALL BE SEALED WITH CURING COMPOUND AFTER FINISHING.

13. PAVEMENT SPOT ELEVATION SHOWN TO FINISHED GRADE OF PAVEMENT. TOP OF CURB TO BE 6" ABOVE FINISHED GRADE OF PAVEMENT.

14. IF CURB/SIDEWALK SECTIONS ARE TO BE REMOVED; THEY SHALL BE SAWCUT AND REMOVED TO THE EXTENT NEEDED FOR INSTALLATION OF PROPOSED UTILITY. REMOVED SECTIONS SHALL BE REPLACED IN KIND TO THE SATISFACTION AND SPECIFICATIONS OF THE OWNER OR ENGINEER.

EROSION AND SEDIMENTATION NOTES

PLAN PREPARER AND CONTACT INFORMATION
DANIEL GRIFFITHS, P.E.
GRIFFITHS ENGINEERING, LLC
13 SOUTH WASHINGTON STREET, BINGHAMTON NY 13903
PHONE: (607)724–2400 / FAX: (607)724–2436

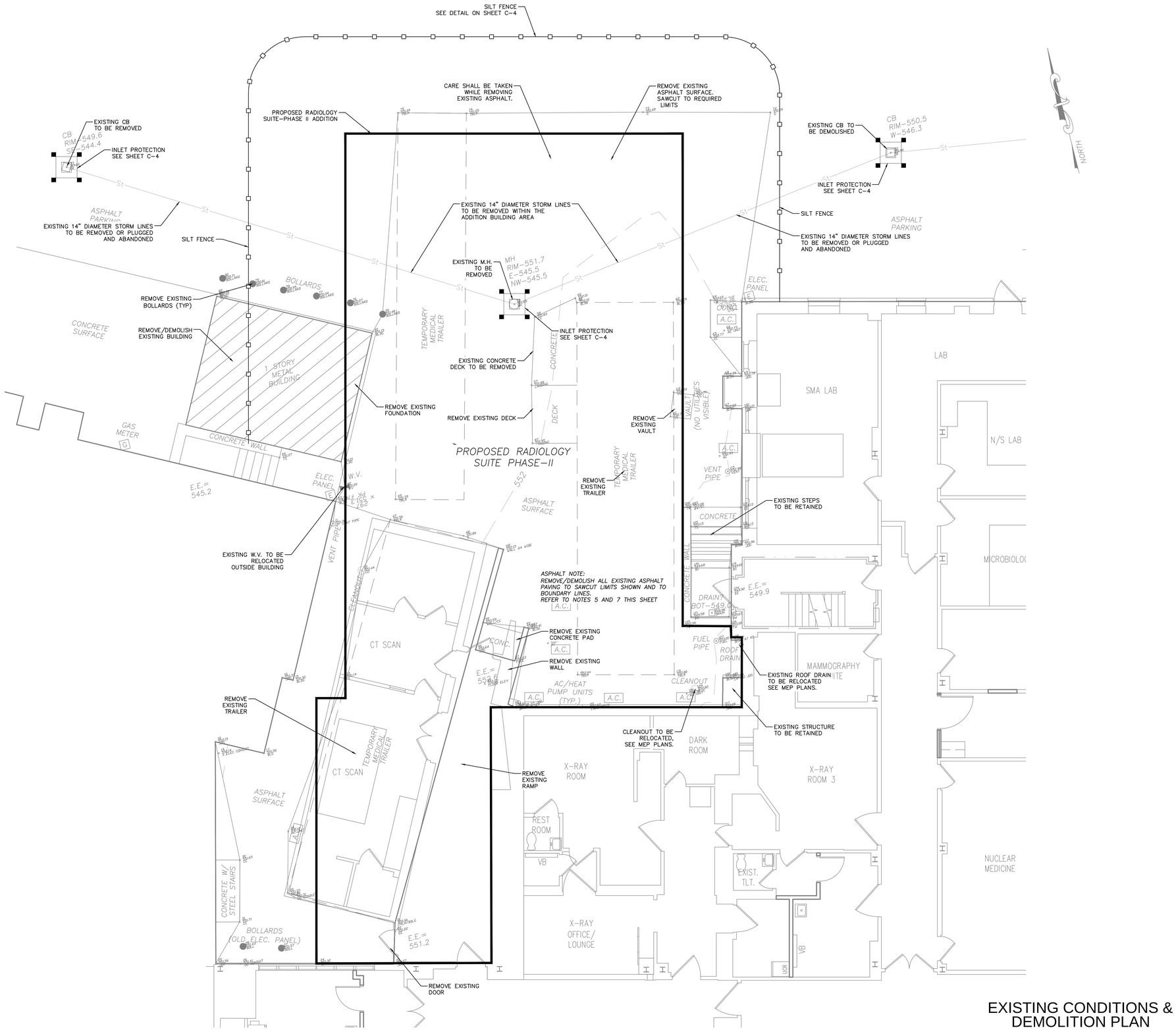
GENERAL NOTES:
CONTRACTOR SHALL ABIDE BY ALL RULES AND REGULATIONS PUBLISHED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION UNDER THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL".

SEE EROSION CONTROL DETAILS ON SHEET C–4

E&S POLLUTION CONTROL PLAN NOTES:
1. THERE ARE NO NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS HAVING THE POTENTIAL TO CAUSE POLLUTION.
2. POTENTIAL THERMAL IMPACTS RESULTING FROM THIS PROJECT HAVE BEEN MITIGATED BY:
   2.1. MINIMIZING DISTURBED AREA ON THE SITE.

GENERAL NOTES:
1. REFER TO SHEET C–4 FOR NOTES AND DETAILS PERTINENT TO EROSION AND SEDIMENT POLLUTION CONTROL.
2. STEEP SLOPES SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS (NORTH AMERICAN GREEN DS75, STAPLE PATTERN B OR APPROVED EQUAL), OR SPRAYED BONDED FIBER MATRIX APPLIED AT A RATE OF 3,000 – 4,000 lbs/ac. REFER TO NOTES AND DETAILS ON SHEET C–4.
3. THERE ARE NO RIPARIAN AREAS WITHIN THE MAPPING LIMITS OF THESE PLANS.
4. THE PROJECT IS ANTICIPATED TO BEGIN ONCE PERMITTING APPROVED WITH FINAL STABILIZATION TO FOLLOW.

CONTRACTOR NOTES:
THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION. IF UNFORESEEN CIRCUMSTANCES ARE DISCOVERED– I.E. SOIL EROSION, DISPLACED STONE, UNINTENDED LOSS OF VEGETATION; APPROPRIATE MEASURES SHALL BE TAKEN TO REMEDY THE SITUATION UNDER THE DIRECTION OF THE ENGINEER AND/OR THE OSWEGO COUNTY CONSERVATION DISTRICT.



EXISTING CONDITIONS & DEMOLITION PLAN
SCALE: 1"=5'

LEGEND
E E —OVERHEAD UTILITY LINES
W W —UNDERGROUND WATER LINE
St St —UNDERGROUND STORM LINE

0 5 10 15

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586–4334
Engineering: 102 Highland Avenue fax(570) 586–5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:

90% Issued For Bid

GRIFFITHS ENGINEERING
13 South Washington Street, Suite 1
Binghamton, New York 13903
Telephone (607) 724-2400
Fax (607) 724-2436

PROJECT TITLE:

WMC Health | ROY SCOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

RADIOLOGY ADDITION
EXISTING CONDITIONS & DEMOLITION PLAN

DRAWN BY:	CHECKED BY:
A.K.V.	D.G.
DATE:	PROJECT NO:
07/21/23	2021-109

DRAWING NO:

C-1

CAD FILE: ST ANTHONY HOSPITAL RADIOLOGY PLOT DATE: 7/21/2023.DWG

UTILITY NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO CONTACT NY811 (DIG SAFELY NEW YORK 1-800-962-7692) AT LEAST 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION OR DEMOLITION WORK FOR THE IDENTIFICATION OF UTILITIES IN THE VICINITY OF THE WORK AREA.
2. THE EXISTING UTILITIES SHOWN ON PLANS ARE FOR REFERENCE ONLY AND ARE NOT TO BE CONSTRUED AS AN ACCURATE OR ALL-INCLUSIVE REPRESENTATION OF THE UTILITIES PRESENT WITHIN THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE LOCATIONS OF ALL UTILITIES WITHIN THE WORK AREA PRIOR TO THE START OF WORK.
3. THE PROPOSED UTILITIES SHOWN ON THIS PLAN IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE ENGINEER/UTILITY TO DETERMINE SIZES AND LOCATION PRIOR TO CONSTRUCTION.
4. ALL UTILITIES DAMAGED OR DESTROYED SHALL BE BROUGHT TO THE ATTENTION OF THE SPECIFIC UTILITY OWNER. ALL COST INCURRED TO REPAIR OR REPLACE THE UTILITY SHALL BE BORNE BY THE CONTRACTOR.
5. ALL WORK ASSOCIATED WITH NEW WATER SERVICE OUTSIDE OF THE NYSDOT RIGHT-OF-WAY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

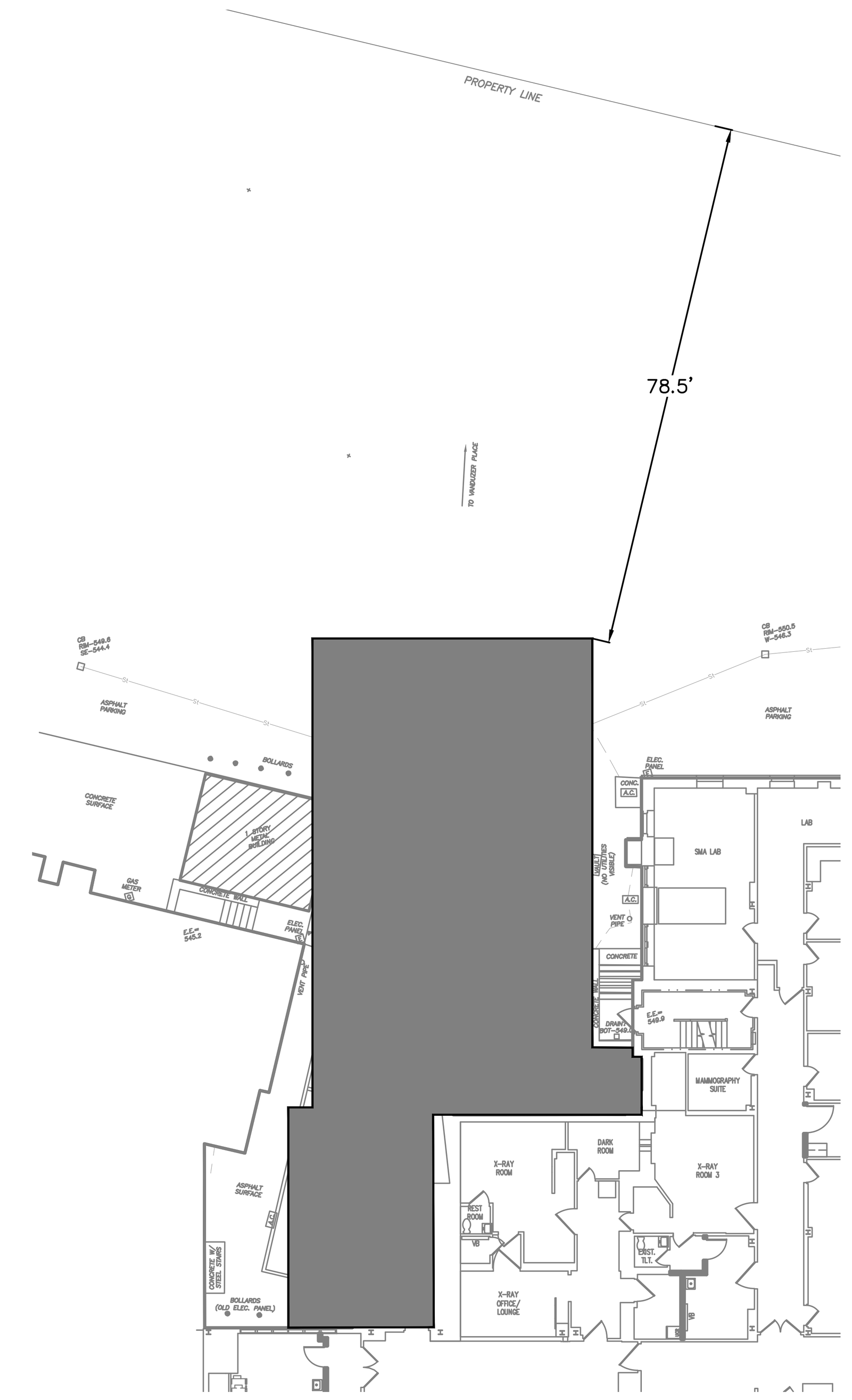
NORTH
CB
RIM-549.6
SE-544.4
CB
RIM-550.5
W-546.3
ASPHALT PARKING
ASPHALT PARKING
BOLLARDS
CONCRETE SURFACE
1 STORY METAL BUILDING
GAS METER
CONCRETE WALL
E.E.= 545.2
ELEC. PANEL
EXISTING W.V. TO BE RELOCATED OUTSIDE BUILDING
VENT PIPE
PROPOSED RADIOLOGY SUITE PHASE-II
ELEC. PANEL
CONC.
A.C.
VAULT (NO UTILITIES VISIBLE)
A.C.
VENT PIPE
CONCRETE
CONCRETE WALL
DRAIN? BOT-549.0
E.E.= 549.9
SMA LAB
MAMMOGRAPHY SUITE
DARK ROOM
X-RAY ROOM
X-RAY ROOM 3
REST ROOM
VB
EXIST. TLT.
VB
UCR
X-RAY OFFICE/ LOUNGE
SEE MEP PLANS FOR ELECTRICAL SERVICE AND GAS
CONNECT WATER TO EXISTING WATER MAIN. SEE MEP PLANS
CONNECT SANITARY LINES TO EXISTING. SEE MEP PLANS
ASPHALT SURFACE
A.C.
CONCRETE W/ STEEL STAIRS
BOLLARDS (OLD ELEC. PANEL)

LEGEND

——U/E——U/E—— –OVERHEAD UTILITY LINES
——W——W—— –UNDERGROUND WATER LINE
——St——St—— –UNDERGROUND STORM LINE

PROPOSED SITE LAYOUT AND UTILITIES
SCALE: 1"=5'

0 5 10 15



PROPOSED BUILDING SETBACK PLAN
SCALE: 1"=20'

0 20 40 60

HIGHLAND ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center | 102 Highland Avenue | Clarks Summit, PA 18411
(570) 586-4334 | fax(570) 586-5990 | www.highlandassociates.com

REVISION NO:

90% Issued For Bid

GRIFFITHS ENGINEERING
13 South Washington Street, Suite 1
Binghamton, New York 13903
Telephone (607) 724-2400
Fax (607) 724-2436

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:
RADIOLOGY ADDITION PROPOSED SITE LAYOUT AND UTILITIES

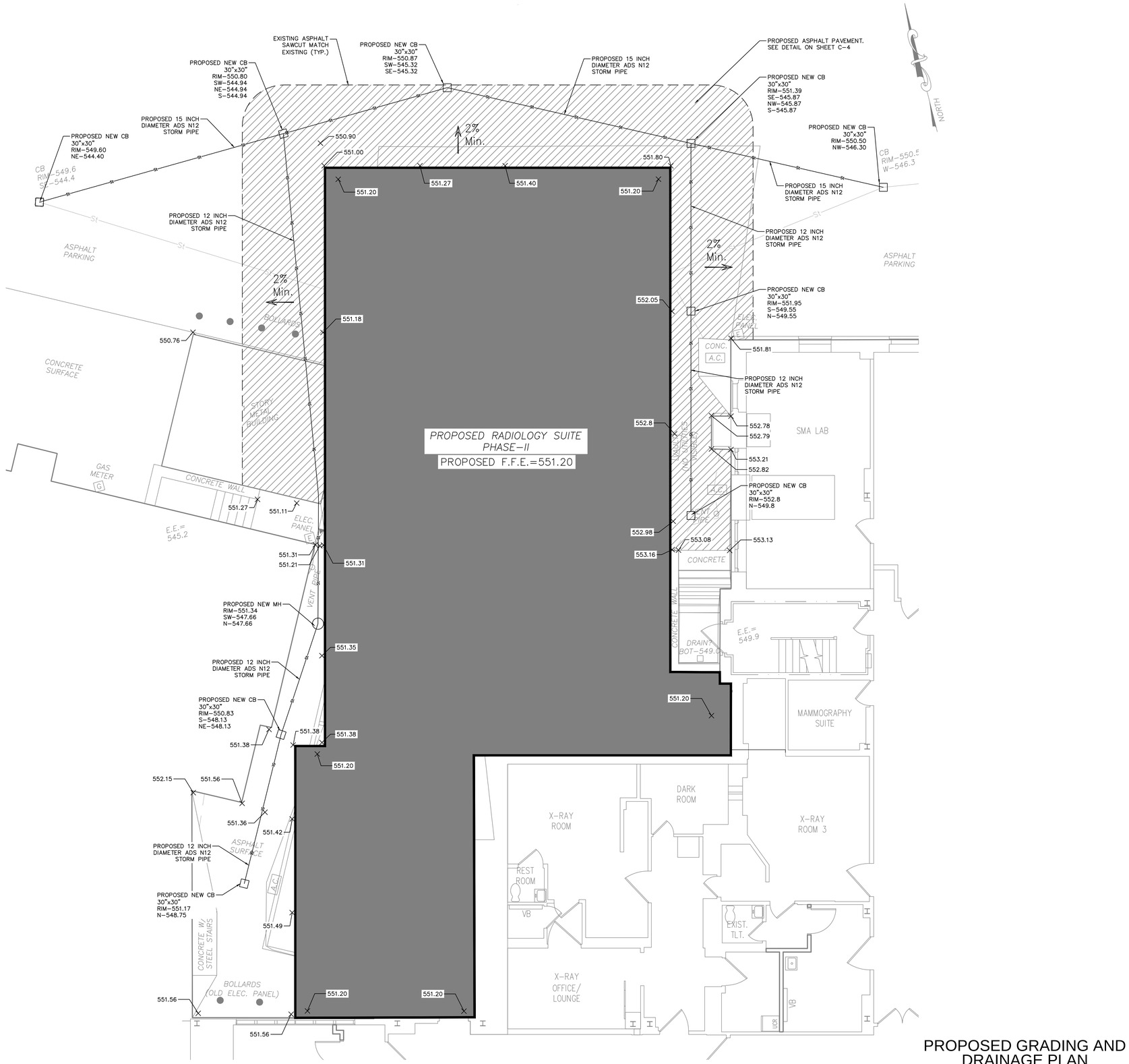
DRAWN BY:	CHECKED BY:
A.K.V.	D.G.
DATE:	PROJECT NO:
07/21/23	2021-109

DRAWING NO:
C-2

CAD FILE: ST ANTHONY HOSPITAL-RADIOLOGY SUITE PHASE II 3-09-2021.DWG PLOT DATE:

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT AND/OR REPAIR OF ALL ROADS OR OTHER EXISTING CONDITIONS DAMAGED AS A RESULT OF HIS/HER WORK.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND COMPLY WITH REQUIREMENTS AND REGULATIONS OF AGENCIES HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC AND JOB SAFETY.
4. PRIOR TO CONSTRUCTION, CONSULT WITH LOCAL OFFICIALS AND UTILITY COMPANIES TO DETERMINE THE LOCATION OF FACILITIES WITHIN PROJECT LIMITS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE NY ONE-CALL SERVICE BEFORE BEGINNING ANY EXCAVATION WORK.
6. ALL UTILITIES DAMAGED OR DESTROYED SHALL BE BROUGHT TO THE ATTENTION OF THE SPECIFIC UTILITY. ALL COST INCURRED TO FIX OR REPLACE THE UTILITY SHALL BE BORNE BY THE CONTRACTOR.
7. CONTRACTOR SHALL INSURE POSITIVE FLOW OF DRAINAGE SO THAT NO PONDING OF STORM WATER WILL OCCUR.
8. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR IN THE FIELD.
9. THE CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS AT ALL TIMES TO THE JOB SITE.



PROPOSED GRADING AND DRAINAGE PLAN

SCALE: 1"=5'

0 5 10 15

LEGEND

U/E U/E —OVERHEAD UTILITY LINES

W W —UNDERGROUND WATER LINE

—UNDERGROUND STORM LINE

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:

90% Issued For Bid

GRIFFITHS ENGINEERING
15 South Washington Street, Suite 1
Binghamton, New York 13903
Telephone (607) 724-2400
Fax (607) 724-2456

PROJECT TITLE:

WMC Health | RON SECORIS CHARITY HEALTH SYSTEM, A member of the Westchester Medical Center Health Network

St. Anthony Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

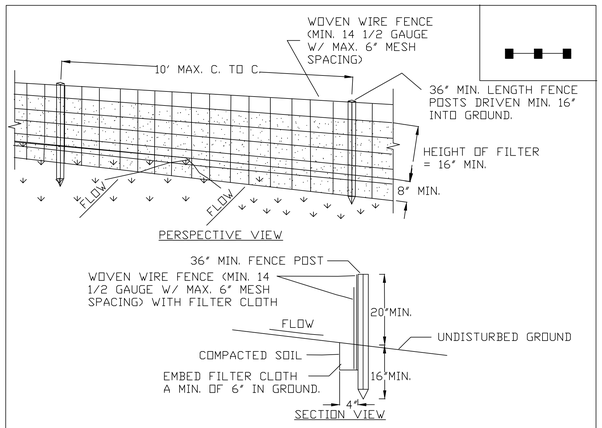
RADIOLOGY ADDITION
PROPOSED GRADING AND DRAINAGE PLAN

DRAWN BY:	CHECKED BY:
A.K.V.	D.G.
DATE:	PROJECT NO:
07/21/23	2021-109

DRAWING NO:

C-3

CAD FILE: ST ANTHONY HOSPITAL-RADIOLOGY PLOT DATE: 7/21/2023.DWG



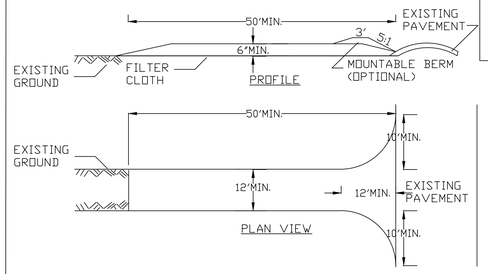
CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

SILT FENCE

SYMBOL



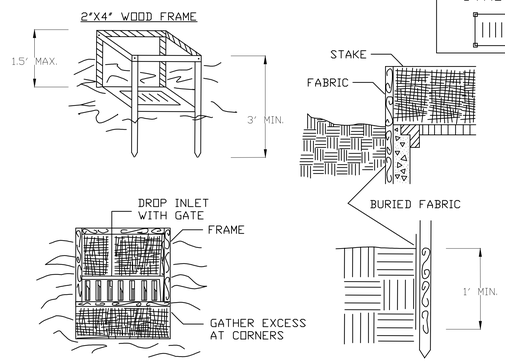
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CON-STRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STABILIZED CONSTRUCTION ENTRANCE

SYMBOL



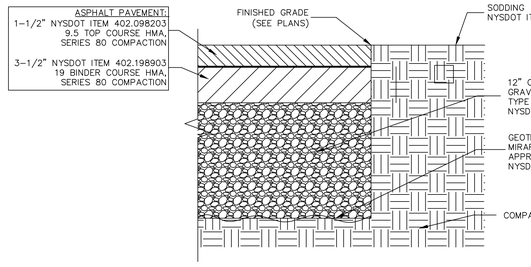
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

FILTER FABRIC DROP INLET PROTECTION

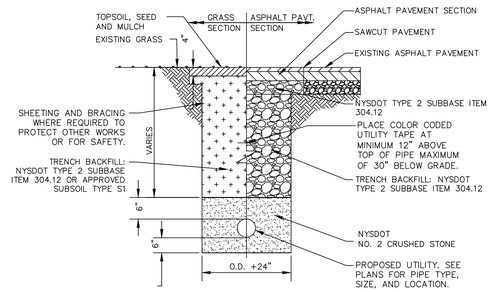


NOTES:

1. EXCAVATE AND DISPOSE OF ALL EXISTING MATERIAL REQUIRED TO INSTALL CROSS SECTION OF NEW ASPHALT.
2. INSTALL GEO TEXTILE FABRIC BETWEEN COMPACTED SUBGRADE AND TYPE 2 SUBBASE.
3. INSTALL SUBBASE MATERIAL FINE GRADE & ROLL SUBBASE COMPACT TO 95% PROCTOR COMPACTED LIFTS NOT TO EXCEED 6 INCHES.
4. APPLY TACK COAT TO ALL VERTICAL SURFACES ADJACENT TO NEW ASPHALT PAVEMENT.
5. PLACE ASPHALT COURSES COMPACTED TO MEET NYSDOT STANDARDS AND SPECIFICATIONS SECTION 402 DATED MAY 1 2019.

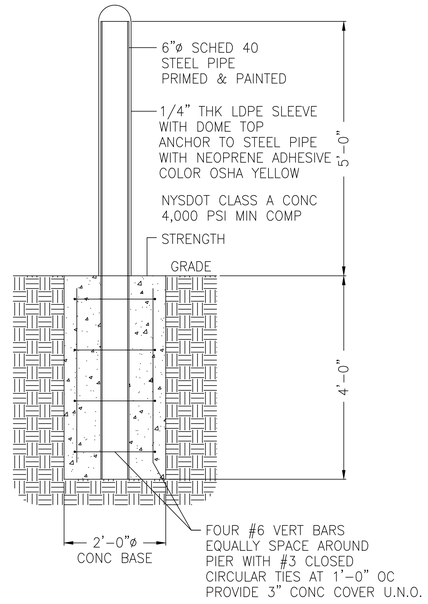
ASPHALT PAVEMENT SECTION

NOT TO SCALE



TRENCH EXCAVATION & BACKFILL DETAIL

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:

90% Issued For Bid

GRIFFITHS ENGINEERING
13 South Washington Street, Suite 1
Binghamton, New York 13903
Telephone (607) 724-2400
Fax (607) 724-2456

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM, A member of the Westchester Medical Center Health Network

St. Anthony Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

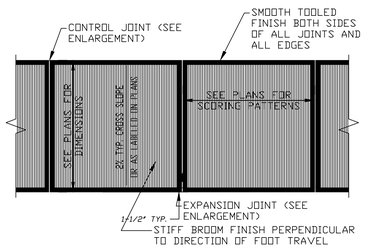
RADIOLOGY ADDITION DETAILS

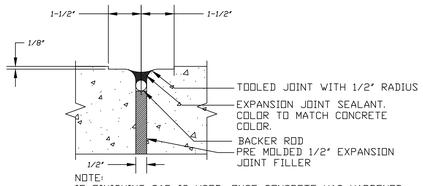
DRAWN BY:	CHECKED BY:
A.K.V.	D.G.
DATE:	PROJECT NO:
07/21/23	2021-109

DRAWING NO:

C-4

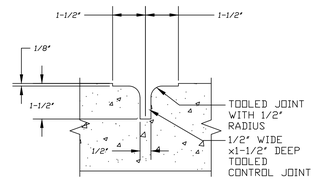
CAD FILE: ST ANTHONY HOSPITAL RADIOLOGY PLOT DATE: 8/23/2023





NOTE:
IF FINISHING CAP IS USED, ONCE CONCRETE HAS HARDENED REMOVE FINISHING CAP AND CAULK JOINT WITH SEALANT TO MATCH CONCRETE COLOR.

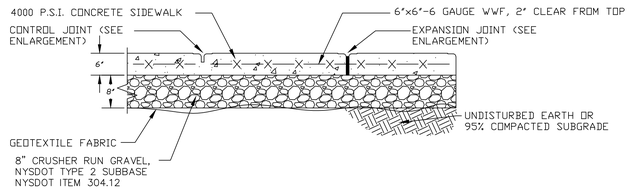
EXPANSION JOINT ENLARGEMENT



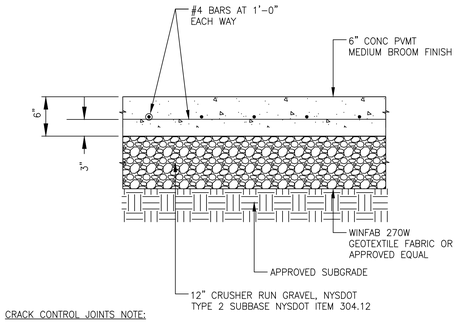
CONTROL JOINT ENLARGEMENT

NOTES :

1. LOCATE EXPANSION JOINTS AS SHOWN ON PLANS OR AT MAXIMUM 30'-0" IN ANY DIRECTION.
2. PROVIDE EXPANSION JOINTS AT CONTACT POINTS WITH BUILDINGS, NEW OR EXISTING CONCRETE, AND ANY PERMANENT STRUCTURES.
3. LOCATE CONTROL JOINTS AS SHOWN ON PLANS OR IF NOT SHOWN ON PLANS AT 5'-0" ON CENTER.
4. EDGES OF CONCRETE SHALL BE TOOLED WITH 1/2" RADIUS.
5. AFTER CONCRETE HAS CURED, SEAL EXPOSED CONCRETE. REFER TO SITE CONCRETE SPECIFICATION FOR SEALING COMPOUND REQUIREMENTS. APPLY PER MANUFACTURERS RECOMMENDATION



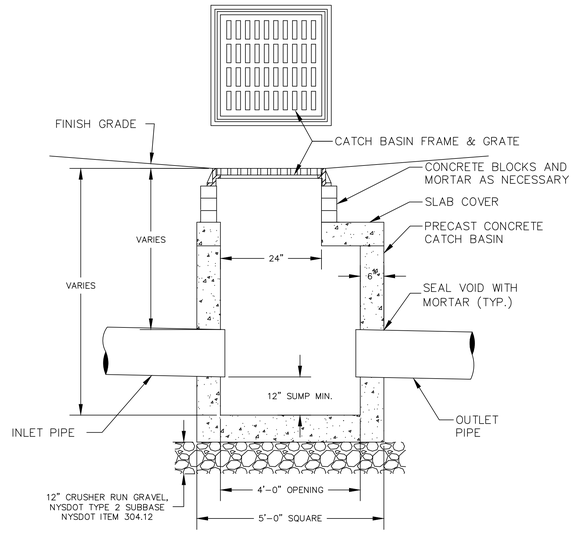
CONCRETE SIDEWALK DETAIL (NO CURB)
NOT TO SCALE



CRACK CONTROL JOINTS NOTE:

ALL CONCRETE PAVEMENT CRACK CONTROL JOINTS SHALL BE ESTABLISHED BY USE OF 1 1/2" DEEP SPEED-E-JOINT PREFORMED CONTRACTION JOINT EMBEDDED STRIPS BY W.R. MEADOWS, INC. OR APPROVED EQUAL. SPACING AND LOCATION OF CRACK CONTROL JOINTS SHALL BE AS SHOWN ON SITE PLAN.

CONCRETE DUMPSTER PAD/ TRANSFORMER PAD SECTION DETAIL
NOT TO SCALE



CATCH BASIN DETAIL
NOT TO SCALE

HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:

90% Issued For Bid

GRIFFITHS ENGINEERING
13 South Washington Street, Suite 1
Binghamton, New York 13905
Telephone (607) 724-2400
Fax (607) 724-2436

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

RADIOLOGY ADDITION DETAILS

DRAWN BY:	CHECKED BY:
A.K.V.	D.G.
DATE:	PROJECT NO:
07/21/23	2021-109

DRAWING NO:

C-5

CAD FILE: ST ANTHONY HOSPITAL-RADIOLOGY.DWG PLOT DATE: 1/23/2023

DEMOLITION NOTES

1. ALL DEMOLITION AND REMOVAL WORK SHALL BE COMPLETED AS INDICATED AND NOTED ON THE DRAWINGS AND AS SPECIFIED.

2. BEFORE STARTING WORK, MAKE A THOROUGH EXAMINATION OF THOSE PORTIONS OF THE STRUCTURE IN WHICH THE WORK IS TO BE PERFORMED. CHECK ALL THE WORK ADJOINING OR AT UNDERLYING LOCATIONS. REPORT TO THE ARCHITECT ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK. DO NOT START THE WORK UNTIL SUCH CONDITIONS HAVE BEEN EXAMINED AND A COURSE OF ACTIONS MUTUALLY AGREED UPON.

3. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL CALL TO THE ATTENTION OF THE OWNER: ANY DAMAGE, CRACKS OR OTHER IMPERFECTIONS IN THE WORK ADJACENT TO DEMOLITION AREAS.

4. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS.

5. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM RISING

6. KEEP ALL ADJOINING PUBLIC AREAS CLEAN AND FREE OF DEBRIS OR CONSTRUCTION MATERIALS DURING WORKING HOURS, AND MAKE AN EFFORT TO PROVIDE SAFE CONDITIONS FOR THE GENERAL PUBLIC AND WORKMEN.

7. DEMOLISHED MATERIALS, UNLESS OTHERWISE NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE SITE, ON A REGULAR BASIS, IN A LEGAL MANNER.

8. REPAIR AND/OR REPLACE EXISTING ITEMS NOT SCHEDULED OR NOTED TO BE DEMOLISHED, AND NOT SPECIFIED TO BE REMOVED, BUT WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.

9. PATCH, FILL AND REPAIR ALL SURFACES DISTURBED, CUT, DAMAGED, IN NEED OF REPAIR OR MADE IMPERFECT BY ALTERATIONS OR REMOVAL WORK AND AS REQUIRED TO PREPARE SURFACES FOR NEW MATERIALS AND ARRANGEMENTS.

10. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (WATER, GAS, ELECTRICITY, STEAM, ETC.) THE CONTRACTOR SHALL ARRANGE WITH THE OWNER TO LOCATE SHUTOFF VALVES, PANEL BOXES AND OTHER CONTROL ELEMENTS, SO THAT WATER DAMAGE AND OTHER POTENTIALLY INCONVENIENT OR DANGEROUS SITUATIONS ARE AVOIDED.

11. ALL DOORS THAT ARE REMOVED ARE TO BE TURNED OVER TO BUILDING OWNER, UNLESS OTHERWISE INSTRUCTED.

12. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT AND SHORING OF EXISTING CEILINGS PARTITIONS, ETC. DURING DEMOLITION AND RENOVATION.

13. EXISTING FINISHES THAT ARE DISTURBED BY DEMOLITION SHALL BE PATCHED TO MATCH EXISTING.

14. ALL WORK TO BE SCHEDULED WITH OWNER

ACOUSTICAL PERFORMANCE NOTES:

ALL NEW STC RATED PARTITIONS SHALL HAVE SOUND ATTENUATION INSULATION BLANKETS FROM CONCRETE SLAB TO UNDERSIDE OF DECK ABOVE. THICKNESS OF SAID INSULATION TO MATCH THICKNESS OF STUD FRAME TO FILL VOIDS COMPLETELY. SEE PARTITION LEGEND FOR ADDITIONAL INFORMATION

ALL PERIMETER EDGES OF STC RATED PARTITIONS SHALL BE CAULKED WITH AN ACOUSTICAL SEALER (CONTINUOUS).

AT ALL PENETRATIONS (DUCTS, PIPES, CONDUITS, ETC.) THRU ANY STC RATED PARTITIONS, PROVIDE 1" SPACE AROUND PERIMETER. VOID SHALL BE PACKED WITH SOUND ATTENUATION BLANKETS AND CAULKED WITH ACOUSTICAL SEALANT. SEE MECHANICAL DRAWINGS FOR DETAIL.

WRAP BACKSIDE OF BOXES WITH MOLDABLE ACOUSTIC DEADENING SOUND MAT AND PACK AROUND ALL ELECTRICAL OUTLETS AND SWITCH BOXES WITH SOUND ATTENUATION INSULATION (THICKNESS TO MATCH VOID) AND CAULK WITH ACOUSTICAL SEALANT. ELECTRICAL CONTRACTOR SHALL NOT INSTALL ANY OUTLETS BACK TO BACK. INSTALL ONLY ONE BOX PER STUD CAVITY.

ALL WALL PANELS TO BE RECESSED IN A SOUND ATTENUATION LINED BOX. CONDUITS INTO BOX TO BE ACOUSTICALLY PACKED AND CAULKED WITH ACOUSTICAL SEALANT.

INSULATE AROUND ALL CONDUITS, PIPES, ETC. - RUN IN STUD PARTITIONS WITH 3\" SOUND ATTENUATION INSULATION.

PULL TEST REQUIREMENTS FOR FASTENERS

1. PULL OUT TESTS SHALL BE PERFORMED BY THE FASTENER MFGR. CONFORM TO FACTORY MUTUAL'S LOST PREVENTION DATA SHEET 1-49. THE RESULTS OF THESE TESTS, AND ASSESSMENT BY THE FASTENER MFGR. REGARDING THE SUITABILITY OF THE FASTENER FOR THE INTENDED PROJECT IS REQUIRED. FASTENER INSTALLATION INSTRUCTIONS SHALL BE PROVIDED TO THE APPLICATOR PRIOR TO THE JOB START.

2. FASTENERS AND PLATES SHALL MEET FACTORY MUTUAL STANDARD 4470 FOR CORROSION RESISTANCE AND WIND UPLIFT RESISTANCE.

3. FASTENER MFGR. SHALL WARRANTY THE PERFORMANCE OF THE FASTENER AND PLATES FOR THE DURATION OF THE ROOFING WARRANTY.

4. FASTENER AND PLATES SHALL BE APPROVED IN WRITING BY THE FASTENER MANUFACTURER FOR THE INTENDED USAGE.

5. THE CONTRACTOR IS TO VERIFY THE PULL OUT PERFORMANCE OF THE WOOD NAILERS TO CONFIRM THAT THEY MEET FACTORY MUTUAL'S LOSS PREVENTION DATA 1-49. ANY NAILERS THAT DO NOT MEET THIS REQUIREMENT SHALL BE REPLACED.

6. IN AREAS WHERE EXISTING WOOD BLOCKING IS TO REMAIN IN EXISTING PARAPET WALLS FASTENER MANUFACTURER TO PROVIDE THE PULL OUT TEST PERFORMANCE CERTIFICATE PRIOR TO THE START OF ANY INSTALLATION.

GENERAL NOTES

1. THE CONTRACTOR SHALL INVESTIGATE JOB SITE TO COMPARE CONTRACT DOCUMENTS AND EXISTING CONDITIONS. INCLUDE COST FOR ALL WORK DESCRIBED IN CONTRACT DOCUMENTS AND REQUIRED OR IMPLIED BY EXISTING CONDITIONS. NOTIFY ARCHITECT OF ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND NEW WORK, OMISSIONS OR CONFLICTS IN THE DRAWINGS AND ANY RESTRICTIONS RELATED TO THE EXECUTION OF THE WORK.

2. THE CONTRACTOR SHALL ISSUE COMPLETE SETS OF THE CONTRACT DOCUMENTS TO EACH OF THE SUBCONTRACTORS FOR COORDINATION OF THEIR WORK AND DESCRIPTION OF SCOPE. COORDINATE ALL DEMOLITION AND CONSTRUCTION WITH OTHER TRADES. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION CONTRACTORS UNDER DIRECTION OF THE CONSTRUCTION MANAGER TO COORDINATE THEIR WORK. THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE ARCHITECT PRIOR TO STARTING ANY WORK. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ELECTRICAL EQUIPMENT. SPECIAL ATTENTION IS CALLED TO ARTICLE 110-26 (F) OF THE NATIONAL ELECTRIC CODE. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6 FT. ABOVE THE EQUIPMENT OR TO STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE. THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT.

3. THE CONTRACTOR SHALL APPLY FOR, OBTAIN AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND APPROVALS BY LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PROJECT. PROVIDE COPIES OF ALL TRANSACTIONS TO OWNER. NOTIFY ARCHITECT OF ANY VARIANCE WITH CODES IN FORCE. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.

4. THE CONTRACTOR SHALL PROVIDE, AND PAY FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT, WAREHOUSING, TRANSPORTATION AND DELIVERY COSTS, HOISTING, REMOVAL OF TRASH AND DEBRIS, AND OTHER FACILITIES AND SERVICES NECESSARY FOR THE EXECUTION AND COMPLETION OF THE WORK.

5. ALL WORK SHALL BE PERFORMED BY THE GENERAL CONTRACTOR UNLESS OTHERWISE NOTED. ALL REFERENCES TO THE "CONTRACTOR" INCLUDE THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS.

6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR, AND HAVE CONTROL OVER, ALL CONSTRUCTION MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK REQUIRED BY THE CONTRACT DOCUMENTS.

7. THE ARCHITECT/ENGINEER IS NOT RESPONSIBLE FOR ERRORS, OMISSIONS OR DELAYS BY THE CONTRACTOR.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACTS AND OMISSIONS OF THE CONTRACTOR'S EMPLOYEES, SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTRACT WITH A CONTRACTOR.

9. OTHER CONTRACTORS AND THEIR SUBCONTRACTORS MAY BE WORKING ON THE PREMISES SIMULTANEOUS WITH THE DURATION OF THIS CONTRACT. NO ACTION SHALL BE TAKEN ON THE PART OF THIS CONTRACTOR OR ANY SUBCONTRACTOR TO IMPEDE THE ACCESS OR OPERATION OF ANY OTHER CONTRACTOR ON THE PREMISES, UNION OR NON-UNION.

10. WORK SHALL BE DONE DURING NORMAL WORKING HOURS. CONTRACTOR SHALL SCHEDULE AND PERFORM ALL WORK SO AS NOT TO UNREASONABLY DISTURB ANY TENANT IN THE BUILDING AND SHALL BE RESPONSIBLE FOR ANY OVERTIME COSTS INCURRED THEREBY.

11. THE CONTRACTOR SHALL COMPLY AND COORDINATE ALL WORK WITH BUILDING OWNER REGARDING HEAT, WATER, ELECTRICITY, DELIVERIES, ACCESS, ELEVATOR AVAILABILITY, NOISE CONTROL, TRASH AND DEBRIS REMOVAL, HOISTING, AND ANY OTHER UTILITIES OR OWNER'S RULES AND REGULATIONS CONCERNING THE PROJECT SITE.

12. THE CONTRACTOR SHALL PROCURE MATERIALS SO AS NOT TO DELAY SUBSTANTIAL COMPLETION. NOTIFY ARCHITECT WITHIN 5 DAYS OF EXECUTION OF CONTRACT OF ANY MATERIAL DELIVERY WHICH COULD DELAY COMPLETION OF CONTRACT.

13. THE CONTRACTOR SHALL COORDINATE SCHEDULING, PROVISIONS FOR INSTALLATION, LOCATIONS AND THE ACTUAL INSTALLATION OF ITEMS FURNISHED BY OWNER OR BY OTHERS.

14. WORK WITH ALL TRADES ON THE PROJECT NOT UNDER CONTRACT TO THE CONTRACTOR (I.E.: TELEPHONE, COMPUTER INSTALLERS, ETC.). ANY CHANGES OR DELAYS ARISING FROM CONFLICTS BETWEEN SUCH TRADES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD. CONTRACT DRAWINGS ARE NOT INTENDED TO REPRESENT EXACT DIMENSIONS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR FOR ALL PHASES INCLUDING BIDDING, FABRICATION, COORDINATION AND CONSTRUCTION.

16. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS.

17. THE CONTRACTOR. SHALL SUBMIT FOR ARCHITECT'S REVIEW ALL BUILDING STANDARD SAMPLES AND PRODUCT LITERATURE. CONTRACTOR TO ALSO SUBMIT SAMPLES AND PRODUCT LITERATURE AND OTHER PERTINENT DATA FOR ARCHITECT'S CONSIDERATION OF ANY PROPOSED SUBSTITUTIONS.

18. THE CONTRACTOR. SHALL SUBMIT FOR ARCHITECT'S REVIEW PRIOR TO FABRICATION OR PURCHASE, SHOP DRAWINGS OR SAMPLES FOR ALL MILLWORK, CUSTOM METALWORK, CUSTOM CASEWORK, AND ALL OTHER ITEMS AS REQUESTED BY THE ARCHITECT FOR ALL ABOVE BUILDING STANDARD ITEMS.

19. CHANGES IN DRAWINGS OR ACTUAL WORK SHALL BE ISSUED BY THE ARCHITECT.

20. PERFORM ALL INTERIOR AND EXTERIOR WORK INSTALLING MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND IN A MANNER CONSISTENT WITH INDUSTRY STANDARD OF WORKMANSHIP. FOLLOW ALL SAFETY PROCEDURES TO PROTECT WORKERS, GENERAL PUBLIC, AND BUILDING OCCUPANTS.

    NOTIFY AND SCHEDULE WITH BUILDING OWNER AND EVERYONE INVOLVED WITH PROJECT (IN ADVANCE), WHEN CERTAIN WORK OR CONSTRUCTION IS BEING PERFORMED, REQUIRING THE BUILDING TO BE EVACUATED. SCHEDULE ALL WORK SO AS NOT TO INTERFERE WITH BUILDING OCCUPANTS. PERFORM WORK ON OFF HOURS OR WORK SHIFTS WHEN BUILDING IS VACANT, AND ALLOW ENOUGH TIME FOR ANY ODORS TO DISSIPATE. PROVIDE PROPER EXHAUST VENTILATION AS PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. CONTRACTOR TO SUBMIT DUST AND H.V.A.C. (VENTILATION) CONTROL PLAN AND PROCEDURES TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO STARTING CONSTRUCTION.

    REVIEW ALL PRODUCT M.S.D.S (MATERIAL SAFETY DATA SHEET) INFORMATION ON ALL MATERIALS AND FOLLOW ALL SAFETY AND APPLICATION PROCEDURES.

    THE FOLLOWING LIST IS A SAMPLE OF ITEMS THAT REQUIRE SPECIAL PRECAUTIONS: PAINTS, STAINS, SOLVENTS, VAPORS, EPOXY, CORROSIVES, CONTAMINANTS, VAPOR EMISSION COMPLIANCE TREATMENTS, ADHESIVES, GLUES, CLEANING SOLUTIONS, PROPANE, FUELS, WELDING, CHEMICALS, ETC...

21. THE CONTRACTOR SHALL EXAMINE ALL SURFACES TO DETERMINE THAT THEY ARE SOUND, DRY, CLEAN AND READY TO RECEIVE FINISHES PRIOR TO INSTALLATION. START OF INSTALLATION SHALL IMPLY ACCEPTANCE OF SUBSTRATE AND SHALL NOT BE GROUNDS FOR CLAIMS AGAINST IMPROPER PERFORMANCE OF INSTALLED MATERIALS. ADVISE ARCHITECT OF ANY EXISTING CONSTRUCTION NOT LEVEL, SMOOTH AND PLUMB WITHIN INDUSTRY STANDARDS PRIOR TO START OF CONSTRUCTION.

22. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL NECESSARY COVERINGS, PROTECTIVE ENCLOSURES, TEMPORARY DOORS AND PARTITIONS AND DUST BARRIERS TO PROTECT ALL OCCUPANTS AND EXISTING WORK AND FINISHES TO REMAIN. LOCATION OF SUCH PROTECTION SHALL BE VERIFIED WITH OWNER PRIOR TO COMMENCING WORK AND IN COORDINATION WITH PROGRESSION OF WORK SCHEDULE. PERFORM WORK IN A MANNER THAT WILL AVOID HAZARDS TO PERSONS IN ADJACENT AREAS AND THAT WON'T INTERFERE WITH WORK OR PASSAGE TO ANY OF THESE AREAS. REPAIR AND REPLACE ANY DAMAGES CAUSED BY IMPROPER PROTECTIONS AT NO ADDITIONAL CHARGE TO OWNER.

23. WORK DAMAGED DURING CONSTRUCTION OR NOT CONFORMING TO SPECIFIED STANDARDS, TOLERANCES OR MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION SHALL BE REPLACED, BY THE CONTRACTOR, AT NO ADDITIONAL CHARGE TO THE OWNER.

24. THE CONTRACTOR SHALL MAINTAIN ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND LIFE SAFETY SYSTEMS IN WORKING ORDER.

25. EXIT DOORS, EGRESS DOORS, AND OTHER DOORS REQUIRED FOR MEANS OF EGRESS SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

26. VERIFY ALL KEYING REQUIREMENTS OF ALL LOCKS WITH OWNER.

27. 24 HOURS PRIOR TO OCCUPANCY OF ANY PHASE, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL SURFACES OF DUST, DEBRIS, LOOSE CONSTRUCTION MATERIAL AND EQUIPMENT. VACUUM OR MOP ALL FLOORS AND CLEAN WINDOWS.

28. SUBSTANTIAL COMPLETION SHALL BE THE DATE ON WHICH THE PREMISES ARE AVAILABLE FOR OCCUPANCY FROM THE CONTRACTOR AND SHALL BE AS DEFINED IN AIA DOCUMENT A201. ADDITIONAL TOUCH-UP OR MINOR INSTALLATION WORK MAY BE INCOMPLETE.

29. THE CONTRACTOR SHALL PROVIDE A WARRANTY TO THE OWNER THAT ALL MATERIALS, AND EQUIP. FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE NEW, UNLESS OTHERWISE SPECIFIED, AND THAT ALL WORK SHALL BE OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND SHALL CONFORM TO THE CONTRACT DOCUMENTS.

30. FOR A PERIOD OF ONE YEAR BEGINNING AT THE DATE OF SUBSTANTIAL COMPLETION, CONTRACTOR SHALL PROMPTLY CORRECT WORK FOUND NOT TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. CONTRACTOR SHALL BEAR ALL COST OF CORRECTIONS.

31. CONTRACTOR SHALL FULLY ACQUAINT HIMSELF WITH THE CONDITIONS OF THE CONTRACT, LOCAL CONDITIONS RELATING TO LOCATION, ACCESSIBILITY AND GENERAL CHARACTER OF THE CONSTRUCTION SITE AND LOCAL LABOR CONDITIONS SO THAT HE UNDERSTANDS THE NATURE, EXTENT, DIFFICULTIES, AND RESTRICTIONS RELATED TO THE EXECUTION OF WORK. NOTIFY ARCHITECT OF ALL DISCREPANCIES PRIOR TO COMMENCING WORK.

32. ALL WOOD TO BE FIRE RETARDANT (TYP.)

33. CONTRACTOR SHALL FRAME AND FINISH WHERE NECESSARY ALL MECHANICAL AND ELECTRICAL WALL PENETRATIONS.

34. IN ALL INSTANCES WHERE EXISTING WALLS ARE BEING REMOVED AND REWORKED, CONTRACTOR IS TO REPAINT ENTIRE WALL TO NEAREST CORNER OR BREAK LINE WHERE WALL CHANGES DIRECTION.

35. CONTRACTOR TO COORDINATE WITH E.C. THE MOUNTING HEIGHT OF ALL SWITCHES AND OUTLETS AT MILLWORK, COUNTERS, SHELVING, SINKS, ETC...

36. CONTRACTOR IS TO PROVIDE ALL MISC. FRAMING, BLOCKING, ETC. TO HANG SCREENS, BULLETIN BOARDS, RAILS, TOILET ACCESSORIES, WOODWORK, ETC.

37. CONTRACTOR IS TO COORDINATE WITH ALL TRADES FOR CEILING PENETRATIONS AND PROVIDE BRACING FOR EXTRA SUPPORT AS NECESSARY FOR PROPER INSTALLATION.

38. CONTRACTOR IS TO PROVIDE TEMPORARY WATERTIGHT WEATHERPROOF CLOSURES AT ALL ROOF OPENINGS UNTIL AFTER INSTALLATION OF MECHANICAL UNITS, DRAINS, VENTS, ETC. ROOF IS THEN TO BE RESEALED WEATHER-TIGHT.

39. WHERE EXISTING BUILT UP ROOF HAS BEEN DISTURBED, REPAIR IN THE FOLLOWING MANNER: REMOVE EXISTING GRAVEL 3'-0" FROM EDGE, MOP ON 1ST FELT (3'-0" WIDE) EXTENDING UP CANT (OR OVER WOOD BLOCKING MOP ON EACH FOLLOWING FELT TRIMMING 9" OFF EACH LAYER (FOUR LAYERS). APPLY TOP COAT OF BITUMEN, (NEW BITUMEN TO BE COMPATIBLE WITH EXISTING) FOLLOWED BY GRAVEL TO MATCH EXISTING.

40. CONTRACTOR TO PROVIDE CONTROL JOINTS IN DRYWALL ON STRIKE SIDE OF DOORS.

41. CONTROL JOINTS IN GYPSUM BOARD PARTITIONS AND GYPSUM BOARD CEILINGS SHALL BE SPACED AS FOLLOWS:

    PARTITIONS - 30 FT. MAXIMUM IN EITHER DIRECTION.

    INTERIOR CEILINGS (WITH PERIMETER RELIEF) - 50 FT MAXIMUM IN EITHER DIRECTION.

    INTERIOR CEILINGS (WITHOUT PERIMETER RELIEF) - 30 FT MAXIMUM IN EITHER DIRECTION.

    EXTERIOR CEILINGS - 30 FT. MAXIMUM IN EITHER DIRECTION.

42. ALL PENETRATIONS THROUGH RATED WALLS ARE TO BE SEALED TO MAINTAIN INTEGRITY OF WALL CONSTRUCTION AND RATING.

43. ALL INSULATION EXPOSED TO CEILING PLENUM IS TO BE FIRE AND DUST PROOF.

44. ALL NEW SUPPLY AIR AND RETURN GRILLES SHALL BE LOCATED IN THE CENTER LINE OF ACOUSTICAL TILES UNLESS OTHERWISE INDICATED ON PLANS.

45. PIPE SLEEVES ARE TO BE CONDUIT (LENGTH TO MATCH THE THICKNESS OF THE WALL), WITH INSULATED BUSHINGS AND ARE TO BE SEALED BY CONTRACTOR AFTER CONDUIT INSTALLATION TO MAINTAIN RATING. SLEEVES ARE TO BE PLACED IN FIRST BLOCK COURSE.

46. CONTRACTOR SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS WHEN RELOCATING AND/OR INSTALLING ANY EQUIPMENT AND FURNISHINGS.

47. GENERAL CONTRACTOR SHALL VERIFY EQUIPMENT LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

48. CONTRACTOR SHALL VERIFY EXISTING EQUIPMENT CONDITIONS. EQUIPMENT CURRENTLY ANCHORED TO FLOOR SHALL RECEIVE SIMILAR TREATMENT WHEN RELOCATED.

49. CONTRACTOR SHALL BE MADE AWARE THAT ALL EXISTING EQUIPMENT "TO REMAIN" WILL BE PRESENT IN LABS DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO EQUIPMENT AND PROVIDE TEMPORARY COVERING FOR ALL EXISTING EQUIPMENT TO REMAIN.

50. ALL PENETRATIONS THROUGH DRYWALL AND MASONRY SURFACES INCLUDING BUT NOT LIMITED TO PIPE, CONDUIT, DUCTWORK, GRILLES, REGISTERS, DEVICE BOXES, HANGER RODS, ETC. SHALL HAVE THEIR COMMON JOINTS WITH DRYWALL AND/OR MASONRY CAULKED TO PROVIDE AN AIR-TIGHT SEAL.

51. CONTRACTOR TO REMOVE ANY STRAY PAINT, DIRT, OR STAINS INCURRED DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TEMPORARY EQUIPMENT COVERINGS USED DURING CONSTRUCTION AND HE SHALL ALSO BE RESPONSIBLE FOR REMOVING HIS TRASH OFF OF THE JOB SITE DAILY.

52. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND WELDING IN COMPLIANCE WITH THE PUBLISHED STANDARDS OF NFPA. THE CONTRACTOR SHALL PROVIDE FIRE WATCHES FOR ALL CUTTING, GRINDING, AND WELDING OPERATIONS. THE TRAINING OF THESE FIRE WATCHES AND THE USE OF THE CONTRACTOR'S SUPPLIED FIRE EXTINGUISHERS IS THE RESPONSIBILITY OF THE CONTRACTOR.

53. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DETAILS OF UTILITY WALL PENETRATIONS.

54. ALL DRYWALL USED ONLY UNDER CERAMIC TILE IS TO BE MOISTURE RESISTANT.

55. ALL FIXTURES LABELED "H" INDICATE HANDICAP FIXTURES.

56. PROVIDE ADA COMPLIANT PIPE INSULATION AT ALL EXPOSED PIPING UNDER HANDICAPPED SINKS.

57. ANY STEEL NOT SHOWN ON THE STRUCTURAL DRAWINGS IS TO BE FURNISHED BY THE MISCELLANEOUS IRON CONTRACTOR (M.I. CONTR.)

58. ALL STRUCTURAL STEEL MEMBERS TO HAVE ONE SHOP COAT OF PAINT (PRIMER ONLY).

59. WHERE TWO DISSIMILAR METALS MEET, PAINT FACE OF ONE WITH BITUMINOUS PAINT.

60. PROVIDE OPENINGS AS REQUIRED FOR MECH. AND ELECT. EQUIPMENT. DRYWALL CONTRACTOR TO PROVIDE STUD BRACING AS REQUIRED TO STABILIZE WALLS ABOVE CEILINGS AT HIGH AND LOW PARTITIONS.

61. GYPSUM WALL BOARD CEILING SUBCONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION AND INSTALLATION OF ALL SUPPLEMENTAL MISCELLANEOUS IRON AND/OR STRUCTURAL STEEL (16 GA.) STUDDING REQUIRED TO ADEQUATELY SUPPORT ALL GYPSUM WALLBOARD DROPS SOFFITS, CORNICES, ETC. FROM THE STRUCTURAL STEEL ABOVE.

62. SAID CONTRACTOR AS WELL AS THE GENERAL CONTRACTOR SHALL CLOSELY COORDINATE THE INSTALLATION OF THE REQUIRED SUPPLEMENTAL MISC. IRON AND/OR STRUCTURAL STEEL STUDDING SO AS CONDUIT, SPRINKLER SYSTEM AND/OR ACOUSTICAL SUSPENDED CEILING SYSTEM ETC... CAN BE INSTALLED PROPERLY.

63. GYPSUM WALLBOARD CEILING SUBCONTRACTOR TO SUBMIT DETAILED SHOP DRAWING OF SUPPLEMENTAL MISC. IRON AND/OR STRUCT. STL. STUDDING TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF SAME.

64. CONTRACTOR IS TO PROVIDE STUD BRACING AS REQUIRED FOR METAL STUD PARTITIONS ABOVE 10'-0".

65. CONTRACTOR IS TO REPLACE ANY SPRAY-ON FIREPROOFING DAMAGED DURING CONSTRUCTION SO AS TO MAINTAIN INTEGRITY OF INSTALLATION.

66. ANY AREA OUTSIDE THE LIMITS OF CONSTRUCTION DISTURBED BY OPERATIONS OF THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

67. ALL CONCRETE WALKS DAMAGED DURING CONSTRUCTION ARE TO BE REPAIRED BY CONTRACTOR. AT NO ADDITIONAL COST TO THE OWNER.

68. EPOXY PAINT SYSTEMS TO BE USED IN WET AREAS UNLESS OTHERWISE NOTED

69. 2 X 6 CONTINUOUS WOOD BLOCKING SHALL BE PROVIDED AT DRYWALL PARTITIONS FOR ALL CABINET WORK AT TOP AND BOTTOM OF WALL MOUNTED UNITS AND UNDER COUNTER TOP LEVEL OF BASE CABINET. ALL OPEN-FACE SHELVING UNITS SHALL HAVE CONCEALED ANCHOR BRACKETS.

70. WHEREVER A FOAM BACKER ROD AND SEALANT ARE USED, THE SEALANT AND BACKER ROD MUST BE COMPATIBLE WITH EACH OTHER. USE A SIZE BACKER ROD THAT COMPRESSES 25% WHEN INSERTED INTO THE JOINT. (TYPICAL ALL JOINTS)

71. ALL EXTERIOR WINDOWS, DOORS, LOUVERS, VENTS, EXHAUST FANS, PIPE PENETRATIONS, AND ALL OTHER PENETRATIONS THRU EXTERIOR WALLS SHALL BE SEALED ALL AROUND WITH SEALANT. (BOTH ON EXTERIOR AND INTERIOR SIDES)

72. ALL INTERIOR PARTITIONS WHICH RECEIVE CERAMIC TILE SHALL BE 16 GA. MIN. AT 12" O.C. W/HORIZONTAL COLD ROLLED STIFFENER CHANNELS AT 4'-0" O.C. (MAX.) AND EXTEND FROM FINISHED FLOOR TO STRUCTURE ABOVE. 20 GA. DIAGONAL STUD KICKERS MUST ALSO BE INSTALLED AT EVERY OTHER VERTICAL STUD ABOVE CEILING. BRACE HORIZ. AT EACH FLOOR OR BEAM @ 24" O.C.

73. "A" INDICATES POSSIBLE ASBESTOS CONTAINING MATERIALS: THE AREA OF WORK CONTAINS ASBESTOS-CONTAINING MATERIALS. THE WORK TO BE PERFORMED PURSUANT TO THIS CONTRACT DOES NOT REQUIRE THE CONTRACTOR TO COME IN IN CONTACT WITH OR DISTURB IN ANY MANNER THE ASBESTOS-CONTAINING MATERIALS. THE CONTRACTOR IS, THEREFORE, EXPRESSLY PROHIBITED FROM DISTURBING IN ANY MANNER OR CAUSING THE IDENTIFIED ASBESTOS-CONTAINING MATERIALS TO BE RELEASED INTO THE ENVIRONMENT. IF DURING THE PERFORMANCE OF WORK SPECIFIED BY THIS CONTRACT THE CONTRACTOR DETERMINES THAT PERFORMANCE OF THE WORK IS NOT PHYSICALLY POSSIBLE WITHOUT DISTURBING THE ASBESTOS-CONTAINING MATERIAL, THE CONTRACTOR SHALL IMMEDIATELY CEASE ALL WORK WHICH MIGHT IMPACT THESE MATERIALS, REPORT SUCH CONFLICTS TO THE OWNER AND ARCHITECT, AND AWAIT INSTRUCTION.

    THE CONTRACTOR SHALL, UNDER NO CIRCUMSTANCES, TAKE ANY ACTION WHICH MAY DISTURB THE IDENTIFIED ASBESTOS PENDING INSTRUCTION. SIMILARLY, IF THE CONTRACTOR ENCOUNTERS OR HAS REASON TO BELIEVE THAT ASBESTOS-CONTAINING MATERIAL IS PRESENT AT THE WORK SITE, THE CONTRACTOR SHALL IMMEDIATELY CEASE ALL WORK WHICH MIGHT IMPACT THE SUSPECT MATERIAL AND REPORT KNOWLEDGE OF SUCH REASONABLE BELIEF TO THE OWNER AND ARCHITECT AND AWAIT FURTHER INSTRUCTION.

74. FIRE EXTINGUISHER CABINETS TO BE MOUNTED 4'-6" A.F.F. TO TOP MAXIMUM AS PER ADA REQUIREMENTS. (FIRE EXTINGUISHERS WITH GROSS WEIGHT OVER 40LBS. MUST BE MOUNTED 3'-6" MAX.). CLEARANCE BETWEEN THE BOTTOM OF THE FLOOR AND THE EXTINGUISHER MAY NOT BE LESS THAN 4".)

75. ALL ROOF WORK SHALL BE DONE IN ACCORDANCE WITH EXIST. ROOF MANUFACTURES RECOMMENDATIONS SO AS NOT TO VOID ANY EXISTING ROOF WARRANTIES. CONSULT WITH EXISTING ROOF MANUF. PRIOR TO DOING ANY WORK.

76. REPAIR AND/OR REPLACE EXISTING ITEMS NOT SCHEDULED OR NOTED TO BE DEMOLISHED, AND NOT SPECIFIED TO BE REMOVED, BUT WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.

77. ALL OPENINGS / PENETRATIONS IN WALLS, FLOORS AND CEILINGS SHALL BE SEALED WITH NELSON FIRE-STOP PRODUCTS (1-800-331-7325) OR APPROVED EQUAL. PRODUCT USE SHALL BE AS RECOMMENDED BY NELSON AND MUST MAINTAIN RATING OF ALL WALLS, FLOORS AND CEILINGS. ALL PENETRATIONS REQUIRE SEALANT, SUCH AS BUT NOT LIMITED TO THE FOLLOWING:

    STRUCTURAL STEEL, PIPING, CONDUITS, DUCTWORK, WIRING..........ETC. CONTRACTOR MUST PROVIDE DETAILED SHOP DWGS. OF ALL PENETRATIONS FOR ARCHITECTS REVIEW (NO EXCEPTIONS)

78. ALL MASONRY WEEP HOLES MUST BE LOCATED ABOVE GRADE, CONCRETE WALKS, PAVEMENT MULCH, ETC. DO NOT COVER UNDER ANY CIRCUMSTANCES. CONSTRUCTION MANAGER IS RESPONSIBLE TO COORDINATE WITH MASONRY CONTRACTOR AND ALL CIVIL WORK (TYPICAL).

79. STRUCTURAL STEEL FABRICATOR AND INSTALLER SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL FRAMED OPENINGS IN ROOF WITH APPROVED EQUIPMENT MANUFACTURES. (OPENINGS SUCH AS, BUT NOT LIMITED TO MECHANICAL UNITS, EXHAUST FANS, CURB MOUNTED EQUIPMENT, ROOF DRAINS, SKYLIGHTS, STAIR OPENINGS, ROOF HATCHES, SMOKE HATCHES, DUCT THRU ROOF PENETRATIONS, EXPANSION JOINTS, ETC.)

    EXACT SIZES AND EXACT LOCATIONS OF ALL OPENINGS ARE TO BE VERIFIED WITH THE APPROVED SHOP DRAWINGS ISSUED FOR THE INSTALLATION. THE EXACT SIZES SHALL BE COORDINATED PRIOR TO ANY FABRICATION AND INSTALLATION BY ANY/ALL TRADES. (SIZES AND LOCATIONS INDICATED ON CONTRACT DRAWINGS ARE DIAGRAMMATIC AND FOR INFORMATION ONLY.)

    ANY FABRICATION AND/OR INSTALLATION WHICH HAS NOT BEEN PROPERLY COORDINATED WITH APPROVED EQUIPMENT MANUFACTURE AND MUST BE REPAIRED, RELOCATED, ALTERED, REPLACED, RE-INSTALLED OR MODIFIED IN ANY MANNER WILL BE DONE TO THE SATISFACTION OF THE OWNER WITH NO ADDITIONAL COST TO THE OWNER OR DESIGN PROFESSIONAL.

80. THE USE OF RECYCLED FILL MATERIALS IS PROHIBITED UNDER ANY STRUCTURE AND ANY IMPORTED FILL UNDER STRUCTURES IS TO BE NYDOT ITEM 4 IN NEW YORK . NO EQUALS ARE TO BE ACCEPTED.

81. ALL FLOOR SLABS ON GRADE ARE TO RECEIVE KOSTER VAP 1 2000 SYSTEM VAPOR EMISSIONS COMPLIANCE TREATMENT AS MANUFACTURED BY KOSTER AMERICAN CORPORATION, PH.# (757) 425-1206/ (541) 548-0210.

    FLOOR FINISH CONTRACTORS ARE RESPONSIBLE FOR TESTING MOISTURE CONTENT IN FLOOR SLABS BEFORE APPLYING KOSTER VAP 1 2000 SYSTEM & BEFORE APPLYING FLOOR FINISHES. (TWO (2) TESTS REQUIRED)

82. CONTRACTOR SHALL PROVIDE MEANS OF CONVEYING ALL MATERIALS TO AND FROM ROOF.

83. FOR INSTALLATION OF INSULATION & VAPOR / AIR BARRIERS, INCLUDING ALL TYPES OF INSULATION: BATTS, SPRAY INSULATION, ACOUSTICAL, ETC. (REFER TO DRAWINGS AND SPECIFICATIONS FOR TYPES) CONTRACTOR MUST INSTALL INSULATIONS & VAPOR / AIR BARRIERS AS PER MANUFACTURER'S INSTRUCTIONS, SPECIFICATIONS, METHODS, RECOMMENDATIONS, STANDARDS, PROCEDURES, ETC. FOR EACH TYPE OF INSULATION & VAPOR / AIR BARRIER. SEALING OF ALL GAPS TO PROVIDE A CONTINUOUS ENVELOPE, ATTACHMENT, JOINT SEALING, CONDENSATION CONTROL, THERMAL PERFORMANCE, ACOUSTICAL PERFORMANCE, FIRE PERFORMANCE RATINGS, AESTHETICS, ASTM STANDARDS COMPLIANCE, INTERNATIONAL BUILDING CODE, LOCAL CODES, UNDERWRITERS LABORATORIES, FACTORY MUTUAL, EPA, ETC. MUST ALL BE FOLLOWED.

    ALL OF THE ABOVE MUST BE PERFORMED IN A PROFESSIONAL MANNER AS PER INDUSTRY STANDARDS.

ABBREVIATIONS

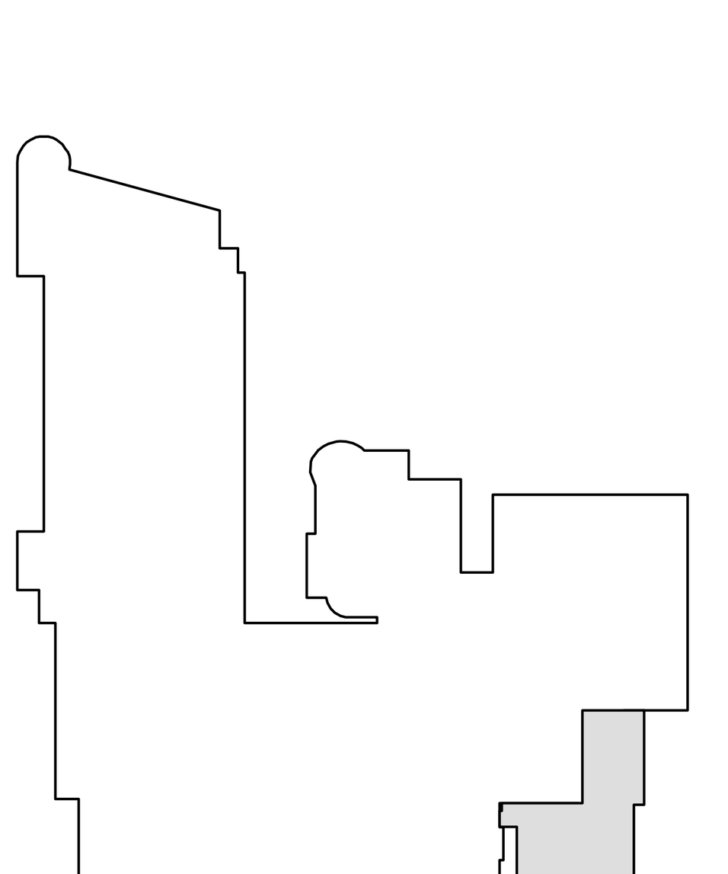
ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL / ALUM	ALUMINUM
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ATTCHMT	ATTACHMENT
BD / BRD	BOARD
BLDG	BUILDING
BLK	BLOCK(ING)
BM	BEAM
BRG	BEARING
BRK	BRICK
BS	BOTTOM OF SLAB
BTM	BOTTOM
CJ	CONTROL OR CONSTRUCTION JOINT
CL	CLOSET
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CJ	CONTROL JOINT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CORR	CORRIDOR
COV	COVER
CPT	CARPET
CT / CER	CERAMIC TILE/CERAMIC
D / DRN	DRAIN
DBL	DOUBLE
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DIV STRIP	DIVIDER STRIP
DN	DOWN
DO	DITTO
DP	DAMPPROOF(ING)
DR	DOOR
DS	DOWNSPOUT
DT	DRAIN TILE
DW	DISH WASHER
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELEC	ELECTRICAL
EC	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEV	ELEVATOR
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
ETC...	ETCETERA
EX / EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FA	FRESH AIR
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FE / FEC	FIRE EXTINGUISHER (CABINET)
FF / FIN FL	FINISHED FLOOR
FIN	FINISH
FL	FLOOR
FLSH	FLASH(ING)
FLUOR	FLUORESCENT
FOS	FACE OF STUDS
FR(G)	FRAME OR FRAMING
FT	FEET OR FOOT
FUR	FURRING
FVC	FIRE VALVE CABINET
Ga	GAGE OR GAUGE
GALV	GALVANIZE OR GALVANIZED
GC	GENERAL CONTRACTOR
GI	GALVANIZED IRON
GL	GLASS
GM	GALVANIZED METAL
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HB	HOSE BIBB
HC	HOLLOW CORE
"H"	HANDICAP ACCESSIBLE
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HOR	HORIZONTAL
HT / HGT	HEIGHT
HTR	HEATER
ID	INSIDE DIAMETER
INFO	INFORMATION
INSUL	INSULATION OR INSULATED
INT	INTERIOR
INV	INVERT
JAN	JANITOR
JT	JOINT
KO	KNOCKOUT
LAM	LAMINATE OR LAMINATED
LAV	LAVATORY
LP	LOW POINT
LT/LGT	LIGHT
MFGR / MANUF	MANUFACTURER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MEMB	MEMBRANE
MET / MTL	METAL
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MVBL / MOVE	MOVABLE
MT	MARBLE THRESHOLD
N	NORTH
NIC	NOT IN CONTRACT
NOM	NOMINAL
NO	NUMBERS
NTS	NOT TO SCALE
OC	ON CENTER
OFF	OFFICE
OH	OPPOSITE HAND
OPNG / OPEN'G	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
OVHD	OVERHEAD
P-LAM	PLASTIC LAMINATE
PART / PTN	PARTITION
PC	PRECAST
PC PL	PORTLAND CEMENT PLASTER
PH	PAPER HOLDER
PL	PROPERTY LINE
PLAS	PLASTER
PLUM / PLMG	PLUMBING
PL CON	PLUMBING CONTRACTOR
PLYWD	PLYWOOD
PNL	PANEL
POL	POLISHED
PR	PAIR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTD	PAINTED
PTS	POINTS
QT	QUARRY TILE
R	RADIUS
R VENT	RANGE VENT
REF	REFRIGERATOR
REINF	REINFORCE(D)
REQ / REQ'D	REQUIRE / REQUIRED
RET	RETURN
REV	REVISE / REVISION
RM	ROOM
RO	ROUGH OPENING
RSTRM	RESTROOM
SAN	SANITARY
SAN ST	SANITARY STACK
SC	SOUND CONTROL
SCR	SCREEN
SECT	SECTION
SCHED	SCHEDULE / SCHEDULED
SCU	SELF-CONTAINED UNIT
SF	SQUARE FOOT (FEET)
SHT	SHEET
SIM	SIMILAR
SP	STANDPIPE
SPLSH BLK	SPLASH BLOCK
SPEC	SPECIFICATION
SPR	SPRINKLER / SPRINKLERED
SQ	SQUARE
SS	STAINLESS STEEL
STN	STAIN(ED)
STL	STEEL
STG / STOR	STORAGE
STRUCT	STRUCTURAL / STRUCTURE
SUSP	SUSPEND / SUSPENDED
T	TILE
TBD	TO BE DETERMINED
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TEL	TELEPHONE
TEMP	TEMPERED
TH / TRSH	THRESHOLD
THK	THICK / THICKNESS
THRU	THROUGH
TOC	TOP OF CURB
TOS	TOP OF SLAB
TRTD	TREATED
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UNFIN	UNFINISHED
V	VENT
VCT	VINYL COMPOSITION TILE
VENT	VENTILATE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VWC	VINYL WALL COVERING
VOL	VOLUME
W	WIDTH
w/	WITH
WxH	WIDTH x HEIGHT
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WK	WORK
WP	WATERPROOF
WT	WEIGHT
X	CROSS
&	AND
@	AT
'	FEET
"	INCHES
#	POUNDS

HIGHLAND ASSOCIATES

Architecture | Engineering | Interior Design

Highland Center (570) 586-4334 | 102 Highland Avenue fax(570) 586-5990 | Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

AREA OF WORK NEW MODULAR

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

GENERAL NOTES & ABBREVIATIONS

DRAWN BY:	CHECKED BY:
R.J.C.	JR
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

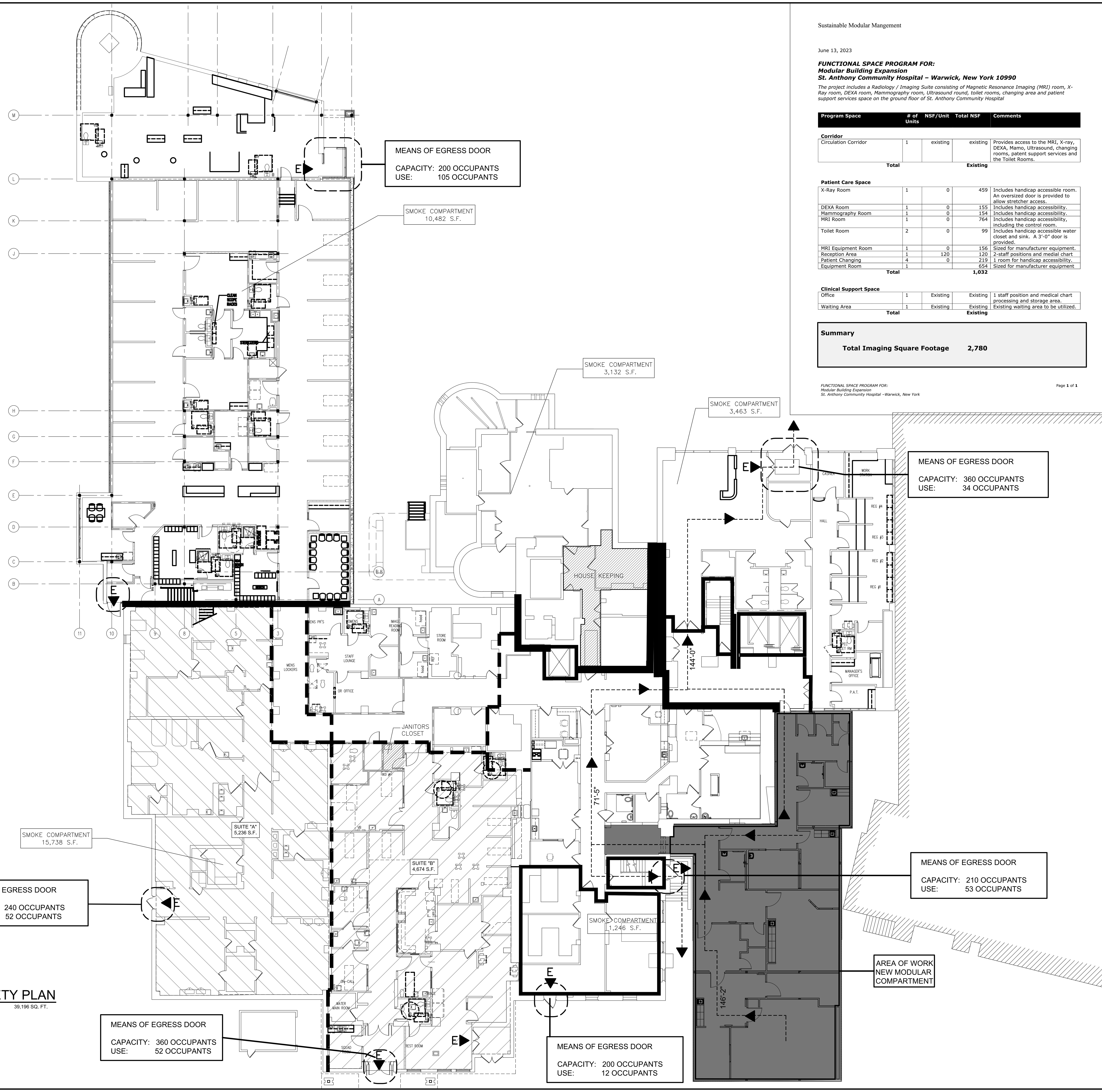
GN-1.1

CAD FILE: 1069-GN-1.1.DWG   PLOT DATE: 7/17/2023

BARRIER LEGEND

◀E	EXIT ACCESS TO GRADE
▨	SUITES
▨	NON-SURVEYABLE BUSINESS OCCUPANCY
▬▬▬	2-HR FIRE BARRIER
▬ ▬ ▬	2-HR FIRE/SMOKE BARRIER
▬▬▬	1-HR FIRE BARRIER
▬ ▬ ▬	1-HR FIRE/SMOKE BARRIER
▬ ▬ ▬	30-MIN.SMOKE BARRIER

NOTE: AS INDICATED AND PROVIDED BY OWNER



GROUND LEVEL LIFE SAFETY PLAN

SCALE: 3/32"=1'-0" 39,196 SQ. FT.

Sustainable Modular Mangement

June 13, 2023

FUNCTIONAL SPACE PROGRAM FOR:
Modular Building Expansion
St. Anthony Community Hospital – Warwick, New York 10990

The project includes a Radiology / Imaging Suite consisting of Magnetic Resonance Imaging (MRI) room, X-Ray room, DEXA room, Mammography room, Ultrasound round, toilet rooms, changing area and patient support services space on the ground floor of St. Anthony Community Hospital

Program Space	# of Units	NSF/Unit	Total NSF	Comments
Corridor				
Circulation Corridor	1	existing	existing	Provides access to the MRI, X-ray, DEXA, Mamo, Ultrasound, changing rooms, patent support services and the Toilet Rooms.
Total			**Existing**	
Patient Care Space				
X-Ray Room	1	0	459	Includes handicap accessible room. An oversized door is provided to allow stretcher access.
DEXA Room	1	0	155	Includes handicap accessibility.
Mammography Room	1	0	154	Includes handicap accessibility.
MRI Room	1	0	764	Includes handicap accessibility, including the control room.
Toilet Room	2	0	99	Includes handicap accessible water closet and sink. A 3'-0" door is provided.
MRI Equipment Room	1	0	156	Sized for manufacturer equipment.
Reception Area	1	120	120	2-staff positions and medial chart
Patient Changing	4	0	219	1 room for handicap accessibility.
Equipment Room	1		654	Sized for manufacturer equipment
Total			**1,032**	
Clinical Support Space				
Office	1	Existing	Existing	1 staff position and medical chart processing and storage area.
Waiting Area	1	Existing	Existing	Existing waiting area to be utilized.
Total			**Existing**	

Summary

Total Imaging Square Footage 2,780

FUNCTIONAL SPACE PROGRAM FOR:
Modular Building Expansion
St. Anthony Community Hospital –Warwick, New York

Page **1** of **1**

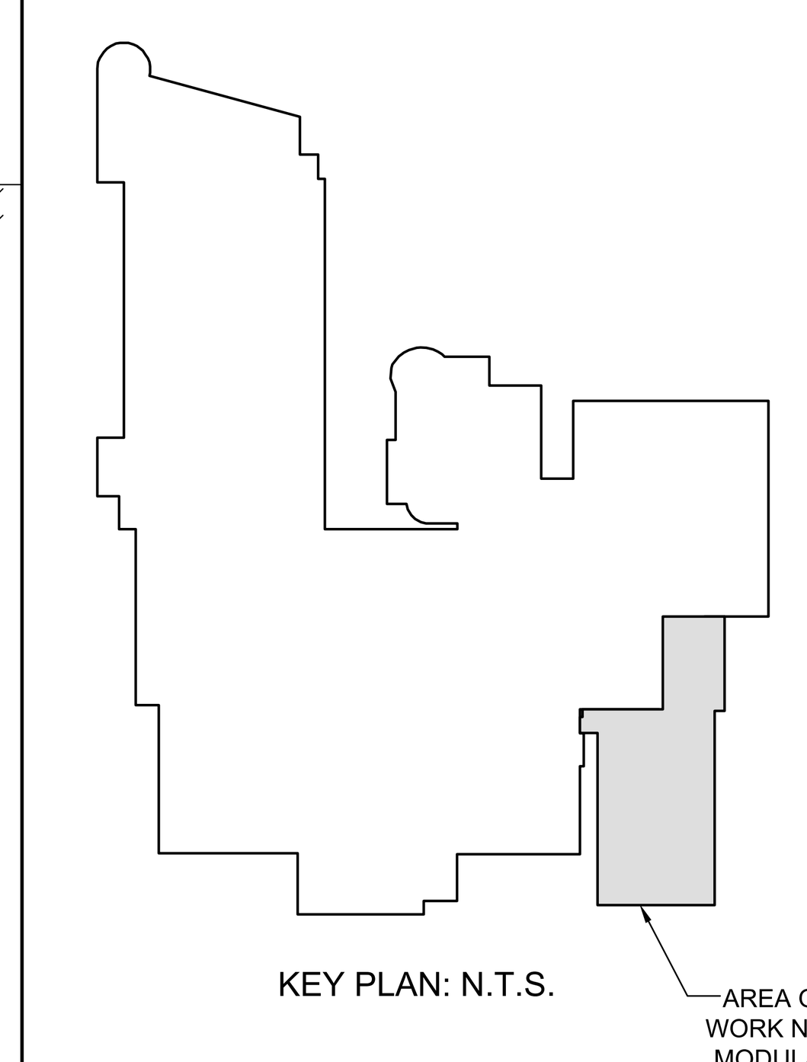
HIGHLAND
ASSOCIATES

Architecture
Highland Center
(570) 586–4334

Engineering
102 Highland Avenue
fax(570) 586–5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

SEALS:

DRAWING TITLE:

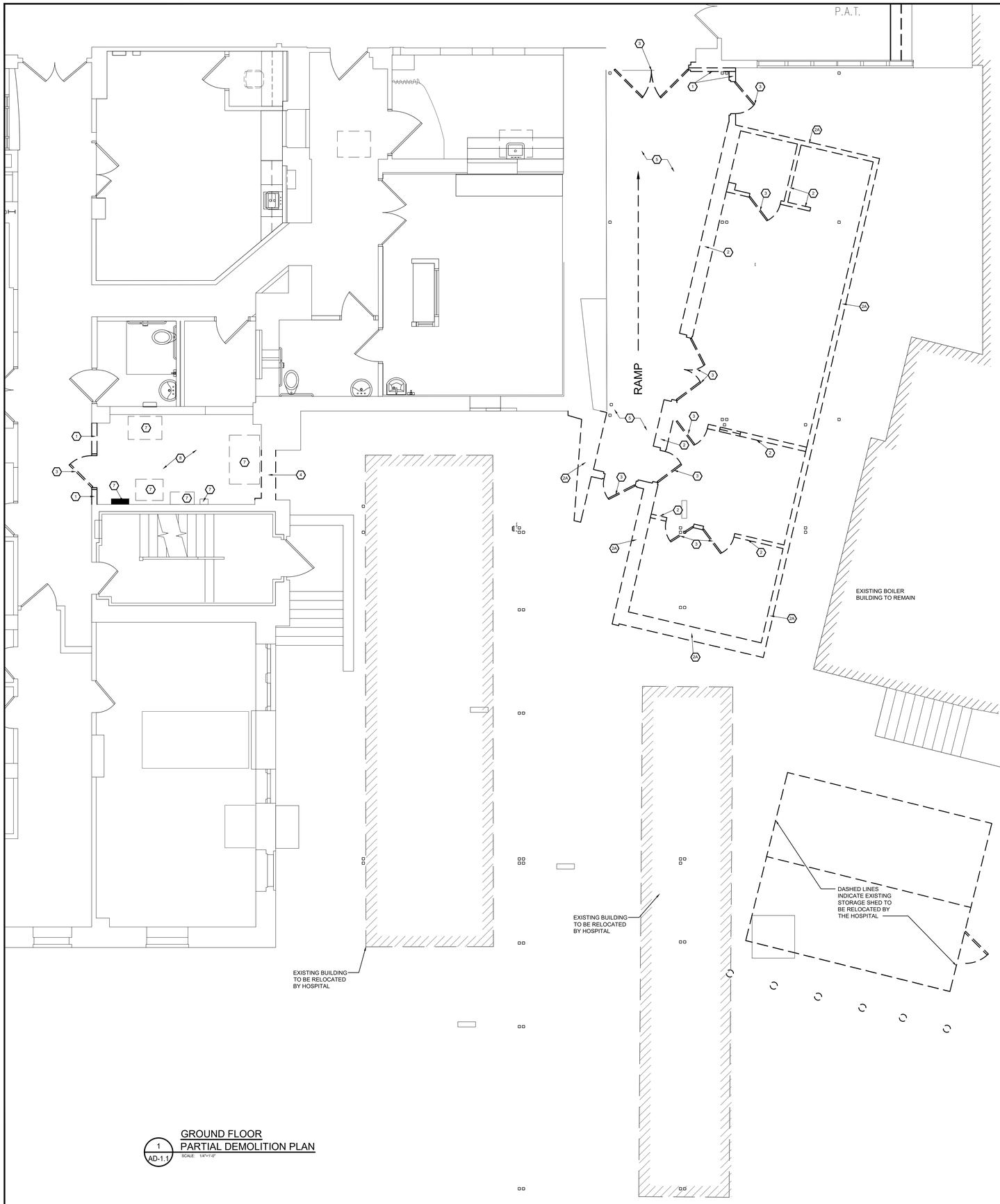
GROUND FLOOR
LIFE SAFETY PLAN

DRAWN BY:	CHECKED BY:
R.J.C.	J.R.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

LS-1.1

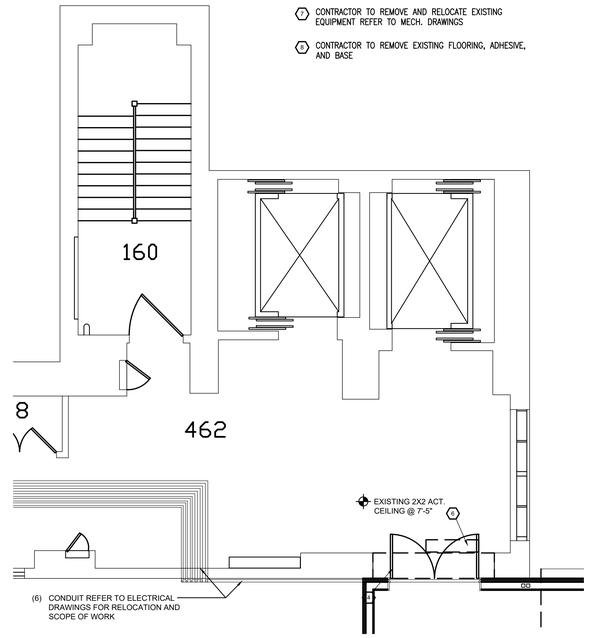
CAD FILE: 1069-LS-GRD PLOT DATE:



1 AD-1.1 GROUND FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/4"=1'-0"

DEMOLITION KEY NOTES:

1. INDICATES AREA WHERE CONTRACTOR IS TO DEMOLISH PORTION OF EXISTING WALL CONSTRUCTION.
2. INDICATES AREA WHERE CONTRACTOR IS TO DEMOLISH ENTIRE EXISTING WALL CONSTRUCTION AND ALL ASSOCIATED CONSTRUCTION IN ITS ENTIRETY.
XA. INDICATES AREA WHERE CONTRACTOR IS TO DEMOLISH ENTIRE EXISTING EXTERIOR ROOF AND WALL CONSTRUCTION AND ALL ASSOCIATED CONSTRUCTION IN ITS ENTIRETY.
3. CONTRACTOR TO REMOVE DOOR, FRAME AND DOOR HARDWARE IN IT'S ENTIRETY.
4. INDICATES AREA WHERE CONTRACTOR IS TO DEMOLISH PORTION OF EXTERIOR WALL AND WINDOW FOR NEW OPENING TO MODULAR BUILDING. SHORE ADJACENT WALLS DURING DEMOLITION PRIOR TO NEW LINTEL INSTALLATION.
5. CONTRACTOR TO DEMOLISH EXISTING RAMP CONSTRUCTION IN ITS ENTIRETY
6. CONTRACTOR TO REMOVE EXISTING HEATING UNIT AND ALL ASSOCIATED PIPING REFER TO MECH. DRAWINGS
7. CONTRACTOR TO REMOVE AND RELOCATE EXISTING EQUIPMENT REFER TO MECH. DRAWINGS
8. CONTRACTOR TO REMOVE EXISTING FLOORING, ADHESIVE, AND BASE

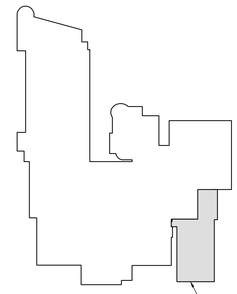


2 AD-1.1 FIRST FLOOR PARTIAL DEMOLITION PLAN
SCALE: 1/4"=1'-0"

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM, A member of the Rochester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

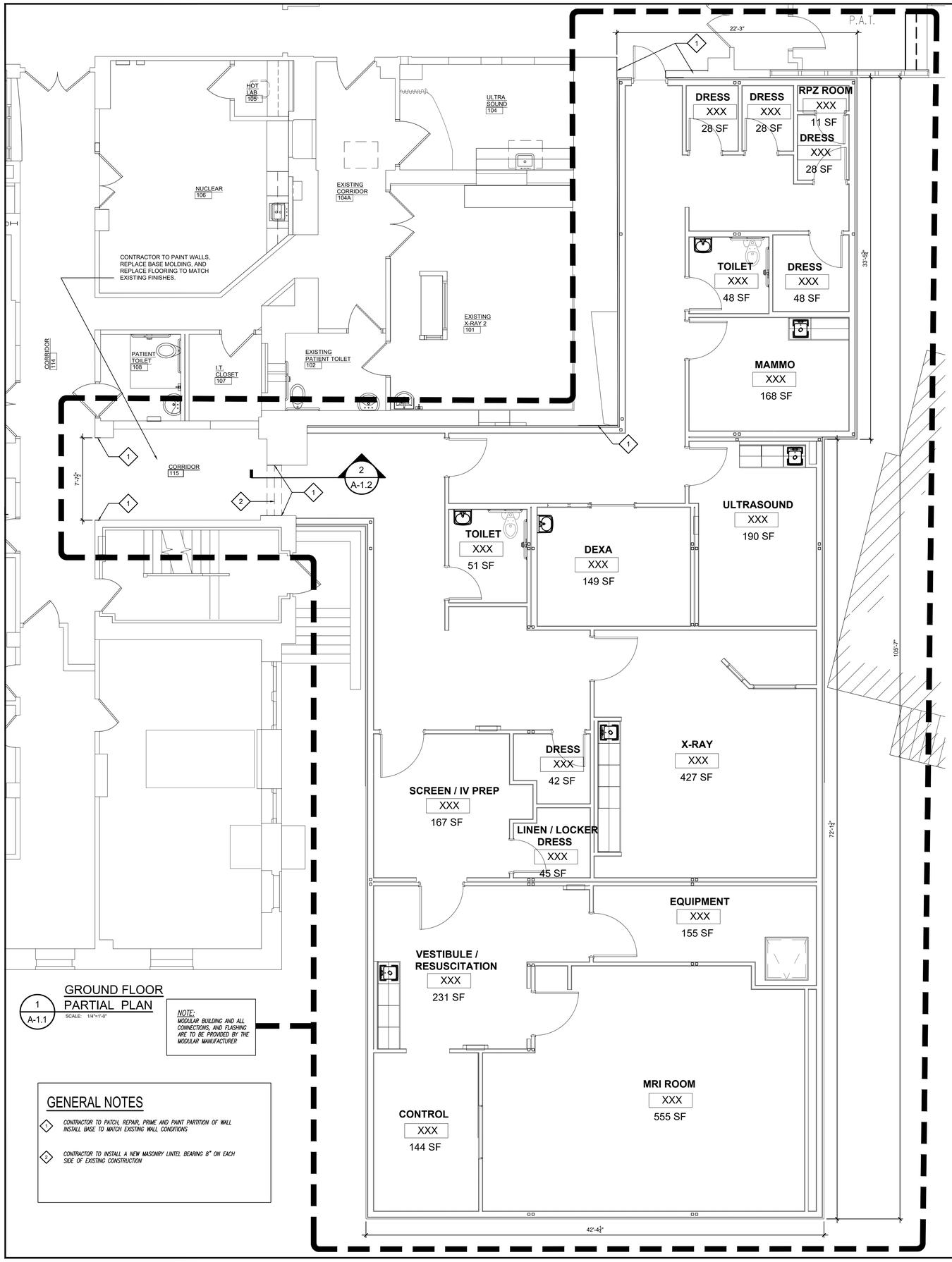
PARTIAL DEMOLITION PLANS AND NOTES

DRAWN BY:	CHECKED BY:
R.J.C.	J.R.
DATE: 07-21-2023	PROJECT NO: 2021-069P

DRAWING NO:

AD-1.1

CAD FILE: 1069-AD-1.1.DWG PLOT DATE: 7/17/2023

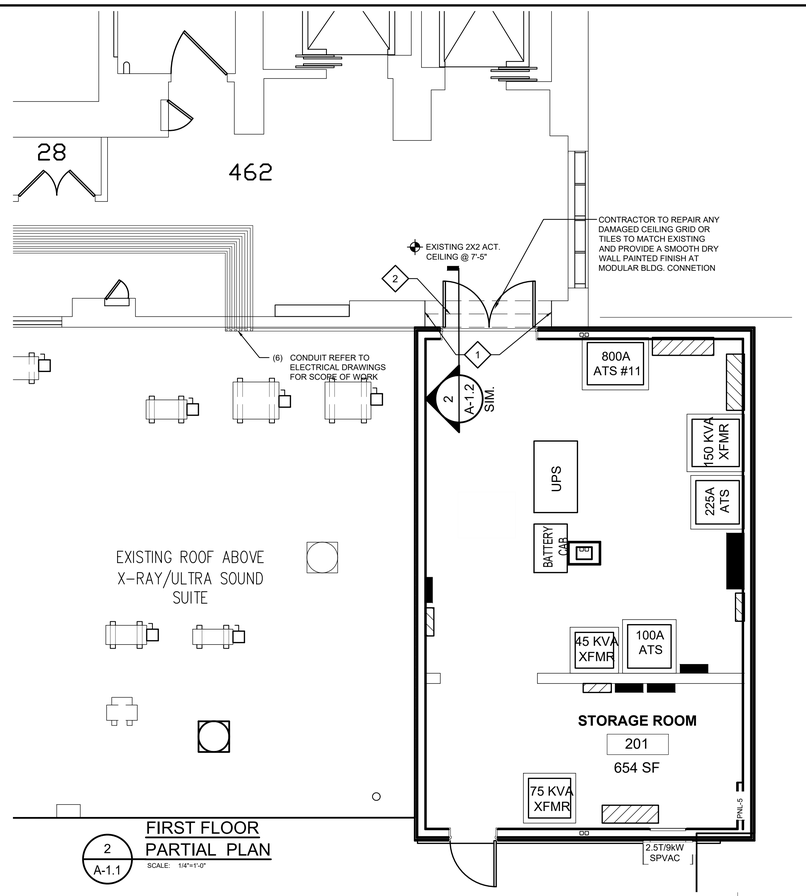


1 A-1.1 GROUND FLOOR PARTIAL PLAN
SCALE: 1/4"=1'-0"

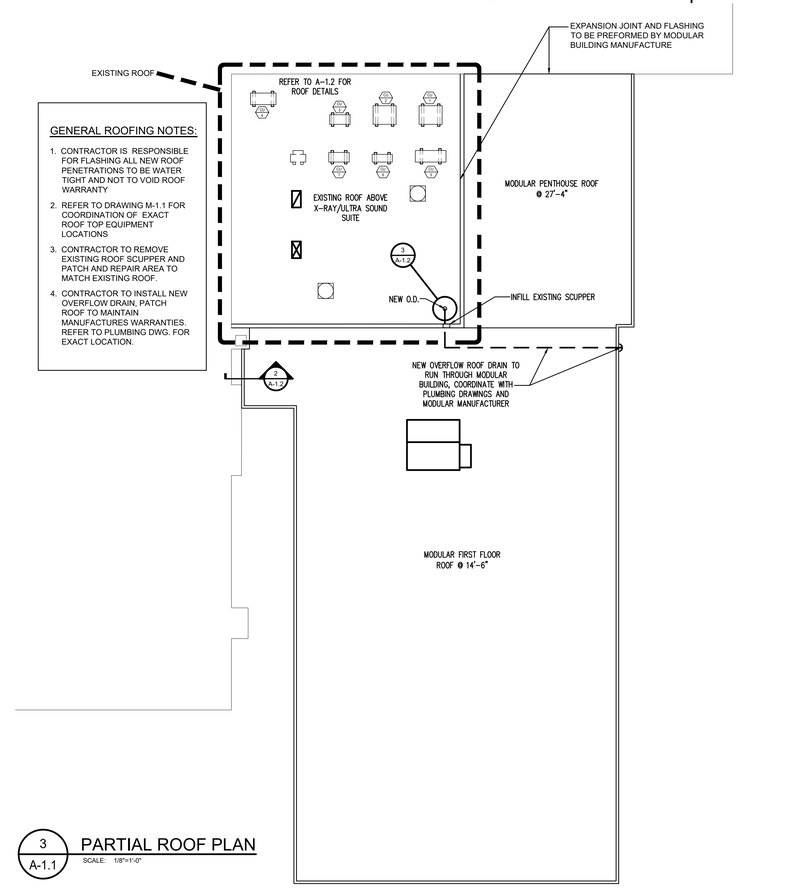
NOTE:
MODULAR BUILDING AND ALL CONNECTIONS, AND FLASHING ARE TO BE PROVIDED BY THE MODULAR MANUFACTURER

GENERAL NOTES

1. *CONTRACTOR TO PATCH, REPAIR, PRIME AND PAINT PARTITION OF WALL INSTALL BASE TO MATCH EXISTING WALL CONDITIONS*
2. *CONTRACTOR TO INSTALL A NEW MASONRY LINTEL BEARING 8" ON EACH SIDE OF EXISTING CONSTRUCTION*



2 A-1.1 FIRST FLOOR PARTIAL PLAN
SCALE: 1/4"=1'-0"



GENERAL ROOFING NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR FLASHING ALL NEW ROOF PENETRATIONS TO BE WATER TIGHT AND NOT TO VOID ROOF WARRANTY
2. REFER TO DRAWING M-1.1 FOR COORDINATION OF EXACT ROOF TOP EQUIPMENT LOCATIONS
3. CONTRACTOR TO REMOVE EXISTING ROOF SCUPPER AND PATCH AND REPAIR AREA TO MATCH EXISTING ROOF.
4. CONTRACTOR TO INSTALL NEW OVERFLOW DRAIN. PATCH ROOF TO MAINTAIN MANUFACTURES WARRANTIES. REFER TO PLUMBING DWG. FOR EXACT LOCATION.

3 A-1.1 PARTIAL ROOF PLAN
SCALE: 1/8"=1'-0"

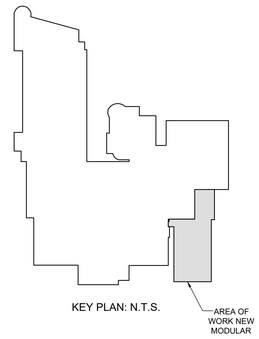
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | IRON SECOURS CHARITY HEALTH SYSTEM, A member of the Rochester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

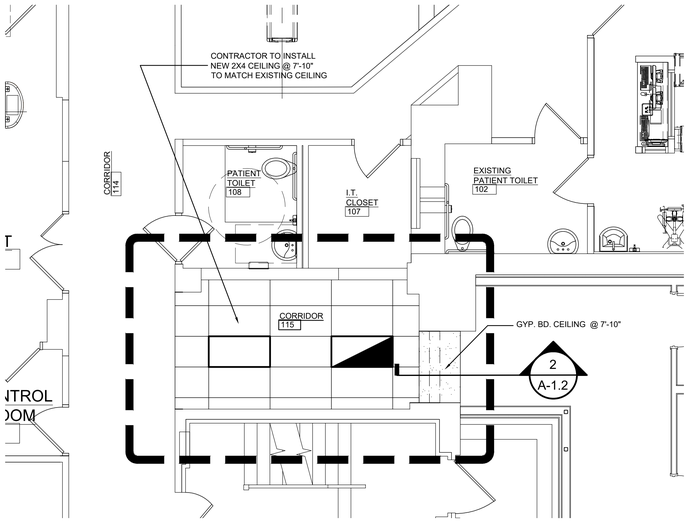
PARTIAL GROUND FLOOR AND FIRST FLOOR NEW PLANS

DRAWN BY:	CHECKED BY:
R.J.C.	J.R.
DATE: 07-21-2023	PROJECT NO: 2021-069P

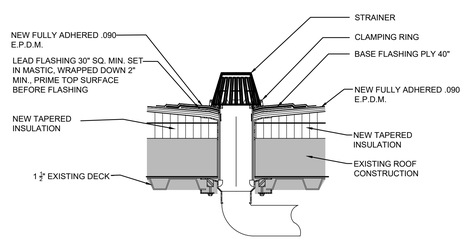
DRAWING NO:

A-1.1

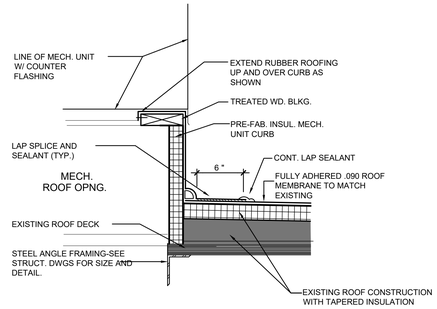
CAD FILE: 1069-A-1.1.DWG PLOT DATE: 7/17/2023



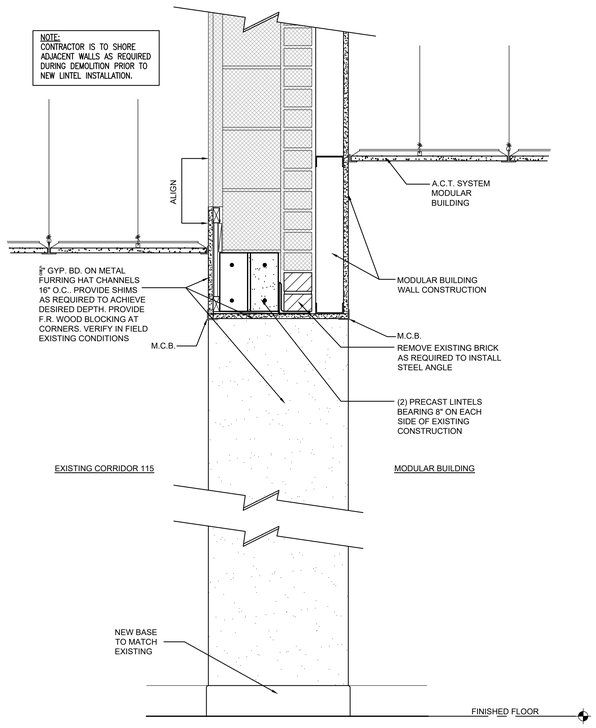
1 / A-1.2 — PARTIAL CEILING PLAN
SCALE: 1/4"=1'-0"



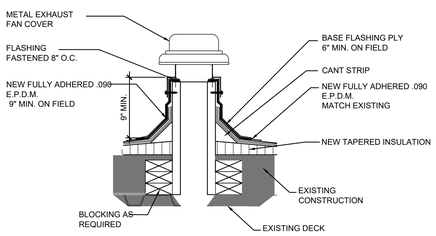
3 / A-1.2 — OVERFLOW DRAIN DETAIL
SCALE: 1 1/2"=1'-0"



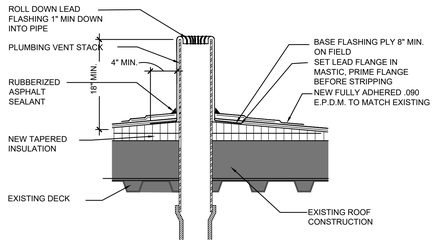
4 / A-1.2 — TYP. ROOF CURB DETAIL
SCALE: 1 1/2" = 1'-0"



2 / A-1.2 — SECTION @ TIE-INTO EXISTING EXTERIOR WALL
SCALE: 1 1/2"=1'-0"



5 / A-1.2 — ROOF EXHAUST DETAIL
SCALE: 1 1/2"=1'-0"

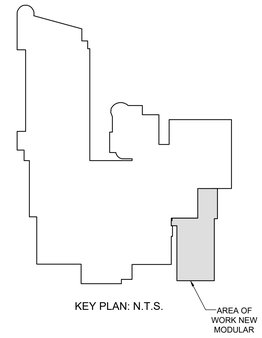


4 / A-1.5 — VENT DETAIL
SCALE: 1 1/2"=1'-0"

HIGHLAND ASSOCIATES

Architecture — Highland Center (570) 586-4334
Engineering — 102 Highland Avenue fax(570) 586-5990
Interior Design — Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | Bon Secours Charity Health System — A member of the Resilience Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

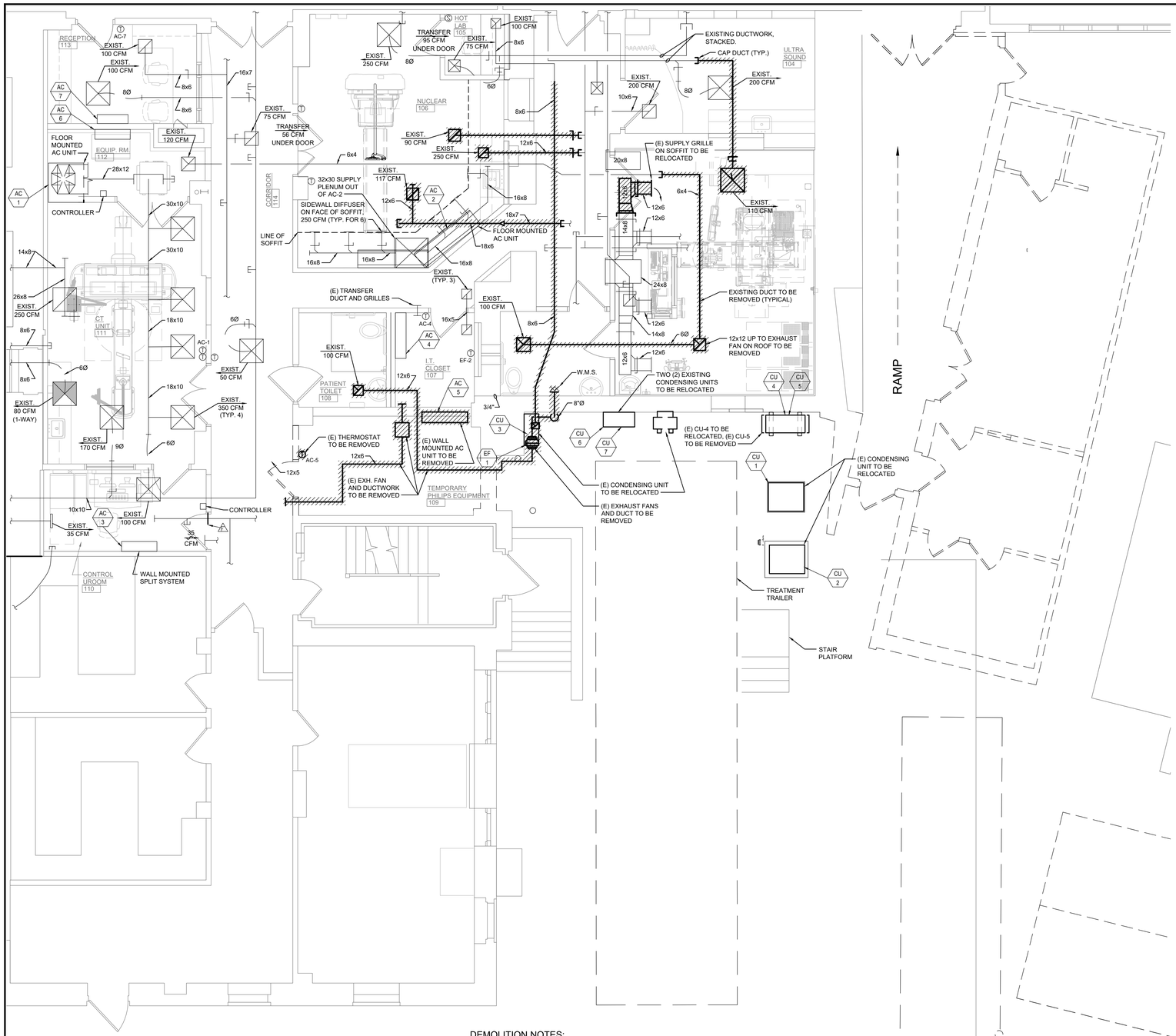
PARTIAL CEILING PLAN
SECTIONS AND
ROOF DETAILS

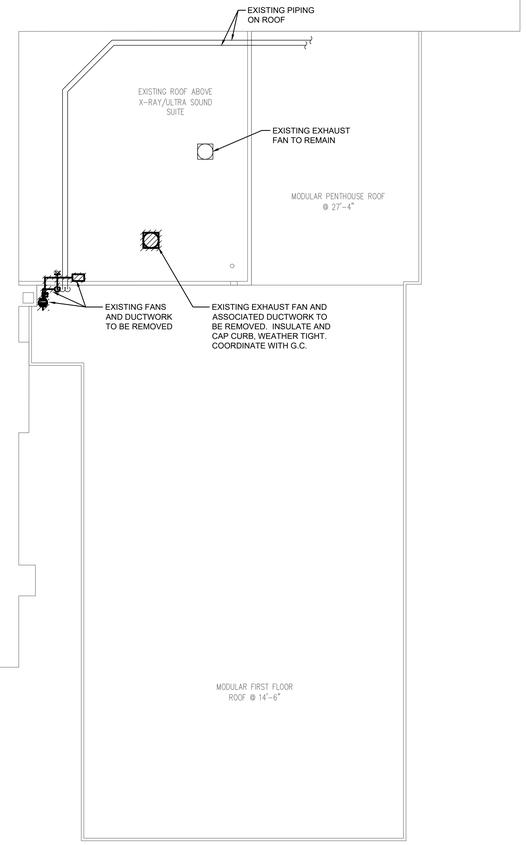
DRAWN BY:	CHECKED BY:
R.J.C.	J.R.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

A-1.2

CAD FILE: 1069-A-1.2.DWG PLOT DATE: 7/17/2023





1 MD-1.1 PARTIAL DEMOLITION PLAN

SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. ALL DUCTWORK OPENINGS CREATED BY DEMOLITION SHALL BE SEALED OR CAPPED AIR TIGHT.
2. DESIGNATES DUCTWORK, DIFFUSERS, GRILLES, PIPES, OR EQUIPMENT TO BE DEMOLISHED.
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EACH PIECE OF EQUIPMENT SLATED FOR REUSE.
4. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS AND COORDINATE WITH HOSPITAL DIRECTOR OF FACILITIES.
5. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM TRANSFERRING TO OTHER SPACES.
6. KEEP ALL ADJOINING PUBLIC AREAS CLEAN AND FREE OF DEBRIS OR CONSTRUCTION MATERIALS DURING WORKING HOURS, AND MAKE AN EFFORT TO PROVIDE SAFE CONDITIONS FOR THE HOSPITAL PERSONNEL AND WORKMEN.
7. DEMOLISHED MATERIALS (DUCTWORK, INSULATION, ETC.), NOT BEING REUSED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF SITE ON A REGULAR BASIS, IN A LEGAL MANNER. COORDINATE PATH FOR TRANSPORTING MATERIAL WITH HOSPITAL DIRECTOR OF FACILITIES.
8. REPAIR AND/OR REPLACE EXISTING ITEMS NOT NOTED TO BE DEMOLISHED, AND NOT SPECIFIED TO BE REMOVED, BUT WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE HOSPITAL.
9. PATCH, FILL AND REPAIR ALL SURFACES DISTURBED, CUT, DAMAGED OR MADE IMPERFECT BY ALTERATIONS OR REMOVAL WORK AND AS REQUIRED TO PREPARE SURFACES FOR NEW MATERIALS AND ARRANGEMENTS.
10. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (WATER, ELECTRICITY, ETC) THE CONTRACTOR SHALL ARRANGE WITH THE HOSPITAL DIRECTOR OF FACILITIES TO LOCATE SHUT-OFF VALVES, PANEL BOXES AND OTHER CONTROL ELEMENTS SO THAT NOT TO POTENTIALLY INCONVENIENT AND AVOID DANGEROUS SITUATIONS.
11. EXISTING FINISHES THAT ARE DISTURBED BY DEMOLITION SHALL BE PATCHED TO MATCH EXISTING.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY DUST PARTITIONS AND DEBRIS PROTECTION BETWEEN AREAS OF CONSTRUCTION AND AREAS IN WHICH NO WORK IS TAKING PLACE. LOCATION OF SUCH PROTECTION SHALL BE VERIFIED WITH GENERAL CONTRACTOR PRIOR TO COMMENCING WORK AND IN COORDINATION WITH THE PROGRESSION OF THE WORK SCHEDULE. FOLLOW HOSPITAL ICRA STANDARDS.
13. ALL WORK REQUIRING SHUT DOWN OF EXISTING SYSTEMS SHALL BE APPROVED BY THE HOSPITAL DIRECTOR OF ENGINEERING AT NO ADDITIONAL COST TO THE HOSPITAL. SUBMIT SCHEDULE OR REQUIRED OUTAGES TO THE OWNER FOR APPROVAL. PERFORM WORK IN A MANNER TO MINIMIZE SHUT DOWN TIME.
14. PROVIDE RECONNECTIONS AND TEMPORARY INSTALLATIONS AS REQUIRED. REMOVE AT JOB COMPLETION.
15. CUTBACK TO FLOOR, WALL OR ABOVE CEILING AND PLUG ENDS OF CONCEALED PIPING MADE OBSOLETE BY ALTERATIONS TO PERMIT REFINISHING SURFACE. REMOVE EXPOSED PIPING AND HANGERS MADE OBSOLETE BY THIS WORK UNLESS DESIGNATED SPECIFICALLY TO REMAIN.
16. COORDINATE DEMOLITION WITH ALL OTHER TRADES.

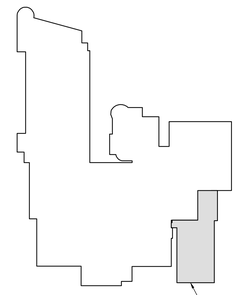
2 MD-1.1 PARTIAL ROOF DEMO PLAN

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

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | Bon Secours Charity Health System — A member of the Rochester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

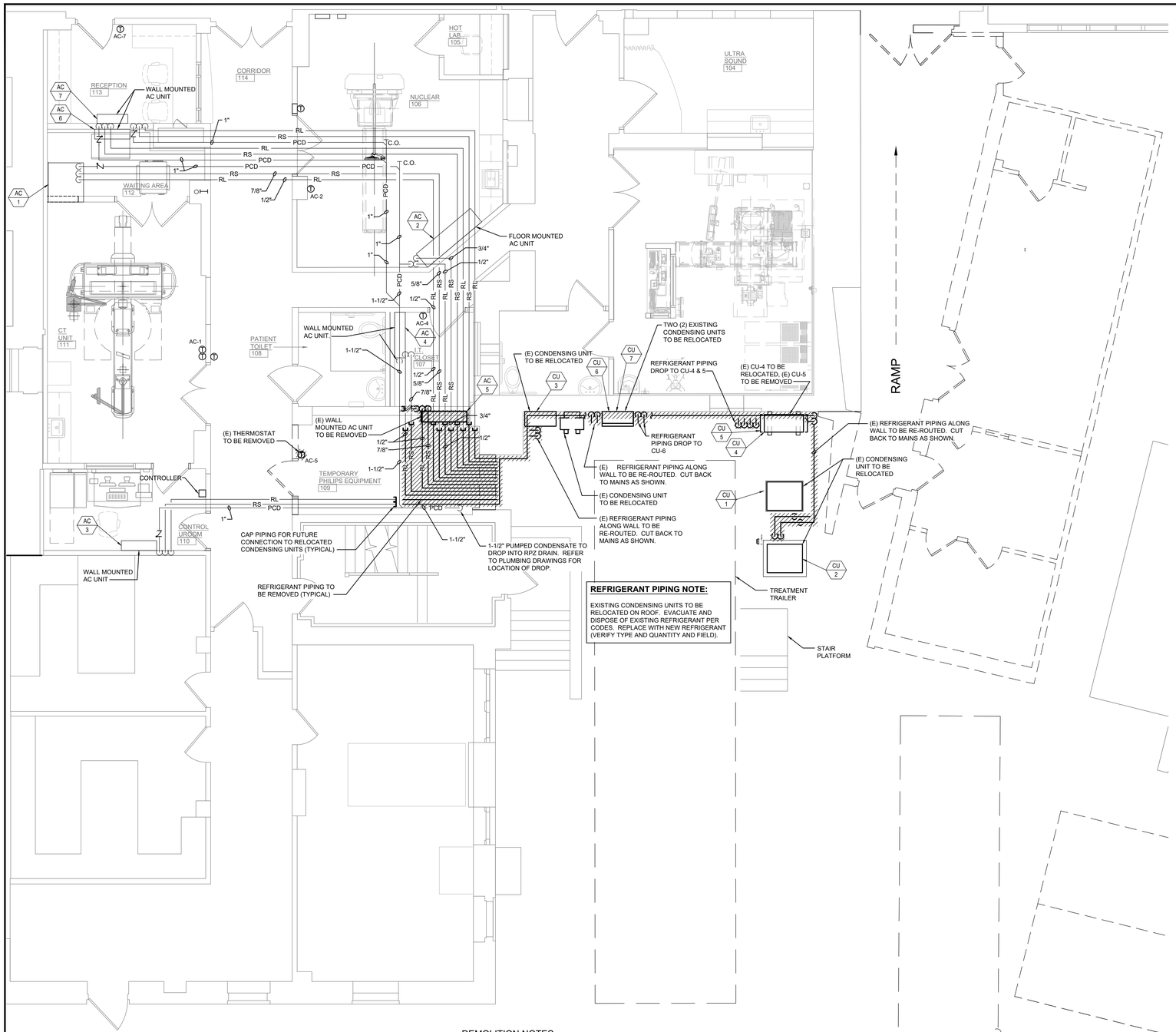
PARTIAL DUCTWORK DEMOLITION

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

MD-1.0

CAD FILE: FILE PLOT DATE: PDATE



REFRIGERANT PIPING NOTE:

EXISTING CONDENSING UNITS TO BE RELOCATED ON ROOF. EVACUATE AND DISPOSE OF EXISTING REFRIGERANT PER CODES. REPLACE WITH NEW REFRIGERANT (VERIFY TYPE AND QUANTITY AND FIELD).

DEMOLITION NOTES:

1. ALL DUCTWORK OPENINGS CREATED BY DEMOLITION SHALL BE SEALED OR CAPPED AIR TIGHT.
2. DESIGNATES DUCTWORK, DIFFUSERS, GRILLES, PIPES, OR EQUIPMENT TO BE DEMOLISHED.
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EACH PIECE OF EQUIPMENT SLATED FOR REUSE.
4. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS AND COORDINATE WITH HOSPITAL DIRECTOR OF FACILITIES.
5. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM TRANSFERRING TO OTHER SPACES.
6. KEEP ALL ADJOINING PUBLIC AREAS CLEAN AND FREE OF DEBRIS OR CONSTRUCTION MATERIALS DURING WORKING HOURS, AND MAKE AN EFFORT TO PROVIDE SAFE CONDITIONS FOR THE HOSPITAL PERSONNEL AND WORKMEN.
7. DEMOLISHED MATERIALS (DUCTWORK, INSULATION, ETC.), NOT BEING REUSED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF SITE ON A REGULAR BASIS, IN A LEGAL MANNER. COORDINATE PATH FOR TRANSPORTING MATERIAL WITH HOSPITAL DIRECTOR OF FACILITIES.
8. REPAIR AND/OR REPLACE EXISTING ITEMS NOT NOTED TO BE DEMOLISHED, AND NOT SPECIFIED TO BE REMOVED, BUT WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK, MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE HOSPITAL.
9. PATCH, FILL AND REPAIR ALL SURFACES DISTURBED, CUT, DAMAGED OR MADE IMPERFECT BY ALTERATIONS OR REMOVAL WORK AND AS REQUIRED TO PREPARE SURFACES FOR NEW MATERIALS AND ARRANGEMENTS.
10. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (WATER, ELECTRICITY, ETC) THE CONTRACTOR SHALL ARRANGE WITH THE HOSPITAL DIRECTOR OF FACILITIES TO LOCATE SHUT-OFF VALVES, PANEL BOXES AND OTHER CONTROL ELEMENTS SO THAT NOT TO POTENTIALLY INCONVENIENT AND AVOID DANGEROUS SITUATIONS.
11. EXISTING FINISHES THAT ARE DISTURBED BY DEMOLITION SHALL BE PATCHED TO MATCH EXISTING.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY DUST PARTITIONS AND DEBRIS PROTECTION BETWEEN AREAS OF CONSTRUCTION AND AREAS IN WHICH NO WORK IS TAKING PLACE. LOCATION OF SUCH PROTECTION SHALL BE VERIFIED WITH GENERAL CONTRACTOR PRIOR TO COMMENCING WORK AND IN COORDINATION WITH THE PROGRESSION OF THE WORK SCHEDULE. FOLLOW HOSPITAL ICRA STANDARDS.
13. ALL WORK REQUIRING SHUT DOWN OF EXISTING SYSTEMS SHALL BE APPROVED BY THE HOSPITAL DIRECTOR OF ENGINEERING AT NO ADDITIONAL COST TO THE HOSPITAL. SUBMIT SCHEDULE OR REQUIRED OUTAGES TO THE OWNER FOR APPROVAL. PERFORM WORK IN A MANNER TO MINIMIZE SHUT DOWN TIME.
14. PROVIDE RECONNECTIONS AND TEMPORARY INSTALLATIONS AS REQUIRED. REMOVE AT JOB COMPLETION.
15. CUTBACK TO FLOOR, WALL OR ABOVE CEILING AND PLUG ENDS OF CONCEALED PIPING MADE OBSOLETE BY ALTERATIONS TO PERMIT REFINISHING SURFACE. REMOVE EXPOSED PIPING AND HANGERS MADE OBSOLETE BY THIS WORK UNLESS DESIGNATED SPECIFICALLY TO REMAIN.
16. COORDINATE DEMOLITION WITH ALL OTHER TRADES.

1 MD-1.1 **PARTIAL DEMOLITION PLAN**
SCALE: 1/4"=1'-0"

2 MD-1.1 **PARTIAL ROOF DEMO PLAN**
SCALE: 1/8"=1'-0"

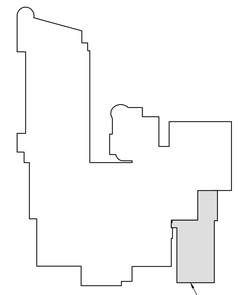
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | Bon Secours Charity Health System — A member of the Rochester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

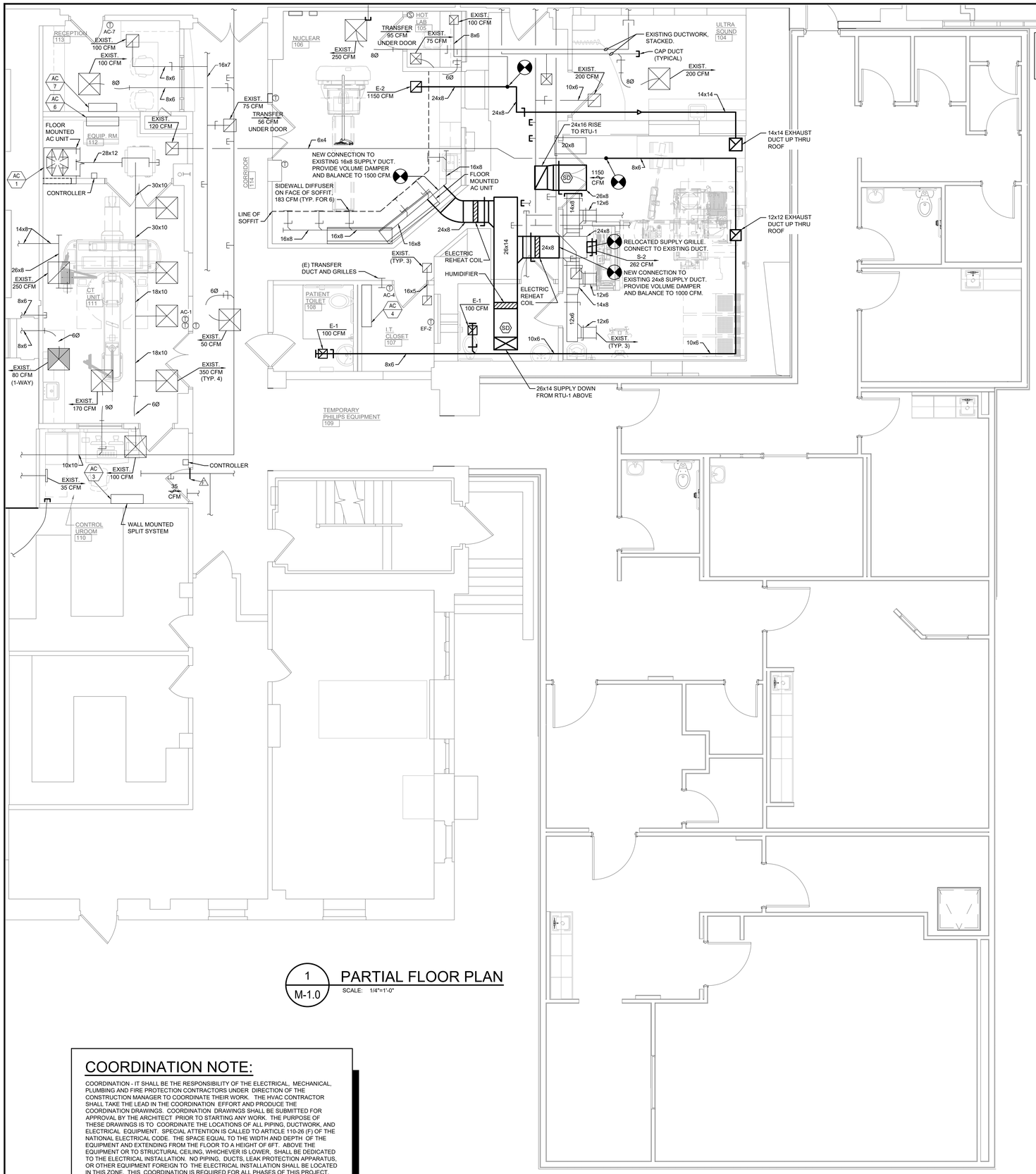
PARTIAL PIPING DEMOLITION

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

MD-1.1

CAD FILE: FILE PLOT DATE: PDATE

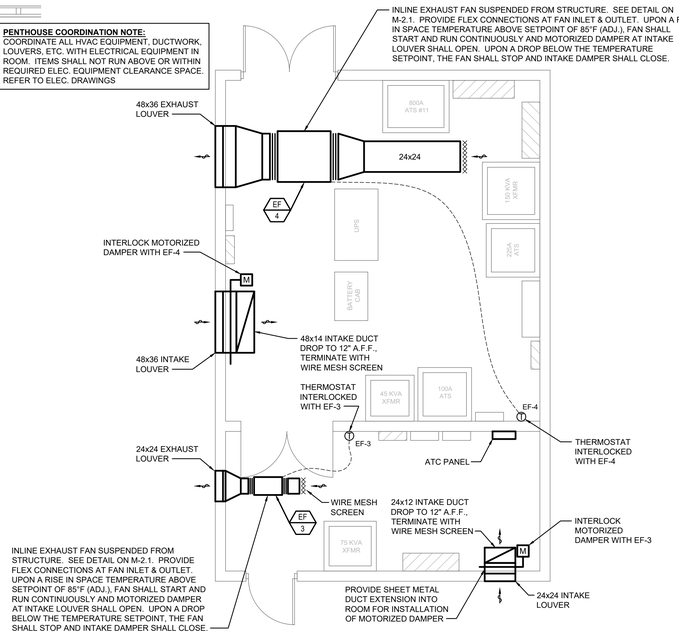


1 M-1.0 PARTIAL FLOOR PLAN
SCALE: 1/4"=1'-0"

COORDINATION NOTE:

COORDINATION - IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION CONTRACTORS UNDER DIRECTION OF THE CONSTRUCTION MANAGER TO COORDINATE THEIR WORK. THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE ARCHITECT PRIOR TO STARTING ANY WORK. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ELECTRICAL EQUIPMENT. SPECIAL ATTENTION IS CALLED TO ARTICLE 110-26 (F) OF THE NATIONAL ELECTRICAL CODE. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6FT. ABOVE THE EQUIPMENT OR TO STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE. THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT.

PENTHOUSE COORDINATION NOTE:
COORDINATE ALL HVAC EQUIPMENT, DUCTWORK, LOUVERS, ETC. WITH ELECTRICAL EQUIPMENT IN ROOM. ITEMS SHALL NOT RUN ABOVE OR WITHIN REQUIRED ELEC. EQUIPMENT CLEARANCE SPACE. REFER TO ELEC. DRAWINGS

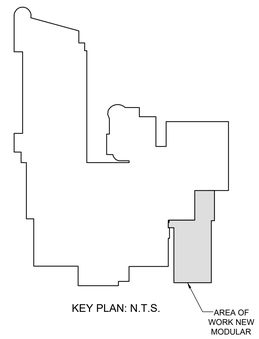


2 M-1.0 PENTHOUSE PLAN
SCALE: 1/4"=1'-0"

3 M-1.0 PARTIAL ROOF PLAN
SCALE: 1/8"=1'-0"

HIGHLAND ASSOCIATES
Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM, A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

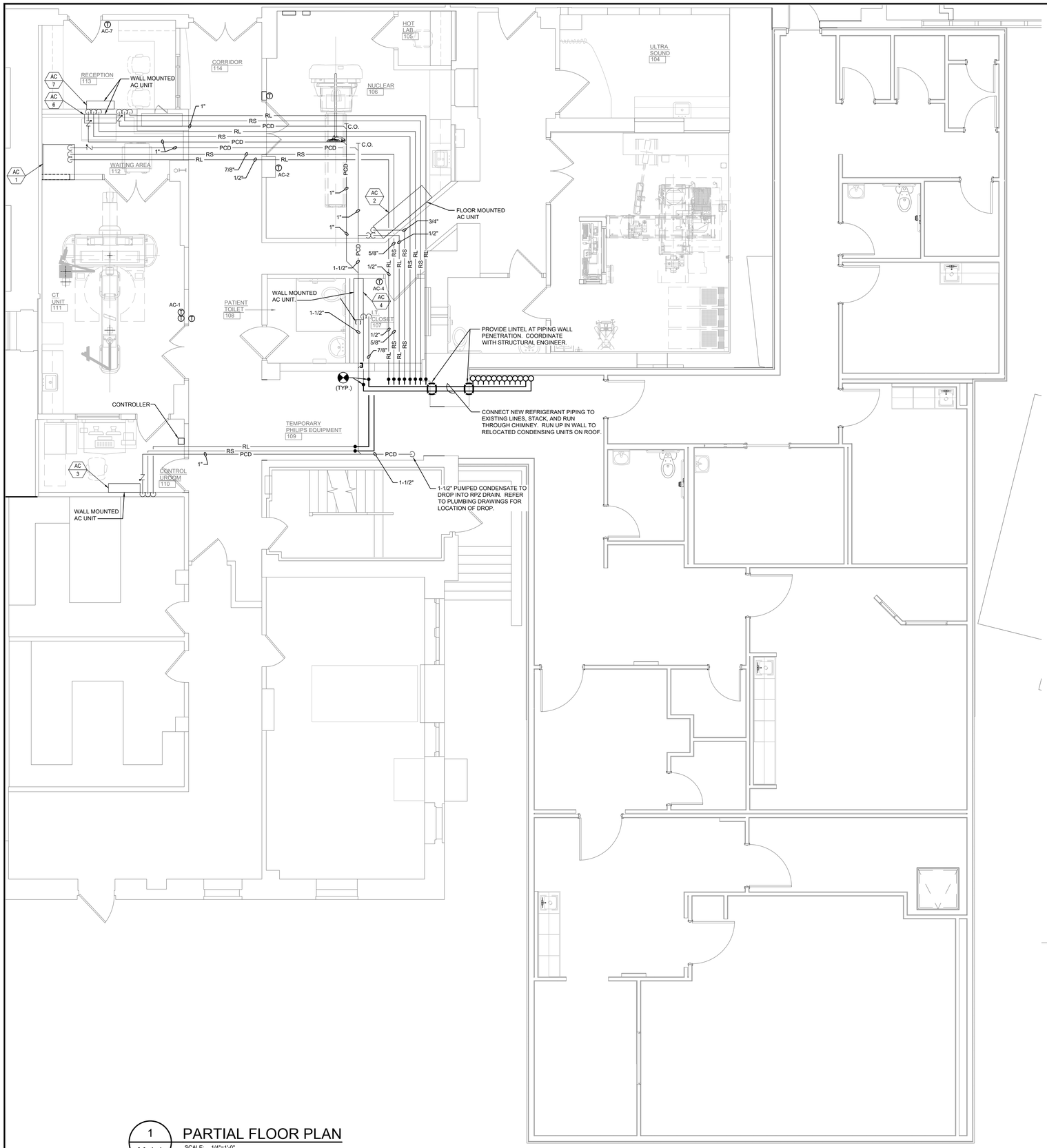
SEALS:

DRAWING TITLE:
NEW DUCTWORK PLAN

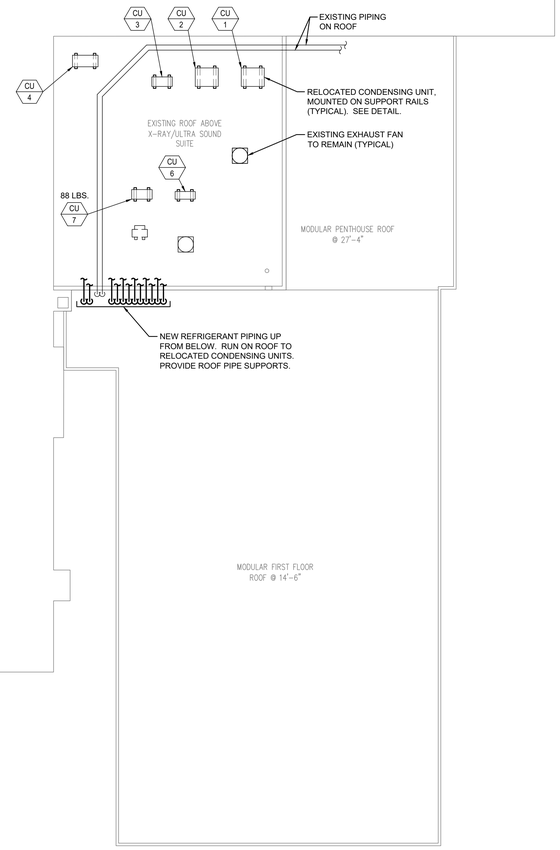
DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE: 07-21-2023	PROJECT NO: 2021-069P

DRAWING NO:
M-1.0

CAD FILE: FILE PLOT DATE: PDATE



1 M-1.1 PARTIAL FLOOR PLAN
SCALE: 1/4"=1'-0"



2 M-1.1 PARTIAL ROOF PLAN
SCALE: 1/8"=1'-0"

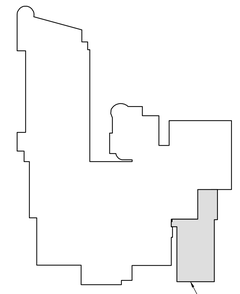
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:
NEW PIPING PLAN

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE: 07-21-2023	PROJECT NO: 2021-069P

DRAWING NO:
M-1.1

CAD FILE: FILE
PLOT DATE: PDATE

PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE

TAG	TOTAL CFM	O/A CFM (MIN.)	AMBIENT DB °F	SUPPLY FAN						DX COOLING COIL												COMPRESSOR		COND. FANS		PRE-FILTER						GAS HEATING SECTION-HEAT PUMP			RE-HEAT COIL			AUXILIARY ELECTRIC HEAT (HEAT PUMP)					
				SIZE (DIA.)	MOTOR HP	BHP	RPM	ESP	TSP	TOTAL MBH	SENS MBH	EAT(°F)		LAT (COIL)		LAT (UNIT)		SIZE SQ. FT.	FPM	ROWS	FINS/INCH	QTY	RLA	MTR. QTY.	TOT. FLA	TYPE	QTY.	APD CLEAN	APD DIRTY	EFF.	FPM	TYPE	OUTPUT (MBH) @ EAT (°F)	OUTPUT (MBH) @ EAT (°F)	MBH	LAT DB	R/H %	CFM	MBH	EAT (°F)	LAT (°F)	KW (EMERG.)	KW (AUX.)
												DB	WB	DB	WB	DB	WF																										
RTU-1	2,100	1150	92	18.5"	5.0	2.56	2120	3.0	4.46	112.02	104.74	84.31	69.57	51.76	51.34	54.93	52.69	8.5	246.9	4	14	1	14.7	2	1.1	2" PLEATED MERV 8	4	0.11	1.0	30%	286	NATURAL	71.0/22°	129.4/62°	46.0	72.0	48	2,100	136.5	31.7	91.8	40.0	10.0

MATCH LINE 'A'

MATCH LINE 'A'

PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE

TAG	REFRIG	EER	ELECTRICAL				MFR / MODEL	SIZE (L x W x H) INCHES	WEIGHT (LBS)	REMARKS
			VOLTS / PHASE	FLA	MCA	MOP				
RTU-1	R-410A	9.4	460V / 3Ø	56	70	70	AAON / RN-010	82 x 79 x 44	1,400	

SOUND DATA

TAG	OCTAVE BANDS:	63	125	250	500	1000	2000	4000	8000
RTU-1	DISCHARGE LW (dB)	87	86	89	86	79	76	73	68
	RETURN LW (dB)	81	80	78	72	69	65	60	51

FILTER SCHEDULE

TAG	SYSTEM / SERVING	CFM	FINAL FILTER	OVERALL BANK SIZE	MAX FACE VELOCITY	FILTER SIZE			FILTER ARRANGMENT		PRESSURE DROP IN. H2O		MFR / MODEL	WEIGHT (LBS)	REMARKS
						W	H	L	HIGH	WIDE	INITIAL	FINAL			
FB-1	RTU-1	2,100	DURAFIL MERV 14A	52.5"W x 27"H x 25"D	500 FPM	24"	24"	12"	1"	2"	0.18	0.36	CAMFIL / GLIDE PACK 1H X 2W MTI-25	-	SEE NOTES

NOTES:
1. REFER TO SPECIFICATION.
2. PROVIDE DWYER MAGNAHELIC GAGE MODEL 2002 - AF (A605-2 INDICATING TRANSMITTER).
3. PROVIDE DOUBLE WALL INSULATED CONSTRUCTION FOR OUTDOOR USE.

EXHAUST REGISTER SCHEDULE

TAG	PANEL SIZE	NECK SIZE	CFM RANGE	THROW (FEET)		MAX. N.C.	MAX. S.P.	MANUFACTURER & MODEL	REMARKS
				HORIZ.	VERTICAL				
E-1	12"x12"	12"x12"	0-180	-	-	< 20	.04"	ANEMOSTAT / 30/L/45	3/4" SPACING, 45 DEG. DEF. NOTE #1 & #2
E-2	24"x24"	24"x24"	1000-1300	-	-	26	.04"	ANEMOSTAT / 30/L/45	3/4" SPACING, 45 DEG. DEF. NOTE #1 & #2

NOTES:
1. CONTRACTOR TO VERIFY CEILING AND WALL TYPES BEFORE ORDERING EQUIPMENT.
2. PROVIDE SQUARE TO ROUND ADAPTER.

FAN SCHEDULE

TAG	TYPE	CFM	ESP IN. H_2O	BHP	MOTOR HP	RPM	OUTLET dBA	VOLTAGE	FLA	MFR / MODEL	ROOF OPEN'G	REMARKS
EF-1	UTILITY SET	1,250	1.25	0.42	3/4	1871	65	460 V / 3 PH	1.6	COOK / CPS	-	NOTE #1
EF-2	UTILITY SET	320	1.0	0.18	1/2	2066	70	460 V / 3 PH	1.1	COOK / CPS	-	NOTE #1
EF-3	INLINE	700	0.5	0.18	1/2	1729	10 SONES	460 V / 3 PH	1.1	COOK / SQN-B	-	NOTE #2
EF-4	INLINE	5,000	0.75	1.20	3.0	642	10 SONES	460 V / 3 PH	3.0	COOK / SQN-B	-	NOTE #3

NOTES:
1. PROVIDE VFD, DISCONNECT SWITCH, DISCHARGE SHUTTER, STEEL ACCESS DOOR, STEEL DRAIN, EXTENDED LUBE LINE, VIBRATION ISOLATORS.
2. PROVIDE VFD, DISCONNECT SWITCH, BACKDRAFT DAMPER, OSHA GUARD/MOTOR COVER, VIBRATION ISOLATORS.
3. PROVIDE VFD, DISCONNECT SWITCH, BACKDRAFT DAMPER, BELT GUARD, INSULATED HOUSING, VIBRATION ISOLATORS.

MECHANICAL / ELECTRICAL EQUIPMENT CONNECTIONS SCHEDULE

EQUIPMENT / TAG	DISCONNECT		STARTER / VFD		NOTES
	FURNISHED BY	INSTALLED BY	FURNISHED BY	INSTALLED BY	
SMOKE DETECTOR SUPPLY AND RETURN	N/A	N/A	N/A	N/A	4
RTU-1	M.C.	M.C.	M.C.	M.C.	3
EF-1, 2, 3, & 4	M.C.	E.C.	M.C.	E.C.	

M/E EQUIPMENT CONNECTIONS SCHEDULE NOTES:

1. THE MECHANICAL/ELECTRICAL EQUIPMENT CONNECTIONS SCHEDULE AND ACCOMPANYING NOTES ARE INTENDED TO CLEARLY DEFINE WHICH CONTRACTOR FURNISHES AND INSTALLS STARTERS AND DISCONNECTS AND SHALL BECOME PART OF THE SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER WIRING AND FINAL POWER CONNECTIONS. ALL CONTROL WIRING SHALL BE FURNISHED, INSTALLED AND FINAL CONNECTION BY THE TRADE SUPPLYING THE EQUIPMENT.
2. E.C. - ELECTRICAL CONTRACTOR
   M.C. - MECHANICAL CONTRACTOR (HVAC)
   MM - MODULAR MANUFACTURER
3. VFD'S PROVIDED BY MANUFACTURER WITH INTERCONNECTING POWER WIRING.
4. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED TO THE FIRE ALARM PANEL BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR TO INSTALL SMOKE DETECTORS. ATC SUB-CONTRACTOR SHALL INSTALL WIRING TO DDC PANEL & WIRING TO RTU UNIT FOR FAN SHUTDOWN. SMOKE DETECTOR SHALL BE PROVIDED WITH 2-SETS OF ADDITIONAL NORMALLY OPEN CONTACTS.

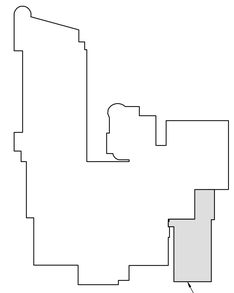
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

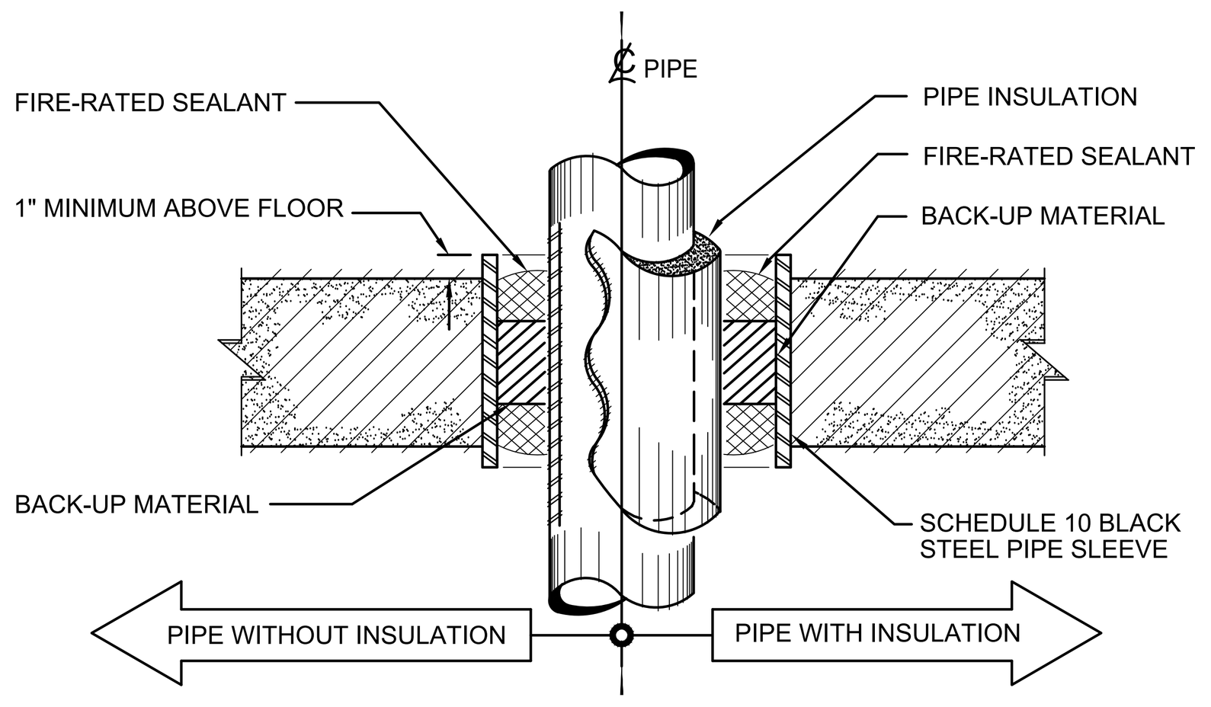
DRAWING TITLE:
MECHANICAL SCHEDULES

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE: 07-21-2023	PROJECT NO: 2021-069P

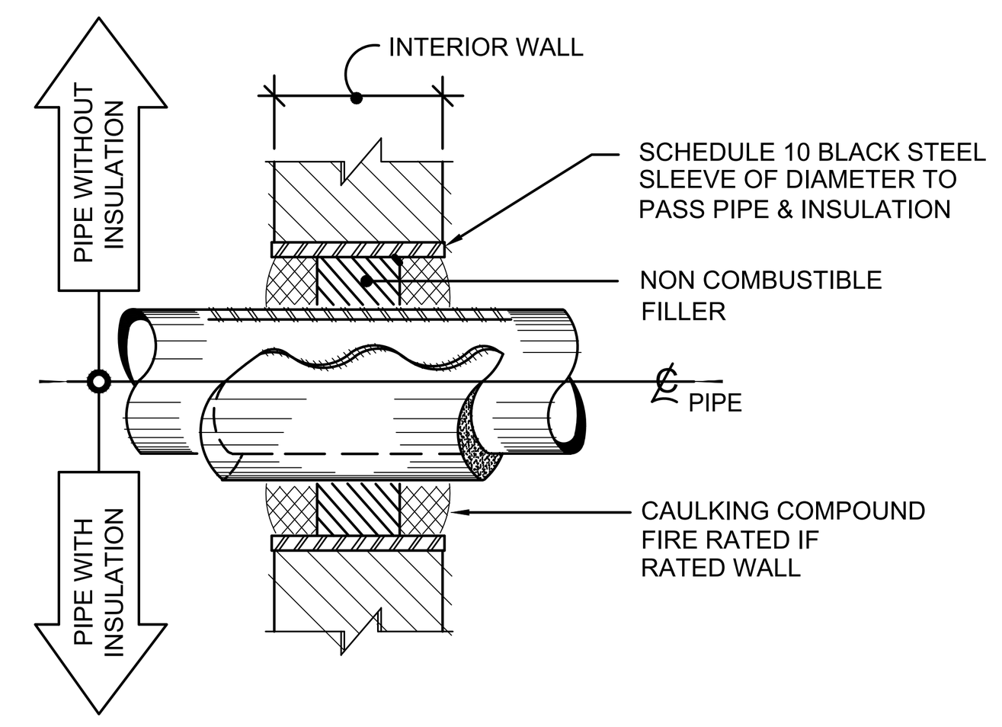
DRAWING NO:

M-2.0

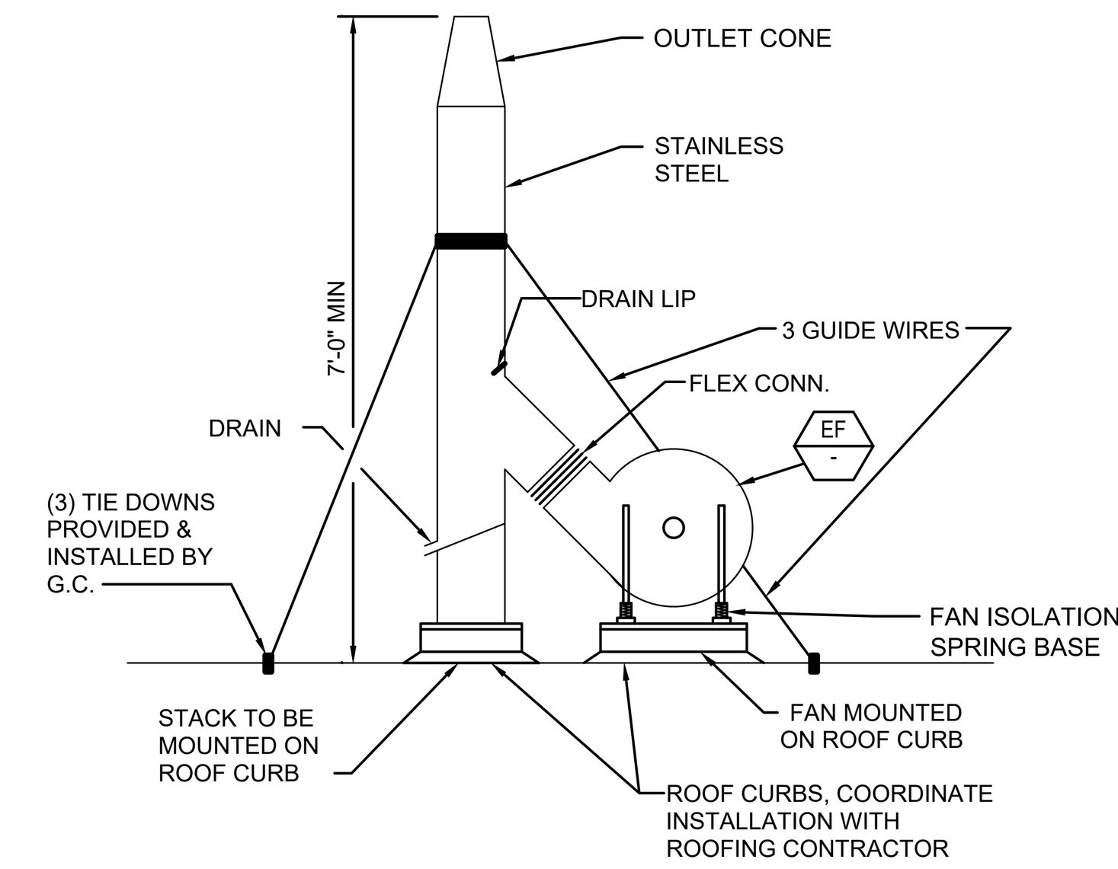
CAD FILE: FILE PLOT DATE: PDATE



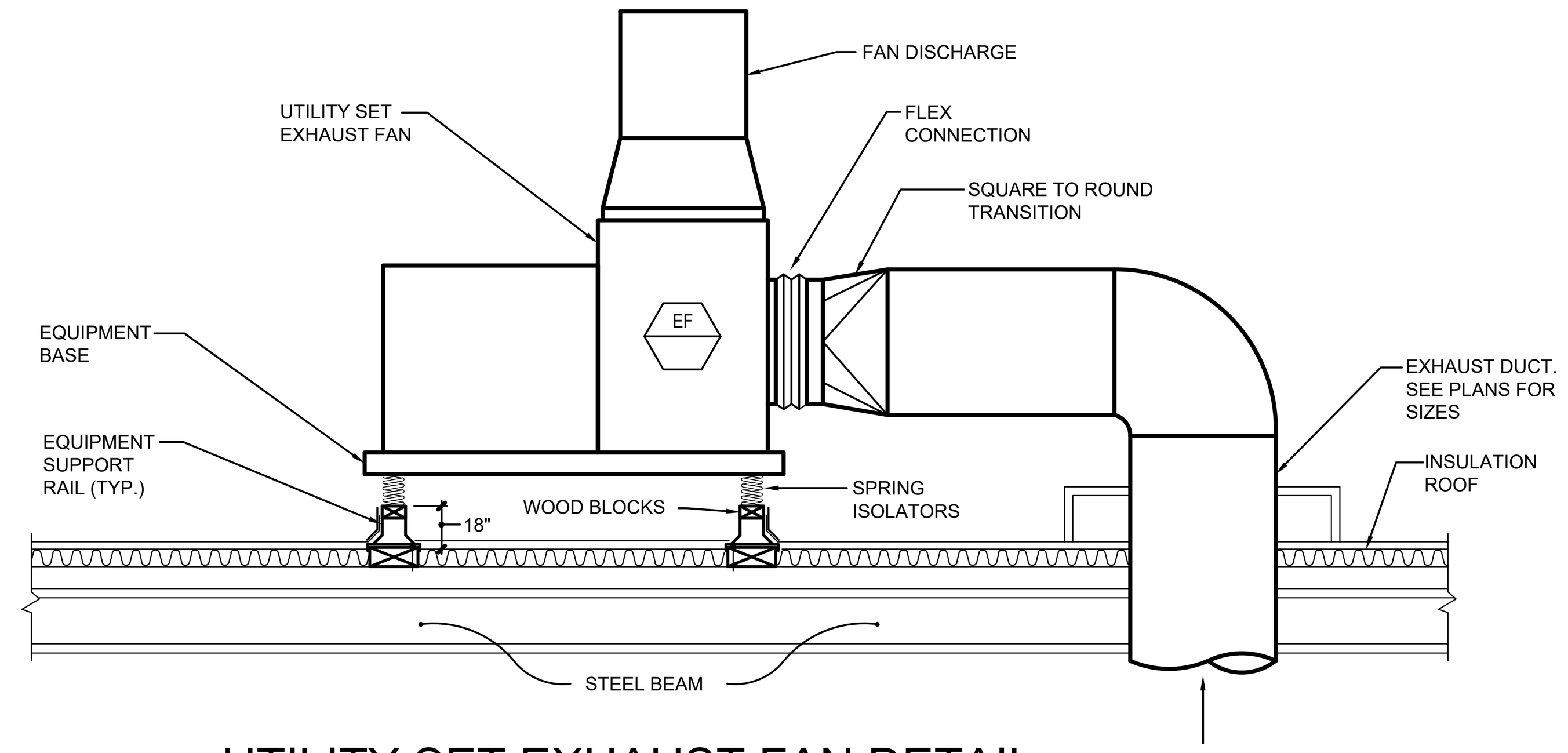
PIPE SLEEVE AT FLOOR PENETRATION
NOT TO SCALE



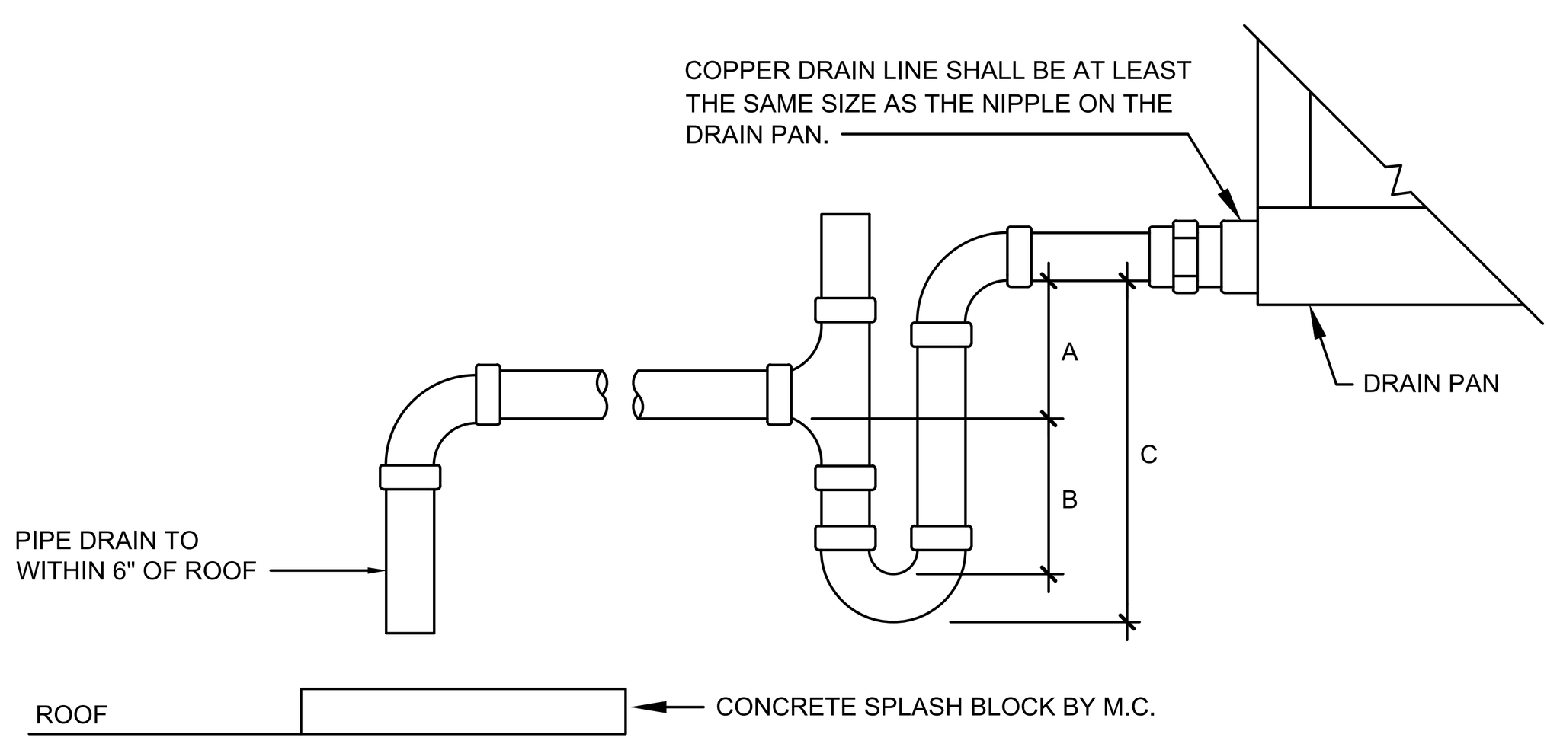
PIPE SLEEVE AT WALL PENETRATION
NOT TO SCALE



OFFSET STACK
NOT TO SCALE

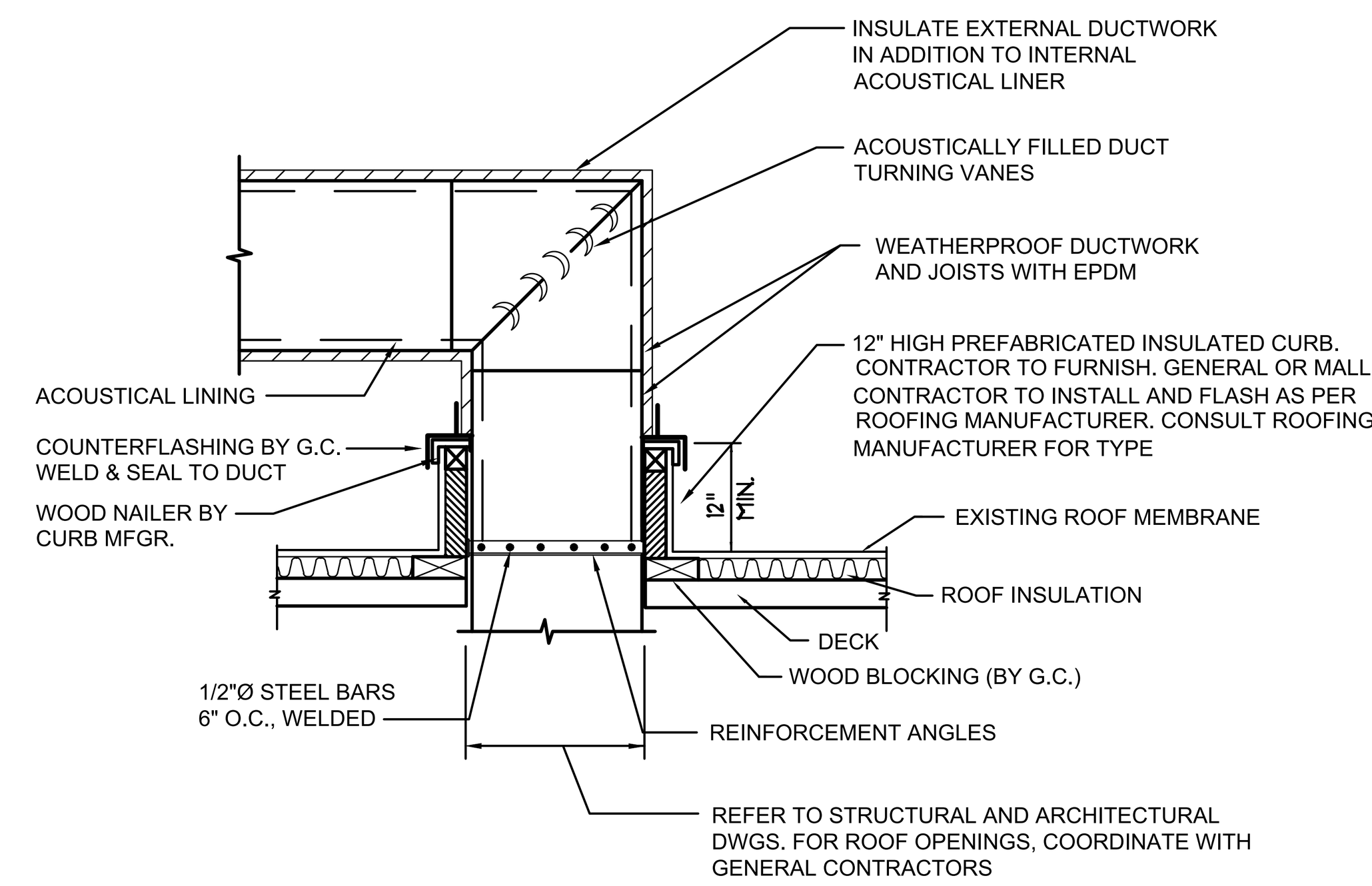


UTILITY SET EXHAUST FAN DETAIL
NOT TO SCALE

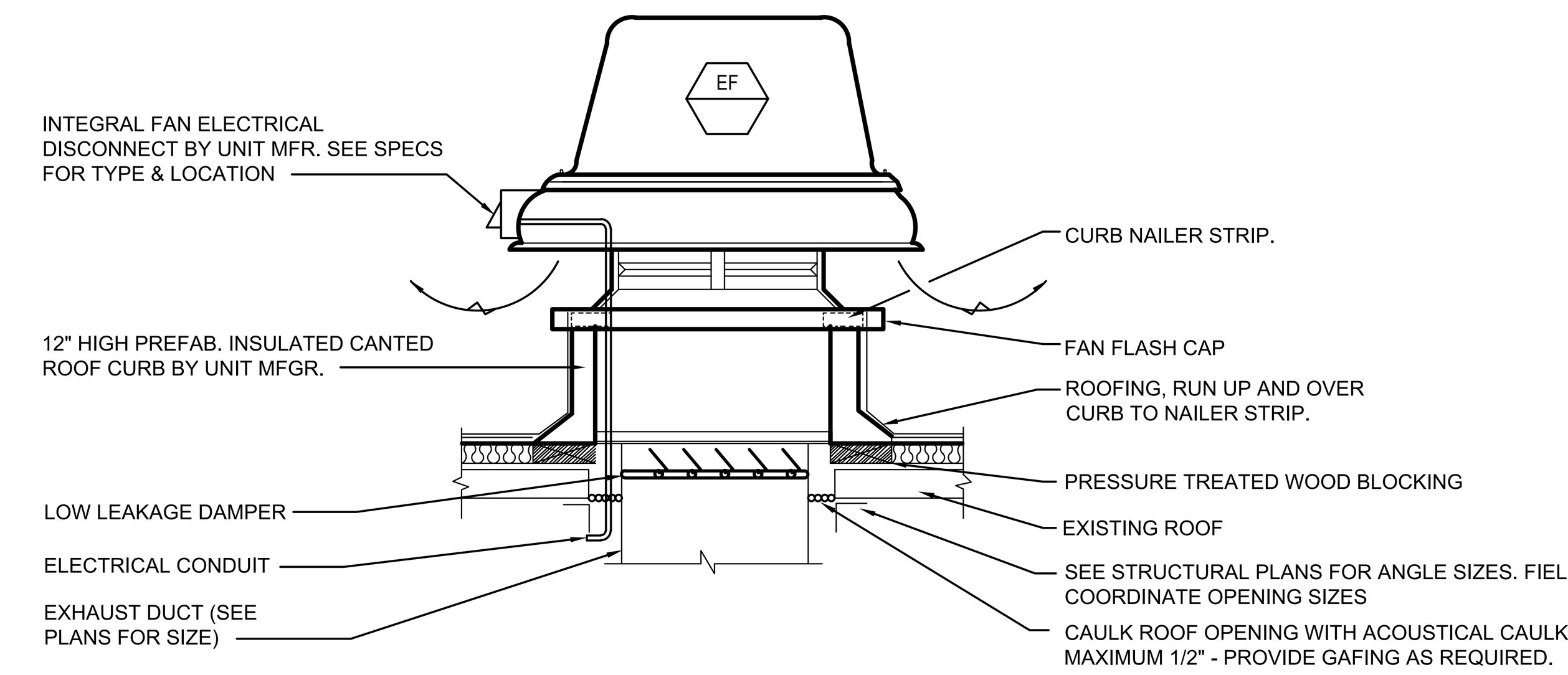


UNIT TYPE	A	B	C
DRAW THRU	(1" FOR EACH 1" OF MAX. NEGATIVE S.P.) + 1"	HALF OF "A"	"A" + "B" + PIPE DIA. + INSULATION
BLOW THRU	1/2" MINIMUM	1/2" PLUS MAX. S.P.	N/A

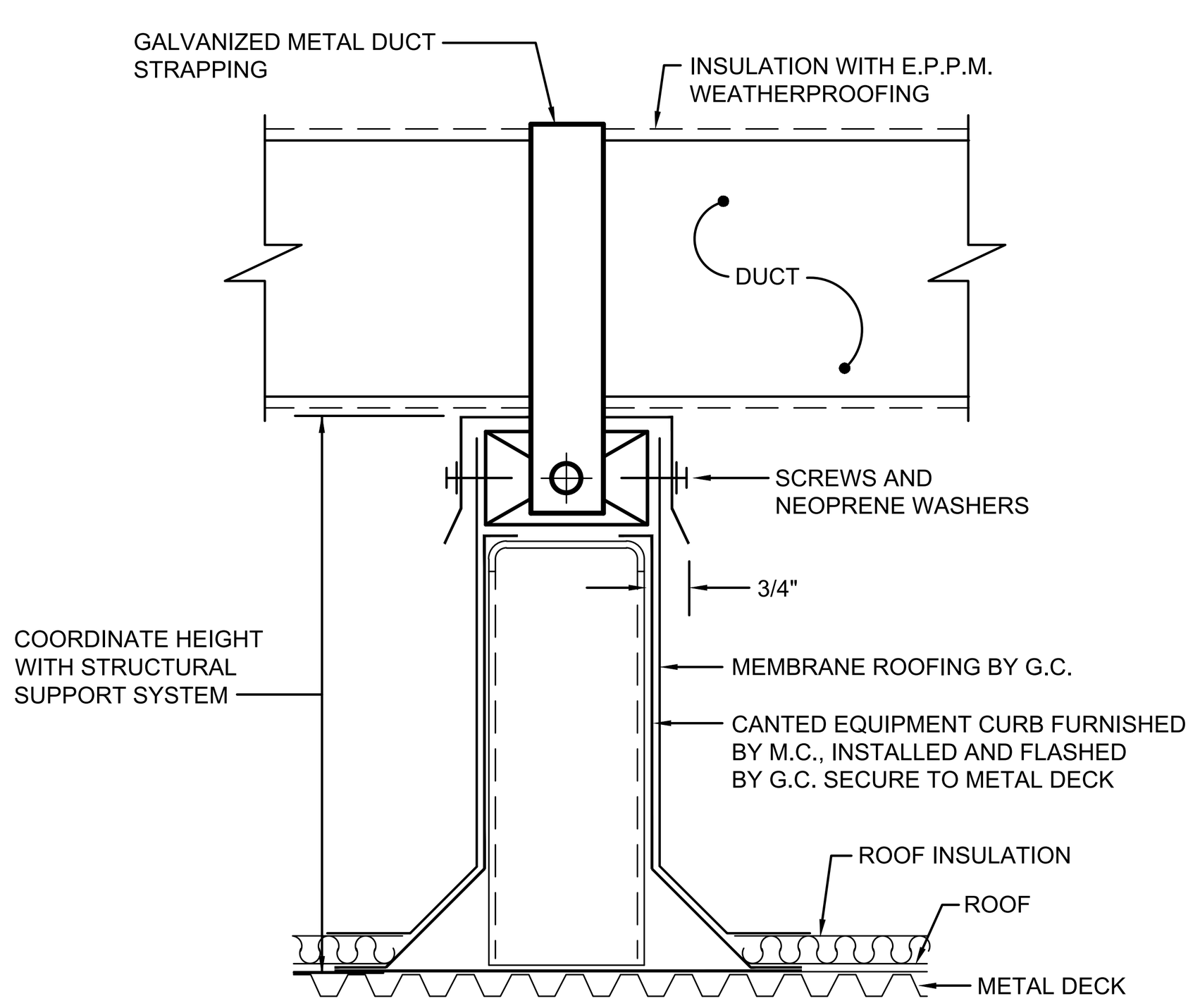
TYPICAL CONDENSATE DRAIN TRAP
NOT TO SCALE



DUCTWORK CURB DETAIL
NOT TO SCALE



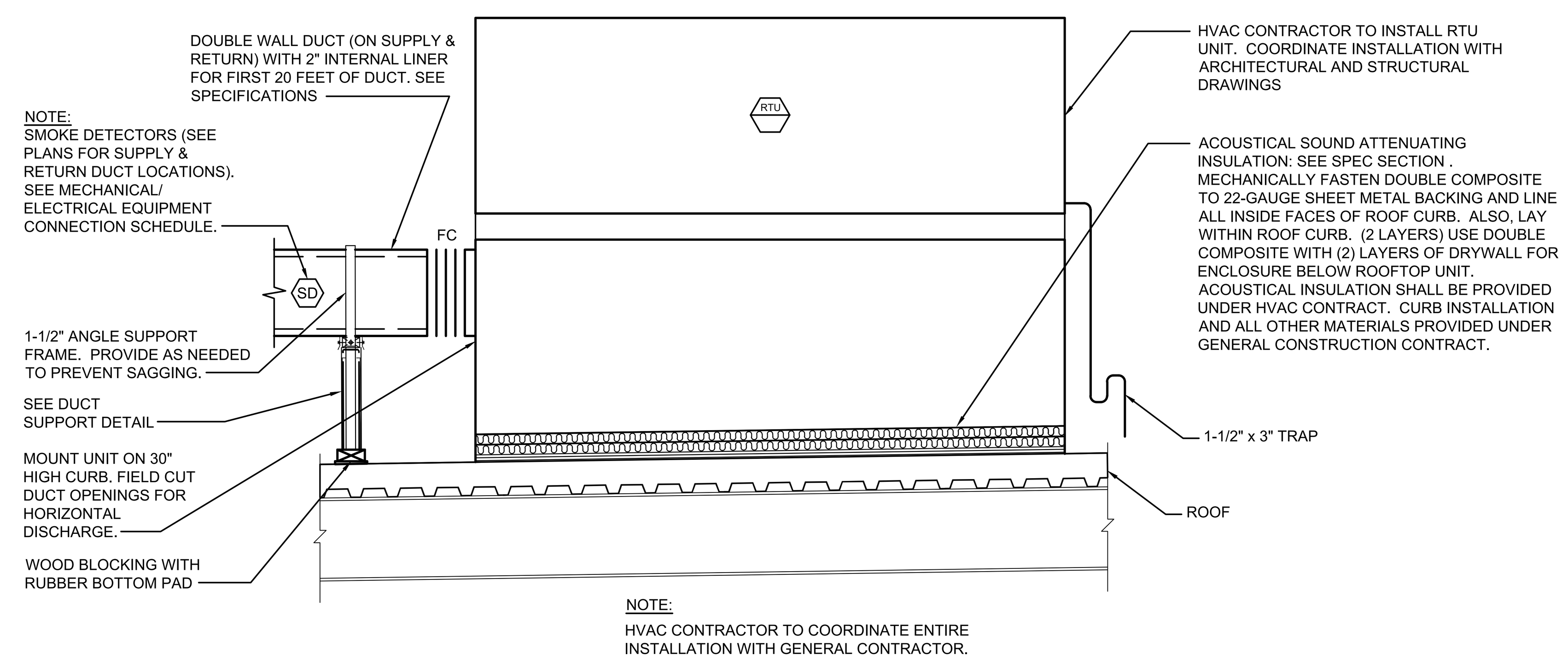
ROOF EXHAUST FAN DETAIL
NOT TO SCALE



MATERIALS - AS MANUFACTURED BY "CUSTOM CURB INC."

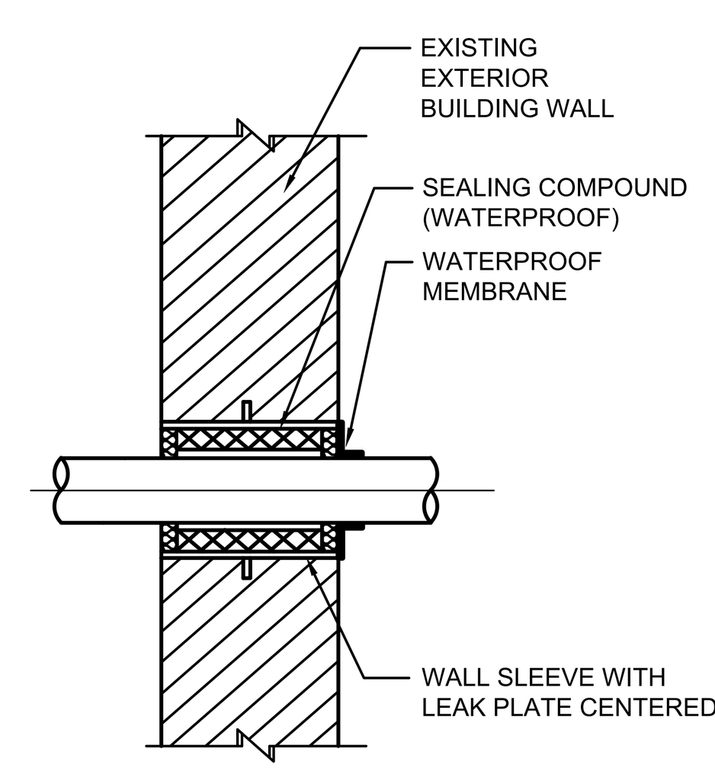
- 18 GA. GALVANIZED STEEL SHELL, BASE PLATE & COUNTERFLASHING.
- FACTORY INSTALLED PRESSURE TREATED WOOD NAILER, 2x4 MIN.
- INTERNAL REINFORCEMENT AT 12" CENTERS WITH FULL DEPTH C-CHANNEL BULKHEADS, ALTERNATING WITH 6" SPREADERS.
- ALL WELDED CONSTRUCTION COATED WITH MICROSEAL.

CUSTOM EQUIPMENT SUPPORT DETAIL
NOT TO SCALE

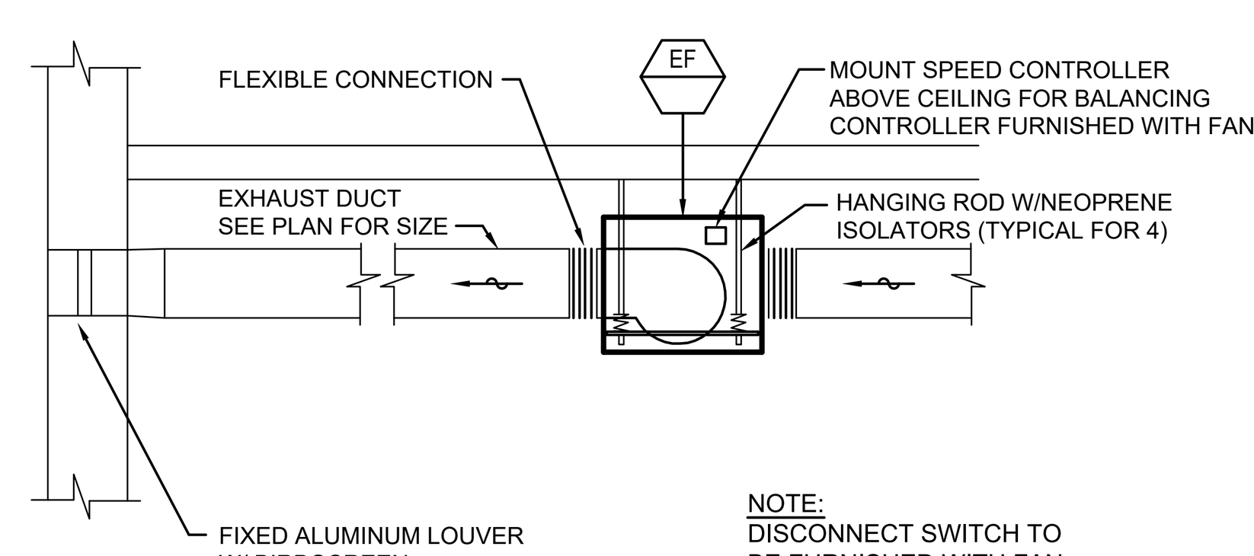


NOTE:
HVAC CONTRACTOR TO COORDINATE ENTIRE INSTALLATION WITH GENERAL CONTRACTOR.

ROOFTOP UNIT DETAIL (SIDE DISCHARGE)
NOT TO SCALE

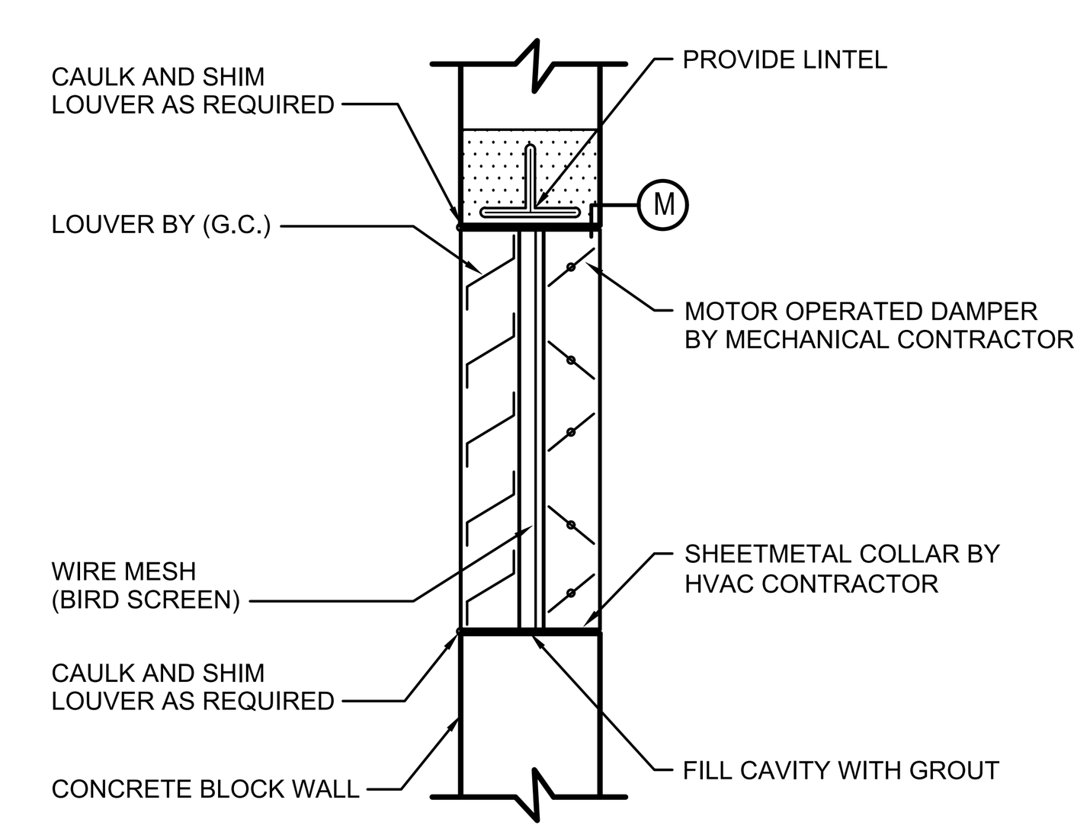


PIPE PENETRATION DETAIL
NOT TO SCALE



NOTE:
DISCONNECT SWITCH TO BE FURNISHED WITH FAN.

INLINE EXHAUST FAN DETAIL
NOT TO SCALE

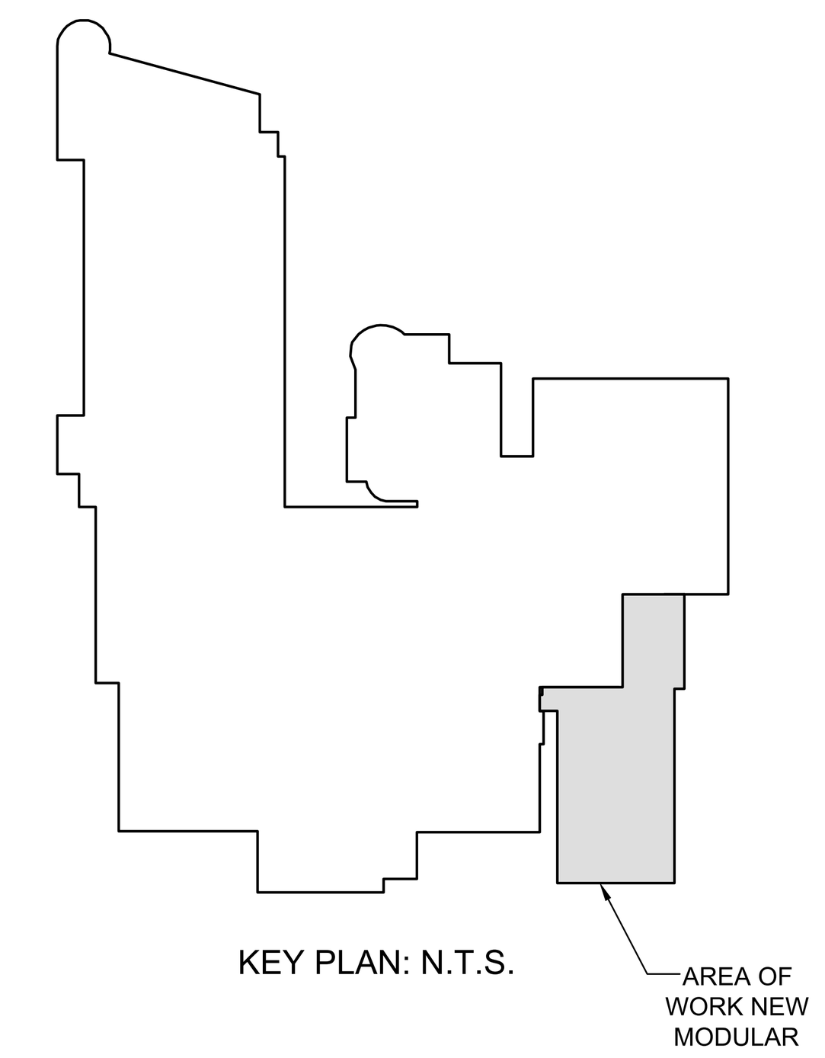


LOUVER DETAIL
NOT TO SCALE

HIGHLAND
ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center (570) 586-4334 | 102 Highland Avenue fax(570) 586-5990 | Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health
BON SECOURS CHARITY HEALTH SYSTEM

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

SEALS:

DRAWING TITLE:
MECHANICAL DETAILS

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:
M-2.1

CAD FILE: FILE PLOT DATE: PDATE

MECHANICAL SPECIFICATIONS:

SCOPE OF WORK:

THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS ARE INTENDED TO COVER THE FURNISHING BY THIS CONTRACTOR OF ALL LABOR, MATERIAL AND EQUIPMENT OF EVERY NECESSARY FOR THE COMPLETE INSTALLATION OF THE VARIOUS SYSTEMS, AND OTHER SUCH MATERIAL AND EQUIPMENT AS HEREINAFTER SPECIFIED, AND SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

A. DEMOLITION/REMOVAL OF EXISTING DUCTWORK, PIPING & DIFFUSERS.
B. PROVIDE INSULATION FOR DUCTWORK, AND PIPING.
C. PROVIDE SUPPLY, RETURN AND EXHAUST AIR DUCTWORK.
D. PROVIDE ALL STEEL SUPPORTS, VIBRATION ISOLATORS, AND HANGERS FOR ALL EQUIPMENT AND DUCTWORK.
E. SETTING OF SLEEVES.
F. PROVIDE SUPPLY & EXHAUST REGISTERS / DIFFUSERS.
G. ALL REFRIGERANT PIPE, VALVES AND FITTINGS FOR THE AC SYSTEMS.
H. ALL STEEL SUPPORTS, AND HANGERS FOR ALL EQUIPMENT, DUCTWORK, AND PIPING.
I. TESTING, ADJUSTING, BALANCING, AND PLACING INTO SERVICE ALL AIR SYSTEMS AND EQUIPMENT INSTALLED.
J. OPERATION AND MAINTENANCE MANUALS FOR EQUIPMENT AND SYSTEMS.
K. PROVIDE PACKAGED ROOFTOP UNIT WITH ROOF CURBS, VFD DRIVEN FANS, GAS FIRED HEATING AND ELECTRIC EMERGENCY SECTIONS, MERV FILTERS, HOT GAS REHEAT COILS, CONDENSER BARRELS AND SINGLE POINT POWER CONENCTIONS.
L. PROVIDE INSULATION FOR PIPING, DUCTWORK AND EQUIPMENT.
M. PROVIDE CONDENSATE DRAIN PIPING.
N. PROVIDE UTILITY SET EXHAUST FAN.
O. PROVIDE REFRIGERANT PIPING AND SPECIALTIES.
P. PROVIDE REFRIGERANT PIPING INSULATION.
Q. RELOCATE OUTDOOR AIR CONDENSING UNITS AND PROVIDE ROOF SUPPORT PADS.
R. PROVIDE ELECTRIC REHEAT COILS.
S. PROVIDE HVAC COMMISSIONING.
T. PROVIDE DUCTWORK LEAKAGE TESTING.
U. PROVIDE LOUVERS AND OTHER DUCTWORK ACCESSORIES FOR ALL AIRSIDE SYSTEMS.
V. PROVIDE VENTILATING EQUIPMENT CONSISTING OF INLINE AND UTILITY SET EXHAUST FANS AND OTHER FANS AS NEEDED FOR ALL AIRSIDE SYSTEMS.
W. PROVIDE GAS FIRED HUMIDIFIERS.
X. PROVIDE SHEET METAL THAT IS WITHIN TOLERANCE OF THE GAUGES FOR AIRSIDE SYSTEMS.

IT IS THE INTENT OF THIS SPECIFICATION AND ACCOMPANYING DRAWINGS TO PROVIDE HVAC SYSTEM, AS SPECIFIED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND EXTENT OF THE WORK TO BE DONE. EXACT LOCATION AND ARRANGEMENT OF ALL COMPONENTS SHALL BE DETERMINED AS THE WORK PROGRESSES. PLANS ARE SUBJECT TO SUCH MODIFICATION AS MAY BE NECESSARY AT THE TIME OF INSTALLATION IN ORDER TO MEET CONSTRUCTION CONDITIONS. ANY ADJUSTMENTS SHALL BE MADE BY THE HVAC CONTRACTOR, WITHOUT EXTRA CHARGE.

SCHEDULE OF WORK

THE CONTRACTOR SHALL SCHEDULE ALL OF HIS WORK TO CONFORM WITH THE HOSPITAL DIRECTOR OF ENGINEERING AND THE JOB PROGRESS SCHEDULE.

PREMIUM TIME WORK

WORK AS DIRECTED BY OWNER AT PREBID MEETING SHALL BE PERFORMED AT NIGHT OR WEEKENDS OTHER THAN HOLIDAY WEEKENDS, AS DIRECTED AND COORDINATED WITH HOSPITAL DIRECTOR OF ENGINEERING.

INTERFERENCE WITH THE OWNER'S NORMAL OPERATION

A. ALL WORK TO BE PERFORMED IN SUCH A MANNER AS NOT TO INTERFERE WITH THE NORMAL WORK OPERATIONS IN ADJACENT SPACES OR BUILDINGS.
B. IN NO WAY SHALL THE CONTRACTOR:
   1. BLOCK OR RESTRICT THE MEANS OF EGRESS FOR ADJACENT SPACES.
   2. DECREASE ANY FIRE RATING OF WALLS, PARTITIONS, CEILINGS, DOORS OR COMBINATION THEREOF OF ADJACENT SPACES OR OF MEANS OF EGRESS.
   3. INTERRUPT SAFETY SYSTEMS OR IN ANY WAY ADVERSELY AFFECT THE SAFETY OF PEOPLE OR MATERIALS IN ADJACENT SPACES.
C. THE CONTRACTOR SHALL PROVIDE DUST PROOF TEMPORARY PARTITIONS AND ANY CONTAINMENT MEASURE REQUIRED TO PREVENT DIRT, DUST OR FUMES FROM REACHING ADJACENT WORK SPACES OR EQUIPMENT.
D. ALL PERSONAL TRAFFIC AND MATERIAL DELIVERY SHALL BE ROUTED SO AS TO ABSOLUTELY MINIMIZE TRAVEL THROUGH ADJACENT WORK AREA.

VISIT TO SITE

A. BEFORE SUBMITTING PROPOSAL, BIDDERS SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAS SUCH EXAMINATION BEEN MADE.

PERMITS

A. OBTAIN ALL PERMITS REQUIRED FOR THE INSTALLATION OF THE WORK AND PAY ALL FEES IN CONNECTION THEREWITH.
B. PROVIDE INSURANCE AND BONDING AS REQUIRED BY THE HOSPITAL DIRECTOR OF ENGINEERING.

CODES AND STANDARDS

A. THE DESIGN, CONSTRUCTION AND INSTALLATION OF ALL MATERIALS AND EQUIPMENT SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF ALL NATIONAL, STATE AND LOCAL CODES OR STANDARDS.
B. THE CODES AND STANDARDS REFERRED TO ARE MINIMUM STANDARDS. WHERE THE REQUIREMENTS OF THESE SPECIFICATIONS AND THE ACCOMPANYING DRAWINGS EXCEED THOSE OF THE CODES AND STANDARDS, THE DRAWINGS AND SPECIFICATIONS SHALL BE FOLLOWED.

CLEAN UP

A. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE GENERAL CLEAN UP OF ALL AREAS AFFECTED BY THE RUBBISH AND ACCUMULATIVE MATERIAL SHALL BE REMOVED FROM THE PREMISES AND THE WORK IN CONTRACT. ALL PREMISES TO BE LEFT "BROOM CLEAN" UPON COMPLETION.

DRAWINGS

A. EXCEPT WHERE DIMENSIONS ARE SHOWN, THE DRAWINGS ARE DIAGRAMMATIC. EXACT LOCATIONS OF FIXTURES, APPARATUS, DUCTWORK AND PIPING SHALL BE DETERMINED BY DIMENSIONS ON THE SITE.

JOB CONDITIONS

A. THE DRAWINGS INDICATE THE LOCATIONS OF APPARATUS, FIXTURES, AND PIPING SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. IF BEFORE THE INSTALLATION IT IS FOUND NECESSARY TO CHANGE THE LOCATION TO ACCOMMODATE CONDITIONS NO ADDITIONAL COST TO THE OWNER, AND AS APPROVED AT THE BUILDING, SUCH CHANGES SHALL BE MADE AT BY THE ENGINEER.

DEMOLITION NOTES:

BEFORE STARTING WORK CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THOSE PORTIONS OF THE STRUCTURE IN WHICH THE WORK IS TO BE PERFORMED. CHECK ALL THE WORK ADJOINING OR AT UNDERLYING LOCATIONS. REPORT TO OWNER ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE EFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK. DO NOT START THE WORK UNTIL SUCH CONDITIONS HAVE BEEN EXAMINED AND A COURSE OF ACTION MUTUALLY AGREED UPON.

TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING INTERIOR FINISHES WHEN INSTALLING NEW HVAC WORK. ANY DAMAGE TO ADJACENT AREAS SHALL BE REPAIRED AND REFINISHED BY HVAC CONTRACTOR TO MATCH EXISTING.

KEEP ALL ADJOINING PUBLIC AREAS CLEAN AND FREE OF DEBRIS OR CONSTRUCTION MATERIALS DURING WORKING HOURS AND PROVIDE SAFE CONDITIONS FOR THE EMPLOYEES AND WORKMEN.

TAKE POSSESSION AND REMOVE FROM THE PREMISES ALL ABANDONED MATERIALS AND EQUIPMENT UNLESS SPECIFIED AS RETURNABLE TO OWNER, IN WHICH CASE REMOVE WITHOUT DAMAGE ALL SUCH EQUIPMENT AND TURN OVER AND DELIVER OWNER AT LOCATION DESIGNATED BY OWNER. CONTRACTOR SHALL PROVIDE ALL LABOR, TRUCK PERMITS AND FEES TO DISPOSE OF REMOVED MATERIALS DAILY.

ALL CHANGES CAN NOT BE DETAILED COMPLETELY ON THE DRAWINGS. SOME REMOVALS AND RELOCATION OF EXISTING MECHANICAL WORK WILL BE NECESSARY FOR SATISFACTORY PERFORMANCE OF THIS AND OTHER TRADES. TAKE INTO CONSIDERATION IN PROPOSAL ALL REQUIRED CHANGES.

ALL WORK REQUIRING SHUT DOWN OF EXISTING SYSTEMS SHALL BE APPROVED BY OWNER AT NO ADDITIONAL COST TO OWNER. SUBMIT SCHEDULE OR REQUIRED OUTAGES TO THE OWNER FOR APPROVAL. PERFORM WORK IN A MANNER TO MINIMIZE SHUT DOWN TIME.

PROVIDE RECONNECTIONS AND TEMPORARY INSTALLATIONS AS REQUIRED. REMOVE AT JOB COMPLETION.

CUTBACK TO FLOOR, WALL OR ABOVE CEILING AND PLUG ENDS OF CONCEALED PIPING MADE OBSOLETE BY ALTERATIONS TO PERMIT REFINISHING SURFACE. REMOVE EXPOSED PIPING AND HANGERS MADE OBSOLETE BY THIS WORK UNLESS DESIGNATED SPECIFICALLY TO REMAIN.

EXISTING UTILITIES: MAINTAIN SERVICES INDICATED TO REMAIN AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.

DO NOT INTERRUPT EXISTING SYSTEMS SERVING OCCUPIED AREAS UNLESS AUTHORIZED IN WRITING BY OWNER. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING SYSTEMS AS ACCEPTABLE.

PROVIDE AT LEAST 72 HOURS NOTICE TO HOSPITAL DIRECTOR OF ENGINEERING IF SHUTDOWN OF SERVICE IS REQUIRED.

PERFORM ALL WORK DURING NIGHT OR WEEKEND HOURS AS REQUIRED.

LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.

IF SYSTEMS ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, BEFORE PROCEEDING WITH SELECTIVE DEMOLITION, PROVIDE TEMPORARY SYSTEMS THAT BYPASS AREA OF SELECTIVE DEMOLITION AND THAT MAINTAIN CONTINUITY OF SYSTEMS TO OTHER PARTS OF THE BUILDING.

CUT OFF PIPE OR CONDUIT IN WALLS OR PARTITIONS TO BE REMOVED. CAP, VALVE, OR PLUG AND SEAL REMAINING PORTION OF PIPE OR CONDUIT AFTER BYPASSING.

SHOP DRAWINGS

A. ALL SUBMITTALS SHALL BEAR A STAMP OR NOTATION INDICATING THAT THE CONTRACTOR HAS REVIEWED AND APPROVED THE SUBMITTALS.
B. ALL SUBMITTALS SHALL BEAR SUFFICIENT NOTATIONS TO CLEARLY INDICATE THE SPECIFIC MAKE, MODEL NUMBER, ACCESSORIES, OPTIONS AND REFERENCE SPECIFICATION PARAGRAPH. VIBRATION ISOLATORS SHALL INCLUDE OPERATING WEIGHT AND LOAD DISTRIBUTION AT EACH MOUNTING POINT.
C. ALL SUBMITTALS INDICATE COMPLETE COMPLIANCE WITH ALL PERFORMANCE AND SPECIFICATION REQUIREMENTS AS HEREIN SPECIFIED AND SHOWN ON THE DRAWINGS OR SHALL SPECIFICALLY LIST THE EXCEPTIONS. THE CONTRACTOR AGREES THAT FAILURE OF MANUFACTURER'S SUBMITTAL TO CONFORM TO THE ABOVE WILL RESULT IN A MANUFACTURER'S DISQUALIFICATION ON THIS PROJECT.

ACCEPTANCE TESTING:

1. AN ACCEPTANCE TEST FOR THE HVAC SYSTEM(S) SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE UPON COMPLETION OF THE SUCCESSFUL TEST, THE CONTRACTOR SHALL SO CERTIFY IN WRITING TO HOSPITAL DIRECTOR OF ENGINEERING.
2. THE ACCEPTANCE TEST SHALL BE PERFORMED TO DETERMINE THAT THE PROTECTIVE MEASURES REQUIRED AS OUTLINED IN NFPA-90A AND THE SEQUENCE OF OPERATION, ALL CONTROLS AND EQUIPMENT SHALL BE MODULATED THROUGHOUT THEIR ENTIRE RANGES AND ADJUSTMENTS SHALL BE MADE FOR OPTIMUM PERFORMANCE.

CUTTING AND PATCHING:

A. THE CONTRACTOR SHALL PROVIDE ALL WALL CUTS AS REQUIRED FOR PIPING PENETRATIONS OF EXISTING CONSTRUCTION.
B. NO CUTTING OF BEARING WALLS, BEAMS, ETC. SHALL BE DONE WITHOUT THE APPROVAL OF OWNER. ALL PATCHING AND FINISHING, ETC. SHALL MATCH THE SURROUNDINGS. ALL CUTTING AND PATCHING SHALL BE DONE BY WORKMEN SKILLED IN THE TRADES AND IN THE EMPLOY OF THE CONTRACTOR FOR THE PROJECT. ALL CUTTING SHALL BE DONE WITH SAW TYPE EDGES TO GIVE A NEAT WORKMANLIKE APPEARANCE. ALL PIPE HOLES SHALL BE CORE DRILLED UNLESS SPECIFIED OTHERWISE.
C. SHOULD IT BE NECESSARY TO DO ANY CUTTING AND PATCHING DUE TO THE FAILURE OF THIS CONTRACTOR TO GIVE PROPER INFORMATION TO THE CONTRACTOR, IT SHALL BE DONE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.

FIRE STOP PENETRATION PROTECTION SEALING SYSTEM:

A. WHERE PIPES PASS THROUGH FIRE PARTITIONS, FIRE WALLS, INSTALL A FIRE STOP THAT PROVIDES AN EFFECTIVE BARRIER AGAINST THE SPREAD OF FIRE, SMOKE, GASES AND WATER. FIRE-STOP MATERIAL SHALL BE PACKED TIGHT AND COMPLETELY FILL CLEARANCES BETWEEN PIPE, SLEEVES AND STRUCTURE. ALL CRACK VOIDS OR HOLES (UP TO 4" DIAMETER) SHALL BE SEALED.
B. FIRE-STOPPING MATERIALS SHALL MAINTAIN ITS INTEGRITY WHILE PREVENTING THE PASSAGE OF FLAME, SMOKE, GASES OR WATER.
C. HILTI MODEL NUMBER CFS-S SIL SL FIRESTOP SILICONE SEALANT. COORDINATE WITH HOSPITAL DIRECTOR OF ENGINEERING.

DUCTWORK:

1. GENERAL: HVAC SUPPLY SYSTEM DUCTWORK SHALL BE G90 GALVANIZED STEEL CONSTRUCTED AND INSTALLED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA). "HVAC DUCT CONSTRUCTION STANDARDS" LATEST EDITION.
2. INSULATED FLEXIBLE DUCTS: FLEXIBLE DUCT WRAPPED WITH FLEXIBLE GLASS FIBER INSULATION, ENCLOSED BY SEAMLESS ALUMINUM PIGMENTED PLASTIC VAPOR BARRIER JACKET, MAXIMUM 0.23 K VALUE AT 75 DEGREES F. 10 YEAR PARTS AND LABOR WARRANTY AGAINST BLOW-OUT. THERMAFLEX G-KM. PROVIDE INSULATED THERMAFLEX FLEXFLOW ELBOWS AT DIFFUSER LOCATIONS.
3. FASTENERS - RIVETS, BOLTS OR SHEET METAL SCREWS.
4. SEALANT - WATER RESISTANT, FIRE RESISTIVE, COMPATIBLE WITH MATING MATERIALS, HEAVY MASTIC, WATER-BASED, 0/0 SMOKE DEVELOPED/FLAME SPREAD PER ASTM E84. DUCTMATE PRO SEAL.

HANGER RODS - STEEL, THREADED BOTH ENDS, ONE END OR CONTINUOUSLY THREADED.

CONSTRUCT T'S, BENDS AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON INSIDE RADIUS. WHERE NOT POSSIBLE, USE TURNING VANES.

INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEG DIVERGENCE WHEREVER POSSIBLE. DIVERGENCE UPSTREAM OF EQUIPMENT SHALL NOT EXCEED 30 DEG, CONVERGENCE DOWNSTREAM SHALL NOT EXCEED 45 DEG.

PROVIDE EASEMENTS WHERE LOW PRESSURE DUCTWORK CONFLICTS WITH PIPING AND STRUCTURE. WHERE EASEMENTS EXCEED 10% DUCT AREA, SPLIT INTO TWO DUCTS MAINTAINING ORIGINAL DUCT AREA.

CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH DRAWBANDS.

ALL LOW PRESSURE DUCT LONGITUDINAL JOINTS SHALL BE OF THE PITTSBURGH LOCK TYPE.

USE BUCKLEY ATMD FITTINGS ON TAPS TO AIR INLETS AND OUTLETS. FITTINGS TO HAVE NEOPRENE GASKET, INTEGRAL VOLUME DAMPER AND EXTENDED NECK/ QUADRANT DAMPER. SECURE WITH MULTIPLE SHEET METAL SCREWS.

FOR MEDIUM PRESSURE DUCTWORK, USE DUCTMATE JOINTS ON SUPPLY AND EXHAUST.

ROUND AND OVAL DUCTWORK MAY BE SUBSTITUTED FOR RECTANGULAR. AIR VELOCITY MAY NOT BE INCREASED. ACCEPTABLE MANUFACTURER IS UNITED MCGILL. CLEARANCE MUST BE VERIFIED AND CONSIDERED WHERE CONFLICTS OCCUR.

THE CONTRACTOR SHALL INCLUDE ALLOWANCES FOR STRUCTURAL, PIPING AND CONDUIT INTERFERENCE'S NOT EVIDENT IN THE BID PHASE OR INDICATED ON THE DRAWINGS. INTERFERENCE'S ARE TO BE WORKED OUT DURING THE SHOP DRAWING PHASE.

PROVIDE OFFSETS AT INTERFERENCE LOCATIONS AND/PR WHERE CHANGES IN CEILING HEIGHTS REQUIRE SUCH OFFSETS. OFFSETS SHALL BE SMOOTH AS POSSIBLE AND WITHOUT THE NEED FOR HARD ELBOWS. OFFSETS SHALL MINIMIZE THE ELBOW/OFFSET ANGLE REQUIRED WHICH SHALL RESULT IN MINIMAL STATIC PRESSURE GRADIENTS INTO THE SYSTEM.

LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.

DURING CONSTRUCTION, PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEMS.

LOW PRESSURE DUCTWORK:

1. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS AND ASHRAE HANDBOOKS, EXCEPT AS INDICATED. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED.
2. SIZE ROUND AND OVAL DUCTS INSTALLED IN PLACE OF RECTANGULAR DUCTS IN ACCORDANCE WITH ASHRAE TABLE OF EQUIVALENT RECTANGULAR, OVAL AND ROUND DUCTS. NO VARIATION OF DUCT CONFIGURATION OF SIZES PERMITTED EXCEPT BY WRITTEN PERMISSION.
3. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS ARE USED, PROVIDE AIRFOIL TURNING VANES, BY AERO DYNE MODEL HEP.
4. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE. DIVERGENCE UPSTREAM OF EQUIPMENT SHALL NOT EXCEED 30 DEGREES CONVERGENCE DOWNSTREAM SHALL NOT EXCEED 45 DEGREES.
5. PROVIDE EASEMENTS WHERE LOW PRESSURE DUCTWORK CONFLICTS WITH PIPING AND STRUCTURE. WHERE EASEMENTS EXCEED 10 PERCENT DUCT AREA, SPLIT INTO TWO DUCT MAINTAINING ORIGINAL DUCT AREA.
6. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH DRAW BANDS.
7. USE DOUBLE NUTS AND LOCK WASHERS ON THREADED ROD SUPPORTS.
8. ALL LONGITUDINAL JOINTS SHALL BE OF THE PITTSBURGH LOCK TYPE. USE BUCKLEY ATMD FITTINGS WITH EXTENDED NECK QUADRANT LOCK. SECURE WITH SHEET METAL SCREWS.
9. ROUND AND OVAL DUCTWORK MAY BE USED IN LIEU OF RECTANGULAR. AIR VELOCITY MAY NOT BE INCREASED. ACCEPTABLE MANUFACTURER IS UNITED SHEET METAL. CLEARANCES MUST BE VERIFIED AND CONSIDERED WHERE CONFLICTS OCCUR.

SYSTEM	CLASSIFICATION
DUCTWORK : SUPPLY	LOW PRESSURE; 1 INCH
DUCTWORK: RETURN	LOW PRESSURE; 2"
DUCTWORK: GENERAL EXHAUST.	LOW PRESSURE; 1 INCH

DOUBLE WALL DUCTWORK- ROOFTOP UNIT

A. DOUBLE WALL (INSULATED) DUCTWORK: FABRICATE DOUBLE-WALL (INSULATED) DUCTWORK WITH AN INNER AND OUTER SHELL AND A 2" LINER BETWEEN. DIMENSIONS INDICATED ON INTERNALLY INSULATED DUCTS ARE INSIDE DIMENSIONS.
   1. THERMAL CONDUCTIVITY (K-VALUE): 0.26 AT 75 DEG. F MEANS TEMPERATURE.
   2. OUTER SHELL: BASE OUTER-SHELL METAL THICKNESS IS 18 GAUGE METAL. USE THE SAME METAL THICKNESSES FOR UNINSULATED FITTINGS AS OUTER DUCT.
   3. INSULATION: 2" THICK FIBROUS-GLASS INSULATION, (DUCT LINER) UNLESS OTHERWISE INDICATED. TERMINATE INSULATION WHERE INTERNALLY INSULATE DUCT CONNECTS TO SINGLE-WALL DUCT OR UNINSULATED COMPONENTS. TERMINATE INSULATION AND REDUCE OUTER DUCT DIMENSION TO NOMINAL SINGLE-WALL SIZE.
   4. (SOLID) (PERFORATED) INNER LINER: BASE INNER SHELL METAL THICKNESS IS 22 (STANDARD), 20 (CUSTOM) GAUGE METAL.
   5. THIS DUCTWORK SHALL BE INSTALLED ON THE FIRST 20'-0" ON ALL DUCTS CONNECTED TO THE AIR HANDLER UNIT OR MORE AS INDICATED ON THE CONTRACT DOCUMENTS. CONSTRUCT TO MEDIUM PRESSURE REQUIREMENTS AS OUTLINED HEREIN.
   6. PERFORATED LINER SHALL CONSIST OF (3/32) (5/32) PERFORATIONS SPACED TO PROVIDE (23%) (25%) FREE AREA.

DUCTWORK MATERIAL SCHEDULE

AIR SYSTEM	MATERIAL
SUPPY, RETURN & EXHAUST	G90 STEEL
GENERAL EXHAUST	G90 STEEL
HUMIDIFIER	STAINLESS STEEL; WELDED LIQUID TIGHT
FIRST 20' OF DUCTWORK OF DISCHARGE AND RETURN AIR OPENING AROUND EACH AIR HANDLING UNIT	G90, DOUBLE WALL, 22 GAUGE INNER, 18 GAUGE OUTER (SEE EXECUTION)

B. ALL DUCTWORK LOCATED WITHIN 20' OF THE DISCHARGE AND RETURN AIR OPENING AROUND AIR HANDLING EQUIPMENT SHALL BE SOLID DOUBLE WALL WITH **22 GAUGE (SOLID)** INNER LINER, 18 GAUGE OUTER SHELL AND 2" THICK ACOUSTIC DUCT LINER BETWEEN THE LINER AND SHELL. THE INNER DUCT SHALL BE THE PRESSURE DUCT WHERE THE INNER DUCT IS SOLID WALL.

FLEXIBLE DUCT CONNECTIONS

1. FABRICATE IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS.
2. UL LISTED FIRE-RETARDANT NEOPRENE COATED WOVEN GLASS FIBER FABRIC TO NFPA 90A MINIMUM DENSITY 36 OZ PER SQ YD APPROX. 3" WIDE, CRIMPED INTO METAL NOSING.

ACCEPTABLE MANUFACTURES - DUCTWORK INSULATION

A. OWENS-CORNING
B. JOHNS MANVILLE
C. CERTAINTEED
D. KNAUF
E. ARMACELL

DUCTWORK INSULATION

A. TYPE A: FLEXIBLE GLASS FIBER; ANSI/ASTM C553 AND ASTM C 1290; COMMERCIAL GRADE; "K" VALUE OF 0.26 AT 75 DEGREES F; RATED TO 250 DEGREES F; 3/4 LB. DENSITY; FOIL SCRIM KRAFT FACING ASTM C1136 FOR AIR CONDITIONING DUCTS. JOHNS MANVILLE MICROLITE FSK (BASIS OF DESIGN).
B. TYPE B: RIGID GLASS FIBER; ANSI/ASTM C612, CLASS 1; "K" VALUE OF 0.23 AT 75 DEGREES F; 3 LB./CU. FT. DENSITY; RATED TO 450 DEGREES F; FOIL SCRIM FACING ASTM C1136 TYPE II FOR AIR CONDITIONING DUCTS. JOHNS MANVILLE SERIES 800 SPIN-GLASS BOARD (BASIS OF DESIGN).
C. TYPE C: FLEXIBLE GLASS FIBER; ANSI/ASTM C553; "K" VALUE OF 0.24 AT 75 DEGREES F; COATED AIR SIDE FOR MAXIMUM 4,000 FT./MIN. AIR VELOCITY. JOHNS MANVILLE LINACOUSTIC RC (RECTANGULAR), SPIRACOUSTIC PLUS (ROUND).
D. TYPE D: HUSHCORE™ *DECK*™ SYSTEM IN-CURB MULTI-LAYER ACOUSTICAL TREATMENT
   1. COMPONENT PRODUCTS SHALL BE AS LISTED:
      a. HUSHCORE™ DS-52 ACOUSTICAL COMPOSITE
      b. HUSH BATT™ DS-49 DECK SYSTEM
      c. HUSH SEALANT™ HSAC-100 ACOUSTICAL CAULK
   2. HUSHCORE™ DS-52 ACOUSTICAL COMPOSITE
      a. THE COMPOSITE SHALL MEET ASTM E-84 CLASS "A" FOR FLAMMABILITY.
      b. THE OVERALL INSTALLED COMPOSITE SHALL HAVE AN INSTALLED THICKNESS OF 8" FOR THE DS-52 COMPOSITE.
      c. THE INSTALLATION DS-52 SHALL HAVE A THERMAL VALUE OF R-27.
      d. THE COMPOSITE PANELS SHALL GET HUSH SEALANT™ MODEL HSAC-100 ACOUSTICAL GRADE CAULK AT SEAMS AND ALL PERIMETER EDGES INSIDE THE CURB.
      e. SEAMS FOR EACH LAYER SHALL BE STAGGERED.
      f. ACOUSTICAL COMPOSITE SHALL HAVE 65% POST-CONSUMER RECYCLED CONTENT.
   3. HUSH SEALANT™ HSAC-100 ACOUSTICAL CAULK
      a. SHALL BE A NON-HARDENING FORMULATION
      b. THE ACOUSTICAL SEALANT MUST BE APPLIED AROUND THE ENTIRE PERIMETER OF THE CURB, AROUND DUCT DROP PENETRATIONS OF THE DECKING, AND AT ALL SEAMS BETWEEN HUSH CORE COMPOSITE PANELS.
   4. WHERE ACOUSTICAL TREATMENT IS EXPOSED TO THE AIR STREAM, MODEL DS-49 DECK SYSTEM, RATED AT STC 49 SHALL BE SUPPLIED. THE DS-49 IN-CURB IS RATED CLASS A FOR FLAMMABILITY PER ASTM 84.
   5. BRD NOISE AND VIBRATION CONTROL, AS BASIS OF DESIGN.
   6. EXCEPTIONS MUST BE SUBMITTED AND APPROVED PRIOR TO PROJECT BID DATE AS "OR EQUAL" COMPLIANT.
   7. HUSHCORE™ IN-CURB ACOUSTIC TREATMENT ACOUSTICAL PERFORMANCE
      a. THE COMBINATION OF ALL LAYERS SHALL BE TESTED FOR SOUND TRANSMISSION LOSS IN ACCORDANCE WITH PROCEDURE ASTM E-90-10. THE ASSEMBLY SHALL BE RATED AT NOT LESS THAN STC-52 WITH 1/3 OCTAVE PERFORMANCE VALUES AS LISTED BELOW FOR SOUND RADIATION THROUGH THE DECK INSIDE THE CURB.

FREQ. (Hz)	80	100	125	160	200	250	315	400	500	630	800	1K
TL (dB)	26	27	33	32	35	42	45	45	50	56	59	60
FREQ. (Hz)	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	STC	
TL (dB)	62	63	64	65	67	71	74	78	80	80	52	

SCHEDULE

DUCTWORK	TYPE	MINIMUM THICKNESS	R-VALUE
SUPPLY & RETURN AIR DUCT (OUTDOOR)	B	4.0	R-12
SUPPLY & RETURN AIR DUCT (UNCONDITIONED CONCEALED)	A	2.0	R-6
INTERNAL ACOUSTICAL LINING	C	2.0	R-5
BOARD BELOW ROOF MOUNTED UNIT	D	4.0	N/A
EXHAUST DUCT (OUTDOOR)	NONE	EPDM JACKET ONLY VENTURECLAD 1577CW NOT ACCEPTABLE	N/A

MANUFACTURERS – VOLUME CONTROL AND SHUT OFF DAMPERS

A. RUSKIN
B. GREENHECK

VOLUME CONTROL AND SHUT OFF DAMPERS

A. CONTROL DAMPERS: AMCA STANDARD 500-D TESTED AND RATED. PROVIDE DAMPERS WITH PARALLEL BLADES FOR 2-POSITION CONTROL, OR OPPOSED BLADES FOR MODULATING CONTROL. CONSTRUCT BLADES OF 16 GAUGE STEEL; PROVIDE HEAVY-DUTY MOLDED SELF-LUBRICATING NYLON BEARINGS, 1/2 INCH HEX STEEL AXLES SPACED ON 9" CENTERS. CONSTRUCT FRAME OF 5 INCH X 1 INCH X 16 GAUGE STEEL CHANNEL WITH LINKAGE CONCEALED WITHIN THE JAMB. FINISH IS TO BE GALVANIZED. FOR DAMPERS LOCATED IN DUCTWORK WITH AIR VELOCITIES GREATER THAN 1500 FPM, DAMPERS SHALL HAVE AIRFOIL BLADES. PROVIDE FRAMES TO ACCEPT DUCTMATE JOINTS WHERE APPLICABLE TRANSVERSE JOINTS ARE PROVIDED. PROVIDE A 2" STANDOFF BRACKET AND LOCKING QUADRANT MANUAL OPERATOR. DAMPERS FOR MOISTURE LADEN AIRSTREAMS OR CORROSIVE ENVIRONMENTS SHALL BE TYPE 304 STAINLESS STEEL CONSTRUCTION INCLUDING BEARINGS. PROVIDE SLEEVE AND SECURITY BARS WHERE REQUIRED.

FLEXIBLE DUCT CONNECTIONS

A. GENERAL DESCRIPTION: FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1.

B. METAL-EDGED CONNECTORS: FACTORY FABRICATED WITH A FABRIC STRIP 6" WIDE ATTACHED TO TWO STRIPS OF 3" WIDE, 0.028-INCH THICK, GALVANIZED SHEET STEEL OR 0.032-INCH THICK ALUMINUM OR STAINLESS STEEL SHEETS. SELECT METAL COMPATIBLE WITH DUCTS.

C. INDOOR SYSTEM, FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE COATED WITH NEOPRENE. MODEL VENTGLAS.
   1. MINIMUM WEIGHT: 30 OZ./SQ. YD.
   2. TENSILE STRENGTH: 480 LBF/INCH IN THE WARP AND 360 LBF/INCH IN THE FILLING.
   3. SERVICE TEMPERATURE: MINUS 20 TO PLUS 200 DEGREES F.
   4. SERVICE PRESSURE: RATED TO +/- 10" WG.

D. OUTDOOR SYSTEM, FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE COATED WITH WEATHERPROOF, SYNTHETIC RUBBER RESISTANT TO UV RAYS AND OZONE. MODEL VENTLON.
   1. MINIMUM WEIGHT: 26 OZ./SQ. YD.
   2. TENSILE STRENGTH: 530 LBF/INCH IN THE WARP AND 440 LBF/INCH IN THE FILLING.
   3. SERVICE TEMPERATURE: MINUS TO PLUS 275 DEGREES F.
   4. SERVICE PRESSURE: RATED TO +/- 10" WG.

ACCEPTABLE MANUFACTURERS:

A. ANEMOSTAT (BASIS OF DESIGN)
B. TITUS

EXHAUST GRILLES:

EXHAUST GRILLES & REGISTERS SHALL BE ANEMOSTAT MODEL 30 (3/4" BLADE SPACING) FIXED BLADE, NON-ADJUSTABLE GRILLES, MANUFACTURED FROM (STEEL). FOR SURFACE MOUNTING APPLICATIONS, COUNTERSUNK MOUNTING HOLES SHALL BE PROVIDED IN THE BORDER, WITH OVAL HEAD SCREWS ALSO PROVIDED BY THE GRILLE MANUFACTURER.

BLADES SHALL BE ON 3/4" SPACING, AND SHALL RUN HORIZONTAL (LONG DIMENSION). BLADES SHALL BE POSITIONED AT 45° DEFLECTION ANGLES, AND HELD RIGIDLY FIXED IN PLACE BY REAR MULLIONS WELDED TO THE GRILLE FRAME. CORNERS SHALL BE WELDED OR STAKED FOR NEAT, UNIFORM MITERED CORNERS.

WHERE SCHEDULED, INCLUDE STEEL, ALUMINUM, OPPSED BLADE VOLUME CONTROL DAMPERS.

PROVIDE A BAKED-ON, ARTIC WHITE FINISH.

CEILING DIFFUSERS:

A. CEILING DIFFUSERS SHALL BE DIRECTIONAL TYPE MODEL D AND SHALL HAVE A SQUARE OR RECTANGULAR NECK. DIFFUSERS SHALL HAVE A FIXED, HORIZONTAL AIR DISCHARGE PATTERN, AND SHALL BE CONFIGURED WITH A 1,2, 3 OR 4 WAY CORE / DISCHARGE PATTERN AS SCHEDULED. THE DIFFUSER CORE SHALL BE REMOVABLE, WITHOUT TOOLS, FOR CLEANING OR RE-CONFIGURING THE SPACE AIR DISTRIBUTION. NO SCREW HOLES SHALL BE VISIBLE.

DIFFUSERS SHALL BE CONSTRUCTED FROM STEEL.

MODEL SRA SQUARE TO ROUND DUCT ADAPTERS SHALL BE USED IN TRANSITIONING TO ROUND DUCT. ADAPTERS SHALL BE OF SUFFICIENT HEIGHT TO INCLUDE OPPOSED BLADE VOLUME CONTROL DAMPERS. DAMPERS SHALL BE ADJUSTABLE FROM THE ROOM SIDE BY REMOVING, WITHOUT TOOLS, THE INNER CORE ASSEMBLY. MODEL TRV THROW REDUCING VANES SHALL BE FACTORY PROVIDED AND ATTACHED TO THE CORE, TO DIRECT AIR OUT THE CORNERS OF THE DIFFUSER.

THE MANUFACTURER SHALL PROVIDE PERFORMANCE DATA OBTAINED IN ACCORDANCE WITH CURRENT ANSI/ASHRAE STANDARD 70.

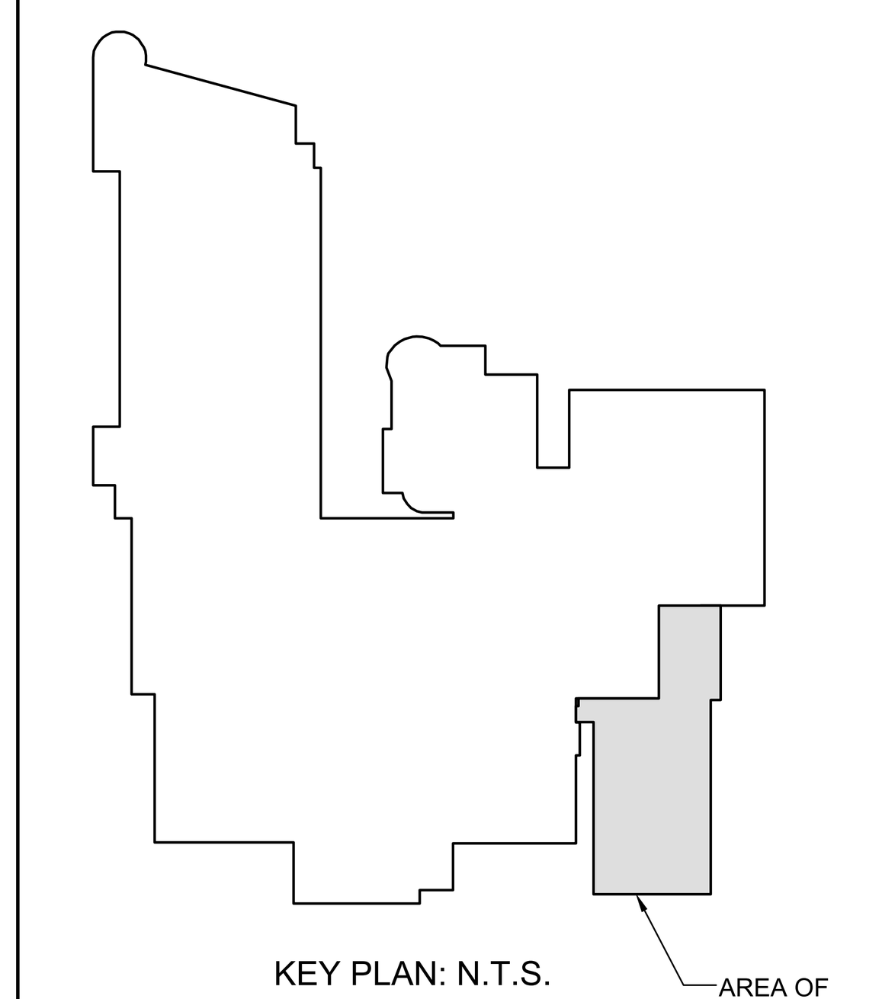
THE BAKED-ON FINISH SHALL BE ANEMOSTAT ARCTIC WHITE.

B. ANEMOSTAT - MODEL "D"

HIGHLAND
ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center | 102 Highland Avenue | Clarks Summit, PA 18411
(570) 586-4334 | fax(570) 586-5990 | www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

SEALS:

DRAWING TITLE:
MECHANICAL SPECIFICATIONS

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:
M-2.2

CAD FILE: FILE   PLOT DATE: PDATE

MECHANICAL SPECIFICATIONS:

SUPPLY REGISTER:

A. DOUBLE DEFLECTION SUPPLY REGISTER.

B. HEAVY 20 GAUGE STEEL FRAMES.

C. 3/4" SPACING OF INDIVIDUALLY ADJUSTABLE FRONT HORIZONTAL BLADES.

D. STEEL OPPOSED BLADE VOLUME CONTROL DAMPER.

E. MOUNTING HOLES IN FRAME COUNTERSUNK FOR SUPPLIED #8 x 1-1/2" OVAL HEAD SCREWS.

F. ARCTIC WHITE BAKED-ON FINISH.

G. ANEMOSTAT MODEL 20/L (BASIS OF DESIGN) OR APPROVED EQUAL BY TITUS.

REFRIGERANT PIPING:

A. COPPER TUBING: ASTM B280, TYPE ACR HARD DRAWN.

1. FITTINGS: ANSI/ASME B16.22 WROUGHT COPPER.
2. JOINTS: ANSI/AWS A5.8 B CUP SILVER BRAZE.

REFRIGERANT:

A. REFRIGERANT: ANSI/ASHRAE 34; R410A.

EQUIPMENT DRAINS:

A. COPPER TUBING: ASTM B88, TYPE L HARD DRAWN.

1. FITTINGS: ANSI/ASME B16.23 CAST BRASS, OR ANSI/ASME B16.29 SOLDER WROUGHT COPPER, DRAINAGE PATTERN.
2. JOINTS: ASTM B32, SOLDER, GRADE 95TA.

REFRIGERANT PIPE INSULATION

A. INTERIOR APPLICATIONS (LIQUID AND SUCTION), AP ARMAFLEX "SS" SEAL (1" THICK WITH FLAME SPREAD OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS, ASTM E84-91A.

B. EXTERIOR APPLICATIONS (LIQUID AND SUCTION). AP ARMAFLEX "86" PROVIDE WITH ARMSTRONG "WB" ARMAFLEX FINISH.

REFRIGERATION PIPING AND SPECIALTIES

REGULATORY REQUIREMENTS

A. CONFORM TO ANSI/ASME B31.9.

B. WELDING MATERIALS AND PROCEDURES: CONFORM TO ANSI/ASME SEC 9 AND APPLICABLE STATE LABOR REGULATIONS.

C. WELDERS CERTIFICATION: IN ACCORDANCE WITH ANSI/ASME SEC 9.

DELIVERY, STORAGE, AND HANDLING

A. DELIVER, STORE AND PROTECT PRODUCTS UNDER PROVISIONS OF DIVISION 23.

B. DELIVER AND STORE PIPING AND SPECIALTIES IN SHIPPING CONTAINERS WITH LABELING IN PLACE. PROTECT CONTAINERS.

C. PROTECT PIPING AND SPECIALTIES FROM ENTRY OF CONTAMINATING MATERIAL BY LEAVING END CAPS AND PLUGS IN PLACE UNTIL INSTALLATION.

PRODUCTS

PIPING

A. COPPER TUBING: ASTM B280, TYPE ACR HARD DRAWN.

1. FITTINGS: ANSI/ASME B16.22 WROUGHT COPPER.

2. JOINTS: ANSI/AWS A5.8 B CUP SILVER BRAZE.

REFRIGERANT

A. REFRIGERANT: ANSI/ASHRAE 34; R410A.

MANUFACTURERS

A. HENRY

B. MUELLER

C. SPORLAN

D. APPROVED EQUIVALENT

MOISTURE AND LIQUID INDICATORS

A. INDICATORS: SINGLE PORT TYPE, UL LISTED, WITH COPPER OR BRASS BODY, BRAZE ENDS, SIGHT GLASS, COLOR CODED PAPER MOISTURE INDICATOR WITH REMOVABLE ELEMENT CARTRIDGE AND PLASTIC CAP; FOR MAXIMUM WORKING PRESSURE OF 500 PSI, AND MAXIMUM TEMPERATURE OF 200° F.

VALVES

A. DIAPHRAGM PACKLESS VALVES: UL LISTED, GLOBE OR ANGLE PATTERN, FORGED BRASS BODY AND BONNET, PHOSPHOR BRONZE AND STAINLESS STEEL DIAPHRAGMS, RISING STEM AND HANDWHEEL, STAINLESS STEEL SPRING, NYLON SEAT DISC, BRAZE ENDS, WITH POSITIVE BACKSEATING; FOR MAXIMUM WORKING PRESSURE OF 500 PSI AND MAXIMUM TEMPERATURE OF 275° F.

B. PACKED ANGLE VALVES: FORGED BRASS, FORGED BRASS SEAL CAPS WITH COPPER GASKET, RISING STEM AND SEAT WITH BACKSEATING, MOLDED STEM PACKING, BRAZE ENDS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI AND MAXIMUM TEMPERATURE OF 275° F.

C. PACKED BALL VALVES: TWO PIECE FORGED BRASS BODY WITH TEFLON BALL SEALS AND COPPER TUBE EXTENSIONS WITH BRAZE ENDS, BRASS SEAL CAP, CHROME PLATED BALL, STEM WITH NEOPRENE RING STEM SEALS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI AND MAXIMUM TEMPERATURE OF 300° F.

PRESSURE RELIEF VALVES

A. STRAIGHT THRU OR ANGLE TYPE: BRASS BODY AND DISC, NEOPRENE SEAT, FACTORY SEALED AND STAMPED WITH ASME UV AND NATIONAL BOARD CERTIFICATION NB; FOR STANDARD 400 PSI SETTING; SELECTED TO ANSI/ASHRAE 15.

FILTER-DRIERS

A. REPLACEABLE CARTRIDGE ANGLE TYPE: ANSI/ARI 710, UL LISTED, BRASS SHELL AND BRONZE CAP, PERFORATED BRASS SHELL AND MOLDED DESICCANT FILTER CORE; FOR MAXIMUM WORKING PRESSURE OF 350 PSI.

B. PERMANENT STRAIGHT THRU TYPE: ANSI/ARI 710, UL LISTED, STEEL SHELL WITH MOLDED DESICCANT FILTER CORE, FOR MAXIMUM WORKING PRESSURE OF 400 PSI. USE ONLY WHERE REPLACEABLE CARTRIDGE IS NOT AVAILABLE FOR LINE SIZES.

SOLENOID VALVES

A. VALVE: ARI 760, PILOT OPERATED, COPPER OR BRASS BODY AND INTERNAL PARTS, SYNTHETIC SEAT, STAINLESS STEEL STEM AND PLUNGER ASSEMBLY, WITH BRAZE ENDS; FOR MAXIMUM WORKING PRESSURE OF 500 PSI. STEM SHALL PERMIT MANUAL OPERATION IN CASE OF COIL FAILURE.

B. COILS ASSEMBLY: UL LISTED, REPLACEABLE WITH MOLDED ELECTROMAGNETIC COIL, MOISTURE AND FUNGUS PROOF, WITH SURGE PROTECTOR AND COLOR CODED LEAD WIRES, INTEGRAL JUNCTION BOX WITH PILOT LIGHT.

EXPANSION VALVES

A. ANGLE OR STRAIGHT THRU TYPE: ARI 750; DESIGN SUITABLE FOR REFRIGERANT, BRASS BODY, INTERNAL OR EXTERNAL EQUALIZER, BLEED HOLE, ADJUSTABLE SUPERHEAT SETTING, REPLACEABLE INLET STRAINER, WITH REPLACEABLE CAPILLARY TUBE AND REMOTE SENSING BULB. BRAZE ENDS.

B. SELECTION: EVALUATE REFRIGERANT PRESSURE DROP THROUGH SYSTEM TO DETERMINE AVAILABLE PRESSURE DROP ACROSS VALVE. SELECT VALVE FOR MAXIMUM LOAD AT DESIGN OPERATING PRESSURE AND MINIMUM 10° F SUPERHEAT. SELECT TO AVOID BEING UNDERSIZED AT FULL LOAD AND EXCESSIVELY OVERSIZED AT PART LOAD.

FLEXIBLE CONNECTORS

A. CORRUGATED BRONZE HOSE WITH SINGLE LAYER OF EXTERIOR BRAIDING, MINIMUM 9" LONG WITH COPPER TUBE BRAZE ENDS; RATED IN EXCESS OF MAXIMUM WORKING PRESSURE OF SYSTEM.

EXECUTION

INSTALLATION

A. INSTALL REFRIGERATION SPECIALTIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. ROUTE PIPING IN ORDERLY MANNER, WITH PLUMBING PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT.

C. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

D. PROVIDE ACCESS TO CONCEALED VALVES AND FITTINGS. COORDINATE SIZE AND LOCATION OF BUILDING ACCESS PANELS.

E. PREPARE PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES NOT PREFINISHED, READY FOR FINISH PAINTING.

TEST PRESSURES

A. LINE TEST PRESSURE FOR REFRIGERANT R-410A:

1. SUCTION LINES FOR AIR-CONDITIONING APPLICATIONS: 300 PSIG.

2. SUCTION LINES FOR HEAT-PUMP APPLICATIONS: 535 PSIG.

3. HOT-GAS AND LIQUID LINES: 535 PSIG.

SYSTEM CHARGING

A. CHARGE SYSTEM USING THE FOLLOWING PROCEDURES:

1. INSTALL CORE IN FILTER DRYERS AFTER LEAK TEST BUT BEFORE EVACUATION.

2. EVACUATE ENTIRE REFRIGERANT SYSTEM WITH A VACUUM PUMP TO 500 MICROMETERS. IF VACUUM HOLDS FOR 12 HOURS, SYSTEM IS READY FOR CHARGING.

3. BREAK VACUUM WITH REFRIGERANT GAS, ALLOWING PRESSURE TO BUILD UP TO 2 PSIG.

4. CHARGE SYSTEM WITH A NEW FILTER-DRYER CORE IN CHARGING LINE.

ADJUSTING

A. ADJUST THERMOSTATIC EXPANSION VALVE TO OBTAIN PROPER EVAPORATOR SUPERHEAT.

B. ADJUST HIGH AND LOW PRESSURE SWITCH SETTINGS TO AVOID SHORT CYCLING IN RESPONSE TO FLUCTUATING SUCTION PRESSURE.

C. ADJUST SET-POINT TEMPERATURE OF AIR-CONDITIONING OR CHILLED WATER CONTROLLERS TO THE SYSTEM DESIGN TEMPERATURE.

D. PERFORM THE FOLLOWING ADJUSTMENTS BEFORE OPERATING THE REFRIGERATION SYSTEM, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS:

1. OPEN SHUTOFF VALVES IN CONDENSER WATER CIRCUIT.

2. VERIFY THAT COMPRESSOR OIL LEVEL IS CORRECT.

3. OPEN COMPRESSOR SUCTION AND DISCHARGE VALVE.

4. OPEN REFRIGERANT VALVES EXCEPT BYPASS VALVES THAT ARE USED FOR OTHER PURPOSES.

5. CHECK OPEN COMPRESSOR-MOTOR ALIGNMENT AND VERIFY LUBRICATION FOR MOTORS AND BEARINGS.

E. REPLACE CORE OF REPLACEABLE FILTER DRYER AFTER SYSTEM HAS BEEN ADJUSTED AND AFTER DESIGN FLOW RATES AND PRESSURES ARE ESTABLISHED.

TESTING, ADJUSTING, BALANCING

1. THE WORK INCLUDED UNDER THIS SECTION OF SPECIFICATIONS ALSO CONSISTS OF THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT AND SERVICE NECESSARY TO PERFORM BALANCING FOR THE HVAC WORK ON AIR DISTRIBUTION SYSTEMS AS SHOWN ON THESE SPECIFICATIONS AND THE SEQUENCE OF CONTROLS.

2. THE BALANCING WORK SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

A. THE SETTING AND ADJUSTING OF ALL NEW BALANCE DEVICES TO ACHIEVE PROPER AIR FLOW IN ALL PARTS OF THE SYSTEM(S).

B. THE INSPECTION OF THE FUNCTION AND OPERATION OF ALL ATC CONTROLS TO INSURE PROPER OPERATION AND CONTROL CYCLES.

3. THE CONTRACTOR SHALL PRODUCE THE SERVICES OF AN INDEPENDENT AIR BALANCING TEST AGENCY WHO SHALL NOT HAVE ANY AFFILIATION WITH CONSTRUCTION CONTRACTORS, EQUIPMENT SALES OR DESIGN ENGINEERING FIRMS. THE AGENCY SHALL BE A CERTIFIED MEMBER OF THE ASSOCIATED NEBB, AABC OR TABB.

4. SYSTEM SHALL OPERATE AS SPECIFIED OR INDICATED. TESTING AGENCY SHALL CHECK ALL CONTROLS THAT REGULATE AIRFLOW AND PRESSURE FOR PROPER CALIBRATION AND LIST CONTROLS REQUIRING ADJUSTMENT

5. PROVIDE TEST AND BALANCE REPORTS. SUBMIT FOUR COPIES. FORMS SHALL BE IN AABC, NEBB OR TABB STANDARD FORMS.

6. BEFORE FINAL ACCEPTANCE OF THE HVAC SYSTEM, THE CONTRACTOR SHALL TEST THE HVAC SYSTEMS UNDER NORMAL CONDITIONS FOR TWO 8-HOUR DAYS OR LONGER WHEN SO DIRECTED TO DETERMINE THAT THEY FULFIL REQUIREMENTS OF PLANS, SPECIFICATIONS AND THAT THEY OPERATE SATISFACTORY.

7. BALANCE REPORTS: PROVIDE A COMPLETE TEST AND BALANCE REPORT.

8. QUALIFICATIONS: BALANCING CONTRACTOR SHALL BE EITHER "NEBB" OR "AABC" CERTIFIED. ALL REPORTS SHALL BE IN NEBB OR AABC FORMAT.

AIR DISTRIBUTION TEST AND BALANCE

A. ALL FILTERS SHALL BE CLEAN AND IN PLACE BEFORE STARTING FANS. ALL AIR FILTERS SHALL BE ARTIFICIALLY LOADED BY PARTIAL BLANKING OR OTHER MEANS TO PRODUCE AIR PRESSURE DROP MIDWAY BETWEEN CLEAN AND DIRTY AS SPECIFIED. CONTROLS AND DAMPERS SHALL BE SET FOR NORMAL FULL AIR FLOW TESTING AND BALANCING.

B. DURING TESTING AND BALANCING PERIOD, ALL SUPPLY, RETURN AND EXHAUST AIR FANS SHALL HAVE SPEEDS ADJUSTED AND DRIVES CHANGED WHERE NECESSARY SO THAT FANS DELIVER DESIGN CFM AT THE ACTUAL STATIC PRESSURE DEVELOPED BY THE INSTALLED SYSTEM. INCREASING STATIC PRESSURE BY DAMPERING AT FAN OR CLOSING ALL VOLUME DAMPERS TO INDUCE SYSTEM STATIC WILL NOT BE PERMITTED. EXTERNAL STATIC PRESSURE NOTED IN SCHEDULES ON DRAWINGS INCLUDES PRESSURE DROPS THROUGH DUCT SYSTEMS, TERMINAL UNITS AND DIFFUSERS. TOTAL STATIC PRESSURES MUST BE CALCULATED BY ADDING PRESSURE DROPS THROUGH UNIT MOUNTED COILS AND DIRTY FILTER CONDITIONS, AND UNIT CONVERSION LOSSES IF APPLICABLE TO THAT OF THE PREVIOUSLY MENTIONED COMPONENTS. PROVIDE MINIMUM ONE (1) FAN SHEAVE AND DRIVE CHANGE PER FAN SYSTEM.

C. ADJUST ALL AIR DUCTS TO PROPER DESIGN CFM. AIR QUANTITIES SHALL BE ADJUSTED BY VOLUME OR SPLITTER DAMPERS. DAMPERS AND OTHER BALANCING DEVICES SHALL HAVE THEIR ADJUSTED POSITIONS MARKED IN AN INCONSPICUOUS PERMANENT MANNER.

D. TEST AND ADJUST EACH DIFFUSER, GRILLE, REGISTER AND PRIMARY WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN CFM REQUIREMENTS, BUT TOTAL AIR FOR EACH SYSTEM SHALL BE NOT LESS THAN INDICATED. VOLUME ADJUSTERS MAY BE USED TO BALANCE AIR QUANTITIES AT OUTLETS AND INLETS PROVIDING FINAL ADJUSTMENTS DO NOT PRODUCE OBJECTIONABLE DRAFTS OR SOUND LEVELS IN EXCESS OF SPECIFIED LIMITS. DESIGN POSITIVE AND NEGATIVE PRESSURE IN EACH AREA MUST BE MAINTAINED.

E. DIFFUSERS, REGISTER, GRILLES SHALL BE ADJUSTED TO MINIMIZE DRAFTS IN ALL AREAS.

F. DIFFUSERS, REGISTERS, GRILLES SHALL BE IDENTIFIED ON TEST REPORT AS TO LOCATION AND AREAS.

G. READING AND TEST OF DIFFUSERS, REGISTERS SHALL INCLUDE REQUIRED FPM VELOCITY AND TEST RESULTANT VELOCITY, REQUIRED CFM AND TEST RESULTANT CFM AFTER ADJUSTMENTS.

H. RECORD DESIGN AND TEST CFM, STATIC PRESSURE, MOTOR VOLTAGE AND AMPS (NAMEPLATE AND TEST) FOR EACH FAN.

I. RECORD DESIGN AND TEST STATIC PRESSURE, IN ORDER OF PHYSICAL ARRANGEMENT, FOR EACH SYSTEM COMPONENT, I.E., LOUVER, FILTER, COOLING COIL, FAN HEATING COIL, ETC., AND THE MOST REMOTE TERMINAL UNIT.

J. WITH CONTROLS FUNCTIONING PROPERLY WATER FLOW RATES, TEST AND RECORD AIR DRY BULB FOR SUPPLY AIR, AND AIR ENTERING AND LEAVING EACH COIL FOR EACH HEAT PUMP. WHERE FEASIBLE, MEASURE AIR DRY BULB AND WET BULB TEMPERATURES WITH THE MECHANICALLY ASPIRATED PSYCHROMETER.

K. AIR DISTRIBUTION TEST AND BALANCE REPORT SHALL INCLUDE:

1. SCHEMATIC DIAGRAM OF EACH SYSTEM SHOWING SIZE AND CFM (DESIGN AND ACTUAL) FOR MAIN DUCTS; ALL DAMPERS AND REGULATING DEVICES; TERMINAL UNITS; AND EACH INLET AND OUTLET WITH DESIGN AND ACTUAL CFM.

2. TEST DATA FORM FOR EACH FAN.

3. TABULATION OF DESIGN, PRELIMINARY AND FINAL CFM FOR EACH DIFFUSER, REGISTER, MIXING BOX OR OTHER TERMINAL. SUMMARY OF CFM TABULATIONS BY SYSTEMS AND COMPARISON WITH RESPECTIVE FAN DATA.

L. AUTOMATICALLY OPERATED DAMPERS SHALL OPERATE AS SPECIFIED OR INDICTED. TESTING AGENCY SHALL CHECK ALL CONTROLS THAT REGULATE AIR FLOW AND PRESSURE FOR PROPER CALIBRATIONS AND LIST CONTROLS REQUIRING ADJUSTMENT.

M. AS DETERMINED BY THE ENGINEER, FOR 10 PERCENT OF TOTAL ROOMS, TESTS AND RECORD HOURLY FOR FOUR HOURS, THE FOLLOWING:

1. ROOM DESIGN CONDITION D.B. HEATING AND COOLING AND W.B. COOLING.

2. ROOM ACTUAL CONDITION D.B. HEATING AND COOLING AND W.B. COOLING.

N. FOR VARIABLE-AIR VOLUME SYSTEMS, DEVELOP A PLAN TO SIMULATE DIVERSITY.

O. DETERMINE THE BEST LOCATIONS IN MAIN AND BRANCH DUCTS FOR ACCURATE DUCT AIRFLOW MEASUREMENTS.

P. CHECK THE AIRFLOW PATTERNS FROM THE OUTSIDE-AIR LOUVERS AND DAMPERS AND THE RETURN AND EXHAUST AIR DAMPERS, THROUGH THE SUPPLY-FAN DISCHARGE AND MIXING DAMPERS.

Q. LOCATE START-STOP AND DISCONNECT SWITCHES, ELECTRICAL INTERLOCKS, AND MOTOR STARTERS.

R. VERIFY THAT MOTOR STARTERS ARE EQUIPPED WITH PROPERLY SIZED THERMAL PROTECTION.

S. CHECK DAMPERS FOR PROPER POSITION TO ACHIEVE DESIRED AIRFLOW PATH.

T. CHECK FOR AIRFLOW BLOCKAGES.

U. CHECK FOR PROPER SEALING OF ROOFTOP UNIT COMPONENTS.

V. COMPENSATING FOR DIVERSITY: WHEN THE TOTAL AIRFLOW OF ALL TERMINAL UNITS IS MORE THAN THE FAN DESIGN AIRFLOW VOLUME, PLACE A SELECTED NUMBER OF TERMINAL UNITS AT A MAXIMUM SET-POINT AIRFLOW CONDITION UNTIL THE TOTAL AIRFLOW OF THE TERMINAL UNITS EQUALS THE DESIGN AIRFLOW OF THE FAN. SELECT THE REDUCED AIRFLOW TERMINAL UNITS SO THEY ARE DISTRIBUTED EVENLY AMONG THE BRANCH DUCTS.

TEST AND BALANCE REPORTS

A. ALL TESTS AND BALANCE REPORTS AND OTHER REQUIREMENTS OF THIS SECTION WILL BE COMPLETED AND FURNISHED TO ENGINEER PRIOR TO FINAL INSPECTION. SUBMIT FOUR COPIES. USE FORMAT SIMILAR TO FORMS OF SHEET METAL & AIR CONDITIONING CONTRACTORS ASSOCIATION, INC., WASHINGTON, D.C., OR ASSOCIATED AIR BALANCE COUNCIL, LOS ANGELES, CALIFORNIA.

B. TYPES, SERIAL NUMBERS, AND DATE OF CALIBRATION OF ALL INSTRUMENTS SHALL BE INCLUDED.

C. REPORTS SHALL IDENTIFY CONSPICUOUSLY ITEMS NOT CONFORMING TO CONTRACTOR REQUIREMENTS, OR OBVIOUS MAL-OPERATION AND DESIGN DEFICIENCIES.

HANGERS & SUPPORTS FOR HVAC PIPING

1. PIPE HANGER MANUFACTURERS:

a. B-LINE SYSTEMS, INC.

b. CARPENTER & PATTERSON, INC.

c. GRINNELL CORP.

2. MANUFACTURED UNITS

A. PIPE HANGERS, SUPPORTS, AND COMPONENTS: MSS SP-58, FACTORY-FABRICATED COMPONENTS. REFER TO "HANGER AND SUPPORT APPLICATIONS" ARTICLE IN PART 3 FOR WHERE TO USE SPECIFIC HANGER AND SUPPORT TYPES.

- GALVANIZED, METALLIC COATINGS: FOR PIPING AND EQUIPMENT THAT WILL NOT HAVE FIELD-APPLIED FINISH.
- CORROSION RESISTANT FOR PIPING LOCATED OUTDOORS SUCH AS INCLUDING BUT NOT LIMITED TO STEAM PIPING.
- NONMETALLIC COATINGS: ON ATTACHMENTS FOR ELECTROLYTIC PROTECTION WHERE ATTACHMENTS ARE IN DIRECT CONTACT WITH NON-INSULATED COPPER TUBING.

3. HANGER AND SUPPORT APPLICATIONS

A. COMPLY WITH MSS SP-69 FOR PIPE HANGER SELECTIONS AND APPLICATIONS THAT ARE NOT SPECIFIED IN PIPING SYSTEM SPECIFICATION SECTIONS.

B. HORIZONTAL-PIPING HANGERS AND SUPPORTS:

- ADJUSTABLE STEEL CLEVIS HANGERS (MSS TYPE 1): FOR SUSPENSION OF UNINSULATED OR INSULATED STATIONARY PIPES, NPS 1/2 TO NPS 30.

4. HANGER AND SUPPORT INSTALLATION

A. INSULATED PIPING: COMPLY WITH THE FOLLOWING:

1. ATTACH CLAMPS AND SPACERS TO PIPING.

a. ALL INSULATED PIPING: CLAMP SHALL NOT PROJECT THROUGH INSULATION.

b. ALL INSULATED PIPING: USE THERMAL-HANGER SHIELD AND INSERT WITH CLAMP SIZED TO MATCH OD OF INSERT. PIPE INSULATION AND JACKET SHALL BE CONTINUOUS, PROVIDE PIPE ACCESSORIES AS REQUIRED.

B. VERTICAL PIPING SUPPORTS

1. BOLT PIPE RISER CLAMPS SECURELY TO PIPE; REST CLAMP AND EXTENSION ON BUILDING STRUCTURE. IN SPECIAL CASES WHERE DIRECTED, WELD CLAMP TO PIPE AND TO BUILDING STEEL. WHERE REQUIRED, PROVIDE SUPPLEMENTARY STEEL MEMBERS FOR CLAMP REST.

PIPING

A. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN, 2-1/2" AND BELOW.

1. FITTINGS: ANSI/ASME B16.23 CAST BRASS OR ANSI/ASME B16.29 SOLDER WROUGHT COPPER.
2. JOINTS: ASTM B32, SOLDER, GRADE 95TA.

EQUIPMENT DRAINS AND OVERFLOWS

A. STEEL PIPE: ASTM A53, SCHEDULE 40 GALVANIZED.

1. FITTINGS: GALVANIZED CAST IRON, OR ANSI/ASTM B16.3 MALLEABLE IRON.
2. JOINTS: SCREWED, OR GROOVED MECHANICAL COUPLINGS, DRAINAGE PATTERN.

B. COPPER TUBING: ASTM B88, TYPE L HARD DRAWN.

1. FITTINGS: ANSI/ASME B16.23 CAST BRASS, OR ANSI/ASME B16.29 SOLDER WROUGHT COPPER, DRAINAGE PATTERN.
2. JOINTS: ASTM B32, SOLDER, GRADE 95TA.

FINAL FILTER

A. AIR FILTERS SHALL BE V-BANK MINI-PLEAT FIBERGLASS DISPOSABLE TYPE WITH PLEAT SEPARATORS PACK TO FRAME, POLYSTYRENE ENCLOSING FRAME AND HAVE AN ECI VALUE OF FIVE STARS.

B. FILTER MEDIA SHALL BE OF MICROFINE GLASS FIBERS FORMED INTO UNIFORM PLEATS WITH A SPACING OF 8 PLEATS PER INCH AND A UNIFORM PLEAT HEIGHT OF 24mm. PLEATS SHALL BE SEPERATED AT 25mm INTERVALS TO ENSURE PLEAT SEPARATION AND UNIFORM AIRFLOW THROUGH THE FILTER PACK.

C. PLEATS MEDIA PACKS SHALL BE ASSEMBLED INTO A V-BANK CONFIGURATION WITH SUFFICIENT TOTAL MEDIA AREA TO MEET AIRFLOW REQUIREMENTS. THE FILTER OUTLET SHALL BE RADIAL IN SHAPE WITH A MAXIMUM OF 60% OPEN AREA TO MAINTAIN LOW-PRESSURE DROP AND UNIFORM AIRFLOW (20" BY 20" SHALL BE STRAIGHT V-STYLE DESIGN.)

D. THE MEDIA PACKS SHALL BE BONDED TO THE INSIDE OF PERIPHERY OF AN ABS ENCLOSING FRAME WITH A POLYURETHANE SEALANT. THE ENCLOSING FRAME SHALL INCLUDE TOP AND BOTTOM MOLDED TRACKS AS IN INTEGRAL PART OF THE FRAME TO ENSURE PROPER SEAL.

E. MEDIA PACKS SHALL BE RECESSED AT LEAST 1" FROM THE AIR ENTERING SIDE OF THE ENCLOSING FRAME TO ALLOW UNIFORM AIRFLOW WHEN A PREFILTER IS MOUNTED DIRECTLY TO ENCLOSING FRAME.

F. RIGID PLASTIC END CAPS SHALL BE MECHANICALLY FASTENED TO THE TOP AND BOTTOM OF THE MEDIA PACK ENCLOSING STRUCTURE TO ENSURE A RIGID AND DURABLE FILTER.

G. CARRYING HANDLES SHALL BE AN INTERGRAL PART OF THE FILTER FRAME AND SHALL BRIDGE FROM MEDIA PACK TO MEDIA PACK PROVIDING ADDITIONAL FILTER SUPPORT AND FILTER RIGIDITY. HANDLES SHALL INCLUDE FASTENERS WHEN THE FILTER IS APPLIED IN REVERSE FLOW APPLICATIONS.

H. FILTER SHALL BE LISTED UL 900 BY UNDERWRITERS LABORATORIES.

MANUFACTURERS

FILTERS SHALL BE CAMFIL OR APPROVED EQUAL.

ROOFTOP UNIT

ACCEPTABLE MANUFACTURERS

A. AAON (BASIS OF DESIGN)

B. CARRIER

C. YORK

ROOFTOP UNITS

A. MANUFACTURERS OTHER THAN THE BASIS OF DESIGN, MUST SUBMIT A DETAILED 1/4" PER FOOT SCALE LAYOUT INCLUDING PROPOSED UNIT LOCATIONS WITH MANUFACTURER'S RECOMMENDED CLEARANCES AROUND EACH UNIT FOR ACCESSIBILITY, MAINTENANCE REQUIREMENTS, DUCTWORK LAYOUTS INCLUDING INTERFERENCES WITH STRUCTURAL MEMBERS CLEARLY IDENTIFIED AND RESOLVED, PROPOSED DUCTWORK FITTINGS AND ELBOWS AND INCLUDING STATIC PRESSURE CALCULATIONS AND ELECTRICAL SERVICE CHANGE REQUIREMENTS RESULTING FROM DEVIATIONS FROM THE ORIGINAL DESIGN, MIN 10'-0" DISTANCES BETWEEN INTAKE AIR LOCATIONS AND EXHAUST FAN OUTLET LOCATIONS CLEARLY IDENTIFIED, PERFORMANCE DATA AND DEVIATIONS FROM DESIGN CLEARLY IDENTIFIED, FAN CURVES WITH THE OPERATING POINT CLEARLY IDENTIFIED AND PERFORMANCE CRITERIA. ANY WORK RESULTING IN COST INCREASES DUE TO THE PROPOSED SUBSTITUTIONS SHALL BE BORNE BY THE MANUFACTURER PROPOSING THE UNITS. THE LAYOUTS AND INFORMATION SHALL BE REVIEWED BY THE ENGINEER FOR CONFORMANCE TO THE PRESENT INTENDED LAYOUT AND THE DESIGN CONCEPT WHICH TAKES INTO CONSIDERATION THE ABOVE MENTIONED FACTORS

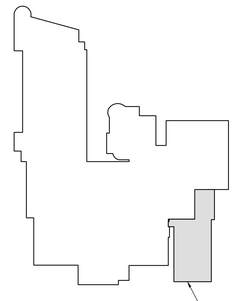
B. MANUFACTURERS ARE LISTED FOR A QUALITY ASSURANCE LEVEL ONLY. ALTHOUGH A MANUFACTURER IS LISTED DOES NOT CONSTITUTE COMPLIANCE WITH THE SPECIFICATION SIZE, WEIGHT, FUNCTIONALITY, CAPACITY, NOISE, OR PERFORMANCE LEVELS. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO ASSURE THE PROPOSED MANUFACTURER HAS COMPLETE COMPLIANCE WITH THE CONTRACT DOCUMENTS, **PRIOR TO BIDDING**.

C. FACTORY ASSEMBLED AND TESTED; DESIGNED FOR ROOF INSTALLATION; AND CONSISTING OF COMPRESSORS, CONDENSERS, EVAPORATOR COILS, CONDENSER AND EVAPORATOR FANS, REFRIGERATION AND TEMPERATURE CONTROLS, GAS HEATER, ENTHALPY WHEELS, FILTERS, AND DAMPERS.

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334 | Engineering: 102 Highland Avenue fax(570) 586-5990 | Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM — A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital

15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

MECHANICAL SPECIFICATIONS

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

M-2.3

CAD FILE: FILE

PLOT DATE: PDATE

MECHANICAL SPECIFICATIONS:

D. CONSTRUCTION:
1. UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED AND WIRED AND SHIPPED IN ONE SECTION.
2. UNIT SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR ROOF TOP APPLICATION WITH A FULLY WEATHERPROOF CABINET.
3. CABINET SHALL BE CONSTRUCTED ENTIRELY OF G90 GALVANIZED STEEL WITH THE EXTERIOR CONSTRUCT-ED OF 20 GAUGE OR HEAVIER MATERIAL. PAINT FINISH SHALL BE CAPABLE OF WITHSTANDING AT LEAST 2000 HOURS, WITH NO VISIBLE CORROSIVE EFFECTS, WHEN TESTED IN A SALT SPRAY AND FOG ATMOSPHERE IN ACCORDANCE WITH ASTM B 117-95 TEST PROCEDURE.
4. THE UNIT ROOF SHALL BE SLOPED OR CROSS-BROKEN TO ASSURE DRAINAGE.
5. UNIT SPECIFIC COLOR CODED WIRING DIAGRAMS SHALL MATCH THE UNIT COLOR CODED WIRING AND WILL BE PROVIDED IN BOTH POINT-TO-POINT AND LADDER FORM.
6. DIAGRAMS SHALL ALSO BE LAMINATED IN PLASTIC AND PERMANENTLY AFFIXED INSIDE THE CONTROL COMPARTMENT.
7. ACCESS TO FILTERS, BLOWER, HEATING SECTION, AND OTHER ITEMS NEEDING PERIODIC CHECKING OR MAINTENANCE SHALL BE THROUGH HINGED ACCESS DOORS WITH QUARTER TURN LATCHES. DOOR FASTENING SCREWS ARE NOT ACCEPTABLE.
8. ACCESS DOORS SHALL HAVE STAINLESS STEEL HINGES AND FULL PERIMETER GASKETING.
9. ALL OPENINGS THROUGH THE BASE PAN OF THE UNIT SHALL HAVE UPTURNED FLANGES OF AT LEAST 1/2" IN HEIGHT AROUND THE OPENING THROUGH THE BASE PAN.
10. AIR SIDE SERVICE ACCESS DOORS SHALL HAVE RAIN BREAK OVERHANGS.
11. ALL ACCESS DOORS SHALL HAVE AN INTERNAL METAL LINER TO PROTECT THE DOOR ½ INCH THICK, 1½ LB. DENSITY FIBERGLASS INSULATION.
12. THE INTERIOR AIR SIDE OF THE CABINET SHALL BE ENTIRELY INSULATED ON ALL EXTERIOR PANELS WITH 1 INCH THICK, 1 1/2 LB. DENSITY FIBERGLASS INSULATION.
13. UNIT SHALL HAVE DECALS AND TAGS TO INDICATE UNIT LIFTING AND RIGGING, SERVICE AREAS AND CAUTION AREAS. INSTALLATION AND MAINTENANCE MANUALS SHALL BE SUPPLIED WITH EACH UNIT.
14. UNIT SHALL BE FURNISHED WITH 304 STAINLESS STEEL DRAIN PANS.

A. DESCRIPTION
1. PACKAGED ROOFTOP UNIT SHALL INCLUDE COMPRESSORS, EVAPORATOR COILS, FILTERS, SUPPLY FANS, DAMPERS, AIR-COOLED CONDENSER COILS, CONDENSER FANS, REHEAT COIL, ELECTRIC HEATERS, AND UNIT CONTROLS.
2. UNIT SHALL BE FACTORY ASSEMBLED AND TESTED INCLUDING LEAK TESTING OF THE DX COILS, PRESSURE TESTING OF THE REFRIGERATION CIRCUIT, AND RUN TESTING OF THE COMPLETED UNIT. RUN TEST REPORT SHALL BE SUPPLIED WITH THE UNIT IN THE SERVICE COMPARTMENT'S LITERATURE POCKET.
3. UNIT SHALL HAVE DECALS AND TAGS TO INDICATE LIFTING AND RIGGING, SERVICE AREAS AND CAUTION AREAS FOR SAFETY AND TO ASSIST SERVICE PERSONNEL.
4. UNIT COMPONENTS SHALL BE LABELED, INCLUDING REFRIGERATION SYSTEM COMPONENTS, AND ELECTRICAL AND CONTROLS COMPONENTS.
5. ESTIMATED SOUND POWER LEVELS (DB) SHALL BE SHOWN ON THE UNIT RATINGS SHEET.
6. INSTALLATION, OPERATION, AND MAINTENANCE MANUAL SHALL BE SUPPLIED WITHIN THE UNIT.
7. LAMINATED COLOR-CODED WIRING DIAGRAM SHALL MATCH FACTORY INSTALLED WIRING AND SHALL BE AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT'S HINGED ACCESS DOOR.
8. UNIT NAMEPLATE SHALL BE PROVIDED IN TWO LOCATIONS ON THE UNIT, AFFIXED TO THE EXTERIOR OF THE UNIT AND AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT'S HINGED ACCESS DOOR.

DELIVERY, STORAGE, PROTECTION AND HANDLING

A. DELIVER, STORE, PROTECT AND PROTECT PRODUCTS UNDER PROVISIONS OF DIVISION 23.
B. PROTECT UNITS FROM PHYSICAL DAMAGE BY STORING OFF SITE UNTIL ROOF MOUNTING FRAMES ARE IN PLACE, READY FOR IMMEDIATE INSTALLATION OF UNITS.
C. DELIVER ROOFTOP UNITS AS FACTORY-ASSEMBLED UNITS WITH PROTECTIVE CRATING AND COVERING AS RECOMMENDED BY THE MANUFACTURER.
D. COORDINATE DELIVERY OF UNITS IN SUFFICIENT TIME TO ALLOW MOVEMENT INTO BUILDING.
E. HANDLE ROOFTOP UNITS TO COMPLY WITH MANUFACTURER'S WRITTEN RIGGING AND INSTALLATION INSTRUCTIONS FOR UNLOADING AND MOVING TO FINAL LOCATION.

WARRANTY

A. PROVIDE ONE YEAR WARRANTY ON PARTS AND LABOR FROM DATE OF FINAL ACCEPTANCE.
B. INCLUDE 5 YEAR COMPRESSOR PARTS AND LABOR WARRANTY FROM DATE OF FINAL ACCEPTANCE.
C. INCLUDE 10 YEAR PARTS AND LABOR WARRANTY ON THE GAS FIRED HEAT EXCHANGER FROM DATE OF FINAL ACCEPTANCE

CONSTRUCTION

1. ALL CABINET WALLS, ACCESS DOORS, AND ROOF SHALL BE FABRICATED OF DOUBLE WALL, IMPACT RESISTANT, RIGID POLYURETHANE FOAM PANELS.
2. UNIT INSULATION SHALL HAVE A MINIMUM THERMAL RESISTANCE R-VALUE OF 13. FOAM INSULATION SHALL HAVE A MINIMUM DENSITY OF 2 POUNDS/CUBIC FOOT AND SHALL BE TESTED IN ACCORDANCE WITH ASTM D1929-11 FOR A MINIMUM FLASH IGNITION TEMPERATURE OF 610°F.
3. UNIT CONSTRUCTION SHALL BE DOUBLE WALL WITH G90 GALVANIZED STEEL ON BOTH SIDES AND A THERMAL BREAK. DOUBLE WALL CONSTRUCTION WITH A THERMAL BREAK PREVENTS MOISTURE ACCUMULATION ON THE INSULATION, PROVIDES A CLEANABLE INTERIOR, REDUCES HEAT TRANSFER THROUGH THE PANEL, AND PREVENTS EXTERIOR CONDENSATION ON THE PANEL.
4. UNIT SHALL BE DESIGNED TO REDUCE AIR LEAKAGE AND INFILTRATION THROUGH THE CABINET. CABINET LEAKAGE SHALL NOT EXCEED 1% OF TOTAL AIRFLOW WHEN TESTED AT 3 TIMES THE MINIMUM EXTERNAL STATIC PRESSURE PROVIDED IN AHRI STANDARD 340/360. PANEL DEFLECTION SHALL NOT EXCEED L/240 RATIO AT 125% OF DESIGN STATIC PRESSURE, AT A MAXIMUM 8 INCHES OF POSITIVE OR NEGATIVE STATIC PRESSURE, TO REDUCE AIR LEAKAGE. DEFLECTION SHALL BE MEASURED AT THE MIDPOINT OF THE PANEL HEIGHT AND WIDTH. CONTINUOUS SEALING SHALL BE INCLUDED BETWEEN PANELS AND BETWEEN ACCESS DOORS AND OPENINGS TO REDUCE AIR LEAKAGE. PIPING AND ELECTRICAL CONDUIT THROUGH CABINET PANELS SHALL INCLUDE SEALING TO REDUCE AIR LEAKAGE.
5. ROOF OF THE AIR TUNNEL SHALL BE SLOPED TO PROVIDE COMPLETE DRAINAGE. CABINET SHALL HAVE RAIN BREAK OVERHANGS ABOVE ACCESS DOORS.
6. ACCESS TO FILTERS, DAMPERS, COOLING COILS, REHEAT COIL, HEATERS, COMPRESSORS, AND ELECTRICAL AND CONTROLS COMPONENTS SHALL BE HINGED ACCESS DOORS WITH QUARTER TURN, ZINC CAST, LOCKABLE HANDLES. FULL-LENGTH STAINLESS-STEEL PIANO HINGES SHALL BE INCLUDED ON THE DOORS.
7. EXTERIOR PAINT FINISH SHALL BE CAPABLE OF WITHSTANDING AT LEAST 2,500 HOURS, WITH NO VISIBLE CORROSIVE EFFECTS, WHEN TESTED IN A SALT SPRAY AND FOG ATMOSPHERE IN ACCORDANCE WITH ASTM B 117-95 TEST PROCEDURE.
8. UNITS WITH COOLING COILS SHALL INCLUDE DOUBLE SLOPED 304 STAINLESS STEEL DRAIN PANS.
9. UNIT SHALL BE PROVIDED WITH BASE DISCHARGE AND RETURN AIR OPENINGS. ALL OPENINGS THROUGH THE BASE PAN OF THE UNIT SHALL HAVE UPTURNED FLANGES OF AT LEAST 1/2 INCH IN HEIGHT AROUND THE OPENING.
10. UNIT SHALL INCLUDE LIFTING LUGS ON THE TOP OF THE UNIT.
11. UNIT SHALL INCLUDE FACTORY WIRED CONTROL PANEL COMPARTMENT LED SERVICE LIGHTS.
12. UNIT SHALL INCLUDE FACTORY INSTALLED, PAINTED GALVANIZED STEEL CONDENSER COIL GUARDS ON THE FACE OF THE CONDENSER COIL.

ELECTRICAL

1. UNIT SHALL HAVE A 5KAIC SCCR.
2. UNIT SHALL BE PROVIDED WITH A FACTORY INSTALLED AND FACTORY WIRED, NON-FUSED DISCONNECT SWITCH.
3. AIR-SOURCE HEAT PUMP SHALL INCLUDE A DEFROST CYCLE TO PREVENT FROST ACCUMULATION ON THE OUTDOOR COIL DURING HEAT PUMP HEATING OPERATION. DEFROST CYCLE SHALL BEGIN WHEN OUTDOOR COIL TEMPERATURE IS BELOW A FIXED SETPOINT AND HAVE A FIXED 10 MINUTE RUN TIME, OR END WHEN THE OUTDOOR COIL TEMPERATURE IS ABOVE A FIXED SETPOINT. DEFROST TIMER, WITH 30/60/90 MINUTE SELECTABLE DEFROST CYCLE INTERVAL TIME, SHALL BE FACTORY INSTALLED IN THE CONTROLS COMPARTMENT. DURING DEFROST CYCLE ALL COMPRESSORS SHALL ENERGIZE, REVERSING VALVE SHALL DE-ENERGIZE, AND AUXILIARY HEAT SHALL ENERGIZE.
4. UNIT SHALL BE PROVIDED WITH A FACTORY INSTALLED AND FACTORY WIRED 115V, 12 AMP GFI OUTLET DISCONNECT SWITCH IN THE UNIT CONTROL PANEL.
5. UNIT SHALL BE PROVIDED WITH PHASE AND BROWN OUT PROTECTION WHICH SHUTS DOWN ALL MOTORS IN THE UNIT IF THE ELECTRICAL PHASES ARE MORE THAN 10% OUT OF BALANCE ON VOLTAGE, THE VOLTAGE IS MORE THAN 10% UNDER DESIGN VOLTAGE OR ON PHASE REVERSAL.

SUPPLY FANS

1. UNIT SHALL INCLUDE DIRECT DRIVE, UNHOUSED, BACKWARD CURVED, PLENUM SUPPLY FANS.
2. BLOWERS AND MOTORS SHALL BE DYNAMICALLY BALANCE AND MOUNTED ON RUBBER ISOLATORS.
3. MOTORS SHALL INCLUDE SHAFT GROUNDING.
4. MOTOR TO BE PROVIDED WITH VFD.

COOLING COILS

1. EVAPORATOR COILS
   a. COILS SHALL BE DESIGNED FOR USE WITH R-410A REFRIGERANT AND CONSTRUCTED OF COPPER TUBES WITH ALUMINUM FINS MECHANICALLY BONDED TO THE TUBES AND GALVANIZED STEEL END CASINGS. FIN DESIGN SHALL BE SINE WAVE RIPPLED.
   b. COIL SHALL BE STANDARD CAPACITY.
   c. COILS SHALL BE HYDROGEN OR HELIUM LEAK TESTED.
   d. COILS SHALL BE FURNISHED WITH FACTORY INSTALLED EXPANSION VALVES.

REFRIGERATION SYSTEM

1. UNIT SHALL BE FACTORY CHARGED WITH R-410A REFRIGERANT.
2. COMPRESSORS SHALL BE SCROLL TYPE WITH THERMAL OVERLOAD PROTECTION AND CARRY A 5-YEAR NON-PRORATED WARRANTY, FROM THE DATE OF ORIGINAL EQUIPMENT SHIPMENT FROM THE FACTORY.
3. COMPRESSORS SHALL BE MOUNTED IN AN ISOLATED SERVICE COMPARTMENT WHICH CAN BE ACCESSED WITHOUT AFFECTING UNIT OPERATION. LOCKABLE HINGED COMPRESSOR ACCESS DOORS SHALL BE FABRICATED OF DOUBLE WALL, RIGID POLYURETHANE FOAM INJECTED PANELS TO PREVENT THE TRANSMISSION OF NOISE OUTSIDE THE CABINET.
4. COMPRESSORS SHALL BE ISOLATED FROM THE BASE PAN WITH THE COMPRESSOR MANUFACTURER'S RECOMMENDED RUBBER VIBRATION ISOLATORS, TO REDUCE ANY TRANSMISSION OF NOISE FROM THE COMPRESSORS INTO THE BUILDING AREA.
5. EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH EXPANSION VALVE TYPE REFRIGERANT FLOW CONTROL.
6. EACH REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH AUTOMATIC RESET LOW PRESSURE AND MANUAL RESET HIGH PRESSURE REFRIGERANT SAFETY CONTROLS, SCHRADER TYPE SERVICE FITTINGS ON BOTH THE HIGH PRESSURE AND LOW-PRESSURE SIDES AND A FACTORY INSTALLED LIQUID LINE FILTER DRIERS.
7. UNIT SHALL INCLUDE A VARIABLE CAPACITY SCROLL COMPRESSOR ON THE REFRIGERATION CIRCUIT WHICH SHALL BE CAPABLE OF MODULATION FROM 10-100% OF ITS CAPACITY.
8. UNIT SHALL INCLUDE FACTORY PROVIDED AND INSTALLED COMPRESSOR SOUND JACKETS ON ALL COMPRESSORS.
9. REFRIGERATION CIRCUIT SHALL BE PROVIDED WITH HOT GAS REHEAT COIL, MODULATING VALVES, ELECTRONIC CONTROLLER, SUPPLY AIR TEMPERATURE SENSOR AND A CONTROL SIGNAL TERMINAL WHICH ALLOW THE UNIT TO HAVE A DEHUMIDIFICATION MODE OF OPERATION, WHICH INCLUDES SUPPLY AIR TEMPERATURE CONTROL TO PREVENT SUPPLY AIR TEMPERATURE SWINGS AND OVERCOOLING OF THE SPACE.
10. UNIT SHALL BE CONFIGURED AS AN AIR-SOURCE HEAT PUMP. REFRIGERATION CIRCUIT SHALL BE EQUIPPED WITH A FACTORY INSTALLED LIQUID LINE FILTER DRIER WITH CHECK VALVE, REVERSING VALVE, ACCUMULATOR, AND EXPANSION VALVES ON BOTH THE INDOOR AND OUTDOOR COILS. REVERSING VALVE SHALL ENERGIZE DURING THE HEAT PUMP COOLING MODE OF OPERATION.
11. UNIT SHALL BE PROVIDED WITH A FIXED 55F COMPRESSOR LOCKOUT.

CONDENSERS

1. AIR-COOLED CONDENSER
   a. CONDENSER FANS SHALL BE A VERTICAL DISCHARGE, AXIAL FLOW, DIRECT DRIVE FANS.
   b. HEAT PUMP OUTDOOR COIL SHALL BE CONSTRUCTED OF COPPER TUBES WITH ALUMINUM FINS MECHANICALLY BONDED TO THE TUBES AND ALUMINUM END CASINGS. FIN DESIGN SHALL BE SINE WAVE RIPPLED.
   c. COILS SHALL BE DESIGNED FOR A MINIMUM OF 10°F OF REFRIGERANT SUB-COOLING.
   d. COILS SHALL BE HYDROGEN OR HELIUM LEAK TESTED

ELECTRIC HEATING

1. UNIT SHALL INCLUDE AN ELECTRIC HEATER CONSISTING OF ELECTRIC HEATING COILS, FUSES AND A HIGH TEMPERATURE LIMIT SWITCH, WITH CAPACITIES AS SHOWN ON THE PLANS.
2. ELECTRIC HEATING COILS SHALL BE LOCATED IN THE REHEAT POSITION DOWNSTREAM OF THE COOLING COIL.
3. ELECTRIC HEATER SHALL HAVE FULL MODULATION CAPACITY CONTROLLED BY AN SCR (SILICON CONTROLLED RECTIFIER). A 0-10 VDC HEATING CONTROL SIGNAL SHALL BE FIELD PROVIDED TO CONTROL THE AMOUNT OF HEATING.
4. AUXILIARY ELECTRIC HEATING CAPACITY SHALL BE SIZED TO MEET HEATING LEAVING AIR TEMPERATURE SETPOINT WHEN HEAT PUMP HEATING IS IN OPERATION. DUAL FUEL AUXILIARY HEATING CAPACITY SHALL BE AVAILABLE FOR OPERATION WHEN HEAT PUMP HEATING IS IN OPERATION. UNIT SHALL INCLUDE 1 STAGE OF AUXILIARY ELECTRIC HEATING CAPACITY. HEAT PUMP - AUXILIARY HEAT SIZING.
5. EMERGENCY ELECTRIC HEATING CAPACITY SHALL BE SIZED BY DETERMINING THE MAXIMUM ELECTRIC HEATING CAPACITY NOT TO EXCEED THE AMP DRAW OF ALL COMPRESSORS AND ADDING THAT ELECTRIC HEATING CAPACITY TO THE AUXILIARY ELECTRIC HEATING CAPACITY. AUXILIARY ELECTRIC HEATING CAPACITY SHALL BE SIZED TO MEET HEATING LEAVING AIR TEMPERATURE SETPOINT WHEN HEAT PUMP HEATING IS IN OPERATION. UNIT SHALL INCLUDE 1 STAGE OF AUXILIARY ELECTRIC HEATING CAPACITY. HEAT PUMP - MCA LIMITED HEAT SIZING.
6. EMERGENCY ELECTRIC HEATING CAPACITY SHALL BE SIZED TO MEET HEATING LEAVING AIR TEMPERATURE SETPOINT WHEN HEAT PUMP HEATING IS NOT IN OPERATION. AUXILIARY ELECTRIC HEATING CAPACITY SHALL BE SIZED TO MEET HEATING LEAVING AIR TEMPERATURE SETPOINT WHEN HEAT PUMP HEATING IS IN OPERATION. UNIT SHALL INCLUDE 1 STAGE OF AUXILIARY ELECTRIC HEATING CAPACITY. HEAT PUMP - EMERGENCY HEAT SIZING.

FILTERS

1. UNIT SHALL INCLUDE 2 INCH THICK, PLEATED PANEL FILTERS WITH AN ASHRAE MERV RATING OF 8, UPSTREAM OF THE COOLING COIL.
2. UNIT SHALL INCLUDE 1 INCH ALUMINUM MESH PRE FILTERS-UPSTREAM OF THE OUTSIDE AIR OPENING.
3. UNIT SHALL INCLUDE A CLOGGED FILTER SWITCH.
4. UNIT SHALL INCLUDE A MAGNEHELIC GAUGE MOUNTED IN THE CONTROLS COMPARTMENT.

OUTSIDE AIR/ECONOMIZER

1. UNIT SHALL INCLUDE 0-100% ECONOMIZER CONSISTING OF A MOTOR OPERATED OUTSIDE AIR DAMPER AND RETURN AIR DAMPER ASSEMBLY CONSTRUCTED OF EXTRUDED ALUMINUM, HOLLOW CORE, AIRFOIL BLADES WITH RUBBER EDGE SEALS AND ALUMINUM END SEALS. DAMPER BLADES SHALL BE GEAR DRIVEN AND DESIGNED TO HAVE NO MORE THAN 20 CFM OF LEAKAGE PER SQ FT. AT 4 IN. W.G. AIR PRESSURE DIFFERENTIAL ACROSS THE DAMPER. LOW LEAKAGE DAMPERS SHALL BE CLASS 2 AMCA CERTIFIED, IN ACCORDANCE WITH AMCA STANDARD 511. DAMPER ASSEMBLY SHALL BE CONTROLLED BY SPRING RETURN DDC ACTUATOR. UNIT SHALL INCLUDE OUTSIDE AIR OPENING BIRD SCREEN, OUTSIDE AIR HOOD, AND RELIEF DAMPERS.

CONTROLS

1. FIELD INSTALLED DDC CONTROLLER BY OTHERS
   a. CONTROLS AND SENSORS SHALL BE FIELD PROVIDED AND FIELD INSTALLED BY OTHERS.
   b. STANDARD TERMINAL BLOCK - UNIT SHALL BE PROVIDED WITH A TERMINAL BLOCK FOR FIELD INSTALLATION OF CONTROLS.
2. ACCESSORIES
   a. UNIT SHALL BE PROVIDED WITH A HIGH CONDENSATE LEVEL SWITCH THAT SHUTS DOWN THE UNIT WHEN A HIGH-WATER LEVEL IS DETECTED IN THE DRAIN PAN.
   b. UNIT SHALL BE PROVIDED WITH A TERMINAL BLOCK FOR FIELD INSTALLATION OF A SMOKE DETECTOR WHICH SHUTS OFF THE UNIT'S CONTROL CIRCUIT.

ROOF CURBS

1. A PREFABRICATED HEAVY GAUGE GALVANIZED STEEL, MOUNTING CURB SHALL BE PROVIDED FOR FIELD ASSEMBLY ON THE ROOF DECKING PRIOR TO UNIT SHIPMENT. THE ROOF CURB SHALL BE A FULL PERIMETER TYPE WITH COMPLETE PERIMETER SUPPORT OF THE AIR HANDLING SECTION AND CONDENSING SECTION. THE CURB SHALL BE A MINIMUM OF 14" HIGH AND INCLUDE A NOMINAL 2" X 4" WOOD NAILING STRIP. GASKET SHALL BE PROVIDED FOR FIELD MOUNTING BETWEEN THE UNIT BASE AND ROOF CURB.
2. IN-CURB MULTI-LAYER ACOUSTICAL TREATMENT
   a. COMPONENT PRODUCTS SHALL BE AS LISTED:
      1) HUSHCORE™ DS-52 ACOUSTICAL COMPOSITE
      2) HUSH BATT™ DS-49 DECK SYSTEM
      3) HUSH SEALANT™ HSAC-100 ACOUSTICAL CAULK
3. HUSHCORE™ DS-52 ACOUSTICAL COMPOSITE
   a. THE COMPOSITE SHALL MEET ASTM E-84 CLASS "A" FOR FLAMMABILITY.
   b. THE OVERALL INSTALLED COMPOSITE SHALL HAVE AN INSTALLED THICKNESS OF 8" FOR THE DS-52 COMPOSITE.
   c. THE INSTALLATION DS-52 SHALL HAVE A THERMAL VALUE OF R-27.
   d. THE COMPOSITE PANELS SHALL GET HUSH SEALANT™ MODEL HSAC-100 ACOUSTICAL GRADE CAULK AT SEAMS AND ALL PERIMETER EDGES INSIDE THE CURB.
   e. SEAMS FOR EACH LAYER SHALL BE STAGGERED.
   f. ACOUSTICAL COMPOSITE SHALL HAVE 65% POST-CONSUMER RECYCLED CONTENT.
4. HUSH SEALANT™ HSAC-100 ACOUSTICAL CAULK
   a. SHALL BE A NON-HARDENING FORMULATION
   b. THE ACOUSTICAL SEALANT MUST BE APPLIED AROUND THE ENTIRE PERIMETER OF THE CURB, AROUND DUCT DROP PENETRATIONS OF THE DECKING, AND AT ALL SEAMS BETWEEN HUSH CORE COMPOSITE PANELS.
5. WHERE ACOUSTICAL TREATMENT IS EXPOSED TO THE AIR STREAM, MODEL DS-49 DECK SYSTEM, RATED AT STC 49 SHALL BE SUPPLIED. THE DS-49 IN-CURB IS RATED CLASS A FOR FLAMMABILITY PER ASTM 84.

DECKING

A. DECKING SHALL BE MAINTAINED INSIDE THE RTU ROOF CURB TO A CLEARANCE OF ¼" MAXIMUM AROUND ALL DUCT DROPS BUT NEVER CONTACT THE DUCT.
   1. PACK ALL AIR GAPS AROUND DUCT DROPS FOR RETURN AND SUPPLY WITH HUSH BATT AND SEAL WITH HUSH SEALANT™ HSAC-100.

PERFORMANCE

A. TO ASSURE OPTIMIZED AERODYNAMIC AND ACOUSTIC PERFORMANCE AS WELL AS PROPER INTEGRATION AND COORDINATION OF THE FINAL INSTALLATION, THE CURB SYSTEM SHALL BE SUPPLIED BY THE ROOFTOP UNIT MANUFACTURER AS PART OF A TURNKEY PACKAGE.
B. HUSHCORE™ IN-CURB ACOUSTIC TREATMENT ACOUSTICAL PERFORMANCE
   1. THE COMBINATION OF ALL LAYERS SHALL BE TESTED FOR SOUND TRANSMISSION LOSS IN ACCORDANCE WITH PROCEDURE ASTM E-90-10. THE ASSEMBLY SHALL BE RATED AT NOT LESS THAN STC-52 WITH 1/3 OCTAVE PERFORMANCE VALUES AS LISTED BELOW FOR SOUND RADIATION THROUGH THE DECK INSIDE THE CURB.

FREQ. (Hz)	80	100	125	160	200	250	315	400	500	630	800	1K
TL (dB)	26	27	33	32	35	42	45	45	50	56	59	60
FREQ. (Hz)	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	STC	
TL (dB)	62	63	64	65	67	71	74	78	80	80	52	

ACCEPTABLE MANUFACTURERS – LOUVERS, BRICK VENTS

A. RUSKIN
B. ARROW
C. GREENHECK

LOUVERS, BRICK VENTS

A. LOUVERS AND BRICK VENTS SHALL BE 6 INCHES DEEP WITH 4-3/8 INCH BLADE SPACING, 45 DEGREE DRAINABLE, STATIONARY BLADES, HEAD AND SILL WITH BLADES CONTAINED WITHIN THE JAMB; CONSTRUCTED OF 6063-T52 ALUMINUM ALLOY WITH 0.125 INCH THICK BLADES. INTAKE LOUVERS SHALL BE FURNISHED WITH 18/16, 0.011 INCH DIAMETER ALUMINUM INSECT SCREEN, EXHAUST LOUVERS SHALL HAVE BIRD SCREEN. ALL LOUVERS SHALL BEAR THE AMCA SEAL.
B. FURNISH WITH SCREW HOLES IN JAMBS FOR INSTALLATION. PROVIDE ALL NECESSARY DUCT COLLARS, AND CAULKING REQUIRED FOR COMPLETE INSTALLATION OF EACH UNIT. PROVIDE EXTENDED SILL BELOW LOUVER AND FLANGE FRAME.

ACCEPTABLE MANUFACTURERS – UTILITY SET FANS

A. LOREN COOK
B. GREENHECK

UTILITY SET FANS

GENERAL:
FAN SHALL BE A SINGLE WIDTH, SINGLE INLET, BACKWARD INCLINED FLAT BLADE, BELT DRIVEN CENTRIFUGAL VENT SET. FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL/CUL 705) FOR US AND CANADA. FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR AIR PERFORMANCE.

CONSTRUCTION:
THE FAN SHALL BE OF BOLTED AND WELDED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. THE SCROLL WRAPPER SHALL BE A MINIMUM 14 GAUGE STEEL AND THE SCROLL SIDE PANELS SHALL BE A MINIMUM 12 GAUGE STEEL. THE ENTIRE FAN HOUSING SHALL HAVE CONTINUOUSLY WELDED SEAMS FOR LEAKPROOF OPERATION. A PERFORMANCE CUT-OFF SHALL BE FURNISHED TO PREVENT THE RECIRCULATION OF AIR IN THE FAN HOUSING. THE FAN HOUSING SHALL BE FIELD ROTATABLE TO ANY ONE OF EIGHT DISCHARGE POSITIONS AND SHALL HAVE A MINIMUM 1-1/2 INCH OUTLET DISCHARGE FLANGE. BEARING SUPPORT SHALL BE MINIMUM 10 GAUGE WELDED STEEL. SIDE ACCESS INSPECTION PORTS SHALL BE PROVIDED WITH QUICK RELEASE LATCHES FOR ACCESS TO THE MOTOR COMPARTMENT WITHOUT REMOVING THE WEATHER COVER. LIFTING LUGS SHALL BE PROVIDED FOR EASE OF INSTALLATION. UNIT SHALL BEAR AN ENGRAVED ALUMINUM NAMEPLATE. NAMEPLATE SHALL INDICATE DESIGN CFM, STATIC PRESSURE, AND MAXIMUM FAN RPM. UNIT SHALL BE SHIPPED IN ISTA CERTIFIED TRANSIT TESTED PACKAGING.

COATING:
STEEL FAN COMPONENTS SHALL HAVE AN ELECTROSTATICALLY APPLIED, BAKED POLYESTER POWDER COATING. EACH COMPONENT SHALL BE SUBJECT TO A FIVE STAGE ENVIRONMENTALLY FRIENDLY WASH SYSTEM, FOLLOWED BY A MINIMUM 2 MIL THICK BAKED POWDER FINISH. PAINT MUST EXCEED 1,000 HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD.

WHEEL:
WHEEL SHALL BE STEEL CENTRIFUGAL BACKWARD INCLINED, NON-OVERLOADING FLAT BLADE TYPE. BLADES SHALL BE CONTINUOUSLY WELDED TO THE BACKPLATE AND DEEP SPUN INLET SHROUD. WHEEL HUB SHALL BE KEYED AND SECURELY ATTACHED TO THE FAN SHAFT. WHEEL INLET SHALL OVERLAP AN AERODYNAMIC ALUMINUM INLET CONE TO PROVIDE MAXIMUM PERFORMANCE AND EFFICIENCY. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-05, BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.

MOTOR:
MOTOR SHALL BE NEMA DESIGN B WITH CLASS B INSULATION RATED FOR CONTINUOUS DUTY AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.

BEARINGS:
BEARINGS SHALL BE DESIGNED AND TESTED SPECIFICALLY FOR USE IN AIR HANDLING APPLICATIONS. CONSTRUCTION SHALL BE HEAVY DUTY REGREASABLE BALL OR ROLLER TYPE IN A CAST IRON PILLOW BLOCK HOUSING SELECTED FOR A MINIMUM L50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGED OPERATING SPEED.

BLOWER SHAFT:
BLOWER SHAFT SHALL BE AISI C-1045 HOT ROLLED AND ACCURATELY TURNED, GROUND AND POLISHED. SHAFTING SHALL BE SIZED FOR A CRITICAL SPEED OF AT LEAST 125% OF MAXIMUM RPM.

BELTS AND DRIVES:
BELTS SHALL BE OIL AND HEAT RESISTANT, STATIC CONDUCTING. DRIVES SHALL BE PRECISION MACHINED CAST IRON TYPE, KEYED AND SECURELY ATTACHED TO THE WHEEL AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR 150% OF THE INSTALLED MOTOR HORSEPOWER. THE VARIABLE PITCH MOTOR DRIVE MUST BE FACTORY SET TO THE SPECIFIED FAN RPM.

ACCEPTABLE MANUFACTURERS – INLINE FANS

A. LOREN COOK
B. GREENHECK

INLINE FANS

GENERAL:
FAN SHALL BE DUCT MOUNTED, BELT DRIVEN CENTRIFUGAL SQUARE INLINE. FAN SHALL BE MANUFACTURED AT AN ISO 9001 CERTIFIED FACILITY. FAN SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL 705) AND UL LISTED FOR CANADA (CUL 705). FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE.

CONSTRUCTION:
THE FAN SHALL BE OF BOLTED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. HOUSING SHALL BE MINIMUM 18 GAUGE GALVANIZED STEEL WITH INTEGRAL DUCT COLLARS. BOLTED ACCESS DOORS SHALL BE PROVIDED ON THREE SIDES, SEALED WITH CLOSED CELL NEOPRENE GASKETING. PIVOTING MOTOR PLATE SHALL UTILIZE THREADED L-BOLT DESIGN FOR POSITIVE BELT TENSIONING. HOUSING SHALL BE PRE-DRILLED TO ACCOMMODATE UNIVERSAL MOUNTING FEET FOR VERTICAL OR HORIZONTAL INSTALLATION. UNIT SHALL BEAR AN ENGRAVED ALUMINUM NAMEPLATE. NAMEPLATE SHALL INDICATE DESIGN CFM, STATIC PRESSURE, AND MAXIMUM FAN RPM. UNIT SHALL BE SHIPPED IN ISTA CERTIFIED TRANSIT TESTED PACKAGING.

WHEEL:
WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED, CONSTRUCTED OF 100% ALUMINUM, INCLUDING A PRECISION MACHINED CAST ALUMINUM HUB. WHEEL INLET SHALL OVERLAP AN AERODYNAMIC ALUMINUM INLET CONE TO PROVIDE MAXIMUM PERFORMANCE AND EFFICIENCY. WHEEL SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-05, BALANCE QUALITY AND VIBRATION LEVELS FOR FANS.

MOTOR:
MOTOR SHALL BE NEMA DESIGN B WITH CLASS B INSULATION RATED FOR CONTINUOUS DUTY AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.

BEARINGS:
BEARINGS SHALL BE DESIGNED AND INDIVIDUALLY TESTED SPECIFICALLY FOR USE IN AIR HANDLING APPLICATIONS. CONSTRUCTION SHALL BE HEAVY DUTY REGREASABLE BALL TYPE IN A PILLOW BLOCK CAST IRON HOUSING SELECTED FOR A MINIMUML50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGED OPERATING SPEED.

BELTS AND DRIVES:
BELTS SHALL BE OIL AND HEAT RESISTANT, STATIC CONDUCTING. DRIVES SHALL BE PRECISION MACHINED CAST IRON TYPE, KEYED AND SECURELY ATTACHED TO THE WHEEL AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR 150% OF THE INSTALLED MOTOR HORSEPOWER. THE VARIABLE PITCH MOTOR DRIVE MUST BE FACTORY SET TO THE SPECIFIED FAN RPM.

HVAC COMMISSIONING

A. WITHIN ONE MONTH AFTER AWARD OF CONTRACT, THE CONTRACTOR SHALL REVIEW THE DESIGN INTENT AND INTENDED COMMISSIONING PROCEDURE WITH THE ENGINEER. WITHIN 3 MONTHS OF AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT A DETAILED COMMISSIONING PLAN TO THE ENGINEER FOR REVIEW. THE COMMISSIONING PLAN SHALL CONTAIN THE INFORMATION NECESSARY TO DOCUMENT THE COMMISSIONING PROCESS AS IT PROGRESSES FROM PRE-START-UP CHECKS, TO START-UP, AND INITIAL OPERATION AND FINALLY TO FUNCTIONAL PERFORMANCE VERIFICATION OF ALL SYSTEMS. THE COMMISSIONING PLAN MUST INCLUDE DETAILED CHECK LISTS, RELEVANT TO GUIDING AND CARRYING OUT. ASHRAE GUIDELINE 1 SHOULD BE USED AS OUTLINE.
B. PHASE 1 - SYSTEMS READINESS AND START-UP:

   BEFORE STARTING ANY EQUIPMENT OR SYSTEMS, COMPLETE THE SYSTEM READINESS OR PRE-START CHECKS IN THE COMMISSIONING PLAN AND DOCUMENT THE RESULTS. THE FOLLOWING CONDITIONS AND ITEMS SHALL BE COMPLETED AS APPLICABLE.
   1. PIPING SYSTEMS HAVE BEEN PRESSURE TESTED AS SPECIFIED, FOUND TO BE TIGHTS, WITH REPORTS SUBMITTED.
   2. EQUIPMENT HAS BEEN LUBRICATED.
   3. AIR SYSTEM CLEANING IS COMPLETE, AND PARTICULATE FILTERS HAVE BEEN INSTALLED.
   4. VIBRATION ISOLATION HAVE BEEN INSTALLED TO SPECIFICATION AND ADJUSTED.
   5. EQUIPMENT DRIVES HAVE BEEN ALIGNED.
   6. ELECTRICAL SERVICES HAVE BEEN INSTALLED AND CHECKED.
   7. CONTROL POINT CHECKOUTS HAVE BEEN COMPLETED.
   8. SAFETY CONTROLS HAVE BEEN INSTALLED AND OPERATION CHECKED.
   9. MAJOR EQUIPMENT START-UP HAS BEEN CARRIED OUT BY MANUFACTURER'S REPRESENTATIVE AND REQUIRED START-UP REPORTS COMPLETED, SUBMITTED AND APPROVED.

   ALL CHECKS SHALL BE DOCUMENTED ON THE RELEVANT CHECKLISTS AS THEY ARE CARRIED OUT. DEFICIENCIES OR INCOMPLETE WORK SHALL BE CORRECTED, AND THE CHECKS REPEATED UNTIL THE INSTALLATION IS READY FOR OPERATION, BEFORE PROCEEDING TO PHASE 2 OF THE PROCESS.
C. PHASE 2 - INITIAL OPERATION:

   IN PHASE 2 OF THE COMMISSIONING PROCESS, THE CONTRACTOR COMPLETES THE TESTING, BALANCING, AND CALIBRATION OF ALL COMPONENTS AND SYSTEMS. THEY ALSO OPERATE ALL SYSTEMS THROUGH ALL SPECIFIED MODES OF OPERATION, AND TEST SYSTEM RESPONSES TO SPECIFIED ABNORMAL OR EMERGENCY CONDITIONS.

   WORK CARRIED OUT DURING THIS PHASE OF COMMISSIONING SHALL INCLUDE THE FOLLOWING:
   1. AIR SYSTEMS BALANCING, INCLUDING POSITIONING OF ALL BALANCE VALVE.
   2. CORRECTION OF PROBLEMS REVEALED DURING BALANCING, INCLUDING CHANGES TO FAN SPEEDS OR BLADE PITCH AS NECESSARY.
   3. SETTING UP AND CALIBRATING ALL AUTOMATIC TEMPERATURE CONTROL DEVICES, INCLUDING ADJUSTMENTS TO CONTROL VALVES AND DAMPER ACTUATORS.
   4. VERIFY THE BALANCING CONTRACTOR, AND CONTROLS CONTRACTOR ARE WORKING TOGETHER, SETTING UP AIR FLOWS AND CONTROLS CALIBRATIONS FOR VARIABLE VOLUME TERMINAL UNITS AND AIR VALVES WHERE APPLICABLE.
   5. CHECKING OPERATION OF ALL FIRE DAMPERS, AS WAS DONE IN PHASE 1, ALL CHECKS AND TESTS SHALL BE DOCUMENTED ON THE RELEVANT CHECKLISTS AS THEY ARE CARRIED OUT.

      DEFICIENCIES OR INCOMPLETE WORK SHALL BE CORRECTED, AND THE CHECKS OR TEST REPEATED UNTIL CORRECT INSTALLATION AND FUNCTION HAS BEEN CONFIRMED AND THE INSTALLATION IS READY FOR ENGINEER VERIFICATION.
D. PHASE 3 - FUNCTIONAL PERFORMANCE VERIFICATION

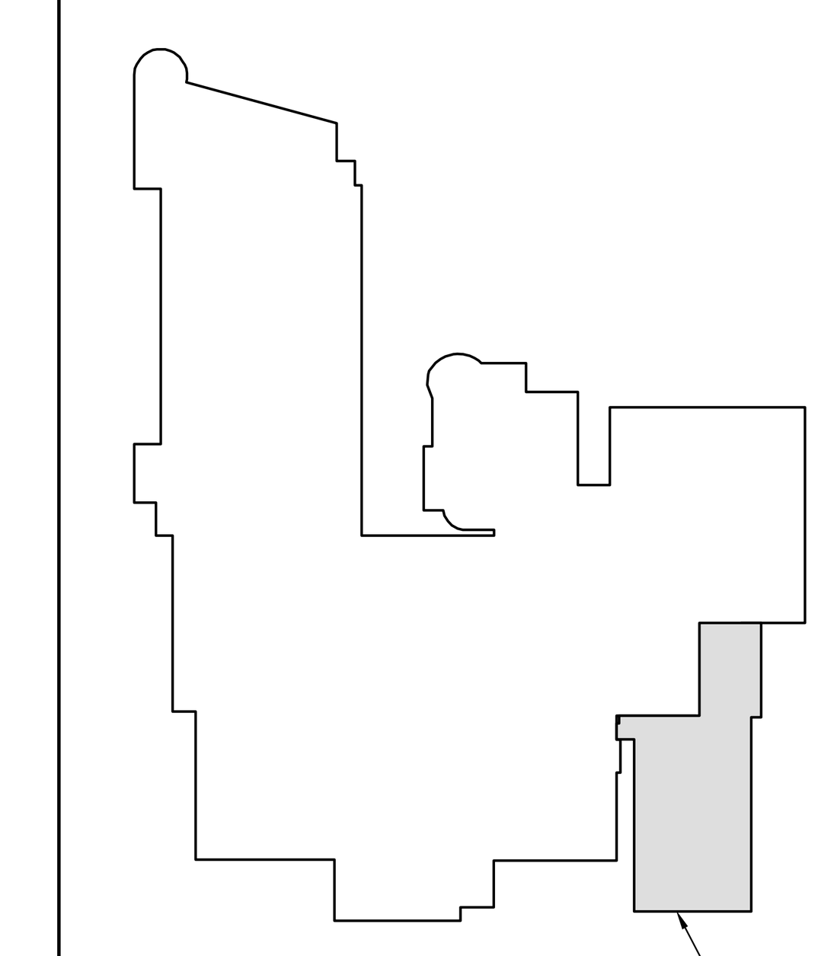
   ALL EQUIPMENT AND SYSTEMS SHALL BE OPERATED THROUGH THE ENTIRE SPECIFIED SEQUENCE OF OPERATIONS, AS DIRECTED BY THE ENGINEER FOR WITNESSING AND VERIFYING ACCEPTABLE OPERATION.

   DURING THIS PHASE OF COMMISSIONING, THE FOLLOWING CHECKS AND TEST MAY BE REQUIRED BY THE ENGINEER AND SHALL BE ALLOWED FOR:
   1. CHECKING THE LOCATION AND ACCESSIBILITY OF ALL ACCESS PANELS.
   2. OPERATION OF ALL CONTROLS SYSTEMS DEVICES, BOTH SENSORS AND ACTUATORS.
   3. DEMONSTRATION OF ACCEPTABLE NOISE AND VIBRATION LEVELS FROM ANY EQUIPMENT, UNDER ITS FULL RANGE OF OPERATIONAL CONDITIONS.
   4. OPERATION OF EQUIPMENT AND SYSTEMS UNDER EVERY SPECIFIED MODE OF OPERATION AND SEQUENCE OF CONTROL.
   5. OPERATION OF EQUIPMENT AND SYSTEMS UNDER NORMAL, ABNORMAL, AND EMERGENCY CONDITIONS.
   6. ACCEPTANCE TESTING AS INDICATED IN 3.3 HEREIN.

HIGHLAND ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center | 102 Highland Avenue | Clarks Summit, PA 18411
(570) 586-4334 | fax(570) 586-5990 | www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

AREA OF WORK NEW MODULAR

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

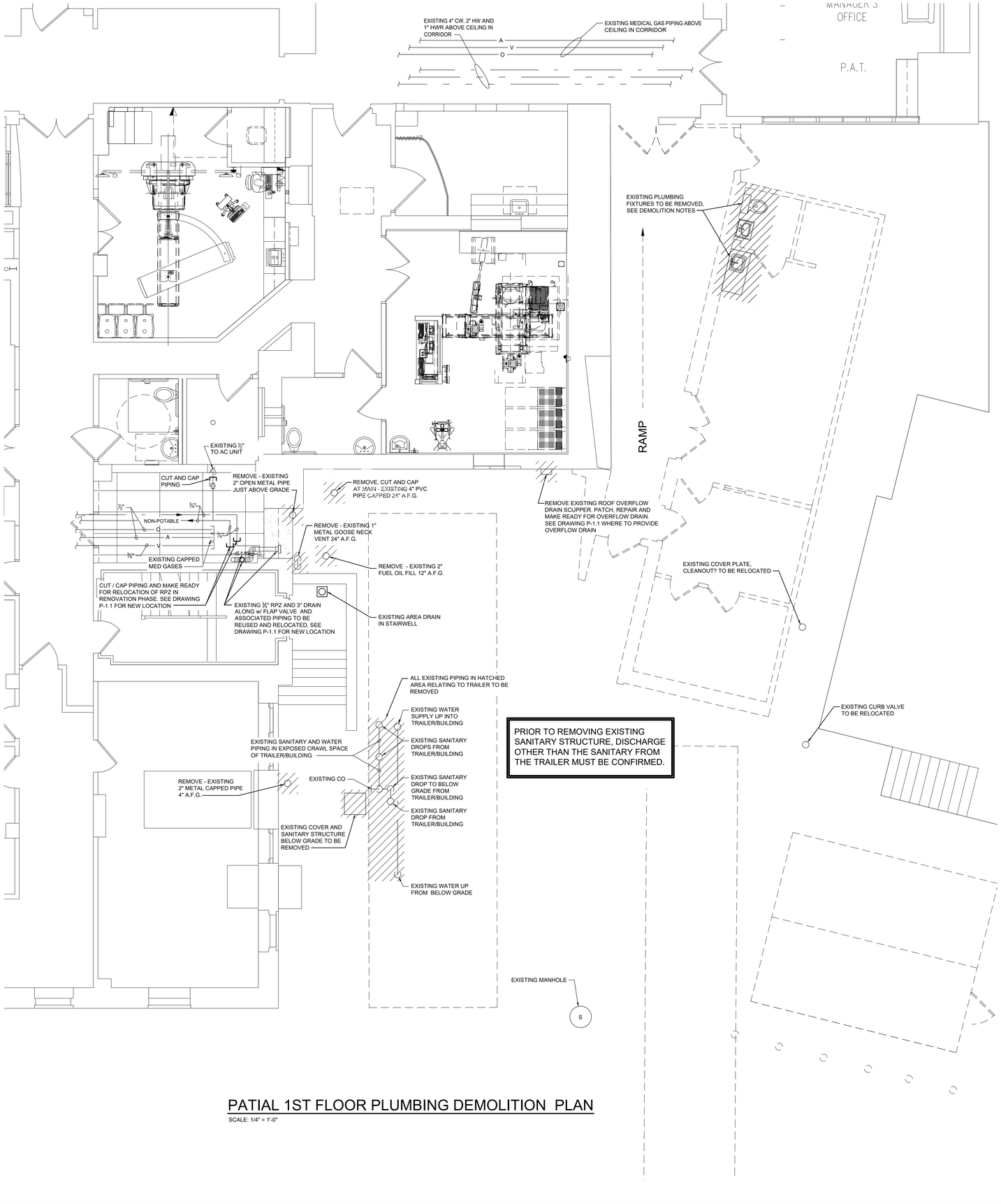
SEALS:

DRAWING TITLE:
MECHANICAL SPECIFICATIONS

DRAWN BY:	CHECKED BY:
A.F.	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:
M-2.4

CAD FILE: FILE   PLOT DATE: PDATE



PATIAL 1ST FLOOR PLUMBING DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

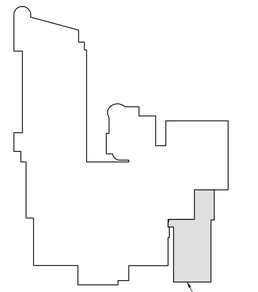
DEMOLITION NOTES:

1. ////, ////, INDICATES EXISTING PLUMBING FIXTURES AND/OR EQUIPMENT, PIPING ETC. TO BE REMOVED UNLESS OTHERWISE NOTED, INCLUDE ALL PIPING, VALVES AND ROUGHING (CARRIERS IF REQUIRED), CUT AND CAP LINES AT MAIN, IN WALLS, BELOW FLOORS AND/OR ABOVE CEILING AS REQUIRED AND OUT OF WAY OF NEW CONSTRUCTION.
2. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS.
3. REPAIR AND/OR REPLACE EXISTING ITEMS WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.
4. PATCH AND REPAIR ALL SURFACES DISTURBED, CUT OR DAMAGED BY ALTERATIONS OR DEMOLITION WORK AND AS NECESSARY TO PREPARE SURFACES FOR NEW MATERIALS AND ARRANGEMENTS.
5. INFORMATION PERTAINING TO EXISTING STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS PROVIDED BY FACILITIES DEPARTMENT OR WHEN POSSIBLE BY SURVEY. THEREFORE THE LOCATIONS SHOWN ARE CONSIDERED APPROXIMATE. FIELD VERIFICATION MUST BE DONE AND OTHER SUCH WORK MAY EXIST, DUE TO LOCATION, SIZE, ETC., NOT PRESENTLY KNOWN.
6. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (ELECTRICITY, ETC) THE CONTRACTOR SHALL ARRANGE WITH THE OWNER TO LOCATE PANEL BOXES AND OTHER CONTROL ELEMENTS SO THAT DAMAGE AND OTHER POTENTIALLY INCONVENIENT OR DANGEROUS SITUATIONS ARE AVOIDED.
7. ALL ACTIVE PIPING, THAT CONTINUES TO OTHER AREAS NOT IN SCOPE OF WORK ARE TO REMAIN ACTIVE & IN PLACE, IF REQUIRED RELOCATE EXISTING VALVE, RUN NEW SUPPLY LINES IN NEW WALLS, ABOVE CEILINGS, BELOW FLOOR OR IN COLUMN CHASES.
8. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL WORK WITH THE OWNER DURING THE DEMOLITION AND PHASING PROCESS OF CONSTRUCTION. IF DEMOLITION OF PARTICULAR ITEMS WILL AFFECT THE OPERATION OF OTHERS PARTS OF THE FACILITY OUTSIDE THE CONSTRUCTION PHASE, TEMPORARY PROVISIONS SHALL BE MADE TO KEEP THOSE AREAS UP AND RUNNING.
9. THESE DRAWINGS DO NOT SHOW RELOCATION OR REROUTING OF EXISTING PIPING FOR WALLS OR CHASES THAT ARE BEING REMOVED. REROUTING AND RELOCATION OF EXISTING PIPING WILL BE SHOWN ON THE RENOVATION DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS PRICING ADDITIONAL DEMO THAT IS NOT SHOWN ON THESE DRAWINGS DUE TO UNFORESEEN CIRCUMSTANCES.

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM, A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

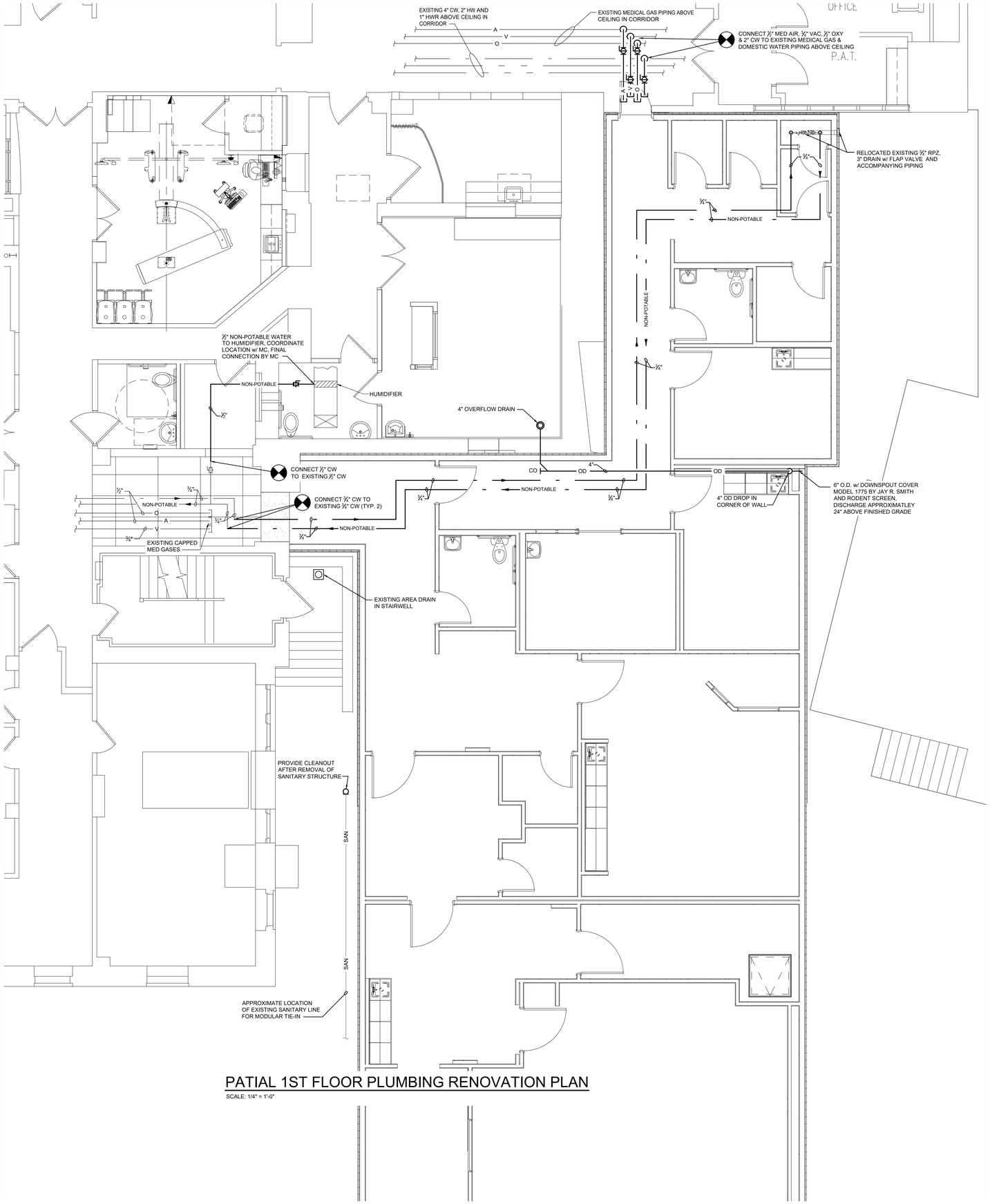
PARTIAL 1ST. FLOOR PLUMBING DEMOLITION

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

PD-1.1

CAD FILE: 1069-PD-1.1.DWG PLOT DATE: 7/17/2023



PATIAL 1ST FLOOR PLUMBING RENOVATION PLAN

SCALE: 1/4" = 1'-0"

PLUMBING GENERAL NOTES:

1. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH INTERNATIONAL PLUMBING CODE, THE INTERNATIONAL BUILDING CODE, OSHA, THE OWNER'S INSURANCE UNDERWRITERS REQUIREMENTS AND LOCAL CODES AND REGULATIONS.
2. ALL SYSTEM SHUT-DOWNS AND DISRUPTIONS IN SERVICE SHALL BE COORDINATED WITH THE OWNER & DONE AT THE OWNERS CONVENIENCE.
3. ALL SANITARY AND VENT PIPING SHALL SLOPE AT A MINIMUM OF 1/8" PER FOOT UNLESS OTHERWISE NOTED.
4. PROVIDE ALLOWANCE FOR OFFSETS WHERE SANITARY, STORM AND VENT PIPING INTERFERE WITH BUILDING STEEL OR ANY OTHER OBSTRUCTIONS.
5. PROVIDE ALLOWANCE FOR ALL PLUMBING PIPING FOR ADDITIONAL OFFSETS TO AVOID INTERFERENCES WITH MECHANICAL, ELECTRICAL EXISTING BUILDING ELEMENTS AND ARCHITECTURAL EQUIPMENT AND SYSTEMS.
6. WHERE FIXTURES ARE LOCATED ON AN EXTERIOR WALL, DOMESTIC WATER PIPING IT SHALL BE RUN ON THE INSIDE (WARM SIDE) OF THE INSULATION. PIPING SHALL NOT RUN THROUGH THE INSULATION OR VAPOR BARRIER. COORDINATE WITH OTHER TRADES INSTALLATION OF INSULATION.
7. THESE DRAWINGS ARE DIAGRAMMATIC. PLUMBING CONTRACTOR SHALL COORDINATE ACTUAL LOCATIONS OF PIPING AND EQUIPMENT UNLESS DIMENSIONS ARE SPECIFICALLY CALLED OUT.
8. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE ACTUAL ROUTING OF HIS PIPING WITH THE ARCHITECTURAL CEILINGS, HVAC PIPING, DUCTWORK AND EQUIPMENT, ELECTRICAL LIGHTING, CONDUIT AND EQUIPMENT, AND FIRE PROTECTION PIPING AND VALVES.
9. INFORMATION PERTAINING TO EXISTING STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS PROVIDED BY THE OWNER AND BY SURVEY (WHERE POSSIBLE). THE LOCATIONS SHOWN, MUST THEREFORE BE CONSIDERED APPROXIMATE. OTHER SUCH WORK MAY EXIST, DUE TO LOCATION, SIZE, ETC., NOT PRESENTLY KNOWN.
10. ALL PIPE PENETRATION THROUGH INTERIOR WALLS SHALL BE FURNISHED AND INSTALLED AS PER PROJECT SPECIFICATIONS. ALL PIPE PENETRATIONS SHALL BE FURNISHED AND INSTALLED AS AN APPROVED UL ASSEMBLY TO MEET FIRE RATING OF WALL.
11. COORDINATE ALL VALVES LOCATED IN THE CEILING WITH DIFFUSERS, LIGHTS, SPEAKERS, A/V EQUIPMENT, ETC. TO BE IN AN ACCESSIBLE LOCATION SO MAINTENANCE PERSONNEL CAN ACCESS THEM AND FULLY ACTUATE THE VALVE HANDLES.
12. THIS CONTRACTOR IS RESPONSIBLE FOR ALL FINAL CONNECTIONS TO ROUTING FROM THE LOCATIONS SHOWN ON THE PLANS TO THE EQUIPMENT OR FIXTURES. COORDINATE INSTALLATION WITH MILLWORK AND EQUIPMENT.

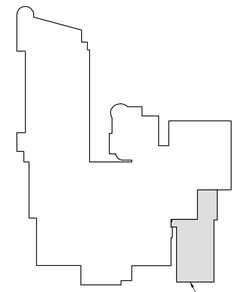
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health — BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

PARTIAL 1ST. FLOOR PLUMBING RENOVATION

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

P-1.1

CAD FILE: 1069-P-1.1.DWG PLOT DATE: 7/17/2023

PLUMBING SPECIFICATIONS

GENERAL

ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2020 PLUMBING CODE OF NEW YORK STATE WITH INTERNATIONAL PLUMBING CODE 2018 WITH AMENDMENTS. THE 2020 BUILDING CODE OF NEW YORK STATE WITH INTERNATIONAL BUILDING CODE 2018 WITH AMENDMENTS, THE DEPARTMENT OF HEALTH REGULATIONS, OSHA, THE OWNER'S INSURANCE UNDERWRITERS REQUIREMENTS AND ALL LOCAL CODES AND REGULATIONS.

THIS CONTRACTOR SHALL COORDINATE G.C. AND MAKE G.C. AWARE OF ALL NECESSARY CUTTING AND PATCHING. G.C. WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING.

THESE DRAWINGS INDICATE THE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS. FOR EXACT LOCATIONS, HEIGHT, DOOR SWINGS, MOUNTING HEIGHTS, ETC. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS.

PRIOR TO STARTING ANY WORK, PURCHASE OF EQUIPMENT, ETC. COORDINATE THE WORK WITH OTHER TRADES. CONFER WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION AND ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT OF OTHERS, WITH THE BUILDING CONSTRUCTION AND WITH ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE. IN THE EVENT THERE IS A CONFLICT IN COORDINATION BETWEEN TRADES, THE OWNER WILL RESOLVE IT.

BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL EFFECT THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH EXAMINATION BEEN MADE.

ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE INSTALLATION AND ANY PORTIONS OF THE WORK WHICH DEVELOP DEFECTS DURING THAT TIME SHALL BE REPLACED OR REPAIRED IN A MANNER SATISFACTORY TO THE OWNER.

PREPARE AND FURNISH TO THE OWNER "AS-BUILT" PLANS FOR ALL WORK INSTALLED.

SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW COMMENTS BEFORE FABRICATION OF THE WORK IS STARTED.

ALL PARTS OF THE WORK AND ASSOCIATED EQUIPMENT SHALL BE TESTED AND ADJUSTED TO WORK PROPERLY AND BE LEFT IN PERFECT OPERATING CONDITION.

THIS CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR THE COMPLETION OF THIS WORK.

REQUIREMENTS

ALL DRAWINGS AND PORTIONS OF THE DRAWINGS, ALL FLOOR PLANS, RISERS, DETAILS, SCHEMATICS AND SPECIFICATIONS INDICATED SHALL APPLY AND ARE PART OF THE PLUMBING CONTRACT.

ANY DISCREPANCY OR CONFLICT NOTED BETWEEN OR WITHIN THE ABOVE REFERENCED DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING, A MINIMUM OF THREE (3) DAYS PRIOR TO SUBMITTAL OF BIDS. THE ARCHITECT/ENGINEER SHALL RESOLVE ISSUES PRIOR TO BID SUBMITTAL.

THIS CONTRACTOR SHALL CAREFULLY READ THE ABOVE MENTIONED DOCUMENTS AND STUDY THE DRAWINGS OF ALL TRADES. HE SHALL BE RESPONSIBLE FOR NEGLECT TO READ, OR ATTEND TO, ANY PARAGRAPH OR ITEMS CONTAINED THEREIN. FAILURE TO BRING ANY CONFLICTS OR DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER, IN WRITING, PRIOR TO BID SUBMITTAL SHALL NOT CONSTITUTE GROUNDS FOR EXTRAS AND/OR CHANGE ORDERS. COSTS RESULTANT FROM THIS FAILURE SHALL BE BORNE BY THIS CONTRACTOR.

BASIC MATERIALS AND METHODS

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE WELDING PROCEDURES OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU, OR OTHER APPROVED PROCEDURE, CONFORMING TO THE REQUIREMENTS OF ASME BOILER AND PRESSURE VESSEL CODE AND THE ANSI CODE FOR PRESSURE PIPING. ALL WELDERS SHALL BE CERTIFIED.

PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES

DOMESTIC HOT AND COLD WATER PIPING:

TYPE "L" ASTM B-88, HARD DRAWN COPPER TUBE WITH ASTM B-75 WROUGHT COPPER SWEAT FITTINGS CONFORMING TO ANSI B16.22. SOLDER SHALL BE "LEAD FREE" CONTAINING LESS THAN 0.2 PERCENT LEAD CONTENT.

DIELECTRIC FITTINGS SHALL BE USED AT ALL DISSIMILAR METAL CONNECTIONS.

SOIL, WASTE AND VENT PIPING:

CAST IRON SOIL PIPE AND FITTINGS, ASTM A74 AND/OR CISPI 301, SERVICE WEIGHT, SHALL BE USED FOR PIPING WITHIN THE BUILDING. PIPING SHALL BE PLAIN END (NO-HUB) WITH PLAIN END FITTINGS. JOINTS FOR NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL CONSIST OF A NEOPRENE GASKET CONFORMING TO ASTM C-564 AND STAINLESS STEEL CLAMPS, SERIES 300. WHERE NO-HUB IS USED, ANCHORS SHALL BE PROVIDED AT THE WATER CLOSETS TO PREVENT PIPE FROM TWISTING. PIPE AND FITTINGS BELOW FLOOR SHALL BE MODIFIED-HUB CAST IRON. CAST IRON TO PVC ADAPTERS SHALL BE PROVIDED.

PVC PIPE AND FITTINGS: PVC DWV PIPE AND FITTINGS MAY OPTIONALLY BE USED FOR BELOW GROUND SOIL WASTE AND VENT SYSTEMS AND FOR DISCHARGE OF RPZ DRAINS.

WHERE BELOW GRADE PVC PIPING IS ALLOWED/UTILIZED, THE FIRST ELBOW OR TEE BELOW ANY PIPING DROP OR CLEANOUT SHALL BE OF CAST IRON CONSTRUCTION.

VALVES AND ACCESSORIES

WATER VALVES FOR USE IN COPPER LINES SHALL BE RATED 175 PSIG WOG, 2 PIECE BRONZE BODY, FULL PORT, BALL TYPE, CONFORMING TO MSS-SP-110.

HANGERS AND SUPPORTS

PRODUCTS OF B-LINE SYSTEMS INC., OR BASIC ENGINEERING INC., WILL BE ACCEPTABLE IN PLACE OF A PARTICULAR MANUFACTURER'S CATALOG FIGURE NUMBER SPECIFIED HEREIN.

OVERHEAD SUPPORTS: PROVIDE ONE OF THE FOLLOWING TYPES OF HANGER FOR OVERHEAD SUPPORT OF HORIZONTAL PIPING:

1. FOR COPPER TUBING WHERE HANGERS ARE IN DIRECT CONTACT WITH TUBING, USE CLEVIS TYPE STEEL HANGER, COPPER PLATED, GRINNELL FIG. CT-65, WITH SUPPORTING ROD TO SUIT.
2. FOR ALL OTHER PIPING 4 INCHES AND SMALLER, USE CLEVIS TYPE HANGERS, GRINNELL FIG. 260.

PROVIDE SUPPORTING RODS FOR HANGERS OF DIAMETER AS INDICATED AND WHERE NOT INDICATED, AS SPECIFIED UNDER "HORIZONTAL PIPE SUPPORTS SCHEDULE" HEREINAFTER, OF LENGTHS AS REQUIRED, WITH DOUBLE LOCKNUTS FOR EACH.

WHERE HANGER RODS LEAVE UNSIGHTLY HOLES IN CEILINGS IN FINISHED AREAS, PROVIDE PLASTIC CEILING PLATES, GRINNELL FIG. 127 OR CAST IRON CEILING PLATES WITH SETSCREW, GRINNELL FIG. 395.

WALL SUPPORTS: PROVIDE ONE OF THE FOLLOWING TO SUPPORT HORIZONTAL PIPING FROM WALL.

WHERE NO PROVISION FOR EXPANSION AND CONTRACTION IS REQUIRED AND PIPE CAN BE LOCATED CLOSE TO WALL, USE STEEL J-HOOK, SUITABLE FOR PIPE SIZES UP TO 3 INCHES, GRINNELL FIG. 126.

SUPPORT HORIZONTAL PIPING AS PER FOLLOWING SCHEDULE:

PIPE SIZE (INCHES)	ROD DIAMETER (INCHES)	MAX SPACING (FEET)
UP TO 1 1/2	3/8"	6
2 TO 3	1/2"	10
3 1/2 TO 4	1/2"	12
4 AND 5	5/8"	12

INSULATION

INSULATION SHALL BE APPLIED BY EXPERIENCED PERSONNEL IN ACCORDANCE WITH BEST TRADE PRACTICE GUIDED BY MANUFACTURER'S PRINTED INSTALLATION DIRECTIONS.

INSULATION SHALL BE MANVILLE MICRO-LOK FIBERGLASS PIPE INSULATION TO COMPLY WITH ASTM C547. FITTINGS SHALL BE PROVIDED WITH FIRE RATED PVC FITTING COVERS.

ALL INSULATION JACKETS, OR FACINGS AND ADHESIVES USED TO ADHERE JACKET OR FACING TO THE INSULATION, INCLUDING FITTINGS AND BUTT STRIPS, SHALL HAVE NON-COMBUSTIBLE FIRE AND SMOKE HAZARD SYSTEM RATING AND LABEL AS TESTED BY ASTM-83, NFPA 255 AND UL 723 NOT EXCEEDING FLAME SPREAD 25, SMOKE DEVELOPED 50. ALL PRODUCTS SHALL BE AS MANUFACTURED BY FOSTER DIVISION, MIRACLE ADHESIVE CORPORATION OR AN APPROVED EQUAL.

PIPING INSULATION

MINIMUM INSULATION THICKNESS FOR PIPES SIZES

PIPING SYSTEMS AND TYPES	FLUID TEMP. RANGE	1½" & LESS	2"	2½" - 4"	5" & 6"	8" & LARGER
HOT WATER & HOT WATER RECIRC.	100°F - 200°F	1"	2"	2"	2"	2"
LOW TEMP. PIPING COLD WATER & DRAIN LINES	40°F - 65°F	1"	1½"	1½"	1½"	1½"

INSULATION THICKNESS FOR PIPING, FITTINGS, FLANGES, AND VALVES SHALL BE NOT LESS THAN INDICATED ABOVE.

CLEANOUTS

INTERIOR FINISHED FLOOR AREAS: DUCO-COATED CAST IRON, TWO PIECE BODY AND ADJUSTABLE NICKEL-BRONZE SCORIATED COVER IN SERVICE AREAS AND SQUARE WITH DEPRESSED COVER (TAMPER PROOF SCREWS) TO ACCEPT FLOOR FINISH IN FINISHED FLOOR AREAS MODEL 4020 AND MODEL 4200 MANUFACTURED BY J. R. SMITH.

INTERIOR FINISHED WALL AREAS: LINE TYPE WITH DUCO-COATED CAST IRON BODY AND ROUND EPOXY COATED GASKETTED COVER, AND ROUND STAINLESS STEEL ACCESS COVER SECURED WITH TAMPER PROOF SCREWS, MODEL 4452 MANUFACTURED BY J. R. SMITH.

INTERIOR UNFINISHED ACCESSIBLE AREAS: CAULKED OR THREADED TYPE. PROVIDE BOLTED STACK CLEANOUTS ON VERTICAL RAINWATER LEADERS.

ROOF STACK TERMINATION

PROVIDE SLEEVES FOR STACKS PASSING THROUGH ROOF. FLASHING AROUND BASE OF STACK SHALL BE COORDINATED WITH ARCHITEXTURAL SPECIFICATIONS.

SHOCK ABSORBER DEVICES

PROVIDE WHERE INDICATED OR REQUIRED, SHOCK ABSORBING DEVICES WHICH WILL PROTECT WATER SUPPLY PIPING FROM WATER HAMMER. THEY SHALL BE ONE OF THE FOLLOWING TYPES AND MANUFACTURERS:

SEALED AIR CHAMBER METAL BELLOWS TYPE SHALL BE SMITH "HYDROTROL", WADE MFG. CO., "WADE WACOR SHOCK STOP", OR ZURN MFG. CO. "SHOCKTROL".

ELASTIC TUBE AND INSERT TYPE SHALL BE JOSAM FMG. CO., "SHOCK ABSORBER".

PROVIDE ADEQUATE SUPPORT FOR SHOCK ABSORBING DEVICES, AS APPROVED, TO PREVENT STAIN ON PIPING.

BACKFLOW PREVENTER DEVICES

PROVIDE A BACKFLOW PREVENTION DEVICE AT ANY POINT IN THE PLUMBING SYSTEM WHERE THE POTABLE WATER SUPPLY COMES IN CONTACT WITH A POTENTIAL SOURCE OF CONTAMINATION. LISTED BELOW IS A PARTIAL LIST OF CONNECTIONS TO THE POTABLE WATER SYSTEM WHICH SHALL BE PROTECTED AGAINST BACKFLOW OR BACK SIPHONAGE:

REDUCED PRESSURE BACKFLOW PREVENTERS SHALL BE OF BRONZE BODY CONSTRUCTION, STAINLESS STEEL INTERNAL PARTS AND FLANGE BOLTS, DURABLE TIGHT SEATING RUBBER CHECK VALVE ASSEMBLY, SUITABLE FOR SUPPLY PRESSURE UP TO 175 PSI AND FOR WATER TEMPERATURE UP TO 210 DEGREES F. FURNISHED COMPLETE WITH STRAINER, TEST COCKS AND GATE VALVES AND HALL CONFORM TO A.S.S.E. STANDARD 1013, SERIES LF009-QT AS MANUFACTURED BY WATTS REGULATOR CO., OR APPROVED EQUAL.

INSPECTION, TESTS, ADJUSTMENT AND ACCEPTANCE DISINFECTION OF DOMESTIC WATER PIPING

PRIOR TO STARTING WORK, VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEAN.

ENSURE PH OF WATER TO BE TREATED IS BETWEEN 7.4 AND 7.6 BY ADDING ALKALI (CAUSTIC SODA OR SODA ASH) OR ACID (HYDROCHLORIC).

INJECT DISINFECTANT, FREE CHLORINE IN LIQUID, POWDER, TABLET OR GAS FORM, THROUGHOUT SYSTEM TO OBTAIN 50 TO 80 MG/L RESIDUAL.

BLEED WATER FROM OUTLETS TO ENSURE DISTRIBUTION AND TEST FOR DISINFECTANT RESIDUAL AT MINIMUM 15 PERCENT OF OUTLETS.

MAINTAIN DISINFECTANT IN SYSTEM FOR 24 HOURS.

IF FINAL DISINFECTANT RESIDUAL TESTS LESS THAN 25 MG/I REPEAT TREATMENT.

FLUSH DISINFECTANT FROM SYSTEM UNTIL RESIDUAL EQUAL TO THAT OF INCOMING WATER OR 1 MG/L.

TAKE SAMPLES NO SOONER THAN 24 HOURS AFTER FLUSHING, FROM 10 PERCENT OF OUTLETS AND FROM WATER ENTRY, AND ANALYZE IN ACCORDANCE WITH AWWA C601.

SANITARY SYSTEM TEST

THE PIPING OF PLUMBING DRAINAGE AND VENTING SYSTEMS SHALL BE TESTED UPON COMPLETION OF THE DEMOLITION, RE-ROUTING, CAPPING, ETC. OF EXISTING PIPING, INSTALLATION BY WATER OR AIR AND PROVED WATER-TIGHT. WHERE REQUIRED BY THE CODE OFFICIAL, THE CLEANOUT PLUGS SHALL BE REMOVED TO ASCERTAIN IF THE PRESSURE HAS REACHED ALL PARTS OF THE SYSTEM. EITHER OF THE FOLLOWING METHODS SHALL BE USED.

WATER TEST: THE WATER TEST SHALL BE APPLIED TO THE DRAINAGE SYSTEM EITHER IN ITS ENTIRETY OR IN SECTIONS AFTER ROUGH PIPING HAS BEEN INSTALLED. IF APPLIED TO THE ENTIRE SYSTEM, ALL OPENINGS IN THE PIPING SHALL BE CLOSED EXCEPT THE HIGHEST OPENING, AND THE SYSTEM FILLED WITH WATER TO THE POINT OF OVERFLOW. IF THE SYSTEM IS TESTED IN SECTIONS, EACH OPENING SHALL BE PLUGGED EXCEPT THE HIGHEST OPENING OF THE SECTION UNDER TEST, AND EACH SECTION SHALL BE FILLED WITH WATER, BUT A SECTION SHALL NOT BE TESTED WITH LESS THAN A 10-FOOT HEAD OF WATER.

IN TESTING SUCCESSIVE SECTIONS, AT LEAST THE UPPER 10 FEET OF THE NEXT PRECEDING SECTION SHALL BE TESTED, SO THAT A JOINT OR PIPE IN THE BUILDING (EXCEPT THE UPPERMOST 10 FEET OF THE SYSTEM) SHALL NOT HAVE BEEN SUBJECTED TO A TEST OF LESS THAN A 10-FOOT HEAD OF WATER. THE WATER SHALL BE KEPT IN THE SYSTEM OR IN THE PORTION UNDER TEST FOR A MINIMUM OF 15 MINUTES BEFORE INSPECTION STARTS. THE SYSTEM SHALL THEN BE TIGHT AT ALL POINTS.

WATER SUPPLY SYSTEM TEST

UPON COMPLETION OF A SECTION OF OR THE ENTIRE WATER SUPPLY SYSTEM, THE SYSTEM, OR PORTION COMPLETED, SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE UNDER WHICH IT IS TO BE USED. THE WATER USED FOR TESTS SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY.

ADJUSTMENTS, REPAIRS, AND TESTS

THIS CONTRACTOR SHALL ADJUST, REPAIR AND TEST THE PLUMBING SYSTEMS AS SPECIFIED HEREIN.

CORRECT DEFECTS DISCLOSED BY TESTS OR INSPECTION: REPLACE DEFECTIVE PARTS WHEN DIRECTED. REPLACING DEFECTIVE PARTS USE ONLY NEW MATERIAL, IN CASE OF PIPE REPLACE WITH SAME LENGTH AS DEFECTIVE PIECES. CAULKING OF SCREWED JOINTS WILL NOT BE PERMITTED. REPEAT TESTS AFTER DEFECTS HAVE BEEN CORRECTED AND PARTS REPLACED, AS DIRECTED, UNTIL PRONOUNCED SATISFACTORY.

THE COST OF REPAIRS AND RESTORATION OF WORK OF OTHER TRADES DAMAGED BY THE TESTS, OR CUTTING THAT HAD TO BE DONE IN CONNECTION WITH TESTS SHALL BE MADE AT NO EXTRA COST TO OWNER.

INSPECTION

THE CONTRACTOR SHALL OBTAIN ALL INSPECTION REQUIRED BY LAWS, ORDINANCES AND REGULATIONS OF ORANGE COUNTY, THE STATE OF NEW YORK, THE TOWN OF WARWICK. NEW YORK STATE DEPARTMNT OF HEALTH, AND OTHER AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL OBTAIN CERTIFICATES OF INSPECTION AND SUBMIT THEM TO THE OWNER AND SHALL PAY FOR ALL FEES, CHARGES AND OTHER EXPENSES IN CONNECTION WITH THE SAME, INCLUDING SAME IN CONTRACT PRICE.

THIS CONTRACTOR SHALL FURNISH AND INSTALL SUCH TEST TEES AND PLUG FITTINGS IN HIS WORK AS MAY BE REQUIRED BY LOCAL AUTHORITIES FOR THEIR TEST, AND ANY OTHER TEST REQUIRED, AND SHALL ASCERTAIN INFORMATION FROM LOCAL AUTHORITIES AS TO ALL REQUIREMENTS BEFORE INSTALLATION OF WORK. NO CLAIMS FOR EXTENSION OF TIME WILL BE ENTERTAINED WHICH ARISES FROM FAILURE TO OBTAIN THIS INFORMATION IN TIME, OR SECURING THE NECESSARY PERMITS AND ARRANGING FOR REQUIRED INSPECTION.

MEDICAL GAS SPECIFICATIONS

GENERAL

SECTION INCLUDES

A. MEDICAL OXYGEN GAS OUTLET/PIPING
B. MEDICAL VACUUM OUTLET/PIPING.
B. MEDICAL AIR OUTLET/PIPING.

PRODUCTS INSTALLED

A. MEDICAL GAS OUTLETS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER PRIOR TO PURCHASING.

REFERENCES

A. ANSI B16.18 - CAST COPPER ALLOY SOLDER-JOINT PRESSURE FITTINGS.
B. ANSI B16.22 - WROUGHT COPPER AND COPPER ALLOY SOLDER JOINT PRESSURE FITTINGS.
C. ANSI B40.1 - GAUGES, PRESSURE AND VACUUM, INDICATING DIAL TYPE ELASTIC ELEMENT.
D. ASTM A167 - STAINLESS AND HEAT-RESISTING CHROMIUM - NICKEL STEEL PLATE.
E. ASTM A269 - STAINLESS AND WELDED AUSTENITIC STAINLESS STEEL TUBING FOR GENERAL SERVICE.
F. ASTM A403 - WROUGHT AUSTENITIC STAINLESS STEEL PIPING FITTINGS.
G. ASTM B32 - SOLDER METAL.
H. AWS A5.8 - BRAZING FILLER METAL.
I. CGA V-5 - DIAMETER INDEX SAFETY SYSTEM NON INTERCHANGEABLE LOW PRESSURE CONNECTIONS FOR MEDICAL GAS APPLICATIONS.
J. FM - FACTORY MUTUAL SYSTEM - APPROVAL GUIDE.
K. FS PPP-T-66 - TAPE, PACKAGING, VINYL PLASTIC FILM.
L. FS TT-P-645 - PRIMER, PAINT, ZINC CHROMATE, ALKYD TYPE.
M. FS W-C-596 - ELECTRICAL POWER CONNECTOR, PLUG, RECEPTACLE, AND CABLE OUTLET.
N. FS WW-V-35 - VALVE BALL.
O. FS WW-V-54 - VALVE, GATE, BRONZE (125, 150 AND 200 POUND, SCREWED, FLANGED, SOLDER END, FOR LAND USE).
P. MIL-R- 36557 - REGULATOR, PRESSURE, MEDICAL GAS ADMINISTRATION APPARATUS.
Q. MIL-STD-101 - COLOR CODE FOR PIPELINES AND FOR COMPRESSED GAS CYLINDERS.
R. MIL-V-82026 - VALVES, DIAPHRAGM, STOP.
S. MSS SP-58 - PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN AND MANUFACTURE.
T. MSS SP-69 - PIPE HANGERS AND SUPPORTS - SELECTION AND APPLICATION.
U. NEMA WD 1 - GENERAL-PURPOSE WIRING DEVICES.
V. NEMA WD 5 - SPECIFIC-PURPOSE WIRING DEVICES.
W. NFPA 50 - BULK OXYGEN SYSTEMS AT CONSUMER SITES.
Y. NFPA 99 - STANDARD FOR HEALTH CARE FACILITIES.
Z. UL - UNDERWRITER LABORATORIES, INC.

SUBMITTALS

A. SHOP DRAWINGS: INDICATE GENERAL ASSEMBLY OF COMPONENTS, MOUNTING AND INSTALLATION DETAILS, AND GENERAL LAYOUT
B. PRODUCT DATA: PROVIDE MANUFACTURERS LITERATURE AND ILLUSTRATIONS FOR ALL COMPONENTS INDICATING SIZE, DIMENSIONS AND CONFIGURATION.
C. INDEPENDENT TESTING AGENCY REPORTS: INDICATE SYSTEMS ARE COMPLETE INSTALLED, PRESSURE AND CROSS CONNECTIONS TESTS PERFORMED. DOCUMENT TESTS.
D. MANUFACTURER'S INSTALLATION INSTRUCTION: INDICATE REQUIREMENTS FOR EQUIPMENT AND SYSTEMS.

PROJECT RECORD DOCUMENTS

A. ACCURATELY RECORD ACTUAL LOCATIONS OF PIPING, VALVING, AND OUTLETS AND SUBMIT AS-BUILT DRAWINGS.

OPERATION AND MAINTENANCE DATA

B. OPERATION DATA: INCLUDE INSTALLATION INSTRUCTIONS, ASSEMBLY VIEWS, LUBRICATION INSTRUCTIONS, AND ASSEMBLY VIEWS.
C. MAINTENANCE DATA: INCLUDE MAINTENANCE AND INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY, AND SERVICE DEPOT LOCATION AND TELEPHONE.

QUALITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE WITH NFPA 99.
B. MAINTAIN TWO COPIES OF EACH DOCUMENT ON SITE.

QUALIFICATIONS

A. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.
B. INSTALLER: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

REGULATORY REQUIREMENTS

A. CONFORM TO APPLICABLE CODE FOR MEDICAL GAS SYSTEMS.
B. PROVIDE CERTIFICATE OF COMPLIANCE FROM AUTHORITY HAVE JURISDICTION INDICATING APPROVAL OF SYSTEMS.

DELIVERY, STORAGE, AND HANDLING

A. ACCEPT MATERIAL ON SITE IN FACTORY CONTAINERS AND PACKING. INSPECT FOR DAMAGE.
B. PROTECT FROM DAMAGE AND CONTAMINATION BY MAINTAINING FACTORY PACKAGING AND CAPS IN PLACE UNTIL INSTALLATION.

SCHEDULING

B. SCHEDULE WORK TO ENSURE EQUIPMENT IS INSTALLED AND SYSTEMS TESTED AND CERTIFIED PRIOR TO SUBSTANTIAL COMPLETION.

WARRANTY

A. PROVIDE FIVE YEAR WARRANTY.
B. WARRANTY: INCLUDE COVERAGE FOR MEDICAL GAS SYSTEM INSTALLATION.

PIPE AND FITTINGS

A. PREPARATION: WASH INSIDE OF COPPER PIPE AND COPPER FITTING WITH HOT SOLUTION OF SODIUM CARBONATE OR TRISODIUM PHOSPHATE MIXED ONE POUND TO 3 GALLONS OF WATER RINSE WITH WATER, AND BLOW DRY WITH OIL-FREE DRY NITROGEN OR COMPRESSED AIR.
B. OXYGEN AND MEDICAL AIR ABOVEGROUND:
  1. COPPER TUBE: ASTM B 88, TYPE K, HARD DRAWN.
  2. FITTINGS: ANSI B16.18, CAST BRONZE, OR ANSI B16.22, WROUGHT COPPER.
  3. JOINTS: AWS A5.8, BCUP SILVER BRAZE.
C. VACUUM ABOVEGROUND:
  1. COPPER TUBE: ASTM B88, TYPE L, HARD DRAWN.
  2. FITTINGS: ANSI B16.18, CAST BRONZE, OR ANSI B16.22, WROUGHT COPPER.
  3. JOINTS: AWS A5.8, BCUP SILVER BRAZE.

PIPING

A. HANGERS AND SUPPORTS: MSS SP-58 WITH TYPES AS REQUIRED BY MSS SP-69.
B. PRESSURE GAGES: ANSI B40.1, WHITE DIALS AND BLACK LETTERING WITH RESTRICTOR. GAGES FOR OXYGEN AND SYSTEMS: MANUFACTURED AND LABELED EXPRESSLY FOR INTENDED SERVICE AND UL LABELED.
C. STAINLESS STEEL OR BRONZE OR REINFORCED TFE BELLOWS OR HOSE.

MED GAS ISOLATION LOCKING VALVES WITH EXTENSIONS

A. ALL AREA AND MAIN LINE ISOLATION VALVES SHALL BE OHIO MEDICAL SERIES (BASIS OF DESIGN). VALVES SHALL BE LOCKING PT# 261600-05 & 261600-07.
B. THE VALVES SHALL BE OXYGEN CLEANED, FULL PORT, THREE PIECE BALL TYPE WITH FLANGES TO ALLOW EASY SERVICE AND INSTALLATION. THE VALVE SHALL HAVE A BRONZE BODY, AND A BLOW-OUT PROOF STEM. THE VALVE BALL SHALL BE BRONZE CHROME PLATEDM AND THE SEATS AND PACKING SHALL BE TEFLON (PTFE). THE VALVE SHALL HAVE A PRESSURE RATING OF 600 PSIG AND BY HYDROSTATICALLY TESTED.
C. TYPE “K” COPPER PIPE EXTENSIONS THAT ARE CLEANED FOR MEDICAL GAS SERVICE SHALL BE FITTED INTO EACH SIDE OF THE VALVE. TWO GAUGE PORTS SHALL BE DRILLED INTO PIPE EXTENSIONS FOR THE PURPOSE OF INSERTING A GAUGE IF REQUIRED. THE VALVE ASSEMBLY SHALL BE PLUGGED OR CAPPED AND SEALED IN A PLASTIC BAG TO PREVENT CONTAMINATION.
D. EACH VALVE SHALL HAVE A BRACKET USED TO IDENTIFY THE GAS BEING HANDLED BY MEANS OF A GAS SPECIFIC LABEL.
E. A LEVER STYLE HANDLE SHALL BE USED TO OPERATE THE VALVE. THE VALVE SHALL BE CHANGED FROM FULLY OPEN TO FULLY CLOSED THROUGH A QUARTER TURN OF THE HANDLE.

EXECUTION

INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NFPA 99.
B. PRE-INSTALLATION CLEANING: DISASSEMBLE POSITIVE PRESSURE GAS SYSTEMS PIPE, FITTINGS, VALVES, AND COMPONENTS, EXCEPT THOSE SUPPLIED CLEANED AND PREPARED FOR INTENDED SERVICE, AND THOROUGHLY WASH IN HOT SOLUTION OF SODIUM CARBONATE OR TRISODIUM PHOSPHATE MIXED ONE POUND TO 3 GALLONS OF WATER. AFTER WASHING, RINSE WITH WATER, DRY AND CAP UNTIL INSTALLATION.
C. BRAZE JOINTS IN PIPE AND TUBING. AVOID LEAVING EXCESS FLUX INSIDE OF PIPE AND FITTINGS. DURING BRAZING OF PIPE CONNECTIONS, PURGE INTERIOR OF PIPE CONTINUOUSLY WITH NITROGEN.
D. EFFECT CHANGES IN SIZE WITH REDUCING FITTINGS. MAKE CHANGES IN DIRECTION OF REQUIRED TURNS OR OFFSETS WITH FITTINGS OR TUBING SHAPED BY BENDING TOOLS. BENDS SHALL BE FREE OF FLATTENING, BUCKLING OR THINNING OF TUBE WALL.
E. CUT PIPE AND TUBING ACCURATELY AND INSTALL WITHOUT SPRINGING OR FORCING.
F. INSTALL EXPOSED OXYGEN PIPING IN WALL-MOUNTED SHEET STEEL RACEWAYS AND JUNCTION BOXES.
G. GRADE PIPING DOWN IN DIRECTION OF FLOW.
H. PROVIDE PIPE SLEEVES WHERE PIPES AND TUBING PASS THROUGH WALLS, FLOORS, ROOFS, AND PARTITIONS. FINISH FLUSH AT BOTH ENDS. EXTEND 2 INCHES ABOVE FINISHED FLOORS. PACK SPACE BETWEEN PIPE OR TUBING AND SLEEVE, AND CALK.
I. IDENTIFY PIPING IN ACCORDANCE WITH MIL-STD 101, WITH TAPE AND DECALS TO FS PPP-TP 66. PROVIDE PIPING IDENTIFICATION AND CODE AND SCHEMATIC. REFER TO SECTION 15190. LABELLING SHALL APPEAR ON PIPE AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY PIPELINE.
J. SUPPORT GAS PIPING WITH PIPE HOOKS OR HANGERS SUITABLE FOR SIZE OF PIPE, SPACED:
  1. 1/2 INCH PIPE OR TUBING: 72 INCHES.
  2. 3/4 INCH OR ONE INCH PIPE OR TUBING: 96 INCHES.
  3. 1-1/4 INCHES OR LARGER (HORIZONTAL): 120 INCHES.
  4. 1-1/4 INCHES OR LARGER (VERTICAL): EVERY FLOOR LEVEL.

  NOTE: ALL HANGER AND SUPPORTS IN MRI AREA (IF APPLICABLE) TO BE OF NON-FERROUS MATERIAL TYPE

PIPING SYSTEMS CLEANING AND PRESSURE TESTING

PRESSURE TEST ALL MEDICAL GAS PIPING PRIOR TO ERECTING WALLS (CLOSING IN). FINAL MEDICAL GAS CLEANING AND CERTIFICATION WILL BE PERFORMED AT TIME OF SYSTEM ACTIVATION.

A. AFTER ERECTION OF PIPE AND TUBING BUT PRIOR TO INSTALLATION OF SERVICE OUTLET VALVES, BLOW SYSTEMS CLEAR OF FREE MOISTURE AND FOREIGN MATTER WITH NITROGEN GAS.
B. INSTALL SERVICE OUTLET VALVES, SUBJECT SYSTEM TO TEST PRESSURE OF 150 PSIG WITH NITROGEN OR DRY COMPRESSED AIR. CHECK WITH SOAPY WATER. PROVIDE 24-HOUR STANDING PRESSURE TEST.
C. CONTRACTOR TESTING

  THE CONTRACTOR SHOULD PERFORM THE FOLLOWING ACCEPTANCE TESTING:
  1. BLOW THE PIPELINE CLEAR OF ANY DEBRIS BEFORE INSTALLING THE OUTLET ROUGH-INS.
  2. TEST ALL PIPE JOINTS AT 150 PSI FOR PRESSURE GASES AND AT 60 PSI FOR VACUUM WITH OUTLET ROUGH-INS INSTALLED, BUT BEFORE INSTALLATION OF OTHER EQUIPMENT, WITH AN APPROVED LEAK-TEST SOLUTION.
  3. AFTER THE INSTALLATION OF ALL COMPONENTS, TEST THE PIPELINE FOR 24 HOURS AT 20% ABOVE NORMAL LINE PRESSURE.
  4. VISUALLY TEST FOR CLEANLINESS BY PURGING THE OUTLET WITH A GELMAN .45 MICRON FILTER OR A WHITE CLOTH.
  5. CHECK FOR CROSS CONNECTIONS.
D. SAFETY CODES FOR OXYGEN LINES AND OTHER MEDICAL GASES REQUIRE TYPE L COPPER TUBE. SPECIAL CLEANLINESS REQUIREMENTS ARE NECESSARY BECAUSE OXYGEN UNDER PRESSURE MAY CAUSE SPONTANEOUS COMBUSTION OF SOME ORGANIC OILS. COPPER TUBE FOR OXYGEN LINES IS FURNISHED SUITABLY CLEANED AND CAPPED OR PLUGGED BY THE MANUFACTURERS. CARE MUST BE TAKEN TO PREVENT CONTAMINATION OF THE SYSTEM WHEN THE CAPS OR PLUGS ARE REMOVED AND THE TUBE IS INSTALLED. THE INSTALLER MUST SATISFY HIMSELF AND THE INSPECTION DEPARTMENT THAT THE CLEANLINESS REQUIREMENTS OF THE CODE HAVE BEEN MET (NFPA 99, "HEALTH CARE FACILITIES," CHAPTER 4-4.1.4.1, INSTALLATION AND TESTING OF PIPING SYSTEMS").
F. ALL SYSTEM CLEANING AND TESTING SHALL BE DONE IN ACCORDANCE WITH HOSPITAL STANDARDS. COORDINATE THIS WORK WITH HOSPITAL SAFETY DIRECTOR.

CROSS-CONNECTION TESTS

A. INDEPENDENT TESTING AGENCY TO CERTIFY SYSTEM IS COMPLETE, ZONE VALVE INSTALLED, ALARM SYSTEMS FUNCTIONAL, AND TEST PERFORMED. DOCUMENT TESTS AND SUBMIT.
B. REDUCE PRESSURE IN PIPING SYSTEMS OTHER THAN SYSTEM UNDER INVESTIGATION TO ATMOSPHERIC.
C. TEST SYSTEM WITH DRY COMPRESSED AIR OR DRY NITROGEN WITH TEST PRESSURE IN PIPING SYSTEM AT 50 PSIG.
D. CHECK EACH STATION OUTLET OF EVERY PIPING SYSTEM TO DETERMINE TEST GAS IS DISPENSED ONLY FROM OUTLET OF SYSTEM UNDER INVESTIGATION. MEASURE PRESSURE WITH GAGE ATTACHED TO SPECIFIC ADAPTOR. DO NOT USE UNIVERSAL ADAPTORS.
E. DISCONNECT TEST GAS AND CONNECT PROPER GAS TO EACH SYSTEM. PURGE ENTIRE SYSTEM TO REMOVE TEST GAS. CHECK WITH ANALYZER SUITABLE FOR GAS INSTALLED.

PLUMBING LEGEND

SYMBOL	DESCRIPTION
— SAN —	SOIL OR WASTE PIPE - SANITARY
— — —	VENT PIPE
— · —	COLD WATER SUPPLY
— · · —	HOT WATER SUPPLY
— · · · —	HOT WATER RECIRC.
— OD —	OVERFLOW DRAIN
	BALL VALVE
	BALL VALVE ON RISER
	CAPPED/ PLUGGED CONNECTION
C.O.	CLEAN-OUT (EXPOSED)
C.O.	CLEAN-OUT (IN FLOOR)
OR	"P" TRAP

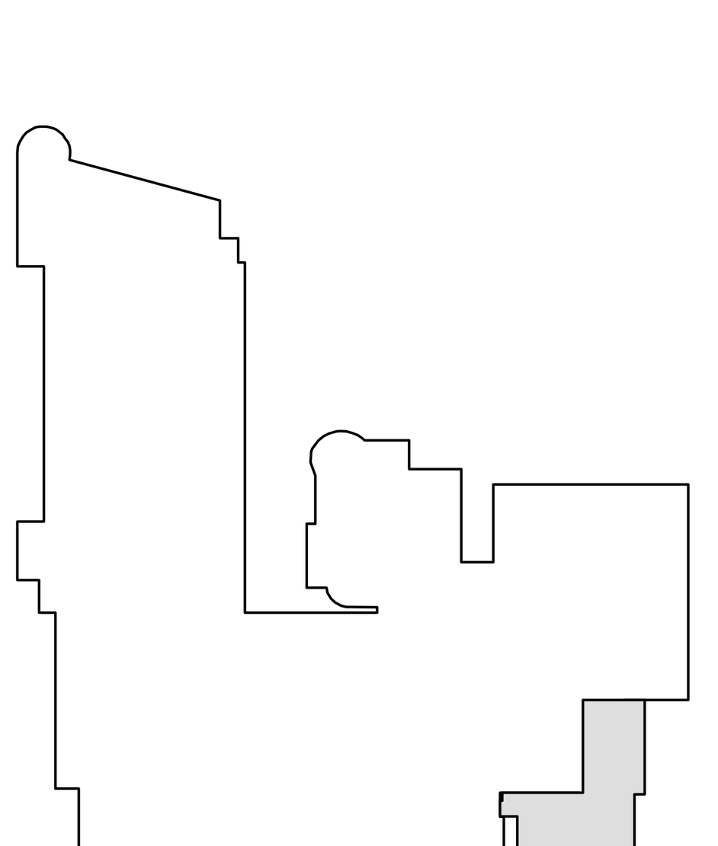
COORDINATION NOTE:

COORDINATION - IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION CONTRACTORS UNDER DIRECTION OF THE CONSTRUCTION MANAGER TO COORDINATE THEIR WORK. THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE ARCHITECT PRIOR TO STARTING ANY WORK. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ELECTRICAL EQUIPMENT. SPECIAL ATTENTION IS CALLED TO ARTICLE 110-26 (E) OF THE NATIONAL ELECTRICAL CODE. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6FT. ABOVE THE EQUIPMENT OR TO STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE. THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT.

HIGHLAND ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center, 102 Highland Avenue, Clarks Summit, PA 18411
(570) 586-4334 fax(570) 586-5990 www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

AREA OF WORK NEW MODULAR

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

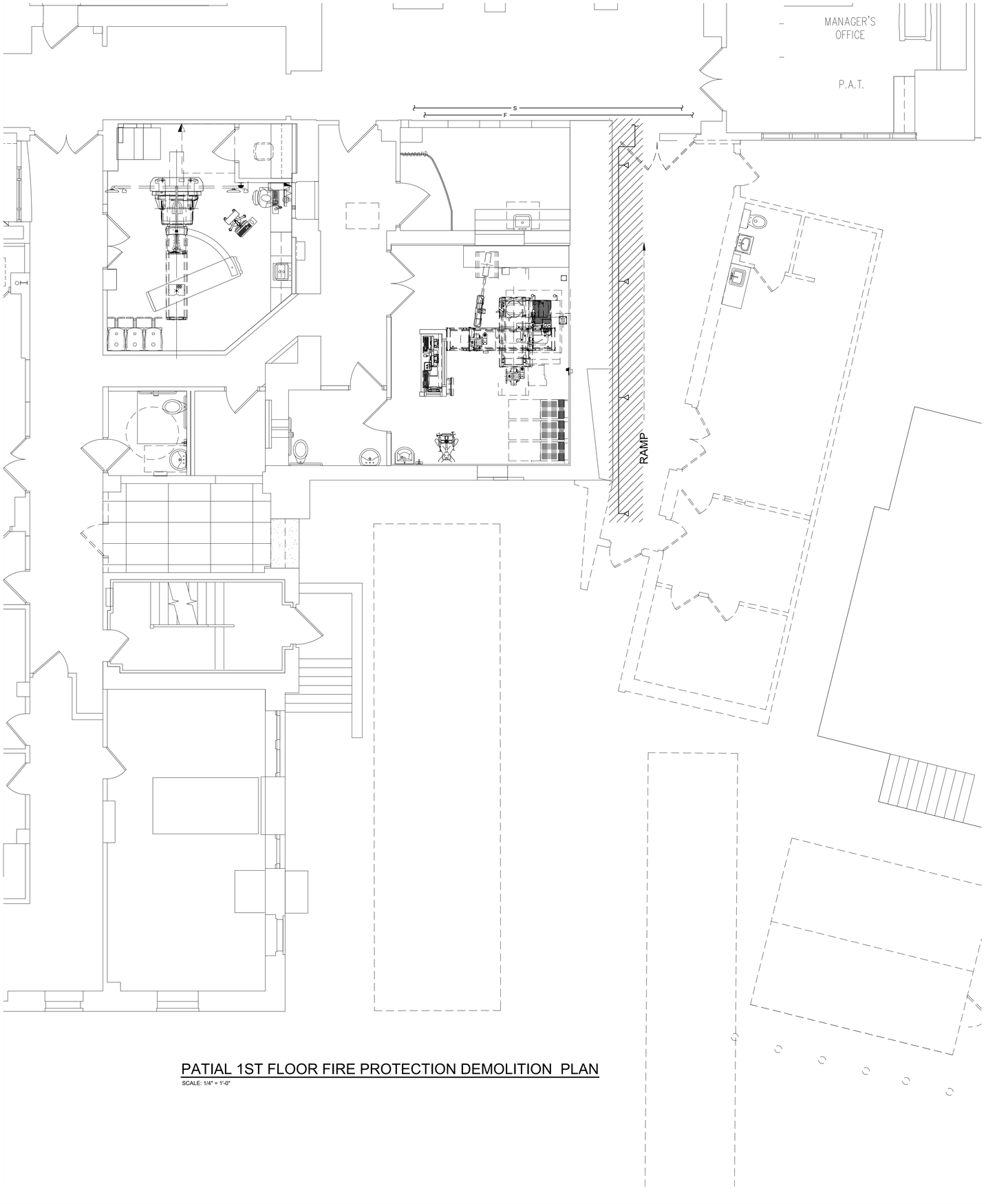
SEALS:

DRAWING TITLE:
PLUMBING LEGEND / SPECIFICATIONS

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE: 07-21-2023	PROJECT NO: 2021-069P

DRAWING NO:
P-2.1

CAD FILE: 1069- P-2.1.DWG PLOT DATE: 7/17/2023



PATIAL 1ST FLOOR FIRE PROTECTION DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

DEMOLITION NOTES:

1. //// INDICATES EXISTING SPRINKLER HEADS, PIPING, VALVES ETC. TO BE REMOVED, CUT AND CAP LINES //// AT MAIN, IN WALLS, BELOW FLOORS AND/OR ABOVE CEILING AS REQUIRED AND OUT OF WAY OF NEW CONSTRUCTION UNLESS OTHERWISE NOTED.
2. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS.
3. REPAIR AND/OR REPLACE EXISTING ITEMS WHICH BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE REPAIRS, REPLACEMENTS AND MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITION AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.
4. PATCH AND REPAIR ALL SURFACES DISTURBED, CUT OR DAMAGED BY ALTERATIONS OR DEMOLITION WORK AND AS NECESSARY TO PREPARE SURFACES FOR NEW MATERIALS AND ARRANGEMENTS.
5. INFORMATION PERTAINING TO EXISTING STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN OBTAINED FROM AVAILABLE RECORDS PROVIDED BY FACILITIES DEPARTMENT OR WHEN POSSIBLE BY SURVEY. THEREFORE THE LOCATIONS SHOWN ARE CONSIDERED APPROXIMATE. FIELD VERIFICATION MUST BE DONE AND OTHER SUCH WORK MAY EXIST, DUE TO LOCATION, SIZE, ETC., NOT PRESENTLY KNOWN.
6. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (ELECTRICITY, ETC) THE CONTRACTOR SHALL ARRANGE WITH THE OWNER TO LOCATE PANEL BOXES AND OTHER CONTROL ELEMENTS SO THAT DAMAGE AND OTHER POTENTIALLY INCONVENIENT OR DANGEROUS SITUATIONS ARE AVOIDED.
7. ALL ACTIVE PIPING, THAT CONTINUES TO OTHER AREAS NOT IN SCOPE OF WORK ARE TO REMAIN ACTIVE & IN PLACE, IF REQUIRED RELOCATE EXISTING VALVE, RUN NEW SUPPLY LINES IN NEW WALLS, ABOVE CEILINGS, BELOW FLOOR OR IN COLUMN CHASES.
8. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL WORK WITH THE OWNER DURING THE DEMOLITION AND PHASING PROCESS OF CONSTRUCTION. IF DEMOLITION OF PARTICULAR ITEMS WILL AFFECT THE OPERATION OF OTHERS PARTS OF THE FACILITY OUTSIDE THE CONSTRUCTION PHASE, TEMPORARY PROVISIONS SHALL BE MADE TO KEEP THOSE AREAS UP AND RUNNING.
9. THESE DRAWINGS DO NOT SHOW RELOCATION OR REROUTING OF EXISTING PIPING FOR WALLS OR CHASES THAT ARE BEING REMOVED. REROUTING AND RELOCATION OF EXISTING PIPING WILL BE SHOWN ON THE RENOVATION DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS PRICING ADDITIONAL DEMO THAT IS NOT SHOWN ON THESE DRAWINGS DUE TO UNFORESEEN CIRCUMSTANCES.
10. THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL CONCERNING FIRE SPRINKLER SYSTEM SHUTDOWN PLANS, PROCEDURES, AND FIRE WATCH PLANS THAT WILL BE IMPLEMENTED FOR SYSTEM INTERRUPTIONS DURING DEMOLITION AND CONSTRUCTION PHASES OF THE PROJECT.

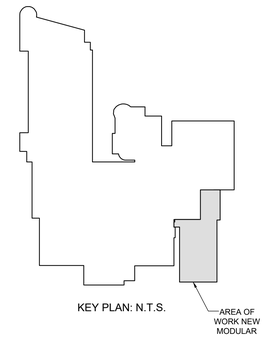
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Montefiore Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

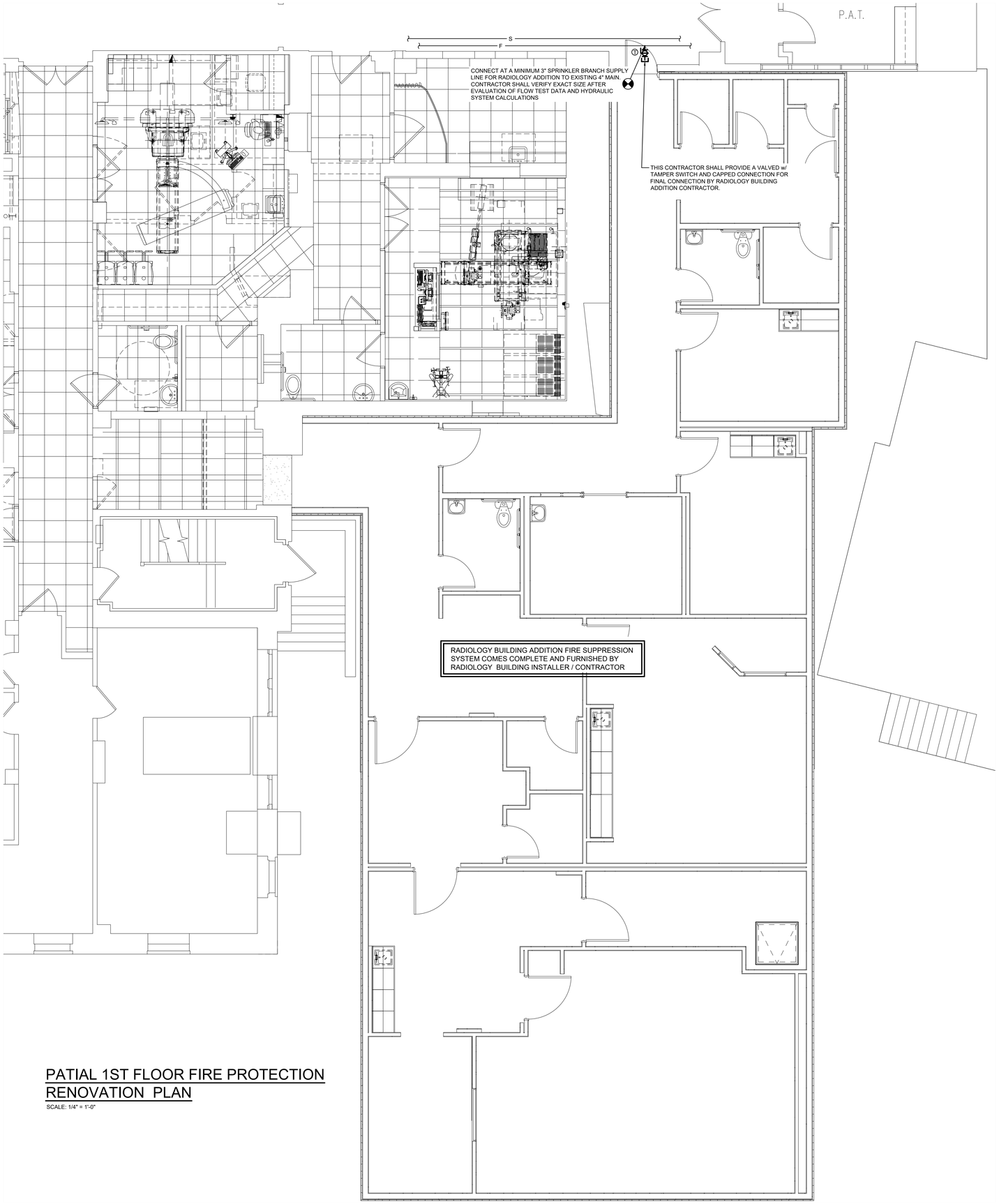
PARTIAL 1ST. FLOOR FIRE PROTECTION DEMOLITION PLAN

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

FD-1.1

CAD FILE: 1069-FD-1.1.DWG PLOT DATE: 7/17/2023



PATIAL 1ST FLOOR FIRE PROTECTION RENOVATION PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THE CONTRACTOR WILL BE HELD RESPONSIBLE TO HAVE VISITED AND EXAMINED THE PREMISES BEFORE SUBMITTING HIS PROPOSAL, IN ORDER TO UNDERSTAND THE EXISTING CONDITIONS RELATED TO HIS WORK.
2. ALL MATERIALS AND APPARATUS SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE RULES AND REGULATIONS OF NFPA, FACTORY MUTUAL STANDARDS AND THE 2020 PLUMBING CODE OF NEW YORK STATE WITH INTERNATIONAL STANDARD PLUMBING CODE WITH AMENDMENTS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. PROCUREMENT OF ALL PERMITS AND CERTIFICATES FOR THE INSTALLATION OF THESE SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH ALL THE RULES AND REGULATIONS OF THE NATIONAL FIRE CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
4. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES AND ALL EXISTING CONDITIONS AND PROVIDE OFFSETS IN PIPING SYSTEM TO AVOID STRUCTURAL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL INTERFERENCES, WHETHER INDICATED OR NOT AT NO ADDITIONAL COST.
5. CONNECTION TO EXISTING SERVICES SHALL BE PERFORMED DURING REGULAR HOURS OR AS DIRECTED BY THE OWNER. CONNECTION OF NEW WORK TO EXISTING WORK SHALL BE PERFORMED IN A NEAT AND APPROVED MANNER, RESTORING EXISTING WORK DISTURBED TO ORIGINAL CONDITION.
6. EXACT PIPING LOCATIONS TO BE VERIFIED IN FIELD.
7. EXISTING PIPING DAMAGED AS A RESULT OF PERFORMING THE WORK OF THIS CONTRACT SHALL BE REPAIRED OR REPLACED AS REQUIRED WITH MATERIAL AND FINISH TO MATCH EXISTING.
8. NO PIPING SHALL BE RUN IN SPACES SUBJECT TO FREEZING. THIS CONTRACTOR MUST COORDINATE WITH THE G.C. AS TO LOCATION OF PIPE RUNS TO ENSURE ALL PIPING WILL BE PROTECTED AGAINST FREEZING.
9. THIS CONTRACTOR WILL BE RESPONSIBLE FOR FIELD ROUTING AND COORDINATION AS NECESSARY TO FIT PIPING. THIS INCLUDES COORDINATION w/ ALL OTHER TRADES AND ALL NECESSARY PIPING, OFFSETS, HANGERS/SUPPORTS, DRILLING, CUTTING PATCHING, ETC.
10. THESE DRAWINGS ARE A DIAGRAMMATIC SCHEMATIC INDICATING THE INTENT OF THE INSTALLATION. ACTUAL FIELD ROUTING MAY DIFFER FROM WHAT IS INDICATED. THIS CONTRACTOR SHALL INCLUDE IN BIDDING ALL NECESSARY COMPONENTS, DESIGN, INSTALLATION AND COORDINATION FOR A COMPLETE AND FULLY OPERATIONAL FACILITY.

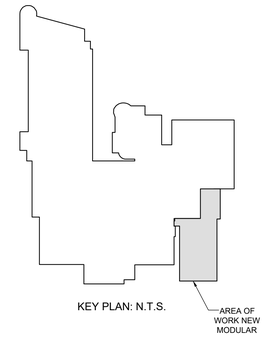
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Montefiore Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

PARTIAL 1ST. FLOOR FIRE PROTECTION RENOVATION PLAN

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

F-1.1

CAD FILE: 108-F-1.1.DWG PLOT DATE: 7/17/2023

FIRE PROTECTION SPECIFICATIONS

GENERAL

PERFORM ALL WORK IN ACCORDANCE WITH THE OWNER'S INSURANCE UNDERWRITER, THE NEW YORK CODES, LOCAL AND COUNTY FIRE MARSHAL LOCAL CITY CODES, O.S.H.A. AND N.F.P.A. CODES, AND ANY OTHER AUTHORITIES HAVING JURISDICTION. PROVIDE OWNER WITH WITH CERTIFICATES OF INSPECTION.

THIS CONTRACTOR SHALL COORDINATE G.C. AND MAKE G.C. AWARE OF ALL NECESSARY CUTTING AND PATCHING. G.C. WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING.

THESE DRAWINGS INDICATE THE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS. FOR EXACT LOCATIONS, HEIGHT, DOOR SWINGS, MOUNTING HEIGHTS, ETC. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS.

PRIOR TO STARTING ANY WORK, PURCHASE OF EQUIPMENT, ETC. COORDINATE THE WORK WITH OTHER TRADES. CONFER WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION AND ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT OF OTHERS, WITH THE BUILDING CONSTRUCTION AND WITH ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE. IN THE EVENT THERE IS A CONFLICT IN COORDINATION BETWEEN TRADES, THE OWNER WILL RESOLVE IT.

BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL EFFECT THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH EXAMINATION BEEN MADE.

ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE INSTALLATION AND ANY PORTIONS OF THE WORK WHICH DEVELOP DEFECTS DURING THAT TIME SHALL BE REPLACED OR REPAIRED IN A MANNER SATISFACTORY TO THE OWNER.

PREPARE AND FURNISH TO THE OWNER "AS-BUILT" PLANS FOR ALL WORK INSTALLED.

SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW COMMENTS BEFORE FABRICATION OF THE WORK IS STARTED.

ALL PARTS OF THE WORK AND ASSOCIATED EQUIPMENT SHALL BE TESTED AND ADJUSTED TO WORK PROPERLY AND BE LEFT IN PERFECT OPERATING CONDITION.

THIS CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR THE COMPLETION OF THIS WORK.

REQUIREMENTS

ALL DRAWINGS AND PORTIONS OF THE DRAWINGS, ALL FLOOR PLANS, RISERS, DETAILS, SCHEMATICS AND SPECIFICATIONS INDICATED SHALL APPLY AND ARE PART OF THE PLUMBING CONTRACT.

ANY DISCREPANCY OR CONFLICT NOTED BETWEEN OR WITHIN THE ABOVE REFERENCED DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER, IN WRITING, A MINIMUM OF THREE (3) DAYS PRIOR TO SUBMITTAL OF BIDS. THE ARCHITECT/ENGINEER SHALL RESOLVE ISSUES PRIOR TO BID SUBMITTAL.

THIS CONTRACTOR SHALL CAREFULLY READ THE ABOVE MENTIONED DOCUMENTS AND STUDY THE DRAWINGS OF ALL TRADES. HE SHALL BE RESPONSIBLE FOR NEGLECT TO READ, OR ATTEND TO, ANY PARAGRAPH OR ITEMS CONTAINED THEREIN. FAILURE TO BRING ANY CONFLICTS OR DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT/ENGINEER, IN WRITING, PRIOR TO BID SUBMITTAL SHALL NOT CONSTITUTE GROUNDS FOR EXTRAS AND/OR CHANGE ORDERS. COSTS RESULTANT FROM THIS FAILURE SHALL BE BORNE BY THIS CONTRACTOR.

THIS SECTION APPLIES TO ALL PLUMBING CONTRACT DRAWINGS AND DOCUMENTS.

BASIC MATERIALS AND METHODS

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE WELDING PROCEDURES OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU, OR OTHER APPROVED PROCEDURE, CONFORMING TO THE REQUIREMENTS OF ASME BOILER AND PRESSURE VESSEL CODE AND THE ANSI CODE FOR PRESSURE PIPING. ALL WELDERS SHALL BE CERTIFIED.

PIPING

STEEL PIPE: ASTM A53 OR A795; SCHEDULE 40, SEAMLESS OR ERW, GRADE A OR B, BLACK

1. STEEL FITTINGS (WELDED FOR 2½" AND ABOVE): ANSI/ASME B16.11, ASTM A234 FORGED STEEL SOCKET WELDED.
2. MECHANICAL GROOVED FITTINGS AND COUPLINGS (2½" AND ABOVE): VICTAULIC ROLL GROOVE TYPE, UL LISTED AND FM APPROVED FOR FIRE PROTECTION.
3. MALLEABLE IRON FITTINGS (THREADED FOR 2" AND BELOW): ANSI/ASME B16.3, ASTM A197, CLASS 150 THREADED FITTINGS.

WALL THICKNESSES LESS THAN SCHEDULE 40 WILL NOT BE PERMITTED.

CUT GROOVED OR THREADED THINWALL PIPE WILL NOT BE PERMITTED.

PLAIN END PIPE, FITTINGS WITH LOCKING LUGS OR SHEAR BOLTS WILL NOT BE PERMITTED.

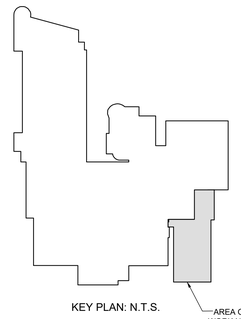
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

FIRE PROTECTION SPECIFICATIONS

DRAWN BY:	CHECKED BY:
CP	A.J.L.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

F-2.1

CAD FILE: 1069-F-2.1.DWG PLOT DATE: 7/17/2023

ELECTRICAL SYMBOL LEGEND

- FIXTURE TYPE (INDICATION)
- LIGHTING FIXTURE SYMBOL WITH CEILING OUTLET BOX. SHADING INDICATES FIXTURE TO BE ON EMERG. OR NIGHT LIGHTING CIRCUIT
- WALL MOUNTED LIGHT FIXTURE. SHADING INDICATES FIXTURE TO BE ON EMERGENCY OR NIGHT LIGHTING CIRCUIT.
- CEILING MOUNTED LIGHT FIXTURE. (RECESSED OR SURFACE)
- CEILING MOUNTED LIGHT FIXTURE. (RECESSED OR SURFACE) FIXTURE ON EMERGENCY OR NIGHT LIGHTING CIRCUIT.
- WALL MOUNTED LIGHT FIXTURE.
- CEILING MOUNTED EXIT SIGN (SHADED QUADRANT INDICATES FACE). DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS
- WALL MOUNTED ILLUMINATED EXIT SIGN (SHADED QUADRANT INDICATES FACE). DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS
- BATTERY OPERATED EMERGENCY LIGHTING UNIT, NUMBER OF HEADS AS INDICATED ON FLOOR PLANS
- REMOTE HEAD FOR BATTERY OPERATED EMERGENCY LIGHTING UNIT
- DUAL REMOTE HEAD FOR BATTERY OPERATED EMERGENCY LIGHTING UNIT
- S — WALL OUTLET BOX AND SINGLE POLE SWITCH - 20 AMP
- S_3 — WALL OUTLET BOX AND THREE-WAY SWITCH (20 AMP)
- S_4 — WALL OUTLET BOX AND FOUR-WAY SWITCH (20 AMP)
- S_K — WALL OUTLET BOX SINGLE POLE KEY SWITCH (20 AMP)
- S^3_K — WALL OUTLET BOX AND THREE-WAY KEY SWITCH (20 AMP)
- S_D — WALL OUTLET BOX AND DIMMER SWITCH (AS NOTED)
- S_{D3} — WALL OUTLET BOX AND THREE-WAY DIMMER SWITCH (AS NOTED)
- OS — OCCUPANCY SENSOR
- (OS) — CEILING MOUNTED OCCUPANCY SENSOR (NO. INDICATES TYPE)
- COMBINATION TELE-DATA WALL OUTLET BOX AND BLANK PLATE WITH MINIMUM 1" C. TO ABOVE ACCESSIBLE FINISHED CEILING (PROVIDE PULL CORD AND END BUSHING) MOUNTED AT 18" AFF TO ℄ (UNLESS OTHERWISE NOTED)
- TV — COMBINATION TELE-DATA WALL OUTLET BOX AND BLANK PLATE WITH MINIMUM 1" C. TO ACCESSIBLE FINISHED CEILING (PROVIDE PULL CORD AND END BUSHING) MOUNTED AT 72" AFF TO ℄ (UNLESS OTHERWISE NOTED)
- (S) — CEILING MOUNTED SMOKE DETECTOR (LETTER 'A' DENOTES AUXILIARY CONTACTS)
- (H) — CEILING MOUNTED HEAT DETECTOR
- D_S — DUCT DETECTOR - SUPPLY DUCT
- D_R — DUCT DETECTOR - RETURN DUCT
- DH — DOOR HOLD OPEN DEVICE (ELECTRO-MAGNETIC RELEASE)
- F — WALL MOUNTED ADA COMPLIANT FLUSH MANUAL PULL STATION (MOUNT BOTTOM @ 42" AFF)
- AV — WALL MOUNTED ADA COMPLIANT AUDIO/VISUAL UNIT (MOUNT BOTTOM 80" AFF)
- V — WALL MOUNTED ADA COMPLIANT VISUAL ONLY UNIT (MOUNT BOTTOM 80" AFF)
- EPO — EMERGENCY POWER "OFF" BUTTON
- BR — CONTROLLED ACCESS SYSTEM BADGE READER WITH ℄C. TO POWER SOURCE.
- DS — DOOR STATUS SWITCH
- ES — ELECTRIC DOOR STRIKE
- RTE — REQUEST TO EXIT
- HS — HAND SWIPE CONTROLLER
- CAMERA
- WALL OUTLET BOX AND 20 AMP G.F.I. (HOSPITAL GRADE)
- WALL OUTLET BOX AND 20 AMP DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER BACKSPLASH (HOSPITAL GRADE)
- GFI — WALL OUTLET BOX AND 20 AMP G.F.I. RECEPTACLE (HOSPITAL GRADE)
- WP — WALL OUTLET BOX AND 20 AMP DUPLEX RECEPTACLE WEATHERPROOF COVER WEATHERPROOF COVER (HOSPITAL GRADE)
- WALL OUTLET BOX AND TWO GANG WALL OUTLET BOX AND TWO 20 AMP DUPLEX RECEPTACLES (HOSPITAL GRADE)
- WALL OUTLET BOX AND 20 AMP DUPLEX RECEPTACLE (HOSPITAL GRADE) CONNECTED TO EMERGENCY SYSTEM (RED DEVICE AND COVERPLATE)
- WALL OUTLET BOX AND TWO 20 AMP DUPLEX RECEPTACLES (HOSPITAL GRADE) CONNECTED TO EMERGENCY SYSTEM (RED DEVICE AND COVERPLATE)
- WALL OUTLET BOX AND 20 AMP SINGLE RECEPTACLE (HOSPITAL GRADE)
- WALL OUTLET BOX AND SPECIAL PURPOSE RECEPTACLE
- T — TRANSFORMER
- M — MOTOR CONNECTION
- S^{MP} — MANUAL MOTOR STARTER SWITCH WITH PILOT LIGHT AND OVERLOADS (UNLESS OTHERWISE NOTED)
- UNFUSED DISCONNECT SWITCH. SIZE AS NOTED
- FUSED DISCONNECT SWITCH, SIZE AS NOTED
- COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR CONTROLLER, SIZE AS NOTED
- MAGNETIC MOTOR STARTER OR CONTACTOR, AS NOTED
- M — MOTORIZED DAMPER LOCATION (FURNISHED UNDER DIVISION 15)
- WALL OUTLET BOX AND 15 AMP CLOCK RECEPTACLE (STAINLESS STEEL)
- XXX / XX — MECHANICAL EQUIPMENT TAG - SEE MECHANICAL DRAWINGS FOR DESCRIPTION
- FLUSH WALL JUNCTION BOX OR JUNCTION BOX ABOVE CEILING
- TC — TIME CLOCK
- HOMERUN TO PANEL
- S^M — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOADS (UNLESS OTHERWISE NOTED)
- 208/120V BRANCH CIRCUIT PANELBOARD-SURFACE MOUNTED
- 480/277V BRANCH CIRCUIT PANELBOARD-SURFACE MOUNTED
- NCM — NURSE CALL MASTER STATION
- CB — NURSE CALL CODE BLUE STATION
- NP — NURSE CALL PATIENT STATION - PILLOW SPEAKER WITH NURSE CALL, TV CONTROL AND AMBIENT AND READING LIGHT CONTROL
- NM — NURSE CALL MASTER STATION
- ND — NURSE CALL DUTY/STAFF STATION
- B — NURSE CALL BATHROOM STATION
- WP B — NURSE CALL SHOWER STATION
- NURSE CALL DOME LIGHT
- Z — NURSE CALL ZONE LIGHT

COORDINATION NOTE:

COORDINATION - IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION CONTRACTORS UNDER DIRECTION OF THE CONSTRUCTION MANAGER TO COORDINATE THEIR WORK. THE HVAC CONTRACTOR SHALL TAKE THE LEAD IN THE COORDINATION EFFORT AND PRODUCE THE COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE ARCHITECT PRIOR TO STARTING ANY WORK. THE PURPOSE OF THESE DRAWINGS IS TO COORDINATE THE LOCATIONS OF ALL PIPING, DUCTWORK, AND ELECTRICAL EQUIPMENT. SPECIAL ATTENTION IS CALLED TO ARTICLE 110-26 (F) OF THE NATIONAL ELECTRIC CODE. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6FT. ABOVE THE EQUIPMENT OR TO STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE. THIS COORDINATION IS REQUIRED FOR ALL PHASES OF THIS PROJECT.

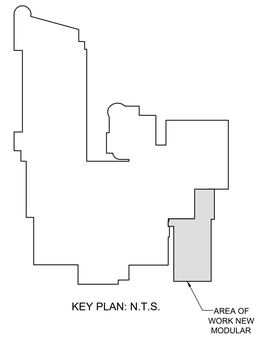
GENERAL ELECTRICAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH THE DISCONNECTION, REMOVAL, RELOCATION, DISPOSAL, TEMPORARY CONNECTIONS, ETC.. OF ALL EXISTING ELECTRICAL SYSTEMS.
2. CONTRACTOR SHALL PROVIDE SAFETY BARRIERS AND MAINTAIN APPROVED DANGER, WARNING, AND "KEEP OUT" SIGNS AT LOCATIONS WHERE THE PLACING OF SUCH SIGNS IS WARRANTED FOR SAFETY OF ALL PERSONNEL NOT WORKING IN THE PROJECT AREA.
3. PERFORM DEMOLITION IN SUCH A MANNER AS TO AVOID HAZARDS TO PERSONS AND PROPERTY, INTERFERENCE WITH THE USE OF ADJACENT AREA'S AND INTERRUPTION OF FREE PASSAGE TO AND FROM SUCH AREAS. PERFORM ALL WORK IN ACCORDANCE WITH ALL MUNICIPAL, STATE, AND FEDERAL RULES, REGULATIONS, CODES, AND LAWS WHICH MAY GOVERN AND APPLY TO THIS WORK.
4. MAINTAIN CONTINUOUS SERVICE ON FEEDERS, CIRCUITS OR PARTIAL CIRCUITS, AND OUTLETS NOT AFFECTED BY THIS WORK, EXCEPT WHERE ARCHITECT GIVES WRITTEN PERMISSION FOR OUTAGE FOR SPECIFIED TIME.
5. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING MATERIALS NOT AFFECTED BY THE DEMOLITION WORK. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED MATERIAL OR EQUIPMENT AS DIRECTED BY OWNER AT NO ADDITIONAL COST TO THE OWNER.
6. THE OWNER RESERVES ALL RIGHTS TO CLAIMING MATERIAL AND EQUIPMENT REMOVED DURING DEMOLITION. THE CONTRACTOR IS RESPONSIBLE TO LEGALLY DISPOSE OF ALL MATERIAL AND EQUIPMENT NOT CLAIMED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE TO DELIVER ALL MATERIALS AND EQUIPMENT CLAIMED BY OWNER TO THE OWNER'S DESIGNATED STORAGE FACILITIES.
7. PRIOR TO SUBMITTING BID, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS PARAGRAPH WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING ALL NECESSARY WORK SHOWN ON THE DRAWINGS. NO EXTRA MONIES WILL BE GRANTED FOR DEMOLITION OR NEW WORK REQUIRED FOR RELOCATION OF ELECTRICAL SYSTEMS AND/OR EQUIPMENT THAT MAY ARISE.
8. EXISTING CONDUIT REMAINING IN PLACE MAY BE REUSED, PROVIDED CONDUIT IS THOROUGHLY CLEANED BEFORE NEW WIRE IS INSTALLED.
9. REMOVED CONDUIT AND WIRE SHALL NOT BE REUSED.
10. IF AN EXISTING ELECTRICAL ITEM TO BE REMOVED IS LOCATED IN THE MIDDLE OF AN EXISTING CIRCUIT, WITH OTHER EXISTING ITEMS ON THAT CIRCUIT TO REMAIN, THE EXISTING CIRCUIT SHALL BE MADE CONTINUOUS.
11. IF AN EXISTING ELECTRICAL ITEM TO BE REMOVED IS LOCATED ON THE END OF AN EXISTING CIRCUIT, THE EXISTING WIRE AND EXPOSED CONDUIT BACK TO THE NEXT ACTIVE ITEM ON THAT CIRCUIT SHALL BE REMOVED.
12. IF AN EXISTING ELECTRICAL ITEM TO BE REMOVED IS THE ONLY ITEM ON THE CIRCUIT, THE EXISTING WIRE AND EXPOSED CONDUIT SHALL BE REMOVED BACK TO THE PANELBOARD AND, UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE EXISTING BREAKER FOR THAT CIRCUIT SHALL BECOME A SPARE. EXISTING PANEL SCHEDULE SHALL BE REVISED ACCORDINGLY.
13. WHERE AN EXISTING, OR PORTION OF AN EXISTING CONDUIT RUN TO BE REMOVED IS PARTIALLY EXPOSED AND PARTIALLY CONCEALED, THE EXPOSED PORTION SHALL BE REMOVED TO A CONCEALED POINT BEYOND THE SURFACE I.E. A WALL, A CEILING, A FLOOR, AND THE SURFACE SHALL BE PATCHED TO MATCH EXISTING.
14. REQUIREMENTS FOR EXISTING EXPOSED CONDUIT, AS STATED IN NOTE 13 ABOVE, SHALL ALSO APPLY TO EXISTING CONCEALED CONDUIT RUNS LOCATED ABOVE EXISTING ACCESSIBLE TILE CEILING OR EXISTING CONDUIT RUNS THAT WILL BE LOCATED ABOVE NEW ACCESSIBLE TILE CEILINGS.
15. REMOVAL OF EXISTING EQUIPMENT AND MATERIALS: ELECTRICAL EQUIPMENT AND MATERIALS INDICATED ON DRAWINGS AS "TO BE REMOVED" SHALL BE REMOVED AS WORK OF THIS DIVISION. ITEMS OF VALUE AS DETERMINED BY OWNER SHALL BE STORED ON SITE WHERE DIRECTED BY OWNER. EQUIPMENT AND MATERIAL THAT OWNER DOES NOT WISH TO RETAIN SHALL BE DISCARDED OFF SITE. DO NOT REMOVE ANY EQUIPMENT AND MATERIALS FROM THE SITE WITHOUT OWNER'S PRIOR APPROVAL.
16. RELOCATION OF EXISTING EQUIPMENT AND MATERIALS: ELECTRICAL EQUIPMENT AND MATERIALS INDICATED ON DRAWINGS AS "TO BE RELOCATED" SHALL BE REMOVED, RELOCATED, REINSTALLED AND RECONNECTED UNLESS OTHERWISE NOTED ON THE DRAWINGS. BEFORE REINSTALLATION, EQUIPMENT AND MATERIALS SHALL BE CLEANED AND NICKS AND SCRATCHES SHALL BE TOUCHED UP. NEW LAMPS SHALL BE INSTALLED IN RELOCATED LIGHTING FIXTURES. BROKEN PARTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, OR ENGINEER.
17. PERFORM ALL CUTTING AND PATCHING AS REQUIRED TO INSTALL EQUIPMENT AND WIRING, AND TO MATCH SURROUNDINGS, AND TO MAINTAIN FIRE RATING.
18. OWNER, THROUGH ARCHITECT, OR ENGINEER, RESERVES THE RIGHT TO MOVE ANY OUTLET OR STUBBED-UP CONDUIT, A DISTANCE OF TWENTY FIVE FEET BEFORE ROUGHING-IN, WITHOUT ADDITIONAL COST TO THE OWNER.
19. PROVIDE SUFFICIENT SCAFFOLDING AND HOIST TO RIG MATERIAL AND EQUIPMENT INTO PLACE, OR ARRANGE FOR RIGGING BY OTHERS. IN ANY CASE, RIGGING OR HOISTING SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
20. DRAWINGS ARE GENERALLY INDICATIVE OF WORK TO BE INSTALLED, BUT MAY NOT INDICATE ALL BENDS, FITTINGS, BOXES, ETC., REQUIRED TO MEET CONDITIONS. WHERE ITEMS SHOWN ON THE DRAWINGS, OR HEREIN DESCRIBED, ARE NOT CLEARLY UNDERSTOOD, BIDDER SHALL CONFER WITH ARCHITECT, OR ENGINEER. NO ALLOWANCE WILL BE MADE FOR LACK OF INFORMATION AFTER BID IS SUBMITTED AND AGREEMENT SIGNED.
21. COOPERATION WITH CONTRACTORS UNDER SEPARATE CONTRACTS IS REQUIRED, AND THE WORK DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AS REQUIRED TO FULFILL THE INTENT OF THE CONTRACT, TO COMPLY WITH ALL APPLICABLE CODES, AND TO PREVENT INTERFERENCE OF WORK AMONGST ALL TRADES INVOLVED. ALL WORK SHALL COMPLY WITH DEDICATED SPACE REQUIREMENTS AS PER NEC ARTICLE 110.
22. ALL CONDUIT AND WIRING SHALL BE CONCEALED IN WALL AND CEILING, UNLESS OTHERWISE NOTED.
23. PROVIDE COVER PLATES FOR ALL DEVICES TO MATCH EXISTING, U.O.N..
24. ALL ABANDONED LOW VOLTAGE CABLING SHALL BE REMOVED IN ITS ENTIRETY. THIS INCLUDES BUT IS NOT LIMITED TO TELEPHONE, DATA, NOTIFICATION, FIRE ALARM, SECURITY, ETC.
25. THE FIRE ALARM SYSTEM SHALL REMAIN FULLY OPERATIONAL DURING ALL PHASES OF CONSTRUCTION. PROTECT ALL EXISTING AND NEW FIRE ALARM DEVICES FROM DIRT AND DEBRIS DURING ALL PHASES OF CONSTRUCTION.
26. ALL SERVICES AND SPECIAL SYSTEMS SERVING THE EXISTING SPACE(S) NOT UNDER CONSTRUCTION SHALL REMAIN IN OPERATION AND SHALL NOT BE INTERRUPTED UNLESS PRIOR WRITTEN PERMISSION IS GRANTED BY THE OWNER OR ARCHITECT.
27. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS INCLUDING BUT NOT LIMITED TO THE 2015 INTERNATIONAL BUILDING CODE, 2014 NATIONAL ELECTRIC CODE, NFPA 72, ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND STANDARDS, AS WELL AS GOOD SAMARITAN'S HOSPITAL STANDARDS AND REGULATIONS.
28. PROVIDE THE FOLLOWING DEVICE COLORS FOR ALL DEVICES. RECEPTACLE COLORS SHALL BE AS SELECTED BY ARCHITECT WITH STAINLESS COVERS WHERE SERVED FROM THE NORMAL POWER SOURCE. DEVICES SERVED FROM THE EMERGENCY POWER SYSTEM SHALL BE RED IN COLOR WITH STAINLESS COVERS.

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | RON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:
ELECTRICAL SYMBOL LEGEND

DRAWN BY:	CHECKED BY:
C.A.R	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021065P

DRAWING NO:

E-0.00

CAD FILE: 1065-E000.DWG PLOT DATE: 7/19/2023

ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

1. NEW 3000A-277/480V-3Ø-4W SWITCHBOARD IN NEW STANDALONE SWITCHBOARD ROOM.
2. FEEDERS TO NEW IMAGING SUITE SHALL RISE UP ON EXTERIOR TRESTLE TO ROOF AND RUN ON ROOF INTO ELECTRICAL ROOM. TRESTLE SIZE AND LOCATION TO BE DETERMINED AFTER IMAGING SUITE TRAILERS ARE FINALIZED.

PROPOSED WORK
OVERALL SITE PLAN

0 30 60 90

SCALE: 1"=30'

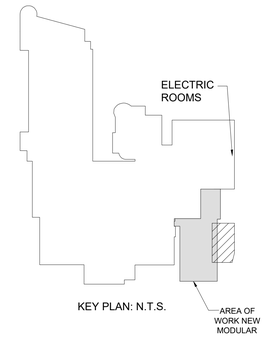
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

SEALS:

DRAWING TITLE:

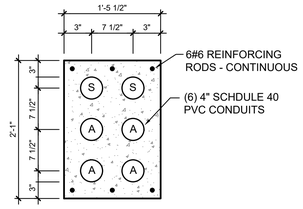
OVERALL ELECTRICAL SITE PLAN

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

ES-1.00

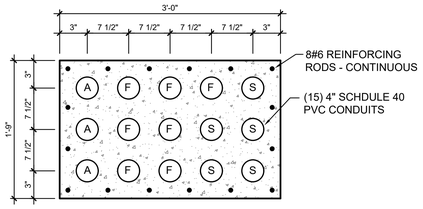
CAD FILE: 1069-ES-1.00.DWG PLOT DATE: 7/19/2023



EMERGENCY DUCTBANK "EA-EA"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

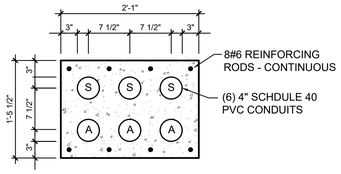
FROM 750KW GENERATOR
TO EMERGENCY SW'BD



EMERGENCY DUCTBANK "EB-EB"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

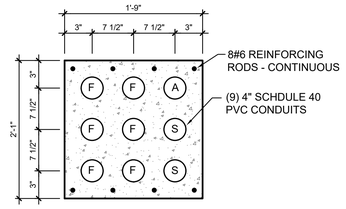
FROM EMERGENCY SW'BD
TO MANHOLE AT IMAGING
SUITE



EMERGENCY
DUCTBANK "EC-EC"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

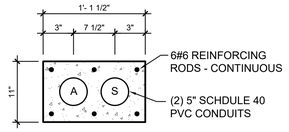
FROM MANHOLE AT IMAGING
SUITE TO IMAGING SUITE'S
1000 AMP EMERGENCY
DISTRIBUTION PANEL



EMERGENCY DUCTBANK "ED-ED"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

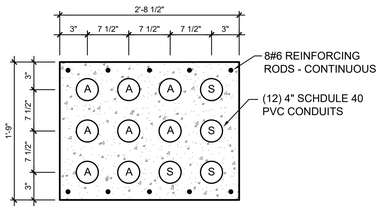
FROM MANHOLE AT IMAGING
SUITE TO MANHOLE AT OR
ADDITON



NORMAL PRIMARY
DUCTBANK "A-A"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

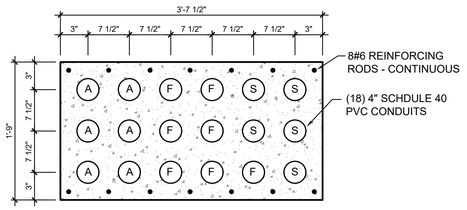
FROM SERVICE POLE
TO SWITCH



NORMAL DUCTBANK "B-B"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

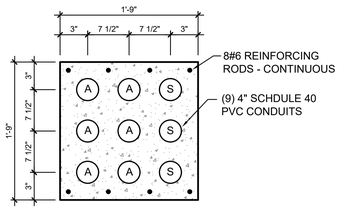
FROM HV XFMR TO NEW
SW'BD



NORMAL DUCTBANK "C-C"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

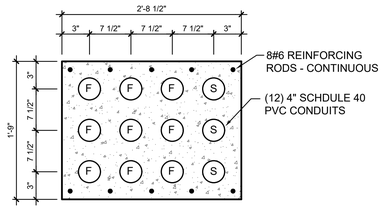
FROM NEW SW'BD TO MANHOLE
AT IMAGING SUITE



NORMAL DUCTBANK "D-D"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

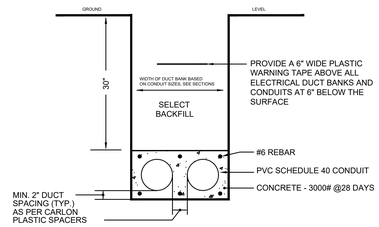
BACKFEED TO EXISTING
SW'BD



NORMAL DUCTBANK "F-F"
N.T.S.

NOTE:
SEE TYPICAL DUCT BANK SECTIONS
FOR ADDITIONAL REQUIREMENTS

NEW IMAGING SUITE
MANHOLE TO OR MANHOLE



TYPICAL DUCT BANK
N.T.S.

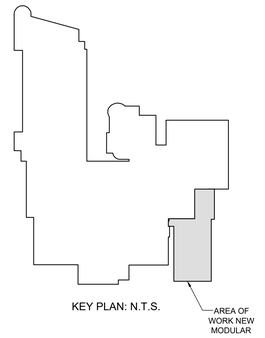
HIGHLAND
ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite
Phase II

SEALS:

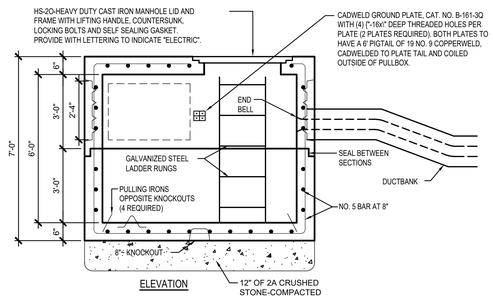
DRAWING TITLE:
DUCTBANK DETAILS

DRAWN BY:	CHECKED BY:
C.A.R	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

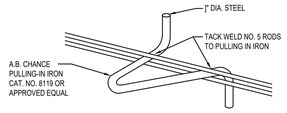
DRAWING NO:

ES-2.00

CAD FILE: 1069-ES-2.00.DWG PLOT DATE: 7/19/2023



ELEVATION

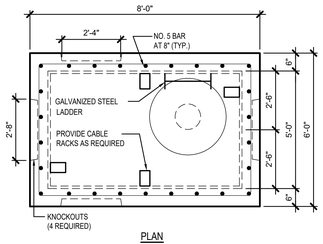


PULLING-IN IRON DETAIL

NOT TO SCALE

NOTES:

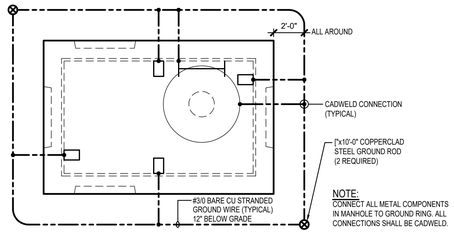
1. ALL GROUND CABLES TO BE #2/0 CU STRANDED.
2. DESIGN CRITERIA:
   LOADING - HS-20
   CONCRETE - 4500PSI AT 28 DAYS
   STEEL - DEFORMED BARS
   ASTM A615 GRADE 60 fy=60,000 PSI
3. CONCRETE SHALL BE AIR ENTRAINED CONCRETE THAT WILL TEST TO 4500PSI AT 28 DAYS.
4. ALL REINFORCING BAR SPLICES SHALL HAVE A MIN. 20 DIA. LAP.
5. MANHOLE TO BE MARKED CLEARLY SHOWING DATE UNIT WAS CONSTRUCTED AND RECORDED AT THE SUPPLIERS YARD.
6. WATERPROOF THE EXTERIOR OF ALL VAULTS AND MANHOLES.



PLAN

MANHOLE/VAULT DETAIL

NOT TO SCALE



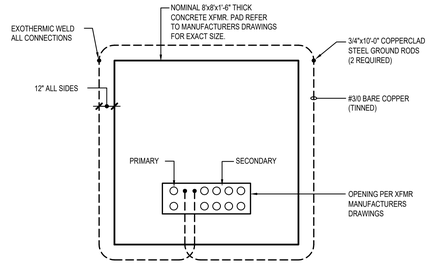
NOTE:
CONNECT ALL METAL COMPONENTS IN MANHOLE TO GROUND RING. ALL CONNECTIONS SHALL BE CADWELD.

MANHOLE/VAULT GROUNDING DETAIL

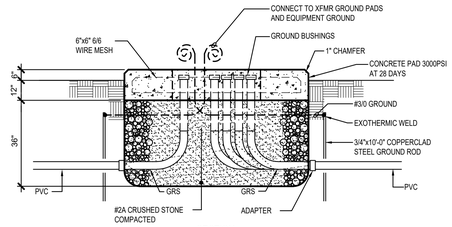
NOT TO SCALE

NOTE:

MANHOLE DETAILS SHOWN ABOVE SHALL APPLY TO ALL MANHOLES AND VAULTS INCLUDING ALL GROUNDING, COVERS, LADDERS, REINFORCING, PULLING IRONS, CABLE RACKS, ETC. DETAILS SHOWN ARE FOR TYPICAL MANHOLES.



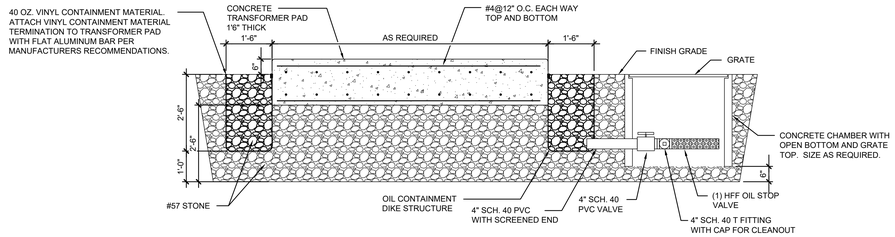
PLAN VIEW



SECTION

TRANSFORMER PAD DETAIL

NOT TO SCALE

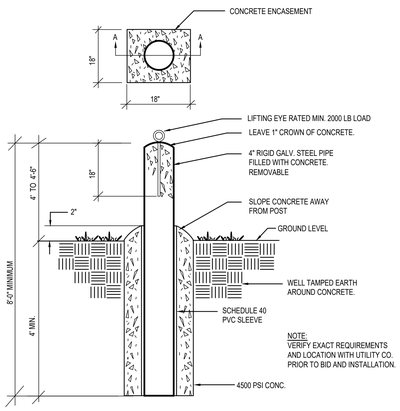


SPILL CONTAINMENT DETAIL

NOT TO SCALE

NOTES:

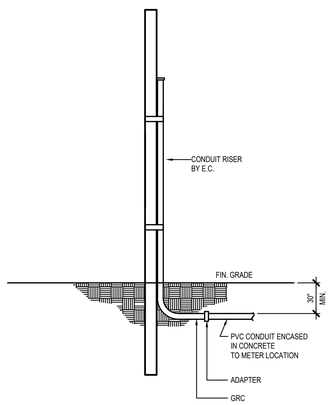
1. VERIFY EXACT DETAILS WITH MANUFACTURER.
2. HFF OIL STOP VALVE AS MANUFACTURED BY JUSTRITE: 4" PIPE FITTING X 12"LONG, SUITABLE FOR 70 GPM AT 2" HEAD PRESSURE.



SECTION A-A

REMOVABLE BOLLARD DETAIL

NOT TO SCALE



NEW O&R SERVICE POLE

NOT TO SCALE

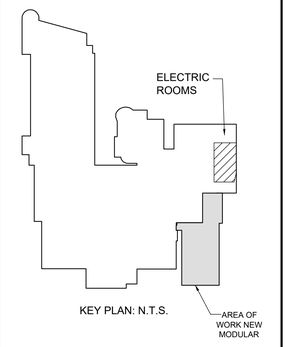
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

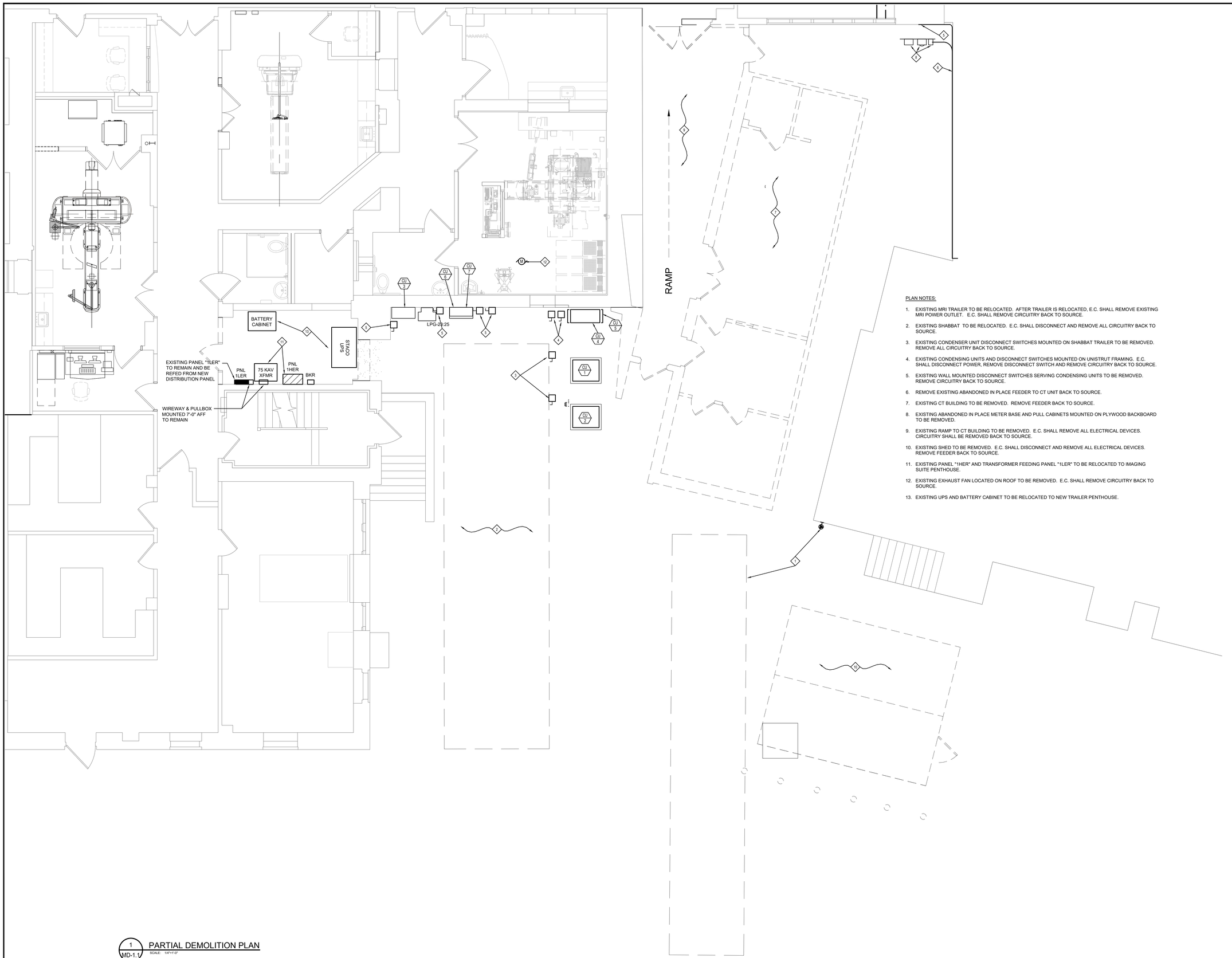
ELECTRICAL SITE DETAILS

DRAWN BY:	CHECKED BY:
C.A.R	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

ES-2.01

CAD FILE: 1069-ES-2.01.DWG PLOT DATE: 7/19/2023



1 MD-1.1 PARTIAL DEMOLITION PLAN
SCALE: 1/4"=1'-0"

PLAN NOTES:

1. EXISTING MRI TRAILER TO BE RELOCATED. AFTER TRAILER IS RELOCATED, E.C. SHALL REMOVE EXISTING MRI POWER OUTLET. E.C. SHALL REMOVE CIRCUITRY BACK TO SOURCE.
2. EXISTING SHABBAT TO BE RELOCATED. E.C. SHALL DISCONNECT AND REMOVE ALL CIRCUITRY BACK TO SOURCE.
3. EXISTING CONDENSER UNIT DISCONNECT SWITCHES MOUNTED ON SHABBAT TRAILER TO BE REMOVED. REMOVE ALL CIRCUITRY BACK TO SOURCE.
4. EXISTING CONDENSING UNITS AND DISCONNECT SWITCHES MOUNTED ON UNISTRUT FRAMING. E.C. SHALL DISCONNECT POWER, REMOVE DISCONNECT SWITCH AND REMOVE CIRCUITRY BACK TO SOURCE.
5. EXISTING WALL MOUNTED DISCONNECT SWITCHES SERVING CONDENSING UNITS TO BE REMOVED. REMOVE CIRCUITRY BACK TO SOURCE.
6. REMOVE EXISTING ABANDONED IN PLACE FEEDER TO CT UNIT BACK TO SOURCE.
7. EXISTING CT BUILDING TO BE REMOVED. REMOVE FEEDER BACK TO SOURCE.
8. EXISTING ABANDONED IN PLACE METER BASE AND PULL CABINETS MOUNTED ON PLYWOOD BACKBOARD TO BE REMOVED.
9. EXISTING RAMP TO CT BUILDING TO BE REMOVED. E.C. SHALL REMOVE ALL ELECTRICAL DEVICES. CIRCUITRY SHALL BE REMOVED BACK TO SOURCE.
10. EXISTING SHED TO BE REMOVED. E.C. SHALL DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES. REMOVE FEEDER BACK TO SOURCE.
11. EXISTING PANEL "1HER" AND TRANSFORMER FEEDING PANEL "1LER" TO BE RELOCATED TO IMAGING SUITE PENTHOUSE.
12. EXISTING EXHAUST FAN LOCATED ON ROOF TO BE REMOVED. E.C. SHALL REMOVE CIRCUITRY BACK TO SOURCE.
13. EXISTING UPS AND BATTERY CABINET TO BE RELOCATED TO NEW TRAILER PENTHOUSE.

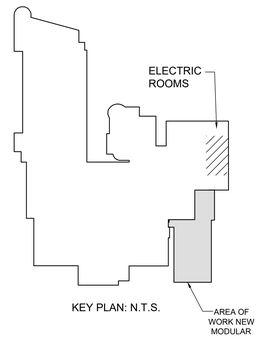
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health
BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

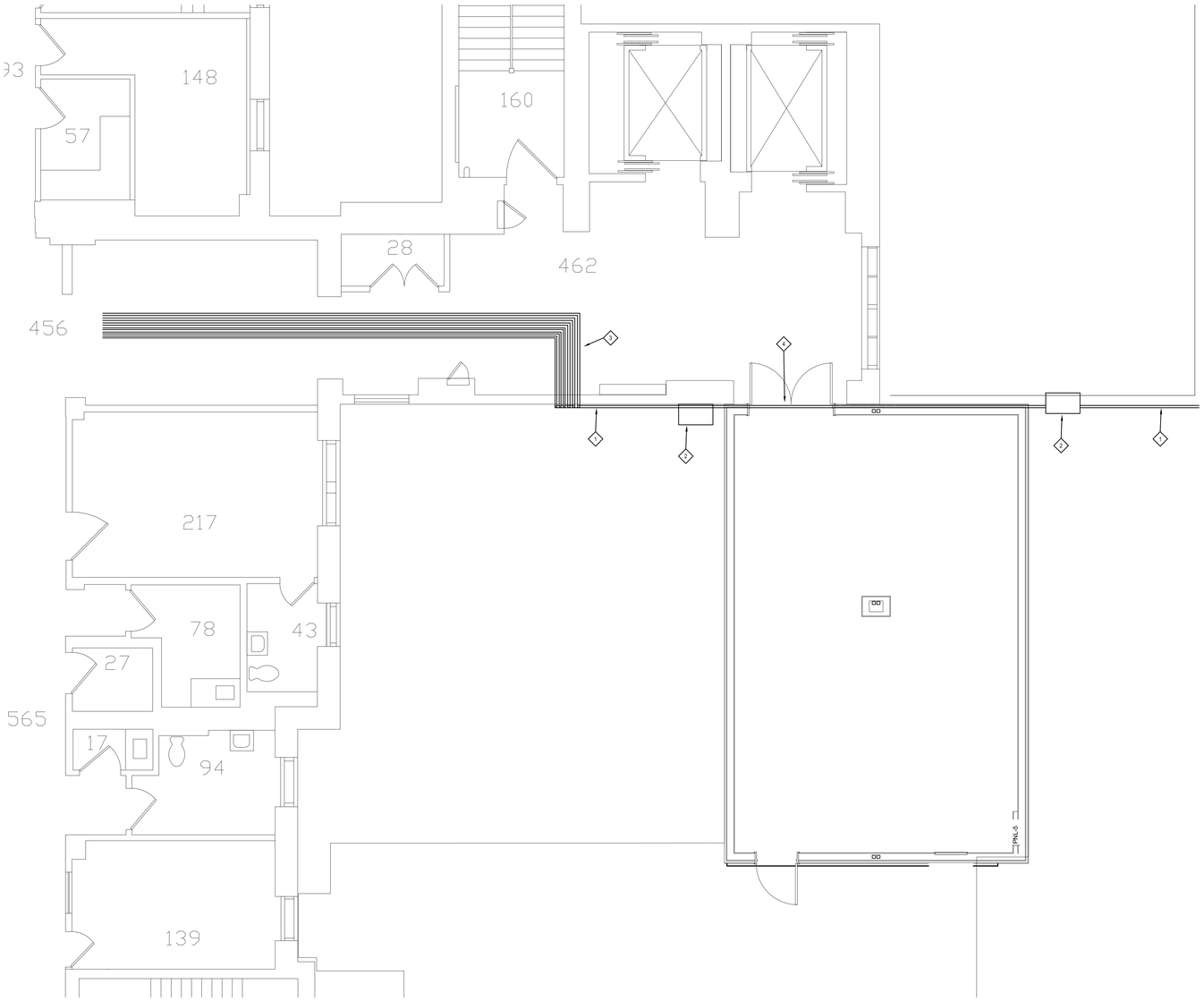
PARTIAL ELECTRICAL DEMOLITION PLAN

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

ED-1.00

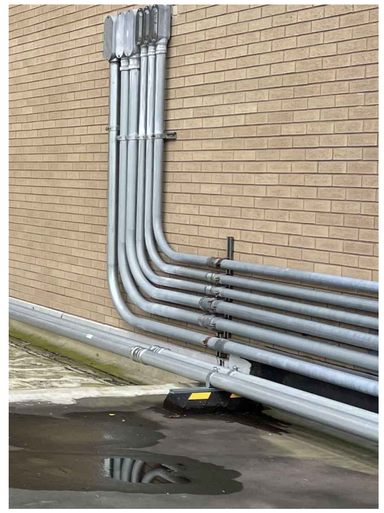
CAD FILE: 1069-ED-1.0.DWG PLOT DATE: 7/19/2023



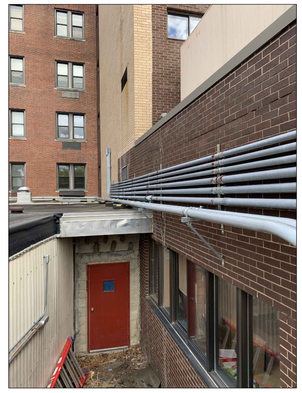
1 / ED-1.1 PARTIAL ELECTRICAL DEMOLITION PLAN - ROOF
SCALE: 1/4"=1'-0"

PLAN NOTES:

1. EXISTING CONDUITS SHALL BE RAISED ABOVE NEW IMAGING TRAILER PENTHOUSE ROOF.
2. PROVIDE NEW PULLBOXES AS REQUIRED TO ALLOW NEW ROUTING OF CONDUITS.
3. EXISTING CONDUITS WITHIN BUILDING.
4. NEW OPENING FOR DOOR. E.C. SHALL RELOCATE ANY CIRCUITRY FOUND WITHIN WALL.



CONDUITS ENTERING BUILDING



CONDUITS RUNNING ALONG EXTERIOR WALL

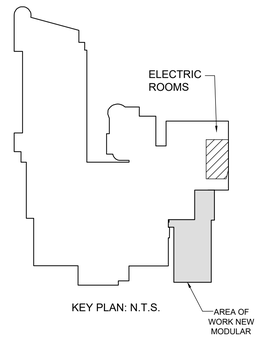
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

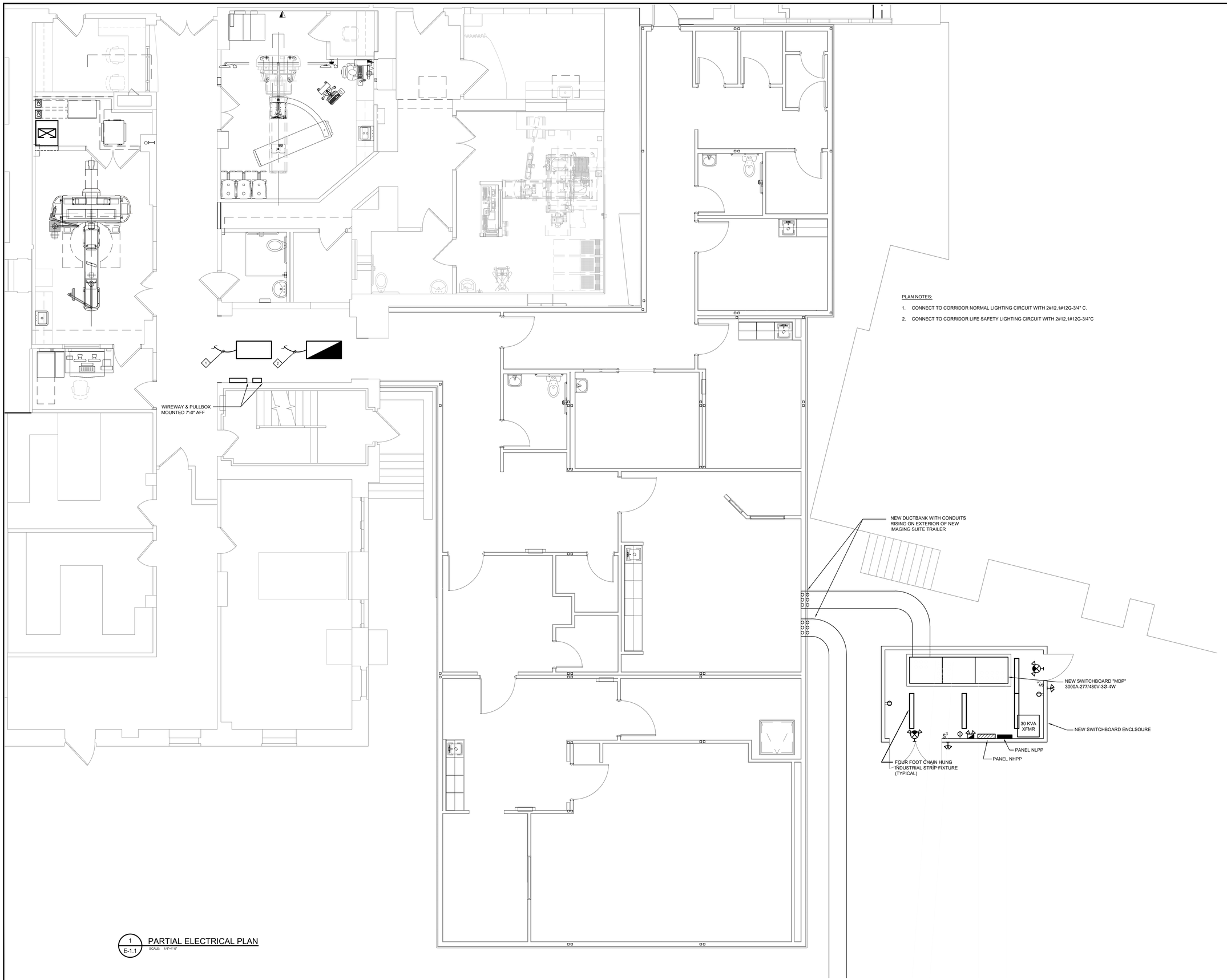
DRAWING TITLE:
PARTIAL ELECTRICAL DEMOLITON ROOF PLAN

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

ED-1.01

CAD FILE: 069-ED-1.1.DWG PLOT DATE: 7/19/2023



PLAN NOTES:

1. CONNECT TO CORRIDOR NORMAL LIGHTING CIRCUIT WITH 2#12,1#12G-3/4" C.
2. CONNECT TO CORRIDOR LIFE SAFETY LIGHTING CIRCUIT WITH 2#12,1#12G-3/4"C

1 / E-1.1 PARTIAL ELECTRICAL PLAN
SCALE: 1/8"=1'-0"

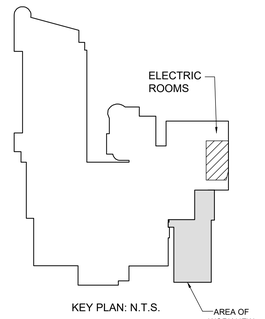
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM, A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

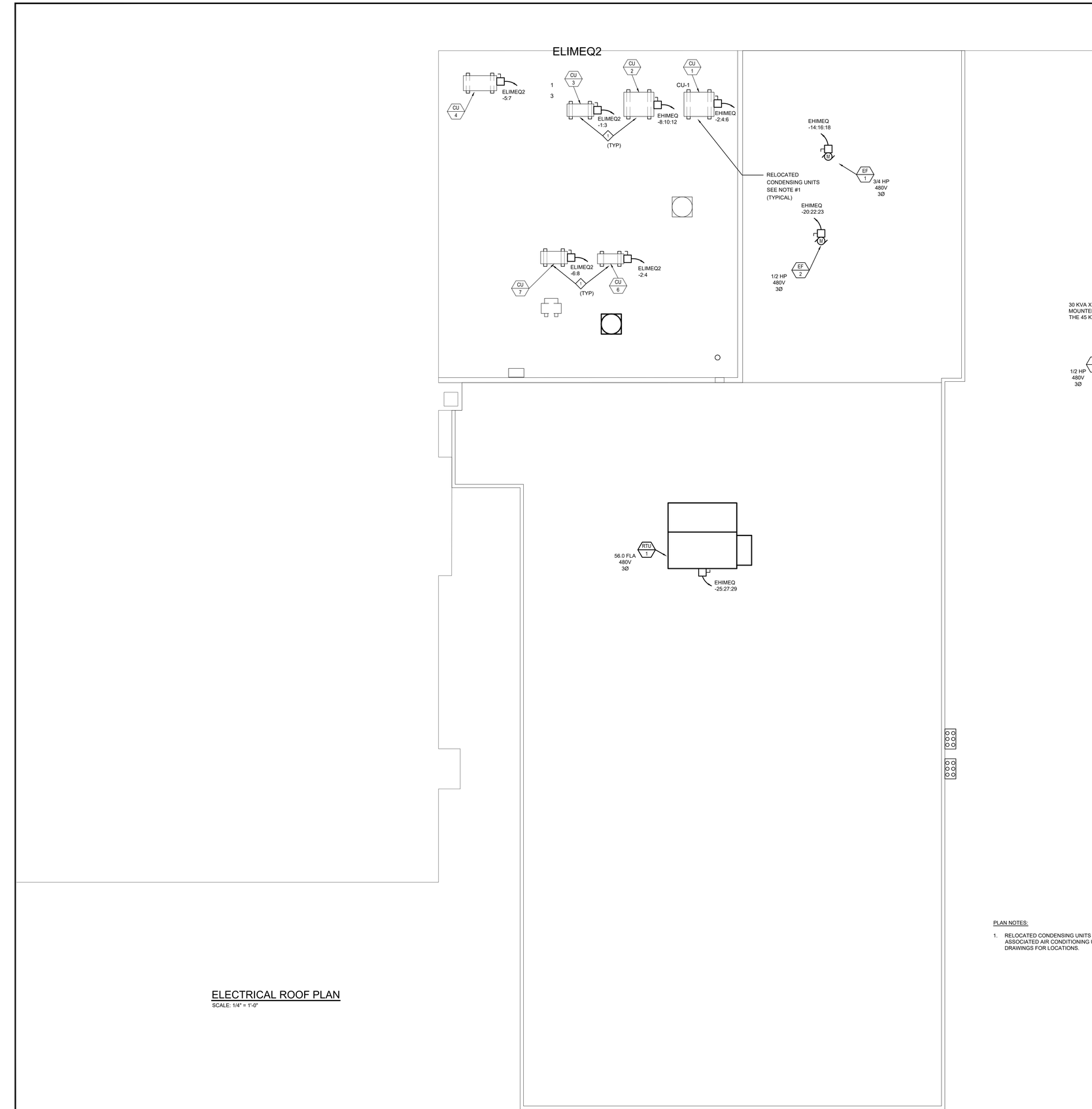
PARTIAL ELECTRICAL PLAN

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

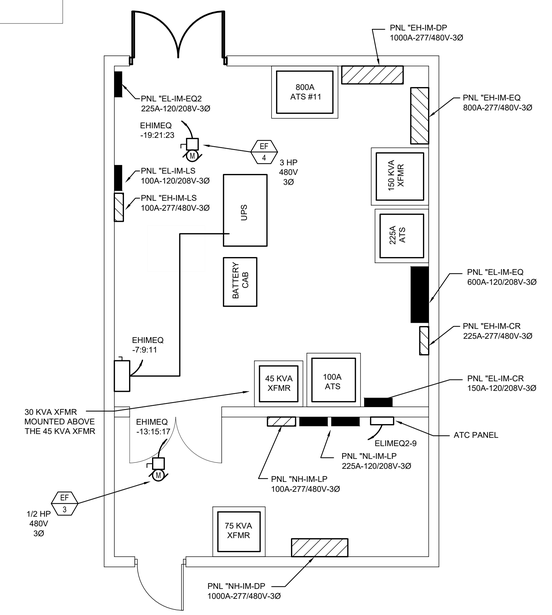
E-1.00

CAD FILE: 1069-E-1.0.DWG PLOT DATE: 7/19/2023



ELECTRICAL ROOF PLAN

SCALE: 1/4" = 1'-0"



PENTHOUSE EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"

PLAN NOTES:

1. RELOCATED CONDENSING UNITS FROM EXTERIOR OF BUILDING. E.C. SHALL REWORK CIRCUITRY FROM ASSOCIATED AIR CONDITIONING UNITS TO RELOCATED CONDENSING UNITS. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS.

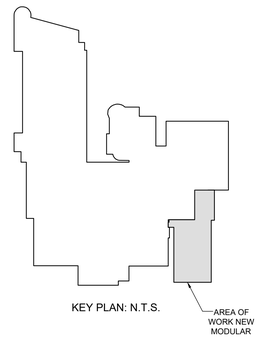
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

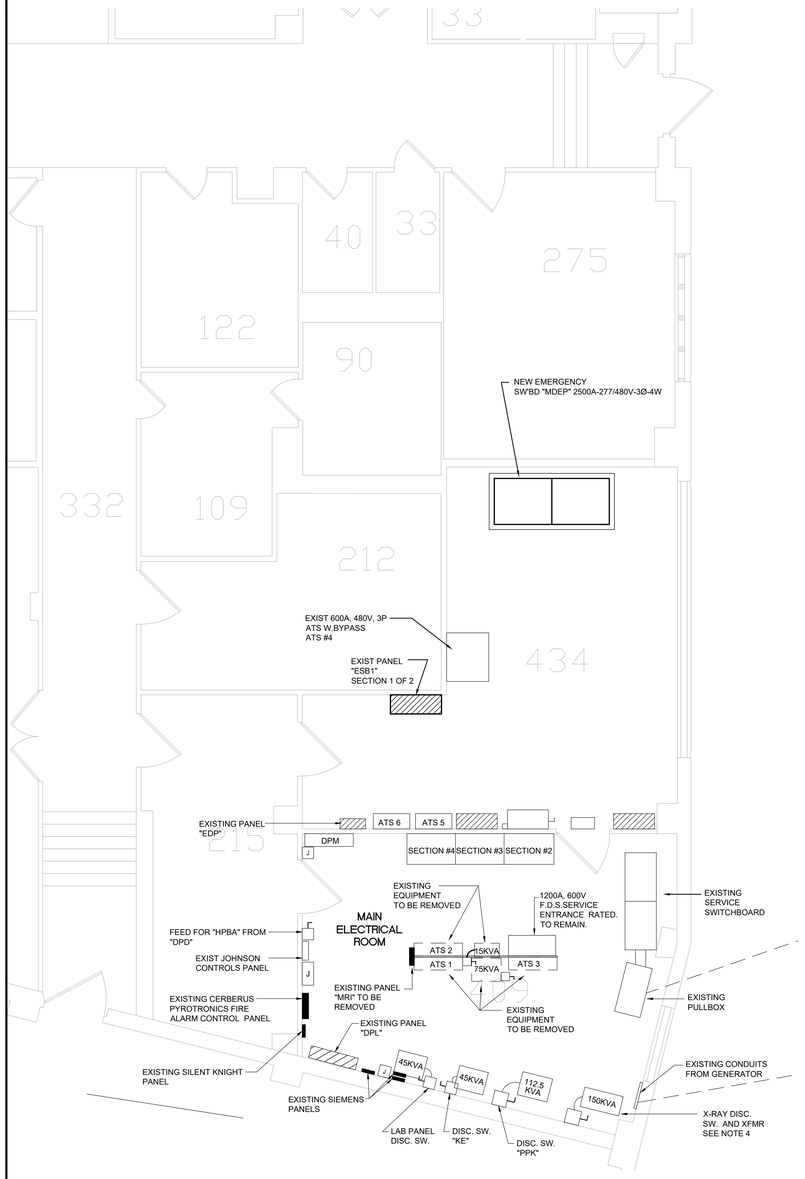
ELECTRICAL ROOF PLAN

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

E-2.00

CAD FILE: 1069-E2.0.DWG PLOT DATE: 7/19/2023



EXISTING MAIN ELECTRICAL ROOM

SCALE: 1/4" = 1'-0"

NOTES:

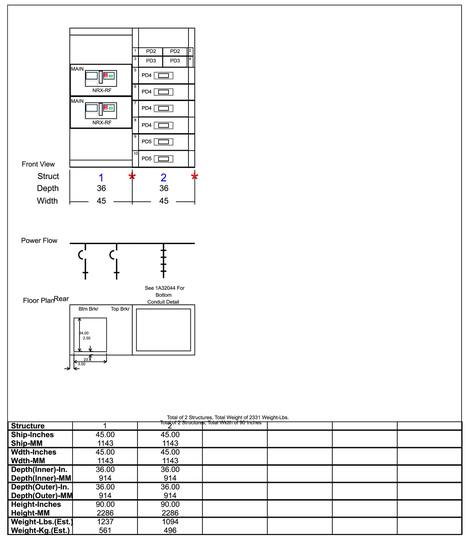
1. ONCE NEW EMERGENCY SWITCHBOARD IS IN OPERATION, EXISTING PANEL "ESB1" SHALL BE TRANSFER TO

Switchboard Units Information

Str#	Unit	Description/Modifications	Nameplate
1		Main Breaker - Top Ind Mtd-800A 3P NRX-RF Brkr [Fixed-Manual], 65 kAIC, Main Breaker - Top Ind Mtd, Trip 800A., PXR20 LSIG/A, 100 % rated Terminals, Mechanical, (3) 500-750 kcmil, Bottom Main Breaker - Bottom Ind Mtd-2000A 3P NRX-RF Brkr [Fixed-Manual], 65 kAIC, Main Breaker - Bottom Ind Mtd, Trip 800A., PXR20 LSIG/A, 100 % rated Terminals, Mechanical, (6) #4-500 kcmil, Bottom Neutral Terminal, (6) #4-500 kcmil	
2			
	1	Feeder Breaker - Chassis Mtd-225A, 3P Frame 2 Branch Breaker [225A Frame], Trip 225A., PXR10 LSI, None Terminals, Mechanical, (1) #4-4/0 Auxiliary switch: 1 NO & 1 NC Aux Contact (Integral) AND 1 NO & 1 NC Alarm Contact Neutral Terminal, (1) #6-350 kcmil	
	2	Feeder Breaker - Chassis Mtd-225A, 3P Frame 2 Branch Breaker [225A Frame], Trip 225A., PXR10 LSI, None Terminals, Mechanical, (1) #4-4/0 Auxiliary switch: 1 NO & 1 NC Aux Contact (Integral) AND 1 NO & 1 NC Alarm Contact Neutral Terminal, (1) #6-350 kcmil	
	3	Feeder Breaker - Chassis Mtd-400A, 3P Frame 3 Branch Breaker [400A Frame], Trip 400A., PXR10 LSI Terminals, Mechanical, (1) 2/0-500 kcmil Neutral Terminal, (1) #4-500 kcmil	
	4	Feeder Breaker - Chassis Mtd-400A, 3P Frame 3 Branch Breaker [400A Frame], Trip 400A., PXR10 LSI Terminals, Mechanical, (1) 2/0-500 kcmil Neutral Terminal, (1) #4-500 kcmil	
	5	Feeder Breaker - Chassis Mtd-800A, 3P Frame 4 Branch Breaker [800A Frame], Trip 800A., PXR20 LSI, None Terminals, Mechanical, (3) 3/0-400 kcmil Neutral Terminal, (3) #4-500 kcmil	
	6	Feeder Breaker - Chassis Mtd-800A, 3P Frame 4 Branch Breaker [800A Frame], Trip 800A., PXR20 LSI, None Terminals, Mechanical, (3) 3/0-400 kcmil Neutral Terminal, (3) #4-500 kcmil	
	7	Feeder Breaker - Chassis Mtd-800A, 3P Frame 4 Branch Breaker [800A Frame], Trip 800A., PXR20 LSI, None Terminals, Mechanical, (3) 3/0-400 kcmil Neutral Terminal, (3) #4-500 kcmil	
	8	Feeder Breaker - Chassis Mtd-800A, 3P Frame 4 Branch Breaker [800A Frame], Trip 800A., PXR20 LSI, None Terminals, Mechanical, (3) 3/0-400 kcmil Neutral Terminal, (3) #4-500 kcmil	
	9	Feeder Breaker - Chassis Mtd-1000A, 3P Frame 5 Branch Breaker, [1200A Frame], Trip 1000A., PXR20 LSI, None Terminals, Mechanical, (4) 4/0-500 kcmil Neutral Terminal, (4) #4-500 kcmil	
	10	Feeder Breaker - Chassis Mtd-1000A, 3P Frame 5 Branch Breaker, [1200A Frame], Trip 1000A., PXR20 LSI, None Terminals, Mechanical, (4) 4/0-500 kcmil Neutral Terminal, (4) #4-500 kcmil	

NEW EMERGENCY SWITCHBOARD DETAILS

N.T.S.



Total of 2 Structures, Total Weight of 2331 Weight-Lbs.
Total of 2 Structures, Total Width of 90 Inches

Structure	1	2				
Ship-Inches	45.00	45.00				
Ship-MM	1143	1143				
Width-Inches	45.00	45.00				
Width-MM	1143	1143				
Depth(Inner)-In.	36.00	36.00				
Depth(Inner)-MM	914	914				
Depth(Outer)-In.	36.00	36.00				
Depth(Outer)-MM	914	914				
Height-Inches	90.00	90.00				
Height-MM	2286	2286				
Weight-Lbs.(Est.)	1237	1094				
Weight-Kg.(Est.)	561	496				

NEW EMERGENCY SWITCHBOARD DETAILS

N.T.S.

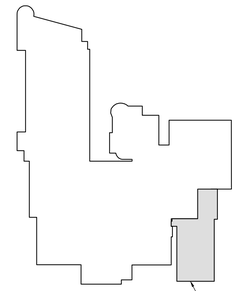
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

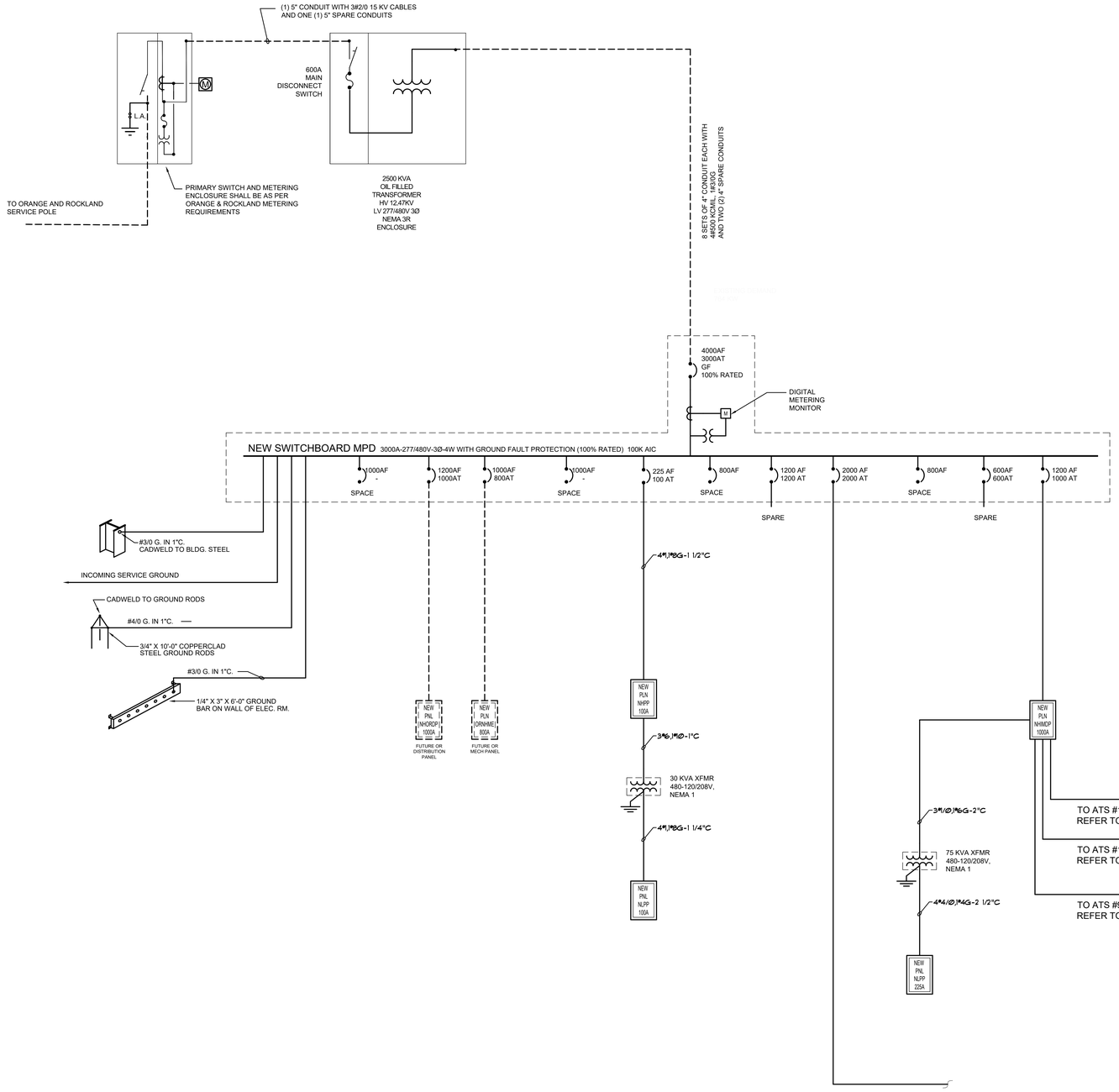
DRAWING TITLE:
ENLARGED SCALED PLANS

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

E-3.0

CAD FILE: 1069-E-3.0.DWG PLOT DATE: 7/19/2023



NOTE:

ALL BREAKERS 100 AMPS AND GREATER SHOULD BE PROVIDED WITH DIGITAL TRIP SETTINGS

ELECTRICAL CONTRACTOR SHALL PROVIDE SHORT CIRCUIT AND ARC FLASH STUDY FOR THE NEW ELECTRICAL DISTRIBUTION. STUDY SHALL INCLUDE ALL NEW EQUIPMENT AND TO FIRST LEVEL OF EXISTING 480 VOLT PANELS OR TRANSFORMERS.

PROPOSED SEQUENCE OF INSTALLATION :

1. INSTALLATION OF NEW PRIMARY ELECTRICAL SERVICE, PRIMARY SWITCH, TRANSFORMER AND SWITCHBOARD.
2. BACK FEEDING OF EXISTING NORMAL SWITCHGEAR
3. AFTER BACK FEEDING OF EXISTING SWITCHBOARD, REMOVE OF EXISTING PRIMARY SWITCH, TRANSFORMER AND SERVICE.
4. INSTALLATION OF NEW EMERGENCY GENERATOR IN LOCATION OF REMOVED TRANSFORMER.
5. PARALLELING OF EXISTING AND NEW GENERATOR.
6. INSTALLATION OF NEW EMERGENCY SWITCHBOARD.
7. CONNECTION TO NEW EMERGENCY SWITCHBOARD
8. FEEDER IN PLACE TO FEED EXISTING PANEL "ESB1"
9. FINAL TERMINATIONS FOR EXISTING PANEL "ESB1".
10. THE PROPOSED SEQUENCE MAY CHANGE BASED HOSPITAL'S NEEDS DURING CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH HOSPITAL'S REPRESENTATIVE.
11. ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE ALL TEMPORARY POWER TO KEEP HOSPITAL RUNNING

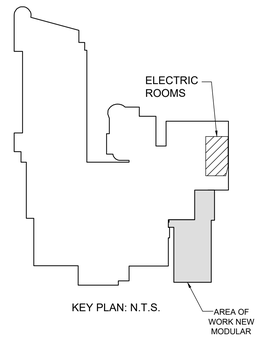
ONE LINE DIAGRAM NOTES:

1. A LISTED SURGE PROTECTION DEVICE (SPD) SHALL BE INSTALLED ON ALL EMERGENCY SYSTEM SWITCHBOARDS AND PANELBOARDS PER NEC 700.8

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

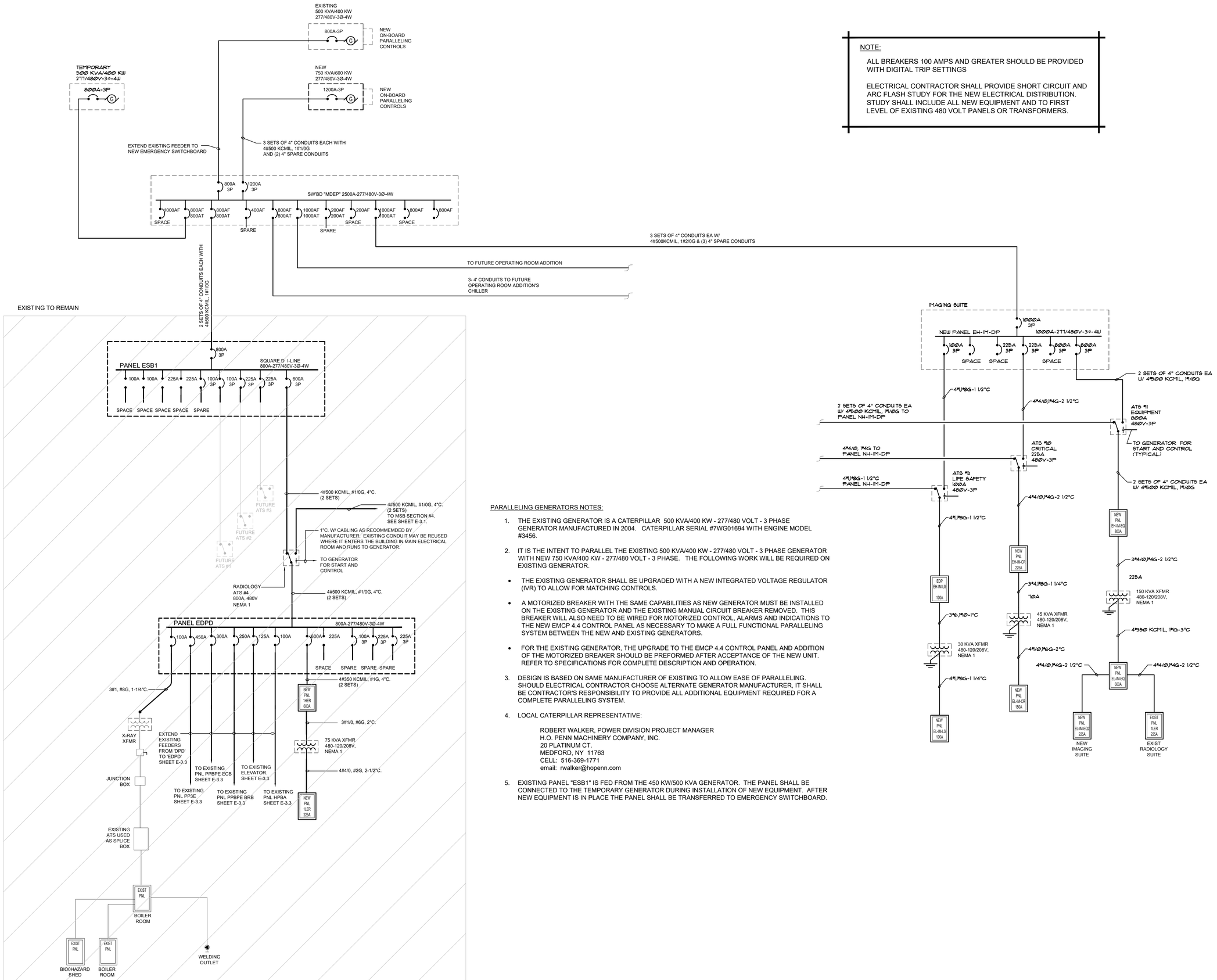
NORMAL POWER ONE-LINE DIAGRAM

DRAWN BY:	CHECKED BY:
C.A.R	L.K.N.
DATE:	PROJECT NO.:
07-21-2023	2021-069P

DRAWING NO:

E-4.00

CAD FILE: 1069-E-4.0.DWG PLOT DATE: 7/19/2023



PROPOSED EMERGENCY ONE-LINE

NO SCALE

NOTE:

ALL BREAKERS 100 AMPS AND GREATER SHOULD BE PROVIDED WITH DIGITAL TRIP SETTINGS

ELECTRICAL CONTRACTOR SHALL PROVIDE SHORT CIRCUIT AND ARC FLASH STUDY FOR THE NEW ELECTRICAL DISTRIBUTION. STUDY SHALL INCLUDE ALL NEW EQUIPMENT AND TO FIRST LEVEL OF EXISTING 480 VOLT PANELS OR TRANSFORMERS.

PARALLELING GENERATORS NOTES:

1. THE EXISTING GENERATOR IS A CATERPILLAR 500 KVA/400 KW - 277/480 VOLT - 3 PHASE GENERATOR MANUFACTURED IN 2004. CATERPILLAR SERIAL #7WG01694 WITH ENGINE MODEL #3456.

2. IT IS THE INTENT TO PARALLEL THE EXISTING 500 KVA/400 KW - 277/480 VOLT - 3 PHASE GENERATOR WITH NEW 750 KVA/400 KW - 277/480 VOLT - 3 PHASE. THE FOLLOWING WORK WILL BE REQUIRED ON EXISTING GENERATOR.

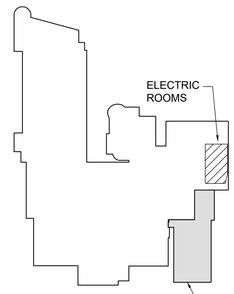
- THE EXISTING GENERATOR SHALL BE UPGRADED WITH A NEW INTEGRATED VOLTAGE REGULATOR (IVR) TO ALLOW FOR MATCHING CONTROLS.
- A MOTORIZED BREAKER WITH THE SAME CAPABILITIES AS NEW GENERATOR MUST BE INSTALLED ON THE EXISTING GENERATOR AND THE EXISTING MANUAL CIRCUIT BREAKER REMOVED. THIS BREAKER WILL ALSO NEED TO BE WIRED FOR MOTORIZED CONTROL, ALARMS AND INDICATIONS TO THE NEW EMCP 4.4 CONTROL PANEL AS NECESSARY TO MAKE A FULL FUNCTIONAL PARALLELING SYSTEM BETWEEN THE NEW AND EXISTING GENERATORS.
- FOR THE EXISTING GENERATOR, THE UPGRADE TO THE EMCP 4.4 CONTROL PANEL AND ADDITION OF THE MOTORIZED BREAKER SHOULD BE PREFORMED AFTER ACCEPTANCE OF THE NEW UNIT. REFER TO SPECIFICATIONS FOR COMPLETE DESCRIPTION AND OPERATION.

3. DESIGN IS BASED ON SAME MANUFACTURER OF EXISTING TO ALLOW EASE OF PARALLELING. SHOULD ELECTRICAL CONTRACTOR CHOOSE ALTERNATE GENERATOR MANUFACTURER, IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL ADDITIONAL EQUIPMENT REQUIRED FOR A COMPLETE PARALLELING SYSTEM.

4. LOCAL CATERPILLAR REPRESENTATIVE:

   ROBERT WALKER, POWER DIVISION PROJECT MANAGER
   H.O. PENN MACHINERY COMPANY, INC.
   20 PLATINUM CT.
   MEDFORD, NY 11763
   CELL: 516-369-1771
   email: rwalker@hopenn.com

5. EXISTING PANEL "ESB1" IS FED FROM THE 450 KW/500 KVA GENERATOR. THE PANEL SHALL BE CONNECTED TO THE TEMPORARY GENERATOR DURING INSTALLATION OF NEW EQUIPMENT. AFTER NEW EQUIPMENT IS IN PLACE THE PANEL SHALL BE TRANSFERRED TO EMERGENCY SWITCHBOARD.



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

EMERGENCY POWER ONE-LINE DIAGRAM

DRAWN BY:	CHECKED BY:
C.A.R	L.K.N.
DATE: 07-21-2023	PROJECT NO: 2021-1069P

DRAWING NO:

E-4.01

CAD FILE: 1069-E4.1.DWG PLOT DATE: 7/19/2023

HIGHLAND ASSOCIATES

Architecture: Highland Center (570) 586-4334
Engineering: 102 Highland Avenue fax(570) 586-5990
Interior Design: Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:

PANELBOARD SCHEDULE

DESIGNATION: **EHIMDP**
MAINS: 1200 AMP | TYPE: SQ D I-LINE | O.C. DEVICE: 1000A M.C.B.
VOLTAGE: 277/480V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMDP | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	3	800	-	-	-	ATS #11 - PANEL EHIMEQ	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	3	225	-	-	-	ATS #10 - PANEL EHIMCR	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	3	100	-	-	-	ATS #9 - PANEL EHIMLS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	95.9		95.9		95.9								

TOTAL CONNECTED KVA: 287.7
TOTAL DEMAND KVA: 201.4
TOTAL DEMAND AMPERES: 243

PANELBOARD SCHEDULE

DESIGNATION: **EHIMLS**
MAINS: 100 AMP | TYPE: - | O.C. DEVICE: 100A M.C.B.
VOLTAGE: 277/480V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM - IMAGING PENTHOUSE | FED BY: EMERG SW'BD | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	3	50	-	-	-	PANEL ELIMLS(30 KVA XFMR)	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-		-		-								

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: **ELIMCR**
MAINS: 250 AMP | TYPE: - | O.C. DEVICE: 150A M.C.B.
VOLTAGE: 120/208V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 10K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMCR (VIA 45 KVA XFMR) | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-		-		-								

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: **EHIMEQ**
MAINS: 800 AMP | TYPE: SQ D I-LINE | O.C. DEVICE: 800A M.C.B.
VOLTAGE: 277/480V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMDP | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	/	/					-	0.4	—	—	—	—					/	/	2
3	3	225	-	-	-	PANEL ELIMEQ (150 KVA XFMR)	—	—		0.4	—	—	CU-1	3/4	12	4#12	15	3	4
5	/	/					—	—	—	—	-	0.4					/	/	6
7	/	/					73.0	2.5	—	—	—	—					/	/	8
9	3	350	3#500	2#500	3"	UPS - PHILIPS iCT ELITE 256 SLICE	—	—	73.0	2.5	—	—	CU-2	3/4	12	4#12	15	3	10
11	/	/					—	—	—	—	73.0	2.5					/	/	12
13	/	/					0.4	0.5	—	—	—	—					/	/	14
15	3	15	4#12	12	3/4	EF-3 (1/2 HP)	—	—	0.4	0.5	—	—	EF-1 (3/4 HP)	3/4	12	4#12	15	3	16
17	/	/					—	—	—	—	0.4	0.5					/	/	18
19	/	/					1.4	0.4	—	—	—	—					/	/	20
21	3	15	4#12	12	3/4	EF-4 (3 HP)	—	—	1.4	0.4	—	—	EF-2 (1/2 HP)	3/4	12	4#12	15	3	22
23	/	/					—	—	—	—	1.4	0.4					/	/	24
25	/	/					15.5	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	3	80	4#3	8	1 1/4	RTU-1	—	—	15.5	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	/	/					—	—	—	—	15.5	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	95.9		95.9		95.9								

TOTAL CONNECTED KVA: 287.7
TOTAL DEMAND KVA: 201.4
TOTAL DEMAND AMPERES: 243

PANELBOARD SCHEDULE

DESIGNATION: **ELIMEQ**
MAINS: 800 AMP | TYPE: SQ D I-LINE | O.C. DEVICE: 600A M.C.B.
VOLTAGE: 120/208V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 10K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMEQ (VIA 150 KVA XFMR) | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	3	250	*	*	*	EXIST PANEL 1LER	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	3	250	*	*	*	PANEL EL-IM-EQ2	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	95.9		95.9		95.9								

TOTAL CONNECTED KVA: 287.7
TOTAL DEMAND KVA: 201.4
TOTAL DEMAND AMPERES: 243

PANELBOARD SCHEDULE

DESIGNATION: **ELIMLS**
MAINS: 100 AMP | TYPE: - | O.C. DEVICE: 100A M.C.B.
VOLTAGE: 120/208V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 10K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMCR (VIA 30 KVA XFMR) | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-		-		-								

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: **EHIMCR**
MAINS: 225 AMP | TYPE: - | O.C. DEVICE: 225A M.C.B.
VOLTAGE: 277/480V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PNL EHIMDP | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	3	70	-	-	-	PANEL ELIMCR (45 KVA XFMR)	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-		-		-								

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: **ELIMEQ2**
MAINS: 250 AMP | TYPE: - | O.C. DEVICE: 225A M.C.B.
VOLTAGE: 120/208V-3Ø-4W | MINIMUM O.C. DEVICE | INTERRUPTING RATING: 10K AIC
LOCATION: ELEC RM-IMAGING PENTHOU | FED BY: PANEL ELIMEQ | MOUNTING: SURFACE
SINGLE PANEL ■ | DOUBLE PANEL ☐ | COMMON COVER ☐

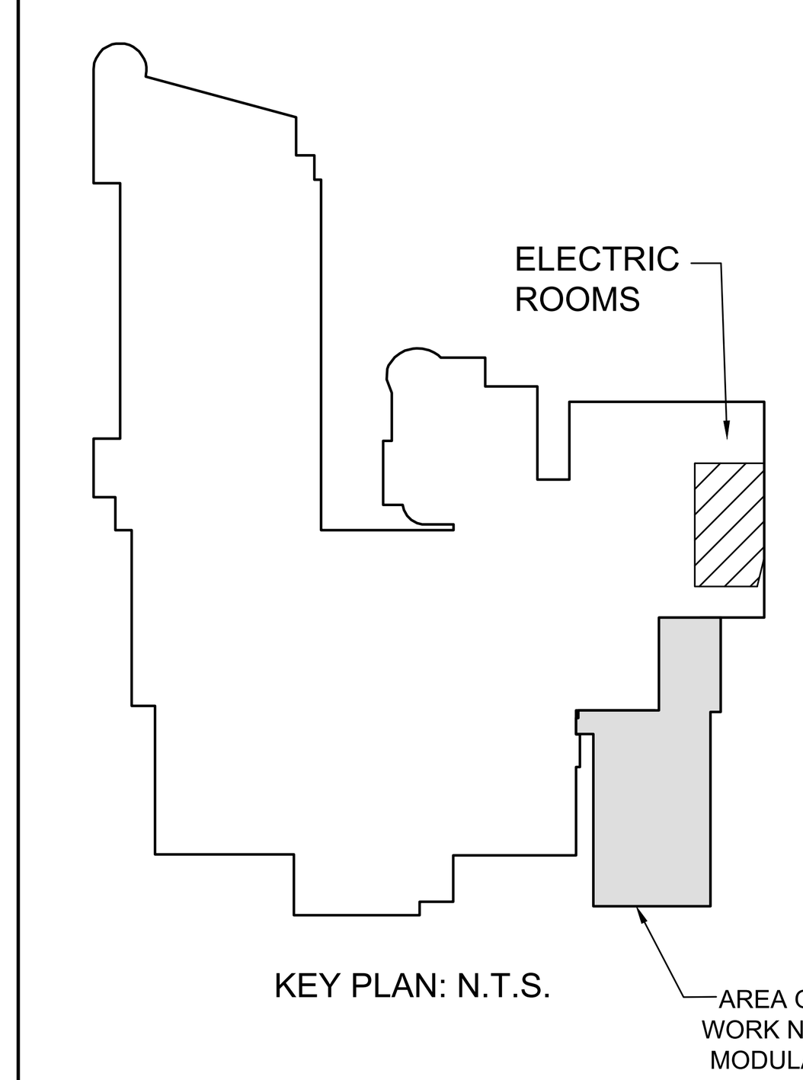
CKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A		KVA Ø A		KVA Ø A		LOAD	C	G	WIRE	TRIP	POLE	CKT NO
1	2	30	3#10	10	3/4	CU-3	1.7	0.5	—	—	—	—	CU-6	3/4	12	3#12	15	2	2
3	/	/					—	—	1.7	0.5	—	—					/	/	4
5	2	30	3#10	10	3/4	CU-4	—	—	—	—	1.7	0.5	CU-7	3/4	12	3#12	15	2	6
7	/	/					1.7	0.5	—	—	—	—					/	/	8
9	1	20	2#12	12	3/4	ATC PANEL	—	—	0.5	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-		-		-								

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

HIGHLAND ASSOCIATES

Architecture | Engineering | Interior Design
Highland Center (570) 586-4334 | 102 Highland Avenue fax(570) 586-5990 | Clarks Summit, PA 18411 www.highlandassociates.com

REVISION NO:



KEY PLAN: N.T.S.

90% Issued For Bid

PROJECT TITLE:

WMC Health | BON SECOURS CHARITY HEALTH SYSTEM | A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:
PANELBOARD SCHEDULES

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE: 07-21-2023	PROJECT NO: 2021-069P

DRAWING NO: E-5.00

CAD FILE: 1069- E-5.0.DWG | PLOT DATE: 7/19/2023

PANELBOARD SCHEDULE

DESIGNATION: NHIMDP
MAINS: 1200 AMP
TYPE: SQ D I-LINE
O.C. DEVICE: 1000A M.C.B.
VOLTAGE: 277/480V-3Ø-4W
MINIMUM O.C. DEVICE
INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM-IMAGING PENTHOU
FED BY: NEW SWBD MDP
MOUNTING: SURFACE
SINGLE PANEL ■
DOUBLE PANEL ☐
COMMON COVER ☐

OKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A	KVA Ø A	KVA Ø A	LOAD	C	G	WIRE	TRIP	POLE	OKT NO
1	/	/					-	-	—	—				/	/	2
3	3	800	*	*	*	ATS #11 - PANEL EHIMEQ	—	—	-	-	—	—	PANEL NHIMLP	*	*	*	100	3	4
5	/	/					—	—	—	-	-						/	/	6
7	/	/					-	-	—	—	—	—					/	/	8
9	3	225	*	*	*	ATS #10 - PANEL EHIMCR	—	—	-	-	—	—	75 KVA XFMR - PANEL NHIMLP	*	*	*	125	3	10
11	/	/					—	—	—	—	-	-					/	/	12
13	/	/					-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	3	100	*	*	*	ATS #9 - PANEL EHIMLS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-	-	-										

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: NHPP
MAINS: 100 AMP
TYPE: -
O.C. DEVICE: 100A M.C.B.
VOLTAGE: 277/480V-3Ø-4W
MINIMUM O.C. DEVICE
INTERRUPTING RATING: 65K AIC
LOCATION: NEW SWBD ENCLOSURE
FED BY: NEW SWBD
MOUNTING: SURFACE
SINGLE PANEL ■
DOUBLE PANEL ☐
COMMON COVER ☐

OKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A	KVA Ø A	KVA Ø A	LOAD	C	G	WIRE	TRIP	POLE	OKT NO
1	/	/					-	-	—	—						
3	3	50	-	-	-	PANEL NLPP (30 KVA XFMR)	—	—		-	—	—	SW'BD ENCLOSURE LIGHTING	3/4	12	2#12	20	1	2
5	/	/					—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	4
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	6
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	10
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	12
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	16
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	18
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	22
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	24
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	28
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	30
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	34
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	36
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	40
						CONNECTED KVA PER PHASE	-	-	-										

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: EHIMEQ
MAINS: 100 AMP
TYPE: -
O.C. DEVICE: 100A M.C.B.
VOLTAGE: 277/480V-3Ø-4W
MINIMUM O.C. DEVICE
INTERRUPTING RATING: 65K AIC
LOCATION: ELEC RM-IMAGING PENTHOU
FED BY: PNL NHIMDP
MOUNTING: SURFACE
SINGLE PANEL ■
DOUBLE PANEL ☐
COMMON COVER ☐

OKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A	KVA Ø A	KVA Ø A	LOAD	C	G	WIRE	TRIP	POLE	OKT NO
1	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-	-	-										

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: NLPP
MAINS: 100 AMP
TYPE: -
O.C. DEVICE: 100A M.C.B.
VOLTAGE: 120/208V-3Ø-4W
MINIMUM O.C. DEVICE
INTERRUPTING RATING: 10K AIC
LOCATION:
FED BY: PNL NHPP (30 KVA XFMR)
MOUNTING: SURFACE
SINGLE PANEL ■
DOUBLE PANEL ☐
COMMON COVER ☐

OKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A	KVA Ø A	KVA Ø A	LOAD	C	G	WIRE	TRIP	POLE	OKT NO
1	1	20	2#12	12	3/4	SW'BD ENCLOSURE RECEPTS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-	-	-										

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

PANELBOARD SCHEDULE

DESIGNATION: NLIMLP
MAINS: 250 AMP
TYPE: -
O.C. DEVICE: 225A M.C.B.
VOLTAGE: 120/208V-3Ø-4W
MINIMUM O.C. DEVICE
INTERRUPTING RATING: 10K AIC
LOCATION: ELEC RM-IMAGING PENTHOU
FED BY: PNL EHIMDP
MOUNTING: SURFACE
SINGLE PANEL ■
DOUBLE PANEL ☐
COMMON COVER ☐

OKT NO	POLE	TRIP	WIRE	G	C	LOAD	KVA Ø A	KVA Ø A	KVA Ø A	LOAD	C	G	WIRE	TRIP	POLE	OKT NO
1	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	2
3	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	4
5	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	6
7	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	8
9	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	10
11	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	12
13	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	14
15	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	16
17	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	18
19	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	20
21	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	22
23	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	24
25	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	26
27	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	28
29	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	30
31	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	32
33	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	34
35	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	36
37	1	-	-	-	-	SPACE AND PROVISIONS	-	-	—	—	—	—	SPACE AND PROVISIONS	-	-	-	-	1	38
39	1	-	-	-	-	SPACE AND PROVISIONS	—	—	-	-	—	—	SPACE AND PROVISIONS	-	-	-	-	1	40
41	1	-	-	-	-	SPACE AND PROVISIONS	—	—	—	—	-	-	SPACE AND PROVISIONS	-	-	-	-	1	42
						CONNECTED KVA PER PHASE	-	-	-										

TOTAL CONNECTED KVA: -
TOTAL DEMAND KVA: -
TOTAL DEMAND AMPERES: -

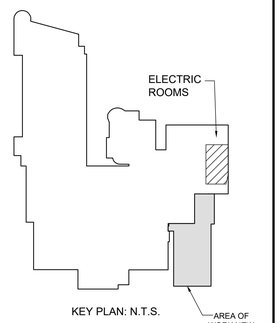
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



90% Issued For Bid

PROJECT TITLE:

WMC Health
BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

PANELBOARD SCHEDULES

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

E-5.01

CAD FILE: 1069-E-5.1.DWG PLOT DATE: 7/19/2023

Package Generator Set

1.1 GENERAL

1.1.1 References and Standards

The generator set covered by these specifications shall be designed, tested, rated, assembled and installed in strict accordance with all applicable standards below:

- CSA C22.2 No14
- CSA 282
- CSA 100
- EN61000-6
- EN55011
- FCC Part 15 Subpart B
- ISO8528
- IEC61000
- UL508
- UL2200
- UL142
- Designed to allow for installed compliance to NFPA 37, NFPA 70, NFPA 99 and NFPA 110

1.2 RELATED SECTIONS

1.2.1 Division 3 - Concrete

1.2.2 Division 15 - Mechanical

1.3 WORK INCLUDED

1.3.1 Installation

The work includes supplying and installing a complete integrated generator system. The system consists of agenerator set with related component accessories and automatic transfer switches specified under a separate section.

1.3.2 Fuel System

The CONTRACTOR shall provide a full tank of diesel fuel for the completion of all testing.

1.3.3 System Test

A complete system load test shall be performed after all equipment is installed. Guidelines in the Start-up Section.

1.3.4 Requirements, Codes and Regulations

The equipment supplied and installed shall meet the requirements of the NEC and all applicable local codes and regulations. All equipment shall be of new and current production by a MANUFACTURER who has 25 years of experience building this type of equipment. Manufacturer shall be ISO9001 certified.

1.4 SUBSTITUTION

Proposed deviations from the specifications shall be treated as follows:

1.4.1 Substitution Time Requirement

Requests for substitutions shall be made a minimum of ten (10) days prior to bid date. Manufacturers catalog data shall accompany each request and authorized acceptance shall be addenda only.

1.4.2 Substitution Responsibility

The power system has been designed to the specified manufacturer's electrical and physical characteristics. The equipment sizing, spacing, amounts, electrical wiring, ventilation equipment, fuel, and exhaust components have all been sized and designed around CATERPILLAR supplied equipment. Should any substitutions be made, the CONTRACTOR shall bear responsibility for the installation, coordination and operation of the system as well as any engineering and redesign costs, which may result from such substitutions.
In addition the design calls for an integrated, "on board" paralleling to the existing Caterpillar 400kW/500kVA unit currently at site.

1.5 SUBMITTALS

Engine-generator submittals shall include the following information:

A. Factory published specification sheet.

B. Manufacturer's catalog cut sheets of all auxiliary components such as battery charger, control panel, enclosure, etc. including cuts on the panel and circuit breaker used for "on board" paralleling, for the existing Caterpillar unit, at site.

C. Dimensional elevation and layout drawings of the generator set, enclosure and transfer switchgear and related accessories.

D. Weights of all equipment.

E. Concrete pad recommendation, layout and stub-up locations of electrical and fuel systems.

F. Interconnect wiring diagram of complete emergency system, including generator, switchgear, day tank, remote pumps, battery charger, control panel, and remote alarm indications.

G. Engine mechanical data, including heat rejection, exhaust gas flows, combustion air and ventilation air flows, fuel consumption, etc.

H. Generator electrical data including temperature and insulation data, cooling requirements, excitation ratings, voltage regulation, voltage regulator, efficiencies, waveform distortion and telephone influence factor.

I. Generator resistances, reactances and time constants.

J. Generator locked rotor motor starting curves.

K. Manufacturer's documentation showing maximum expected transient voltage and frequency dips, and recovery time during operation of the generator set at the specified site conditions with the specified loads.

L. Manufacturer's and dealer's written warranty.

1.7 SYSTEM RESPONSIBILITY

1.7.1 Generator Set Distributor

The completed engine generator set shall be supplied by the Manufacturer's authorized distributor only.

1.7.2 Requirements, Codes and Regulations

The equipment supplied and installed shall meet the requirements of NEC and all-applicable local codes and regulations. All equipment shall be new, of current production. There shall be one source responsibility for warranty; parts and service through a local representative with factory trained service personnel.

1.7.3 Automatic Transfer Switch

The automatic transfer switch(es) specified in another section shall be supplied by the generator set manufacturer in order to establish and maintain a single source of system responsibility and coordination.

1.8 WARRANTY

1.8.1 Two Year Standby (ISO 8528-1: ESP) **Generator Set Warranty**

The manufacturer's standard warranty shall in no event be for a period of less than two (2) years from date of initial start-up of the system and shall include repair parts, labor, reasonable travel expense necessary for repairs at the job site, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair. Running hours shall be limited to 500 hours annually for the system warranty by both the manufacturer and servicing distributor. Submittals received without written warranties as specified will be rejected in their entirety.

For any components used for the existing generator, for paralleling, there shall be a one year warranty for those supplied factory compenents.

1.9 PARTS AND SERVICE QUALIFICATIONS

1.9.1 Service Facility

The engine-generator supplier shall maintain 24-hour parts and service capability within 100 miles of the project site. The distributor shall stock parts as needed to support the generator set package for this specific project. The supplier must carry sufficient inventory to cover no less than 80% parts service within 24hrs and 95% within 48 hours.

1.9.2 Service Personnel

The dealer shall maintain qualified factory trained service personnel.

2 PRODUCT SPECIFICATIONS

2.1 GENERAL REQUIREMENTS

2.1.1 Generator set Requirements

The generator set shall be Standby Duty rated at 400 ekW, 500.0 kVA,
1800 RPM, 0.8 power factor, 480 V, 3-Phase,
60 hertz, including radiator fan and all parasitic loads. Generator set shall be sized to operate at the specified load at a maximum ambient of 122F (25.0C) and altitude of 500.0 feet (152.4 m).

Standby Power Rating:
Power is available for the duration of an emergency outage
Average Power Output = 70% of standby power
Load = Varying
Typical Hours/Year = 200 Hours
Maximum Expected Usage = 500 hours/year
Typical Application = Standby

2.1.2 Material and Parts

All materials and parts comprising the unit shall be new and unused.

2.1.3 Engine

The engine shall be diesel fueled, four (4) cycle, water-cooled, while operating with nominal speed not exceeding 1800 RPM. The engine will utilize in-cylinder combustion technology, as required, to meet applicable EPA non-road mobile regulations and/or the EPA NSPS rule for stationary reciprocating compression ignition engines. Additionally, the engine shall comply with the State Emission regulations at the time of installation/commissioning. Actual engine emissions values must be in compliance with applicable EPA emissions standards per ISO 8178 – D2 Emissions Cycle at specified ekW / bHP rating. Emissions requirements / certifications of this package:
EPA ESE

2.2 GENERATOR

2.2.1 Generator Specifications

The synchronous three phase generator shall be a single bearing, self-ventilated, drip-proof design in accordance with NEMA MG 1 and directly connected to the engine flywheel housing with a flex coupling. The generator shall meet performance class G2 of ISO 8528. The excitation system shall enable the alternator to sustain 300% of rated current based on the 105C (Class F) rise rating for ten seconds during a fault condition and shall improve the immunity of the voltage regulator to non-linear distorting loads. The excitation system shall be of brushless construction and be independent of main stator windings (either permanent magnet or auxiliary windings).

2.2.2 Voltage Regulator

2.2.2.1 Integrated Voltage Regulator (IVR)

The IVR shall maintain generator output voltage within +/- 0.25% for any constant load between no load and full load. The regulator shall be capable of sensing true RMS in three phases of alternator output voltage, or operating in single phase sensing mode. The IVR shall be cable of configuring knee frequency and voltage regulation configurable up to +/- 30%. The voltage regulator shall include a VAR/Pfcontrol feature as standard. The regulator shall provide an adjustable dual slope regulation characteristic in order to optimize voltage and frequency response for site conditions. The IVR shall be capable of setpoint adjustment.

The existing unit shall also be upgraded to a new IVR to allow for matching cont4rols and ensure proper parallel operation.

2.2.3 Motor Starting

Provide locked rotor motor starting capability of

1310.6 skVA at 30% instantaneous voltage dip as defined per NEMA MG 1. Sustained voltage dip data is not acceptable.

2.3 CIRCUIT BREAKER

2.3.1 Circuit Breaker Specifications

Provide a generator mounted, motorized circuit breaker, molded case, Qty.(1) 800 amp trip, 3 pole, NEMA 1/IP22. Breaker shall utilize a solid state L-S-I trip unit and include 2 form C contact and bell alarm rated at 24VDC . The breaker shall be UL Listed and connected to engine/generator safety shutdowns, as well as control for paralleling operation. Breaker shall be housed in an extension terminal box which is isolated from vibrations induced by the generator set. Mechanical type lugs, sized for the circuit breaker feeders shown on drawing, shall be supplied on the load side of breaker.
A motorized breaker with the same capabilities must also be installed on the existing site genset and the current manual breaker removed. The breaker will also nee to be wired for motorized control and alarms and indications to the new EMCP 4.4 control, as necessary, to make a fully functional paralleling system between the new and existing units.

2.4 CONTROLS – GENERATOR SET MOUNTED (EMCP 4.4)

Provide a fully solid-state, microprocessor based, generator set control for both the existing and new units, including local and remote annunciators. The control panel shall be designed and built by the engine manufacturer. The control shall provide all operating, monitoring, and control functions for the generator set. The control panel shall provide real time digital communications to all engine and regulator controls via SAE J1939.

2.4.1 Environmental

The generator set control shall be tested and certified to the following environmental conditions:

A. –40°C to +70°C Operating Range
B. 100% condensing humidity, 30°C to 60°C
C. IP22 protection for rear of controller; IP55 when installed in control panel
D. 5% salt spray, 48 hours, +35°C, 36.8V system voltage
E. Sinusoidal vibration 6G's RMS, 24-1000Hz
F. Electromagnetic Capability (89/336/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC, BS EN 50081-2, 50082-2)
G. Shock: withstand 15G

2.4.2 Functional Requirements

The following functionality shall be integral to the control panel.

A. The control shall include a minimum 5.5 inch, 480 x 320 pixel, white backlit graphical display with text based alarm/event descriptions.
B. The control shall include a minimum of 6-line data display
C. Generator set overview screen displaying critical generator set mechanical and electrical data on a single screen.
D. Audible horn for alarm and shutdown with horn silence switch
E. Standard ISO labeling
F. Multiple language capability
G. Remote start/stop control
H. Local run/off/auto control integral to system microprocessor
I. Cooldown timer
J. Speed adjust
K. Lamp test
L. Emergency stop push button
M. Voltage adjust
N. Voltage regulator V/Hz slope - adjustable
O. Password protected system programming

2.4.3 Digital Monitoring Capability

The controls shall provide the following digital readouts for the engine and generator. All readings shall be indicated in either metric or English units

Engine

A. Engine oil pressure
B. Engine oil temperature
C. Engine coolant temperature
D. Engine RPM
E. Battery volts
F. Engine hours
G. Engine crank attempt counter
H. Engine successful start counter
I. Service maintenance interval
J. Real time clock
K. Engine exhaust stack temperature
L. Engine main bearing temperature

Generator

A. Generator AC volts (Line to Line, Line to Neutral and Average)
B. Generator AC current (Avg and Per Phase)
C. Generator AC Frequency
D. Generator kW (Total and Per Phase)
E. Generator kVA (Total and Per Phase)
F. Generator kVAR (Total and Per Phase)
G. Power Factor (Avg and Per Phase)
H. Total kW-hr
I. Total kVAR-hr
J. % kW
K. % kVA
L. % kVAR
M. Generator bearing temperature
N. Generator stator winding temperature

2.4.4 Alarms and Shutdowns

The control shall monitor and provide alarm indication and subsequent shutdown for the following conditions. All alarms and shutdowns are accompanied by a time, date, and engine hour stamp that are stored by the control panel for first and last occurrence:

Engine Alarm/Shutdown

A. Low oil pressure alarm/shutdown
B. High coolant temperature alarm/shutdown
C. Loss of coolant shutdown
D. Overspeed shutdown
E. Overcrank shutdown
F. Emergency stop shutdown
G. Low coolant temperature alarm
H. Low battery voltage alarm
I. High battery voltage alarm
J. Control switch not in auto position alarm
K. Battery charger failure alarm
I. ATS remote start wiring failure

Generator Alarm/Shutdown

A. Generator phase sequence
B. Generator over voltage
C. Generator under voltage
D. Generator over frequency
E. Generator under frequency
F. Generator reverse power (real and reactive)
G. Generator overcurrent ((including inverse definite minimum time. for Normally Inverse, Very Inverse, Extremely Inverse conditions as well as those based on Thermal Damage Curve configurations)
H. Generator current balance

Voltage Regulator Alarm/Shutdown

A. Loss of excitation alarm/shutdown
B. Instantaneous over excitation alarm/shutdown
C. Time over excitation alarm/shutdown
D. Rotating diode failure
E. Loss of sensing
F. Loss of PMG

2.4.5 Inputs and Outputs

Programmable Digital Inputs

The controller shall include the ability to accept programmable digital input signals. The signals may be programmed for either high or low activation using programmable Normally Open or Normally Closed contacts.

Programmable Discrete Outputs

The control shall include the ability to operate seventeen (17) discrete outputs, integral to the controller, which are capable of sourcing up to 200mA.

Integrated PLC Functionality

The panel shall allow the operator to create custom logic functions to provide additional user defined control of the generator set operation.

2.4.6 Maintenance

All engine, voltage regulator, control panel and accessory units shall be accessible through a single electronic service tool. The following maintenance functionality shall be integral to the generator set control

A. Engine running hours display
B. Service maintenance interval (running hours or calendar days)
C. Engine crank attempt counter
D. Engine successful starts counter
E. 40 events are stored in control panel memory
F. Chronological status event log capable of displaying a sequence of event leading up to a generator set shutdown
G. Programmable cycle timer that starts and runs the generator for a predetermined time. The timer shall use 7 user-programmable sequences that are repeated in a 7-day cycle. Each sequence shall have the following programmable set points:

1. Day of week
2. Time of day to start
3. Duration of cycle

2.4.7 Remote Communications

Remote Communications

The control shall include Modbus TCP communications via Ethernet 10BASE-T and Modbus RTU communications via RS-485 half duplex with configurable baud rates from 2.4k to 57.6k.

Remote Monitoring Software

The control shall provide Monitoring Software with the following functionality

A. Monitor up to eight (8) generator sets, plus ATS and UPS.
B. Provide access to all date and events on generator set communications network
C. Provide remote control capability for the generator set(s)
D. Ability to communicate via Modbus TCP, Modbus RTU or remote modem

2.4.8 Annunciation

Local Annunciator (NFPA 99/110)

Provide a local, control panel mounted, annunciator to meet the requirements of NFPA 110, Level 1.

A. Annunciators shall be networked directly to the generator set control
B. Local Annunciator shall include a lamp test pushbutton, alarm horn and alarm acknowledge pushbutton
C. Provide the following individual light indications for protection and diagnostics:
1. Overcrank
2. Low coolant temperature
3. High coolant temperature warning
4. High coolant temperature shutdown
5. Low oil pressure warning
6. Low oil pressure shutdown
7. Overspeed
8. Low coolant level
9. EPS supplying load
10. Control switch not in auto
11. High battery voltage
12. Low battery voltage
13. Battery charger AC failure
14. Emergency stop
15. Spare (or ATS Remote Start wiring failure)
16. Spare (or Tier 4 SCR when applicable)

Remote Annunciator (NFPA 99/110)

Provide a remote annunciator to meet the requirements of NFPA 110, Level 1.

A. The annunciator shall incorporate ring-back capability so that after silencing the initial alarm, any subsequent alarms will sound the horn.
B. Ability to be located up to 4000 ft from the generator set
C. The annunciator shall provide remote annunciation of all points listed below:
1. Overcrank
2. Low coolant temperature
3. High coolant temperature warning
4. High coolant temperature shutdown
5. Low oil pressure warning
6. Low oil pressure shutdown
7. Overspeed
8. Low coolant level
9. EPS supplying load
10. Control switch not in auto
11. High battery voltage
12. Low battery voltage
13. Battery charger AC failure
14. Emergency stop
15. Spare (or ATS Remote Start wiring failure)
16. Spare (or Tier 4 SCR when applicable)

2.4.9 Sequence of Operations

Description: This sequence describes a system utilizing CAT® EMCP4.4 generator controllers to parallel The new and existing generators to each other in an island or standby application.

A. Functional Sequence of Operation

1. The EPS Automation shall be provided with the following Modes of Operation:
a) Automatic/Standby Mode
1) The automatic transfer switches are in the normal position serving utility power to the loads.
2) The generator set main breakers are open.
3) The automation is standing by to act in response to a run request from associated automatic transfer switches.
b) Emergency Mode
Entry
1) Automatic Transfer Switch Run Request is received by all generator controllers
2) Where applicable, load shed sequence is executed.
3) All available generators are started.
4) The first generator up to voltage and frequency is closed to the bus.
5) Critical loads and load shed priority 1 loads are powered.
6) The remaining generator sets are synchronized and paralleled to the bus as they come up to voltage and frequency.
7) As additional generators are paralleled to the emergency bus, Load Shed Priority levels are added, powering their associated loads.
8) The system will continuously monitor real and reactive power and proportionally share load among all generators on the bus.
9) The system is now in emergency mode.
Exit
1) Automatic transfer switches sense the utility source is within acceptable operational tolerances for a time duration set at the automatic transfer switch.
2) As each automatic transfer switch transfers back to utility power, it removes it's run request from the generator plant.
3) When the last automatic transfer switch has retransferred to the utility and all run requests have been removed from the generator plant, the tie breaker (if present) and all generator set main circuit breakers shall be opened.
4) The generator sets are allowed to run for their programmed cool down period and shut down.
5) The system is returned to automatic/standby mode

2. Load Sense Generator Demand

a) The controller shall also include logic to automatically sequence the generator sets based on the total load requirement of the system. If the load exceeds a minimum reserve kW threshold, additional generator sets will automatically start, synchronize, and close the generator circuit breaker. If the site load falls below a reserve kW threshold, a generator set will automatically unload, open the generator circuit breaker, and shutdown.

2.5 COOLING SYSTEM

The generator set shall be equipped with a rail-mounted, engine-driven radiator with blower fan and all accessories. The cooling system shall be sized to operate at full load conditions and 122 F ambient air entering the room or enclosure. The generator set supplier is responsible for providing a properly sized cooling system based on the enclosure static pressure restriction.
The unit shall have a coolant drain line with valve; terminated on edge of base, fan and belt guards, coolant level sight gauge and a coolant level sensor that will connect to the control panel for annunciation of alarm. The engine shall have thermostats and housing, full open temperature 92 deg C (198 deg F). with a jacket water pump, gear driven, centrifugal.
The unit shall be ready ofr start up with Extended Life Coolant.

2.6 FUEL SYSTEM

2.6.1 Fuel System

The fuel system shall be integral with the engine. In addition to the standard fuel filters provided by the engine manufacturer, there shall also be installed a primary fuel filter/water separator in the fuel inlet line to the engine. All fuel piping shall be black iron or flexible fuel hose rated for this service. No galvanized piping will be permitted. Flexible fuel lines shall be minimally rated for 300 degrees F and 100 psi.

2.6.2 Integral Fuel Tank

Provide a double wall integral tank, incorporated into the generator set base frame and constructed to meet all local codes and requirements. A fuel tank base of 12 hour capacity and shall be provided as an integral part of the enclosure. It shall be contained in a rupture basin with 110% capacity. The tank shall meet UL142 standards. A locking fill cap, a mechanical reading fuel level gauge, low fuel level alarm contact, and fuel tank rupture alarm contact shall be provided. The robust base design includes linear vibration isolators between tank base and engine generator.

2.7 EXHAUST SYSTEM (INDOOR INSTALLATIONS ONLY)

2.7.1 Silencer

A silencer companion flanges, and flexible stainless steel exhaust fitting properly sized shall be furnished and installed according to the manufacturer's recommendation. Mounting shall be provided by the manufacturer within the sound attenuated enclosure and sized to match the sound specification of the packaged genset. Exhaust pipe size shall be sufficient to ensure that exhaust backpressure does not exceed the maximum limitations specified by the engine manufacturer.

2.8 STARTING SYSTEM

2.8.1 Starting Motor

A DC electric starting system with positive engagement shall be furnished. The motor voltage shall be as recommended by the engine manufacturer.

2.8.2 Jacket Water Heater

Jacket water heater shall be provided and shall be sized to insure that genset will start within the specified time period and ambient conditions.

2.8.3 Batteries

Batteries - A lead-acid storage battery set of the heavy-duty diesel starting type shall be provided. Battery voltage shall be compatible with the starting system.

2.8.4 Battery Charger

A current limiting battery charger shall be furnished to automatically recharge batteries. The charger shall be dual charge rate with automatic switching to the boost rate when required. The battery charger shall be mounted on the genset package or inside the genset enclosure/room.

2.9 ENCLOSURE

2.9.1 Attenuated Enclosure (Standard Sound optional)

The complete engine generator set, including generator control panel, engine starting batteries and fuel oil tank, shall be enclosed in a factory assembled, sound attenuated enclosure mounted on the fuel tank base.

A. A weather resistant, sound attenuated enclosure of steel with electrostatically applied powder coated baked polyester paint. The enclosure shall have a resulting sound level of 73 dba @ 23 ft at an ambient capability of 124 F, with the genset running under full load. It shall consist of a roof, side walls, and end walls. Fasteners shall be either zinc plated or stainless steel.

B. Enclosure Sound Attenuation: Acoustical foam shall be provided between all supports and inside doors and sound baffles on air intake and air discharge.

3 EXECUTION

3.1 INSTALLATION

Install equipment in accordance with manufacturer's recommendations, the project drawings and specifications, and all applicable codes.

3.2 START-UP AND TESTING

Coordinate all start-up and testing activities with the Engineer and Owner. After installation is complete and normal power is available, the manufacturer's local dealer shall perform the following:

Perform initial start up: Verify proper installation and operation of the new unit. Test safeties and alarms. Check rotation with the electrician and close circuit breaker to building, if allowed.

With resistive Load bank: Perform a 4-hour load bank test at a 1.0 PF at full nameplate rating. Load bank, cables and other equipment required for this test to be supplied by the genset supplier.

NFPA 110 Load Test Requirements:

- Verify that the equipment is installed properly.
- Check all auxiliary devices for proper operation, including battery charger, jacket water heater(s), generator space heater, remote annunciator, etc.
NFPA 110 Load Test Requirements:.
- Check all auxiliary devices for proper operation, including battery charger, jacket water heater(s), generator space heater, remote annunciator, etc.

For the existing unit, the ugrade to the EMCP 4.4 control panel and addition of the motorized breaker should be performed after acceptance of the new unit. This unit shall be test run without load to verify operation of the new panel and breaker performing the following checks:

- Verify that the equipment is installed properly.
- Check genset for general operation
- Check safeties and alarms.
- Check all auxiliary devices for proper operation, including voltage regulator,motorized circuit breaker, remote annunciator, etc.

After satisfactory performance of the genset operation as a standalone, the units should be tested with the new unit to demonstrate paralleling capability and function.
With resistive Load bank: Perform a 4-hour load bank test at a 1.0 PF at full nameplate rating for some time at the combined system of 800kW. Vary load load to demonstrate load sharing and demonstrate any required features of the sequence of operation section. Load bank, cables and other equipment required for this test to be supplied by the genset supplier.

3.3 OPERATION AND MAINTENANCE MANUALS

Provide two (2) sets of operation and maintenance manuals covering the generator, switchgear, and auxiliary components. Include final as-built wiring interconnect diagrams and recommended preventative maintenance schedules.

3.4 TRAINING

3.4.1 On-Site Training

Provide on-site training to instruct the owner's personnel in the proper operation and maintenance of the equipment. Review operation and maintenance manuals, parts manuals, and emergency service procedures.

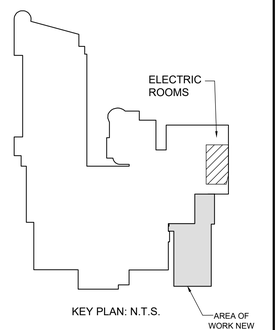
HIGHLAND ASSOCIATES

Architecture
Highland Center
(570) 586-4334

Engineering
102 Highland Avenue
fax(570) 586-5990

Interior Design
Clarks Summit, PA 18411
www.highlandassociates.com

REVISION NO:



ELECTRIC ROOMS

90% Issued For Bid

PROJECT TITLE:

WMC Health
BON SECOURS CHARITY HEALTH SYSTEM
A member of the Westchester Medical Center Health Network

St. Anthony's Community Hospital
15 Maple Ave, Warwick, NY 10990

Radiology Suite Phase II

SEALS:

DRAWING TITLE:

GENERATOR SPECIFICATIONS

DRAWN BY:	CHECKED BY:
C.A.R.	L.K.N.
DATE:	PROJECT NO:
07-21-2023	2021-069P

DRAWING NO:

E-6.00

CAD FILE: 1069-E-6.0.DWG PLOT DATE: 7/19/2023