ROOF RENOVATION AND ASSOCIATED WORK AT

TORRINGTON MIDDLE SCHOOL

200 MIDDLE SCHOOL DR.
TORRINGTON, CT 06790

PREPARED FOR

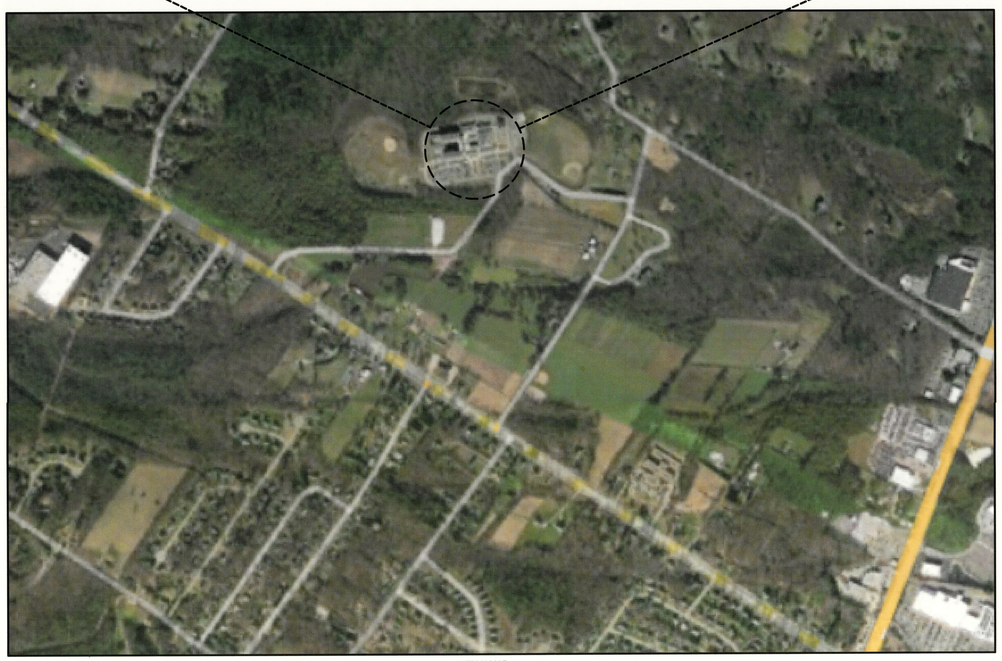
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

DRAWING NO	TITLE
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G101	GENERAL NOTES & LEGENDS
G102	WIND UPLIFT PRESSURE AND ZONES
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MP105	MECHANICAL DETAILS
MP106	MECHANICAL SPECIFICATIONS
S100	EXISTING ROOF FRAMING PLAN
S501	STRUCTURAL DETAILS

BUILDING OFFICIAL SIGN OFF	FIRE MARSHAL SIGN OFF
SIGNATURE:	SIGNATURE:
PRINTED NAME AND DATE: Kevin Gillette 7/8/25	PRINTED NAME AND DATE: Jared Howe 7/7/25
HEALTH OFFICIAL SIGN OFF	**FEDERAL 504 OFFICIAL SIGN OFF**
SIGNATURE: Robert Rubbo	SIGNATURE:
PRINTED NAME AND DATE: Robert Rubbo 07/08/2025	PRINTED NAME AND DATE: Kevin Gillette 7/8/25



SITE MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

GALE

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ENGINEERS and PLANNERS

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BID DOCUMENTS

PROJECT
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TORRINGTON MIDDLE SCHOOL
200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	977541 G100
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

COVER SHEET

STATE OF CONNECTION
MARK A. LAMBERTON
No. 25171
LICENSED
PROFESSIONAL ENGINEER

DRAWING NO.
G100

LEGEND

ALL ITEMS ARE EXISTING UNLESS OTHERWISE NOTED

- ROOF EDGE
- E.J. EXPANSION JOINT
- PARAPET
- RIDGE/HIP LINE
- VALLEY
- CONTROL JOINT
- PORTABLE GUARD RAILS
- CONDUIT/ LIGHTNING PROTECTION CABLES
- CRICKET
- DUCT/RTU SUPPORT
- GUTTER WITH DOWNSPOUT
- E HEAT TRACE CABLES
- M MECHANICAL PIPING
- SNOW GUARD
- WELDED WIRE FABRIC
- BENCHMARK
- A50 NOTE DETAIL INDICATOR
- NOTE ELEVATION CALLOUT
- PHOTO INDICATOR
- ELEV.=_'-_"± ROOF ELEVATION RELATIVE TO GRADE WHICH IS ASSUMED TO BE ZERO FEET
- DUCTWORK
- MANUFACTURER'S WALKWAY PADS
- ROOF AREA NOT IN CONTRACT
- AC AC AIR CONDITIONING UNIT WITH OPTIONAL STAND
- ROOF ANTENNA
- TELEPHONE ANTENNA
- A WALL MOUNTED ANTENNA
- CAP
- C C CHIMNEY
- DOOR
- DS DOWNSPOUT
- "A AUGMENTING ROOF DRAIN
- OVERFLOW ROOF DRAIN
- ROOF DRAIN
- ROOF DRAIN WITH SUMP
- WALL DRAIN
- D D DUCT
- BUILDING ENTRANCE
- ELECTRICAL PANEL
- WALL MOUNTED ELECTRICAL CONDUIT
- E E E WALL MOUNTED ELECTRICAL PANEL
- EF EXISTING EXHAUST FAN
- IV EXISTING INTAKE VENT
- RV EXISTING RELIEF VENT
- F F FAN
- FA FA FIRE ALARM
- H ACCESS HATCH
- SMOKE HATCH
- ACCESS LADDER
- WALL MOUNTED LADDER
- # LEAK
- L LIGHT FIXTURE
- LIGHTNING ROD
- LOUVER
- E ELECTRICAL PENETRATIONS
- # PIPE PENETRATION
- M MECHANICAL PENETRATION
- UNKNOWN PENETRATION
- VP # VENT PIPE
- G GLASS VENT PIPE
- HP # HOT PIPE
- PS POURABLE SEALER BOX
- RTU ROOF TOP MECHANICAL UNIT
- SATELLITE DISH
- SCUPPER
- OVERFLOW SCUPPER
- SECURITY CAMERA
- S SKYLIGHT
- SLEEPER
- STRUCTURAL SLOPE
- TAPERED INSULATION SLOPE
- SPLASHBOX
- STACK
- SUPPORT
- # TEST CUT LOCATION
- TEL TEL UNIT
- V VENT
- J J J-VENT
- WATER SPIGOT
- WINDOW
- (A) ABANDONED
- BGL BELOW GRADE LEADER
- XX XX APPROXIMATE ROOF SLOPE

REPAIR LEGEND

ROOFING DEFECT LEGEND

- DFC # REPAIR DETERIORATED FLOOD COAT; PREPARE LOW SLOPE ROOFING AND INSTALL RESTORATION COATING AND GRAVEL; # INDICATES SQUARE FEET
- MRG # REPAIR MISSING / BROKEN GUTTER; INSTALL REPLACEMENT TO MATCH ADJACENT; # INDICATES LINEAR FEET
- OTWF # REMOVE AND REPLACE THROUGHWALL FLASHING; REMOVE AND REPLACE BRICK MASONRY TO ACCOMMODATE REPLACEMENT THROUGHWALL FLASHING # INDICATES LINEAR FEET
- PF # REPAIR PEELED FINISH; PREPARE SURFACE AND REPAINT; # INDICATES SQUARE FEET

SEALANT & GLAZING

- CJ # CONTROL JOINT; # INDICATES LINEAR FEET

GENERAL SCOPE OF WORK

1. ROOF RENOVATION INVOLVES WORK ON ALL STEEP SLOPE ROOF AREAS. IN GENERAL, THE EXISTING METAL ROOF PANELS ARE TO REMAIN IN PLACE UNLESS SPECIFICALLY INDICATED OTHERWISE. REMOVE FASCIA PANELS AND MISCELLANEOUS FLASHING WHERE INDICATED ON DRAWINGS IN PREPARATION FOR WORK.
2. INSTALL NEW STANDING SEAM METAL ROOFING OVER THE EXISTING METAL ROOF SYSTEM. THE NEW METAL ROOF ASSEMBLY SHALL BE ATTACHED THROUGH THE EXISTING METAL ROOF ASSEMBLY TO THE EXISTING ROOF STRUCTURE UTILIZING METAL SUB-FRAMING MEMBERS AS INDICATED IN THE SPECIFICATIONS AND DRAWINGS.
3. REMOVE AND REINSTALL EXISTING MECHANICAL AND ELECTRICAL COMPONENTS ATTACHED TO PANELS AS INDICATED. PROVIDE NEW WEATHERTIGHT ROOF PLATES AROUND PENETRATION.
4. REMOVE AND REINSTALL LIGHTNING PROTECTION SYSTEM AS REQUIRED TO INSTALL NEW ROOF SYSTEM. EXTEND THE EXISTING AIR TERMINALS PROVIDE REPLACEMENT BOOT FLASHING.

GENERAL NOTES

1. THE INFORMATION SHOWN ON THIS DRAWING HAS BEEN COMPILED FROM VARIOUS SOURCES AND MAY NOT REFLECT THE ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION.
2. FOR THE SAKE OF CLARITY, EACH INDIVIDUAL DETAIL HAS NOT BEEN INDICATED ON THE PLANS AND/OR ELEVATIONS. INSTALLATION DETAILS HAVE BEEN INDICATED FOR TYPICAL COMPONENTS AT RANDOM LOCATIONS.
3. HATCH PATTERNS ARE FOR REPRESENTATION ONLY AND SHOULD NOT BE USED AS A MEANS FOR QUANTIFYING.
4. JOB SITE SAFETY IS THE CONTRACTOR'S RESPONSIBILITY. GALE REPRESENTATIVES, INCLUDING SUBCONSULTANTS RETAINED BY GALE, MAY VISIT THE JOB SITE FROM TIME TO TIME. THESE VISITS ARE FOR CLARIFICATIONS OF SPECIFIC DESIGN RELATED ISSUES ONLY AND ARE NOT FOR THE PURPOSES OF JOB SITE SAFETY. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COMPLY WITH ALL SITE SAFETY APPLICABLE REQUIREMENTS.
5. ALL ITEMS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS APPLICABLE TO THE PROJECT.
6. THE CONTRACTOR SHALL REPORT DETERIORATED OR UNSUITABLE STRUCTURAL COMPONENTS OR SUBSTRATES TO THE OWNER PRIOR TO PERFORMING ANY INSTALLATION WORK.
7. THE CONTRACTOR IS CAUTIONED THAT DUE TO BUILDING OCCUPANCY, THE OWNER REQUIRES COMPLIANCE ON WORK HOURS, SCHEDULING, SET-UP, CLEANUP, PARKING, SECURITY, ETC. REFER TO SPECIFICATIONS FOR OWNER REQUIREMENTS.
8. DETAILS NOT DEPICTED SHALL BE CONSTRUCTED IN A MANNER CONSISTENT WITH THE DETAIL DRAWINGS.
9. REFER TO CONTRACT DOCUMENTS FOR WORK SCHEDULE LIMITATIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF ALL MATERIALS LISTED AND/OR INDICATED ON THE DRAWINGS OR NOTED IN THE WRITTEN SPECIFICATIONS ; TYPICAL.
11. THE BUILDING SHALL BE MAINTAINED IN A DUST FREE CONDITION. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY PROTECTION TO ENSURE THE INTERIOR OF THE BUILDING REMAINS DUST FREE. NO DEMOLITION CAN PROCEED UNTIL AN APPROVED TEMPORARY PROTECTION SYSTEM IS IN PLACE.
12. DUE TO THE CONGESTION AROUND THE PROJECT SITE THE CONTRACTOR MUST PROVIDE DETAILED TRAFFIC AND SCAFFOLDING PLANS TO THE OWNER FOR REVIEW. THE CONTRACTOR WILL ONLY BE ALLOWED THE AREAS SHOWN FOR SETUP AND STORAGE OF MATERIALS.
13. NOTIFY THE OWNER OF WORK LOCATIONS A MINIMUM OF 72 HOURS IN ADVANCE IN ORDER THAT OCCUPANCY BELOW THE WORK AREAS MAY BE CONTROLLED.
14. REFER TO SPECIFICATIONS FOR HAZARDOUS MATERIAL DEMOLITION AND HANDLING.

CODE INFORMATION

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING BUILDING CODES AND STANDARDS:
   - 2022 CONNECTICUT BUILDING CODE (CSBC).
   - 2021 INTERNATIONAL BUILDING CODE.
   - ICC A117.1-2017.
   - 2021 INTERNATIONAL EXISTING BUILDING CODE.
   - 2021 INTERNATIONAL PLUMBING CODE.
   - 2021 INTERNATIONAL MECHANICAL CODE CODE.
   - 2021 INTERNATIONAL ENERGY CONSERVATION CODE.
   - 2021 INTERNATIONAL RESIDENTIAL CODE.
   - 2020 NFPA 70, NATIONAL ELECTRICAL CODE
2. BUILDING USE / OCCUPANCY GROUPS: (E)
3. CONSTRUCTION TYPES: TYPE I
4. EXISTING INSULATION CONSISTS OF SUSPENDED FIBERGLASS BATT INSULATION (APPROXIMATELY R-20), WHICH IS DRAPED OVER STRUCTURAL METAL PURLINS.
5. BASIS OF DESIGN: ROCKWOOL CAVITY ROCK STONE WOOL INSULATION AT 2.5" THICK RESULTS IN SUPPLEMENTAL INSULATION VALUE OF R-10.75.
6. DESIGN LOADS

   DESIGN CODE - 2022 CONNECTICUT BUILDING CODE (CSBC)
   BASIS OF DESIGN 2021 IEBC AS AMENDED BY CSBC

   ROOF:
   - DEAD LOADS:
     - EXISTING ROOFING 10.7 PSF
     - EXISTING ROOFING WITH CWF DECK 4.7 PSF
     - NEW ROOFING 13.8 PSF
     - NEW ROOFING WITH CWF DECK 7.8 PSF
     - STRUCTURE ACTUAL WEIGHT
   - LIVE LOADS:
     - GROUND SNOW LOAD 40 PSF
     - IMPORTANCE FACTOR, IS 1.1
     - EXPOSURE FACTOR, CE 0.9
     - THERMAL FACTOR, CT 1.0
     - SLOPED ROOF SNOW LOAD, PS 30 PSF
     - DRIFT, SLIDING AND UNBALANCED LOADS IN ACCORDANCE WITH ASCE 7-16

   WIND:
   - BASIC WIND SPEED 125 MPH
   - EXPOSURE CATEGORY C
   - RISK CATEGORY III
   - MEAN ROOF HEIGHT VARIES
   - INTERNAL PRESSURE COEFFICIENT, (GCPI = +/- 0.18
   - REFERENCE WIND PRESSURE Q 133.3 PSF

NOTE: REFER TO SHEET G-102 FOR INDIVIDUAL ROOF AREA WIND UPLIFT REQUIREMENTS

SITE PLAN NOTES

1. CONTRACTOR SHALL BASE STAGING REQUIREMENTS ON THE INFORMATION SHOWN. THE LOCATIONS ARE APPROXIMATE AND MAY BE SUBJECT TO CHANGE.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A DETAILED STAGING/LAYOUT PLAN FOR THE OWNER'S REVIEW AND APPROVAL.
3. CONTRACTOR SHALL PROVIDE OVERHEAD PROTECTION AT BUILDING ENTRANCE WAYS IN ACCORDANCE WITH OSHA, LOCAL, STATE, AND FEDERAL GUIDELINES.
4. OVERHEAD PROTECTION SHALL EXTEND A MINIMUM OF 8'-0" BEYOND THE BUILDING'S ENTRANCES.
5. CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES TO PREVENT PEDESTRIANS FROM ACCESSING THE WORK AREA, FROM WALKING UNDER WORK LOCATIONS, AND FROM WALKING UNDER THE CRANE AND LOADING AREAS.
6. CONTRACTOR MAY PROVIDE TEMPORARY BARRICADES AT PEDESTRIAN WALKWAYS IN LIEU OF OVERHEAD PROTECTION SHOULD THE ROOF AREAS ABOVE SAID WALKWAYS BE REMOVED AND REPLACED IN THE SAME DAY. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MONITOR AT GROUND LEVEL TO WARN PEDESTRIAN TRAFFIC OF THE ABOVE-ROOFLINE WORK.
7. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION FOR THE PAVED AREAS, CURBS, SIDEWALKS, AND LANDSCAPED AREAS TO PREVENT DAMAGE FROM THE WORK, MATERIALS, OR EQUIPMENT. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR/REPLACE ANY DAMAGED LOCATIONS AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR IS CAUTIONED THAT MIDDLE SCHOOL DRIVE IS A ONE WAY STREET INTO AND OUT OF THE SCHOOL PROPERTY. SITE STORAGE/STAGING AREA MUST NOT IMPEDE VEHICLE TRAFFIC. DO NOT BLOCK PEDESTRIAN CROSSWALK. CONTRACTOR WILL BE RESPONSIBLE FOR STREET/SIDEWALK PERMITS AND POLICE DETAILS.

DEMOLITION NOTES

1. NO DEMOLITION WORK SHALL PROCEED UNTIL A PLAN HAS BEEN SUBMITTED TO AND APPROVED BY THE OWNER AND ENGINEER DETAILING THE METHODS AND EQUIPMENT TO BE USED TO DEMOLISH AND/OR SURFACE PREPARE STRUCTURES AND FEATURES.
2. ALL DEMOLISHED MATERIALS AND DEBRIS SHALL BE LEGALLY DISPOSED OF OFF SITE IN A MANNER SATISFACTORY TO THE OWNER AND CURRENT DEP/EPA REQUIREMENTS.
3. THE CONTRACTOR SHALL USE CAUTION WHILE PERFORMING DEMOLITION WORK NEAR THE EXISTING BUILDING STRUCTURES TO REMAIN.
4. ALL ITEMS NOTED TO BE REMOVED OR DEMOLISHED (NOT INDICATED TO BE REUSED) MUST BE PROPERLY DISPOSED OF.
5. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.
6. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO EXISTING BUILDINGS, FACILITIES, AND SITE IMPROVEMENTS TO REMAIN.
7. USE WATER MIST AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS.
8. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
9. CLEAN ADJACENT STRUCTURES OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
10. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. CONTRACTOR TO BE RESPONSIBLE FOR ANY CUTTING AND PATCHING THAT IS REQUIRED.
11. EXISTING STRUCTURES, UTILITY LINES AND EMBEDDED UTILITIES MUST BE IDENTIFIED BY THE OWNER AND CONTRACTOR, AND MARKED ON-SITE PRIOR TO INITIATING CONSTRUCTION. IN THE EVENT THAT ANY UNMARKED OR UNKNOWN STRUCTURE/UTILITY ARE UNCOVERED BY THE CONTRACTOR, WORK MUST HALT AND THE CONTRACTOR SHALL REPORT ITS FINDINGS TO THE OWNER'S SITE REPRESENTATIVE FOR INSTRUCTIONS BEFORE PROCEEDING FURTHER. THE EXISTING STRUCTURES AND UTILITIES WHICH ARE ADJACENT TO THE SITE AND THOSE TO REMAIN WITHIN THE LIMITS OF THE WORK SHALL BE PROTECTED AGAINST DAMAGE. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO THE OWNER IN THE EVENT OF REMOVAL OF OR DAMAGE TO ANY EXISTING OBJECTS BY CONTRACTORS PERSONNEL, WHICH ARE INTENDED BY THE OWNER TO REMAIN IN PLACE.

TEMPORARY SHORING NOTES

1. THE CONTRACTOR MUST PROVIDE TEMPORARY STRUCTURAL SHORING SUPPORT OR SHORING TO PERFORM REPAIRS AS NOTED ON THE DRAWINGS. ALL MEANS AND METHODS TO ACCOMPLISH THE REPAIR WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT PROPOSED MEANS AND METHODS TO THE OWNER AND ENGINEER FOR REVIEW.
2. THE CONTRACTOR MUST SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO THE PERFORMANCE OF ANY WORK SHOWING THE LOCATION, SIZE, DIMENSIONS, CAPACITY, DETAIL, WEIGHT, EQUIPMENT, ETC. OF ALL SUPPORTING MEMBERS AS WELL AS A TIME SCHEDULE AND SEQUENCE OF WORK INDICATING WHEN ALL THE PERTINENT ITEMS OF WORK WILL BE PERFORMED.
3. THE CONTRACTOR MUST SUBMIT DESIGN CALCULATIONS, SIGNED-AND-SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF CONNECTICUT, TO THE ENGINEER FOR REVIEW PRIOR TO, OR INCLUSIVE WITH, SHOP DRAWINGS.
4. NO CONSTRUCTION WORK WILL COMMENCE UNTIL THE ENGINEER HAS REVIEWED THE SHORING SHOP DRAWINGS AND DESIGN CALCULATIONS.
5. CONTRACTOR MUST PROVIDE ADEQUATE LATERAL BRACING. ALL SHORING MUST BE CONTINUOUS THROUGH ALL LEVELS AND/OR SOLIDLY BLOCKED BETWEEN LEVELS. ALL SHORES MUST BE CARRIED DOWN TO FIRM BEARING MATERIAL AND THE LOAD MUST BE ADEQUATELY SPREAD OUT IF SUPPORTED ON THE EXISTING GRADE.
6. THE CONTRACTOR SHALL JACK BUILDING COMPONENTS TO A TRUE, PLUMB AND LEVEL PLANE. ANY DEFICIENCIES OR DAMAGE AS A RESULT OF SHORING OR JACKING SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL PROVIDE ALL OVERHEAD PROTECTION AT BUILDING ENTRANCE WAYS IN ACCORDANCE WITH OSHA, LOCAL, STATE AND FEDERAL GUIDELINES.

ROOFING NOTES

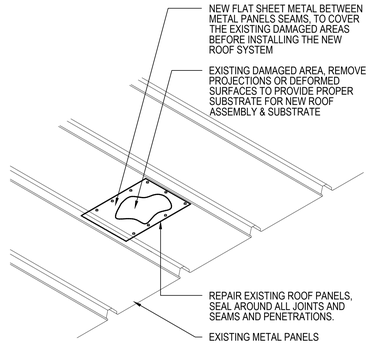
1. ROOFING AND FLASHING SHALL BE 100% WEATHERTIGHT ON A DAILY BASIS.
2. REMOVE ONLY AS MUCH ROOFING AS CAN BE REPLACED ON THE SAME DAY. NO PHASED CONSTRUCTION IS ALLOWED.
3. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT ADJACENT NOT IN CONTRACT ROOF SYSTEMS AND NEWLY INSTALLED ROOF AREAS. ANY DAMAGE THAT OCCURS AS A RESULT OF THE CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. DISCONNECT, REMOVE, RAISE, REINSTALL, AND RECONNECT EXISTING ROOFTOP EQUIPMENT AND ASSOCIATED MECHANICAL/ELECTRICAL PENETRATIONS TO PROVIDE MINIMUM SPECIFIED FLASHING HEIGHTS. COORDINATE ALL DISCONNECTIONS WITH THE OWNER IN ADVANCE.
5. CONTRACTOR TO VERIFY WITH BUILDING OWNER THE STATUS OF ALL HVAC EQUIPMENT, MECHANICAL UNITS, AND RELATED ROOFTOP PENETRATIONS. ALL ABANDONED ROOFTOP EQUIPMENT, STACKS, WOOD SLEEPERS, ETC. SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF SITE. ALL ABANDONED CURBS SHALL BE REMOVED - EXISTING ROOF DECK SHALL BE PATCHED/ REPAIRED AND PREPARED TO RECEIVE NEW ROOFING SYSTEM.
6. RESECURE ALL PIPES, CONDUITS, ETC. AND REPLACE ALL FAILED, DETERIORATING, AND MISSING FASTENERS. REMOVE AND REPLACE ALL DETERIORATED SLEEPERS WITH NEW PRESSURE TREATED WOOD SLEEPERS. RELOCATE PIPE SUPPORTS AND SLEEPERS AS REQUIRED TO PROVIDE PROPER ATTACHMENT OF THE FASTENERS AND SUPPORT TO THE PIPES WITHOUT OBSTRUCTING ROOFTOP DRAINAGE; TYPICAL.
7. NIGHTLY TIE-IN OF THE ROOF INSULATION SYSTEM SHALL BE STAGGERED MINIMUM 12" BETWEEN EACH LAYER. LOOSE LAID BOARDS WILL BE REQUIRED TO PROVIDE TEMPORARY SUPPORT OF THE CONDITIONS. SHOULD STAGGERED INSULATION NOT BE PROVIDED, THE ROOF INSULATION IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE OWNER.

PHOTOGRAPHIC DOCUMENTATION NOTES

1. THE INFORMATION SHOWN ON THIS DRAWING HAS BEEN COMPILED FROM VARIOUS SOURCES AND MAY NOT REFLECT THE ACTUAL CONDITIONS AT THE TIME OF CONSTRUCTION.
2. PHOTOGRAPHIC INDICATORS ARE IN APPROXIMATE LOCATIONS. THEY ARE NOT INTENDED TO DEFINE THE LIMITS OF WORK.
3. THE PHOTOGRAPHS SHOWN ON THIS SHEET ARE BOTH UNIQUE AND TYPICAL CONDITIONS. THEY ARE NOT MEANT TO BE ALL ENCOMPASSING.

METAL FABRICATION NOTES

1. FILE SMOOTH ALL EXPOSED SHARP EDGES.
2. FABRICATE METAL TRANSITIONS IN ONE PIECE CONSTRUCTION.
3. COMPLETELY LOCK AND SEAL ALL JOINTS AND SEAMS SOLID. SEAL OVER ALL POP RIVETS.
4. ENSURE METAL LAPS OCCUR SO AS TO SHED WATER, WITH NO "BACK WATER" LAPS. SEAL BETWEEN METAL LAYERS AT ALL JOINTS/SEAMS.
5. FIELD VERIFY ALL DIMENSIONS.



1 METAL PANEL REPAIR
SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

GALE
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BID DOCUMENTS

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GRAPHIC SCALE

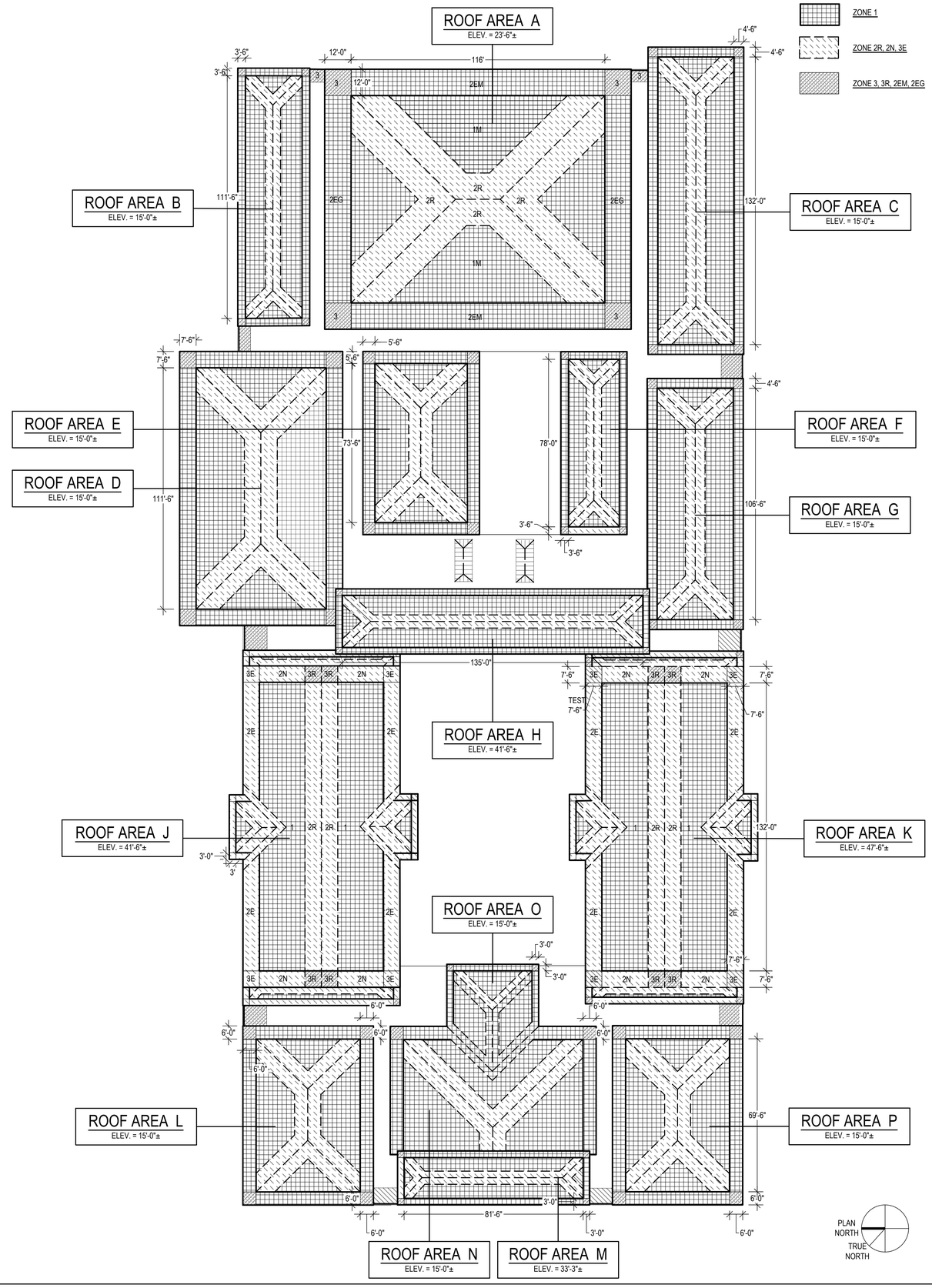
SHEET TITLE

GENERAL NOTES AND LEGENDS

STATE OF CONNECTICUT · MARK A. LORENZO · No. 25170 · LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
G101

WIND UPLIFT ZONES



WIND UPLIFT PRESSURES

ASCE 7-16 UPLIFT PRESSURE (PSF)

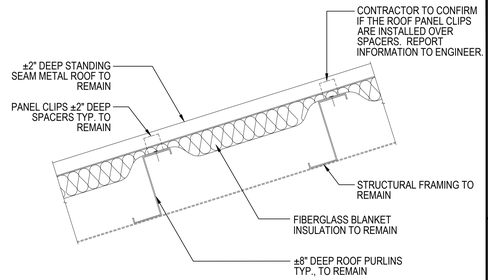
ROOF AREA	ZONE 1	ZONE 2R, 2N, 3E	ZONE 3, 2EM, 2EG, 3R
A	-65.5	-104.5	-83.3
B	-59.3	-91.5	-76
C	-57.9	-92.4	-73.6
D	-59.4	-94.7	-75.4
E	-58.5	-93.4	-74.4
F	-60.8	-91.4	-78.3
G	-58	-92.5	-73.7
H	-88.1	-110.6	-118.1
J	-97.2	-135.4	-158.3
K	-97.2	-135.4	-158.3
L	-58.8	-93.8	-74.7
M	-84.1	-105.6	-112.7
N	-58.8	-93.8	-74.7
O	-62.4	-91.2	-80.9
P	-58.8	-93.8	-74.7
ENTRANCE ROOFS			-92.6

WIND UPLIFT ZONES

ASCE 7-16 UPLIFT ZONES

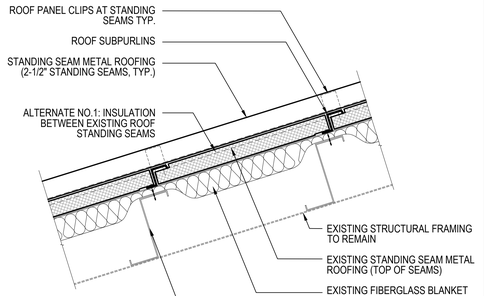
ROOF AREA	ZONE 2	ZONE 3
A	116'-0"	12'-0"
B	111'-6"	3'-6"
C	132'-6"	4'-6"
D	111'-6"	7'-6"
E	73'-6"	5'-6"
F	78'-0"	3'-6"
G	106'-6"	4'-6"
H	135'-0"	3'-0"
J	132'-0"	7'-6"
K	132'-0"	7'-6"
L	69'-6"	6'-0"
M	82'-0"	3'-0"
N	81'-6"	6'-0"
O	36'-0"	3'-0"
P	69'-6"	6'-0"

NOTE: PROVIDE ADDITIONAL SUBFRAMING PURLINS AND SUB-RAFTERS AT PERIMETER AND CORNER ZONES AS REQUIRED TO SUPPORT ENHANCED ROOF PANEL UPLIFT FASTENING REQUIREMENTS IN THESE AREAS. ENHANCED FASTENING SHALL BE IDENTIFIED IN THE CONTRACTOR'S SUBMITTED SHOP DRAWINGS.



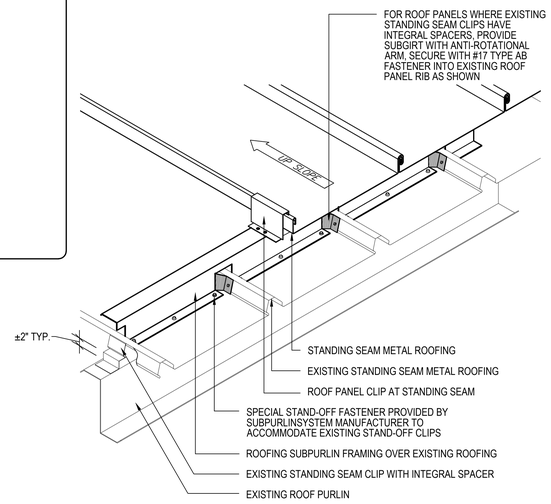
1 EXISTING ROOF ASSEMBLY

SCALE: N.T.S.
(ALL ITEMS ARE EXISTING UNLESS OTHERWISE DESIGNATED)



2 NEW ROOF ASSEMBLY

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



TYPICAL SUBPURLIN ATTACHMENT TO EXISTING ROOF FRAMING

3

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

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PROJECT
ROOF RENOVATION AND ASSOCIATED WORK AT
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200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
35S MGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	977541 G100s
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

WIND UPLIFT PRESSURE AND ZONES

STATE OF CONNECTICUT — MICHAEL A. LOMBARDO — No. 25170 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
G102



TRUE NORTH
PLAN NORTH

SITE PLAN NOTES

1. CONTRACTOR SHALL BASE STAGING REQUIREMENTS ON THE INFORMATION SHOWN. THE LOCATIONS ARE APPROXIMATE AND MAY BE SUBJECT TO CHANGE.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A DETAILED STAGING/LAYOUT PLAN FOR THE OWNER'S REVIEW AND APPROVAL.
3. CONTRACTOR SHALL PROVIDE OVERHEAD PROTECTION AT BUILDING ENTRANCE WAYS IN ACCORDANCE WITH OSHA, LOCAL, STATE, AND FEDERAL GUIDELINES.
4. OVERHEAD PROTECTION SHALL EXTEND A MINIMUM OF 8'-0" BEYOND THE BUILDING'S ENTRANCES.
5. CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES TO PREVENT PEDESTRIANS FROM ACCESSING THE WORK AREA, FROM WALKING UNDER WORK LOCATIONS, AND FROM WALKING UNDER THE CRANE AND LOADING AREAS.
6. CONTRACTOR MAY PROVIDE TEMPORARY BARRICADES AT PEDESTRIAN WALKWAYS IN LIEU OF OVERHEAD PROTECTION SHOULD THE ROOF AREAS ABOVE SAID WALKWAYS BE REMOVED AND REPLACED IN THE SAME DAY. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MONITOR AT GROUND LEVEL TO WARN PEDESTRIAN TRAFFIC OF THE ABOVE-ROOFLINE WORK.
7. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION FOR THE PAVED AREAS, CURBS, SIDEWALKS, AND LANDSCAPED AREAS TO PREVENT DAMAGE FROM THE WORK, MATERIALS, OR EQUIPMENT. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR/REPLACE ANY DAMAGED LOCATIONS AT NO ADDITIONAL COST TO THE OWNER.

SITE SYMBOLS LEGEND

- CONTRACT LIMIT LINE
- FENCE LINE
- FENCE LINE WITH OVERHEAD PROTECTION
- MATERIAL MOVEMENT PATH
- CONTRACTOR PARKING, LAYDOWN AREA, & STAGING/MATERIAL
- CONTRACTOR RESTRICTED AREA(S); MAINTAIN FREE AND CLEAR ACCESS
- PEDESTRIAN EGRESS/ACCESS
- WALKING PATH; MAINTAIN ACCESSIBILITY IN SAFE MANNER
- ACCESS ROAD; DO NOT BLOCK
- CONTRACTOR PARKING AND LAYDOWN GATE

SITE KEY NOTES

1. PARKING AREA(S) RESTRICTED FROM CONTRACTOR USE.
2. CONTRACTOR PARKING AND LAYDOWN AREA
3. PROVIDE OVERHEAD PROTECTED COVERED WALKWAY TO MAINTAIN FREE AND CLEAR ACCESS TO EGRESS DOORS.
4. CONTRACTOR DELIVERY PATH VIA RTE 183, E. PEARL ROAD, AND MIDDLE SCHOOL DRIVE. DELIVERIES SHALL MOVE COUNTERCLOCKWISE AT THE PERIMETER AND AROUND BACK OF THE SCHOOL.
5. AT CRANE LOCATIONS, PROVIDE TEMPORARY GROUND PROTECTION IN THE FORM OF HEAVY DUTY COMPOSITE MATTING, TIMBER MATTING, AND/OR LAMINATED CONSTRUCTION MAT.

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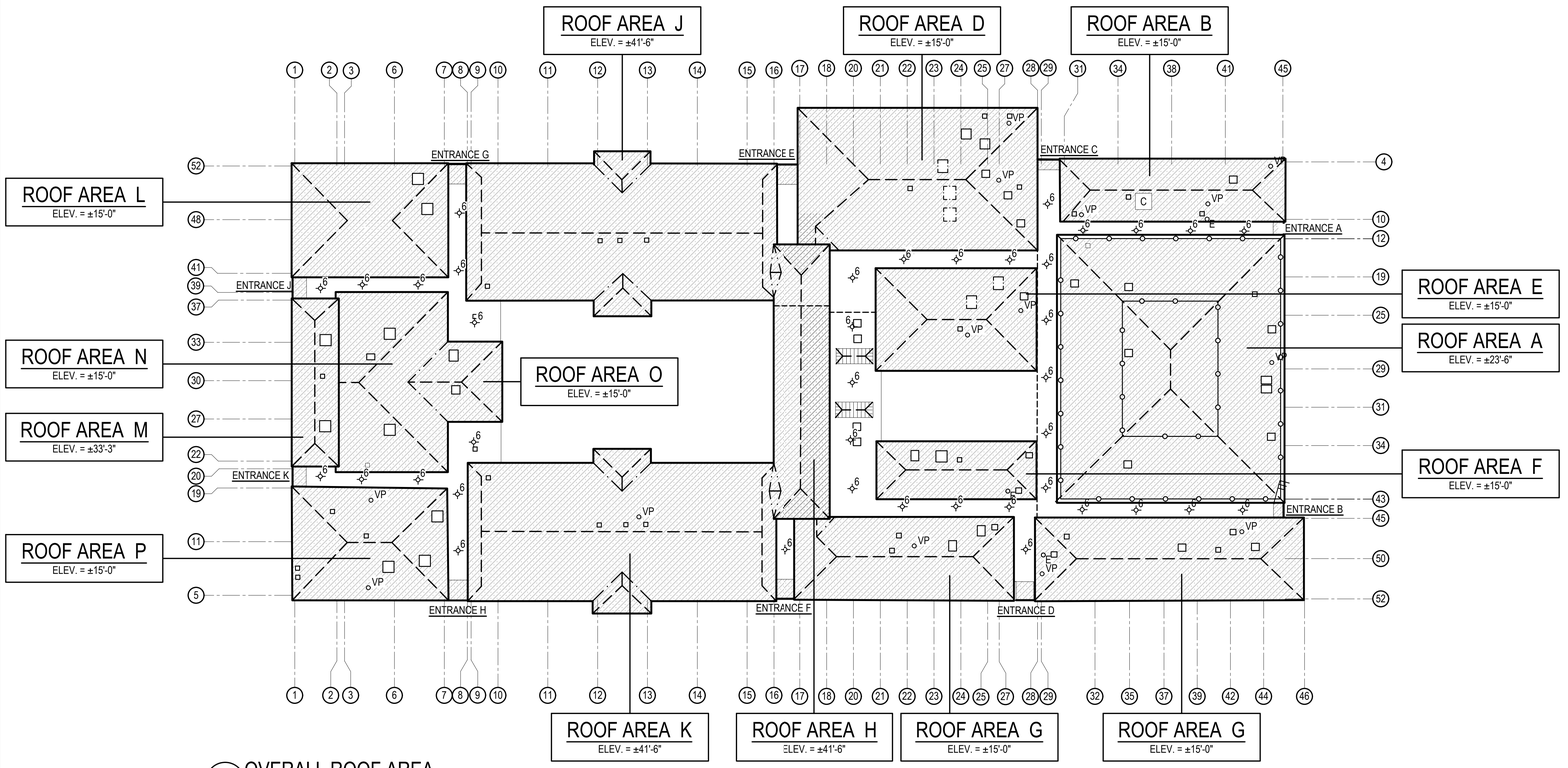
SHEET TITLE

SITE LAYDOWN PLAN

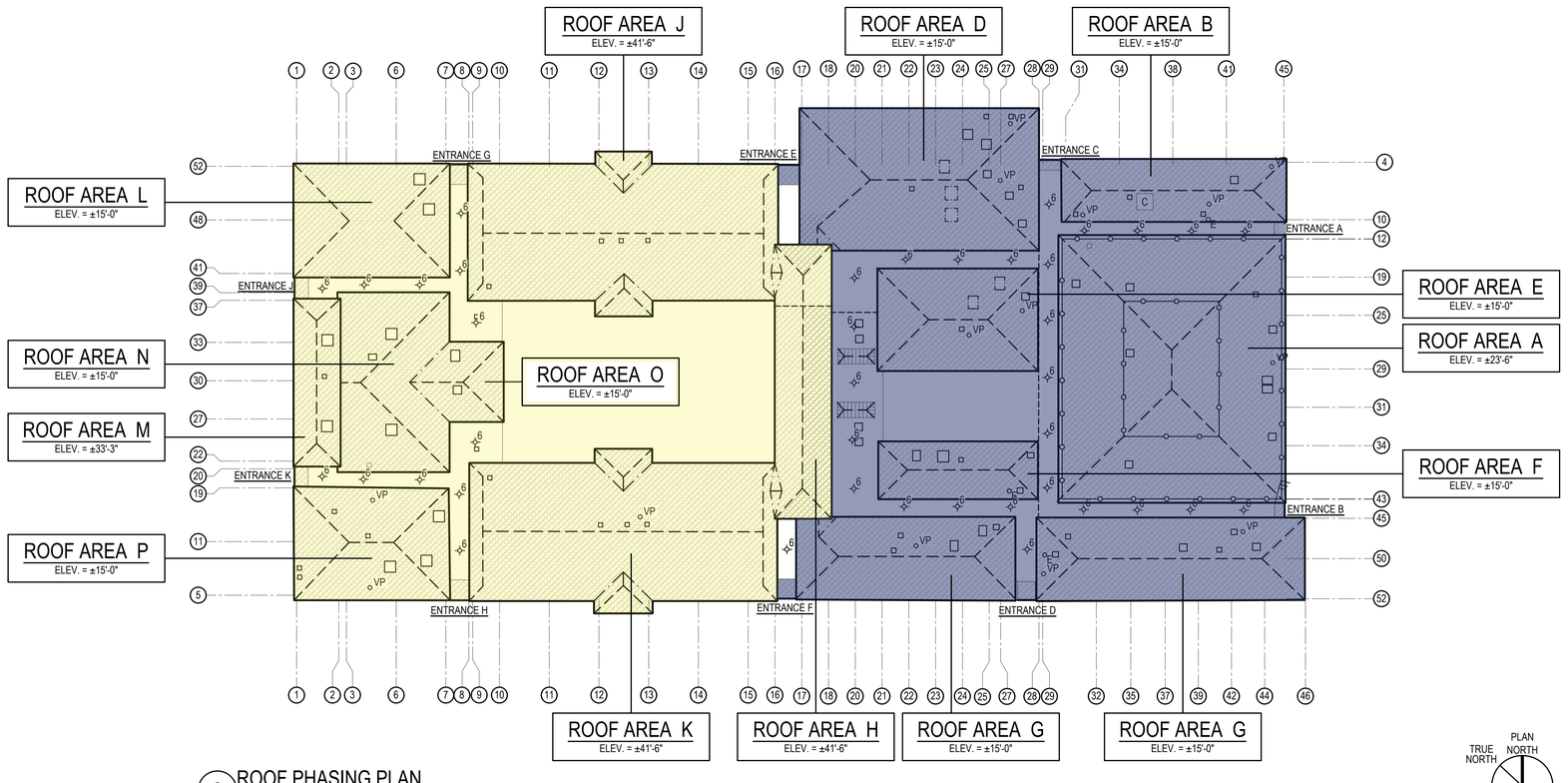
STATE OF CONNECTICUT · MARK A. LANDRY · No. 25170 · LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
G103

4 OF 25



1 OVERALL ROOF AREA
SCALE: 1/32"=1'-0"



2 ROOF PHASING PLAN
SCALE: 1/32"=1'-0"

LEGEND

- PHASE 1 - SUMMER OF 2025
- PHASE 2 - SUMMER OF 2026

TRUE NORTH / PLAN NORTH

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GRAPHIC SCALE
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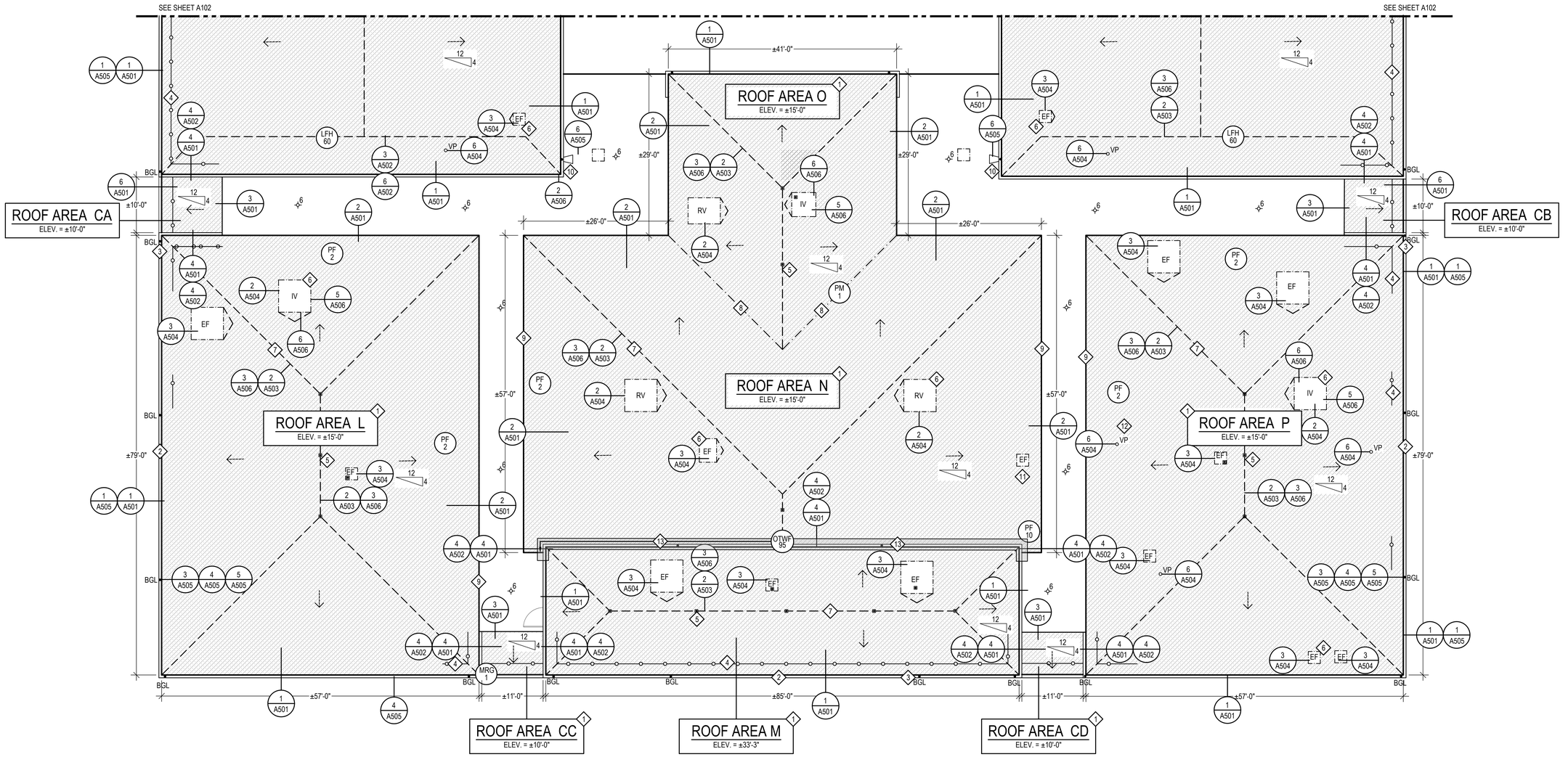
SHEET TITLE

OVERALL ROOF AND PHASING PLAN

STATE OF CONNECTICUT · MARK A. LOMBARDO · No. 25170 · LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
A100

5 OF 25



SHEET NOTES

1. OVERLAY THE EXISTING METAL ROOF PANEL WITH NEW SUB-GIRT SYSTEM AND STRUCTURAL STANDING SEAM ROOF PANELS - TYPICAL.
2. REMOVE EXISTING AND REPLACE THE GUTTERS WITH NEWLY SIZED GUTTERS - TYPICAL AT ALL EXISTING GUTTER LOCATIONS.
3. REMOVE EXISTING DOWNSPOUTS AND REPLACE DOWNSPOUTS AND WALL STRAPS AND ANCHORS - TYPICAL.
4. REMOVE AND REPLACE SNOW GUARDS - TYPICAL. ADD NEW SNOW GUARDS WHERE NOTED.
5. TEMPORARILY REMOVE AND DISCONNECT LIGHTNING AIR TERMINALS. EXTEND THE CONDUCTOR CABLE UPWARD TO CONNECT TO REINSTALLED EXISTING AIR TERMINALS. FLASH PENETRATIONS WITH NEW FLASHING BOOTS - TYPICAL.
6. REMOVE AND REPLACE METAL BASE FLASHING AT ALL ROOFTOP MOUNTED MECHANICAL EQUIPMENT CURBS. SOME UNIT CURBS WILL REQUIRE EXTENDED REPLACEMENTS DUE TO THE INCREASED THICKNESS OF THE OVERLAY ROOF SYSTEM. REFER TO M-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
7. REMOVE AND REPLACE HIP AND RIDGE CAPS - TYPICAL.
8. INSTALL DROPPED VALLEY FLASHING AT EXISTING VALLEY LOCATIONS - TYPICAL.
9. REMOVE AND REPLACE VERTICALLY ORIENTED ROOF FACIAS - TYPICAL.
10. REMOVE AND REPLACE PLASTIC SPLASH BLOCKS WITH HEAVIER CONCRETE SPLASH BLOCKS - TYPICAL AT LOW SLOPE ROOF AREAS.
11. EXTEND DUCTWORK, AND INSTALL NEW CAP OF NON-POWERED RELIEF CAP ON ROOF AREA N.
12. EXTEND VENT PIPES THAT DO NOT EXTEND ABOVE THE NEW ROOF BY A MINIMUM OF 12 INCHES - TYPICAL. REPLACE FLASHING BOOTS.
13. INSTALL REPLACEMENT THROUGH WALL FLASHING. REMOVE AND REPLACE BRICK VENEER TO ACCOMMODATE INSTALLATION OF THROUGH WALL FLASHING.

1 ENLARGED ROOF PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH
TRUE NORTH

KEY PLAN

ROOF AREA SHOWN

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

GRAPHIC SCALE
0 4' 8' 16'

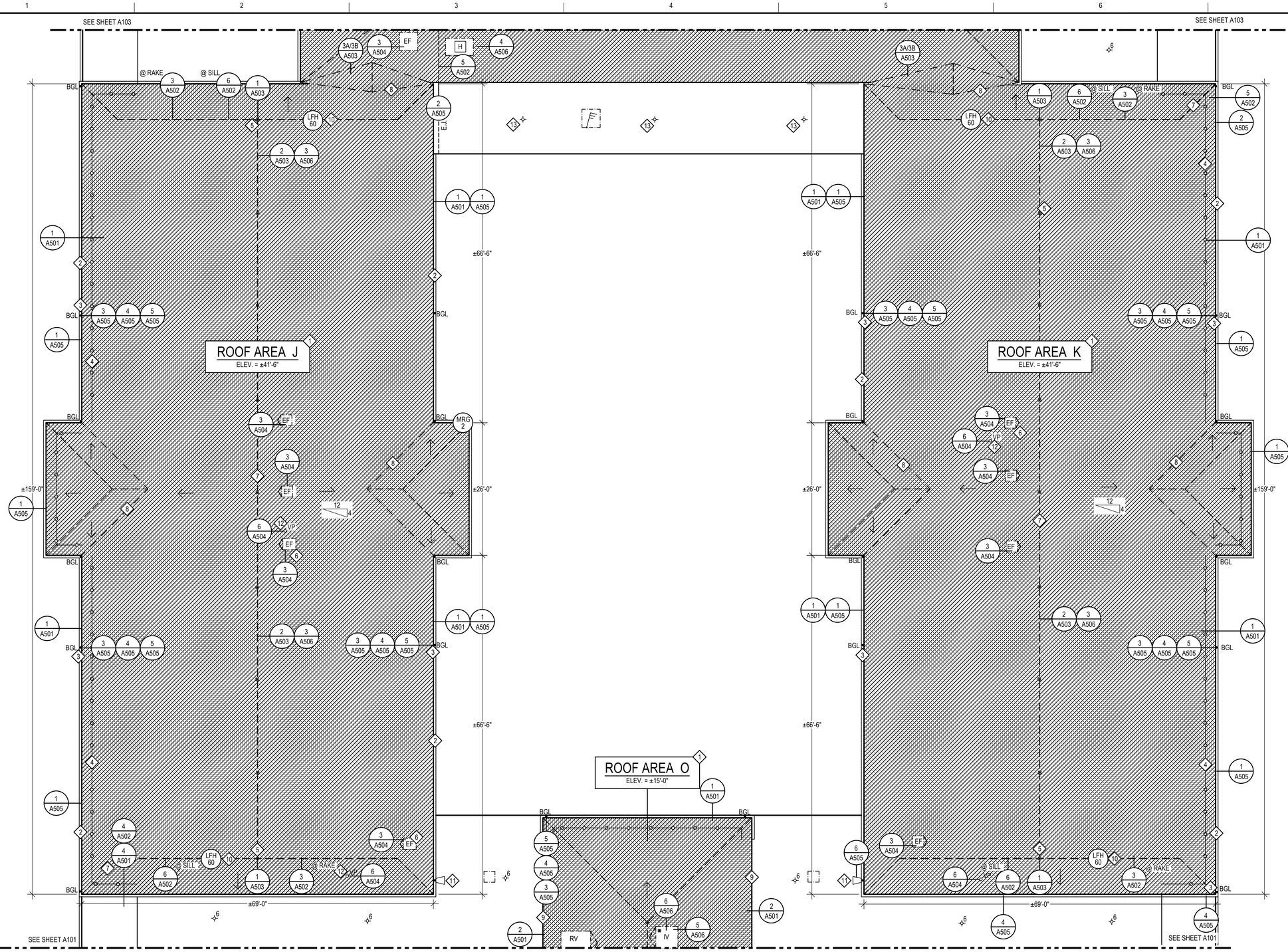
SHEET TITLE

ENLARGED ROOF AREA PLAN

STATE OF CONNECTION
MARK A. LONGOBARDI
No. 25170
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
A101

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SHEET NOTES

1. OVERLAY THE EXISTING METAL ROOF PANEL WITH NEW SUB-GIRT SYSTEM AND STRUCTURAL STANDING SEAM ROOF PANELS - TYPICAL.
2. REMOVE EXISTING AND REPLACE THE GUTTERS WITH NEWLY SIZED GUTTERS - TYPICAL AT ALL EXISTING GUTTER LOCATIONS.
3. REMOVE EXISTING DOWNSPOUTS AND REPLACE DOWNSPOUTS AND WALL STRAPS AND ANCHORS - TYPICAL.
4. REMOVE AND REPLACE SNOW GUARDS - TYPICAL. ADD NEW SNOW GUARDS WHERE NOTED.
5. TEMPORARILY REMOVE AND DISCONNECT LIGHTNING AIR TERMINALS. EXTEND THE CONDUCTOR CABLE UPWARD TO CONNECT TO REINSTALLED EXISTING AIR TERMINALS. FLASH PENETRATIONS WITH NEW FLASHING BOOTS - TYPICAL.
6. REMOVE AND REPLACE METAL BASE FLASHING AT ALL ROOFTOP MOUNTED MECHANICAL EQUIPMENT CURBS. SOME UNIT CURBS WILL REQUIRE EXTENDED REPLACEMENTS DUE TO THE INCREASED THICKNESS OF THE OVERLAY ROOF SYSTEM. REFER TO M-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
7. REMOVE AND REPLACE HIP AND RIDGE CAPS - TYPICAL.
8. INSTALL DROPPED VALLEY FLASHING AT EXISTING VALLEY LOCATIONS - TYPICAL.
9. REMOVE AND REPLACE VERTICALLY ORIENTED ROOF FACIAS - TYPICAL.
10. LOUVER SILLS REQUIRE ADDITIONAL REVIEW. THERE IS LOW FLASHING HEIGHT AT THESE SILLS AND INCREASING ROOFING HEIGHT MAY IMPACT THE LOUVER SILL CONDITION. OPTIONS FOR ROOF REMOVAL AND REPLACEMENT, OR MODIFICATION TO LOUVER SILLS ARE BEING CONSIDERED.
11. REMOVE AND REPLACE PLASTIC SPLASH BLOCKS WITH HEAVIER CONCRETE SPLASH BLOCKS - TYPICAL AT LOW SLOPE ROOF AREAS.
12. EXTEND VENT PIPES THAT DO NOT EXTEND ABOVE THE NEW ROOF BY A MINIMUM OF 12 INCHES - TYPICAL. REPLACE FLASHING BOOTS.
13. INSTALL DRAIN STRAINER AT EACH EXISTING DRAIN LOCATION

1 ENLARGED ROOF PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH
TRUE NORTH

KEY PLAN

ROOF AREA SHOWN

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NO.	DATE	DESCRIPTION	BY

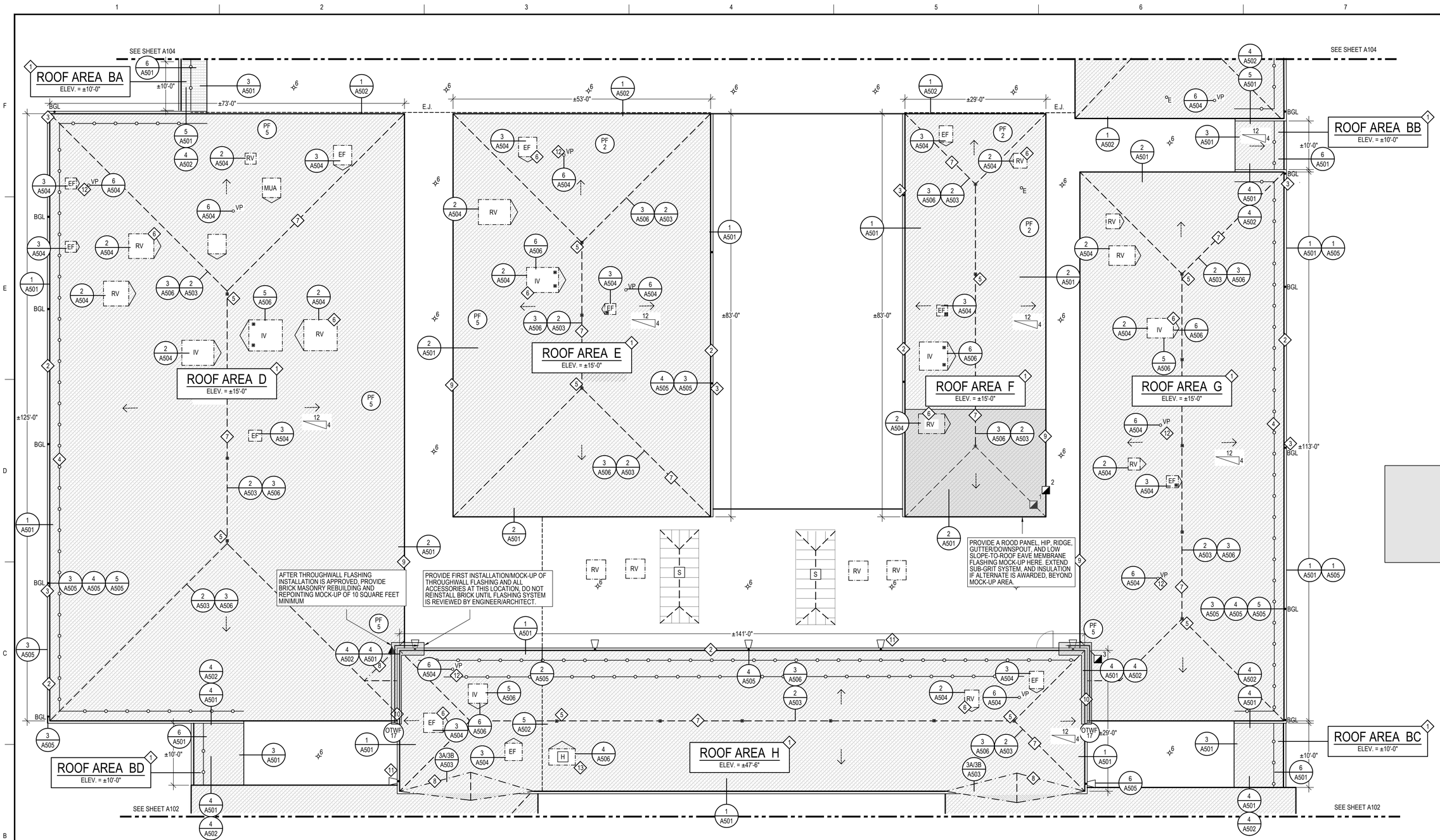
PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	977541 A100s
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	1/8"=1'-0"

GRAPHIC SCALE
0 4' 8' 16'

SHEET TITLE
ENLARGED ROOF AREA PLAN

STATE OF CONNECTICUT MARK A. LOMBARDO No. 25170 REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
A102



1 ENLARGED ROOF PLAN
SCALE: 1/8"=1'-0"

SHEET NOTES

1. OVERLAY THE EXISTING METAL ROOF PANEL WITH NEW SUB-GIRT SYSTEM AND STRUCTURAL STANDING SEAM ROOF PANELS - TYPICAL.
2. REMOVE EXISTING AND REPLACE THE GUTTERS WITH NEWLY SIZED GUTTERS - TYPICAL AT ALL EXISTING GUTTER LOCATIONS.
3. REMOVE EXISTING DOWNSPOUTS AND REPLACE DOWNSPOUTS AND WALL STRAPS AND ANCHORS - TYPICAL.
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6. REMOVE AND REPLACE METAL BASE FLASHING AT ALL ROOFTOP MOUNTED MECHANICAL EQUIPMENT CURBS. SOME UNIT CURBS WILL REQUIRE EXTENDED REPLACEMENTS DUE TO THE INCREASED THICKNESS OF THE OVERLAY ROOF SYSTEM. REFER TO M-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
7. REMOVE AND REPLACE HIP AND RIDGE CAPS - TYPICAL.
8. INSTALL DROPPED VALLEY FLASHING AT EXISTING VALLEY LOCATIONS - TYPICAL.
9. REMOVE AND REPLACE VERTICALLY ORIENTED ROOF FACIAS - TYPICAL.
10. INSTALL REPLACEMENT THROUGH WALL FLASHING. REMOVE AND REPLACE BRICK VENEER TO ACCOMMODATE INSTALLATION OF THROUGH WALL FLASHING.
11. REMOVE AND REPLACE PLASTIC SPLASH BLOCKS WITH HEAVIER CONCRETE SPLASH BLOCKS - TYPICAL AT LOW SLOPE ROOF AREAS.
12. EXTEND VENT PIPES THAT DO NOT EXTEND ABOVE THE NEW ROOF BY A MINIMUM OF 12 INCHES - TYPICAL. REPLACE FLASHING BOOTS.
13. REMOVE AND REINSTALL EXISTING ROOF SMOKE HATCH, REPLACE FUSIBLE LINK AND/OR TEMPORARILY DISCONNECTED/RECONNECT OTHER FIRE DEPARTMENT AND ELECTRICAL CONNECTIONS.

WORK LEGEND

1. ROOF TEST CUT LOCATION
   REMOVE AND INSTALL METAL HIP CAP ± 8'-0" (OR FULL LENGTH) TO EXPOSE INSULATION AND STRUCTURAL SUBSTRATES
2. ROOF TEST CUT LOCATION
   REMOVE AND INSTALL METAL ROOF PANEL + FASCIA TO EXPOSE LOW SLOPE ROOF TERMINATION AND STRUCTURAL SUBSTRATES
3. ROOF TEST CUT LOCATION
   EXPLORE STEPPED COUNTER FLASHING TERMINATION IN BRICK JOINTS AND ROOF PANEL TERMINATION TO BRICK. REVIEW ROOF TO WALL FLASHING AT KNOWN LEAK LOCATION

▲ LEAK LOCATION

PLAN NORTH
TRUE NORTH

KEY PLAN

ROOF AREA SHOWN

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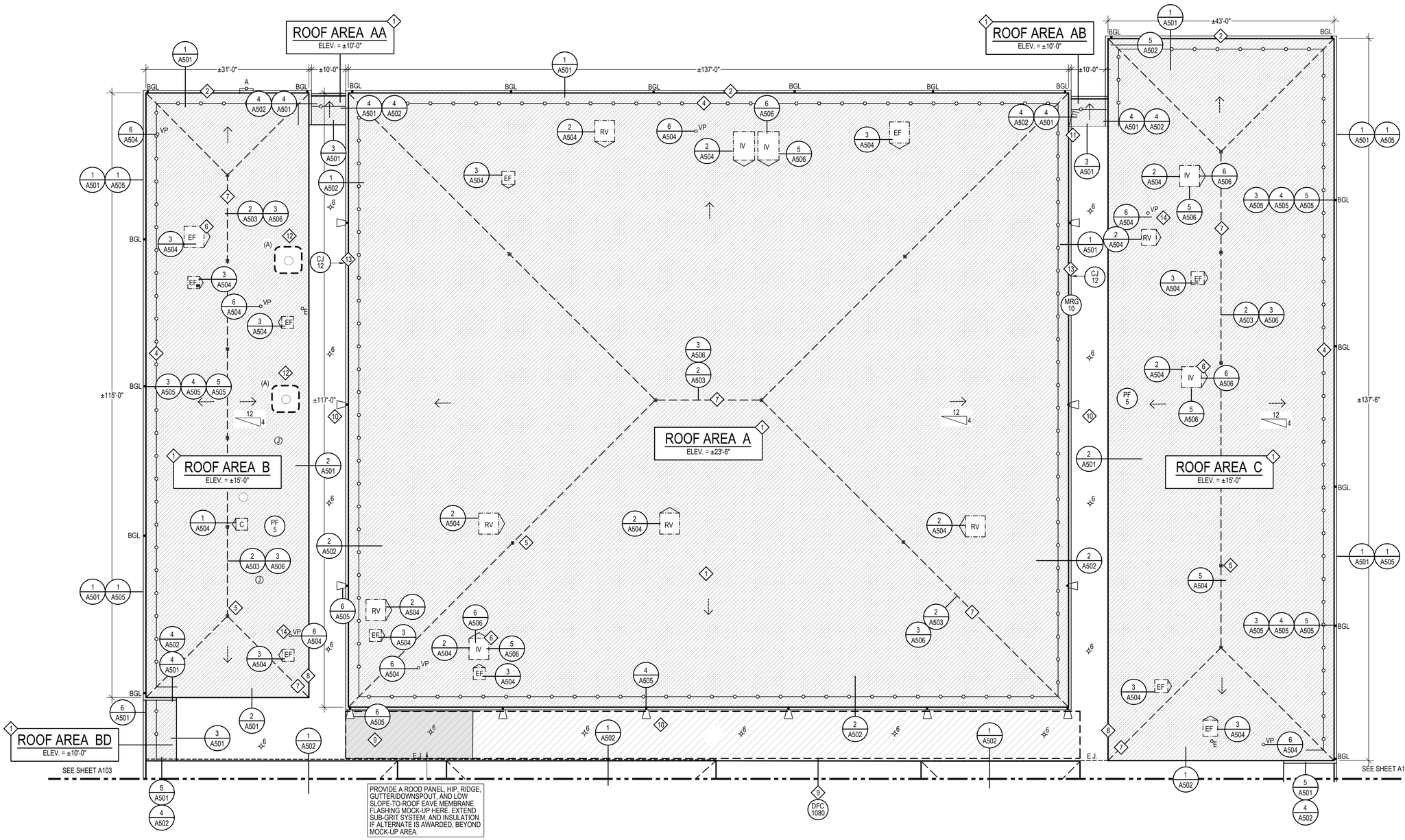
GRAPHIC SCALE
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SHEET TITLE
ENLARGED ROOF AREA PLAN

STATE OF CONNECTICUT
MARK A. LOMANSKI
No. 25170
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
A103

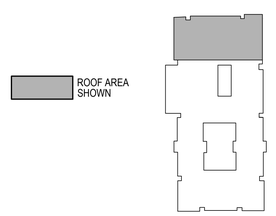
8 OF 25



SHEET NOTES

1. OVERLAY THE EXISTING METAL ROOF PANEL WITH NEW SUB-GIRT SYSTEM AND STRUCTURAL STANDING SEAM ROOF PANELS - TYPICAL.
2. REMOVE EXISTING AND REPLACE THE GUTTERS WITH NEWLY SIZED GUTTERS - TYPICAL AT ALL EXISTING GUTTER LOCATIONS.
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6. REMOVE AND REPLACE METAL BASE FLASHING AT ALL ROOFTOP MOUNTED MECHANICAL EQUIPMENT CURBS. SOME UNIT CURBS WILL REQUIRE EXTENDED REPLACEMENTS DUE TO THE INCREASED THICKNESS OF THE OVERLAY ROOF SYSTEM. REFER TO M-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
7. REMOVE AND REPLACE HIP AND RIDGE CAPS - TYPICAL.
8. REMOVE AND REPLACE VERTICALLY ORIENTED ROOF FACIAS - TYPICAL.
9. REPAIR THE SCOURED LOW SLOPE ROOF MEMBRANE AND DISPLACED GRAVEL STONE.
10. REMOVE AND REPLACE PLASTIC SPLASH BLOCKS WITH HEAVIER CONCRETE SPLASH BLOCKS - TYPICAL AT LOW SLOPE ROOF AREAS.
11. REMOVE THE ABANDONED WALL-MOUNTED ANTENNA AND ASSOCIATED CONDUITS. REPLACE BRICK WITH FASTENER PENETRATIONS AND PATCH MORTAR JOINTS.
12. REPLACE THE PREVIOUS PATCH IN THE ROOF SYSTEM BEFORE INSTALLATION OF THE NEW ROOF - TYPICAL.
13. REMOVE AND REPLACE FAILED SEALANT AT MASONRY VENEER TO METAL PANEL BELOW ROOF AREA A.
14. EXTEND VENT PIPES THAT DO NOT EXTEND ABOVE THE NEW ROOF BY A MINIMUM OF 12 INCHES - TYPICAL. REPLACE FLASHING BOOTS.

KEY PLAN



PLAN NORTH
TRUE NORTH

1 ENLARGED ROOF PLAN
SCALE: 1/8"=1'-0"

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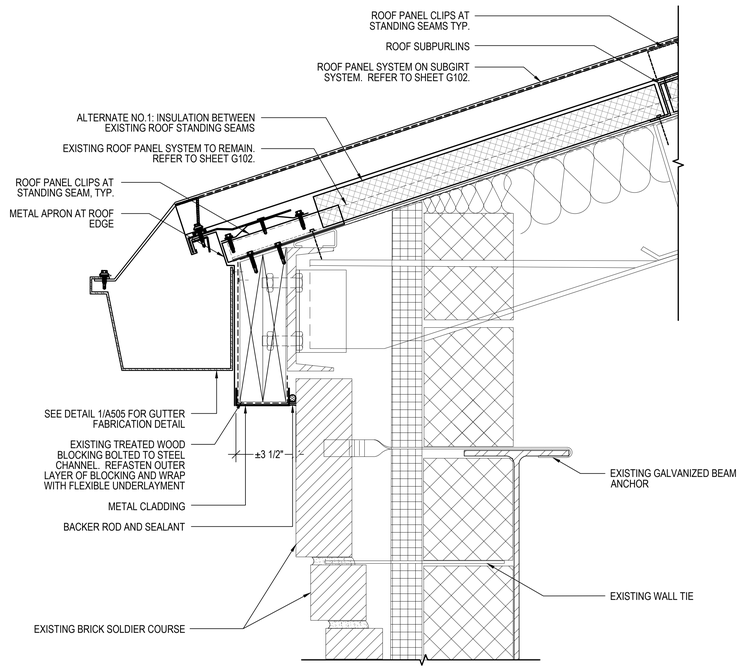
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STATE OF CONNECTION
MARK A. LONARDO
No. 25170
LICENSED PROFESSIONAL ENGINEER

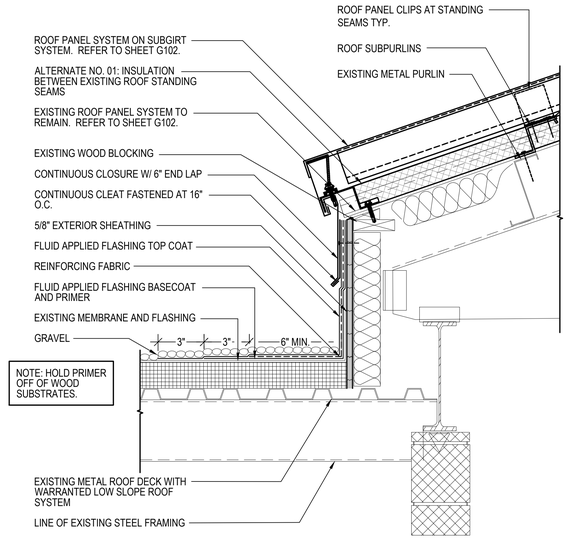
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A104

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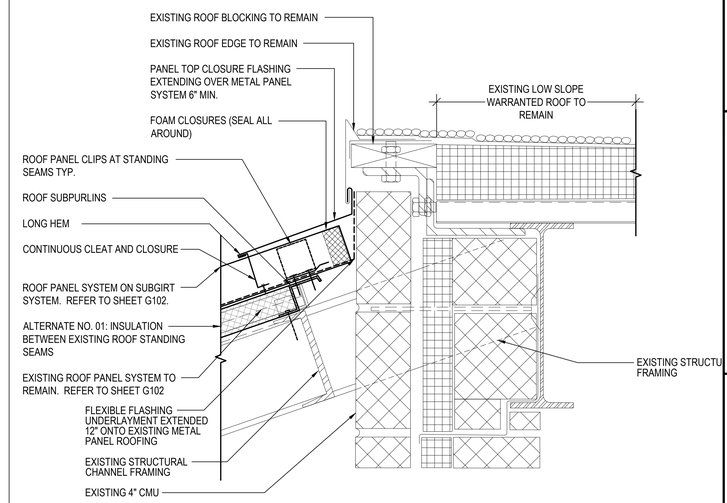
1 ROOF EDGE AT BRICK SOLDIER COURSE

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



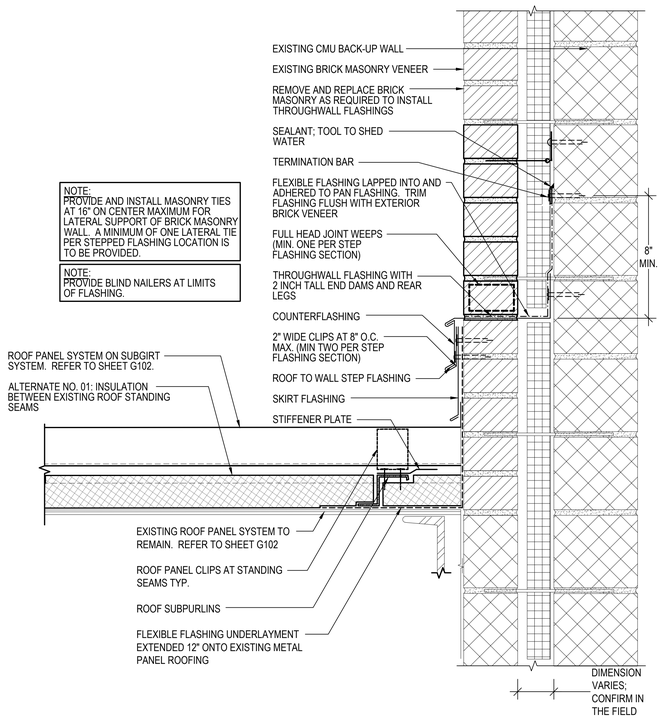
2 STANDING SEAM TO FLAT ROOF TRANSITION

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



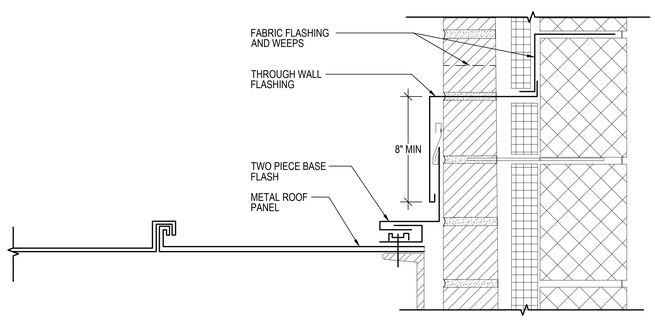
3 ROOF EDGE TRANSITION AT ENTRANCE CANOPY

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



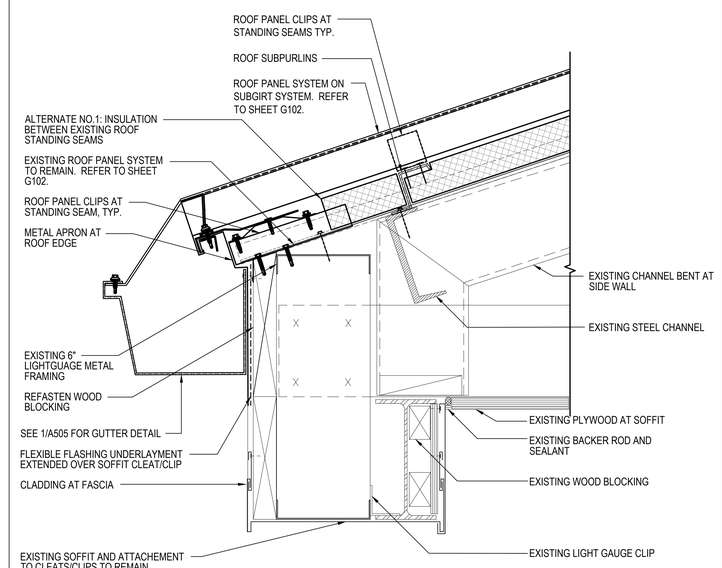
4 THROUGH WALL FLASHING

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



5 STEP FLASHING AT EXPANSION JOINT DETAIL

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



6 ROOF EDGE AT ENTRANCE CANOPY

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

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PROJECT
ROOF RENOVATION AND ASSOCIATED WORK AT TORRINGTON MIDDLE SCHOOL
200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	977541 A500s
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	3"=1'-0"

GRAPHIC SCALE
0 3" 6" 9"

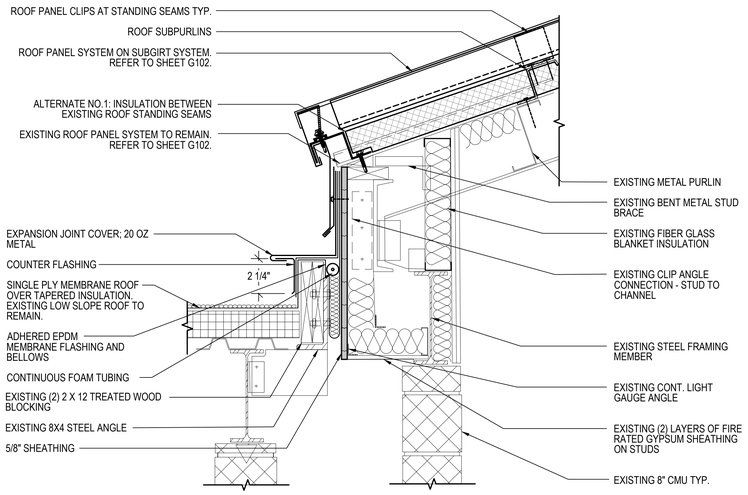
SHEET TITLE

DETAILS

STATE OF CONNECTICUT
MARK A. LONGOBARDI
No. 25170
REGISTERED
PROFESSIONAL ENGINEER

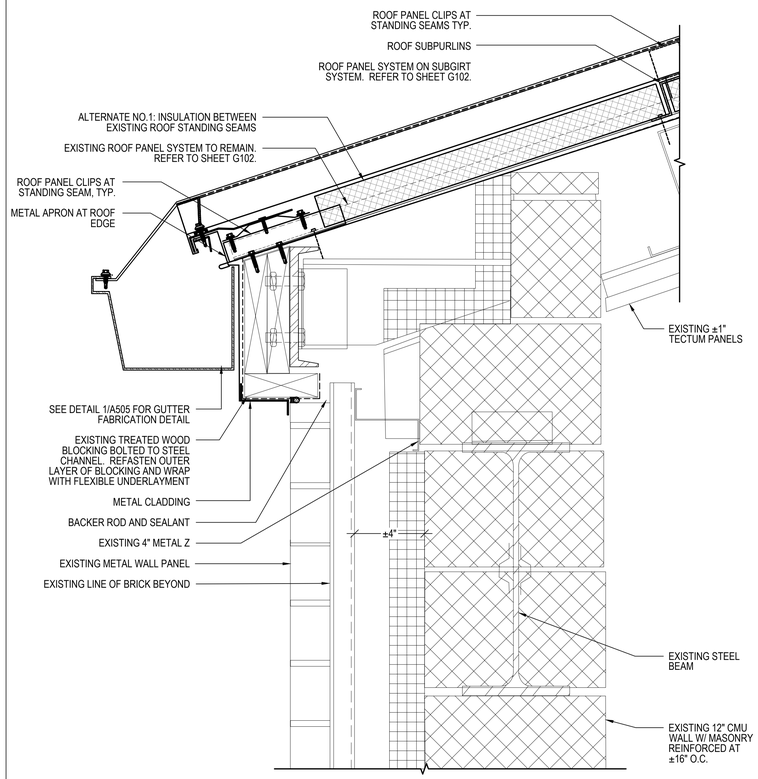
DRAWING NO.
A501

10 OF 25



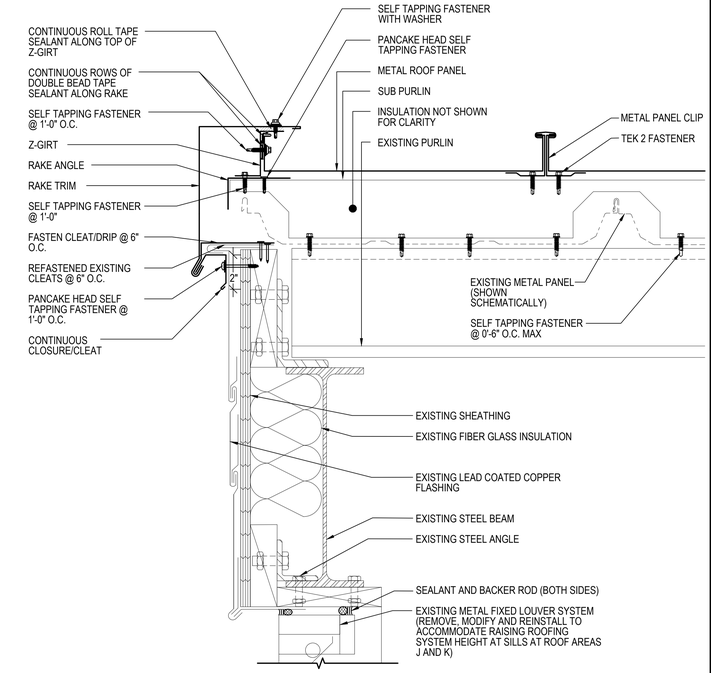
1 EXPANSION JOINT AT METAL ROOF TO FLAT ROOF TRANSITION

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



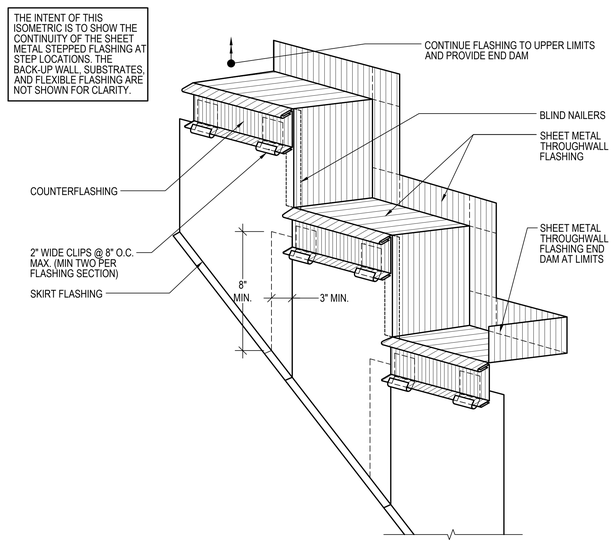
2 ROOF EDGE GUTTER AT METAL PANEL SIDING

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



3 ROOF LOUVER HEADER (AREAS J AND K)

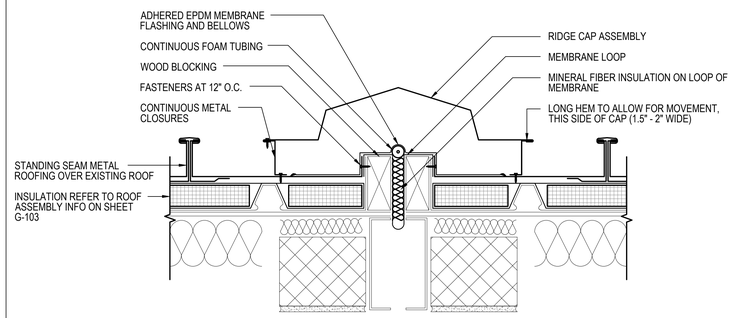
SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



THROUGHWALL FLASHING ISOMETRIC
NOT TO SCALE

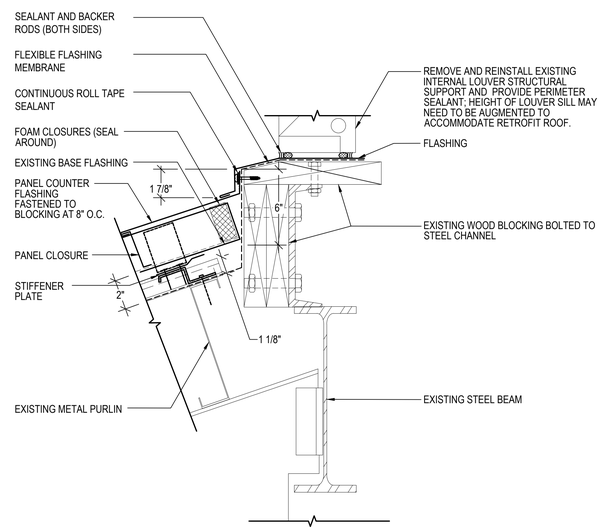
4 STEPPED THROUGHWALL FLASHING ISOMETRIC

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



5 ROOF EXPANSION JOINT

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



6 ROOF LOUVER SILL (AREAS J AND K)

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

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OWNER
TORRINGTON BOARD OF EDUCATION
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TORRINGTON, CT 06790

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PROJECT NO.	977541
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DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	3"=1'-0"

GRAPHIC SCALE
0 3" 6" 9"

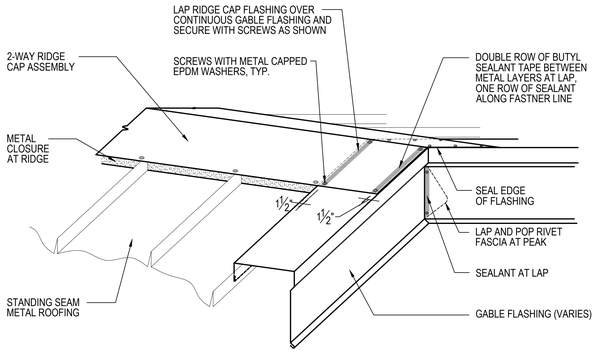
SHEET TITLE

DETAILS

STATE OF CONNECTICUT
MARK A. LUSSIER
No. 25170
LICENSED PROFESSIONAL ENGINEER

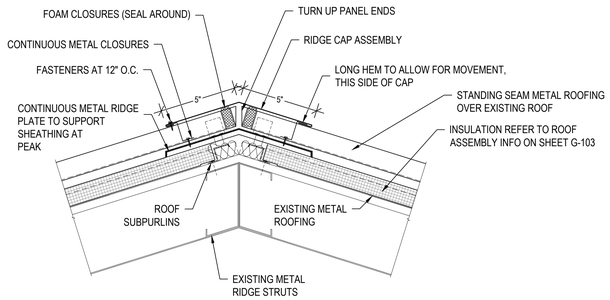
DRAWING NO.
A502

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1 ROOF RAKE EDGE @ ROOF J AND K

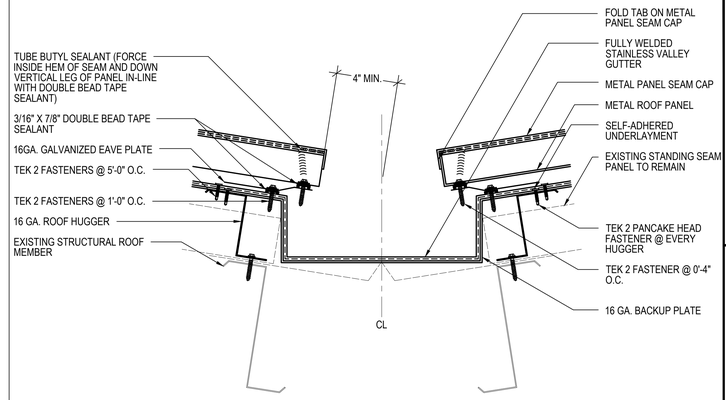
SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



2 ROOF RIDGE

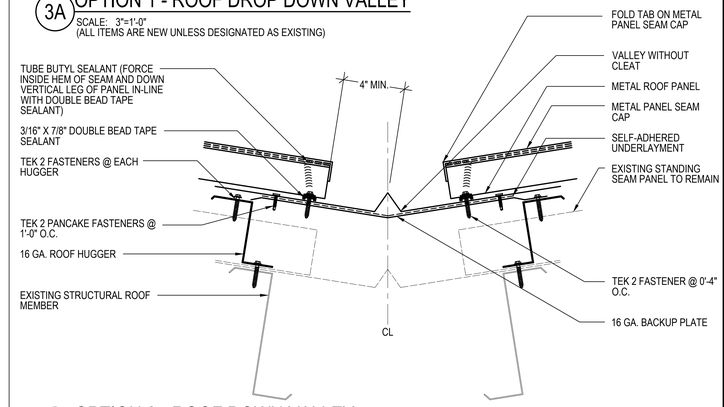
SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 3" 6" 9"



3A OPTION 1 - ROOF DROP DOWN VALLEY

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



3B OPTION 2 - ROOF DOWN VALLEY

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

SPACE INTENTIONALLY LEFT BLANK

4 DETAIL NOT USED

SCALE:

SPACE INTENTIONALLY LEFT BLANK

5 DETAIL NOT USED

SCALE:

SPACE INTENTIONALLY LEFT BLANK

6 DETAIL NOT USED

SCALE:

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GRAPHIC SCALE

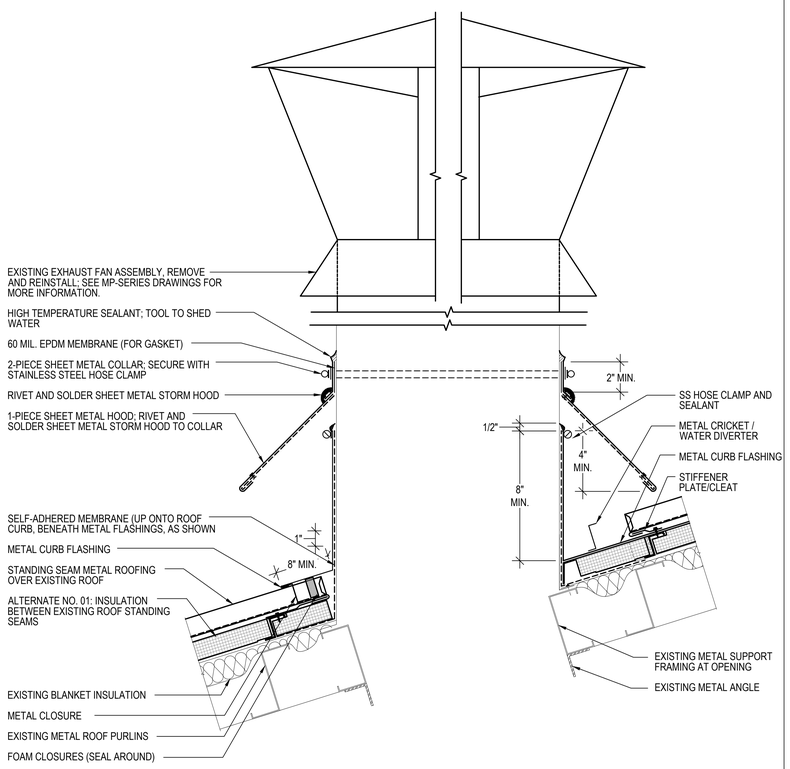
SHEET TITLE

DETAILS

STATE OF CONNECTICUT REGISTERED No. 25170 PROFESSIONAL ENGINEER

DRAWING NO.
A503

12 OF 25



1 CHIMNEY FLUE FLASHING

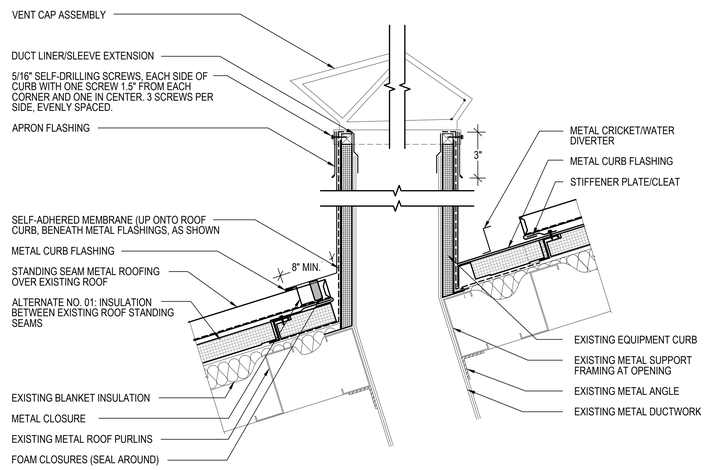
SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 3" 6" 9"

SPACE
INTENTIONALLY
LEFT BLANK

4 DETAIL NOT USED

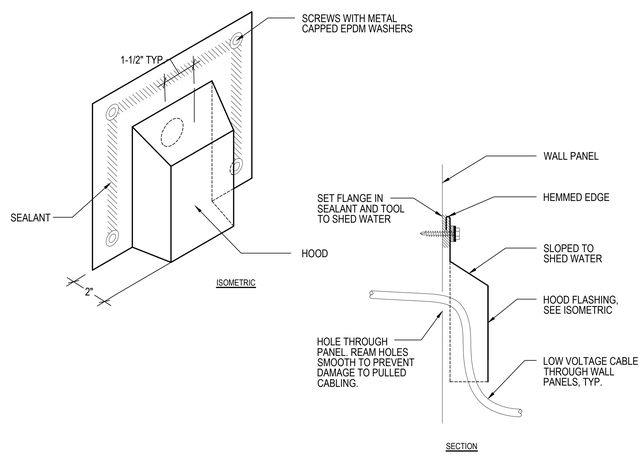
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2 VENT CAP FLASHING

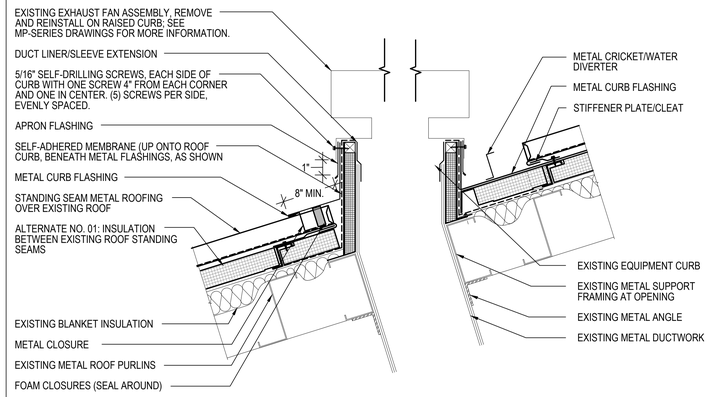
SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 3" 6" 9"



5 FASCIA CABLE PENETRATION FLASHING

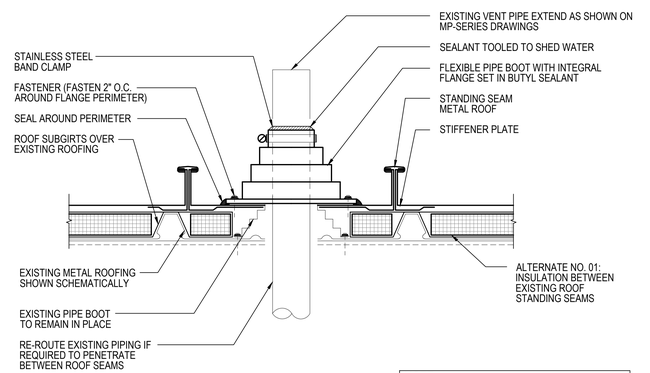
SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



3 CURB FLASHING

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 3" 6" 9"



NOTE:
INSTALL METAL ROOFING SO VENT PIPES PENETRATE BETWEEN STANDING SEAMS, RELOCATE PIPING AS REQUIRED SO THEY DO NOT INTERSECT ROOF SEAMS.

6 VENT PIPE FLASHING

SCALE: 3"=1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 3" 6" 9"

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TORRINGTON, CT 06790

OWNER
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355 MIGEON AVE
TORRINGTON, CT 06790

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PROJECT NO.	977541
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DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

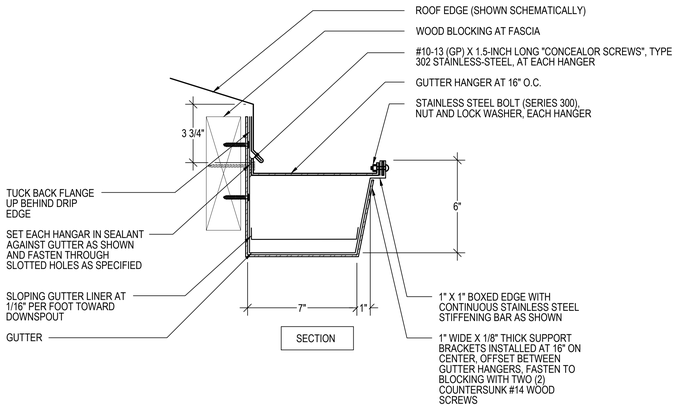
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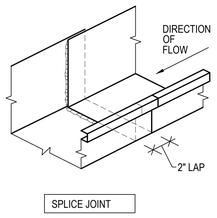
MEP / PLUMBING DETAILS

STATE OF CONNECTICUT
MARK A. LOMBARDO
No. 25170
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
A504

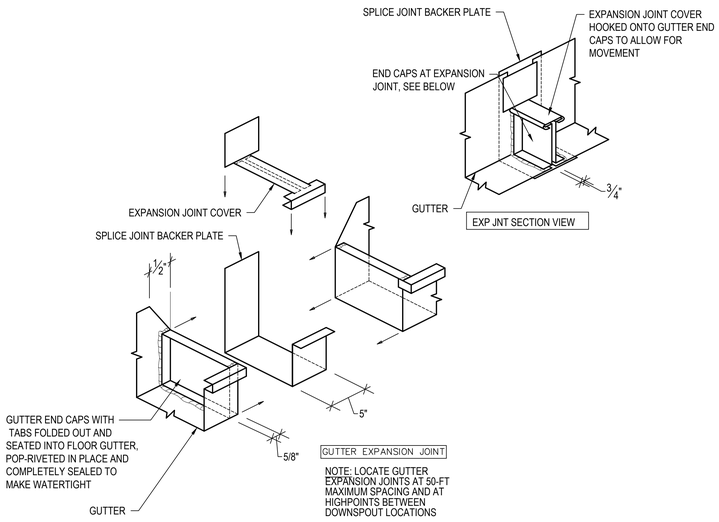
13 OF 25





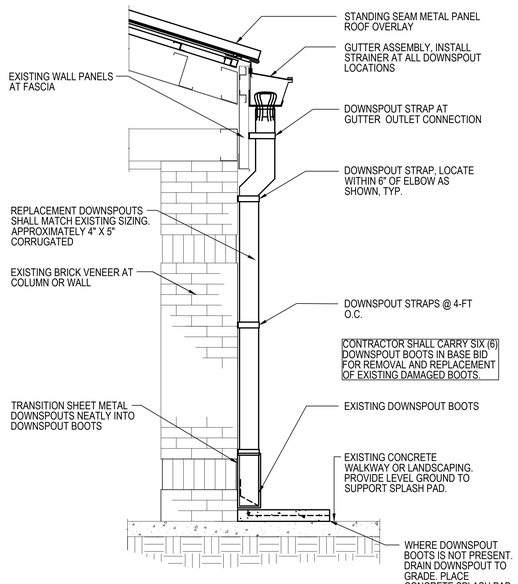
1 TYPICAL GUTTER FABRICATION DETAILS

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



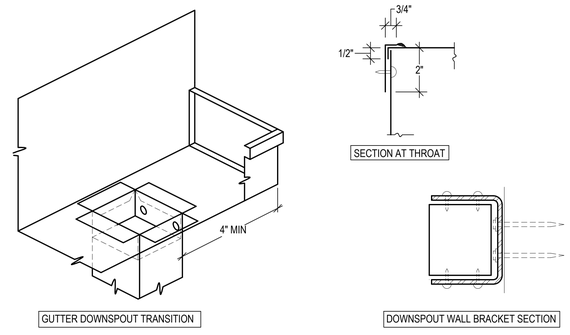
2 GUTTER EXPANSION JOINT FABRICATION

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



3 DOWNSPOUT PROFILE

SCALE: N.T.S.
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



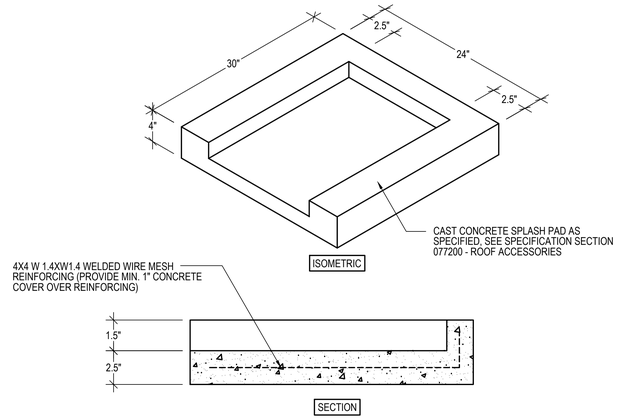
4 GUTTER OUTLET CONNECTION

SCALE: N.T.S
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

SPACE
INTENTIONALLY
LEFT BLANK

5 NOT USED

SCALE:



6 CONCRETE SPLASH BLOCK

SCALE: N.T.S
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

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DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE

GUTTER AND DOWNSPOUT DETAILS

STATE OF CONNECTICUT
MARK A. LOMBARDO
No. 25170
REGISTERED
PROFESSIONAL ENGINEER

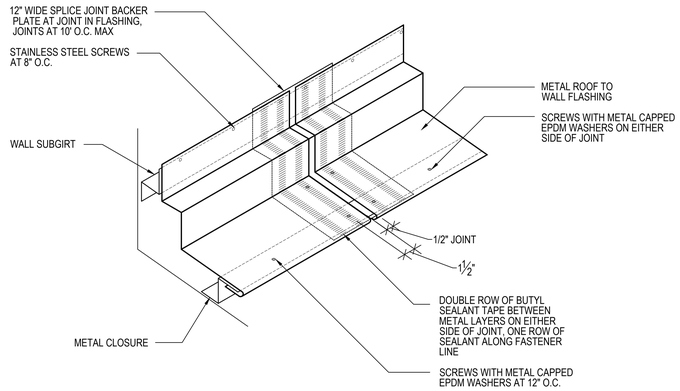
DRAWING NO.
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14 OF 25

SPACE
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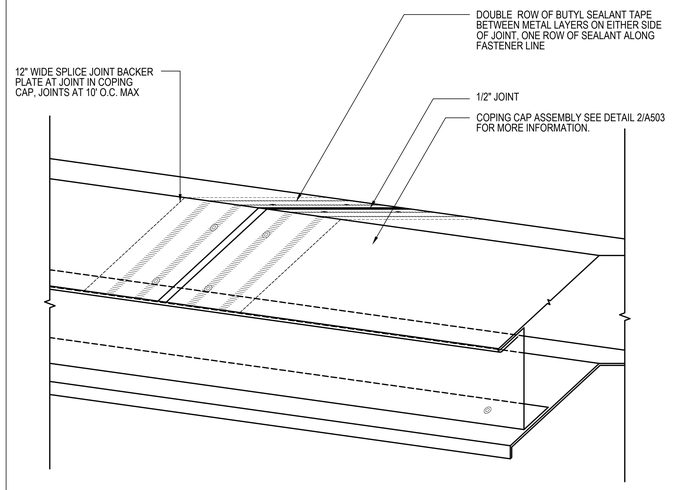
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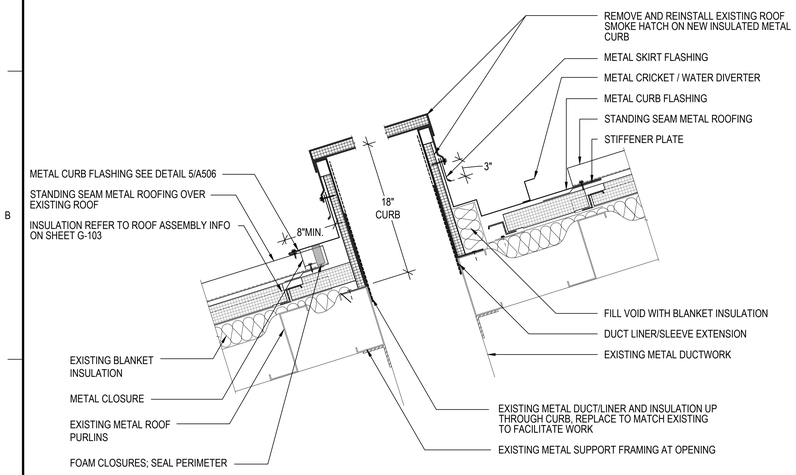
2 ROOF TO WALL TRANSITION FLASHING

SCALE: NTS
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



3 RIDGE CAP JOINTING

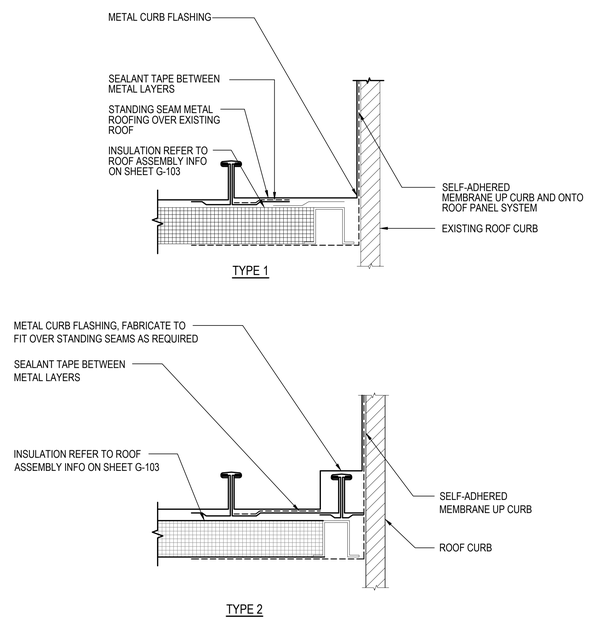
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(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



4 ROOF HATCH

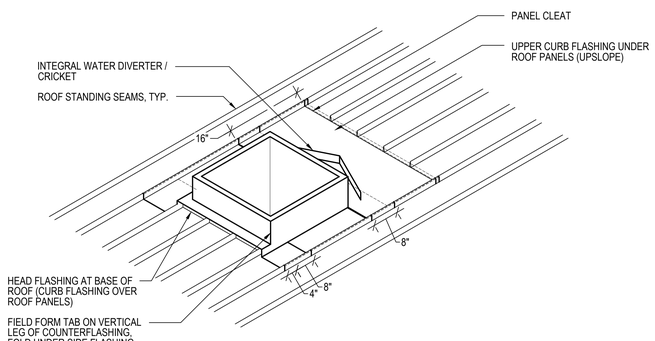
SCALE: 1 1/2" = 1'-0"
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

0 1/2' 1' 1 1/2'



5 TYPICAL ROOF CURB SIDECAP FASTENING

SCALE: N.T.S
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)



6 TYPICAL ISOMETRIC AT ROOF CURB

SCALE: N.T.S
(ALL ITEMS ARE NEW UNLESS DESIGNATED AS EXISTING)

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DETAILS

STATE OF CONNECTICUT
MARK A. LOMBARDO
No. 25170
REGISTERED
PROFESSIONAL ENGINEER

DRAWING NO.
A506

15 OF 25

ABBREVIATIONS

α	48" ABOVE FINISHED FLOOR	FD	FIRE DAMPER	OD	OUTSIDE DIAMETER
A	GENERAL SERVICE COMPRESSED AIR	FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS	ORD	OVERFLOW ROOF DRAIN
A/AMP	AMPERE	FD	FLOOR DRAIN	ORWL	OVERFLOW RAIN WATER LEADER
AC	AIR COMPRESSOR	FDC	FIRE DEPARTMENT CONNECTION	P	POLE
AC	ALTERNATING CURRENT	FDV	FIRE DEPARTMENT VALVE	PCD	PUMPED CONDENSATE DRAIN (COOLING)
ACD	AUTOMATIC COOLING CONDENSATE PUMP	FHC	FIRE HOSE CABINET	PCR	PUMPED CONDENSATE RETURN (STEAM)
ACF	AIRFLOW CENTRIFUGAL FAN	FM	FLOW METER	PD	PRESSURE DROP
ACU	AIR CONDITIONING UNIT(S)	FMC	FLEXIBLE METALLIC TUBING	PE	PRIMARY ELECTRIC SERVICE
AD	ACCESS DOOR	FOB	FLAT ON BOTTOM	PF	POWER FACTOR
AD	AREA DRAIN	FOF	FUEL OIL FILL	PF	PROPELLER FAN
AF	ARC FAULT	FOR	FUEL OIL RETURN	PH / ø	PHASE
AFF	ABOVE FINISHED FLOOR	FOS	FUEL OIL SUPPLY	PIV	POST INDICATOR VALVE
AFG	ABOVE FINISHED GRADE	FOT	FLAT ON TOP	PLEF	PLENUM FAN
AHU	AIR HANDLING UNIT	FOV	FUEL OIL VENT	PLUF	PLUG FAN
AIC	AMPS INTERRUPTING CURRENT	FP	FIRE PUMP	PNL	PANELBOARD
AMB	AMBIENT	FPM	FEET PER MINUTE	PRESS	PRESSURE
ANN	ANNUNCIATOR	FPS	FEET PER SECOND	PRV	PRESSURE REDUCING VALVE
APD	AIR PRESSURE DROP	FS	FLOOR SINK	PSI	POUNDS PER SQUARE INCH
APPROX	APPROXIMATE	FT	FOOT OR FEET	PT	POTENTIAL TRANSFORMER
ARV	AXIAL ROOF VENTILATOR	FVC	FIRE VALVE CABINET	PVC	POLYVINYL CHLORIDE
AS	AIR SEPARATOR	G	GAS	RA	RETURN AIR
ATC	AUTOMATIC TEMPERATURE CONTROL	GA	GAUGE	RAF	RETURN AIR FAN
ATS	AUTOMATIC TRANSFER SWITCH	GAL	GALLONS	RD	ROOF DRAIN
AV	ACID VENT (CHEMICAL)	GCC	GRAVITY COOLING CONDENSATE	REF	REFRIGERANT PIPING (MULTIPLE PIPES)
AVG	AVERAGE	GF	GROUND FAULT	REF	ROOF EXHAUST FAN
AVTR	ACID VENT THRU ROOF	GND	GROUND	REG	REGISTER
AW	ACID WASTE	GPH	GALLONS PER HOUR	RF	RELIEF FAN
AWG	AMERICAN WIRE GAUGE	GPM	GALLONS PER MINUTE	RGS	RIGID GALVANIZED STEEL CONDUIT
AWT	AVERAGE WATER TEMPERATURE	GR	GRAINS	RH	RELATIVE HUMIDITY
b	42" ABOVE FINISHED FLOOR	GRU	GREASE RECOVERY UNIT	RHC	REHEAT COIL
BAS	BUILDING AUTOMATION SYSTEM	GW	GREASE WASTE	RHG	REFRIGERANT HOT GAS
BDD	BACK DRAFT DAMPER	GWA	GREASE WASTE ABOVE GRADE	RM	ROOM
BES	BUILDING ENERGY SYSTEM	GWB	GREASE WASTE BURIED	RMS	ROOT MEAN SQUARED
BFW	BOILER FEED WATER	GWH	GAS WATER HEATER	RO	REVERSE OSMOSIS WATER
BHP	BRAKE HORSEPOWER	H	HEIGHT	RPD	REDUCED PRESSURE DEVICE
BICF	BACKWARD INCLINED CENTRIFUGAL FAN	HC	HEATING COIL	RPM	REVOLUTIONS PER MINUTE
BMS	BUILDING MANAGEMENT SYSTEM	H/C	HEATING/COOLING	RTU	ROOF TOP UNIT
BSMT	BASEMENT	HD	HEAD	RV	RADON VENT
BTUH	BRITISH THERMAL UNITS/HOUR	HDCP	HANDICAP	RWL	RAIN WATER LEADER
C	CONDUIT	HP	HORSEPOWER	S	SOIL
C/B	CIRCUIT BREAKER	HPC	HIGH PRESSURE CONDENSATE	S&R	SUPPLY AND RETURN
CV	COEFFICIENT, VALVE FLOW	HPG	HIGH PRESSURE GAS	SA	SUPPLY AIR
CC	COOLING COIL	HPS	HIGH PRESSURE SODIUM	SAC	SHOP AIR COMPRESSOR
CER/CEG	CEILING EXHAUST REG./GRILLE	HPS	HIGH PRESSURE STEAM	SCC	SPRINKLER CONTROL CABINET
CFM	CUBIC FEET PER MINUTE	HR	HOUR(S)	SCP	STEAM CONDENSATE PUMP
CFP	CHEMICAL FEED PUMPS	HT	HEAT	SD	SMOKE DAMPER
CHWR	CHILLED WATER RETURN	HTHW	HIGH TEMPERATURE HOT WATER	SE	SECONDARY ELECTRIC SERVICE
CHWS	CHILLED WATER SUPPLY	HTHWR	HIGH TEMPERATURE HOT WATER RETURN	SEP	SEWAGE EJECTOR PUMP
CHP	CONSOLE HEAT PUMP	HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY	SG	STEAM GENERATOR
CI	CAST IRON	HTR	HEATER	SP	STANDPIPE
CKT	CIRCUIT	HUM	HUMIDIFIER	SP	STATIC PRESSURE
CLGWTR	COOLING WATER	HV	HEATING/VENTILATION UNIT	SP	SUMP PUMP
CLPS	CLEAN LOW PRESSURE STEAM	HW	HOT WATER	SPDT	SINGLE POLE DOUBLE THROW
CLG	CEILING	HWR	HOT WATER RETURN	SPEC	SPECIFICATION
CMPS	CLEAN MEDIUM PRESSURE STEAM	HWRP	HOT WATER RETURN PUMP	SPK	SPRINKLER
CMV	CEILING MOUNTED VENTILATOR	HWRR	HOT WATER REVERSE RETURN	SPK/SP	COMBINED SPRINKLER/ STANDPIPE
CO	CLEANOUT	HWS	HOT WATER SUPPLY	SPST	SINGLE POLE SINGLE THROW
CO2	CARBON DIOXIDE	HX	HEAT EXCHANGER	SQ	SQUARE
COMP	COMPRESSOR	HZ	FREQUENCY (CYC, PER SEC.)	SS	STAINLESS STEEL
COND	CONDENSER	ICF	IN-LINE CENTRIFUGAL FAN	ST	STORM
CONV	CONVECTOR	ID	INSIDE DIAMETER	STD	STANDARD
CP	CONDENSATE PUMP	IEF	IN-LINE EXHAUST FAN	SUCT	SUCTION
CPU	CENTRAL PROCESSING UNIT	IG	ISOLATED GROUND	SWBD	SWITCHBOARD
CRU	COMPUTER ROOM UNIT	IN	INCHES	SW	SWITCH
CRV	CENTRIFUGAL ROOF VENTILATOR	IN WG	INCHES OF WATER, GAUGE (PRESS.)	SWH	STEAM WATER HEATER
CWR	CONDENSER WATER RETURN	IW	INDIRECT WASTE	TAF	TUBEAXIAL FAN
CWS	CONDENSER WATER SUPPLY	JB	JUNCTION BOX	TAG	IDENTIFICATION OF EQUIPMENT
CWV	CENTRIFUGAL WALL VENTILATOR	JP	JOCKEY PUMP	TD	TEMPERATURE DIFFERENCE
CT	COOLING TOWER	KEF	KITCHEN EXHAUST FAN	TEL	TELECOMMUNICATIONS SERVICE
CT	CURRENT TRANSFORMER	KHWST	KITCHEN HOT WATER STORAGE TANK	TEMP	TEMPERATURE
CU	CONDENSING UNIT	KVA	KILOVOLT AMPERE	TMV	THERMOSTATIC MIXING VALVE
CU FT	CUBIC FEET	KW	KILOWATT	TP	TAMPERPROOF
CUH	CABINET UNIT HEATER	KWH	KITCHEN WATER HEATER	TP	TRAP PRIMER
CV	CONSTANT VOLUME	L	LENGTH	TS	TELEPHONE SERVICE
CW	COLD WATER	LA	LABORATORY COMPRESSED AIR	TSP	TOTAL STATIC PRESSURE
dB	DECIBEL	LAT	LEAVING AIR TEMPERATURE	T'STAT	THERMOSTAT
D	DEPTH	LAV	LAVATORY	TV	TELEVISION
DB	DRY BULB TEMPERATURE	LBS/HR	POUNDS PER HOUR	TVS	TRANSIENT VOLTAGE SUPPRESSOR
DC	DIRECT CURRENT	LF	LINEAR FEET	TW	TEMPERED WATER
DCV	DOUBLE CHECK VALVE	LG	LABORATORY GAS	TWR	TEMPERED WATER RETURN
DE	DEIONIZED PROCESS WATER	LIQ	LIQUID	TX	TRANSFORMER
DEG or °	DEGREE	LPC	LOW PRESSURE CONDENSATE	TYP	TYPICAL
DET	DOMESTIC EXPANSION TANK (PLUMBING)	LPS	LOW PRESSURE STEAM	UF	UNFUSED
DI	DISTILLED WATER	LV	LABORATORY VACUUM	UH	UNIT HEATER
DIA or ø	DIAMETER	LWT	LEAVING WATER TEMPERATURE	UPF	UPBLAST PROPELLER ROOF EXHAUST FAN
DN	DOWN	MA	MEDICAL COMPRESSED AIR	UR	URINAL
DP	DIFFERENTIAL PRESSURE	MA	MILLIAMPERE	USF	UTILITY SET FAN
DSA	DUCT SOUND ATTENUATORS	MA	MIXED AIR	V	VENT
DWBP	DOMESTIC WATER BOOSTER PUMP	MAGP	MASTER ALARM GAS PANEL	V	VOLTAGE
DWG	DRAWING	MAX	MAXIMUM	VA	VOLT AMPERE
DX	DIRECT EXPANSION	MBH	BTU PER HOUR (THOUSAND)	VAC	VACUUM
EA	EXHAUST AIR	MC	METAL CLAD CABLE	VAF	VANEAXIAL FAN
EAT	ENTERING AIR TEMPERATURE	MCC	MOTOR CONTROL CENTER	VAV	VARIABLE AIR VOLUME
EBR	ELECTRIC BASEBOARD RADIATION	MD	MOTORIZED DAMPER	VD	VOLUME DAMPER
EDR	EQUIVALENT DIRECT RADIATION	MECH	MECHANICAL	VEL	VELOCITY
EF	EXHAUST FAN	MFF	MIXED FLOW FAN	VFC	VARIABLE FREQUENCY CONTROLLER
EFF	EFFICIENCY	MFR	MANUFACTURER	VIF	VERIFY IN FIELD
EHC	ELECTRICAL HEATING CABLES	MH	METAL HALIDE	VOL	VOLUME
ELEC	ELECTRICAL	MIN	MINIMUM	VTR	VENT THRU ROOF
ELEV	ELEVATOR	MLO	MAIN LUGS ONLY	W	WASTE
EM	EMERGENCY	MPC	MEDIUM PRESSURE CONDENSATE	W	WATT
EM/NL	EMERGENCY/NIGHT LIGHT WALK-THRU	MPS	MEDIUM PRESSURE STEAM	WB	WET BULB TEMPERATURE
EMT	ELECTRIC METALLIC TUBING	MUAU	MAKE UP AIR UNIT	WC	WATER CLOSET
ESP	EXTERNAL STATIC PRESSURE	MV	MEDICAL VACUUM	WEF	WALL EXHAUST FAN
ET	EXPANSION TANK (HVAC)	N2	NITROGEN	WG	WIREGUARD
ETP	ELECTRIC TRAP PRIMER	N2O	NITROUS OXIDE	WH	WALL HYDRANT (HOSE BIBB)
EUH	ELECTRIC UNIT HEATER	N/A	NOT APPLICABLE	WHA	WATER HAMMER ARRESTER
EVAP	EVAPORATOR	N.C.	NORMALLY CLOSED	WI	WIDTH
EWB	ENTERING WET BULB TEMPERATURE	NEC	NATIONAL ELECTRICAL CODE	WP	WEATHERPROOF
EWC	ELECTRIC WATER COOLER	NIC	NOT IN CONTRACT	WPD	WATER PRESSURE DROP
EWH	ELECTRIC WATER HEATER	NL	NIGHT LIGHT WALK-THRU	WTG	WALL TRANSFER GRILLE
EWT	ENTERING WATER TEMPERATURE	N.O.	NORMALLY OPEN	WTR	WATER
EXH	EXHAUST	NTS	NOT TO SCALE	WV	WASTE AND VENT COMBINATION
EXP	EXPANSION	O	OXYGEN	WWM	WELDED WIRE MESH
F	FAHRENHEIT	OA	OUTSIDE AIR	ZVB	MEDICAL GAS ZONE VALVE BOX

NOTE:
NOT ALL ABBREVIATIONS WILL APPEAR ON DRAWINGS.

HVAC SYMBOLS

	RECTANGULAR, FLAT OVAL OR ROUND AIR DUCT
	AIR DUCT WITH ACOUSTICAL LINING
	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	TURNING VANES
AD / AD	ACCESS DOOR
	FLEXIBLE DUCT CONNECTION
	CEILING SUPPLY DIFFUSERS
	CEILING RETURN / EXHAUST GRILLE
	HARD DUCTED DIFFUSER OR GRILLE WITH FULL SIZE BOTTOM TAKE-OFF
	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW
	DIRECTION OF RETURN OR EXHAUST AIRFLOW
	DOOR UNDERCUT
BDD	BACK DRAFT DAMPER
VD	VOLUME DAMPER
FD	FIRE DAMPER
FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
A	VAV BOX w/ UNIT TYPE
	FAN POWERED VAV BOX
XXX	SUPPLY PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
XXX	RETURN PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
XXX	ELECTRICAL HEATING CABLE. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
SD	SMOKE DAMPER SYSTEM AND ASSOCIATED DEVICES PER SPECIFICATIONS AND MEP DETAILS
FS	COMBINATION FIRE AND SMOKE DAMPER
M	MOTORIZED DAMPER
H	HUMIDIFIER TUBE/PANEL
DS	DUCT SMOKE DETECTOR WITH REMOTE INDICATING LIGHT AND TEST SWITCH
SP	DUCT STATIC PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
VFC	VARIABLE FREQUENCY CONTROLLER
AFS	AIR FLOW STATION
DSA	DUCT SOUND ATTENUATOR
T	ROOM THERMOSTAT OR TEMPERATURE SENSOR
Tc	ROOM TEMPERATURE WITH CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
H	HUMIDISTAT
	FINNED TUBE RADIATION
CVS	CONTROL VALVE STATION
FM	FLOW METER
77 77	FIN TUBE TAG
DUCT SIZING	
20x12	RECTANGULAR DUCT
20/12	FLAT OVAL DUCT
20"ø	ROUND DUCT

NOTE:
THIS IS A GENERIC SYMBOLS LIST NOT ALL SYMBOLS WILL APPEAR ON DRAWINGS.

HVAC DEMOLITION GENERAL NOTES

1. BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
3. DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
4. REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
5. THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
6. THE LOCATION OF EXISTING HVAC SYSTEM SHOWN ON FLOOR PLANS IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
7. ALL EQUIPMENT AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
8. ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
9. ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
11. THE CONTRACTOR SHALL OBTAIN EXISTING MECHANICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.
12. SYSTEMS REQUIRING TO REMAIN IN OPERATION DURING DEMOLITION AND RENOVATION SHALL BE CAREFULLY PROTECTED FROM DAMAGE AND CONTAMINATION BY THE CONSTRUCTION.

HVAC GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, REGULATORY AGENCIES HAVING JURISDICTION, AND SPECIFICATIONS. SPECIFICATIONS MAY EXCEED REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING THEIR BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS, AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL TRADES BEFORE COMMENCING WORK.
6. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF VARIOUS EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
7. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
8. PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR, AND EXTERIOR WALLS AND FLOOR SLABS.
9. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION.
10. ALL EQUIPMENT LOCATED ON THE ROOF THAT REQUIRES SERVICING SHALL BE LOCATED A MINIMUM 10'-0" FROM EDGE OF THE ROOF.
11. ALL EXPOSED DUCTWORK SHALL BE FLAT, OVAL, OR ROUND. COORDINATE WITH ARCHITECT'S CEILING PLANS AND IDENTIFY ON DUCTWORK SHOP DRAWINGS.
12. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.

GENERAL PROCEDURES NOTES

1. PROJECT INCLUDES ACCESS TO AND COORDINATION WITH POSSIBLE OCCUPIED SPACES BELOW THE WORK AREA AND WITHIN OTHER PARTS OF THE BUILDING.
2. NOTICE OF WORK TO BE PERFORMED OUTSIDE THE WORK AREA, OR AFFECTING OTHER TENANTS IS TO BE GIVEN AT LEAST 48 HOURS PRIOR TO SCHEDULED WORK TO ALL PARTIES.
3. THE CONTRACTOR IS TO INCLUDE IN HIS BID, OR MAKE PROVISIONS FOR, THE FOLLOWING SPECIAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
   A. PERFORMANCE OF WORK AFTER HOURS, OR PREMIUM TIME, SUCH AS CORE DRILLING, HAMMER DRILLING, ETC.
   B. "HOT WORKS PERMIT" FOR SOLDERING, BRAZING OR TORCHING. CONTACT BBS ENGINEERING OFFICE AT LEAST 24 HOURS IN ADVANCE OF SCHEDULED WORK.
   C. PROTECTION OF THE ADJACENT OCCUPIED AREAS AND ITEMS IN THESE AREAS FROM DAMAGE.
   D. RESTORATION OF ANY DISTURBED OCCUPIED SPACES TO CONDITION ACCEPTABLE TO THE BUILDING OWNER PRIOR TO THE START OF NEXT DAY'S NORMAL BUSINESS HOURS.
   E. CONTRACTOR TO SUBMIT A PROPOSED SCHEDULE TO OWNER AND LANDLORD INDICATING ANTICIPATED AFTER HOURS WORK AND ACCESS TO ADJACENT TENANT SPACES FOR REVIEW PRIOR TO COMMENCING WORK.

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BID DOCUMENTS

PROJECT
ROOF RENOVATION AND ASSOCIATED WORK AT
TORRINGTON MIDDLE SCHOOL
200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

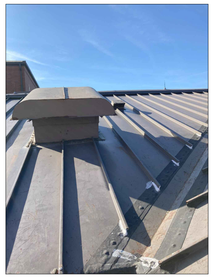
PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE
MECHANICAL GENERAL INFORMATION

STATE OF CONNECTICUT — REGISTERED PROFESSIONAL ENGINEER — No. 27225 — RICHARD H. HOLLINGSWORTH

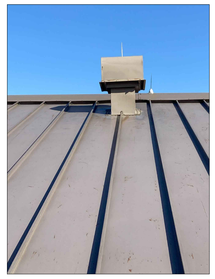
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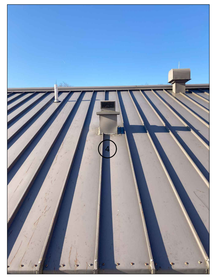
1 NON POWERED INTAKE HOOD ON CURB ANGLED AT PITCH OF ROOF. (OTHERS SIMILAR). PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF INTAKE HOOD AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



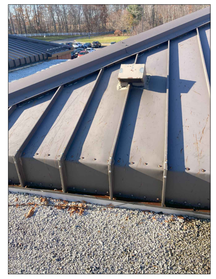
2 NON POWERED RELIEF HOOD ON CURB ANGLED AT PITCH OF ROOF. (OTHERS SIMILAR) PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF INTAKE HOOD AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



3 POWERED EXHAUST FAN ON UP-RIGHT CURB. (OTHERS SIMILAR) PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF POWERED EXHAUST FAN AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. DISCONNECT CONDUIT AND FEEDERS. EXTEND AND RECONNECT TO FAN ON NEW CURB EXTENSION. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



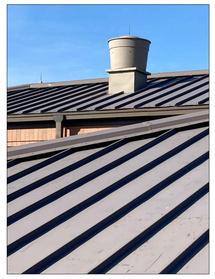
4 NON POWERED RELIEF CAP ON UP-RIGHT CURB. (OTHERS SIMILAR) PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF ROOF CAP AT A MINIMUM OF 18" ABOVE NEW FINISHED ROOF. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



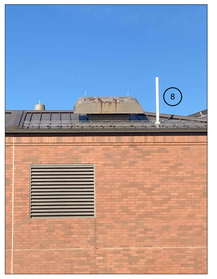
5 NON POWERED RELIEF CAP NO CURB. (OTHERS SIMILAR). REMOVE EXISTING ROOF CAP, INSTALL NEW ROOF CURB SIZED TO KEEP LOWEST POINT OF CAP AT MINIMUM 24" ABOVE NEW FINISHED ROOF. REPLACE ROOF CAP WITH NEW EQUIVALENT.



6 LARGE POWERED EXHAUST FAN ON UP-RIGHT CURB. WITH POWERED CONNECTION THROUGH ROOF PANEL. (OTHERS SIMILAR) PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF POWERED EXHAUST FAN AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. DISCONNECT CONDUIT AND FEEDERS. EXTEND AND RECONNECT TO FAN ON NEW CURB EXTENSION. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



7 POWERED UP-BLAST EXHAUST FAN ON UP-RIGHT CURB ON STAGE ROOF. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



8 TALL WHITE PVC VENT.



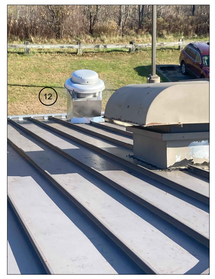
9 POWERED EXHAUST FAN ON FLAT ROOF. (OTHERS SIMILAR) PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



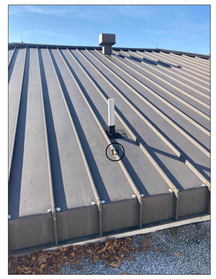
10 RELIEF HOOD ON FLAT ROOF. (OTHERS SIMILAR) PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



11 NON POWERED RELIEF HOOD ON CURB ANGLED AT PITCH OF ROOF.HOOD IS IN POOR CONDITION. PROVIDE AND INSTALL NEW HOOD EQUIVALENT TO EXISTING. PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF INTAKE HOOD AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



12 POWERED DOWN-BLAST TYPE EXHAUST FAN ON UP-RIGHT CURB. MUST BE SIZED TO KEEP LOWEST POINT OF POWERED EXHAUST FAN AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. DISCONNECT CONDUIT AND FEEDERS. EXTEND AND RECONNECT TO FAN ON NEW CURB EXTENSION. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



13 WHITE PVC VENT. (OTHERS SIMILAR) EXTEND ALL VENT PIPES SO VENT TERMINATION IS AT A MINIMUM OF 24" ABOVE FINISHED ROOF LEVEL.



14 BLACK IRON VENT PIPE, WHITE PVC VENT. RELOCATE OR EXTEND TO CLEAR MAKE-UP AIR UNIT AIR INTAKE PER CODE REQUIREMENTS. IF BLACK IRON VENT PIPE, WHITE PVC VENT ARE RELOCATED VENT TERMINATIONS TO BE AT A MINIMUM OF 24" ABOVE FINISHED ROOF.

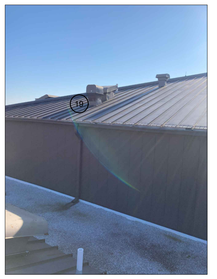
15 MAKE-UP AIR UNIT ON UP-RIGHT CURB WITH ANGLE IRON SUPPORT. REPLACE ANGLE IRON SUPPORT WITH ROOF SUPPORT BY MIRO OR EQUAL.

16 POWERED UP-BLAST TYPE KITCHEN EXHAUST FAN ON UP-RIGHT CURB. (OTHERS SIMILAR) DISCONNECT CONDUIT AND FEEDERS. PROVIDE CURB EXTENSION TO KEEP FAN DISCHARGE A MINIMUM OF 40" ABOVE ROOF SURFACE. MODIFY/EXTEND EXISTING CONDUIT AND WIRING TO FAN.

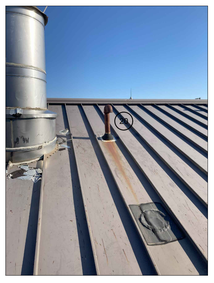


17 ROOF HATCH. MODIFY PER ARCHITECTURAL DETAILING.

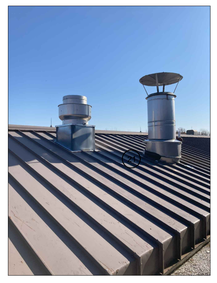
18 ANTENNA MOUNTED ON FLAT ROOF. NO WORK REQUIRED AT THIS LOCATION.



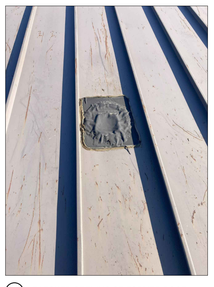
19 POWERED EXHAUST FAN ON PITCHED TO UP-RIGHT CURB. PROVIDE NEW CURB EXTENSION. MUST BE SIZED TO KEEP LOWEST POINT OF POWERED EXHAUST FAN AT A MINIMUM OF 24" ABOVE NEW FINISHED ROOF. DISCONNECT CONDUIT AND FEEDERS. EXTEND AND RECONNECT TO FAN ON NEW CURB EXTENSION. PREPARE AND PAINT PER ARCHITECTURAL SPECIFICATIONS.



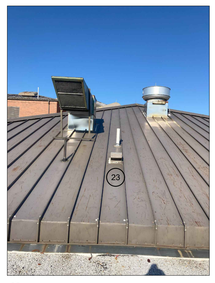
20 BLACK IRON INTAKE PIPE GOOSENECK. (OTHER SIMILAR) EXTEND GOOSENECK SO INTAKE IS A MINIMUM OF 24" ABOVE FINISHED ROOF.



21 30" DIAMETER METAL CHIMNEY. REPLACE DAMAGED SHEET METAL FLASHING CONE, SHEET METAL CRICKET AND ASSOCIATED FLASHING.



22 PATCHED OPENING OF FORMER ROOF PENETRATION. (OTHER SIMILAR) REMOVE PATCH AND APPLY NEW COVER AND PATCH PER ARCHITECTURAL DRAWINGS.



23 NON POWERED RELIEF CAP NO CURB. RELOCATE ROOF CAP TO PROVIDE MINIMUM 10'-0" DISTANCE FROM MAKE-UP AIR UNIT INTAKE PER CODE. INSTALL NEW ROOF CURB SIZED TO KEEP LOWEST POINT OF CAP AT MINIMUM 18" ABOVE NEW FINISHED ROOF. REPLACE ROOF CAP WITH NEW EQUIVALENT. COVER OPENING AND PATCH EXISTING OPENING PER ARCHITECTURAL DRAWINGS.

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BID DOCUMENTS

PROJECT
ROOF RENOVATION AND ASSOCIATED WORK AT
TORRINGTON MIDDLE SCHOOL
200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

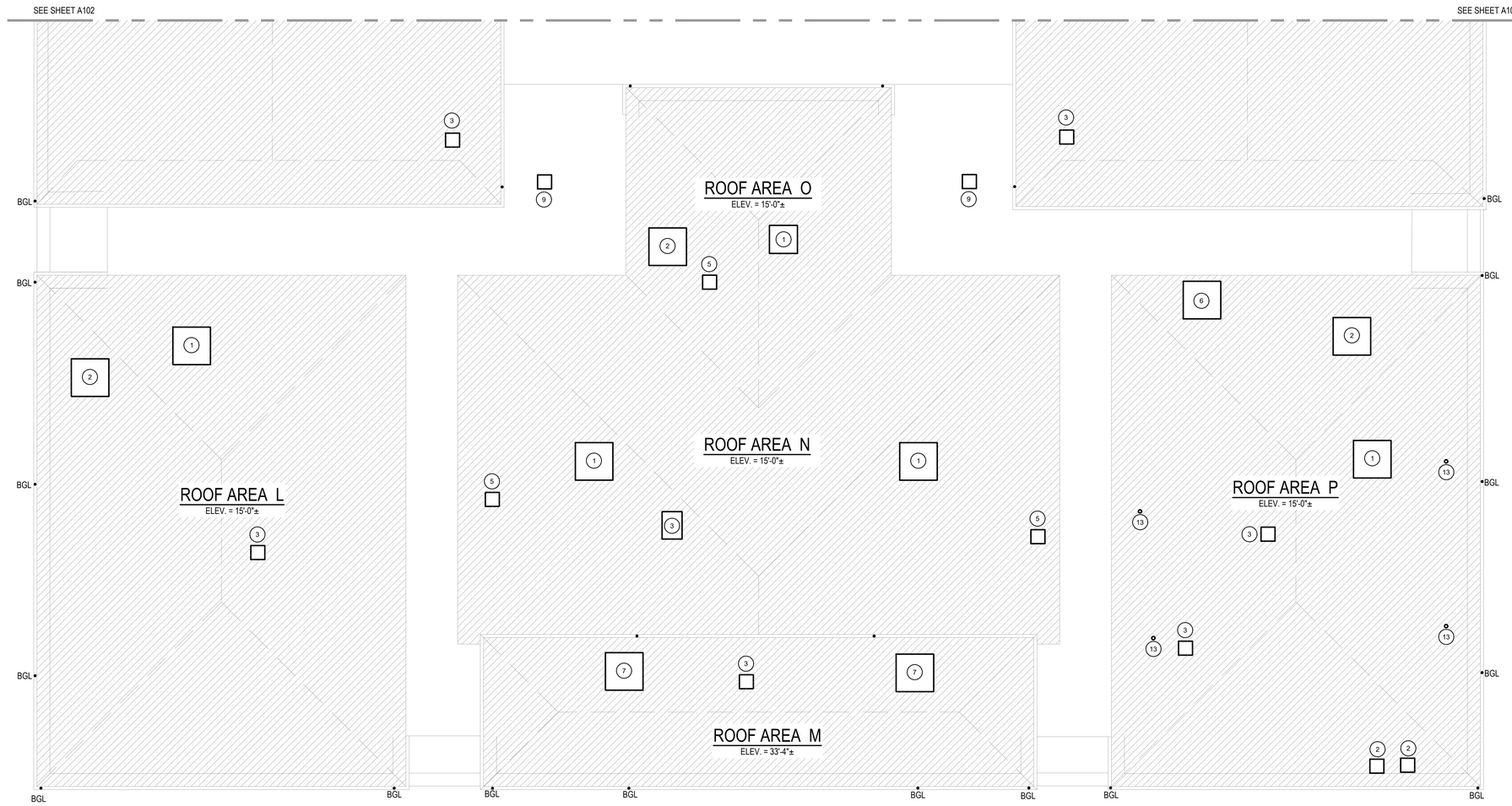
GRAPHIC SCALE

SHEET TITLE
MECHANICAL AND PLUMBING PLAN LEGEND

STATE OF CONNECTICUT REGISTERED PROFESSIONAL ENGINEER No. 17225

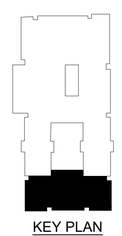
DRAWING NO.
MP100

17 OF 25



1 MP101 MECHANICAL AND PLUMBING PLAN
SCALE: 1/8" = 1'-0"

ROOF PLAN GENERAL NOTES
1. THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.



KEY PLAN

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OWNER
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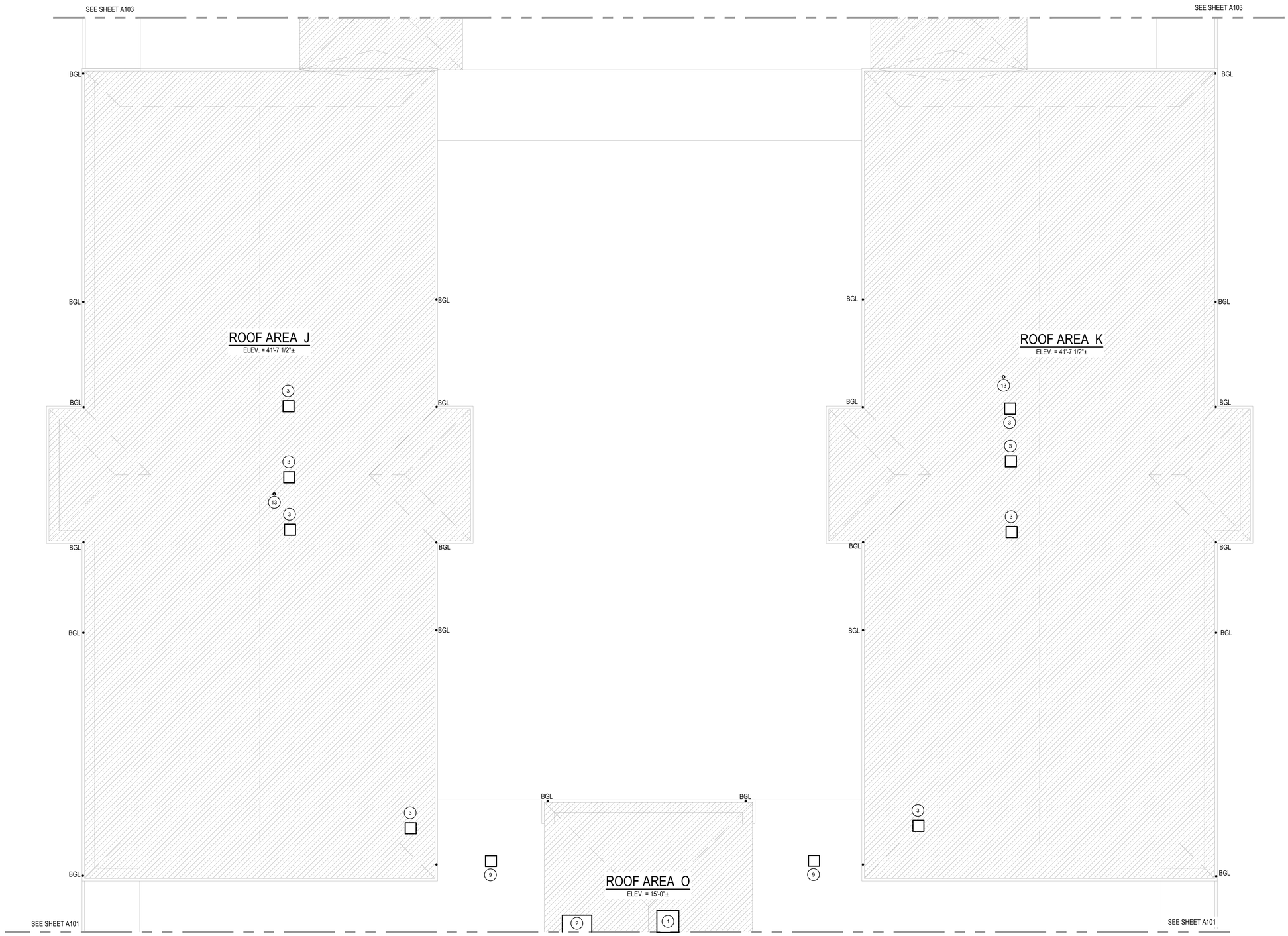
PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

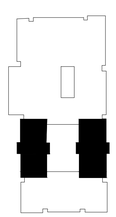
SHEET TITLE
MECHANICAL AND PLUMBING PLAN ENLARGED ROOF AREA PLAN

STATE OF CONNECTICUT — JOSEPH W. HEWETT — No. 27225 — REGISTERED PROFESSIONAL ENGINEER

DRAWING NO.
MP101



1 MP102 MECHANICAL AND PLUMBING PLAN
SCALE: 1/8" = 1'-0"



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355 MIGEON AVE
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NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE
MECHANICAL AND PLUMBING PLAN ENLARGED ROOF AREA PLAN

DRAWING NO.
MP102

19 OF 25

SEE SHEET A104

SEE SHEET A104



SEE SHEET A102

SEE SHEET A102

1 MP103 MECHANICAL AND PLUMBING PLAN
SCALE: 1/8" = 1'-0"

KEY PLAN

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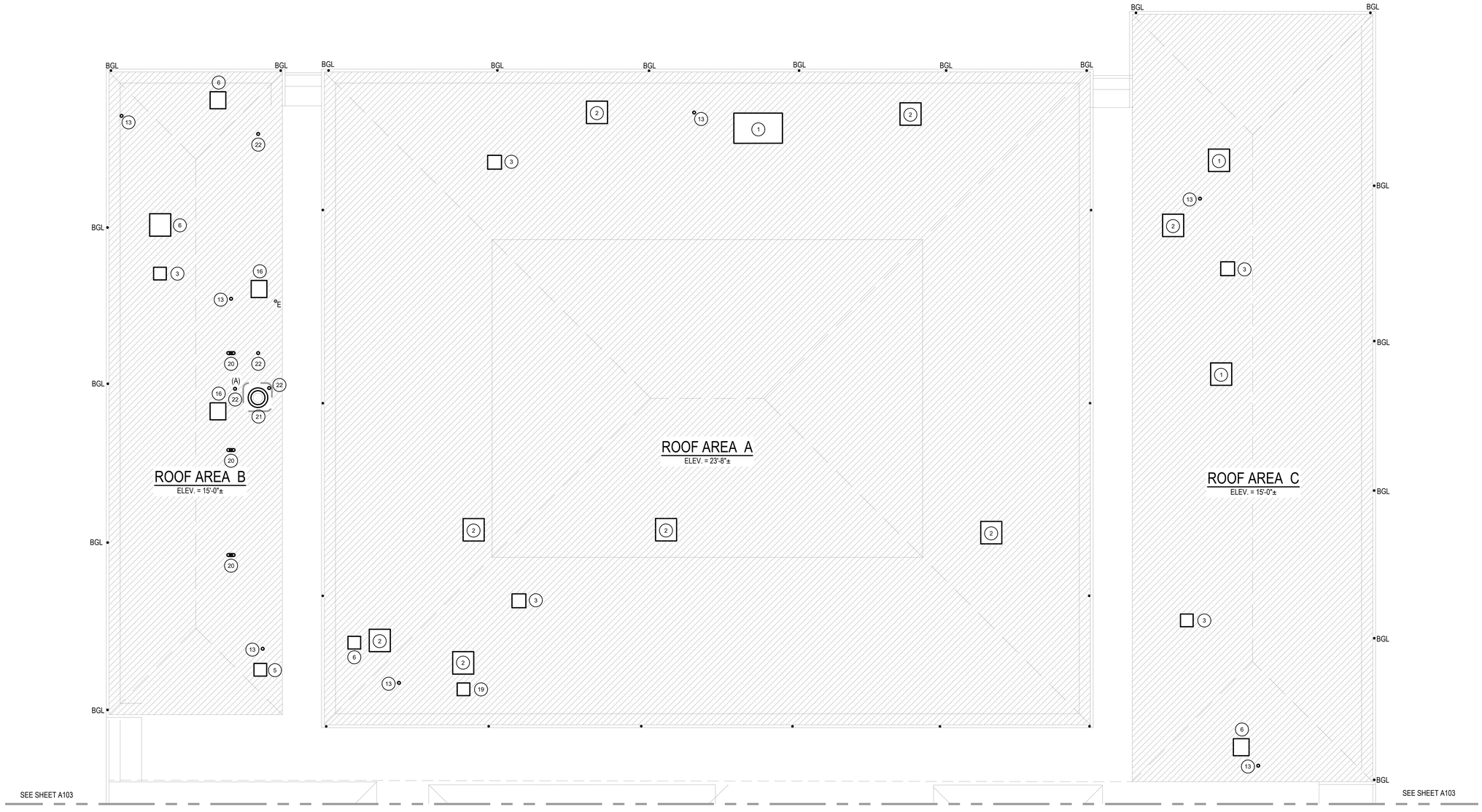
PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE

MECHANICAL AND PLUMBING PLAN ENLARGED ROOF AREA PLAN

DRAWING NO.
MP103



1 MP104 MECHANICAL AND PLUMBING PLAN
SCALE: 1/8" = 1'-0"

KEY PLAN

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TORRINGTON, CT 06790

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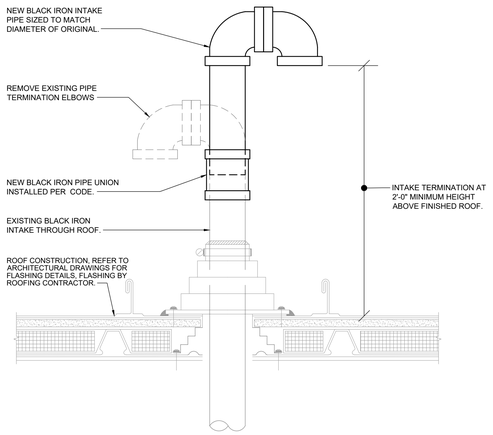
NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
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CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

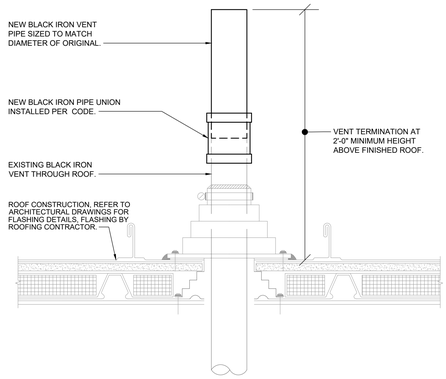
GRAPHIC SCALE

SHEET TITLE
MECHANICAL AND PLUMBING PLAN ENLARGED ROOF AREA PLAN

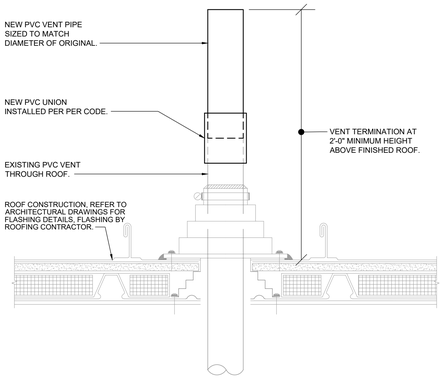
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MP104



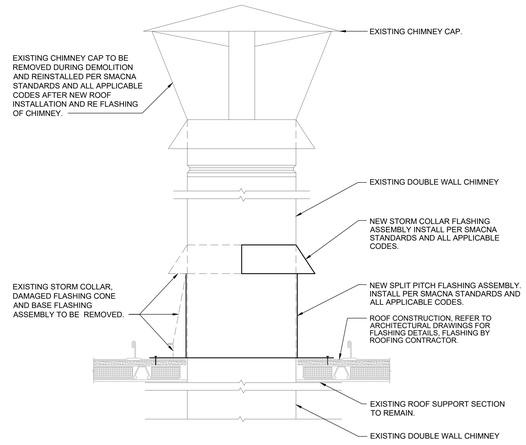
BLACK IRON VENT PIPE EXTENSION DETAIL
NOT TO SCALE



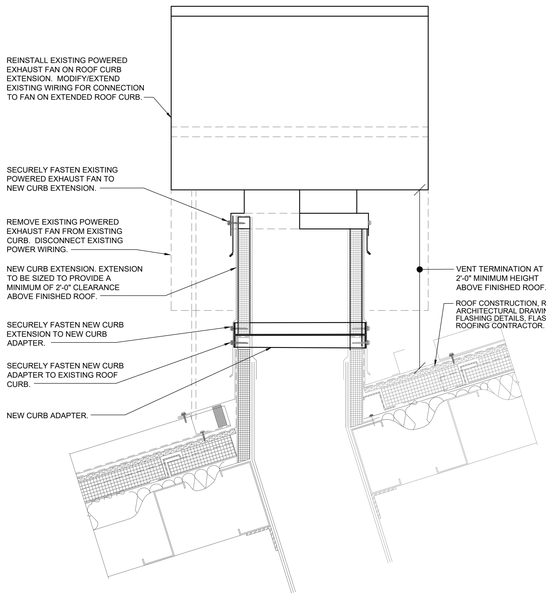
BLACK IRON VENT PIPE EXTENSION DETAIL
NOT TO SCALE



PVC VENT PIPE EXTENSION DETAIL
NOT TO SCALE

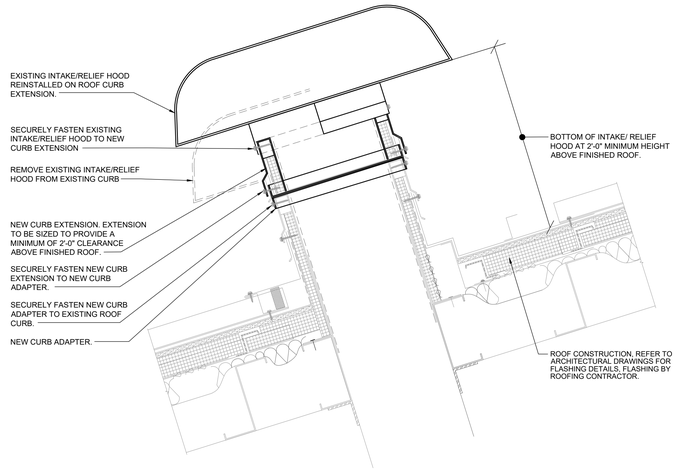


30" DIAMETER CHIMNEY/FLUE DETAIL
NOT TO SCALE

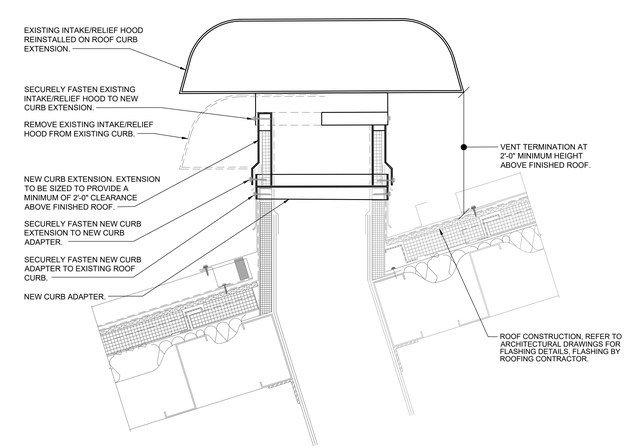


(DOWN BLAST FANS SIMILAR)

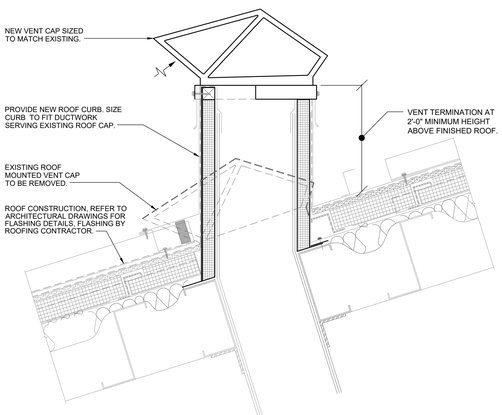
UPRIGHT POWERED EXHAUST FAN CURB EXTENSION DETAIL
NOT TO SCALE



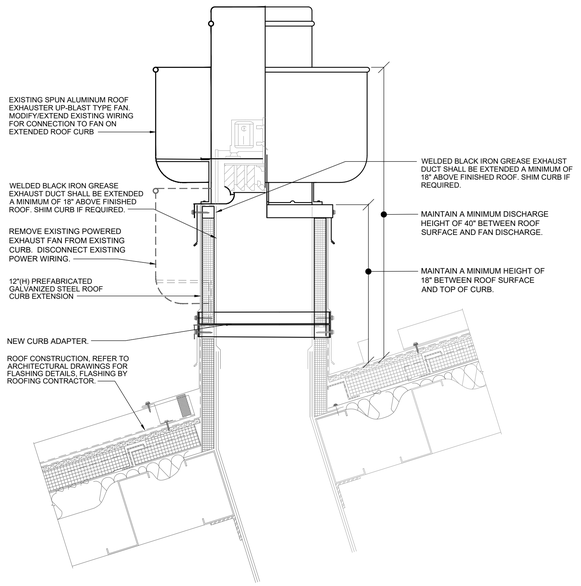
PITCHED INTAKE/RELIEF HOOD CURB EXTENSION DETAIL
NOT TO SCALE



UPRIGHT INTAKE/RELIEF HOOD CURB EXTENSION DETAIL
NOT TO SCALE



ROOF VENT CAP CURB DETAIL
NOT TO SCALE



UPRIGHT KITCHEN EXHAUST FAN CURB EXTENSION DETAIL
NOT TO SCALE

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TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
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NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

SHEET TITLE
MECHANICAL DETAILS

STATE OF CONNECTICUT — REGISTERED PROFESSIONAL ENGINEER — No. 27225

DRAWING NO.
MP105

22 OF 25

MECHANICAL SPECIFICATIONS

GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.

CONNECTICUT CODES AND STANDARDS:
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS
2021 INTERNATIONAL EXISTING BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL PLUMBING CODE
2020 NATIONAL ELECTRICAL CODE (NFPA 70)
ICC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

9. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS RELATING TO THE WORK OF ALL DIVISIONS AND TRADES AND BECOME FULLY FAMILIAR AND INFORMED AS TO THE EXTENT AND CHARACTER OF WORK REQUIRED, AND ITS RELATIONSHIP TO THE REQUIREMENTS OF THIS DIVISION. INCLUDE ALL SUCH REQUIREMENTS AS PART OF THIS MECHANICAL WORK.

10. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, AND SHALL BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE SITE AND EXISTING BUILDING AND THE CONTRACT DOCUMENTS.

PERMITS AND FEES

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTIONS FOR HIS WORK, AND DELIVER A COPY TO THE OWNER'S REPRESENTATIVE BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR INFORMATION ON WAIVING OF PERMIT FEES.

ALTERATION WORK AND DEMOLITION

1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC... TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL. REMOVE ALL EXISTING COMPONENTS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE DESIGN DRAWINGS.

2. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK AND PIPING SYSTEMS UPON COMPLETION OF WORK. ALL DUCTWORK AND PIPING BEING REMOVED SHALL BE PROPERLY VALVED AND CAPPED AT THE MAINS.

3. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.

4. CONDUCT SELECTIVE DEMOLITION WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF NORMAL OPERATIONS IN OTHER AREAS OF THE BUILDING. PROVIDE MINIMUM OF 48 HOURS ADVANCE NOTICE TO OWNER OF DEMOLITION OR SYSTEM SHUTDOWN ACTIVITIES THAT WILL AFFECT NORMAL OPERATIONS IN THE BUILDING OR REQUIRE THE INTERRUPTION OF UTILITY SERVICES.

5. DRAINING OF PIPING SYSTEMS: WHERE EXISTING PIPING SYSTEMS REQUIRE DRAINING OF FLUIDS FROM EQUIPMENT AND PIPING, ALL DRAINAGE SHALL BE DIRECTED BY HOSE OR PIPE TO SUITABLE, FREE FLOWING DRAINS OR SUITABLE CONTAINERS. DO NOT ALLOW EXCESSIVE FLUID/WATER BUILDUP ON FLOORS OR SITE AREA. ENSURE THAT EXISTING DRAINS ARE KEPT CLEAR OF DEBRIS TO PREVENT BLOCKAGES.

6. CERTAIN ITEMS OF EXISTING EQUIPMENT AND PIPING OR DUCTWORK MAY BE INDICATED FOR REMOVAL, RELOCATION OR ABANDONMENT. ITEMS NOTED FOR REMOVAL SHALL BE DISCONNECTED AND DISPOSED OF BY THE CONTRACTOR OR TURNED OVER TO THE OWNER IF THE OWNER SO REQUESTS. IF INSTRUCTED TO DISPOSE OF ITEMS, THE CONTRACTOR SHALL REMOVE THE ITEMS FROM THE PREMISES AND DISPOSE OF THEM IN A SAFE, LEGAL AND RESPONSIBLE MANNER AND LOCATION. ITEMS NOTED FOR RELOCATION ARE INTENDED FOR REUSE IN ANOTHER LOCATION AS DESIGNATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE THE MATERIAL FROM ITS PRESENT LOCATION, STORE THE MATERIAL IN A SAFE PLACE, AND REINSTALL THE MATERIAL IN ITS NEW LOCATION. QUESTIONS REGARDING THE SUITABILITY OF THE MATERIAL OR EQUIPMENT SHALL BE BROUGHT, IN WRITTEN FORM, TO THE ATTENTION OF THE OWNER/ENGINEER. ABANDONMENT SHALL BE DEFINED AS LEAVING IN PLACE ANY ITEM SO DESIGNATED AND SHALL INCLUDE PROPER PIPING OR DUCTWORK TERMINATION WITHIN ANY OCCUPIED OR OPEN AREA. ALL ABANDONED PIPES AND DUCTS SHALL BE DISCONNECTED AND CAPPED AT THEIR MAINS.

COORDINATION WITH OTHER DIVISIONS

1. ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE. PARTICULAR EMPHASIS IS PLACED ON TIMELY INSTALLATION OF MAJOR APPARATUS AND FURNISHING OTHER CONTRACTORS, ESPECIALLY THE CONSTRUCTION MANAGER, WITH INFORMATION AS TO OPENINGS, CHASES, SLEEVES, BASES, INSERTS, EQUIPMENT LOCATIONS, PANELS, ETC., REQUIRED BY OTHER TRADES.

2. THE CONTRACTORS ARE REQUIRED TO EXAMINE ALL OF THE PROJECT DRAWINGS, INCLUDING THE SITE, ARCHITECTURAL, STRUCTURAL AND THOSE OF OTHER MECHANICAL AND ELECTRICAL TRADES AND MUTUALLY ARRANGE WORK SO AS TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES AND / OR EXISTING SYSTEMS AND EQUIPMENT. IN GENERAL, DUCTWORK, HEATING PIPING, SPRINKLER PIPING AND DRAINAGE LINES TAKE PRECEDENCE OVER WATER, GAS AND ELECTRICAL CONDUITS. THE ENGINEER SHALL MAKE FINAL DECISIONS REGARDING THE ARRANGEMENT OF WORK WHICH CANNOT BE AGREED UPON BY THE CONTRACTORS.

3. WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO OR WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTORS WILL COOPERATE IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT.

4. IF THE WORK UNDER A SECTION IS INSTALLED BEFORE COORDINATING WITH OTHER DIVISIONS OR SECTIONS OR SO AS TO CAUSE INTERFERENCE WITH WORK OF OTHER SECTIONS, THE NECESSARY CHANGES TO CORRECT THE CONDITION SHALL BE MADE BY THE CONTRACTOR CAUSING THE INTERFERENCE WITHOUT EXTRA CHARGE TO THE OWNER.

SHUT DOWNS

1. WHEN INSTALLATION OF A NEW SYSTEM REQUIRES THE TEMPORARY SHUTDOWN OF AN EXISTING OPERATING SYSTEM, THE CONNECTION OF THE NEW SYSTEM SHALL BE PERFORMED AT SUCH TIME AS DESIGNATED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.

2. THE ENGINEER AND THE OWNER SHALL BE NOTIFIED OF THE ESTIMATED DURATION OF THE SHUTDOWN PERIOD AT LEAST THREE (3) DAYS IN ADVANCE OF THE DATE THE WORK IS TO BE PERFORMED.

3. WORK SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE WHENEVER POSSIBLE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT EXISTING OPERATING SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTIONS.

ELECTRICAL CONNECTIONS

1. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH DIVISION 26.

2. ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 26 COMPLETE FROM POWER SOURCE TO MOTOR OR EQUIPMENT JUNCTION BOX INCLUDING POWER WIRING THROUGH THE STARTERS. ALL STARTERS NOT FACTORY MOUNTED ON EQUIPMENT SHALL BE MOUNTED UNDER THE SPECIFICATION SECTION FURNISHING THE STARTER.

3. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPERATURE CONTROL WIRING, INTERLOCK WIRING AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT FURNISHED UNDER THIS DIVISION.

4. THE MECHANICAL CONTRACTOR SHALL FURNISH STARTERS AND/OR DISCONNECTS TO THE ELECTRICAL CONTRACTOR FOR EQUIPMENT PROVIDED. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROPERLY SIZED OVERLOAD HEATERS IN ALL STARTERS THAT HE FURNISHES.

SHOP DRAWINGS

1. PRIOR TO DELIVERY TO THE JOBSITE AND SUFFICIENTLY IN ADVANCE TO ALLOW THOROUGH REVIEW, THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SPECIFIED IN EACH SECTION AND COORDINATED DUCTWORK LAYOUTS. ALL DUCTWORK SHOP DRAWINGS, AUTOMATIC TEMPERATURE CONTROLS AND ALL DIAGRAMS AND RISERS SHALL BE SUBMITTED IN HARD COPY FORMAT. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL THE CONTRACTOR HAS RECEIVED SHOP DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT WHICH HAVE BEEN PROPERLY REVIEWED.

2. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN 30 DAYS AFTER AWARD OF CONTRACT BEFORE ANY MATERIAL OR EQUIPMENT IS PURCHASED. THE CONTRACTOR SHALL SUBMIT FOR REVIEW COPIES OF ALL SHOP DRAWINGS TO BE INCORPORATED IN THE MECHANICAL CONTRACT. REFER TO THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE QUANTITY OF COPIES REQUIRED FOR SUBMISSION. WHERE QUANTITIES ARE NOT SPECIFIED, PROVIDE SEVEN (7) COPIES FOR REVIEW.

3. PROVIDE SHOP DRAWINGS FOR ALL DEVICES SPECIFIED ON DRAWINGS IN EQUIPMENT SCHEDULES AND FOR ALL SYSTEMS INCLUDING DUCTWORK, PIPING, CONTROLS, ETC., OR WHERE CALLED FOR ELSEWHERE IN THE SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS' NAMES, CATALOG NUMBERS, CUTS, WIRING AND PIPING DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND ACCEPT THE EQUIPMENT, CERTIFIED DIMENSIONAL DRAWINGS, ACCURATE LAYOUT AND ARRANGEMENT DRAWINGS, LOCATIONS AND SIZES OF ALL CONNECTIONS, AND EQUIPMENT WEIGHTS. ALL PERFORMANCE DATA REQUIRED TO VERIFY THE EQUIPMENT'S SUITABILITY SHALL BE CLEARLY PRESENTED. A COMPLETE LIST IN EACH CATEGORY (EXAMPLE: ALL DIFFUSERS) OF ALL SHOP DRAWINGS, CATALOG CUTS, MATERIAL LISTS, ETC., SHALL BE SUBMITTED TO THE ENGINEER AT ONE TIME. NO CONSIDERATION WILL BE GIVEN TO A PARTIAL SHOP DRAWING SUBMITTAL.

A. EQUIPMENT SHOP DRAWINGS SHALL CONTAIN FULL RANGE PERFORMANCE CURVES, GRAPHS, TABLES OR OTHER PERTINENT DATA WHICH CLEARLY INDICATES OPERATIONAL RANGE OF A GIVEN UNIT SIZE. COMPUTER GENERATED/PLOTTED CURVES OR INFORMATION, BASED SOLELY ON THE DESIGN PERFORMANCE, WILL NOT BE ACCEPTED.

B. ALL SUBMITTALS OF EQUIPMENT FURNISHED WITH MOTORS SHALL CONTAIN A COMPLETE DESCRIPTION OF THE MOTOR'S OPERATING CHARACTERISTICS (HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR) AND THE NAMEPLATE MOTOR EFFICIENCY.

C. SHOP DRAWING SUBMITTAL SHEETS WHICH MAY SHOW ITEMS THAT ARE NOT BEING FURNISHED SHALL HAVE THOSE ITEMS CROSSED OFF IN INK TO CLEARLY INDICATE WHICH ITEMS WILL BE FURNISHED AND WHICH WILL NOT BE FURNISHED.

4. ACCEPTANCE RENDERED ON SHOP DRAWINGS SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS. WHERE DRAWINGS ARE REVIEWED, REVIEW DOES NOT MEAN THAT DRAWINGS HAVE BEEN CHECKED IN DETAIL; SAID APPROVAL DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY OR NECESSITY OF FURNISHING MATERIAL OR PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS. VERIFY AVAILABLE SPACE PRIOR TO SUBMITTING SHOP DRAWINGS. ACCEPTANCE OF SHOP DRAWINGS SHALL NOT APPLY TO QUANTITY NOR RELIEVE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY WITH INTENT OF DRAWINGS AND SPECIFICATIONS.

AS-BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS -BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

2. PROVIDE “AS-BUILT DRAWINGS” INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.

B. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.

C. EQUIPMENT LOCATIONS (EXPOSEED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

D. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

E. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND LOCAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC. ARE SUPPORTED FROM CONCRETE CONSTRUCTION, DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.

3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.

4. BEAM CLAMPS - HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, I BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.

5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

WIND RESTRAINTS

1. ALL MECHANICAL EQUIPMENT, APPLIANCES AND SUPPORTS THAT ARE EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE FOR THE SITE BASED ON ASCE 7. WIND PRESSURE REQUIREMENTS ARE BASED ON THE EXPOSURE OF THE BUILDING AND WIND SPEEDS FOR THAT REGION. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

DUCTWORK

1. DUCTWORK SHALL BE FABRICATED FROM HOT-DIPPED GALVANIZED STEEL SHEET CONFORMING TO ASTM A653, WITH G60 COATING. EXHAUST DUCTWORK SERVING TOILET/SHOWER SPACES SHALL BE ALUMINUM SHEET ALLOY 3003-H14, ASTM B 209, ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT STRENGTH.

2. MANUFACTURED METAL DUCTWORK AND FITTINGS SHALL BE BY LINDAB, SEMCO OR UNITED McGILL CORP. FLAT OVAL AND ROUND DUCTS: MACHINE MADE FROM SPIRAL LOCKSEAM DUCT WITH LIGHT REINFORCING CORRUGATIONS; FITTINGS MANUFACTURED OF AT LEAST TWO GAGES HEAVER THAN METAL DUCT.

3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR OPERATING PRESSURES INDICATED.

4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. NEGATIVE. FLEXIBLE DUCTS SHALL NOT PASS THROUGH WALLS NOR EXCEED 8 FEET IN LENGTH. SECURE TO DUCT TAP WITH CLAMP OR DRAWBAND. PROPERLY SUPPORT SO AS NOT TO SAG OR KINK.

5. JOINT SEALERS AND SEALANTS SHALL BE NON-HARDENING, WATER, MILDEW AND MOLD RESISTANT. MAXIMUM FLAME SPREAD OF 25, SMOKE DEVELOPED OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

6. PROVIDE AIR FOIL TURNING VANES WHEN RECTANGULAR ELBOWS MUST BE USED.

7. ACCESS DOORS SHALL BE PROVIDED UNDER THIS SECTION AS REQUIRED TO PROVIDE ACCESS TO FIRE AND SMOKE DAMPERS, CONTROLS, HUMIDIFIERS, COILS VALVES, ETC., WHICH ARE LOCATED IN DUCTS.

8. ON ALL AIR HANDLING EQUIPMENT INCLUDING AIR HANDLERS, ERV UNITS, UTILITY AND CABINET FANS, FURNISH AND INSTALL FLEXIBLE DUCT CONNECTORS TO ISOLATE FAN VIBRATION FROM THE DUCT SYSTEM. (EXCEPTION: AIR HANDLING UNITS WITH INTERNAL FAN VIBRATION ISOLATORS AND FLEXIBLE CONNECTORS INSTALLED BETWEEN FAN AND HOUSING.)

9. ACCESSORY DUCTWORK MATERIALS SUCH AS TAPES, SEALANTS, FASTENERS, ETC., SHALL COMPLY WITH NFPA 90A WITH A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50, AND SHALL BE SMACNA AND UL APPROVED.

DUCTWORK INSULATION

1. FACED FIBERGLASS DUCT WRAP SHALL BE APPLIED EXTERNALLY TO ALL CONCEALED DUCTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. DUCT WRAP TO BE 1.5 PCF DENSITY WITH K VALUE OF 0.27 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 100 OR EQUIVALENT.

2. APPLY RIGID BOARD INSULATION TO ALL EXPOSED DUCTWORK AND PLENUMS, ETC., BY USING MECHANICAL, WELD-TYPE PIN FASTENERS. FASTENERS SHALL BE SPOTTED NOT LESS THAN 3 INCHES FROM THE EDGE OF THE DUCT AND ON 12-INCH CENTERS THROUGHOUT THE AREA OF THE DUCT. RIGID BOARD INSULATION SHALL BE 6.0 PCF DENSITY WITH K VALUE OF 0.22 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 705 OR EQUIVALENT.

3. APPLY 1" ACOUSTICAL DUCT LINER AND LINER BOARD TO THE INSIDE OF DUCTS AND PLENUMS AS SPECIFIED AND AS CALLED FOR ON DRAWINGS. ACOUSTICAL LINER SHALL BE 2.0 PCF DENSITY WITH K VALUE OF 0.26 AT 75 DEG F, EQUAL TO MANVILLE PERMACOTE LINACOUSTIC-HP OR EQUIVALENT.

4. THE FOLLOWING DUCTS SHALL BE INSULATED WITH KRAFT FOIL FACED DUCT WRAP INSULATION IN SUFFICIENT THICKNESS TO MEET THE REQUIREMENTS OF THE 2015 INTERNATIONAL ENERGY CODE:

A. ALL CONCEALED SUPPLY AIR AND RETURN AIR DUCTWORK ABOVE CEILINGS WHETHER LINED OR UNLINED.

B. ALL OUTDOOR AIR DUCTWORK.

C. ALL EXHAUST DUCTWORK ON COLD SIDE OF BACKDRAFT OR MOTORIZED DAMPERS.

5. PROVIDE 1” ACOUSTICAL DUCT LINER ON FIRST 10' OF SUPPLY AIR DISCHARGE AND RETURN AIR INLET DUCTS OF ALL AIR HANDLING UNITS.

REGISTERS, GRILLES AND DIFFUSERS

1. REGISTERS, GRILLES AND DIFFUSERS SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE AS SELECTED BY THE ARCHITECT.

2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3. CHECK LOCATIONS OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF REGISTERS, GRILLS AND DIFFUSERS.

4. INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION.PAINT INSIDE OF DUCT CONNECTION TO REGISTERS AND DIFFUSERS BLACK FOR A DISTANCE OF 18" WHEREVER SHINY SHEETMETAL IS VISIBLE FORM THE OCCUPIED SPACE.

5. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS, DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE OR REGISTER ASSEMBLY.

PIPING

1. HOT WATER SUPPLY AND RETURN & CHILLED WATER SUPPLY AND RETURN

A. PIPE: SCHEDULE 40 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED, THREADED OR GROOVED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS, ASTM B16.3 MALLEABLE IRON THREADED FITTINGS, OR GROOVED FITTINGS AND MECHANICAL COUPLINGS.

C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED OR GROOVED.

D. PIPING 2" AND SMALLER MAY BE ASTM B88 TYPE K DRAWN COPPER WITH SOLDERED FITTINGS OR COPPER PRESS FITTINGS.

2. LOW PRESSURE STEAM

A. PIPE: SCHEDULE 40 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED OR THREADED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS OR ASTM B16.3 MALLEABLE IRON THREADED FITTINGS.

C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED.

3. LOW PRESSURE CONDENSATE

A. PIPE: SCHEDULE 80 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED OR THREADED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS OR ASTM B16.3 MALLEABLE IRON THREADED FITTINGS.

C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED.

4. PIPING INSULATION:

A. PROVIDE RIGID MOLDED, NONCOMBUSTIBLE FIBERGLASS PIPE INSULATION WITH WHITE KRAFT PAPER VAPOR BARRIER JACKET AND SELF-SEALING LAP JOINT AND BUTT STRIPS. INSULATION SHALL BE 1.5 PCF DENSITY WITH K VALUE OF 0.24 AT 75 DEG F. INSULATION SHALL BE RATED FOR OPERATING TEMPERATURES FROM 0 DEG F TO 850 DEG F AND BE EQUIVALENT TO OWENS CORNING ASJ-SSL II OR EQUIVALENT.

B. FITTINGS SHALL BE COVERED WITH FLEXIBLE FIBERGLASS INSULATION AND ZESTON PVC FITTING COVERS. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.

C. ALL INSULATION MATERIALS, INCLUDING JACKETS AND ADHESIVES, SHALL MEET THE REQUIREMENTS OF NFPA 90A, ACCORDING TO ASTM TEST E-84, NFPA 255 AND UL 723, HAVING A FLAME-SPREAD RATING OF NOT OVER 25, A SMOKE-DEVELOPED RATING OF NOT OVER 50 AND A FUEL-CONTRIBUTED RATING OF NOT OVER 50.

5. PIPING INSTALLATION

A. ALL PIPE CONNECTIONS SHALL BE INSTALLED TO ALLOW FOR FREEDOM OF MOVEMENT OF THE PIPING DURING EXPANSION AND CONTRACTION WITHOUT SPRINGING. SWING JOINTS, EXPANSION LOOPS AND EXPANSION JOINTS WITH PROPER ANCHORS AND GUIDES SHALL BE PROVIDED BY THE CONTRACTOR WHERE NECESSARY AND/OR WHERE SHOWN ON THE DRAWINGS. ANCHORS AND GUIDES SHALL BE SUBJECT TO THE REVIEW OF THE ENGINEER. PAY PARTICULAR ATTENTION TO PLASTIC PIPING WITH HIGH COEFFICIENTS OF EXPANSION.

B. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE OF PIPE BEFORE ASSEMBLY.

C. AFTER COMPLETION, FILL, CLEAN AND TREAT SYSTEM. VENT AIR FROM SYSTEM.

D. INSTALL HOT WATER AND CHILLED WATER PIPING TO ASME B31.9 REQUIREMENTS.

E. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

F. PIPING SYSTEMS SHALL BE PERMANENTLY LABELED TO IDENTIFY FLUID INSIDE PIPES, DIRECTION OF FLUID FLOW AND APPROXIMATE WORKING PRESSURE. LABELING SYSTEM SHALL BE "OPTI-CODE" WITH "ARROWS ON A ROLL TAPE" PERMANENTLY AFFIXED TO PIPING AS MANUFACTURED BY SETON NAME PLATE CORP., OR AN ACCEPTED EQUIVALENT.

G. UNIONS ARE TO BE USED AT CONNECTIONS TO FIXTURES AND OTHER APPARATUS TO ALLOW EASY REMOVAL. PROVIDE ACCEPTABLE DIELECTRIC UNIONS OR ADAPTERS AT ALL CONNECTIONS BETWEEN FERROUS AND NON-FERROUS PIPING.

H. ANY EXPOSED, UNINSULATED PIPING LOCATED IN FINISHED AREAS WHERE PIPING PASSES THROUGH WALLS, FLOOR OR CEILING, SHALL BE CHROME-PLATED WITH CHROME-PLATED ESCUTCHEONS.

I. PROVIDE HOSE BIB DRAINS WITH BRASS CAPS AT LOW POINTS OF PIPING RISERS FOR DRAINAGE.

6. PIPE HANGERS AND SUPPORTS

A. ALL HANGER, SUPPORT AND ANCHOR TYPES OR MODEL NUMBERS SPECIFIED HEREIN ARE BASED ON GRINNELL OR ACCEPTABLE EQUIVALENT. SUPPORTS SHALL CONFORM TO MSS-SP-69 AND ANSI B31.1. WIRE AND/OR STRAP HANGERS WILL NOT BE ACCEPTABLE.

B. ALTERNATE PIPING SUPPORT SYSTEMS MAY BE ACCEPTABLE BASED ON TYPE AND SIZE OF PIPING INSTALLED AND SUPPORT SYSTEM EMPLOYED. STRUT SYSTEMS SUCH AS B-LINE, UNI-STRUT, SUPER STRUT, ETC. WITH INTEGRAL PIPE CLAMPING AND SUPPORTING HARDWARE OR INNOVATIVE SUPPORT PRODUCTS MAY BE ACCEPTED. SUBMIT A DRAFT SUBMITTAL TO ENGINEER PRIOR TO OFFICIAL SUBMITTAL FOR APPROVAL TO DETERMINE ACCEPTABILITY OF ALTERNATIVE SUPPORT SYSTEMS.

C. IN NO CASE SHALL PIPING BE BOTTOM OR FLOOR SUPPORTED ON THREADED ROD ONLY. A MANUFACTURED SUPPORT / BASE SHALL BE EMPLOYED WHICH IS DURABLE AND SUITABLE RESISTANT TO THE EFFECTS OF CORROSION AND MINOR IMPACT.

D. HANGERS FOR PIPE SIZES TWO (2") INCHES AND SMALLER SHALL BE LIGHT-DUTY, CLEVIS-TYPE HANGERS, #65. FOR COPPER PIPES TWO (2") INCHES AND SMALLER, USE CT-69 COPPER BAND HANGERS OR CT-65 COPPER PLATED CLEVIS.

E. HANGERS FOR PIPING OVER 2-1/2 INCHES SHALL BE GENERAL-DUTY, CLEVIS-TYPE HANGERS, #260. FOR COPPER SIZES 2-1/2 INCHES THROUGH 4 INCHES, USE CT-65. THESE HANGERS MAY BE USED FOR LARGER SIZES IN PLASTIC DRAINAGE PIPING. USE SADDLES OR INSULATION PROTECTORS FOR PLASTIC PIPE OR USE FEE & MASON FIGURE 108.

F. FOR INSULATED COLD AND/OR CHILLED WATER PIPING SYSTEMS, HANGERS SHALL BE SIZED FOR THE SPECIFIED INSULATION THICKNESS. PROVIDE NON-COMPRESSIBLE, FOAM-TYPE PIPE COVERING SADDLES OF THE REQUIRED THICKNESS AND A SHEET METAL HANGER SADDLE TO PREVENT CRUSHING OF INSULATION BY THE HANGER. INSULATED HOT WATER PIPING MAY BE INSTALLED WITH LINE- SIZE HANGERS. INSULATE AROUND HANGER.

G. VERTICAL RISERS SHALL BE SUPPORTED WITH RISER CLAMPS. FOR PIPES 2-1/2" AND SMALLER, USE FIGURE 261. FOR PIPES 3" THROUGH 8”, USE RISER CLAMPS, FIGURE 261 WITH SHEAR LUGS WELDED TO PIPE. RISERS 10” AND LARGER, OR WHERE RISER CLAMP MUST BE HUNG FROM STRUCTURE ABOVE OR ON HIGH PRESSURE STEAM OR HIGH TEMPERATURE HOT WATER SYSTEMS USE A 4 OR 6 BOLT CLAMP, FIGURE 40.

H. UPPER ATTACHMENTS FOR PIPING IN WOOD CONSTRUCTION SHALL BE MALLEABLE IRON SIDE BEAM BRACKET, GRINNELL #202, WITH LEG BOLT INTO SIDE OF WOOD MEMBER OR APPROVED “SAMMY” TYPE SCREWS.

REFRIGERANT PIPING

1. DRAWN (RIGID) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, H58 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME B16.22 WROUGHT COPPER. JOINTS SHALL BE BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.

2. ANNEALED (SOFT) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, O60 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME 16.22 WROUGHT COPPER. JOINTS SHALL BE FLARED OR BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.

3. INSULATION SHALL BE FLEXIBLE ELASTOMERIC. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.

4. PIPING INSTALLATION

A. INSTALL REFRIGERATION PIPING IN ACCORDANCE WITH VRF SYSTEM MANUFACTURER'S INSTRUCTIONS AND ASME B31.5.

B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

TESTING, ADJUSTING AND BALANCING

1. AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS IN ACCORDANCE WITH EITHER AABC, NEBB, OR TABB STANDARDS.

2. TESTING AND BALANCING CONTRACTORS SHALL BE CERTIFIED BY EITHER AABC, NEBB OR TABB.

3. AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS.

4. AIR OUTLETS AND INLETS SHALL BE BALANCED TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.

5. ADJUST HYDRONIC SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.

6. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.

7. SUBMIT FINAL REPORT INDICATING DESIGN VERSUS FINAL PERFORMANCE; NOTABLE CHARACTERISTICS OF THE SYSTEM; DESCRIPTION OF SYSTEMS OPERATION SEQUENCE; TEST CONDITIONS; AND A LIST OF INSTRUMENTS USED. FINAL REPORT SHALL BE SUBMITTED PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.

GALE

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BID DOCUMENTS

PROJECT

ROOF RENOVATION AND ASSOCIATED WORK AT
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200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER

TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

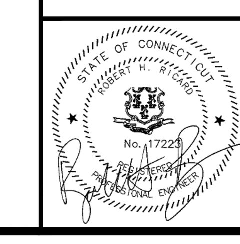
NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
CADD FILE	
DESIGNED BY	SJH
DRAWN BY	SJH
CHECKED BY	RHR
DATE	03/17/2025
DRAWING SCALE	AS NOTED

GRAPHIC SCALE

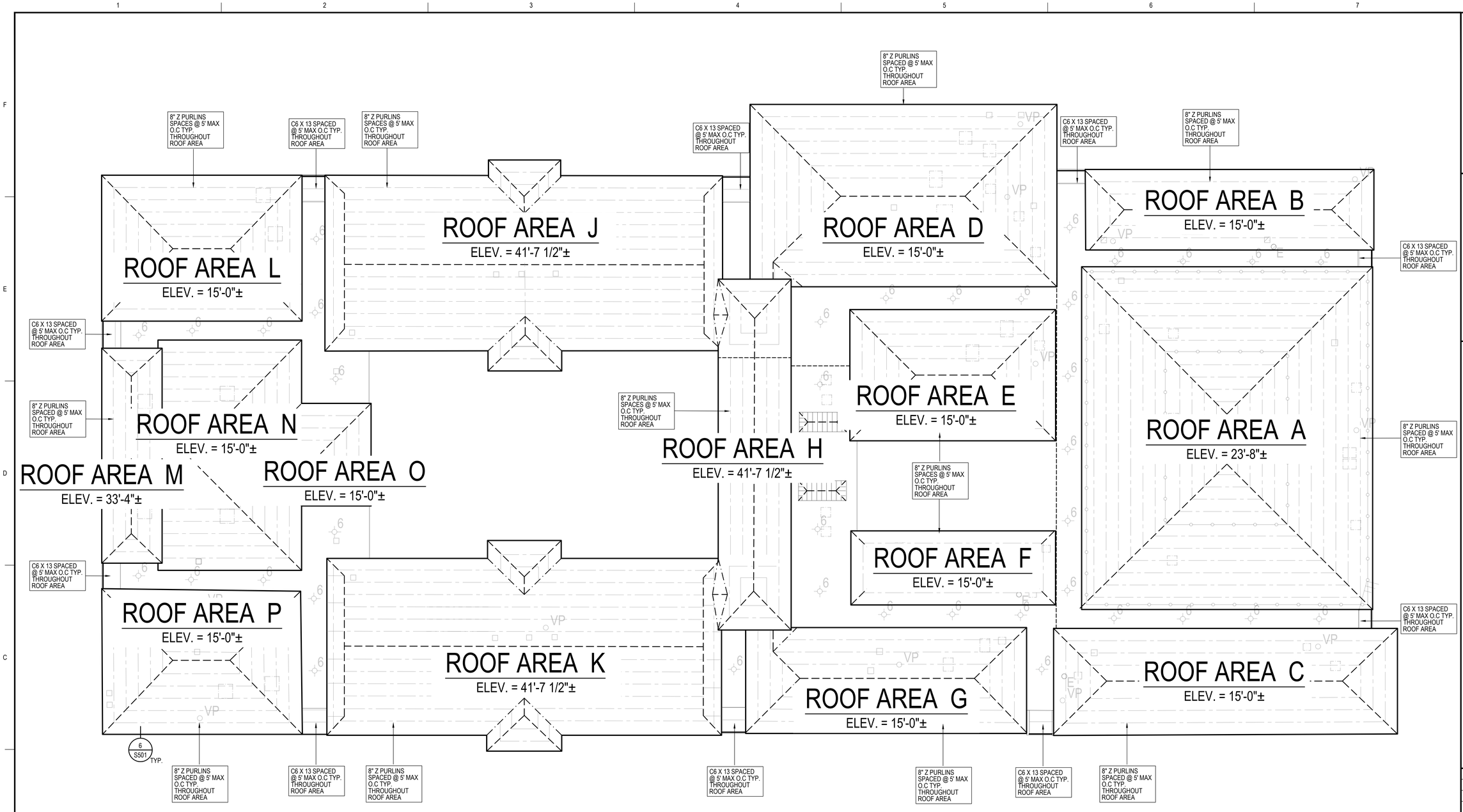
SHEET TITLE

MECHANICAL SPECIFICATIONS



DRAWING NO.

MP106



STRUCTURAL FRAMING AND SLOPE

Roof Area	Room Designation	Structural Frame Type	Height	Spacing	Deck Type Per Drawings	Observed Deck Type	Slope
Area A	Gym	Purlins	8"	5'-0"	Metal Deck	Acoustic Plank Decking CWF)	4:12
Area B	Mechanical	Purlins	8"	5'-0"	Metal Deck	Unknown	4:12
Area C	Tech	Purlins	8"	5'-0"	Metal Deck	Unknown	4:12
Area D	Café	Purlins	8"	5'-0"	None		4:12
Area E	Home Ec	Purlins	8"	5'-0"	None		4:12
Area F	Computer	Purlins	8"	5'-0"	None		4:12
Area G	Office	Purlins	8"	5'-0"	None		4:12
Area H	Spec. Ed.	Purlins	8"	5'-0"	None	(Alternate Roof Framing Plan)	4:12
Area J	Class/Science	Purlins	8"	5'-0"	Metal Deck		4:12
Area K	Class/Science	Purlins	8"	5'-0"	Metal Deck		4:12
Area L	Band	Purlins	8"	5'-0"	None		4:12
Area M	Stage	Purlins	8"	5'-0"	None		4:12
Area N	Auditorium	Purlins	8"	5'-0"	None		4:12
Area O	Lobby	Purlins	8"	5'-0"	None		4:12
Area P	Art	Purlins	8"	5'-0"	Metal Deck	Unknown	4:12
Entrance Roofs		Channels	6" x 13#	5'-0" max	None	Section 1 / S-5	4:12

1 EXISTING ROOF FRAMING PLAN
SCALE: 1/16"=1'-0"

PLAN NORTH

KEY PLAN

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BID DOCUMENTS

PROJECT
ROOF RENOVATION AND ASSOCIATED WORK AT TORRINGTON MIDDLE SCHOOL
200 MIDDLE SCHOOL DR
TORRINGTON, CT 06790

OWNER
TORRINGTON BOARD OF EDUCATION
355 MIGEON AVE
TORRINGTON, CT 06790

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	S100
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	1/16"=1'-0"

GRAPHIC SCALE
0 8' 16' 32'

SHEET TITLE
EXISTING ROOF FRAMING PLAN

STATE OF CONNECTION — MICHAEL A. LOMBARDO — No. 25170 — LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
S100

24 OF 25

SPACE
INTENTIONALLY
LEFT BLANK

1 DETAIL NOT USED
SCALE:

SPACE
INTENTIONALLY
LEFT BLANK

2 DETAIL NOT USED
SCALE:

SPACE
INTENTIONALLY
LEFT BLANK

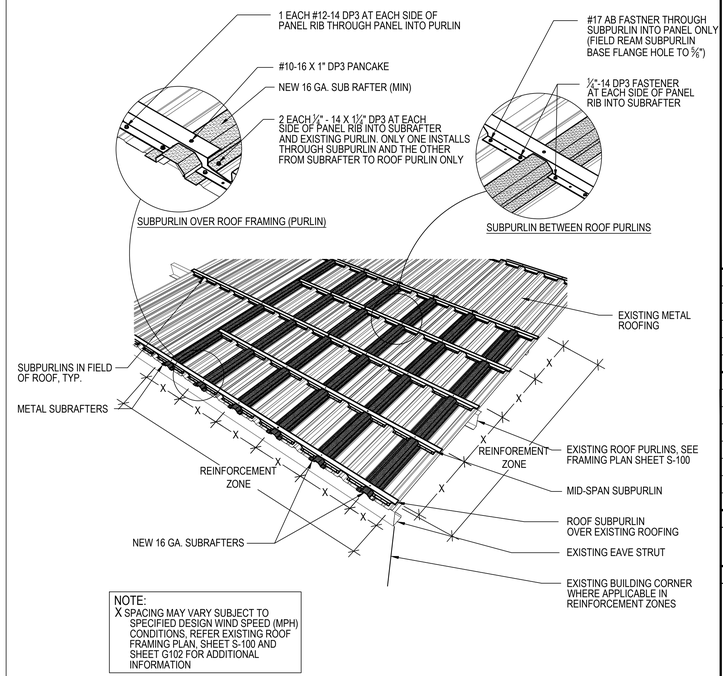
3 DETAIL NOT USED
SCALE:

SPACE
INTENTIONALLY
LEFT BLANK

4 DETAIL NOT USED
SCALE:

SPACE
INTENTIONALLY
LEFT BLANK

5 DETAIL NOT USED
SCALE:



NOTE:
X SPACING MAY VARY SUBJECT TO SPECIFIED DESIGN WIND SPEED (MPH) CONDITIONS. REFER EXISTING ROOF FRAMING PLAN, SHEET S-100 AND SHEET G102 FOR ADDITIONAL INFORMATION

6 ROOF SUBPURLIN FRAMING SYSTEM
SCALE: NTS

GALE

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NO.	DATE	DESCRIPTION	BY

PROJECT NO.	977541
STATE PRJCT NO.	143-0078RR
CADD FILE	S501
DESIGNED BY	MAL
DRAWN BY	EKJ
CHECKED BY	MAL
DATE	03/17/2025
DRAWING SCALE	N.T.S

GRAPHIC SCALE

SHEET TITLE

STRUCTURAL DETAILS

STATE OF CONNECTICUT
MARK A. LOMBARDO
No. 25170
LICENSED PROFESSIONAL ENGINEER

DRAWING NO.
S501

25 OF 25