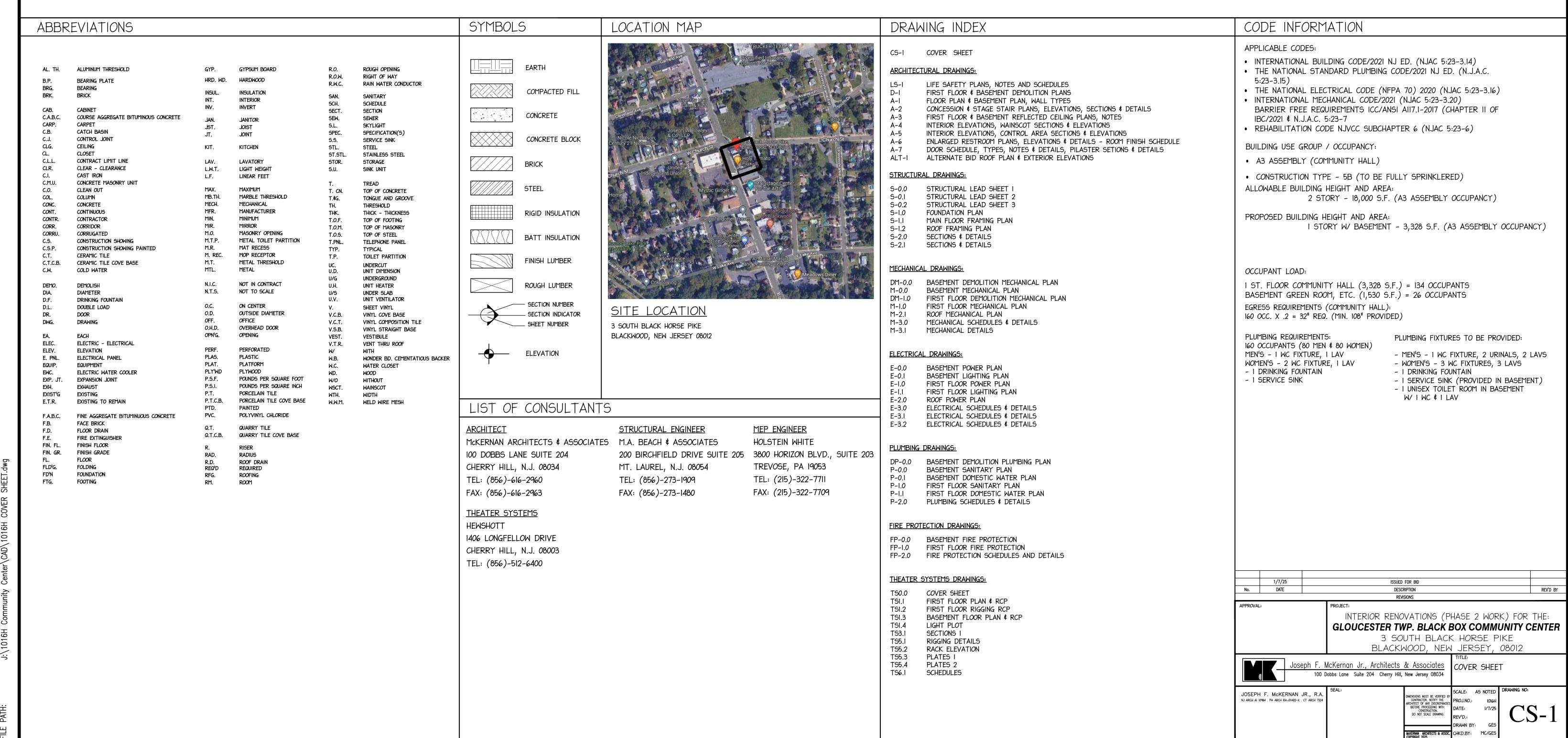
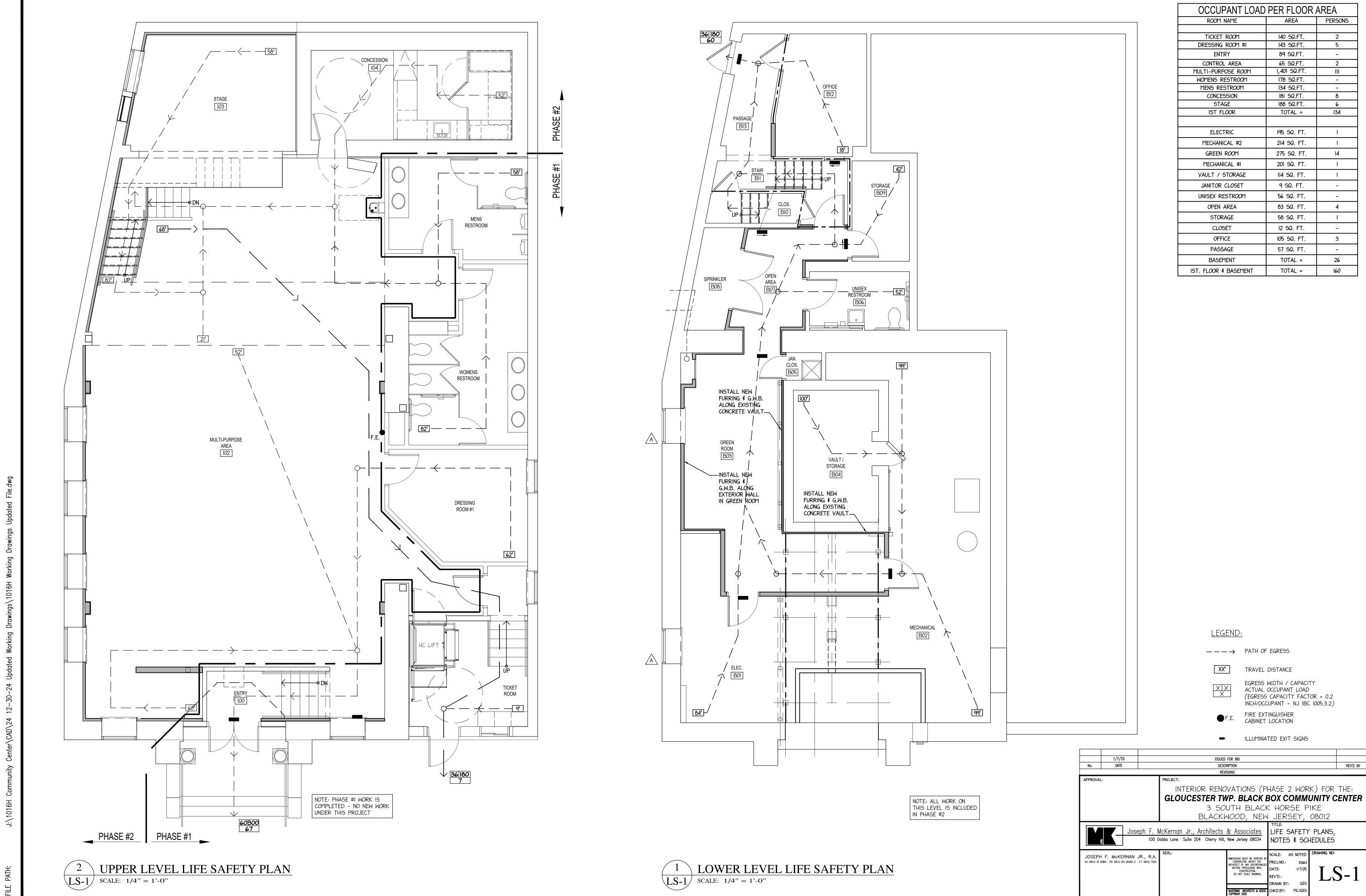
# INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE

## GLOUCESTER TOWNSHIP BLACK BOX COMMUNITY CENTER

3 S. BLACK HORSE PIKE BLACKWOOD, NEW JERSEY 08012





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ME: Jan 13, 2025 — 2:58pm

PLOT DATE & TIME: Jan 13, 3 FILE PATH: J:\1016H

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## GENERAL REFLECTED CEILING NOTES

- A. CONTRACTORS OF RESPECTIVE TRADES SHALL COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER TRADES BEFORE INSTALLATION OF FIXTURES AND/ OR EQUIPMENT.
- B. REFER TO FIRE PROTECTION, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZES, TYPES AND INSTALLATION REQUIREMENTS OF FIXTURES AND/ OR EQUIPMENT.
- C. INCLUSION OF SYMBOLS IN THE GRAPHIC LEGEND DOES NOT IMPLY INCLUSION WITHIN THE SCOPE OF WORK. REFER TO REFLECTED CEILING PLANS AND ASSOCIATED DETAILS FOR THE
- D. CHANDELIER SHALL BE FASTENED TO EXISTING ROOF TRUSS MEMBERS AS PER MANUF. RECOMMENDATIONS.
- E. ALL PENDANT MOUNT LIGHT FIXTURES SHALL BE MECHANICALLY FASTENED TO UNISTRUT MEMBERS WHICH ARE ALSO MECHANICALLY FASTENED TO THE EXISTING ROOF TRUSS

R.C.P. LEGEND:

2 x 2 CEILING GRID 2 x 4 CEILING GRID

LIGHT FIXTURE CONCEALED WET SPRINKLER HEAD W/ COVERPLATE SIDEWALL SPRINKLER

HEAD IN WALL

MOTION SENSOR

SPEAKER

FIXTURE

RECESSED LIGHT

EXTERIOR RECESSED

2 x 4 FLUORESCENT LIGHT FIXTURE 2 x 2 SUPPLY AIR

UPRIGHT WET SPRINKLER HEAD ILLUMINATED EXIT SIGN

G.W.B. SOFFIT (SEE PLAN FOR HT. A.F.F.)

2 x 2 EXHAUST FAN

ISSUED FOR BID DESCRIPTION REVISIONS

INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACK HORSE PIKE BLACKWOOD, NEW JERSEY, 08012

FIRST FLOOR & BASEMENT

REFLECTED CEILING PLANS, NOTES

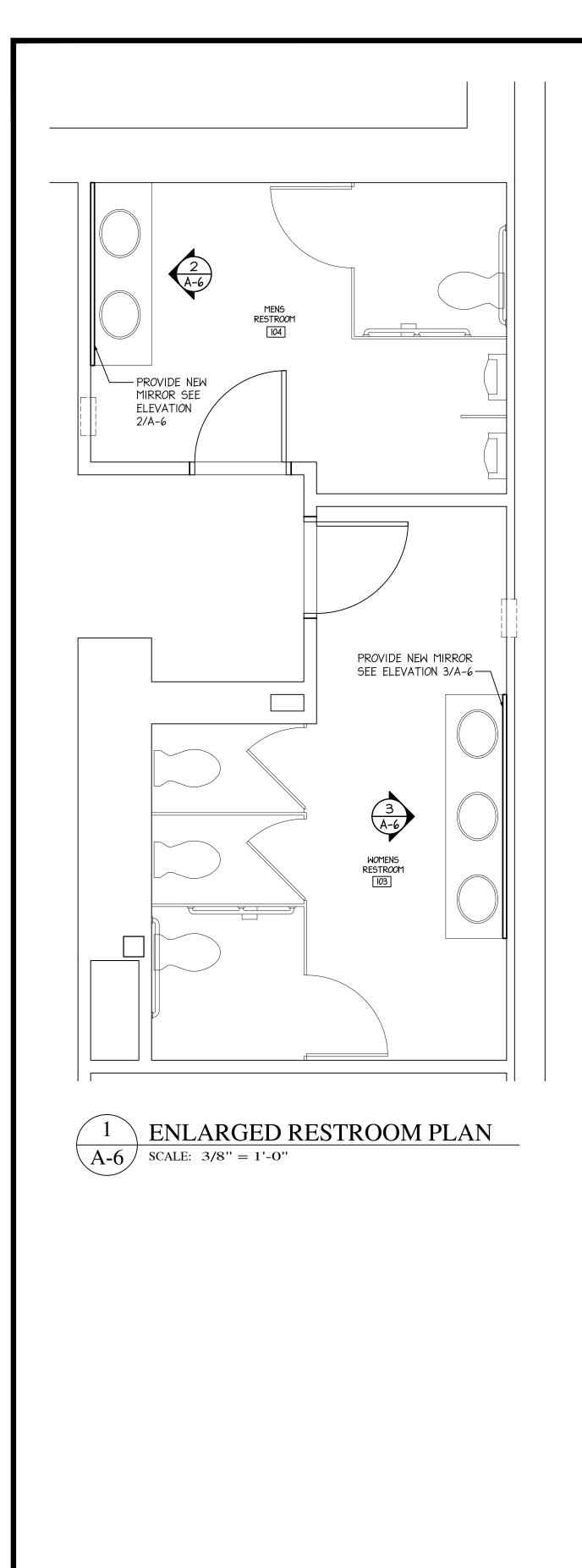
IMENSIONS MUST BE VERIFIED B CONTRACTOR. NOTIFY THE RCHITECT OF ANY DISCREPANCIE BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING. PROJ.NO.: DRAWN BY: MCKERNAN ARCHITECTS & ASSOC. CHKD.BY: MC/GE: REV'D BY

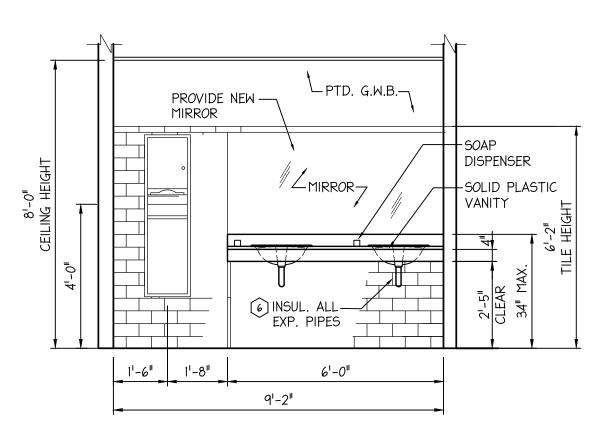
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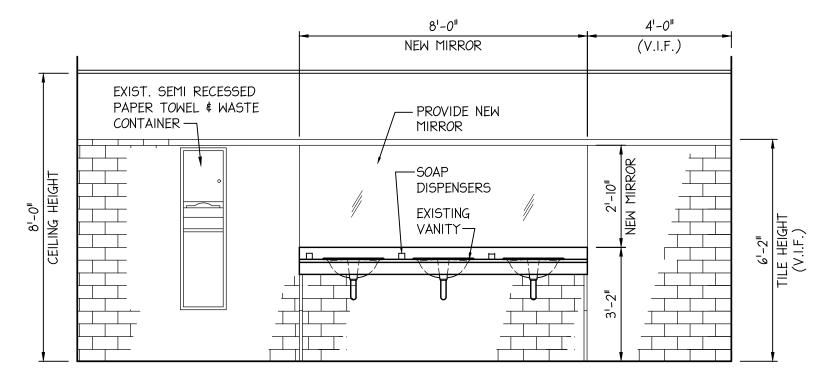
McKERNAN ARCHITECTS & ASSOC. CHKD.BY: MC/GE:

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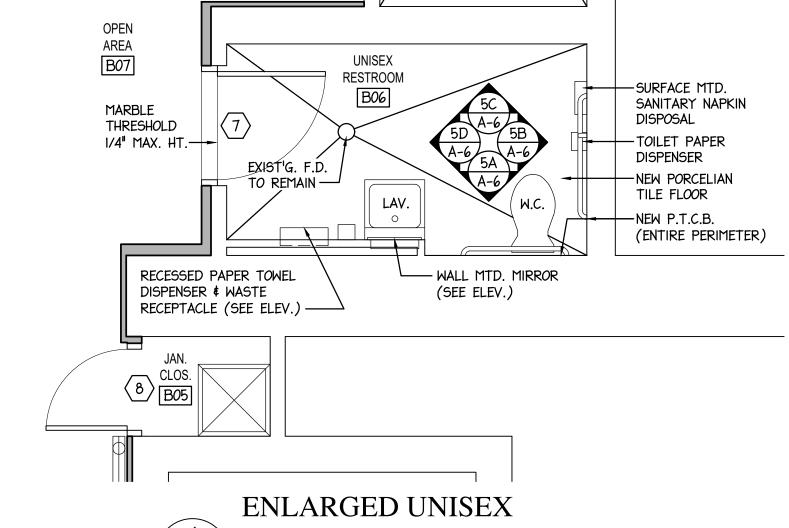




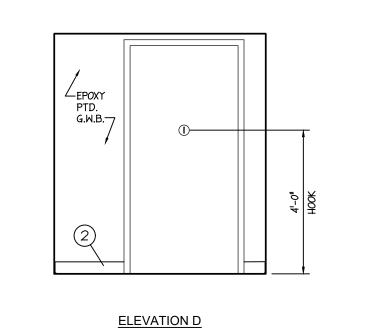


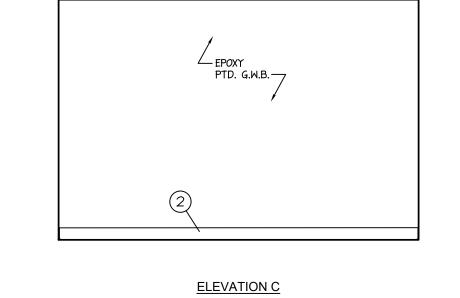




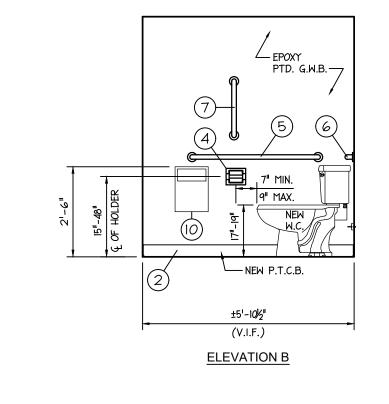


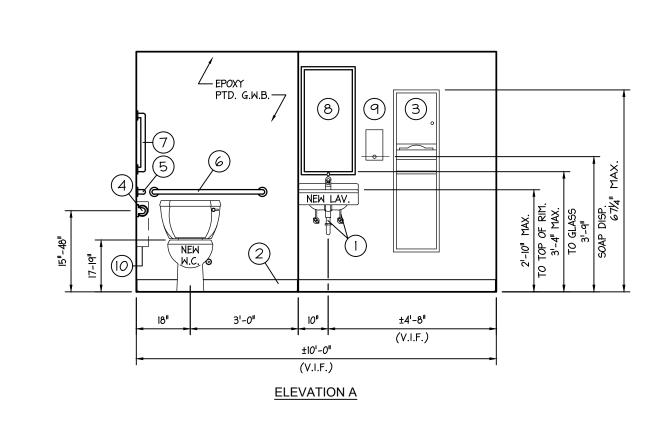
RESTROOM PLAN A-6 SCALE: 3/8" = 1'-0"





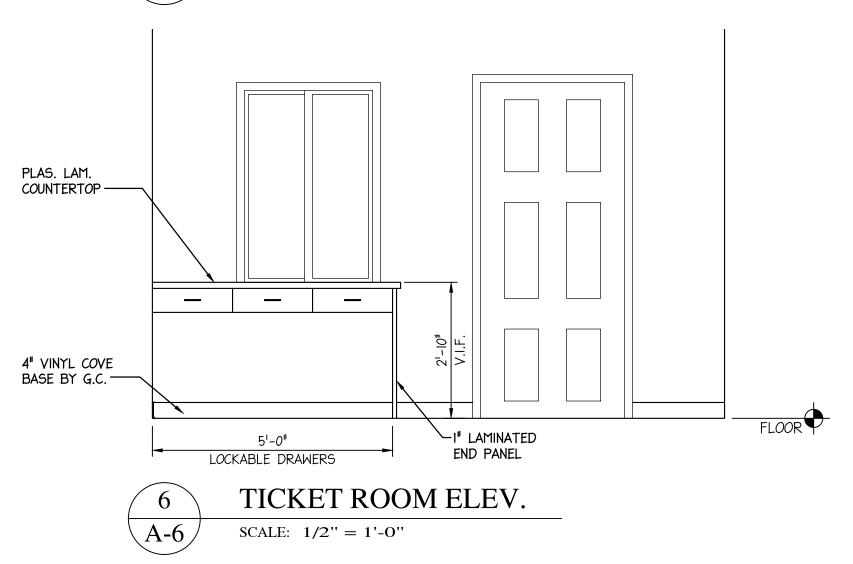




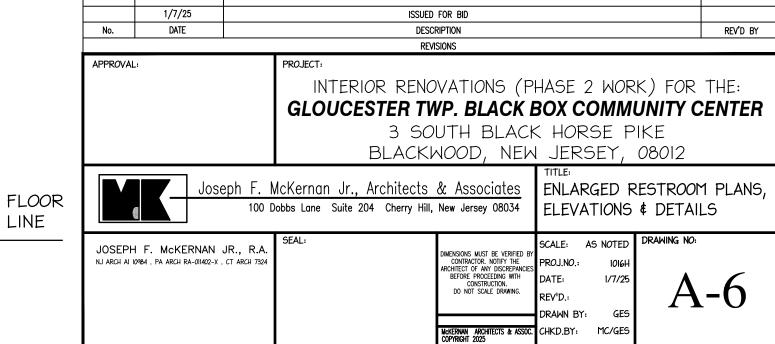


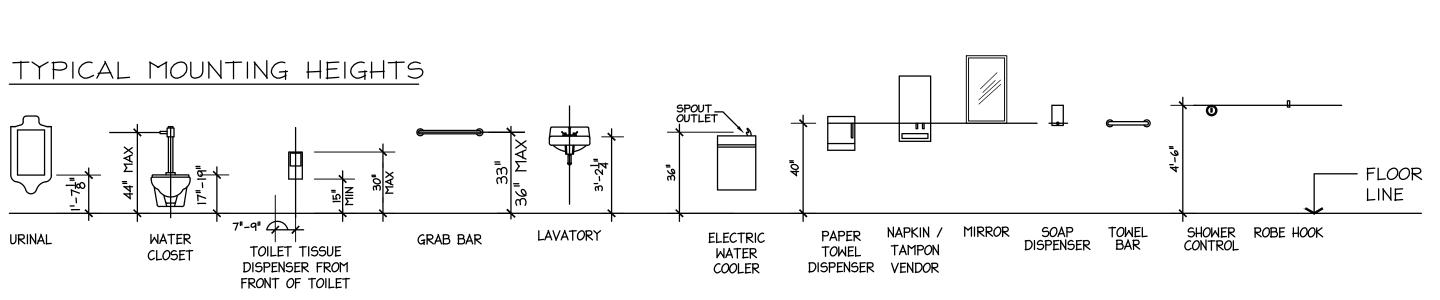
FI>	KTURE LEGEND
ITEM. NO.	ITEM
1	TRUEBRO LAV GUARD - UNDERSINK PIPING COVERS
2	RUBBER BASE
3	RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE
4	TOILET PAPER DISPENSER
5	HORIZONTAL GRAB BAR - 42"
6	HORIZONTAL GRAB BAR - 36"
7	VERTICAL GRAB BAR - 18"
8	MIRROR - 18 X 36"
9	WALL MOUNTED SOAP DISPENSER
10	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL

rev'd by



			FI	RST FLOOR			
ROOM NO.	ROOM NAME	FL00R	BASE	WALLS	CEILING	HEIGHT	REMARKS
100	ENTRY	LVT	MD	PT	EXP0SED	EXIST.	
102	MULTI-PURPOSE AREA	LVT	MD	*PT	ACT	15'-0"/ 11'-8"	WAINSCOT AT (SEE 2/A4 FOR CEILING HEIGHT
103	STAGE	LVT	WD	PT	ACT	7'-10"	
104	CONCESSION	LVT	WD	PT	ACT	8'-0 <b>"</b>	
			E	BASEMENT			
B0I	ELEC.	EXP0SED	-	-	EXP0SED	-	
B02	MECHANICAL	EXP0SED	-	-	EXPOSED	-	
B03	GREEN ROOM	LVT	RB	PŤ	ACT	6'-6"	
B04	VAULT / STORAGE	EXP0SED	-	-	-	-	
B <i>0</i> 5	JANITOR CLOSET	LVT	RB	PŤ	ACT	6'-6"	
B06	UNISEX RESTROOM	LVT	RB	PT	ACT	6'-8"	
B07	OPEN AREA	LVT	RB	PT	ACT	6'-8"	
B08	SPRINKLER	EXP0SED	-	-	EXPOSED	-	
B09	ST <i>O</i> RAGE	LVT	RB	PT	ACT	6'-8"	
BI0	CL0SET	LVT	RB	PT	ACT	-	
BII	STAIR	RB	RB	PT	ACT	-	* I HOUR FIRE RATED (U.LL521)
Bl2	OFFICE	LVT	PB	PŤ	ACT	7'-4"	
BI3	PASSAGE	LVT	RB	PT	ACT	7'-4"	VERIFY CEILING HEIGHT

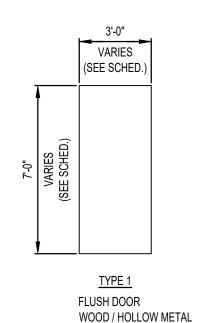


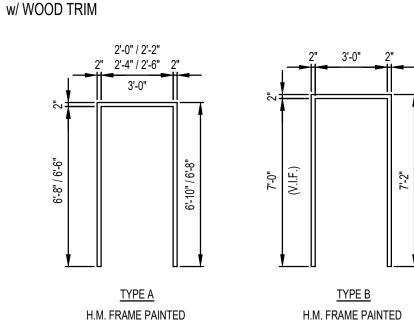


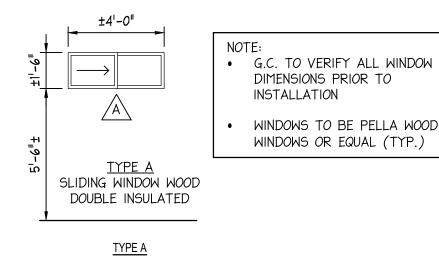
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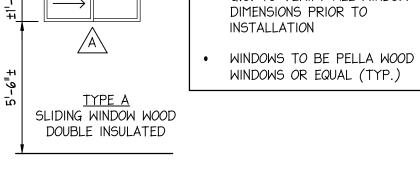
					DC	OOR S	SCHE	DUL				
DOOD NO	ODENING GIZE	TYDE	TUCK	MAT.			FRA	AME			LADEI	DEMARKS
DOOR NO.	OPENING SIZE	TYPE	THICK	TIAT.	TYPE	MAT.	HEAD	JAMB	SILL	HDW. SET	LABEL	REMARKS
1	3'-0" x 7'-0"	1	1 3/4"	H.M.	В	H.M.	1	1	ALUM.	1	-	
2	3'-0" x 7'-0"	1	I 3/4"	WD.	Α	H.M.	2	2	-	-	I HR.	DOOR RELOCATED TO NEW LOCATION
3	2'-6" x 6'-8"	1	I 3/4"	WD.	Α	H.M.	2	2	-	-	I HR.	
4	2'-0" x 6'-8"	1	1 3/4"	WD.	Α	H.M.	2	2	-	1	I HR.	
5	3'-0" x 6'-8"	1	1 3/4"	WD.	Α	H.M.	2	2	-	1	I HR.	
6	2'-8" x 6'-6"	1	1 3/4"	WD.	Α	H.M.	2	2	-	1	-	
7	3'-0" x 6'-6"	1	1 3/4"	WD.	Α	H.M.	3	3	-	1	-	
8	(2)3'-0" x 6'-6"	1	1 3/4"	WD.	Α	H.M.	2	2	MARBLE	1	-	
9	2'-3" x 6'-6"	1	1 3/4"	WD.	Α	H.M.	2	2	-	-	-	
10	3'-0" x 6'-6"	1	1 3/4 <sup>#</sup>	WD.	Α	H.M.	2	2	-	1	1	
11	3'-0" x 6'-6"	1	1 3/4 <b>"</b>	WD.	Α	H.M.	2	2	-	-	-	











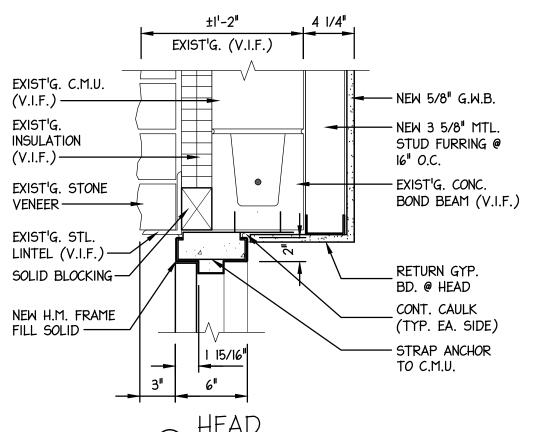
## SLIDING WOOD WINDOW DOUBLE INSULATED

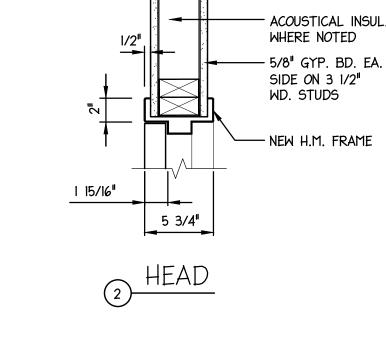


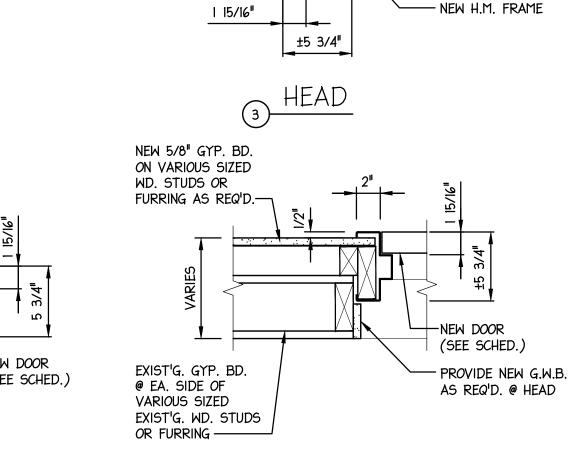
FRAME TYPES SCALE: 1/4'' = 1'-0''



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

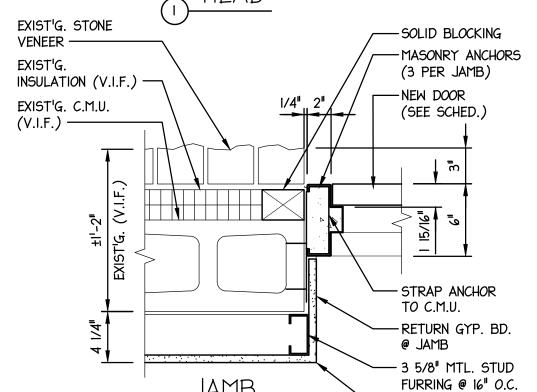


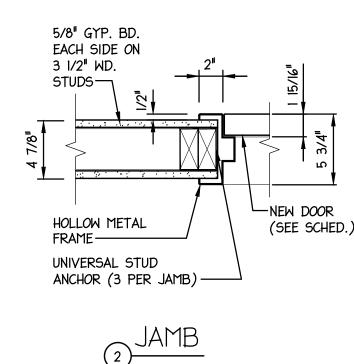


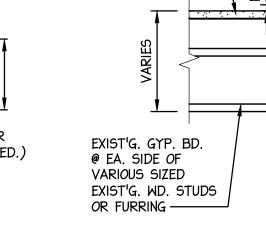


VARIOUS SIZED

OR FURRING







NEW 5/8" GYP. BD.

ON VARIOUS SIZED

FURRING AS REQ'D. -

WD. STUDS OR

**HEAD & JAMB TYPES** 

#### DOOR & FRAME NOTES

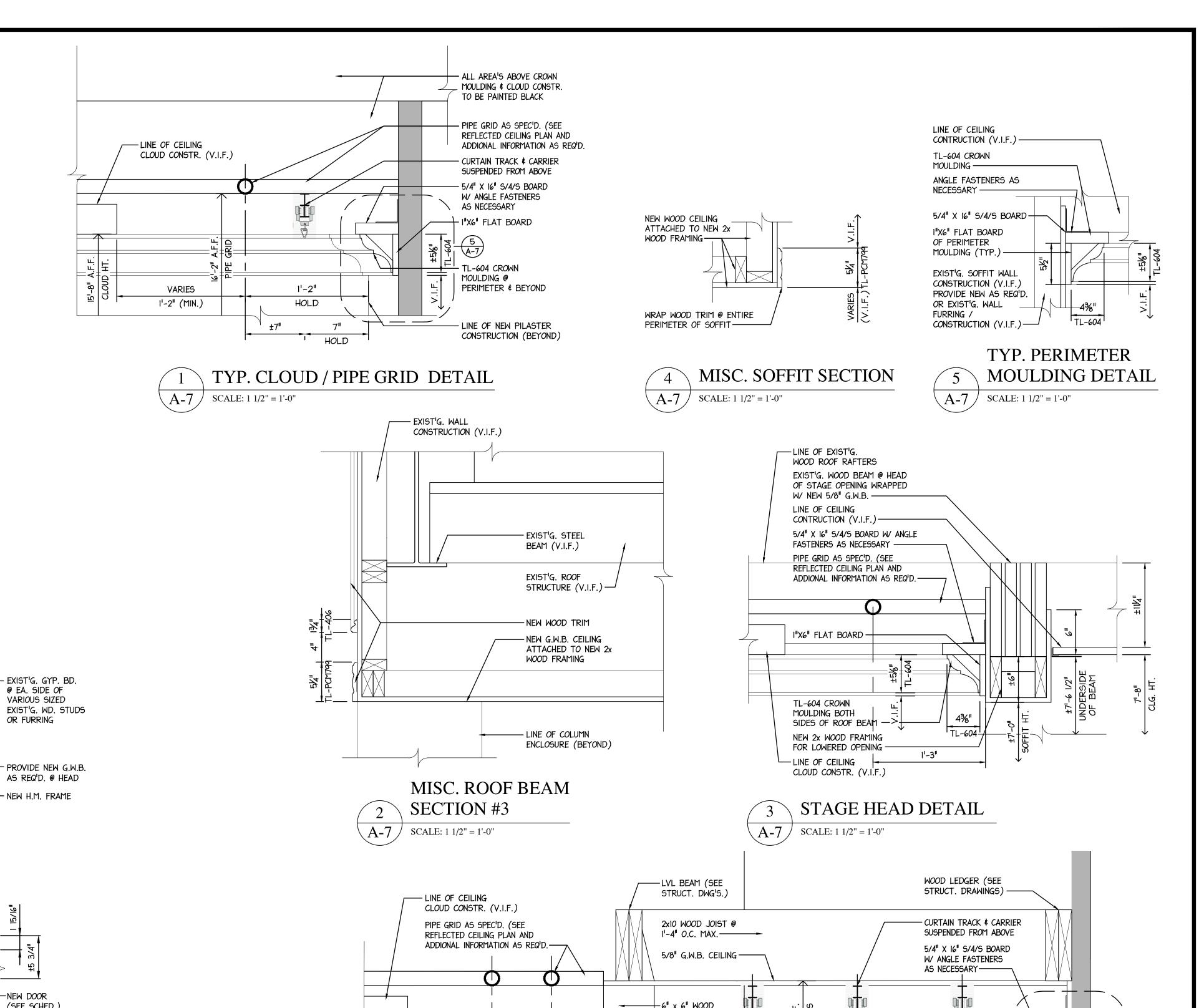
SCALE: 1-1/2" = 1'-0"

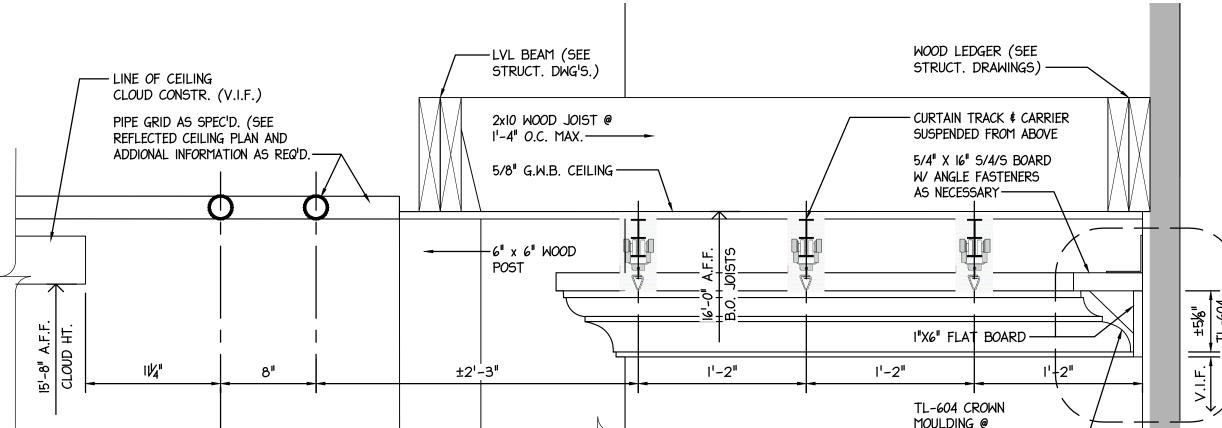
- 1. VERIFY SIZES OF OPENINGS IN FIELD PRIOR TO ORDERING.
- SUBMIT DOOR, FRAME & HARDWARE SCHEDULE TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
- 3. ALL HOLLOW METAL FRAMES TO BE KNOCK DOWN AND 20 GAUGE MIN. STEEL.
- 4. ALL SOLID CORE WOOD (W) DOORS TO HAVE A BIRCH VENEER BOTH SIDES W/ A NATURAL CLEAR FINISH UNLESS NOTED OTHERWISE.
- 5. ALL GLAZING IN DOORS & WINDOWS TO BE TEMPERED SAFETY GLASS (TSG) AS SPECIFIED IN CODE.

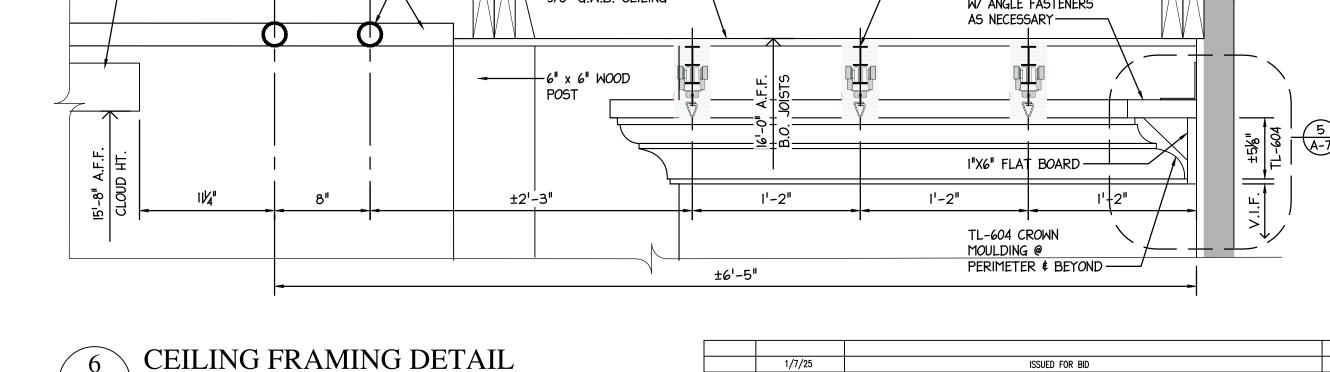
#### HARDWARE SCHEDULE NOTES

- NEW 5/8" GYP. BD.

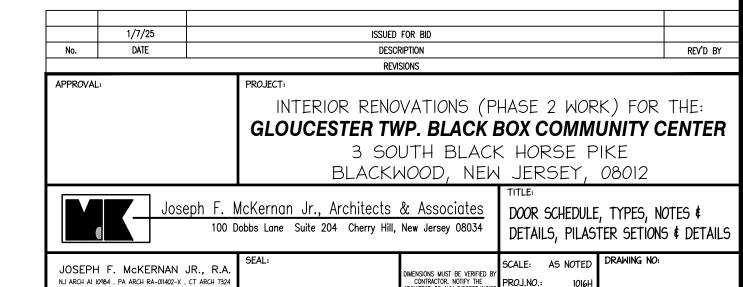
- CONTRACTOR TO SUBMIT DOOR HARDWARE SCHEDULE FOR ARCHITECT'S APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
- CONTRACTOR TO PROVIDE COMPLETE PROFESSIONALLY PREPARED WIRING DIAGRAMS FOR ANY OPENINGS REQUIRING ELECTRONIC
- CONTRACTOR TO PROVIDE COMPLETE OPERATIONAL DESCRIPTIONS OF ELECTRONIC COMPONENTS LISTED BY THE OPENING IN THE HARDWARE SUBMITTALS. DETAIL HOW EACH ELECTRICAL COMPONENT FUNCTIONS WITHIN THE OPENING INCORPORATING ALL CONDITIONS OF INGRESS AND EGRESS.
- PROVIDE ELEVATION DRAWINGS OF ELECTRONIC HARDWARE AND SYSTEMS IDENTIFYING LOCATIONS OF THE SYSTEM COMPONENTS WITH RESPECT TO THEIR PLACEMENT IN THE DOOR OPENING.







A-7 SCALE: 1 1/2" = 1'-0"



IMENSIONS MUST BE VERIFIED CONTRACTOR. NOTIFY THE RCHITECT OF ANY DISCREPANCI BEFORE PROCEEDING WITH CONSTRUCTION.

DO NOT SCALE DRAWING. PROJ.NO.: DRAWN BY: McKERNAN ARCHITECTS & ASSOC. CHKD.BY: MC/GE

#### GENERAL NOTES:

- 1. THIS PROJECT HAS BEEN DESIGNED USING THE 2021 INTERNATIONAL BUILDING CODE, NJ EDITION.
- 2. 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 MASONRY CONSTRUCTION SEE TABLE 1704.5.3, FOR SOILS SEE TABLE 1704.7. SEE THE NOTES ON THIS DRAWING FOR ANY ADDITIONAL INSPECTIONS REQUIRED.
- 3. 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
- 4. 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.

  5. ALL CONSTRUCTION AND DEMOLITION SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES INCLUDING ALL OSHA
- 6. 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.

  11. 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.

  12. IN CASE OF CONFLICT BETWEEN STRUCTURAL DRAWINGS AND STRUCTURAL SPECIFICATIONS, CONTRACTOR SHALL IMMEDIATELY CONTACT
- ENGINEER FOR CLARIFICATION PRIOR TO START OF WORK.

  13. 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.

  14. THE CONTRACTOR IS RESPONSIBLE FOR SURVEYING AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO THE
- 15. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND TEMPORARY SHORING OF THE EXCAVATIONS AND BUILDING STRUCTURE AS REQUIRED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. DESIGN OF SHEETING, SHORING, SCAFFOLDING, FORM WORK, AND OTHER MEANS AND METHODS STRUCTURES SHALL BE DESIGNED BY ENGINEERS HIRED BY THE CONTRACTOR.
- 16. SECTIONS SHOWN ON PLANS APPLY TO SIMILAR CONDITIONS THROUGHOUT THE BUILDING.
  17. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL DRAWINGS FOR THE PROJECT FOR THE FOLLOWING INFORMATION.
- A. LOCATION OF ALL REQUIRED OPENINGS IN WALLS, FLOORS, ROOF, ETC. ALL OPENINGS MAY NOT BE INDICATED ON STRUCTURAL
- B. SIZE AND LOCATION OF ALL SLEEVES, INSERTS, AND DEPRESSIONS.
- C. LOCATION AND SIZE OF ALL EQUIPMENT HOUSE KEEPING PADS.

LOCATION, ELEVATIONS AND DIMENSIONS OF EXISTING WALLS AND FRAMING.

- 18. 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.
- 19. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL MASONRY AND STUD NON-LOAD BEARING PARTITIONS. PROVIDE SLIP CONNECTIONS THAT ALLOW FOR VERTICAL MOVEMENT OF THE BUILDING STRUCTURE AT THE HEADS OF ALL PARTITIONS. CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE TOP OF WALL LATERALLY FOR ALL CODE REQUIRED LATERAL FORCES. PROVIDE FIRE SAFING AT THE TOP OF THE WALL AS REQUIRED BY ARCHITECTURAL DRAWINGS.
- 20. THE DESIGN OF NON-LOAD BEARING METAL STUD AND CURTAIN WALLS SHALL BE PERFORMED BY ENGINEERS RETAINED BY THE CONTRACTOR. DRAWINGS AND CALCULATIONS FOR THESE WALLS SHALL BE PREPARED AND SUBMITTED FOR REVIEW. ALL SUBMITTALS SHALL BE SIGNED AND SEALED BY ENGINEERS LICENSED IN THE STATE OF THE PROJECT'S JURISDICTION. DESIGN OF WALL SYSTEM AND CONNECTIONS SHALL CONSIDER ALL VERTICAL AND LATERAL LOADS REQUIRED BY THE APPLICABLE BUILDING CODE.
- 21. METAL STAIRS, RAILINGS, GUARDRAILS, AND LADDERS SHALL BE DESIGNED BY ENGINEERS RETAINED BY THE CONTRACTOR. SEE THE DELEGATED DESIGN SCHEDULE FOR MORE INFORMATION. DRAWINGS AND CALCULATIONS FOR THESE ITEMS SHALL BE PREPARED AND SUBMITTED FOR REVIEW. ALL SUBMITTALS SHALL BE SIGNED AND SEALED BY ENGINEERS LICENSED IN THE STATE OF THE PROJECTS JURISDICTION. DESIGNS ARE THE RESPONSIBILITY OF THE ENGINEER RETAINED BY THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ALL LOADS REQUIRED BY THE APPLICABLE BUILDING CODE. REVIEW OF SHOP DRAWINGS FOR THESE ITEMS WILL BE FOR CONCEPT ONLY AND WILL NOT BE A CHECK OF THE DESIGN OF THESE ITEMS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL LOCATIONS, DIMENSIONS, AND DETAILS.
- 22. FORMWORK FOR CONCRETE CONSTRUCTION SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL. SEE THE DELEGATED DESIGN SCHEDULE FOR MORE INFORMATION. THE PROFESSIONAL ENGINEER SHALL HAVE EXPERIENCE IN THE DESIGN OF FORM WORK AND SHORING AND SHALL PREPARE, SIGN AND SEAL FABRICATION AND ERECTION DOCUMENTS. THESE DOCUMENTS SHALL INCLUDE CALCULATIONS, SPECIFYING FORM WORK AND SHORING REQUIREMENTS, STRIPPING CRITERIA, AND RESHORING PROCEDURES FOR STRUCTURAL CONCRETE SLABS, BEAMS, WALLS, AND COLUMNS. THE FABRICATION AND ERECTION DOCUMENTS SHALL INDICATE FORM WORK SYSTEM REQUIREMENTS, INCLUDING CONSTRUCTION SCHEDULES, SHORING DESIGN AND LAYOUT, SHORING REMOVAL, AND RESHORING REQUIREMENTS. THE DESIGN SHALL INCLUDE THE CONSTRUCTION LOADS TO BE DELIVERED TO THE BUILDING AND SUPPORT SYSTEMS, AS WELL AS THE SLAB DEFLECTIONS ANTICIPATED DURING CONSTRUCTION AND SHALL INDICATE THE STRENGTHS OF THE BUILDING ELEMENTS, INCLUDING SLABS ON GRADE, ASSUMED FOR FORM WORK AND SHORING DESIGNS, AND STRIPPING AND RESHORING SCHEDULES.

#### SHOP DRAWINGS AND SUBMITTALS:

- 1. 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.
- 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.

2. SHOP DRAWINGS AND RELATED MATERIALS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL

- 3. 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.
- 4. 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).
- 5. 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.
- 6. 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
- 7. ALL REVISIONS TO SHOP DRAWINGS AFTER THE FIRST SUBMISSION SHALL BE APPROPRIATELY IDENTIFIED ON SUBSEQUENT SUBMISSIONS.
- 8. 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.

#### STRUCTURAL NOTES

#### BUILDING STRUCTURE AND LATERAL BRACING DURING CONSTRUCTION:

- 1. WOOD STUDS IN BEARING WALLS ARE TO BE BRACED WITH FULL DEPTH WOOD BLOCKING AT 1/3 POINTS ALONG THE STUD LENGTH. IN ADDITION, ALL SHEAR WALLS AND EXTERIOR WALLS SHALL HAVE SOLID FULL DEPTH WOOD BLOCKING AT ALL SHEATHING PANEL EDGES.
- 2. WOOD STUD SPACING DEPICTED ON STRUCTURAL PLANS FOR BEARING AND SHEAR WALLS IS THE MAXIMUM SPACING ALLOWED FOR SUPPORT OF THE DESIGN LOADS. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THE LOCATION AND DIMENSIONS OF ALL WOOD BEARING AND SHEAR WALLS. CONTRACTOR SHALL REVIEW UL FIRE RATING REQUIREMENTS AND SOUND STC RATINGS FOR EACH WALL AND CONFIRM THAT STUD SPACING SHOWN ON STRUCTURAL DRAWINGS CONFORMS TO MAXIMUM SPACING ALLOWED IN UL/STC ASSEMBLY SPECIFIED ON ARCHITECTURAL DRAWINGS. IF STUD SPACING SHOWN ON STRUCTURAL DRAWINGS DOES NOT MATCH STUD SPACING SHOWN IN UL/STC ASSEMBLY ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR DIRECTION PRIOR TO
- 3. 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.
- 4. A CONTINUOUS LOAD PATH FROM THE ELEVATED FLOOR AND ROOF STRUCTURE IS TO BE PROVIDED IN ALL BEARING WALLS. ALL BEARING WALL STUDS SHALL ALIGN WITH FLOOR AND ROOF FRAMING POINTS OF BEARING. ADDITIONAL STUD FRAMING SHALL BE ADDED WHERE FLOOR AND ROOF FRAMING DOES NOT ALIGN WITH A WALL STUD. PROVIDE SOLID BLOCKING AS REQUIRED BETWEEN FLOORS TO PROVIDE A CONTINUOUS LOAD PATH THROUGH THE FLOOR TO THE FOUNDATION.
- 5. SINCE DRAWINGS FOR THE EXISTING BUILDING WERE NOT AVAILABLE DURING DESIGN, CERTAIN ASSUMPTIONS WERE MADE REGARDING EXISTING CONSTRUCTION. 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 CONDITIONS DIFFER FROM THOSE SHOWN OR ASSUMED 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.

#### CONCRETE:

- 1. THE PROVISIONS OF ACI 318 HAVE BEEN UTILIZED FOR THE DESIGN OF CONCRETE ELEMENTS ON THIS PROJECT.
- 2. FLOOR FINISH TOLERANCES FOR THE SLAB ON GRADE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 117. FLOOR FINISH TOLERANCE SHALL BE MEASURED USING A 10 FOOT STRAIGHTEDGE ANYWHERE ON THE SLAB AND ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 72 HOURS AFTER SLAB PLACEMENT. THE GAP AT ANY POINT BETWEEN THE STRAIGHT EDGE AND THE FLOOR SHALL NOT EXCEED 1/4".
- 3. 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.
- 4. 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.
- 5. DO NOT USE ADMIXTURES THAT CONTAIN CHLORIDES. FLY ASH OR OTHER POZZOLANS SHALL NOT BE USED IN ANY CONCRETE UNLESS APPROVED BY THE ENGINEER.
- 6. 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.

  7. 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.
- 8. ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60. WWF SHALL BE COMPRISED OF CARBON STEEL PLAIN WIRES FABRICATED INTO SHEETS OR ROLLS IN ACCORDANCE WITH ASTM A1064.
- 9. FOOTING, SLAB, AND WALL REINFORCEMENT NOT SHOWN ON SECTIONS AND PLANS IS THE SAME AS THAT SHOWN IN SIMILAR SECTIONS AND AT SIMILAR LOCATIONS
- 10. LAP ALL BARS PER TABLE 1 LAP SPLICE LENGTHS FOR CONCRETE, CLASS B. LAP ALL WWF A MINIMUM OF 8 INCHES.
- 11. CONTRACTOR SHALL PROVIDE ALL BOLSTERS, CHAIRS, BAR POSITIONERS, ETC. AS REQUIRED TO SET REBAR AND SLAB WWF TO REQUIRED DIMENSIONS INDICATED ON DRAWINGS.12. CONTROL JOINTS FOR SLABS-ON-GRADE SHALL BE SAW CUT IN ACCORDANCE WITH THE PATTERN AS INDICATED ON THE STRUCTURAL
- DRAWINGS. THE SPACING OF CONTROL JOINTS SHALL BE ARRANGED SUCH THAT THE AREA OF CONCRETE SLAB BETWEEN CONTROL JOINTS DOES NOT EXCEED 225 SQUARE FEET (MAXIMUM). COORDINATE WITH THE STRUCTURAL CONTRACT DRAWINGS FOR TYPICAL CONTROL JOINT DETAILS.
- 13. PROVIDE CONTINUOUS KEYWAYS AND DOWELS IN THE TOP OF WALL FOOTINGS SUPPORTING CONCRETE WALLS. AT CONSTRUCTION JOINTS IN CONCRETE WALLS PROVIDE KEYWAYS AND CONTINUE REINFORCING THROUGH THE JOINT.
- 14. REFER TO ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING DETAILS AT FOUNDATIONS, WALLS, AND SLABS.
- 15. AT CONCRETE WALL INTERSECTIONS PROVIDE CORNER BARS EQUAL IN SIZE AND SPACING TO TYPICAL WALL REINFORCING STEEL.
- 16. 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".
- 17. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL SLEEVES, INSERTS, ANCHOR BOLTS, AND OTHER EMBEDDED ITEMS AS REQUIRED BY OTHER TRADES.
- 18. ALL CONCRETE SHALL BE PROPERLY CONSOLIDATED THROUGH THE USE OF VIBRATORS. VIBRATORS SHALL NOT BE USED TO TRANSPORT CONCRETE ALONG FORMWORK.
- 19. CONTRACTOR SHALL FOLLOW THE GUIDELINES IN ACI 303 GUIDE TO CAST-IN-PLACE ARCHITECTURAL CONCRETE PRACTICE TO ACHIEVE SPECIFIED SURFACE FINISHES OF EXPOSED CONCRETE. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS ON
- 20. 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.

#### CONCRETE MIX DESIGN AND DURABILITY REQUIREMENTS PER ACI 318 BUILDING CODE CORROSION FREEZE/THAW SULFATE AIR w/c NW = 145 pcf PERMEABILITY PROTECTION OF LOCATION SEVERITY SEVERITY CONTENT RATIO (max (psi) LW = 115 pcf REINF 4,000 FOOTINGS NW S0 P0 C1 0.50 ----SLAB-ON-GRADE CONCRETE WALLS 4,000 NW S0 0.50 C0 (INTERIOR LOCATIONS) EXTERIOR WALLS NW 4,500 0.45 F1 S0 P0 C1 6 % 5,000 EXTERIOR SLABS C2 6 % 0.40 NW F3

#### ONCRETE MIX DESIGN & DURABILITY NOTES

- CONCRETE MIX SHALL BE DESIGNED BY THE CONCRETE SUPPLIER USING THE INFORMATION CONTAINED IN THIS SCHEDULE.
   REFER TO CHAPTER 19 OF THE ACI-318 BUILDING CODE FOR ADDITIONAL INFORMATION NOT PROVIDED OR NOTED IN THIS SCHEDULE.
- 3. TOTAL AIR CONTENT LISTED IN THIS SCHEDULE IS BASED ON A MAXIMUM AGGREGATE SIZE OF 3/4" AND SHALL BE ADJUSTED BY THE
- CONCRETE MIX DESIGNER AS REQUIRED FOR DIFFERENT AGGREGATE SIZES PER ACI-318.

  4. REFER TO THE CONCRETE NOTES ON THE LEAD SHEET FOR THIS PROJECT FOR ADDITIONAL REQUIREMENTS.
- 5. FLY ASH OR OTHER POZZOLANS SHALL NOT BE UTILIZED IN ANY CONCRETE MIX UNLESS APPROVED BY THE ENGINEER. THE
- QUANTITY OF POZZOLANS USED IN CONCRETE SUBJECT TO EXPOSURE CLASS F3 SHALL NOT EXCEED THE LIMITS SET FORTH IN ACI-318.

## CAST-IN-PLACE CONCRETE CLEAR COVER FOR REINFORCING

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"
INSIDE FACE OF WALLS	1"

CAST-IN-PLACE CONCRETE CLEAR COVER NOTES:

1. MINIMUM REINFORCING COVER SHALL BE PROVID

MINIMUM REINFORCING COVER SHALL BE PROVIDED PER THIS TABLE UNLESS SHOWN OR NOTED OTHERWISE ON PLANS AND SECTIONS.

#### FOUNDATIONS

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NJ Certificate of Authorization No. 24GA27962200 Project No: 747.216

- 1. 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.

  2. BOTTOM OF ALL FOOTINGS HAVE BEEN DESIGNED TO BEAR ON SOIL CAPABLE OF SAFELY SUPPORTING 2000 PSF.

FILL, AND SOFT UNSUITABLE MATERIAL FROM THE BUILDING AREA.

- 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.
   EXISTING FOUNDATIONS, SLABS, PAVEMENTS, UNDERGROUND UTILITIES, AND OTHER BELOW GRADE STRUCTURES SHALL BE REMOVED FROM
  THE PROPOSED PROJECT SITE BUILDING FOOTPRINT. REMOVE SURFACE VEGETATION, TOPSOIL, ROOT SYSTEMS, ORGANIC MATERIAL, EXISTING
- 5. 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.
- 6. 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 2000 PSF BELOW ALL
- FOOTINGS.

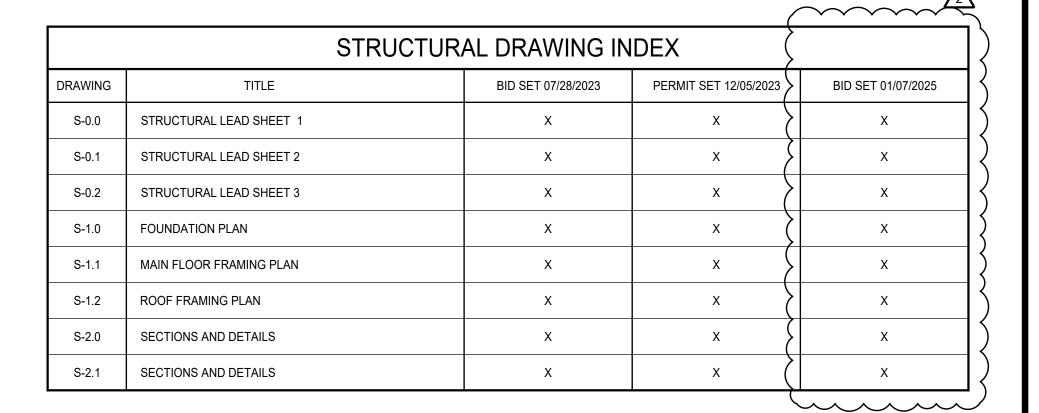
  7. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF THREE FEET (3'-0") BELOW EXTERIOR FINISH GRADE.
- 8. STANDARD PROCEDURES FOR FROST PROTECTION OF FOUNDATIONS AND EXCAVATIONS SHALL BE EMPLOYED FOR WINTER CONSTRUCTION.
- BACKFILLING OF EXCAVATIONS SHALL BE DONE AS SOON AS POSSIBLE TO PROTECT FOUNDATIONS FROM FROST.

  9. EXPOSED CONCRETE WALLS SHALL HAVE CONTROL JOINTS AT 30 FEET MAXIMUM ON CENTERS UNLESS NOTED OTHERWISE. WALLS WITH
- INTEGRAL COLUMN PIERS OR PILASTERS SHALL HAVE A FORMED CONTROL JOINT ON ONE SIDE OF EACH PIER ON BOTH FACES OF THE WALL, JOINTS TO BE FILLED WITH AN APPROVED SEALANT.

  10. 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.

  11. HORIZONTAL REINFORCING BARS IN FOUNDATIONS AND STEM WALLS SHALL BE CONTINUOUS. PROVIDE CORNER BARS AT ALL CORNERS AND
- INTERSECTIONS.

  12. FOUNDATION PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER. PENETRATIONS SHALL BE THROUGH THE FOUNDATION STEM WALL OR 6" CLEAR BELOW FOOTINGS.
- 13. ALL CMU WALL FOUNDATION WALLS SHALL BE FILLED SOLID WITH 3,000 PSI GROUT BELOW FINISHED GRADE ELEVATION UNLESS NOTED OTHERWISE ON PLANS.



ISSUED FOR BID - PHASE 2 4/3/2024 RFI #11-14 COORDINATION TDJ 12/05/2023 TDJ & VAB PERMIT SET No. DATE REV'D BY DESCRIPTION REVISIONS INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCESTER TWP. BLACK BOX COMMUNITY CENTER TIMOTHY D. JENNINGS 3 SOUTH BLACK HORSE PIKE PROFESSIONAL ENGINEER NJ LIC. NO. 24GE03838500 BLACKWOOD, NEW JERSEY, 08012

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JOSEPH F. McKERNAN JR., R.A.
A.I.A.

NJ ARCH AJ 10984 - PA ARCH RA-011402-X . CT ARCH 7324

BLACKWOOD, NEW JERSEY, 08012

TITLE:

STRUCTURAL LEAD
SHEET 1

SCALE: AS NOTED PROJ.NO.: 1016H
DATE: 1/7/25
REVD.:
DRAWN BY: AD/CG

S-0.0

MCKERNAN ARCHITECTS & ASSOC. CHKD.BY: TDJ

#### STRUCTURAL NOTES

- 1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360-10 (SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS), AND WITH AISC 303-10 (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. 2. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM SPECIFICATION A992 (Fy = 50 KSI MIN.). ALL HSS RECTANGULAR SHAPES SHALL CONFORM TO ASTM SPECIFICATION A500 GRADE C (Fy = 50 KSI). ALL HSS ROUND SHAPES SHALL CONFORM TO ASTM SPECIFICATION A500 GRADE C (Fy = 46 KSI). ALL STEEL PIPE (STANDARD, EXTRA STRONG, DOUBLE EXTRA STRONG) SHALL CONFORM TO ASTM A53 GRADE B
- (Fy = 35 KSI). ALL CHANNELS, ANGLES AND PLATE MATERIAL SHALL CONFORM TO ASTM A36. 3. ALL BOLTS SHALL BE 3/4" DIAMETER ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS, UNLESS OTHERWISE NOTED.
- 4. ALL ANCHOR RODS SHALL BE FABRICATED IN ACCORDANCE WITH ASTM F1554. ALL ANCHOR RODS SHALL BE 36 KSI UNLESS OTHERWISE NOTED. 5. ALL STEEL SHALL BE THOROUGHLY CLEANED BY POWER TOOL CLEANING (SSPC SP3) PRIOR TO APPLYING PRIMER OR GALVANIZING.
- 6. 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
- 7. STEEL SCHEDULED TO RECEIVE SPRAY APPLIED FIREPROOFING SHALL NOT BE PRIMED. STEEL WHICH IS TO BE FIREPROOFED IS INDICATED ON THE ARCHITECTURAL DRAWINGS. 8. GALVANIZE ALL STEEL EXPOSED TO WEATHER AND WHERE INDICATED ON THE DRAWINGS. STEEL SHALL BE HOT-DIP GALVANIZED IN
- ACCORDANCE WITH ASTM A123. ALL GALVANIZED SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED USING A GALVANIZING REPAIR PAINT IN ACCORDANCE WITH ASTM A780. 9. ALL CONNECTIONS SHALL BE BOLTED OR WELDED. FULL DEPTH CONNECTIONS ARE TO BE USED ON ALL GIRDER AND BEAM CONNECTIONS TO
- COLUMNS. BOLTS TO BE AT 3 INCH O/C VERTICAL PROVIDE A MINIMUM 3/8" THICK FULL DEPTH TAB PLATE FOR ALL TUBE COLUMN
- 10. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SHALL BE BOLTED "SNUG-TIGHT" UNLESS NOTED OTHERWISE.
- 11. THE STEEL FABRICATOR SHALL SELECT AND COMPLETE THE STEEL CONNECTION DETAILS FOR THE SHOP DRAWINGS BASED ON THE INFORMATION CONTAINED ON THE STRUCTURAL DESIGN DRAWINGS. THE FABRICATOR SHALL COMPLETE THE CONNECTION DETAILS UTILIZING THE REQUIREMENTS IN THE AISC SPECIFICATION AND THE CONTRACT DOCUMENTS. SUBMIT THE CONNECTION DETAILS TO THE FOR APPROVAL PRIOR TO CONSTRUCTION.
- 12. THE DESIGN OF ALL CONNECTIONS IS THE RESPONSIBILITY OF THE STEEL CONTRACTOR AND SHALL BE PERFORMED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE STEEL CONTRACTOR. SEE PLANS FOR DESIGN LOADS AND ANY OTHER SPECIAL CONNECTION REQUIREMENTS. SUBMIT ENGINEERING DESIGN CALCULATIONS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONSTRUCTION, PRIOR TO SUBMITTING STEEL PIECE SHOP DRAWINGS. DESIGN CONNECTIONS FOR MINIMUM SERVICE LEVEL REACTION (ASD) = 15K, UNLESS NOTED OTHERWISE ON PLAN.
- 13. 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. 14. ALL STEEL WELDING RODS SHALL BE E70XX.
- 15. THE MINIMUM SIZE OF ALL FILLET WELDS SHOWN ON DRAWINGS SHALL BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL TABLE
- 16. ALL MILL CAMBER TO BE ORIENTED UPWARD DURING FABRICATION AND ERECTION. 17. GROUT FOR BASE, LEVELING, AND BEARING PLATES SHALL BE NONMETALLIC AND SHRINKAGE-RESISTANT, 6000 PSI MINIMUM. GROUT SHALL
- MEET THE REQUIREMENTS OF ASTM C 1107 AND SHALL BE FACTORY-PACKAGED, NONMETALLIC AGGREGATE, NON CORROSIVE, NON STAINING, MIXED WITH WATER TO CONSTANCY SUITABLE FOR APPLICATION AND A 30-MINUTE WORKING TIME. SUBMIT GROUT MANUFACTURES DATA SHEETS FOR APPROVAL PRIOR TO CONSTRUCTION.
- 18. PROMPTLY PACK GROUT SOLIDLY BETWEEN BEARING SURFACES AND BASE OR BEARING PLATES SO NO VOIDS REMAIN. NEATLY FINISH EXPOSED SURFACES. PROTECT GROUT AND ALLOW TO CURE. COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR
- 19. ALL LINTELS AND SHELF ANGLES SHALL BE HOT DIP GALVANIZED. ANY POINTS OF WELDING SHALL BE TOUCHED UP IN THE FIELD WITH A GALVANIZING REPAIR PAINT IN ACCORDANCE WITH ASTM A780.
- 20. PROVIDE BEARING PLATES WITH (2) 1/2" DIAMETER x 6" LONG HEADED STUDS FOR STEEL BEAMS BEARING UPON CMU OR CONCRETE. BEARING PLATE THICKNESS SHALL BE THE SAME THICKNESS AS THE BEAM BOTTOM FLANGE (3/8" MINIMUM). BEARING PLATE SIZE SHALL EXTEND TO WITHIN 1/2" OF THE FACE OF CMU WALLS. FILL CMU CELLS (2) COURSES BELOW THE BEAM BEARING WITH 3,000 PSI GROUT
- 21. ALL STEEL BEAMS FRAMING OVER THE TOP OF COLUMNS SHALL BE FITTED WITH (2) 1/2" THICK STIFFENER PLATES ON EACH SIDE OF THE BEAM WEB. THE COLUMN CAP PLATE SHALL MATCH THE THICKNESS OF THE BEAM ABOVE (1/2" THICK MINIMUM) UNLESS NOTED OTHERWISE.
- 22. PROVIDE ADJUSTABILITY IN ANGLE AND BENT PLATE CONDITIONS FOR STEEL BEAMS ADJACENT TO VERTICAL SHAFTS OR EXTERIOR WALL SPANDREL CONDITIONS. ALLOW FOR A HORIZONTAL ADJUSTMENT OF 1/2" OUTWARD OR INWARD IN THE BENT PLATE OR ANGLE TO COMPENSATE FOR STEEL ERECTION TOLERANCES. MAKE FINAL CONNECTION OF ANGLE OR BENT PLATE TO STEEL BEAM IN THE FIELD AFTER
- 23. ALL ALUMINUM AND STEEL MEMBERS TO BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND CORROSIVE EFFECTS. 24. HOLLO-BOLTS AS SPECIFIED ON THE DRAWINGS SHALL BE AS MANUFACTURED BY LINDAPTER. ALL HOLE PREPARATION, BOLT TIGHTENING, AND SPACING TOLERANCES SHALL BE AS PER MANUFACTURER REQUIREMENTS.
- 25. FOR ALL STEEL COLUMNS EMBEDED IN OR ADJACENT TO MASONRY WALLS PROVIDE HOHMAN AND BARNARD #359 WELD-ON TIE W/ VEE-TYPE WALL TIES #VWT @ 24" ON CENTER (GALVANIZED). PROVIDE ON EACH SIDE OF WEBS OF COLUMNS EMBEDED IN CMU WALLS. FOR STEEL BEAMS ADJACENT TO CMU WALLS PROVIDE HOHMANN & BARNARD GRIPSTAY #360 W/ #365 MASONRY ANCHORS (3/16" THICK) @ 24" ON CENTER (GALVANIZED). PROVIDE ANCHORS AT EACH SIDE OF CONTROL AND EXPANSION JOINTS.
- 26. 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.
- 27. THE STEEL CONTRACTOR SHALL PROVIDE TEMPORARY BRACING TO RESIST WIND LOADS, CONSTRUCTION LOADS, ETC. DURING CONSTRUCTION. BRACING SHALL REMAIN IN PLACE UNTIL THE STRUCTURE IS CAPABLE OF SUSTAINING ALL DESIGN LOADS 28. SUBMIT CHECKED STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION.
- 29. PERFORM INSPECTIONS OF STEEL CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODE.

#### POST-INSTALLED ADHESIVE ANCHORS & REINFORCING:

- 1. THE ADHESIVE ANCHOR SYSTEM USED FOR POST-INSTALLED ANCHORAGE TO CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY PUBLISHED ACI 355.4. ACCEPTANCE CRITERIA FOR QUALIFICATION OF POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE AND
- 2. THE ADHESIVE ANCHORS SHALL BE SUPPLIED AS AN ENTIRE SYSTEM. THE SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO, THE NEW ADHESIVE CARTRIDGE, A CLEAN MIXING NOZZLE, EXTENSION TUBE, A DISPENSING GUN, AND ALL MANUFACTURER RECOMMENDED SUPPLIES FOR PROPERLY CLEANING THE DRILLED HOLE.
- 3. EYEBOLTS, THREADED STUDS, INTERNAL THREADED PARTS TO BE USED IN ADHESIVE ANCHOR ASSEMBLIES SHALL CONFORM TO ASTM A36, A193 (GRADE B7), A307, B348 (BD), OR F1554. STAINLESS STEEL ANCHOR RODS SHALL BE AISI TYPE 304 OR TYPE 316. THREADS SHALL BE UNC COARSE THREADS, UNLESS NOTED OTHERWISE. COMPATIBLE NUTS AND WASHERS SHALL BE FURNISHED WITH THE ALL-THREAD ROD AND CONSIDERED PART OF THE ASSEMBLY. THE COST OF THE HARDWARE SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLED ADHESIVE
- 4. NUTS, WASHERS, AND OTHER HARDWARE USED WITH AN ALL-THREADED BAR ADHESIVE ANCHOR SYSTEM SHALL HAVE A MATERIAL OR AN ALLOY DESIGNATION THAT MATCHES THE ALL-THREAD MATERIAL / ALLOY. GALVANIZED ASSEMBLIES SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. ELECTROPLATE GALVANIZING IS NOT ACCEPTABLE. DISSIMILAR METAL ASSEMBLIES SHALL BE SEPARATED BY NYLON, EPDM, OR OTHER APPROVED NON-METALLIC WASHERS.
- 5. REINFORCING BARS TO BE USED IN ADHESIVE ANCHORS ASSEMBLIES SHALL CONFORM TO ASTM A615.
- 6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'c) OF 2,500 PSI AT THE TIME OF ADHESIVE ANCHOR INSTALLATION.
- 7. CONCRETE AT TIME OF ADHESIVE ANCHOR INSTALLATION SHALL HAVE A MINIMUM AGE OF 21 DAYS.
- 8. CONCRETE TEMPERATURE AT THE TIME OF ADHESIVE ANCHOR INSTALLATION SHALL BE AT LEAST 50 DEGREES F 9. EMBEDMENT DEPTH AND ANCHOR PROJECTION (STICK-OUT) FROM THE CONCRETE SURFACE SHALL BE AS SHOWN ON THE DRAWING OR DETAIL FOR THE PARTICULAR ANCHOR OR GROUP OF ANCHORS BEING INSTALLED. ABSENT ANY INFORMATION, THE MINIMUM EMBEDMENT DEPTH SHALL BE 10 TIMES THE ANCHOR DIAMETER IN INCHES AND MINIMUM STICK-OUT SHALL BE AS REQUIRED TO MAKE THE CONNECTION.
- 10. ADHESIVES SHALL BE STORED AND INSTALLED AT THE SERVICE TEMPERATURE RANGES RECOMMENDED BY THE MANUFACTURER. 11. ADHESIVE ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER AND THE CONTRACT DOCUMENTS. POST-INSTALLED ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
- 12. INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM. THESE ANCHORS ARE DESIGNATED WITH A (CERT) AFTER THE ANCHOR CALL-OUT. NOTE: SOME DOWNHAND INSTALLATIONS SHOWN ON THESE DRAWINGS SUPPORT SUSTAINED TENSION LOADS AND ARE SO DESIGNATED WITH A (CERT) AFTER THE ANCHOR CALL-OUT.
- 13. THE INSTALLER'S QUALIFICATIONS SHALL BE SUBMITTED AND APPROVED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. 14. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED TO INSTALL THE ADHESIVE ANCHOR INCLUDING, BUT NOT LIMITED TO, DRILLS,
- SETTING TOOLS, CLEAN-OUT BRUSHES, BLOW OUT BULBS, OIL-FREE COMPRESSED AIR, SHOP VACUUMS, WRENCHES, ETC. 15. ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH A ROTARY IMPACT HAMMER DRILL OR ROCK DRILL.
- 16. ANCHOR HOLES SHALL BE THOROUGHLY CLEANED PRIOR TO ADHESIVE INJECTION, AS REQUIRED BY THE MANUFACTURERS PRINTED
- INSTALLATION INSTRUCTIONS. 17. ANCHORS TO BE INSTALLED IN THE ADHESIVE SHALL BE CLEAN, OIL-FREE, AND FREE OF LOOSE RUST, PAINT, OR OTHER COATINGS. 18. INSTALLED ADHESIVE ANCHORS SHALL BE SECURELY FIXED IN-PLACE TO PREVENT DISPLACEMENT WHILE THE ADHESIVE CURES. UNLESS
- SHOWN OTHERWISE ON THE DRAWINGS, ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE CONCRETE SURFACE. ANCHORS DISPLACED BEFORE FULL ADHESIVE CURE SHALL BE CONSIDERED DAMAGED AND REPLACED AT THE CONTRACTOR'S EXPENSE. 19. REINFORCING BARS OR ALL-THREADED BARS SHALL NOT BE BENT AFTER BEING ADHESIVELY EMBEDDED IN HARDENED, SOUND CONCRETE,
- UNLESS PERMITTED BY THE ENGINEER. 20. ANCHORS SHALL HAVE NO VISIBLE INDICATIONS OF DISPLACEMENT OR DAMAGE DURING OR AFTER PROOF LOAD APPLICATION. CONCRETE
- CRACKING IN THE VICINITY OF THE ANCHOR AFTER LOADING SHALL BE CONSIDERED A FAILURE.
- 21. ADHESIVE ANCHORS INTO CONCRETE SUBSTRATE APPLICATIONS SHALL USE THE HILTI HIT HY-200 SYSTEM.
- 22. ADHESIVE ANCHORS INTO SOLID GROUTED CMU SUBSTRATE APPLICATIONS SHALL USE THE HILTI HY-270 SYSTEM. 23. ADHESIVE ANCHORS INTO HOLLOW CMU SUBSTRATE APPLICATIONS SHALL USE THE HILTI HIT HY-270 SYSTEM.
- 24. ALL HOLES IN STEEL MEMBERS TO RECEIVE POST-INSTALLED ADHESIVE OR EXPANSION ANCHORS SHALL BE STANDARD SIZE BASED ON THE ANCHOR DIAMETER (UNLESS NOTED OTHERWISE). OVERSIZED OR SLOTTED HOLES IN THE DIRECTION OF FORCE APPLICATION ARE NOT

#### **BOLTS, SCREWS, & FASTENERS:**

- 1. FASTENERS FOR MATERIALS SHOWN ON STRUCTURAL DRAWINGS SHALL BE IN ACCORDANCE WITH THE MATERIAL SPECIFICATION NOTES ON
- THE LEAD SHEET OR IF NOT INDICATED. THE NOTES IN THIS SECTION.
- 2. INSTALLATION OF ALL THE FASTENERS SHALL BE IN ACCORDANCE WITH THE FASTENER MANUFACTURERS WRITTEN INSTRUCTIONS. 3. PROVIDE CORROSION RESISTANCE ON ALL FASTENERS BASED ON APPLICATION AND MATERIAL BEING FASTENED. FOR APPLICATIONS INVOLVING PRESSURE TREATED LUMBER, OR FOR FASTENERS BEING INSTALLED IN WET AREAS, PROVIDE STAINLESS STEEL OR HOT-DIP GALVANIZED
- FASTENERS. ALL FASTENERS INSTALLED INTO SLAB ON GRADE APPLICATIONS SHALL BE HOT-DIP GALVANIZED OR ZINC PLATED. 4. DO NOT INSTALL PAF OR POST-INSTALLED DRILLED-IN FASTENERS INTO POST-TENSIONED CONCRETE SLABS WITHOUT PRIOR APPROVAL OF
- STRUCTURAL ENGINEER. DO NOT CUT CONCRETE REINFORCING TO INSTALL POST-INSTALLED DRILLED-IN FASTENERS. 5. ALL POWDER ACTUATED FASTENERS SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.
- 6. ALL PAF SHALL BE INSTALLED SO THAT THE ATTACHED MATERIAL IS CLAMPED TIGHT TO THE BASE MATERIAL. THE APPROPRIATE PAF FASTENER
- SHALL BE SELECTED BASED ON THE APPLICATION AND BASE MATERIAL. 7. ALL SCREWS FOR COLD-FORMED STEEL APPLICATIONS SHALL BE AS MANUFACTURED BY ITW BUILDEX.
- 8. ALL SELF-DRILLING SCREWS SHALL BE INSTALLED FULLY SEATED WITH THE FASTENER HEAD FLUSH WITH THE WORK SURFACE.
- 9. DO NOT OVERDRIVE SELF-TAPPING SCREWS. TORSIONAL FAILURE OF FASTENER OR STRIP OUT OF SUBSTRATE MAY RESULT. 10. INSTALL ALL SELF-DRILLING SCREWS TO PENETRATE BEYOND THE METAL STRUCTURE A MINIMUM OF 3 PITCHES OF THREAD.
- 11. ALL BOLTS UTILIZED TO FASTEN WOOD BLOCKING OR WOOD PLATES TO STEEL SHAPES SHALL BE ASTM A307. PROVIDE HOT-DIP GALVANIZED BOLTS FOR APPLICATIONS INVOLVING PRESSURE TREATED LUMBER.
- 12. PROVIDE STEEL WASHERS ON ALL BOLTS ANCHORING WOOD FRAMING TO STEEL SHAPES. 13. ALL POST-INSTALLED EXPANSION AND SCREW ANCHORS INTO CONCRETE SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL 14. EMBEDMENT DEPTH FOR ALL POST-INSTALLED ANCHORAGE TO CONCRETE SHALL BE AS SHOWN ON THE STRUCTURAL SECTIONS AND DETAILS.
- IF EMBEDMENT DEPTH IS NOT INDICATED, PROVIDE MANUFACTURERS STANDARD EMBEDMENT. 15. SEE POST-INSTALLED ADHESIVE ANCHOR NOTES FOR CHEMICAL/EPOXY ADHESIVE ANCHORS INSTALLED IN CONCRETE OR HOLLOW CMU. 16. EXPANSION ANCHORS INTO CONCRETE SHALL BE HILTI KWIK BOLT TZ (UNO). EXPANSION ANCHORS INTO SOLID GROUTED CMU SHALL BE HILTI KWIK BOLT 3.

#### DIMENSIONAL LUMBER, ENGINEERED LUMBER, SHEATHING

- 1. CONTRACTOR SHALL SUBMIT CERTIFICATION FOR ALL LUMBER USED ON PROJECT. CERTIFICATION SHALL INDICATE LUMBER COMPLIANCE WITH DESIGN PROPERTIES INDICATED IN THESE NOTES AND ON THE DRAWINGS.
- 2. ALL STRUCTURAL LUMBER NOTED ON PLANS SHALL BE HEM-FIR No. 1 (OR APPROVED EQUAL) AND HAVE MINIMUM ALLOWABLE PROPERTIES AS FOLLOWS: Fb = 975 PSI, Fv = 150 PSI, E = 1,500,000 PSI. ALL STRUCTURAL LUMBER TO BE STAMPED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION'S "CONSTRUCTION MANUAL".
- 3. ALL DIMENSIONAL LUMBER PROVIDED FOR THE PROJECT SHALL BE SURFACE DRY WITH A MAXIMUM MOISTURE CONTENT NOT EXCEEDING 19 PERCENT. GREEN LUMBER SHALL NOT BE UTILIZED FOR ANY PORTIONS OF THIS PROJECT.
- 4. WOOD STUDS IN BEARING WALLS ARE TO BE BRACED WITH FULL DEPTH WOOD BLOCKING AT 1/3 POINTS ALONG THE STUD LENGTH. IN ADDITION, ALL SHEAR WALLS AND EXTERIOR WALLS SHALL HAVE SOLID FULL DEPTH WOOD BLOCKING AT ALL SHEATHING PANEL EDGES. 5. WOOD STUD SPACING DEPICTED ON STRUCTURAL PLANS FOR BEARING AND SHEAR WALLS IS THE MAXIMUM SPACING ALLOWED FOR SUPPORT
- OF THE DESIGN LOADS. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THE LOCATION AND DIMENSIONS OF ALL WOOD BEARING AND SHEAR WALLS. CONTRACTOR SHALL REVIEW UL FIRE RATING REQUIREMENTS AND SOUND STC RATINGS FOR EACH WALL AND CONFIRM THAT STUD SPACING SHOWN ON STRUCTURAL DRAWINGS CONFORMS TO MAXIMUM SPACING ALLOWED IN UL/STC ASSEMBLY SPECIFIED ON ARCHITECTURAL DRAWINGS. IF STUD SPACING SHOWN ON STRUCTURAL DRAWINGS DOES NOT MATCH STUD SPACING SHOWN IN UL/STC ASSEMBLY ON ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR DIRECTION PRIOR TO CONSTRUCTION OF THE THE WALL.
- 6. ALL WOOD FOR EXTERIOR DECKS SHALL BE PRESSURE-TREATED.
- 7. ALL LUMBER AND WOOD CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND CODES AS SPECIFIED BELOW:
- A. AMERICAN INSTITUTE OF TIMBER CONSTRUCTION: TIMBER CONSTRUCTION MANUAL. B. ANSI / AF&PA: NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION 2015.
- C. ENGINEERED WOOD ASSOCIATION (APA): PLYWOOD DESIGN SPECIFICATION.
- D. AMERICAN WOOD-PRESERVERS ASSOCIATIONS STANDARDS. E. NATIONAL LUMBER MANUFACTURERS ASSOCIATIONS: NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS
- 8. ALL WOOD CONNECTIONS ARE TO BE MADE USING PREFABRICATED CONNECTORS. TOE-NAILING WILL NOT BE PERMITTED. SUBMIT
- MANUFACTURER'S DATA FOR APPROVAL. FASTENERS TO BE AS MANUFACTURED BY SIMPSON OR APPROVED EQUAL. 9. ALL WOOD CONNECTORS SHALL BE PROVIDED IN MANUFACTURERS STANDARD FINISH EXCEPT FOR APPLICATIONS INVOLVING PRESSURE TREATED OR FIRE-RETARDANT TREATED LUMBER. FOR TREATED LUMBER APPLICATION, ALL METAL CONNECTORS SHALL BE HOT DIP GALVANIZED OR STAINLESS STEEL. USING SIMPSON PRODUCTS AS A BASIS. CONNECTORS FOR PRESSURE TREATED APPLICATIONS SHALL BE
- "ZMAX", POST HOT DIPPED GALVANIZED, OR STAINLESS STEEL. ANY PRODUCT SUBSTITUTIONS MUST MEET THIS MINIMUM STANDARD. 10. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE TREATED WOOD OR FIRE RETARDANT TREATED WOOD SHALL BE HOT-DIP GALVANIZED OR STAINLESS STEEL. PLAIN CARBON STEEL FASTENERS ARE ALLOWED IN SBX/DOT AND ZINC BORATE
- PRESERVATIVE-TREATED WOOD IN AN INTERIOR DRY ENVIRONMENT ONLY. 11. SIMPSON STRONG TIE CONNECTIONS HAVE BEEN SPECIFIED TO MEET THE STRUCTURAL CALCULATIONS OF PLAN ELEMENTS. PRIOR TO SUBSTITUTING ANOTHER BRAND, CONFIRM LOAD CAPACITY BASED ON RELIABLE PUBLISHED TESTING DATA OR CALCULATIONS. THE ENGINEER
- SHALL EVALUATE AND GIVE WRITTEN APPROVAL FOR SUBSTITUTIONS PRIOR TO INSTALLATIONS. 12. ALL NAILS FOR PROJECT SHALL BE COMMON WIRE NAILS OR POWER DRIVEN NAILS IN CONFORMANCE WITH ICC-ES EVALUATION REPORT ESR-1539. SEE PLANS AND DETAILS FOR NAILING REQUIREMENTS. STAPLES SHALL NOT BE SUBSTITUTED FOR NAILS UNLESS APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. IF THE CONTRACTOR DESIRES TO SUBSTITUTE STAPLES FOR NAILS, A FORMAL SUBMISSION MUST BE MADE TO THE ENGINEER. THE SUBMISSION MUST CLEARLY DOCUMENT HOW THE STAPLES MEET OR EXCEED THE NAILS SPECIFIED ON THE
- DRAWINGS. THE STAPLES MUST BE IN COMPLIANCE WITH ALL CODE REQUIREMENTS. INCOMPLETE SUBMISSIONS WILL NOT BE REVIEWED. 13. SHEATHING NAILS IN SHEAR WALLS AND EXTERIOR WALLS SHALL BE DRIVEN WITH THE HEAD OF THE NAIL FLUSH WITH THE SURFACE OF THE
- VOLUNTARY PRODUCT STANDARD PS-1 OR PS-2. 15. SHEATHING FOR SLOPED ROOFS SHALL BE 5/8 INCH THICK 40/20 SPAN RATING APA RATED SHEATHING. EXPOSURE 1. ALL JOINTS IN SHEATHING SHALL BE STAGGERED. USE PANEL CLIPS, TONGUE & GROOVE, OR LUMBER BLOCKING EDGE SUPPORTS AS RECOMMENDED BY APA FOR ROOF

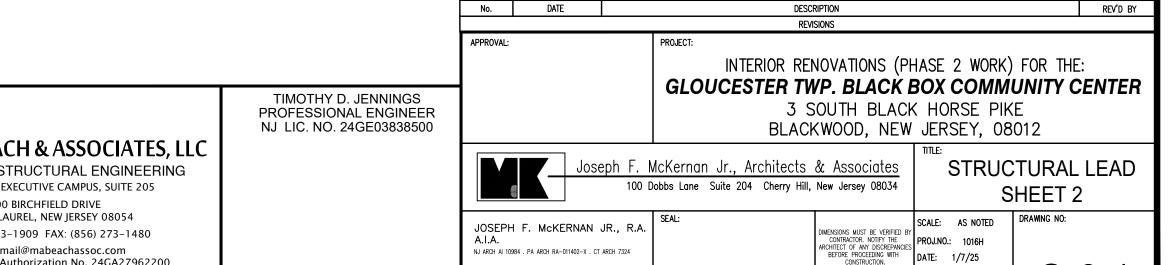
14. PLYWOOD PANELS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE U.S. DEPARTMENT OF COMMERCE

- SHEATHING EDGES. NAILING SHALL COMPLY WITH REQUIREMENTS FOR PLYWOOD ROOF DIAPHRAGMS (SEE PLANS). 16. SHEATHING FOR FLAT ROOFS SHALL BE 3/4 INCH THICK 24" SPAN RATING APA RATED, EXPOSURE 1. ALL JOINTS IN SHEATHING SHALL BE
- STAGGERED. ALL EDGES IN FLOOR SHEATHING SHALL BE TONGUE AND GROOVE. NAILING REQUIREMENTS SHALL BE AS INDICATED ON PLANS. 17. SHEATHING FOR FLOORS SHALL BE 3/4 INCH THICK 24" SPAN RATING APA STURD-I-FLOOR, EXPOSURE 1. ALL JOINTS IN SHEATHING SHALL BE STAGGERED. ALL EDGES IN FLOOR SHEATHING SHALL BE TONGUE AND GROOVE. NAILING REQUIREMENTS SHALL BE AS INDICATED ON PLANS.
- SHEATHING SHALL BE STAGGERED. USE BLOCKING AT ALL PANEL EDGES AND NAIL AS SHOWN ON DETAILS. 19. ALL WOOD EXPOSED TO WEATHER AND/OR IN CONTACT WITH GROUND, CONCRETE, OR CMU SHALL BE PRESSURE TREATED SOUTHERN PINE

18. SHEATHING FOR EXTERIOR WALLS SHALL BE 1/2 INCH THICK 32/16 SPAN RATING APA RATED SHEATHING, EXPOSURE 1. ALL JOINTS IN

- 20. THE ENGINEERED LUMBER SPECIFIED ON THE DRAWINGS IS BASED ON WEYERHAEUSER ENGINEERED WOOD PRODUCTS. NO ALTERNATIVES. MODIFICATIONS OR SUBSTITUTIONS ARE ALLOWED UNLESS THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SUBMITS IN WRITING FOR SUCH REQUESTS TO THE PROJECT ENGINEER FOR APPROVAL. ALTERNATE PRODUCTS MUST HAVE A CURRENT ICC-ES CODE EVALUATION REPORT WITH LISTED DESIGN PROPERTIES EQUIVALENT TO OR GREATER THAN SPECIFIED PRODUCTS. SUBSTANTIATING CALCULATIONS SHALL BE SUBMITTED. ALL HOLES, TAPERED CUTS AND NOTCHING SHALL BE JUSTIFIED FOR ALTERNATE. THE ENGINEER OF RECORD SHALL BE
- REIMBURSED FOR ANY REVIEW TIME. 21. ALL PARALLAM PSL AND MICROLAM LVL LUMBER SHALL BE AS MANUFACTURED BY ILEVEL BY WEYERHAEUSER OR APPROVED EQUIVALENT. ALL PSL LUMBER EXPOSED TO WEATHER SHALL BE TREATED FOR EXTERIOR EXPOSURE. ALL TJI FRAMING SHALL BE MANUFACTURED AND LABELED AS TRUS JOIST PRODUCTS BY WEYERHAEUSER.
- 22. ALL HOLES FOR PLUMBING, MECHANICAL, AND ELECTRICAL UTILITIES THROUGH TJI FRAMING SHALL BE LOCATED AND SIZED ACCORDING TO THE GUIDELINES IN THE ENGINEERED WOOD PRODUCT LITERATURE. ANY NON-CONFORMING OPENINGS/PENETRATIONS MADE THROUGH ENGINEERED FRAMING SHALL BE REPAIRED AS REQUIRED AT THE EXPENSE OF THE CONTRACTOR RESPONSIBLE FOR THE NON-CONFORMING
- MODIFICATIONS. 23. PROVIDE ADDITIONAL STUDS IN BEARING WALLS AT LOCATIONS OF BEAM OR GIRDER TRUSS BEARINGS. MINIMUM BUILT UP STUD DIMENSIONS
- SHALL MATCH NUMBER OF PLY'S IN GIRDER TRUSSES OR WIDTH OF BEAM BEARING ON WALL UNLESS SHOWN OTHERWISE ON DRAWINGS. 24. IN ALL BEARING WALLS AND SHEAR WALLS WHERE THE WALL TOP OR BOTTOM PLATES HAVE BEEN CUT OR NOTCHED TO ACCOMMODATE PLUMBING OR HVAC DUCTWORK, THE PLATES SHALL BE REPAIRED USING SIMPSON CTS218 COMPRESSION AND TENSION STRAPS. THESE STRAPS SHALL BE INSTALLED ON ALL DAMAGED PLATES ON BOTH SIDES OF THE PLATE. USE ALL SPECIFIED FASTENERS AS RECOMMENDED BY

#### STANDARD ABBREVIATIONS F TO F: Face to Face A: Area AB: Anchor Bolt FABR: Fabricate NF: Near Face FAST: Fastener, Fasten NIC: Not In Contract ABV: Above ACI: American Concrete Institute FD: Floor Drain NO.: Number (with period) ACOUST: Acoustical FDN: Foundation NOM: Nominal FF: Finished Floor AD: Access Door, Area Drain 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 o/c: On Center AFF: Above Finished Floor FLR: Floor OD: Outside Diameter AISC: American Institute of Steel Construction FO: Finished Opening OF: Outside Face ALT: Alternate, Alteration FOC: Face of Concrete OPNG: Opening AMT: Amount FOS: Face of Studs OPP: Opposite ANCH: Anchor, Anchorage FRM: Frame APPROX: Approximate FS: Far Side PAF: Powder Actuated Fasteners APRVD: Approved FT: Foot, Feet PARTN: Partition FTG: Footing ARCH: Architect, Architectural PC: Piece, Precast Concrete ASCE: American Society of Civil Engineers FURR: Furring PCF: Pounds per cubic foot ASSOC: Association, Associate PERP: Perpendicular Ga: Gauge, Gage ASSY: Assembly PJF: Preformed Joint Filler ASTM: American Society for Testing and Materials GALV: Galvanized P:Plate GC: General Contractor AVG: Average PLCS: Places GENL: General AWS: American Welding Society PLF: Pounds Per Lineal Foot GL: Glass PLTF: Platform B TO B: Back to Back GR: Grade PREFAB: Prefabricated GRND: Ground B/: Bottom of PRTN: Partition GRTG: Grating BLW: Below GT: Grout PSF: Pounds per square foot BETW: Between GVL: Gravel PSI: Pounds per square inch BEV: Bevel PT: Preservative Treated or Point GWB: Gypsum Wallboard BF: Bottom Face, Both Faces BL: Base Line, Building Line, Block QTY: Quantity BLDG: Building H: High BLK: Block HD: Head R: Riser BLKG: Blocking HDR: Header RAD: Radius BM: Beam HDW: Hardware REBAR: Reinforcing Bar BNT: Bent HEF: Horizontal Each Face REF: Reference BOS: Bottom of Steel HGR: Hanger REINF: Reinforcement, or Reinforce BOT: Bottom HGT: Height REQD: Required BASE P: Base Plate HKD: Hooked RET: Return, Retaining BRG P. Bearing Plate HORIZ: Horizontal RF: Roof BRDG: Bridge, Bridging HP: High Point RFG: Roofing BRG: Bearing HSS: Hollow Structural Section RM: Room BRK: Brick HVAC: Heating, Ventilating & Air Conditioning RO: Rough Opening BRKT: Bracket HVY: Heavy BS: Both Sides RWC: Rain Water Conductor BSMT: Basement ID: Inside Diameter BT: Bolt IN: Inch BVL: Bevelled INFO: Information SC: Solid Core BW: Both Ways INSP: Inspect SCHED: Schedule INSTL: Install SE: Structural Engineer C: Channel INSUL: Insulation SECT: Section CANT: Cantilever, Cantilevered INT: Interior SF: Square Foot CHAM: Chamfer INTERM: Intermediate SHT: Sheet CJ: Control Joint SHTHG: Sheathing C : Centerline JF: Joint Filler SIM: Similar CLR: Clear JST: Joist SKL: Skylight CLR OPNG: Clear Opening JT: Joint SLV: Sleeve CMU: Concrete Masonry Unit SPEC: Specification, Specifications COL: Column KB: Knee Brace SQ: Square COMB: Combination KP: Kickplate SS: Stainless Steel CONC: Concrete KIP: (1000 pounds) STD: Standard CONN: Connection STGR: Stagger CONST: Construction ∠, L: Angle STIFF: Stiffener CONT: Continuous, Continue, Control LAD: Ladder STL: Steel CONTR: Contractor LAM: Laminate, Laminated STRUC: Structural LAT: Lateral CTR: Center STWY: Stairway LB: Pound (weight) CTRD: Centered SUPP: Supplementary, Supplement LG: Long DBL: Double SUR: Surface LH: Left Hand SY: Square Yard DEMO: Demolition LIN: Linear SYM: Symmetrical **DEP: Depressed** LL: Live Load DET: Detail SYS: System LLH: Long Leg Horizontal DIAG: Diagonal LLV: Long Leg Vertical Ø: Diameter T/: Top of LN: Length DIM: Dimension (T&B): Top and Bottom LNTL: Lintel DL: Dead Load TEMP: Temporary LOC: Locate DN: Down LOCS: Locations THK: Thick, Thickness DWG: Drawing THRU: Through LP: Low Point DWGS: Drawings TOC: Top of Concrete LT WT: Lightweight DWL: Dowel LWC: Light Weight Concrete TOS: Top of Steel TYP: Typical EA: Each M: Bending Moment EB: Expansion Bolt MAS: Masonry UNEXC: Unexcavated ECC: Eccentric MATL: Material UNFIN: Unfinished EF: Each Face MAX: Maximum UNO: Unless Noted Otherwise EJ: Expansion Joint MECH: Mechanical EL: Elevation VAR: Varies MED: Medium ELEC: Electrical VEF: Vertical Each Face MEMB: Membrane ELEV: Elevator VERT: Vertical MET: Metal ENGR: Engineer VIF: Verify In the Field MEZZ: Mezzanine ENTR: Entrance VNR: Veneer MFR: Manufacture, Manufacturer



4/3/2024

12/05/2023

MIN: Minimum

MK: Mark

MISC: Miscellaneous

MO: Masonry Opening

MRD: Metal Roof Deck

MTL: Material, Metal

MONO: Monolithic

W: West, Width, Wide

WR: Water Resistant

WWF: Welded Wire Fabric

XXS: Double Extra Strong (pipe)

XS: Extra Strong (pipe)

WF: Wide Flange (structural steel)

WP: Waterproof, Working Point, Weatherproof

→ DRAWN BY: AD/CG

MCKERNAN ARCHITECTS & ASSOC. CHKD.BY: TDJ

TDJ

TDJ & VAB

w/: With

w/o: Without

WT: Weight

ISSUED FOR BID - PHASE 2

RFI #11-14 COORDINATION

PERMIT SET

WD: Wood

MICHAEL A. BEACH & ASSOCIATES, LLC CONSULTING STRUCTURAL ENGINEERING TWIN PONDS EXECUTIVE CAMPUS, SUITE 205 200 BIRCHFIFI D DRIVE MOUNT LAUREL, NEW JERSEY 08054 PH: (856) 273-1909 FAX: (856) 273-1480 EMAIL: mail@mabeachassoc.com NJ Certificate of Authorization No. 24GA27962200

Project No: 747.216

EQ: Equal

EQUIP: Equipment

EWB: Each Way Bottom

EWT: Each Way Top

EXIST: Existing

**EXP: Expansion** 

EXT: Exterior

EWEF: Each Way Each Face

EW: Each Way

CL		Submittal Required	Signed & Sealed
<b>5</b> F	IOP DRAWING SUBMITTAL REQUIREMENTS	Yes	Yes
Section	1 - General		
1	Temporary Shoring Shop Drawings & Calculations	Х	Х
Section	3 - Concrete		
1	Concrete Mix Design	X	
2	Concrete Reinforcing Shop Drawings	Х	
Section	4 - Metals		
1	Steel Shop Drawings	Х	
2	Steel Connection Calculations	Х	Х
3	Post Installed Anchors, Materials, Adhesives	Х	
Section	5 - Wood & Composites		
1	Miscellaneous Lumber Including; Wood Products, Nails, Hangers, & Sheathing	X	
2	Engineered Lumber Beams, Posts, & Joists Shop Drawings	Х	

STAIR, HANDRAIL, GUARDRAIL, GRAB BAR, & FIXED LADDER DESIGN SCHEDULE									
COMPONENT	DESIGN LOAD								
STAIRS AND LANDINGS	100 PSF UNIFORM LOAD AND 300 LB (NON CONCURRENT) CONCENTRATED LOAD ON STAIR TREADS APPLIED TO 2" x 2" AREA.								
HANDRAIL/ GUARDRAIL SYSTEMS	200 LB LOAD APPLIED AT ANY POINT IN ANY DIRECTION ON HANDRAIL ON TOP RAIL TO PRODUCE MAXIMUM LOAD EFFECT, OR 50 LB PER FOOT NON-CONCURRENT UNIT LOAD APPLIED IN ANY DIRECTION ALONG HANDRAIL OR TOP RAIL TO PRODUCE MAXIMUM LOAD EFFECT. INTERMEDIATE RAILS SHALL BE DESIGNED FOR HORIZONTAL LOAD OF 50 LBS APPLIED ON AN AREA NOT TO EXCEED 12"x12".								

NOTES:

1. SEE THE APPLICABLE EDITION OF ASCE 7 FOR MORE INFORMATION REGARDING LIVE LOADS ON

2. STAIRS, HANDRAIL, GUARDRAIL, GRAB BARS, & FIXED LADDERS ARE DELEGATED DESIGN

COMPONENTS PER THE SCHEDULE ON DWG S0.2

	DELEGATED DESIGN
1	Temporary Shoring of Excavations & Building Structure During Construction. Other Contractor Means & Methods Components (e.g. Scaffolding, Fall Protection, etc.)
2	Concrete Formwork
3	Site Appurtenances (e.g. Site Walls, Planters, Pools, Trellises, Gazebos, etc.)
4	Metal Stairs, Railings, Guardrails, & Ladders

- DELEGATED DESIGN SCHEDULE NOTES: 1. THE ITEMS LISTED IN THIS SCHEDULE HAVE NOT BEEN DESIGNED BY THE STRUCTURAL ENGINEER OF RECORD FOR THIS PROJECT. A SPECIALTY ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PERFORM THE REQUIRED DESIGNS.
- 2. THE SPECIALTY ENGINEER SHALL BE A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
- 3. CALCULATIONS AND/OR SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO THE STRUCTURAL ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

SNOW LOAI SCHEE		N
DESCRIPTION	SYMBOL	VALUE
GROUND SNOW LOAD	Pg	20 PSF
FLAT-ROOF SNOW LOAD	Pf	20 PSF
SNOW EXPOSURE CATEGORY	Се	1.0
THERMAL FACTOR	Ct	1.1
SNOW LOAD IMPT FACTOR	I	1.0

#### LATERAL LOAD **DESIGN SCHEDULE** WIND CRITERIA DESCRIPTION SYMBOL VALUE BASIC WIND SPEED 114 MPH (3 SECOND GUST) RISK CATEGORY EXPOSURE CATEGORY INTERNAL PRESSURE COEFF GCpi +/- 0.18 SEISMIC CRITERIA DESCRIPTION SYMBOL VALUE RISK CATEGORY SEISMIC IMPT FACTOR 1.0 MAPPED SPECTRAL ACCEL 0.17 g FOR SHORT PERIODS MAPPED SPECTRAL ACCEL 0.046 g FOR ONE SECOND PERIOD SPECTRAL RESPONSE COEFF 0.182 g SPECTRAL RESPONSE COEFF 0.073 g SITE CLASS SEISMIC DESIGN CATEGORY

GRAVITY LOAD										
DESIGN SC	DESIGN SCHEDULE									
COMPONENT	4" SLAB ON GRADE	MAIN FLOOR	ROOF AREAS							
ROOF & INSULATION			10							
WOOD FRAMING & DECK		5	5							
CEILINGS		5	2							
MISC / COLLATERAL		10	3							
4" CONCRETE SLAB	50									
TOTAL DEAD LOAD	50	20	20							
LIVE LOAD	100	100	20							
TOTAL LOAD	150	120	40							
LIVE LOAD REDUCTION USED IN DESIGN (YES/NO)	NO	NO	NO							

1. ALL LOADS SHOWN ARE IN POUNDS PER SQ FT.

2. ALL LOADS ARE IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE.

## TABLE 1 LAP SPLICE LENGTHS FOR CONCRETE

	CLASS B SPLICE LENGTHS (INCHES)													
	3,000 F	PSI CON	CRETE	4,000 F	PSI CON	CRETE	5,000 F	PSI CON	CRETE	6,000 F	PSI CON	CRETE		
BAR	TENS	SION	COMP	TEN	SION	COMP	TEN	SION	COMP	TENS	SION	COMP		
SIZE	TYP	TOP	COMP	TYP	TOP	COMP	TYP	TOP	COMP	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)

	3,000 F	PSI CON	CRETE	4,000 F	PSI CON	CRETE	5,000 F	PSI CON	CRETE	6,000 F	PSI CON	CRETE
BAR	TENS	SION	COMP	TEN:	SION	COMP	TEN	SION	COMP	TEN:	SION	COMP
SIZE	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

1. DEVELOPMENT AND LAP SPLICE LENGTHS SHOWN ARE FOR UNCOATED ASTM A615 GRADE 60 (Fy

= 60,000 PSI) DEFORMED BAR REINFORCING.

2. DEVELOPMENT LENGTHS ARE BASED ON NORMAL WEIGHT CONCRETE. FOR LIGHT WEIGHT

CONCRETE MULTIPLY THE LENGTHS SHOWN BY 1.333. 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.

SPECIAL INSPECTION AND TESTING (IBC 2021 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)

		OBSERVE	PERFOR
705 º	STEEL CONSTRUCTION	UDSERVE	FERFUR
703.Z	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	Х	
b.	WPS available		Х
C.	Manufacturer certifications for welding consumables available		Х
d.	Material identification (type/grade)	Χ	
e.	Welder identification system	Х	
f.	Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs		Х
g.	Fit-up of CJP groove welds of HSS T-, Y-, and K-joints without backing (including	X	
<b>L</b>	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		
2.	Inspection tasks during welding  Control and handling of welding consumables: packaging and exposure control	X	1
b.	No welding over cracked tack welds	X	
C.	Environmental conditions: wind speed within limits, precipitation, and temperature	X X	
0.	WPS followed: settings on welding equipment, travel speed, selected welding		
d.	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	Χ	
f.	Placement and installation of steel headed stud anchors		Х
3.	Inspection tasks after welding		•
a.	Welds cleaned	Х	
b.	Size, length, and location of welds		Х
C.	Welds meet visual acceptance criteria: crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity		х
d.	Arc strikes		X
e.	k-area		Х
f.	Weld across holes in rolled heavy shapes and built-up heavy shapes		Х
g.	Backing removed and weld tabs removed (if required)		X
h.	Repair activities		X
i.	Document acceptance or rejection of welded joint or member	V	X
j.	No prohibited welds have been added without the approval of the EOR	Х	
4.	Inspection tasks prior to bolting:		<u> </u>
a.	Manufacturer's certifications available for fastener materials	X	Х
b.	Fasteners marked in accordance with ASTM requirements  Correct fasteners selected for the joint detail: grade, type, bolt length if threads are		
C.	to be excluded from shear plane	Х	
d.	Correct bolting procedure selected for joint detail	Χ	
e.	Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirments	Х	
f.	Pre-installation verification testing by installation personnel observed and	X	
	documented for fastener assemblies and methods used		
g.	Protected storage provided for bolts, nuts, washers, and other fastener components	X	
5.	Inspection tasks during bolting:		ı
a.	Fastener assemblies placed in all holes and washers and nuts are positioned as required	Χ	
b.	Joint brought to the snug-tight condition prior to the pretensioning operation	Χ	
C.	Fastener component not turned by the wrench prevented from rotating	Χ	
d.	Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	Х	
6.	Inspection tasks after bolting:		•
a.	Document acceptance or rejection of bolted connections		Х

	VERIFICATION AND INSPECTION	INSPECTION	REQUIRED
		CONTINUOUS	PERIODIC
1705.3	- CONCRETE CONSTRUCTION		
1.	Inspection of reinforcement including prestressing tendons and verification of placement		Х
2.	Inspection of reinforcing bar welding (in accordance with AWS D1.4):		
a.	Verification of weldability of reinforcing bars other than ASTM A706		Х
b.	Inspection of single-pass fillet welds, maximum 5/16"		Х
C.	Inspection of all other welds	Х	
3.	Inspection of anchors cast in concrete		Х
4.	Inspection of anchors post-installed in hardened concrete members:		
a.	Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	х	
b.	Mechanical anchors and adhesive anchors not defined in 4.a		Χ
5.	Verification of required design mix		Х
6.	Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	Х	
7.	Inspection of concrete and shotcrete placement for proper application techniques	Х	
8.	Verification of maintenance of specified curing temperature and techniques		Х
9.	Fit-up of groove welds (including joint geometry): joint preparations, dimensions, cleanliness, tacking, and backing (if applicable)	х	
10.	Inspection of formwork for shape, location, and dimensions of the concrete member being formed		Х

	VERIFICATION AND INSPECTION	INSPECTION	N REQUIRED
		CONTINUOUS	PERIODIC
1705.5	- WOOD CONSTRUCTION		
	Special inspection for wood construction shall be in accordance with IBC Section 1705.5. At a minimum, the following inspections are required:		
1.	Verify, size, species and grade of lumber/sheathing complies with construction documents.		Х
2.	Verify nailing of diaphragm floor and roof sheathing and shear walls complies with construction documents.		Х

	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		Х	
2.	Verification that excavations are extended to proper depth and have reached proper material		Х	
3.	Perform classification and testing of compacted fill materials.		Х	
4.	Verification of use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	Х		
5.	Prior to placement of compacted fill, inspection of subgrade and verify that site has been prepared properly		Х	

#### 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 PS CONCRET
#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

MICHAEL A. BEACH & ASSOCIATES, LLC ★ CONSULTING STRUCTURAL ENGINEERING TWIN PONDS EXECUTIVE CAMPUS, SUITE 205 200 BIRCHFIELD DRIVE MOUNT LAUREL, NEW JERSEY 08054

PH: (856) 273-1909 FAX: (856) 273-1480

EMAIL: mail@mabeachassoc.com

NJ Certificate of Authorization No. 24GA27962200

Project No: 747.216

TIMOTHY D. JENNINGS PROFESSIONAL ENGINEER NJ LIC. NO. 24GE03838500

ISSUED FOR BID - PHASE 2 TDJ & VAB 4/3/2024 RFI #11-14 COORDINATION 12/05/2023 PERMIT SET No. DATE rev'd by DESCRIPTION REVISIONS

> INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACK HORSE PIKE BLACKWOOD, NEW JERSEY, 08012

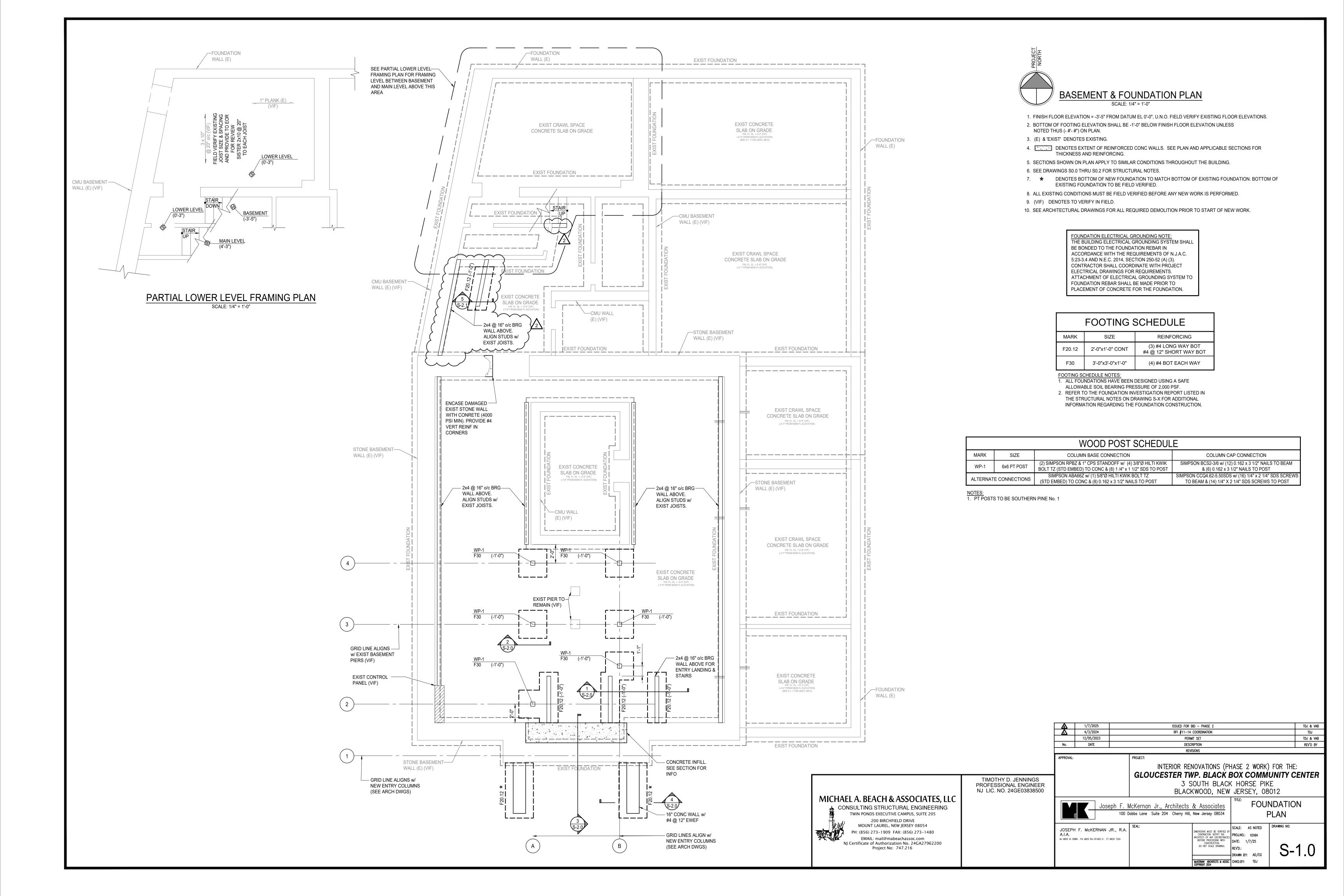
Joseph F. McKernan Jr., Architects & Associates STRUCTURAL LEAD 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 JOSEPH F. McKERNAN JR., R.A. NJ ARCH AI 10984 . PA ARCH RA-011402-X . CT ARCH 7324

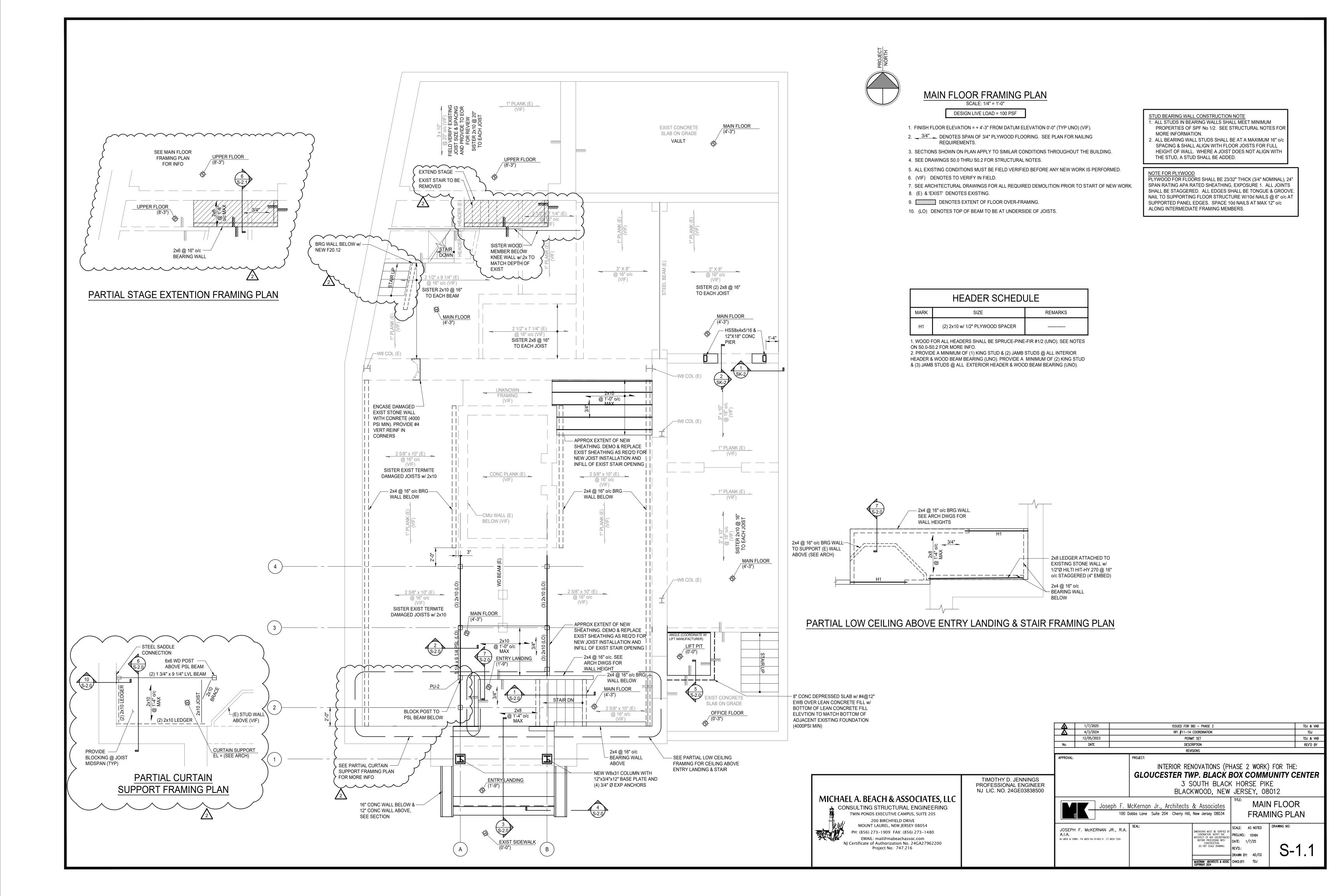
SHEET 3 SCALE: AS NOTED S-0.2 DRAWN BY: AD/CG McKERNAN ARCHITECTS & ASSOC. CHKD.BY: TDJ

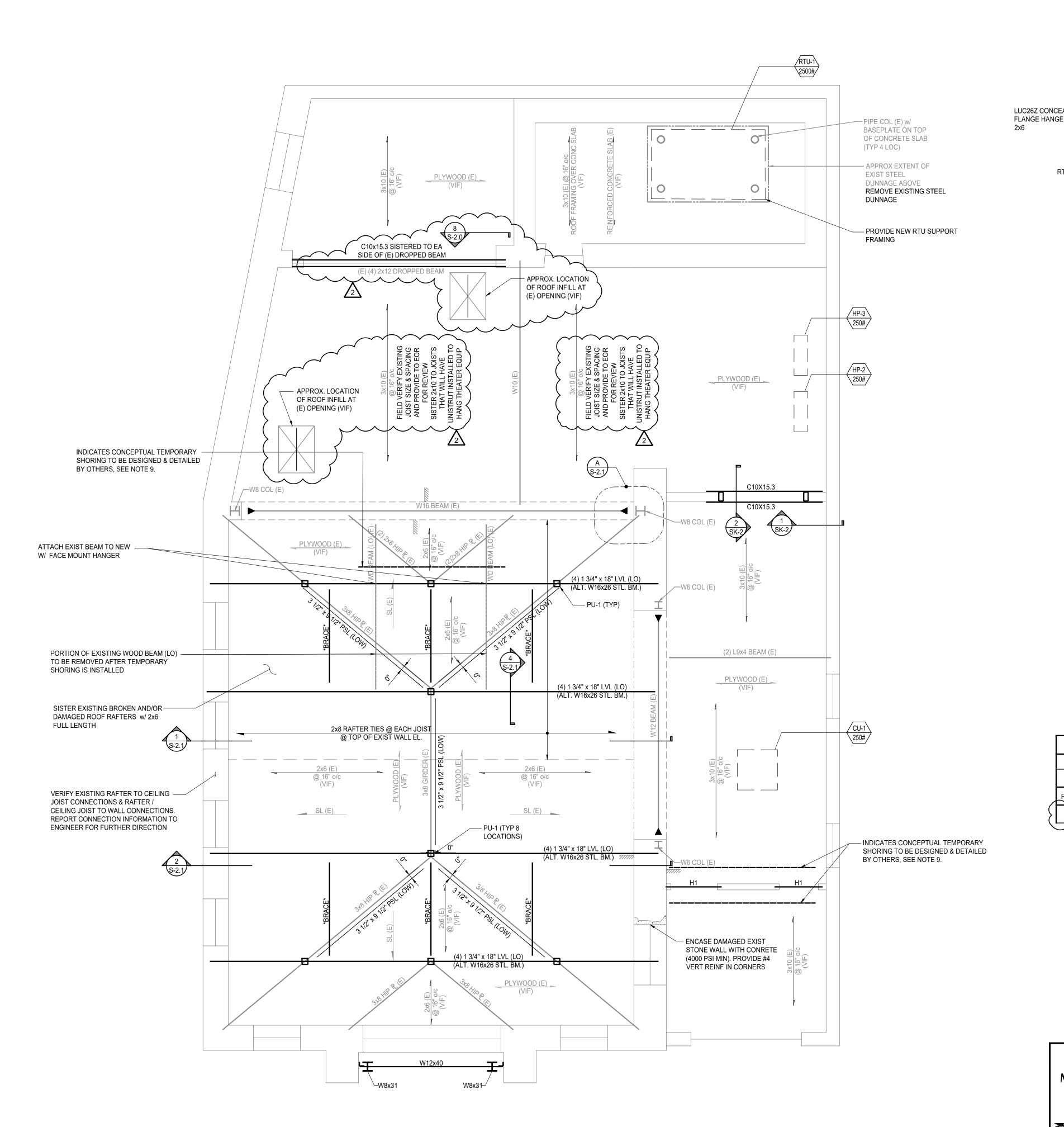
DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.

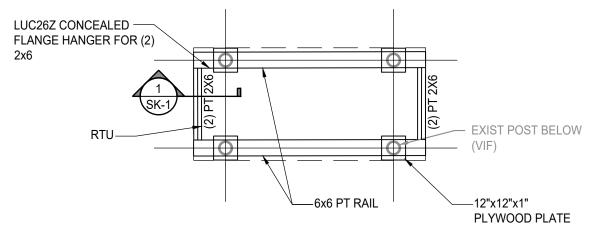
DO NOT SCALE DRAWING.

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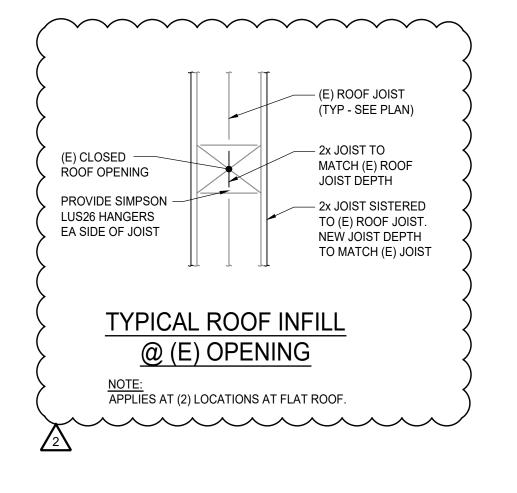


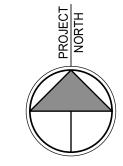






#### RTU SUPPORT FRAMING





### **ROOF FRAMING PLAN**

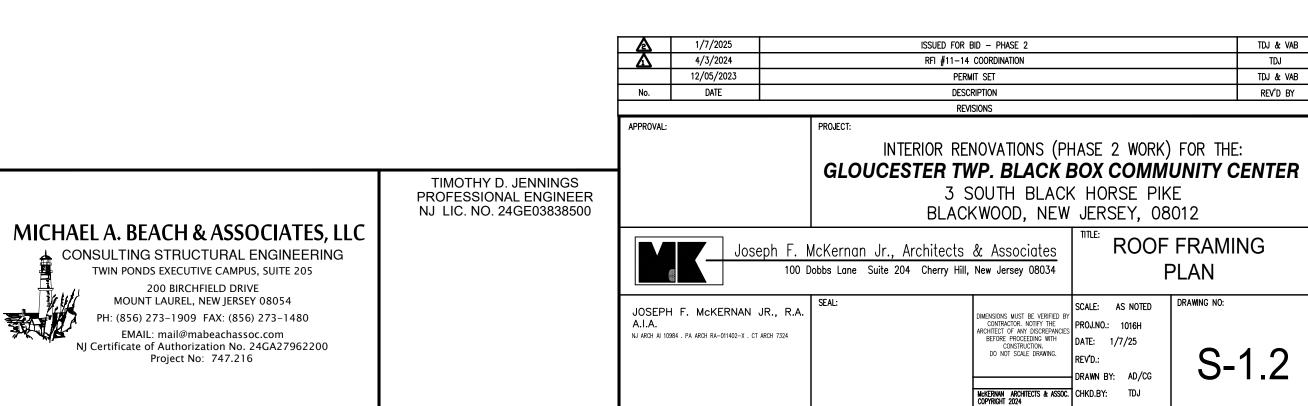
SCALE: 1/4" = 1'-0"

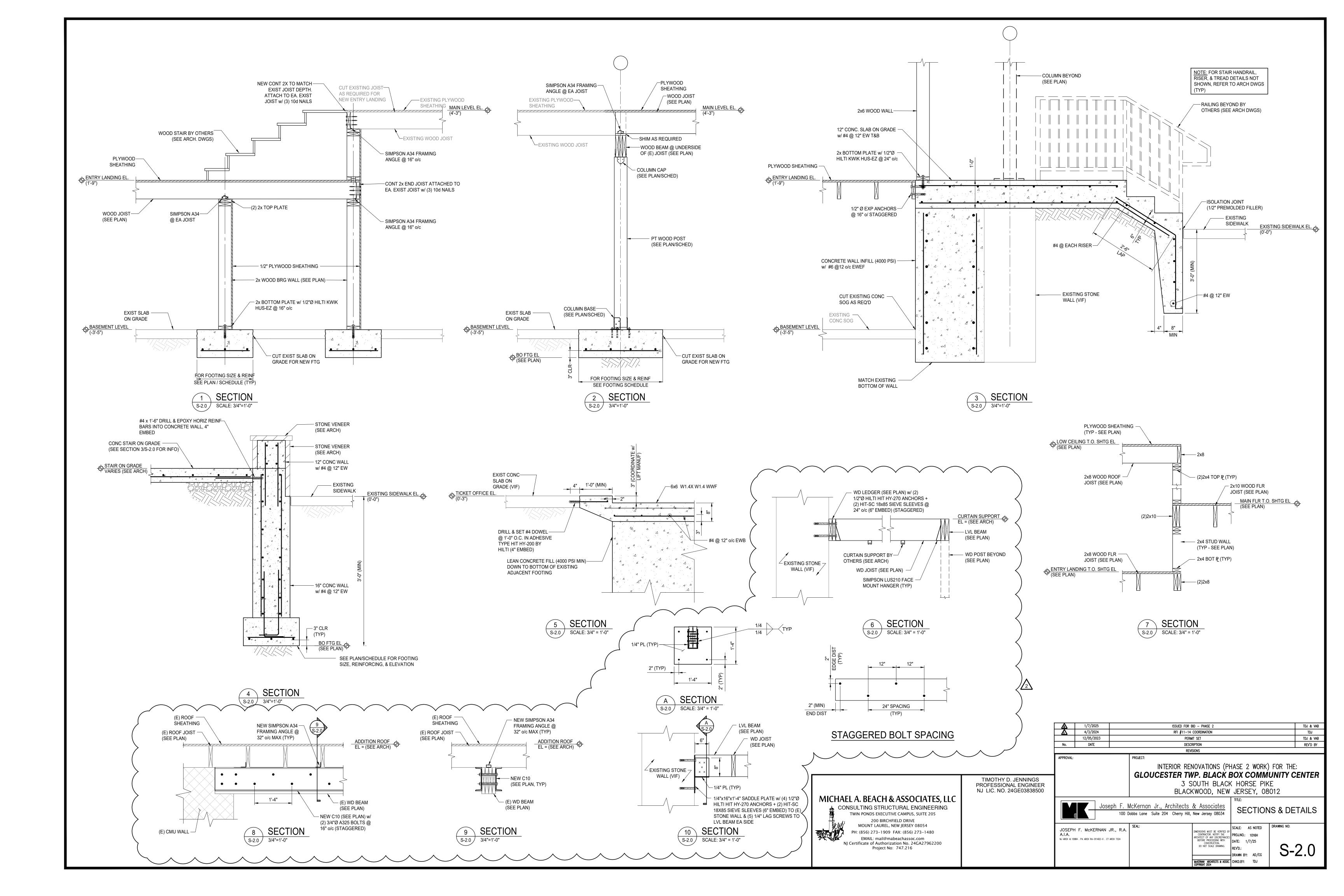
DESIGN LIVE LOAD = 30 PSF

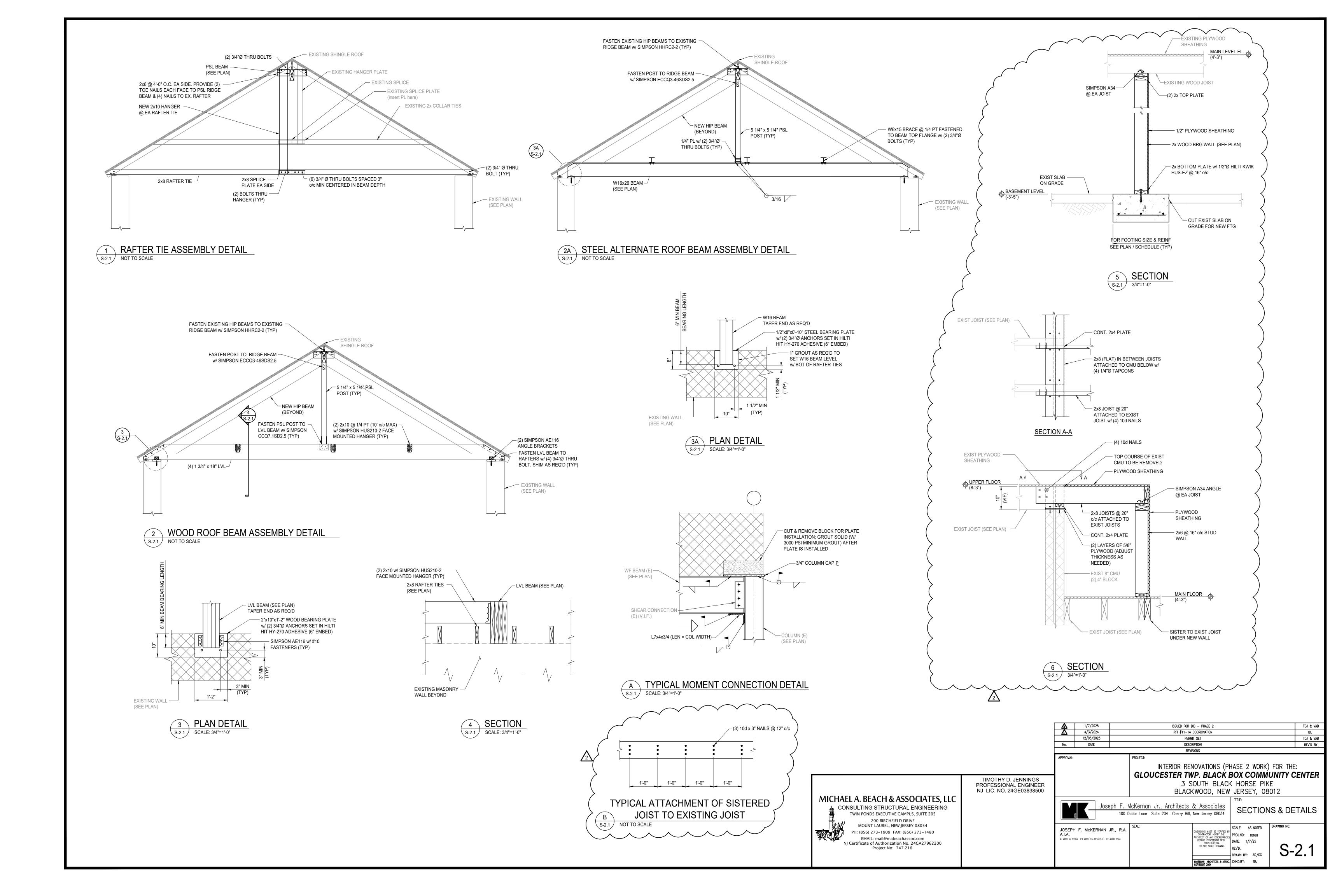
- 1. EXISTING ROOF ELEVATIONS VARY (VIF).
- 2. DENOTES BEAM TO COLUMN MOMENT CONNECTION. SEE DETAIL ON S-2.0.
- 3. SECTIONS SHOWN ON PLAN APPLY TO SIMILAR CONDITIONS THROUGHOUT THE BUILDING.4. SEE DRAWINGS S0.0 THRU S0.2 FOR STRUCTURAL NOTES.
- 5. ALL EXISTING CONDITIONS MUST BE FIELD VERIFIED BEFORE ANY NEW WORK IS PERFORMED.
- 6. (VIF) DENOTES TO VERIFY IN FIELD.
- 6. (VIF) DENOTES TO VERIFY IN FIELD.

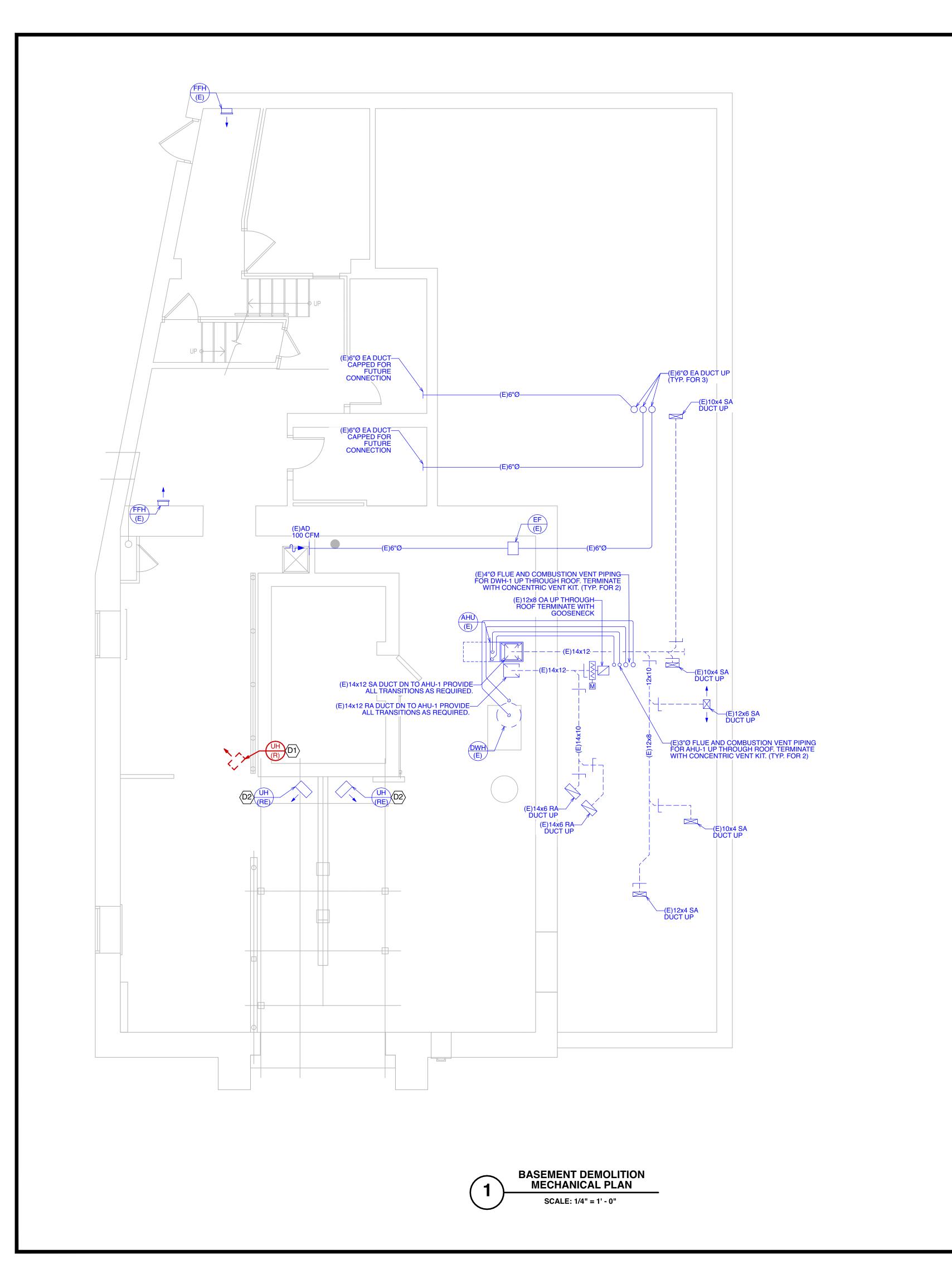
  7. SEE ARCHITECTURAL DRAWINGS FOR ALL REQUIRED DEMOLITION PRIOR TO START OF NEW WORK.
- 8. (E) & 'EXIST' DENOTES EXISTING.
- 9. CONCEPTUAL SHORING IS SHOWN ON PLAN. DESIGN AND DETAIL OF TEMPORARY SHORING IS A DELEGATED DESIGN. SEE DELEGATED DESIGN SCHEDULE ON S0.2 FOR ADDITIONAL INFORMATION. TEMPORARY SHORING TO BE PROVIDED ON THE JOB AS REQUIRED FOR NEW WORK.
- 10. \*BRACE\* INDICATES (2) 2x10 BRACE BEAM @ 1/4 POINTS OF BEAM (MAX 10' O.C., V.I.F.) (ALT. W6x15 STL BM) SEE DETAILS ON S-2.1 FOR ADDITIONAL INFORMATION.
- 11. (LO) INDICATES BOTTOM OF BEAM TO BE AT TOP OF EXISTING WALL, SEE DETAILS ON S-2.1.
- 12. (LOW) INDICATES TOP OF BEAM TO BE TIGHT TO UNDERSIDE OF EXISTING ROOF RIDGE AND HIP BEAMS.

		WOOD POST-UP SCHEDU	JLE
MARK	SIZE	COLUMN BASE CONNECTION	COLUMN CAP CONNECTION
PU-1	5 1/4" x 5 1/4" LVL POST	SIMPSON CCQ7.1-6SDS2.5 w/ (16) 1/4" x 2 1/2" SDS TO BEAM & (14) 1/4" x 2 1/2" SDS TO POST	SIMPSON ECCQ3-6SD2.5 w/ (14) 1 /4" x 2 1/2" SDS TO BEAM & (14) 1 /4" x 2 1/2" SDS TO POST
PU-1 ALT.	BID CONNECTION	(2) 1/4" PLATES WELDED TO BM TOP FLANGE W/ (2) 3/4" Ø BOLTS THROUGH PLATE AND POST	SIMPSON ECCQ3-6SD2.5 w/ (14) 1 /4" x 2 1/2" SDS TO BEAM & (14) 1 /4" x 2 1/2" SDS TO POST
PU-2	6x6	SIMPSON CCQ66SDS2.5 w/ (16) 1/4" x 2 1/2" SDS TO BEAM & (14) 1/4" x 2 1/2" SDS TO POST	SIMPSON ECCQ46SDS2.5 w/ (14) 1/4" x 2 1/2" SDS TO BEAM & (14) 1/4" x 2 1/2" SDS TO POST
			2









#### **DEMOLITION GENERAL NOTES**

- REMOVE DESIGNATED ELEMENTS AS SHOWN ON
- ALL MECHANICAL EQUIPMENT AND ASSOCIATED APPURTENANCES DESCRIBED SHALL BE REMOVED AND DEMOLISHED.
- ALL ELECTRICAL WIRING SHALL BE DEMOLISHED BACK TO MAIN PANEL UNLESS INDICATED TO BE
- COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.

RECONNECTED.

- PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
- OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
- **ERECT AND MAINTAIN TEMPORARY PARTITIONS** TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SPOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
- 8. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
- ALL SYSTEMS CONTAINING REFRIGERANTS SHALL BE EVACUATED FOR REFRIGERANT RECYCLING PRIOR TO DEMOLITION.
- 10. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN CONDITION AT THE END OF EACH DAY.
- 11. COORDINATE ALL DEMOLITION WORK WITH FACILITIES MANAGEMENT PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
- 12. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS CONTRACTOR OF DEMOLITION. DEMOLITION.
- 13. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED SITE CONDITIONS AND ANY DISCOVERED
  DISCREPANCIES BETWEEN DRAWINGS AND SITE
  CONDITIONS SHALL BE BROUGHT TO THE
  OWNER'S ATTENTION PRIOR TO SUBMITTING
  THEIR BID. THE CONTRACTOR SHALL INCLUDE
  ALL DEMOLITION WORK EXPOSED AND
  CONCEALED, WHETHER OR NOT SHOWN ON
- CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
- 14. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

#### **DEMOLITION SHEET NOTES**

- CONTRACTOR SHALL CAREFULLY REMOVE AND PLACE IN STORAGE EXISTING UNIT HEATER FOR POTENTIAL USE BY BUILDING OWNER. VERIFY EXACT LOCATION OF EXISTING HEATER IN THE
- CONTRACTOR SHALL CAREFULLY REMOVE
  RELOCATE EXISTING UNIT HEATER TO NEW
  LOCATION. REFER TO SHEET M-0.0 FOR NEW UNIT HEATER LOCATION.

### **DRAWING SYMBOLS**

- EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- EXISTING MECHANICAL WORK TO BE
- EXISTING MECHANICAL WORK TO REMAIN EXISTING MECHANICAL WORK TO BE
- DEMOLISHED AND REMOVED NEW MECHANICAL WORK

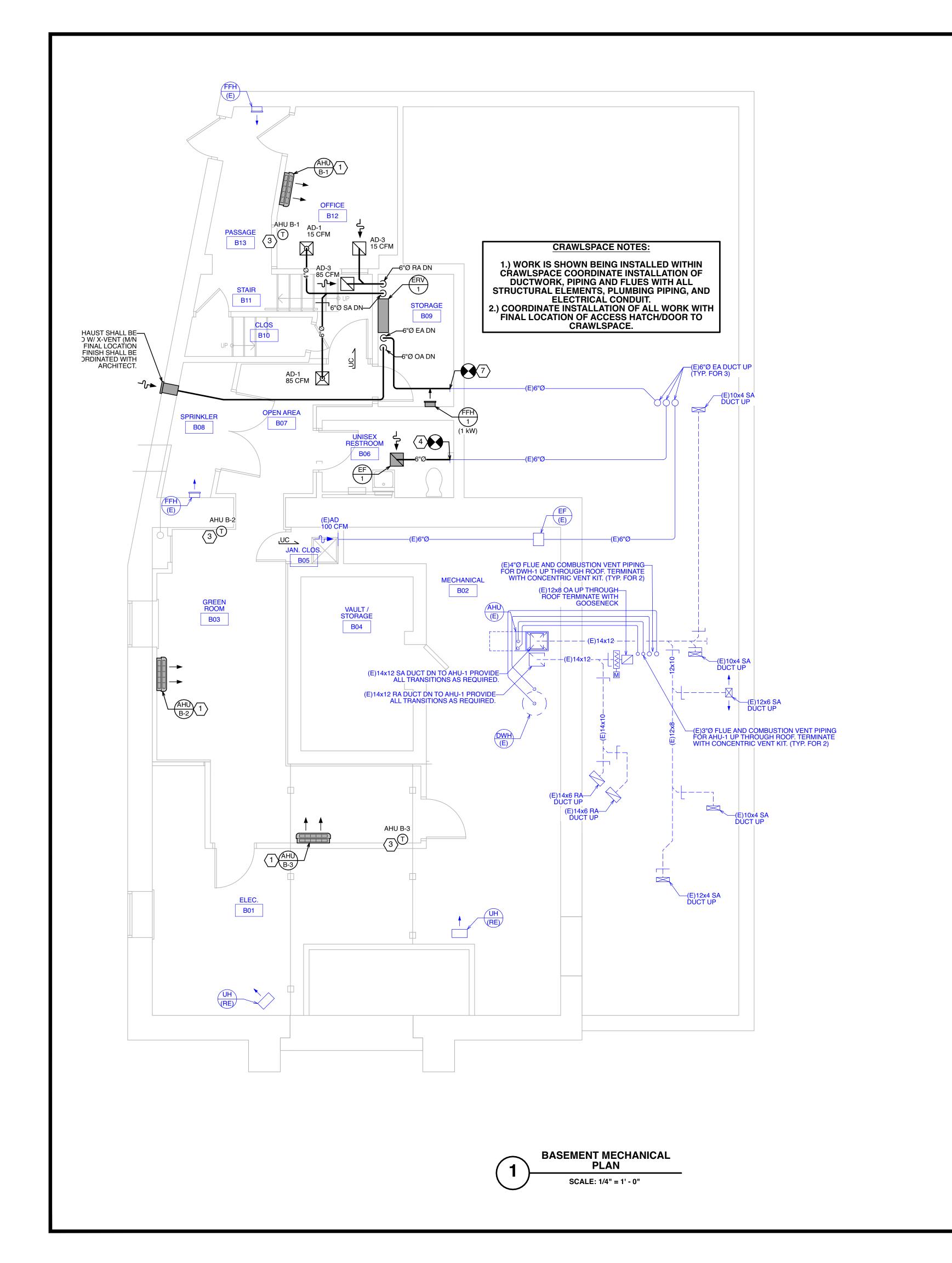
#### **EXISTING CONDITIONS NOTES**

- 1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF A SITE SURVEY CONDUCTED BY HOLSTEIN WHITE, INC. (ENGINEER) ON APRIL 11, 2023.
- ALTHOUGH THE EXISTING CONDITIONS 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.

DESCRIPTION INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACKHORSE PIKE BLACKWOOD, NEW JERSEY, 08012 Joseph F. McKernan Jr., Architects & Associates

100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 BASEMENT DEMOLITION MECHANICAL PLAN

DM-0.0



#### **SEQUENCE OF OPERATIONS: EXISTING AHU**

- A. AIR HANDLING UNITS: THE AIR HANDLING SYSTEM IS EQUIPPED WITH A GAS-FIRED FURNACE, DX COOLING COIL AND SUPPLY AIR FAN.
- THE AIR HANDLING UNIT WILL BE CONTROLLED BY STANDALONE THERMOSTATIC CONTROLS.
- B. OCCUPANCY: A USER ADJUSTABLE OCCUPANCY SCHEDULE WILL BE ESTABLISHED AND MAINTAINED BY THE BUILDING OWNER/OPERATOR. OCCUPIED AND UNOCCUPIED HEATING AND COOLING SETPOINTS WILL BE ESTABLISHED. THE FAN SYSTEM WILL MAINTAIN SPACE CONDITIONS TO THE OCCUPIED AND UNOCCUPIED SETPOINTS BASED ON THIS OPERATING SCHEDULE.

OCCUPIED HEATING 70°F OCCUPIED COOLING 74°F = 65°F UNOCCUPIED HEATING = UNOCCUPIED COOLING

IN "OCCUPIED MODE", THE OUTSIDE AIR MOTOR-OPERATED DAMPER SHALL OPEN AND FAN SHALL RUN CONTINUOUSLY. IN THE UNOCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL CLOSE. THE FAN SYSTEM WILL SHUTDOWN, BUT WILL CYCLE AS NECESSARY TO MAINTAIN UNOCCUPIED SETPOINTS.

OPTIMAL START: AN OPTIMAL START ROUTINE WILL CALCULATE AN EARLY START TIME TO BRING SPACE CONDITIONS TO WITHIN OCCUPIED SETPOINTS BY THE BEGINNING OF THE SCHEDULED OCCUPANCY TIME PERIOD. THE OPTIMAL START ROUTINE FACTORS SPACE TEMPERATURE(S) AND OUTDOOR CONDITIONS TO CALCULATE AND LEARN THE START-UP RECOVERY TIME FROM THE UN-OCCUPIED MODE.

82°F

- D. FAN SYSTEM CONTROL: THE FAN SYSTEM WILL BE ENABLED TO RUN IN THE OCCUPIED MODE. THE SUPPLY FAN WILL START AND RUN CONTINUOUSLY. ALL SAFETY DEVICES MUST BE "CLEAR" TO ALLOW RUN PERMISSIVE. FAN STATUS WILL BE MONITORED VIA CURRENT SENSING SWITCH. ALL CONTROL LOOPS WILL BE ENABLED BASED ON PROOF OF THE SUPPLY FAN, UNLESS OTHERWISE SPECIFIED.
- HEATING: THE GAS HEAT WILL MODULATE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT. UPON A FALL IN ZONE TEMPERATURE BELOW SETPOINT, THE GAS HEATING VALVE WILL MODULATE OPEN. UPON A RISE IN ZONE TEMPERATURE THE REVERSE WILL OCCUR.
- COOLING D/X: D/X COOLING WILL BE ENERGIZED TO MAINTAIN THE ZONE TEMPERATURE TO SETPOINT. UPON A RISE IN ZONE TEMPERATURE ABOVE SETPOINT D/X COOLING WILL BE ENERGIZED. UPON A FALL IN TEMPERATURE THE REVERSE WILL OCCUR.

#### **GENERAL NOTES**

- ALL BRANCH DUCTWORK SHALL HAVE BALANCING DAMPERS.
- COORDINATE ALL AIR DEVICES WITH LIGHTING AND REFLECTED CEILING PLANS.
- IT IS THE INTENT TO MAINTAIN THE CEILING HEIGHTS AS SHOWN ON THE REFLECTED
- DUCTWORK SHOULD BE INSTALLED AS TIGHT AS POSSIBLE TO THE STRUCTURAL FRAMING AND
- MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT, INSTALLED BY G.C. COORDINATED ALL LOCATIONS AND SIZES WITH ARCHITECT PRIOR TO INSTALLATION.
- 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 "B".
- ALL DUCTWORK SIZES SHOWN ON PLAN ARE CLEAR I.D. DIMENSIONS. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED.
- CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF CUTTING AND PATCHING WITH CURRENT ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY. COORDINATE ALL WORK WITH LANDLORD PRIOR TO CONSTRUCTION.

#### **SHEET NOTES**

- $^{\prime}$  1  $\rangle$  REFER TO THE FOLLOWING NOTES FOR EACH AHU: RUN REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO CORRESPONDING OUTDOOR CONDENSING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S
  - WITH ARCHITECT. CONDENSATE SHALL DRAIN TO MOP RECEPTOR IN BASEMENT. REFER TO
  - PLUMBING PLANS FOR SIZE AND LOCATION. COORDINATE THE FINAL LOCATION OF AHU WA ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.

RECOMMENDATIONS. COORDINATE ALL RUNS

- (2) REFER TO THE FOLLOWING NOTES FOR EACH CU/
  - INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND PROVIDE ALL REQUIRED MAINTENANCE CLEARANCES.
- ROUTE REFRIGERANT PIPING TO CORRESPONDING AHU. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT. CONDENSING UNIT SHALL BE MOUNTED ON PATE EQUIPMENT SUPPORTS.
- INDICATES LOCATION OF NEW SEVEN-DAY ELECTRONIC PROGRAMABLE THERMOSTAT WITH OCCUPIED AND UNOCCUPIED CAPABILITIES TO OPERATE NEW OUTSIDE AIR DAMPER. PROVIDE NON-TAMPER TRANSPARENT ENCLOSURE FOR THERMOSTAT. COORDINATE ENCLOSURE AND FINAL LOCATION MOUNTING HEIGHT OF THE THERMOSTAT WITH ARCHITECT.
- TIE NEW 6"Ø EA DUCT INTO EXISTING 6"Ø EA DUCT UP THROUGH ROOF VERIFY EXACT SIZE, LOCATION AND ROUTING OF EXISTING DUCTWORK IN THE
- PROVIDE TRANSITION FROM NEW 32"Ø SA DUCT INTO EXISTING 32X16 SA DUCT THROUGH WALL. VERIFY EXACT SIZE, LOCATION AND ROUTING OF EXISTING DUCTWORK IN THE FIELD.
- 6 TIE NEW 32"Ø SA DUCT INTO EXISTING 32"Ø ROOF MOUTED SA MAIN. VERIFY EXACT SIZE, LOCATION AND ROUTING OF EXISTING DUCTWORK IN THE
- TIE NEW 6"Ø EA DUCT FROM ERV INTO EXISTING 6"Ø EA DUCT UP THROUGH ROOF VERIFY EXACT SIZE, LOCATION AND ROUTING OF EXISTING DUCTWORK IN THE FIELD.

#### **DRAWING SYMBOLS**

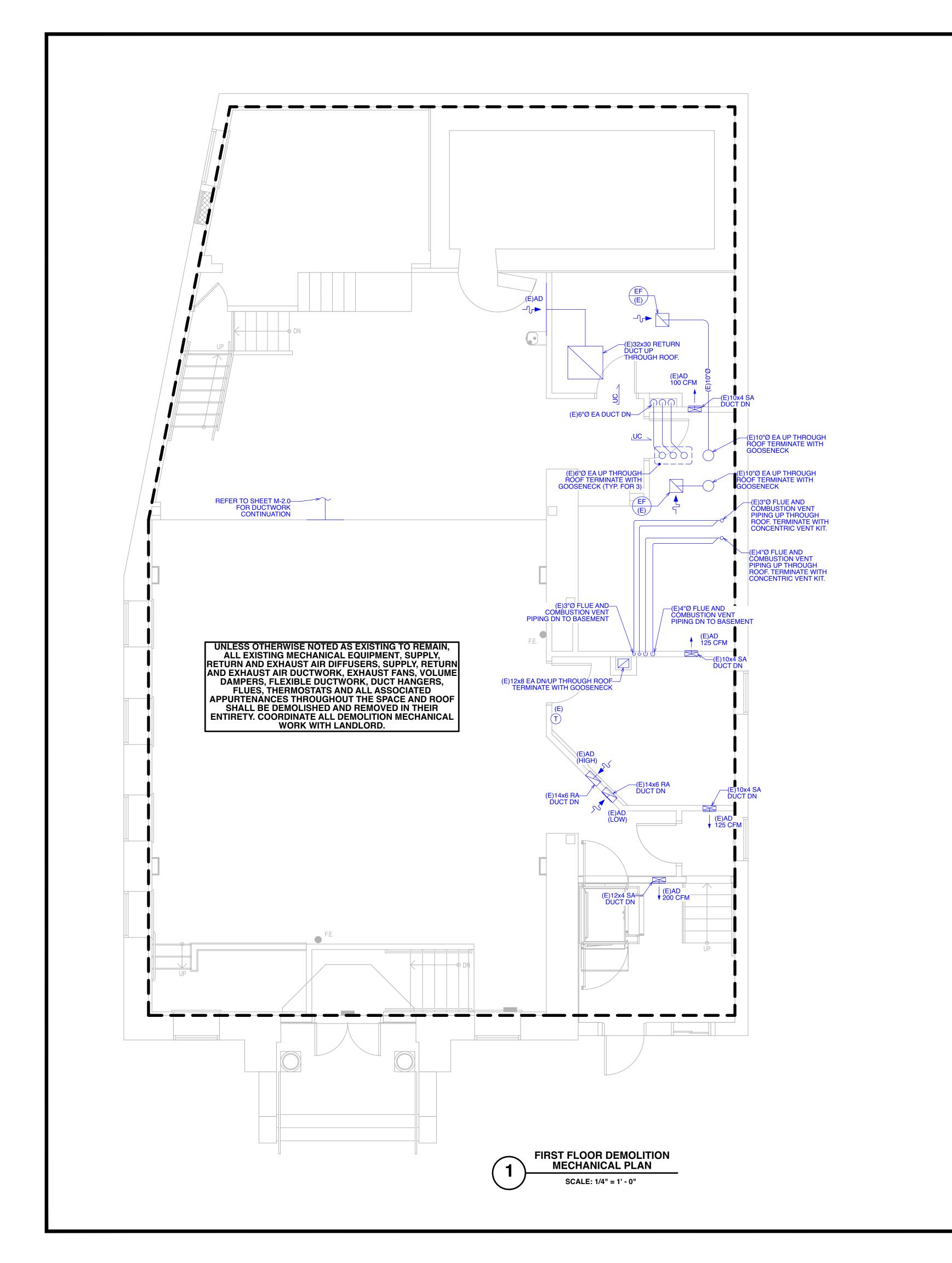
- EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- EXISTING MECHANICAL WORK TO BE
- EXISTING MECHANICAL WORK TO REMAIN — — EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK

CKERNAN ARCHITECTS & ASSOC. CHKD.BY:

DESCRIPTION REV'D BY REVISIONS INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACKHORSE PIKE BLACKWOOD, NEW JERSEY, 08012 Joseph F. McKernan Jr., Architects & Associates BASEMENT MECHANICAL PLAN 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 SCALE: AS NOTED DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.

REVID.:

NOTIFY THE ARCHITECT OF A CONTRACTOR M-0.03800 Horizon Blvd., Suite Trevose, PA 19053 O: (215)-322-7711 F: (215)-322-7709 SCOTT A. WHITE DLSTEIN WHITE



#### **DEMOLITION GENERAL NOTES**

#### REMOVE DESIGNATED ELEMENTS AS SHOWN ON

- ALL MECHANICAL EQUIPMENT AND ASSOCIATED APPURTENANCES DESCRIBED SHALL BE REMOVED AND DEMOLISHED.
- ALL ELECTRICAL WIRING SHALL BE DEMOLISHED BACK TO MAIN PANEL UNLESS INDICATED TO BE
- COMPLY WITH APPLICABLE NFPA STANDARDS WHEN TORCH CUTTING.

RECONNECTED.

- PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
- OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
- **ERECT AND MAINTAIN TEMPORARY PARTITIONS** TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SPOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
- 8. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE WITH ADJACENT BUILDING AREAS. MAINTAIN PROTECTED LEGAL EGRESS AND ACCESS AT ALL TIMES. KEEP REQUIRED EXIT WAYS UNENCUMBERED AT ALL TIMES AND ARTIFICIALLY LIGHTED.
- ALL SYSTEMS CONTAINING REFRIGERANTS SHALL BE EVACUATED FOR REFRIGERANT RECYCLING PRIOR TO DEMOLITION. 10. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN

CONDITION AT THE END OF EACH DAY.

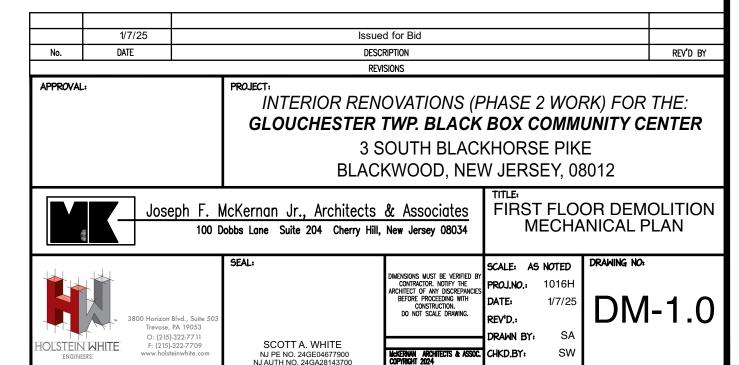
- 11. COORDINATE ALL DEMOLITION WORK WITH FACILITIES MANAGEMENT PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.
- 12. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS CONTRACTOR OF DEMOLITION. DEMOLITION.
- 13. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED SITE CONDITIONS AND ANY DISCOVERED
  DISCREPANCIES BETWEEN DRAWINGS AND SITE
  CONDITIONS SHALL BE BROUGHT TO THE
  OWNER'S ATTENTION PRIOR TO SUBMITTING
  THEIR BID. THE CONTRACTOR SHALL INCLUDE
  ALL DEMOLITION WORK EXPOSED AND
  CONCEALED, WHETHER OR NOT SHOWN ON CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
- 14. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

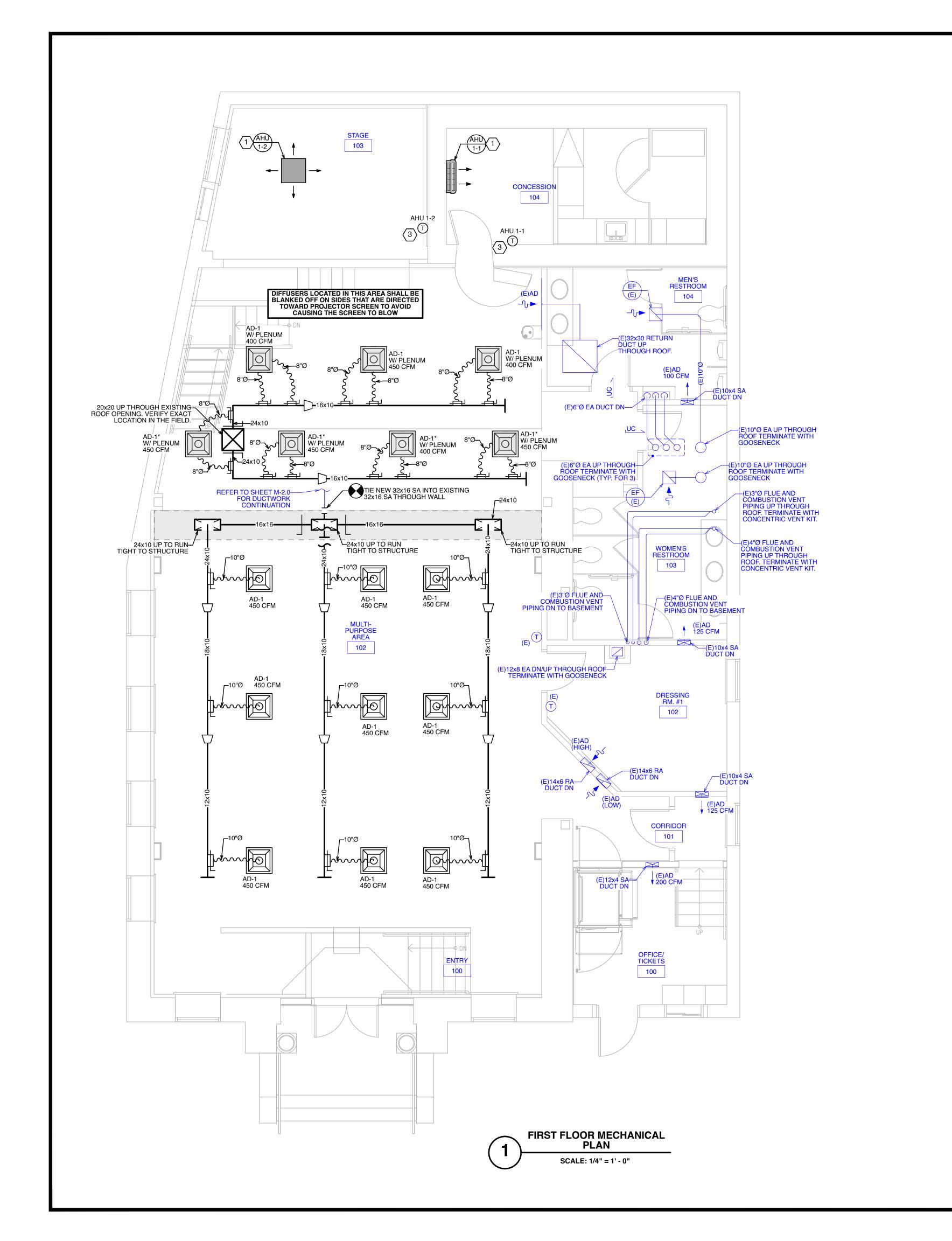
#### **DRAWING SYMBOLS**

- EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- EXISTING MECHANICAL WORK TO BE
- EXISTING MECHANICAL WORK TO REMAIN
- — EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK

#### **EXISTING CONDITIONS NOTES**

- 1. ALL THE EXISTING DUCTWORK SIZES, LOCATIONS, EXISTING MECHANICAL EQUIPMENT LOCATIONS, TAGS, EXISTING ARCHITECTURAL PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF A SITE SURVEY CONDUCTED BY HOLSTEIN WHITE, INC. (ENGINEER) ON APRIL 11, 2023.
- ALTHOUGH THE EXISTING CONDITIONS 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.





#### **GENERAL NOTES**

- ALL BRANCH DUCTWORK SHALL HAVE BALANCING DAMPERS.
- 2. COORDINATE ALL AIR DEVICES WITH LIGHTING AND REFLECTED CEILING PLANS.
- IT IS THE INTENT TO MAINTAIN THE CEILING HEIGHTS AS SHOWN ON THE REFLECTED CEILING PLANS.
- 4. DUCTWORK SHOULD BE INSTALLED AS TIGHT AS POSSIBLE TO THE STRUCTURAL FRAMING AND
- 5. MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT, INSTALLED BY G.C. COORDINATED ALL LOCATIONS AND SIZES WITH ARCHITECT PRIOR TO INSTALLATION.
- S. 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 "B".
- . ALL DUCTWORK SIZES SHOWN ON PLAN ARE CLEAR I.D. DIMENSIONS. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED.
- 8. CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF CUTTING AND PATCHING WITH CURRENT ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY. COORDINATE ALL WORK WITH LANDLORD PRIOR TO CONSTRUCTION.

#### SHEET NOTES

- REFER TO THE FOLLOWING NOTES FOR EACH AHU:
   RUN REFRIGERANT PIPING FROM INDOOR AIR HANDLING UNIT TO CORRESPONDING OUTDOOR CONDENSING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S
  - RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT.
     CONDENSATE SHALL DRAIN TO MOP
  - RECEPTOR IN BASEMENT. REFER TO
    PLUMBING PLANS FOR SIZE AND LOCATION.
    COORDINATE THE FINAL LOCATION OF AHU W/
    ARCHITECT. INSTALL PER MANUFACTURER'S
    RECOMMENDATIONS. PROVIDE ALL REQUIRED
- MAINTENANCE CLEARANCES.

  2 REFER TO THE FOLLOWING NOTES FOR EACH CU/HP:
   INSTALL PER MANUFACTURER'S
- RECOMMENDATIONS AND PROVIDE ALL
  REQUIRED MAINTENANCE CLEARANCES.

  ROUTE REFRIGERANT PIPING TO
  CORRESPONDING AHU. SIZE REFRIGERANT
  PIPING PER MANUFACTURER'S
  RECOMMENDATIONS. COORDINATE ALL RUNS
  WITH ARCHITECT.

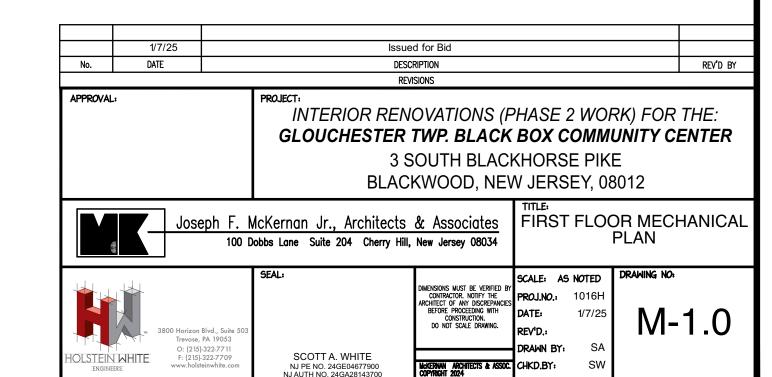
  CONDENSING UNIT SHALL BE MOUNTED ON

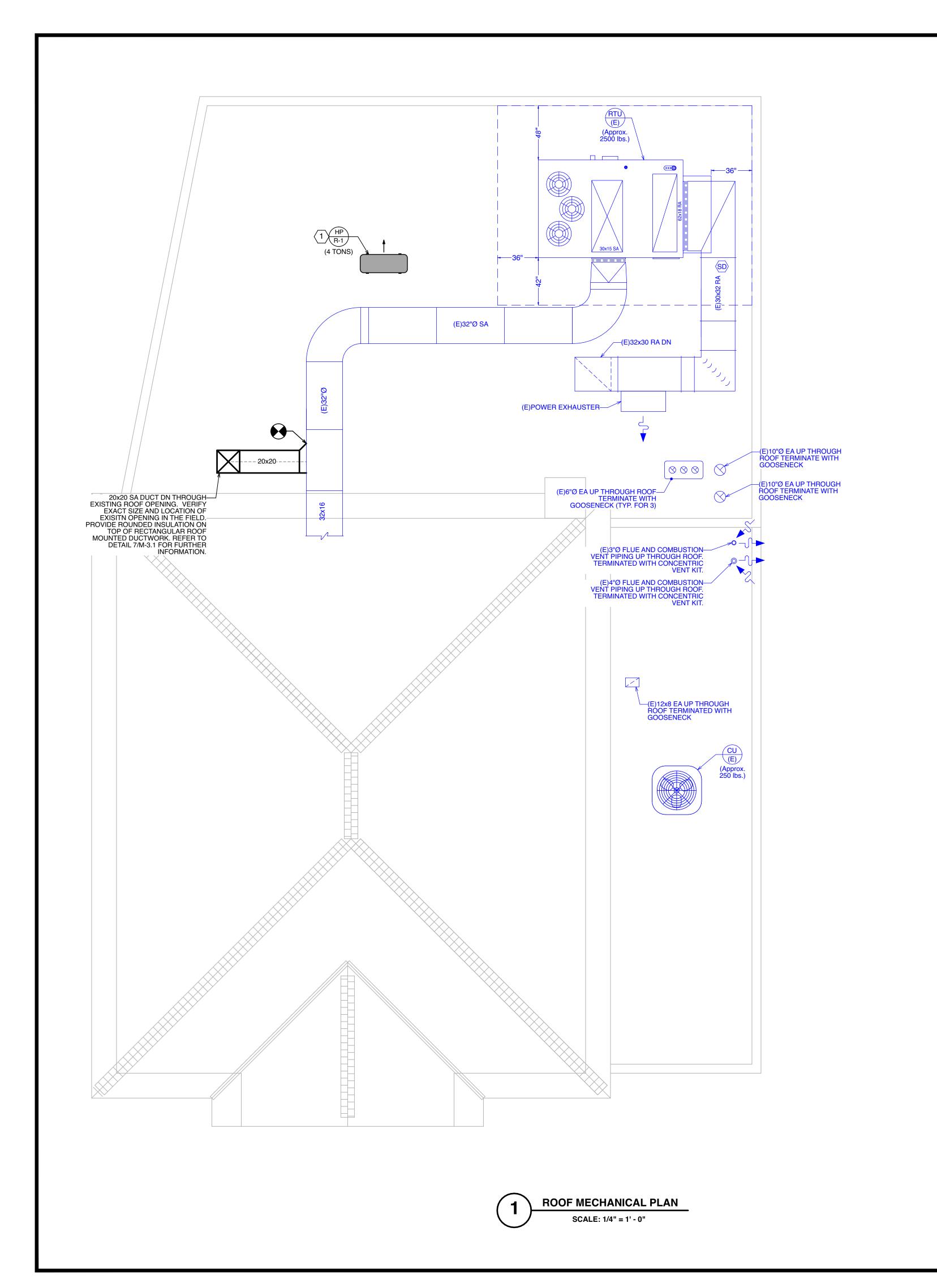
PATE EQUIPMENT SUPPORTS.

- INDICATES LOCATION OF NEW SEVEN-DAY ELECTRONIC PROGRAMABLE THERMOSTAT WITH OCCUPIED AND UNOCCUPIED CAPABILITIES TO OPERATE NEW OUTSIDE AIR DAMPER. PROVIDE NON-TAMPER TRANSPARENT ENCLOSURE FOR THERMOSTAT. COORDINATE ENCLOSURE AND FINAL LOCATION MOUNTING HEIGHT OF THE THERMOSTAT WITH ARCHITECT.
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#### **DRAWING SYMBOLS**

- E) EXISTING MECHANICAL WORK TO REMAIN
- R) EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- (RE) EXISTING MECHANICAL WORK TO BE RELOCATED
  - EXISTING MECHANICAL WORK TO REMAIN
- EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED
- NEW MECHANICAL WORK





#### **SEQUENCE OF OPERATIONS: EXISTING RTU**

- OCCUPANCY: A USER ADJUSTABLE OCCUPANCY SCHEDULE WILL BE ESTABLISHED AND MAINTAINED BY THE BUILDING OWNER/OPERATOR. OCCUPIED AND UNOCCUPIED HEATING AND COOLING SETPOINTS WILL BE ESTABLISHED. THE FAN SYSTEM WILL MAINTAIN SPACE CONDITIONS TO THE OCCUPIED AND UNOCCUPIED SETPOINTS BASED ON THIS OPERATING SCHEDULE.
- INITIAL SETPOINTS:
  OCCUPIED HEATING
  - OCCUPIED COOLING UNOCCUPIED HEATING
  - 74°F = 65°F = UNOCCUPIED COOLING
- SPACE CONDITIONS TO WITHIN OCCUPIED SETPOINTS BY THE BEGINNING OF THE SCHEDULED OCCUPANCY TIME PERIOD. THE OPTIMAL START ROUTINE FACTORS SPACE TEMPERATURE(S) AND OUTDOOR CONDITIONS TO CALCULATE AND LEARN THE START-UP RECOVERY TIME FROM THE

B. OPTIMAL START: AN OPTIMAL START ROUTINE WILL CALCULATE AN EARLY START TIME TO BRING

- FIRE / SMOKE SAFETY DEVICE: UPON ACTIVATION OF THE FIRE/SMOKE SAFETY DEVICE, THE FAN SYSTEM WILL SHUTDOWN AND CEASE ALL FUNCTION, EXCEPT WHERE SPECIFIED OTHERWISE. A MANUAL RESET OF THE DEVICE WILL BE REQUIRED TO ALLOW THE SYSTEM RE-START IN ITS APPROPRIATE MODE OF OPERATION. AN ALARM WILL BE ACTIVATED AT THE OPERATOR'S TERMINAL
- COOLING: WHEN FREE COOLING IS NOT AVAILABLE, THE COMPRESSORS WILL BE CONTROLLED BY THE ZONE THERMOSTAT. WHEN FREE COOLING IS AVAILABLE, THE OUTDOOR AIR DAMPER IS MODULATED BY THE ECONOMIZER CONTROL TO PROVIDE A 50°F TO 55°F MIXED AIR TEMPERATURE INTO THE ZONE. AS THE MIXED AIR TEMPERATURE FLUCTUATES ABOVE 55°F OR BELOW 50°F, DAMPERS WILL BE MODULATED (OPEN OR CLOSE) TO BRING THE MIXED AIR TEMPERATURE BACK WITHIN CONTROL. IF MECHANICAL COOLING IS UTILIZED WITH FREE COOLING, THE OUTDOOR AIR DAMPER WILL MAINTAIN ITS CURRENT POSITION AT THE TIME THE COMPRESSOR IS STARTED. IF THE INCREASE IN COOLING CAPACITY CAUSES THE MIXED AIR TEMPERATURE TO DROP BELOW 45°F, THEN THE OUTDOOR AIR DAMPER POSITION WILL BE DECREASED TO THE MINIMUM POSITION. IF THE MIXED AIR TEMPERATURE CONTINUES TO FALL, THE OUTDOOR AIR DAMPER WILL CLOSE. CONTROL RETURNS TO NORMAL ONCE THE MIXED AIR TEMPERATURE RISES ABOVE 48°F. THE POWER EXHAUST FANS WILL BE ENERGIZED AND DE-ENERGIZED AS THE OUTDOOR AIR DAMPER OPENS AND CLOSES.

FIELD INSTALLED ACCESSORY CO2 SENSORS ARE TO BE CONNECTED TO THE ECONOMIZER CONTROL FOR A DEMAND CONTROLLED VENTILATION SEQUENCE. AS THE CO2 LEVEL IN THE ZONE INCREASES ABOVE THE CO2 SETPOINT, THE MINIMUM POSITION OF THE DAMPER WILL BE INCREASED PROPORTIONALLY, AS THE CO2 LEVEL DECREASES BECAUSE OF THE INCREASE IN FRESH AIR, THE OUTDOOR AIR DAMPER WILL BE PROPORTIONALLY CLOSED. FOR ECONOMIZER OPERATION, THERE MUST BE A THERMOSTAT CALL FOR THE FAN. IF THE UNIT IS OCCUPIED AND THE FAN IS ON, THE DAMPER WILL OPERATE AT MINIMUM POSITION. OTHERWISE, THE DAMPER WILL BE CLOSED.

WHEN THE ECONOMIZER CONTROL IS IN THE OCCUPIED MODE AND A CALL FOR COOLING EXISTS (Y1 ON THE THERMOSTAT), THE CONTROL WILL FIRST CHECK FOR INDOOR FAN OPERATION. IF THE FAN IS NOT ON, THEN COOLING WILL NOT BE ACTIVATED. IF THE FAN IS ON, THEN THE CONTROL WILL OPEN THE ECONOMIZER DAMPER TO THE MINIMUM POSITION.

ON THE INITIAL POWER TO THE ECONOMIZER CONTROL, IT WILL TAKE THE DAMPER UP TO 2-1/2 MINUTES BEFORE IT BEGINS TO POSITION ITSELF. AFTER THE INITIAL POWER-UP, FURTHER CHANGES IN DAMPER POSITION CAN TAKE UP TO 30 SECONDS TO INITIATE. DAMPER MOVEMENT FROM FULL CLOSED TO FULL OPEN (OR VICE VERSA) WILL TAKE BETWEEN 1-1/2 AND 2-1/2 MINUTES. IF FREE COOLING CAN BE USED AS DETERMINED FROM THE APPROPRIATE CHANGEOVER COMMAND (SWITCH, DRY BULB, ENTHALPY CURVE, DIFFERENTIAL DRY BULB OR DIFFERENTIAL ENTHALPY), THEN THE CONTROL WILL MODULATE THE DAMPERS OPEN TO MAINTAIN THE MIXED AIR TEMPERATURE SETPOINT AT 50°F TO 55°F. IF THERE IS A FURTHER DEMAND FOR COOLING (COOLING SECOND STAGE -- Y2 IS ENERGIZED), THEN THE CONTROL WILL BRING ON COMPRESSOR STAGE 1 TO MAINTAIN THE MIXED AIR TEMPERATURE SETPOINT. THE ECONOMIZER DAMPER WILL BE OPEN AT MAXIMUM POSITION.

HEATING: WHEN THE THERMOSTAT CALLS FOR HEATING, POWER IS SENT TO W ON THE INTEGRATED GAS CONTROLLER (IGC) BOARD. AN LED ON THE IGC BOARD TURNS ON AND REMAINS ON DURING NORMAL OPERATION. A CHECK IS MADE TO ENSURE THAT THE ROLLOUT SWITCH AND LIMIT SWITCH ARE CLOSED. IF THE CHECK WAS SUCCESSFUL, THE INDUCED-DRAFT MOTOR IS ENERGIZED AND WHEN ITS SPEED IS SATISFACTORY, AS PROVEN BY THE "HALL EFFECT" SENSOR, THE IGNITION ACTIVATION PERIOD BEGINS. THE BURNERS WILL IGNITE WITHIN 5 SECONDS. IF THE BURNERS DO NOT LIGHT, THERE IS A 22-SECOND DELAY BEFORE ANOTHER 5-SECOND ATTEMPT. THIS SEQUENCE IS REPEATED FOR 15 MINUTES OR UNTIL THE BURNERS LIGHT. IF, AFTER THE 15 MINUTES, THE BURNERS STILL HAVE NOT LIT, HEATING IS LOCKED OUT. TO RESET THE CONTROL, BREAK 24V POWER TO THE THERMOSTAT.

WHEN IGNITION OCCURS, THE IGC BOARD WILL CONTINUE TO MONITOR THE CONDITION OF THE ROLLOUT SWITCH, THE LIMIT SWITCHES, THE "HALL EFFECT" SENSOR, AS WELL AS THE FLAME SENSOR. 45-SECONDS AFTER IGNITION OCCURS, ASSUMING THE UNIT IS CONTROLLED THROUGH A ROOM THERMOSTAT SET FOR FAN AUTO. THE INDOOR FAN MOTOR WILL ENERGIZE (AND THE OUTDOOR AIR DAMPERS WILL OPEN TO THEIR MINIMUM POSITION). IF, FOR SOME REASON, THE OVER-TEMPERATURE LIMIT OPENS PRIOR TO THE START OF THE INDOOR FAN BLOWER. THE UNIT WILL SHORTEN THE 45-SECOND DELAY TO 5-SECONDS LESS THAN THE TIME FROM INITIATION OF HEAT TO WHEN THE LIMIT TRIPPED. GAS WILL NOT BE INTERRUPTED TO THE BURNERS AND HEATING WILL CONTINUE. ONCE THE FAN-ON DELAY HAS BEEN MODIFIED, IT WILL NOT CHANGE BACK TO 45-SECONDS UNTIL POWER IS RESET TO THE CONTROL.

ON UNITS WITH 2 STAGES OF HEAT, WHEN ADDITIONAL HEAT IS REQUIRED, W2 CLOSES AND INITIATES POWER TO THE SECOND STAGE OF THE MAIN GAS VALVE. WHEN THE THERMOSTAT IS SATISFIED, W1 AND W2 OPEN AND THE GAS VALVE CLOSES, INTERRUPTING THE FLOW OF GAS TO THE MAIN BURNERS.

IF THE CALL FOR W1 LASTED LESS THAN 1 MINUTE, THE HEATING CYCLE WILL NOT TERMINATE UNTIL 1 MINUTE AFTER W1 BECAME ACTIVE. IF THE UNIT IS CONTROLLED THROUGH A ROOM THERMOSTAT SET FOR FAN AUTO, THE INDOOR FAN MOTOR WILL CONTINUE TO OPERATE FOR AN ADDITIONAL 45-SECONDS THEN STOP. IF THE OVER-TEMPERATURE LIMIT OPENS AFTER THE INDOOR MOTOR IS STOPPED, BUT WITHIN 10 MINUTES OF W1 BECOMING INACTIVE, ON THE NEXT CYCLE THE TIME WILL BE EXTENDED BY 15-SECONDS. THE MAXIMUM DELAY IS 3 MINUTES. ONCE MODIFIED, THE FAN OFF DELAY WILL NOT CHANGE BACK TO 45-SECONDS UNLESS POWER IS RESET TO THE CONTROL. AN LED INDICATOR IS PROVIDED ON THE IGC TO MONITOR OPERATION.

- UNITS WITH THE FACTORY EQUIPPED HUMIDI-MIZER HUMIDI-MIZER DEHUMIDIFICATION SYSTEM: OPTION ARE CAPABLE OF PROVIDING MULTIPLE MODES OF IMPROVED DEHUMIDIFICATION AS A VARIATION OF THE NORMAL COOLING CYCLE. THE HUMIDI-MIZER OPTION INCLUDES ADDITIONAL VALVES IN THE LIQUID LINE AND DISCHARGE LINE OF EACH REFRIGERANT CIRCUIT, A SMALL REHEAT CONDENSER COIL DOWNSTREAM OF THE EVAPORATOR, AND MOTORMASTER VARIABLE-SPEED CONTROL OF SOME OR ALL OUTDOOR FANS. OPERATION OF THE REVISED REFRIGERANT CIRCUIT FOR EACH MODE IS DESCRIBED
- THE HUMIDI-MIZER SYSTEM PROVIDES THREE MODES OF OPERATION: COOL, REHEAT1 AND REHEAT2:

COOL MODE PROVIDES A NORMAL RATIO OF SENSIBLE AND LATENT COOLING EFFECT FROM THE EVAPORATOR COIL PROVIDES INCREASED LATENT COOLING WHILE SLIGHTLY REDUCING THE SENSIBLE

COOLING EFFECT. PROVIDES NORMAL LATENT COOLING BUT WITH NULL OR MINIMUM SENSIBLE COOLING EFFECT DELIVERED TO THE SPACE. REHEAT2

THE REHEAT1 AND REHEAT2 MODES ARE AVAILABLE WHEN THE UNIT IS NOT IN A HEATING MODE AND WHEN THE LOW AMBIENT LOCKOUT SWITCH IS CLOSED.

#### **GENERAL NOTES**

- ALL BRANCH DUCTWORK SHALL HAVE BALANCING DAMPERS.
- COORDINATE ALL AIR DEVICES WITH LIGHTING ND REFLECTED CEILING PLANS.
- IT IS THE INTENT TO MAINTAIN THE CEILING HEIGHTS AS SHOWN ON THE REFLECTED

PRIOR TO INSTALLATION.

- DUCTWORK SHOULD BE INSTALLED AS TIGHT AS POSSIBLE TO THE STRUCTURAL FRAMING AND
- MECHANICAL CONTRACTOR SHALL FURNISH ALL REQUIRED CEILING ACCESS PANELS AND WALL OPENINGS TO SERVICE ALL MECHANICAL EQUIPMENT, INSTALLED BY G.C. COORDINATED ALL LOCATIONS AND SIZES WITH ARCHITECT
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- CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF CUTTING AND PATCHING WITH CURRENT ROOFING CONTRACTOR TO MAINTAIN ROOF WARRANTY, COORDINATE ALL WORK WITH LANDLORD PRIOR TO CONSTRUCTION.

#### **SHEET NOTES**

- 1 REFER TO THE FOLLOWING NOTES FOR EACH AHU: RUN REFRIGERANT PIPING FROM INDOOR AIR
  - HANDLING UNIT TO CORRESPONDING OUTDOOR HEAT PUMP. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS
  - CONDENSATE SHALL DRAIN TO MOP RECEPTOR IN BASEMENT. PROVIDE

WITH ARCHITECT.

CONDENSATE PUMP. COORDINATE THE FINAL LOCATION OF AHU W/ ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED

RUN REFRIGERANT PIPING FROM INDOOR AIR

- MAINTENANCE CLEARANCES.  $\langle 2 \rangle$  REFER TO THE FOLLOWING NOTES FOR EACH AHU:
- HANDLING UNIT TO CORRESPONDING OUTDOOR CONDENSING UNIT. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL RUNS WITH ARCHITECT. CONDENSATE SHALL DRAIN TO FLOOR DRAIN IN STORAGE ROOM. REFER TO PLUMBING PLANS FOR SIZE AND LOCATION. COORDINATE THE FINAL LOCATION OF AHU W/ ARCHITECT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL REQUIRED
- (3) REFER TO THE FOLLOWING NOTES FOR EACH CU/

MAINTENANCE CLEARANCES.

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PATE EQUIPMENT SUPPORTS.

#### **DRAWING SYMBOLS**

EXISTING MECHANICAL WORK TO REMAIN

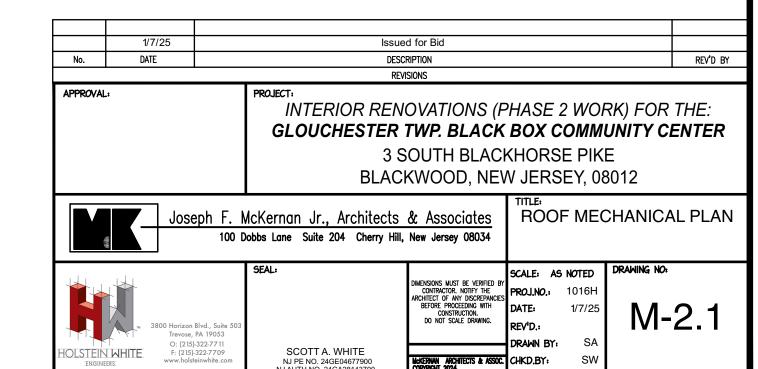
EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED

EXISTING MECHANICAL WORK TO BE

EXISTING MECHANICAL WORK TO REMAIN

— EXISTING MECHANICAL WORK TO BE DEMOLISHED AND REMOVED

NEW MECHANICAL WORK



	Material	Insulation				
System	Basis of Design	Basis of Design	Туре	Wall (in.)	Vapor Barrier	Remarks
Ductwork; Flexible	Aluminized Steel Mylar	Certainteed	Certaflex	1-1/2	Yes	UL Listed Flexible Air Duct Tested Under UL-181, R-5 Duct Insulation
Ductwork; Supply	Galvanized Steel	Ultralite 150	Duct Liner	1/2		Construct per SMACNA Standards, 2" Pressure Class
Ductwork; Return	Galvanized Steel	Ultralite 150	Duct Liner	1/2		Construct per SMACNA Standards, 2" Pressure Class
Ductwork; Combustion Air Intake	Sch. 40 PVC (Solid Wall)					
Ductwork; Gas Flue Exhaust	Sch. 40 PVC (Solid Wall)					
Piping; Refrigerant (Liquid / Suction)	"ACR" Copper	Armacell	Armatuff	1-1/2		Insulate per Mfr. Recommendations, Provide UV Protection Where Exposed to Sunlight
Piping; Condensate Discharge (A/C)	Type "L" Copper	Rubatex	R-180FS	1/2	Integral	Insulate Trap Only, Provide UV Protection Where Exposed to Sunlight
Ductwork; Roof Mounted	Galvanized Steel (Min. 16 ga.)	VentureClad John Mansville	1577 CW Duct Board	2	Yes	Construction per SMACNA standards and IMC Section 506

No.	CFM	Size	Neck	Mfr.	Model #	Finish	Damper	Mtd. Surface	Material	Remarks
AD-1	0 - 85	12x12	6"Ø	Krueger	51400	Note #3	Yes	Ceiling	Aluminum	
	0 - 375	24x24	8"Ø	Krueger	51400	Note #3	Yes	Ceiling	Aluminum	Aluminum Louvered Face Diffuser with 4-cones Drop Face Refer to note 5 below for AD-1*
	376 - 475	24x24	10"Ø	Krueger	51400	Note #3	Yes	Ceiling	Aluminum	There is note a solow for AB T
AD-2	0 - 375	16x8	14x6	Krueger	5880	Note #3	Yes	Wall	Aluminum	Double Deflection Supply Grille with 3/4" Blade Spacing
	376 - 500	20x8	18x6	Krueger	5880	Note #3	Yes	Wall	Aluminum	Double Deflection Supply Grille with 3/4" Blade Spacing
AD-3	0 - 250	10x8	8x6	Krueger	S580	Note #3	Yes	Ceiling	Aluminum	Return Grille with 3/4" Spacing and 35° Deflection

- Unless otherwise indicated, provide duct connection the full size of duct shown on drawing
- Provide air device frames to suit wall and ceiling construction.
   Finish. color, sizes and style of all air devices shall be coordinated with Architect and Owner prior to ordering and installation.
- Paint return air plenums behind / above return air, transfer air and / or exhaust air grilles black.
  For any air devices installed in areas with non-accessible ceilings (AD-1\*), provide Bowden Cable Control system to allow for damper adjustment. Refer to detail 8/M-3.1 for more information

Unit Designation	FFH - 1
Description	Unit Heater
Basis of Design	Q-Mark
Model Number	CWH1101DSF
Mount	Ceiling
Dimensions (H x W x D) (in.)	11 x 9-1/4 x 4
Weight (lbs.)	10
Service	Refer to Plans
Electrical	120 / 1Ø / 60
	1.0
Capacity (kW)  Number of Elements	1.0
Unit FLA	8.4
Element (Watts/ft.)	8.4 N/A
Element (watts/it.)	IN/A
Accessories	
Finish	
Mounting Kit	Yes
Disconnect Switch	Yes
Over Current Protection	Yes
Automatic Reset Thermal Limit	Yes
Automatic Fan Delay Circuit	No
Control	
Unit Mounted Thermostat	Yes, Tamperproof

Unit Designation	EF-1
Basis of Design	Cook
Model Number	GC-146
CFM	75
E.S.P. (in. W.C.)	0.25
Dimensions (L x W x H) (in.)	13-1/4x15-1/2x8
Weight (lbs.)	15
Electrical	120 / 1Ø / 60
Motor Power (W)	98
Accessories	
Backdraft Damper	Yes
Brick Vent / Wall Cap	No
Roof Cap	Refer to Plans
Exhaust Grille	Yes, Intergral
Mounting Isolator Kit	Yes
Standard Disconnect	Yes
DC Motor Technology	
Radiation Damper	
Control	
Control	#1
Speed Controller	Yes

Indoor Unit Designation	AHU B-1	AHU B-2	AHU B-3	AHU 1-1	AHU 1-2					
Basis of Design	Carrier	Carrier	Carrier	Carrier	Carrier					
AHU Model Number	40MAHBQ06XA3	40MAHBQ12XA3	40MAHBQ06XA3	440MAHBQ09XA3	40MBCQ09-3					
Indoor Unit Type	High Wall Mounted	High Wall Mounted	High Wall Mounted	High Wall Mounted	Ceiling Cassette					
AHU CFM	335	335	335	335	380					
AHU Entering Air Temp. (°F db / °F wb)	80 / 67	80 / 67	80 / 67	80 / 67	80 / 67					
Drive Type	Direct	Direct	Direct	Direct	Direct					
AHU Dimensions (L x W x H)	31.3 x 8.86 x 11.61	22.4 x 22.4 x 10.24								
AHU Weight (lbs)	25	25	25	25	40					
Service	Office B01	Green Room #1 B01	Green Room #2 B01	Concessions 104	Stage 103					
Heating/Cooling Coil (Indoor)										
Nominal Cooling Capacity (BTUH)	6,000	12,000	6,000	9,000	9,000					
Total Cooling Capacity (BTUH)	5,894.4	11,787.8	5,894.4	8,841.1	8,841.1					
Sensible Cooling Capacity (BTUH)	4,771.0	9,541.1	4,771.0	7,156.0	7,156.0					
Nominal Heating Capacity (BTUH)	7,400	12,000	7,400	11,800	10,000					
Corrected Heating Capacity (BTUH)	3,953.8	7,907.5	3,953.8	5,930.7	9,049.8					
Indoor Unit Electrical	208V / 1Ø / 60Hz									
MCA	0.3125	0.3125	0.3125	0.3125	0.2					
Power Supply	Powered by Outdoor Unit									
Outdoor Unit Electrical		208V / 1Ø / 60Hz								
Outdoor MCA	40									
Recommended Fuse Size	45									
Outdoor Unit Designation	HP R-1									
Basis of Design										
HP Model Number	38MGHBQ48EA3									
Dimensions (L x W x H)	41.7 x 16.3 x 52.5									
Nominal Tonnage	4.0									
Defrost Method			Reverse Cycle							
SEER2 / EER2	21.5 / 11.6									
Refrigerant	R-410A									
Condenser EAT (°F db / °F wb)			95 / 75							
Refrigerant Lines (Liquid / Vapor)			Sized by MFGR							
Outdoor Unit Weight			250							
Accessories & Options										
Integral Disconnect Switch	Yes									
Integrated Condensate Drain Pump			Yes							
Low Ambient Controls			Yes							
410A Refrigerant			Yes							
Remote Mount Wired Thermostat with Tamperproof Cover			Yes							
Notes										

ERV-1
<b>Energy Recovery Ventilator</b>
RenewAire
SL 75
Wall
21-1/4 x 30-3/4 x 9-1/2
6"Ø
45
100
1
112
0.6
46%
62%
120 / 1Ø / 60
15
15
Yes, MERV 8
Line Cord
Onboard Digital Control

dampers on the ERV supply duct. Entire installation shall conform to manufacturer's

recommendations.

#### **7**VVVV FLEXIBLE DUCTWORK **EQUIPMENT DESIGNATION TAG** $\bigcirc$ DUCT W/ ACOUSTICAL LINING SUPPLY AIR DIFFUSER (CEILING) RETURN/EXHAUST AIR DUCT UP SUPPLY AIR DIFFUSER (SIDEWALL) RETURN/EXHAUST AIR DUCT DN SUPPLY AIR DIFFUSER (LINEAR, CEILING) SUPPLY/MAKE-UP AIR DUCT UP SUPPLY AIR DIFFUSER (LINEAR, WALL) $\boxtimes$ SUPPLY/MAKE-UP AIR DUCT DN ----CD----CONDENSATE DRAIN RETURN AIR DIFFUSER (CEILING) DIRECTION OF FLOW **}\_\_\_**> EXHAUST AIR DIFFUSER (CEILING) PIPE TURNING DOWN RETURN/EXHAUST AIR DIFFUSER PIPE TURNING UP (SIDEWALL) CAPPED FLANGE AIR DEVICE **BRANCH DAMPER** A.F.F. ABOVE FINISHED FLOOR CUBIC FEET OF AIR PER MINUTE CFM **VOLUME DAMPER** EXHAUST AIR 2" DOOR UNDERCUT EXHAUST FAN FAN FORCED HEATER THERMOSTAT MOTORIZED DAMPER OUTSIDE AIR **(S)** DUCT MOUNTED SMOKE DETECTOR RETURN AIR **ROOFTOP UNIT** D DUCT SIZE TRANSITION SUPPLY AIR UNDERCUT EXHAUST FAN **UNIT HEATER**

**MECHANICAL SYMBOLS, INDICATIONS & ABBREVIATIONS** 

## PIPING AND DUCT CRITERIA

M.C. shall furnish all equipment disconnect switches and E.C. shall install equipment disconnect switches.

Coordinate final location with Architect. Provide supports for all units on roof. Coordinate requirements rails with equipment manufacturer.

- 1. ALL DUCTWORK SHALL BE SIZED USING A STANDARD DUCTULATOR. THE FOLLOWING CRITERIA SHALL BE USED TO CALCULATE DUCT SIZES:
- a. SUPPLY DUCTS SHALL BE NO MORE THAN 0.10 IN. PER 100 FEET OF PRESSURE DROP.
   b. RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF PRESSURE DROP.
- PRESSURE DROP.

  c. 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 SAFE-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.

#### **ELECTRICAL COORDINATION**

- 1. 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 REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT.
- 2. 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.
- B. 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.

#### **MECHANICAL DRAWING NOTES**

- GENERAL NOTES:
  Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete their work in accordance with the contract documents, codes, laws and ordinances and accepted trade procedures.
- accordance with the contract documents, codes, laws and ordinances and accepted trade procedures.
   The Contractor shall review all of the contract documents including those of the other trades in order to acquaint themselves with the existing and related conditions that may, will or could affect their work. They shall be experienced,
- 3. The Contractor shall visit the site before they submits their proposal. They shall examine all existing conditions which affect the work. 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.
  - The Contractor by their 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 them shall develop the capacities and characteristics specified. They further guarantee 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 them 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 they will charge the cost to the Contractor.

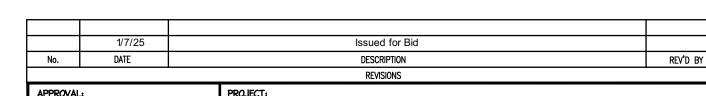
skilled and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation and interpretation of contract documents such as those prepared for this project.

- Mechanical equipment shall be installed in a neat and workmanlike manner in accordance with the latest and best practices of the trade. Only mechanics skilled in this type of work shall be employed and utilized by the Contractor for this division in the execution of this work.
- 5. The contract drawings are diagrammatic and indicate the general arrangement of systems. The Contractor shall provide all work required for a complete installation. 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.
- 7. The Contractor shall follow the contract drawings in laying out work and shall also check the contract drawings of the other trades to verify spaces in which their work shall be provided. Equipment locations shall be coordinated with the Architect and the General Contractor.
- The Contractor shall, without additional costs to the Owner, make reasonable modifications in the layout of their work in order to prevent conflicts with the work of other trades or for the proper execution of their work.
- 9. The Contractor shall provide and maintain in good order a complete set of prints (or electronic version) 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 (or electronic version) shall be available at the site for inspection at all times. At the conclusion of the work, the Contractor shall, at their own expense, obtain a set of reproducibles (or electronic version) 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 reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "As-Built" reproducibles (or electronic version) and one (1) set of prints shall be signed, dated and delivered to the Engineer and Owner.
- 10. The Contractor shall supply all labor required to perform all work which may be claimed by trade organizations within their 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 rendered regarding disputes between the respective trades and provide and install their work in accordance with the accepted trade practice in the area.
- 11. 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 International Building Codes, the codes of the International Codes 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 NJUCC, NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
- 12. The Contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with their work. They shall file all necessary plans and prepare all other documents including additional detailed
- The Contractor shall be responsible for working conditions and shall maintain a safe working environment at the job site for all employees.
- 4. All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements.
- 15. Openings around ductwork and piping passing through the construction shall be sealed with fire barrier caulking.

plans that are required for compliance with all applicable laws, ordinances, rules and regulations.

- All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
- 17. 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.
- 18. 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.
- 19. The HVAC and Plumbing trades shall coordinate with the General Contractor.
- 20. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments, filter replacement, component service and provide a minimum 2" clearance between piping, ductwork and other work.
- 21. 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, quality installation. Unless otherwise indicated, run all piping, ductwork, and conduit as high as possible. Provide starters for all motor driven equipment.
- 22. The HVAC trades shall coordinate all electrical loads with the Electrical Contractor.
- 23. All HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with the National Electrical Code Sections 110.24, 430.98, 440.99, 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.
- 24. Contractor shall perform all system commissioning with an approved commissioning agency per Section C408 of the 2018 International Energy Conservation Code (if required).
- The Contractor shall coordinate with the General Contractor and locate all required cutting and patching and the like required by the installation of the Mechanical work.
- Provide all specialties, accessories, controls, and the like to provide complete, quiet, properly operating automatically
- controlled systems.
- The HVAC trade shall provide all safety and operating controls, transformers, motor starters, devices and control wiring required for the systems to operate in a safe and satisfactory manner.
- 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 produce quiet, draftless operation. Ductwork sizes shown on the plans are sheet metal I.D. free area.
- 6. 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.
- 7. 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 spacial requirements worked out and shown on drawings. These drawing must show: locations of openings to be cut through construction and any problems. These drawing shall be submitted for review by the Architect and Engineer prior
- 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.
- 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 balancing reports for review
- by the Engineer.

  Provide written operating and maintenance instructions and warranty certificates, in duplicate, to the Architect.
- All flexible ductwork shall conform with the UL rating under flexible air duct test UL-181.



INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE:
GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER
3 SOUTH BLACKHORSE PIKE
BLACKWOOD, NEW JERSEY, 08012

Joseph F. McKernan Jr., Architects & Associates

100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

MECHANICAL SCHEDULES & DETAILS



SCOTT A. WHITE NJ PE NO. 24GE04677900 J AUTH NO. 24GA28143700 DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH DO NOT SCALE DRAWING.

PROJ.NO.: 1016H
DRAUT SCALE DRAWING.

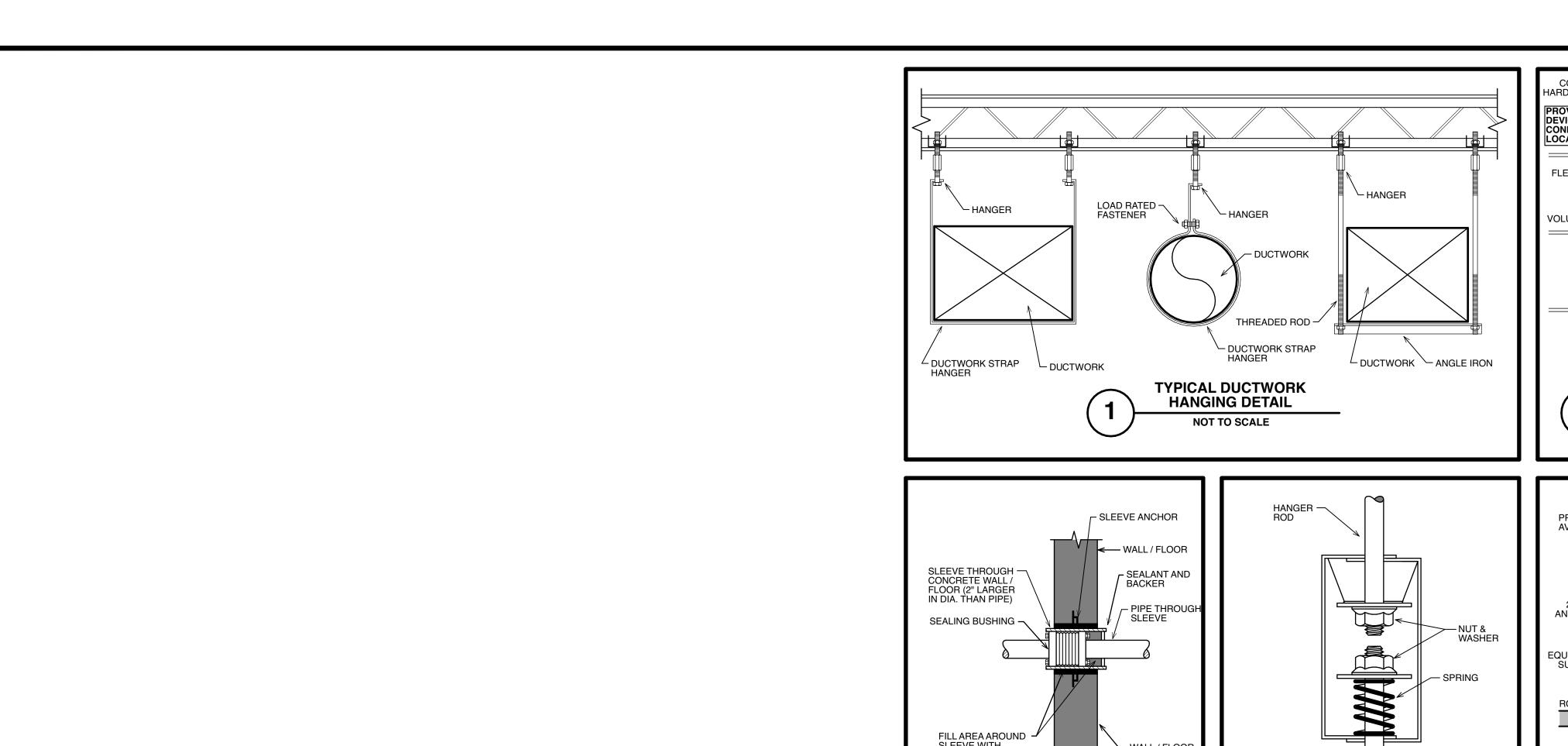
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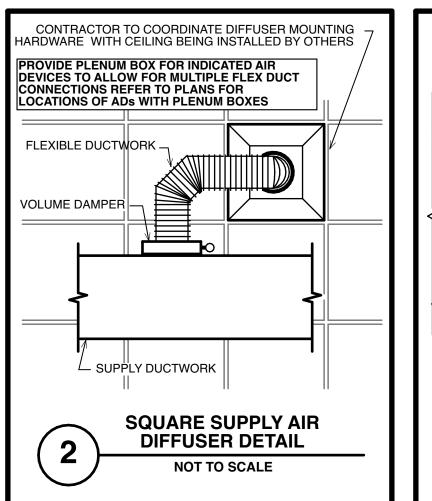
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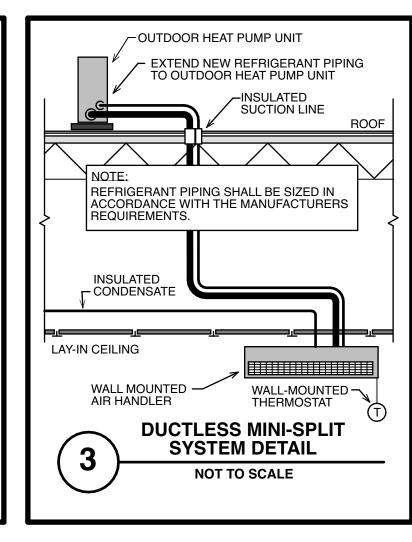
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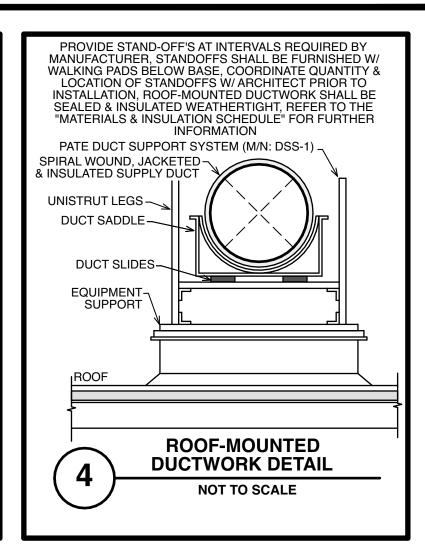
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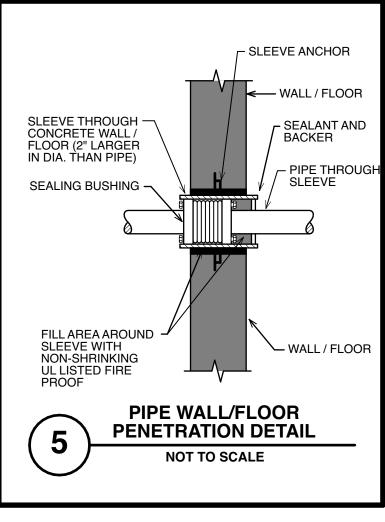
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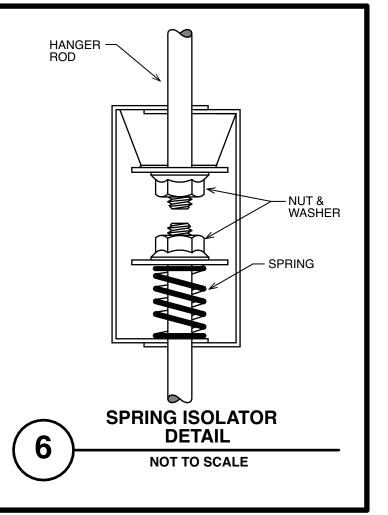


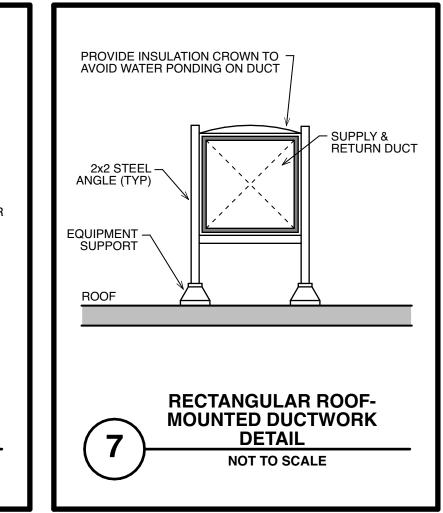


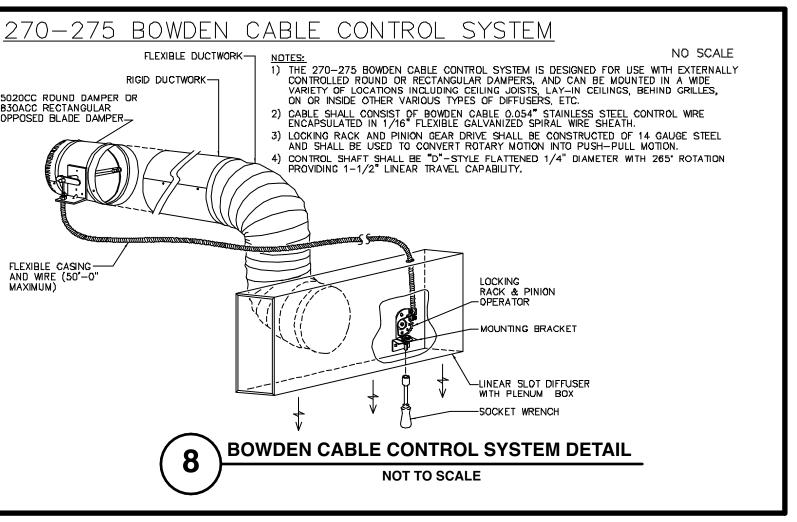


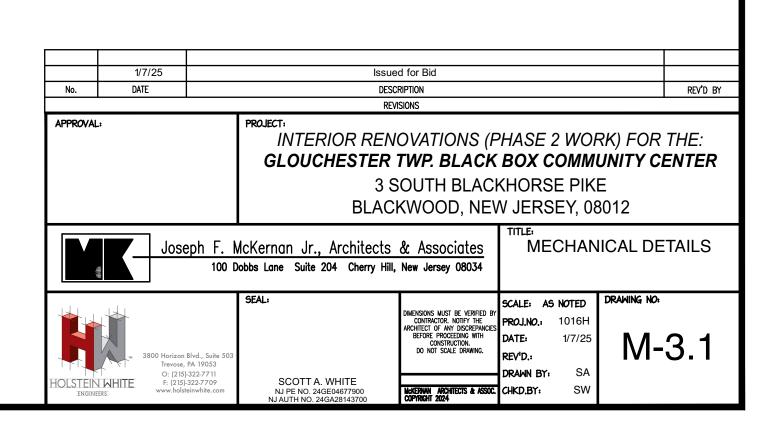


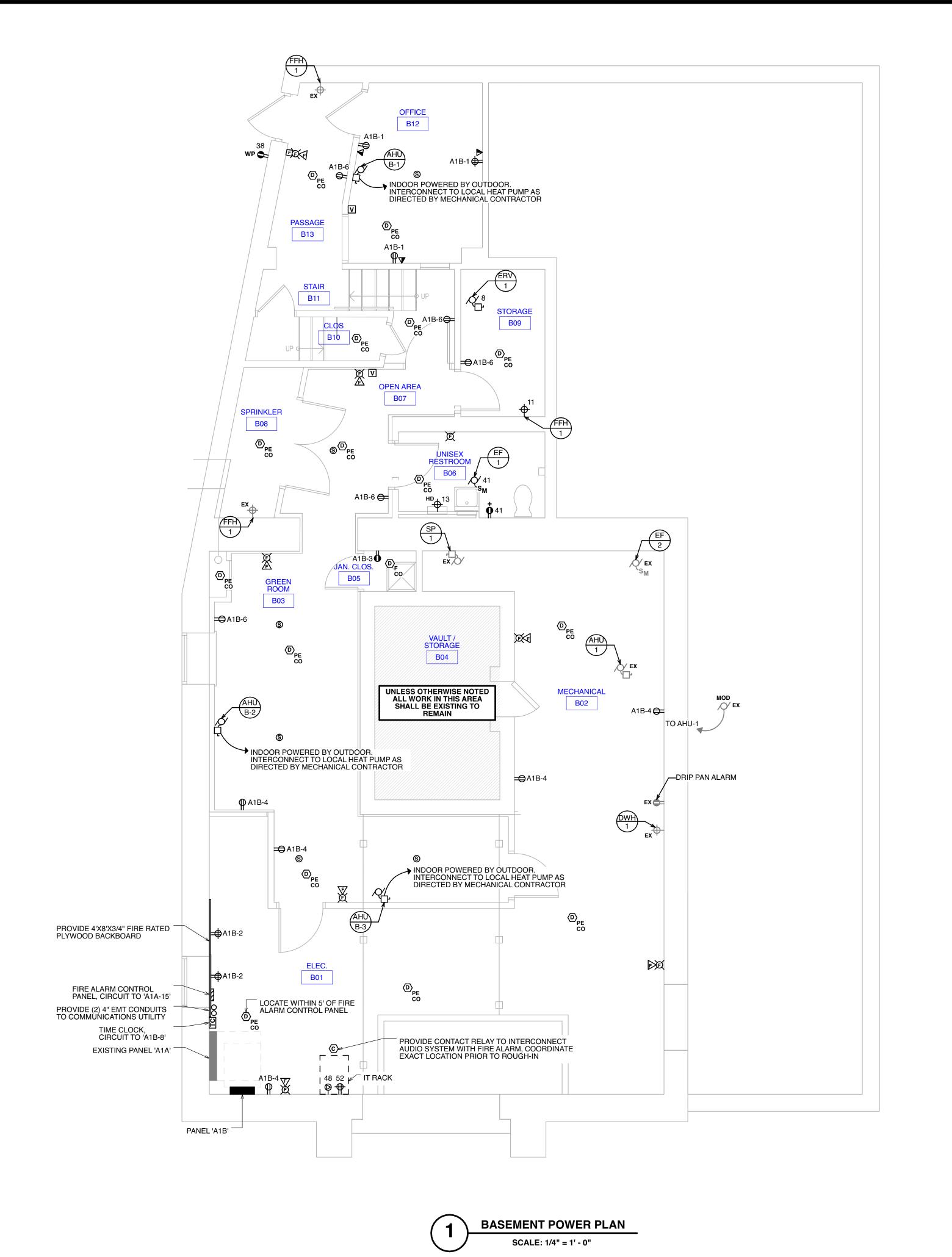












#### **DEMOLITION NOTES**

- . 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 SPECIFIES, SHOWN OR REQUIRED.
- PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH AM 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. IN WRITING BY OWNER.
- . WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
- 4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR A POLITECT. OR ARCHITECT.
- 5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
- 6. DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
- 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.
- 8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER
  REQUIRED BY NAME CONSTRUCTION BACK TO ELECTRICAL PANEL.
- ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
- 10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
- 11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING OWNER'S ALTENTION PRIOR TO SUBMITTING
  THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL
  DEMOLITION WORK EXPOSED AND CONCEALED,
  WHETHER OR NOT SHOWN ON DRAWINGS,
  NECESSARY FOR THE EFFECTIVE INSTALLATION
  AND PERFORMANCE OF NEW SYSTEM. THE
  OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

#### **DRAWING NOTES**

- FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
- 2. COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR AND WIRE DISCONNECT SWITCHES FURNISHED BY MECHANICAL CONTRACTOR.
- 3. MOTORIZED DAMPERS REFER TO MECHANICAL PLANS FOR EXACT LOCATION, INTERCONNECT TO
- LOCAL AHU AS DIRECTED BY M.C. 4. UNLESS OTHERWISE NOTED, ALL POWER SHALL BE CIRCUITED TO PANEL 'A1A'.
- 5. UNLESS OTHERWISE NOTED, COORDINATE WITH OWNERS LOW-VOLTAGE VENDOR EXACT LOCATION OF ALL LOW-VOLTAGE EQUIPMENT LOCATIONS. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOX, CONDUIT, AND PULL STRING FOR ALL LOW-VOLTAGE DEVICES SHOWN ON PLAN. THEATER LOW-VOLTAGE EQUIPMENT SHALL BE FURNISHED UNDER A SEPARATE CONTRACT. OBTAIN COPY OF LOW-VOLTAGE SUB-CONTRACTOR PLANS. GENERAL CONTRACTOR SHALL PROVIDE 120 VOLT POWER AS REQUIRED FOR LOW-VOLTAGE SYSTEMS. LOW-VOLTAGE SYSTEMS INCLUDED BUT ARE NOT LIMITED TO SPEAKERS, VOLUME CONTROL, AND DATA.

DESCRIPTION REV'D BY REVISIONS INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE:

> GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACKHORSE PIKE BLACKWOOD, NEW JERSEY, 08012

Joseph F. McKernan Jr., Architects & Associates 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

BASEMENT POWER PLAN SCALE: AS NOTED

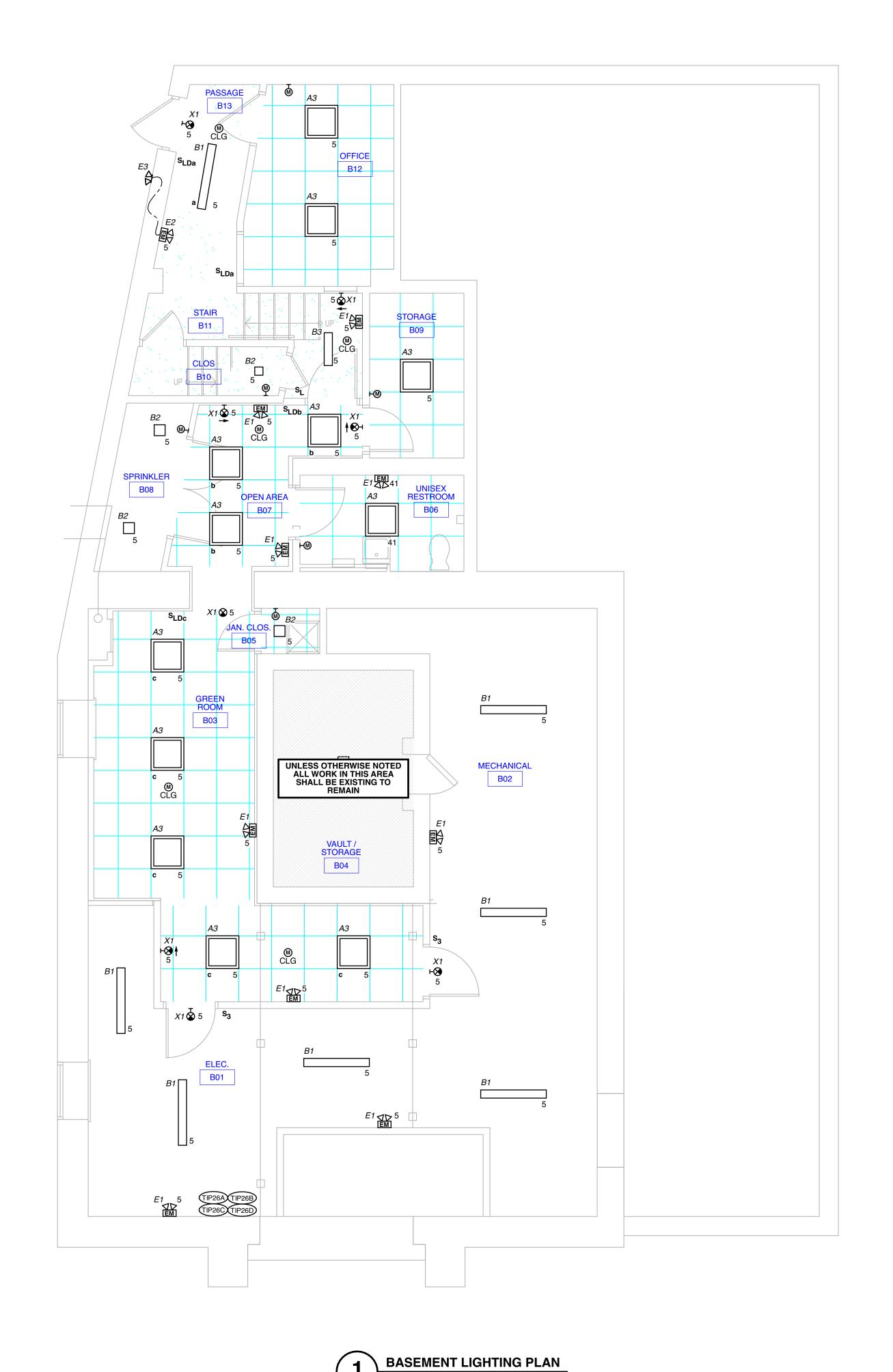


JEFFREY E. HOLSTEIN

DIMENSIONS MUST BE VERIFIED BY
CONTRACTOR. NOTIFY THE
ARCHITECT OF ANY DISCREPANCIES
BEFORE PROCEEDING WITH
CONSTRUCTION.
DO NOT SCALE DRAWING.

REVI'D.:

MCKERNAN ARCHITECTS & ASSOC. CHKD.BY:



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

#### **DEMOLITION NOTES**

- . 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 SPECIFIES, SHOWN OR REQUIRED.
- 2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH AM 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.
- 3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
- 4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT. OR ARCHITECT.
- 5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
- DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
- PERFORM ALL WORK NECESSARY TO PERMIT 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.
- 8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
- ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
- 10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
- 11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

#### **DRAWING NOTES**

- FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
- 2. FIELD VERIFY EXACT LOCATIONS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
- 3. UNLESS OTHERWISE NOTED ALL LIGHTING SHALL BE CIRCUITED TO 'A1B'.
- EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE CONNECTED TO LINE SIDE OF LOCAL LIGHTING CONTROL.

Issued for Bid DESCRIPTION

INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACKHORSE PIKE BLACKWOOD, NEW JERSEY, 08012

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JEFFREY E. HOLSTEIN NJ PE NO. 24GE04644300 NJ AUTH NO. 24GA28143700

MCKERNAN ARCHITECTS & ASSOC. CHKD.BY: COPYRIGHT 2024

E-0.1

BASEMENT LIGHTING PLAN



#### **DEMOLITION NOTES**

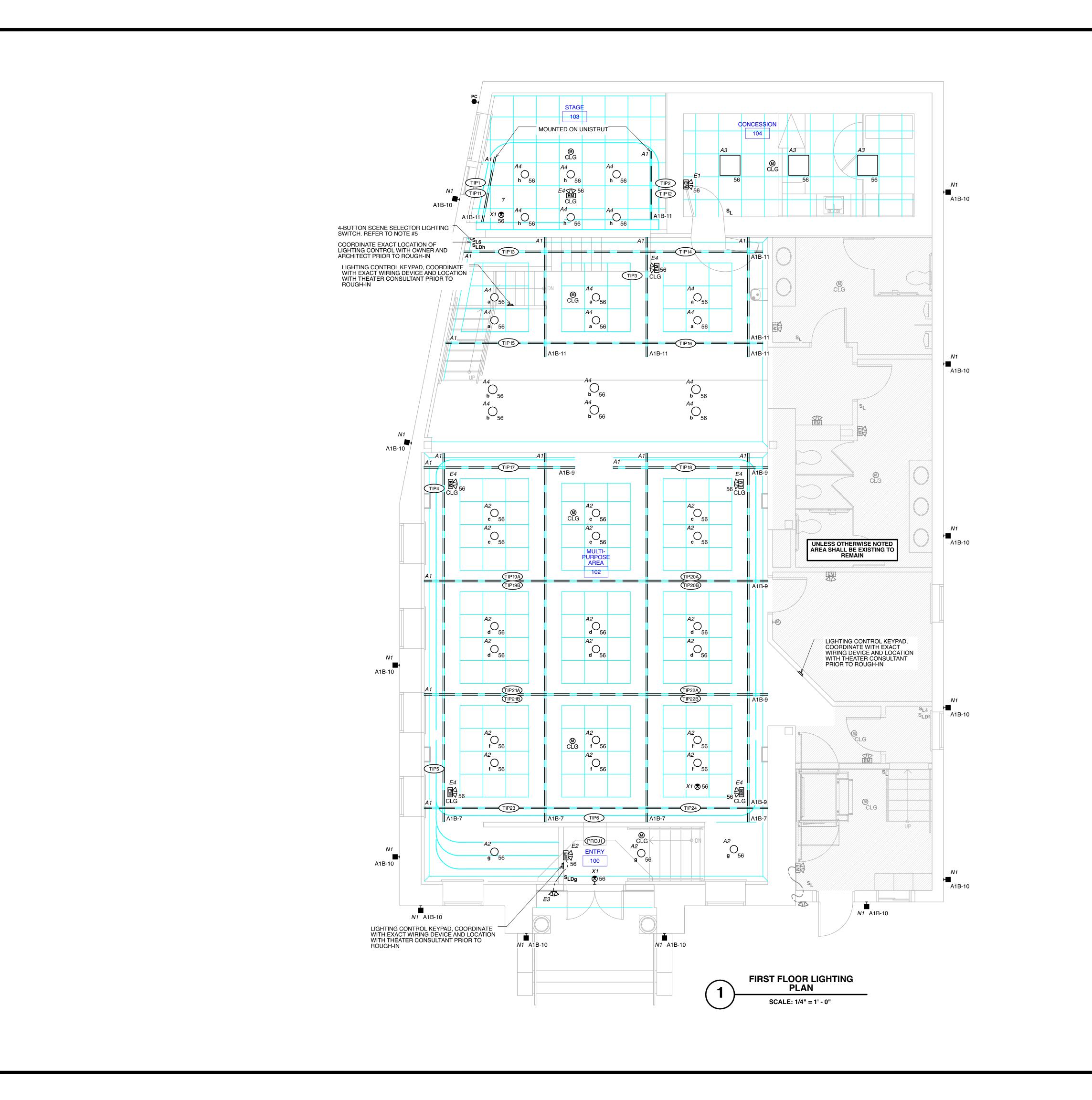
- 1. WHERE EXISTING FACILITIES ARE BEING ALTERED, DISCONNECT AND REMOVE OR RELOCATE ALL EXISTING ELECTRICAL WORK THAT INTERFERES WITH OR IS NECESSARY BECAUSE OF NEW CONSTRUCTION AS SPECIFIES, SHOWN OR REQUIRED.
- 2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH AM MINIMUM INTERRUPTION 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.
- 3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
- 4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT.
- 5. EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND SHALL BE EXTENDED AS REQUIRED.
- 6. DISCONNECT AND REMOVE EXISTING WIRING DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
- 7. 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.
- 8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
- ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
- 10. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
- 11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

#### **DRAWING NOTES**

- FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR AND WIRE DISCONNECT SWITCHES FURNISHED BY MECHANICAL CONTRACTOR.
- 3. MOTORIZED DAMPERS REFER TO MECHANICAL PLANS FOR EXACT LOCATION, INTERCONNECT TO LOCAL AHU AS DIRECTED BY M.C.
- 4. UNLESS OTHERWISE NOTED, ALL POWER SHALL BE CIRCUITED TO PANEL 'A1A'.

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- 5. UNLESS OTHERWISE NOTED, COORDINATE WITH OWNERS LOW-VOLTAGE VENDOR EXACT LOCATION OF ALL LOW-VOLTAGE EQUIPMENT LOCATIONS. ELECTRICAL CONTRACTOR SHALL PROVIDE BACKBOX, CONDUIT, AND PULL STRING FOR ALL LOW-VOLTAGE DEVICES SHOWN ON PLAN. THEATER LOW-VOLTAGE EQUIPMENT SHALL BE FURNISHED UNDER A SEPARATE CONTRACT. OBTAIN COPY OF LOW-VOLTAGE SUB-CONTRACTOR PLANS. GENERAL CONTRACTOR SHALL PROVIDE 120 VOLT POWER AS REQUIRED FOR LOW-VOLTAGE SYSTEMS. LOW-VOLTAGE SYSTEMS INCLUDED BUT ARE NOT LIMITED TO SPEAKERS, VOLUME CONTROL, AND DATA.



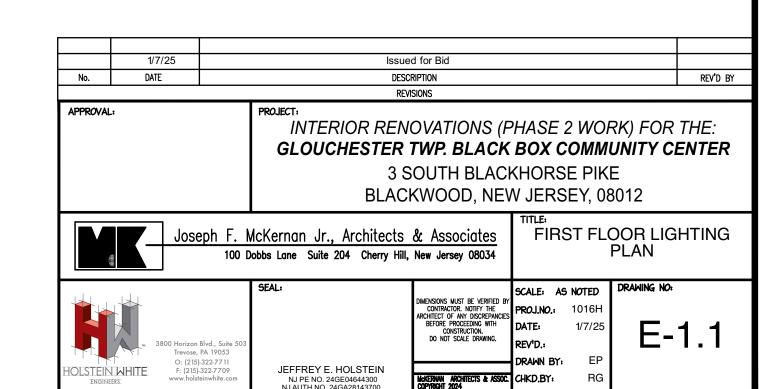


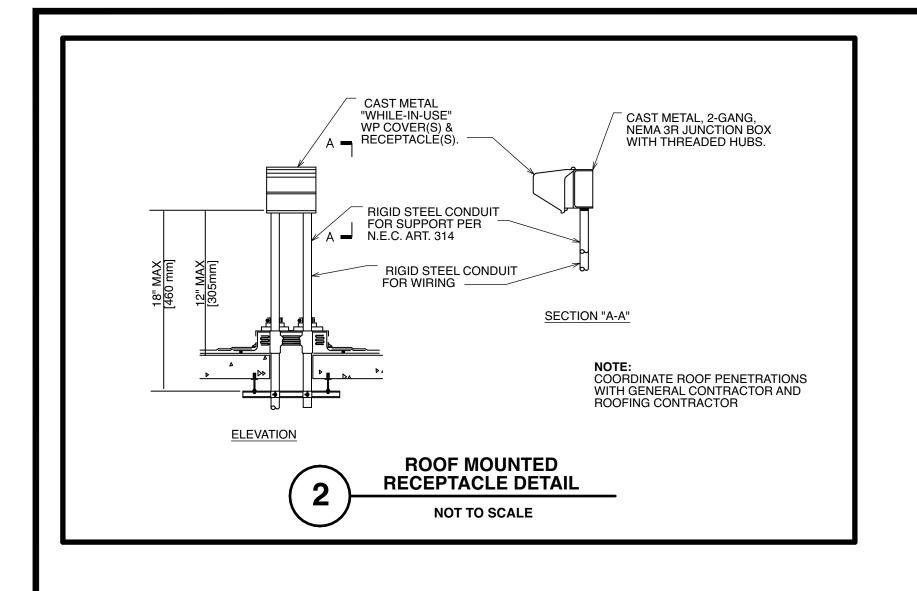
#### **DEMOLITION NOTES**

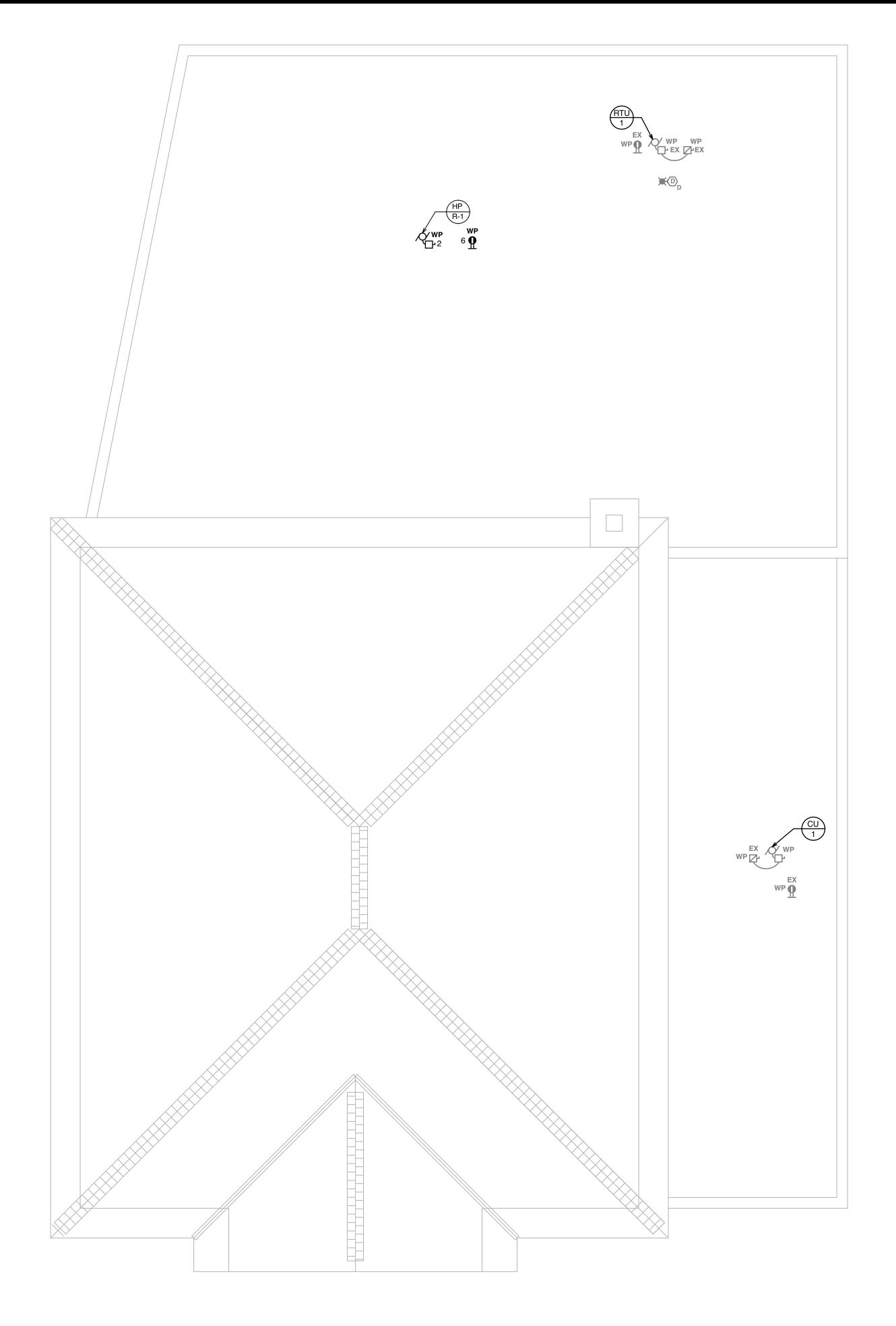
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#### **DRAWING NOTES**

- 1. FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
- FIELD VERIFY EXACT LOCATIONS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
- 3. UNLESS OTHERWISE NOTED ALL LIGHTING SHALL BE CIRCUITED TO 'A1A'.4. EMERGENCY LIGHTING AND EXIT SIGNS SHALL BE
- CONNECTED TO LINE SIDE OF LOCAL LIGHTING CONTROL.
- 5. SCENE SELECTOR SWITCH SHALL HAVE CAPABILITY TO CONTROL ZONES "a,b,c,d,f,g" REFER TO LIGHTING PLANS FOR LOCATION OF SWITCH. REFER TO DETAIL #4 ON DRAWING E-3.1.
- COORDINATE CONTROLS OF ALL THEATRICAL LIGHTING WITH THEATER CONSULTANT PRIOR TO ROUGH-IN.







ROOF POWER PLAN

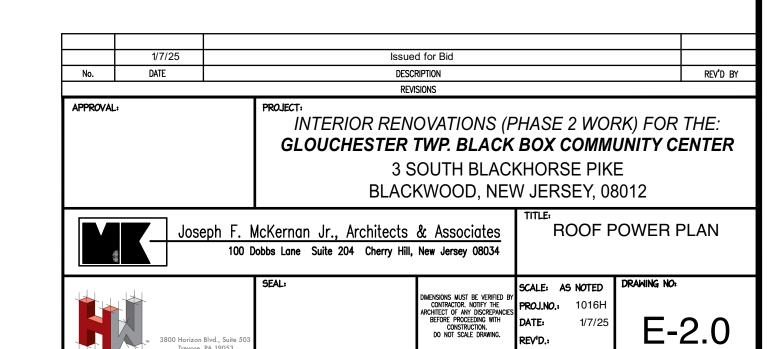
SCALE: 1/4" = 1' - 0"

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JEFFREY E. HOLSTEIN NJ PE NO. 24GE04644300 NJ AUTH NO. 24GA28143700

#### **ELECTRICAL SPECIFICATIONS**

contract documents, codes, laws and ordinances, and accepted trade procedures 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

Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the

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.

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.

- 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.
- 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, 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 provide and maintain in good order a complete set of blueline 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 reproducibles 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 reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.
- The lighting controls shall be commissioned per Philadelphia L&I's requirements. This should be submitted as a shop drawing for review by the engineer and owner. Final payment is predicated upon approval of this shop drawing. The shop drawing submittal should include the following
  - a. Drawings that include the location and catalogue number of each lighting control;
  - b. An operating and maintenance manual; c. A report of functional testing including results, deficiencies, and corrective actions.
- 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 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 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.
- 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.
- 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.
- 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.
- 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.
- All wiring shall be insulated copper conductors installed in code conforming raceways or cable assemblies.
- 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.
- Where conductors connect directly to equipment, the insulation temperature rating of the conductor shall meet or exceed the equipment temperature rating
- Color code conductors to designate neutral conductor and phases. Color coding shall conform with existing building standard.
- 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
- Grounding shall comply with Article 250 of NEC and to approval of local Underwriters inspection authorities.
- Panelboards shall be dead front type with plated aluminum bus, bolt-on breakers, fully rated neutral bus and grounding bus block. Cabinet shall be code gauge galvanized steel, NEMA 1, minimum 20" wide, 5-3/4" deep. Cover shall have door and trim and adjustable clamps, gray baked finish, and tumbler type key lock. "Spaces" shall be fully bussed and drilled, ready for breaker installation.
- 22. Contractor shall provide typed updated panel schedules at completion of project for all panels effected by scope of work.
- 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 milliampere ground fault sensitivity, where required. Circuit breakers used as switches in 120 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.
- Provide all labor, materials and equipment required to provide electric power to meet the requirements for heating, ventilating, airconditioning 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.
- 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.
- 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.
- 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.
- Perform alteration of utilities and services in accordance with the rules, regulations and requirements of the involved utility companies and regulatory agencies having jurisdiction.
- 29. Arrange and pay for the relocation, disconnection or removal of existing utilities and services where shown and where such utilities or
- services interfere with new construction, whether shown or not. Provide all excavation, backfilling and paving, manholes, and cables
- Fully coordinate installation, wiring and connection of service and distribution systems with the owner, PSE&G and all contractors. Coordinate with Power Company; inform them of the proposed work; obtain their approval before beginning work; comply with their
- requirements for details of installation and materials used.
- 32. Determine and pay any and all charges required by Power Company. Have electrical service available when required by construction
- Fully coordinate installation, wiring and connection of service and distribution systems with the owner and PSE&G.

used as the basis of design shall not cause any interference with other work.

- Coordinate with Power Company; inform them of the proposed work; obtain their approval before beginning work; comply with their requirements for details of installation and materials used.
- 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.
- . Submit Shop Drawings and complete product data of the incoming electric service equipment to the PSE&G for their review and approval prior to approval by Engineer.
- 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
- 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.
- Provide materials, equipment, supplies and labor necessary as required to adequately support, brace and strengthen all equipment and
- 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
- Protect all conduit, fittings, panelboards, switchgear, transformers and other equipment before and during installation and keep clean. 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.
- 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 ASTMA 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 Solorite KN--1146, or Link Seal. Install seals in accordance with the manufacturer's recommendations to provide air tightness above ground and hydrostatic 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.

- 44. Provide for each voice and data outlet a 4x4 outlet box with pullstring to accessible ceiling space. In non-fishable construction, provide 3/4" conduit with pullstring between outlet box and accessible ceiling space.
- 45. Provide for each CCTV location a 4x4 outlet box with pullstring to accessible ceiling space. In non-fishable construction, provide 3/4" conduit with pullstring between outlet box and accessible ceiling space. Provide weatherproof gasketed cover plates for outdoor
- 46. Telephone, data, CCTV, and security cabling shall be by owner's communications and security contractors.
- 47. CCTV locations are for diagrammatic purposes only. Final locations, aiming, lens angle, and pant-tilt-zoom capabilities, and system specification of all CCTV cameras shall be provided by owner's security contractors
- 48. Coordinate all lighting fixture locations and quantities with Architectural plans, and provide all fixtures indicated.
- 49. 120 Volt Switches shall be quiet toggle type with totally enclosed case, rated 20 ampere, specification grade, color as selected by
- 50. Where dimmers are provided, install a separate neutral conductor for each branch circuit.
- Dimmable switches shall be 120 volt switches rated for load controlled (LED). Switch shall be dimmable thru the entire range from 0 to 100%, with preset control and separate on-off switch. Switches shall be as manufactured by Legrand. Provide Tru-Universal dimmer Care shall be taken when de-rating switches for installation in multi-gang switch boxes. Install switches with highest loads on outside of boxes to minimize the quantity of cooling fins (sides) removed. Contractor shall be responsible to ensure quantity of sides removed does not de-rate switch below required capacity. Multiple switch boxes shall be provided as required to maintain ratings of switches. All switches shall be installed in accordance with manufacturers instructions.
- 52. 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 built list of settings to owner in operations manuals.
- 53. Furnish and install all lighting fixtures as specified OR by other consultants. Provide all interior and exterior lighting fixtures complete with sockets, reflectors, diffusers, shades, holders, lamps, 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 ighting fixtures and Mechanical and Plumbing piping, ductwork, supports, fittings and equipment. Furnish to other trades, plaster rames, trim rings, etc., where required.
- 54. 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.
- 55. 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.
- 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.
- 57. Plates for Flush Devices shall be type and color as selected by Architect.
- 58. 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 and provisions for padlocking 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.
- 59. 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.
- 60. Contractor shall include in bid Unit Prices for each of the following: Each type of receptacle, including coverplate connected to area circuit. Voice outlet box with conduit and pullstring. Each type of switch, including coverplate connected to area circuit.

20/1 Homerun to Local Branch Circuit Panel.

- 61. Unless otherwise noted all electrical equipment is a basis of design of Square D. Equipment shall be as manufactured by Square D or
- 62. 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.
- 63. 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, 430.98, 430.99, 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.
- 64. No product shall be installed without prior approval from Owner.
- 65. Contractor shall perform all system commissioning with an approved agency per Section 9.9 of the 2019 Edition of ASHRAE 90.1
- The Electrical Contractor shall contact the local electric company and be responsible for installing adequate temporary electric light and power service to the project site.
- The temporary light and power service installation shall conform to the requirements of all local, state and federal regulations, National 67. Electric Code, National Safety Code and the local utility company.
- The cost of the energy consumption for temporary light and power shall be paid by the General Contractor.
- Temporary light and power electrical work shall be installed in such a manner as not to interfere with permanent construction. The 69. temporary design and location of light and power plan will be coordinated with and approved by the General Contractor/Construction
- The Electrical Contractor shall distribute light and power from the meter location to the sub-disconnect location to serve all buildings 70. during construction. This distribution shall be done using overhead suspension means or underground conduit to provide reliable service for the duration of the project.
- The Electrical Contractor shall provide main distribution panel for lighting and power within all buildings. This panel shall have 71. adequate provisions for 120-volt power and lighting to meet or exceed OSHA requirements. Temporary lighting shall be installed to provide a minimum of .25 watts per square foot over the floor. There shall be no area without temporary lighting. In addition, the Electrical Contractor shall provide 120 Volt quadraplex receptacles located at intervals throughout the building area, so that each trade Contractor can obtain power by utilizing a 100' extension cord. Temporary systems shall be maintained until the completion of the
- The Electrical Contractor shall turn off all temporary power and lighting at the end of each day and turn it on at the beginning of each
- Lighting in stairways and other areas required for public and employee safety shall operate on a 24-hour basis.
- The Electrical Contractor shall provide power for gas fired temporary heaters provided by the General Contractor. Heaters shall 74. operate on a 24-hour basis when directed by the General Contractor.
- The Electrical Contractor shall provide power to any heat tape (installed by others) on temporary water and or fire lines. Heat Tape
- The Electrical Contractor shall provide a termination box in the Contractors Office trailer area for electrical service connection of the 76. Trade Contractor's trailers. Cost for individual trade contractor trailer electrical service connection shall be borne by the Trade Contractor requiring this service. Use of electric heaters in those trailers and shanties will not be permitted.
- Electrical connection of Trade Contractors' tools and equipment to the power distribution system shall be at the expense of the Trade 77. Contractor.
- The Electrical Contractor shall obtain and pay for any required applications, permits and inspections pertaining to this work. The 78. Electrical Contractor shall include the cost for all wiring, panels, circuit breakers, disconnects, etc., in order to provide a complete system in conformance with the above requirements.
- Temporary lighting and power receptacles will be required at various locations as the work progresses. Costs for moving these items, 79. as directed by the General Contractor, shall be included as part of the contract costs.
- Temporary lighting and power shall be provided for construction purposes during normal working hours, Monday through Friday. Any costs required to accomplish this work shall be included as part of the Electrical contract. Any temporary light or power required outside these hours shall be paid for by the contractor requiring the extra service.
- The Electrical Contractor shall remove temporary power system when it is no longer required.

manufacturer or manufacturers representative for all system testing and programming.

Provide power for parking lot lighting as directed by owner.

- A source for temporary electric will not be available for welding machines. The Trade Contractor requiring this temporary connection shall be responsible to hire the Electrical Contractor to perform this work. Trade Contractors may utilize a gas or diesel-powered unit. Welding units must be placed outside in accordance with applicable safety codes.
- Provide new Addressable Fire Alarm system. The system shall include, but not limited to: control panel, dialer, alarm initiating and indicating peripheral devices, conduit, wire and accessories required to furnish a complete operational system. 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. Flashing lights shall be ADA approved, candela as required by location. Contractor shall use equipment
- FIRE ALARM SUBMITTAL REQUIREMENTS: In addition, the contractor shall prepare a Fire Alarm system submittal to fulfill the 85. requirements of the local Fire Marshall. Submit (3) sets of Signed and Sealed plans prepared by a professional engineer or 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, 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 nitiating and annunciating devices, Battery calculations and proposed battery capacity, and voltage drop calculations.
- Power System Study: The following shall be provided with the gear submittal and be performed by a licensed professional engineer 86. authorized to work in the State of New Jersey. The electrical submittals will not be reviewed until a complete Study including all of the following is received. Provide a Short-Circuit, and Arc Flash Protection Studies. The Studies shall be performed using SKM Power Tools or equal approved by Holstein White. All calculations shall be based on the exact equipment proposed in the gear submittal. All wire types, sizes, and lengths, shall be confirmed by the contractor and accurately reflected in the calculations. The calculations shall start at the utility company termination to the owner's new equipment and shall be based on the available fault current and X/R values furnished by the Utility Company. Contractor shall request the information from the Utility Company and include a copy in the Study Appendix. The short circuit study shall be performed in conformance with IEEE 141 and all submitted equipment shall have an AIC rating equal to or exceeding the calculated values. In addition, provide ground fault coordination. Copies of time-current curves shall be included in the study for review with the equipment submittal. The arc flash protection study shall be performed in accordance with the requirements of IEEE 1584 and NFPA 70E. The report shall make recommendations for the reduction of any Dangerous conditions. Upon approval of the study, the contractor shall print and apply arc-flash warning labels to the new equipment. The labels shall be compliant with the latest applicable codes, and shall at a minimum contain the following information: Equipment Name, Upstream Protective Device, Flash Hazard Boundary, Flash Hazard at 18 inches, Shock Hazard (Voltage) with covers removed, Glove Class, Limited Approach Boundary, Restricted Approach Boundary, and Prohibited Approach Boundary.

#### **ELECTRICAL STANDARD MOUNTING HEIGHTS**



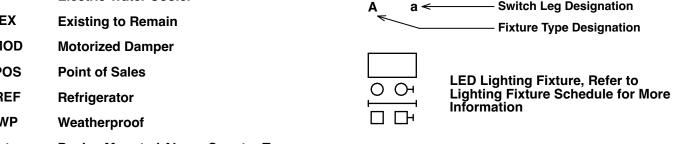
Mounting Heights to center of outlets unless otherwise noted. In masonry construction the mounting heights shall be used for reference to the nearest block or brick coursing The above mounting heights shall be adhered to unless specifically noted or detailed on the Architectural drawings or

## **ELECTRICAL SYMBOLS**

**Circuit Number At Panel** 

Fire Alarm Control Panel

**Equipment Idenification Number** 



- **Device Mounted Above Counter Top** Duplex Receptacle - 125V, 2P, 3W
- Quadraplex Receptacle - 125V, 2P, 3W **Emergency Battery Pack GFI Duplex Receptacle**
- 125V, 2P, 3W **Dual Remote Lighting Heads** Solid Connection to Equipment Single Pole Switch
- Single Receptacle 250V, 2P, 3W Low Voltage Switch Communication System Outlet
- **Junction Box** Switch Controlling Device Indicated
- **Three Way Switch** Volume Control **Manual Motor Switch Remote Condition Light**
- Wall Mounted Occupancy Sensor **Alarm Initiating Contact** Ceiling Mounted Occupancy Sensor Automatic Detector Photocell Control Switch
- D Duct Mounted, Smoke Ionization F - Thermal, Fixed Temperature PE - Smoke PhotoElectric CO - Carbon Monoxide

[ Detector Control Function ]

Fire Alarm Horn

Ceiling Mounted

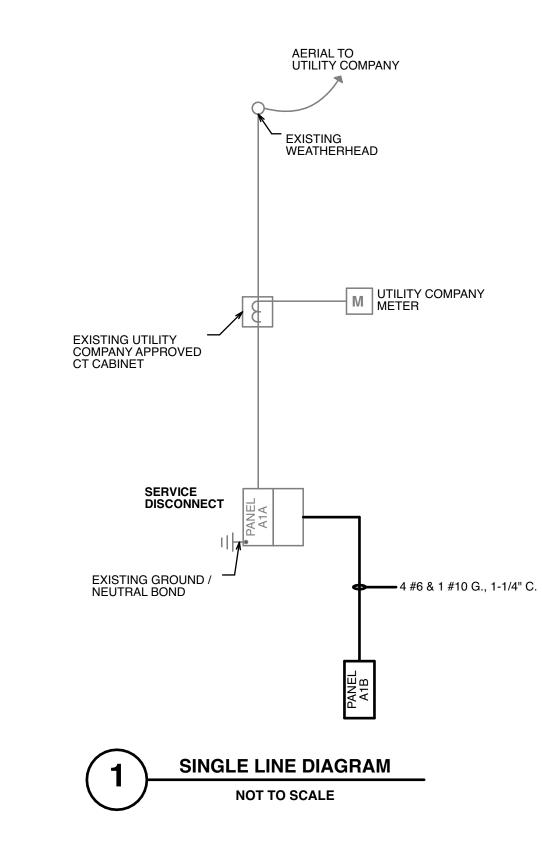
Electric Water Cooler

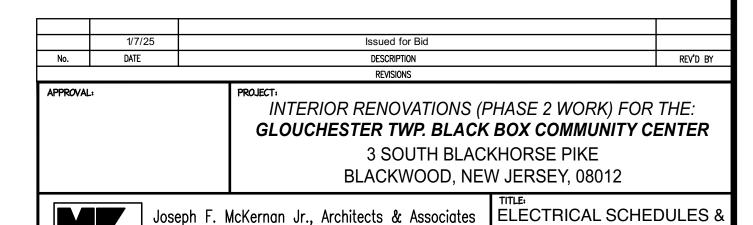
- **Fire Alarm Manual Pull Station** Fire Alarm Flashing Light
- **Unfused Disconnect Switch**
- **Fused Disconnect Switch**

#### SINGLE LINE DIAGRAM NOTES

SPACES ARE 3 POLE.

- UNLESS OTHERWISE NOTED, ALL DEVICES AND
- UNLESS OTHERWISE NOTED, ALL ABOVE GRADE CONDUCTORS SHALL BE COPPER, TYPE THW,
- UNLESS OTHERWISE NOTED ALL BELOW GRADE CONDUCTORS SHALL BE COPPER, TYPE XHHW-2,
- UNLESS OTHERWISE NOTED, ALL INTERIOR CONDUITS SHALL BE EMT.
- UNLESS OTHERWISE NOTED ALL UNDERGROUND AND EXTERIOR CONDUITS SHALL BE SCHEDULE 40
- LIGHT LINEWEIGHT INDICATES EXISTING
- HEAVY LINEWEIGHT INDICATES NEW EQUIPMENT.
- 8. ALL EQUIPMENT SHALL BE SERIES RATED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.
- CONTRACTOR SHALL PROVIDE PERMANENT LABELS ON ALL ELECTRICAL AND HVAC EQUIPMENT INDICATING THE MAXIMUM AVAILABLE FAULT





100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034

300 Horizon Blvd., Suite Trevose, PA 19053

DLSTEIN WHITE

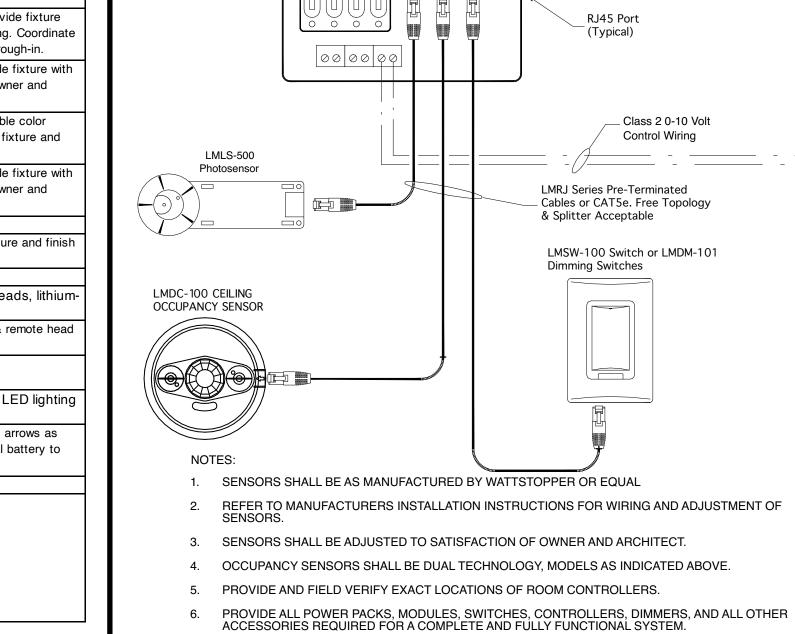
JEFFREY E. HOLSTEIN

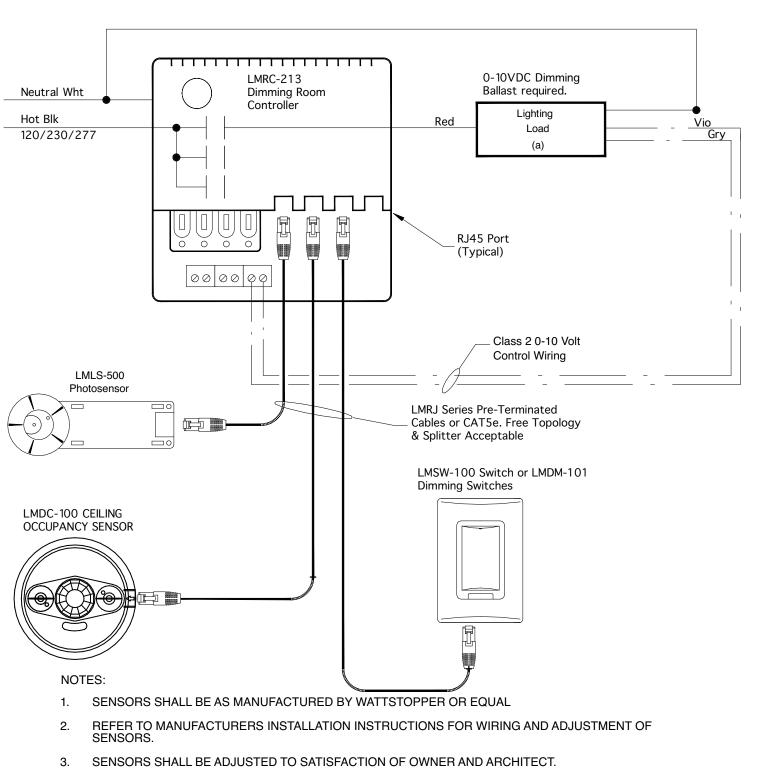
SCALE: AS NOTED PROJ.NO.: 1016 DATE: KERNAN ARCHITECTS & ASSOC. CHKD.BY:

DETAILS

		T		Lamps	<u></u>			
Туре	Manufacturer	Catalog No.	No.	Watts	Туре	Volts	Mounting	Remarks
nterior	Lighting							
A1	Armstrong	39-S-1-L-B-G-R-S-5-XX-1-1-E		7 W/FT	LED 3500K	120	Recessed	Cloud lighting system located in Multipurpose Area. Provide fixture with 0-10V dimming. Provide all options for a complete and operational system in satisfaction with Owner. Coordinate exact fixture, finish and lengths with Owner, Architect and Theater Consultant.
A2	Elite Lighting	HH8-LED-RGBW-LENGN-65K-18K- 2000L-ELD0DMX.1-120-HH8-8501-W- WH-WD-90+		29	LED 3500K	120	Recessed	8" LED downlight fixture located in Multipurpose Area. Provide fixture with 0-10V dimming. Provide fixture with RGBW color tuning. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
A3	ILP Lighting	VAT24-43L-U-40		29	LED 3500K	120	Recessed	LED 2'x2' fixture located in green rooms, concession, and stage. Provide fixture with 0-10V dimming. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
A4	Elite Lighting	HH8-LED-RGBW-LENGN-65K-18K- 2000L-ELD0DMX.1-120-HH8-8501-W- WH-VWD-90+		29	LED 3500K	120	Recessed	8" LED downlight fixture located in Multipurpose Area. Provide fixture with 0-10V dimming. Provide fixture with RGBW color tuning. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
B1	ILP Lighting	VS4-4L-U-50-FRL		33	LED 3500K	120	Surface	LED 4' strip fixture located in back of house areas. Provide fixture with 0-10V dimming. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
B2	Green Creative Lighting	NYX-NC-8-SQ-F15-9-CCT5S-DUALDIM		15	LED 3500K	120	Recessed	8" downlight located in back of house areas. Field selectable color temperature shall be set to 3500 kelvin. Coordinate exact fixture and finish with Owner and Architect prior to purchse.
ВЗ	ILP Lighting	VS2-4L-U-50-FRL		19	LED 3500K	120	Surface	LED 2' strip fixture located in back of house areas. Provide fixture with 0-10V dimming. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
Exterior	Lighting							
N1	Teron Lighting	CDSQ-L14-U-X-40K		14	LED 4000K	120	Surface	Wet location listed LED wall sconce. Coordinate exact fixture and finish with Owner and Architect prior to rough-in.
<u>Emegen</u>	cy Lighting							
E1	Evenlite	TEBL3W	2	3	LED	120V / 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/2W LED lighting heads, lithium ion battery, white housing.
E2	Evenlite	TEBL5W	2	3	LED	120V / 9.6VDC	Surface	Indoor battery pack w/ dual 9.6V/2W LED lighting heads & remote head capabilities, lithium-ion battery, white housing.
E3	Evenlite	PRWLED2-MV	2	1	LED	120V / 9.6VDC	Surface	Outdoor dual remote 9.6V/2W LED lighting head
E4	Evenlite	DP-2E18-2-W69-B	2	9	LED	120V / 6VDC	Recessed	Ceiling mounted indoor battery pack w/ dual 6V/9W LED lighting heads, lithium-ion battery, black housing.
X1	Evenlite	TLX-EM-RU-W			LED	120	As Indicated	LED exit sign, red letters, number of faces and directional arrows as indicated on plan or required by installed location, intergral battery to provide 90 mintues of illumination.

- 1. In addition to those indicated above, refer to Architectural drawings and provide all fixtures specified.
- 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.





7. PROVIDE VOLTAGE BARRIER IN SHARED BOXES TO SEPARATE LOW VOLTAGE FROM LINE VOLTAGE

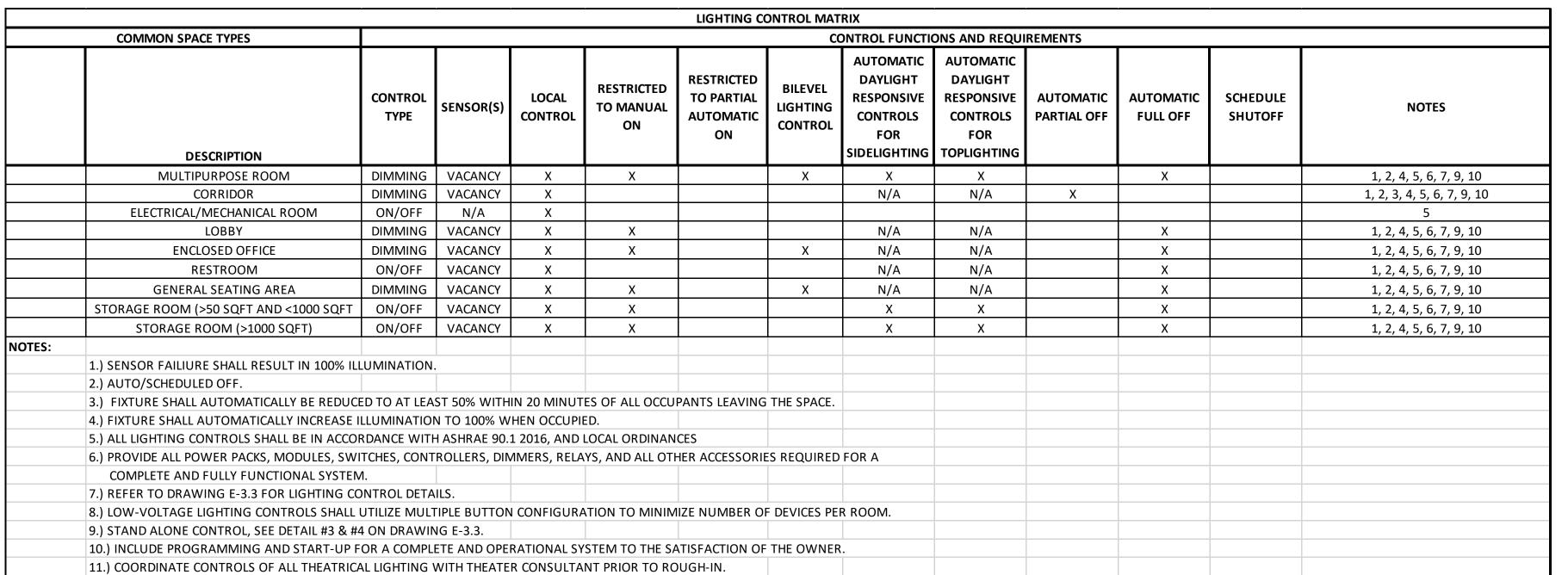
TYPICAL DAYLIGHT

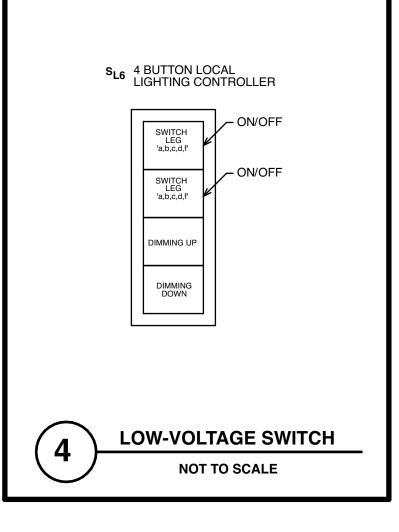
**SENSOR WIRING DETAIL** 

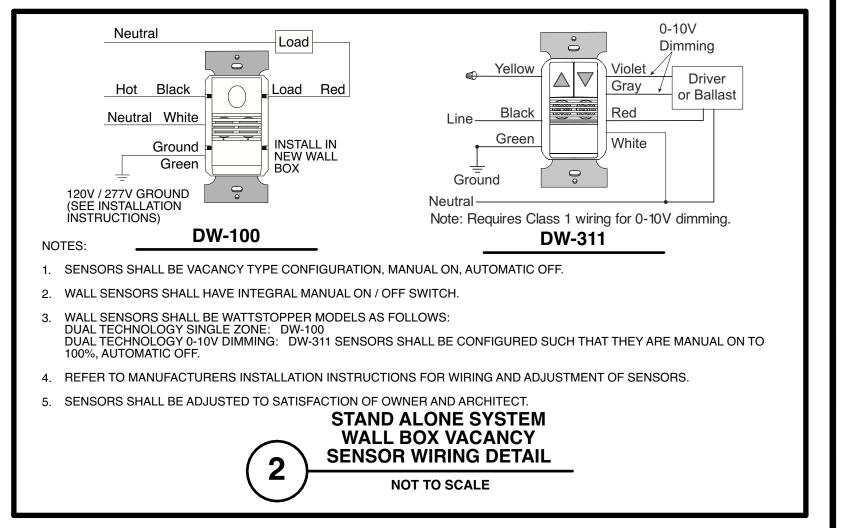
NOT TO SCALE

PROVIDE 120 VOLT, 20 AMP CONTROL CIRCUIT, A1B-10 SITE & BUILDING LIGHTING TIMECLOCK CIRCUIT #1 CONTACTOR PHOTOCELL SPARE | | SPARE | | **TOILET EXHAUST FANS** TIMECLOCK CIRCUIT #2 CONTACTOR A1A-22 | | SPARE | | SPARE | |-SPARE - |-MULTIPOLE CONTACTOR TIMECLOCK CIRCUIT #3 SPARE | | SPARE | |-SPARE | | MULTIPOLE CONTACTOR CIRCUIT #4 SPARE | | SPARE | |-SPARE | |

- 1. PROVIDE INTERMATIC ELECTRONIC TIME SWITCH PROVIDE MOMENTARY CONTACT TOGGLE TYPE TIMECLOCK OVERRIDE SWITCHES AS INDICATED
- 2. OVERRIDE SWITCH COVERPLATES SHALL BE ENGRAVED "LIGHTING OVERRIDE"
- 3. CONNECT EMERGENCY LIGHTING AND EXIT SIGNES TO THE LINE SIDE OF LIGHTING CONTROLS.
- 4. COORDINATE WITH OWENR AND PROGRAM TIMECLOCK TO OWNER'S SCHEDULE.
- 5. ACTIVATION OF LIGHTING OVERRIDE SHALL YIELD AN ADDITIONAL 1 HOUR OF LIGHTING.
- 6. OVERRIDE SWITCHES SHALL BE INTERCONNECTED TO TIMECLOCK FOR OVERRIDE OF EACH TIMECLOCK CIRCUIT AS DIRECTED BY MANUFACTURER.



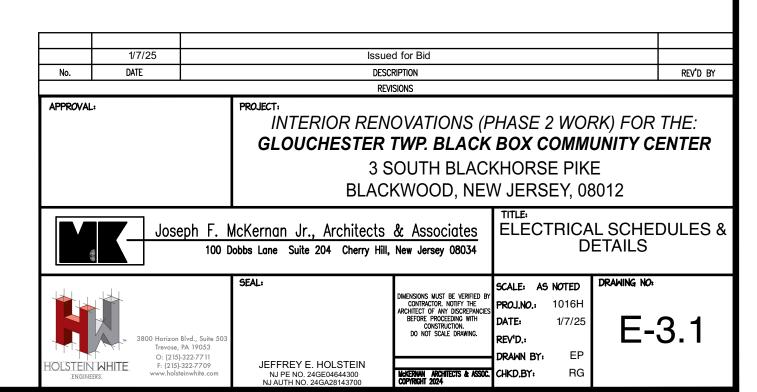


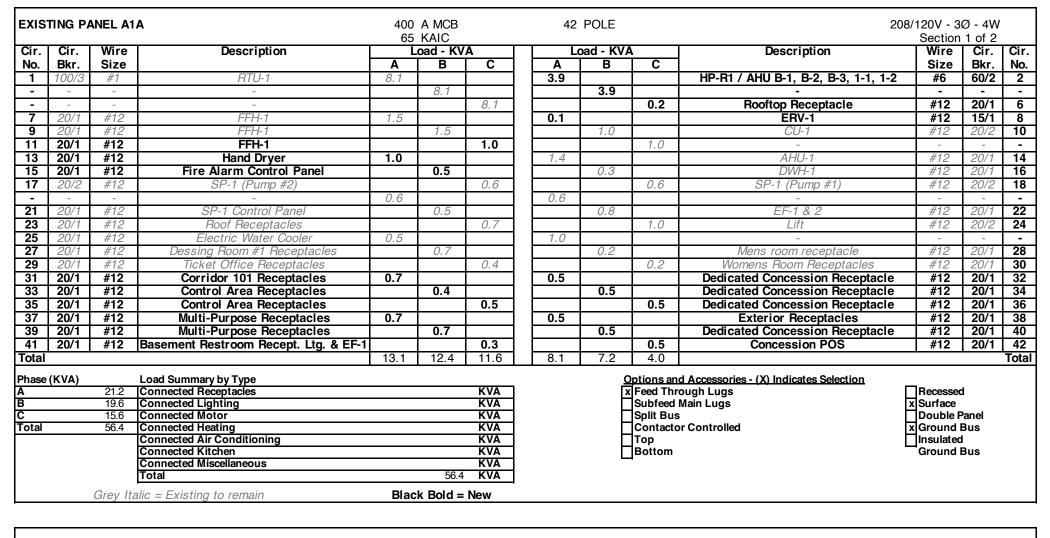


**TIMECLOCK** 

**CONTROL DETAIL** 

NOT TO SCALE





EXIS	TING PA	ANEL A1	A	400 A MLO 65 KAIC			42 POLE			208/120V - 3Ø - 4W Section 2 of 2				
Cir.	Cir.   Cir.   Wire   Description		Load - KVA			Load - KVA			Description	Wire	Cir.	Cir		
No.	Bkr.	Size		Α	В	С	Α	В	С		Size	Bkr.	No	
43	60/3	#6	Sub Panel 'A1B'	2.8						Spare		20/1	44	
-	-	-	-		3.2					Spare		20/1	46	
-	-	-	-			2.4			2.5	IT Rack	#10	30/2	48	
49	20/1	#12	Concession Receptacle	0.2			2.5			-	-	-	-	
51	20/1	#12	PROJ1		0.8			0.4		IT Quadreceptacle	#12	20/1	52	
53	20/1	#12	Concession Refrigerator			0.8			0.5	SP-1 (Alarm Panel)	#12	20/1	54	
55	20/1	#12	Drip Pan Alarm	0.2			1.1			First Floor Architectural Lighting	#12	20/1	56	
57	20/1	#12	TIP26A		0.6			0.6		TIP26B	#12	20/1	58	
59	20/1	#12	TIP26C			0.3			0.3	TIP26D	#12	20/1	60	
61	20/1	#12	TIP1	0.6			0.6			TIP2	#12	20/1	62	
63	20/1	#12	TIP3		0.8			0.5		TIP4	#12	20/1	64	
65	20/1	#12	TIP5			0.5			0.5	TIP6	#12	20/1	66	
67	20/1	#12	TIP11 & TIP12	0.6			0.3			Motorized Projector Screen	#12	20/1	68	
69	20/1	#12	TIP13		0.3			0.3		TIP14	#12	20/1	70	
71	20/1	#12	TIP15			0.4			0.4	TIP16	#12	20/1	72	
73	20/1	#12	TIP17	0.8			0.8			TIP18	#12	20/1	74	
75	20/1	#12	TIP19A	-	0.6			0.6		TIP19B	#12	20/1	76	
77	20/1	#12	TIP20A			0.6			0.6	TIP20B	#12	20/1	78	
79	20/1	#12	TIP21A	0.6			0.6		1	TIP21B	#12	20/1	80	
81	20/1	#12	TIP22A		0.5			0.5		TIP22B	#12	20/1	82	
83	20/1	#12	TIP23			0.3			0.3	TIP24	#12	20/1	84	
Total				5.7	6.8	5.4	5.9	2.9	5.1				Tota	
haca	(KVA)		Load Summary by Type	•		•	•	0	ntions and	Accessories - (X) Indicates Selection				
Δ	(IXVA)		Connected Receptacles							ough Lugs Recessed				
B 9.7 Connected Lighting						KVA	Subfeed M				x Surface			
C 10.5 Connected Motor						KVA			Split Bus	<b> 9-</b>	Double F	Panel		
Total 31.8 Connected Heating					KVA	Contactor			Controlled	x Ground I	Bus			
Connected Air Conditioning Connected Kitchen						KVA	Top Bottom				Insulated Ground Bus			
						KVA								
Connected Miscellaneous						KVA			4					
			Total		31.8	KVA								
			lic = Existing to remain		k Bold =									

Cir.   Cir.   Wire		Wire	re Description		10 KAIC Load - KVA		Load - KVA			Description	Wire	Cir.	Cir.	
No.	Bkr.	Size	·	Α	В	С	Α	В	С	•	Size	Bkr.	No.	
1	20/1	#12	Office Receptacles	0.7			0.7		1 1	Telecom backboard Receptacle	#12	20/1	2	
3	20/1	#12	Jan Closet Receptacles		0.2			0.9		Basement Receptacle	#12	20/1	4	
5	20/1	#12	Basement Lighting			0.6			0.9	Basement Receptacle	#12	20/1	6	
7	20/1	#12	Multipurpose Room Cloud Lighting	0.8			0.5			Time Clock	#12	20/1	8	
9	20/1	#12	Multipurpose Room Cloud Lighting		0.9			1.2		Exterior Signage	#12	20/1	10	
11	20/1	#12	Stage Cloud Lighting			0.7		0.2		Exterior Lighting	#12	20/1	12	
13	20/1		Spare							Spare		20/1	14	
15	20/1		Spare							Spare		20/1	16	
17	20/1		Spare							Spare		20/1	18	
19			Space							Space			20	
21			Space							Space			22	
23			Space							Space			24	
									1					
									1					
									1					
									++			─	├	
otal				1.5	1.1	1.3	1.2	2.1	1.1			Ь	Tota	
Olai				1.5	1.1	1.5	1.2	۷.۱	1.1				TOL	
hase	(KVA)		Load Summary by Type					<u>C</u>		Accessories - (X) Indicates Selection				
<b>A</b> 2.8			Connected Receptacles			KVA	Feed Through Lugs				Recessed	d		
3.2			Connected Lighting KVA						Main Lugs	x Surface				
2.4			Connected Motor KVA					Split Bus				Double Panel		
otal	otal 8.							Contactor Controlled						
								<u> </u> _	lob		Insulated			
								<u></u>	Bottom		Ground	Bus		
Total 8.3			Connected Heating Connected Air Conditioning Connected Kitchen			KVA KVA		E	Contactor Top Bottom	r Controlled	Insu	atec	ind Bus lated ind Bus	

24 POLE

208/120V - 3Ø - 4W

60 A MLO

10 KAIC

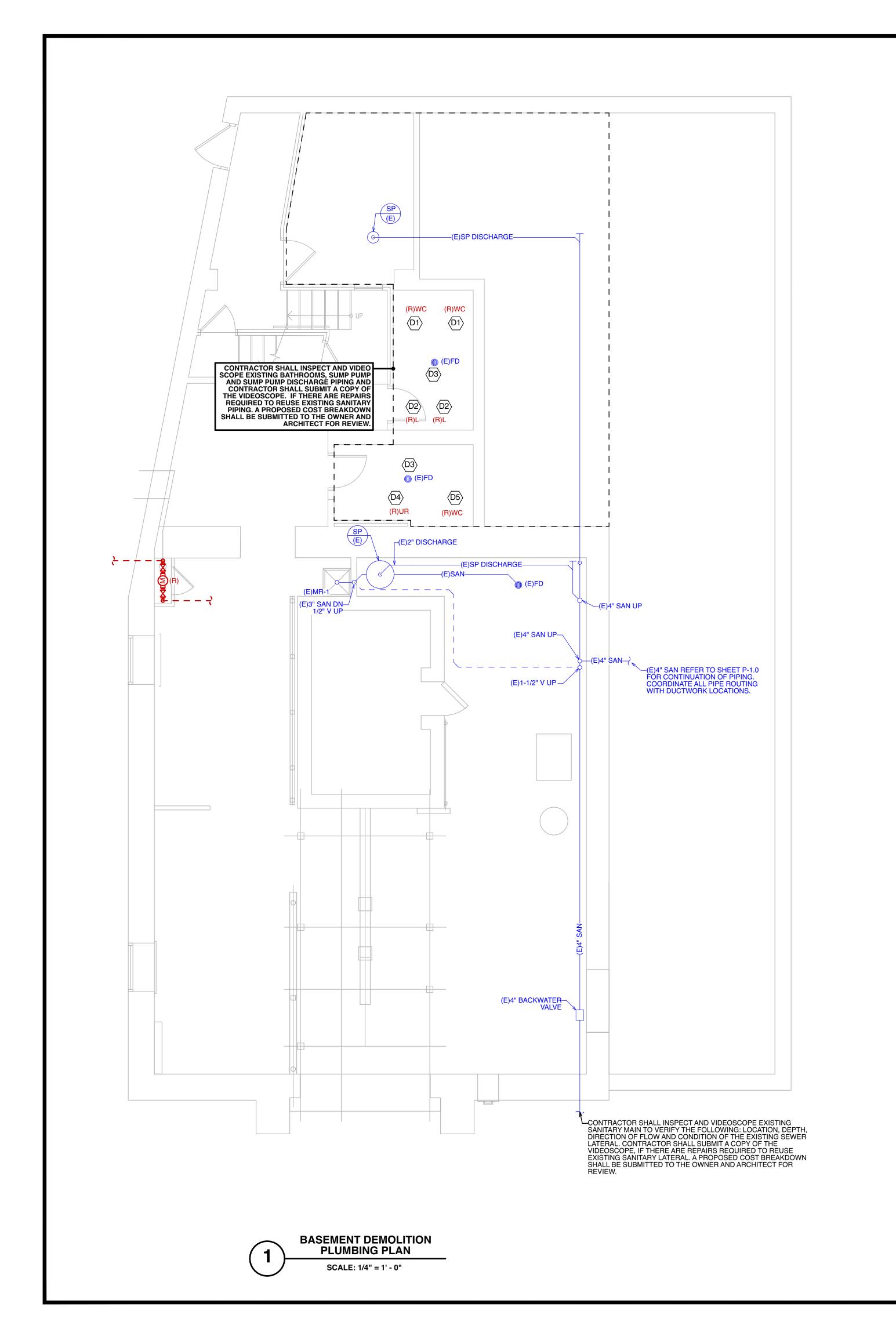
**NEW PANEL A1B** 

EQUIPMENT SCHEDULE										
Symbol	ol	Item	Model	Load (kW)	Volt/Phase	Connection	Circuit	Mounting Height	t Remarks	
TIP1	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-61	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP2	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-62	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP3	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.8	120/1Ø	5-20R	A1A-63	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP4	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.5	120/1Ø	5-20R	A1A-64	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP5	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.5	120/1Ø	5-20R	A1A-65	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP6	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.5	120/1Ø	5-20R	A1A-66	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP11	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-67	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP12	<u>Y</u> Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-67	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP13	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-69	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP14	Technic	ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-70	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP15		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.4	120/1Ø	5-20R	A1A-71	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP16		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.4	120/1Ø	5-20R	A1A-72	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP17		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.8	120/1Ø	5-20R	A1A-73	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP18		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.8	120/1Ø	5-20R	A1A-74	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP19A		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-75	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP19B		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-76	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP20A		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-77	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP20B		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-78	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP21A		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-79	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP21B		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-80	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP22A		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.5	120/1Ø	5-20R	A1A-81	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP22B		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.5	120/1Ø	5-20R	A1A-82	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP23		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-83	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP24		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-84	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
PROJ1		tor Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.8	120/1Ø	5-20R	A1A-51	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP26A		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-57	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP26B		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.6	120/1Ø	5-20R	A1A-58	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP26C		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-59	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
TIP26D		ical Interface Plate	Hubbell: SNAP5362BLK TRA Hubbell: SNAP1RA	0.3	120/1Ø	5-20R	A1A-60	Verify	Refer to notes 1, 2, 3, 4, 5, 6, 7, & 8.	
Totals Notes:	<u>š</u>			10.8	<u> </u>					

### 1. Unless otherwise noted, all equipment to be provided by theater consultant.

- 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. All mounting heights are to center of device.
- 5. Unless otherwise noted all power for equipment listed in this equipment schedule shall be circuited to panel 'A1A'
- 6. Refer to theater consultant plans for device quantities, device specifications and location.
- 7. Provide all back boxes and voltage dividers as required. Coordinate exact specifications with theater consultant.
- 8. Wiring devices and snap pigtails to be furnished by theater consultant for the electrical contractor to install.

	1/7/25	lee							
No.	DATE	Issued for Bid  DESCRIPTION							
NO.	DATE		REVISIONS		REV'D BY				
APPROVAL	a.	PROJECT: INTERIOR REI GLOUCHESTER 3							
V	Jose	eph F. McKernan Jr., Architect 100 Dobbs Lane Suite 204 Cherry H			L SCHEDULES & ETAILS				
		<b>SEAL:</b> Blvd., Suite 503 PA 19053	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR, NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.	SCALE: AS NOTED PROJ.NO.: 1016H DATE: 1/7/25 REV'D.:	E-3.2				



#### **EXISTING CONDITIONS NOTE**

- 1. ALL THE EXISTING PIPE SIZES AND LOCATIONS, THE PLUMBING FIXTURE LOCATIONS AND TAGS, THE EXISTING ARCHITECTURAL FLOOR PLANS, ETC., HAVE BEEN DOCUMENTED BASED OFF SURVEY DATA HOLSTEIN WHITE, INC. (ENGINEER) CONDUCTED ON APRIL 11, 2023.
- 2. 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.

#### **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 REMAINNEW SANITARY WORK
- - NEW VENTING WORK
- - NEW COLD WATER PLUMBING WORK
- ——— NEW HOT WATER PLUMBING WORK
- POINT OF CONNECTION TO EXISTING
- POINT OF DEMOLITION, CUT AND CAP

#### **DEMOLITION GENERAL NOTES**

REMOVE DESIGNATED ELEMENTS AS SHOWN ON DRAWINGS.

WHEN TORCH CUTTING.

- ALL PLUMBING EQUIPMENT AND ASSOCIATED WATER AND SANITARY PIPING DESCRIBED SHALL BE DEMOLISHED AND REMOVED. CAP AT MAIN.
- BE DEMOLISHED AND REMOVED. CAP AT MAIN.

  3. COMPLY WITH APPLICABLE NFPA STANDARDS
- 4. PROVIDE, ERECT AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES AS REQUIRED.
- 5. OBTAIN WRITTEN CONSENT OF OWNER PRIOR TO TORCH CUTTING.
- 6. ERECT AND MAINTAIN TEMPORARY PARTITIONS TO PREVENT SPREAD OF DUST, FUMES, NOISE AND SMOKE TO PROVIDE FOR CONTINUING OWNER OCCUPANCY.
- 7. CONDUCT DEMOLITION TO MINIMIZE
  INTERFERENCE WITH ADJACENT BUILDING
  AREAS. MAINTAIN PROTECTED LEGAL EGRESS
  AND ACCESS AT ALL TIMES. KEEP REQUIRED
  EXIT WAYS UNENCUMBERED AT ALL TIMES AND
  ARTIFICIALLY LIGHTED.
- 8. REMOVE DEMOLISHED MATERIALS FROM SITE AS WORK PROGRESSES AND DISPOSE OF IN A PROPER, LEGAL MANNER. UPON COMPLETION OF WORK, LEAVE AREAS OF WORK IN BROOM CLEAN
- 9. COORDINATE ALL DEMOLITION WORK WITH LANDLORD PRIOR TO SHUT DOWN THE SERVICE MAINS TO PERFORM THE REQUIRED WORK.

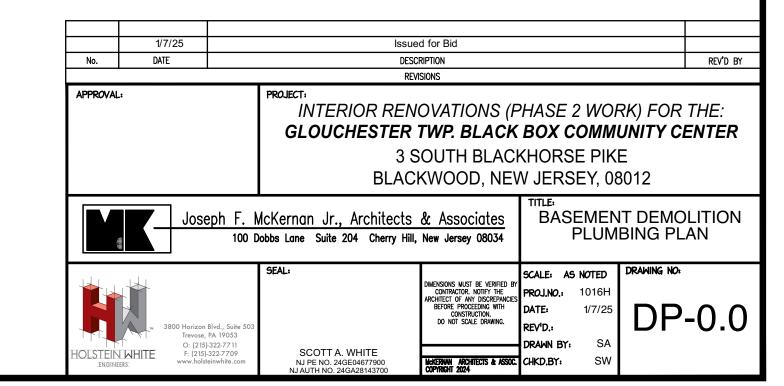
CONDITION AT THE END OF EACH DAY.

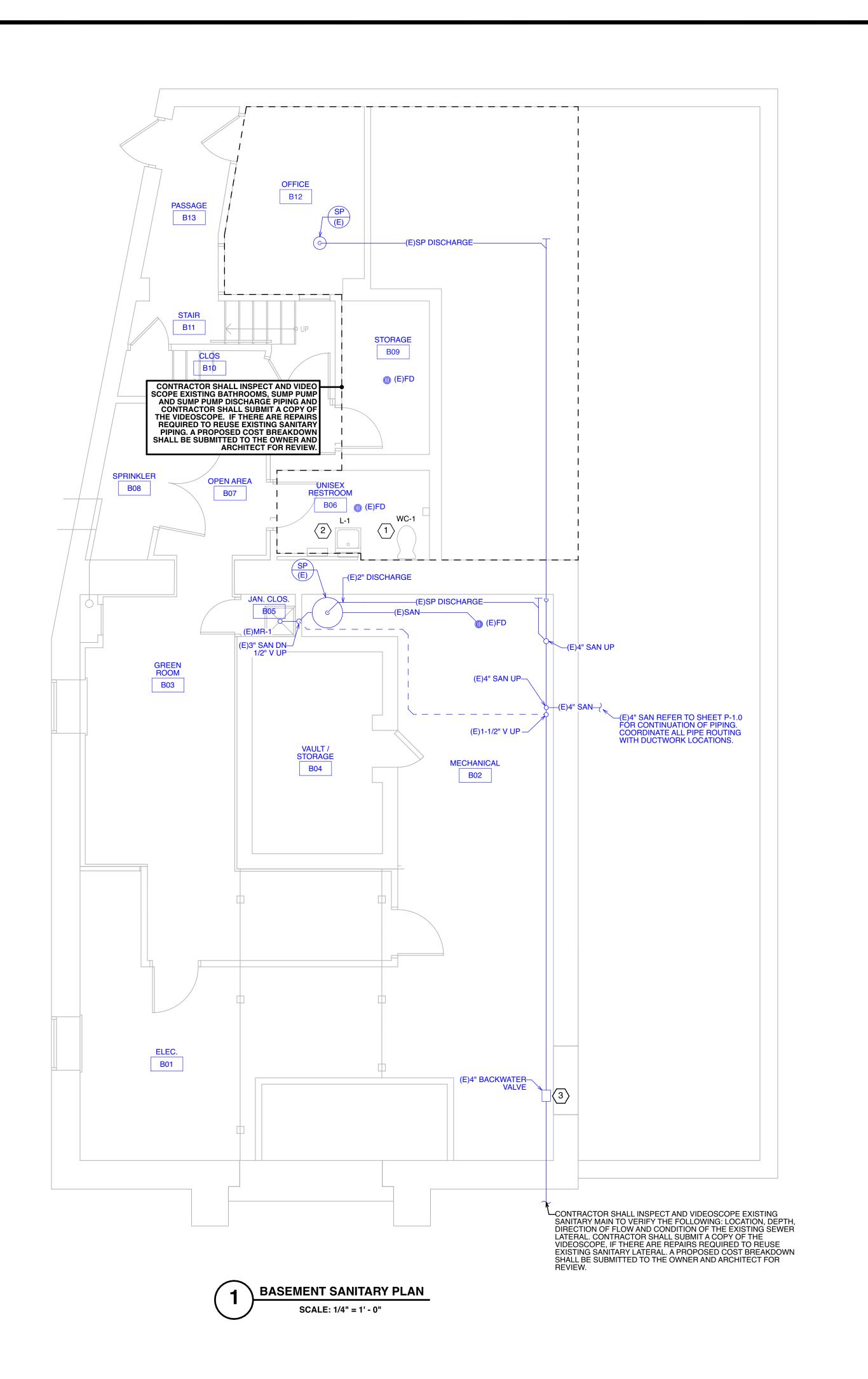
- 10. PRIOR TO COMMENCEMENT OF DEMOLITON, THE CONSTRUCTION MANAGER SHALL WALK THE PROJECT WITH THE CONTRACTOR PERFORMING THIS WORK TO CONFIRM THE EXTENT OF
- THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING THEIR PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK
- 12. CONTRACTOR SHALL PATCH ROOF AS REQUIRED AND SEAL WATERTIGHT (CONTRACTOR SHALL COORDINATE ALL ROOF WORK WITH EXISTING ROOF CONTRACTOR IN ORDER NOT TO VOID EXISTING ROOF WARRANTY).

FROM THE CONTRACTOR.

#### SHEET NOTES

- WATER CLOSET SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. VERIFY EXACT LOCATION OF EXISTING SANITARY AND VENT PIPING IN THE FIELD.
- LAVATORY SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD AND HOT WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.), SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY. VERIFY EXACT LOCATION OF EXISTING SANITARY AND VENT PIPING IN THE FIELD.
- CONTRACTOR SHALL CLEAN/REFURBISH EXISTING
  TO REMAIN FLOOR DRAIN. EXISTING TO REMAIN
  FLOOR DRAIN SHALL BE PROTECTED DURING
  CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT
  EXISTING ARE FUNCTIONAL AND SHALL PROVIDE
  ZURN TRAP SEAL M/N: Z1072-2. VERIFY EXACT
  LOCATION OF EXISTING FLOOR DRAIN IN THE FIELD.
- URINAL SHALL BE DEMOLISHED AND REMOVED IN ITS ENTIRETY INCLUDING ALL COLD WATER PIPING (INCLUDING SHUT-OFFS, SUPPLY HOSES, ESCUTCHEONS, ETC.). SANITARY WASTE AND VENT PIPING (INCLUDING TRAP, ESCUTCHEONS, ETC.) SHALL BE DEMOLISHED BACK TO WALL FOR FUTURE TIE IN BY LAVATORY. VERIFY EXACT LOCATION OF EXISTING FIXTURE AND PIPING IN THE FIELD.
- CONTRACTOR SHALL REPLACE EXISTING WATER CLOSET WITH NEW WATER CLOSET (REFER TO PLUMBING FIXTURE SCHEDULE ON P-3.0).
  CONTRACTOR SHALL MODIFY EXISTING SANITARY AND VENT PIPING AS REQUIRED TO INSTALL NEW FIXTURE. VERIFY EXACT LOCATION OF EXISTING SANITARY AND VENT PIPING IN THE FIELD.





#### **EXISTING CONDITIONS NOTE**

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  - 2. 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.

#### DRAWING SYMBOLS

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

#### **DRAWING NOTES**

- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING

UTILITY PIPING.

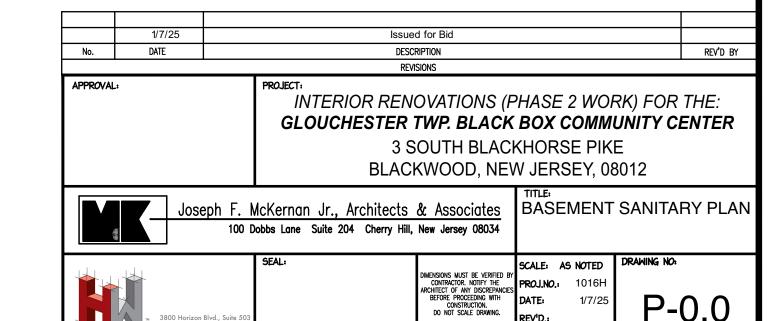
ROUGHING-IN.

- CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE LOCATION OF THE NEW FILLING WITH THE LOCATION OF THE PIPING, DUCT WORK, EQUIPMENT, ARCHITECTURAL PLANS, AND STRUCTURAL ELEMENTS IN THE FIELD.
- ALL PIPING CONNECTIONS ARE SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL VERIFY FINAL CONNECTION POINTS IN FIELD.
- CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL ROOF AND EXTERIOR WALL PENETRATIONS
  IN THE FIELD WITH LANDLORD PRIOR TO
- CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
- CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING

CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

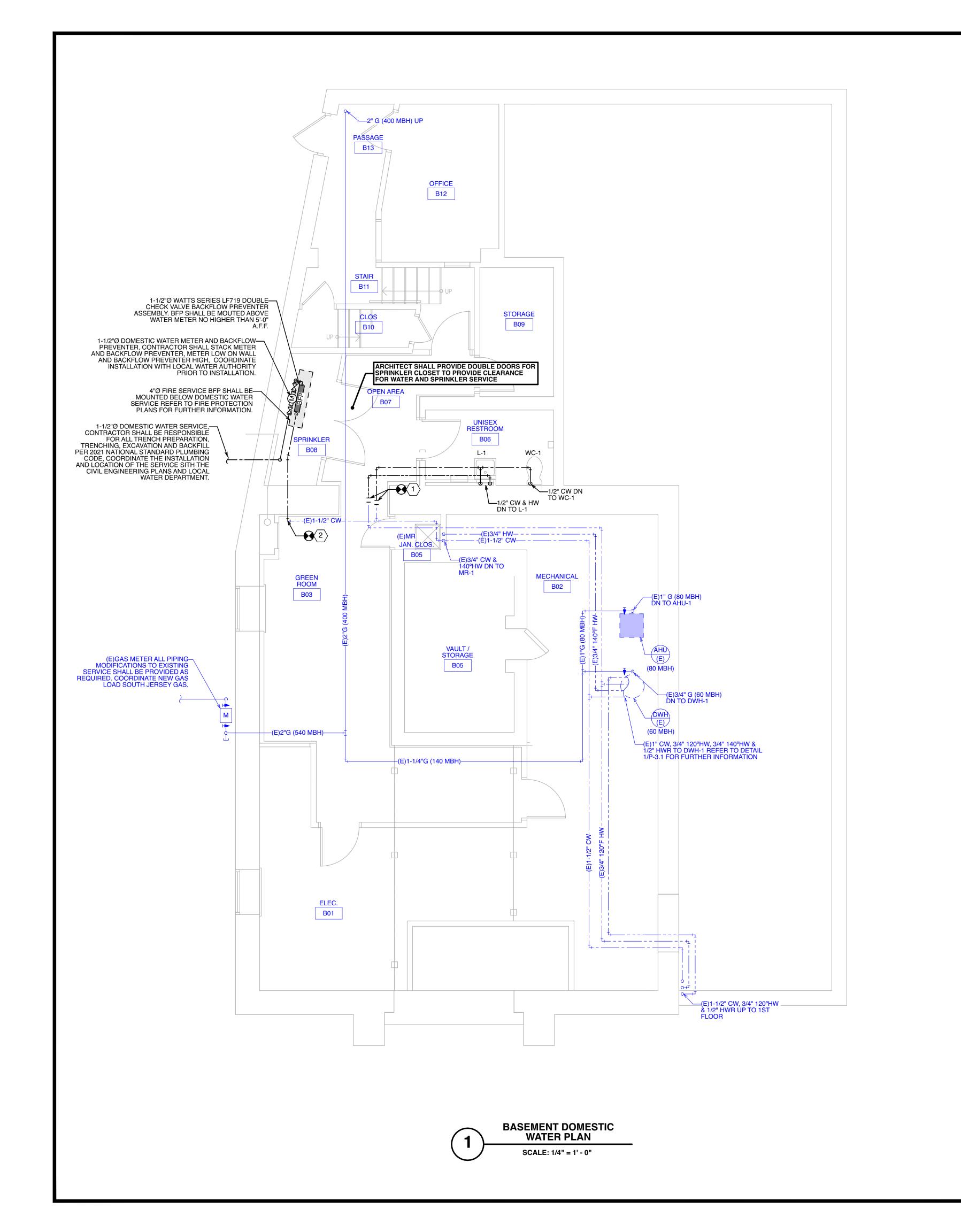
#### **SHEET NOTES**

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  CONTRACTOR SHALL MODIFY EXISTING SANITARY PIPING AS REQUIRED TO INSTALL NEW FIXTURES. VERIFY EXACT LOCATION OF EXISTING SANITARY PIPING IN THE FIELD.
- 2 CONTRACTOR SHALL INSTALL NEW LAVATORY IN EXISTING URINAL LOCATION (REFER TO PLUMBING FIXTURE SCHEDULE ON P-3.0). CONTRACTOR SHALL MODIFY EXISTING SANITARY PIPING AS REQUIRED TO INSTALL NEW LAVATORY. VERIFY ...\_GOILLED TO INSTALL NEW LAVATORY. VERIFY EXACT LOCATION OF EXISTING SANITARY PIPING IN THE FIELD.
- CONTRACTOR SHALL INSPECT AND REPAIR (E)
  BACKWATER VALVE AS REQUIRED. PROVIDE A
  CONTINGENCY PRICE TO REPLACE THE 4" BACKWATER VALVE.
- CONTRACTOR SHALL INSPECT EXITING DOWNSPOUT AND DRAINS AND PROVIDE CONTRIGENCY TO REPLACE DOWNSPOUT AND ASSOCIATED DRAIN.
- CONTRACTOR SHALL EXTEND AND CONNECT NEW 2"Ø SAN INTO EXISTING SAN MAIN. VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN IN THE
- 6 CONTRACTOR SHALL EXTEND AND CONNECT NEW 1-1/2"Ø VENT INTO EXISTING VENT MAIN. VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN IN



MCKERNAN ARCHITECTS & ASSOC. CHKD.BY:

P-0.0



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#### DRAWING SYMBOLS

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## **DRAWING NOTES**

- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCAL TOOLS AND EXISTING

UTILITY PIPING.

ROUGHING-IN.

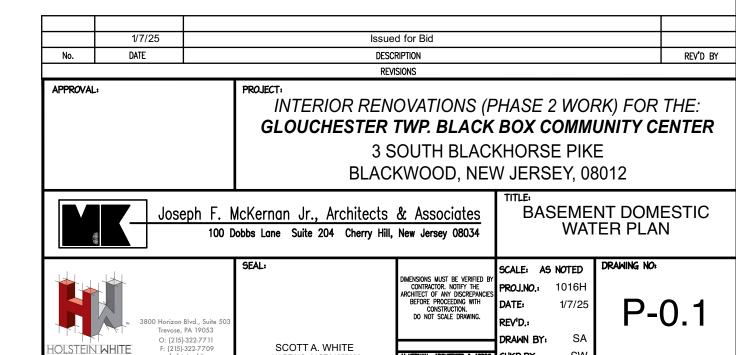
- CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
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- CONTRACTOR SHALL COORDINATE ALL ROOF

CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

#### **SHEET NOTES**

PENETRATIONS WITH EXISTING ROOFING

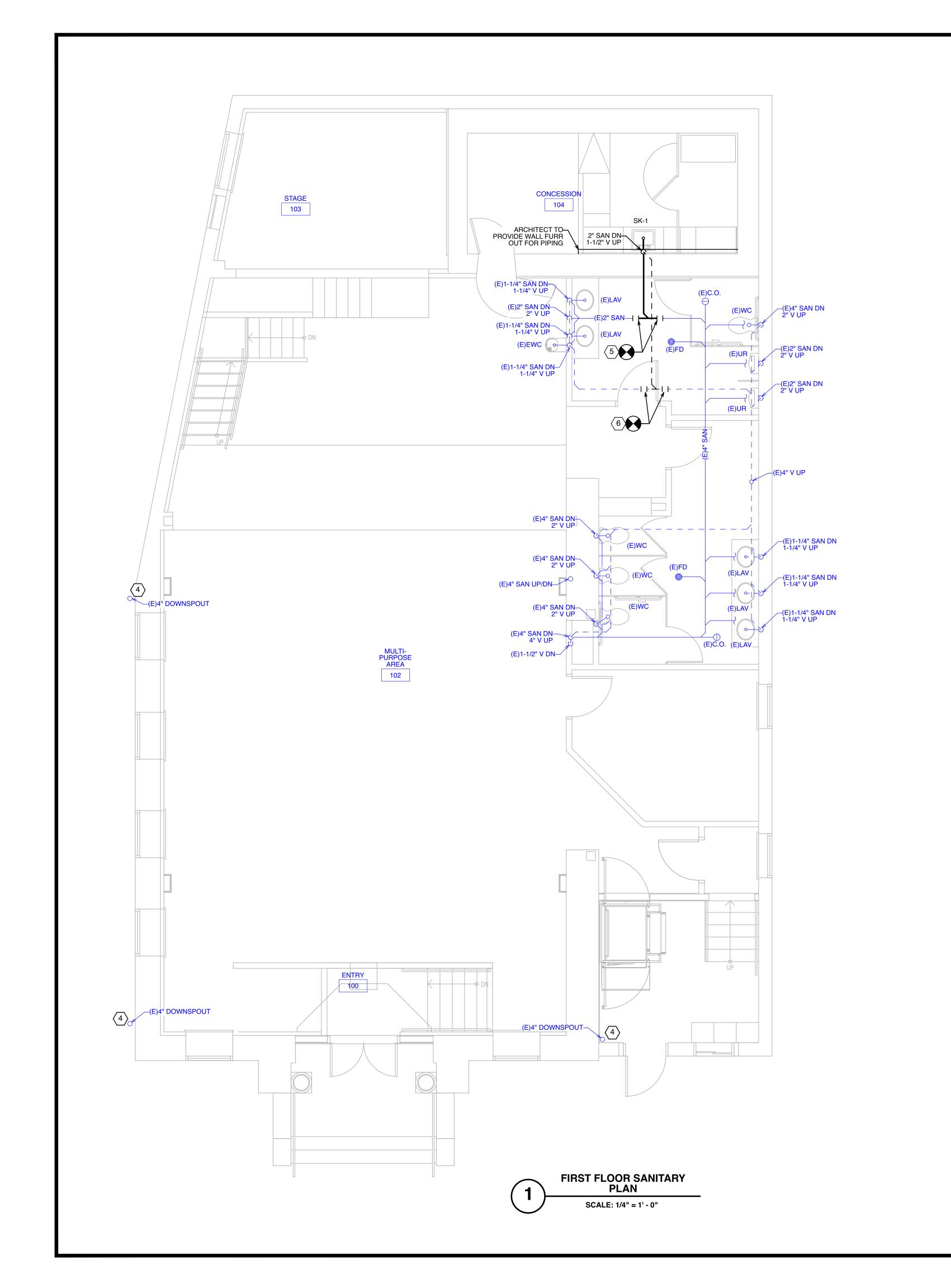
- 1 EXTEND AND CONNECT NEW 1/2" CW AND 1/2" HW INTO EXISTING COLD AND HOT WATER MAINS. VERIFY EXACT LOCATION AND SIZE OF EXISTING MAINS IN THE FIELD.
- 2 EXTEND AND CONNECT NEW 1-1/2" CW FROM NEW METER INTO EXISTING COLD WATER MAIN. VERIFY EXACT LOCATION AND SIZE OF EXISTING MAINS IN THE FIELD.



MCKERNAN ARCHITECTS & ASSOC. CHKD.BY:

SCOTT A. WHITE

OLSTEIN WHITE



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- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.
- 2. CONTRACTOR SHALL COORDINATE THE
  INSTALLATION OF ALL UNDERGROUND PIPING WITH
  THE LOCATION OF ALL FOOTERS AND EXISTING

  LITTUATE OF THE LOCATION OF THE LOCA

UTILITY PIPING.

ROUGHING-IN.

- CONTRACTOR SHALL VERIFY THE EXACT SIZE AND LOCATION OF EXISTING SANITARY AND DOMESTIC WATER PIPING IN THE FIELD. COORDINATE THE INSTALLATION OF THE NEW PIPING WITH THE EXISTING LOCATION.
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- 7. CONTRACTOR SHALL COORDINATE ALL DOMESTIC WATER PIPING WITHIN THERMAL ENVELOPE OF THE BUILDING TO PREVENT FREEZING.
- CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

#### **SHEET NOTES**

- CONTRACTOR SHALL REPLACE EXISTING WATER CLOSET WITH NEW WATER CLOSET (REFER TO PLUMBING FIXTURE SCHEDULE ON P-3.0).
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- 6 CONTRACTOR SHALL EXTEND AND CONNECT NEW 1-1/2"Ø VENT INTO EXISTING VENT MAIN. VERIFY EXACT SIZE AND LOCATION OF EXISTING MAIN IN THE FIELD.

1/7/25 Issued for Bid

No. DATE DESCRIPTION REV'D BY

REVISIONS

APPROVAL:

PROJECT:

INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE:

GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER

3 SOUTH BLACKHORSE PIKE

BLACKWOOD, NEW JERSEY, 08012

TITLE:

FIRST FLOOR SANITARY

PLAN

SEAL:

DIMENSIONS MUST BE VERRIPED BY PROJECT:

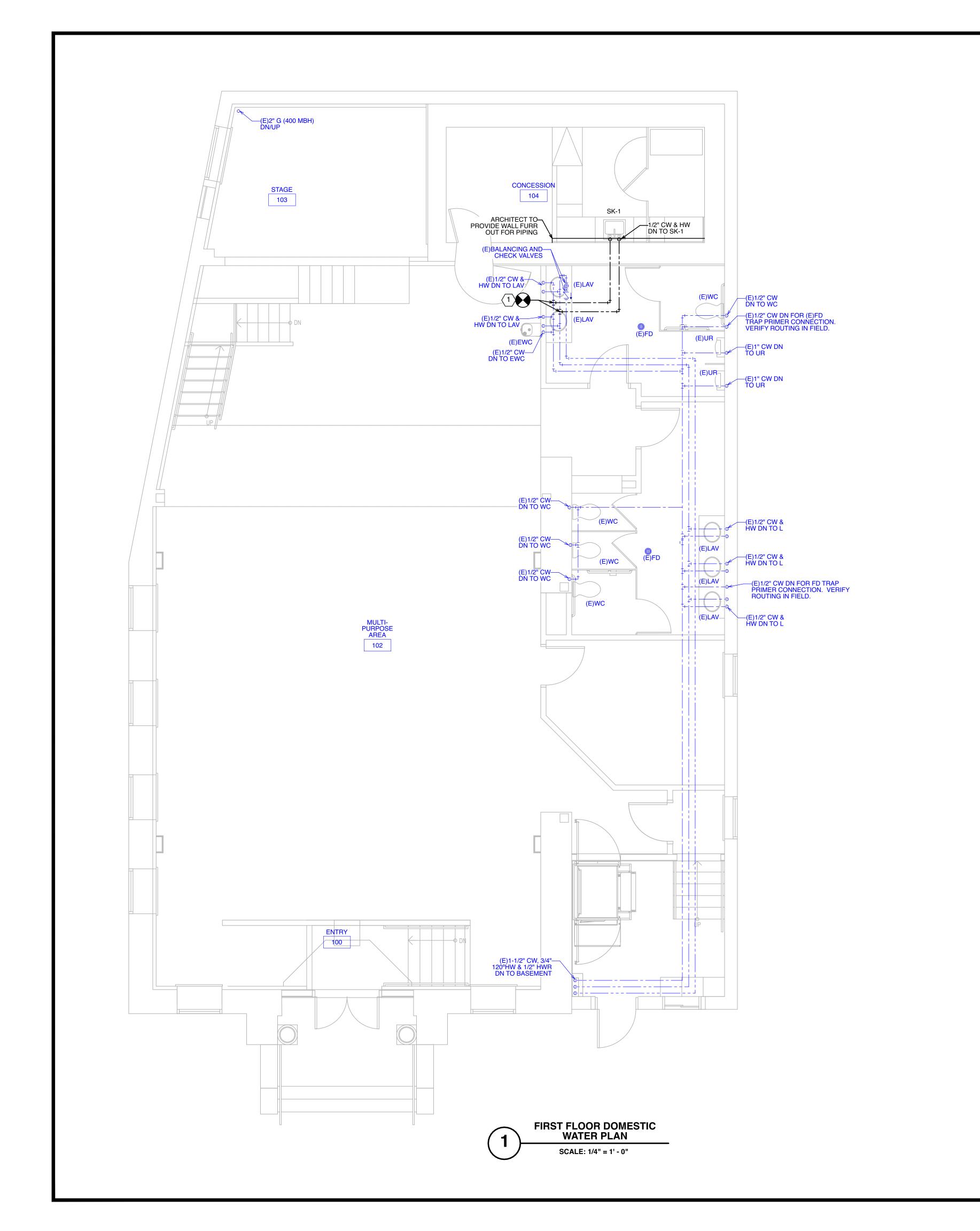
DIMENSIONS MUST BE VERRIPED BY PROJECT:

ONLY BY

SCALE: AS NOTED PROJECT:

DRAMING NO:

P-1.0



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- NEW HOT WATER PLUMBING WORKNEW NATURAL GAS PIPING WORK
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## **DRAWING NOTES**

 REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATIONS OF ALL THE FURNITURE, PLUMBING FIXTURES, AND EQUIPMENT.

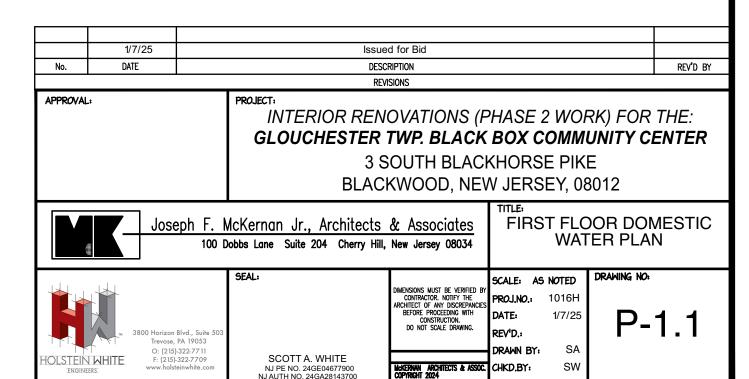
UTILITY PIPING.

ROUGHING-IN.

- 2. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND PIPING WITH THE LOCATION OF ALL FOOTERS AND EXISTING
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- S. CONTRACTOR SHALL COORDINATE ALL ROOF PENETRATIONS WITH EXISTING ROOFING CONTRACTOR AS TO NOT VOID ROOF WARRANTY.

## **SHEET NOTES**

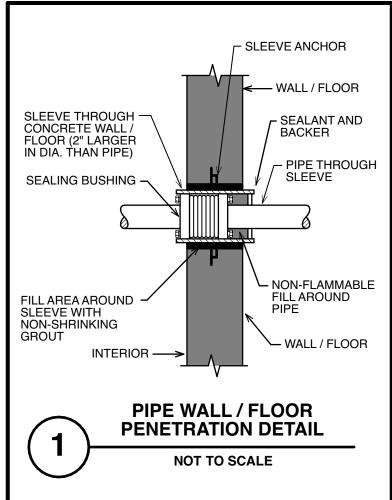
- TIE NEW 1/2" CW AND 1/2" HW INTO EXISTING COLD AND HOT WATER MAINS. VERIFY EXACT SIZE, LOCATION AND ROUTING OF EXISTING COLD AND HOT WATER MAINS IN THE FIELD.
- 2 EXTEND AND CONNECT NEW 1-1/2" CW FROM NEW METER INTO EXISTING COLD WATER MAIN. VERIFY EXACT LOCATION AND SIZE OF EXISTING MAINS IN THE FIELD.

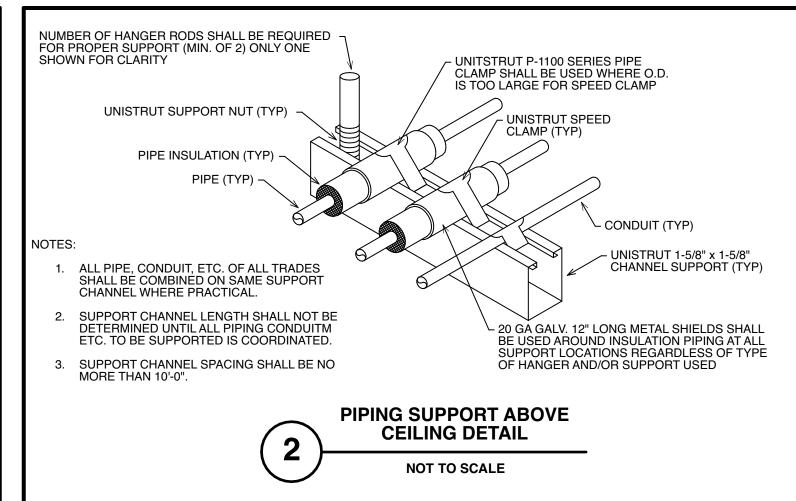


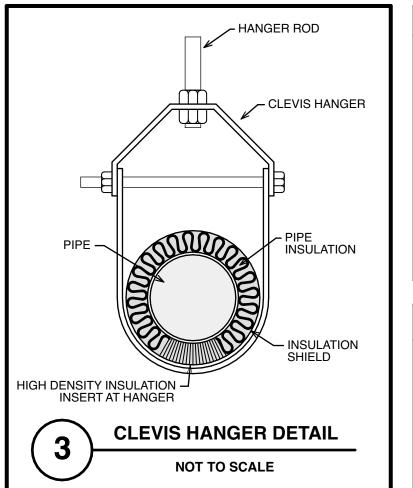
PLUM	BING FIXTU	JRE SCHEDU	LE								
NOTE:	ALL PLUME	BING FIXTUR	ES AND FAUCETS	SHALL B	E PROVI	DED IN	CUSTOM	COLORS AND F	INISHES. COORD	INATE COLOR 8	FIXTURE SELECTION WITH THE ARCHITECT AND OWNER.
Tag Fixture Mount Fixture		Fixture	Domestic Water		Sanitary		Faucet FlushValv			Remarks	
rag	Туре	Wount	Mftr./Model #	CWS	HWS	Drain	Trap	Mftr./Model #	Mftr./Model #	Mftr./Model #	neliidi k5
WC-1	Water Closet	Floor	American Standard 238AA.114CP	1/2"		4"	Integral			Integral	Floor-Mounted, Vitreous China, Two-Piece, Elongated Bowl Water Closet, Flow Rate of 1.00 GPF. ADA Compliant (Min. 17" Rim Height), WaterSense Labeled. Coordinate Lever Location w/ Approach Side. Provide w/ Elongated Toilet Seat. Provide Braided, Flexible Stainless Steel Supply w/ Angle Stop.
L-1	Lavatory Sink	Under Mount	American Standard 0545.000	1/2"	1/2"	1-1/4"	1-1/4"	Zurn Z6956-XL-CV-F- CP4			Under counter-Mounted, Vitreous China Lavatory Sink w/ Integral Overflow. ADA Compliant Installation. Provide Battery Powered, Sensor Operated Faucet w/ a Flow Rate of 0.5 GPM. Provide Braided, Flexible Stainless Steel Supplies w/ Angle Stops, P-Trap Assembly, Pop-Up Drain and Z1240-EZR Sundara Lavatory Carrier.
SK-1	Sink	Drop-in	Elkay LRADQ1517	1/2"	1/2"	1-1/2"	1-1/2"	Elkay LKD2223C			Drop in, single bowl, stainless steel with lustrous finish, sound deadening botton pax, P-trap, drain, trim, stops, single hole, double lever handle faucet lever faucet, trim plate, gooseneck spout, and metal grid strainer. Provide thermostatic mixing valve set at 110°F.

- Provide Water Hammer Arresters (WHA), Similar to Zurn Wilkins 1260XL, on the Domestic Water Branch Pipes Serving Flush Valve Fixtures (if Applicable). Install and Size per Manufacturer's Recommendations. Provide Trap Seal, Similar to Zurn Z1072-2, for all existing Floor Drains determined not to have a fuctional trap primer. Install and Size per Manufacturer's Recommendations. Provide Individual Quarter-turn, Lead-free Shut-off Valves at Each Plumbing Device / Fixture w/ a Water Connection. All Valves Shall Match Pipe Size and Shall be Installed in a Fully Accessible Location. Provide Floor Cleanouts (FCO), Similar to Zurn Z1400-BZ, in Locations as Indicated on Floor Plans. Install and Size per Manufacturer's Recommendations. Provide Wall Cleanouts (WCO), Similar to Zurn Z1446, at the Base of All Sanitary and Storm Risers and in Locations as Indicated on Floor Plans. Install and Size per Manufacturer's Recommendations.

ILE												
Material				Insulation								
Basis of Design	Basis of Design	Туре	Wall (in)	Vapor Barrier	Remarks							
Type "L" Copper	Certainteed	500° Snap On	1/2	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813							
Type "L" Copper	Certainteed	500° Snap On	1	Yes	Lead free solder shall conform to ASTM B32, Flux shall Conform to ASTM B813							
Cast Iron												
Service Weight Cast Iron												
Cast Iron												
Sch. 40 Black Steel					Comply with Utility company standards.							
	Material  Basis of Design  Type "L" Copper Type "L" Copper Cast Iron  Service Weight Cast Iron Cast Iron	Material  Basis of Design  Type "L" Copper  Type "L" Copper  Certainteed  Type "L" Copper  Cast Iron  Cast Iron  Cast Iron  Cast Iron  Cast Iron  Cast Iron	Material         In           Basis of Design         Basis of Design           Type "L" Copper         Certainteed         500° Snap On Certainteed           Type "L" Copper         Certainteed         500° Snap On Certainteed           Cast Iron             Cast Iron             Cast Iron	Material         Insulation           Basis of Design         Basis of Design         Type         Wall (in)           Type "L" Copper         Certainteed         500° Snap On         1/2           Type "L" Copper         Certainteed         500° Snap On         1           Cast Iron              Service Weight Cast Iron              Cast Iron	Material         Insulation           Basis of Design         Basis of Design         Type         Wall (in)         Vapor Barrier           Type "L" Copper         Certainteed         500° Snap On         1/2         Yes           Type "L" Copper         Certainteed         500° Snap On         1         Yes           Cast Iron               Service Weight Cast Iron               Cast Iron							







#### **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 SYMBOLS, INDICATIONS, & ABBREVIATIONS

PLU	MBING SYMBULS, INL	ICATIONS, & ABBRE	VIATIONS
	EQUIPMENT DESIGNATION TAG  GAS SHUT-OFF VALVE W/ DRIP LEG	DIRECTION PIPE UP PIPE DN	OF FLOW
BFP	GAS REGULATOR GAS METER WATER METER BACK FLOW PREVENTOR	PIPE CAPPE BRANCH CC	DNNECTION (BOTTOM) DNNECTION (SIDE) DNNECTION (TOP) N WORK VORK TO REMAIN ADE SANITARY PIPING
	WATER HAMMER ARRESTOR PUMP SOLENOID VALVE	— INDIRECT W — BELOW GRA — — — VENT PIPIN — — — — PUMPED WA	ADE SANITARY PIPING VASTE PIPING ADE VENT PIPING G ASTE (GREASE) ADE GAS PIPING
	SHUT-OFF VALVE PRESSURE REDUCING VALVE	———(G)——— GAS PIPING	i Ade dw Piping Er Piping
₽ ₹	CHECK VALVE  BALANCE VALVE  HOSE BIB	AD AREA DRAIN AAV AIR ADMITT AWB AUXILIARY V BFP BACKFLOW	ANCE VALVE
<b>-</b>	FLOOR SINK CLEAN OUT	DN DOWN DWH DOMESTIC	FIXTURE UNIT WATER HEATER
<b>•</b> -	FLOOR CLEAN OUT ROOF DRAIN	ESH EMERGENC EWC ELECTRIC V FAI FRESH AIR FD FLOOR DRA	EY EYE WASH EY SHOWER VATER COOLER INLET
	FLOOR DRAIN  MIXING VALVE  POINT OF DEMOLITION	RD ROOF DRAI	EXISTING AND REMOVE N
ě	POINT OF CONNECTION	RV RELIEF VEN S / SAN SANITARY SH SHOWER SK SINK SUDS RV SUDS RELIE WB WASHER BO WC WATER CLO WH WALL HYDR V / VENT VENT VTR VENT THRU	EF VENT DX DSET IANT

#### PLUMBING SPECIFICATIONS

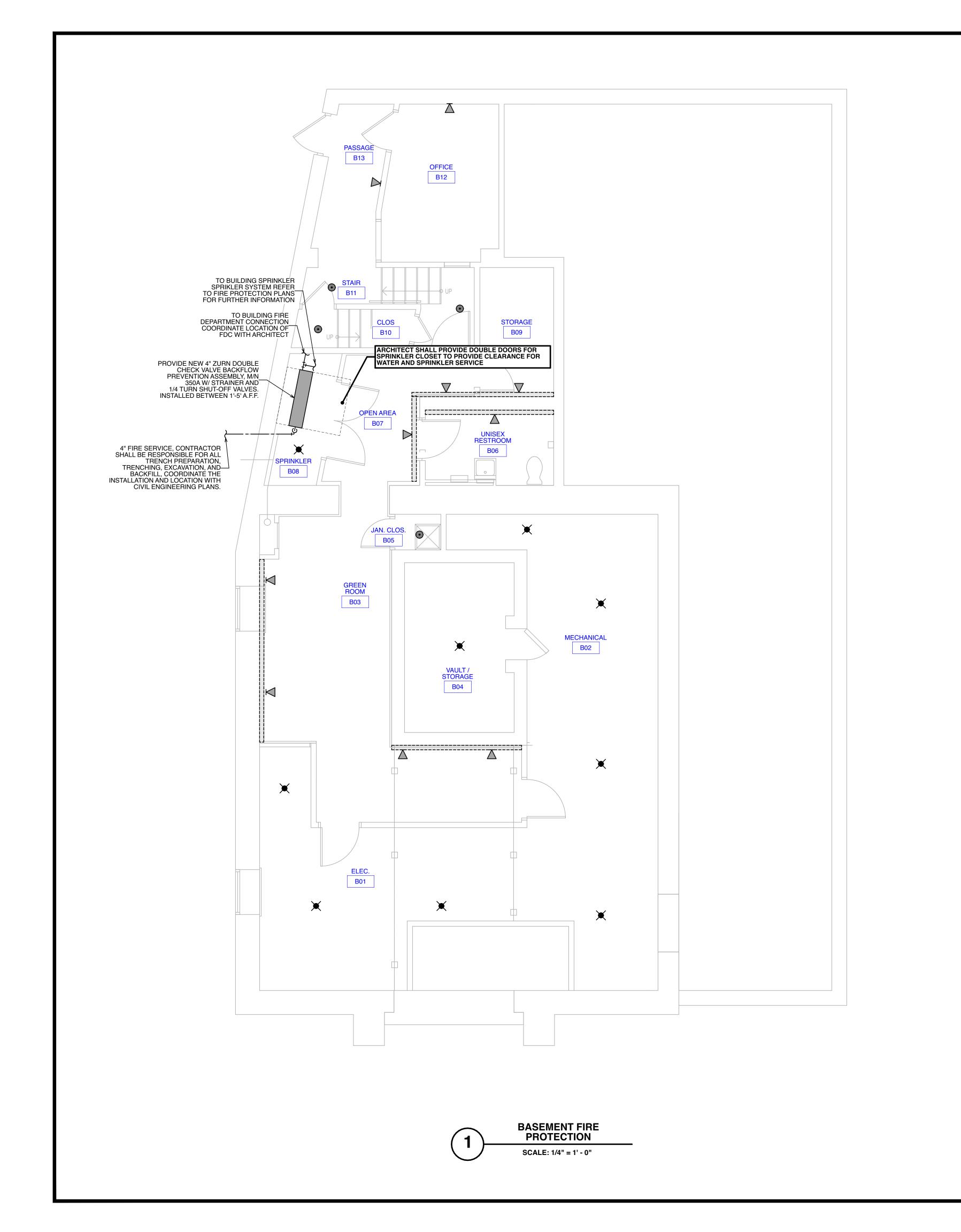
#### **GENERAL WORK:**

- 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
- 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
- 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 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 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, 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
- 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
- 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 blueline 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 reproducibles 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 reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer.

adhesive caulk.

- 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 ch Drainage Piping Equal or Smaller than 3"Ø at 1/4" per foot, Pitch Drainage Piping 4"Ø or Larger at 1/8"
- 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 Hydrotrols, P.D.I. certified and A.S.S.E. approved. Alternate sanitary vent piping shall be standard weight uncoated cast iron bell 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 bell 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 LFe480, 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.
- All Plumbing must be tested and approved by plumbing inspector and meet the requirements of the 2021 National Standard
- All potable water outlets shall be protected from cross connection as required per the 2021 National Standard Plumbing Code 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 pip ng 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 Plumbin Code 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
- 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

	1/7/25		Issue	d for Bid			
No.	DATE		DESC	RIPTION			REV'D BY
			REVI	SIONS			
APPROVA	Lı			<i>TWP. BLACK</i> OUTH BLACI		<i>UŃITY C</i> E	
Y	Jose		McKernan Jr., Architects Oobbs Lane Suite 204 Cherry Hill,		PLUMBING	SCHED ETAILS	ULES &
	Trevose,	Blvd., Suite 503 PA 19053 -322-7711	SEAL:	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.	PROLING: 1016H	DRAWING NO:	2.0



# **GENERAL NOTES**

- SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR THE CALCULATION, DESIGN APPROVAL, CONFORMANCE AND OPERATION OF WET AND/OR DRY FIRE PROTECTION AND/OR SUPPRESSION SYSTEMS. THE PLACEMENT OF THIS INFORMATION ON THE DRAWINGS IS FOR IDENTIFICATION ONLY.
- SPRINKLER CONTRACTOR SHALL PROVIDE A COMPLETE FIRE PROTECTION SYSTEM AS SHOWN ON PLANS AND AS REQUIRED. HE IS SOLELY RESPONSIBLE TO PROVIDE A COMPLETE WORKING SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13, STATE OF NEW JERSEY AND LOCAL CODES, AND THE OWNER'S INSURANCE UNDERWRITER'S REQUIREMENT.
- SPRINKLER CONTRACTOR SHALL PAY FOR PERMITS, INSPECTIONS, TESTS AND APPROVALS RELATED TO THE SPRINKLER SYSTEM AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION. THIS INCLUDES SUPPLYING ERECTION DRAWINGS TO THE ARCHITECT IN ACCORDANCE WITH THE GENERAL CONDITIONS AND THE MECHANICAL TRADE REQUIREMENTS OF THE
- THE AREA WITHIN THE SCOPE OF THIS PROJECT IS TO BE 100% PROTECTED BY THE FIRE SUPPRESSION SYSTEM AND SHOULD BE INSTALLED PER NFPA.
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- SPRINKLER HEADS SHALL BE APPROVED TYPE OF PROPER TEMPERATURE RATING FOR ITS PARTICULAR LOCATION. FIRE DEPARTMENT CONNECTIONS SHALL BE CHROME PLATED BRASS, WITH CONNECTIONS IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT REGULATIONS. ALL CONTROLS, DRAINS, TEST VALVES, AND ALARM VALVES SHALL BE PROVIDED WITH IDENTIFICATION SIGNS OF THE STANDARD DESIGN ADOPTED BY THE AUTOMATIC SPRINKLER INDUSTRY.
- SPRINKLER CONTRACTOR SHALL COORDINATE THE ROUTING OF ALL PIPING WITH THE LOCATIONS OF ALL PLUMBING PIPING, HVAC DUCTWORK & EQUIPMENT, ELECTRICAL CONDUIT, AND STRUCTURAL ELEMENTS. COORDINATE WITH ALL TRADES INVOLVED IN THE PROJECT.

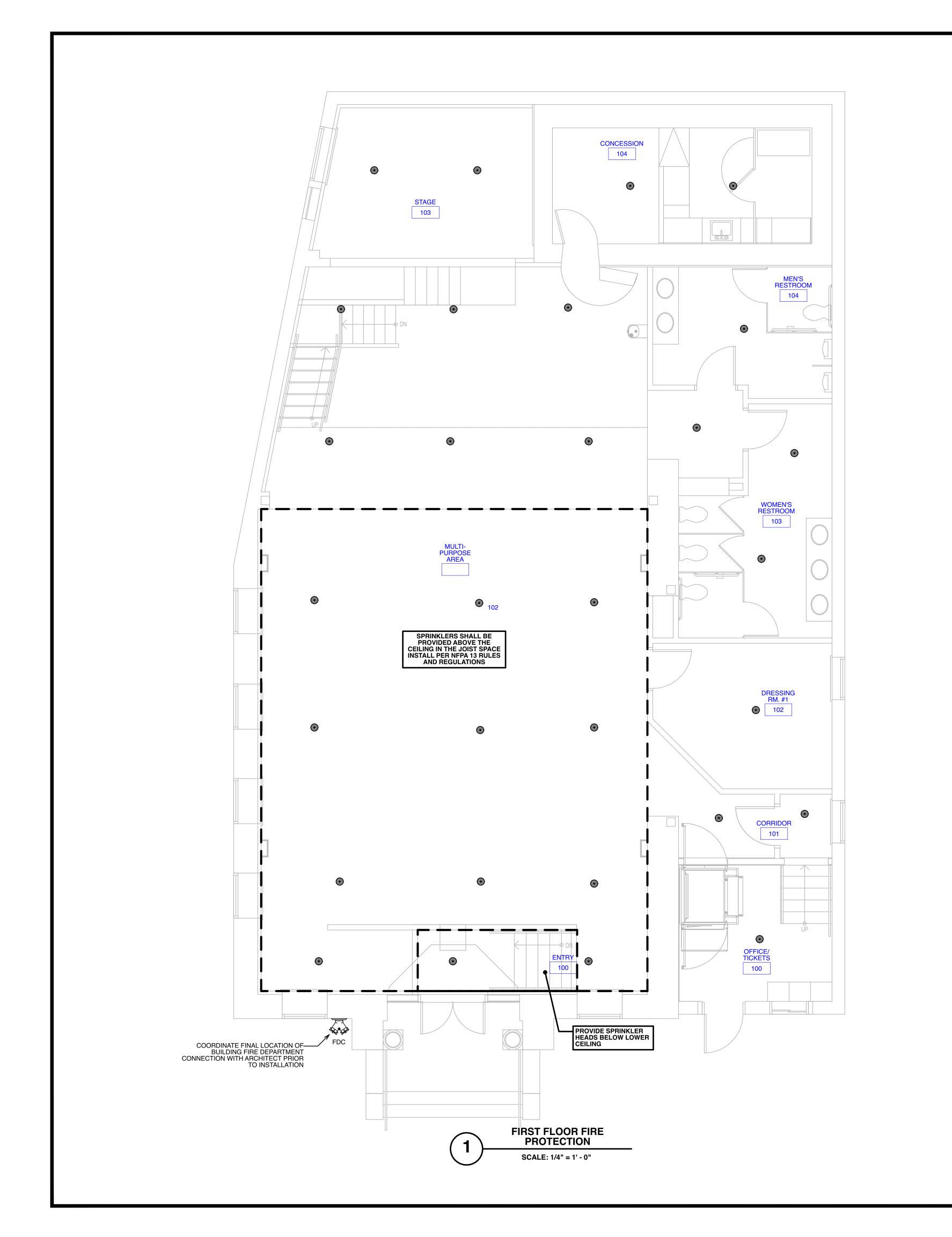
## FIRE PROTECTION SYMBOLS

- = CONCEALED WET SPRINKLER HEAD W/
- = UPRIGHT WET SPRINKLER HEAD

= SIDEWALL WET SPRINKLER HEAD IN WALL

DESCRIPTION INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE: GLOUCHESTER TWP. BLACK BOX COMMUNITY CENTER 3 SOUTH BLACKHORSE PIKE BLACKWOOD, NEW JERSEY, 08012 Joseph F. McKernan Jr., Architects & Associates

100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 BASEMENT FIRE PROTECTION



# GENERAL NOTES

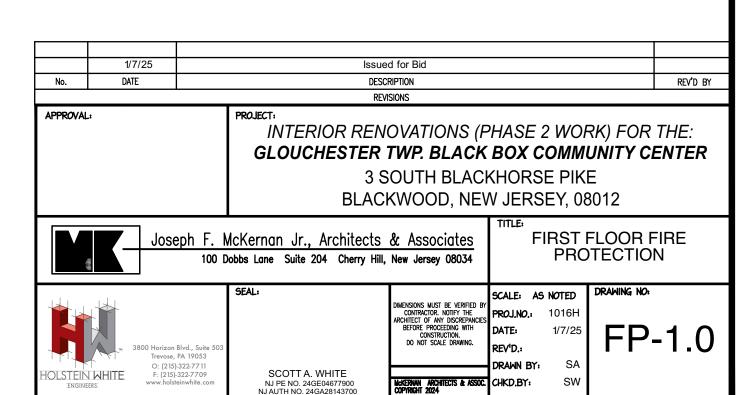
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- 4. THE AREA WITHIN THE SCOPE OF THIS PROJECT IS TO BE 100% PROTECTED BY THE FIRE SUPPRESSION SYSTEM AND SHOULD BE INSTALLED PER NFPA.
- THE COMPLETE SPRINKLER INSTALLATION SHALL INCLUDE THE FOLLOWING: CONNECTION TO THE FIRE MAIN OR TO MAIN IN UTILITY METER VAULT AS REQUIRED. ALL CONTROL VALVES, CHECK VALVES, ALARM VALVES AND NECESSARY TIE-IN. WATER MOTOR GONG FLOW SWITCH, APPARATUS AND THE TIE-IN TO THE BUILDING FIRE ALARM SYSTEM. ALL PIPE, VALVES, FITTINGS, AND SPRINKLER HEADS INCLUDING SPARE HEADS IN A CABINET. ALL INSERTS,
- HANGERS AND SUPPORTS FOR PIPE AND EQUIPMENT.

  SPRINKLER HEADS SHALL BE APPROVED TYPE OF PROPER TEMPERATURE RATING FOR ITS PARTICULAR LOCATION. FIRE DEPARTMENT CONNECTIONS SHALL BE CHROME PLATED BRASS, WITH CONNECTIONS IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT REGULATIONS. ALL CONTROLS, DRAINS, TEST VALVES, AND ALARM VALVES SHALL BE PROVIDED WITH IDENTIFICATION SIGNS OF THE STANDARD DESIGN ADOPTED BY THE AUTOMATIC SPRINKLER INDUSTRY.
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## FIRE PROTECTION SYMBOLS

- = CONCEALED WET SPRINKLER HEAD W/
- COVERPLATE

= UPRIGHT WET SPRINKLER HEAD



#### **FP DESIGN CRITERIA**

- "LIGHT HAZARD": SPRINKLER PROTECTION SHOULD BE PROVIDED IN THE DEFINED AREAS DESIGNED (UNLESS INDICATED OTHERWISE) TO PROVIDE A DENSITY OF 0.10 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1.500 SQUARE FEET WITH 100 GPM RESERVED FOR HOSE STREAMS. SPRINKLER HEADS SHOULD BE RATED AT 1 65 DEGREES FAHRENHEIT. IF A BUILDING HAS A ROOF CLEARANCE HEIGHT OF OVER 20 FEET, A SOLID SUSPENDED CEILING SHOULD BE PROVIDED WITH SPRINKLERS ABOVE AND BELOW THE SUSPENDED CEILING, LIGHT HAZARD SHALL APPLY TO ALL SPACES EXCEPT MECHANICAL CLOSETS.
- "ORDINARY HAZARD, GROUP 1": SPRINKLER PROTECTION SHOULD BE PROVIDED IN THE DEFINED AREAS DESIGNED (UNLESS INDICATED OTHERWISE) TO PROVIDE A DENSITY OF **0.25 GPM PER SQUARE** FOOT OVER THE MOST REMOTE 2,000 SQUARE FEET WITH **250 GPM** RESERVED FOR HÓSE STREAMS. SPRINKLER HEADS SHOULD BE RATED AT 165 **DEGREES FAHRENHEIT**. IF A BUILDING HAS A ROOF CLEARANCE HEIGHT OF OVER 20 FEET, A SOLID SUSPENDED CEILING SHOULD BE PROVIDED WITH SPRINKLERS ABOVE AND BELOW THE SUSPENDED CEILING. ORDINARY HAZARD, GROUP 1 SHALL APPLY TO ALL MECHANICAL CLOSETS.
- REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR BUILDING USE GROUP, OCCUPANCY CLASSIFICATION, FIRE-RESISTIVE CLASSIFICATION, CONTENT INFORMATION, LOCATION AND ARRANGEMENT OF STRÚCTURE.
- REFER TO CIVIL UTILITY PLANS FOR WATER SERVICE LOCATION AND ALL SITE UTILITIES INFORMATION.

#### **GENERAL NOTES**

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- THE AREA WITHIN THE SCOPE OF THIS PROJECT IS TO BE 100% PROTECTED BY THE FIRE SUPPRESSION SYSTEM AND SHOULD BE INSTALLED PER NFPA.

#### THE COMPLETE SPRINKLER INSTALLATION SHALL INCLUDE THE FOLLOWING: CONNECTION TO THE FIRE MAIN OR TO MAIN IN UTILITY METER VAULT AS

- REQUIRED. ALL CONTROL VALVES, CHECK VALVES, ALARM VALVES AND NECESSARY TIE-IN. WATER MOTOR GONG FLOW SWITCH APPARATUS AND THE TIE-IN TO THE BUILDING FIRE ALARM SYSTEM. ALL PIPE. VALVES. FITTINGS, AND SPRINKLER HEADS INCLUDING SPARE HEADS IN A CABINET. ALL INSERTS, HANGERS AND SUPPORTS FOR PIPE AND EQUIPMENT.
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#### FIRE PROTECTION SPECIFICATIONS

#### FIRE PROTECTION SYSTEMS:

For the convenience of the Design/Build Fire Protection Contractors, a set of Fire Protection Specifications have been furnished to act as a design criteria enabling the Fire Protection Contractors to Bid on a defined scope of work. Major items such as the Fire Line, Compressors, etc. have been indicated and/or mentioned on our drawings for Building Preliminary Design only. The Fire Protection Contractor shall assume full responsibility for the final design requirements, coordination and installation of the fire protection systems.

The Fire Protection Contractor is to provide the fire protection system as shown on plans and/or as required. He is solely responsible to provide a complete working fire protection system designed and installed in accordance with NFPA 13, NFPA 24, State and Local Codes, Landlord Requirements, the Owner's Insurance Underwriter's requirement and as required by the local Fire Marshall.

#### SPRINKLER SYSTEM AND BUILDING FIRE PROTECTION SYSTEMS:

- All sprinkler work shall be installed in accordance with the requirements of the local rating bureau and the rules and regulations of the local and state codes. The Contractor shall be responsible for the calculation, design approval, conformance and operation of wet fire protection suppression systems. The placement of this section of the specification within this division is for identification only. The area within the scope of this project is to be 100% protected by the fire suppression system. The Engineer does not assume any responsibility or liability for the design, calculation, approval, review conformance and operation of the items included herewith and/or for the scope and adequacy of these systems.
- The complete sprinkler installation shall include but not be limited to the following:
  - a. All control valves, check valves, alarm valves and necessary tie-in.
  - Water motor gong flow switch, apparatus and the tie-in to the building fire alarm system.
  - c. All pipe, valves, fittings, and sprinkler heads including spare heads in a cabinet.
  - d. All inserts, hangers and supports for pipe and equipment. All hangers and inserts shall meet the approval of all authorities having
- The contractor shall pay for permits, inspections, tests and approvals related to the sprinkler system as required by all authorities having jurisdiction. This includes supplying erection drawings to the architect in accordance with the general conditions and the mechanical trade
- requirements of the project specifications. All controls, drains, test valves, and alarm valves shall be provided with identification signs of the standard design adopted by the automatic
- sprinkler industry.
- Test piping and prove tight for two hours, as required by authorities having jurisdiction in the presence of said authorities, who shall be given ample notice before tests are made. Make preliminary tests and prove satisfactory before requesting witnessing of final test.
- Make tests in stages if so ordered by the Architect to facilitate work by others. Repair defects disclosed by tests, or, if required by the Architect replace defective work.
- Provide all equipment necessary to complete the sprinkler systems including electrical wiring, and related appurtenances as required.
- Provide and maintain temporary piping, Siamese connections, hose valves, hose racks, as required by local fire department to protect floor areas during construction of building.

Refer to local fire department rules for extent of work involved in required temporary fire protection.

- When directed, remove temporary equipment which is considered unsatisfactory; replace by permanent equipment as specified herein.
- Underground piping shall be laid to bear on entire length. All elbows, bends, etc., shall be securely braced or clamped and provided with
- concrete thrust blocks in an approved manner Hangers and supports shall be provided as required by code. Provide all necessary clamps and rods for properly supporting sprinkler risers and underground piping, all in strict accordance with requirements of N.F.P.A. Pamphlets No. 13 and 24. Sprinkler lines under ducts shall
- not be supported from duct work but shall be supported from building structure with trapeze hangers where necessary. Inspector's test pipe as required by code for system, extended down to globe valve not more than 6-feet above floor with discharge as
- shown on the drawings. Test connections as required by code, in riser at point opposite drain connection and equipped with side outlet globe valve. Provide an
- Reductions in pipe sizes shall be made with one piece reducing fittings. Bushing will not be acceptable.
- Victaulic grooved piping system will be accepted on pipe 1-1/2 inches and larger in lieu of welded flanged or threaded methods. Plain end mechanical push on locking type fittings are accepted on pipe 2-inches and smaller in lieu of threaded method. Couplings and fittings shall be manufactured by Victaulic or an approved equal.
- All material and products shall be approved for the particular service selected by Underwriter's Laboratories, Inc., Factory Mutual, State's current IBC and local codes where applicable, and installed in accordance with NFPA 13, other applicable chapters and manufacturer's
- To assure system integrity and performance, all mechanical couplings, fittings, flanges, bolted branch outlets shall be furnished by the same
- Support sprinkler piping from building structure by means of hangers, inserts, and other supports as per requirements of N.F.P.A. Pamphlet

#### FIRE PROTECTION SYSTEM SEALS: Provide brass cross-line chain, all brass padlock, 2 keys for each manually operated shutoff valve required to be sealed in open position.

#### SPRINKLER HEADS: Sprinkler heads shall be approved type of proper temperature rating for its particular location.

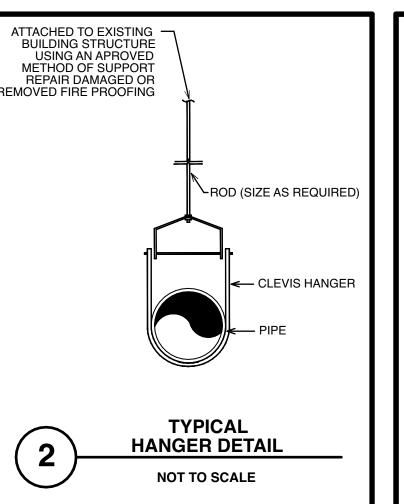
Provide extra heads for each type with wrench and head cabinet.

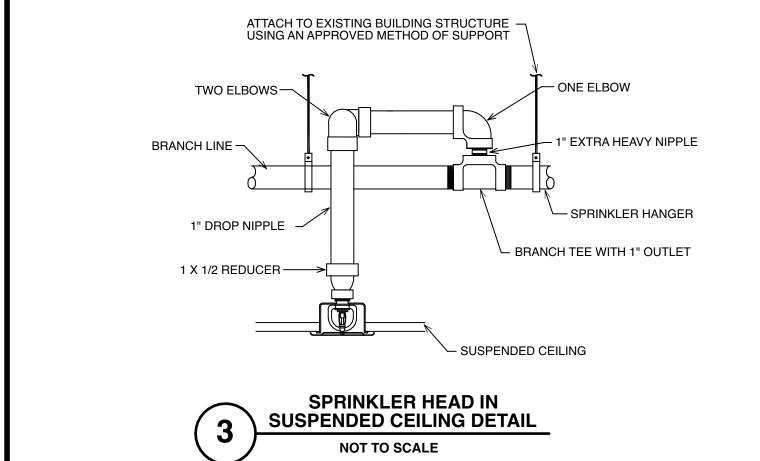
underwriters' approved gauge, in one outlet and plug for other outlet.

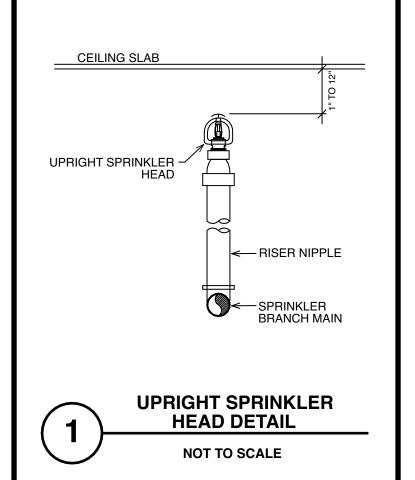
- Concealed sprinkler heads with cover plates (color shall be selected by architect) and shall be used in finished areas and where ceilings are
- Sprinkler heads shall be installed in a "straight" and organized fashion, "Center of Tile" installation is required.

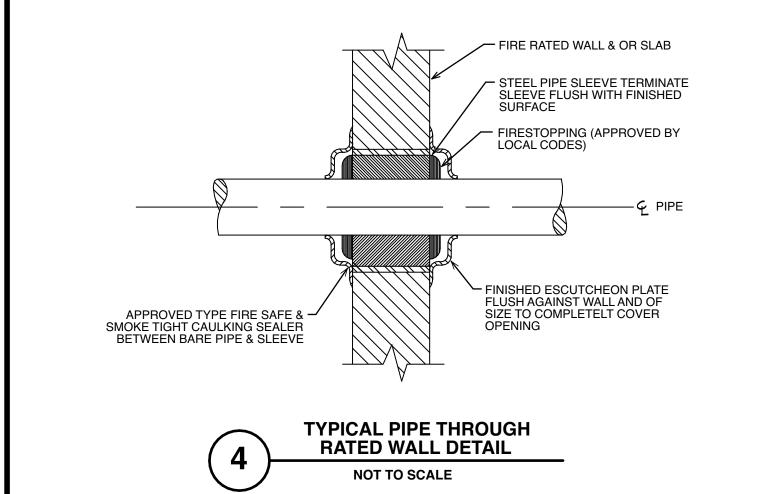
#### GENERAL NOTES: All spaces shall be fully protected.

- The Fire Protection Contractor shall submit a head layout to the Architect and Building Owner for review prior to erection of the work.
- The Fire Protection Contractor shall submit calculations, drawings, and shop drawings for review by the Engineer and shall coordinate their
- The Contractor shall maintain as-built drawings and deliver them to the Owner upon completion of the project.







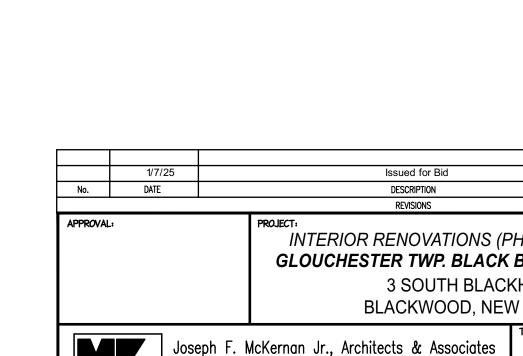


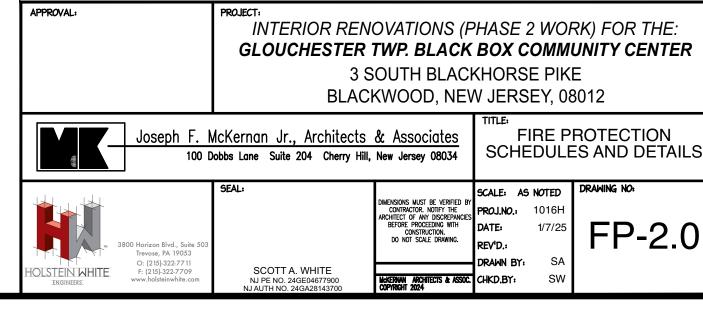
# FIRE PROTECTION SYMBOLS

- = CONCEALED WET SPRINKLER HEAD W/
- = UPRIGHT WET SPRINKLER HEAD
- □ = SIDEWALL WET SPRINKLER HEAD IN WALL

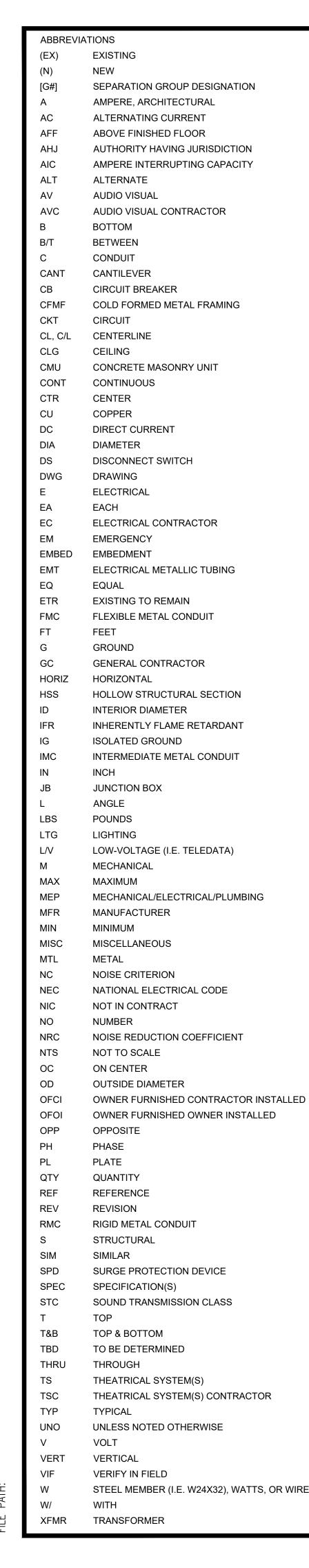
# **ELECTRICAL COORDINATION**

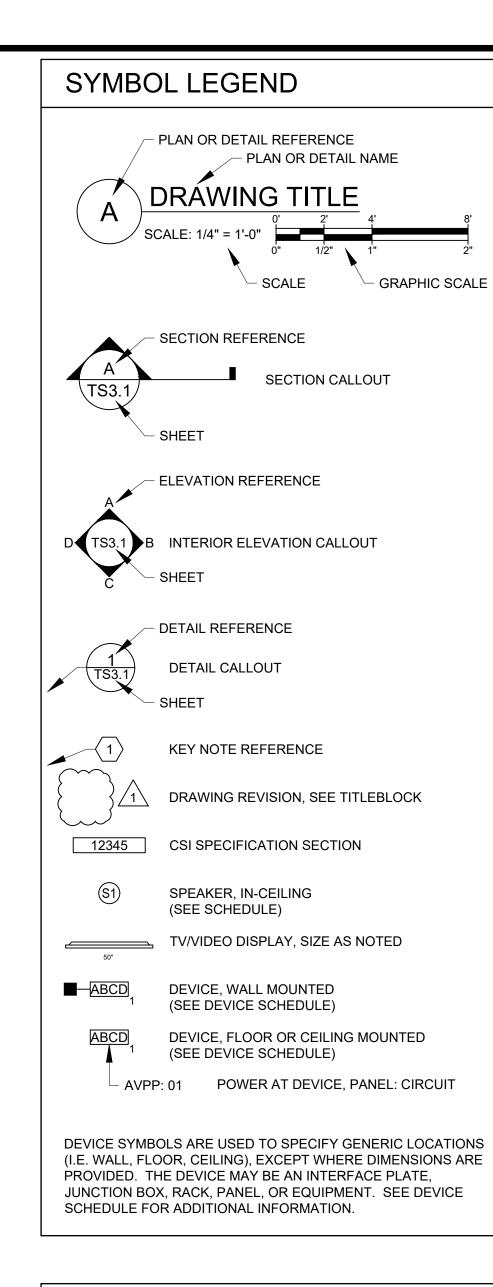
- IT SHALL BE THE RESPONSIBILITY OF THE FIRE SUPPRESSION CONTRACTOR TO COORDINATE THE LOCATIONS OF SUPPRESSION SYSTEM PIPING WITH THE LECTRICAL CONTRACTOR. FIRE SUPPRESSION PIPING SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW LECTRICAL EQUIPMENT.
- COORDINATION OF PIPING LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE FIRE SUPPRESSION CONTRACTOR. APPROVAL OF FIRE SUPPRESSION SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY FINAL COORDINATION SHALL OCCUR IN FIFLD WITH ELECTRICAL CONTRACTOR, FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN RELOCATION OF SUPPRESSION SYSTEM PIPING AT CONTRACTOR'S
- 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 TH LOOR 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

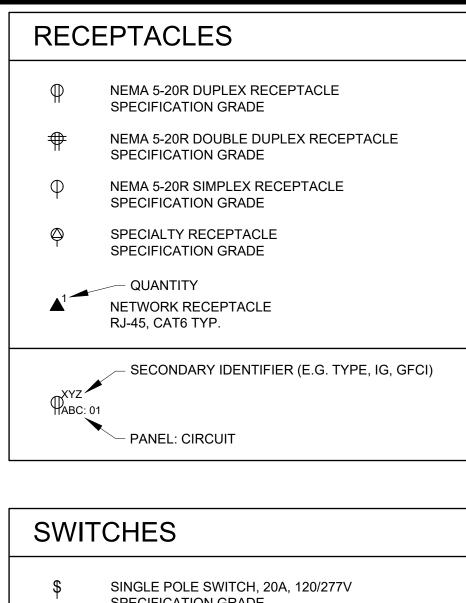


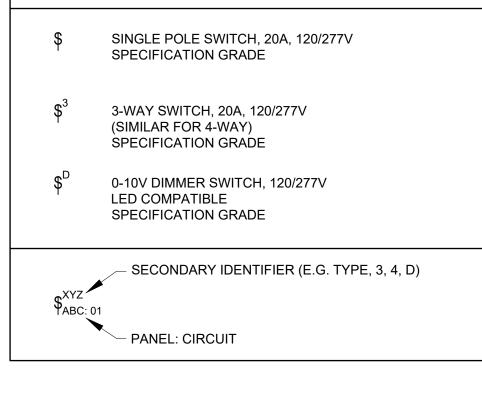


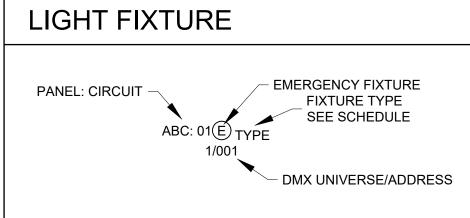
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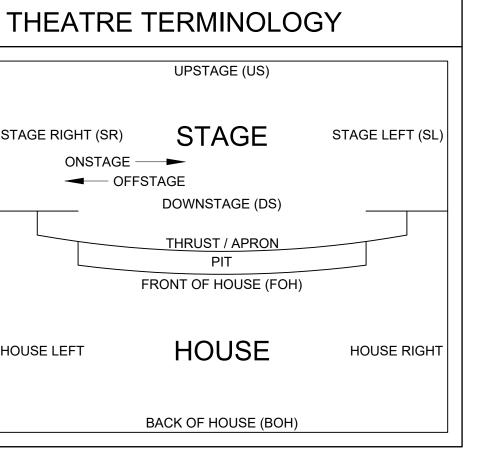


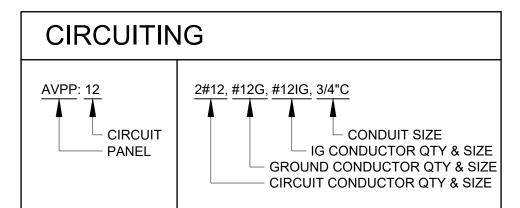








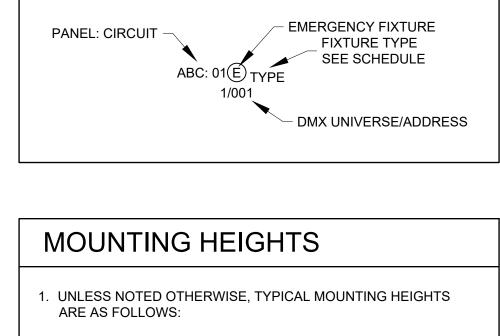


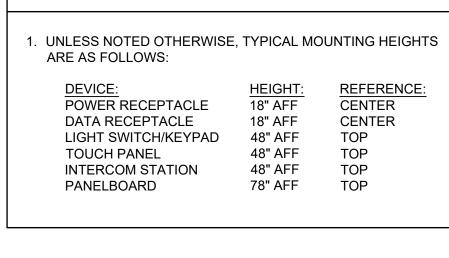


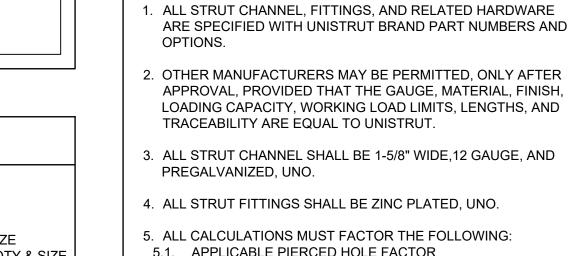
STAGE RIGHT (SR)

HOUSE LEFT

ONSTAGE -

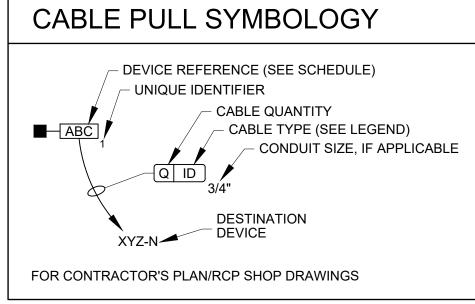


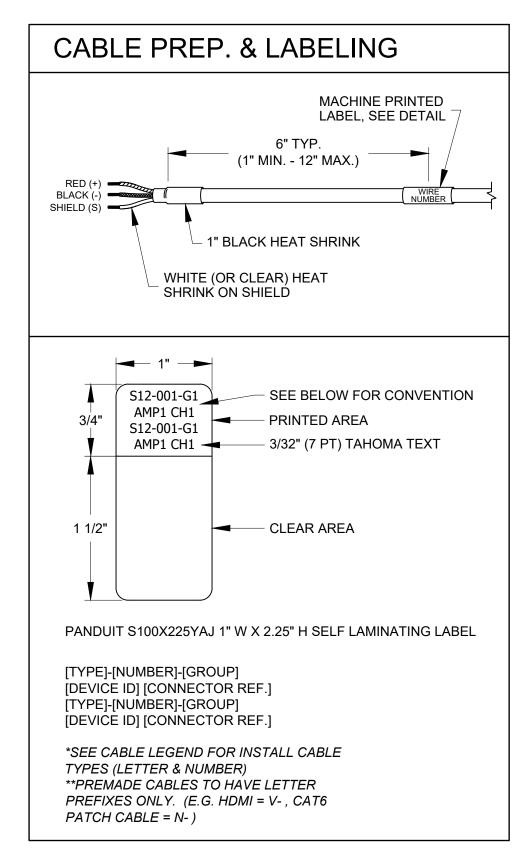


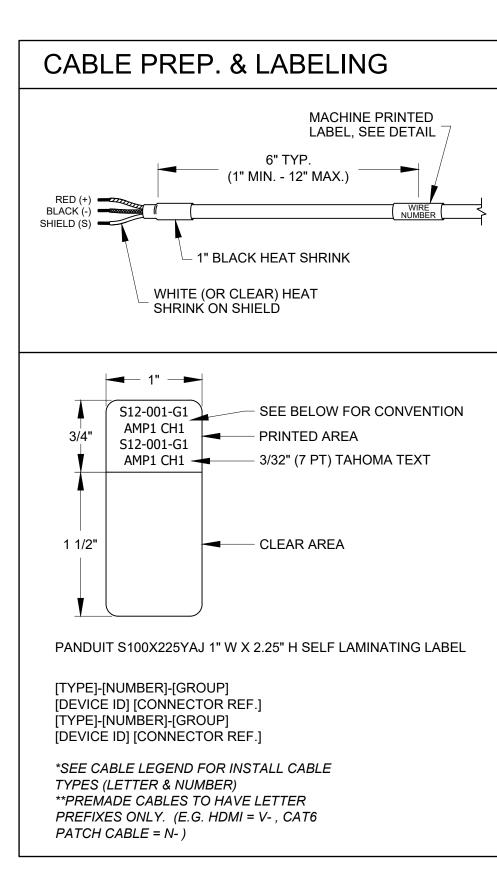


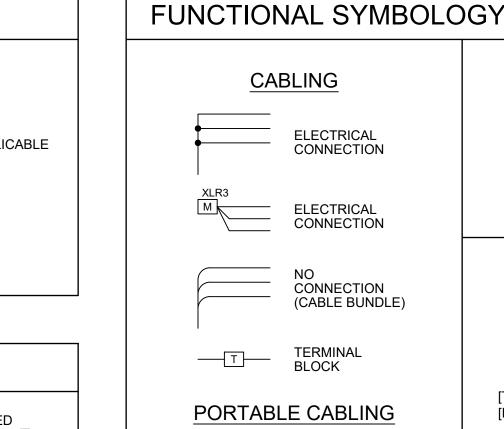
UNISTRUT

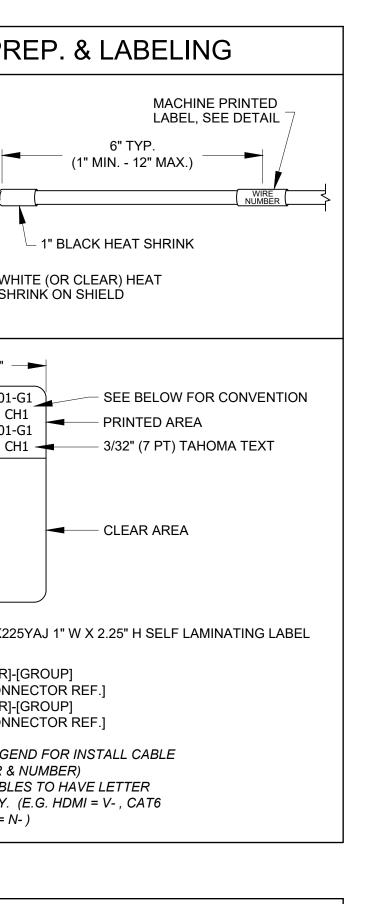
#### OPTIONS. 2. OTHER MANUFACTURERS MAY BE PERMITTED, ONLY AFTER APPROVAL, PROVIDED THAT THE GAUGE, MATERIAL, FINISH, LOADING CAPACITY, WORKING LOAD LIMITS, LENGTHS, AND TRACEABILITY ARE EQUAL TO UNISTRUT. 3. ALL STRUT CHANNEL SHALL BE 1-5/8" WIDE,12 GAUGE, AND PREGALVANIZED, UNO. 4. ALL STRUT FITTINGS SHALL BE ZINC PLATED, UNO. 5. ALL CALCULATIONS MUST FACTOR THE FOLLOWING: 5.1. APPLICABLE PIERCED HOLE FACTOR 5.2. UNBRACED LENGTH FACTOR 5.3. CHANNEL SELF WEIGHT 5.4. MIDSPAN LOADING REDUCTION 6. CANTILEVERED LOADS ARE PROHIBITED!

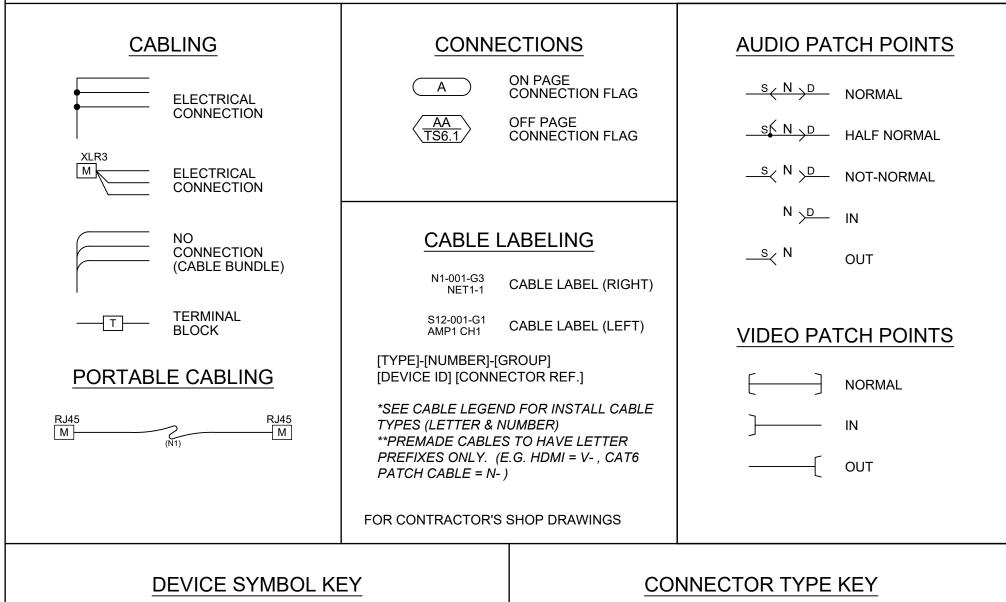


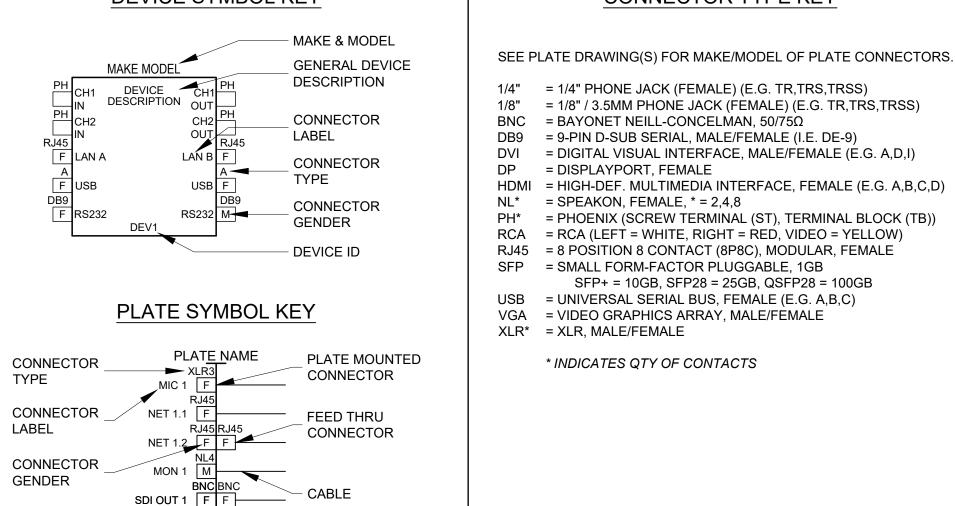


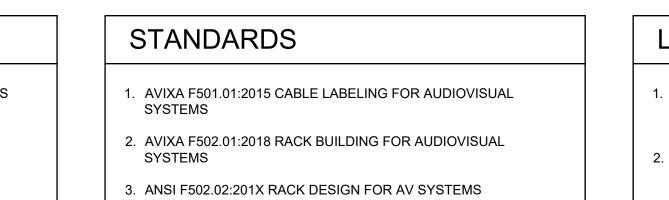












# 4. ANSI 10:2013 AUDIOVISUAL SYSTEMS PERFORMANCE VERIFICATION 5. ANSI A102.01:2017 AUDIO COVERAGE UNIFORMITY

6. ANSI E1.4-2 - 2021 ENTERTAINMENT TECHNOLOGY -

STATICALLY SUSPENDED RIGGING SYSTEMS

. ANSI E1.8 - 2018 (R2023) ENTERTAINMENT TECHNOLOGY -LOUDSPEAKER ENCLOSURES INTENDED FOR OVERHEAD SUSPENSION - CLASSIFICATION, MANUFACTURE AND STRUCTURAL TESTING

8. ANSI E1.11 - 2008 (R2018) ENTERTAINMENT TECHNOLOGY -USITT DMX512-A, ASYNCHRONOUS SERIAL DIGITAL DATA TRANSMISSION STANDARD FOR CONTROLLING LIGHTING EQUIPMENT AND ACCESSORIES

9. ANSI E1.20 - 2010 ENTERTAINMENT TECHNOLOGY - RDM REMOTE DEVICE MANAGEMENT OVER USITT DMX512 NETWORKS

10. ANSI E1.27-1 - 2006 (R2021) ENTERTAINMENT TECHNOLOGY -STANDARD FOR PORTABLE CONTROL CABLES FOR USE WITH ANSI E1.11 (DMX512-A) AND USITT DMX512/1990 PRODUCTS

11. ANSI E1.31 - 2018 ENTERTAINMENT TECHNOLOGY -LIGHTWEIGHT STREAMING PROTOCOL FOR TRANSPORT OF DMX512 USING ACN

12. ANSI E1.33 - 2019 ENTERTAINMENT TECHNOLOGY - (RDMnet) -

MESSAGE TRANSPORT AND DEVICE MANAGEMENT OF ANSI E1.20 (RDM) COMPATIBLE AND SIMILAR DEVICES OVER IP NETWORKS 13. ANSI E1.47 - 2020 ENTERTAINMENT TECHNOLOGY -

RECOMMENDED GUIDELINES FOR ENTERTAINMENT RIGGING

SYSTEM INSPECTIONS 14. ANSI E1.53 - 2019 OVERHEAD MOUNTING OF LUMINARIES, LIGHTING ACCESSORIES, AND OTHER PORTABLE DEVICES: SPECIFICATION AND PRACTICE

# LOW-VOLTAGE RACEWAYS

. ALL RACEWAYS SHALL BE METALLIC, CONTINUOUS, EMT (UNO), LABELED, CONTAIN A PULL STRING, AND ALL ENDS/FITTINGS TO HAVE PLASTIC BUSHINGS.

2. RACEWAYS IN SLAB, BELOW SLAB, OR ON-GRADE SHALL BE

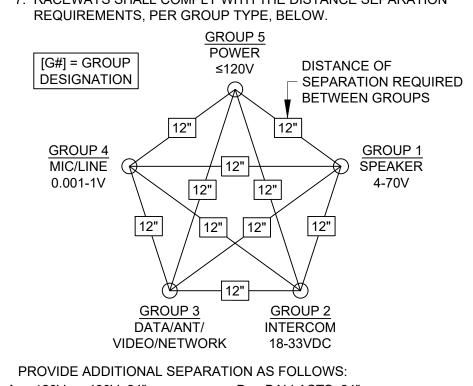
3. PROVIDE PULL BOXES EVERY 270 DEGREES OF BENDS AND AFTER EVERY 100 LINEAR FEET.

4. NO RACEWAY TO BE FILLED GREATER THAN 40%.

5. ALL RACEWAYS TO HAVE A PULL STRING INSTALLED AFTER PULLING ALL CABLING.

6. CLOSE PROXIMITY CROSSING OF RACEWAYS MUST BE PERPENDICULARLY AT 90°.

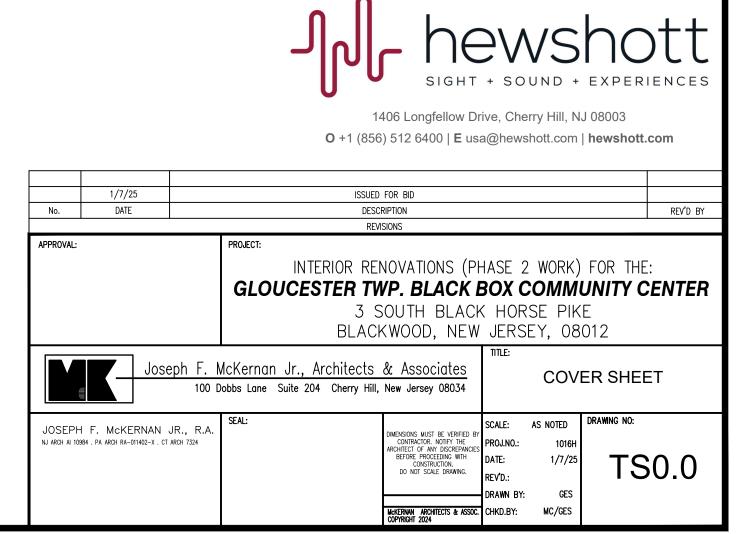
. RACEWAYS SHALL COMPLY WITH THE DISTANCE SEPARATION REQUIREMENTS, PER GROUP TYPE, BELOW.



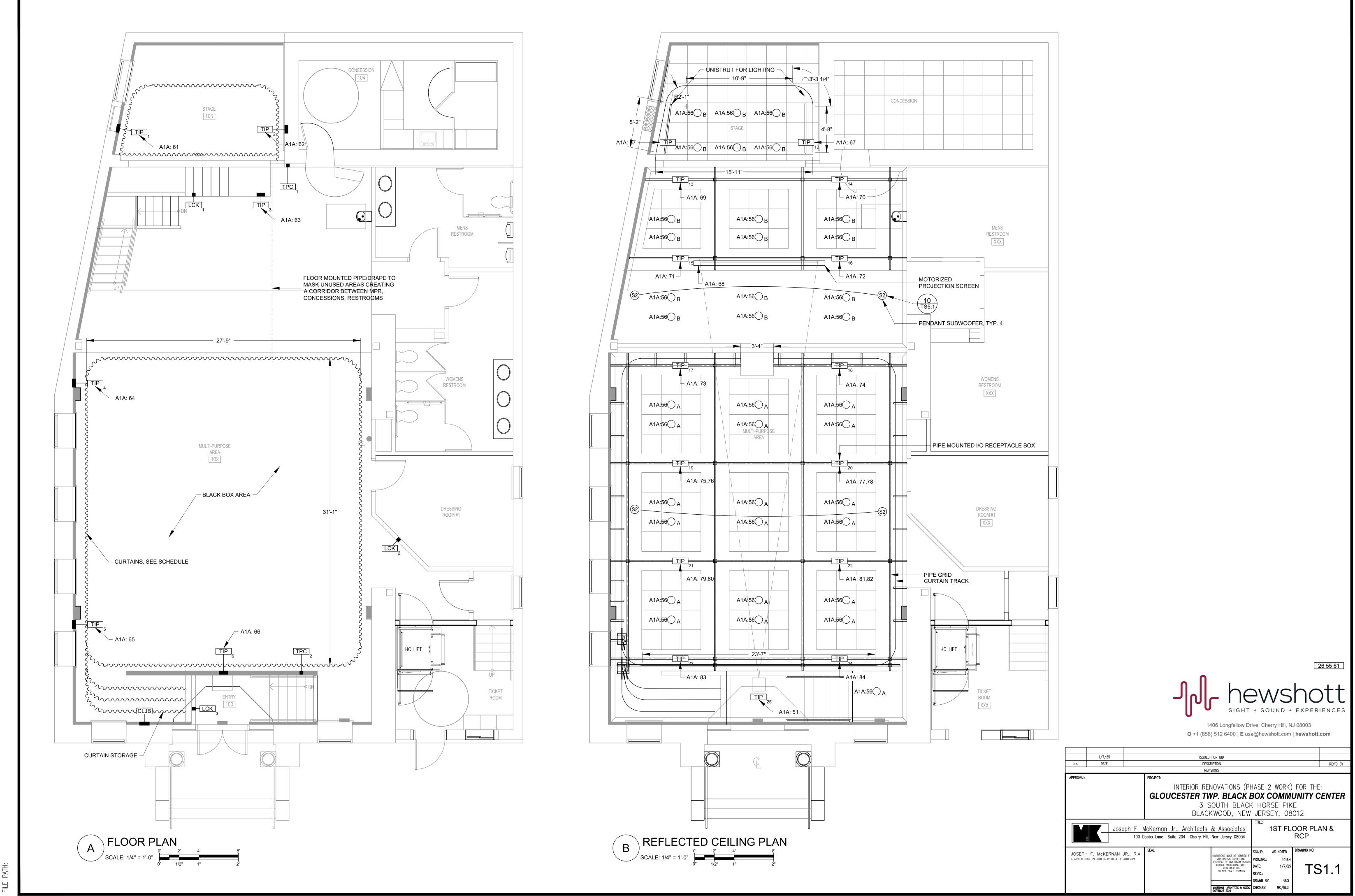
D. BALLASTS: 24" A. 120V<x<480V: 24" B. ≥480V: 36" E. ≥15kVA TRANSFORMERS: 96" C. DIMMED POWER: 24" F. POWER IN PVC CONDUIT: +12"

MAINTAIN SEPARATION WHEREVER PHYSICALLY POSSIBLE. SEE DETAILS FOR TYPICAL INSTALLATION METHODS. IN THE EVENT WHICH SEPARATION CAN NOT BE ACHIEVED, CONTACT CONSULTANT FOR REVIEW OF FIELD CONDITIONS.

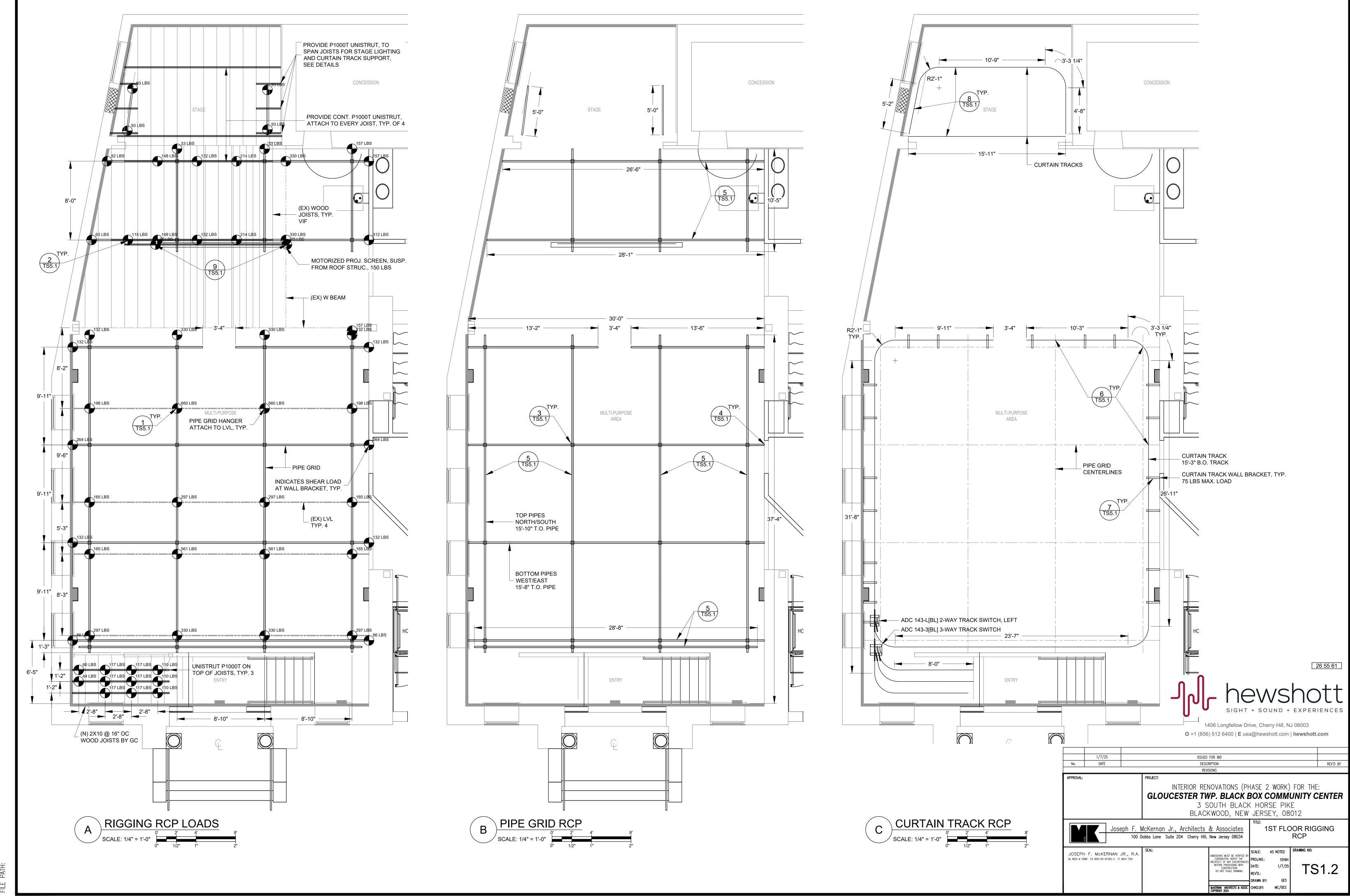
### **BACK BOXES** 1. 4-11/16" BOXES, 3-1/4" DEEP, KNOCKOUTS 1.1. RACO 260 (66.7 CU. IN.) 1.2. RACO 263 (113.3 CU. IN.) 1.3. LOW VOLTAGE PARTITION, RACO 981 1.4. 4-11/16" MUD RINGS & COVER PLATES (AS NEEDED) 2. LARGE SCREW COVER BOXES, PAINTED, NO KNOCKOUTS 2.1. 6"x6"x4". HOFFMAN ASE6X6X4NK 2.2. 12"X12"x4", HOFFMAN ASE12X12X4NK 2.3. 12"x6"x4", HOFFMAN ASE12X6X4NK 2.4. 4"x4"x24", HOFFMAN A4424T1T



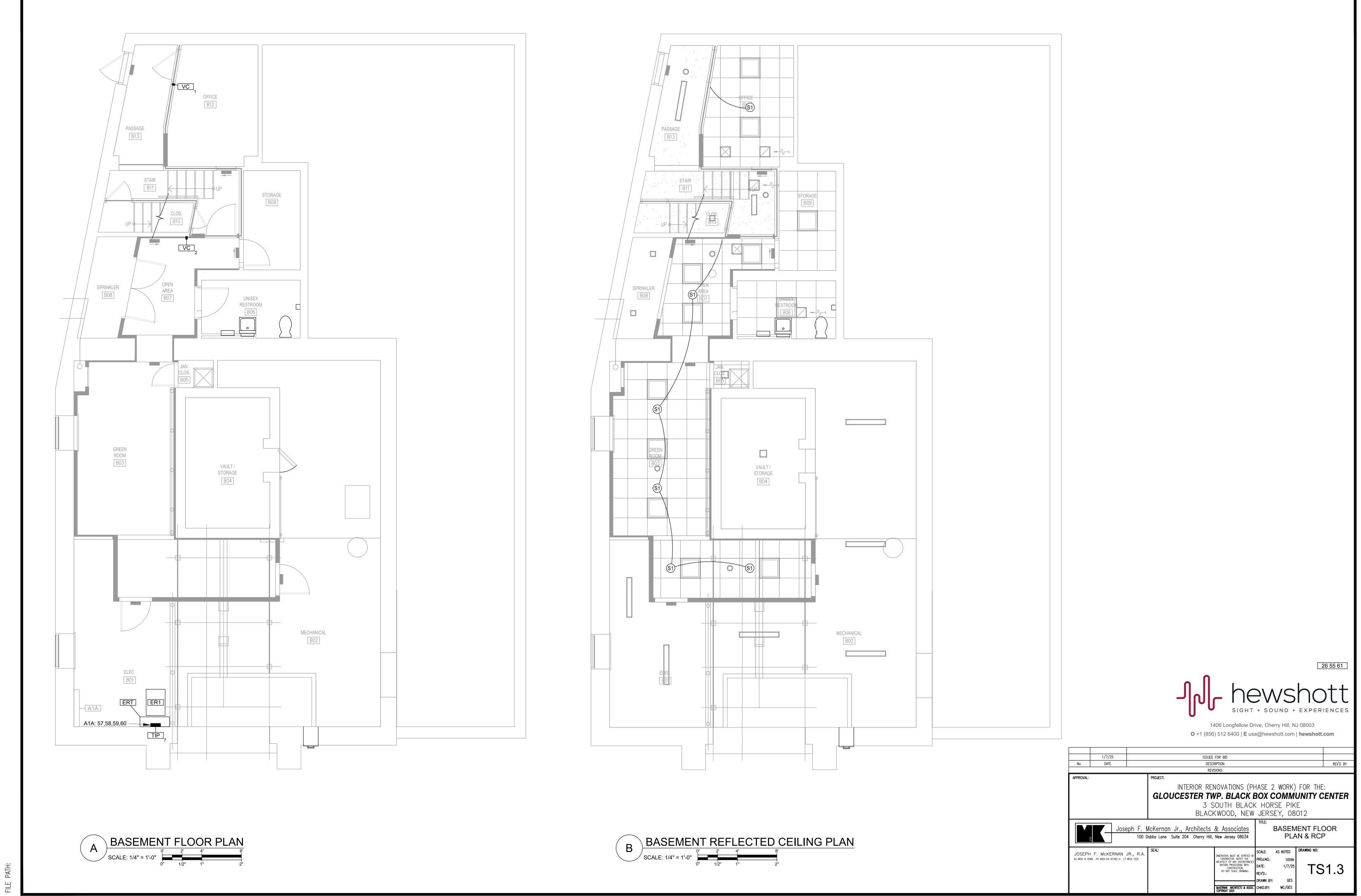
26 55 61



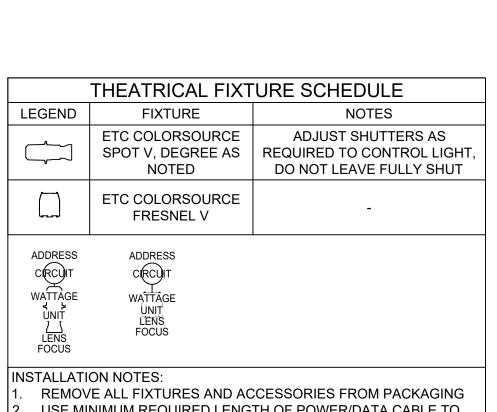
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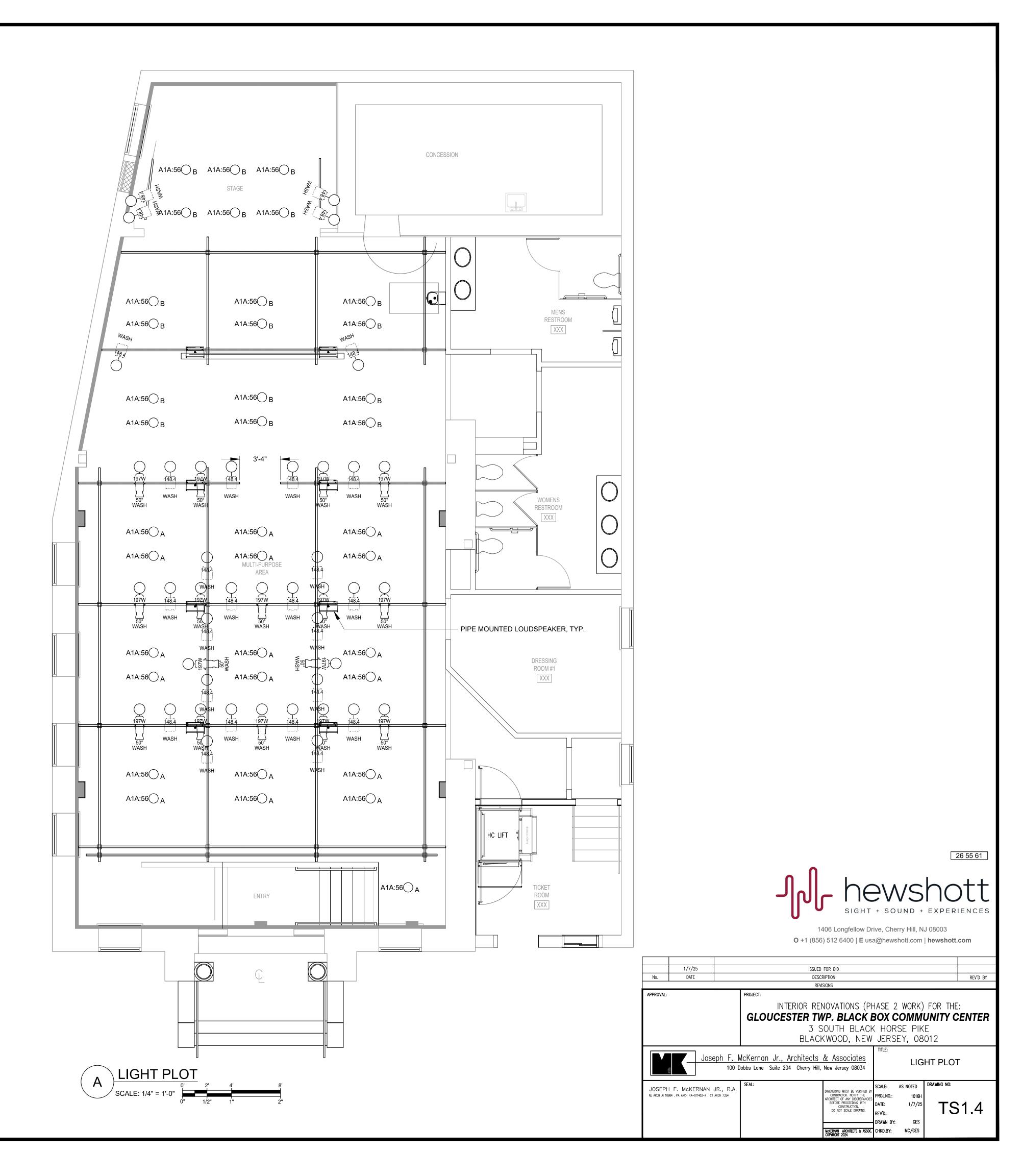
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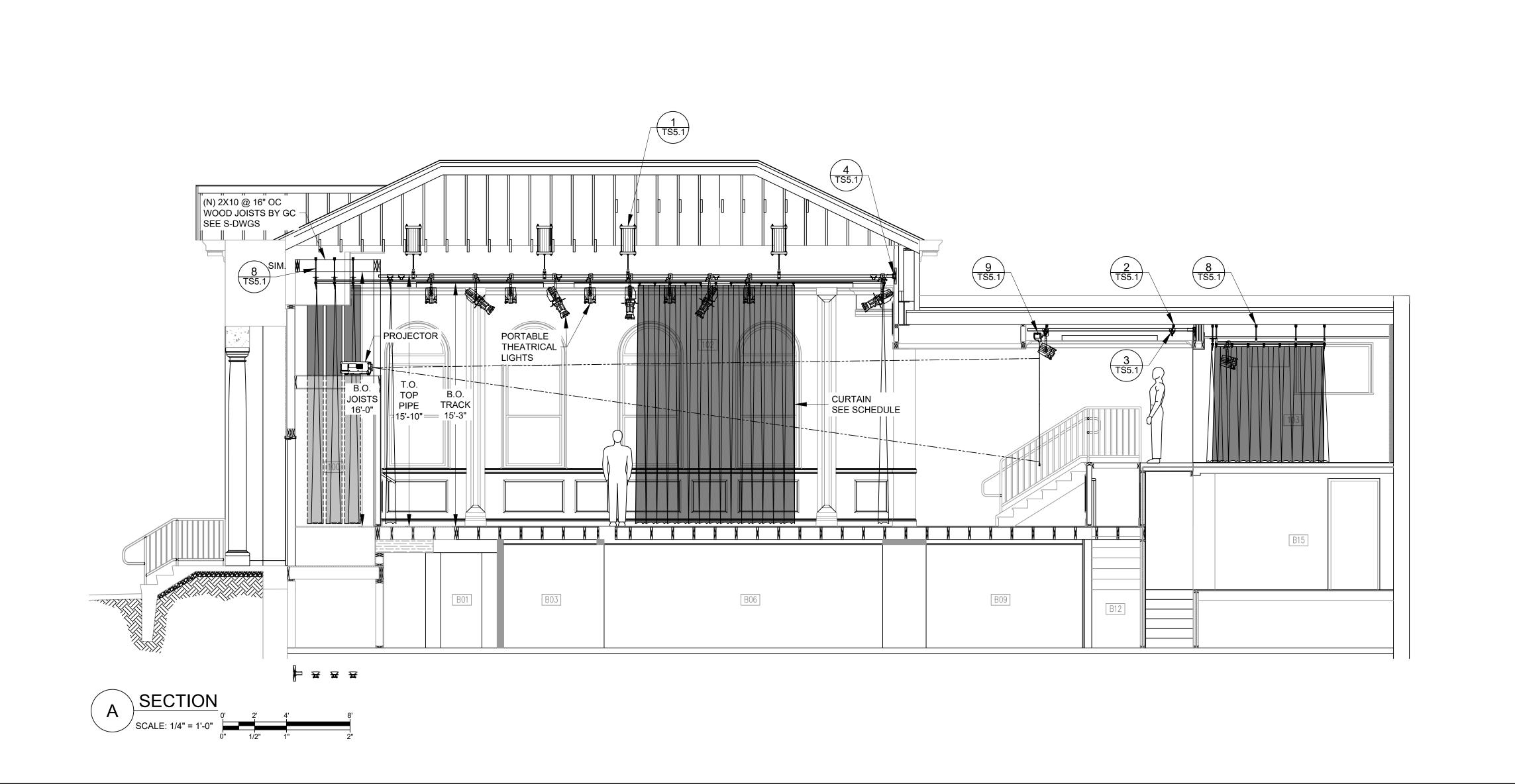


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- USE MINIMUM REQUIRED LENGTH OF POWER/DATA CABLE TO REACH DESIGNATED POWER/DATA RECEPTACLE, TIE UP ALL
- CABLE TO GRID WITH 1/8" TIELINE OR HOOK & LOOP ALLOW ENOUGH CABLE SLACK TO FULLY FOCUS FIXTURE IN
- ANY DIRECTION INSTALL ALL LENSES AS PER PLOT
- FOCUS ALL FIXTURES AS PER PLOT
- ADDRESS EACH FIXTURE SEPARATELY AS PER PLOT
- ASSEMBLE, SETUP, AND PATCH LIGHTING CONTROLLER







No. DATE DESCRIPTION REV'D BY

REVISIONS

APPROVAL:

INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE:

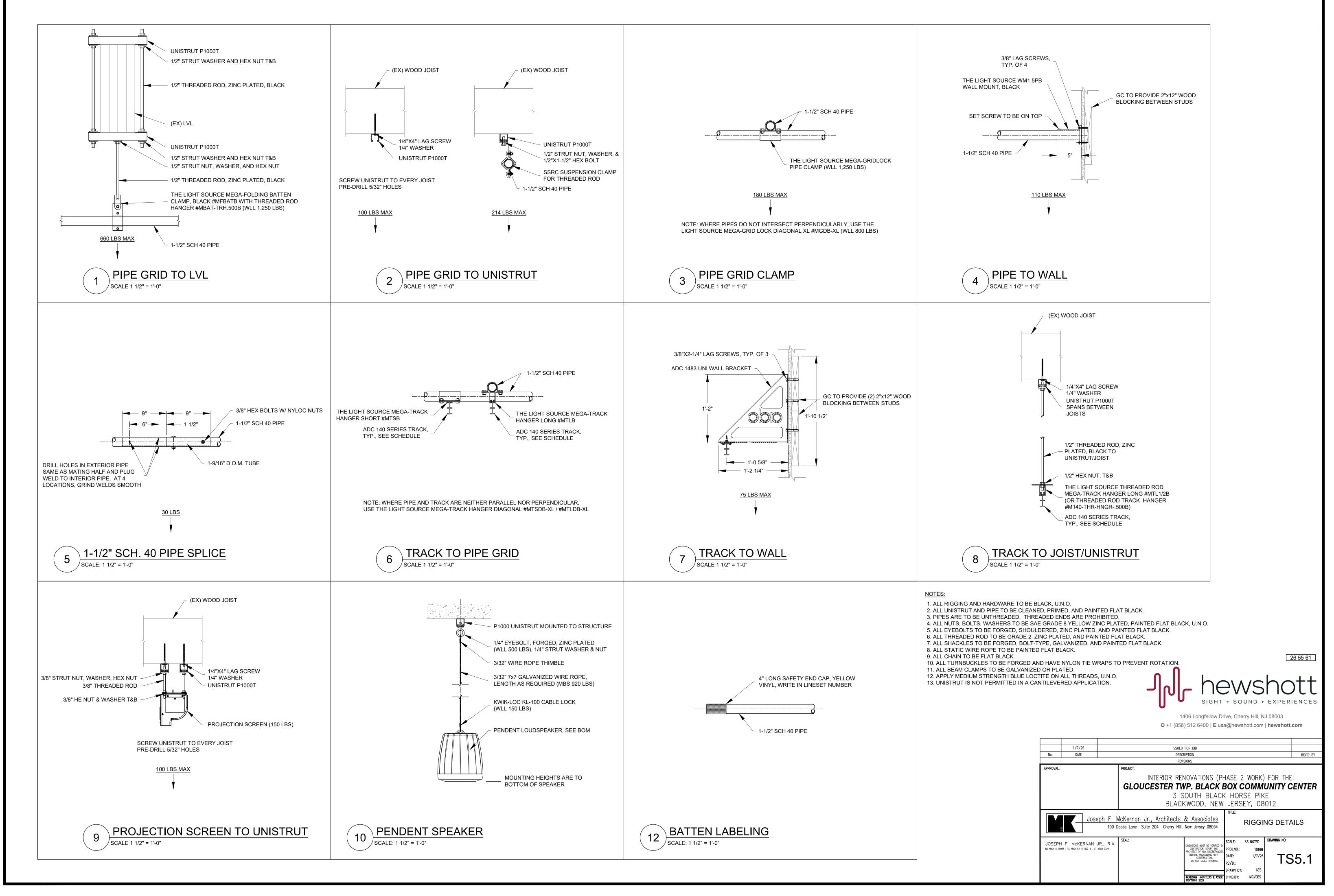
GLOUCESTER TWP. BLACK BOX COMMUNITY CENTER

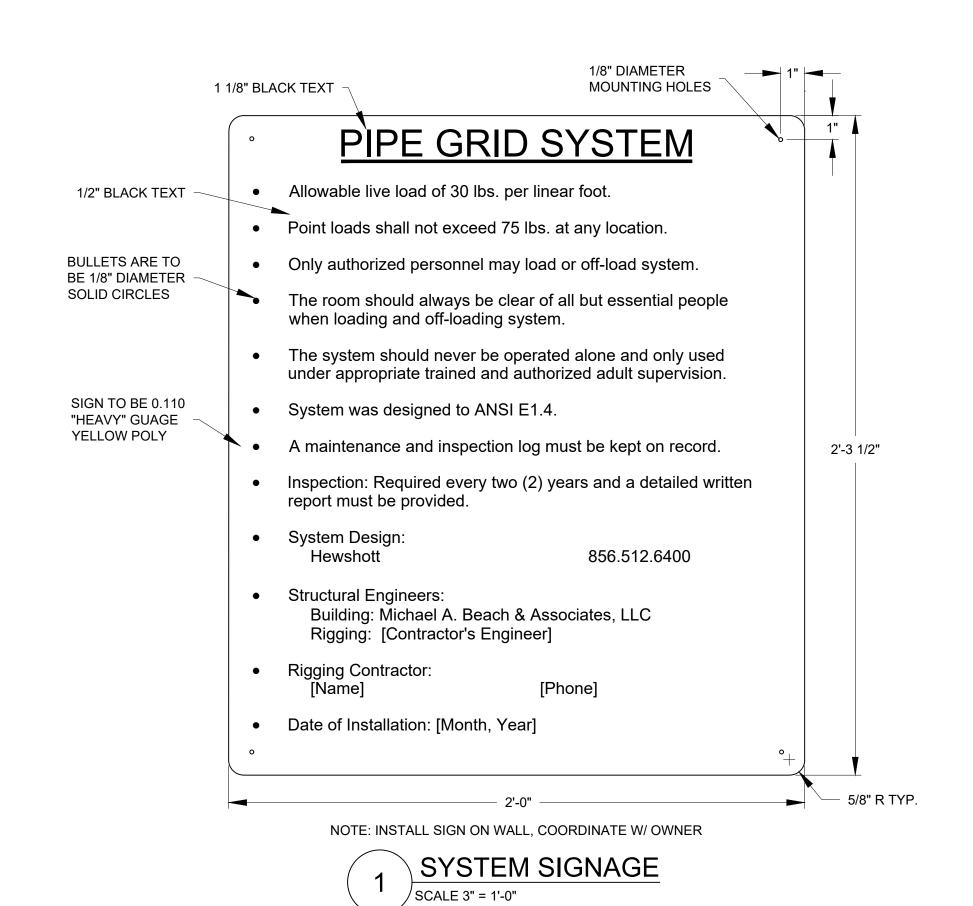
3 SOUTH BLACK HORSE PIKE
BLACKWOOD, NEW JERSEY, 08012

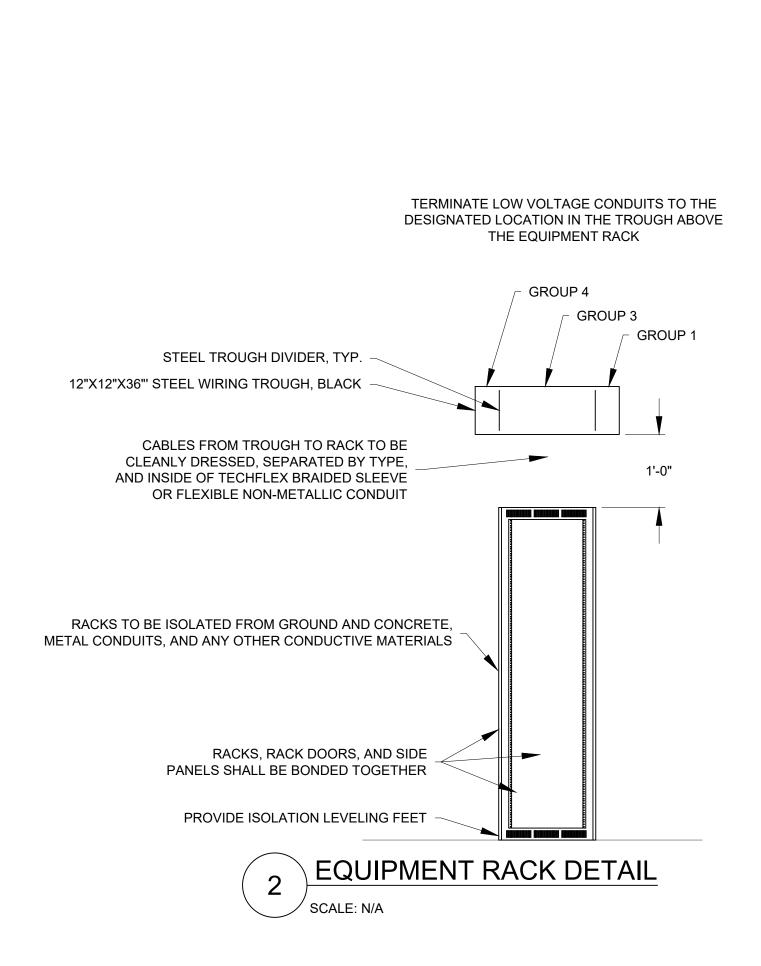
ISSUED FOR BID

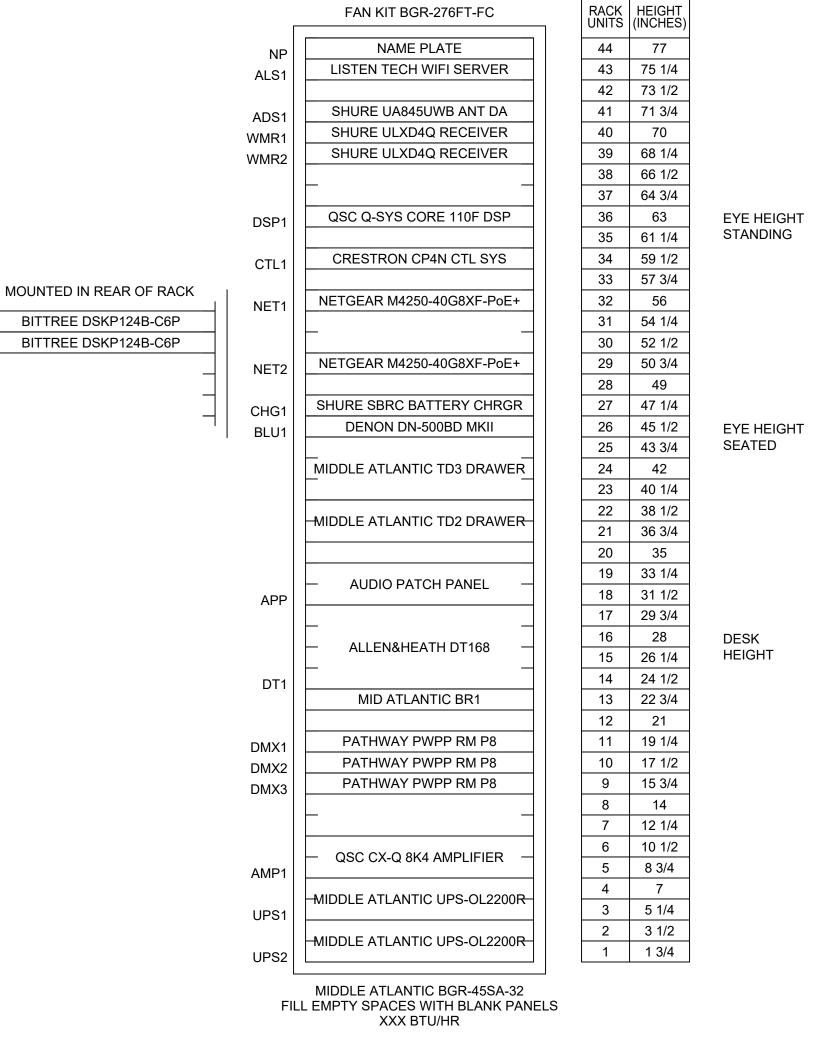
		KWOOD, NEW			· <del>_</del>
	McKernan Jr., Architects obbs Lane Suite 204 Cherry Hill,		TITLE:	CTIONS 1	
JOSEPH F. MCKERNAN JR., R.A. nj arch ai 10984 . pa arch ra-011402-x . ct arch 7324	SEAL:	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.	PROJ.NO.: DATE: REV'D.: DRAWN BY:	AS NOTED  1016H 1/7/25  GES MC/GES	TS3.1

PLOT DATE & TIME: FILE PATH:





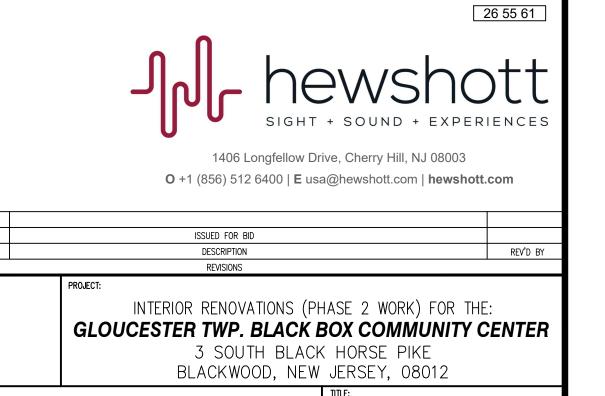




NPP1

NPP2





RACK ELEVATION

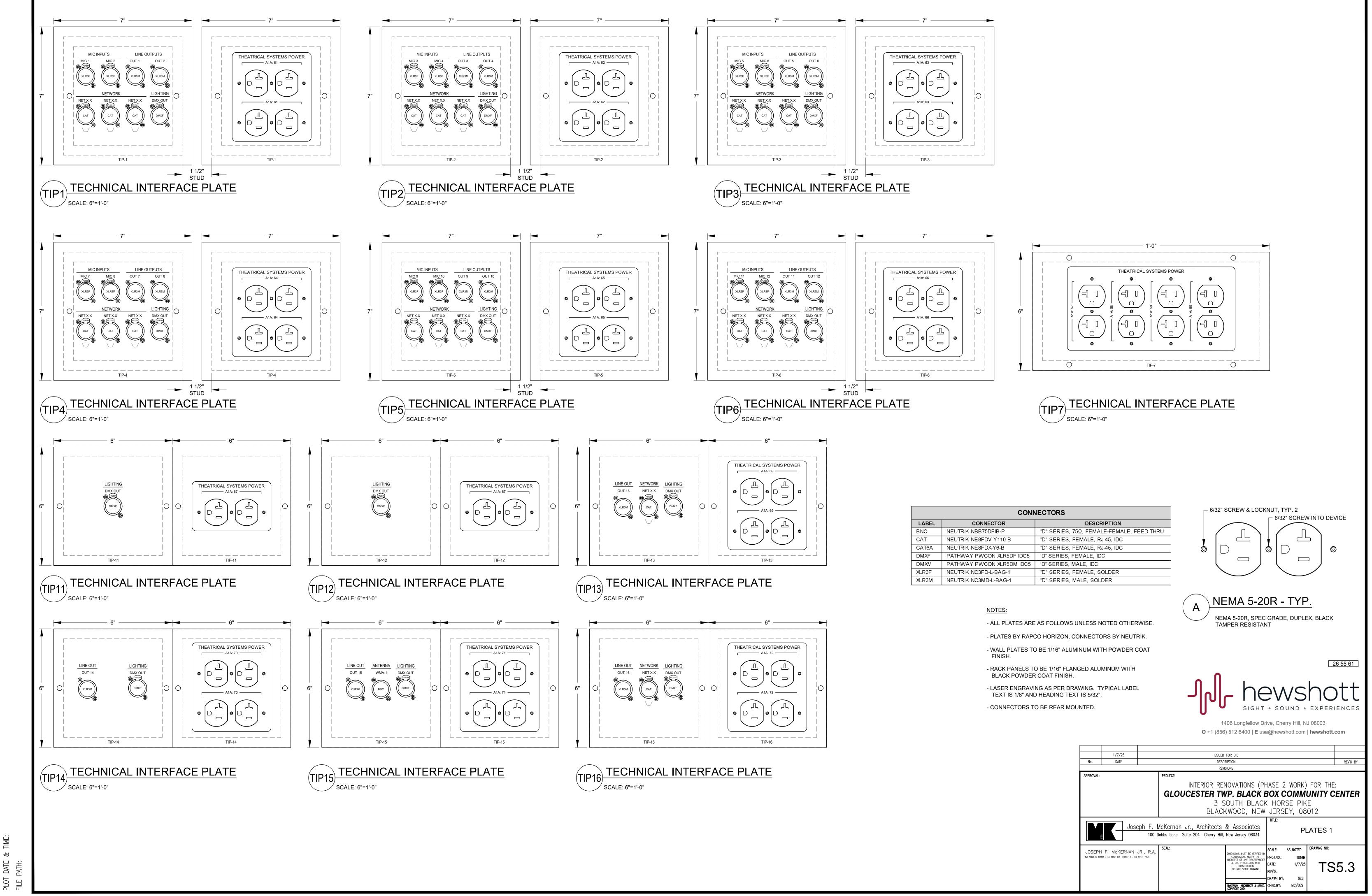
TS5.2

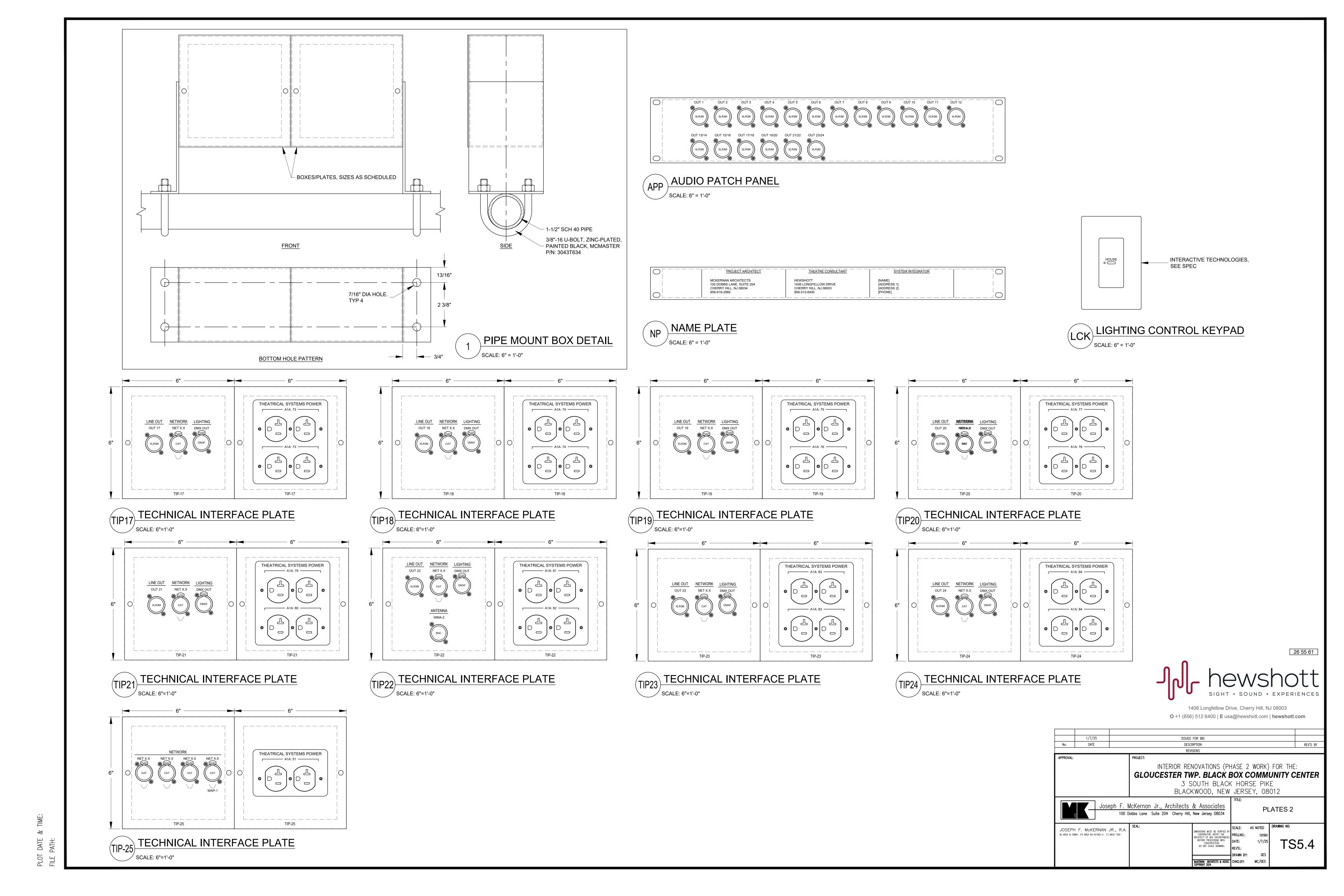
SCALE: AS NOTED

McKERNAN ARCHITECTS & ASSOC. CHKD.BY: MC/GES

Joseph F. McKernan Jr., Architects & Associates

JOSEPH F. MCKERNAN JR., R.A. nj arch ai 10984 . pa arch ra-011402-x . ct arch 7324





							CURTAIN	SCHEDULE				
ITEM	DESCRIPTION	CURTAIN QUANTITY	CURTAIN HEIGHT	CURTAIN WIDTH	CURTAIN FULLNESS	CURTAIN FABRIC	CURTAIN	CURTAIN TOP FINISH	CURTAIN SIDE FINISH	CURTAIN BOTTOM FINISH	TAG LOCATION & QUANTITY	NOTES
		40,111111	112.0111	1112111	1 022/1200		JOZOIX		4" HEM	Timon	Q0/111111	
	PERIMETER TRACK							WEBBING & SNAP HOOKS	L: 2"x8' LOOP ON FACE			
Α	CURTAIN, TYP. PANEL	13	15'-0"	10'-0"	50% BOX	20oz CRESCENT VELOUR	BLACK	воттом	R: 2"x12" HOOK ON BACK	5" HEM, CHAIN LINED	BOTTOM MIDDLE, 1	-
									4" HEM			
	LOOSE PANEL FOR CLG								L: 2"x12' LOOP ON FACE			LOOSE PANEL
В	SOFFIT	1	13'-0"	4'-0''	50% BOX	20oz CRESCENT VELOUR	BLACK	WEBBING	R: 2"x12" HOOK ON BACK	5" HEM, CHAIN LINED	BOTTOM MIDDLE, 1	PROVIDE STORAGE BAG
									4" HEM			
								WEBBING & SNAP HOOKS	L: 2"x8' LOOP ON FACE			
С	STAGE, TYP. PANEL	3	7'-3"	10'-0"	50% BOX	20oz CRESCENT VELOUR	BLACK	воттом	R: 2"x12" HOOK ON BACK	5" HEM, CHAIN LINED	BOTTOM MIDDLE, 1	-
								WEBBING & SNAP HOOKS	ONSTAGE: 1/2 TURNBACK			
D	STAGE TRAVELER	2	7'-3"	10'-0"	50% BOX	20oz CRESCENT VELOUR	TBD	воттом	OFFSTAGE: 4" HEM	5" HEM, CHAIN LINED	BOTTOM MIDDLE, 1	-

				RIGGING PIPE/TRACK SCI	HEDULE		
ITEM	ITEM DISTANCE ITEM		TRACK LENGTH	TRACK/SYSTEM	OPERATION METHOD	MOUNTING	NOTES
1	SEE DWGS	PERIMETER TRACK	+/-154'	ADC 242 W/ (143) 4237[BL] SINGLE CARRIERS NO MASTER CARRIERS	WALK-ALONG (X) MANUAL TRACK SWITCHES	PIPE GRID & WALL BRACKETS SEE DETAILS	FOR CURTAIN TYPE A
2	SEE DWGS	STAGE PERIMETER TRACK	28'-0"	ADC 242 W/ (33) 4237[BL] SINGLE CARRIERS NO MASTER CARRIERS	WALK-ALONG	SUSPENDED SEE DETAILS	FOR CURTAIN TYPE C
3	SEE DWGS	STAGE FRONT TRACK	18'-0"	ADC 242 (20) 4237[BL] SINGLE CARRIERS (2) 4237A[BL] MASTER CARRIERS W/ OVERLAP ARM	WALK-ALONG	SUSPENDED SEE DETAILS	FOR CURTAIN TYPE D
4	SEE DWGS	PIPE GRID	-	-	DEAD-HUNG	SUSPENDED SEE DETAILS	-

		CABLE LEGEND	
ID STANDARD	PLENUM	TYPE	DESCRIPTION
ML1 WEST PENN WIRE 454	WEST PENN WIRE D25454	MIC/LINE	1 PAIR, 22 AWG, SHIELDED, STRANDED, TINNED, PVC
N1 WEST PENN WIRE 4246	WEST PENN WIRE 254246	NETWORK/DATA	CAT6, UTP, 4 PAIR, 23 AWG
P1 WEST PENN WIRE 224	WEST PENN WIRE 25224B	POWER	1 PAIR, 18 AWG, STRANDED
RF1 WEST PENN WIRE 813	WEST PENN WIRE 25812	RF ANTENNA COAXIAL	RG/58, 50 OHM, 20 AWG, SOLID, TINNED
RF2 WEST PENN WIRE 810	WEST PENN WIRE 25810	RF ANTENNA COAXIAL	RG213/U, 50 OHM, 12 AWG, STRANDED
S14 WEST PENN WIRE 226	WEST PENN WIRE 25226B	SPEAKER	1 PAIR, 14 AWG. STRANDED
S16 WEST PENN WIRE 225	WEST PENN WIRE 25225B	SPEAKER	1 PAIR, 16 AWG, STRANDED
U1 -	WEST PENN WIRE 25225B	UNISON	1 PAIR, 16 AWG, STRANDED
X2 WEST PENN WIRE 4246	WEST PENN WIRE 254246	DMX	CAT6, UTP, 4 PAIR, 23 AWG

	FIXTURE SCHEDULE													
TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	LOAD	VOLTAGE	FINISH	MOUNTING	CONTROL					
			HH8-LED-RGBW-LENGN-65K-18K-2000L-						1					
Α	8" RECESSED DOWNLIGHT	ELITE LIGHTING	ELDODMX 1-120-WD-90-HH8-8501-W-WH	LED	29W	120V	WHITE	RECESSED	DMX					
			HH8-LED-RGBW-LENGN-65K-18K-2000L-											
В	8" RECESSED DOWNLIGHT	ELITE LIGHTING	ELDODMX 1-120-VWD-90-HH8-8501-W-WH	LED	29W	120V	WHITE	RECESSED	DMX					

RESPONSIBILITY MATRIX SECTION 16560		OWNIED	CONTRACTOR	GENERAL	CONTRACTOR	ELECTRICAL	CONTRACTOR	THEATRICAL	NOTES
F = FURNISH, I = INSTALL	F	ı	F	-	F	ı	F	ı	
ELECTRICAL:									
CONDUIT (INCLUDING PULL STRINGS & BUSHINGS)					Χ	Χ			
LOW-VOLTAGE PATHWAYS (INCLUDING PULL STRINGS & BUSHINGS)					Χ	Χ			
BACK BOXES, JUNCTION BOXES, PULL BOXES, BLANK PLATES					Χ	Χ			
CUSTOM INPUT/OUTPUT LOW-VOLTAGE PLATES							Х	Х	
SPECIALTY RECEPTACLES AND BACK BOXES (TIP, ERT, CLT)						Χ	Х		
≥120V POWER WIRING					Χ	Х			
LOW-VOLTAGE CABLE, U.N.O.							Χ	Х	
LIGHTING:									
ARCHITECTURAL LIGHTING (TYPE A & B)					Х	Х			
HOUSE LIGHT CONTROL WIRING (JUMPER CABLES)					Χ	Х			
ADDRESSING, PROGRAMMING, TESTING							Х	Х	
THEATRICAL EQUIPMENT:									
PORTABLE THEATRICAL LIGHTING							Χ	Х	
RIGGING SYSTEM (PIPE GRID, TRACKS)							Х	Х	
UNISTRUT FOR SYSTEM, U.N.O.							Χ	Х	
BLOCKING, JOIST REINFORCEMENT, MISC. METALS			Χ	Χ					
CURTAINS							Χ	Х	
PROJECTOR AND PROJECTION SCREEN							Χ	Х	
SPEAKERS AND SUBWOOFERS							Χ	Х	
EQUIPMENT RACK(S)							Х	Х	
PORTABLE EXTENSION CABLE PACKAGE							Χ	Х	
NETWORK SWITCHES & WIRELESS ACCESS POINTS							Χ	Х	
UNINTERRUPTABLE POWER SUPPLIES (UPS)							Х	Х	
ADDRESSING, PROGRAMMING, TESTING, TUNING, DEMONSTRATION							Χ	Х	

				DEV	ICE SCHEDU	LE			
DEVICE	DESCRIPTION	MANUFACTURER	MODEL	BACKBOX (WxHxD)	MOUNTING HEIGHT	MOUNTING TYPE	FINISH	LOW VOLTAGE CONDUIT REQUIREMENTS	NOTES
TS1.1 DEVICE PL	_AN								
ERT	EQUIPMENT RACK TROUGH	-	-	12"X12"X36"	CLG	SURFACE	BLACK	DEVICES REFERENCE ERT	-
LCK-1	LIGHTING CONTROL KEYPAD	INTERACTIVE TECH	SEE BOM	1-GANG	48" AFF	FLUSH	BLACK	3/4" [G3] TO TIP-3	-
LCK-2	LIGHTING CONTROL KEYPAD	INTERACTIVE TECH	SEE BOM	1-GANG	48" AFF	FLUSH	BLACK	3/4" [G3] TO ERT	-
LCK-3	LIGHTING CONTROL KEYPAD	INTERACTIVE TECH	SEE BOM	1-GANG	48" AFF	FLUSH	BLACK	3/4" [G3] TO ERT	-
				6"x6"x4"				3/4" [G3] TO ERT	
TIP-1	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G4] TO ERT	-
				6"x6"x4"				3/4" [G3] TO ERT	
TIP-2	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G4] TO ERT	-
TIP-3	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4" 6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G3] TO ERT 3/4" [G4] TO ERT	_
111 0	TESTINIO, LE INTERNITATE DE LE	1011 00	00010111	6"x6"x4"	10 7 11	1 20011	BEROIT	3/4" [G3] TO ERT	
TIP-4	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G4] TO ERT	-
				6"x6"x4"				3/4" [G3] TO ERT	
TIP-5	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G4] TO ERT	-
TID 6	TECHNICAL INTEREACE DI ATE	RAPCO	CUSTOM	6"x6"x4"	40!! 455	FLUCII	DLACK	3/4" [G3] TO ERT	
TIP-6	TECHNICAL INTERFACE PLATE			6"x6"x4"	18" AFF	FLUSH	BLACK	3/4" [G4] TO ERT	-
TIP-7	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	12"x6"x4"	18" AFF	FLUSH	BLACK		-
TPC-1	TOUCH PANEL CONTROLLER	CRESTRON	SEE BOM	3-GANG	48" AFF	FLUSH	BLACK	3/4" [G3] TO TIP-3	-
TPC-2	TOUCH PANEL CONTROLLER	CRESTRON	SEE BOM	3-GANG	48" AFF	FLUSH	BLACK	3/4" [G3] TO TIP-6	-
VC-1	VOLUME CONTROL	SEE BOM	SEE BOM	1-GANG	48" AFF	FLUSH	BLACK	3/4" [G1] TO VC-2	-
VC-2	VOLUME CONTROL	SEE BOM	SEE BOM	1-GANG	48" AFF	FLUSH	BLACK	3/4" [G1] TO ERT	-
TS1.2 DEVICE RO	CP CP								
CLJB	CEILING LEVEL JUNCTION BOX	SEE BOM	SEE BOM	   12"x12"x4"	SEE DWGS	SUSPENDED	BLACK	(2) 1-1/2" [G3] TO ERT	
CLJB	CEILING LEVEL JONCTION BOX	SEE BOW	SEE BOIN	12 x 12 x4	SEE DWGS	SOSPENDED	BLACK	1" [G4] TO ERT HOMERUNS: 3/4" [G1] TO ERT	-
S2	PENDENT SUBWOOFER SPEAKER	SEE BOM	SEE BOM	_	SEE DWGS	SUSPENDED	BLACK	JUMPERS: J-HOOKS 5' OC	_
SCRN	PROJECTION SCREEN	SEE BOM	SEE BOM	_	SEE DWGS	SUSPENDED	BLACK	3/4" [G3] TO TIP-15	_
00/111	TROCESTION SOREER	OLL BOW	022 50111		322 377 33	0001 211020	BERGIN	3/4" [G3] TO CLJB	
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-11	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	B.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
								3/4" [G3] TO CLJB	
TIP-12	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4" 6"x6"x4"	B.O. PIPE	PIPE	BLACK	3/4" [G4] TO CLJB PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
1117-12	TECHNICAL INTERFACE FLATE	RAPCO		0 80 84	B.O. FIFE	FIFE	BLACK	3/4" [G3] TO CLJB	DO NOTATIACH CONDUIT TO FIFE GRID
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-13	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
								3/4" [G3] TO CLJB	
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-14	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
				6"x6"x4"				3/4" [G3] TO CLJB 3/4" [G4] TO CLJB	
TIP-15	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
								3/4" [G3] TO CLJB	
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-16	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
				CUNCUNA!				3/4" [G3] TO CLJB	
TIP-17	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4" 6"x6"x4"	T.O. PIPE	PIPE	BLACK	3/4" [G4] TO CLJB PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
111 17	TEOTIMO/CE INTERNATION TO TEOTIMO/CE INTERNA	1011 00		0 00 0 0	1.0.112	1 " =	BB (OI)	3/4" [G3] TO CLJB	EG NGT / CT / CGNEGHT TG T II E GNE
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-18	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
				011 011 411				3/4" [G3] TO CLJB	
TIP-19	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4" 6"x6"x4"	T.O. PIPE	PIPE	BLACK	3/4" [G4] TO CLJB PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
115-19	TECHNICAL INTERFACE PLATE	RAPCO	COSTON	0 80 84	1.O. FIFE	FIFE	BLACK	3/4" [G3] TO CLJB	DO NOT ATTACH CONDOIT TO FIFE GRID
				6"x6"x4"				3/4" [G4] TO CLJB	
TIP-20	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
								3/4" [G3] TO CLJB	
TID 04	TEOLINIOAL INTEREA OF BLATE	DADOO	CHOTOM	6"x6"x4"	T 0 DIDE	DIDE.	DI AGIC	3/4" [G4] TO CLJB	DO NOT A TTA OU CONDUIT TO DIDE ODID
TIP-21	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
				6"x6"x4"				3/4" [G3] TO CLJB 3/4" [G4] TO CLJB	
TIP-22	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
								3/4" [G3] TO CLJB	
			_	6"x6"x4"				3/4" [G4] TO CLJB	
TIP-23	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
				6"x6"x4"				3/4" [G3] TO CLJB 3/4" [G4] TO CLJB	
TIP-24	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	DO NOT ATTACH CONDUIT TO PIPE GRID
21		10.11.00	20010101	6"x6"x4"				3/4" [G3] TO CLJB	
TIP-25	TECHNICAL INTERFACE PLATE	RAPCO	CUSTOM	6"x6"x4"	T.O. PIPE	PIPE	BLACK	PROVIDE 24" FMC AT DEVICE	-
*SEE TS0.0 FO	R ADDITIONAL INFORMATION (BACK BO	DXES, MOUNTING HEIG	HTS, CONDUIT	SEPARATION).	,		L		
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APPROVAL:

PROJECT:

INTERIOR RENOVATIONS (PHASE 2 WORK) FOR THE:

GLOUCESTER TWP. BLACK BOX COMMUNITY CENTER

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SCHEDULES

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JOSEPH F. McKERNAN JR., R.A. nj arch ai 10984 . pa arch ra-011402-x . ct arch 7324	SEAL:	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.  MCKERNAN ARCHITECTS & ASSOC. COPYRIGHT 2024	SCALE: PROJ.NO.: DATE: REV'D.: DRAWN BY: CHKD.BY:	AS NOTED  1016H 1/7/25  GES MC/GES	TS6.	1