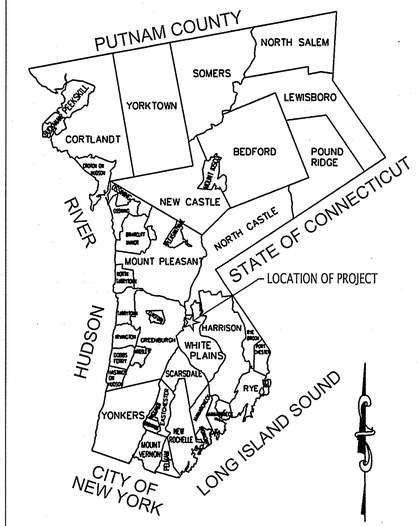


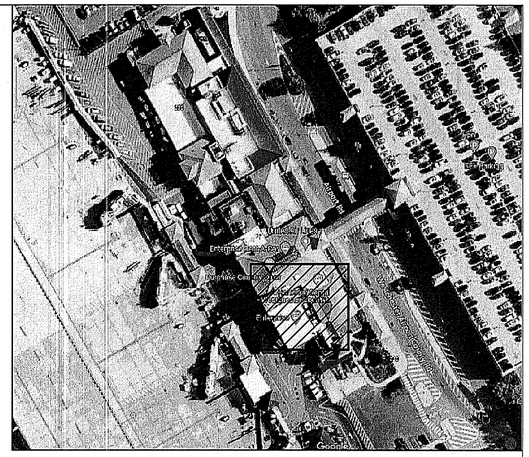
WESTCHESTER COUNTY

Westchester County

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT No. 23-532-Rev.

TERMINAL BUILDING HVAC-1 AND HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK, NEW YORK



LOCATION MAP
SCALE: N.T.S.

SHEET NO.	SHEET TITLE	DPW FILE NO:
T001	COVER SHEET	48-15-T-874-0
S-201	STRUCTURAL FLOOR PLAN	48-15-S-875-0
S-300	STRUCTURAL DETAILS AND NOTES	48-15-2-876-0
GC-201	GENERAL CONSTRUCTION DEMO AND NEW WORK PLAN	48-15-G-877-0
GC-701	GENERAL CONSTRUCTION DETAILS	48-15-G-878-0
M-001	MECHANICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	48-15-M-879-0
M-101	MECHANICAL DEMOLITION FIRST FLOOR PART PLAN	48-15-M-880-0
M-201	MECHANICAL NEW WORK FIRST FLOOR PART PLAN	48-15-M-881-0
M-202	MECHANICAL NEW WORK FIRST FLOOR PLAN	48-15-M-882-0
M-601	MECHANICAL SCHEDULES	48-15-M-883-0
M-701	MECHANICAL DETAILS	48-15-M-884-0
M-702	MECHANICAL DETAILS	48-15-M-885-0
E001	ELECTRICAL SYMBOLS, ABBREVIATIONS AND GENERAL NOTES	48-15-E-886-0
E101	ELECTRICAL FIRST FLOOR PART PLAN - DEMOLITION	48-15-E-887-0
E201	ELECTRICAL FIRST FLOOR PLAN - NEW WORK	48-15-E-888-0
E301	ELECTRICAL ONE-LINE DIAGRAM AND PLANS	48-15-M-889-0
SP-001	SPRINKLER SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	48-15-SP-890-0
SP-201	SPRINKLER SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	48-15-SP-891-0
SP-701	SPRINKLER SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES	48-15-SP-892-0

STRUCTURAL ENGINEER

STATE OF NEW YORK * PATRICK J. CONLON * 079876 LICENSED PROFESSIONAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

STATE OF NEW YORK * PATRICK E. LYNCH * 061467 LICENSED PROFESSIONAL ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

OLA CONSULTING ENGINEERS

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E./JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER, P.E./GIOVANNI DEL CID, P.E.

11/20/24
RECOMMENDED FOR DESIGN DATE
JEFFREY A. DEAN, P.E.
ASSOCIATE ENGINEER
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

11.21.2024
RECOMMENDED FOR CONSTRUCTION DATE
GAYLE M. KATZMAN, P.E.
FIRST DEPUTY COMMISSIONER
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

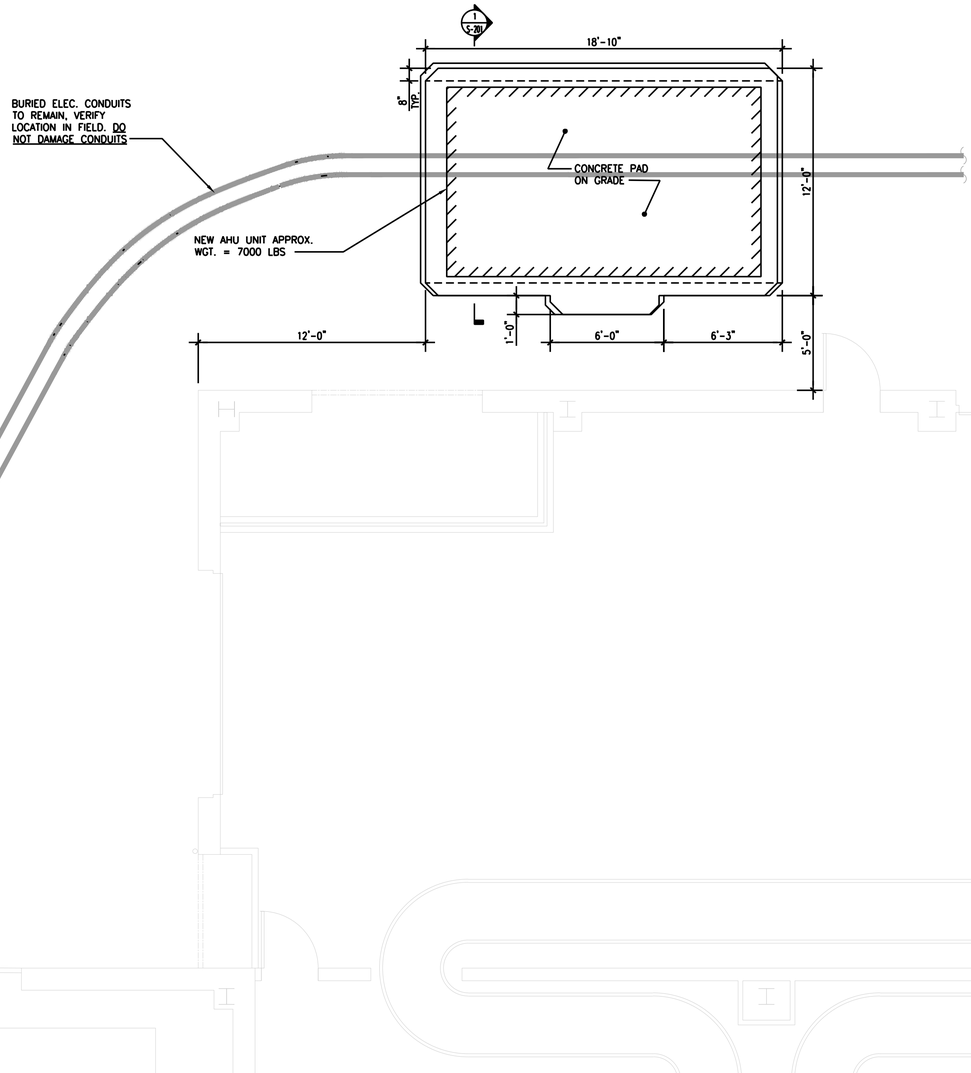
11/20/24
APPROVED FOR CONSTRUCTION DATE
HUGH J. GREECHAN, JR., P.E.
COMMISSIONER
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER T-001
SHEET NO. 1 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK
COVER SHEET

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-T-874
REV. NO. 0



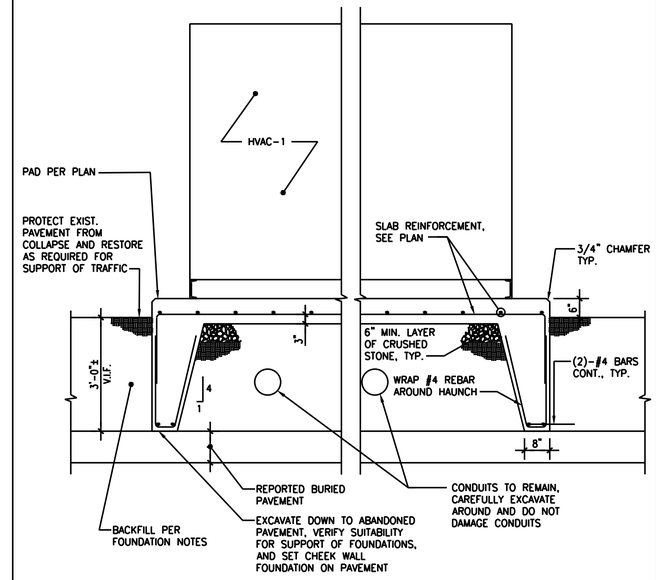
MECHANICAL EQUIP. FOUNDATION PLAN

1/4" = 1'-0"

NORTH:

- DO NOT SCALE THIS DRAWING, ALL DIMENSIONS AND ELEVATIONS SHALL BE V.I.F.
- NEW EQUIPMENT PAD CONSTRUCTION: 8" CONCRETE SLAB REINFORCED WITH #4 AT 18"o.c. EACH WAY.

IN CHARGE OF PATRICK CONLON
CHECKED BY PATRICK CONLON
MADE BY LEANDRO CARVALHO



SECTION

1/2" = 1'-0"

1 / S-201

PROJECT NORTH

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

STATE OF NEW YORK · PATRICK J. CONLON · 079876 · LICENSED PROFESSIONAL ENGINEER

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

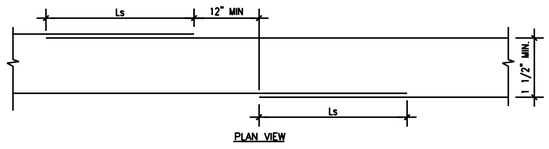
CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

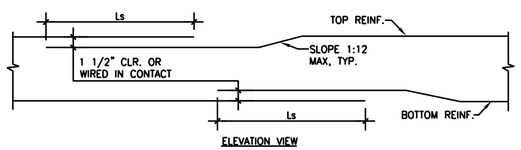
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

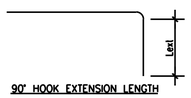
CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER S-201
SHEET NO. 2 OF 19

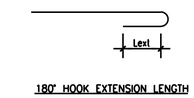
TERMINAL BUILDING HVAC-1 AND HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK, NEW YORK
STRUCTURAL FLOOR PLAN

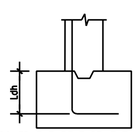
SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-S-875
REV. NO. 0

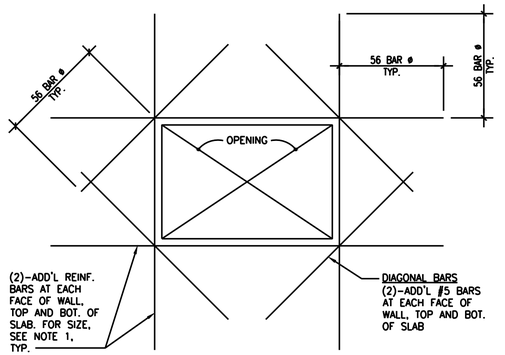












GENERAL NOTES:

1. THE PURPOSE OF THESE DRAWINGS IS TO SHOW THE STRUCTURAL WORK ASSOCIATED WITH EQUIPMENT PAD ON GRADE AT WESTCHESTER COUNTY AIRPORT WHITE PLAINS, NY.
2. THE STRUCTURAL COMPONENTS HAVE BEEN DESIGNED FOR THE FOLLOWING LOADS:
   - A. EQUIPMENT PAD LIVE LOAD:

EQUIPMENT WEIGHT	SEE PLAN
EQUIPMENT ACCESS	60 PSF

   - B. WIND DESIGN DATA:
     WIND LOADS HAVE BEEN DETERMINED BASED ON SECTION 1609.6, SIMPLIFIED PROVISIONS FOR LOW RISE BUILDINGS SECTION 1609.1.1 IN ACCORDANCE WITH ASCE 7-16, CHAPTER 27 (DIRECTIONAL PROCEDURE)

RISK CATEGORY	II
BASIC (ULTIMATE) WIND SPEED (3-SECOND GUST)	115 MPH
EXPOSURE	C

   - C. EARTHQUAKE DESIGN DATA:

RISK CATEGORY	II
MAPPED SHORT PERIOD SPECTRAL RESPONSE ACCELERATIONS, SS:	0.28 g
MAPPED 1 SECOND PERIOD SPECTRAL RESPONSE ACCELERATIONS, S1:	0.06 g
SITE CLASS:	D
DESIGN SHORT PERIOD SPECTRAL RESPONSE ACCELERATIONS, SDS:	0.29 g
DESIGN 1 SECOND PERIOD SPECTRAL RESPONSE ACCELERATIONS, SD1:	0.097 g
SEISMIC DESIGN CATEGORY:	B

   - D. EXISTING BUILDINGS:
     THE PROPOSED ADDITIONS AND ALTERATIONS DO NOT INCREASE THE FORCE IN ANY STRUCTURAL ELEMENT BY MORE THAN 5 PERCENT NOR DO THEY DECREASE THE STRENGTH OF ANY STRUCTURAL ELEMENT TO LESS THAN REQUIRED BY THE BUILDING CODE FOR NEW STRUCTURES.
3. THIS STRUCTURE HAS BEEN DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE WORK SHOWN ON THESE DRAWINGS HAS BEEN COMPLETED. THE STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THIS RESPONSIBILITY EXTENDS TO ALL RELATED ASPECTS OF THE CONSTRUCTION ACTIVITY INCLUDING, BUT NOT LIMITED TO, ERECTION METHODS, ERECTION SEQUENCE, TEMPORARY BRACING, FORMS, SHORING, USE OF EQUIPMENT, AND SIMILAR CONSTRUCTION PROCEDURES. REVIEW OF THE CONSTRUCTION BY THE ENGINEER IS FOR CONFORMANCE WITH DESIGN ASPECTS ONLY, NOT TO REVIEW THE CONTRACTOR'S CONSTRUCTION PROCEDURES. LACK OF COMMENT ON THE PART OF THE ENGINEER WITH REGARD TO CONSTRUCTION PROCEDURES IS NOT TO BE INTERPRETED AS APPROVAL OF THOSE PROCEDURES.
4. JOBSITE SAFETY AND CONSTRUCTION PROCEDURES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. REVIEW OF THE CONSTRUCTION BY THE ENGINEER IS FOR CONFORMANCE WITH DESIGN ASPECTS ONLY, NOT TO REVIEW THE CONTRACTOR'S PROVISIONS FOR JOB SITE SAFETY. LACK OF COMMENT BY THE ENGINEER IS NOT TO BE INTERPRETED AS APPROVAL OF THOSE ASPECTS OF WORK.
5. ONE BLACKLINE PRINT OF ALL ERECTION AND DETAIL SHOP DRAWINGS FOR STEEL REINFORCING BARS (CONCRETECONSTRUCTION) INDICATING THE FABRICATOR, MANUFACTURER, FINISH, LAYOUT, AND ALL ACCESSORIES MUST BE SUBMITTED TO AND BE CHECKED BY THE CONTRACTOR AND SUBCONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE SUBMISSION TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
6. TESTING AND INSPECTION OF CONCRETE STEEL REINFORCING BARS (CONCRETE CONSTRUCTION) AND OTHER WORK IS DESCRIBED IN THE QUALITY CONTROL SECTION OF THESE NOTES. THE CONTRACTOR SHALL REVIEW THE QUALITY CONTROL SECTION AND COORDINATE THE SCHEDULING OF INSPECTIONS WITH THE TESTING AND INSPECTIONS AGENCY AND THE ENGINEER. UNINSPECTED WORK THAT REQUIRED INSPECTIONS MAY BE REJECTED SOLELY ON THAT BASIS.
7. IF FAULTY CONSTRUCTION PROCEDURES, OR MATERIAL, RESULT IN DEFECTIVE WORK THAT REQUIRES ADDITIONAL ENGINEERING TIME TO DEVISE CORRECTIVE MEASURES, PROFESSIONAL FEES MAY BE CHARGED TO THE CONTRACTOR AT THE STANDARD HOURLY RATE OF ADDITIONAL SERVICES. SUCH FEES MAY BE WITHHELD FROM THE GENERAL CONTRACTOR'S PAYMENT.
8. LOADS OPENINGS AND STRUCTURE IN ANY WAY RELATED TO REQUIREMENTS OF OTHER (NON-STRUCTURAL) DISCIPLINES ARE SHOWN FOR BIDDING PURPOSES ONLY. HOWEVER, THESE PLANS DO NOT SHOW THE FULL SCOPE OF OPENINGS, IN ROOFS, FLOORS AND WALLS. FOR SIZE AND LOCATION OF ALL OPENINGS, SEE MECHANICAL DRAWINGS. DO NOT SCALE OPENINGS. THE CONTRACTOR SHALL OBTAIN FROM THE HEATING AND VENTILATING, ELECTRICAL, PLUMBING AND OTHER TRADES THE FINAL APPROVED SIZE AND LOCATION OF ALL OPENINGS, EQUIPMENT AND WORK TO BE PROVIDED FOR THEIR TRADE FOR ROOFS, FLOORS AND WALLS, WHETHER SHOWN OR NOT SHOWN ON STRUCTURAL DRAWINGS. EXCESS COST RELATED TO VARIATION IN REQUIREMENTS OR EQUIPMENT ARE NOT TO BE BORNE BY THE OWNER.
9. MECHANICAL EQUIPMENT WEIGHTS USED IN DESIGN OF SUPPORTING ELEMENTS ARE INDICATED ON THE DRAWINGS. CONTRACTOR SHALL NOTIFY THE MECHANICAL ENGINEER PRIOR TO INSTALLATION OF EQUIPMENT IF ACTUAL WEIGHT EXCEEDS WEIGHT SHOWN ON DRAWINGS.
10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH MECHANIACAL DRAWINGS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
11. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE PROCEEDING WITH ANY WORK. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS NOTED "±" THAT ARE INDICATED ON THE DRAWINGS.
12. WORK SHOWN AS "TYPICAL DETAILS" APPLY THROUGHOUT THE PROJECT AS REQUIRED. WORK SHOWN AS "SECTIONS" SHALL BE CONSIDERED TO APPLY FOR THE SAME AND SIMILAR CONDITIONS IN THE BUILDING.
13. SOME DETAILS OF THE WORK ARE SHOWN ON THE MECHANICAL DRAWINGS. A CAREFUL REVIEW AND STUDY OF THESE DETAILS ARE NECESSARY BEFORE THE FULL SCOPE OF THE WORK CAN BE COMPREHENDED.
14. DO NOT SCALE DRAWINGS.

FOUNDATION NOTES:

1. THE FOUNDATIONS HAVE BEEN DESIGNED TO REST ON INORGANIC, UNDISTURBED SOIL OR COMPACTED GRANULAR FILL HAVING A PRESUMPTIVE BEARING VALUE OF 3000 PSF SUCH BEARING STRATA IS ANTICIPATED AT THE BOTTOM OF FOOTING ELEVATIONS NOTED ON THE FOUNDATION PLAN. ALL BEARING STRATA SHALL BE REVIEWED BY THE ENGINEER PRIOR TO PLACING CONCRETE IN ORDER TO VERIFY THE PRESUMPTIVE BEARING VALUE.
2. IN AREAS REQUIRING FILL, THE FILL MATERIAL SHALL BE A UNIFORMLY GRADED MIXTURE OF SAND AND GRAVEL WEIGHING NO LESS THAN 120 PCF DRY DENSITY AFTER COMPACTION IN PLACE. THIS MIXTURE SHALL BE UNIFORMLY GRADED HAVING NO STONE GREATER THAN 3 INCHES IN ANY ONE DIMENSION, WITH NO MORE THAN 90 PERCENT BY WEIGHT PASSING A 1-1/2-INCH SIEVE, AND WITH LESS THAN 12 PERCENT BY WEIGHT, PASSING A NO. 200 SIEVE. A SOILS TESTING LAB, HIRED BY THE OWNER, SHALL TEST EACH ON-SITE OR BORROW SOIL MATERIAL PROPOSED FOR BACKFILL FOR CLASSIFICATION ACCORDING TO ASTM D 2487 AND FOR LABORATORY COMPACTION CURVE ACCORDING TO ASTM D 1557. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH BACKFILL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT. THE FILL MATERIAL SHALL BE PLACED IN MAXIMUM LIFTS OF 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND IN MAXIMUM LIFTS OF 4 INCHES LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. EACH LIFT SHALL BE COMPACTED WITH APPROPRIATE EQUIPMENT TO A MINIMUM OF 95 PERCENT OF ITS MAXIMUM DENSITY AT OR NEAR OPTIMUM MOISTURE. NO LIFTS SHALL BE PLACED WHEN WEATHER CONDITIONS ARE SUCH THAT THE MOISTURE CONTENT OF THE FILL CANNOT BE PROPERLY CONTROLLED. IN PLACING AND COMPACTING FILL AND BACKFILL MATERIAL, DO NOT DAMAGE NOR DISPLACE CONCRETE WORK ALREADY IN PLACE BY CONTACT FROM COMPACTION MACHINERY, BY SUBJECTING IT TO OVERTURNING FROM HEAVY COMPACTING LOADINGS, OR ANY OTHER CAUSE. PLACE FILL AGAINST SUCH CONCRETE AT THE SAME RATE AS THE REMAINDER OF FILL, COMPACTING UNIFORMLY ON BOTH SIDES USING HAND - OPERATED TAMPERS. A SOILS TESTING LAB, HIRED BY THE OWNER, SHALL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D 1556, ASTM D 2167, ASTM D 2922, AND ASTM D 2937 AS APPLICABLE. WHEN TEST REPORTS INDICATE THAT BACKFILLS HAVE NOT ACHIEVED THE DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.
3. THE SLAB-ON-GRADE SUB-BASE SHALL BE A CRUSHER RUN STONE FREE FROM SOFT DISINTEGRATED PIECES, MUD, DIRT, OR OTHER INJURIOUS MATERIAL. THE MATERIAL SHALL HAVE NO STONE GREATER THAN 2 INCHES IN ANY ONE DIMENSION AND WITH LESS THAN 10 PERCENT BY WEIGHT PASSING A NO. 100 SIEVE.
4. ALL SOIL SURROUNDING AND UNDER FOOTINGS SHALL BE PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.
5. KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES.
6. USE LEAN CONCRETE (f'c=1500 PSI) OR CONTROLLED COMPACTED FILL FOR OVER-EXCAVATION OF FOOTINGS.
7. EXISTING UTILITIES: LOCATE EXISTING UNDERGROUND UTILITIES IN AREAS OF EXCAVATION WORK. PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING EARTHWORK OPERATIONS.
8. WHERE FOOTINGS ARE IN CLOSE PROXIMITY OF SUB-SURFACE PIPING, BOTTOM OF FOOTINGS SHALL BE AT LEAST 8" BELOW ELEVATION OF PIPING, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
9. SUBMITTALS TO THE ENGINEER ARE REQUIRED FOR STRUCTURAL FILL, AND SLAB SUB-BASE AND FINE-GRADED GRANULAR MATERIAL.

CONCRETE NOTES:

1. CONCRETE SHALL BE THE SPECIFIED WEIGHT AND DEVELOP A MINIMUM STRENGTH IN 28 DAYS AS FOLLOWS;

LOCATION	WEIGHT	MINIMUM STRENGTH	MAXIMUM WATER/CEMENTITIOUS RATIO (OR SLUMP WHERE INDICATED)
EQUIP. PAD	NORMAL	4,500 PSI	0.40

2. ALL DETAILING FABRICATION, AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE LATEST ACI CODE AND THE LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
3. CONCRETE DESIGN MIX SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW, TOGETHER WITH LABORATORY REPORTS ATTESTING THAT THE MIXES CAN ATTAIN THE MINIMUM STRENGTH REQUIRED IN ACCORDANCE WITH ACI 301.
4. PORTLAND CEMENT SHALL BE TYPE I OR TYPE II AND CONFORM TO ASTM C150.
5. OTHER CEMENTITIOUS MATERIAL SUCH AS FLYASH OR GROUND GRANULATED BLAST- FURNACE SLAG MAY BE BLENDED WITH CEMENT FOR USE IN THE CONCRETE MIX. FLYASH SHALL CONFORM TO ASTM C618 AND MAY REPLACE CEMENT IF THE FOLLOWING RANGES FOR THE 2 CLASSES OF FLYASH; CLASS C, 20 TO 35%; CLASS F, 15 TO 25%. GROUND GRANULATED BLAST- FURNACE SLAG SHALL CONFORM TO ASTM C989 AND MAY NOT EXCEED 50% OF TOTAL WEIGHT OF CEMENTITIOUS MATERIALS.
6. COARSE AGGREGATE SHALL BE 3/4" AND CONFORM TO ASTM C33.
7. NO ADMIXTURES ARE PERMITTED WITHOUT THE ENGINEERS WRITTEN PERMISSION OTHER THAN ENTRAINED AIR. ALL LIGHTWEIGHT CONCRETE AND CONCRETE EXPOSED TO THE WEATHER, SUCH AS THAT USED IN FOUNDATION WALLS, SHALL CONTAIN 5% ± 1% ENTRAINED AIR. DO NOT USE AIR ENTRAINMENT ADMIXTURE FOR INTERIOR NORMALWEIGHT CONCRETE SLABS.
8. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60.
9. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

LOCATION	COVER (INCHES)
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3

10. THE CONVEYANCE, PLACEMENT AND PROTECTION OF THE CONCRETE SHALL CONFORM TO ACI 318 PER "REFERENCE STANDARD TABLE". MECHANICAL VIBRATORS ARE TO BE USED TO CONSOLIDATE THE FRESHLY CAST CONCRETE AROUND THE REINFORCING AND AGAINST FORM SURFACES AND TO PREVENT THE FORMATION OF AIR OR STONE POCKETS, HONEYCOMBING, PITTING OR PLANES OF WEAKNESS. HOWEVER, CARE MUST BE USED TO AVOID OVER VIBRATION THAT CAN LEAD TO AGGREGATE SEGREGATION.
11. NO WELDING OF REINFORCING WILL BE PERMITTED.
12. ALL LAP SPLICES SHALL BE CLASS B, IN ACCORDANCE WITH ACI 318 INDICATED IN THE "REFERENCE STANDARD TABLE".
13. THE INSTALLATION OF SLABS SHALL CONFORM TO THE REQUIREMENTS OF ACI 302.1R. INTERIOR FINISH SLAB SURFACES ARE TO HAVE A STEEL TROWEL FINISH. SURFACES OF SLABS FORMING THE SUBSTRATE FOR MUD JOBS ARE TO HAVE A CLEAN TEXTURED (SCRATCHED) SURFACE. EXTERIOR SLAB SURFACES ARE TO HAVE A BROOM FINISH UNLESS SPECIFIED ON THE ARCHITECTURAL DRAWINGS.
14. THE CURING AND PROTECTION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 INDICATED IN THE "REFERENCE STANDARD TABLE". CONCRETE SLABS SHALL BE PROTECTED FROM LOSS OF SURFACE MOISTURE FOR NOT LESS THAN 7 DAYS USING A CURING COMPOUND CONFORMING TO ASTM C309 OR CONSTANTLY WETTED BURLAP. CURING COMPOUNDS SHALL BE COMPATIBLE WITH ANY INTENDED FLOORING OVERLAY. DO NOT INSTALL FINISH FLOORING UNTIL SLAB HAS ADEQUATELY DRIED PER THE FLOORING MANUFACTURER'S SPECIFICATIONS.
15. COLD WEATHER CONCRETE PLACEMENT: IF COLD WEATHER CONCRETING CONDITIONS EXIST AS DEFINED BY A PERIOD OF MORE THAN THREE DAYS WHEN THE AVERAGE OUTDOOR TEMPERATURE, (HIGH + LOW)/2, IS LESS THAN 40 DEG. F. THE PROCEDURES OUTLINED IN ACI 306.1 STANDARD SPECIFICATION FOR "COLD WEATHER CONCRETING" SHALL BE UTILIZED.
16. HOT WEATHER CONCRETE PLACEMENT: MAINTAIN CONCRETE TEMPERATURE BELOW 90 DEG. F. AT TIME OF PLACEMENT AND COMPLY WITH ACI 301.
17. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT. LOCATE AND SUPPORT REINFORCEMENT WITH BAR SUPPORTS TO MAINTAIN MINIMUM CONCRETE COVER. DO NOT TACK WELD CROSSING REINFORCING BARS. PROVIDE BAR SUPPORTS AS FOLLOWS:

    BOLSTERS, CHAIRS, SPACERS, AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS AND WELDED WIRE REINFORCEMENT IN PLACE. MANUFACTURE BAR SUPPORTS FROM STEEL WIRE, PLASTIC, OR PRECAST CONCRETE ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE," OF GREATER COMPRESSIVE STRENGTH THAN CONCRETE
18. THE FOLLOWING SUBMITTALS ARE TO BE MADE TO AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING ANY WORK:
    - A. CONCRETE DESIGN MIX FOR EACH STRENGTH OF CONCRETE REQUIRED ATTESTING THAT THE MIXES CAN ATTAIN THE MINIMUM REQUIRED STRENGTHS IN ACCORDANCE WITH ACI 318.
    - B. CERTIFICATES OF COMPLIANCE FOR CEMENT, AGGREGATES, AND ADDITIVES.
    - C. SHOP DRAWINGS WITH PLANS, ELEVATIONS, SECTIONS AND BENDING SCHEDULES INDICATING ALL REINFORCING AND ACCESSORIES NEEDED IN ADDITION TO ALL PROPOSED CONSTRUCTION JOINTS LOCATIONS.

    FABRICATION AND/ OR DELIVERY TO THE SITE OF THESE MATERIALS PRIOR TO RECEIPT OF AND APPROVAL OF THESE SUBMITTALS IS AT THE CONTRACTOR'S OWN RISK.

QUALITY CONTROL:

1. GENERAL:
   - A. THE OWNER SHALL EMPLOY AN INDEPENDENT TESTING AND INSPECTION AGENCY TO PERFORM THE TESTS AND INSPECTIONS INDICATED UNDER THIS QUALITY CONTROL SECTION. REPORTS SHALL BE SUBMITTED TO THE ARCHITECT, ENGINEER AND OWNER IN A TIMELY MANNER.
   - B. THE CONTRACTOR SHALL NOTIFY IN A TIMELY MANNER THE TESTING AND INSPECTION AGENCY AND THE ENGINEER TO SCHEDULE FIELD INSPECTIONS.
2. SOILS AND FOUNDATIONS:
   - A. PRIOR TO PLACEMENT OF PREPARED FILL, THE TESTING AGENCY'S PROFESSIONAL GEOTECHNICAL ENGINEER SHALL DETERMINE THAT THE SITE HAS BEEN PREPARED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. INSPECT SOILS BELOW FOOTINGS FOR ADEQUATE BEARING CAPACITY AND CONSISTENCY WITH THE CONTRACT DOCUMENTS.
   - B. DURING PLACEMENT AND COMPACTION OF FILL MATERIAL, THE TESTING AGENCY'S PROFESSIONAL GEOTECHNICAL ENGINEER SHALL DETERMINE THAT THE MATERIAL BEING USED AND THE MAXIMUM LIFT THICKNESS COMPLY WITH THE CONTRACT DOCUMENTS. VERIFY EXTENT AND SLOPE OF FILL PLACEMENT.
   - C. PERFORM SIEVE TESTS AND MODIFIED PROCTOR TESTS OF EACH SOURCE OF FILL MATERIAL. THROUGH TESTING, VERIFY THAT THE COMPACTED FILL TO BE USED UNDER FOOTINGS AND SLABS COMPLIES WITH THE CONTRACT DOCUMENTS.
   - D. REVIEW THAT THE IN-PLACE DENSITY OF THE COMPACTED FILL COMPLIES WITH CONTRACT DOCUMENTS.
3. CONCRETE:
   - A. REINFORCING: INSPECT 50% OF INSTALLED REINFORCING BARS.
   - B. CAST-IN-PLACE ANCHORS: INSPECT 50% OF ANCHORS FOR MATERIALS, SIZE, POSITIONING, SPACING, EDGE DISTANCE AND EMBEDMENT.
   - C. POST-INSTALLED MECHANICAL AND ADHESIVE ANCHORS AND DOWELS: INSPECT 100% OF MECHANICAL ANCHORS AND 75% OF ADHESIVE ANCHOR FOR MATERIALS, SIZE, POSITIONING, SPACING, EDGE DISTANCE AND EMBEDMENT. INSPECT DRILLED HOLES (FOR PROPER PREPARATION, SIZE, DEPTH AND CLEANING) AND ANCHOR AND DOWEL INSTALLATION FOR COMPLIANCE WITH MANUFACTURER'S REQUIREMENTS.
   - D. CONDUCT STRENGTH TESTS IN ACCORDANCE WITH THE FOLLOWING PROCEDURES: (A STRENGTH TEST CONSISTS OF FOUR CONCRETE CYLINDERS.)
     - a. MAKE ONE STRENGTH TEST FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF FROM EACH MIX DESIGN OF CONCRETE PLACED IN ANY ONE DAY, EXCEPT THAT IN NO CASE SHALL A GIVEN MIX DESIGN BE REPRESENTED BY LESS THAN FIVE TESTS.
     - b. SECURE COMPOSITE SAMPLES IN ACCORDANCE WITH "METHOD OF SAMPLING FRESH CONCRETE" (ASTM C 172). EACH STRENGTH TEST SHALL BE OBTAINED FROM A DIFFERENT BATCH OF CONCRETE ON A REPRESENTATIVE, TRULY RANDOM BASIS. WHEN PUMPING OR PNEUMATIC EQUIPMENT IS USED, SAMPLES SHALL BE TAKEN AT THE DISCHARGE END.
     - c. MOLD FOUR SPECIMENS FROM EACH SAMPLE IN ACCORDANCE WITH "METHOD OF MAKING AND CURING CONCRETE COMPRESSION AND FLEXURE SPECIMENS IN THE FIELD" (ASTM C 31), AND CURE UNDER STANDARD MOISTURE AND TEMPERATURE CONDITIONS, IN ACCORDANCE WITH SECTION 7(A) AND 7(B) OF THE ABOVE ASTM METHOD.
     - d. DETERMINE SLUMP OF THE CONCRETE SAMPLE FOR EACH STRENGTH TEST AND WHENEVER CONSISTENCY OF CONCRETE APPEARS TO VARY USING "METHOD OF TEST OF SLUMP OF PORTLAND CEMENT CONCRETE" (ASTM C 143).
     - e. DETERMINE AIR CONTENT OF NORMAL WEIGHT CONCRETE SAMPLE FOR EACH STRENGTH TEST IN ACCORDANCE WITH EITHER "METHOD OF TEST FOR AIR CONTENT OF FRESHLY MIXED CONCRETE BY PRESSURE METHOD" (ASTM C 231), "METHOD OF TEST FOR AIR CONTENT OF FRESHLY MIXED CONCRETE BY THE VOLUMETRIC METHOD" (ASTM C 173).
     - f. TEST THREE SPECIMENS: ONE AT SEVEN DAYS, AND TWO AT 28 DAYS IN ACCORDANCE WITH "METHOD OF TEST FOR COMPRESSIVE STRENGTH OF MOLDED CONCRETE CYLINDERS" (ASTM C 39). THE 28 DAY TEST RESULT SHALL BE THE AVERAGE OF THE TWO SPECIMENS. IF THE AVERAGE OF THE TWO SPECIMENS IS LESS THAN THE REQUIRED STRENGTH, TEST THE FOURTH SPECIMEN AT 45 DAYS. WHEN HIGH EARLY STRENGTH IS REQUIRED, TWO SPECIMENS SHALL BE TESTED AT SEVEN DAYS.
   - E. CURING AND PROTECTION: PERIODICALLY REVIEW CURING TEMPERATURES AND PROTECTION TECHNIQUES. ALSO INSPECT HOT AND COLD WEATHER PROCEDURES AS APPLICABLE TO BE IN ACCORDANCE WITH ACI 305R (HOT WEATHER) AND ACI 306.1 (COLD WEATHER)

IN CHARGE OF PATRICK CONLON
CHECKED BY PATRICK CONLON
MADE BY LEANDRO CARVALHO

2020 BUILDING CODE OF NEW YORK STATE

ALL CONSTRUCTION MATERIAL SHALL COMPLY WITH REFERENCE STANDARD AS INDICATED BELOW

ITEM	REFERENCE STANDARD
INTERNATIONAL BUILDING CODE	2018
STRUCTURAL CONCRETE	ACI 318-14

ACI 318-14 REINFORCING BAR SPLICE AND DEVELOPMENT LENGTH (INCHES)

NORMAL WT. CONCRETE f'c (PSI)	0.375"		0.500"		0.625"		0.750"		0.875"		1.000"		1.128"		1.270"		1.410"	
	#3		#4		#5		#6		#7		#8		#9		#10		#11	
	"CLASS B" TENSION LAP SPLICE "Ls" SCHEDULE																	
	T	B	T	B	T	B	T	B	T	B	T	B	T	B	T	B	T	B
3000	28	22	38	29	47	36	56	43	81	63	93	72	105	81	116	90	128	98
4000	25	19	33	25	41	31	49	37	71	54	81	62	91	70	101	78	111	85
5000	22	17	29	23	36	28	44	34	63	49	72	56	81	63	90	69	99	76
6000	20	16	27	21	33	26	40	31	58	45	66	51	74	57	82	63	90	70
	TENSION DEVELOPMENT LENGTH "Ld" SCHEDULE																	
3000	22	17	29	22	36	28	43	33	63	48	72	55	81	62	90	69	98	76
4000	19	15	25	19	31	24	37	29	54	42	62	48	70	54	78	60	85	66
5000	17	13	23	17	28	22	34	26	49	38	56	43	63	48	69	54	76	59
6000	16	12	21	16	26	20	31	24	45	34	51	39	57	44	63	49	70	54
	COMPRESSION LAP SPLICE SCHEDULE																	
--	12		15		19		23		27		30		34		39		43	
	COMPRESSION DEVELOPMENT LENGTH "Ld" SCHEDULE																	
3000	9		11		14		17		20		22		25		28		31	
4000	8		10		12		15		17		19		22		25		27	
5000	8		9		12		14		16		18		21		23		26	
6000	8		9		12		14		16		18		21		23		26	
	TENSION 90° AND 180° HOOKED BAR DEVELOPMENT LENGTH "Ldh" SCHEDULE																	
3000	9		11		14		17		20		22		25		28		31	
4000	8		10		12		15		17		19		22		25		27	
5000	7		9		11		13		15		17		20		22		24	
6000	6		8		10		12		14		16		18		20		22	
	90° HOOKED BAR EXTENSION LENGTH "Lext" SCHEDULE																	
--	5		6		8		9		11		12		14		16		17	
	180° HOOKED BAR EXTENSION LENGTH "Lext" SCHEDULE																	
--	3		3		3		3		4		4		5		6		6	

PLAN VIEW

ELEVATION VIEW

90° HOOK EXTENSION LENGTH

180° HOOK EXTENSION LENGTH

HOOKED BAR DEVELOPMENT LENGTH

NOTES:

1. SCHEDULE APPLIES TO UNCOATED GRADE 60 REINFORCING BARS IN NORMAL WEIGHT CONCRETE.
2. FOR LIGHTWEIGHT CONCRETE MULTIPLY LENGTH IN SCHEDULE BY 1.3.
3. ALL SPLICES SHALL BE CLASS B SPLICES UNLESS INDICATED OTHERWISE.
4. TOP BARS (INDICATED WITH "T" IN SCHEDULE) ARE HORIZONTAL TOP BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
5. BOTTOM BARS (INDICATED WITH "B" IN SCHEDULE) ARE ALL VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 12" OF CONCRETE CAST BELOW HORIZONTAL BARS.
6. ALL HORIZONTAL SPLICES SHALL BE STAGGERED AS SHOWN. IF MORE THAN 50% OF VERTICAL REINFORCING IS LAP SPLICED WITHIN THE REQUIRED LAP SLICE LENGTH, THE LAP SPLICE LENGTH SHALL BE INCREASED BY 33%.
7. LAP SPLICES LISTED IN THE SCHEDULE ARE CLASS B LAPS, FOR CLASS A LAPS REDUCE LENGTH BY 25%.

SCHEDULE OF EMBEDMENT AND SPLICE LENGTH

NO SCALE

1
S-300

NOTES:

1. AT WALLS, ADDITIONAL REINFORCING SIZE SHALL MATCH HORIZONTAL AND VERTICAL REINFORCING. AT SLABS USE #5 BARS.
2. THIS DETAIL APPLIES AT ALL OPENINGS 12"x12" AND LARGER. DETAIL IS SIMILAR AT ALL CIRCULAR OPENINGS 12" AND LARGER.
3. COORDINATE ALL OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

TYPICAL SLAB PENETRATION REINFORCING DETAIL

NO SCALE

2
S-300

STRUCTURAL ENGINEER

079876

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

PROJECT NORTH

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME ______
SIGNATURE ______
TITLE ______ DATE ______

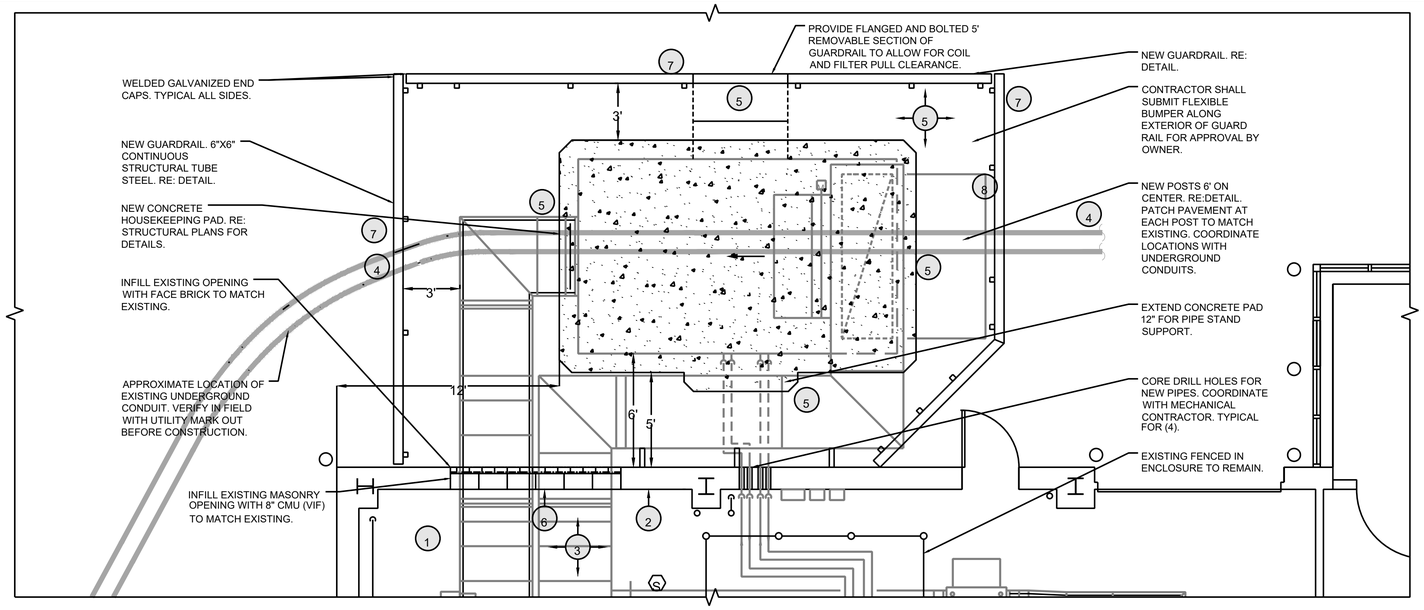
PROJECT COORDINATOR
NAME ______
SIGNATURE ______
TITLE ______ DATE ______

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER S-300
SHEET NO. 3 OF 19

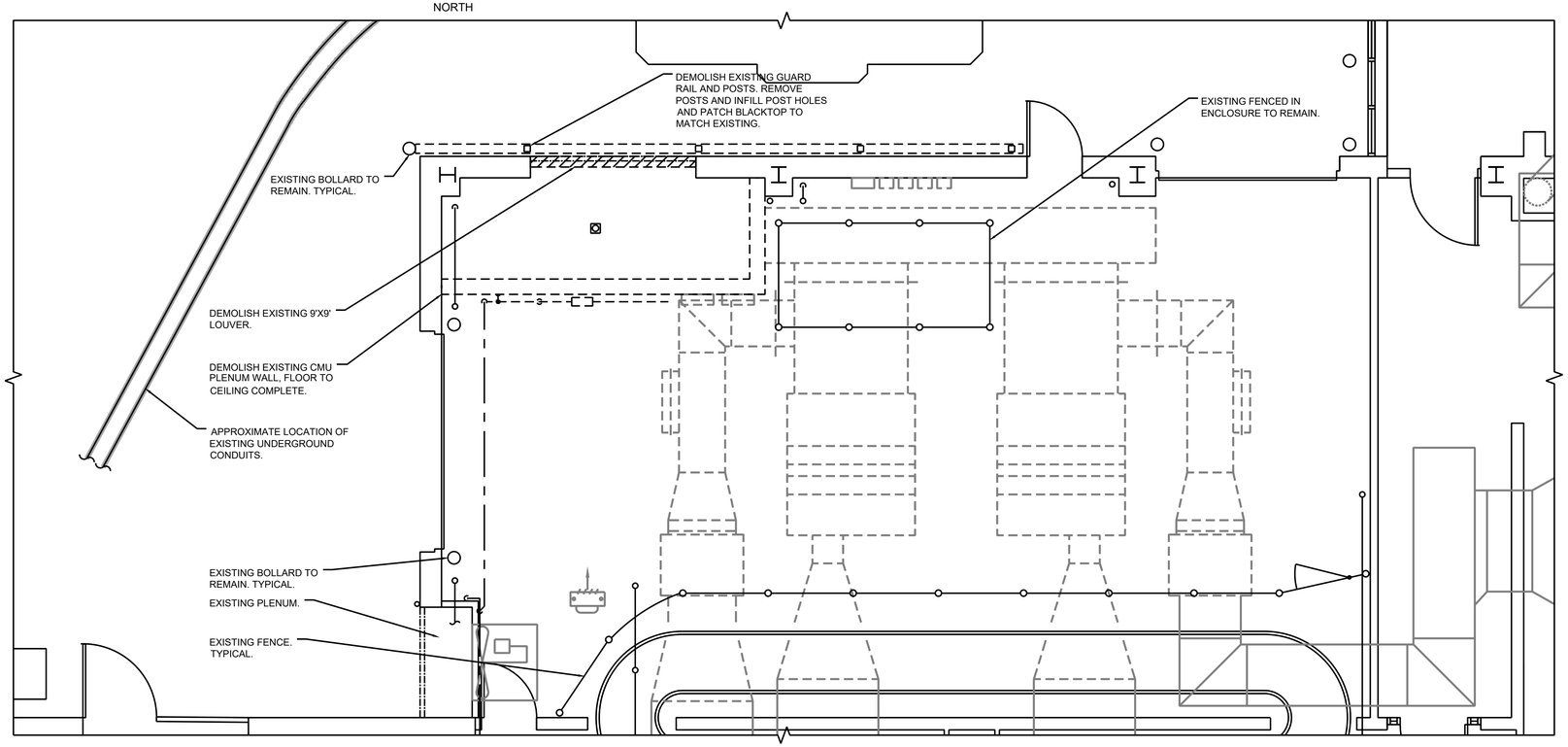
TERMINAL BUILDING HVAC-1 AND HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK, NEW YORK
STRUCTURAL DETAILS AND NOTES

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-S-876
REV. NO. 0



2 GENERAL CONSTRUCTION NEW WORK FIRST FLOOR PART PLAN

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



1 GENERAL CONSTRUCTION DEMOLITION FIRST FLOOR PART PLAN

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

IN CHARGE OF PATRICK LYNCH, P.E.

CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.

MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

GENERAL CONSTRUCTION NEW WORK NOTES:

1. EXISTING CONCRETE FLOOR IN THE AREA OF THE EXISTING OAI PLENUM SHALL BE CLEANED AND PATCHED TO MATCH EXISTING. GRIND AND POLISH FLOOR TO MATCH EXISTING.
2. PAINT WALLS IN THE AREA OF THE OAI PLENUM WHITE TO MATCH EXISTING. CLEAN AND PATCH WALLS. PRIME AND PAINT WITH SATIN URETHANE ALKLD ENAMEL. PAINT SHALL BE SHERWIN WILLIAMS OR BENJAMIN MOORE. SUBMIT PRODUCT SPECIFICATIONS FOR REVIEW AND APPROVAL.
3. FIRE PROOFING: ALL EXISTING STRUCTURAL STEEL CEILING BEAMS, FRAMING, AND DECKING IN THIS ROOM WHERE UNPROTECTED OR FIRE PROOFING HAS BEEN DAMAGED, SHALL BE FIRE PROOFED. REMOVE ANY LOOSE COVERING AND RUST ON STEEL. APPLY 1-1/2" OF GCPAT MONOKOTE TYPE 2-146 HIGH DENSITY CEMENTITIOUS FIRE PROOFING. USE FIRE BOND BONDING AGENT. PREP EXISTING STEEL AND CONCRETE AS PER THE MANUFACTURERS SPECIFICATIONS.
4. THE CONTRACTOR SHALL PERFORM AN UNDERGROUND UTILITY SURVEY PRIOR TO STARTING CONSTRUCTION. COORDINATE THE LOCATION OF THE CONCRETE PAD AND ALL POSTS ACCORDINGLY. DIG BY HAND IF REQUIRED.
5. PATCH THE PAVEMENT IN THE AREA OF WORK AROUND THE NEW CONCRETE PAD TO MATCH EXISTING. SAW CUT PAVEMENT IN STRAIGHT PARALLEL LINES AROUND THE AREA OF WORK.
6. INFILL THE EXISTING WALL OPENING WITH 8" CMU (VIF) TO MATCH EXISTING. INFILL FACE BRICK TO MATCH. REMOVE EXISTING BRICK AND BLOCK AROUND THE OPENING TO "KEY IN" NEW FACE BRICK AND CMU. SUBMIT MORTAR COLOR SAMPLE FOR REVIEW. PROVIDE TEST SAMPLE AREA OF MORTAR AND BRICK FOR REVIEW AND APPROVAL. CMU SHALL BE NEW. BRICK SHALL BE PROVIDED BY THE AIRPORT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND TRANSPORTING FROM AIRPORT WAREHOUSE.
7. ALL GUARD RAILS, POSTS, ANGLE IRON, END CAPS, NUTS, BOLTS, AND WASHERS SHALL BE GALVANIZED STEEL. ALL MEMBERS THAT ARE CUT IN THE FIELD SHALL BE COLD GALVANIZED WITH ZRC COLD GALVANIZING COMPOUND.
8. PROVIDE YELLOW PLASTIC GUARD RAIL COVER ON ALL NEW 6 X 6" GUARD RAILS AND POSTS.
9. SOIL STOCK PILING DETAIL PLAN GC-701

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

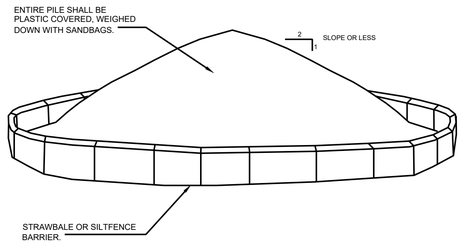
CONTRACT NUMBER: 23-532-Rev.
SHEET NUMBER: GC-201
SHEET NO. 4 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24

GENERAL CONSTRUCTION DEMO AND NEW WORK PLAN

DPW FILE NO. 48-15-G-877-0
REV. NO. 0



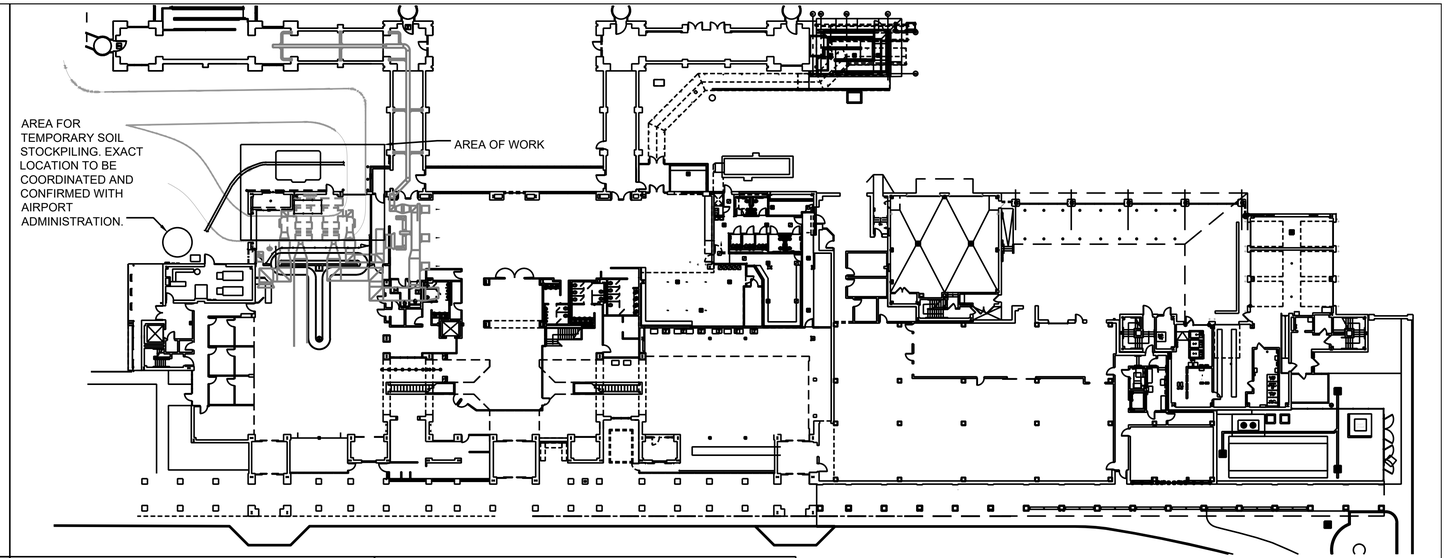
INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.

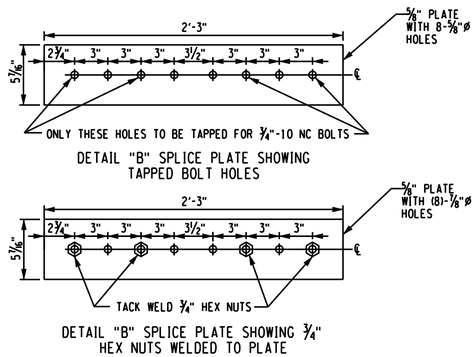
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.

3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN COVERED WITH A PLASTIC COVER WEIGHED DOWN WITH SANDBAGS CONTINUOUSLY AROUND THE PERIMETER.

SOIL STOCKPILING
NOT TO SCALE

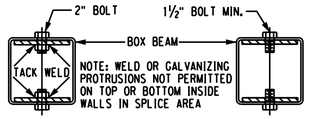


2 FIRST FLOOR KEY PLAN
SCALE: 1/32" = 1'-0"
NORTH



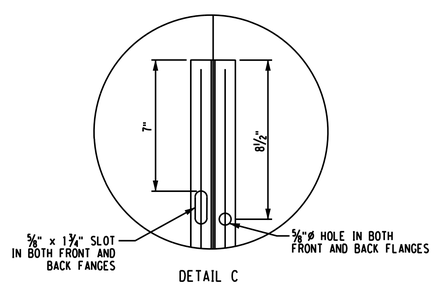
DETAIL "B" SPLICE PLATE SHOWING TAPPED BOLT HOLES

DETAIL "B" SPLICE PLATE SHOWING ¾" HEX NUTS WELDED TO PLATE

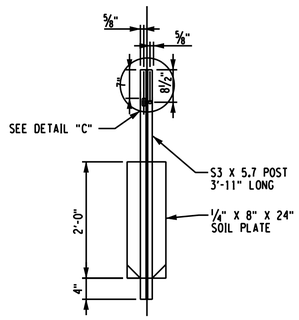


SECTION A-A
SPLICE PLATE SHOWING ¾" HEX NUTS WELDED TO PLATE

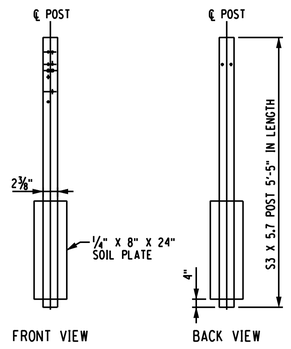
SECTION A-A
SPLICE PLATE SHOWING TAPPED BOLT HOLES



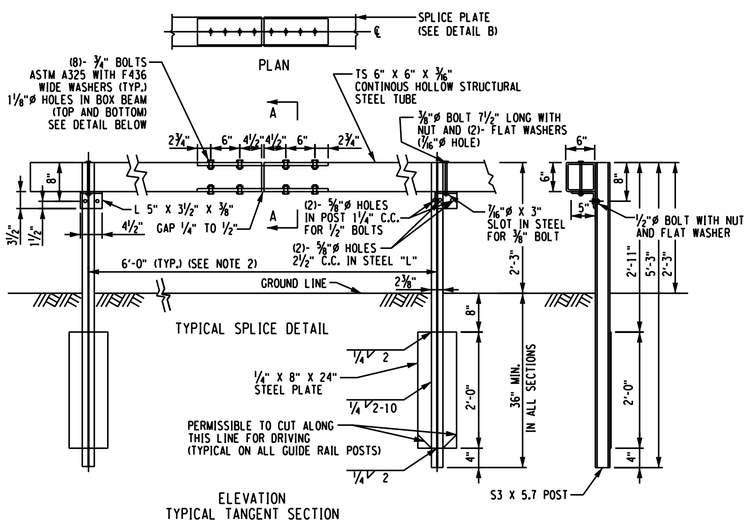
DETAIL C



ANCHOR POST DETAIL



UNIVERSAL POST



ELEVATION
TYPICAL TANGENT SECTION

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
– 646.849.4110

olace.com

STATE OF NEW YORK * PATRICK F. LYNCH * 069867 LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

GENERAL CONSTRUCTION DETAILS

CONTRACT NUMBER	SHEET NUMBER
23-532-Rev.	GC-701
SHEET NO. 5 OF 19	
SCALE: AS SHOWN DATE: 10/29/24	
DPW FILE NO. 48-15-G-878-0	REV. NO. 0

SYMBOL & ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
-	AD	ACCESS DOOR
-	AFF	ABOVE FINISHED FLOOR
-	AHC	ABOVE HUNG CEILING
-	AHU-	AIR HANDLING UNIT
-	AP	ACCESS PANEL
-	BDD	BACKDRAFT DAMPER
-	BHP	BRAKE HORSEPOWER
-	BTU	BRITISH THERMAL UNIT
-	CFM	CUBIC FEET PER MINUTE
-	CL	CENTERLINE
-	CP-	CONDENSATE PUMP
-	DB	DRY BULB TEMPERATURE
-	DIA. OR Ø	DIAMETER
-	DX	DIRECT EXPANSION
-	EA	EXHAUST AIR
-	EAT	ENTERING AIR TEMPERATURE
-	EF-	EXHAUST FAN
-	EL	ELEVATION
-	ER	EXHAUST REGISTER
-	ESP	EXTERNAL STATIC PRESSURE
-	EWT	ENTERING WATER TEMPERATURE
-	FPM	FEET PER MINUTE
-	FPS	FEET PER SECOND
-	GPM	GALLONS PER MINUTE
-	HP	HORSE POWER
-	HV-	HEATING AND VENTILATING UNIT
-	HVAC-	HEATING, VENTILATING AND AIR CONDITIONING UNIT
-	LAT	LEAVING AIR TEMPERATURE
-	LF	LINEAR FEET
-	LWT	LEAVING WATER TEMPERATURE
-	MBH	1000 BRITISH THERMAL UNITS PER HOUR
-	MER	MECHANICAL EQUIPMENT ROOM
-	NC	NORMALLY CLOSED
-	NIC	NOT IN CONTRACT
-	NO	NORMALLY OPEN
-	OAI	OUTSIDE AIR INTAKE
-	PSI	POUNDS PER SQUARE INCH
———	EX.	EXISTING TO REMAIN
- - - - - -	REL.	REMOVE AND RELOCATE
———	NEW	NEW WORK
- - - - - -	DEM.	EXISTING TO BE REMOVED
——CHWS——	-	CHILLED WATER SUPPLY
——CHWR——	-	CHILLED WATER RETURN
—— HWS ——	-	HOT WATER SUPPLY
—— HWR ——	-	HOT WATER RETURN
T	-	THERMOSTAT
H	-	HUMIDISTAT
M	-	MOTORIZED DAMPER
S	-	SMOKE DETECTOR
CO2	-	CO2 SENSOR

SYMBOL	ABBREVIATION	DESCRIPTION
	-	FLEXIBLE CONNECTION
	-	GATE VALVE
	-	STRAINER
	-	FLOW ARROW
	-	BALANCING VALVE
	-	MANUAL AIR VENT
	-	BALL VALVE
	-	PRESSURE GAGE
	-	TERMOMETER
	-	CHECK VALVE
	-	UNION
M	-	MOTORIZED DAMPER
CO2	-	CO2 SENSOR
T	-	THERMOSTAT
S	-	SMOKE DUCT DETECTOR
	-	DOOR UNDER CUT
	-	AIR INTO REGISTER
	-	3-WAY VALVE
	-	FLEXIBLE CONNECTION
	-	2-WAY VALVE
	-	TEE DOWN
	-	ELBOW DOWN
	-	TEE UP
	-	ELBOW UP
	-	CONCENTRIC REDUCER
	CFSD	COMBINATION FIRE SMOKE DAMPER
	VD	VOLUME DAMPER
6x8	-	DUCT SIZE - 1ST FIGURE IS SIDE SHOWN
	FC	FLEXIBLE CONNECTION
FD	FD	FIRE DAMPER
XXX/XX	-	EQUIPMENT TAG
VXXX	-	AIR OUTLET CFM TAG

IN CHARGE OF PATRICK LYNCH, P.E.

CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.

MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

GENERAL NOTES

1. CONTRACT DRAWINGS, AS FAR AS THEY RELATE TO THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, SHEET METAL, AND PIPING, SHALL BE UNDERSTOOD AS DIAGRAMMATIC. ANY CHANGES TO EQUIPMENT, SHEET METAL, AND PIPING LOCATIONS NECESSARY TO AVOID INTERFERENCE WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST, AND MUST BE APPROVED BY THE ENGINEER.

2. THE CONTRACTOR SHALL INSTALL FIRE DAMPERS WITH ACCESS DOORS IN ALL DUCTS PENETRATING FIRE RATED WALLS, WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT.

3. THE CONTRACTOR SHALL FURNISH AND INSTALL VOLUME DAMPERS IN DUCTWORK AS REQUIRED TO BALANCE THE AIRFLOW AT ALL REGISTERS AND DIFFUSERS TO THE CFM'S INDICATED ON PLAN, WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT.

4. ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR HVAC EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE ELECTRICIAN, UNLESS OTHERWISE NOTED. DISCONNECT SWITCHES FURNISHED BY THE CONTRACTOR FOR HVAC EQUIPMENT SHALL BE HEAVY DUTY TYPE.

5. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK, AND SHALL COORDINATE ALL WORK WITH OTHER TRADES.

6. DUCT DIMENSIONS SHOWN ON DRAWINGS REFER TO INSIDE CLEAR DUCT DIMENSIONS. WHERE DUCTWORK IS LINED, THE CONTRACTOR SHALL INCREASE THE SIZE OF DUCT TO COMPENSATE FOR LINING.

7. ALL HVAC EQUIPMENT SHALL HAVE 3" HIGH BLACK LAMACOID NAME PLATES WITH WHITE ENGRAVED LETTERS PERMANENTLY FASTENED TO EQUIPMENT.

8. THE CONTRACTOR SHALL SUBMIT FOR REVIEW A COMPOSITE SHOP DRAWING, FULLY COORDINATED WITH ALL OTHER TRADES, INDICATING DUCTWORK, PLUMBING AND SPRINKLER PIPING, SMOKE DETECTORS, LIGHTS, CONDUITS, DIFFUSERS, GRILLES, ETC.

9. ALL WORK SHALL COMPLY WITH STATE BUILDING CODE, LOCAL BUILDING CODE, AND ENERGY CODE REQUIREMENTS. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.

10. DURING CONSTRUCTION, ALL OPEN OR INCOMPLETE DUCTWORK SHALL BE CAPPED AIRTIGHT WITH HEAVY POLYETHYLENE PLASTIC. AFTER THE INSTALLATION OF DUCTWORK, REGISTERS, GRILLES, AND DIFFUSERS, THE CONTRACTOR SHALL BLANK OFF ALL REGISTERS, GRILLES, AND DIFFUSERS WITH HEAVY POLYETHYLENE PLASTIC AND TAPE AIR TIGHT, IN AREAS THAT ARE UNDER CONSTRUCTION, UNTIL WORK IS COMPLETE IN THOSE AREAS. FLOOR REGISTERS AND GRILLES SHALL ALSO BE COVERED WITH 1/8" MASONITE.

11. WHEN GENERAL CONSTRUCTION IS COMPLETE, VACUUM CLEAN & SANITIZE ALL DUCTWORK, DIFFUSERS, REGISTERS, GRILLES, AND HVAC EQUIPMENT CONNECTED TO THE EXISTING ~~HVAC-1~~ AND ~~HVAC-2~~ SYSTEMS OR SERVING THE PROJECT AREA. REMOVE ANY CONSTRUCTION DEBRIS. REPLACE ALL AIR FILTERS WITH NEW. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

12. THE OWNER'S PERMANENT HVAC EQUIPMENT (NEW AND EXISTING) SHALL NOT BE USED BY CONTRACTOR DURING CONSTRUCTION FOR TEMPORARY HEATING, COOLING, OR VENTILATION. IF TEMPORARY HEATING, COOLING, OR VENTILATION IS REQUIRED AT ANY POINT DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TEMPORARY HEATING, COOLING, OR VENTILATION EQUIPMENT, DUCTWORK, CONTROLS, AND POWER AT HIS OWN EXPENSE.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY VENTILATION AND EXHAUST AIR WHEN WELDING OR SOLDERING OPERATIONS ARE PERFORMED, AS REQUIRED BY OSHA.

14. WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF MECHANICAL WORK, INCLUDING THE INSTALLATION OF HANGERS FOR PIPING, DUCTWORK, OR EQUIPMENT, SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.

16. THE CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, CORE DRILLING, ACCESS PANELS, PAINTING, AND FINAL RESTORATION REQUIRED TO FACILITATE THE INSTALLATION OF HVAC DUCTWORK, CONTROL CONDUITS, AND PIPING, INCLUDING ABOVE CEILINGS AND IN SHAFTS THAT WILL NOT BE REPLACED OR OPENED UNDER ANY OTHER SCOPE OF WORK RELATED TO THIS PROJECT. CONTRACTOR TO REMOVE AND REPLACE CEILINGS, AND OPEN AND PATCH SHAFTS AND WALLS, AS REQUIRED TO EXECUTE THE MECHANICAL WORK.

17. ALL DUCTWORK SHALL BE PRESSURE TESTED AND INSPECTED PRIOR TO CONCEALMENT IN GENERAL CONSTRUCTION OR INSTALLATION OF HUNG CEILINGS.

18. LOCATE THERMOSTATS AND TEMPERATURE SENSORS 5'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. COORDINATE LOCATION WITH FURNITURE, CABINETS, ETC. FURNISH LOCKING TAMPERPROOF COVER FOR ALL NEW THERMOSTATS IN PUBLIC AREAS.

19. DUCT-MOUNTED SMOKE DETECTORS AND SAMPLING TUBES SHALL BE FURNISHED BY THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL EACH SAMPLING TUBE IN THE DUCTWORK. THE CONTRACTOR SHALL INSTALL AND WIRE EACH SMOKE DETECTOR. THE CONTRACTOR SHALL NOT BRANCH OFF ANY DUCT REQUIRING A DUCT SMOKE DETECTOR BEFORE THE DUCT SMOKE DETECTOR. LOCATE SMOKE DETECTORS IN SERVICEABLE AREAS, NOT IN SHAFTS.

20. THE CONTRACTOR IS RESPONSIBLE FOR DRAINING, DISPOSING OF, AND REFILLING THE CHILLED WATER AND HOT WATER SYSTEMS WITH A 30% GLYCOL SOLUTION AS REQUIRED FOR THE INSTALLATION OF THE NEW AHU.

21. THE CONTRACTOR SHALL PERFORM PRE-DEMOLITION WATER BALANCING TESTING AT BOTH OF THE EXISTING AIR HANDLING UNITS HVAC-1 AND HVAC-2. TEST BOTH THE CHILLED WATER AND HOT WATER FLOW RATES AT BOTH UNITS. REPORT FINDINGS TO THE ENGINEER FOR REVIEW.

22. THE CONTRACTOR SHALL PERFORM WORK WITHIN THE BAGGAGE DROP AREA DURING OFF HOURS, WHEN THE BAGGAGE DROP AREA IS NOT IN USE. EXACT SCHEDULE AND HOURS TO BE COORDINATED WITH THE AIRPORT ADMINISTRATION. DEMOLITION WORK IS NOT TO BE STARTED UNTIL ALL NECESSARY MATERIALS AND EQUIPMENT ARE IN HAND, TO PREVENT DELAYS DURING THE CONSTRUCTION PROCESS.

GENERAL NOTES

23. ALL EXISTING SUPPLY AIR & RETURN AIR DUCTWORK CONNECTED TO THE NEW HVAC-1 SYSTEM SHALL BE TESTED & INJECTED SEPARATELY WITH AEROSOLIZED VINYL POLYMER SEALANT BY DUCT DIAGNOSTICS LLC. ALL OF THE OPENINGS OF THE DUCTWORK SHALL BE SEALED OFF AND THEN THE DUCTWORK IS PRESSURIZED USING A CALIBRATED-FLOW FAN, WHICH KEEPS THE AEROSOL MOVING THROUGH THE DUCTS WITHOUT COLLECTING ON THE SURFACE; THE PARTICLES REMAIN SUSPENDED IN THE AIR FLOW UNTIL THE CHANGE IN PRESSURE AROUND LEAKS AND HOLES FORCES THE AEROSOL ADHESIVE THROUGH THE CRACKS, WHERE IT COLLECTS ON THE EDGE AND BUILDS A SEAL TO EFFECTIVELY BLOCK AIR FLOW. THE TEST & SEALING SHALL BE PERFORMED IN THE FOLLOWING SEQUENCE:

1.1. EACH DUCT SYSTEM (SUPPLY & RETURN) SHALL BE TESTED TO 3"WC PRIOR TO INJECTING THE AEROSOLIZED SEALANT. A CFM LEAKAGE SHALL BE MEASURED AND RECORDED.
1.2. EACH DUCT SYSTEM (SUPPLY & RETURN) SHALL BE INJECTED WITH THE SEALANT ACCORDING TO MANUFACTURERS INSTRUCTIONS.
1.3. THE SYSTEM SHALL BE TESTED AND A LEAKAGE CLASS OF 3 SHALL BE REACHED ACCORDING TO TABLE "LEAKAGE AS A PERCENT OF AIRFLOW IN SYSTEM" IN SMACNA APPENDIX A WITH 3.1% LEAKAGE.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 087467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

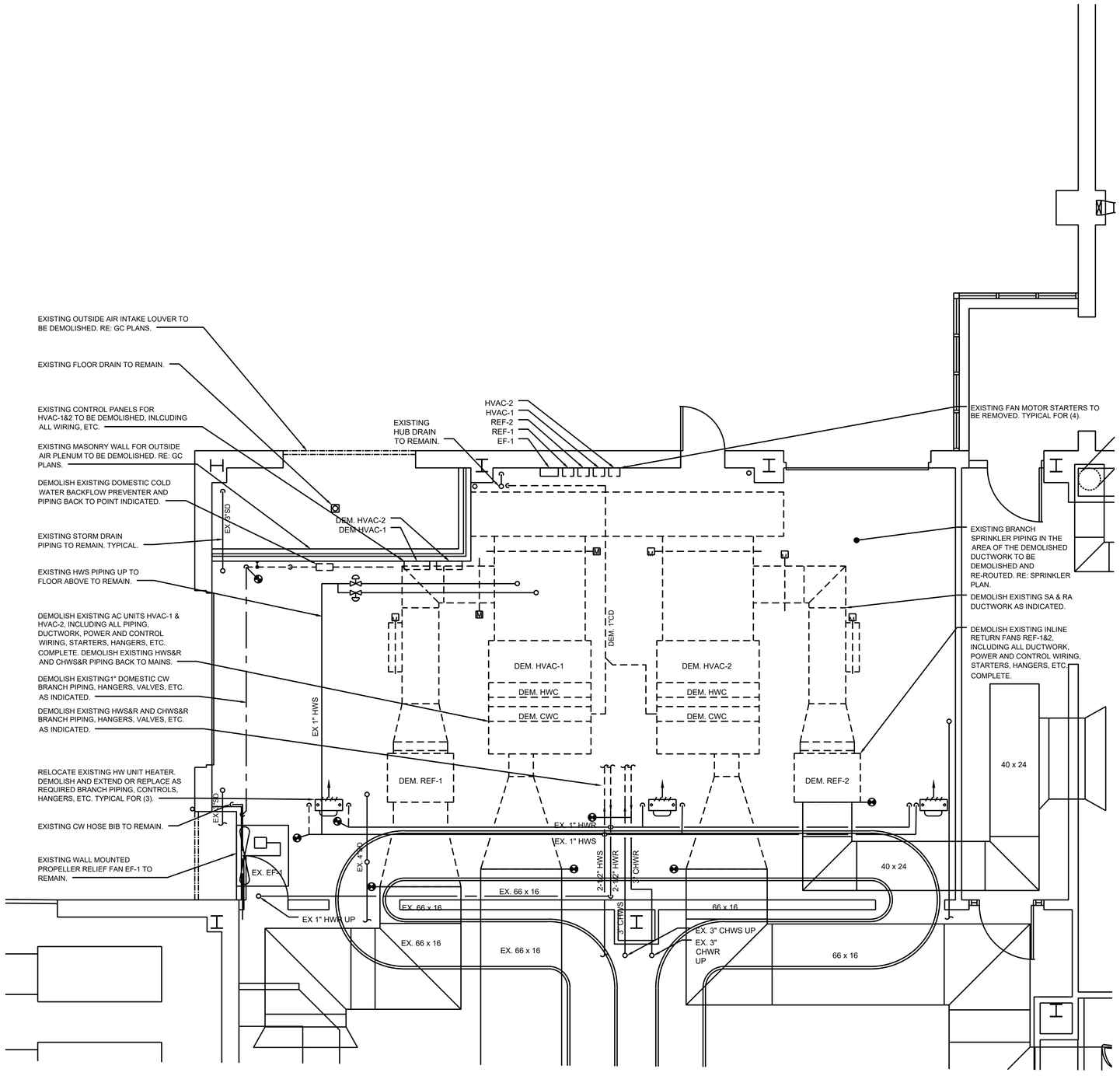
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-001
SHEET NO. 6 OF 19

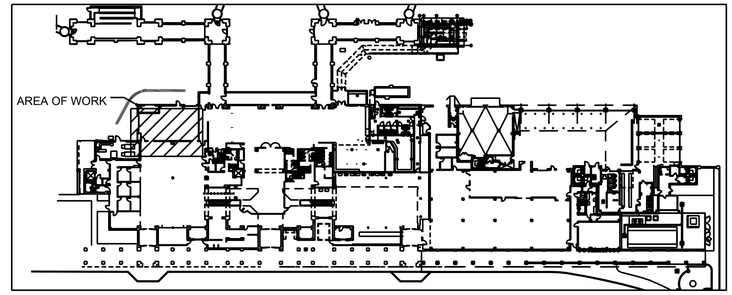
TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-879-0
REV. NO. 0

MECHANICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES



1 MECHANICAL DEMOLITION FIRST FLOOR PART PLAN
SCALE: 1/4" = 1'-0"



2 FIRST FLOOR KEY PLAN
SCALE: 1/64" = 1'-0"
NORTH

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800
8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110
olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069867 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

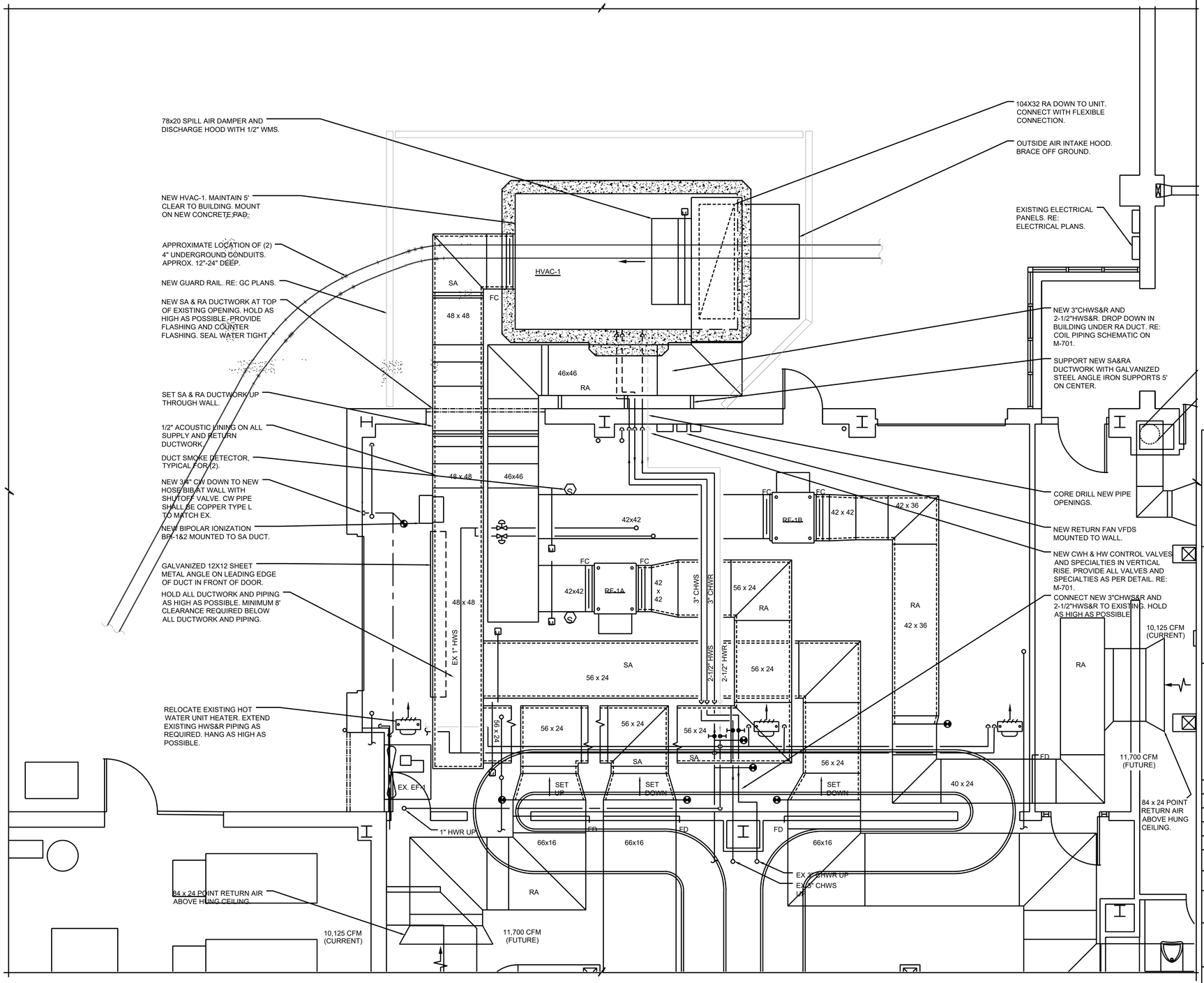
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-101
SHEET NO. 7 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-880-0
REV. NO. 0

MECHANICAL DEMOLITION FIRST FLOOR PART PLAN



1 MECHANICAL NEW WORK FIRST FLOOR PART PLAN
SCALE: 1/4" = 1'-0"

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

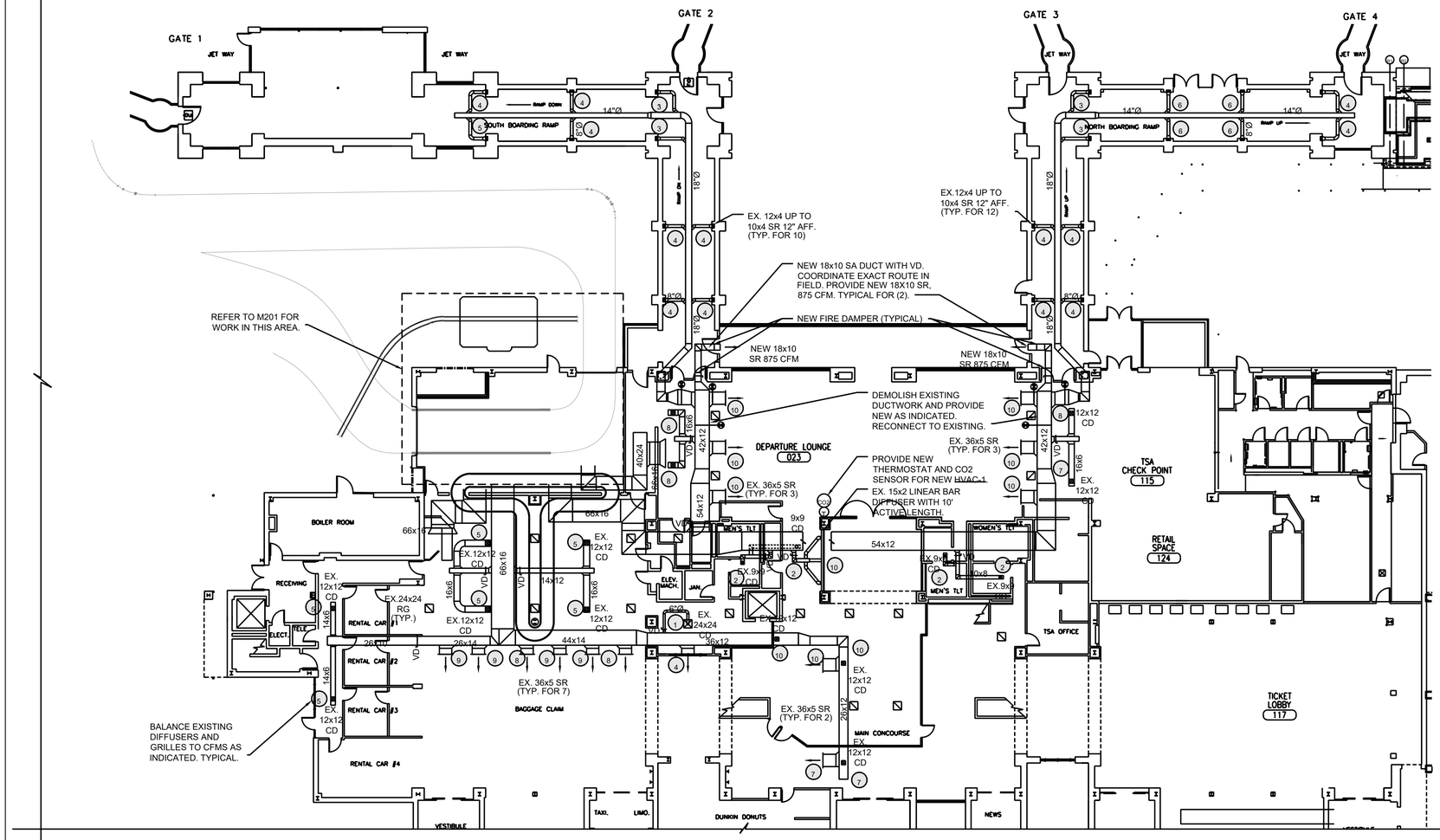
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-201
SHEET NO. 8 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-881-0
REV. NO. 0

MECHANICAL NEW WORK FIRST FLOOR PART PLAN



AIR BALANCE SCHEDULE	
TAG	CFM
1	75
2	100
3	125
4	150
5	175
6	200
7	500
8	600
9	800
10	850

NOTES:

1. THE CONTRACTOR SHALL PERFORM PRE-DEMOLITION CFM READINGS AT ALL AIR OUTLETS THROUGHOUT THE AREA OF WORK, WHETHER SHOWN ON PLAN OR NOT. REPORT FINDINGS TO THE ENGINEER FOR REVIEW.

1 MECHANICAL NEW WORK FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

NORTH

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-202
SHEET NO. 9 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-882-0
REV. NO. 0

MECHANICAL NEW WORK FIRST FLOOR PLAN

AIR HANDLING UNIT SCHEDULE

DESIGNATION	HVAC-1	
LOCATION	GRADE OUTSIDE BAGGAGE DROP	
AREA SERVED	SEE PLANS	
MANUFACTURER- BASIS OF DESIGN	JOHNSON \ YORK	
MODEL	PA0-78X102	
WEIGHT OF UNIT (LBS)	6,868	
DESIGN DATA:	CURRENT	FUTURE
SUPPLY AIR (CFM)	22,500	26,000
OUTDOOR AIR (CFM)	4,350	4,350
RETURN AIR (CFM)	20,250	23,400
SPILL AIR (CFM)	2,300	1,750
SUMMER OA TEMP (°F) DB/WB	86.4/71.9	86.4/71.9
SUMMER RA TEMP (°F) DB/WB	75/62.5	75/62.5
WINTER OA TEMP (°F)	10	10
WINTER RA TEMP (°F)	68	68
FILTERS:		
PRE-FILTER: PANEL/50% DIRTY PD	2" MERV-8/0.61	2" MERV-8/0.61
MAIN FILTER: BAG/50% DIRTY PD	4" MERV-13/0.93	4" MERV-13/0.93
HOT WATER COIL:		
FACE AREA (SQ. FT.)/ VEL. FT/MIN	46.8/475	46.8/555
No. OF ROWS/ FPI MIN	1/8	1/8
E.W.T./L.W.T. (°F)	180/160	180/160
E.A.T./L.A.T. (°F)	58/93.3	58/93.3
AIR P.D. (IN H_2O)	0.05	.11
CAPACITY (MBH)	796	1,101
GPM	62	98.7
W.P.D. (FT H_2O)	5.7	14.2
CHILLED WATER COIL:		
FACE AREA (SQ. FT.)	46.8	46.8
No. OF ROWS/ FPI MIN	8/8	6/8
E.W.T./L.W.T. (°F)	45/56.7	45/56.7
E.A.T. (°F) DB/WB	80/67	80/67
L.A.T. (°F) DB/WB	55.9/54.7	55.9/54.7
AIR P.D. (IN H_2O)	0.81	0.73
CAPACITY (MBH) SENS./TOTAL	579.4/859	689.7/938.2
GPM	146	196.91
W.P.D. (FT H_2O)	8.5	13.9
SUPPLY FAN:		
DESIGN AIRFLOW (CFM)	22,250	26,000
BHP/HP	29.58/45	37.1/45
RPM	1,261	1,891
ESP/TSP (IN H_2O)	3/5.5	3/5.77
STARTER TYPE	VFD	VFD
ELECTRICAL DATA - SINGLE POINT POWER CONNECTION:		
VOLTS/Ø/Hz	460/3/60	460/3/60
FLA/MCA/MOCP (AMPS)	39/48.75/70	54.3/58.8/70

NOTES:
1. PROVIDE THE FOLLOWING MODULES FOR OUTDOOR UNIT (BACK TO FRONT):
· TOP RETURN SECTION
· OAI, RA, MIXED AIR, AND SPILL DAMPERS SHALL BE A UL LISTED SMOKE DAMPERS. THE CONTRACTOR SHALL REMOVE THE EXISTING DAMPERS AND FIELD INSTALL NEW UL LISTED 555S RATED DAMPERS.
· MERV-8 PRE-FILTER
· MERV-13 MAIN-FILTER
· HOT WATER COIL MODULE. COIL SIZED FOR 30% PROP GLYCOL SOLUTION.
· CHILLED WATER COIL MODULE. COIL SIZED FOR 30% PROP GLYCOL SOLUTION.
· BIPOLAR IONIZATION
· SUPPLY FAN MODULE
· DISCHARGE PLENUM MODULE WITH BOTTOM OUTLET.
2. PROVIDE THE FOLLOWING OPTIONAL EQUIPMENT FOR EACH UNIT:
· 100% MODULATING ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL.
· CHILLED WATER AND HOT WATER PIPING TO UNIT SHALL BE LOCATED IN A FACTORY FABRICATED AND INSULATED PIPE ENCLOSURE.
· FURNISH A FREEZE STAT ARRANGED TO OVERRIDE THE HOT WATER CONTROL VALVE AND SHUT DOWN UNIT, AS PER THE SEQUENCE OF OPERATIONS.
· FURNISH (1) EXTRA FILTER SET OF EACH KIND OF FILTER.
· COORDINATE LEFT/RIGHT COIL CONNECTION AND FAN DRIVE IN FIELD.
· FURNISH 2-WAY MODULATING CONTROL VALVE FOR EACH COIL, WITH PIPING PACKAGE AS PER DETAIL #6 ON DRAWING M-701. 5 PSI MAX AT CONTROL VALVE.
· ALL MODULATING DAMPERS SHALL BE OPPOSED-BLADE TYPE.
· OUTSIDE AIR INTAKE DAMPER SHALL BE ARRANGED MODULATE OAI CFM ACCORDING TO THE DEMAND CONTROL VENTILATION SEQUENCE, INDEPENDENT OF VARIABLE SA CFM. PROVIDE AN OUTSIDE AIR INTAKE AIRFLOW MEASURING STATION.
· POWERED CONVENIENCE OUTLET TO BE POWERED BY CONTRACTOR.
3. PROVIDE THE FOLLOWING MOTOR CONTROL OPTIONS FOR EACH UNIT:
· UNITARY CONTROLLER BY AUTOMATIC TEMPERATURE CONTROLS MANUFACTURER, SHALL BE JOHNSON METASYS BUILDING AUTOMATION SYSTEM.
· PREMIUM EFFICIENCY FAN MOTOR. ALL MOTORS FURNISHED WITH VARIABLE FREQUENCY DRIVES SHALL BE INVERTER DUTY RATED & APPROVED FOR VARIABLE SPEED AND TORQUE APPLICATIONS.
· SINGLE POINT EXTERNAL POWER CONNECTION AT UNIT.
· PROVIDE FACTORY MOUNTED COMBINATION VFD / MOTOR STARTERS AND DISCONNECT SWITCHES IN A WEATHERPROOF ENCLOSURE MOUNTED TO UNIT.
4. PROVIDE DIFFERENTIAL AIR PRESSURE GAGES ON EACH SIDE OF THE FILTER BANK. PROVIDE MODULES TO REPORT PRESSURE READINGS TO BMS AND INDICATE DIRTY FILTER ALARM WHEN PRESSURE DROP ACROSS THE FILTER INCREASES ABOVE 0.5" SP (ADJ.).

FAN SCHEDULE

DESIGNATION	RF-1A & RF-1B	
	CURRENT	FUTURE
LOCATION	BAGGAGE DROP	
AREA SERVED	SEE PLANS	
MANUFACTURER	GREENHECK	
MODEL	BSQ-300	
WEIGHT (LBS)	523	
FAN TYPE	INLINE CENTRIFUGAL	
DRIVE TYPE	BELT	
CFM	10,250	11,700
BHP	3.7	4.6
HP	5	5
RPM	739	795
SP (IN H_2O)	1	1
VOLTS/Ø/Hz	460/3/60	460/3/60
STARTER TYPE	VFD	VFD
STARTER LOCATION	BAGGAGE DROP	BAGGAGE DROP
INTERLOCK	HVAC-1	HVAC-1

NOTES:
1. ALL MOTORS 1 HP OR GREATER SHALL BE PREMIUM EFFICIENCY.
2. ALL MOTORS FURNISHED WITH VARIABLE FREQUENCY DRIVES SHALL BE INVERTER DUTY RATED & APPROVED FOR VARIABLE SPEED AND TORQUE APPLICATIONS.
3. FURNISH RUBBER IN SHEAR OR SPRING VIBRATION ISOLATORS AS PER THE SPECIFICATION.
4. FURNISH MOTOR AND BELT GUARDS FOR ALL EXTERNAL MOTOR DRIVES.
5. MOTOR STARTER AND DISCONNECT SWITCH FOR EACH FAN SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE CONTRACTOR.

EQUIPMENT NOTES

1. VOLUME CONTROL DAMPERS: FOR ALL ROUND & RECTANGULAR VOLUME CONTROL DAMPERS THAT ARE LOCATED ABOVE INACCESSIBLE CEILINGS, PROVIDE CABLE OPERATED DAMPERS. ROUND DAMPERS SHALL BE YOUNG BOWDEN MODEL 5020-CC. RECTANGULAR DAMPERS SHALL BE MODEL 830-CC2. CABLE CONTROLS SHALL BE MODEL 270-275 FOR CONCEALED LOCATIONS & MODEL 270-896C FOR LOCATIONS WHERE CABLES TERMINATE IN FINISHED SPACES. COORDINATE LOCATIONS IN THE FIELD.
2. MOTORIZED DAMPERS: SHALL BE RUSKIN MODEL SD60-2, 4" DEEP EXTRUDED ALUMINUM AIRFOIL DAMPER. DAMPER SHALL HAVE OPPOSED BLADES, MOTOR AND LINKAGE. DAMPER SHALL BE LISTED TO UL 555S. DAMPERS SHALL BE 120V/1ϕ/60Hz, 3 AMPS MAX. FURNISH DISCONNECT SWITCH.
3. FIRE DAMPERS: SHALL BE RUSKIN MODEL DIBD-2, 1-1/2 HOUR UL555 RATED, SUITABLE FOR INSTALLATION IN WALL AND FLOOR PARTITIONS WITH FIRE RATINGS OF LESS THAN 3 HOURS. DAMPER SHALL BE A COMPLETE FACTORY PACKAGE INCLUDING U.L. APPROVED ANGLES, WALL SLEEVE, AND BREAKAWAY CONNECTIONS. DAMPER SHALL BE RATED FOR DYNAMIC AIRFLOW CONDITIONS OF 2,000 FPM AND 4.0" SP.
4. DUCT INSULATION (INTERIOR): SHALL BE OWENS CORNING 2" MIN, 700 SERIES TYPE 705, 6.0 PEF RIGID FIBER GLASS BOARD WITH POLY ENCAPSULATED ASJ MAX FACING WITH K FACTOR OF .25 AT 100 DEG FAHRENHEIT MEAN TEMPERATURE INSULATION SHALL BE NO LESS THEN THE HEIGHT OF DUCT STANDING SEAM.
5. DUCT INSULATION (EXTERIOR): SHALL BE AEROFLEX/AEROCEL WLP EPDM SHEET OR ROLL. MINIMUM OF 2" BUT NOT LESS THAN THE DUCT STANDING SEAM. INSTALL WITH AEROFLEX ADHESIVES. GLUE ALL BUTT JOINTS AND SEAM AND TAPE WITH EPDM TAPE. PERMEABILITY SHALL BE 0.01 PER INCH. K±.245
6. PIPE INSULATION (INTERIOR): SHALL BE JOHNS MANVILLE MICROLOK FIBERGLASS K FACTOR .24 AT 100 DEGREE FAHRENHEIT MEAN TEMP 2" THICK WITH WHITE ALL SERVICE JACKET (ASJ) WITH FLAME AND SMOKE SPREAD RATING OF LESS THAN 50/25. PROVIDE ZESTOY 2000 PVC JACKETING ON ALL INTERIOR INSULATED PIPES. HW, CHW, CW.
7. PIPE INSULATION (EXTERIOR): SHALL BE AEROFLEX AEROCELL WLP EPDM TUBE OR SHEET FOR PIPING WITH PREMOLDED PIPE FITTING INSULATION. INSTALL WITH AEROFLEX EPDM TAPE. PERMEABILITY SHALL BE .01 PER INCH. K±.245.
8. EXTERIOR PIPE AND DUCT JACKET SHALL BE POLYGUARD-ALUMNAGUARD ALL WEATHER JACKET. COMPOSITE MEMBRANE CONSISTING OF MULTIPLE UV RESISTANT ALUMINUM FOIL POLYMER LAMINATE.
9. DUCT-MOUNTED BIPOLAR IONIZATION (BPI-1&2): SHALL BE ATMOSAIR 508FC, CAPABLE OF SERVING AIRFLOWS UP TO 15,000 CFM. 120V/1PH/60HZ POWER SUPPLY, 28 WATTS, 0.25 AMPS. FIELD ELECTRICAL CONNECTION TO BE WIRED TO JUNCTION BOX. PROVIDE MOUNTING BRACKET AND AIR PRESSURE SWITCH TO ACTIVATE THE UNIT ONLY WHEN AIRFLOW IS PRESENT.
10. SIDEWALL SUPPLY AIR REGISTERS: SHALL BE TITUS MODEL 300FS, ALUMINUM CONSTRUCTION, WITH 3/4" SPACING, DOUBLE DEFLECTION AIRFOIL BLADES, OPPOSED BLADE VOLUME DAMPER IN NECK, SIZE AND CFM AS NOTED ON PLANS. FINISH SHALL BE BAKED ON ENAMEL. SUBMIT COLOR CHART FOR APPROVAL. FRAME SHALL BE SUITABLE FOR LAY-IN OR SURFACE MOUNTING AS REQUIRED. COORDINATE WITH ARCH PLANS.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

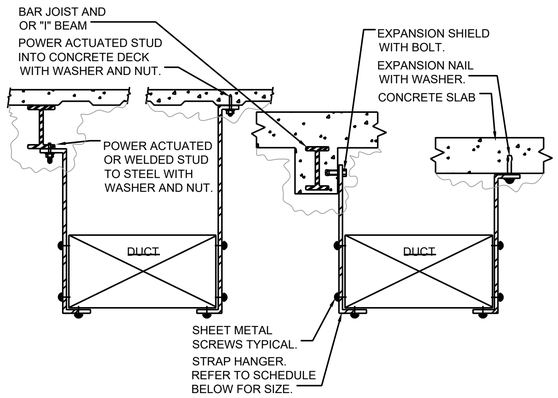
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER: 23-532-Rev.
SHEET NUMBER: M-601
SHEET NO. 10 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

MECHANICAL SCHEDULES

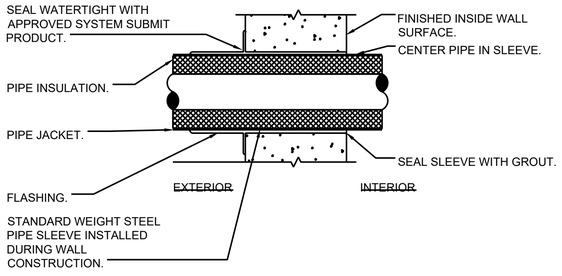
SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-883-0
REV. NO. 0



NOTES:
1. FOR DUCTS OVER 49" WIDE, THE STRAP HANGER SHALL BE TURNED UNDER THE BOTTOM OF THE DUCT.
2. WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.
3. ALL ANCHORS AND INSERTS SHALL HAVE NEW YORK CITY BOARD OF STANDARD AND APPEALS, (BSA) APPROVAL.

HANGER STRAP SCHEDULE		
DUCT SIZE	HANGER SIZE	MAXIMUM SPACING
UP TO 2 SQ.FT.	1" X 1/16"	8'-0"
2 SQ.FT. TO 4 SQ.FT.	1" X 1/8"	8'-0"
4 SQ.FT. TO 10 SQ.FT.	1" X 1/8"	6'-0"
OVER 10 SQ.FT.	1" X 1/8"	4'-0"

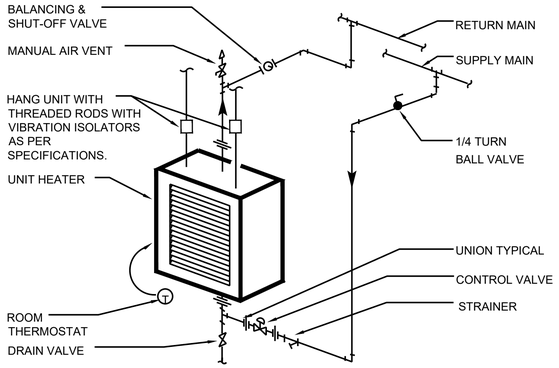
5 DUCT HANGER DETAIL
SCALE: NONE



NOTES:
1.) PIPE SLEEVE FOR EXTERIOR WALL ABOVE GRADE.

4 PIPE WALL SLEEVE DETAIL FOR EXTERIOR WALLS ABOVE GRADE
SCALE: NONE

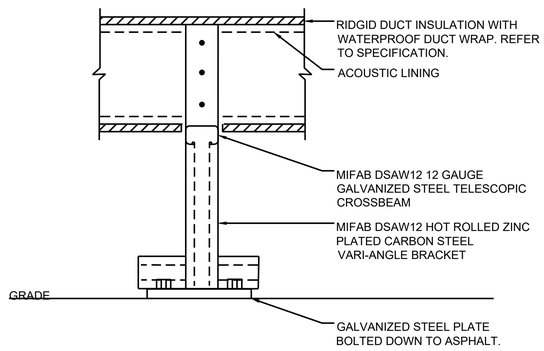
IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.



NOTES:
1.) HANG UNIT WITH THREADED RODS CONTAINING SPRING TYPE VIBRATION ISOLATORS FROM BUILDING STRUCTURAL MEMBERS.
2.) SUSPEND UNIT HEATERS SECURELY WITH PROVISIONS FOR EASY REMOVAL AND REPAIR. COORDINATE EXACT LOCATIONS IN FIELD.
3.) INSTALL UNITS SO THAT THEY HANG LEVEL AND PLUMB.
4.) PROVIDE FOR EXPANSION IN SUPPLY PIPING, SWING JOINT IS SUGGESTED PIPING ARRANGEMENT.
5.) PROVIDE UNIONS AND ISOLATION VALVES ADJACENT TO UNIT HEATER IN BOTH THE SUPPLY AND RETURN LATERALS.
6.) USE 45 DEGREE ANGLE RUN OUTS FROM ALL SUPPLY AND RETURN MAINS.
7.) PROVIDE A ROOM THERMOSTAT ARRANGED TO OPEN CONTROL VALVE AND CYCLE THE FAN ON A CALL FOR HEAT, FURNISH AN AQUASTAT ARRANGED TO PREVENT FAN START UP IF HWS IS NOT ENABLED AND RUNNING.

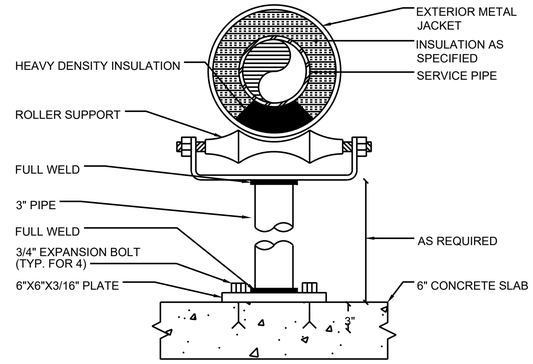
PIPE SIZE SCHEDULE											
PIPE SIZE	1/2	3/4		1	1-1/4	1-1/2	2	2-1/2	3	4	5	6			
MAX. GPM	2		3.5	7	13	22	45	70	130	260	480	750			

4 VERTICAL HOT WATER HEATER PIPING SCHEMATIC
SCALE: NONE

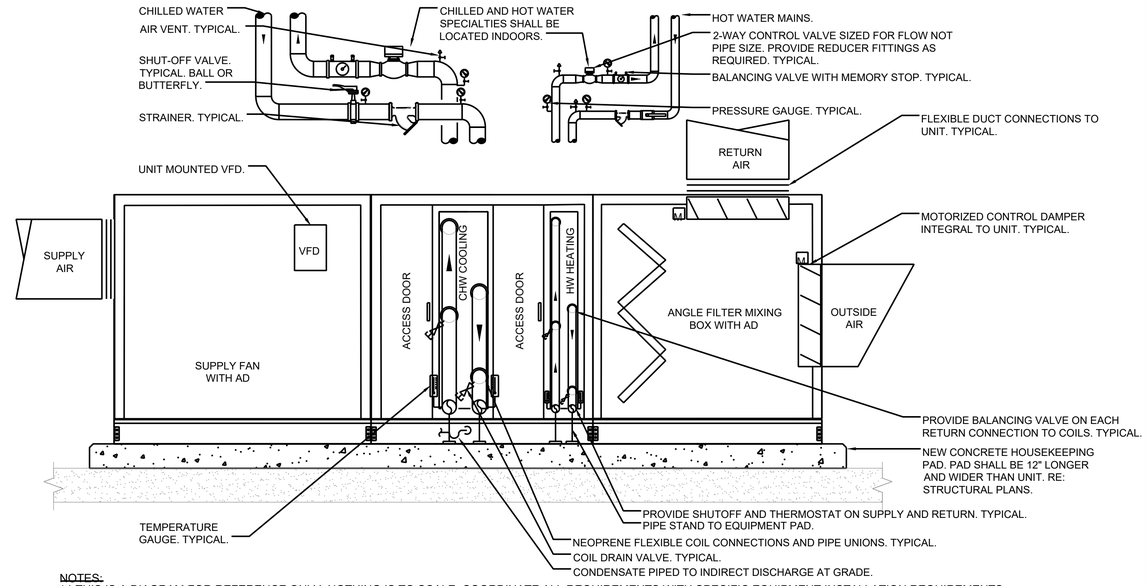


NOTES:
1. DUCT SUPPORT SHALL BE MIFAB MODEL DSAW12-3157, MINIMUM LENGTH SHALL BE 48" OR 12" LONGER THAN DUCT WIDTH.
2. ALL BRACKETS, HANGERS, FASTENERS AND SUPPORTS LOCATED OUTDOORS SHALL BE GALVANIZED OR NICKEL PLATED.
3. CEMENT RUBBER SUPPORT BLOCKS TO ROOF - USE ONLY MATERIALS COMPATIBLE WITH THE ROOFING SYSTEM.

3 OUTDOOR ON GRADE DUCT SUPPORT DETAIL
SCALE: NONE



1 EXTERIOR PIPE SUPPORT DETAIL
SCALE: NONE



NOTES:
1.) THIS IS A DIAGRAM FOR REFERENCE ONLY. NOTHING IS TO SCALE. COORDINATE ALL REQUIREMENTS WITH SPECIFIC EQUIPMENT INSTALLATION REQUIREMENTS.
2.) REFER TO FLOOR PLANS FOR ALL SIZES, PIPING & DUCTWORK ROUTING ETC.
3.) REFER TO MANUFACTURERS INSTALLATION REQUIREMENTS TO MEET ALL SERVICE CLEARANCES.
4.) PIPING, DUCTWORK AND ACCESSORIES SHALL NOT BE INSTALLED IN FRONT OF ACCESS DOORS.
5.) ALL PIPING, DUCTWORK, INSULATION, VALVES & SPECIALTIES SHALL BE AS PER THE SPECIFICATIONS.
6.) REVIEW SEQUENCE OF OPERATIONS IN SPECIFICATIONS AND PROVIDE A COMPLETE CONTROL SYSTEM ACCORDINGLY.
7.) POWER SHALL BE SINGLE POINT CONNECTION. VFD SHALL BE FACTORY MOUNTED TO THE AHU.
8.) PROVIDE FREEZE PROTECTION CONTROLS.
9.) COORDINATE FAN ROTATION WITH DUCTWORK CONFIGURATION IN THE FIELD PRIOR TO ORDERING UNIT.
10.) STATIC PRESSURE (SP) SENSOR SHALL BE LOCATED 2/3 OF THE WAY DOWNSTREAM FROM THE SUPPLY FAN OR WHERE INDICATED ON PLAN.
11.) PROVIDE CONDENSATE PAN OVERFLOW LEVEL SENSOR ARRANGED TO SHUT-DOWN UNIT AND INDICATE A FAULT ON THE DDC.
12.) PROVIDE MAGNEHELIC FOR EACH FILTER BANK. INSTALL PRESSURE SENSORS BEFORE AND AFTER EACH FILTER. DIFFERENTIAL PRESSURE SHALL BE MEASURED AT EACH FILTER BANK AND INDICATED ON THE BMS AIR HANDLER UNIT GRAPHIC DISPLAY. THE BMS SHALL BE CONFIGURED TO INDICATE A FILTER CHANGE OUT ALARM ON THE BMS WHEN THE DP REACHES THE SPECIFIED 50 % DIRTY VALUE IN THE THE AHU SCHEDULE.

2 AIR HANDLING UNIT ON FLOOR SCHEMATIC
SCALE: NONE

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

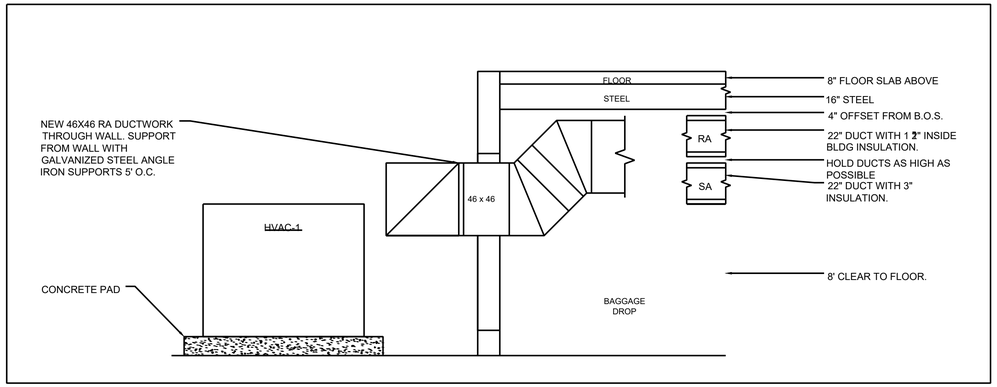
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-701
SHEET NO. 11 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

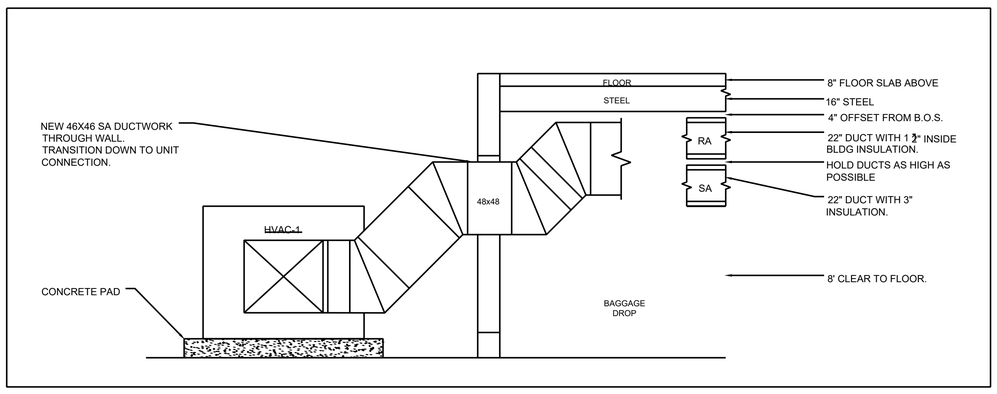
SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-884-0
REV. NO. 0

MECHANICAL DETAILS



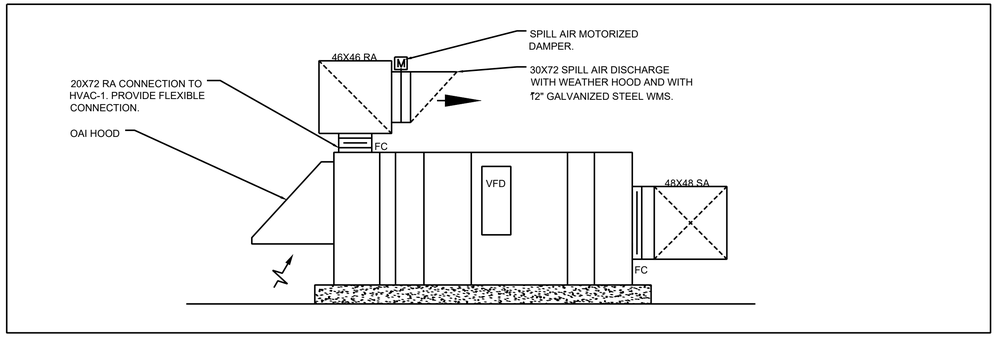
NOTES:
1.) DIMENSIONS ARE APPROXIMATE. ALL DUCTWORK SIZING AND LAYOUT ARE TO BE COORDINATED IN THE FIELD WITH ACTUAL FIELD CONDITIONS.

5 RETURN AIR DUCT SECTION THROUGH WALL
SCALE: 1/4" = 1'-0"



NOTES:
1.) DIMENSIONS ARE APPROXIMATE. ALL DUCTWORK SIZING AND LAYOUT ARE TO BE COORDINATED IN THE FIELD WITH ACTUAL FIELD CONDITIONS.

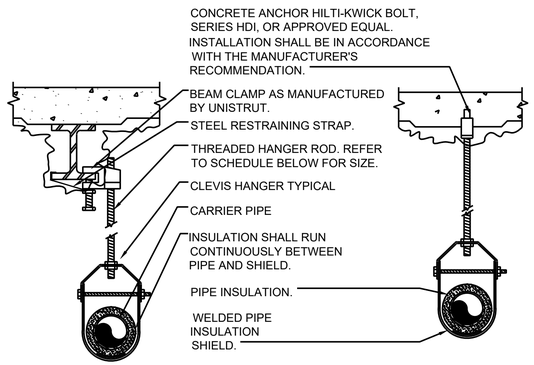
4 SUPPLY AIR DUCT SECTION THROUGH WALL
SCALE: 1/4" = 1'-0"



NOTES:
1.) DIMENSIONS ARE APPROXIMATE. ALL DUCTWORK SIZING AND LAYOUT ARE TO BE COORDINATED IN THE FIELD WITH ACTUAL FIELD CONDITIONS.

3 HVAC-1 ELEVATION VIEW
SCALE: 1/8" = 1'-0"

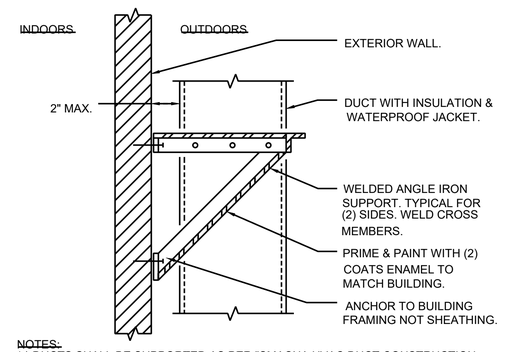
IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.



PIPE HANGER SCHEDULE					
PIPE DIA.	3/4"-2"	2 1/2"-3"	4"-5"	6"	8"-12"
HANGER DIA.	3/8"	1/2"	5/8"	3/4"	7/8"

NOTES:
1.) CLEVIS HANGERS WITH WELDED INSULATION SHIELDS SIMILAR TO RAUCH FIG. 100SH ON ALL PIPES LARGER THAN 1".
2.) FOR PIPES 1" OR SMALLER, A BAND HANGER WITH INSULATION SHIELD MAY BE USED SIMILAR TO RAUCH FIG. NO. 1ASH.
3.) FOR NON-INSULATED PIPE, INSULATION SHIELDS MAY BE OMITTED.
4.) ALL PIPE HANGERS SHALL BE GALVANIZED STEEL OR FACTORY PAINTED BLACK WITH ENAMEL.
5.) FOR NON FERROUS PIPING WITHOUT INSULATION, ALL HANGERS SHALL BE COPPER PLATED OR FURNISHED WITH A DI-ELECTRIC BETWEEN PIPE AND HANGERS.
6.) WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.
7.) ANY AREA WITH A CEILING WHICH IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED. REPLACE WIRE LATH AND RE-CEMENT IF REQUIRED.

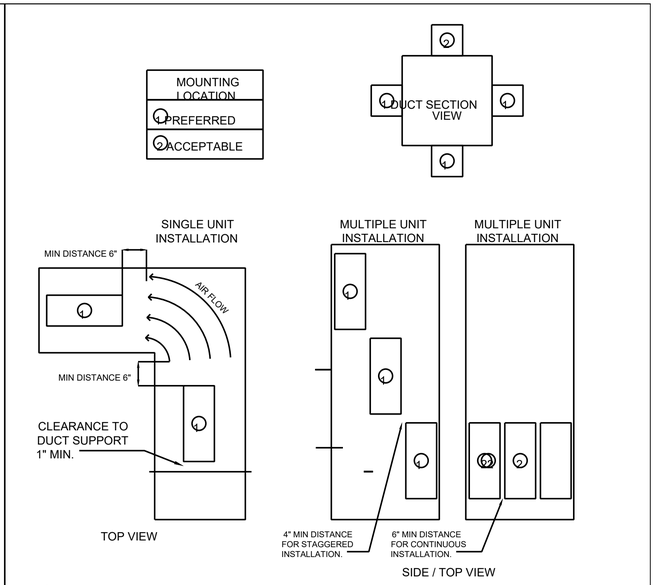
2 PIPE HANGER DETAIL
SCALE: NONE



NOTES:
1.) DUCTS SHALL BE SUPPORTED AS PER "SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE" FIGURE 4-8.B.
2.) ALL BOLT, FASTENERS, AND HARDWARE SHALL BE GALVANIZED.
3.) MAXIMUM SPACING BETWEEN BRACKETS SHALL BE 12'.
4.) LOCATE DUCTS AGAINST WALL OR MAXIMUM 2" AWAY FROM THE WALL.
5.) EACH WALL ANCHOR SHALL SATISFY THE FOLLOWING CRITERIA UNLESS OTHER ANALYSIS IS MADE:
A.) TENSILE LOAD = 3/8 x DUCT WEIGHT, SAFTEY FACTOR 4.
B.) SHEAR LOAD = 1/2 x DUCT WEIGHT, SAFTEY FACTOR 4.
6.) ALL SUPPORT MEMBERS SHALL BE PAINTED WITH (1) COAT OF PRIMER AND (1) COAT OF ENAMEL TO MATCH BUILDING.

ANGLE SIZING		
DUCT SIZE	ANGLE SIZE	MAXIMUM SPACING
30"x12"	1" x 1" x 1/8"	12'-0"
36"x18"	1" x 1" x 1/8"	12'-0"
42"x24"	1-1/4" x 1-1/4" x 1/8"	12'-0"
48"x30"	1-1/4" x 1-1/4" x 1/8"	12'-0"

1 DUCT SUPPORT AT EXTERIOR WALL DETAIL
SCALE: NONE



6 BIPOLAR IONIZATION MOUNTING LOCATION DETAIL
SCALE: NONE

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK * PATRICK F. LYNCH * 069467 LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER M-702
SHEET NO. 12 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-M-885-0
REV. NO. 0

MECHANICAL DETAILS

SYMBOLS AND ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
	-	CONDUIT AND WIRING
	-	CONDUIT & WIRING TO BE REMOVED UON
UG-E	-	BURIED CONDUIT
	-	OVERHEAD CONDUCTORS
	-	HOMERUN TO PANEL, ARROWS INDICATE # 1P
	-	MULTI-POLE HOMERUN
	-	ELECTRICAL EQUIPMENT AS INDICATED
	-	ELECTRICAL EQUIPMENT TO BE REMOVED UON
	-	ELECTRIC METER
	-	JUNCTION BOX
	-	FUSED DISCONNECT SWITCH
	-	UNFUSED DISCONNECT SWITCH
	-	COMBINATION MOTOR STARTER/FUSED DISC.
	-	MOTOR STARTER
	-	MOTOR
	-	BATTERY PACK EMERGENCY LIGHT FIXTURE
Sx	-	SINGLE POLE SWITCH (x - INDICATES FIXTURE BEING CONTROLLED)
SM	-	MOTOR RATED TOGGLE SWITCH
	-	DUPLEX RECEPTACLE
	-	DOUBLE DUPLEX RECEPTACLE
	-	SPECIAL RECEPTACLE
F	-	FIRE ALARM MANUAL PULL STATION
F	-	FIRE ALARM COMBINATION AUDIO/VISUAL DEVICE (15/75 CD - STROBE)
F	-	FIRE ALARM STROBE 15/75 CD
S EL; SH; SC	-	SMOKE DETECTOR. EL - ELEVATOR LOBBY; SH - SMOKE HATCH; SC - PLENUM RATED ABOVE CEILING
S AC	-	DUCT MOUNTED SMOKE DETECTOR
ANN	-	FIRE ALARM ANNUNCIATOR PANEL
CM	CM	FIRE ALARM CONTROL MODULE
MM	MM	FIRE ALARM MONITORING MODULE
FACP	FACP	FIRE ALARM CONTROL PANEL
R	-	FIRE ALARM RELAY
	EOL	END OF LINE RESISTOR
PTZ	-	SECURITY CAMERA PTZ - PAN, TILT, ZOOM
	CB	CIRCUIT BREAKER
	-	ENCLOSED CIRCUIT BREAKER
200AS 150AF	-	FUSED SWITCH
OR	GND	GROUND AS PER LOCAL CODE
OR T	XFMR	TRANSFORMER
	CT	CURRENT TRANSFORMER
	NC	NORMALLY CLOSED CONTACTS
	NO	NORMALLY OPEN CONTACTS
M	MD	MOTORIZED DAMPER
	SD OR CFSD	SMOKE DAMPER
UH	UH	UNIT HEATER
	A	AMPERE(S)
	AC	AIR CONDITIONER
	ACC	AIR CONDITIONER CONDENSER
	AFF	ABOVE FINISHED FLOOR

SYMBOL	ABBREVIATION	DESCRIPTION
	AF	AMPERAGE OF FUSE
	AHU	AIR HANDLING UNIT
	AS	AMPERAGE OF SWITCH
	AWG	AMERICAN WIRE GAUGE
	BCW	BARE COPPER WIRE
	BLDG	BUILDING
	BMS	BUILDING MANAGEMENT SYSTEM
	C	CONDUIT
	CAT	CATALOG
	CD	CANDELA
	CKT	CIRCUIT
	CLG	CEILING
	CU	COPPER
	DEM.	DEMOLISH AND REMOVE
	DISC	DISCONNECT
	DWG	DRAWING
	EMT	ELECTRICAL METALLIC TUBING
	EM	EMERGENCY
	EX.	EXISTING TO REMAIN
	F	FLOOR
	GFI	GROUND FAULT INTERRUPTER
	HP	HORSEPOWER
	HVAC	HEATING VENTILATION AIR CONDITIONING
	IG	ISOLATED GROUND
	IMC	INTERMEDIATE METAL CONDUIT
	KVA	KILO-VOLT-AMPERE
	KW	KILO-WATT
	MAX	MAXIMUM
	MCB	MAIN CIRCUIT BREAKER
	MIN	MINIMUM
	MLO	MAIN LUG ONLY
	NO	NUMBER
	NTS	NOT TO SCALE
	P	POLE
	PNL	PANEL
	PVC	POLY VINYL CHLORIDE
	REL.	REMOVE AND RELOCATE
	RGS	RIGID GALVANIZED STEEL
	RTU	ROOF TOP UNIT
	SCH	SCHEDULE
	SPD	SURGE PROTECTION DEVICE
	SW	SWITCH(ES)
	TYP	TYPICAL
	UG	UNDERGROUND
	UON	UNLESS OTHERWISE NOTED
	V	VOLT(S)
	WP	WEATHERPROOF

NOTES:

1. ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE APPLICABLE FOR THIS PROJECT.
2. SEE LIGHTING FIXTURE SCHEDULE FOR LIGHT FIXTURE SYMBOLS.

IN CHARGE OF PATRICK LYNCH, P.E.

CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.

MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

TYPICAL BRANCH CIRCUIT WIRING LEGEND

2-#12 & 1-#12 GND (1-1P-20A OR 1-1P-15A CB)

3-#12 & 1-#12 GND (3P-20A OR 3P-15A CB)

2-#12 & 1-#12 GND (2P-20A OR 2P-15A CB)

12 — CIRCUIT # / RECEPTACLE

15 — A / a — LIGHT FIXTURE TYPE / SWITCH CONTROL / LIGHT FIXTURE / CIRCUIT #

NOTES:

1. EACH 120V AND 277V CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. SHARED NEUTRAL HOMERUNS ARE NOT PERMITTED.
2. CONDUCTORS SHALL BE INCREASED FOR VOLTAGE DROP AND DERATING AS PER APPLICABLE ELECTRICAL CODE. FOR CIRCUITS THAT ARE BETWEEN 100' AND 150' IN LENGTH, PHASE AND NEUTRAL CONDUCTORS SHALL BE #10 AWG. FOR CIRCUITS THAT ARE BETWEEN 150' AND 225' IN LENGTH, PHASE AND NEUTRAL CONDUCTORS SHALL BE #8 AWG. FOR LENGTHS GREATER THAN 225' IN LENGTH, VERIFY CONDUCTOR SIZES WITH ENGINEER.

DEFINITION OF TERMS

1. WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "CLIENT" IS USED, IT MUST BE UNDERSTOOD THAT "WESCHESTER COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSFORTATION" IS INTENDED.
2. WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "ENGINEER" IS USED, IT MUST BE UNDERSTOOD THAT "OLA CONSULTING ENGINEERS" IS INTENDED.
3. WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "ELECTRICAL UTILITY" OR "POWER COMPANY" ARE USED, IT MUST BE UNDERSTOOD THAT "CON ED" IS INTENDED.
4. WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "FIRE ALARM SYSTEM" OR "FIRE ALARM VENDOR" ARE USED, IT MUST BE UNDERSTOOD THAT "SIEMENS" IS INTENDED.
5. "WORK" MUST BE DEEMED TO CONSIST OF ALL LABOR AND OPERATIONS, TRANSPORTATION, HOISTING, MATERIALS, TOOLS, EQUIPMENT, SERVICES, INSPECTIONS, INVESTIGATIONS, COORDINATION AND SUPERVISION REQUIRED AND / OR REASONABLY NECESSARY TO PRODUCE THE CONSTRUCTION REQUIRED BY THE CONTRACT DOCUMENTS.
6. "FURNISH" MEANS THE DESIGN, FABRICATION, PURCHASE AND DELIVERY TO THE JOB SITE.
7. "INSTALL OR INSTALLATION" MEANS THE ACT OF PHYSICALLY PLACING, APPLYING, SETTING, ERECTING, ANCHORING, SECURING, ETC., CONSTRUCTION MATERIALS, EQUIPMENT, FURNISHINGS, APPLIANCES, AND SIMILAR ITEMS SPECIFIED AND FURNISHED AT THE JOB SITE. INSTALLATION OF SPECIFIED ITEMS MUST BE COMPLETE IN ALL RESPECTS.
8. "PROVIDE" MEANS TO FURNISH AND INSTALL CONSTRUCTION MATERIAL, EQUIPMENT, ETC. AS DEFINED ABOVE.
9. THE FOLLOWING ARE DEFINITIONS OF SHOP DRAWING STAMP ACTIONS:

A. "NO EXCEPTIONS TAKEN" MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY COMMENCE.

B. "MAKE CORRECTIONS NOTED" MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS, SUBJECT TO AND IN COMPLIANCE WITH THE ANNOTATIONS AND/OR CORRECTIONS INDICATED ON THE SHOP DRAWING. FABRICATION AND/OR PURCHASE MAY COMMENCE.

C. "AMEND AND RESUBMIT" MEANS THAT THE COMMENTS AND/OR CORRECTION ARE SO EXTENSIVE AND IMPORTANT THAT THE REVIEWER WANTS TO SEE HOW THE COMMENTS AND/OR CORRECTIONS ARE RESOLVED PRIOR TO RELEASE FOR FABRICATION AND/OR PURCHASE. FABRICATIONS AND/OR PURCHASE MAY NOT COMMENCE.

D. "REJECTED" MEANS THAT THE SHOP DRAWING DOES NOT COMPLY OR CONFORM TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY NOT COMMENCE.

GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED (UON) EXISTING TO REMAIN (EX.).
2. THE DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND DO NOT NECESSARILY SHOW THE EXACT LOCATIONS AND DETAILS OF THE WORK TO BE INSTALLED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND PAYING ALL FEES ASSOCIATED WITH THIS WORK INCLUDING FILING WITH THE UTILITY COMPANY (AS REQUIRED), AND WITH LOCAL AUTHORITY HAVING JURISDICTION.
4. CONTRACTOR SHALL BE RESPONSIBLE TO HIRE A THIRD PARTY ELECTRICAL INSPECTION AGENCY TO PROVIDE UL INSPECTIONS AND SUBMIT A CERTIFICATE OF INSPECTION PRIOR TO FINAL REQUEST FOR PAYMENT.
5. ALL WORK INVOLVING THE ELECTRIC SERVICE SHALL BE COORDINATED AND APPROVED BY THE UTILITY COMPANY.
6. ALL CONDUCTORS SHALL BE COPPER UON "ON DRAWINGS".
7. ELECTRONIC FILES OF THE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS ARE AVAILABLE TO THE CONTRACTOR. THE ENGINEER MAY GRANT THE CONTRACTOR A LIMITED LICENSE TO MAKE A DERIVATIVE WORK OF THE DATABASE FOR THE PURPOSE OF SHOP DRAWINGS, SUBMITTALS AND AS-BUILT DRAWINGS. UPON REQUEST, THE ENGINEER SHALL PROVIDE A RELEASE FORM THAT MUST BE SIGNED AND RETURNED BY THE CONTRACTOR PRIOR TO RELEASE OF THE ELECTRONIC FILES.
8. CIRCUIT NUMBERS ARE FOR INFORMATION PURPOSES ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD.
9. CORE DRILLING OR TRENCHING THROUGH AN EXISTING FLOOR SLAB, WHEN REQUIRED, SHALL BE COORDINATED WITH THE OWNER. FLOOR SLABS SHALL BE RADAR SCANNED PRIOR TO CORE DRILLING OR TRENCHING. ALL WORK, INCLUDING CORE DRILLING, RADAR SCAN, INSTALLATION OF FIRE STOPPING, & CONDUIT/CABLE INSTALLATION SHALL BE PERFORMED DURING NON-BUSINESS HOURS AND INCLUDED IN BASE BID. USE EXTREME CAUTION DURING ANY CUTTING OPERATION TO AVOID DAMAGE TO EXISTING EQUIPMENT/SYSTEMS. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED AT NO COST TO THE CLIENT. ALL CORES SHALL BE FIRE SEALED.
10. WHERE GFI RECEPTACLES ARE CIRCUITED WITH GENERAL CONVENIENCE RECEPTACLES, THE GFI RECEPTACLE SHALL BE THE LAST DEVICE ON THE CIRCUIT.
11. INSTALL CONDUIT EXPANSION FITTINGS AT ALL LOCATIONS WHERE CONDUITS CROSS BUILDING OR STRUCTURE EXPANSION JOINTS.
12. UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES, STARTERS, HOAS AND MOTOR RATED TOGGLE SWITCHES FOR MECHANICAL PUMPS, CABINET AND UNIT HEATERS, RETURN FANS, ROOF FANS, VAV BOXES, COMPRESSORS, FAN COIL UNITS, AIR HANDLERS AND CONDENSERS SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE CONTRACTOR. COORDINATE ALL WORK WITH THE CONTRACTOR.
13. DISCONNECT SWITCHES FOR MOTORIZED DAMPERS, CFSD/SD AND VAV BOXES SUPPLIED BY CONTRACTOR AND INSTALLED AND WIRED BY CONTRACTOR. SWITCHES NOT SHOWN ON PLANS.
14. ALL ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC. SHALL BE APPROVED FOR USE IN NEW YORK STATE.
15. EACH DUPLEX AND QUAD RECEPTACLE SHALL BE LABELED WITH THE CIRCUIT NUMBER WHICH IT SERVES. ALPHANUMERICS TO BE 1/8" HIGH AND BLACK ON CLEAR BACKGROUND. LABELS SHALL BE SELF ADHESIVE. IDENTIFY ASSOCIATED PANEL AND CIRCUIT NUMBER.
16. THE CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, PAINTING, AND FINAL RESTORATION REQUIRED TO FACILITATE THE DEMOLITION AND INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, CONDUITS, WIRING, DEVICES, FIXTURES, ETC. INCLUDING ABOVE CEILINGS. CONTRACTOR TO REMOVE AND REPLACE CEILINGS, AND OPEN AND PATCH WALLS, AS REQUIRED TO EXECUTE THE ELECTRICAL WORK.
17. CONTRACTOR SHALL BE RESPONSIBLE TO HIRE AND PAY ALL FEES FOR THE UL FIELD EVALUATION SERVICE TO RE-INSPECT AND RE-CERTIFY THE SWITCHBOARD IN RELATION TO MODIFICATIONS REQUIRED WHEN TAPPING THE BUS. CONTRACTOR SHALL SCHEDULE WITH UL PRIOR TO START OF WORK. UL SHALL BE PRESENT WHILE TAPPING OF THE SWITCHBOARD IS EXECUTED. (TEL: 1-877-ULHELPS)

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

STATE OF NEW YORK * PATRICK F. LYNCH * 069467 LICENSED PROFESSIONAL ENGINEER

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER: 23-532-Rev.
SHEET NUMBER: E-001
SHEET NO. 13 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-E-886-0
REV. NO. 0

ELECTRICAL SYMBOLS, ABBREVIATIONS AND GENERAL NOTES

DEMOLITION NOTES:

1. ALL EQUIPMENT SHALL BE DISCONNECTED AND REMOVED BACK TO POWER SOURCE ORIGINATION UNLESS OTHERWISE NOTED (UON) EXISTING TO REMAIN (EX.).

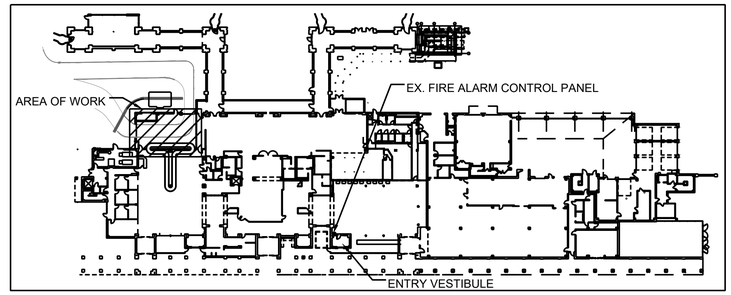
2. CONTRACTOR SHALL VERIFY EXTENT OF DEMOLITION WORK IN THE FIELD PRIOR TO BID AND SHALL INCLUDE ALL LABOR AND MATERIALS IN BASE BID INCLUDING ALL TEMPORARY CONNECTIONS, CONDUIT AND WIRE IN ORDER TO ACCOMMODATE CONSTRUCTION AND PROVIDE CONTINUOUS SERVICE TO DEVICES AND SYSTEMS TO REMAIN, TEMPORARY AND PERMANENTLY. WORK REQUIRING THE SHUT-DOWN OF THE BUILDING POWER SHALL BE PERFORMED DURING OVERTIME AND SHALL BE INCLUDED IN BASE BID.

3. CIRCUIT BREAKER, CONDUIT AND CONDUCTOR SIZES INDICATED SHALL BE FIELD VERIFIED PRIOR TO BID.

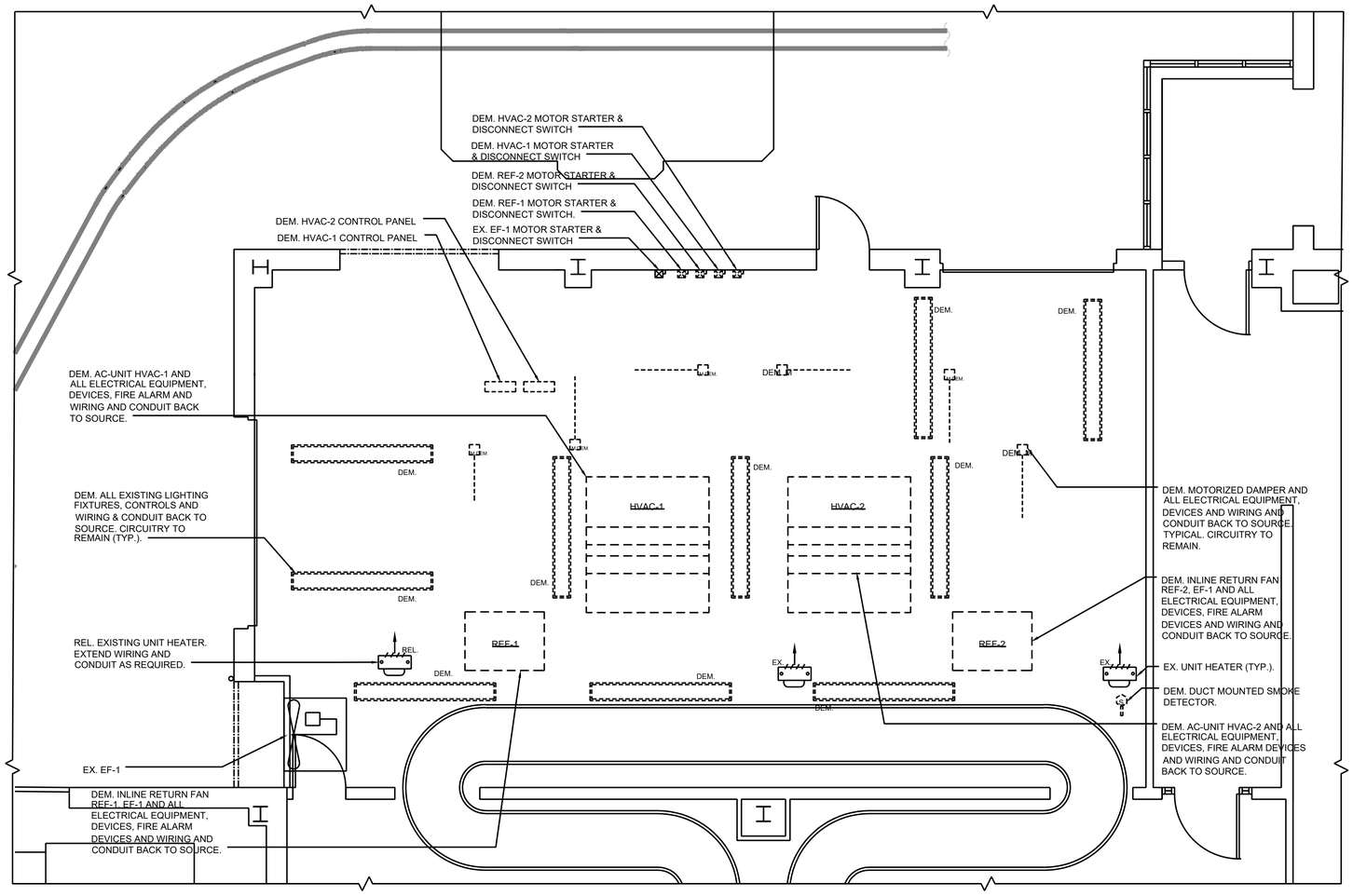
4. ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER IN USE, SUCH AS DISCONNECT SWITCHES, MOTOR CONTROLLERS, MOTOR STARTER PANELS, ETC. SHALL BE REMOVED UON.

5. ALL DISCONNECTED & REMOVED EXISTING ELECTRICAL ITEMS THAT ARE NOT BEING REUSED SHALL BE RETURNED TO THE OWNER OR DISPOSED OF AS DIRECTED.

6. THE CONTRACTOR SHALL INCLUDE IN THE BASE BID FOR ALL MATERIAL & LABOR REQUIRED FOR THE EXTENSIONS, REROUTING & RELOCATION OF EXISTING SYSTEM COMPONENTS, EQUIPMENT, WIRING, CONDUITS & CABLING SO AS TO MAINTAIN OPERATION OF ALL SYSTEMS THROUGHOUT THE BUILDING DURING DEMOLITION & CONSTRUCTION PHASES.



2 FIRST FLOOR KEY PLAN
SCALE: 1/64" = 1'-0"
NORTH



1 ELECTRICAL DEMOLITION FIRST FLOOR PART PLAN
SCALE: 1/4" = 1'-0"
NORTH

NOTES:

1. REFER FOR SYMBOLS, ABBREVIATION AND NOTES ON DWG E-001.00

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 061467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER E-101
SHEET NO. 14 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24

ELECTRICAL FIRST FLOOR PART PLAN - DEMOLITION

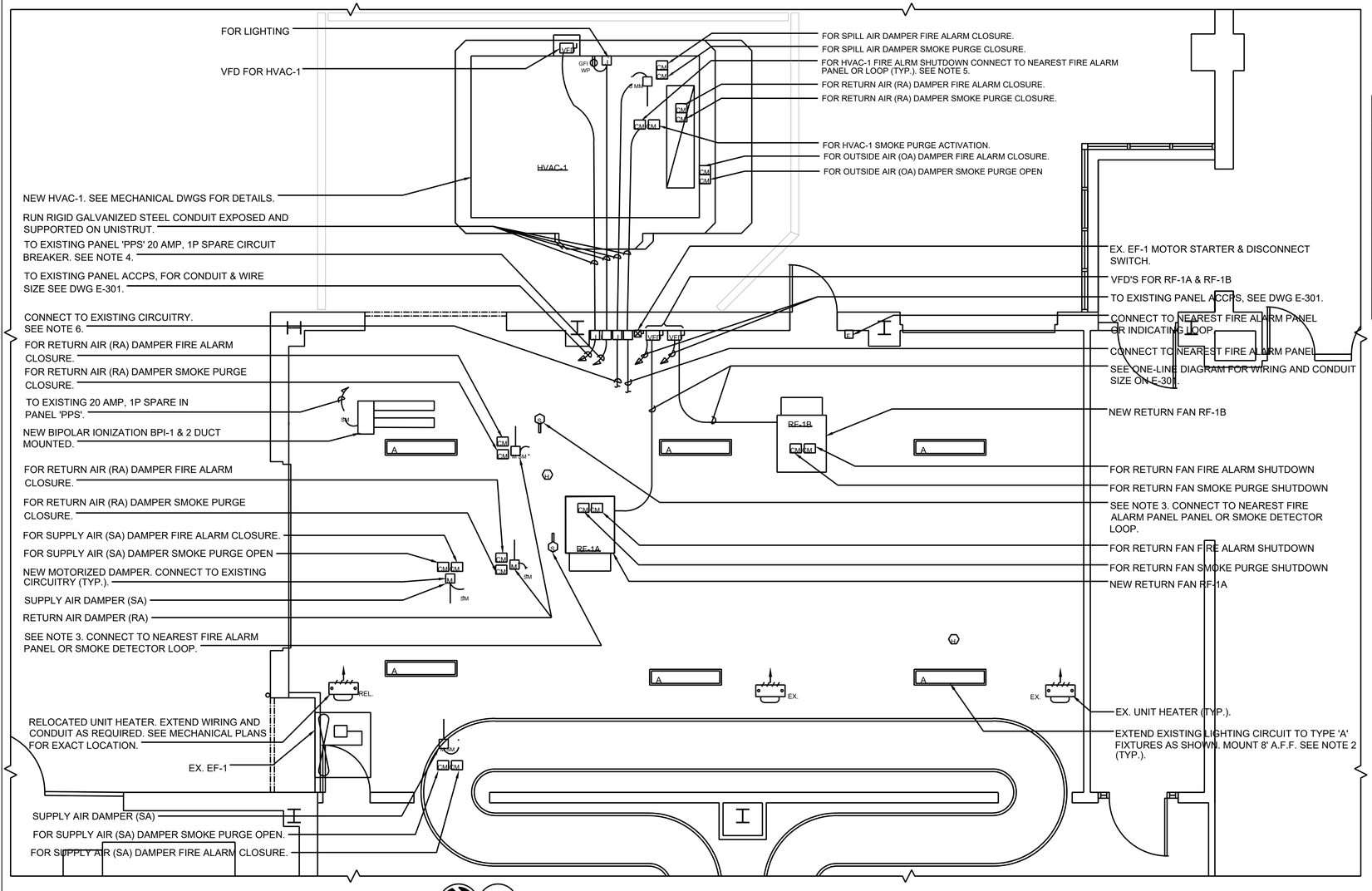
DPW FILE NO. 48-15-E-887-0
REV. NO. 0

LIGHTING FIXTURE SCHEDULE (SITE ONLY)

FIXTURE DESIGNATION	MANUFACTURER	CATALOG NUMBER	LAMPS	VOLTS	INPUT WATTS (W)	MOUNTING	REMARKS
A	LITHONIA LIGHTING	VAP 8000LM PCL MD MVOLT 50K 90CRI	LED 5000K	120-277V	66.9	PENDANT/ SURFACE	INDUSTRIAL TYPE LED LIGHTING FIXTURE.

NOTES:

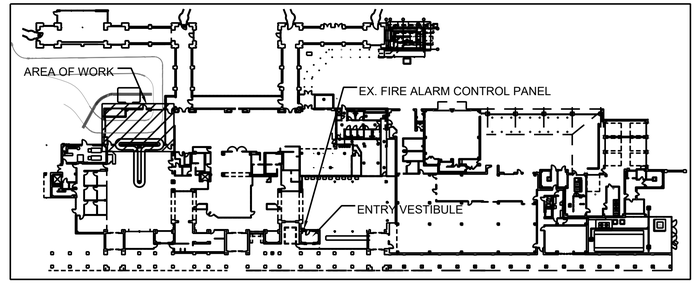
1. VERIFY ALL FIXTURE CATALOG NUMBERS FOR INTENDED APPLICATIONS WITH REQUIRED ACCESSORIES.
2. IN THE EVENT THE CONTRACTOR CHOOSES TO SUBSTITUTE LIGHT FIXTURES FOR THOSE THAT ARE SPECIFIED ON THE LIGHT FIXTURE SCHEDULE, THE CONTRACTOR SHALL SUBMIT POINT-TO-POINT PHOTOMETRIC CALCULATIONS FOR ALL AREAS WHERE THE SUBSTITUTED FIXTURES ARE INDICATED TO BE INSTALLED ON THE DRAWINGS. THESE CALCULATIONS SHALL BE SUBMITTED ALONG WITH THE LIGHT FIXTURE SHOP DRAWINGS.



1 ELECTRICAL FIRST FLOOR PART PLAN - POWER & LIGHTING
SCALE: 1/4" = 1'-0"
NORTH

NOTES:

1. REFER FOR SYMBOLS, ABBREVIATION AND NOTES ON DWG E-001.00.
2. COORDINATE FINAL LOCATION OF LIGHTING FIXTURES WITH MECHANICAL EQUIPMENT AND EXISTING FENCE.
3. DETECTION OF SMOKE SHALL SHUTDOWN HVAC-1, RF-1A AND RF-1B. COORDINATE ALL PROGRAMMING WITH AIRPORT'S FIRE ALARM VENDOR.
4. FOR ELECTRICAL PANEL LOCATIONS SEE PART PLANS ON E-301.
5. SEE FIRE ALARM & SMOKE PURGE SEQUENCE OF OPERATION MATRIX FOR HVAC SYSTEM. FOR ADDITIONAL INFORMATION ON SMOKE PURGE SEQUENCE & FIRE ALARM SHUTDOWN SEQUENCE REFER TO SPECIFICATION 237313FL SECTION 3.09. CONTACT JEFF TODELE AT SIEMENS FIRE ALARM AT 973 396-4386. SEE FIRST FLOOR KEY PLAN FOR LOCATION OF FIRE ALARM CONTROL PANEL.
6. EXTEND EXISTING CIRCUITRY FOR MOTORIZED DAMPERS TO ALL LOCATIONS SHOWN ON FLOOR PLAN.



2 FIRST FLOOR KEY PLAN
SCALE: 1/64" = 1'-0"
NORTH

HVAC SEQUENCE OF OPERATION MATRIX FOR FIRE ALARM & SMOKE PURGE

NOTE: FIRE ALARM SYSTEM SHALL BE PROGRAMMED AS FOLLOWS:

UNIT	NORMAL OPERATION	FIRE ALARM	SMOKE PURGE
HVAC-1	ON	OFF	ON
OA DAMPER AT HVAC-1	OPEN	CLOSED	OPEN
RA DAMPER AT HVAC-1	OPEN	CLOSED	CLOSED
SPILL AIR DAMPER	OPEN	CLOSED	CLOSED
SA DAMPERS (2)	OPEN	CLOSED	OPEN
RA DAMPERS (2)	OPEN	CLOSED	CLOSED
RF-1A	ON	OFF	OFF
RF-1B	ON	OFF	OFF

NOTE: EXISTING SMOKE PURGE FANS WILL CONTINUE TO OPERATE AS PROGRAMMED FOR SMOKE PURGE SEQUENCE.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 060467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

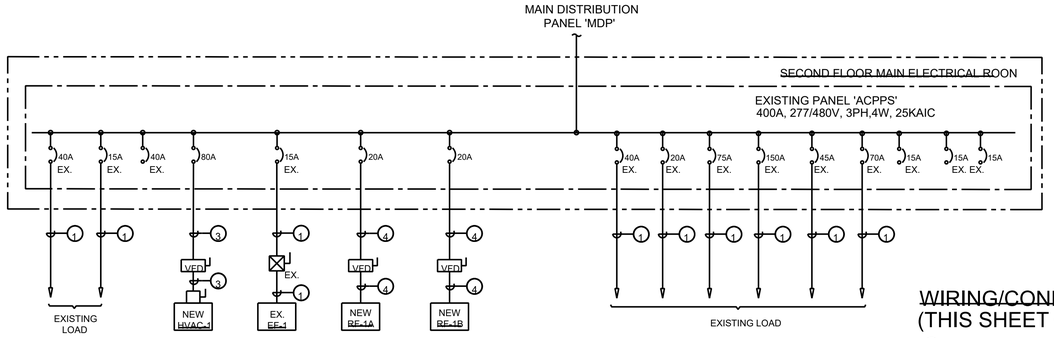
CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER E-201
SHEET NO. 15 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-E-888-0
REV. NO. 0

ELECTRICAL FIRST FLOOR PLAN - NEW WORK

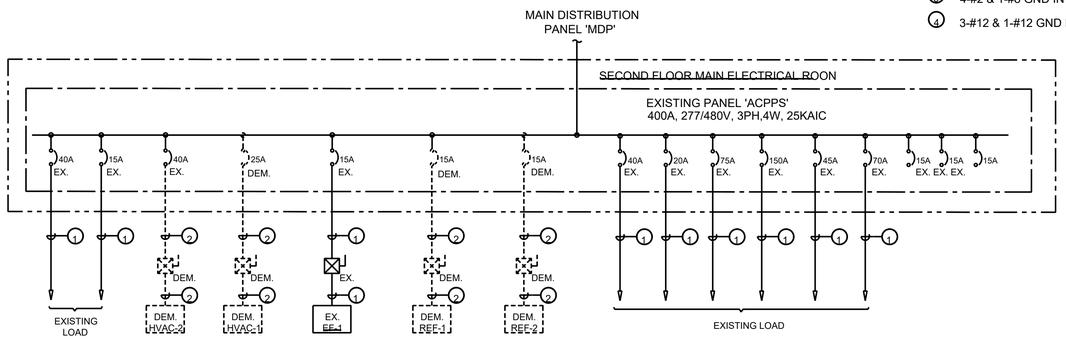
IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.



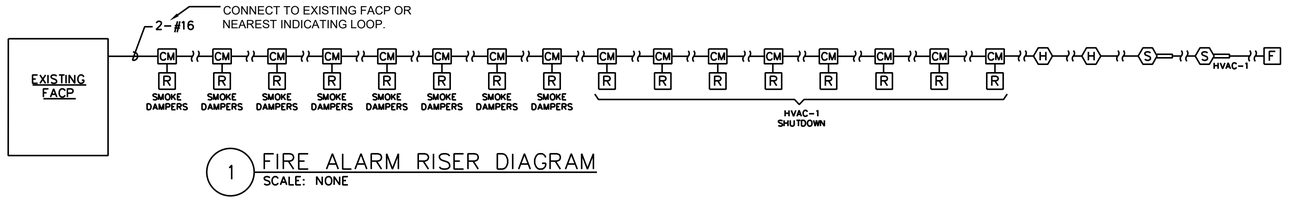
3 ELECTRICAL PART ONE-LINE DIAGRAM - NEW WORK
NOT TO SCALE

WIRING/CONDUIT LEGEND:
(THIS SHEET ONLY)

1. EX. WIRE AND CONDUIT
2. DEM. WIRE & CONDUIT
3. 4-#2 & 1-#8 GND IN 1-1/4"C.
4. 3-#12 & 1-#12 GND IN 3/4"C.



2 ELECTRICAL PART ONE-LINE DIAGRAM - DEMOLITION
NOT TO SCALE



1 FIRE ALARM RISER DIAGRAM
SCALE: NONE

RISER NOTES:

1.) THIS IS NOT A POINT-TO-POINT WIRING DIAGRAM. PRIOR TO STARTING ANY WORK, A WORKING POINT-TO-POINT WIRING DIAGRAM SHALL BE OBTAINED FROM FIRE ALARM SYSTEM VENDOR AND PERFORM ALL WORK IN ACCORDANCE WITH THAT DIAGRAM.

2.) CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL 120V CIRCUITS THAT ARE REQUIRED TO SUPPORT THE OPERATION OF THE FIRE ALARM SYSTEM. COORDINATE REQUIREMENTS WITH THE FIRE ALARM VENDOR.

3.) QUANTITY OF STROBE BOOSTER POWER SUPPLY PANELS AND ASSOCIATED 120V CIRCUITS SHALL BE COORDINATED WITH SELECTED FIRE ALARM SYSTEM MANUFACTURER AND/OR FIRE ALARM VENDOR.

4.) PROVIDE ALL NECESSARY WIRING, MODULES, COMPONENTS, EXTENDER CABINET, AND PROGRAMMING REQUIRED TO CONNECT NEW DEVICES TO EXISTING SYSTEM.

5.) PROVIDE ALL NECESSARY HARDWARE AND PROGRAMMING TO PROVIDE THE CLIENT WITH 20% SPARE CAPACITY ON ALL INITIATING AND INDICATING CIRCUITS.

6.) PROVIDE AS PART OF THE BASE CONTRACT ALL LABOR AND MATERIALS TO INSTALL FOUR (4) ADDITIONAL FIRE ALARM DEVICES DURING CONSTRUCTION. THE ADDITIONAL FIRE ALARM DEVICES CAN BE BUT NOT LIMITED TO SMOKE DETECTOR, HEAT DETECTOR, DOOR HOLDER, DUCT DETECTOR, FAN SHUTDOWN, TAMPER SWITCHES, FLOW SWITCHES, ETC. INCLUDE ALL LABOR AND MATERIALS INCLUDING WIRE, BOXES, CONDUIT, TERMINATIONS, HARDWARE, SOFTWARE, PROGRAMMING AND TESTING.

7.) DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY CONTRACTOR AND INSTALLED IN DUCT WORK BY CONTRACTOR.

8.) PROVIDE ALL FIRE ALARM PROGRAMMING AT EXISTING FIRE ALARM CONTROL PANEL FOR ALL NEW DEVICES. SEE HVAC SEQUENCE OF OPERATION MATRIX FOR FIRE ALARM AND SMOKE PURGE ON DRAWING E-201 FOR PROGRAMMING OF ADDITIONAL DEVICES FOR HVAC SYSTEM. PROVIDE ALL NECESSARY MODULES, AND DEVICES FOR REQUIRED PROGRAMMING.

9.) ALL VISUAL ALARM DEVICES SHALL BE ADA COMPLIANT.

10.) CONTRACTOR TO PROVIDE A RELAY FOR EACH SMOKE DAMPER/COMBINATION FIRE SMOKE DAMPER. RELAYS ARE NOT SHOWN ON PLANS FOR CLARITY.

11.) PROVIDE REMOTE LED INDICATORS FOR ALL CONCEALED FIRE ALARM DEVICES SUCH AS DUCT SMOKE DETECTORS, ABOVE CEILING SMOKE DETECTORS, ELEVATOR SHAFT DETECTORS, MONITORING AND CONTROL MODULES, ETC. LED INDICATORS FOR DEVICES MOUNTED ABOVE DROP CEILINGS SHALL BE MOUNTED BELOW ASSOCIATED DEVICES. LABEL INDICATORS TO INDICATE DEVICE SERVED.

12.) CONTRACTOR TO PROVIDE SMOKE DETECTOR(S) IN ALL LOCATIONS CONTAINING FIRE ALARM CONTROL PANELS, DATA GATHERING PANELS, BOOSTER POWER SUPPLIES, OR ANY OTHER FIRE ALARM SYSTEM PANEL, WHETHER SHOWN ON PLANS OR NOT.

13.) CONTROL MODULES USED TO INITIATE EMERGENCY CONTROL FUNCTIONS THAT DO NOT FAIL IN A SAFE POSITION SHALL BE LOCATED WITHIN 3 FEET OF THE COMPONENT CONTROLLING THE EMERGENCY CONTROL FUNCTION PER NFPA 72. THIS INCLUDES, BUT IS NOT LIMITED TO, CONTROL MODULES CONNECTED TO FAN MOTOR CONTROLLERS, ELEVATOR CONTROLLERS, ETC.

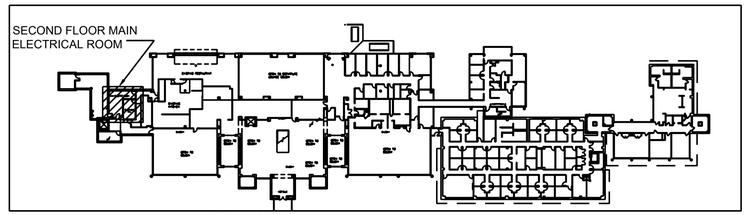
14.) ALL FIRE ALARM PANELS, JUNCTION BOX COVERS, ETC SHALL BE PAINTED "FIRE DEPARTMENT RED".

15.) MAKE CONNECTIONS TO SIDES OR BOTTOM OF FACP ONLY.

16.) THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THE ENGINEER WITH AN ACCURATE AS-BUILT FIRE ALARM DRAWING, SHOWING INSTALLED DEVICE LOCATIONS AND A COMPLETE INTERCONNECTION WIRING DIAGRAM OF THE SYSTEM. THE DRAWINGS SHALL BE PROVIDED IN AUTOCAD FORMAT AND HARD COPIES. AS-BUILT DRAWINGS MUST BE PROVIDED TO THE ENGINEER BEFORE PROJECT CAN BE CLOSEOUT.

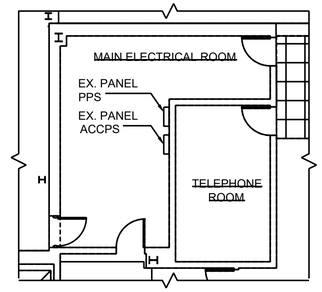
17.) THE CONTRACTOR IS REQUIRED TO SCHEDULE ALL INSPECTIONS WITH AUTHORITY HAVING JURISDICTION IN ORDER TO OBTAIN THE FINAL LETTER OF APPROVAL AND SIGN-OFF. PROVIDE RE-INSPECTIONS AS REQUIRED UNTIL FINAL LETTER OF APPROVAL IS OBTAINED. AT EACH INSPECTION, A MINIMUM OF TWO FIRE ALARM TECHNICIANS WITH S97 OR S98 CERTIFICATIONS AND ONE ELECTRICIAN SHALL BE PRESENT.

18.) ANY REPROGRAMMING OF THE SYSTEM REQUIRED PRIOR TO THE INITIAL INSPECTION SHALL BE DONE AT NO CHARGE TO COMPLY WITH ANY CHANGES REQUIRED BY THE OWNER, ENGINEER, INCONSISTENCIES WITH THE PLANS OR CHANGES REQUIRED DUE TO CHANGE IN NOMENCLATURES OF ANY ROOMS, STAIRS, ELEVATOR, ETC.



2 SECOND FLOOR KEY PLAN
SCALE: 1/64" = 1'-0"

NORTH



3 ELECTRICAL PART PLAN MAIN ELECTRICAL ROOM
SCALE: 1/8" = 1'-0"

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER 23-532-Rev.
SHEET NUMBER E-301
SHEET NO. 16 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-E-889-0
REV. NO. 0

ELECTRICAL ONE-LINE DIAGRAM AND PLANS

SYMBOLS AND ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
———	EX.	EXISTING TO REMAIN
———	NEW	NEW WORK
– – – – – –	DEM.	EXISTING TO BE REMOVED
	–	ELBOW UP
	–	ELBOW DOWN
	–	TEE DOWN
	–	TEE UP
	–	PIPE CAP OR FLUSHING CONNECTION
	–	GATE VALVE
	–	OS&Y GATE VALVE
	–	BUTTERFLY VALVE
	–	CHECK VALVE
	–	UNION
	–	TEMPERATURE GAGE
	–	PRESSURE GAGE
WF	–	WATER FLOW SWITCH
TS	–	TAMPER SWITCH
	–	INSPECTORS TEST CONNECTION
	–	FLOW ARROW
	–	SPRINKLER GUARD
OR	–	EXISTING SPRINKLER TO REMAIN
OR	–	EXISTING SPRINKLER TO BE REMOVED
N	–	NEW PENDENT SPRINKLER, CONCEALED OR EXPOSED AS NOTED.
N	–	NEW UPRIGHT SPRINKLER
	–	SIDEWALL SPRINKLER
	–	POINT OF CONNECTION
	–	POINT OF DISCONNECTION
NI	–	HYDRAULIC REFERENCE NODE
S2	–	HYDRAULIC REFERENCE SPRINKLER
	FDC	FIRE DEPARTMENT CONNECTION
–	AFF	ABOVE FINISHED FLOOR
–	AHC	ABOVE HUNG CEILING
–	ATC	AT CEILING
–	BFP	BACKFLOW PREVENTOR
–	DN.	DOWN
–	FCA	FLOOR CONTROL ASSEMBLY
–	FD	FLOOR DRAIN
–	FLFD	FUNNEL FLOOR DRAIN
–	GPM	GALLONS PER MINUTE
–	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
–	(N0)	NORMALLY OPEN
–	(NC)	NORMALLY CLOSED
–	NTS	NOT TO SCALE
–	PRV	PRESSURE REDUCING VALVE
–	PSI	POUNDS PER SQUARE INCH
–	SF	SQUARE FOOT
–	TYP	TYPICAL
–	U.O.N.	UNLESS OTHERWISE NOTED

NOTE: FOR REFERENCE ONLY. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED IN THIS PROJECT.

GENERAL NOTES

1. THE REVISED SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED BY AN EXPERIENCED CONTRACTOR IN STRICT ACCORDANCE WITH NFPA-13, THE REQUIREMENTS OF THE OWNER, OWNER'S FIRE INSURANCE UNDERWRITER, AND ALL GOVERNMENTAL AGENCIES AND AUTHORITIES HAVING JURISDICTION OVER THE PREMESIS.
2. COORDINATE ALL WORK WITH OTHER TRADES TO MINIMIZE INTERFERENCES WITH NEW AND EXISTING FACILITIES, TO FACILITATE TIMELY COMPLETION AND AVOID NECESSITY FOR CUTTING AND PATCHING. FURNISH TO OTHER AFFECTED TRADES ALL NECESSARY INFORMATION, WORKING DRAWINGS OR MATERIALS REQUIRED FOR INSTALLATION AND COMPLETION OF ALL WORK. ALL CONFLICTS, OBSTRUCTIONS AND/OR MODIFICATIONS TO THE SPRINKLER DESIGN LAYOUT DUE TO FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO FABRICATION AND INSTALLATION.
3. CONTRACTOR SHALL CONDUCT A HYDRANT FLOW TEST ON THE WATER MAIN SERVICING THE BUILDING TO ESTABLISH EXACT FLOW AND PRESSURE AVAILABLE ON THE SITE FOR PREPARATION OF HYDRAULIC CALCULATIONS AS REQUIRED.
4. SPRINKLER SHOP DRAWINGS SHALL BE SUBMITTED FULLY COORDINATED AND RECONCILED WITH SUBMITTED HYDRAULIC CALCULATIONS FOR REVIEW AND APPROVAL BY THE ENGINEER.
5. ALTER PIPING AS REQUIRED TO SUIT NEW AND EXISTING EQUIPMENT, DUCTWORK, AND LIGHTS. PROVIDE AT NO EXTRA COST ALL ADDITIONAL PIPING AND FITTINGS REQUIRED TO OFFSET SYSTEM TO AVOID STRUCTURAL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL INTERFERENCES, WHETHER INDICATED OR NOT, BEFORE INSTALLING WORK.
6. WHEN INSTALLING SPRINKLER HEADS, THE CONTRACTOR SHALL PROVIDE THE SHORTEST HYDRAULIC PIPE LENGTH BETWEEN THE FINAL SPRINKLER HEAD LOCATION AND THE BRANCH LINE CONNECTION. MINIMUM 1" FOR TWO HEADS, 1-1/4" FOR THREE HEADS AND 1-1/2" FOR FIVE HEADS.
7. EXACT LOCATION OF SPRINKLER HEADS IN FINISHED AREAS SHALL BE COORDINATED WITH ALL OTHER TRADES.
8. INSTALL SPRINKLER HEADS TIGHT TO BOTTOM OF DUCT WORK WITH CARE THAT THE FINISH IS NOT DAMAGED.
9. DRAIN VALVES AT MAIN SHUT-OFF VALVES, LOW POINTS, AND APPARATUS SHALL BE PROVIDED.
10. THE CONTRACTOR SHALL MAKE A PROVISION FOR (5) EXTRA SPRINKLERS INCLUDING IMMEDIATE BRANCH PIPING, FITTINGS AND ARM-OVERS. THE CONTRACTOR SHALL COORDINATE WITH FINAL CONFIGURATION OF OPEN AND HUNG CEILINGS, ALL HVAC DUCTWORK AND PIPING AND STRUCTURAL ELEMENTS THROUGHOUT THE AREA OF WORK.
11. THE CONTRACTOR SHALL PERFORM WORK WITHIN BAGGAGE DROP AREA DURING OFF HOURS, WHEN THE BAGGAGE DROP AREA IS NOT IN USE. EXACT SCHEDULE AND HOURS TO BE COORDINATED WITH THE AIRPORT ADMINISTRATION. DEMOLITION WORK IS NOT TO BE STARTED UNTIL ALL NECESSARY MATERIALS AND EQUIPMENT ARE IN HAND, TO PREVENT DELAYS DURING THE CONSTRUCTION PROCESS.
12. PROVIDE SPRINKLER GUARDS ON ALL EXPOSED SPRINKLER HEADS LOCATED UNDER DUCT WORK IN THE AREA OF WORK.

EQUIPMENT NOTES

1. SPRINKLER PIPING MATERIAL: SHALL BE STANDARD WEIGHT SCHEDULE 40 BLACK STEEL PIPE, SEAMLESS OR WELDED MILD STEEL, CONFORMING TO ASTM A-795/A-53. SCHEDULE 10 PIPING IS NOT PERMITTED FOR PIPING LESS THAN 2".
2. SPRINKLERS: REFER TO DRAWING FP-701 FOR SPRINKLER HEAD SCHEDULE.

DESIGN CRITERIA

HAZARD CLASSIFICATION(1)	DENSITY(2)	PROTECTION AREA PER SPRINKLER(3)
LIGHT HAZARD	0.1 GPM / 1500 SQ. FT.	225 SQ. FT. MAX
ORDINARY HAZARD GROUP 1	0.15 GPM / 1500 SQ. FT.	130 SQ. FT. MAX
ORDINARY HAZARD GROUP 2	0.2 GPM / 1500 SQ. FT.	130 SQ. FT. MAX
EXTRA HAZARD GROUP 1	0.3 GPM / 2500 SQ. FT.	100 SQ. FT. MAX
EXTRA HAZARD GROUP 2	0.4 GPM / 2500 SQ. FT.	100 SQ. FT. MAX

NOTES:
1.) HAZARD CLASSIFICATION, DENSITY AND MAX. PROTECTION AREA SHALL BE IN ACCORDANCE WITH NFPA 13 - 2016 RECOMMENDATIONS UNLESS OTHERWISE NOTED.
2.) WHERE REQUIRED BY THE BUILDING DEPARTMENT OR AUTHORITY HAVING JURISDICTION FOR PERMIT, THE ENTIRE SYSTEM SHALL BE HYDRAULICALLY CALCULATED.
3.) THE MINIMUM PRESSURE AT EACH SPRINKLER HEAD SHALL BE 7 PSI.
4.) EQUIVALENT FITTING LENGTHS USED IN HYDRAULIC CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA 13 - 2016.
5.) DISCHARGE FROM EACH SPRINKLER SHALL NOT BE LESS THAN REQUIRED AREA COVERAGE BY THIS HEAD. AREA COVERAGE PER HEAD SHALL BE DETERMINED IN ACCORDANCE WITH NFPA 13 SECTION 8.6.2.2.1 (2016).
6.) HYDRAULIC CALCULATIONS SHALL BE BROUGHT BACK TO THE CONNECTION TO THE RISER OR SPRINKLER CONTROL VALVE (F.C.A).
FLOW VELOCITY IN SPRINKLER PIPING SHALL NOT EXCEED 20 FEET PER SECOND (FPS).

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR	PROJECT COORDINATOR
NAME	NAME
SIGNATURE	SIGNATURE
TITLE DATE	TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

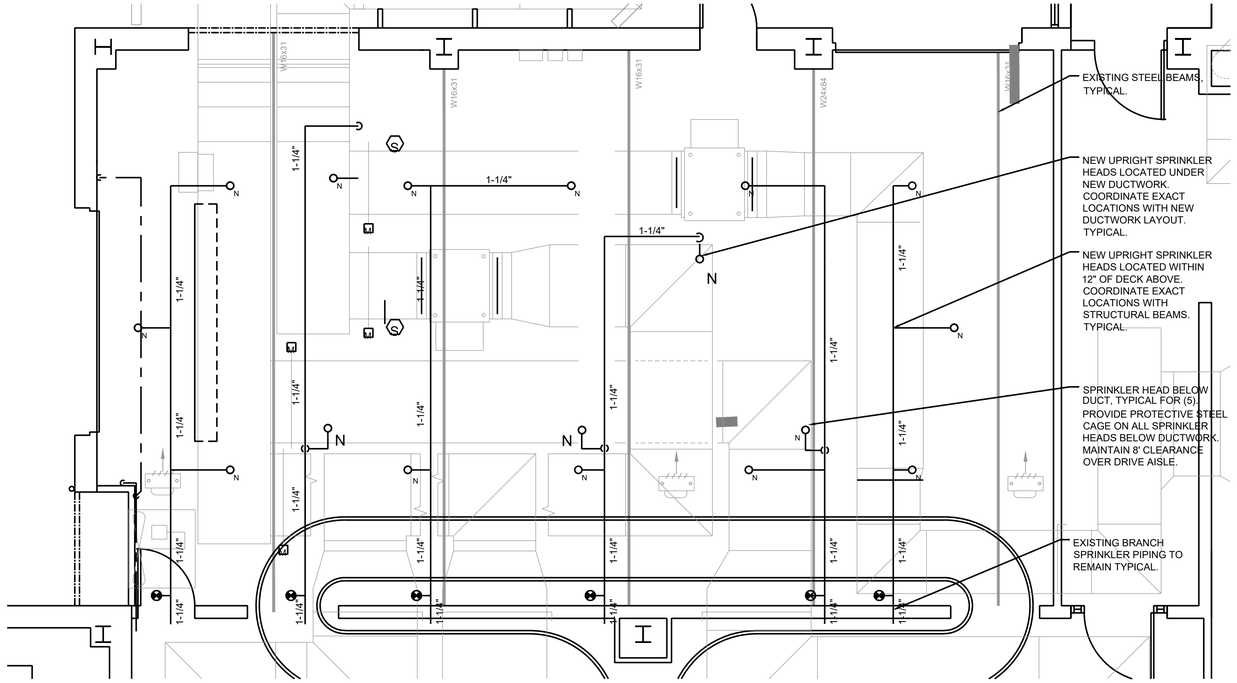
CONTRACT NUMBER: 23-532-Rev.
SHEET NUMBER: SP-001
SHEET NO. 17 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

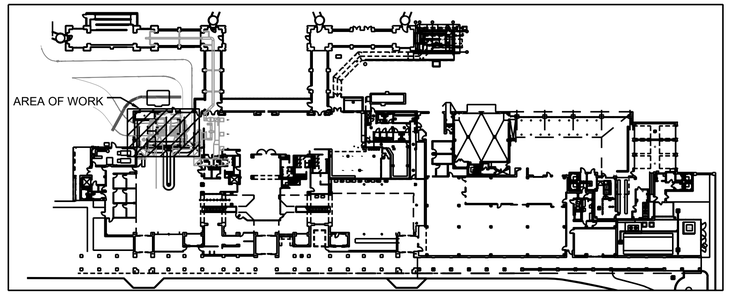
SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-SP-890-0
REV. NO. 0

SPRINKLER SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

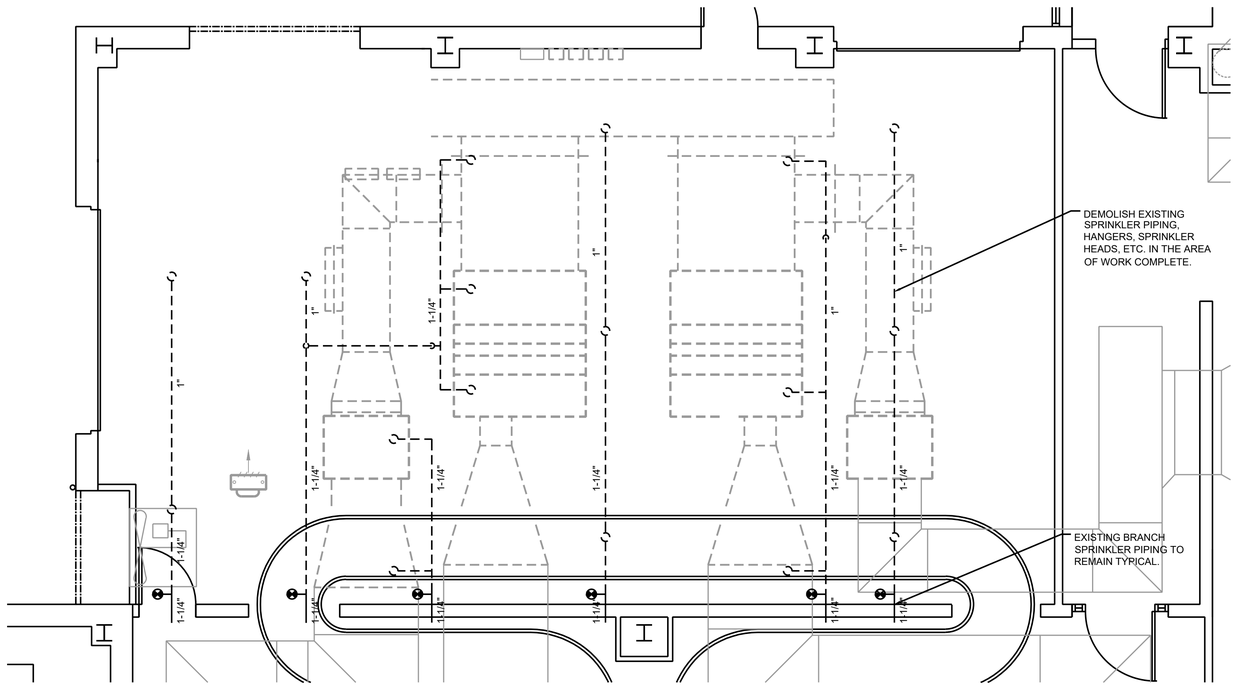
IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.



2 SPRINKLER NEW WORK FIRST FLOOR PART PLAN
SCALE: 1/4" = 1'-0"
NORTH



2 FIRST FLOOR KEY PLAN
SCALE: 1/64" = 1'-0"
NORTH



1 SPRINKLER DEMOLITION FIRST FLOOR PART PLAN
SCALE: 1/4" = 1'-0"
NORTH

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers

50 Broadway,
Hawthorne, NY 10532
914.747.2800

8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110

olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS
AND TRANSPORTATION
DIVISION OF ENGINEERING

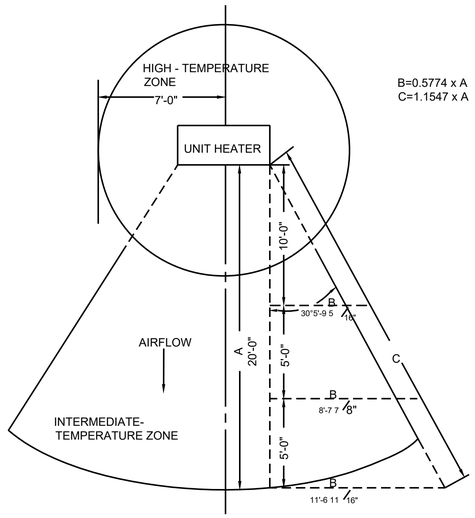
CONTRACT NUMBER 23-532-Rev. | SHEET NUMBER SP-201
SHEET NO. 18 OF 19

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SCALE: AS SHOWN
DATE: 10/29/24

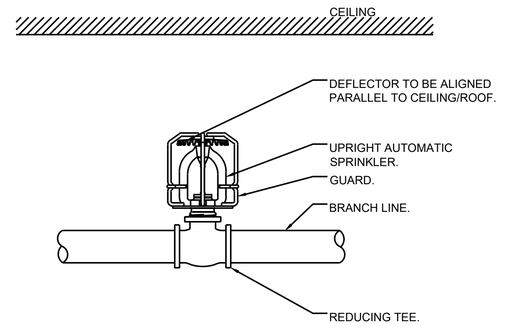
DPW FILE NO. 48-15-SP-891-0 | REV. NO. 0

SPRINKLER DEMOLITION AND NEW WORK



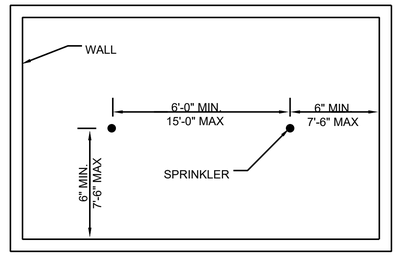
7 SPRINKLER TEMPERATURE ZONES AT UNIT HEATERS

SCALE: NONE



5 TYPICAL UPRIGHT SPRINKLER WITH GUARD

SCALE: NONE



	MAX AREA PER HEAD	DENSITY PER 1500 SQ. FT
LIGHT HAZARD	225 SQ. FT.	0.10 GPM/SQ. FT.
ORDINARY HAZARD	130 SQ. FT.	0.15 GPM/SQ. FT.

3 SPRINKLER HEAD SPACING CRITERIA

SCALE: NONE

PIPE SIZING SCHEDULE

SIZE	LIGHT HAZARD QTY SPRINKLERS	ORDINARY HAZARD QTY SPRINKLERS
1"	2	2
1 1/4"	3	3
1 1/2"	5	5
2"	10	10
2 1/2"	30	20
3"	60	40
3 1/2"	100	65
4"	SEE NOTE 3	100

NOTES:
1. IN ACCORDANCE WITH NFPA 13 - 2013 EDITION - TABLE 22.5.2.2.1 AND TABLE 22.5.3.4.
2. ALL PIPING BASED ON SCHEDULE 40 BLACK STEEL.
3. AREAS REQUIRING MORE SPRINKLERS THAN SPECIFIED FOR 3 1/2" SHALL BE SUPPLIED BY MAINS OR RISERS SIZED FOR ORDINARY HAZARD OCCUPANCIES.

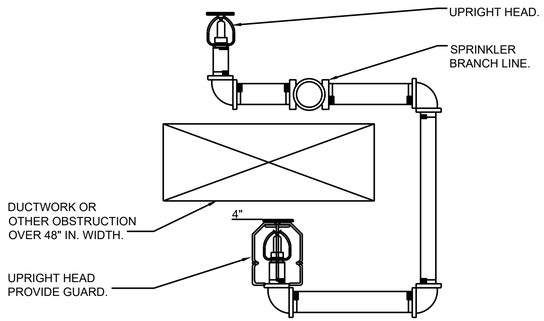
SPRINKLER SCHEDULE

SYM.	TYPE	LOCATION	FINISH	MANUF. MODEL	HEAD TEMP.	MAX CEILING TEMP	ORIFICE	K-FACTOR
○	UPRIGHT	EXPOSED AREAS PER PLANS	CHROME PLATED	RELIABLE F1FR	165°F	100°F	1/2"	5.6
○	UPRIGHT EC	EXTENDED COVERAGE GARAGE	NATURAL BRONZE	RELIABLE JL112	155°F	100°F	3/4"	11.2

NOTES:
1. SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE, SUCH AS SPRINKLER HEADS LOCATED UNDER MECHANICAL DUCTS IN MECHANICAL EQUIPMENT ROOMS WHEN LOCATED LOWER THAN 7'-0" AFF.
3. ALL SPRINKLER HEADS THROUGHOUT THE PROJECT AREA SHALL BE OF THE ORDINARY TEMPERATURE RATING EXCEPT AS FOLLOWS:
3.1. SPRINKLER HEADS LOCATED CLOSE TO HEATERS, HOT WATER PIPING OR LOW-PRESSURE BLOW-OFF VALVE SHALL BE OF THE TEMPERATURE RATING AS REQUIRED BY NFPA-13.
3.2. ALL HEAT GENERATING EQUIPMENT WHICH CAN AFFECT THE TEMPERATURE RATING OF THE SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS PRIOR TO SUBMISSION FOR APPROVAL.

1 SPRINKLER HEAD SCHEDULE

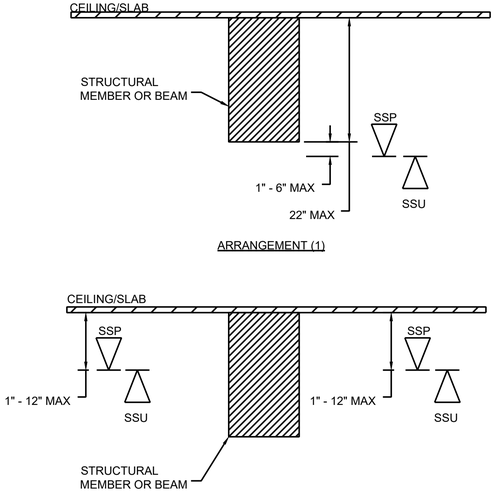
SCALE: NONE



NOTES:
1. CONTRACTOR SHALL SPRINKLER ABOVE AND BELOW DUCT OR OTHER OBSTRUCTION OVER 48" IN WIDTH.
2. SPRINKLERS SHALL BE COORDINATED WITH THE HVAC AND GENERAL CONSTRUCTION.

6 SPRINKLER DETAIL ABOVE AND BELOW DUCT DETAIL

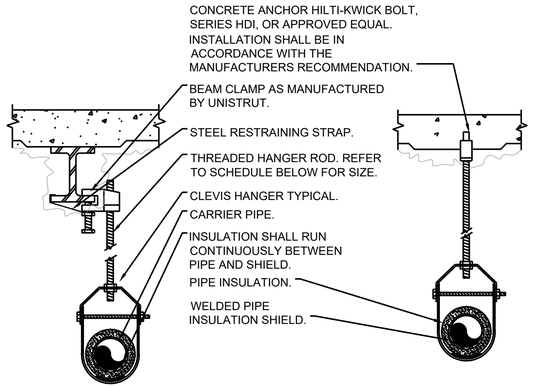
SCALE: NONE



NOTE: SPRINKLERS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 REQUIREMENTS FOR SECTION 8.6.4.1.2 - OBSTRUCTED CONSTRUCTION: UNDER OBSTRUCTED CONSTRUCTION, THE SPRINKLER DEFLECTOR SHALL BE LOCATED IN ACCORDANCE WITH ONE OF THE FOLLOWING ARRANGEMENTS:
1. INSTALLED WITH THE DEFLECTORS WITHIN THE HORIZONTAL PLANES OF 1 IN. TO 6 IN. BELOW THE STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22 IN. BELOW THE CEILING/ROOF DECK
2. INSTALLED WITH THE DEFLECTORS AT OR ABOVE THE BOTTOM OF THE STRUCTURAL MEMBER TO A MAXIMUM OF 22 IN. BELOW THE CEILING/ROOF DECK WHERE THE SPRINKLER IS INSTALLED IN CONFORMANCE WITH 8.6.5.1.2. REFER TO DETAIL #2.
3. INSTALLED IN EACH BAY OF OBSTRUCTED CONSTRUCTION, WITH THE DEFLECTORS LOCATED A MINIMUM OF 1 IN. AND A MAXIMUM OF 12 IN. BELOW THE CEILING

4 OBSTRUCTED CONSTRUCTION DEATIL

SCALE: NONE



PIPE HANGER SCHEDULE					
PIPE DIA.	3/4"-2"	2-1/2"-3"	4"-5"	6"	8"-12"
HANGER DIA.	3/8"	1/2"	5/8"	3/4"	7/8"

NOTES:
1.) CLEVIS HANGERS WITH WELDED INSULATION SHIELDS SIMILAR TO RAUCH FIG. 100SH ON ALL PIPES LARGER THAN 1".
2.) FOR PIPES 1" OR SMALLER, A BAND HANGER WITH INSULATION SHIELD MAY BE USED SIMILAR TO RAUCH FIG. NO. 1ASH.
3.) FOR NON-INSULATED PIPE, INSULATION SHIELDS MAY BE OMITTED.
4.) ALL PIPE HANGERS SHALL BE GALVANIZED STEEL OR FACTORY PAINTED BLACK WITH ENAMEL.
5.) FOR NON FERROUS PIPING WITHOUT INSULATION, ALL HANGERS SHALL BE COPPER PLATED OR FURNISHED WITH A DI-ELECTRIC BETWEEN PIPE AND HANGERS.
6.) WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.

2 PIPE HANGER DETAIL

SCALE: NONE

IN CHARGE OF PATRICK LYNCH, P.E.
CHECKED BY ROBERT SPINA, P.E. / JOSEPH FIERRO, P.E.
MADE BY JOHN TESSER P.E. / GIOVANNI DEL CID, P.E.

STRUCTURAL ENGINEER

CONLON ENGINEERING, LLC
246 FEDERAL ROAD, SUITE B23
BROOKFIELD, CONNECTICUT 06804
203-740-0990

MEP ENGINEER

OLA Consulting Engineers
50 Broadway,
Hawthorne, NY 10532
914.747.2800
8 West 38th Street,
Suite 900
New York, NY 10018
646.849.4110
olace.com

STATE OF NEW YORK · PATRICK F. LYNCH · 069467 · LICENSED PROFESSIONAL ENGINEER

PROJECT NORTH

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED
☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

TERMINAL BUILDING HVAC-1 & HVAC-2 UPGRADES
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON, NORTH CASTLE & VILLAGE OF RYE BROOK

SPRINKLER DETAILS

CONTRACT NUMBER	SHEET NUMBER
23-532-Rev.	SP-701

SHEET NO. 19 OF 19
SCALE: AS SHOWN
DATE: 10/29/24
DPW FILE NO. 48-15-SP-892-0
REV. NO. 0