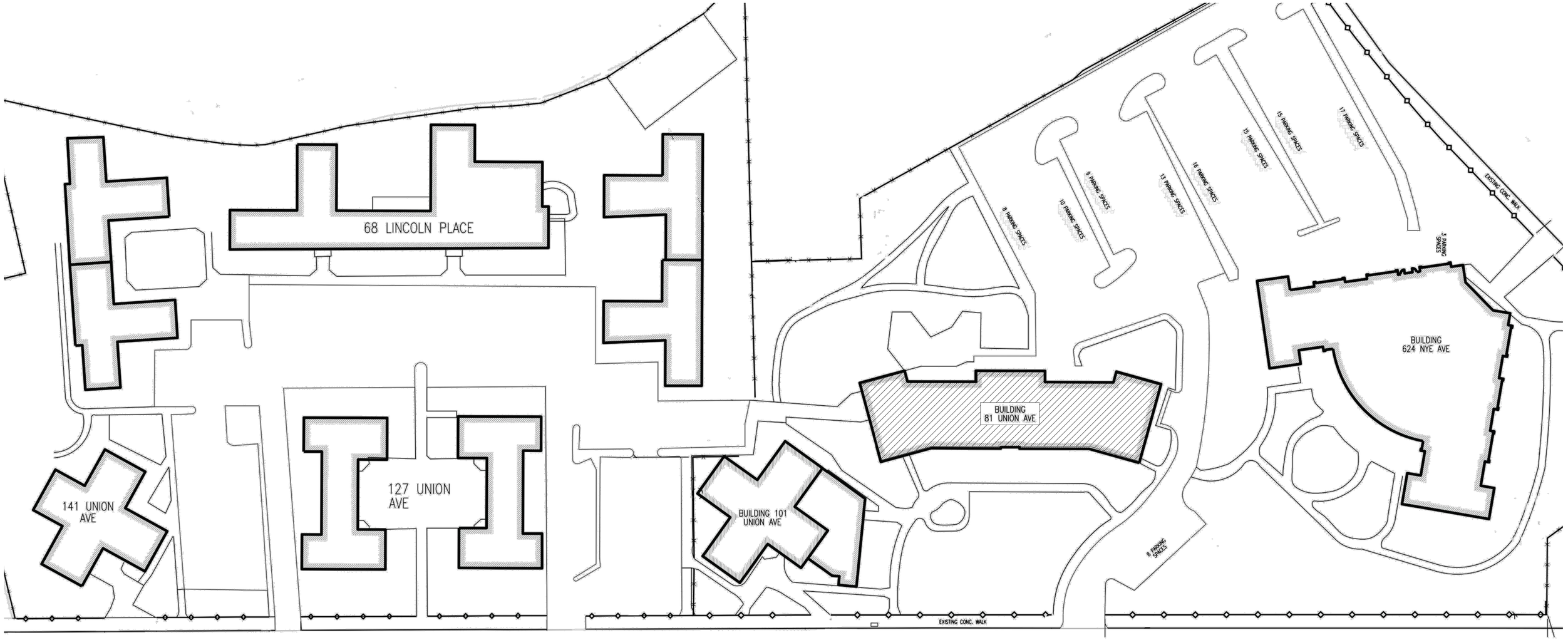


IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES TO 81 UNION AVENUE

#2142.21

81 UNION AVENUE, IRVINGTON, NJ

ISSUED FOR BID/CONSTRUCTION
04/30/2026

CCH PROJECT NUMBER: 2142.21

DRAWING LIST:

CS	COVER SHEET
H1	PARTIAL FLOOR PLANS - HVAC
E1	PARTIAL FLOOR PLANS & DIAGRAM - ELECTRICAL
E2	SINGLE LINE DIAGRAM, FIRE ALARM RISER DIAGRAM & SCHEDULES - ELECTRICAL
E3	SPECIFICATIONS - ELECTRICAL
P1	PARTIAL FLOOR PLAN, SYMBOLS LIST, SCHEDULE, DETAILS AND SPECIFICATION - PLUMBING

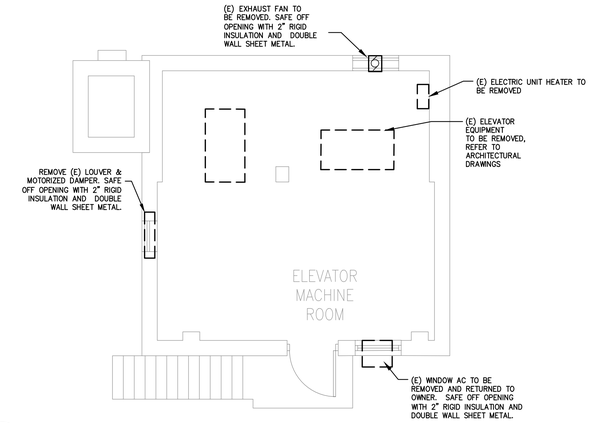
B Squared Engineering, Inc
169 Mill Brook Road
Stamford, CT 06902
VOICE: 609 | 203 | 0388
ELEVATOR CONSULTANT

Kelter & Gilligo
196 Princeton Hightstown Road
Building 1A, Suite 9
West Windsor, NJ 08550
VOICE: 609 | 799 | 8336
ELECTRICAL ENGINEER

Irvington Housing Authority
101-A UNION AVENUE
IRVINGTON, NJ 07111
VOICE: 973 | 375 | 1848
OWNER

Clarke Caton Hintz
Planning
Architecture
Landscape Architecture
Historic Preservation
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8383
fax: (609) 883-4044
www.cchcharchitects.com

Drawings Copyright © 2022 Clarke Caton Hintz, PC



1 / H-1 ELEVATOR MACHINE ROOM PLAN – MECHANICAL DEMOLITION

SCALE 1/4" = 1'-0"

SPLIT AC UNIT SCHEDULE

		AC	CU
MARK No.		AC-1,2	
MANUFACTURER		DAIKIN	
SERVICE		ELEVATOR MACHINE RM	
COOLING TOTAL/SENS. CAPACITY	MBH	24.0/18.0	
HEATING TOTAL CAPACITY	MBH	27.0	
REFRIGERANT TYPE		R410A	
SEER / HSPF		17.6 / 8.4	
INDOOR UNIT:			
MODEL No.		FAA24AAVJU	
V/PH/HZ		208/1/60	
APPROX. WEIGHT	LBS	40	
SIZE (H x W x D)	IN	11-3/8 x 44-1/8 x 9-3/4"	
MIN. CIRCUIT AMPS / MCA	AMPS	0.60 / 15.0	
OUTDOOR UNIT:			
MARK No.		CU-1,2	
MODEL No.		RZA24AAVJU	
V/PH/HZ		208/1/60	
MIN. CIRCUIT AMPS / MOCP	AMPS	19.8 / 20.0	
REFRIG. PIPE LIQUID	IN	3/8	
GAS	IN	5/8	
MAX LENGTH	FT	230	
APPROX. WEIGHT	LBS	240	
SIZE (HxWxD)	IN	34 x 43 x 18	

NOTES:

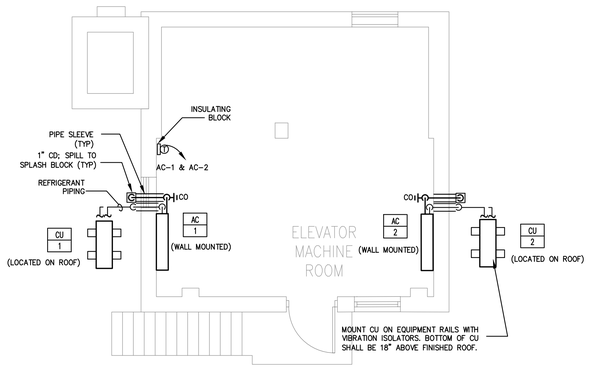
1. PROVIDE FUSED DISCONNECT FOR INDOOR UNIT & WEATHERPROOF FUSED DISCONNECT FOR OUTDOOR UNIT.
2. PROVIDE HARD WIRED WALL MOUNTED CONTROLLER/THERMOSTAT.
3. PROVIDE FIELD INSTALLED WIND BAFFLE KIT FOR LOW AMBIENT COOLING OPERATION TO 0°F.
4. INSTALL POWER & CONTROL WIRING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. INSTALL REFRIGERANT PIPING WITH INSULATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. START-UP AND PERSONNEL TRAINING.
7. PROVIDE EQUIPMENT RAILS WITH VIBRATION ISOLATORS FOR CU.
8. BASIS OF DESIGN IS DAIKIN. APPROVED EQUALS ARE ACCEPTABLE.
9. PROVIDE DRAIN PAN LEVEL SENSOR THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED.
10. PROVIDE BACNET CARD & SEAMLESS INTERFACE W/ EXISTING TRANE TRACER BUILDING MANAGEMENT SYSTEM.

SYMBOLS

- X / X — EQUIPMENT DESIGNATION / ITEM NUMBER
- T — WIRED CONTROLLER WITH TEMPERSURE SENSOR
- PIPE TURNED UP
- PIPE TURNED DOWN
- PIPE TEE BRANCH TURNED DOWN
- CD — CONDENSATE DRAIN PIPING
- P — PITCH PIPE IN DIRECTION OF ARROW

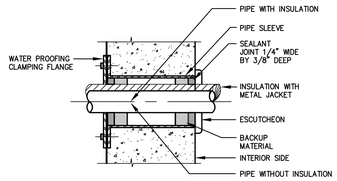
ABBREVIATIONS

AC	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMPS	AMPERES
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
&	AND
CD	CONDENSATE
EXIST./(E)	EXISTING
°F	FAHRENHEIT
FD	FLOOR DRAIN
IN	INCH
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MFR	MANUFACTURER
MIN	MINIMUM
MOCP	MAX OVER CURRENT PROTECTION
(N)	NEW
N/A	NOT APPLICABLE
NK	NECK
NOM	NOMINAL
REF	REFRIGERANT
TEMP	TEMPERATURE
TYP	TYPICAL
V/PH/Hz	VOLTS/PHASE/HERTZ



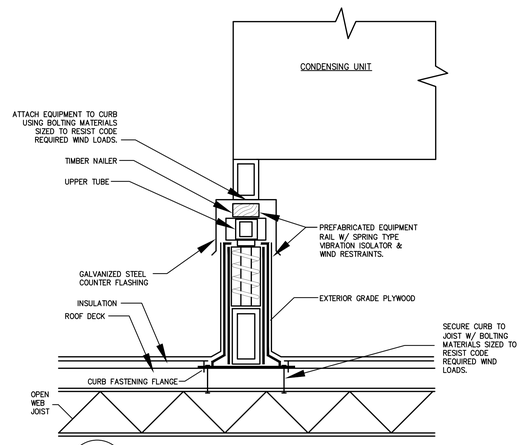
2 / H-1 ELEVATOR MACHINE ROOM PLAN – MECHANICAL

SCALE 1/4" = 1'-0"



3 / H-1 PIPE THRU EXTERIOR WALL DETAIL

NOT TO SCALE

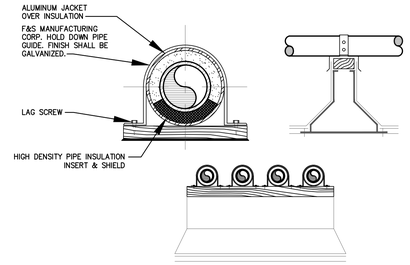


4 / H-1 CONDENSING UNIT RAIL DETAIL

NOT TO SCALE

NOTES:

1. TOP OF CURB SHALL BE MINIMUM OF 18" ABOVE SURFACE OF FINISHED ROOF.
2. CROSS-BRACE EQUIPMENT SUPPORT RAILS W/ 2-1/2" X 2-1/2" X 1/4" GALVANIZED STEEL ANGLES.



5 / H-1 ROOF-TOP PIPE SUPPORT DETAIL

NOT TO SCALE

NOTES:

1. REFER TO ARCHITECTURAL CONSTRUCTION NOTES.
2. ALL WOOD SHALL BE PRESSURE TREATED FIRE RETARDANT.

HVAC SPECIFICATIONS:

1.0 GENERAL

1.1 GENERAL REQUIREMENTS

A. GOVERNING CODES AND STANDARDS:

1. UNIFORM CONSTRUCTION CODE OF NEW JERSEY
2. 2021 INTERNATIONAL BUILDING CODE
3. 2021 INTERNATIONAL MECHANICAL CODE
4. NFPA STANDARDS 90A
5. ALL APPLICABLE ASHRAE STANDARDS
6. ALL APPLICABLE SMACNA STANDARDS
7. 2020 NATIONAL ELECTRICAL CODE
8. UL (ALL EQUIPMENT MUST BE LABELED)
9. NEBB.

B. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS, GOVERNING CODES, APPROVED SHOP DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.

C. SHOP DRAWINGS ARE REQUIRED FOR ALL MATERIALS, METHODS AND EQUIPMENT. PRIOR TO EXECUTION OF CONTRACT WORK, SUBMIT PDF COPY OF SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR REVIEW AND OBTAIN APPROVAL.

D. BEFORE SUBMITTING BIDS, CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND BECOME THOROUGHLY FAMILIAR WITH THE OBSERVABLE EXISTING CONDITIONS AFFECTING THE WORK. NO ADDITIONAL COMPENSATION WILL BE GRANTED ON ACCOUNT OF EXTRA WORK MADE NECESSARY BY THE CONTRACTOR'S FAILURE TO INVESTIGATE EXISTING CONDITIONS.

E. THE CONTRACTOR SHALL VERIFY ACTUAL SITE CONDITIONS PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK, WHETHER OR NOT SHOWN ON THE DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEMS. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

F. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO DOCUMENT THE SCOPE OF ALL MATERIAL AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION AND TESTING OF ALL HVAC SYSTEMS INDICATED HEREIN. THE INSTALLATION FOR ALL SYSTEMS SHALL BE COMPLETE WITH ALL NECESSARY APPURTENANCES AND MINOR AUXILIARIES REQUIRED WHETHER SPECIFICALLY INDICATED OR NOT.

G. ALL DUCT AND PIPING SHALL RISE OR DROP AS REQUIRED TO COORDINATE AND CLEAR ANY AND ALL STRUCTURE, CONDUITS, DUCTWORK AND OTHER PIPING SERVICES.

H. CONTRACTOR SHALL EXAMINE LOCATION WHERE DUCTWORK, PIPING AND INSULATION IS TO BE INSTALLED AND DETERMINE SPACE CONDITIONS AND NOTIFY ENGINEER IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF THE WORK. DO NOT PROCEED WITH THE WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

I. WARRANTY: THE EQUIPMENT SHALL HAVE A MANUFACTURER'S WARRANTY FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER. IF DURING THIS PERIOD, ANY PART SHOULD FAIL TO FUNCTION PROPERLY DUE TO DEFECTS IN WORKMANSHIP OR MATERIAL, IT SHALL BE REPLACED OR REPAIRED AT THE DISCRETION OF THE MANUFACTURER.

J. CONTRACTOR SHALL SUBMIT MARKED UP HVAC DRAWINGS TO ENGINEER TO SHOW "AS-BUILT" CONDITIONS AFTER SATISFACTORY COMPLETION OF PROJECT.

1.2 CUTTING AND PATCHING

A. ALL CUTTING AND PATCHING SHALL BE DONE. FURNISH THE SIZES AND LOCATIONS OF ALL CHASES AND OPENINGS REQUIRED FOR THE INSTALLATION OF THIS WORK TO A/E FOR REVIEW BEFORE THE WALLS AND PARTITIONS ARE BUILT.

B. PROVIDE LABOR AND MATERIALS FOR ALL WORK INCLUDED UNDER THE CONTRACT IN AMPLE TIME AND SUFFICIENT QUANTITIES SO THAT ALL OF THE WORK OF THE CONTRACT MAY BE INSTALLED IN A PROPER SEQUENCE TO AVOID UNNECESSARY CUTTING OF WALLS.

1.3 IDENTIFICATION

A. PROVIDE IDENTIFICATION FOR ALL EQUIPMENT, DUCTWORK AND PIPING.

B. PROVIDE FOR EACH PIECE OF EQUIPMENT A PERMANENTLY ATTACHED NAMEPLATE MADE OF BLACK SURFACE, WHITE CORE LAMINATED BAKELITE WITH INCISED LETTERS. CONTRACTOR FURNISHING EQUIPMENT SHALL PROVIDE NAMEPLATE. NAMEPLATES SHALL BE A MINIMUM OF 3-INCH LONG BY 1/2-INCH WIDE AND SHALL BEAR THE EQUIPMENT NAME AND ITEM NUMBER OF 1/2-INCH HIGH WHITE LETTERS AS DESIGNATED IN THE EQUIPMENT SCHEDULE. MOUNTING SCREWS SHALL HAVE CHROME PLATED ACORN HEADED SCREWS.

2.0 PIPING

2.1 GENERAL

A. PROVIDE AND ERECT IN A WORKMANLIKE MANNER, ACCORDING TO THE BEST PRACTICE OF THE TRADE, ALL PIPING SHOWN ON THE DRAWINGS OR AS REQUIRED TO COMPLETE THE INSTALLATION INTENDED BY THESE SPECIFICATIONS.

B. DISSIMILAR PIPING SHALL BE CONNECTED WITH DIELECTRIC FITTINGS AS MANUFACTURED BY EBCO OR EQUAL.

C. PROVIDE UNIONS AT ALL PIPING CONNECTIONS TO EQUIPMENT TO FACILITATE EASY REMOVAL FOR SERVICING. UNIONS 2-INCH AND SMALLER SHALL BE SCREWED, UNIONS 2-1/2-INCH AND LARGER SHALL BE FLANGED.

D. FURNISH AND INSTALL SLEEVES FOR ALL PIPES PASSING THROUGH INTERIOR WALLS. SLEEVES SHALL BE STEEL PIPE, ASTM A53, TYPE E, GRADE A, SCHEDULE 40, GALVANIZED WITH PLAIN ENDS, LENGTH SHALL BE EQUAL TO WIDTH OF WALL.

E. PIPING SHALL BE TESTED FOR A PERIOD OF NOT LESS THAN FOUR (4) HOURS AT 1-1/2 TIMES THE MAXIMUM ALLOWABLE WORKING PRESSURE OF THE SYSTEM SERVED.

2.2 REFRIGERANT PIPING:

A. REFRIGERANT PIPING SHALL BE ACR GRADE TYPE K ANNEALED OR DRAWN TEMPER COPPER TUBING, DEGREASED AND SEALED.

B. JOINTS IN REFRIGERANT PIPING SHALL BE BRAZED WITH SILVER SOLDER WITH CONTINUOUS N2 PURGE.

C. REFRIGERANT PIPING FITTINGS SHALL BE LONG RADIUS WROUGHT COPPER OR FORGED BRASS.

D. REFRIGERANT PIPING SHALL BE SIZED, INSTALLED, TESTED, EVACUATED & CHARGED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. PROVIDE ALL REQUIRED DEVICES AND ACCESSORIES FOR A COMPLETE SYSTEM.

2.3 CONDENSATE DRAIN PIPING:

A. CONDENSATE DRAIN PIPING SHALL BE DWV COPPER WITH SOLDER FITTINGS MADE WITH 95-5 TIN-ANTIMONY.

B. CONDENSATE DRAIN PIPING SHALL PITCH DOWN A MINIMUM OF 1/8-INCH LINEAR FOOT.

C. CONDENSATE DRAIN PIPING SHALL SPILL TO GRADE OR SUMP AS SHOWN. WHERE INDICATED, PROVIDE CONDENSATE PUMP.

2.4 PIPE HANGERS:

A. PROVIDE NECESSARY STRUCTURAL MEMBERS, HANGERS AND SUPPORTS OF APPROVED DESIGN TO KEEP PIPING IN PROPER ALIGNMENT.

B. PIPE HANGERS SHALL BE OF THE CLEVIS, PIPE ROLL AND PIPE CLAMP TYPES. HANGERS SHALL BE GRINNELL OR APPROVED EQUAL.

C. SUPPORTS AND HANGERS FOR PIPE SHALL BE SECURED TO BUILDING STRUCTURE. NO SUPPORT SHALL BE ATTACHED OR HUNG FROM ANY OTHER PIPE, DUCT OR BUILDING SERVICE.

D. FOR INSULATED PIPE, PIPE HANGERS SHALL BE SIZED FOR THE OUTSIDE DIAMETER OF THE INSULATION. PIPE HANGERS SHALL PEARCE PIPE INSULATION. PROVIDE INSULATION SHIELDS TO PROTECT INSULATION FROM PIPE HANGER.

E. SUPPORT ALL HORIZONTAL PIPING 1-1/4-INCH AND SMALLER AT NOT MORE THAN 6 FEET ON CENTERS. ALL HORIZONTAL PIPING 1-1/2-INCH AND LARGER SHALL BE SUPPORTED AT NOT MORE THAN 10 FEET ON CENTERS, EXCEPT THAT COPPER TUBING SHALL SUPPORTED AT NOT BE MORE THAN 8 FEET ON CENTERS.

F. PROVIDE HANGER RODS OF SUITABLE LENGTH AND DIAMETER TO ADEQUATELY SUPPORT PIPING.

3.0 INSULATION FOR PIPING

3.1 DESCRIPTION OF WORK

A. THE WORK INCLUDES FURNISHING AND INSTALLATION OF ALL LABOR, MATERIALS, EQUIPMENT, ACCESSORIES AND SERVICES NECESSARY FOR THE PROVISION OF INSULATION FOR PIPING.

3.2 QUALITY ASSURANCE

A. ALL INSULATION SHALL HAVE COMPOSITE (INCLUDING INSULATION JACKET OR FACING AND ADHESIVE) FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, NFPA 255 AND UL 723 NOT EXCEEDING:

1. FLAME SPREAD	25
2. SMOKE DEVELOPED	50
3. FUEL CONTRIBUTED	50

B. ACCESSORIES SUCH AS ADHESIVES, CEMENTS AND TAPES FOR FITTINGS SHALL HAVE COMPONENT RATINGS AS LISTED ABOVE. ALL PRODUCTS SHALL BEAR UL LABELS INDICATING THE ABOVE ARE NOT EXCEEDED.

C. PROVIDE CERTIFICATIONS OR OTHER DATA AS NECESSARY TO SHOW COMPLIANCE WITH THESE SPECIFICATIONS AND GOVERNING REGULATIONS. INCLUDE PROOF OF COMPLIANCE FOR TEST OF PRODUCTS FOR FIRE RATING, CORROSIVENESS AND COMPRESSIVE STRENGTH.

3.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. DELIVER INSULATION, CEMENTS AND ADHESIVES TO THE SITE IN FACTORY-FABRICATED CONTAINERS WITH THE MANUFACTURER'S STAMP OR LABEL AFFIXED, SHOWING FIRE HAZARD RATINGS OF THE PRODUCT TO BE USED.

B. PROTECT INSULATION AGAINST DIRT, WATER, CHEMICAL AND MECHANICAL DAMAGE. DO NOT INSTALL DAMAGED INSULATION. REMOVE ALL DAMAGED INSULATION FROM PROJECT SITE.

C. STORE INSULATION IN ORIGINAL WRAPPINGS AND PROTECT FROM WEATHER AND CONSTRUCTION TRAFFIC.

3.4 REFRIGERANT PIPING INSULATION

A. INSULATION FOR REFRIGERANT PIPING SHALL BE FLEXIBLE CLOSED CELL BLACK FOAM ELASTOMERIC TYPE WITH A MAXIMUM K FACTOR OF 0.27 AT 75 DEG F MEAN TEMPERATURE.

B. REFRIGERANT PIPE INSULATION SHALL BE ARMACELL LLC OR APPROVED EQUAL.

C. REFRIGERANT PIPING SHALL BE INSULATED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

HOT GAS/SUCTION PIPING: 3/4-INCH THICK

LIQUID LINE PIPING: 3/4-INCH THICK

3.5 CONDENSATE DRAIN PIPING INSULATION

A. INSULATION FOR CONDENSATE DRAIN PIPING SHALL BE PREFORMED FIBERGLASS PIPE INSULATION WITH A MAXIMUM K FACTOR OF 0.23 AT 75 DEG F MEAN TEMPERATURE AND FACTORY-APPLIED ALL SERVICE VAPOR BARRIER JACKET. INSULATION DENSITY SHALL BE NOT LESS THAN 3 LBS. PER CUBIC FOOT.

B. CONDENSATE DRAIN PIPE INSULATION SHALL BE OWENS-CORNING SSL II OR MANVILLE MICRO-LOK.

C. CONDENSATE DRAIN PIPING INSULATION SHALL BE 1/2-INCH THICK.

3.6 PVC PIPE INSULATION COVERS

A. ALL INDOOR EXPOSED INSULATED PIPE SHALL BE FINISHED WITH PROTECTIVE PVC PIPE INSULATION COVERS.

3.7 ALUMINUM PIPE INSULATION COVERS

A. ALL OUTDOOR INSULATED PIPE SHALL BE COVERED WITH PROTECTIVE CORRUGATED ALUMINUM JACKET.

3.8 PIPE INSULATION INSTALLATION

A. INSTALL PIPE INSULATION IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT INSULATION COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. COORDINATE WITH OTHER WORK AS NECESSARY TO INTERFACE INSTALLATION OF INSULATION WITH OTHER COMPONENTS OF SYSTEMS.

C. PIPE SHALL BE BLOWN OUT, CLEANED AND PRESSURE TESTED PRIOR TO THE APPLICATION OF ANY COVERING.

D. CEMENTS AND ADHESIVES SHALL BE APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTION, INCLUDING RECOMMENDED COVERAGES. CEMENT AND ADHESIVES SHALL NOT BE APPLIED WHEN THE AMBIENT TEMPERATURE IS BELOW 40 DEGREES F OR SURFACES ARE WET.

E. ALL JOINTS IN PIPE INSULATION SHALL BE TAPED NEATLY AND SECURELY. ALL EDGES IN PIPE INSULATION SHALL BE FINISHED NEATLY AND PROTECTED PVC COVER.

F. PIPE INSULATION SHALL BE CONTINUOUS THROUGH NON-FIRE RATED CEILING OPENINGS AND SLEEVES PASSING THROUGH NON-FIRE RATED WALLS OR FLOORS. WHERE PIPES TO BE INSULATED PASSES THROUGH A FIRE-RATED WALL OR FLOOR ASSEMBLY, DISCONTINUE INSULATION AND USE MINERAL WOOL OR THERMOFIBER PACKING IN LIEU OF SPECIFIED PIPE INSULATION MATERIAL.

4.0 AUTOMATIC TEMPERATURE CONTROLS

A. PROVIDE CONTROL DEVICES AS INDICATED ON THE DRAWINGS.

B. PROVIDE ALL REQUIRED DEVICES, CONTROL WIRING, INTERLOCK WIRING, TRANSFORMERS, ETC., FOR A COMPLETE SYSTEM.

C. PROVIDE ALL WORK FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM TO OPERATE IN ACCORDANCE WITH THE SEQUENCES OF OPERATION OR AS INTENDED.

D. EACH SYSTEM, DEVICE AND COMPONENT SHALL BE OPERATED AND FULLY TESTED TO ASSURE PROPER OPERATION AT COMPLETION OF WORK BEFORE BEING TURNED OVER TO OWNER.

April 28, 2026 3:27:33 pm
Drawing: 3250 - H1.dwg

KELTER & GILLIGO
consulting engineers
P.O. BOX 777, 196 PRINCETON-HIGHTSTOWN RD.
PRINCETON JUNCTION NEW JERSEY 08550

Frank Tindall, P.E.
Professional Engineer
NJ 38656

Clarke Caton Hintz
Architecture
Planning
Landscape Architecture
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8383
fax: (609) 883-4044
www.clarkecatonhintz.com

Drawings Copyright ©2023 Clarke Caton Hintz, PC

OWNER:
IRVINGTON HOUSING AUTHORITY
141 Union Avenue
Irvington, NJ 07111
(973) 375-1848

MEP:
KELTER & GILLIGO
196 Princeton Hightstown Road
Building 1A, Suite 9
West Windsor, NJ 08550
(609) 799-8336

ELEVATOR ENGINEER:
B SQUARED ENGINEERING, LLC
169 Mill Brook Road
Stamford, CT 06902
(609) 203-0388

SUBMISSIONS

NO.	DATE	DESCRIPTION
1	4/30/26	ISSUED FOR BID

REVISIONS

PROFESSIONAL ENGINEER
NJ LICENSE NO 38656
FRANK TINDALL, P.E.
DATE:

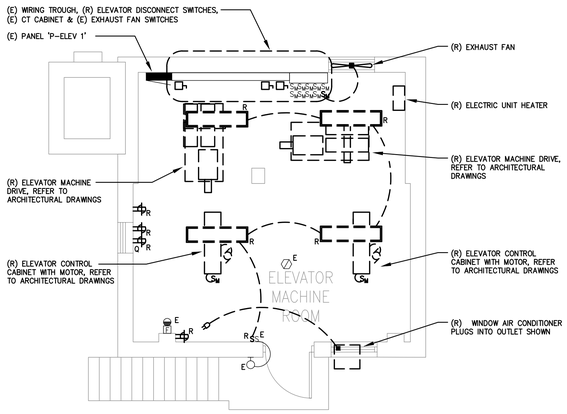
IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES
81 UNION AVE
IRVINGTON, NJ 07111

DATE:	04.28.26
SCALE:	AS NOTED
DRAWN BY:	MP
CHECKED BY:	FT

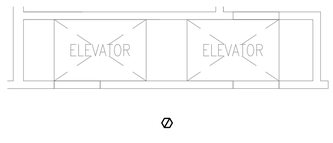
SHEET TITLE:
PARTIAL FLOOR PLANS - HVAC

DRAWING NO.:
H1

CCH PROJECT NO: 2142.21



1 / E-1 ELEVATOR MACHINE ROOM PLAN – ELECTRICAL DEMOLITION
SCALE 1/4" = 1'-0"



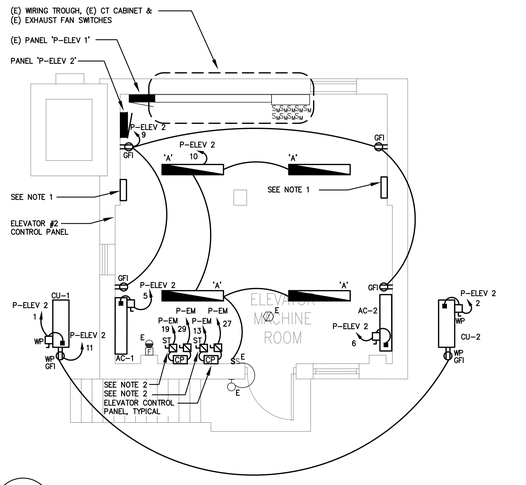
5 / E-1 TYPICAL ELEVATOR LOBBY – ELECTRICAL
SCALE 1/4" = 1'-0"

DEMOLITION NOTES:

1. THESE DEMOLITION PLANS ARE INTENDED TO BE USED AS A GUIDE TO THE CONTRACTOR. ALL DEMOLITION WORK REQUIRED, OR NECESSARY FOR THE INSTALLATION OF NEW WORK OR THE REMOVAL OF EXISTING EQUIPMENT, IS HEREBY INCLUDED, WHETHER SHOWN ON THESE PLANS OR NOT. REFER TO DRAWINGS OF ALL TRADES FOR ADDITIONAL WORK, AND COORDINATE IN THE FIELD.
2. THE CONTRACTOR SHALL VERIFY ACTUAL SITE CONDITIONS PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEMS. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
3. THIS CONTRACTOR SHALL REMOVE ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES AS INDICATED ON THE DEMOLITION PLANS, OR THAT ARE NO LONGER NEEDED BY THE OWNER. ALL EXISTING WIRING AND CONDUIT WHERE NO LONGER REQUIRED SHALL BE REMOVED BACK TO EXISTING PANEL. ALL EXISTING DISCONNECTED CIRCUITS NOT BEING REUSED SHALL BE TURNED OFF AND LABELED "SPARE". WHERE CONDUITS ARE INACCESSIBLE, REMOVE WIRE AND ABANDON CONDUITS.
4. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY POWER IS BEING PROVIDED TO ALL EXISTING EQUIPMENT REQUIRED TO REMAIN IN SERVICE. RECONNECT ALL DISTURBED FACILITIES WHICH ARE EXISTING TO REMAIN AND PLACE THEM IN OPERATIONAL CONDITION.
5. REMOVE ABANDONED OUTLET BOXES, SURFACE METAL RACEWAY AND CONDUIT THAT WOULD BE EXPOSED, AND REPAIR DISTURBED SURFACES TO MATCH ADJACENT AREAS.
6. MAJOR PIECES OF EQUIPMENT ARE TO BE TURNED OVER TO THE OWNER FOR HIS USE, OR AT THE OWNER'S DISCRETION, REMOVED FROM THE SITE AND DISPOSED OF, IF NO LONGER REQUIRED.
7. PATCH ALL WALLS TIGHT AT REMOVALS. MAINTAIN FIRE RATINGS AS REQUIRED.
8. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXTENT OF WALL FINISHES AND CEILINGS TO BE REPLACED. ALL EXISTING DEVICES TO REMAIN SHALL BE TEMPORARILY DISCONNECTED AND REINSTALLED. WHERE TEMPORARY REMOVAL IS NOT POSSIBLE, THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF EXISTING EQUIPMENT IN PLACE.
9. THE EXISTING FIRE ALARM SYSTEM SHALL BE MAINTAINED THROUGHOUT DEMOLITION AND CONSTRUCTION. PROVIDE TEMPORARY SUPPORT OF EXISTING DEVICES AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE FIRE MARSHAL UPON ANY MODIFICATIONS TO OR ANY NECESSARY INTERRUPTION IN SYSTEM OPERATION. NOTE THAT COVERING DEVICES DURING CONSTRUCTION IS AN INTERRUPTION TO COVERAGE.

SYMBOL LIST & ABBREVIATIONS

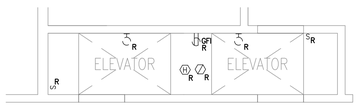
	LIGHT FIXTURE, REFER TO LIGHTING FIXTURE SCHEDULE
	LIGHT FIXTURE ON EMERGENCY CIRCUIT (OR) WITH EMERGENCY BATTERY BACKUP
S	SINGLE POLE SWITCH
S_3	THREE-WAY SWITCH
S_M	MANUAL MOTOR STARTER
ST	FUSED DISCONNECT SWITCH ST – INDICATES SHUNT TRIP DEVICE
	UNFUSED DISCONNECT SWITCH
GFI WP Q	DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, U-GROUND SLOT, COMMERCIAL GRADE, COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN. GFI – INDICATES GROUND FAULT INTERRUPTION WP – INDICATES WEATHERPROOF IN-USE COVER Q – INDICATES DOUBLE DUPLEX (QUAD) RECEPTACLE
	208/120V PANELBOARD
	MOTOR
M	FIRE ALARM, HEAT DETECTOR FIXED TEMPERATURE AND RATE-OF-RISE
	FIRE ALARM, SMOKE DETECTOR PHOTOELECTRIC
F	FIRE ALARM, AUDIO/VISUAL (SPEAKER/STROBE) DEVICE
	WIRE & CONDUIT, CONCEALED IN CEILING OR WALL
	HOMERUN TO PANEL, NUMERAL INDICATES CIRCUIT NUMBER
	CONNECTION TO EQUIPMENT
E	EXISTING
R	EXISTING TO BE REMOVED
WP	WEATHERPROOF



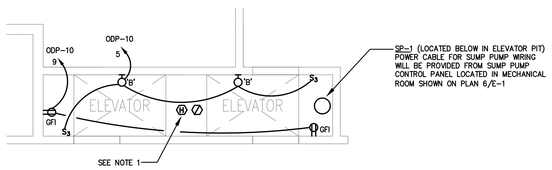
2 / E-1 ELEVATOR MACHINE ROOM PLAN – ELECTRICAL
SCALE 1/4" = 1'-0"

NOTES:

1. ELEVATOR FIRE ALARM MODULE WIRE TO FACP, INCLUDE "FIRE HAT", "ELEV. SHUTDOWN", "ALT FLOOR ELEV. RECALL" & "MAIN FLOOR ELEV. RECALL".
2. ELEVATOR DISCONNECT SWITCH WITH CURRENT-LIMITING, TIME DELAY FUSES AND SHUNT TRIP DEVICE. ELECTRICAL CONTRACTOR SHALL PROVIDE AUXILIARY DRY CONTACTS AS REQUIRED BY ELEVATOR COMPANY. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE FAULT CURRENT STUDY, AS REQUIRED BY THE ELEVATOR MANUFACTURE, TO ENSURE THE FAULT CURRENT AVAILABLE AT ELEVATOR EQUIPMENT AT THE LOAD SIDE OF THE FUSED DISCONNECT (SUCH AS ELEVATOR CONTROLLER, MOTOR, ETC.) DOESN'T EXCEED THE SCCR RATING OF THE EQUIPMENT.



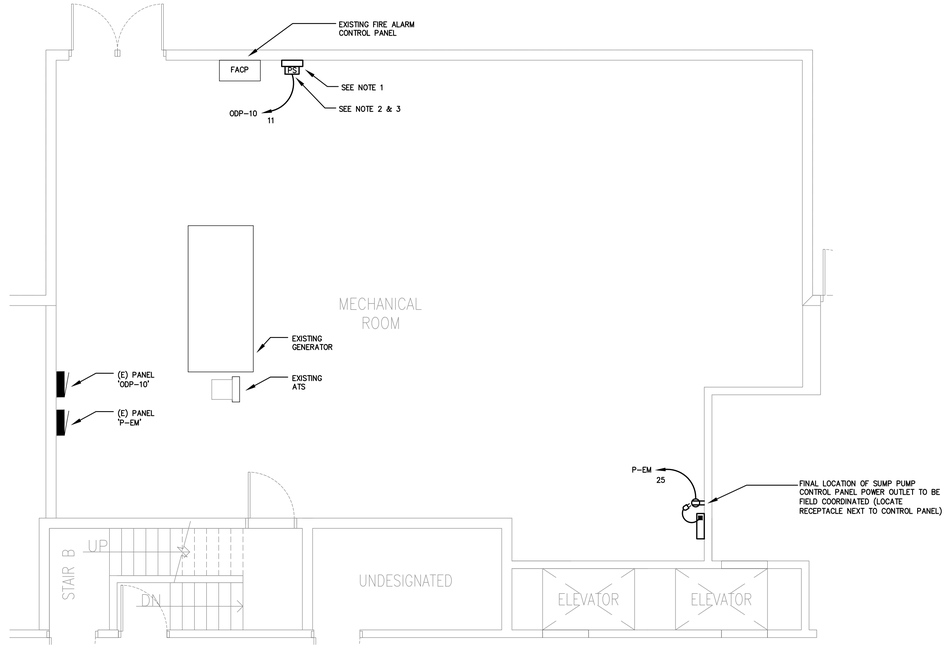
3 / E-1 ELEVATOR PIT PLAN – ELECTRICAL DEMOLITION
SCALE 1/4" = 1'-0"



4 / E-1 ELEVATOR PIT PLAN – ELECTRICAL
SCALE 1/4" = 1'-0"

NOTE:

1. HEAT DETECTOR THAT HAS LOWER TEMPERATURE RATING AND HIGHER SENSITIVITY AS COMPARED TO THE SPRINKLER HEAD, WITHIN 2 FEET OF SPRINKLER HEAD.



6 / E-1 MECHANICAL ROOM PLAN – ELECTRICAL
SCALE 1/4" = 1'-0"

NOTES:

1. TYPICAL FIRE ALARM MONITOR MODULES, WIRE TO FACP, SUPERVISING THE POWER & COMMUNICATION FAILURES OF TWO-WAY COMMUNICATION POWER SUPPLY, BASE STATION AND ALL CALL BOXES.
2. TWO-WAY COMMUNICATION SYSTEM POWER SUPPLY.
3. PER NFPA72, ARTICLE 10.6.7.3.1 PROVIDE APPROVED BACK-UP BATTERY AS SECONDARY POWER SOURCE.

Clarke Caton Hintz
Architecture
Planning
Landscape Architecture
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8383
fax: (609) 883-4044
www.clarkecatonhintz.com

Drawings Copyright © 2023 Clarke Caton Hintz, PC

OWNER:
IRVINGTON HOUSING AUTHORITY
141 Union Avenue
Irvington, NJ 07111
(973) 375-1848

MEP:
KELTER & GILLIGO
196 Princeton Hightstown Road
Building 1A, Suite 9
West Windsor, NJ 08550
(609) 799-8336

ELEVATOR ENGINEER:
B SQUARED ENGINEERING, LLC
169 Mill Brook Road
Stamford, CT 06902
(609) 203-0388

SUBMISSIONS		
NO.	DATE	DESCRIPTION
1	4/30/26	ISSUED FOR BID

REVISIONS

PROFESSIONAL ENGINEER
NJ LICENSE NO 38656
FRANK TINDALL, P.E.
DATE:

IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES
81 UNION AVE
IRVINGTON, NJ 07111

DATE:	04.28.26
SCALE:	AS NOTED
DRAWN BY:	HY
CHECKED BY:	FT

SHEET TITLE:
PARTIAL FLOOR PLANS & DIAGRAM - ELECTRICAL

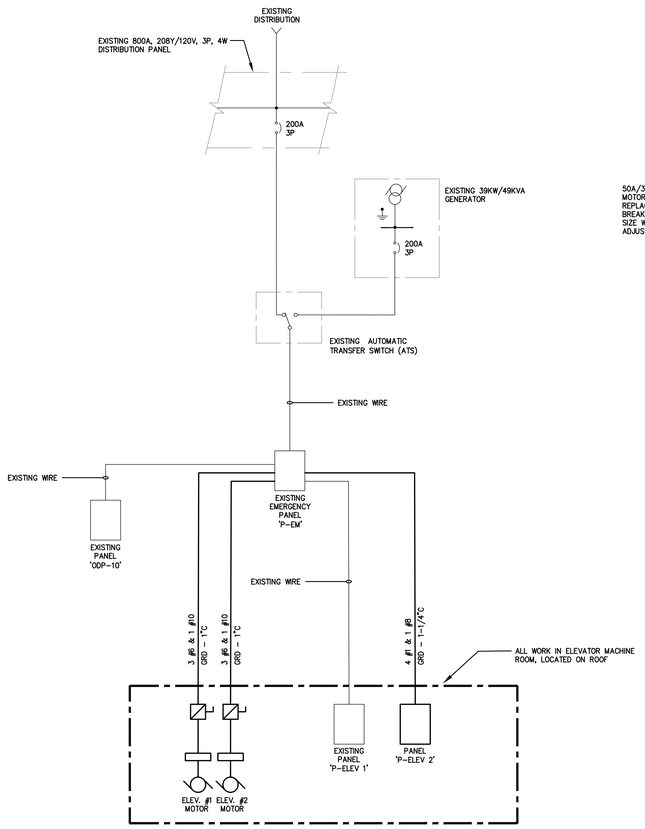
April 28, 2026 3:28:43 pm
Drawing: 3250 – E1.dwg

DRAWING NO.:
E1

CCH PROJECT NO: 2142.21

KELTER & GILLIGO
consulting engineers
P.O. BOX 777, 196 PRINCETON-HIGHTSTOWN RD.
PRINCETON JUNCTION NEW JERSEY 08550

Frank Tindall, P.E.
Professional Engineer
NJ 38656



1 E-2 SINGLE LINE DIAGRAM
SCHEMATIC

50A/3P CIRCUIT BARKER & 8.5 HP MOTOR BASED UPON ELEVATOR REPLACED AT 624 NYE, VERIFY BREAKER, WIRE FEEDER SIZE AND HP SIZE WITH ELEVATOR VENDOR AND ADJUST ACCORDINGLY.

EXISTING EMERGENCY PANELBOARD 'P-EM'

208Y/120V, 3ø, 4W, S/N, SURFACE, 225A MAIN LUG ONLY, EXISTING KAIC

CKT#	DESCRIPTION	LOAD KVA	CIR. BREAKER AMP	CIR. BREAKER POLES	WIRE & CONDUIT	#A #B #C	WIRE & CONDUIT	CIR. BREAKER POLES	CIR. BREAKER AMP	LOAD KVA	DESCRIPTION	CKT#
1	(E) CIRCUIT TO REMAIN	–	90	3	EXISTING		EXISTING	3	100	–	(E) BOILER RM PNL	2
3												4
5												6
7	(E) PANEL 'ODP 10'	–	70	3	EXISTING		EXISTING	1	15	–	(E) CIRCUIT TO REMAIN	8
9							EXISTING	1	20	–	(E) OFFICE OUTLETS	10
11							EXISTING	1	20	–	(E) OFFICE OUTLETS	12
13	ELEV. #1	9.0	50	3	REFER TO SINGLE LINE DIAGRAM 1/E-2		EXISTING	2	50	–	(E) AC	14
15												16
17							EXISTING	1	20	–	(E) CIRCUIT TO REMAIN	18
19	ELEV. #2	9.0	50	3	REFER TO SINGLE LINE DIAGRAM 1/E-2		EXISTING	1	20	–	(E) CIRCUIT TO REMAIN	20
21							REFER TO SINGLE LINE DIAGRAM 1/E-2	3	100	9.70	PANEL 'P-ELEV 2'	22
23												24
25	ELEV. SUMP PUMP	1.13	20	1	2 #12 & 1 #12 GRD-3/4"C							26
27	ELEV. #1 CAR POWER	0.4	20	1	2 #12 & 1 #12 GRD-3/4"C		EXISTING	2	20	–	(E) CIRCUIT TO REMAIN	28
29	ELEV. #2 CAR POWER	0.4	20	1	2 #12 & 1 #12 GRD-3/4"C							30
	SUB TOTAL KVA	19.93								9.70	SUB TOTAL KVA	
		–	TOTAL CONNECTED LOAD									

NOTES:
1. (E) DENOTES EXISTING BRANCH CIRCUIT OR SPARE TO REMAIN, NO WORK PERFORMED. BRANCH CIRCUITS THAT ARE NOT DENOTED ARE NEWLY INSTALLED.
2. ALL NEWLY INSTALLED BREAKERS IN THE EXISTING PANEL SHALL MATCH THE EXISTING BREAKER TYPE AND AIC RATING.

EXISTING PANELBOARD 'ODP-10'

208Y/120V, 3ø, 4W, S/N, SURFACE, 70A MAIN CIRCUIT BREAKER, EXISTING KAIC

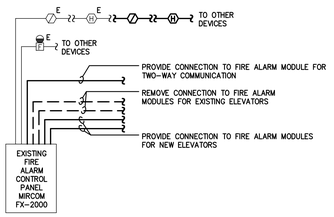
CKT#	DESCRIPTION	LOAD KVA	CIR. BREAKER AMP	CIR. BREAKER POLES	WIRE & CONDUIT	#A #B #C	WIRE & CONDUIT	CIR. BREAKER POLES	CIR. BREAKER AMP	LOAD KVA	DESCRIPTION	CKT#
1	(E) CIRCUIT TO REMAIN	–	20	1	EXISTING		EXISTING	1	15	–	(E) FACP	2
3	(E) CIRCUIT TO REMAIN	–	20	1	EXISTING		EXISTING	1	15	–	(E) CIRCUIT TO REMAIN	4
5	ELEVATOR PIT LGT	0.1	20	1	2 #12 & 1 #12 GRD – 3/4"C		EXISTING	1	15	–	(E) CIRCUIT TO REMAIN	6
7	(E) BOILER ROOM LIGHTS	–	20	1	EXISTING		EXISTING	1	15	–	(E) CIRCUIT TO REMAIN	8
9	ELEVATOR PIT OUTLETS	0.36	20	1	2 #12 & 1 #12 GRD – 3/4"C		EXISTING	1	20	–	(E) OFFICE OUTLETS	10
11	EM COMM. CIRCUIT (NOTE 1)	0.3	20	1	2 #12 & 1 #12 GRD – 3/4"C		–	1	–	–	(E) SPACE	12
	SUB TOTAL KVA	0.76								–	SUB TOTAL KVA	
		–	TOTAL CONNECTED LOAD									

NOTES:
1. INSTALL AN APPROVED BREAKER LOCKING DEVICE AND MARK THE CIRCUIT BREAKER IN RED.
2. (E) DENOTES EXISTING BRANCH CIRCUIT OR SPARE TO REMAIN, NO WORK PERFORMED. BRANCH CIRCUITS THAT ARE NOT DENOTED ARE NEWLY INSTALLED.
3. ALL NEWLY INSTALLED BREAKERS IN THE EXISTING PANEL SHALL MATCH THE EXISTING BREAKER TYPE AND AIC RATING.

PANELBOARD 'P-ELEV 2'

208Y/120V, 3ø, 4W, S/N, SURFACE, 100A MAIN LUG ONLY, 42 KAIC

CKT#	DESCRIPTION	LOAD KVA	CIR. BREAKER AMP	CIR. BREAKER POLES	WIRE & CONDUIT	#A #B #C	WIRE & CONDUIT	CIR. BREAKER POLES	CIR. BREAKER AMP	LOAD KVA	DESCRIPTION	CKT#
1	A/C OUTDOOR CU-1	4.12	20	2	2 #12 & 1 #12 GRD – 3/4"C		2 #12 & 1 #12 GRD – 3/4"C	2	20	4.12	A/C OUTDOOR CU-2	2
3												4
5	A/C INDOOR UNIT AC-1	0.13	15	2	2 #12 & 1 #12 GRD – 3/4"C		2 #12 & 1 #12 GRD – 3/4"C	2	15	0.13	A/C INDOOR UNIT AC-2	6
7												8
9	REC – ELEV RM	0.72	20	1	2 #12 & 1 #12 GRD – 3/4"C		2 #12 & 1 #12 GRD – 3/4"C	1	15	0.12	LGT – ELEV RM	10
11	REC – ROOF	0.36	20	1	2 #12 & 1 #12 GRD – 3/4"C		–	1	–	–	SPACE	12
13	SPARE	–	20	1	–		–	1	–	–	SPACE	14
15	SPARE	–	20	1	–		–	1	–	–	SPACE	16
17	SPACE	–	–	1	–		–	1	–	–	SPACE	18
19	SPACE	–	–	1	–		–	1	–	–	SPACE	20
21	SPACE	–	–	1	–		–	1	–	–	SPACE	22
23	SPACE	–	–	1	–		–	1	–	–	SPACE	24
	SUB TOTAL KVA	5.33								4.37	SUB TOTAL KVA	
		9.70	TOTAL CONNECTED LOAD									



2 E-2 FIRE ALARM SYSTEM RISER DIAGRAM
SCHEMATIC

LIGHTING FIXTURE SCHEDULE

ID	LAMPS	MANUF.	CAT. NO.	MOUNTING	DESCRIPTION
A	30W LED 4000 LUMEN SPX 40	METALUX (OR APPROVED EQUAL)	4VT2-LD5-4-DR-UNV-EL10W	SURFACE	8"x4' LED INDUSTRIAL FIXTURE, SEALED AND GASKETED VAPORTITE, FIBERGLASS HOUSING, UNIVERSAL 120-277V INPUT, 10W EMERGENCY BATTERY PACK
B	17W LED 900 LUMENS	SAYLITE (OR APPROVED EQUAL)	VPW-17W-900L-MV-50K-SN	SURFACE	VAPOR PROOF FIXTURE, UL LISTED FOR WET LOCATIONS, RIGHT ANDGLE/BOX, CLEAR GLOBE, CAST GUARD, UNIVERSAL 120-277V INPUT

NOTE:
1. COORDINATE WITH ELEVATOR VENDOR TO PROVIDE AN ADEQUATE QUANTITY AND PROPER LOCATIONS OF FIXTURES IN ELEVATOR PIT TO MEET REQUIREMENTS OF ASME 17.1.2.2.25.

FIRE ALARM SYSTEM NOTES:

1. PROVIDE ALL WIRING AS RECOMMENDED BY MANUFACTURER. ALL WIRING SHALL MATCH EXISTING.
2. CONTRACTOR IS RESPONSIBLE FOR INSURING THAT FIRE ALARM SYSTEM MODIFICATIONS MEET ALL APPLICABLE CODES AND FOR OBTAINING FINAL APPROVAL FROM LOCAL FIRE INSPECTOR(S).
3. PRIOR TO STARTING WORK, PREPARE SHOP DRAWINGS INCLUDING ALL INFORMATION REQUIRED UNDER IBC-2021, SECTION 907.1.2. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL. ONCE APPROVED, SUBMIT SHOP DRAWINGS TO CODE REVIEWER/INSPECTOR(S) FOR APPROVAL. SHOP DRAWINGS TO BE SIGNED & SEALED BY A NEW JERSEY PROFESSIONAL ENGINEER.
4. EXPAND EXISTING FIRE ALARM SYSTEM AS REQUIRED TO CONNECT NEW DEVICES. PROVIDE ALL NEW HARDWARE, RELAYS, MODULES, WIRING, BATTERIES, ETC., AS NECESSARY FOR COMPLETE INSTALLATION.
5. PROVIDE ALL PROGRAMMING BY A FACTORY CERTIFIED VENDOR AS REQUIRED TO MAKE THE NECESSARY MODIFICATION TO THE SYSTEM. INCLUDE ANY HARDWARE, WIRING, AND COMPONENTS NECESSARY FOR CONTINUED REUSE.
6. UPON COMPLETION OF FIRE ALARM WORK, PROVIDE A RE-ACCEPTANCE TEST OF THE ENTIRE SYSTEM PER NFPA 72.

Clarke Caton Hintz
Architecture
Planning
Landscape Architecture
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8585
fax: (609) 883-4044
www.clarkecatonhintz.com

Drawings Copyright © 2023 Clarke Caton Hintz, PC

OWNER:
IRVINGTON HOUSING AUTHORITY
141 Union Avenue
Irvington, NJ 07111
(973) 375-1848

MEP:
KELTER & GILLIGO
196 Princeton Hightstown Road
Building 1A, Suite 9
West Windsor, NJ 08550
(609) 799-8336

ELEVATOR ENGINEER:
B SQUARED ENGINEERING, LLC
169 Mill Brook Road
Stamford, CT 06902
(609) 203-0388

SUBMISSIONS

NO.	DATE	DESCRIPTION
1	4/30/26	ISSUED FOR BID

REVISIONS

PROFESSIONAL ENGINEER
NJ LICENSE NO. 38656
FRANK TINDALL, P.E.
DATE:

IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES
81 UNION AVE
IRVINGTON, NJ 07111

DATE:	04.28.26
SCALE:	AS NOTED
DRAWN BY:	HY
CHECKED BY:	FT

SHEET TITLE:
SINGLE LINE DIAGRAM, FIRE ALARM RISER DIAGRAM & SCHEDULES - ELECTRICAL

DRAWING NO.:
E2

CCH PROJECT NO: 2142.21

April 28, 2026 - 3:28:43 pm
Drawing: 3250 - E1.dwg

KELTER & GILLIGO
consulting engineers
P.O. BOX 777, 196 PRINCETON-HIGHTSTOWN RD.
PRINCETON JUNCTION NEW JERSEY 08550
Frank Tindall, P.E.
Professional Engineer
NJ 38656

GENERAL REQUIREMENTS

This Section is coordinate with and complementary to the General Conditions and Special Requirements.

Drawings are diagrammatic. Sizes and locations of equipment are shown to scale where possible, but may be distorted for clarity on the Drawings. Final locations shall be as required or directed.

Light and power and system riser diagrams and schematic diagrams generally indicate equipment and connections to be used for various systems. System conduit and wiring shall be as required. Provide all work shown on diagrams whether or not it is duplicated on the plans.

SCOPE OF WORK

In general the work includes, but is not limited to the following:

1. Raceways and installation components.
2. Elevator Installation
3. Wire and Cable.
4. Panelboard and Modifications
5. Fuses.
6. Safety and disconnect switches.
7. Manual motor starters.
8. Grounding.
9. Lighting fixtures.
10. Telephone data and communication conduit systems.
11. Electrical provisions for fire and life safety.
12. Fire alarm system (modifications).
13. Testing.
14. Seismic restraints.
15. Furnishing of access doors.
16. Furnishing and setting of all sleeves through the floors, roof, and walls where required, including waterproofing, and fireproof sealing, and cap flashing.
17. Cutting, drilling and boring associated with electrical work.
18. Prime painting, where required for electrical equipment and installation.
19. Final connection of all equipment unless otherwise noted.

QUALITY ASSURANCE AND STANDARDS

The complete installation shall be in accordance with NJUCC (The State Building Code).

Contractor to be responsible for securing all necessary permits and obtaining all necessary approvals. He shall complete all necessary forms and pay all necessary fees.

SUBMITTALS

The Contractor shall submit shop drawings for all systems and components with such promptness as to cause no delay in his own work or that of another contractor.

EXAMINATION OF EXISTING CONDITIONS ON PREMISES

Before submitting his bid, this Contractor shall visit the site of the work and shall thoroughly familiarize himself with the existing conditions affecting the work. By the act of submitting a bid, the Contractor shall be deemed to have made such an examination, to have accepted such conditions, and to have made allowance therefore in preparing his bid. No additional compensation will be granted on account of extra work made necessary by the Contractor's failure to investigate such existing conditions. Verify all grades, elevations, dimensions, and clearances at the site.

COORDINATION OF WORK WITH OTHER TRADES

The contractor shall coordinate the work of this Section with the work of all other Contracts and all the Utility Companies. It shall be so arranged that there will be no delay in the proper installation and completion of all work.

INSPECTION AND TESTS

The entire wiring system must test free from short and open circuits. Every ground shall be tested for compliance with standards listed below.

PROTECTION, MAINTENANCE AND PRODUCT HANDLING OF ELECTRICAL EQUIPMENT

Electrical equipment shall be delivered and stored at the site, properly packed and crated until finally installed.

Provide effective protection against damage for all material and equipment during shipment and storage at the Project Site.

This Contractor shall be responsible for the maintenance of all installed equipment and systems until final acceptance by the Owner.

GUARANTEE

This Contractor shall guarantee in writing to the Owner that all work installed by him shall be free of defects in workmanship and materials and that all apparatus will develop the capacities and characteristics as indicated, and that, if during a period of one year from date of final approval of work by the Architect, any defects in workmanship, materials or performance appear, he will remedy them without any cost to the Owner.

ACCESSIBILITY AND MEASUREMENTS

All work shall be installed so as to be readily accessible for operation, maintenance, and repair. Minor deviations from the plans may be made to accomplish this, subject to approval.

Before ordering any material or doing any work, the Contractor shall verify all measurements at the Building, and shall be responsible for the correctness of same as related to the work under this Contract.

IDENTIFICATION NAMEPLATES

Identify and mark all electrical equipment to meet OSHA standards and as specified herein.

Unless otherwise noted, nameplates shall be black laminate with white letters of uniform size consisting of reasonably large capital letters, 3/16 inch minimum.

SEISMIC RESTRAINTS

Provide lateral restraints for all electrical equipment installed on project; e.g. cable trays, conduit, lighting fixtures, panels and transformers. Typically, lateral restraints shall consist of angle iron and "uni-strut" bracing, cross bracing, hanger rods, anchor clips, expansion shield anchor bolts, etc. The purpose of the restraints is to provide resistance to lateral (horizontal) movement during earthquake.

All equipment shall be anchored to the floor, ceiling structure or walls.

All suspended equipment, wiring trough and conduit trade size 2-1/2" or larger shall have (lateral) horizontal bracing capable of resisting 50% of the equipment weight. Horizontal bracing shall be placed at each point where vertical supports are specified or required.

All life safety equipment, and conduit shall have lateral bracing capable of resisting 100% of the equipment weight.

Stem mounted fixtures shall have stems and swivel canopies designed for seismic loads. Ceiling outlet boxes and hangers for stem-mounted fixtures shall have lateral bracing capable of withstanding full vertical load. Lateral bracing shall be attached to the ceiling (at an angle) or wall structure.

Recessed and surface mounted light fixtures must be secured to the ceiling system so as to resist 50% of their weight laterally; i.e. a 40 pound fixture must be resistant to a 20 pound lateral force. Life safety lighting fixture must be secured to the ceiling system so as to resist 100% of their weight laterally. Suitable anchor clips must be provided for all lay-in fixtures. Surface mounted fixtures must be supported at two points in addition to the outlet box.

RACEWAYS AND INSTALLATION COMPONENTS

The requirements of this Section apply to raceway work specified elsewhere in these specifications.

The work includes the providing of completely coordinated grounded raceway systems complete with boxes, fittings, flexible connections to vibrating equipment and accessories, as specified and as required for a complete system.

The work permits the use of metal-clad cable in conjunction with conduit. See below.

Raceways and fittings shall be manufactured by Triangle or approved equal by Allied or Republic.

Rigid steel conduit shall be full weight steel pipe, hot dip galvanized inside and outside, threaded, minimum 3/4 inch.

Intermediate metal conduit (IMC) shall be intermediate steel pipe, hot dip galvanized, threaded, minimum 3/4 inch.

Electric metallic tubing (EMT) shall be steel thin wall pipe, galvanized, threadless, minimum 3/4 inch, maximum 2 inch.

Flexible steel conduit (Greenfield) shall be continuous single strip, galvanized, minimum 3/4 inch.

Liquid-tight flexible steel conduit (Seal-tite) shall be zinc coated, consist of flexible galvanized steel tubing over which is extruded a liquid-tight sheathing of polyvinyl chloride (PVC). Conduit shall be provided with a continuous copper bonding conductor would spirally between the convolutions.

Rigid steel and IMC conduit fittings shall be standard threaded couplings, locknuts, bushings, and elbows. Material shall be steel or malleable iron only.

Electrical metallic tubing fittings shall be compression waterproof connection type. Set screw or indent type connectors are not permitted.

Flexible steel conduit (Greenfield) fittings shall be multiple point type, threading into the internal wall of the conduit convolutions, and shall have insulated throat.

Liquid-tight flexible metal conduit fittings shall incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening. Connectors shall have insulated throats.

Expansion and deflection couplings shall be manufactured by O-Z/Gedney, Crouse-Hinds, Appleton or approved equal.

Individual conduit hangers, shall be designed for the purpose, and have pre-assembled closure bolt and nut, and provisions for receiving hanger rod.

Multiple conduit (trapeze) hangers shall be not less than 1-1/2 by 1-1/2 inch, 12 gauge steel, cold formed, lipped channels. Hanger rods shall be not less than 3/8-inch diameter steel.

Solid masonry and concrete anchors shall be a type approved for the purpose.

Provide and assume responsibility for locating and maintaining in proper position all sleeves required for the work.

Openings through floors and walls in which cables, conduits, or pipe pass shall be sealed by U.L. classified smoke and fire stop fittings, and have an hourly rating equal to the fire rating of the floor or wall. Fittings shall be similar to O-Z/Gedney Type "CFS" or "CAFS".

Penetrations through fire-rated floors in which wiring for floor service outlets are routed shall be sealed by U.L. classified smoke and fire-stop fittings, and shall have an hourly rating equal to the floor rating. Fittings shall be similar to O-Z/Gedney Type "PTFS".

Outlet boxes shall be manufactured by Raco, RussellStoll, Steel City, Thomas & Betts or Crouse Hinds.

Outlet boxes for concealed work shall be galvanized steel, 4 in. square or octagon (except as otherwise required by construction, devices or wiring). Provide sufficient depth for application.

Outlet boxes located outdoors and in damp locations shall be weatherproof.

Offset back-to-back outlets shall have minimum 6 in. separation between them. In rated walls, they are to be separated by a stud

Junction, splice and pull boxes shall be made of code gauge sheet steel with removable covers fastened with brass or stainless steel screws, except as noted, and will include insulated supports for cables. Box dimensions shall conform to N.E.C. requirements.

Provide junction, splice and/or pull boxes as noted or as required to facilitate pulling of conductors or in raceway runs that have more than three (3) 90-degree bends.

For indoor applications, boxes shall have a gray enamel finish. For outdoor and damp locations, boxes shall be galvanized.

Wireways shall be as manufactured by Square D, General Electric, or approved equal.

Wireways shall be square, brake-formed of code gauge steel, furnished in standard 10-foot sections with knockouts as required. Wireways shall be of the screw cover type and all necessary offset and elbow fittings. They shall have a gray enamel finish. Size shall be as required for proper cable fill.

Install raceway and installation components as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with the recognized industry practices, to ensure that products serve intended function.

Raceway supports shall be provided by means of ceiling trapeze, strap hangers, or wall brackets. Use structural steel angles or channels, or manufactured steel support system. Spacing of supports shall be as per NEC and per manufacturer's recommendations but in no case shall exceed 8'-0" on centers. Provide U-bolts at each floor level for riser raceways and anchor to acceptable supports. Secure raceways to supports with pipe straps or U-bolts.

Mechanically join all metal raceways, enclosures and junction boxes to assure continuity.

Branch circuit conduits shall be supported by the building structure.

Conduits located underground beyond the building for branch wiring shall be installed with a minimum of 30 in. top cover as shown on the drawings.

Provide expansion-deflection fittings at expansion joints in accordance with manufacturer's recommendations. Expansion-deflection fittings shall be used for all trade sizes 1-1/4" or larger. For trade sizes up to 1" in size, a suitable length of flexible conduit (or liquid-tight flexible conduit) with sufficient slack for movement and grounding conductor fastened on each side of joint shall be permitted.

Rigid steel conduit shall be used for underground installation; in wet, damp or wash down locations; for exposed runs on the exterior of the building; embedded in concrete or masonry or below concrete that is in contact with earth.

Intermediate metal conduit (IMC) may be used in place of rigid steel in dry locations only.

EMT is to be used for feeders and branch circuits in dry locations such as hung ceilings, interior hollow block walls and furred spaces.

Flexible steel conduit shall be used in dry locations for short connections where rigid conduits or tubing is impracticable, and for final connections to lights and equipment other than motors and transformers.

Liquid-tight flexible steel conduit shall be used in damp locations for final connections to motor terminal boxes, transformers, and other vibrating equipment in damp and dry locations.

In general, cutting and core drilling is to be avoided. Where it becomes necessary, locations are to be coordinated with other trades, the Owner and the structural engineer. There is to be no cutting or core drilling without prior approval.

Provide an outlet box for each lighting fixture and device shown, or required, in the wiring system.

Provide galvanized steel extension rings (depth as required) and raised cover plates in plaster, dry wall, masonry and tile walls.

Mount outlet boxes for similar equipment at uniform height within same or similar areas.

Outlet boxes for fixtures recessed in non-accessible ceilings shall be accessible through the opening created by the removal of the fixture or through access doors provided by this contractor.

All outlet boxes in finished areas for convenience receptacles or local switches shall be 4" square and 1-5/8" deep minimum. Provide with regular deep switch extension cover.

Boxes for use with surface mounted raceways shall be of the same construction and manufacture as the raceway.

Provide junction, splice and pull boxes where required to facilitate installation of wiring, whether or not shown on Drawings. Size boxes according to code, and provide interior partitions, insulated supports, hot dip galvanized angle iron braces, screw-on one-piece or split covers, ground connectors, and other accessories as required.

All outdoor installations shall be weatherproof.

Support all material from the building structure in an approved manner.

Where electrical equipment is mounted in suspended ceiling panels, provide support members to span between runners of ceiling suspension system. Do not support electrical equipment from acoustical panels or other ceiling material; attach to this material for alignment only.

Where electrical outlet boxes, lighting fixtures, and other equipment is installed on tee bars of suspended ceilings, use independent support clips with threaded studs. Do not attach to tee bar except for alignment; use clip similar to Caddy "TOS" that snaps around tee bar and has provisions for independent support wire. Attach a suitable anchor in the structure above ceiling, and suspend a minimum No. 12 support wire to engage the clip.

Do not exceed manufacturer' load rating for mounting devices.

At drywall partitions, provide support members to carry weight of equipment; do not use drywall material to carry any weight.

WIRING DEVICES AND INSTALLATION COMPONENTS

All local switches near doors shall be located at strike side of door as finally hung, whether so indicated on the Drawings or not.

Wiring devices and installation components shall be manufactured by Hubbell, Bryant Electric, Pass & Seymour, Leviton, Cooper Industries-Arrow Hart, or General Electric.

Switches shall be heavy-duty specification grade, toggle, quiet type, fully enclosed in composition cases, color as selected by Architect at shop drawing stage. They shall be rated 20 amp, 120/277 volt, AC.

Receptacles shall be the grounding type, composition base, meeting NEMA standards, publication WD-1-1971, color as selected by Owner.

Duplex Convenience Receptacles shall be 20 amps, 125 volts, 2 pole, 3 wire, U ground slot type, Hubbell No. BR20.

Ground Fault Interrupter Duplex Receptacles: 20 amps, 125 volts, 2 pole, 3 wire, Hubbell No. GF-5352, with weatherproof cover, Hubbell No. 5221.

Where more than one switch or receptacle is being installed, provide multiple gang plates for number of devices as required.

Plates shall be beveled stainless steel satin chrome finish #302, of minimum .035" thickness.

Manual motor starters shall be Allen Bradley Bulletin 600 or approved equal by Square D or General Electric and shall be horsepower rated, and voltage rated for the motor load.

Wallboard and masonry shall fit snuggly to all sides of outlet boxes, grout and patch as required.

Convenience receptacles shall be mounted with ground pole up, except those mounted above counter levels.

Local wall switches and receptacles shall be mounted vertically unless otherwise indicated.

WIRE AND CABLE

The work includes providing wire and cable complete with all accessories in accordance with Drawings and Specifications and as required for a complete system. Wiring size referenced in this Section shall be AWG, except as noted

This project has been designed for copper conductors. Aluminum conductors are not acceptable and shall not be used. Cable shall be manufactured by Triangle or approved equal by Carol or Guardian Products.

No. 10 and smaller conductors shall be ASTM Standard, solid, copper; and, No. 8 and larger conductors shall be ASTM standard, stranded copper.

Minimum conductor size shall be No. 12 for lighting and power and No. 14 for control and alarm. Increase wire sizes as required for long runs to overcome voltage drop.

Communications and signal wiring shall conform to the recommendations of the manufacturer's communication and signal systems and shall be specified in respective Sections of these Specifications.

"THWN" or "XHHW" insulation shall be used for interior branch circuit and feeder wiring. Rating shall be 90°C in dry locations and 75°C in wet locations.

Green colored insulated wire shall be used for all grounding applications.

Phase wires shall be color-coded as follows:

1. 120/208 volt system: Black for A phase
   Red for B Phase
   Blue for C Phase

Neutral conductors shall be white for 120/208 volts.

Provide O-Z/Gedney Type "CSB" series or approved equal seal fittings between the wire and conduit for all cable and wire entering the building from underground, including service cables.

Not more than 3 current carrying conductors shall be in one (1) conduit unless otherwise indicated. Provide one neutral conductor for each 3 phase 4 wire homerun to a panelboard unless otherwise noted.

MC cable shall comply with the NEC article 330. MC cable shall be as manufactured by AFC or approved equal by Guardian Products.

MC cable shall include a green insulated ground wire of the same size as the other conductors.

Run MC cable in dry hollow metal partitions and above suspended ceilings. Install cable as slack span; do not pull tight. Maintain at least 6" clearance between parallel runs of light and power wiring to avoid inductive coupling. Maintain at least 24" clearance from hot water and steam piping. Provide conduit sleeves through walls and partitions that obstruct horizontal passage of wiring, and seal sleeves after installation of cables. Cable shall be secured by approved staples, hangers or similar fittings independent of ceiling grids or supports.

MC cable shall be used in conjunction with conduit. Cable shall only be permitted for single phase circuits in hollow metal walls and above accessible ceilings. Single phase cable runs shall be gathered into three phase conduit homeruns. In no case shall cable enter directly into panelboards.

Secure MC cable to ceiling structure at intervals not to exceed 6 feet and within 12 inches of every outlet box, junction box, or fitting.

Make wire splices electrically and mechanically secure. Install small wire connectors so that no bare conductor is exposed. Tighten bolts on large conductor connectors so that conductor is deformed, but do not break strands of wire. Use compression tool with proper die for compression connectors in accordance with manufacturer's recommendations, so that conductors are deformed but not broken. Apply insulation over splice so that insulation thickness is at least 1-1/2 times that on conductor. Lap applied insulation at least 1" over conductor insulation so that no bare conductor is exposed.

In general, all feeders No. 8 and larger shall be continuous from point of origin to equipment being served. Splices shall only be used where necessary and with prior written approval of the Engineer.

Terminate conductors on terminal strips in equipment where terminal strips are used. Provide appropriate connectors, or hook conductors around terminal screws as required.

Provide encapsulated splice kits (3-M type 85 series or approved equal) for all splices in areas subject to moisture, including wet locations inside buildings and underground handholes, manholes, and buried junction boxes. Install splice kit in accordance with manufacturer's recommendations, and make splice waterproof. Apply sealing putty to surround each cable. Install mold body so that resin covers each cable sheath by a minimum of one inch.

All copper conductors No. 8 & larger shall be terminated, spliced, and tapped with color-keyed compression connectors, as manufactured by Thomas & Betts Co., Series 54000, Ideal Industries Series 87000, or approved equal. The manufacturer's recommended tooling shall be used. Mechanical type connectors shall not be used.

All copper conductors No. 10 AWG & smaller shall be terminated and spliced with ideal Industries wing-nut wire connectors or approved equal compression connectors. The flame-retardant thermoplastic insulated type shall be used to isolate the terminal from other metal parts and equipment.

Use insulating boots supplied for compression connectors or fill joint with "Scotchfill" insulating putty and serve (3) 1/2 lap layers of "Scotch" #33 electrical tape.

PANELBOARDS

The interior distribution system, in general, consists of 3-phase, 4-wire mains at 120/208 volts. The contractor shall balance the load on all feeders as nearly as possible on the three phases after the system is fully energized and all components are functioning.

Panelboards and distribution panels shall be General Electric "A" Series and CCB or approved equal by Square D, Cutler Hammer, or Siemens.

In multi-section panels, install suitable terminating lugs in one of the sections to permit the termination of the incoming feeder conductors as well as the extension of jumpers to the lugs of the other sections.

Panel circuit breaker overcurrent protective devices shall be as scheduled on the Drawings and as specified. All breakers shall be bolted-on thermal magnetic type

Panel circuit breakers shall be rated for 10,000 RMS symmetrical amperes minimum interrupting rating at 120/208 volts. Provide higher ratings as required or as scheduled on the Drawings.

Provide handle-locking attachments for all circuit breakers serving emergency lights, exit lights, clocks, and other functions indicated.

Cabinets and trim shall be fabricated of code gauge steel, with hinged door, lock and catch, and directory pocket covered with clear plastic shield over directory.

Furnish and install a typewritten circuit directory. Hand written will not be accepted.

Distribution panels shall be provided with molded case circuit breakers as specified for panelboards. Breakers through 225 ampere frame sizes shall be thermal-magnetic trip with inverse time current characteristics unless otherwise noted. Breakers 400 ampere frame and above shall have solid-state trip and rating ratings as indicated on Drawings.

SAFETY AND DISCONNECT SWITCHES

Switches shall be heavy-duty and service rated. They shall be General Electric Type "TH" or equal by Square D, Cutler Hammer, or Siemens. Switches shall include solid neutral where required. Provide auxiliary contacts where required to break motor control circuit power.

Interior enclosures shall be NEMA 1. Enclosures shall have interlocked doors and be capable of being positively padlocked in ON and OFF positions. For exterior installations, the enclosures shall be NEMA 4.

FUSES

Fused safety and disconnect switches shall be provided with fuses of class, type, and rating as required or shown on Drawings.

Install disconnect switches used with motor-driven appliances, and motors and controllers within sight of the controller position unless otherwise indicated.

Fuses sizes 0 to 600 Amperes shall be Buss Fusetron Type FRS-R or equal by Chase Shawmut or Cefco. They shall be U.L. Class "RK-5" Time-Delay dual element.

GROUNDING

Ground rods shall be copper clad steel not less than 3/4" diameter and 10 foot long. Provide at least two per location separated by at least 24". Ground clamps shall be bronze, solderless type with bronze screws suitable for receiving required or noted conductors.

Grounding equipment shall be manufactured by Chance, Burndy, Cadweld, Thomas & Betts, Blackburn, or O-Z/Gedney.

The complete electrical installation shall be permanently and effectively grounded in accordance with all code requirements, whether or not such connections are specifically shown or specified. Measured resistance to ground shall be 5 ohms, maximum. All parts of the electrical installation shall be grounded.

Ground conductors shall be sized in accordance with the National Electrical Code. Ground conductors shall be continuous without splices.

Ground rods shall be vertically driven with tops below grade. Where required to obtain the specified ground resistance, install multiple rods.

Where ground connections will be permanently concealed, make the connections by the exothermic process to form solid metal joints. Make accessible ground connections with mechanical pressure type ground connections.

Clarke Caton Hintz
Architecture
Planning
Landscape Architecture
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8383
fax: (609) 883-4044
www.clarkecatonhintz.com

Drawings Copyright © 2023 Clarke Caton Hintz, PC

OWNER:
IRVINGTON HOUSING AUTHORITY
141 Union Avenue
Irvington, NJ 07111
(973) 375-1848

MEP:
KELTER & GILLIGO
196 Princeton Hightstown Road
Building 1A, Suite 9
West Windsor, NJ 08550
(609) 799-8336

ELEVATOR ENGINEER:
B SQUARED ENGINEERING, LLC
169 Mill Brook Road
Stamford, CT 06902
(609) 203-0388

SUBMISSIONS

NO.	DATE	DESCRIPTION
1	4/30/26	ISSUED FOR BID

REVISIONS

PROFESSIONAL ENGINEER
NJ LICENSE NO. 38656
FRANK TINDALL, P.E.
DATE:

IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES
81 UNION AVE
IRVINGTON, NJ 07111

DATE:	04.28.26
SCALE:	AS NOTED
DRAWN BY:	HY
CHECKED BY:	FT

SHEET TITLE:
SPECIFICATIONS - ELECTRICAL

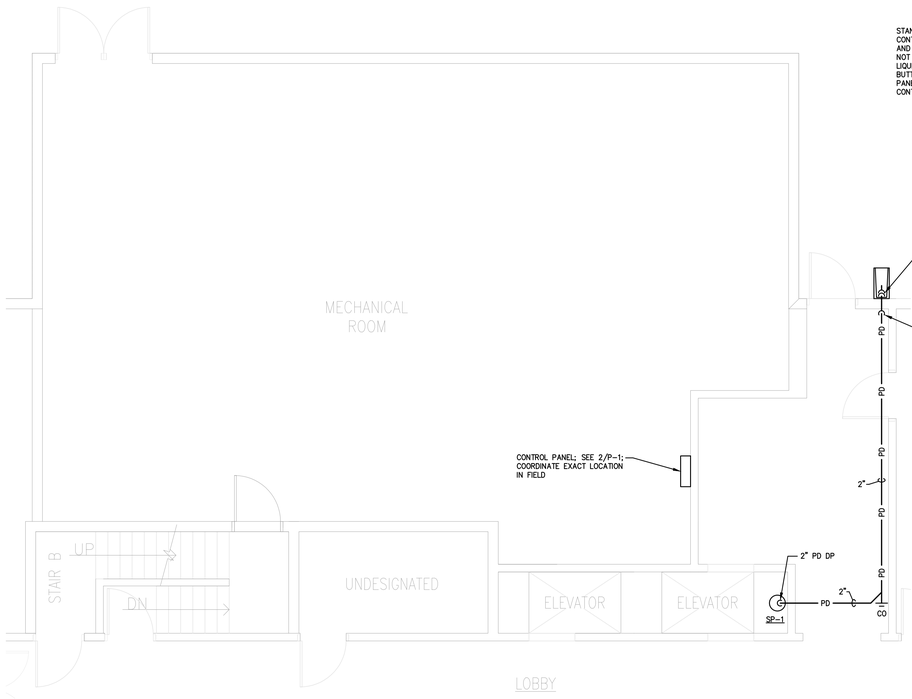
DRAWING NO.:
E3

CCH PROJECT NO: 2142.21

April 28, 2026 3:28:44 pm
Drawing: 3250 - E1.dwg

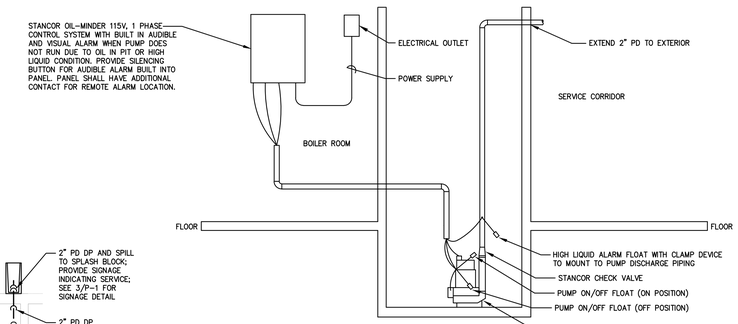
KELTER & GILLIGO
consulting engineers
P.O. BOX 777, 196 PRINCETON-HIGHTSTOWN RD.
PRINCETON JUNCTION NEW JERSEY 08550

Frank Tindall, P.E.
Professional Engineer
NJ 38656



1/P-1 PARTIAL GROUND FLOOR PLAN – PLUMBING

SCALE 1/4" = 1'-0"



2/P-1 SUMP PUMP DETAIL

NOT TO SCALE

NOTES:

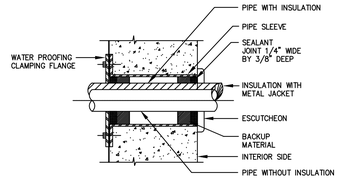
1. PROVIDE MINIMUM 5 FEET EXTRA OF EACH CABLE (SLACK) ROLLED AND CLAMPED TO THE DISCHARGE PIPE TO ALLOW FOR THE REMOVAL OF THE PUMP FROM THE PIT.

ELEVATOR SUMP PUMP DISCHARGE

ALUMINUM SIGN WITH REFLECTIVE WHITE SURROUND AND LETTERS ON RED BACKGROUND. LETTERS SHALL BE NO LESS THAN 0'-1" HIGH. SIGN SHALL BE PERMANENTLY AFFIXED TO WALL ABOVE PUMP DISCHARGE PIPE.

3/P-1 ELEVATOR SUMP PUMP DISCHARGE SIGNAGE DETAIL

NOT TO SCALE



4/P-1 PIPE THRU EXTERIOR WALL DETAIL

NOT TO SCALE

PLUMBING EQUIPMENT SCHEDULE

MARK	GENERAL				DESIGN DATA		ELECTRICAL					GAS	REMARKS
	DESCRIPTION	MANUFACTURER	MODEL NUMBER	LOCATION	CAPACITY	PUMP HEAD	HP	RPM	VOLTS	PH	HZ	MBH	
SP-1	ELEVATOR SUMP PUMP	STANCOR	SE-50 O/M	ELEVATOR PIT	67 GPM	15'	1/2	3600	115	1	60	N/A	COMPLETE WITH SUBMERSIBLE PUMP, CHECK VALVE, SHUT-OFF VALVE, ON/OFF FLOAT SWITCH AND 2" DISHARGE, OM300 VERTICAL PROBE AND FLOAT ASSEMBLY, BACNET COMPATIBLE OIL DETECTION & PUMP CONTROLLER

PLUMBING SYMBOL LIST

ABBREVIATION	SYMBOL	DESCRIPTION	ABBREVIATION	SYMBOL	DESCRIPTION
PD	PD	PUMPED DISCHARGE	BV		BALL VALVE
DP		PIPING DROP	CV		CHECK VALVE
CO		CLEANOUT			

PLUMBING SPECIFICATIONS:

1. SCOPE OF WORK
   - A. SUMP PUMP AND DISCHARGE.
   - B. HANGERS AND SUPPORTS.
   - C. VALVES.
   - D. CUTTING AND ROUGH PATCHING.
   - E. REMOVALS.
   - F. EQUIPMENT
   - G. SUBMITTALS
   - H. PERMITS
   - I. WARRANTY
   - J. SUPERVISION
   - K. RIGGING

2. STANDARDS AND CODES
   - A. NEW JERSEY UNIFORM CONSTRUCTION CODE
   - B. INTERNATIONAL BUILDING CODE 2021, NEW JERSEY EDITION
   - C. NATIONAL STANDARD PLUMBING CODE 2021
   - D. LOCAL MUNICIPAL UTILITY AUTHORITY
   - E. LOCAL WATER COMPANY RULES AND REGULATIONS
   - F. OTHER STATE AND LOCAL AUTHORITIES HAVING JURISDICTION

3. MATERIALS:
   - A. PIPE AND FITTINGS
     1. PIPE

SERVICE	MATERIAL	SCHEDULE	DESIGNATION
SUMP PUMP DISCHARGE	COPPER	TYPE "L"	ASTM B-88

     2. FITTINGS

SERVICE	SIZE	MATERIAL	WEIGHT	TYPE
SUMP PUMP DISCHARGE	ALL	WROUGHT COPPER	STANDARD	SOLDERED 95/5 TIN & ANTIMONY

     3. DISSIMILAR METALS: PIPE, FITTINGS, HANGERS, ETC. DISSIMILAR METALS SHALL BE INSULATED AGAINST DIRECT CONTACT WITH EACH OTHER, BY USING A HIGH QUALIT OR GRADE OF DIELECTRIC MATERIAL.
   - B. VALVES
     1. BALL VALVES SHALL BE APOLLO, 77-200 SERIES, FULL PORT, SOLDER END WITH TFE TEFLON SEATS AND SEALS WITH STEEL LEVER HANDLES WITH STOPS.

4. HANGERS AND SUPPORTS
   - A. HANGERS AND SUPPORTS
     1. SHALL CONFORM TO NATIONAL STANDARD PLUMBING CODE 2021, WITH SEISMIC RESTRAINTS AS REQUIRED FOR NEW CONSTRUCTION UNDER 2021 INTERNATIONAL BUILDING CODE.
     2. PIPE HANGERS SHALL BE SPACED NOT GREATER THAN 10'-0" O.C. WITH 1/2" MINIMUM ROD SIZE.
     3. ALL PIPE HANGERS, SUPPORTS, & HARDWARE SHALL BE GALVANIZED.
     4. PIPE SUPPORTS SHALL BE OF THE FOLLOWING TYPE AND FIGURE NUMBER, MANUFACTURED BY C&P, F&M, GRINNELL, MIRO INDUSTRIES OR APPROVED EQUAL:
        - a. BEAM CLAMP:
          1. C&P – FIGURE 268
          2. F&M – FIGURE 282
        - b. CLEVIS HANGER:
          1. C&P – FIGURE 100
          2. F&M – FIGURE 239
          3. GRINNELL – FIGURE 260
        - c. U-BOLT:
          1. C&P – FIGURE 283
          2. F&M – FIGURE 176
          3. GRINNELL – FIGURE 137
        - d. RISER CLAMP:
          1. C&P – FIGURE 89 OR 126
          2. F&M – FIGURE 241
          3. GRINNELL – FIGURE 261
   - B. PIPE INSERTS
     1. INSERTS SHALL BE PRESET CONCRETE INSERTS WITH STEEL REINFORCED RODS THROUGH THE INSERT AND BOTH ENDS HOOKED OVER THE REINFORCING MESH. INSERTS SHALL BE OF INDIVIDUAL TYPE OF MALLEABLE IRON CONSTRUCTION WITH ACCOMMODATION FOR REMOVABLE NUTS AND THREADED RODS UP TO 3/4" DIAMETER, PERMITTING LATERAL ADJUSTMENT, EXCEPT AS OTHERWISE NOTED. INDIVIDUAL INSERTS SHALL BE GRINNELL FIG. 282 UP TO 5" PIPE AND CONDUIT, FIG. 282, 6" AND UP TO 8" PIPE AND CONDUIT, FIG. 152 ABOVE 8" AND UP TO 12" PIPE AND CONDUIT. FOR FIGURES 282 AND 152, THEY SHALL COME WITH AN OPENING AT THE TIP TO ALLOW REINFORCING RODS UP TO 1/2" DIAMETER TO BE PASSED THROUGH THE INSERT BODY. RODS SHALL EXTEND A MINIMUM OF 4" ON EITHER SIDE OF THE INSERT. PIPES LARGER THAN 12" SHALL BE SUSPENDED FROM STEEL MEMBERS ONLY.
   - C. PIPE SHIELDS
     1. FOR ALL INSULATED PIPE FURNISH CLEVIS HANGERS WITH WELDED SHIELDS AND EQUAL TO C&P, INC., FIG. 100 SH.

5. SUBMITTALS:
   - A. SHOP DRAWINGS SHALL BE REQUIRED FOR:
     1. ALL EQUIPMENT, MATERIALS, MEANS & METHODS INTENDED FOR USE UNDER THIS CONTRACT.
   - B. PRIOR TO DELIVERY TO JOB SITE, BUT SUFFICIENTLY IN ADVANCE OF REQUIREMENTS NECESSARY TO ALLOW ARCHITECT AMPLE TIME FOR REVIEW, SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT, FIXTURES, MATERIALS, PIPING, SLEEVES, WIRING DIAGRAMS, ETC. AND FURTHER OBTAIN WRITTEN COMMENTS OF "APPROVED" OR "APPROVED AS NOTED" FOR SAME FROM ARCHITECT BEFORE INSTALLING ANY OF THESE ITEMS.
   - C. SHOP DRAWINGS SHALL CONSIST OF MANUFACTURER'S CERTIFIED SCALE DRAWINGS, CUTS, OR CATALOGS, INCLUDING DESCRIPTIVE LITERATURE AND COMPLETE CERTIFIED CHARACTERISTICS OF EQUIPMENT, FIXTURES, ETC. SHOWING DIMENSIONS, CAPACITY, CODE REQUIREMENTS, MOTOR AND DRIVE TESTING, AS INDICATED IN THE CONTRACT DOCUMENTS.
   - D. CERTIFIED PERFORMANCE CURVES FOR ALL PUMPING EQUIPMENT SHALL BE SUBMITTED FOR REVIEW.
   - E. SAMPLES, DRAWINGS, SPECIFICATIONS, CATALOGS, ETC., SUBMITTED FOR REVIEW SHALL BE PROPERLY LABELED INDICATING PROJECT NAME, AND SPECIFIC SERVICE FOR WHICH MATERIAL OR EQUIPMENT IS TO BE USED.
   - F. FAILURE TO SUBMIT SHOP DRAWINGS IN AMPLE TIME FOR CHECKING SHALL NOT ENTITLE AN EXTENSION OF CONTRACT TIME NOR NO CLAIM FOR EXTENSION BY REASON OF SUCH DEFAULT SHALL BE ALLOWED.
   - G. PRIOR TO SUBMISSION OF SHOP DRAWINGS CONTRACTOR SHALL THOROUGHLY CHECK EACH SHOP DRAWING, REJECT THOSE NOT CONFORMING TO THE SPECIFICATIONS, AND INDICATE BY SIGNED, WRITTEN DECLARATION THAT THE SHOP DRAWINGS SUBMITTED MEET CONTRACT REQUIREMENTS.
   - H. THE COMMENT "APPROVED" OR "APPROVED AS NOTED" RENDERED ON SHOP DRAWINGS SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS. WHERE DRAWINGS ARE REVIEWED, SAID REVIEW DOES NOT IN ANY WAY RELIEVE THE RESPONSIBILITY, OR NECESSITY, OF FURNISHING MATERIAL OR PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS.
   - I. "APPROVED AS NOTED" MEANS, UNLESS OTHERWISE NOTED ON THE DRAWINGS, TO APPROVE FOR CONSTRUCTION, FABRICATION, AND/OR MANUFACTURE SUBJECT TO THE PROVISION THAT THE WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH ALL ANNOTATIONS AND/OR CORRECTIONS INDICATED ON THE SHOP DRAWINGS AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
     1. WHERE THE COMMENT "APPROVED AS NOTED" INCLUDES DIRECTION TO THE CONTRACTOR TO RESUBMIT CORRECTED SHOP DRAWING FOR RECORD, FAILURE TO COMPLY WITH THE INSTRUCTION TO RESUBMIT RECORD COPY SHALL RENDER THE APPROVAL NULL AND VOID.

6. PERMITS & FEES:
   - A. CONTRACTOR SHALL ACQUIRE ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE EXECUTION OF THIS CONTRACT.

7. WARRANTY:
   - A. CONTRACTOR SHALL:
     1. UNCONDITIONALLY WARRANTY HIS WORK TO BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.
        - a. ANY DEFECTS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE OWNER AT NO ADDITIONAL COST.
     2. ALL EQUIPMENT SHALL CARRY THE ORIGINAL MANUFACTURER'S WARRANTY AS SPECIFIED IN THE MANUFACTURER'S WARRANTY DOCUMENTATION PROVIDED WITH THE EQUIPMENT. WARRANTY PERIOD SHALL BE CALCULATED FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.
        - a. ANY DEFECTS SHALL BE REPAIRED OR REPLACED AT THE DISCRETION OF THE MANUFACTURER.

8. EQUIPMENT
   - A. ELEVATOR SUMP PUMP
     1. PROVIDE ELEVATOR SUMP PUMP AS INDICATED IN THE PLUMBING EQUIPMENT SCHEDULE ON THIS DRAWING.
     2. PUMP SHALL BE DESIGNED TO HANDLE, WITHOUT CLOGGING, CLEAN WATER, CONTAMINATED WATER, WASTEWATER EFFLUENT, STORM WATER, AND OTHER SIMILAR CORROSIVE LIQUIDS WHICH MAY CONTAIN SMALL SOLIDS.
     3. THE PUMP SHALL HAVE INTEGRATED FEET ALLOWING IT TO STAND ON A HARD SURFACE.
     4. MAJOR PUMP COMPONENTS SHALL BE CONSTRUCTED OF TYPE 304 STAINLESS STEEL AND FC-20 CAST IRON, WITH SMOOTH SURFACES DEVOID OF POROSITY OR OTHER IRREGULARITIES.
     5. CRITICAL MATING SURFACES WHERE A WATERTIGHT SEAL IS REQUIRED SHALL BE MACHINED AND FITTED WITH NITRILE (BUNA N) O-RINGS.
     6. SEALING WILL BE THE RESULT OF CONTROLLED COMPRESSION OF RUBBER O-RINGS WITHOUT REQUIRING A SPECIFIC TORQUE ON FASTENERS TO ACCOMPLISH SEALING.
     7. RECTANGULAR CROSS SECTIONED GASKETS REQUIRING SPECIFIC FASTENER TORQUE TO ACHIEVE COMPRESSION SHALL NOT BE CONSIDERED ADEQUATE OR EQUAL.
     8. NO SECONDARY SEALING COMPOUNDS SHALL BE USED OR REQUIRED.
     9. THE IMPELLER SHALL BE A NON-CLOGGING, DYNAMICALLY BALANCED, VORTEX DESIGN, CAPABLE OF PASSING A 35MM DIAMETER SPHERICAL SOLID. IMPELLER SHALL BE THREADED ONTO THE MOTOR SHAFT, AND SHALL BE FASTENED TO THE SHAFT BY A STAINLESS STEEL IMPELLER NUT.
     10. THE USE OF ADJUSTABLE BOTTOM PLATES TO MAINTAIN IMPELLER EFFICIENCY SHALL NOT BE CONSIDERED EQUAL.
     11. THE PUMP VOLUTE SHALL BE A SINGLE-PIECE DESIGN WITH VERTICAL DISCHARGE. PASSAGES SHALL BE SMOOTH AND LARGE ENOUGH TO PASS ANY SOLIDS WHICH MAY ENTER THE IMPELLER. VOLUTE OPENING SHALL BE 35MM.
     12. PUMP DISCHARGE DESIGN SHALL PERMIT ATTACHMENT TO STANDARD 2" NPS PIPE FITTINGS.
     13. THE COMMON MOTOR/PUMP SHAFT SHALL BE OF TYPE 410 STAINLESS STEEL THAT IS IN CONTACT WITH THE SUMP PUMP'S MECHANICAL SEALS AND SHALL HAVE A POLISHED FINISH AND ACCURATELY MACHINED SHOULDERS TO ACCOMMODATE BEARINGS, SEALS AND IMPELLER. CARBON STEEL SHAFTS SHALL NOT BE CONSIDERED ADEQUATE OR EQUAL.
     14. THE ROTATING ASSEMBLY (IMPELLER, SHAFT, AND ROTOR) SHALL BE DYNAMICALLY BALANCED SUCH THAT UNDUE VIBRATION OR OTHER UNSATISFACTORY CHARACTERISTICS WILL NOT RESULT WHEN THE PUMP IS IN OPERATION.
     15. THE ROTATING ASSEMBLY (IMPELLER, SHAFT, AND ROTOR) SHALL BE DYNAMICALLY BALANCED SUCH THAT UNDUE VIBRATION OR OTHER UNSATISFACTORY CHARACTERISTICS WILL NOT RESULT WHEN THE PUMP IS IN OPERATION.
     16. THE PUMP SHALL BE EQUIPPED WITH A TANDEM MECHANICAL SHAFT SEAL SYSTEM CONSISTING OF TWO INDEPENDENT SEAL ASSEMBLIES WITH A COMMON SPRING BETWEEN THEM AND A RADIAL LIP SEAL; PROVIDING THREE COMPLETE LEVELS OF SEALING BETWEEN THE PUMP WET END AND MOTOR.
     17. THE MECHANICAL SEALS SHALL OPERATE IN AN OIL FILLED CHAMBER WHICH IS COMPLETELY SEPARATE FROM THE MOTOR CHAMBER.
     18. THE SEAL FACES SHALL BE SIC/SIC FOR THE LOWER SEAL AND CARBON/CERAMIC FOR THE UPPER SEAL.
     19. METALLIC COMPONENTS OF THE MECHANICAL SEAL SHALL BE CONSTRUCTED OF 300-SERIES STAINLESS STEEL.
     20. THE SEAL SYSTEM SHALL NOT RELY UPON THE PUMPED MEDIA FOR LUBRICATION AND SHALL NOT BE DAMAGED WHEN THE PUMP IS RUN DRY.
     21. A READILY ACCESSIBLE INSPECTION SCREW SHALL BE PROVIDED FOR INSPECTING THE CONDITION OF THE SEAL CHAMBER OIL DURING ROUTINE MAINTENANCE.
     22. THE PUMP SHAFT SHALL ROTATE ON PERMANENTLY LUBRICATED, GREASED BEARINGS.
     23. THE UPPER BEARING SHALL BE A SINGLE ROW DEEP GROOVED BALL BEARING.
     24. THE UPPER AND LOWER BEARINGS SHALL BE OF SUFFICIENT SIZE AND PROPERLY SPACED TO TRANSFER ALL RADIAL AND AXIAL LOADS TO THE PUMP HOUSING AND MINIMIZE SHAFT DEFLECTION.
     25. B-10 BEARING LIFE SHALL BE A MINIMUM OF 30,000 HOURS AT BEP.
     26. PUMP DESIGNS UTILIZING OTHER THAN BALL BEARINGS, OR THOSE REQUIRING SUPPLEMENTAL GUIDE BUSHINGS FOR THE SHAFT OR IMPELLER SHALL NOT BE CONSIDERED ADEQUATE OR EQUAL.
     27. THE MOTOR HOUSING SHALL BE TYPE 304 STAINLESS STEEL AND THE TOP COVER OF NYLON 66. THE MOTOR SHALL BE OF THE SQUIRREL-CAGE INDUCTION DESIGN WITH COPPER WINDINGS, HOUSED IN AN AIR FILLED, WATERTIGHT CHAMBER.
     28. THE MOTOR SHALL BE CAPABLE OF CONTINUOUS SUBMERGED OPERATION UNDER WATER TO A DEPTH OF 30'.
     29. THE STATOR WINDINGS AND STATOR LEADS SHALL BE INSULATED WITH MOISTURE RESISTANT CLASS B INSULATION RATED FOR 266(F).
     30. THE MOTOR SHALL BE CAPABLE OF OPERATING CONTINUOUSLY, SUBMERGED IN LIQUID OF 104(F) WITHOUT OVERHEATING.
     31. THE MOTOR SHALL BE CAPABLE OF HANDLING UP TO 10 EVENLY SPACED STARTS PER HOUR.
     32. ALL MOTORS SHALL HAVE A VOLTAGE TOLLERANCE OF ±10% FROM NORMAL NAME PLATE RATING.
     33. THE POWER CABLE SHALL BE SIZED ACCORDING TO NEC AND CSA STANDARDS AND SHALL BE OF SUFFICIENT LENGTH TO REACH THE JUNCTION BOX WITHOUT REQUIRING SPLICES.
     34. THE OUTER JACKET OF THE CABLE SHALL BE OIL AND WATER RESISTANT THERMOPLASTIC ELASTOMER.
     35. THE POWER CABLE SHALL BE FITTED TO THE MOTOR USING AN EPOXY POTTED WATERTIGHT CABLE ENTRY SYSTEM WITH A RUBBER GROMMET AS THE SECONDARY SEAL AND STRAIN RELIEF.

9. EXECUTION:
   - A. CONCEALED PIPING
     1. ALL PIPING INSTALLED IN FINISHED AREAS SHALL BE COMPLETELY CONCEALED WITHIN HUNG CEILINGS, FURRING, SOFFITS, PIPE SPACES, ETC.
     2. WHERE COMPLETE CONCEALMENT IS IMPOSSIBLE BECAUSE OF OBSTRUCTIONS SUCH AS BEAMS, DUCTS, LIGHTS, PIPING, ETC., DO NOT INSTALL ANY WORK BEFORE FIRST CONSULTING WITH THE ARCHITECT, AND HIS INSTRUCTIONS (WRITTEN OR ON REVISED DRAWINGS) SHALL BE FOLLOWED.
     3. ALL PIPING, ETC. SHALL BE COMPLETELY TESTED AND APPROVED BY ALL AUTHORITIES HAVING JURISDICTION BEFORE ANY CONCEALMENT BEGINS.
     4. PROVIDE ACCESS PANELS IN NON ACCESSIBLE CEILINGS AND WALLS FOR ALL VALVES, SHOCK ABSORBERS, CLEAN OUTS, AND ALL OTHER ITEMS THAT REQUIRE ACCESS TO PROPERLY MAINTAIN OR SERVICE. ACCESS PANEL TYPE AND LOCATION SHALL BE APPROVED BY ARCHITECT PRIOR TO INSTALLATION.

10. TESTING
    - A. FURNISH ALL TESTING INSTRUMENTS, GAUGES, PUMPS, AND ALL OTHER EQUIPMENT NECESSARY TO PERFORM TESTS.
    - B. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE REPRESENTATIVES OF THE ARCHITECT, THE OWNER AND THE PLUMBING INSPECTOR. GIVE NOT LESS THAN 5 DAYS NOTICE.
    - C. PRESSURE TEST
      1. SUMP PUMP DISCHARGE PIPING: TEST WITH WATER AT 125 PSI.

11. PIPE INSTALLATION
    - A. MODIFY PIPING INSTALLATION TO SUIT BUILDING CONDITIONS AND TO AVOID INTERFERENCES WITH OTHER TRADES, MAINTAINING ACCESS TO ALL PARTS OF THE PIPING SYSTEMS AND DUCTWORK AND TO MAINTAIN PROPER PITCH.
    - B. RUN PIPING GENERALLY PARALLEL TO THE AXIS OF THE BUILDING, ARRANGED TO CONFORM TO THE BUILDING REQUIREMENTS AND TO SUIT THE NECESSITIES OF CLEARANCE OF DUCTS, FLUES, CONDUITS AND WORK OF OTHER TRADES AND CLOSE TO CEILING OR OTHER CONSTRUCTION AS PRACTICAL, FREE OF TRAPS OR BENDS.
    - C. PROVIDE ADDITIONAL OFFSETS, FITTINGS, VALVES, DRAINS, ETC. WHERE REQUIRED BY CONSTRUCTION AND WORK OF OTHER TRADES.
    - D. RUN IN CHASES, RECESSES, SHAFTS, HUNG CEILINGS AND BEAM CUTS WHERE APPLICABLE. DO NOT COVER BEFORE EXAMINATION AND TESTING. NO PIPING IN FLOOR FILL UNLESS NOTED OR APPROVED.
    - E. RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS AND OTHER PIPING, NEATLY SPACED AND WITH PLUMB RISERS. MAINTAIN MAXIMUM HEADROOM.
    - F. PROVIDE REDUCING FITTINGS FOR CHANGES IN PIPE SIZE. NO BUSHINGS ARE PERMITTED.
    - G. RUN WATER PIPING FREE OF TRAPS. GRADE AND VALVE FOR COMPLETE CONTROL AND DRAINAGE OF SYSTEM.
    - H. VALVES SHALL NOT BE INSTALLED WITH THE OPERATING HANDLE POINTING DOWNWARD.
    - I. MANUFACTURER'S NAMEPLATE, NAME OR TRADEMARK, SHALL BE PERMANENTLY AFFIXED TO ALL EQUIPMENT AND MATERIAL FURNISHED UNDER THIS SPECIFICATION. WHERE SUCH EQUIPMENT IS IN A FINISHED OCCUPIED SPACE, THE NAMEPLATE SHALL BE IN A CONCEALED BUT ACCESSIBLE LOCATION. THE NAMEPLATE OF A SUBCONTRACTOR OR DISTRIBUTOR WILL NOT BE ACCEPTABLE.
    - J. PROVIDE FOR EACH ITEM OF EQUIPMENT, INCLUDING PANELBOARDS, DISCONNECTS, BREAKERS, STARTERS, SWITCHES, AND ALL CONTROL DEVICES, PUMPS, FANS, COMPRESSORS, BOILERS, ETC., A PERMANENTLY ATTACHED NAMEPLATE MADE OF BLACK SURFACE, WHITE CORE-FURNISHING EQUIPMENT SHALL PROVIDE NAMEPLATE. PNEUMATIC, ELECTRIC AND MECHANICALLY ACTUATED GAUGES SHALL HAVE A BRIEF, BUT COMPLETE DESCRIPTION OF THEIR FUNCTION. STATING THE AIR PRESSURE OR VOLTAGE RANGE ALONE IS NOT ACCEPTABLE. NAMEPLATES SHALL BE A MINIMUM OF 3" LONG BY 1-1/2" WIDE AND SHALL BEAR THE EQUIPMENT NAME AND ITEM NUMBER OF 1/2" HIGH WHITE LETTERS AS DESIGNATED IN THE EQUIPMENT SCHEDULE. MOUNTING SCREWS SHALL HAVE CHROME PLATED ACORN HEADED SCREWS.
    - K. FURNISH AND ATTACH TO EACH VALVE AS HEREINAFTER SPECIFIED, A 1-1/2" DIAMETER BRASS TAG WITH 1/2" INDENTED NUMERALS FILLED WITH DURABLE BLACK COMPOUND. TAGS SHALL BE SECURELY ATTACHED TO STEMS OF VALVES WITH COPPER WIRE AND "S" HOOKS.
      1. VALVE TAG SCHEDULE

SERVICE	TAG DESIGNATION
SUMP PUMP DISCHARGE	SP

    - L. CONTRACTOR SHALL MODIFY OWNER'S EXISTING VALVE CHARTS & BOOK TO REFLECT ALL CHANGES MADE UNDER THIS CONTRACT.
    - M. PROVIDE TAGS FOR THE FOLLOWING VALVES:
      1. ZONE CONTROL, BYPASS, SHUT OFF, CHECK AND BALANCING VALVES.
      2. BUILDING AND AREA SHUT OFF AND BALANCING VALVES.
      3. CONTROL, BY PASS, SHUT OFF, BALANCING AND DRAIN VALVES FOR MAJOR PIECES OF EQUIPMENT SUCH AS BOILERS, DOMESTIC HOT WATER HEATERS, HEAT EXCHANGERS, REFRIGERATION MACHINES, PUMPS, HEATING, VENTILATING AND AIR CONDITIONING UNITS, COOLING TOWERS, ETC.
      4. SYSTEM DRAIN VALVES, SAFETY AND RELIEF VALVES.
    - N. IDENTIFICATION SHALL BE IN ACCORDANCE WITH "SCHEME FOR IDENTIFICATION OF PIPING SYSTEM ANSI A13.1" AND OSHA SAFETY COLOR REGULATION.
    - O. MARKERS SHALL BE SNAP ON TYPE AS MANUFACTURED BY SETON NAMEPLATE CORP., NEW HAVEN, CONN. (SETMARK SYSTEM), BUNTING STAMP CO. INC., PITTSBURGH, P.A. OR APPROVED EQUAL. MARKERS SHALL COMPLETELY ENCIRCLE THE PIPE WITH A SUBSTANTIAL OVERLAP. NO ADHESIVE SHALL BE USED. THEY SHALL BE MANUFACTURED OF U.L. APPROVED, SELF EXTINGUISHING PLASTIC. WHEN THE PIPE INCLUDING INSULATION (IF ANY) IS LARGER THAN 6" DIAMETER AND LARGER, MARKERS SHALL BE STRAP ON TYPE.
    - P. WHERE PIPE IS TO BE LEFT BARE IT SHALL BE PAINTED WITH TWO (2) COATS OF SELF-PRIMING, MARINE-GRADE SILOXANE EPOXY PAINT IN GLOSS COLORS AS REQUIRED BY ITEM Q, BELOW, AND STENCIL AND VALVE TAG SCHEDULE.
      1. COLOR SPECIFICATIONS:

COLOR	NAME	FEDERAL STANDARD NUMBER
WHITE	INSIGNIA WHITE	17875
GREEN	OSHA SAFETY GREEN	14120

    - Q. PIPE SHALL BE LETTERED AND VALVES TAGGED IN ACCORDANCE WITH THE SCHEDULE BELOW. LETTERING SHALL BE LOCATED NEAR EACH VALVE AND BRANCH CONNECTION AND AT INTERVALS OF NOT OVER 40' (10' ON FIRE LINES) ON STRAIGHT RUNS OF PIPE. PROVIDE FLOW ARROWS FOR ALL PIPING AT EACH MARKER. ADJACENT TO THE LEGEND, STENCIL THE SIZE OF THE PIPE. LETTER COLORS ARE AS FOLLOWS:
      1. GREEN WITH WHITE LETTERING
    - R. STENCIL AND VALVE TAG SCHEDULE

SERVICE	STENCIL DESIGNATION	COLOR	TAG DESIGNATION
SUMP PUMP DISCHARGE	ELEV. PUMP DISCH.	GREEN	SP

Clarke Caton Hintz
Architecture
Planning
Landscape Architecture
100 Barrack Street
Trenton, NJ 08608
tel: (609) 883-8383
fax: (609) 883-4044
www.clarkecatonhintz.com

Drawings Copyright, ©2023 Clarke Caton Hintz, PC

OWNER:
IRVINGTON HOUSING AUTHORITY
141 Union Avenue
Irvington, NJ 07111
(973) 375-1848

MEP:
KELTER & GILLIGO
196 Princeton Hightstown Rood
Building 1A, Suite 9
West Windsor, NJ 08550
(609) 799-8336

ELEVATOR ENGINEER:
B SQUARED ENGINEERING, LLC
169 Mill Brook Rood
Stamford, CT 06902
(609) 203-0388

SUBMISSIONS

NO.	DATE	DESCRIPTION
1	4/30/26	ISSUED FOR BID

REVISIONS

PROFESSIONAL ENGINEER
NJ LICENSE NO. 38656
FRANK TINDALL, P.E.
DATE:

IRVINGTON HOUSING AUTHORITY
ELEVATOR UPGRADES
81 UNION AVE
IRVINGTON, NJ 07111

DATE: 04.28.26
SCALE: AS NOTED
DRAWN BY: ACL
CHECKED BY: FT

SHEET TITLE:
PARTIAL FLOOR PLAN, SYMBOLS LIST, SCHEDULE, DETAILS AND SPECIFICATION - PLUMBING

DRAWING NO.:
P1

CCH PROJECT NO: 2142.21

April 28, 2026 3:28:45 pm
Drawing: 3250 - P1.dwg

KELTER & GILLIGO
consulting engineers
P.O. BOX 727, 196 PRINCETON-HIGHTSTOWN RD
PRINCETON JUNCTION NEW JERSEY 08550
Frank Tindall, P.E.
Professional Engineer
NJ 38656