

RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NEW JERSEY 08094

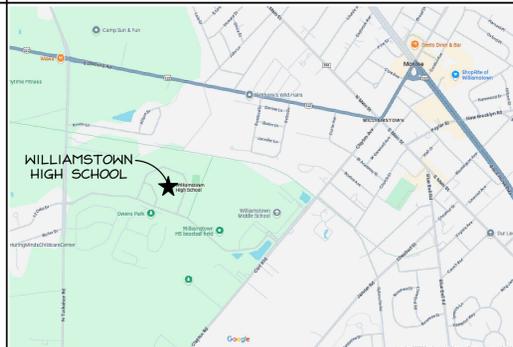
ABBREVIATIONS

AL. TH.	ALUMINUM THRESHOLD	GYP.	GYPSUM BOARD	R.O.	ROUGH OPENING
B.P.	BEARING PLATE	HRD. WD.	HARDWOOD	R.O.M.	RIGHT OF WAY
BRG.	BEARING	INSUL.	INSULATION	R.M.C.	RAIN WATER CONDUCTOR
BRK.	BRICK	INT.	INTERIOR	SAN.	SANITARY
CAB.	CABINET	INV.	INVERT	SCH.	SCHEDULE
C.A.B.C.	COURSE AGGREGATE BITUMINOUS CONCRETE	JAN.	JANITOR	SECT.	SECTION
CARP.	CARPET	JST.	JOIST	SENI.	SEWER
C.B.	CATCH BASIN	JT.	JOINT	S.L.	SKYLIGHT
C.J.	CONTROL JOINT	KIT.	KITCHEN	SPEC.	SPECIFICATION(S)
CL.	CEILING	LAV.	LAVATORY	S.S.	SERVICE SINK
CL.	CLOSET	L.M.T.	LIGHT WEIGHT	STL.	STEEL
C.L.L.	CONTRACT LIMIT LINE	L.F.	LINEAR FEET	ST.STL.	STAINLESS STEEL
CLR.	CLEAR - CLEARANCE	LAV.	LAVATORY	STOR.	STORAGE
C.I.	CAST IRON	L.F.	LINEAR FEET	S.U.	SINK UNIT
C.M.U.	CONCRETE MASONRY UNIT	MAX.	MAXIMUM	T.	TREAD
C.O.	CLEAN OUT	MB.TH.	MARBLE THRESHOLD	T. CN.	TOP OF CONCRETE
COL.	COLUMN	MECH.	MECHANICAL	T.G.	TONGUE AND GROOVE
CONC.	CONCRETE	MFR.	MANUFACTURER	TH.	THRESHOLD
CONT.	CONTINUOUS	MIN.	MINIMUM	THK.	THICK - THICKNESS
CONTR.	CONTRACTOR	MIR.	MIRROR	T.O.F.	TOP OF FOOTING
CORR.	CORRIDOR	M.O.	MASONRY OPENING	T.O.M.	TOP OF MASONRY
CORRU.	CORRUGATED	M.T.P.	METAL TOILET PARTITION	T.O.S.	TOP OF STEEL
C.S.	CONSTRUCTION SHOWING	M.R.	MAT RECESS	T.PNL.	TELEPHONE PANEL
C.S.P.	CONSTRUCTION SHOWING PAINTED	M. REC.	MOP RECEPTOR	TYP.	TYPICAL
C.T.	CERAMIC TILE	M.T.	METAL THRESHOLD	T.P.	TOILET PARTITION
C.T.C.B.	CERAMIC TILE COVE BASE	N.T.	METAL THRESHOLD	UC.	UNDERCUT
C.M.	COLD WATER	N.T.	METAL THRESHOLD	U.D.	UNIT DIMENSION
		N.T.	METAL THRESHOLD	U/G	UNDERGROUND
DEMO.	DEMOLISH	N.I.C.	NOT IN CONTRACT	U.H.	UNIT HEATER
DIA.	DIAMETER	N.T.S.	NOT TO SCALE	U.N.O.	UNDER SLAB
D.F.	DRINKING FOUNTAIN	O.C.	ON CENTER	U/S	UNDER SLAB
D.L.	DOUBLE LOAD	O.D.	OUTSIDE DIAMETER	U.V.	UNIT VENTILATOR
DR.	DOOR	OFF.	OFFICE	V.	SHEET VINYL
DWG.	DRAWING	O.H.D.	OVERHEAD DOOR	V.C.B.	VINYL COVE BASE
		OPNG.	OPENING	V.C.T.	VINYL COMPOSITION TILE
EA.	EACH	PERF.	PERFORATED	V.S.B.	VINYL STRAIGHT BASE
ELEC.	ELECTRIC - ELECTRICAL	PLAS.	PLASTIC	VEST.	VESTIBULE
ELEV.	ELEVATION	PLAT.	PLATFORM	V.T.R.	VENT THRU ROOF
E. PNL.	ELECTRICAL PANEL	PLYMD	PLYWOOD	W/	WITH
EQUIP.	EQUIPMENT	P.S.F.	POUNDS PER SQUARE FOOT	W.B.	WONDER BD. CEMENTIOUS BACKER
ENC.	ELECTRIC WATER COOLER	P.S.I.	POUNDS PER SQUARE INCH	W.C.	WATER CLOSET
EXP. JT.	EXPANSION JOINT	P.T.	PORCELAIN TILE	WD.	WOOD
EXH.	EXHAUST	P.T.C.B.	PORCELAIN TILE COVE BASE	W/O	WITHOUT
EXISTG.	EXISTING	PTD.	PAINTED	W/SCOT.	WAINSCOT
EXIST'G.	EXISTING TO REMAIN	PVC.	POLYVINYL CHLORIDE	WTH.	WITH
		Q.T.	QUARRY TILE	WTH.	WITH
F.A.B.C.	FINE AGGREGATE BITUMINOUS CONCRETE	Q.T.C.B.	QUARRY TILE COVE BASE	WTH.	WITH
F.B.	FACE BRICK	R.	RISER	WTH.	WITH
F.D.	FLOOR DRAIN	RAD.	RADIUS	WTH.	WITH
F.E.	FIRE EXTINGUISHER	R.D.	ROOF DRAIN	WTH.	WITH
FIN. FL.	FINISH FLOOR	REQ'D	REQUIRED	WTH.	WITH
FIN. GR.	FINISH GRADE	RFG.	ROOFING	WTH.	WITH
FL.	FLOOR	RM.	ROOM	WTH.	WITH
FLDG.	FOLDING				
FDN	FOUNDATION				
FTG.	FOOTING				

SYMBOLS

	EARTH
	COMPACTED FILL
	CONCRETE
	CONCRETE BLOCK
	BRICK
	STEEL
	RIGID INSULATION
	BATT INSULATION
	FINISH LUMBER
	ROUGH LUMBER
	SECTION NUMBER
	SECTION INDICATOR
	SHEET NUMBER
	ELEVATION

LOCATION MAP



LIST OF CONSULTANTS

ARCHITECT McKERNAN ARCHITECTS & ASSOCIATES 100 DOBBS LANE SUITE 204 CHERRY HILL, N.J. TEL: (856)-616-2960 FAX: (856)-616-2963	MEP ENGINEER HOLSTEIN WHITE 3800 HORIZON BLVD SUITE 503 TREVOSE, PA TEL: (215)-322-7711 FAX: (215)-322-7709	STRUCTURAL ENGINEER MICHAEL A BEACH & ASSOCIATES 161 GAITHER DRIVE SUITE 102 MOUNT LAUREL, N.J. TEL: (856)-273-1480 FAX: (856)-273-1909
---	---	---

DRAWING INDEX

CS-1	COVER SHEET
ARCHITECTURAL DRAWINGS:	
D-1	DEMOLITION PLAN
A-1	CONSTRUCTION PLAN
ALT-1	CONSTRUCTION PLAN - ALTERNATE #1
A-2	REFLECTED CEILING PLAN
A-3	INTERIOR ELEVATIONS
STRUCTURAL DRAWINGS:	
S-0.0	GENERAL NOTES & DRAWING INDEX
S-0.1	SCHEDULE & ABBREVIATIONS
S-1.0	FOUNDATION PLAN, ROOF FRAMING PLAN & SECTIONS
MECHANICAL DRAWINGS:	
M-1.0	FIRST FLOOR MECHANICAL PLAN
M-2.0	MECHANICAL SCHEDULES & DETAILS
M-2.1	CAPTIVE AIRE SCHEDULES & DETAILS
ELECTRICAL DRAWINGS:	
E-1.0	FIRST FLOOR POWER PLAN
E-1.1	FIRST FLOOR LIGHTING PLAN
E-2.0	ELECTRICAL SCHEDULES & DETAILS
E-2.1	ELECTRICAL SCHEDULES & DETAILS
PLUMBING DRAWINGS:	
P-1.0	FIRST FLOOR SANITARY PLAN
P-1.1	FIRST FLOOR DOMESTIC WATER PLAN
P-2.0	PLUMBING SCHEDULES & DETAILS

PROJECT DESCRIPTION/ SCOPE OF WORK

THE SCOPE OF WORK INCLUDES THE RENOVATION OF A HOME ECONOMICS SEWING CLASSROOM, GI05, AT THE HIGH SCHOOL TO CONVERT IT TO A HOME ECONOMICS CULINARY CLASSROOM.

DEMOLITION WORK INCLUDES REMOVING EXISTING PLASTIC LAMINATED COUNTER WITH CASEWORK AND NECESSARY TRENCHING OF THE SLAB ON GRADE FOR THE NEW PLUMBING WORK.

NEW WORK WILL INCLUDE THE INSTALLATION OF STAINLESS STEEL PREP TABLES, PREP SINKS, HAND SINKS, GAS FIRED OVENS WITH EXHAUST HOOD. A DISHWASHING AREA WILL ALSO BE INSTALLED WITH A THREE BOWL SINK, A COMMERCIAL DISHWASHER WITH COUNTERS AND GREASE TRAP. A STORAGE ROOM WILL BE INSTALLED TO STORE DRY GOODS/ SUPPLIES AS NECESSARY. STAND ALONE REFRIGERATORS AND FREEZERS WILL BE PURCHASED FOR THE ROOM ALONG WITH WIRE STORAGE RACKS AND STAINLESS STEEL WALL MOUNTED POT RACKS FOR ADDITIONAL STORAGE.

NEW WORK WILL ALSO INCLUDE THE INSTALLATION OF MEP SYSTEMS NECESSARY FOR THE NEW EQUIPMENT MENTIONED. THE PROJECT WILL BE PRESENTED AND REVIEWED BY THE HEALTH DEPT. AS NECESSARY.

CODE INFORMATION

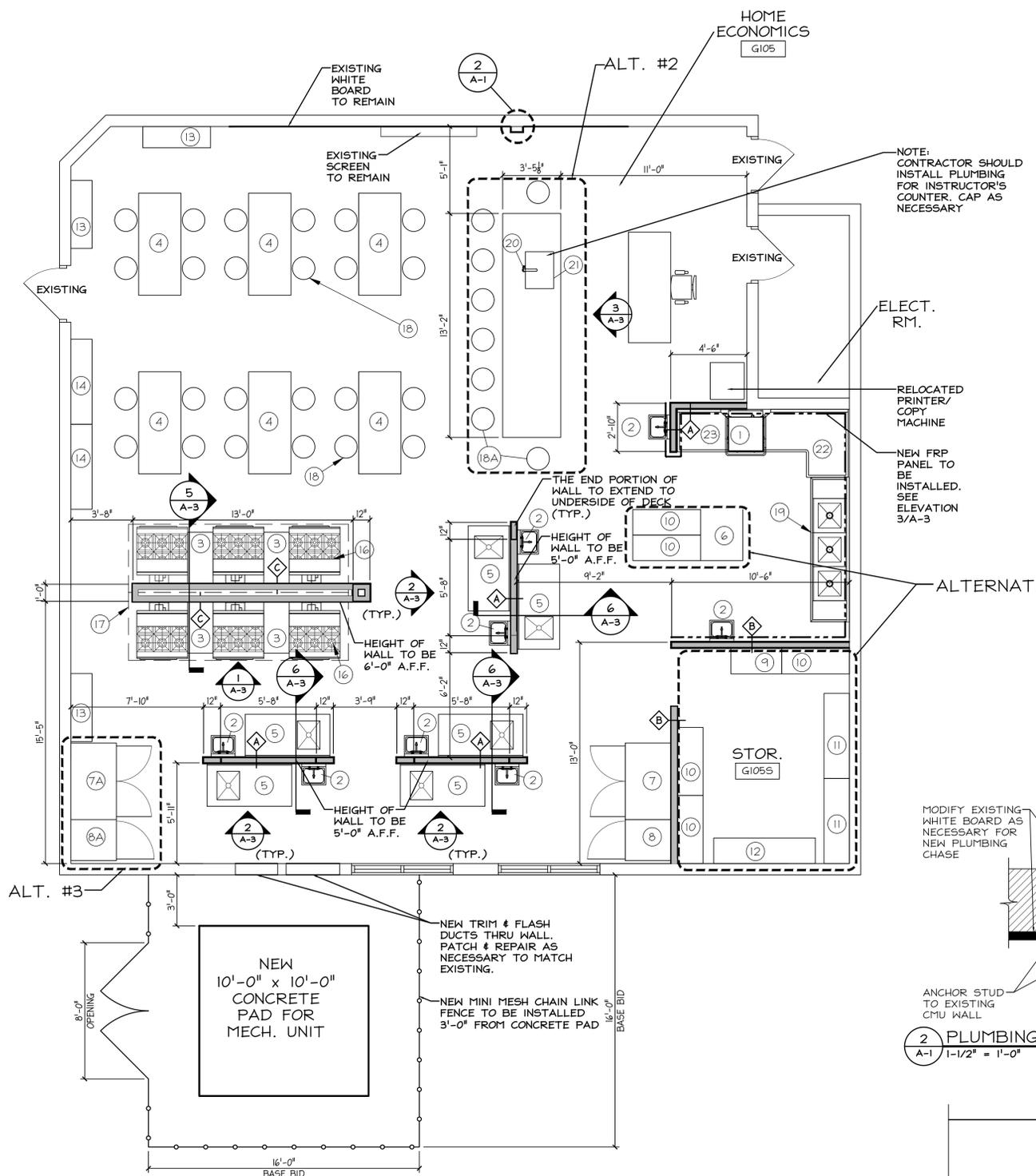
APPLICABLE CODES:
INTERNATIONAL BUILDING CODE/2021 (NJAC 5:23-3.14)
THE NATIONAL STANDARD PLUMBING CODE/2021 (N.J.A.C. 5:23-3.15)
THE NATIONAL ELECTRICAL CODE (NFPA 70) 2020 (NJAC 5:23-3.16)
INTERNATIONAL MECHANICAL CODE/2021 (NJAC 5:23-3.20)
BARRIER FREE REQUIREMENTS PER ICC/ANSI A117.1-2017
REHABILITATION CODE (NJAC 5:23-6)
INTERNATIONAL ENERGY CONSERVATION CODE 2021

BUILDING USE GROUP/ OCCUPANCY
E EDUCATIONAL
CONSTRUCTION TYPE - 2B NON-COMBUSTIBLE

NOTE: OCCUPANT LOAD IS NOT AFFECTED BY THE RENOVATION/ CONVERSION OF THIS CLASSROOM.

NOTE: EGRESS IS NOT AFFECTED BY THE RENOVATION/ CONVERSION OF THIS CLASSROOM.

No.	6-24-2025	ISSUED FOR BIDS	REVISIONS	REV'D BY
APPROVAL:		PROJECT:		
Joseph F. McKernan Jr., R.A.		RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08094		
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: COVER SHEET		
SEAL:	SCALE: AS NOTED	PROJNO: 193	DATE: 6/24/25	DRAWING NO: CS-1
JOSEPH F. MCKERNAN JR., R.A. NJ ARCH. 01 0064 - PA ARCH. 06-0402-X - CT ARCH. 1254	CHANGES MUST BE REFERRED TO THE ARCHITECT WITH THE PROJECT'S ARCHITECT'S SIGNATURE AND SEAL TO BE MADE TO THE DRAWING.	REVISIONS	REVISIONS	REVISIONS



WALL LEGEND

- EXISTING PARTITION WALL TO REMAIN
- NEW PARTITION WALL

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR TO VERIFY OR ESTABLISH ALL DIMENSIONS, ELEVATIONS AND CONDITIONS IN THE FIELD. ALL DIMENSIONS ARE TO THE FACE OF METAL STUD.
2. CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES. OBTAIN ALL PERMITS AS REQUIRED.
3. PAINT ALL NEW AND EXISTING WALLS AT AREAS OF NEW WORK, WITH ONE COAT PRIMER AND TWO COATS FINISH PAINT (U.N.O.).
4. PROVIDE CORNER GUARDS AT ALL G.W.B. CORNERS AND OPENINGS.
5. PROVIDE DOUBLE STUDS AT ALL DRYWALL OPENINGS.
6. CONTRACTOR TO SUBMIT SAMPLES OF FLOORING AND FINISHES, ETC. FOR OWNER'S APPROVAL PRIOR TO INSTALLATION.

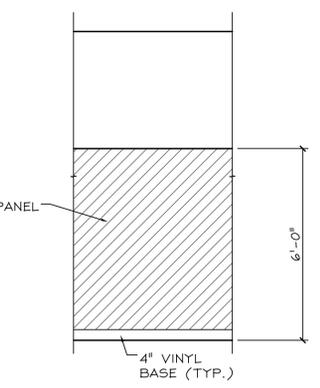
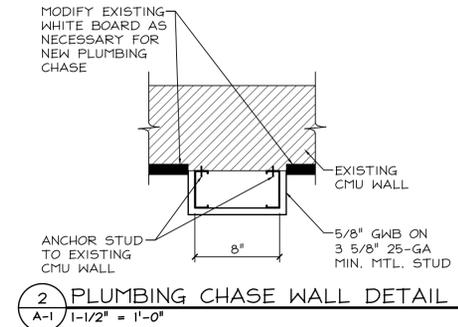
NOTE: CONTRACTOR SHOULD INSTALL PLUMBING FOR INSTRUCTOR'S COUNTER, CAP AS NECESSARY

ELECT. RM.

RELOCATED PRINTER/COPY MACHINE

NEW FRP PANEL TO BE INSTALLED. SEE ELEVATION 3/A-3

ALTERNATE #4

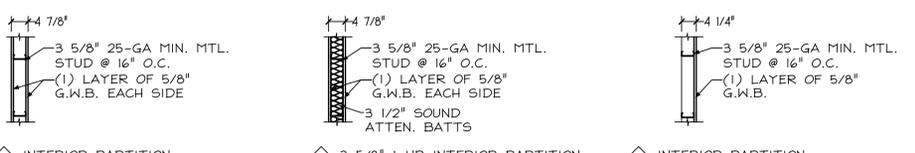


EQUIPMENT LEGEND (SUPPLIED BY CONTRACTOR U.N.O.)

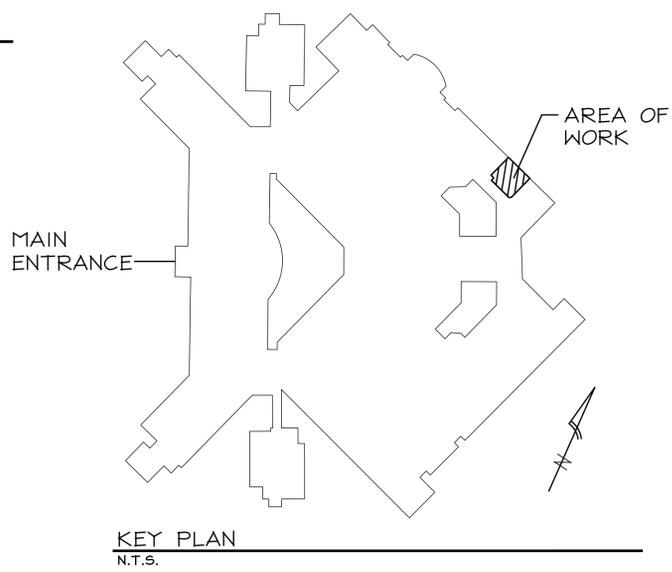
ITEM NO.	ITEM	MFR./ MODEL#	COMMENTS
1	CHEMICAL SANITIZING DOOR-TYPE COMMERCIAL DISH MACHINE	CENTERLINE BY HOBART: CDL-1	PROVIDE RACKS FOR DISHWASHER
2	WALL MOUNTED HAND SINK WITH GOOSENECK FAUCET	REGENCY 17" x 15": #600HS17	34" MAX. TO TOP OF SINK RIM
3	304 STAINLESS STEEL COMMERCIAL WORK TABLE WITH UNDERSHELF	REGENCY 18" x 36": #600T1836G	18-GAUGE WITH GALVANIZED LEGS
4	304 STAINLESS STEEL COMMERCIAL WORK TABLE WITH UNDERSHELF	REGENCY 30" x 72": #600T30720G	18-GAUGE WITH GALVANIZED LEGS
5	304 STAINLESS STEEL WORK TABLE WITH SINK	REGENCY 30" x 60": #600STCB3060L	16-GAUGE WITH SINK ON LEFT
6	304 STAINLESS STEEL COMMERCIAL WORK TABLE WITH UNDERSHELF	REGENCY 30" x 36": #600T3036G	18-GAUGE WITH GALVANIZED LEGS
7/ 7A	2-DOOR REACH-IN REFRIGERATOR	NEXEL: #243008	47 CU. FT.
8/ 8A	1-DOOR REACH-IN FREEZER	NEXEL: #243009	23 CU. FT.
9	WIRE SHELVING (18" x 36")	ULINE: #H-6763	63" HEIGHT WITH 4 SHELVES
10	WIRE SHELVING (18" x 48")	ULINE: #H-6764	63" HEIGHT WITH 4 SHELVES
11	WIRE SHELVING (18" x 60")	ULINE: #H-6765	63" HEIGHT WITH 4 SHELVES
12	WIRE SHELVING (18" x 72")	ULINE: #H-6766	63" HEIGHT WITH 4 SHELVES
13	STAINLESS STEEL WALL MOUNTED POT RACK (15" x 48")	REGENCY SPACE SOLUTIONS: #600PS1548	WITH SHELF AND 18 GALVANIZED HOOKS
14	STAINLESS STEEL WALL MOUNTED POT RACK (15" x 60")	REGENCY SPACE SOLUTIONS: #600PS1560	WITH SHELF AND 18 GALVANIZED HOOKS
15		OMIT	
16	6-OPEN BURNER GAS RESTAURANT RANGE	VULCAN: #36S-6BN	2 EXISTING TO REMAIN 4 TO BE PURCHASED BY SCHOOL DISTRICT
17	EXISTING COMMERCIAL EXHAUST HOOD	CAPTIVEAIRE: #4824 ND-2	EXISTING TO REMAIN
18/ 18A	METAL LAB STOOL	LEARNITURE	24" HEIGHT
19	EXISTING THREE-BOWL SINK	...	EXISTING TO REMAIN
20	GOOSENECK FAUCET	...	SPECIFIED BY PLUMBING ENGINEER
21	SINGLE-BOWL SINK	...	SPECIFIED BY PLUMBING ENGINEER
22	STAINLESS STEEL CLEAN L-SHAPE DISHTABLE - ISLAND (4'-0")	REGENCY SPACE SOLUTIONS: #600CDT148R	RIGHT SIDE INSTALLATION
23	STAINLESS STEEL CLEAN DISHTABLE - LEFT DRAINBOARD (3'-0")	REGENCY SPACE SOLUTIONS: #600CDT36L	LEFT SIDE INSTALLATION

1 CONSTRUCTION PLAN
A-1 1/4" = 1'-0"

TYPICAL INTERIOR PARTITIONS:

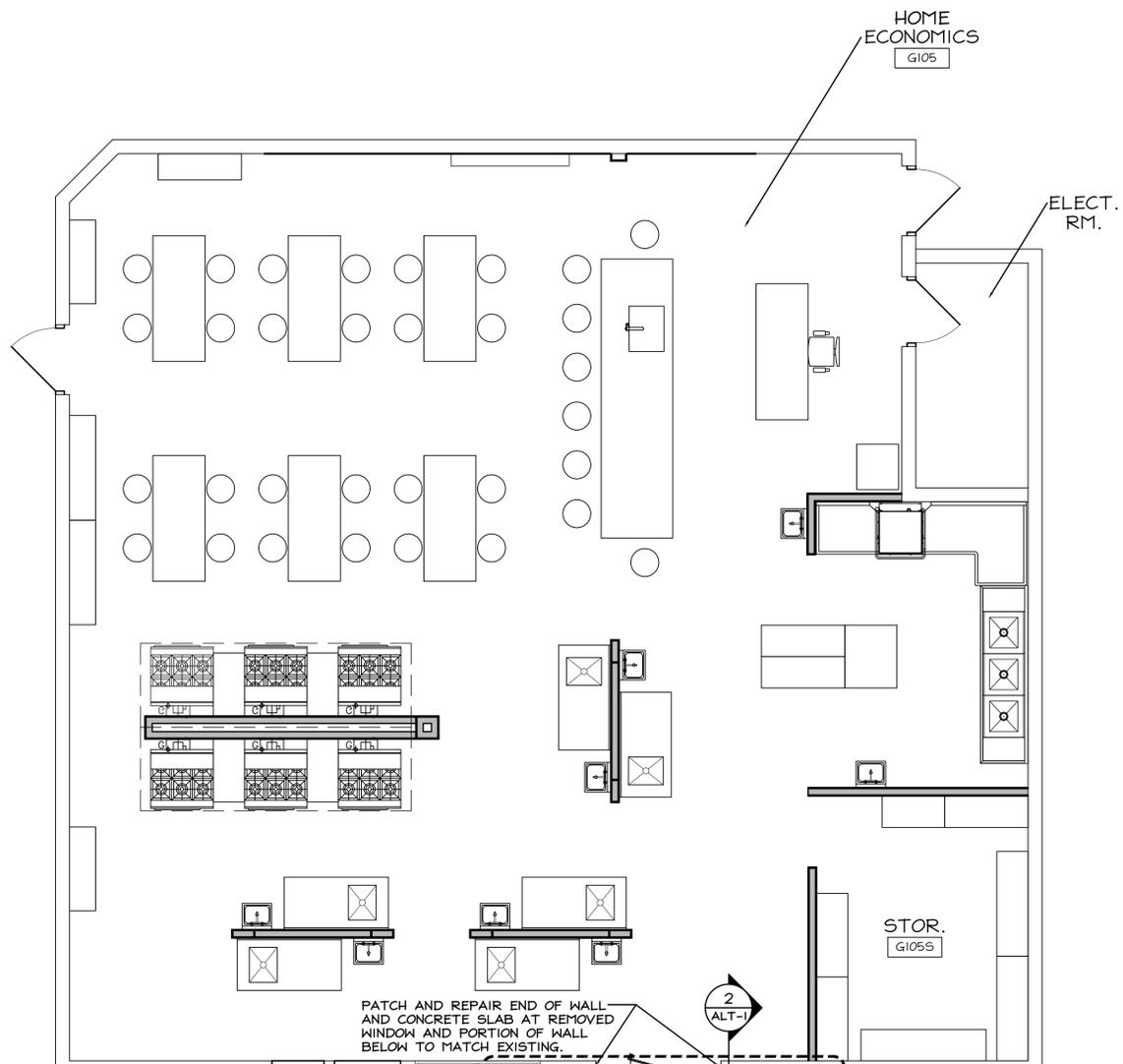


NOTE: SEE DETAILS ON A-3 FOR LOW WALLS



KEY PLAN
N.T.S.

6-24-2025		ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:	RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08094	
Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: CONSTRUCTION PLAN	
JOSEPH F. MCKERNAN JR., R.A. NJ ARCH. #1984 - PA ARCH. #A-01482-1 - CT ARCH. 1754	SCALE: AS NOTED	PROJ. NO.: 193	DRAWING NO.: A-1
SEAL:	DATE: 6/24/25	REVISIONS MUST BE REFERRED TO SHEET OF ANY DIMENSIONS OR NOTES. HOLDING BY CONTRACTOR. NO NET SCALE DRAWING.	DRAWN BY: DR
REVISIONS #1 & #2	CHK'D BY:		

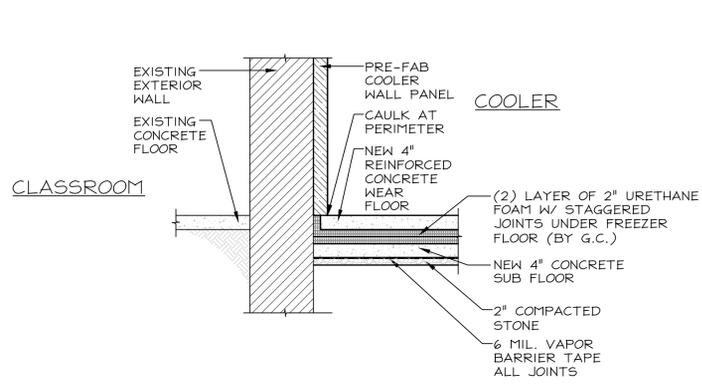


WALL LEGEND

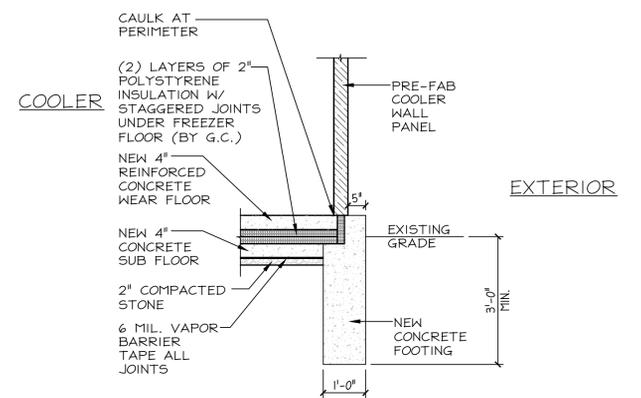
— EXISTING PARTITION WALL TO REMAIN

— NEW PARTITION WALL

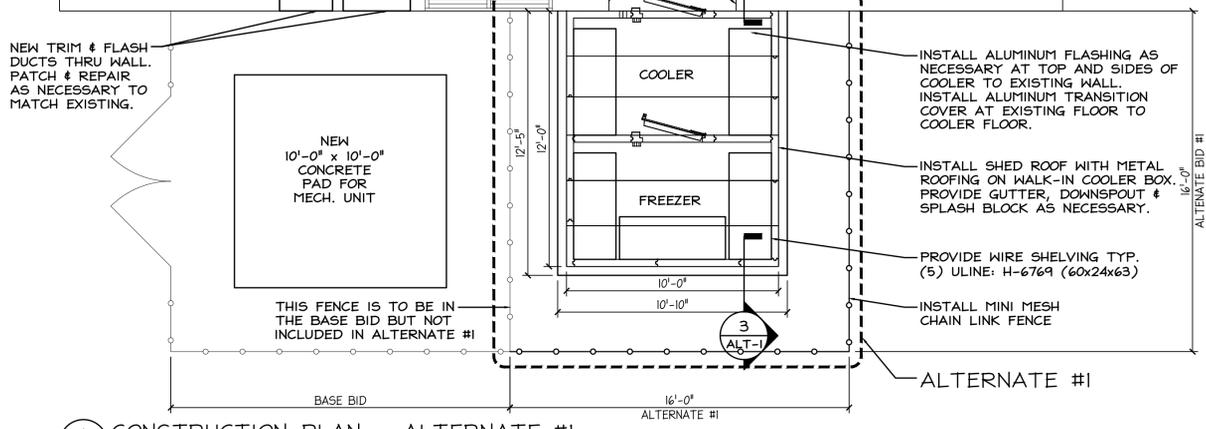
- GENERAL CONSTRUCTION NOTES**
1. CONTRACTOR TO VERIFY OR ESTABLISH ALL DIMENSIONS, ELEVATIONS AND CONDITIONS IN THE FIELD. ALL DIMENSIONS ARE TO THE FACE OF METAL STUD.
 2. CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES. OBTAIN ALL PERMITS AS REQUIRED.
 3. PAINT ALL NEW AND EXISTING WALLS AT AREAS OF NEW WORK, WITH ONE COAT PRIMER AND TWO COATS FINISH PAINT (U.N.O.).
 4. PROVIDE CORNER GUARDS AT ALL GMB CORNERS AND OPENINGS.
 5. PROVIDE DOUBLE STUDS AT ALL DRYWALL OPENINGS.
 6. CONTRACTOR TO SUBMIT SAMPLES OF FLOORING AND FINISHES, ETC. FOR OWNER'S APPROVAL PRIOR TO INSTALLATION.



2 INSULATED CONCRETE SLAB AT WALK-IN COOLER
ALT-1/1/2" = 1'-0"



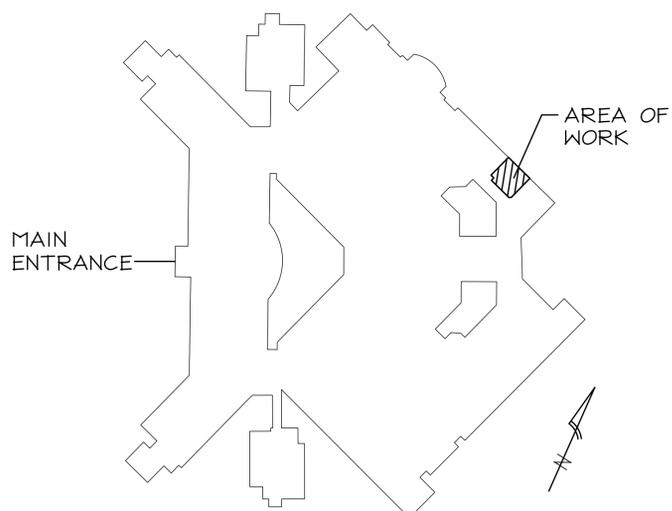
3 INSULATED CONCRETE SLAB AT WALK-IN COOLER
ALT-1/1/2" = 1'-0"



1 CONSTRUCTION PLAN - ALTERNATE #1
ALT-1/1/4" = 1'-0"

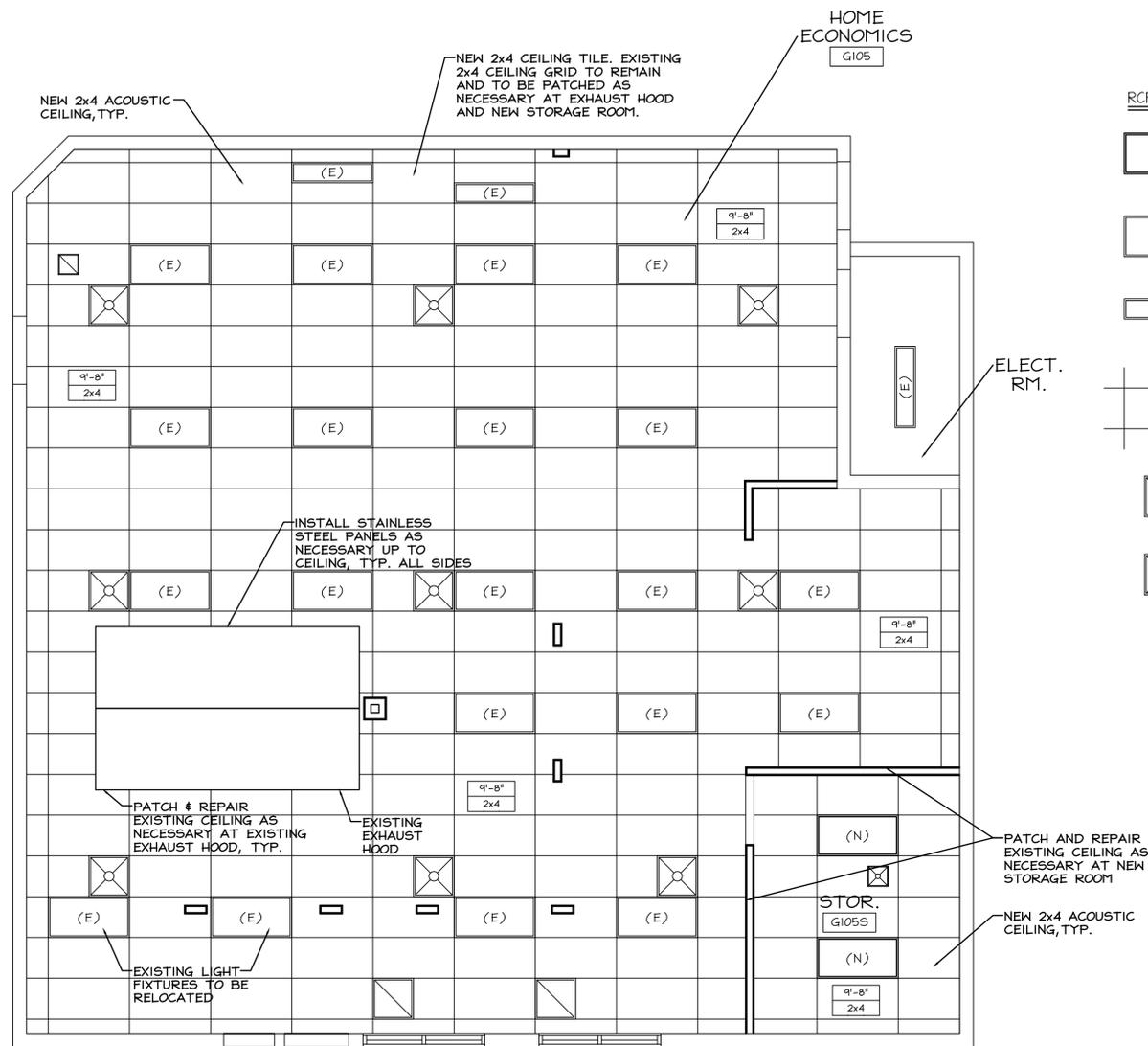
ALTERNATES

- ALTERNATE #1 - FINISH AND INSTALL WALK-IN COOLER BOX AS SHOWN ON DRAWING ALT-1. SEE DETAILS 2 & 3/ ALT-1 AND ENGINEERING DRAWINGS.
- ALTERNATE #2 - FURNISH AND INSTALL INSTRUCTOR'S COUNTER WITH SINK AND (8) LAB STOOLS 18A. SEE DETAILS ON DRAWING A-3.
- ALTERNATE #3 - FURNISH AND INSTALL REACH-IN REFRIGERATOR 7A & FREEZER 8A.
- ALTERNATE #4 - FURNISH AND INSTALL SHELVING UNITS 6,9,10,11 AND 12.



KEY PLAN
N.T.S.

6-24-2025		ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:	RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08094	
Joseph F. McKernan Jr., R.A. 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: CONSTRUCTION PLAN ALTERNATE #1	
JOSEPH F. MCKERNAN JR., R.A. NJ ARCH #10964 PA ARCH #A-01462-1 CT ARCH 1534	SEAL:	CONTRACTOR MUST BE KEPT BY CONTRACTOR WITH BE SUBJECT OF ANY DISCIPLINES BEFORE INCLUDING WITH CONTRACTOR TO NOT SCALE DRAWING.	SCALE: AS NOTED PROJ. NO.: 193 DATE: 6/24/25 REV'D: DRAWN BY: DR CHECKED BY:
REVISIONS & RESUBMITTALS		DRAWING NO: ALT-1	



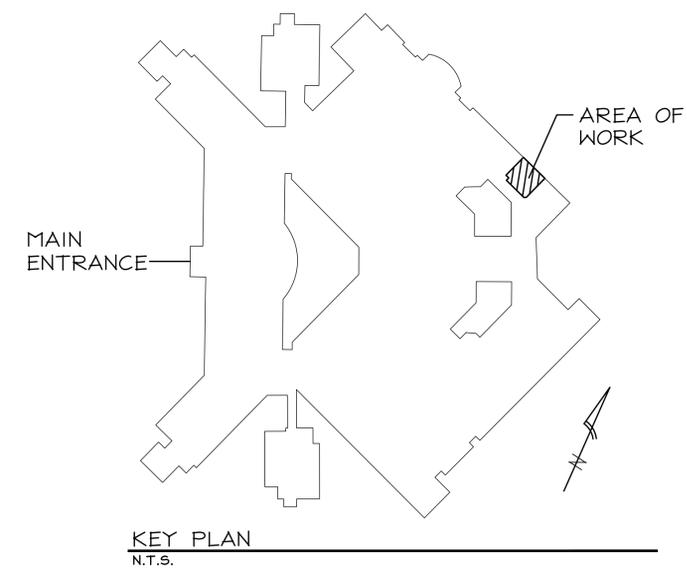
RCP LEGEND

- (N) NEW 2x4 RECESSED LED LIGHT
- (E) EXISTING 2x4 ACOUSTIC CEILING TILE
- (E) EXISTING 1x4 ACOUSTIC CEILING TILE
- 2x4 ACOUSTIC CEILING TILE
- DIFFUSER - RETURN AIR
- DIFFUSER - SUPPLY AIR

GENERAL NOTE:

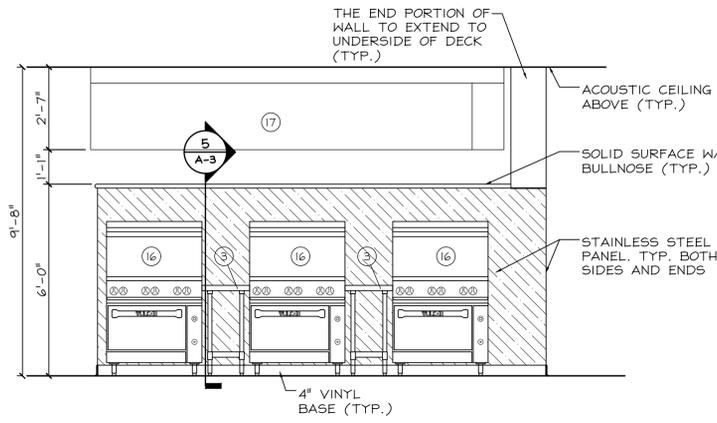
ADDITIONAL ITEMS SUCH AS EXHAUST FANS, SUPPLY AND RETURN DIFFUSERS HAVE BEEN SHOWN ON THE REFLECTED CEILING PLANS FOR COORDINATION PURPOSES. REFER TO MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS AND SPECIFICATIONS FOR ADD'L INFO.

1 REFLECTED CEILING PLAN
A-2 1/4" = 1'-0"

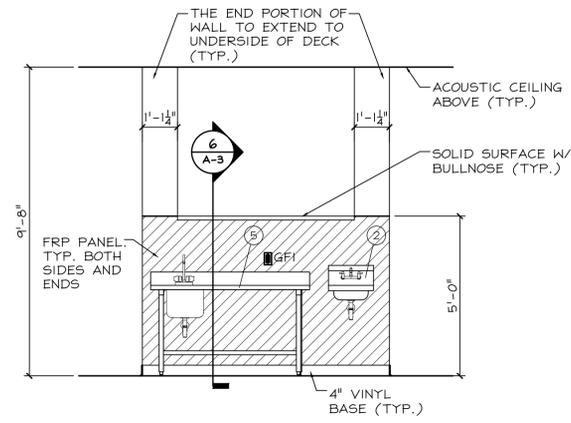


KEY PLAN
N.T.S.

6-24-2025		ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT: RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08034		
 Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: REFLECTED CEILING PLAN	
JOSEPH F. MCKERNAN JR., R.A. <small>NJ ARCH 01 0784 PA ARCH 06-01402-1 CT ARCH 1754</small>	SEAL:	<small>CONTRACTOR MUST BE KEPT ADVISED OF ANY CHANGES BEFORE PROCEEDING WITH CONSTRUCTION TO AVOID DISCREPANCY.</small> <small>REVISIONS NUMBER & REVISION CHECKED BY:</small>	SCALE: AS NOTED PROJNO: 193 DATE: 6/24/25 REV'D: DRAWN BY: DR CHECKED BY:
			DRAWING NO: A-2

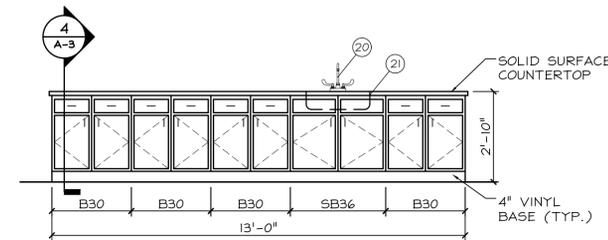


1 ELEVATION: HOME ECONOMICS GI05
A-3 3/8" = 1'-0"

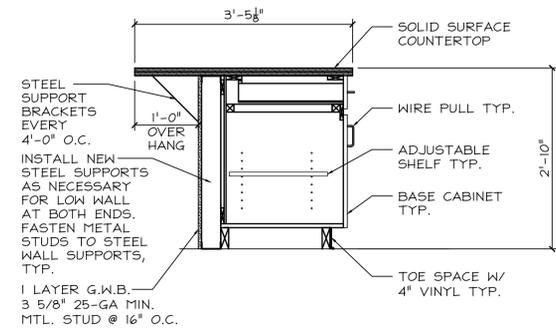


2 ELEVATION: HOME ECONOMICS GI05
A-3 3/8" = 1'-0"

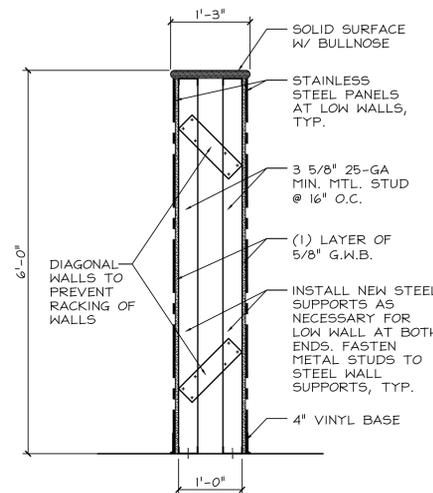
NOTE:
SEE SHEET A-1 FOR FIXTURE LIST



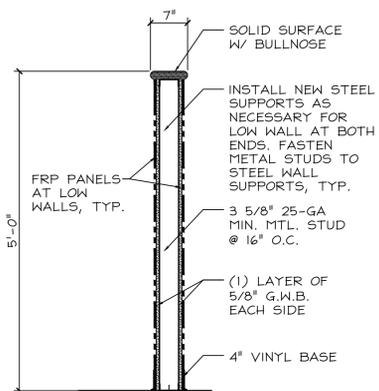
3 ELEVATION: INSTRUCTOR'S COUNTER
A-3 3/8" = 1'-0"



4 CASEWORK SECTION AT INSTRUCTOR'S COUNTER
A-3 3/4" = 1'-0"



5 SECTION AT HALF-WALL
A-3 3/4" = 1'-0"



6 SECTION AT HALF-WALL
A-3 3/4" = 1'-0"

6-24-2025		ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT: RENOVATIONS TO THE: HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08034		
 Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: INTERIOR ELEVATIONS	
JOSEPH F. MCKERNAN JR., R.A.	SEAL:	CONTRACTOR MUST BE KEPT BY ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION TO NOT SCALE DRAWING.	SCALE: AS NOTED DRAWING NO: A-3
PROJ. NO.: 193 DATE: 6/24/25 REV'D.: DRAWN BY: DR CHECKED BY:		REVISIONS:	

STRUCTURAL NOTES

GENERAL NOTES:

- THIS PROJECT HAS BEEN DESIGNED USING THE 2021 INTERNATIONAL BUILDING CODE NEW JERSEY EDITION.
- STRUCTURAL SPECIAL INSPECTIONS ARE A REQUIREMENT FOR THIS PROJECT. A QUALIFIED INDEPENDENT INSPECTION AGENCY SHALL BE SELECTED TO PERFORM THIS SERVICE. ALL INSPECTIONS AS REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE (SEE THE FOLLOWING TABULAR REFERENCES) ARE REQUIRED AT A MINIMUM. FOR STEEL CONSTRUCTION REFER TO TABLE 1704.3, FOR CONCRETE CONSTRUCTION SEE TABLE 1704.4, FOR SOILS SEE TABLE 1704.7. SEE THE NOTES ON THIS DRAWING FOR ANY ADDITIONAL INSPECTIONS REQUIRED.
- ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR ADHERING TO THE REQUIREMENTS AS INDICATED IN THE NOTES FOR THIS JOB. FAILURE OF THE CONTRACTOR TO READ THE STRUCTURAL NOTES DOES NOT PERMIT THE CONTRACTOR TO DEVIATE FROM THEIR REQUIREMENTS.
- NO FIELD MODIFICATIONS TO ANY STRUCTURAL COMPONENTS SHALL BE MADE WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER. THIS INCLUDES, BUT IS NOT LIMITED TO REVISIONS DUE TO MIS-LOCATION, MISFIT, OR ANY OTHER CONSTRUCTION ERRORS.
- ALL CONSTRUCTION AND DEMOLITION SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING ALL OSHA REGULATIONS.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL PEOPLE WHO MAY BE ON OR NEAR THE WORK AREA, BY MAINTAINING A SAFE WORK AREA, SAFE WORKING CONDITIONS, AND LIMITING ACCESS TO THE WORK AREA.
- CONTRACTOR IS FULLY RESPONSIBLE FOR HIS WORKERS' SAFETY, SAFETY EQUIPMENT, FIRST AID, AND EMERGENCY HANDLING PROCEDURES.
- CONTRACTOR SHALL PERSONALLY SUPERVISE THE WORK AND SHALL BE PRESENT AT THE WORK SITE AT ALL TIMES DURING CONSTRUCTION WORK. CONTRACTOR SHALL PROVIDE ADEQUATE PERSONNEL FOR THE PROPER COORDINATION AND EXPEDITING OF THE WORK.
- THESE DRAWINGS SHALL NOT BE SCALED FOR PURPOSES OF CONSTRUCTION.
- TYPICAL DETAILS ARE NOT NECESSARILY REFERENCED ON EVERY DRAWING SHEET AND SHALL BE USED BY THE CONTRACTOR AS REQUIRED FOR ALL CONDITIONS WHERE APPLICABLE.
- IN CASE OF CONFLICT BETWEEN STRUCTURAL DRAWINGS AND OTHER DRAWINGS OF THIS PROJECT, CONTRACTOR SHALL IMMEDIATELY CONTACT ARCHITECT FOR CLARIFICATION PRIOR TO START OF WORK.
- ALL COLUMN LINE AND WALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS ARE FOR REFERENCE AND SHALL FIRST BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO THE START OF THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR SURVEYING AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO THE LOCATION, ELEVATIONS AND DIMENSIONS OF EXISTING WALLS AND FRAMING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TEMPORARY SHORING OF THE BUILDING STRUCTURE AS REQUIRED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. DESIGN OF SHORING, SCAFFOLDING, AND OTHER MEANS AND METHODS STRUCTURES SHALL BE DESIGNED BY ENGINEERS HIRED BY THE CONTRACTOR.
- SECTIONS SHOWN ON PLANS APPLY TO SIMILAR CONDITIONS THROUGHOUT THE BUILDING.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL DRAWINGS FOR THE PROJECT FOR THE FOLLOWING INFORMATION.
 - LOCATION OF ALL REQUIRED OPENINGS IN ROOF, ETC. ALL OPENINGS MAY NOT BE INDICATED ON STRUCTURAL DRAWINGS.
 - LOCATION AND SIZE OF ALL EQUIPMENT PADS.
- ALL COSTS OF INVESTIGATION OR REDESIGN REQUIRED TO CORRECT CONTRACTOR MIS-LOCATION OF STRUCTURAL ELEMENTS OR OTHER CONSTRUCTION DOCUMENT DEVIATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE.

SHOP DRAWINGS AND SUBMITTALS:

- FOR A LISTING OF SHOP DRAWINGS AND OTHER SUBMITTALS REQUIRED FOR THIS PROJECT SEE THE SHOP DRAWING AND SUBMITTAL REQUIREMENTS TABLE. CERTAIN SUBMITTALS MUST BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECTS JURISDICTION. THE CONTRACTOR IS REQUIRED TO RETAIN SPECIALTY ENGINEERS AS REQUIRED TO PREPARE THESE SUBMITTALS.
- SHOP DRAWINGS AND RELATED MATERIALS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT/STRUCTURAL ENGINEER. THE GENERAL CONTRACTOR SHALL REVIEW ALL SUBMISSIONS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION, TECHNICAL CONTENT, COORDINATION OF TRADES, DIMENSIONAL ACCURACY, SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL APPROVE AND SO STAMP EACH SUBMISSION.
- SHOP DRAWINGS, WHERE REQUIRED, SHALL BE SUBMITTED AS FOLLOWS. PROVIDE ONE (1) ELECTRONIC PDF COPY TO THE ENGINEER FOR REVIEW. ONE (1) COPY WILL BE MARKED UP AND RETURNED FOR DISTRIBUTION AS REQUIRED BY THE CONTRACTOR. ALL SHOP DRAWINGS SHALL BE CHECKED PRIOR TO SUBMISSION. CONTRACTOR SHALL ALLOW (10) WORKING DAYS IN THE CONSTRUCTION SCHEDULE FOR SHOP DRAWING REVIEW. FAX SUBMITTALS OF SHOP DRAWINGS WILL NOT BE ACCEPTED.
- STRUCTURAL DESIGN DRAWINGS (INCLUDING ORIGINAL CAD DRAWINGS) SHALL NOT BE USED AS THE BACKGROUNDS FOR THE PRODUCTION OF ANY SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED. THIS INCLUDES REBAR PLACEMENT DRAWINGS, FABRICATION DRAWINGS, ERECTION DRAWINGS, ERECTION DETAILS, ETC. THE CONTRACTOR SHALL PREPARE THEIR OWN SHOP DRAWINGS (INCLUDING DETAILS).
- ANY DEVIATIONS FROM THE ORIGINAL DESIGN OR DESIGN CRITERIA AS SPECIFIED ON THE "ISSUED FOR CONSTRUCTION" DESIGN DOCUMENTS OF THE PROJECT SHALL BE NOTED (BUBBLED, NOTE, ETC.) ON THE SHOP DRAWINGS THAT ARE SUBMITTED FOR APPROVAL.
- REVIEW OF SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY CONTRACT REQUIREMENTS EVEN IF SUCH ITEMS ARE NOT SHOWN ON THE SHOP DRAWINGS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND PROJECT REQUIREMENTS, AND DOES NOT IMPLY APPROVAL OR VARIANCE FROM THE CONTRACT DOCUMENTS. QUANTITIES WILL NOT BE CHECKED BY THE ENGINEER.
- ALL REVISIONS TO SHOP DRAWINGS AFTER THE FIRST SUBMISSION SHALL BE APPROPRIATELY IDENTIFIED ON SUBSEQUENT SUBMISSIONS.
- SUBSTITUTIONS TO PRODUCTS SPECIFIED ON THE DRAWINGS IS ACCEPTABLE PROVIDED THE FOLLOWING CRITERIA ARE MET. THE CONTRACTOR SHALL SUBMIT INFORMATION ON THE PRODUCT TO BE SUBSTITUTED THAT SUBSTANTIATES ITS PERFORMANCE ON AN EQUAL OR BETTER VALUE. CONTRACTOR SHALL ALLOW A MINIMUM OF (5) WORKING DAYS IN THE CONSTRUCTION SCHEDULE FOR REVIEW OF THE SUBSTITUTED PRODUCT BY THE ENGINEER.

BUILDING STRUCTURE AND LATERAL BRACING DURING CONSTRUCTION:

- PROPER WEIGHT DISTRIBUTION OF CONSTRUCTION MATERIALS DURING CONSTRUCTION IS A MUST AND IS THE RESPONSIBILITY OF THE CONTRACTOR. DO NOT STACK CONSTRUCTION MATERIALS ON UNBRACED FRAMING. AVOID STACKING HEAVY CONSTRUCTION MATERIALS AT MID-SPAN OF FRAMING. HEAVY CONSTRUCTION MATERIALS SHOULD BE STORED AT GROUND LEVEL AND ONLY MOVED TO ELEVATED FLOOR AND ROOF LOCATIONS WHEN REQUIRED FOR INSTALLATION.
- EXISTING CONDITIONS REQUIRE CONTRACTOR FIELD VERIFICATION PRIOR TO CONSTRUCTION OF THE NEW STRUCTURES. THE ENGINEER MUST BE NOTIFIED IMMEDIATELY IF EXISTING CONDITIONS DIFFER FROM THOSE SHOWN ON THE CONTRACT DRAWINGS. IN NO INSTANCE SHALL THE EXISTING BUILDING BE MODIFIED IF EXISTING CONDITIONS DIFFER FROM THOSE DEPICTED ON THE CONTRACT DOCUMENTS. THE ENGINEER MUST BE NOTIFIED IMMEDIATELY TO PROVIDE ADDITIONAL DETAILS AS REQUIRED IF EXISTING CONDITIONS DIFFER FROM THOSE DOCUMENTED ON THE CONTRACT DOCUMENTS.

EXISTING BUILDING REFERENCE DRAWINGS:

- THE FOLLOWING LIST OF EXISTING DRAWINGS WERE USED TO DOCUMENT THE CONSTRUCTION OF THE EXISTING BUILDING SHOWN ON THE STRUCTURAL DRAWINGS.
 - ARCHITECTURAL AND STRUCTURAL DRAWINGS PREPARED BY RADEY AND FULLER ARCHITECTS & ENGINEERS, DATED 05/18/1994.
- CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER IMMEDIATELY IF EXISTING STRUCTURAL CONDITIONS DIFFER FROM THOSE SHOWN OR NOTED ON THE STRUCTURAL DRAWINGS.

STEEL:

- ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360-16 (SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS), AND WITH AISC 303-16 (CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES). QUALITY CONTROL AND QUALITY ASSURANCE DURING STEEL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER N OF AISC 360.
- ALL CHANNELS, ANGLES AND PLATE MATERIAL SHALL CONFORM TO ASTM A36.
- ALL STEEL SHALL BE THOROUGHLY CLEANED BY POWER TOOL CLEANING (SSPC SP3) PRIOR TO APPLYING PRIMER.
- ALL STEEL SHALL HAVE A SHOP COAT OF RUST INHIBITIVE PRIMER UNLESS OTHERWISE NOTED. ALL PRIMER THAT IS DAMAGED IN THE FIELD AND ALL FIELD WELDS SHALL BE TOUCHED UP WITH FIELD APPLIED PRIMER.
- ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED, AS DESCRIBED IN "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" (AWS D1.1), TO PERFORM THE TYPE OF WORK REQUIRED.
- ALL STEEL WELDING RODS SHALL BE E70XX.
- THE MINIMUM SIZE OF ALL FILLET WELDS SHOWN ON DRAWINGS SHALL BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL TABLE 12.4 UNLESS NOTED OTHERWISE.
- STEEL FABRICATOR IS SOLELY RESPONSIBLE FOR SURVEYING AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO THE LOCATION, ELEVATION, AND DIMENSIONS OF EXISTING WALLS AND FRAMING.
- SUBMIT CHECKED STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION.
- PERFORM INSPECTIONS OF STEEL CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODE.

CONCRETE:

- THE PROVISIONS OF ACI 318-19 HAVE BEEN UTILIZED FOR THE DESIGN OF CONCRETE ELEMENTS ON THIS PROJECT.
- ALL CONCRETE SHALL BE NORMAL WEIGHT, READY-MIX. ALL CONCRETE MIX DESIGNS SHALL BE DESIGNED BY ENGINEERS RETAINED BY THE CONCRETE SUPPLIER ACCORDING TO THE CRITERIA CONTAINED WITHIN THESE NOTES AND AS SHOWN ON THE CONTRACT DRAWINGS. SUBMIT ALL CONCRETE MIX DESIGNS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ALL SUBMITTED MIX DESIGNS SHALL INCLUDE SAMPLE CYLINDER BREAK TEST RESULTS CONFIRMING COMPRESSIVE STRENGTH OF EACH MIX DESIGN.
- ALL CONCRETE SHALL HAVE A WATER REDUCING ADMIXTURE AS REQUIRED TO INCREASE WORKABILITY. WORKABILITY SHALL NOT BE ACHIEVED THROUGH THE ADDITION OF WATER TO THE MIX. CONCRETE SLUMP PRIOR TO ADMIXTURE ADDITION SHALL BE A MAXIMUM OF 3 INCHES. PROPORTIONS OF CONCRETE ADMIXTURES SHALL BE DETERMINED BY THE CONCRETE MIX DESIGNER.
- DO NOT USE ADMIXTURES THAT CONTAIN CHLORIDES. FLY ASH OR OTHER POZZOLANS SHALL NOT BE USED IN ANY CONCRETE UNLESS APPROVED BY THE ENGINEER.
- ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING ACI PUBLICATIONS ACI 301 (SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS), ACI 302.1R (GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION), ACI 304 (GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE), ACI 311.4 (GUIDE FOR CONCRETE INSPECTION), ACI 315 (DETAILS AND DETAILING OF CONCRETE REINFORCEMENT), ACI 318 (BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE), ACI 347R (GUIDE TO FORMWORK FOR CONCRETE), AND ACI 546R (GUIDE TO CONCRETE REPAIR). IN ADDITION, REFER TO THE CRSI - MANUAL OF STANDARD PRACTICE FOR DETAILS ON THE FABRICATION AND PLACEMENT OF CONCRETE REINFORCING.
- PRIOR TO FABRICATION OR SHIPMENT OF MATERIAL, THE CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL OF SHOP DRAWINGS. SHOP DRAWINGS SHALL INDICATE BENDING DIAGRAMS, SPLICING, LAPPING, SHAPES, DIMENSIONS AND DETAILS OF ALL BAR REINFORCING. THE APPROVAL OF SHOP DRAWINGS WILL BE FOR ARRANGEMENT ONLY AND SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR ERRORS, OMISSIONS OR THE ACCURACY OF HIS OWN DIMENSIONS. DRAWINGS AND DETAILS SHALL CONFORM WITH ACI 315. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO THE OWNER'S REPRESENTATIVE.
- ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60.
- FOOTING AND SLAB REINFORCEMENT NOT SHOWN ON SECTIONS AND PLANS IS THE SAME AS THAT SHOWN IN SIMILAR SECTIONS AND AT SIMILAR LOCATIONS.
- LAP ALL BARS PER TABLE 1 LAP SPLICE LENGTHS FOR CONCRETE, CLASS B. LAP ALL WWF A MINIMUM OF 8 INCHES.
- CONTRACTOR SHALL PROVIDE ALL BOLSTERS, CHAIRS, BAR POSITIONERS, ETC. AS REQUIRED TO SET REBAR TO REQUIRED DIMENSIONS INDICATED ON DRAWINGS.
- CONSTRUCTION JOINTS IN SLABS SHALL BE AT MID-SPAN AND KEY JOINTED WITH REINFORCING CONTINUOUS ACROSS JOINT. COORDINATE WITH ENGINEER FOR CONSTRUCTION JOINT LOCATIONS PRIOR TO CONSTRUCTION. CONSTRUCTION JOINTS ARE TO BE LOCATED WITH RESPECT TO PARTITIONS, FLOOR FINISHES, DEPRESSIONS, ETC. AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
- ALL CONCRETE PLACED AT TEMPERATURES BELOW 50 DEGREES F, SHALL CONFORM TO THE REQUIREMENTS OF ACI 306R "GUIDE TO COLD WEATHER CONCRETING". ALL CONCRETE PLACED IN HOT WEATHER SHALL CONFORM TO THE REQUIREMENTS OF ACI 305R "GUIDE TO HOT WEATHER CONCRETING".
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL SLEEVES, INSERTS, ANCHOR BOLTS, AND OTHER EMBEDDED ITEMS AS REQUIRED BY OTHER TRADES.
- ALL CONCRETE SHALL BE PROPERLY CONSOLIDATED THROUGH THE USE OF VIBRATORS. VIBRATORS SHALL NOT BE USED TO TRANSPORT CONCRETE ALONG FORMWORK.
- UNLESS OTHERWISE SPECIFIED, A TESTING AGENCY SHALL BE EMPLOYED FOR EVALUATION AND QUALITY CONTROL OF CONCRETE PLACED. THE TESTING AGENCY PERFORMING ACCEPTANCE TESTING SHALL COMPLY WITH ASTM C1077. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318. FREQUENCY OF CONCRETE TESTING SHALL MEET THE REQUIREMENTS OF ACI 318 AT A MINIMUM UNLESS REQUIRED OTHERWISE BY THE APPLICABLE BUILDING CODE.

FOUNDATIONS:

- SPECIAL INSPECTIONS FOR EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT, AND LOAD BEARING REQUIREMENTS SHALL BE IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND TABLE 1704.7.
- BOTTOM OF ALL FOOTINGS HAVE BEEN DESIGNED TO BEAR ON SOIL CAPABLE OF SAFELY SUPPORTING 2,000 PSF.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE AUTHORITIES TO LOCATE ALL POTENTIALLY BURIED UTILITIES WITHIN THE PROPOSED PROJECT SITE BUILDING FOOTPRINT PRIOR TO COMMENCING EXCAVATION FOR NEW BUILDING FOUNDATIONS.
- REMOVE SURFACE VEGETATION, TOPSOIL, ROOT SYSTEMS, ORGANIC MATERIAL, EXISTING FILL, AND SOFT UNSUITABLE MATERIAL FROM THE BUILDING AREA.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING NEW FOUNDATION CONSTRUCTION ACTIVITIES ADJACENT TO EXISTING BUILDING FOUNDATIONS THAT ARE TO REMAIN (EVEN IF LOCATED ON AN ADJACENT PROPERTY). SINCE DRAWINGS FOR EXISTING CONSTRUCTION ARE NOT ALWAYS AVAILABLE DURING DESIGN, CERTAIN ASSUMPTIONS MAY BE MADE REGARDING EXISTING FOUNDATIONS BASED ON TYPICAL CONSTRUCTION PRACTICES. THESE ASSUMPTIONS TYPICALLY REQUIRE CONTRACTOR FIELD VERIFICATION PRIOR TO CONSTRUCTION OF THE NEW STRUCTURES. IN ANY EVENT, THE ENGINEER MUST BE NOTIFIED IMMEDIATELY IF EXISTING SITE OR FOUNDATION CONDITIONS DIFFER FROM THOSE SHOWN OR ASSUMED ON THE CONTRACT DRAWINGS. IN NO INSTANCE SHALL EXISTING BUILDING FOUNDATIONS BE UNDERMINED TO INSTALL NEW FOUNDATIONS. IF NEW BOTTOM OF FOOTING ELEVATIONS ARE LOWER THAN ADJACENT EXISTING BOTTOM OF FOOTING ELEVATIONS THE ENGINEER MUST BE NOTIFIED IMMEDIATELY TO PROVIDE ADDITIONAL DETAILS AS REQUIRED TO CONSTRUCT THE NEW FOUNDATIONS AT THE LOWER LEVEL.
- THE CONTRACTOR MUST PROVIDE SURFACE DRAINAGE AND PUMPS TO PROTECT ALL EXCAVATION FROM FLOODING OR GROUND WATER INFILTRATION. FLOODING OF ANY EXCAVATION AFTER APPROVAL OF THE SUBGRADE WILL BE CAUSE FOR COMPLETE RE-PREPARATION OF THE SUBGRADE.
- BOTTOM OF ALL FOOTINGS MUST BE INSPECTED AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE PLACING ANY CONCRETE. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN A SOIL BEARING PRESSURE OF 2,000 PSF BELOW ALL FOOTINGS.
- BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF THREE FEET (3'-0") BELOW EXTERIOR FINISH GRADE.
- STANDARD PROCEDURES FOR FROST PROTECTION OF FOUNDATIONS AND EXCAVATIONS SHALL BE EMPLOYED FOR WINTER CONSTRUCTION. BACKFILLING OF EXCAVATIONS SHALL BE DONE AS SOON AS POSSIBLE TO PROTECT FOUNDATIONS FROM FROST.
- UNLESS OTHERWISE DICTATED BY THE GEOTECHNICAL ENGINEER, ALL FILL AND BACKFILL SHALL BE COMPACTED IN 8 INCH MAXIMUM LIFTS TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D1557.

STRUCTURAL DRAWING INDEX	
DRAWING	TITLE
S-0.0	GENERAL NOTES & DRAWING INDEX
S-0.1	SCHEDULES & ABBREVIATIONS
S-1.0	PARTIAL ROOF AND FIRST FLOOR FRAMING PLAN AND TYPICAL DETAILS

NICHOLAS J. COLAMECO
PROFESSIONAL ENGINEER
NJ LIC. NO. 24GE05930300

MICHAEL A. BEACH & ASSOCIATES, LLC
CONSULTING STRUCTURAL ENGINEERING
CENTERPOINTE AT EAST GATE CORPORATE CENTER
161 GAITHER DRIVE
MOUNT LAUREL, NEW JERSEY 08054
PH: (856) 273-1909 FAX: (856) 273-1480
EMAIL: mail@mabeachassociates.com
NJ Certificate of Authorization No. 24CA27962200
Project No: 747.274

06/24/25		ISSUED FOR BIDS		NJC	
No.	DATE	DESCRIPTION	REVISIONS	REV'D BY	
APPROVAL:		PROJECT:			
MONROE TOWNSHIP SCHOOL DISTRICT HOME ECONOMICS CLASSROOM AT THE HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08094					
Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034			TITLE: GENERAL NOTES & DRAWING INDEX		
JOSEPH F. MCKERNAN JR., R.A. <small>NJ ARCH # 10884 - PA ARCH 64-01402-1 - CT ARCH 7024</small>		SEAL:	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR FIELD VERIFICATION PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND SHALL BE RESPONSIBLE FOR ANY DIMENSIONAL ERRORS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DIMENSIONAL ERRORS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DIMENSIONAL ERRORS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DIMENSIONAL ERRORS.	SCALE: AS NOTED DRAWING NO:	REV'D BY: NJC CHECKED: TMJ
S-0.0					

WIND CRITERIA		
DESCRIPTION	SYMBOL	VALUE
BASIC WIND SPEED (3 SECOND GUST)	V	127 MPH
RISK CATEGORY	-	III
EXPOSURE CATEGORY	-	C
INTERNAL PRESSURE COEFF	GCPi	+/-0.18

SEISMIC CRITERIA		
DESCRIPTION	SYMBOL	VALUE
RISK CATEGORY	-	III
SEISMIC IMPT FACTOR	I _E	1.25
MAPPED SPECTRAL ACCEL FOR SHORT PERIODS	S _s	0.16 g
MAPPED SPECTRAL ACCEL FOR ONE SECOND PERIOD	S ₁	0.045 g
SPECTRAL RESPONSE COEFF	S _{DS}	0.171 g
SPECTRAL RESPONSE COEFF	S _{DI}	0.072 g
SITE CLASS	-	D
SEISMIC DESIGN CATEGORY	-	B

SNOW LOAD DESIGN SCHEDULE		
DESCRIPTION	SYMBOL	VALUE
GROUND SNOW LOAD	P _g	20 PSF
FLAT-ROOF SNOW LOAD	P _f	16.0 PSF
SNOW EXPOSURE CATEGORY	C _e	1.0
THERMAL FACTOR	C _t	1.0
SNOW LOAD IMPT FACTOR	I	1.10

TYPE	COVER
FOOTINGS, AND OTHER CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER (#6 BAR AND LARGER)	2"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER (#5 BAR AND SMALLER)	1 1/2"

CAST-IN-PLACE CONCRETE CLEAR COVER NOTES:
 1. MINIMUM REINFORCING COVER SHALL BE PROVIDED PER THIS TABLE UNLESS SHOWN OR NOTED OTHERWISE ON PLANS AND SECTIONS.

TABLE 1 LAP SPLICE LENGTHS FOR CONCRETE CLASS B SPLICE LENGTHS (INCHES)												
BAR SIZE	3,000 PSI CONCRETE			4,000 PSI CONCRETE			5,000 PSI CONCRETE			6,000 PSI CONCRETE		
	TENSION			TENSION			TENSION			TENSION		
	TYP	TOP	COMP									
#3	21	27	12	18	24	12	17	22	12	17	20	12
#4	29	38	15	25	32	15	22	29	15	20	26	15
#5	37	47	19	31	40	19	28	36	19	25	33	19
#6	43	56	23	38	48	23	34	43	23	31	39	23
#7	62	82	27	54	70	27	49	63	27	45	58	27
#8	72	92	30	62	80	30	56	72	30	51	66	30
#9	81	104	34	70	91	34	63	81	34	57	74	34
#10	90	116	39	79	102	39	71	92	39	64	84	39

TABLE 2 STRAIGHT BAR DEVELOPMENT LENGTHS CLASS A SPLICE LENGTHS (INCHES)												
BAR SIZE	3,000 PSI CONCRETE			4,000 PSI CONCRETE			5,000 PSI CONCRETE			6,000 PSI CONCRETE		
	TENSION			TENSION			TENSION			TENSION		
	TYP	TOP	COMP									
#3	16	21	9	14	18	8	13	17	8	12	16	8
#4	22	29	11	19	25	9	17	22	9	15	20	9
#5	28	36	14	24	31	12	21	29	12	19	25	12
#6	33	43	17	29	37	14	26	33	14	24	30	14
#7	48	63	19	42	54	17	38	49	16	34	45	16
#8	55	71	22	48	62	19	43	56	18	39	51	18
#9	62	80	25	54	70	21	48	63	20	44	57	20
#10	69	89	28	61	79	24	54	71	23	50	64	23

NOTES (TABLES 1, 2, AND 3):
 1. DEVELOPMENT AND LAP SPLICE LENGTHS SHOWN ARE FOR UNCOATED ASTM A615 GRADE 60 (F_y = 60,000 PSI) DEFORMED BAR REINFORCING.
 2. DEVELOPMENT LENGTHS ARE BASED ON NORMAL WEIGHT CONCRETE. FOR LIGHT WEIGHT CONCRETE MULTIPLY THE LENGTHS SHOWN BY 1.33.
 3. MINIMUM BAR CLEAR COVER SHALL BE 1 BAR DIAMETER. MINIMUM BAR CLEAR SPACING IS 1 BAR DIAMETER IN BEAMS AND COLUMNS AND 2 BAR DIAMETERS IN OTHER CONCRETE ELEMENTS. MULTIPLY THE DEVELOPMENT LENGTH SHOWN BY 1.5 FOR REINFORCING WITH COVER AND SPACING LESS THAN DESCRIBED ABOVE.
 4. USE THE LAP SPLICE LENGTHS IN THE "TOP" COLUMN FOR HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE BELOW THE BAR.

TABLE 3 HOOKED BAR TENSION DEVELOPMENT LENGTHS LENGTHS (INCHES)				
BAR SIZE	3,000 PSI CONCRETE	4,000 PSI CONCRETE	5,000 PSI CONCRETE	6,000 PSI CONCRETE
#3	9	8	7	6
#4	11	10	9	8
#5	14	12	11	10
#6	17	15	13	12
#7	19	17	15	14
#8	22	19	17	16
#9	25	22	20	18
#10	28	24	22	20

SPECIAL INSPECTION AND TESTING (IBC 2018 CHAPTER 17)
 1. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY. THE SPECIAL INSPECTOR FROM THIS TESTING AGENCY SHALL OBSERVE THE WORK FOR CONFORMANCE TO THE DESIGN DRAWINGS AND SPECIFICATIONS. THE SPECIAL INSPECTOR SHALL BE TRAINED/CERTIFIED TO PERFORM THE REQUIRED SPECIAL INSPECTIONS. THE SPECIAL INSPECTOR SHALL SUBMIT WRITTEN DOCUMENTATION OF CERTIFICATIONS FOR RECORD PRIOR TO CONSTRUCTION.
 2. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND ALL OTHER DESIGNATED INDIVIDUALS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF NOT CORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
 3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS, SPECIFICATIONS, SOILS REPORT AND APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE.
 4. STRUCTURAL OBSERVATIONS BY THE STRUCTURAL ENGINEER SHALL NOT BE CONSIDERED A SPECIAL INSPECTION.
 5. THE FOLLOWING ITEMS MARKED "X" REQUIRE SPECIAL INSPECTIONS: (REFER TO IBC 2018 CHAPTER 17 FOR ADDITIONAL INFORMATION)

VERIFICATION AND INSPECTION	INSPECTION REQUIRED	
	OBSERVE	PERFORM
1705.2 - STEEL CONSTRUCTION		
Special inspection for structural steel shall be in accordance with AISC 360. At a minimum, the following inspections are required.		
1. Inspection tasks prior to welding:		
a. Welder qualification records and continuity records	X	
b. WPS available		X
c. Manufacturer certifications for welding consumables available		X
d. Material identification (type/grade)	X	
e. Welder identification system	X	
f. Fit-up of groove welds (including joint geometry): joint preparations, dimensions, cleanliness, tacking, and backing (if applicable)	X	
g. Fit-up of CJP groove welds of HSS T-, Y-, and K-joints without backing (including joint geometry): joint preparations, dimensions, cleanliness, and tacking	X	
h. Configuration and finish of access holes	X	
i. Fit up of fillet welds: dimensions, cleanliness, and tacking	X	
2. Inspection tasks during welding		
a. Control and handling of welding consumables: packaging and exposure control	X	
b. No welding over cracked tack welds	X	
c. Environmental conditions: wind speed within limits, precipitation, and temperature	X	
d. WPS followed: settings on welding equipment, travel speed, selected welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained, and proper position	X	
e. Welding techniques: interpass and final cleaning, each pass within profile limitations, and each pass meets quality requirements	X	
f. Placement and installation of steel headed stud anchors		X
3. Inspection tasks after welding		
a. Welds cleaned		X
b. Size, length, and location of welds		X
c. Welds meet visual acceptance criteria: crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity		X
d. Arc strikes		X
e. k-area		X
f. Weld across holes in rolled heavy shapes and built-up heavy shapes		X
g. Backing removed and weld tabs removed (if required)		X
h. Repair activities		X
i. Document acceptance or rejection of welded joint or member		X
j. No prohibited welds have been added without the approval of the EOR	X	

VERIFICATION AND INSPECTION	INSPECTION REQUIRED	
	CONTINUOUS	PERIODIC
1705.3 - CONCRETE CONSTRUCTION		
1. Inspection of reinforcement and verification of placement		X
2. Verification of required design mix		X
3. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	
4. Inspection of concrete placement for proper application techniques	X	
5. Verification of maintenance of specified curing temperature and techniques		X
6. Inspection of formwork for shape, location, and dimensions of the concrete member being formed		X

VERIFICATION AND INSPECTION	INSPECTION REQUIRED	
	CONTINUOUS	PERIODIC
1705.6 - SOILS		
1. Verification of materials below shallow foundations are adequate to achieve the design bearing capacity		X
2. Verification that excavations are extended to proper depth and have reached proper material		X
3. Perform classification and testing of compacted fill materials.		X
4. Verification of use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X	
5. Prior to placement of compacted fill, inspection of subgrade and verify that site has been prepared properly		X

STANDARD ABBREVIATIONS		
A: Area	F TO F: Face to Face	N: North
AB: Anchor Bolt	FABR: Fabricate	NF: Near Face
ABV: Above	FAST: Fastener, Fasten	NC: Not In Contract
ACI: American Concrete Institute	FD: Floor Drain	NO: Number (with period)
ACoust: Acoustical	FDN: Foundation	NOM: Nominal
AD: Access Door, Area Drain	FF: Finished Floor	NS: Near Side
ADD: Addendum, Addition	FFE: Finished Floor Elevation	NTS: Not To Scale
ADDL: Additional	FIN: Finish, Finished	OA: Overall
ADJ: Adjust, Adjustable, Adjacent	FLG: Flange	OC: On Center
AF: Above Finished Floor	FL: Floor	OD: Outside Diameter
AISC: American Institute of Steel Construction	FLR: Floor	OF: Outside Face
ALT: Alternate, Alteration	FO: Finished Opening	OPNG: Opening
AMT: Amount	FOC: Face of Concrete	OPP: Opposite
ANCH: Anchor, Anchorage	FOS: Face of Studs	PAF: Powder Actuated Fasteners
APPROX: Approximate	FRM: Frame	PARTN: Partition
APRVD: Approved	FS: Far Side	PC: Piece, Precast Concrete
ARCH: Architect, Architectural	FT: Foot, Feet	PCF: Pounds per cubic foot
ASCE: American Society of Civil Engineers	FTG: Footing	PERP: Perpendicular
ASSOC: Association, Associate	FURR: Furring	PJF: Preformed Joint Filler
ASSY: Assembly	Ga: Gauge, Gage	P: Plate
ASTM: American Society for Testing and Materials	GALV: Galvanized	PLC: Places
AVC: Average	GC: General Contractor	PLF: Pounds Per Lineal Foot
AWIS: American Welding Society	GENL: General	PLT: Platform
B TO B: Back to Back	GL: Glass	GR: Grade
B/: Bottom of	GRND: Ground	GRND: Ground
BLW: Below	GRTG: Grating	GRTG: Grating
BETW: Between	GST: GROUT	GVL: Gravel
BEV: Bevel	GWB: Gypsum Wallboard	H: High
BF: Bottom Face, Both Faces	H: High	HD: Head
BLD: Building	HDR: Header	HDW: Hardware
BLK: Block	HDR: Header	HDW: Hardware
BLKG: Blocking	HEF: Horizontal Each Face	HGR: Hanger
BM: Beam	HGT: Height	HGT: Height
BNT: Bent	HKD: Hooked	HKB: Hooked
BOS: Bottom of Steel	HORZ: Horizontal	HP: High Point
BOT: Bottom	HP: High Point	HSS: Hollow Structural Section
BASE: Base Plate	HSS: Hollow Structural Section	HVAC: Heating, Ventilating & Air Conditioning
BRG: Bearing Plate	HVAC: Heating, Ventilating & Air Conditioning	HT: Right
BRD: Bridge, Bridging	HT: Right	HVY: Heavy
BRG: Bearing	ID: Inside Diameter	I: Inch
BRK: Brick	INCH: Inch	INFQ: Information
BRKT: Bracket	INSP: Inspection Schedule	INS: Structural Engineer
BS: Both Sides	INT: Interior	INT: Intermediate
BSMT: Basement	INT: Interior	INT: Intermediate
BT: Bolt	INT: Intermediate	JF: Joint Filler
BVL: Bevelled	JF: Joint Filler	JST: Joist
BW: Both Ways	JST: Joist	JT: Joint
C: Channal	JT: Joint	KB: Knee Brace
CANT: Cantilever, Cantilevered	KB: Knee Brace	KP: Kickplate
CHAM: Chamfer	KP: Kickplate	KIP: (1000 pounds)
CJ: Control Joint	KIP: (1000 pounds)	L: L: Angle
CL: Centerline	L: L: Angle	LAD: Ladder
CLR: Clear	LAD: Ladder	LAM: Laminated, Laminated
CLR OPNG: Clear Opening	LAM: Laminated, Laminated	LAT: Lateral
CMU: Concrete Masonry Unit	LAT: Lateral	LC: Locate
COL: Column	LC: Locate	LOC: Locate
COMB: Combination	LOC: Locate	LOCS: Locations
CONC: Concrete	LOCS: Locations	LP: Low Point
CONN: Connection	LP: Low Point	LT WT: Lightweight
CONST: Construction	LT WT: Lightweight	LWC: Light Weight Concrete
CONT: Continuous, Continue, Control	LWC: Light Weight Concrete	M: Bending Moment
CONTR: Contractor	M: Bending Moment	MAS: Masonry
CTR: Center	MAT: Material	MAX: Maximum
CTRD: Centered	MAX: Maximum	MECH: Mechanical
DBL: Double	MECH: Mechanical	MED: Medium
DEMO: Demolition	MED: Medium	MEMB: Membrane
DEP: Depressed	MEMB: Membrane	MET: Metal
DET: Detail	MET: Metal	MEZZ: Mezzanine
DIAG: Diagonal	MEZZ: Mezzanine	MFR: Manufacture, Manufacturer
Ø: Diameter	MFR: Manufacture, Manufacturer	MIN: Minimum
DM: Dimension	MIN: Minimum	MISC: Miscellaneous
DL: Dead Load	MISC: Miscellaneous	MK: Mark
DN: Down	MK: Mark	MO: Masonry Opening
DWG: Drawing	MO: Masonry Opening	MONO: Monolithic
DWGS: Drawings	MONO: Monolithic	MRD: Metal Roof Deck
DWL: Dowel	MRD: Metal Roof Deck	MTL: Material, Metal
EA: Each	MTL: Material, Metal	EXT: Exterior
EB: Expansion Bolt	EXT: Exterior	
ECC: Eccentric		
EF: Each Face		
EJ: Expansion Joint		
EL: Elevation		
ELEC: Electrical		
ELEV: Elevator		
ENGR: Engineer		
ENTR: Entrance		
EQ: Equal		
EQUIP: Equipment		
EW: Each Way		
EWB: Each Way Bottom		
EWEF: Each Way Each Face		
EWT: Each Way Top		
EXIST: Existing		
EXP: Expansion		
EXT: Exterior		

NICHOLAS J. COLAMECO
 PROFESSIONAL ENGINEER
 NJ LIC. NO. 24GE05930300

MICHAEL A. BEACH & ASSOCIATES, LLC
 CONSULTING STRUCTURAL ENGINEERING
 CENTERPOINTE AT EAST GATE CORPORATE CENTER
 161 GAITHER DRIVE
 MOUNT LAUREL, NEW JERSEY 08054
 PH: (856) 273-1909 FAX: (856) 273-1480
 EMAIL: mail@mabeachassociates.com
 NJ Certificate of Authorization No. 24CA27962200
 Project No: 747.274

ISSUED FOR BIDS		DATE	DESCRIPTION	REV'D BY
06/24/25				NUC
No.		DATE	DESCRIPTION	REV'D BY
REVISIONS				
APPROVAL:		PROJECT:		
MONROE TOWNSHIP SCHOOL DISTRICT HOME ECONOMICS CLASSROOM AT THE HIGH SCHOOL 700 TUCKAHOE ROAD WILLIAMSTOWN, NJ 08054				
Joseph F. McKernan Jr., Architects & Associates 100 Dobbins Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: SCHEDULES & ABBREVIATIONS		
JOSEPH F. MCKERNAN JR., R.A. NJ ARCH # 1086 - PA ARCH #A-014212 - CT ARCH 2024	SEAL: ENGINEER MUST BE VERIFIED BY ARCHITECT WITH THE STATE ARCHITECTS BOARD. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS.	SCALE: AS NOTED PROJECT NO: 1313 DATE: 06/24/25 DRAWN BY: NUC CHECKED: TBA	SHEET NO: S-0.1	

SHEET NOTES

- REFER TO 'EXISTING EQUIPMENT NOTES' 1, 2 & 3 ON THIS SHEET FOR FURTHER INFORMATION.
- COORDINATE FINAL LOCATION OF MAKEUP AIR UNIT WITH OWNER/ARCHITECT AND ALL EXISTING CONDITIONS. THE DESIGN INTENT IS FOR NEW MAKEUP AIR UNIT TO MOUNTED ON CONCRETE HOUSEKEEPING PAD AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL SERVICE AND MAINTENANCE CLEARANCES. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 10'-0" BETWEEN ALL EXHAUST AIR OUTLETS AND FRESH AIR INLETS.
- PROVIDE DUCTWORK STANDOFFS AT INTERVALS AS REQUIRED BY THE EQUIPMENT MANUFACTURER FOR ALL EXTERIOR DUCTWORK. MECHANICAL CONTRACTOR SHALL COORDINATE QUANTITY AND LOCATION OF ALL STANDOFFS WITH OWNER. ALL EXPOSED DUCTWORK SHALL BE SEALED AND INSULATED WEATHERTIGHT. REFER TO 'MATERIAL & INSULATION SCHEDULE' ON M-2.0 AND DETAIL(S) ON M-2.1 FOR FURTHER INFORMATION TYPICAL FOR ALL EXTERIOR MOUNTED DUCTWORK).
- INDICATES LOCATION OF NEW SEVEN-DAY ELECTRONIC PROGRAMMABLE THERMOSTAT WITH OCCUPIED AND UNOCCUPIED CAPABILITIES FOR INDICATED HVAC UNIT. PROVIDE NON-TAMPER TRANSPARENT ENCLOSURE FOR THERMOSTAT. COORDINATE QUANTITY AND FINAL LOCATION OF THE THERMOSTAT WITH ARCHITECT/TENANT PRIOR TO INSTALLATION.
- UPON ACTIVATION OF KITCHEN HOOD EXHAUST FAN THE EXISTING FCU'S SHALL DE-ENERGIZE AND CONDITIONING OF THE SPACE SHALL BE BY MAU-1. MAU-1 SHALL BE INTERLOCKED WITH THE OPERATION OF KITCHEN HOOD'S EXHAUST FAN. ONCE THE KITCHEN HOOD EXHAUST FAN AND MAU-1 SHUT OFF THE EXISTING FCU'S SHALL OPERATE AS DESIGNED TO MAINTAIN SPACE TEMPERATURE.

EXISTING EQUIPMENT NOTES

- ALL EXISTING HVAC EQUIPMENT TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING LUBRICATION, REPLACEMENT OF VALVES AND GAUGES AND CHECKING FOR PROPER OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD MAJOR WORK ON THE EQUIPMENT BE REQUIRED, THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
- ALL EXISTING CONTROLS TO BE REUSED SHALL BE REFURBISHED WHERE APPLICABLE AND HAVE FULL MAINTENANCE ROUTINES PERFORMED INCLUDING CALIBRATION, ADJUSTMENT AND VERIFICATION OF SEQUENCE OF OPERATION. ALL MINOR REPAIRS SHALL BE INCLUDED AS PART OF THIS CONTRACT. SHOULD CONTROLS NEED REPLACEMENT OR OTHER SIGNIFICANT REPAIRS THE CONTRACTOR SHALL PROVIDE A WRITTEN REPORT TO OWNER AND ENGINEER, INDICATING THE NATURE OF THE WORK ALONG WITH A COST ESTIMATE TO PERFORM SAID REPAIRS.
- CONTRACTOR SHALL CARRY A CONTINGENCY IN THEIR PRICE TO PERFORM THESE REPAIRS. IF REPAIR WORK IS APPROVED, THE CONTRACTOR SHALL DRAW AGAINST CONTINGENCY. IF REPAIR WORK IS NOT APPROVED / REQUIRED, CONTINGENCY SHALL BE CREDITED BACK TO OWNER.

GENERAL NOTES

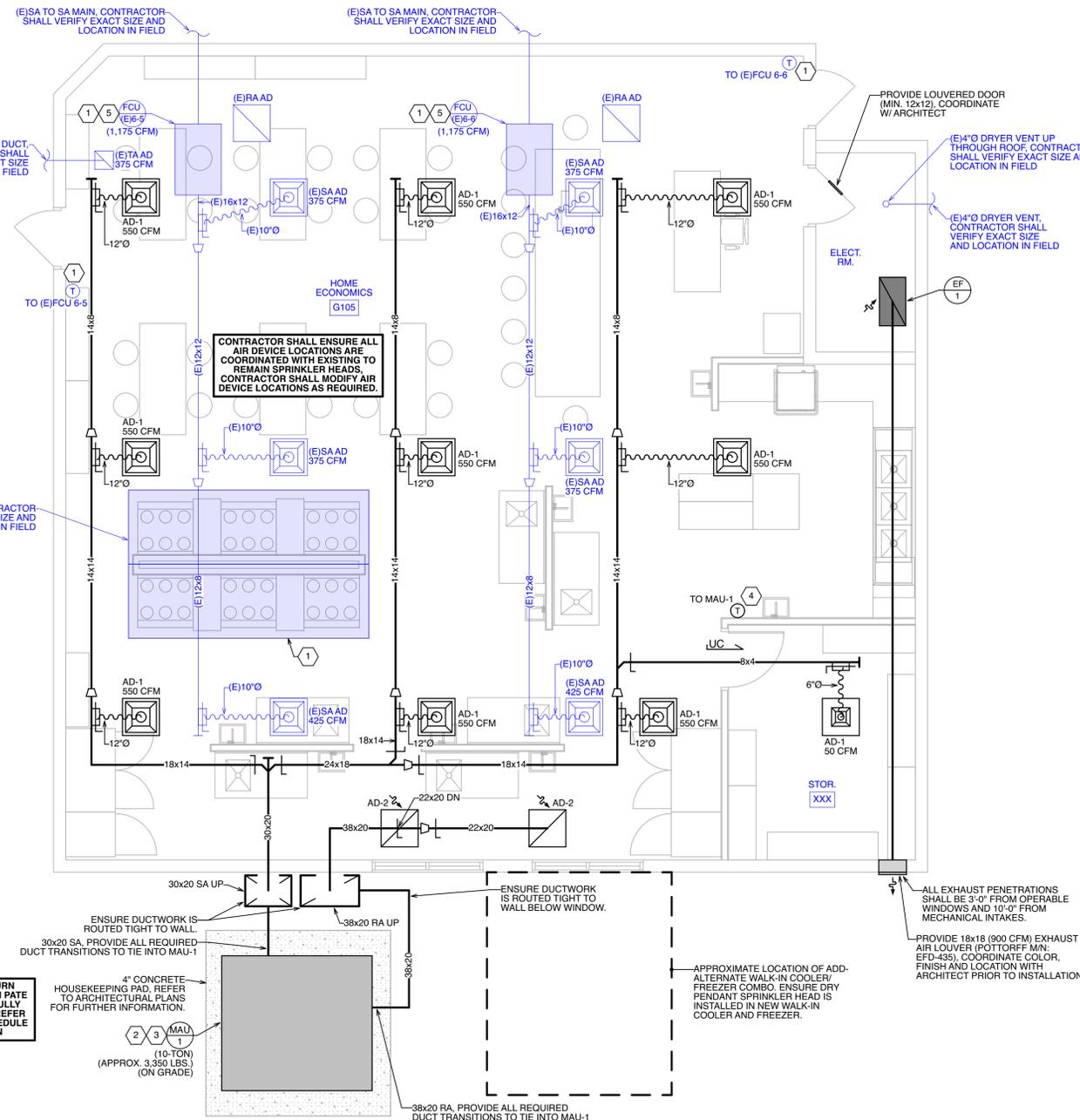
- CONTRACTOR SHALL PROVIDE A FIRE DAMPER AND ACCESS PANEL AT ALL FIRE RATED CEILING AND WALL PENETRATIONS WHERE APPLICABLE. COORDINATE WITH ARCHITECTURAL PLANS.
- ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED WITH RCD#8 LOW-VOC MASTIC. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA'S SEAL CLASS 1st.
- COORDINATE ALL SUPPLY, RETURN AND EXHAUST AIR DEVICES WITH LIGHTING AND REFLECTED CEILING PLANS.
- MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT, VALVES, BALANCING DEVICES, ETC. ALL ACCESS PANELS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND INSTALLED BY GENERAL CONTRACTOR. ALL ACCESS PANEL LOCATIONS AND SIZES SHALL BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR REQUIRED TO PROVIDE ALL COMPONENTS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- THE INTENT IS TO MAINTAIN ALL CEILING HEIGHTS AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLAN.
- ALL DUCTWORK SIZES ARE SHOWN WITH CLEAR I.D. DIMENSIONS. ALL SUPPLY, RETURN, OUTSIDE, AND RELIEF DUCTWORK SHALL BE INSULATED. (REFER TO INSULATION SCHEDULE FOR MORE INFORMATION).
- MECHANICAL CONTRACTOR SHALL VERIFY FINAL LOCATION OF ALL MECHANICAL EQUIPMENT, SUPPLY, RETURN AND EXHAUST DUCTWORK, AIR DEVICES AND ALL ASSOCIATED APPURTENANCES IN THE FIELD. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL MODIFICATIONS REQUIRED TO PROVIDE A FULLY FUNCTIONAL MECHANICAL DESIGN BASED ON THE FINAL LOCATION OF THE MECHANICAL EQUIPMENT.
- FINAL ROUTING OF DUCTWORK SHALL BE FULLY COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.
- COORDINATE REGISTER LOCATIONS WITH LIGHTING FIXTURE HANGERS TO PREVENT SWINGING OF LIGHTING FIXTURES.
- ALL ROOF-MOUNTED EQUIPMENT SHALL BE A MINIMUM OF 10'-0" FROM ROOF EDGE AS REQUIRED BY CODE. IF SET BACK CANNOT BE MAINTAINED, CONTRACTOR SHALL PROVIDE SAFETY RAILINGS AS REQUIRED BY CODE.
- ALL EXPOSED DUCTWORK, AIR DEVICES, AND PIPING SHALL BE PAINTED (COLOR TO BE SELECTED BY ARCHITECT).
- COORDINATE ALL ROOF WORK WITH CURRENT ROOFING CONTRACTOR IN ORDER TO MAINTAIN CURRENT ROOF WARRANTY.
- CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF THERMOSTATS/CONTROLS WITH THE OWNER.
- ALL EXHAUST AIR AND INTAKE AIR TERMINATIONS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. 2018 INTERNATIONAL MECHANICAL CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. FINAL LOCATIONS OF ALL TERMINATIONS SHALL BE FIELD COORDINATED. EXHAUST AIR TERMINATIONS SHALL BE A MINIMUM OF 3'-0" FROM PROPERTY LINES, 3'-0" FROM OPERABLE OPENINGS INTO BUILDINGS, AND 10'-0" FROM MECHANICAL AIR INTAKES UNLESS OTHERWISE NOTED.
- MECHANICAL CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF ALL MECHANICAL EQUIPMENT TO ENSURE THAT THE EQUIPMENT IS FULLY ACCESSIBLE FOR SERVICE AND EVENTUAL REPLACEMENT. INSTALL ALL MECHANICAL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND INSTALLATION MANUALS FOR ALL MECHANICAL EQUIPMENT EARLY IN THE PROJECT FOR ENGINEER AND ARCHITECT REVIEW.
- CONTRACTOR SHALL PROVIDE A SET OF FULLY COORDINATED SHOP DRAWINGS, INCLUDING ALL DUCTWORK AND HVAC PIPING (I.E. CONDENSATE, REFRIGERANT PIPING, ETC.) FOR REVIEW AND APPROVAL. COORDINATE ALL MECHANICAL WORK WITH PLUMBING WORK, ELECTRICAL WORK, STRUCTURE, FIRE SUPPRESSION WORK, AND ALL OTHER TRADES PRIOR TO SUBMITTAL FOR REVIEW.
- ALL BRANCH DUCTWORK SHALL HAVE FULLY ACCESSIBLE BALANCING DAMPERS. IF BALANCING DAMPERS ARE LOCATED ABOVE AN INACCESSIBLE SPACE, CONTRACTOR SHALL PROVIDE AN ACCESS PANEL (MIN. 18" x 18") FOR ACCESS. COORDINATE FINAL LOCATION OF ALL ACCESS PANELS WITH ARCHITECT PRIOR TO INSTALLATION.
- DRAWING PLANS AND SCHEMATIC DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DUCT SYSTEMS. INDICATED DUCT LOCATIONS, CONFIGURATIONS, AND ARRANGEMENTS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO PRODUCE A COMPLETE SET OF COORDINATION DRAWINGS INCLUDING ALL DUCT ELEVATIONS, CHANGES IN DIRECTION, TRANSITIONS, AND ELEVATION CHANGES REQUIRED FOR A COMPLETELY COORDINATED INSTALLATION. COORDINATION DRAWINGS SHALL BE SUBMITTED TO ARCHITECT AND ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
- ALL INDICATED DOOR UNDERCUTS SHALL BE A MINIMUM OF 3/4" HIGH. COORDINATE ALL DOOR UNDERCUTS WITH ARCHITECT.

EXISTING CONDITIONS NOTES

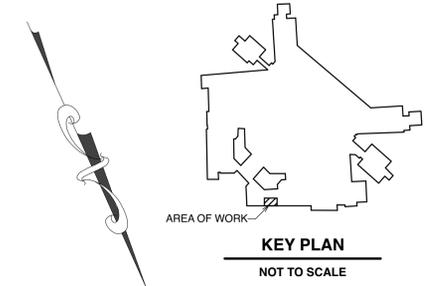
- ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM OCTOBER 31, 2024 AND AS-BUILT DRAWINGS FROM DLB ASSOCIATES, INC. FROM MAY 18, 1994.
- ALTHOUGH THE EXISTING CONDITIONS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM THE FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

DRAWING SYMBOLS

- (E) EXISTING MECHANICAL WORK TO REMAIN
- (R) EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- (RE) EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
- (N) NEW MECHANICAL WORK
- EXISTING MECHANICAL WORK TO REMAIN
- - - EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK
- ◆ POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
- ⊙ POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED



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



1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:		
RENOVATION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 USARVILLE ROAD WILLIAMSTOWN, NJ 08994			
Joseph F. Mckernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: FIRST FLOOR MECHANICAL PLAN	
SEAL:	SCALE: AS NOTED	DRAWING NO.:	
SCOTT A. WHITE LICENSE NO. 1313 MECHANICAL ENGINEER	PROJ. NO.: 1313	DATE: 06/24/25	
	DATE: 06/24/25	REV'D: RY	
	DATE: 06/24/25	DRAWN BY: RY	
	DATE: 06/24/25	CHK'D BY: BA	

ALL EXTERIOR SUPPLY AND RETURN DUCTWORK SHALL BE MOUNTED ON PATE DUCT SUPPORTS AND SHALL BE FULLY INSULATED AND WEATHERPROOF. REFER TO MATERIAL AND INSULATION SCHEDULE FOR ADDITIONAL INFORMATION

ENSURE DUCTWORK IS ROUTED TIGHT TO WALL. 30x20 SA, PROVIDE ALL REQUIRED DUCT TRANSITIONS TO TIE INTO MAU-1

4" CONCRETE HOUSEKEEPING PAD, REFER TO ARCHITECTURAL PLANS FOR FURTHER INFORMATION.

APPROXIMATE LOCATION OF ADD-ALTERNATE WALK-IN COOLER/FREEZER COMBO. ENSURE DRY PENDANT SPRINKLER HEAD IS INSTALLED IN NEW WALK-IN COOLER AND FREEZER.

ENSURE DUCTWORK IS ROUTED TIGHT TO WALL BELOW WINDOW.

ALL EXHAUST PENETRATIONS SHALL BE 3'-0" FROM OPERABLE WINDOWS AND 10'-0" FROM MECHANICAL INTAKES.

PROVIDE 18x18 (900 CFM) EXHAUST AIR LOUVER (POT TORFF MN: EFD-435). COORDINATE COLOR, FINISH AND LOCATION WITH ARCHITECT PRIOR TO INSTALLATION

38x20 RA, PROVIDE ALL REQUIRED DUCT TRANSITIONS TO TIE INTO MAU-1

MECHANICAL SPECIFICATIONS

- GENERAL WORK:**
- The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
 - In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
 - The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
 - The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
 - Mechanical work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of work shall be employed and utilized by Contractor for this Division in the execution of this Work.
 - The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
 - The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
 - The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
 - The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner regardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
 - The entire installation shall conform with the 2021 International Mechanical Code, and all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Code Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
 - The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
 - The HVAC and Plumbing trades shall coordinate with the General Contractor, locate all required cutting and patching of existing work required by the installation of their trades work, and arrange for his compensation.
 - All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
 - Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report and exceptions to the Architect before the start of the work. Opening around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments, component service, and provide a minimum 2" clearance between all piping and other work.
 - Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialities and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, or from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
 - The contractor shall provide and maintain in good order a complete set of blue line prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the close of the work, the contractor shall, at his own expense, obtain a set of reproducible of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated in these reproducible including all sketches and written directives. All concealed equipment, main/leaders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducible and one (1) set of prints shall be signed, dated and delivered to the engineer.
 - The Mechanical and Plumbing trades shall coordinate all electrical loads with the Electrical Contractor.
 - The architectural general conditions shall apply to and form a part of this section of these specifications.
 - The contractor shall perform all demolition work as indicated on the drawings as required to perform the work.
 - The contractor shall verify all utility service information shown on the drawings with the local utility company prior to submitting a bid. Any changes or service charges imposed by the utility company shall be qualified and included in the bid.
 - All equipment, materials and workmanship shall be guaranteed for a minimum of one year (five year for all compressors) from the date of acceptance by the owner.
 - Where products are specified by brand name, catalog numbers or by names of manufacturers, the reference is intended to be descriptive and not restrictive and is solely for the purpose of indicating the type of quality of the item that will be acceptable. An approved equal will be accepted unless otherwise indicated.
 - All cutting and patching of every nature required in connection with this contract shall be done by this contractor with mechanics experienced in their respective trades. All patching shall match adjacent surfaces.
 - All HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with the National Electric Code Sections 110.24, 430.99m-440.10, 700.5 and all applicable local codes. Coordinate exact available fault current and labeling with the Electrical Contractor. The Electrical Contractor shall provide all fault current labels.

- HVAC NOTES:**
- Provide all specialties, accessories, controls, and the like to provide a complete, quiet, properly operating automatically controlled systems.
 - Do not operate the air conditioning systems during construction except for testing, and provide new filters for all units and immediately prior to substantial completion.
 - Ductwork shall be constructed of galvanized sheet metal fabricated and erected in accordance with ASHRAE and SMACNA standards. Provide turning vanes in all elbows, manual volume dampers in all branches, air equalizers, and similar devices as required to properly balance the systems and provide quiet, draftless operation. Ductwork sizes shown on the plans are sheet metal I.D. free area.
 - Ductwork shall be constructed to the sizes shown and made airtight during erection with caulked, taped or hardcast joints to restrict leakage to 5% or less of circulated air.
 - All ductwork shall be closely coordinated prior to fabrication. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information. Full sheet metal shop drawings drawings shall be developed with all spatial requirements worked out and shown on drawings. These drawings must show locations of openings to be cut through existing construction and any problems. These drawing shall be submitted for review by the architect and engineer prior to fabrication.
 - Provide UL labeled and inspected fire dampers for all ducts and openings passing through floors, fire rated walls and ceilings, where shown on the drawings, and in locations required by codes.
 - Provide starters for all motor driven equipment, supports, hangers, flexible duct connections, flexible pipe connections, vibration isolation, supplementary supports, specialities and all other labor, materials, devices and services required for a complete, first quality installation. Retain the General Contractor to provide all cutting and patching required by the HVAC trade.
 - Prior to ordering materials and equipment, submit product data sheets for all items for review by the Engineer.
 - Balance all air quantities to within 5% of the CFM shown on the drawings. Finally balance individual outlets to the occupants' satisfaction. Install all devices required for balancing in the system during construction. Provide certified balancing reports for review by the Engineer.
 - Provide a complete, automatic, ready-to-use system, unconditionally guaranteed in writing against defective workmanship and materials for a period of one year from the date of beneficial occupancy.
 - All flexible ductwork shall conform with the UL rating under flexible air duct test UL-181.

- EQUIPMENT:**
- Ductwork
 - Ductwork shall be galvanized steel designed for two inch W.C. pressures for supply and return systems and one inch W.C. for exhaust systems in accordance with SMACNA. All elbows shall be provided with single thickness turning vanes. All supply and return ductwork shall be insulated with 1-1/2" fiberglass duct wrap as manufactured by Owens Corning with a minimum installed R-value of five (5) in unconditioned spaces and R-value of eight (8) outside the building.
 - Insulate all sheetmetal supply and return ducts.
 - Provide acoustical lining at the first ten feet of the supply and return ductwork of the rooftop unit.
 - Flexible ductwork shall be UL 181 Class 1 complete with an insulating fiberglass blanket, foil faced vapor barrier and designed to withstand pressures up to six inches positive pressure W.G. Flexible duct runs shall be a maximum of 6 feet in length and shall be type SM-insulated as manufactured by Flexmaster USA, INC. with a minimum R-value of six (6)
 - Fans
 - Centrifugal cabinet fans shall have centrifugal steel wheels, galvanized steel fan casing with integral backdraft damper, disconnect switch mounted and wired and perforated metal face grille with extruded aluminum frame where scheduled. Fans shall carry the UL label and be rated in accordance with the AMCA test code. Fans shall be provided with a unit mounted speed controller. Capacities shall be as indicated on the drawings. Fans shall be as manufactured by Loren Cook Company, Inc. with model numbers as scheduled.
 - Diffusers, Registers and Grilles
 - Ceiling diffusers shall be complete with balancing dampers and white enamel finish.
 - Ceiling return air registers shall be complete with balancing dampers and white enamel finish.
 - Controls
 - The contractor shall provide and install all necessary control components included, but not limited to, relays, automatic dampers, damper operators, thermostats, controllers, etc. and wiring as required to provide automatic temperature control. All control components shall be as manufactured by Honeywell or equal. All wiring shall be done in accordance with the local and state codes and the national electric code.
 - Thermostat for (E)RTU shall be provided by landlord. Thermostat shall be mounted in accordance with ADA requirements.
 - Occupied mode: supply fan shall run continuously, the outside air damper shall be open to the minimum position and the heating and cooling portions of the unit shall function as required to maintain space conditions.
 - Unoccupied mode: the outside air damper shall be closed and the fan shall cycle with heating/cooling portions of the unit.
 - All exhaust fans shall be connected to Timeclock furnished by the Electrical Contractor unless otherwise indicated.
 - The equipment and materials shall be completely cleaned prior to testing, insulating and placing the system in operation.
 - The refrigeration system shall be tested and proven tight prior to placing in operation. Units shall be checked for proper refrigerant charge and operation and adjusted as per the manufacturer's recommendations.
 - The complete supply, return and exhaust air duct systems, including fans, dampers, outlets, and appurtenances shall be properly balanced to deliver air volumes within +/- 5 percent of the values indicated. The total system leakage through duct joints and connections shall not exceed five percent. Temperature, ampere and RPM readings shall also be provided to verify system performance.
 - The contractor shall furnish three sets of instruction manuals to the owner at the completion of construction.

No.	CFM	Size	Neck	Mfg.	Model #	Finish	Damper	Mtd. Surface	Material	Remarks
AD-1	0-50	12x12	6"O	Krueger	1400	Note 3	Yes	Ceiling	Aluminum	Aluminum Supply Diffuser w/ Removable Square Plaque Face.
	51-100	24x24	6"O	Krueger	1400	Note 3	Yes	Ceiling	Aluminum	Aluminum Supply Diffuser w/ Removable Square Plaque Face.
	101-240	24x24	8"O	Krueger	1400	Note 3	Yes	Ceiling	Aluminum	Aluminum Supply Diffuser w/ Removable Square Plaque Face.
	241-400	24x24	10"O	Krueger	1400	Note 3	Yes	Ceiling	Aluminum	Aluminum Supply Diffuser w/ Removable Square Plaque Face.
AD-2	0-2500	24x24	Duct Size	Krueger	SS80	Note 3	No	Ceiling	Aluminum	Return Air Grille w/ 3/4" Blade Spacing @ 35° Blade Deflection.

Air Device Notes:

- Unless otherwise indicated, provide duct connection the full size of duct shown on drawing.
- Provide air device frames to suit wall and ceiling construction.
- Color and finish of all grilles, registers and diffusers shall be coordinated with Architect.

	Material		Insulation			Remarks	
	Basis of Design	Alternate	Basis of Design	Type	Wall (in.)		Vapor Barrier
Ductwork, Supply	Galvanized Steel	-----	Certainiteed	Duct Wrap	1-1/2	Integral	Construction per SMACNA standards. External wrap insulation.
Ductwork, Return	Galvanized Steel	-----	Certainiteed	Duct Wrap	1/2	Integral	Construction per SMACNA standards. External wrap insulation.
Ductwork, Exhaust	Galvanized Steel	-----	---	---	---	---	
Ductwork, Flexible Duct (Supply Only)	Aluminized Steel Mylar	-----	Certainiteed	Cerfaflex	1-1/2	Yes	UL Listed Flexible Air Duct Tested Under UL-181
Ductwork, Supply (Exterior)	Galvanized Steel	-----	Certainiteed	Duct Wrap	R-8	Integral	Construction per SMACNA standards. External wrap insulation.

*Refer to Equipment note 1.1.2 in Mechanical Drawing Notes on this sheet for further information.

- ### ELECTRICAL COORDINATION
- IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATIONS OF SUPPRESSION SYSTEM PIPING WITH THE ELECTRICAL CONTRACTOR. DUCTWORK SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE RESERVED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
 - SUPPLY DUCTS SHALL BE NO MORE THAN 0.10 IN. PER 100 FEET OF PRESSURE DROP.
 - RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF PRESSURE DROP.
 - VENTILATION DUCTS SHALL BE NO MORE THAN 0.075 IN. PER 100 FEET OF PRESSURE DROP.
 - COORDINATION OF DUCTWORK LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. APPROVAL OF SHEET METAL SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
 - PER NFPA 70, ARTICLE 110.26(F), DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.

PIPING AND DUCT CRITERIA

1. ALL DUCTWORK SHALL BE SIZED USING A STANDARD DUCTULATOR. THE FOLLOWING CRITERIA SHALL BE USED TO CALCULATE DUCT SIZES:

- SUPPLY DUCTS SHALL BE NO MORE THAN 0.10 IN. PER 100 FEET OF PRESSURE DROP.
- RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF PRESSURE DROP.
- VENTILATION DUCTS SHALL BE NO MORE THAN 0.075 IN. PER 100 FEET OF PRESSURE DROP.

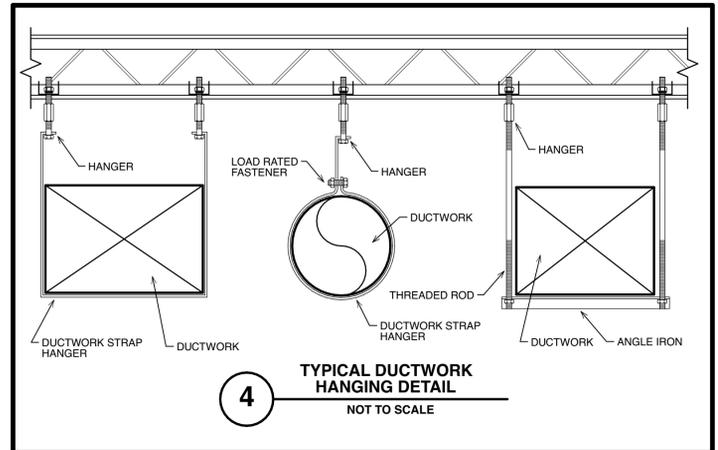
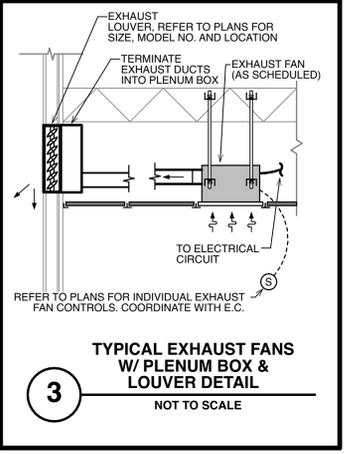
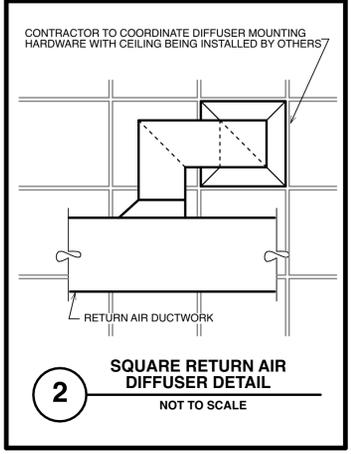
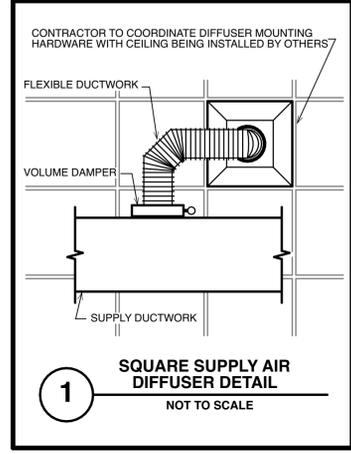
2. CONDENSATE SHALL BE COLLECTED AND RUN WITH ADEQUATE PITCH TO THE CLOSEST SINK OR WASTE. PROVIDE CONDENSATE PUMPS IF PITCH CAN NOT BE ACHIEVED. CONDENSATE PIPING SHALL BE SIZED AS FOLLOWS:

CONDENSATE PIPE SIZING CHART	TONS	SIZE
	0-20	3/4"
	20-40	1"
	40-90	1-1/4"
	90-125	1-1/2"
	125-250	2"

3. ALL CONDENSATE DRAINS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

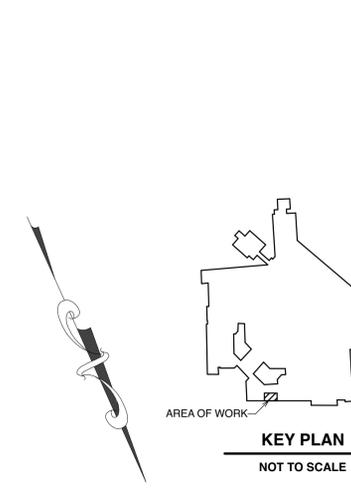
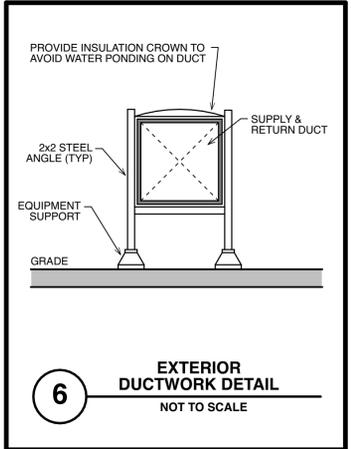
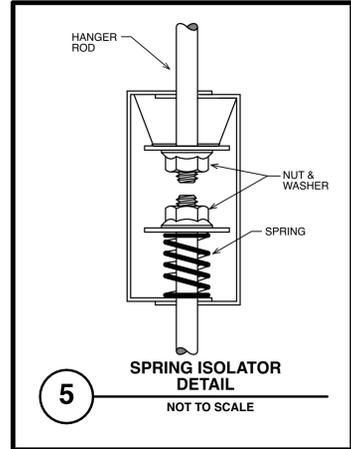
EXHAUST FAN SCHEDULE

Unit Designation	EF-1
Basis of Design	Cook
Model Number	GC-822
CFM	900
E. S. P. (in. W.C.)	0.25
Drive Type	Direct
Dim (L x W x H)(in.)	14.688" x 31.375" x 14.688"
Weight (lbs.)	59
Location	Ceiling Mounted
Service	Refer to Plans
Electrical	115/10/60
Motor Power	242 Watts
Motor HP	0.333
Accessories	
Backdraft Damper	Yes
Roof Curb	No
Wall Cap	Yes
Roof Cap	No
Exhaust Grille	Yes, White
Vibration Isolation Kit	Yes
Standard Disconnect	Yes
Control	
Speed Controller	Yes
Time Delay Switch	No
Interlock	Provide Reverse Acting T-Stat Set to 85°F (adj.)



MECHANICAL SYMBOLS, INDICATIONS & ABBREVIATIONS

(XX)	EQUIPMENT DESIGNATION TAG	~~~~~	FLEXIBLE DUCTWORK	(E)	EXISTING MECHANICAL WORK TO REMAIN
(X)	SUPPLY AIR DIFFUSER (CEILING)	-----	DUCT W/ ACOUSTICAL LINING	(R)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(H)	SUPPLY AIR DIFFUSER (SIDEWALL)	-----	RETURN/EXHAUST AIR DUCT UP	(RE)	EXISTING MECHANICAL WORK TO BE RELOCATED AS SHOWN
(L)	SUPPLY AIR DIFFUSER (LINEAR, CEILING)	-----	RETURN/EXHAUST AIR DUCT DN	(N)	NEW MECHANICAL WORK
(W)	SUPPLY AIR DIFFUSER (LINEAR, WALL)	-----	SUPPLY/MAKE-UP AIR DUCT UP	(-)	EXISTING MECHANICAL WORK TO REMAIN
(R)	RETURN AIR DIFFUSER (CEILING)	-----	SUPPLY/MAKE-UP AIR DUCT DN	(- - -)	EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
(R)	EXHAUST AIR DIFFUSER (CEILING)	-----	MOTORIZED DAMPER	(- - - - -)	NEW MECHANICAL WORK
(R)	RETURN AIR DIFFUSER (SIDEWALL)	-----	CONDENSATE DRAIN	(- - - - -)	POINT OF DEMOLITION, CUT AND CAP BACK TO POINT INDICATED ON PLANS
(B)	BRANCH DAMPER	-----	DIRECTION OF FLOW	(- - - - -)	POINT OF CONNECTION, EXTEND AND CONNECT TO EXISTING WHERE INDICATED
(V)	VOLUME DAMPER	-----	PIPE TURNING DOWN		
(U)	2" DOOR UNDERCUT	-----	PIPE TURNING UP		
(T)	THERMOSTAT	-----	CAPPED FLANGE		
(S)	DUCT MOUNTED SMOKE DETECTOR	-----			
(D)	DUCT SIZE TRANSITION	-----			
(F)	EXHAUST FAN	-----			



1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:		
RENOVATION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 100 USARVILLE ROAD WILLIAMSTOWN, NJ 08984			TITLE: MECHANICAL SCHEDULES & DETAILS
Joseph F. Mckernan Jr., Architects & Associates 100 Dobbins Lane Suite 204 Cherry Hill, New Jersey 08034			SCALE: AS NOTED
SEAL:			DRAWING NO.: M-2.0
HOLSTEIN WHITE ARCHITECTS 3800 Horizon Blvd., Suite 603 Trevose, PA 19053 P: (215) 252-7711 F: (215) 252-7709 www.holsteinwhite.com			PROD. NO.: 1313 DATE: 06/24/25 REV'D: DRAWN BY: RY CHK'D BY: BA

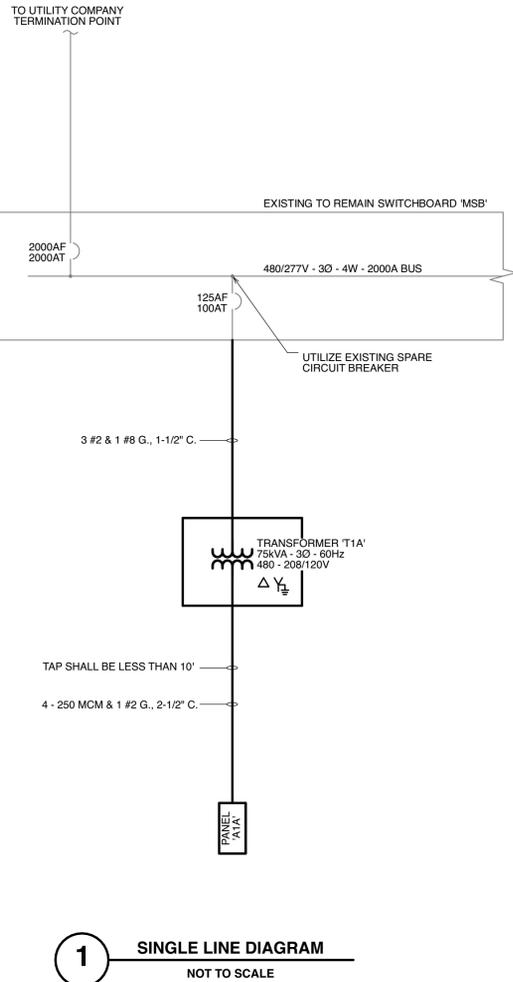
ELECTRICAL SPECIFICATIONS

1. Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
2. The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
3. The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
4. Electrical equipment shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of work shall be employed and utilized by Contractor for this Division in the execution of this Work.
5. The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
6. The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
7. The contractor shall provide and maintain in good order a complete set of blue line prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproductions of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproductions including all sketches and written directives. All concealers, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproductions and one (1) set of prints shall be signed, dated and delivered to the engineer.
8. The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner regardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
9. The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the codes of the National Fire Protective Association, the New Jersey Uniform Construction Codes, and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
10. The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance laws, ordinances, rules and regulations.
11. Before starting any work under this Contract, file for inspection with the Middle Department Inspection Agency or other certified Agency. Upon completion of the work, furnish Electrical Certificates from said Agency for all Electrical equipment and systems installed or furnished and installed as part of the work.
12. The contractor shall at all times keep the premises free from the accumulation of waste materials or rubbish caused by his employees or work. At the completion of the work, he shall remove all superfluous materials, equipment and debris resulting from the work.
13. All feeder wiring shall be soft drawn copper of 98% conductivity, installed in code conforming metallic raceways or cable assemblies. All wiring shall be copper, thermoplastic covered insulated Type 75° C, THW or 90° C, Type THHN, 600-volt rating. Wire No. 8 AWG and smaller shall be solid. Wire larger than No. 8 shall be stranded.
14. All outdoor wiring shall be soft drawn copper of 98% conductivity, installed in code conforming pvc raceways. All wiring shall be copper, thermoplastic covered insulated Type 75° C, THW or 90° C, Type THHN, 600-volt rating. Wire No. 8 AWG and smaller shall be solid. Wire larger than No. 8 shall be stranded.
15. All wiring shall be insulated copper conductors installed in code conforming raceways or cable assemblies.
16. All wiring shall be run concealed wherever possible. All exposed conduit shall be EMT or rigid steel as required. Flexible conduit shall be smooth liquidtight with appropriate fittings. Conduit drops from above ceiling shall be structurally secured and supported. Cable assemblies used for branch circuits shall not be run exposed. Cable assemblies shall be permitted exposed for final connections to Mechanical and Plumbing equipment and shall be limited to 6 feet total length, routing shall not interfere with equipment workspace.
17. Where conductors connect directly to equipment, the insulation temperature rating of the conductor shall meet or exceed the equipment temperature rating.
18. Color code conductors to designate neutral conductor and phases. Color coding shall conform with existing building standard.
19. Exercise great care in maintaining a uniform and consistent arrangement of phase conductors on all systems. Throughout the entire wiring systems, each phase conductor must always be in the same physical position with respect to the other phase wires at equipment terminals.
20. Grounding shall comply with Article 250 of NEC and to approval of local Underwriters inspection authorities.
21. Contractor shall provide typed updated panel schedules at completion of project for all panels effected by scope of work.
22. Circuit Breakers shall be molded case, bolted, thermal magnetic trip in each pole, enclosure-compensated to carry full rated load at 40°C, trip-free handles shall clearly indicate trip, on and off condition, quick-make and quick-break action. Lugs approved for copper and aluminum conductors and compression type. Ground Fault type breakers shall be provided with thermal and magnetic protection, UL class A, 5 milliamperes ground fault sensitivity, where required. Circuit breakers used as switches in 120 and 277 volt circuits feeding incandescent, fluorescent, and/or HID fixtures shall be approved for such use and marked "SWD", per NEC. Circuit breakers serving Heating and Air Conditioning equipment shall be HACR rated.
23. Where new circuit breakers are to be installed within existing panelboards, they shall be listed for use with the existing panelboard type, and of sufficient short circuit rating for the application.
24. Provide all labor, materials and equipment required to provide electric power to meet the requirements for heating, ventilating, air-conditioning and plumbing systems. Fully coordinate installation of electrical wiring and equipment with installation of electrically operated mechanical equipment provided by the Mechanical and Plumbing Contractors. Install disconnect switches, motor starters, and control transformers furnished by Mechanical and Plumbing Contractors. Provide final equipment electrical terminations. All internal equipment wiring shall be by manufacturer.
25. Test equipment, including panelboards and all other equipment and wiring for unintended grounds, short circuits, open circuits, continuity, current leakage, and that equipment will operate as specified. Test feeders for insulation resistance; for load balance of the final installation, and for overall operation of systems. Furnish labor and material required for making such tests and make corrections necessary to balance the load and to obtain proper operation.
26. Where existing facilities are being altered, disconnect and remove or relocate all existing electrical work that interferes with or is necessary because of new construction as specified, shown or required.
27. Perform alterations and additions to present electrical systems with a minimum interruption in the operation of these systems. Obtain written clearance from Owner for such interruptions and schedule same at whatever time specified in writing by Owner.
28. Verify locations of existing underground services in the area of construction. Verify existing locations of underground electrical services, natural gas piping, water services and sanitary piping, which may affect work.
29. Lay out all work from approved building and property lines and benchmarks. Verify and be responsible for the correctness of all measurements in connection with work. Any change made in major overall dimensions as shown which affect the physical size, shape, or location of any part of the Work, whether due to field check or changes due to the use of equipment of a manufacturer other than that used as the basis of design shall not cause any interference with other work.
30. Electrical equipment shall not interfere in any way with other material or equipment and shall provide adequate working space; see Requirements for Electrical Installations, Article 110 and other related articles of the National Electrical Code.
31. Provide materials, equipment, supplies and labor necessary as required to adequately support, brace and strengthen all equipment and materials furnished as part of this work.
32. Locations are subject to changes that may be necessary to avoid obstacles in building construction. Verify all dimensions and conditions at site. Check layout for sizes and clearances, and provide so that the apparatus and material may be installed and operated satisfactorily in space provided. Install equipment and raceways to preserve headroom and to keep openings and passageways clear.
33. Protect all conduit, fittings, panelboards, switchgear, transformers and other equipment before and during installation and keep clean.
34. Identify each switchboard, panel, panelboard, and other electrical equipment as to nature, service and purpose, by means of permanently attached, approved size, laminated phenolic nameplates.
35. Where sleeves containing a single conduit penetrate FIRE RATED walls, floors, partitions or slabs, fill and seal conduit to the sleeve with a 1-part intumescent caulk/putty sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTM E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves containing multiple conduits or multiple cables penetrate FIRE RATED walls, floors, partitions, or slabs, fill and seal spaces between the conduits or cables and the sleeve with 2-part intumescent foam sealant creating a fire stop equal to or exceeding fire rating of construction material being penetrated. Fire sealant shall prevent spread of flame, smoke, air and water through the sleeve and shall pass 3-hour test per ASTM E814 and UL 1479. Fire sealant shall be installed in accordance with manufacturer's written instructions. Where sleeves penetrate exterior walls, fill and seal ends around conduits and/or cables with duct sealant compound equal to Solortite KN-1146, or Link Seal. Install seals in accordance with the manufacturer's recommendations to provide air tightness above ground and hydraulic sealing below grade. Caulking or other type mastic is not acceptable. Where wiring devices are placed in fire rated construction, fire rating of installed assembly shall meet or exceed the rating of the construction.
36. Provide for each voice and data outlet a 4x4 outlet box with pullstrung to accessible ceiling space. In non-fishable construction, provide 3/4" conduit with pullstrung between outlet box and accessible ceiling space.
37. Telephone, data, and security cabling shall be by owner's communications and security contractors.
38. Coordinate all lighting fixture locations and quantities with Architectural plans, and provide all fixtures indicated.
39. 277 Volt Switches shall be quiet toggle type with totally enclosed case, rated 20 ampere, specification grade, color as selected by Architect.
40. Provide occupancy sensors where indicated on plan. Occupancy sensors shall be as manufactured by Watt Stopper. Wall type shall be dual technology, combination passive infrared and ultrasonic with toggle switch. Refer to detail for exact model number. Provide as a list of settings to owner in operation's manuals.
41. Furnish and install all lighting fixtures as specified. Provide all interior and exterior lighting fixtures complete with sockets, reflectors, diffusers, shades, holders, ballasts, protective devices and all other required appurtenances. Prior to ordering lighting fixtures, verify exact type of ceiling to be used for each space. Coordinate with Division 15 to avoid conflicts between lighting fixtures and Mechanical and Plumbing piping, ductwork, supports, fittings and equipment. Furnish to other trades, plaster frames, trim rings, etc., where required.
42. Receptacles shall be permanently labeled to identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.
43. Standard duplex receptacles shall be polarized, duplex, parallel blade, U-grounding slot, specification grade, rated 20 amperes, 125 volts, style and color as selected by Architect.
44. GFI receptacles shall be 125V, 20 amp rated, as manufactured by Leviton or equal, style and color as selected by Architect. Trip threshold and time shall be as required for the application in accordance with the NEC.
45. Plates for Flush Devices shall be type and color as selected by Architect.
46. Contactors shall be permanent magnetic latched, electrically operated, mechanically-held type with number of poles and current rating as shown. Operating coils shall be 120 volts as required. Contactors shall be housed in NEMA Type 1 enclosures with knockouts for conduit and pullstrung, or incorporated in branch circuit or distribution panelboards as indicated. Provide hand-off-automatic switch in cover to facilitate safe maintenance. Contactors shall be UL listed for switching 208-volt ballast inductive loads. Install, completely wire and connect all systems in accordance with details on Drawings and manufacturer's instructions.
47. Motor and circuit disconnect means shall be a horsepower rated safety switch or a circuit breaker, each sized for the applied load and system voltage having an interrupting capacity not less than maximum available short-circuit current of circuit on which applied. Disconnects shall be sized in accordance with NEC and NEMA requirements. Safety switches shall be cartridge fuse type or unfused, as required. Manual toggle type motor switches with overload protection may be used as motor disconnects for fractional horsepower motors provided they meet NEC requirements including padlock provision. Safety switches shall be quick-make, quick-break and NEMA Heavy Duty, Type HD. Disconnect enclosures: NEMA 1, NEMA 3R, NEMA 4 to suit application.
48. Contractor shall include in bid Unit Prices for each of the following:
 A. Each type of receptacle, including coverplate connected to area circuit.
 B. Voice outlet box with conduit and pullstrung.
 C. Each type of switch, including coverplate connected to area circuit.
 D. 20/1 Homerun to Local Branch Circuit Panel.
49. All electrical equipment shall be labeled to warn qualified persons of potential Arc Flash hazards in accordance with NEC Article 110.16 and all local codes. Electrical contractor shall provide all required labels.
50. All electrical equipment and HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with NEC Articles 110.24, 430.96, 430.98, 440.10, 700.5, and all local codes. The electrical contractor shall coordinate with the utility company to verify actual available fault current. Max values shown on the single line diagram are based on worst case conditions, actual conditions may vary.
51. No product shall be installed without prior approval from Owner.
52. Where specified or required, extend existing systems or tie into same to provide a complete coordinated electrical system to satisfaction of Owner and Architect.
53. All existing work to remain, but disturbed or disconnected because of alterations and new construction shall be replaced and put in operating condition unless instructed otherwise in writing by Owner or Architect.
54. Perform all work necessary to permit operation of all existing systems during the construction period. Provide and maintain applicable approved temporary wiring to meet this requirement.
55. Existing branch circuits not shown shall remain intact to extent practicable, and shall be extended as required.
56. Demolish and remove existing electrical equipment, feeders and conduit no longer required by new construction.
57. Circuit breakers made spare due to demolition shall be set in off position and labeled 'SPARE'.
58. Extend the existing Base Building Fire Alarm System as indicated and required. The system shall include, but not limited to: alarm initiating and indicating peripheral devices, conduit, wire and accessories required to furnish a complete operational system. Provide expansion of existing panel as required to accommodate installation of new devices. The equipment and installation shall comply with the current provision of the National Fire Protection Association Standards, 70, 72, and all local codes. All equipment shall be UL listed. New Fire Alarm devices shall be type and style to match base building standards. New Flashing lights shall be ADA approved, candela as required by location. Contractor shall use Building fire alarm vendor / service provider for all system tests, testing and programming. **FIRE ALARM CONTROL PANEL: HONEYWELL NOTIFIER VENDOR: FRANKLIN ALARM COMPANY INC., FACI (866)768-8424**
59. Unless otherwise directed by the Fire Code Official, minimum radio signal strength for Fire Department communications shall be maintained at a level determined by the International Fire Code, National Fire Protection Association Standards 1, 110, 1225 and all local codes. The General Contractor shall provide a survey once all the exterior is enclosed and all interior walls pertaining to the renovations are up to determine if the existing radio coverage meets the minimum radio signal strength. If minimum radio signal strength is not met, drawings shall be provided under a separate permit for the installation or modification of a bi-directional amplification system to meet the minimum radio signal strength.
60. FIRE ALARM SUBMITTAL REQUIREMENTS: In addition, the contractor shall prepare a Fire Alarm system submittal to fulfill the requirements of the local Fire Marshall. Submit (3) sets of Signed and Sealed plans prepared by a certified Fire Protection Engineer for Fire Marshall review. The submittal shall include the following: Scaled plans indicating Fire Alarm work, Project Name and Address, Square footage of affected spaces, Fire Alarm symbols list, Device matrix showing description and quantity of devices, Equipment Cut sheets, Wiring information including size, type, and all point to point wire runs, Fire Alarm Riser diagram including initiating and annunciating devices, Battery calculations indicating existing batteries are of adequate capacity and/or sizing of new batteries, and voltage drop calculations.
61. Provide all required branch circuits from panel to kitchen equipment rough-in location, and from rough-in location to attachment point on the equipment. Make all connections. Where branch circuits are shown turning up out of the floor, stub up 4 inches above finished floor and extend and make connections after equipment has been set in place and leveled by Kitchen Equipment Contractor. At wall or column locations, provide outlets and conduits in the wall whenever possible.
62. Kitchen Equipment Contractor will furnish all food service equipment completely wired internally. All electrical outlets and devices mounted on or in fabricated equipment will be provided by Kitchen Equipment Contractor, including internal wiring for same to a suitable terminal box, subpanel, starter or disconnect switch on equipment, except where receptacles symbols are shown, in which case install wiring and conduit to receptacle and make final connections.
63. Kitchen Equipment Contractor will provide Shop Drawings, including wiring and connection diagrams of all equipment to be used, and Roughing-In Drawings to locate all electrical work. Confirm all characteristics of each item of electrically operated equipment before installing wiring and circuit protective devices.
64. Electrically heated equipment will be provided by Kitchen Equipment Contractor with an "ON-OFF" light indicator, control, contactors, approved wiring, grounding, enclosure and equipment all connected to factory installed terminal boxes. For each voltage and phase requirement for a piece of equipment there will be a one-point terminal box ready to receive final connection by Electrical Contractor.

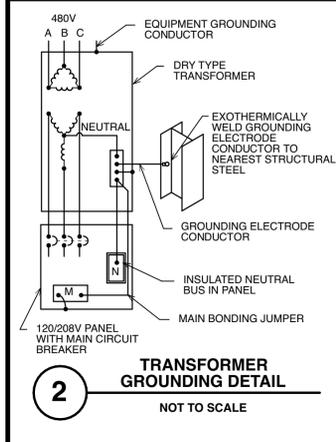
ELECTRICAL STANDARD MOUNTING HEIGHTS

- 9" Below Finished Ceiling
- 10'-0"
- 8'-6"
- Center Above Door or Window Opening
- 6'-8" or 6" Below Finished Ceiling
- 6'-8"
- 6'-6"
- 6'-0"
- 4'-6"
- 4'-0"
- 3'-6"
- 3'-4"
- 2'-0"
- 1'-6"
- 0'-0"

Mounting Heights to center of outlets unless otherwise noted. In masonry construction the mounting heights shall be used for reference to the nearest block or brick course. The above mounting heights shall be adhered to unless specifically noted or detailed on the Architectural drawings or specifications.



1 SINGLE LINE DIAGRAM
NOT TO SCALE

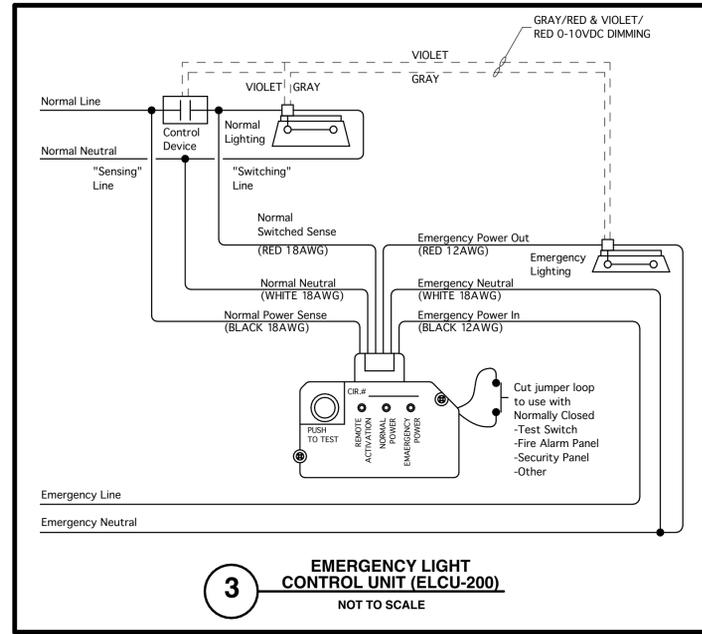
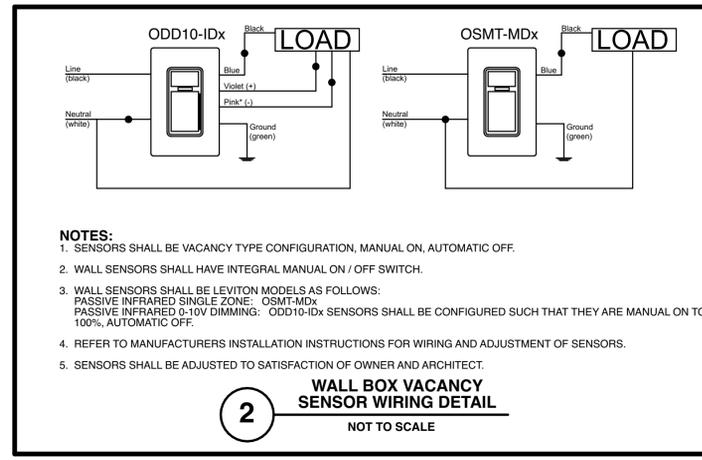
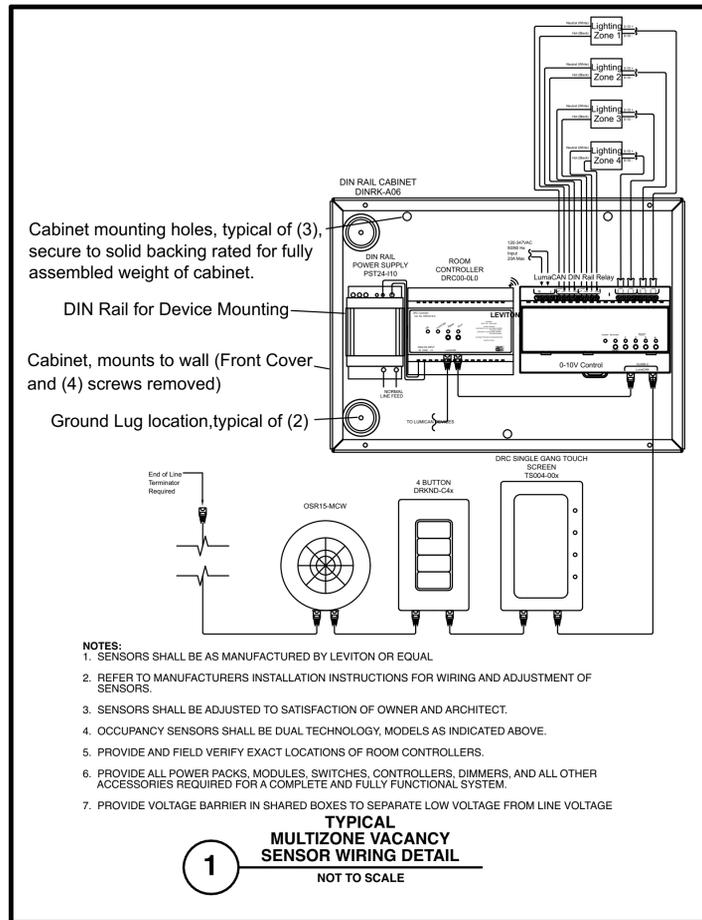


2 TRANSFORMER GROUNDING DETAIL
NOT TO SCALE

SINGLE LINE DIAGRAM NOTES

1. UNLESS OTHERWISE NOTED, ALL DEVICES AND SPACES ARE 3 POLE.
2. UNLESS OTHERWISE NOTED, ALL ABOVE GRADE CONDUCTORS SHALL BE COPPER, TYPE THW, RATED 75° C.
3. UNLESS OTHERWISE NOTED, ALL INTERIOR CONDUITS SHALL BE EMT.
4. LIGHT LINEWEIGHT INDICATES EXISTING EQUIPMENT.
5. HEAVY LINEWEIGHT INDICATES NEW EQUIPMENT.
6. ALL EQUIPMENT SHALL BE SERIES RATED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.
7. CONTRACTOR SHALL PROVIDE PERMANENT LABELS ON ALL ELECTRICAL AND HVAC EQUIPMENT INDICATING THE MAXIMUM AVAILABLE FAULT CURRENT.

1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:		
RENOVATION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL WILLIAMSTOWN, NJ 08984			
Joseph F. Mckernan Jr., Architects & Associates 100 Dobbins Lane Suite 204 Cherry Hill, New Jersey 08004		TITLE: ELECTRICAL SCHEDULES & DETAILS	
SEAL:	SCALE: AS NOTED	DRAWING NO.:	
3800 Horizon Blvd., Suite 503 Newark, NJ 07102 P: (201) 222-7700 F: (201) 222-7709 www.jfmckernan.com	PROD. NO.: 1913 DATE: 06/24/25 REV'D: DRAWN BY: CM CHKD. BY: RG	E-2.0	
JEFFREY E. HOLSTEN 100 Dobbins Lane Cherry Hill, NJ 08004			



ELECTRICAL SYMBOLS

AF	Amp Frame		LED Lighting Fixture
AT	Amp Trip		
CLG	Ceiling Mounted		
EX	Existing to Remain		
REF	Refrigerator		Emergency Lighting Fixture
WP	Weatherproof		
J	Junction Box		
TV	Television Outlet		
47	Kitchen Equipment Identification Number		
CO	Automatic Detector [Detector Control Function] CO - Carbon Monoxide D - Duct Mounted		
P	Pushbutton		
D	Duplex Receptacle - 125V, 2P, 3W		
G	GFI Duplex Receptacle - 125V, 2P, 3W		
Q	Quadplex Receptacle - 125V, 2P, 3W		
+	Device Mounted Above Counter Top		
M	Motor		
U	Unfused Disconnect Switch		
E	Electrical Panel		
PP	Power Pole		
CS	Communication System Outlet		
TV	Television Outlet		
S	Single Pole Switch		
S3	Three Way Switch		
Sa	Switch Controlling Device Indicated		
MO	Wall Mounted Occupancy Sensor		
CO	Ceiling Mounted Occupancy Sensor		
ELCU	Emergency Lighting Control Unit		
ES	Exit Sign - Ceiling or Wall Mounted		
T	Transformer		
CB	Circuit Breaker		
FDS	Fused Disconnect Switch		
F	Fuse		
DS	Disconnect Switch		

LIGHTING FIXTURE SCHEDULE

Type	Manufacturer	Catalog No.	No.	Watts	Type	Volts	Mounting	Remarks
A1	Elite Lighting	24-OAT2-LED-3000L/4000L/5000L/6000L-DIM10-MVOLT-30K/35K/40K/50K-85	30		LED 3500K	277	Recessed	2x4 LED flatpanel with 0-10V dimming. Provide 3000 lumen selection and 3500K color temperature.
A2	Elite Lighting	14-FPL1-LED-2000L/3000L/4000L-DIM10-MVOLT-35K/40K/50K-85	28		LED 3500K	277	Recessed	1x4 LED flatpanel with 0-10V dimming. Provide 3000 lumen selection and 3500K color temperature.

Notes:
 1. In addition to those indicated above, refer to Architectural drawings and provide all fixtures specified.
 2. All fixtures shall be provided with lamping.
 3. Confirm final fixture options and color selection with Architect prior to purchase.
 4. Refer to specifications for detailed requirements for construction, handling, ballasts, lamps, etc.
 5. Coordinate fixture location and mounting requirements with Architectural drawings and details.
 6. Refer to Architectural reflected ceiling plans for ceiling types and conditions affecting mounting and installation of lighting fixtures.
 7. Coordinate exact fixture color temperature with owner and architect prior to purchase.

KITCHEN EQUIPMENT SCHEDULE

Symbol	Item	Manufacturer, Model	Load (kW)	Volt/Phase	Connection	Circuit	Mounting Height (AFF)	Remarks
1	Commercial Dish Machine	Hobart, CDL-1	2.0	120V/1Ø	Verify	A1A-15	Verify	Provide junction box. Coordinate exact connection with equipment vendor prior to rough-in.
2	Walk-in Cooler/Freezer Combo	TBD	1.0	120/1Ø	Verify	A1A-17	Verify	Coordinate exact connection with equipment vendor prior to rough in.
3	Walk-in Cooler Evaporator Coil	TBD	0.2	120/1Ø	Verify	A1A-19	Verify	Coordinate exact connection with equipment vendor prior to rough in.
4	Walk-in Cooler Condensing Unit	TBD	3.1	208/1Ø	Verify	A1A-21	Verify	Coordinate exact connection with equipment vendor prior to rough in.
5	Exhaust Hood	TBD	1.2	120/1Ø	Verify	A1A-25	Verify	Provide (2) junction boxes. Coordinate exact connections with equipment vendor prior to rough in. Provide Shunt Trip Breaker.
6	Exhaust Hood Control Panel	TBD	0.6	120/1Ø	Verify	A1A-29	Verify	Coordinate exact connection with equipment vendor prior to rough in. Provide Shunt Trip

Notes:
 1. Unless otherwise noted, all equipment to be provided by owner.
 2. Coordinate all equipment requirements with owner, owner's vendor, and manufacturer
 3. Coordinate all equipment locations and mounting heights with owner's vendor and manufacturer prior to install.
 4. AFF = Above Finished Floor
 5. All mounting heights are to center of device.
 6. All equipment located under an exhaust hood shall be protected by a shunt trip circuit breaker. Circuit breakers shall be interconnected to the fire alarm system.
 control panel for automatic shunt trip prior to release of hood suppression
 7. All receptacles in kitchen areas shall be GFCI type.
 8. All mounting heights are to center of device.
 9. Refer to Food Service plans for all final connections, power requirements, mounting heights, and additional requirements.
 10. Unless otherwise noted all power for equipment listed in this equipment schedule shall be circuited to panel 'A1A'

PANEL A1A

250 A MCB 10 KAIC 42 POLE 208/120V - 3Ø - 4W

Cir. No.	Cir. Bkr.	Wire Size	Description	Load - KVA			Description	Wire Size	Cir. Bkr.	Cir. No.
				A	B	C				
1	20/1		Spare				TV Receptacle	#12	20/1	2
3	20/1		Spare				Countertop Receptacles	#12	20/1	4
5	20/1		Spare				Countertop Receptacles	#12	20/1	6
7	20/1		Spare				Countertop Receptacles	#12	20/1	8
9	20/1		Spare				Countertop Receptacles	#12	20/1	10
11	20/1		Spare				Refrigerator	#12	20/1	12
13	20/1	#12	Teacher's Desk Receptacles	0.4			Refrigerator	#12	20/1	14
15	30/1	#12	1 - Commercial Dish Machine		2.0		Refrigerator	#12	20/1	16
17	20/1	#12	2 - Walk-in Cooler/Freezer Combo			1.0	Refrigerator	#12	20/1	18
19	20/1	#12	3 - Walk-in Cooler Evaporator Coil	0.1			KEF-1	#10	30/3	20
21	20/2	#12	4 - Walk-in Cooler Condenser Unit		1.6					
25	20/1	#12	5 - Exhaust Hood	1.4		1.6	Hoodtop Receptacle	#12	20/1	26
**	**	**	** Shunt Trip Breaker **				Exterior Receptacle	#12	20/1	28
29	20/1	#12	6 - Exhaust Hood Control Panel			0.6	EF-1	#12	20/1	30
**	**	**	** Shunt Trip Breaker **				Space			32
33			Space				Space			34
35			Space				Space			36
37			Space				MAU-1	#1/0	150/3'	38
39			Space							
41			Space							
Total				1.9	3.6	3.2				Total

Phase (KVA) Load Summary by Type

A	19.4	Connected Receptacles	KVA
B	21.6	Connected Lighting	KVA
C	21.3	Connected Motor	KVA
Total	62.2	Connected Heating	KVA
		Connected Air Conditioning	KVA
		Connected Kitchen	KVA
		Connected Miscellaneous	KVA
Total			62.2 KVA

Options and Accessories - (X) Indicates Selection

<input type="checkbox"/> Feed Through Lugs	<input type="checkbox"/> Recessed
<input type="checkbox"/> Subfeed Main Lugs	<input type="checkbox"/> Surface
<input type="checkbox"/> Split Bus	<input type="checkbox"/> Double Panel
<input type="checkbox"/> Contactor Controlled	<input type="checkbox"/> Ground Bus
<input type="checkbox"/> Top	<input type="checkbox"/> Insulated
<input type="checkbox"/> Bottom	<input type="checkbox"/> Ground Bus

* = Provide Subfeed Breaker Kit
 ** = Provide Shunt Trip Breaker

1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY

APPROVAL: _____ PROJECT: _____

REVISION TO THE
HOME ECONOMICS CLASSROOM
 AT THE WILLIAMSTOWN HIGH SCHOOL
 100 USANCE ROAD
 WILLIAMSTOWN, NJ 08994

Joseph F. McKernan Jr., Architects & Associates
 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08004

SCALE: AS NOTED DRAWING NO: **E-2.1**

PROJ. NO.: 1313 DATE: 06/24/25
 REV'D: DRAM:BY: CM
 CHECKED BY: RG

JEFFREY E. HOLSTEIN
 3800 Horizon Blvd., Suite 503
 Trevose, PA 19053
 P: (215) 222-7711
 F: (215) 222-7709
 www.jeholstein.com

EXISTING CONDITIONS NOTE

- ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM OCTOBER 31, 2024 AND AS-BUILT DRAWINGS FROM DLB ASSOCIATES, INC. FROM MAY 18, 1994.
- ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

GENERAL NOTES

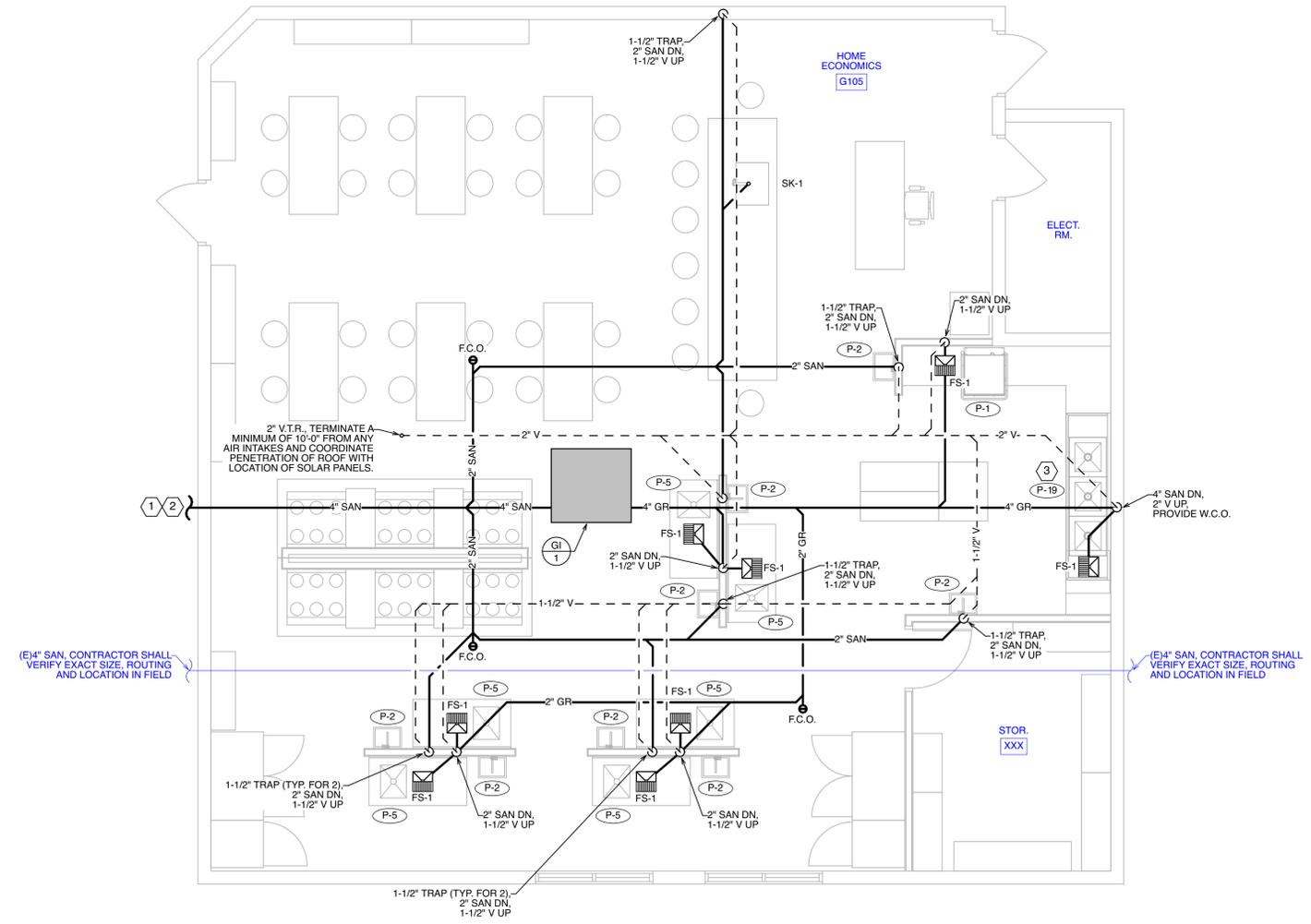
- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PIPING WITH ALL TRADES ON THE FLOOR ABOVE AND BELOW TO AVOID CONFLICTS.
- ALL SANITARY PIPING 4"Ø AND LARGER SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT AND ALL SANITARY PIPING 3"Ø AND SMALLER SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT UNLESS OTHERWISE NOTED. CONTRACTOR SHALL VERIFY EXACT INVERTS IN THE FIELD.
- CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF NEW PIPING WITH THE EXISTING LOCATION.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- REFER TO PLUMBING FIXTURE SCHEDULE AND RISER DIAGRAMS FOR MORE INFORMATION REGARDING DWV, DOMESTIC WATER, AND GAS PIPING SIZES.
- CONTRACTOR SHALL PROVIDE TRAP PRIMERS SIMILAR TO P.P.P. INDUSTRIES SERIES PR-500 FOR ALL FLOOR DRAINS. INSTALL AND SIZE PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY AND STORM STACKS.
- PROVIDE UL LISTED FIRE RATED PENETRATION PROTECTION AS REQUIRED BASED ON THE PIPING MATERIALS MANUFACTURER'S RECOMMENDATIONS AND UL ASSEMBLIES.
- CONTRACTOR SHALL COORDINATE WITH STRUCTURAL ENGINEER ALL REQUIRED CORING LOCATIONS THROUGH FLOORS/FOOTERS.
- CONTRACTOR SHALL INSTALL ALL PIPING AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE.
- REFER TO SHEET P-2.0 FOR PLUMBING SYMBOLS, INDICATIONS, AND ABBREVIATIONS.
- COORDINATE LOCATIONS OF FLOOR DRAINS WITH ARCHITECT.
- CONTRACTOR SHALL ENGAGE EXISTING ROOFING CONTRACTOR TO PERFORM ALL WORK, PATCHING AND REPAIR OF ROOF PENETRATIONS TO MAINTAIN CURRENT WARRANTY.

DRAWING SYMBOLS

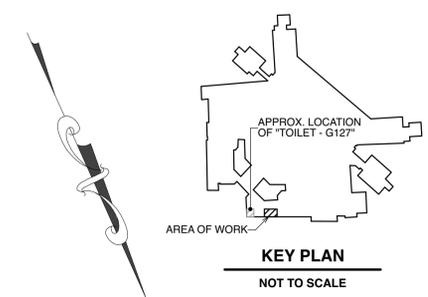
- (E) EXISTING PLUMBING WORK TO REMAIN
- EXISTING PLUMBING WORK TO REMAIN
- (R) EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
- EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
- NEW VENTING WORK
- NEW SANITARY WORK
- NEW COLD WATER PLUMBING WORK
- NEW HOT WATER PLUMBING WORK
- NEW NATURAL GAS WORK
- POINT OF CONNECTION TO EXISTING
- ◆ POINT OF DEMOLITION, CUT AND CAP

SHEET NOTES

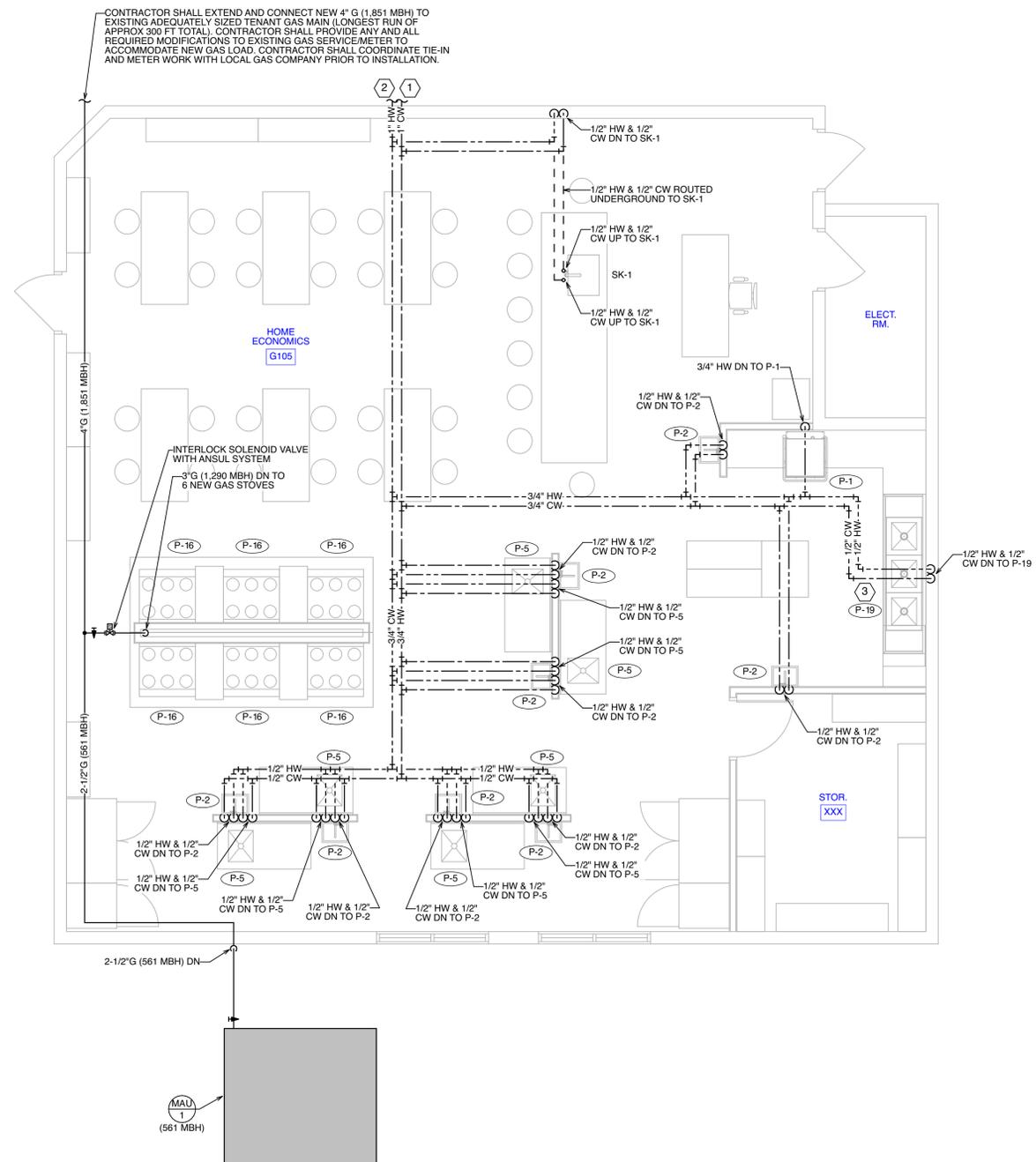
- CONTRACTOR SHALL INSPECT AND VIDEOSCOPE EXISTING SANITARY MAIN LOCATED IN "TOILET - G127" TO VERIFY THE FOLLOWING: LOCATION, DEPTH, DIRECTION OF FLOW AND CONDITION OF THE EXISTING SEWER LATERAL. CONTRACTOR SHALL SUBMIT A COPY OF THE VIDEOSCOPE. IF THERE ARE REPAIRS REQUIRED TO REUSE EXISTING SANITARY LATERAL, A PROPOSED COST BREAKDOWN SHALL BE SUBMITTED TO THE OWNER AND ARCHITECT FOR REVIEW.
- CONTRACTOR SHALL EXTEND AND CONNECT NEW 4" SANITARY PIPING TO EXISTING 6" SANITARY MAIN LOCATED IN "TOILET - G127". CONTRACTOR SHALL VERIFY EXACT SIZE AND LOCATION IN FIELD.
- CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL.



1 FIRST FLOOR SANITARY PLAN
SCALE: 1/4" = 1' - 0"



1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:		
RENOVATION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 USLAVER ROAD WILLIAMSTOWN, NJ 08994			
Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: FIRST FLOOR SANITARY PLAN	
SCALE: AS NOTED DRAWING NO.: P-1.0	PROJ. NO.: 1913 DATE: 06/24/25 REV'D: RY DRAWN BY: RY CHK'D BY: BA	SEAL: SCOTT A. WHITE ARCHITECT	



1 FIRST FLOOR DOMESTIC WATER PLAN
SCALE: 1/4" = 1' - 0"

EXISTING CONDITIONS NOTE

- ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF PHOTOGRAPHS AND SURVEY DATA BY HOLSTEIN WHITE, INC. FROM OCTOBER 31, 2024 AND AS-BUILT DRAWINGS FROM DLB ASSOCIATES, INC. FROM MAY 18, 1994.
- ALTHOUGH THE EXISTING CONDITIONS DOCUMENTED ON THESE PLANS HAVE BEEN MODIFIED PER OBSERVATIONS IN THE FIELD, THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM FINAL FIELD VERIFICATION OF ALL OF THE EXISTING CONDITIONS PRIOR TO COMMENCING WORK TO CONFIRM ALL EXISTING CONDITIONS AND LOCATIONS OF ALL PLUMBING FIXTURES, VALVES, PIPING, ETC.

GENERAL NOTES

- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING UTILITY PIPING.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PIPING WITH ALL TRADES ON THE FLOOR ABOVE AND BELOW TO AVOID CONFLICTS.
- ALL SANITARY PIPING 4" O AND LARGER SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT AND ALL SANITARY PIPING 3" AND SMALLER SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT UNLESS OTHERWISE NOTED. CONTRACTOR SHALL VERIFY EXACT INVERTS IN THE FIELD.
- CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF NEW PIPING WITH THE EXISTING LOCATION.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- REFER TO PLUMBING FIXTURE SCHEDULE AND RISER DIAGRAMS FOR MORE INFORMATION REGARDING DWV, DOMESTIC WATER, AND GAS PIPING SIZES.
- CONTRACTOR SHALL PROVIDE TRAP PRIMERS SIMILAR TO P.P.P. INDUSTRIES SERIES PR-500 FOR ALL FLOOR DRAINS. INSTALL AND SIZE PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY AND STORM STACKS.
- PROVIDE UL LISTED FIRE RATED PENETRATION PROTECTION AS REQUIRED BASED ON THE PIPING MATERIALS MANUFACTURER'S RECOMMENDATIONS AND UL ASSEMBLIES.
- CONTRACTOR SHALL COORDINATE WITH STRUCTURAL ENGINEER ALL REQUIRED CORING LOCATIONS THROUGH FLOORS/FOOTERS.
- CONTRACTOR SHALL INSTALL ALL PIPING AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE.
- REFER TO SHEET P-2.0 FOR PLUMBING SYMBOLS, INDICATIONS, AND ABBREVIATIONS.
- COORDINATE LOCATIONS OF FLOOR DRAINS WITH ARCHITECT.
- CONTRACTOR SHALL ENGAGE EXISTING ROOFING CONTRACTOR TO PERFORM ALL WORK, PATCHING AND REPAIR OF ROOF PENETRATIONS TO MAINTAIN CURRENT WARRANTY.

DRAWING SYMBOLS

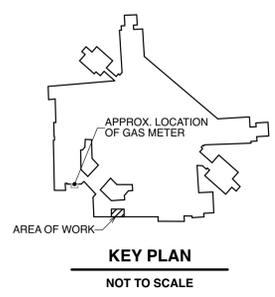
- (E) EXISTING PLUMBING WORK TO REMAIN
- EXISTING PLUMBING WORK TO REMAIN
- (R) EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
- EXISTING PLUMBING WORK TO BE DEMOLISHED AND REMOVED
- NEW VENTING WORK
- NEW SANITARY WORK
- NEW COLD WATER PLUMBING WORK
- NEW HOT WATER PLUMBING WORK
- NEW NATURAL GAS WORK
- POINT OF CONNECTION TO EXISTING
- POINT OF DEMOLITION, CUT AND CAP

SHEET NOTES

- CONTRACTOR SHALL EXTEND AND CONNECT NEW 1" COLD WATER PIPING TO EXISTING COLD WATER MAIN ABOVE CEILING IN 'CORRIDOR - G128'. CONTRACTOR SHALL VERIFY EXISTING COLD WATER MAIN IS ADEQUATELY SIZED TO HANDLE THE NEW LOAD. CONTRACTOR SHALL PROVIDE ALL REQUIRED MODIFICATIONS TO EXISTING COLD WATER MAIN AS NECESSARY.
- CONTRACTOR SHALL EXTEND AND CONNECT NEW 1" HOT WATER PIPING TO EXISTING HOT WATER MAIN ABOVE CEILING IN 'CORRIDOR - G128'. CONTRACTOR SHALL VERIFY EXISTING HOT WATER MAIN IS ADEQUATELY SIZED TO HANDLE THE NEW LOAD. CONTRACTOR SHALL PROVIDE ALL REQUIRED MODIFICATIONS TO EXISTING HOT WATER MAIN AS NECESSARY.
- CONTRACTOR SHALL CLEAN/REFURBISH EXISTING TO REMAIN PLUMBING FIXTURE. EXISTING TO REMAIN PLUMBING FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT EXISTING PLUMBING FIXTURES ARE FULLY FUNCTIONAL.

GAS PIPING NOTES

- ALL GAS PIPING SHALL BE INSTALLED PER THE REQUIREMENTS OF IFGC 2021.
- ALL EXPOSED EXISTING AND NEW GAS PIPING & FITTING SHALL BE COATED OR WRAPPED WITH A CORROSION-RESISTANT MATERIAL.
- 4" GAS (1,851 MBH) SIZED FOR LONGEST RUN OF 300 FT FROM METER PER IFGC 2021, TABLE 402.4(1), LESS THAN 2 PSI, 0.3 IN. W.C. PRESSURE DROP, & 0.60 SPECIFIC GRAVITY.



1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:		TITLE:
RENOVATION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 700 LAWRENCE ROAD WILLIAMSTOWN, NJ 08094		FIRST FLOOR DOMESTIC WATER PLAN	
Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034		SCALE: AS NOTED PROJ. NO.: 1313 DATE: 06/24/25	DRAWING NO.: P-1.1
3800 Horizon Blvd., Suite 503 Trevose, PA 19053 © 2010-2025 HW P: (215) 222-7709 www.holsteinwhite.com		SCOTT A. WHITE ARCHITECT	DRN: RY CHKD: BA

PLUMBING SPECIFICATIONS

GENERAL WORK:

- The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
- In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
- The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
- The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
- Plumbing work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work.
- The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
- The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
- The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
- The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
- The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities. The National Board of Fire Underwriters, the 2021 National Standard Plumbing Code (NJ Edition), the codes of the International Code Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
- The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
- The Contractor shall coordinate with the General Contractor and locate all required cutting and patching and the like required by the installation of the plumbing work.
- All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
- Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments, component service, and provide a minimum 2" clearance between all piping and other work.
- Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
- The contractor shall provide and maintain in good order a complete set of blue line prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducible of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducible including all sketches and written directives. All concealed equipment, mainfenders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducible and one (1) set of prints shall be signed, dated and delivered to the engineer.

PLUMBING:

- All shutoff valves, fixture trims, and plumbing specialties shall be Lead Free per the current regulations.
- All shutoff valves shall be ball or gate valves. All valves shall be bronze, 125 psi WP, solid wedge disc, non-rising stem, soldered ends. Provide shut-off valves for all connected equipment and plumbing fixtures.
- The Contractor shall provide a sanitary drain from all fixtures. The Contractor shall provide all required vent piping for all fixtures installed. Pitch Drainage Piping Equal or Smaller than 3/4" at 1/4" per foot, Pitch Drainage Piping 4" or Larger at 1/8" per foot.
- Provide cleanouts in new sanitary and piping 50 feet on centers on all horizontal piping, at direction changes of 45° or more, and elsewhere required by codes. Cleanouts accessible through walls shall be provided with chrome-plated covers and frame, in floors with recessed top to receive floor finishing material.
- The Contractor shall sterilize all new domestic water piping as required by the plumbing code and the Health Department. The plumbing contractor shall provide water hammer arresters as required. Water hammer arresters: Smith Series 5000 stainless steel Hydrocils, F.O.I. certified and A.S.S.E. approved.
- Alternate sanitary vent piping shall be standard weight uncoated cast iron ball and spigot soil pipe and fittings conforming to ASTM A74 with caulked oakum and lead joints, no-hub if permitted by code, DWV Copper, or standard weight galvanized steel with galvanized cast iron banded and recessed screwed drainage fittings, ASTM A126. Alternate sanitary piping within the building shall be standard weight, uncoated cast iron ball and spigot soil pipe and fittings conforming to ASTM A 74 with caulked oakum and lead joints or DWV copper. Codes permitting, no-hub may be used.
- Provide thermostatic mixing valve at each lavatory, exam room sink, and any sink where hand washing will take place. The mixing valve shall be similar to Powers Model LF480, with the following devices: union inlet strainers, check stops, and shutoff valves. Mixing valve shall be installed under the counter or fixture being served. Install per manufacturer's recommendations. Leaving water temperature shall be adjusted to 110°F.
- Provide trap primers for all floor drains. Trap primers shall be supplied with a 1/2" cold water branch pipe. The pipe shall be installed below grade and insulated with 1" Armaflex.
- Floor Drains shall be installed according to the 2021 National Standard Plumbing Code (NJ Edition).
- All Plumbing must be tested and approved by plumbing inspector and meet the requirements of the 2021 National Standard Plumbing Code (NJ Edition).
- All potable water outlets shall be protected from cross connection as required per the 2021 National Standard Plumbing Code (NJ Edition) and local utility rules and regulations.
- Provide an unconditional one-year written guarantee to replace or repair all defective work.
- All hole drilling for pipe hangers or floor and wall penetrations shall be by the Plumbing Contractor for Plumbing work.
- All piping shall be supported by pipe hangers of similar material as pipe being supported. Suspend from building structure with spacing of hangers not to exceed requirements of the latest edition of the IBC 2021 and the 2021 National Standard Plumbing Code (NJ Edition) as well as the local authority having jurisdiction. Do not use wire or perforated metal strap to support piping. Do not rest piping on any part of building structure for support. Provide all necessary hangers, inserts, supports required to properly support the equipment and piping. Hanger and supports shall be made of the same material as the material of pipe or equipment which is being supported.
- All plumbing fixtures and fixture trim shall be provided as specified herein. Fixtures shall be complete with all necessary wall hangers & supports, supply stop valves, 17-gauge chrome-plated brass drainage fittings & p-trap, and chrome-plated escutcheons. All exposed piping shall be chrome-plated brass. All fixtures shall be installed level and plumb according to manufacturer's recommendations and code requirements. Provide mildew resistant joint sealant similar to Phenoseal vinyl adhesive caulk.
- Seismic protection for the Plumbing system shall be provided as required by the IBC 2021.
- All gas piping, electric, and other rooftop utilities are to be run from below and brought directly to the machinery they service.
- Contractor to X-Ray slab/floor for utilities prior to saw cutting, coring, or demolition of floors.
- All trenches to be backfilled and compacted to 95% compaction, or filled with 3/4" clean stone. Landlord to inspect compaction prior to pouring concrete.

ELECTRICAL COORDINATION

- IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO COORDINATE THE LOCATIONS OF PIPING WITH THE ELECTRICAL CONTRACTOR. PLUMBING PIPING SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
- COORDINATION OF PIPING LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. APPROVAL OF PLUMBING SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S EXPENSE.
- PER NFPA 70, ARTICLE 110.26(F): DEDICATED EQUIPMENT SPACE SHALL APPLY TO SWITCHBOARDS, DISTRIBUTION PANELS, AND MOTOR CONTROL CENTERS. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.

PLUMBING FIXTURE SCHEDULE

NOTE: ALL PLUMBING FIXTURES AND FAUCETS SHALL BE PROVIDED IN CUSTOM COLORS AND FINISHES. COORDINATE COLOR & FIXTURE SELECTION WITH THE ARCHITECT AND OWNER.

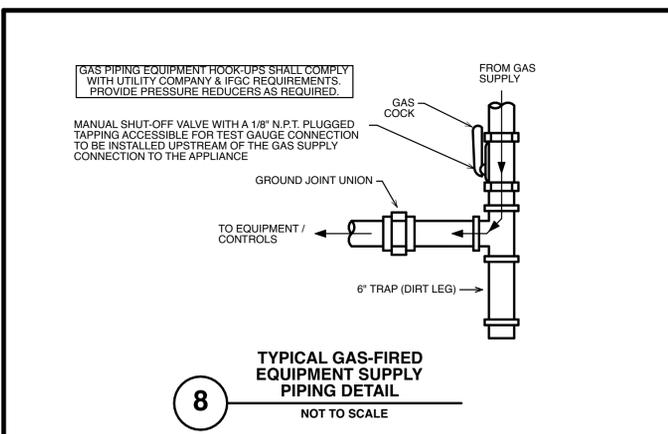
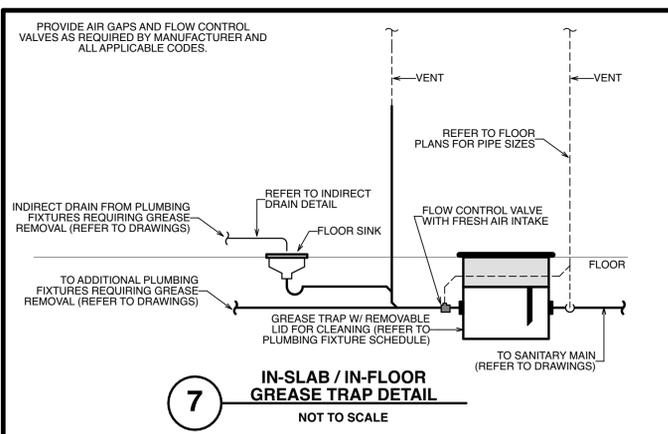
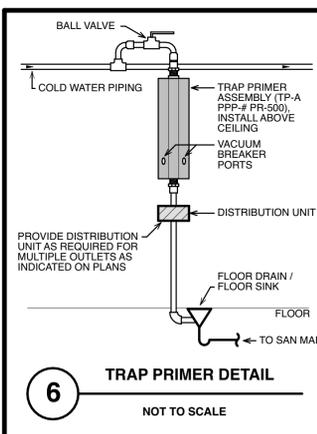
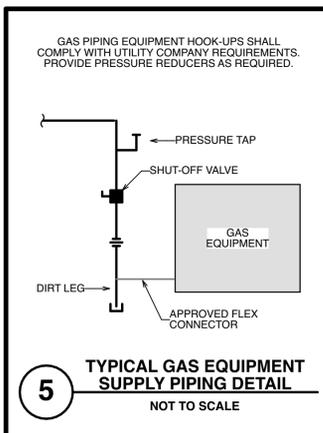
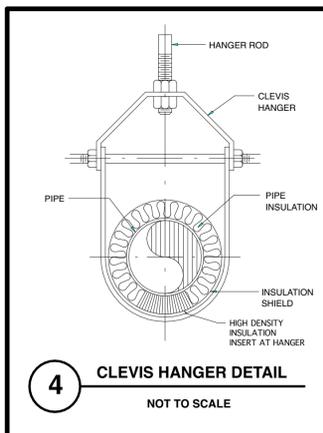
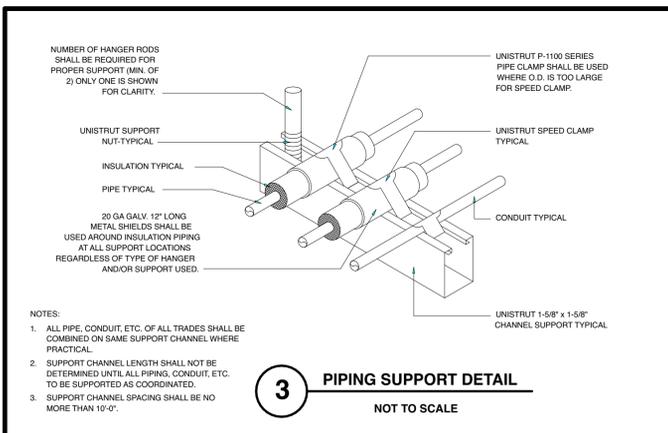
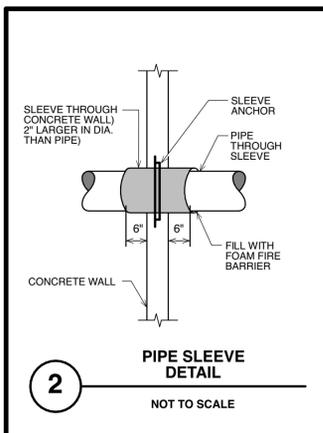
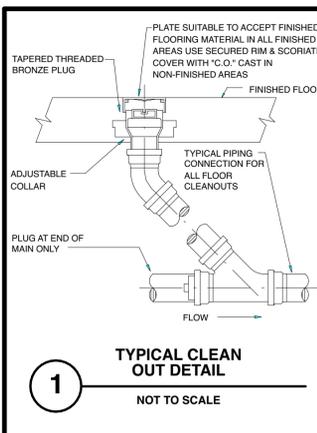
Tag	Fixture Type	Mount	Fixture Mfr./Model #	Domestic Water CWS	Domestic Water HWS	Sanitary Drain	Trap	Faucet Mfr./Model #	Flush Valve Mfr./Model #	Seat Mfr./Model #	Remarks
SK-1	Sink	Countertop	Elkay LRAD 191855	1/2"	1/2"	1-1/2"	1-1/2"	American Standard 7502.175	---	---	Countertop, single bowl, stainless steel with lustrous finish, rear center drain placement, P-trap, drain, trim, stops, wrist blade handles, swivel gooseneck spout, and metal grid strainer. Provide thermostatic mixing valve set at 110°F.
FS-1	Floor Sink	Floor	Zum Z1900	---	---	2"	2"	---	---	---	12"x12"x6" Floor Sink, Cast Iron Construction, Square Sump, 1/2 Grate, Sediment Bucket, Trap Primer Connection.

Notes:

- Provide Water Hammer Arrestors similar to P.P.P., Industries Series SWA on the domestic water branch pipes serving the flush valve fixtures. Install and size per manufacturer's recommendations.
- Provide Trap Primer Valves similar to P.P.P., Inc. Series PR-500 for all floor drains and floor sinks. Install and size per manufacturer's recommendations.
- All Floor Cleanouts (F.C.O) shall be similar to Jay R. Smith 4040.
- All Wall Cleanouts (W.C.O) shall be similar to Jay R. Smith 4710.

MATERIAL AND INSULATION SCHEDULE

System	Material		Insulation				Remarks
	Basis of Design	Alternate	Basis of Design	Type	Wall (in)	Vapor Barrier	
Domestic CW - Above Grade	Type "L" Copper	-----	Certainteed	500" Snap On	1/2	Yes	Lead free solder shall conform to ASTM B32. Flux shall Conform to ASTM B813
Domestic HW - Above Grade	Type "L" Copper	-----	Certainteed	500" Snap On	1	Yes	Lead free solder shall conform to ASTM B32. Flux shall Conform to ASTM B813
Sanitary Piping - Above Grade	Cast Iron	Sch.40 PVC Solid Wall	-----	-----	-----	-----	-----
Sanitary Piping - Below Grade	Cast Iron	Sch.40 PVC Solid Wall	-----	-----	-----	-----	-----
Sanitary Vent Piping	Cast Iron	Sch.40 PVC Solid Wall	-----	-----	-----	-----	-----
Natural Gas Piping	Sch. 40 Black Steel	-----	-----	-----	-----	-----	Comply with Utility company standards.



KITCHEN EQUIPMENT SCHEDULE

Item	Description	Drain Size	Drain Type	CW	HW	Gas	Remarks
P-1	Chemical Sanitizing Door-Type Commercial Dish Machine	1-1/2"	Indirect	-	3/4"	-	-
P-2	Wall Mounted Hand Sink with Gooseneck Faucet	1-1/2"	Direct	1/2"	1/2"	-	Provide thermostatic mixing valve set to 110°F.
P-5	304 Stainless Steel Commercial Work Table with Undershelf	1-1/2"	Indirect	1/2"	1/2"	-	Provide thermostatic mixing valve set to 110°F.
P-16	6-Open Burner Gas Restaurant Range	-	-	-	-	1-1/2"	215 MBH.
P-19	Three-Bowl Sink (Existing to Remain)	1-1/2"	Indirect	1/2"	1-2"	-	Provide thermostatic mixing valve set to 110°F.

General Notes

- Entire installation shall conform to manufacturer's recommendations.
- Kitchen Equipment Schedule has been provided by Architect, refer to Architect's plans for further information.
- Verify all exact kitchen equipment locations with Architect's plans prior to installation/rough-in of plumbing.
- All kitchen equipment shall be owner furnished and installed by the contractor. Coordinate with owner and owner's preferred vendor(s).
- Contractor shall be responsible for installing all faucets and drain connections.
- Final location of all kitchen equipment and plumbing fixtures shall be fully coordinated w/Architect, kitchen consultant, tenant, and all trades.
- Provide shut-off valves and Watts #98D Backflow Preventer on all beverage equipment water feeds or AHJ required equivalent.

1	6-24-25	ISSUED FOR BIDS	
No.	DATE	DESCRIPTION	REV'D BY
REVISIONS			
APPROVAL:	PROJECT:	REVISION TO THE HOME ECONOMICS CLASSROOM AT THE WILLIAMSTOWN HIGH SCHOOL 100 USAR ROAD WILLIAMSTOWN, NJ 08044	
Joseph F. Mckernan Jr., Architects & Associates 100 Dobbins Lane Suite 204 Cherry Hill, New Jersey 08034		TITLE: PLUMBING SCHEDULES & DETAILS	
SCALE: AS NOTED	DRAWING NO.: P-2.0	PROJECT NO.: 1913	
DATE: 06/24/25	REV'D: RY	DATE: 06/24/25	
DRAWN BY: BA	CHK'D BY: BA	DATE: 06/24/25	

