# Joseph's House Toilet Rooms

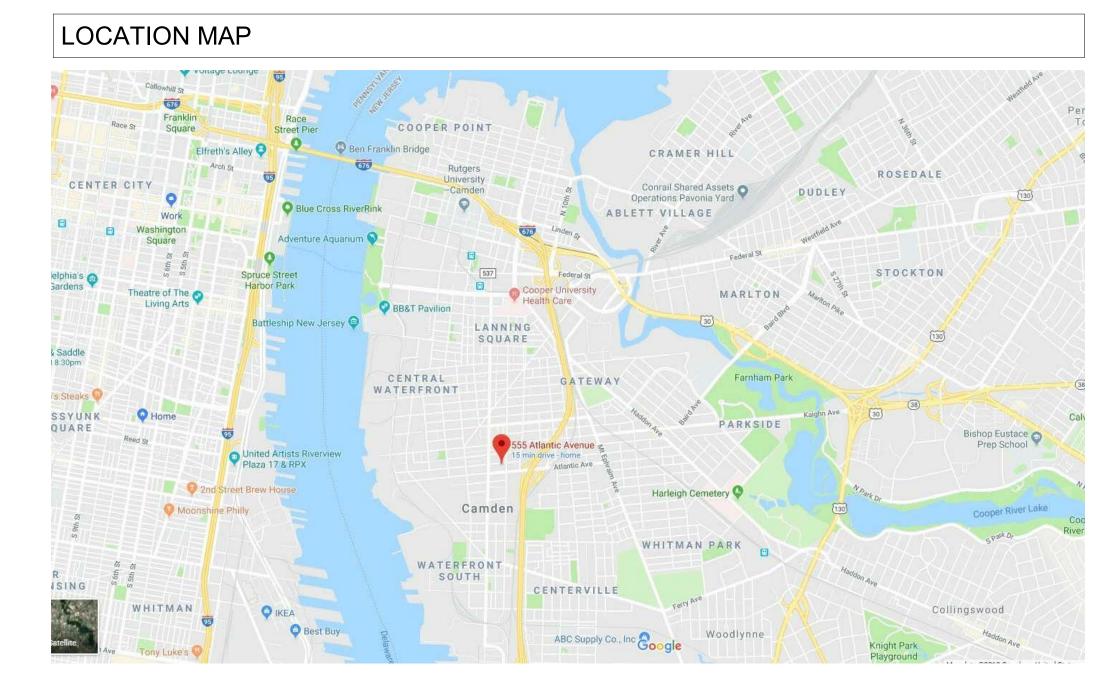
# 555 Atlantic Avenue Camden, NJ 08105

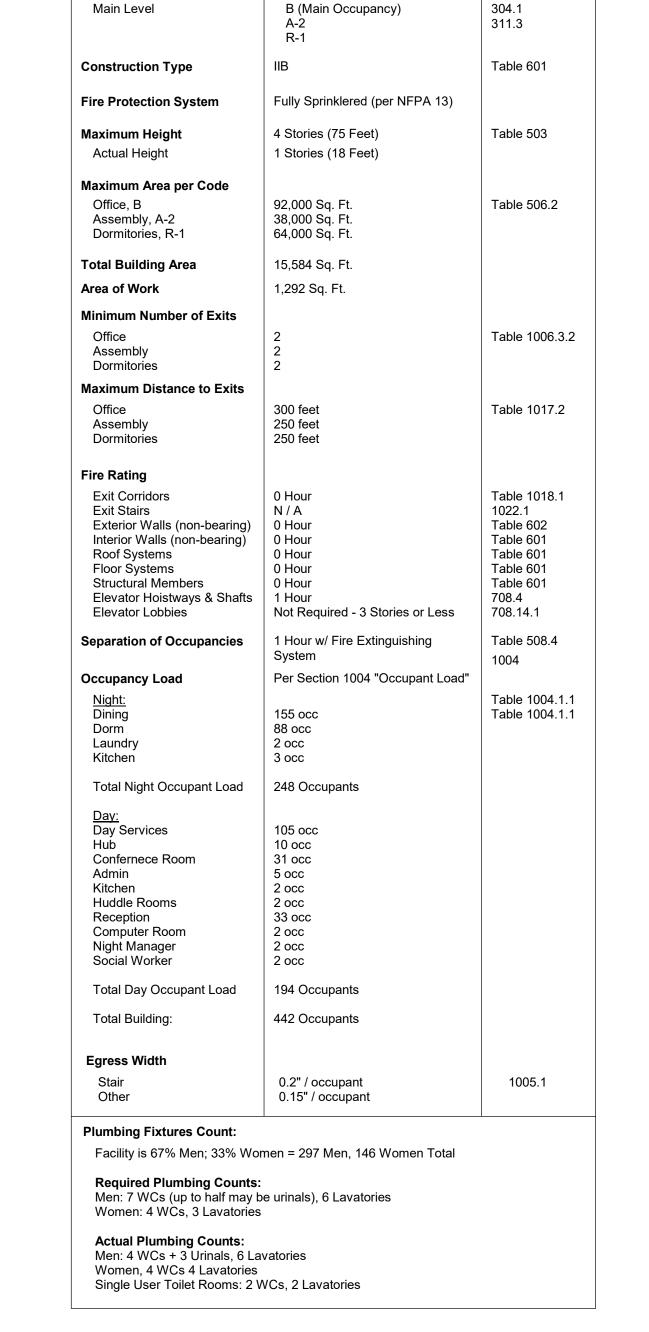
#### **ABBREVIATIONS** Sound Attenuation Blanket SCHED Schedule Acoustical Ceiling Tile ALUM Specification Square foot Anodize APPROX Access Panel EXP STRUCT Structure, Structural Architect, Architecture Stainless Steel NOM Nominal Temporary, Temperature TLT Bottom Of TO Top of TOP Top of Parapet Outside Diameter TOW Top of wall Opposite Hand CFCI Contractor Furnished / Overhead Foamed-In-Place Contractor Installed Owner Furnished / Owner Installed Underwriters Laboratory Owner Furnished / Contractor Installed Unless Otherwise Noted Control Joint Opposite Galvinized Open To Structure General contractor Centerline Glass Fiber Reinforced Concrete CMU Concrete Masonry Unit VCT Vinyl Composition Tile Glass Fiber Reinforced Gypsum Plumbing CONC Concrete Verify In Field PNT Paint CONT CPT Continuous Vinyl Wall covering Pressure Treated Carpet Hollow Metal PTD Painted Ceramic Tile HORIZ Horizontal PLWD Plywood Curtain Wall High Point Polyvinyl chloride Water Closet Wood HVAC Window Opening Heating, Ventilation, Radius and Air Conditioning Waterproofing Drinking Fountain Roof drain Diameter Reference, Refrigerator Extruded Polystyrene DIM Dimension REQD Required INV Invert Revision Downspout Rough opening Drawing, Drawings Roof Top Unit Rainwater conducter Lavatorv Low Point

SHEET LIST					
SHEET NUMBER	SHEET NAME				
01-General					
CS	PROJECT COVER SHEET				
 G0.1	ACCESSIBILITY STANDARDS				
G0.2	SIGNAGE				
07-Demolition					
D1.0	DEMOLITION PLANS				
08-Architectural					
A1.1	ARCHITECTURAL PLAN				
A2.1	REFLECTED CEILING PLAN				
A3.1	SCHEDULES & PARTITION TYPES				
A3.2	DETAILS				
A4.1	ELEVATIONS				
A10.1	FINISH PLAN				
12-Mechanical					
M0.0	MECHANICAL COVER SHEET				
MD1.0	MECHANICAL DEMOLITION PLAN				
M1.0	MECHANICAL FLOOR PLAN				
M2.0	MECHANICAL SCHEDULES & DETAILS				
M3.0	MECHANICAL SPECIFICATIONS				
13-Plumbing					
P0.0	PLUMBING COVER SHEET				
PD1.0	PLUMBING DEMOLITION PLAN				
P1.0	PLUMBING FLOOR PLAN				
P3.0	PLUMBING SPECIFICATION				
15-Fire Protection					
FP1.0	FIRE PROTECTION FLOOR PLAN				
16-Electrical					
E0.0	ELECTRICAL COVERSHEET				
ED1.0	ELECTRICAL DEMOLITION PLAN				
E1.0	ELECTRICAL FLOOR PLAN				
E2.0	ELECTRICAL SPECIFICATION				

PHASING
THIS PROJECT WLL BE COMPLETED IN TWO SEPARATE PHASES TO MAINTAIN USE OF BUILDING DURING CONSTRUCTION. THE NIGHT SIDE TOILETS ARE TO BE COMPLETED IN ONE PHASE AND THE DAY SIDE TOILETS ARE TO BE COMPLETED IN A SEPARATE PHASE. ORDER OF PHASING TO BE COORDINATED WITH OWNER.

#### SYMBOLS LEGEND Room name ROOM TAG: NAME, NUMBER, AREA **EXTERIOR ELEVATION TAG:** DRAWING NUMBER & SHEET REFERENCE 150 SF DOOR TAG PARTITION TYPE TAG INTERIOR ELEVATION TAG: DRAWING NUMBER & SHEET REFERENCE WINDOW TYPE TAG SECTION TAG REFERENCE TOILET ACCESSORY TAG KEYNOTE TAG (REFER TO ASSOCIATED SHEET NOTES) ELEVATION LEVEL REFERENCE Elevation 1i FFE TAG SPOT ELEVATION REFERENCE DETAIL NUMBER & SHEET REFERENCE CENTERLINE (SIM: SIMILAR, OPP: OPPOSITE, MIR: MIRRORED) SHEET DRAWING REFERENCE: NUMBER, NAME, & SCALE





**CODE DATA** 

Mixed Use - B, A-2, Non-Separated | 508.3

**REFERENCE** 

**NJ IBC 2015 SUMMARY** 

Use Group

NIGHT MEN'S TOILET ROOM —	DAY TOILET ROOMS
NIGHT WOMEN'S TOILET ROOM	PHASE 1 PHASE 2
1 KEY PLAN 1/32" = 1'-0"	

#### **ISSUE INFORMATION**

#### OWNER

Joseph's House of Camden 555 Atlantic Avenue Camden, NJ 08104 phone: 215.284.6402 CONTACT PERSON: Dominic Vallone

#### **ARCHITECT**

**Blackney Hayes Architects** 150 S. Independence Mall West, Suite 1200 Philadelphia, PA 19106 phone: 215.829.0922 facsimile: 215.829.0596 CONTACT PERSON: Darin Jellison

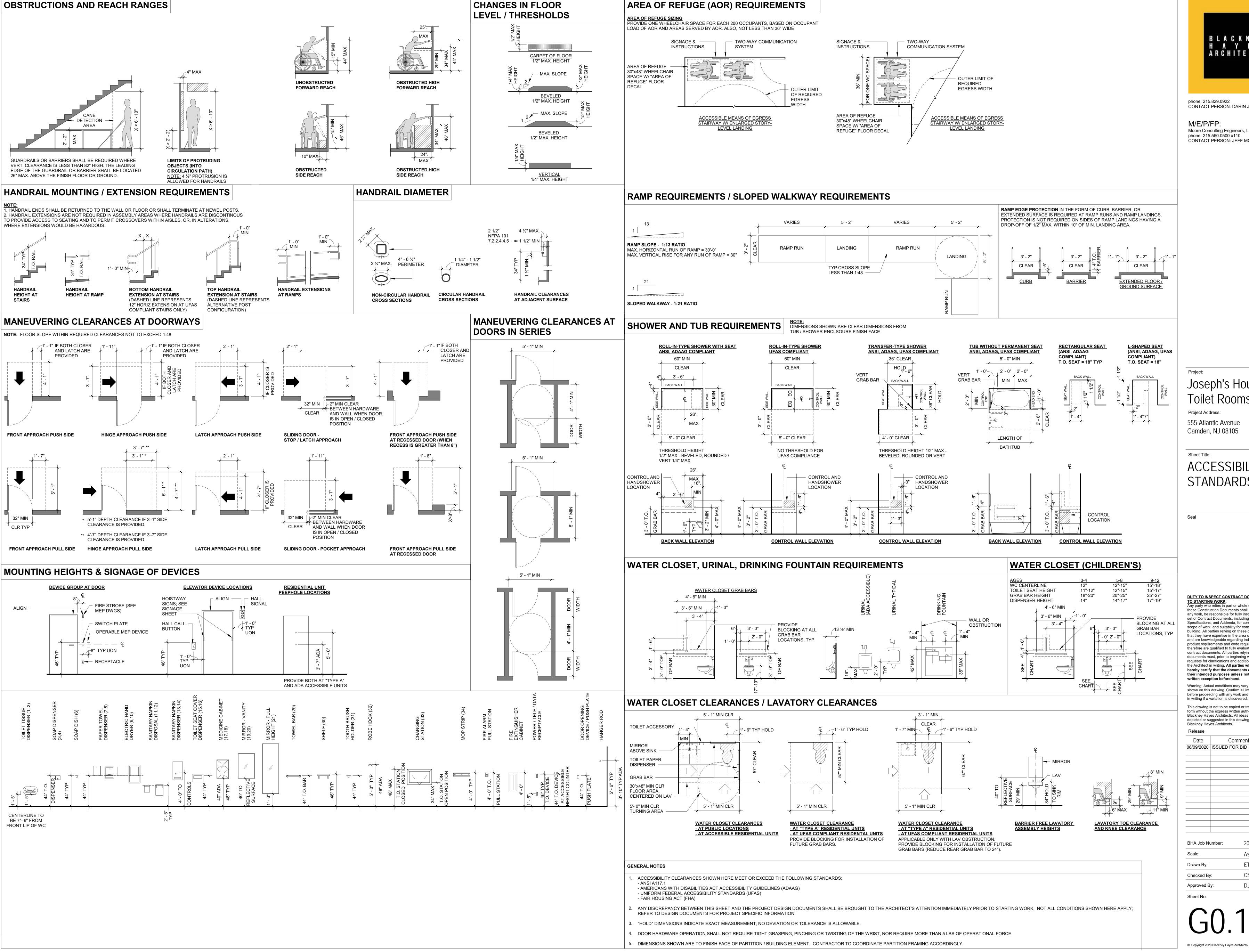
#### M/E/P/FP

Moore Consulting Engineers, LLC 150 S. Independence Mall West, Suite 1200 Philadelphia, PA 19106 phone: 215.560.0500 x110 CONTACT PERSON: Jeff Moore

06.09.2020 Issued for Bid

LACKNE AYE RCHITECT

House Toilet



BLACKNEY HAYES ARCHITECTS

phone: 215.829.0922 CONTACT PERSON: DARIN JELLISON

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Joseph's House

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title: **ACCESSIBILITY** STANDARDS

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK:
Any party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represent that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for

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Comments 06/09/2020 ISSUED FOR BID

BHA Job Number: 20-004 Scale: As indicated Drawn By: CS Checked By: Approved By:



phone: 215.829.0922 CONTACT PERSON: DARIN JELLISON

M/E/P/FP: Moore Consulting Engineers, LLP phone: 215.560.0500 x110 CONTACT PERSON: JEFF MOORE

# Joseph's House

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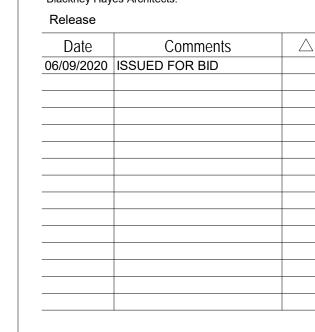
Sheet Title: SIGNAGE

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Scale:	As indicated
Drawn By:	ET
Checked By:	CS
Approved By:	DJ

Sheet No.

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"ROOM" "X" "BRAILLE" SIGN TYPE 2A COMMON ROOM DOORS "ROOM" "X" <sub>1"</sub>"ROOM" "X" WOMEN MEN UNISEX ACCESSIBLE "BRAILLE" ACCESSIBLE "BRAILLE" ACCESSIBLE "BRAILLE" "BRAILLE"  $\rightarrow$ -SIGN TYPE 2B **SIGN TYPE 10A** SIGN TYPE 10B SIGN TYPE 10C COMMON ROOM DOORS PUBLIC TOILET ROOMS PUBLIC TOILET ROOMS (ACCESSIBLE) PUBLIC TOILET ROOMS (ACCESSIBLE) **GENERAL NOTES** 

1. ALL SIGNAGE SHALL CONFORM TO: - ANSI A117.1, CHAPTER 7

- INTERNATIONAL BUILDING CODE, CHAPTER 11 - ADA ACCESSIBILITY GUIDELINES, 4.30 SIGNAGE

2. INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE SHALL BE LOCATED: - AT EACH REQUIRED ACCESSIBLE PUBLIC ENTRANCE - AT EACH REQUIRED ACCESSIBLE TOILET / BATHING FACILITY - AT EACH REQUIRED AREA OF REFUGE

3. MOUNT SIGNAGE AT 48" AFF, MEASURED TO THE BOTTOM OF THE BRAILLE UON

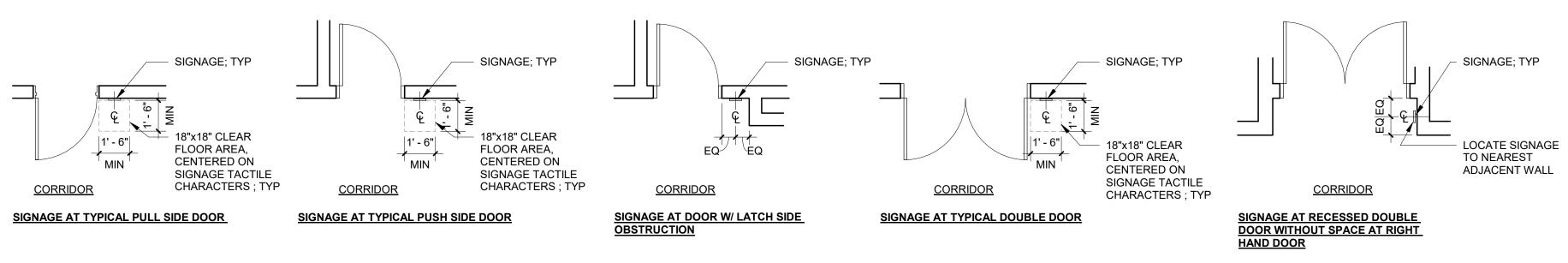
4. MOUNT SIGNAGE ON THE LATCH SIDE OF DOOR; WHEN THERE IS NO WALL SPACE ON THE LATCH SIDE OF A SINGLE DOOR, OR THE RIGHT SIDE OF DOUBLE DOORS, SIGNAGE SHALL BE LOCATED ON THE NEAREST ADJACENT WALL

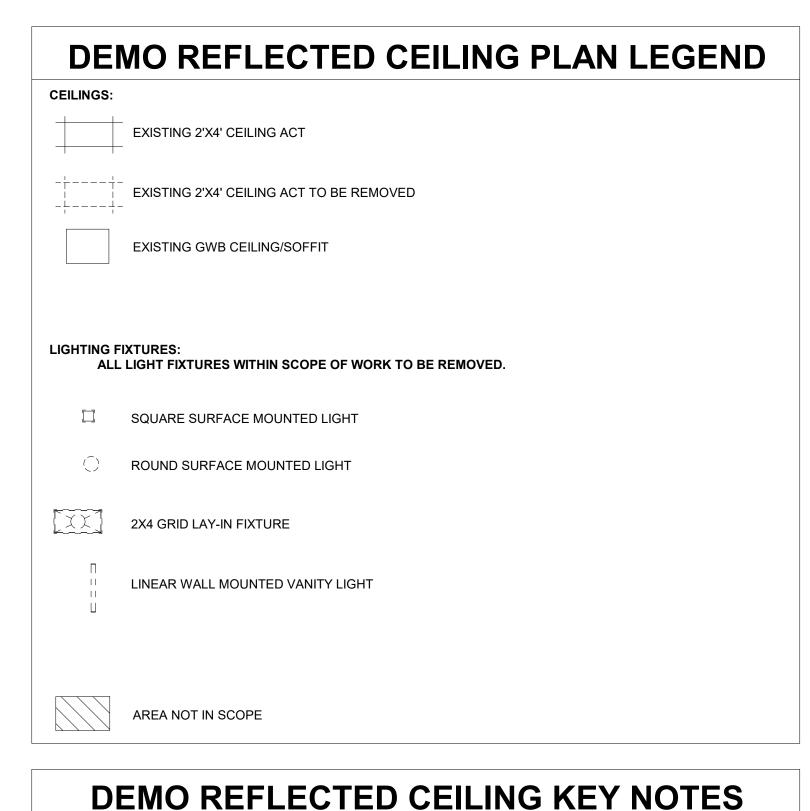
5. ALL CHARACTERS TO BE RAISED, MIN 1/32". ALL TEXT AND GRAPHICS TO BE CENTERED HORIZONTALLY IN

6. CONTRACTOR SHALL CONFIRM ALL SIGNAGE LOCATIONS AND TYPES WITH CLIENT

7. FONT: TBD, 5/8" UON

8. WHEN SIGNAGE IS MOUNTED TO GLASS, A FLAT BACK PLATE WITH ADHESIVE SHALL BE PROVIDED ON THE OTHER SIDE OF THE GLASS; TYP UON





REMOVE CEILING & LIGHTS IN ROOM. REMOVE ALL CEILING DEVICES & RELOCATE ON NEW GWB CEILING.

REMOVE PORTION OF CEILING FOR NEW JANITOR CLOSET. REFER TO ARCHITECTURAL PLAN &

REMOVE ALL LIGHTS IN ROOM. GWB CEILING TO REMAIN.

REFLECTED CEILING PLAN FOR EXACT LOCATION.

#### **DEMOLITION GENERAL NOTES**

- DEMOLITION IS NOT NECESSARILY LIMITED TO WHAT IS SHOWN ON DRAWINGS. THE INTENT IS TO INDICATE THE GENERAL SCOPE OF DEMOLITION REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS. AS REQUIRED, PATCH & REPAIR ALL EXISTING SURFACES WHERE ITEMS HAVE BEEN REMOVED EITHER BY CONTRACTOR OR BY OTHERS, OR AS A RESULT OF DEMOLITION OF ADJACENT & ATTACHED CONSTRUCTION. PATCHING IS TO BE SMOOTH AND LEVEL WITH ADJACENT SURFACES TO
- AS APPLICABLE, REMOVE ALL ABANDONED & NO LONGER ACTIVE WIRING & CABLING FROM EITHER THE CEILING PLENUM OR DEMOLISHED PARTITIONS. INACTIVE CIRCUITS TO BE REMOVED BACK TO THE CIRCUIT
- PANEL; DATA CABLING BACK TO THE SOURCE & TELEPHONE CABLING BACK TO THE PUNCH DOWN BLOCKS. WHERE NOTED, REMOVE AND CAP OFF EXISTING PLUMBING AS REQUIRED PER CODE. AS REQUIRED, ANY DISRUPTED FIREPROOFING OF ALL BUILDING STRUCTURAL MEMBERS & WITHIN DEMISING WALLS, FLOORS & CEILINGS SHALL BE SUPPLEMENTED AFTER DEMOLITION, IN ACCORDANCE WITH ALL CURRENT APPLICABLE CODES, REGULATIONS & ORDINANCES OF ALL GOVERNING BODIES
- DO NOT CLOSE OR OBSTRUCT FACILITIES OR INTERRUPT UTILITIES WITHOUT WRITTEN PERMISSION FROM & COORDINATION WITH OWNER & ALL AUTHORITIES HAVING JURISDICTION. THE SCHEDULING, SEQUENCING & EXECUTION OF THE DEMOLITION WORK, REMOVAL OF DEBRIS & STORAGE OF SALVAGED ITEMS SHALL BE COORDINATED WITH OWNER.

HAVING JURISDICTION OVER THE PROJECT.

- CONTRACTOR TO PROTECT EXISTING SURFACES, FIXTURES AND EQUIPMENT TO REMAIN. CONTRACTOR TO PROVIDE PROTECTIVE BARRIERS DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL SURFACES, FIXTURES INCLUDING LENSES AND MATERIALS PRIOR TO FINAL PUNCH LIST. ANY ITEMS, MATERIALS, FIXTURES, ETC THAT ARE DAMAGED DURING CONSTRUCTION ARE TO BE REPLACED AT CONTRACTOR'S COST. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO DOCUMENT ANY PREEXISTING DAMAGE AND NOTIFY BLACKNEY HAYES ARCHITECTS OF ANY SUCH DAMAGE PRIOR TO
- GENERAL CONTRACTOR IS REQUIRED TO MAINTAIN OPERATION OF BUILDING AND LIFE SAFETY SYSTEMS IN OCCUPIED AREAS DURING CONSTRUCTION. A CLEAR & UNOBSTRUCTED PATHS IS TO BE MAINTAINED TO EGRESS EXITS DURING CONSTRUCTION.
- CONTRACTOR TO COORDINATE WITH OWNER REMOVAL OF EXISTING EQUIPMENT LOCATED WITHIN SPACE WHERE CONSTRUCTION IS TO BE PERFORMED. REMOVAL OF FLOORING IS TO INCLUDE ALL TRANSITION STRIPS, PADDING, GLUE RESIDUE, TACK STRIPS, AND ASSOCIATED ITEMS. REMOVAL OF FLOORING IS TO INCLUDE FLOORING UNDERNEATH CASEWORK/FURNITURE ITEMS, WITHIN CLOSETS & STORAGE AREAS WHERE NOTED. WHERE EXISTING MATERIALS ARE TO BE REMOVED, CONTRACTOR TO REMOVE ALL ADHESIVES, PATCH, REPAIR, & LEVEL SURFACE FOR NEW FINISH.
- REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL DEMO. CONTRACTOR SHALL CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO FACILITATE WORK AS INDICATED ON MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL DRAWINGS.

#### **DEMOLITION LEGEND** BLACKNEY HAYES EXISTING PARTITION TO BE REMOVED NOTE: EXISTING PARTITIONS ARE PRIMARILY CMU ARCHITECTS EXISTING PARTITION TO REMAIN EXISTING DOOR/FRAME TO BE REMOVED. SALVAGE ALL DOORS & HARDWARE FOR RE-USE. phone: 215.829.0922

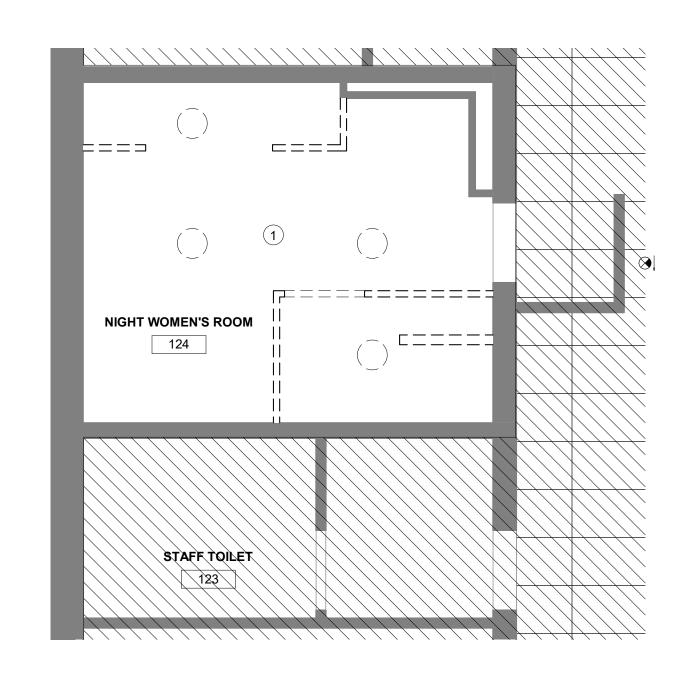
CONTACT PERSON: DARIN JELLISON

M/E/P/FP: Moore Consulting Engineers, LLP phone: 215.560.0500 x110 CONTACT PERSON: JEFF MOORE

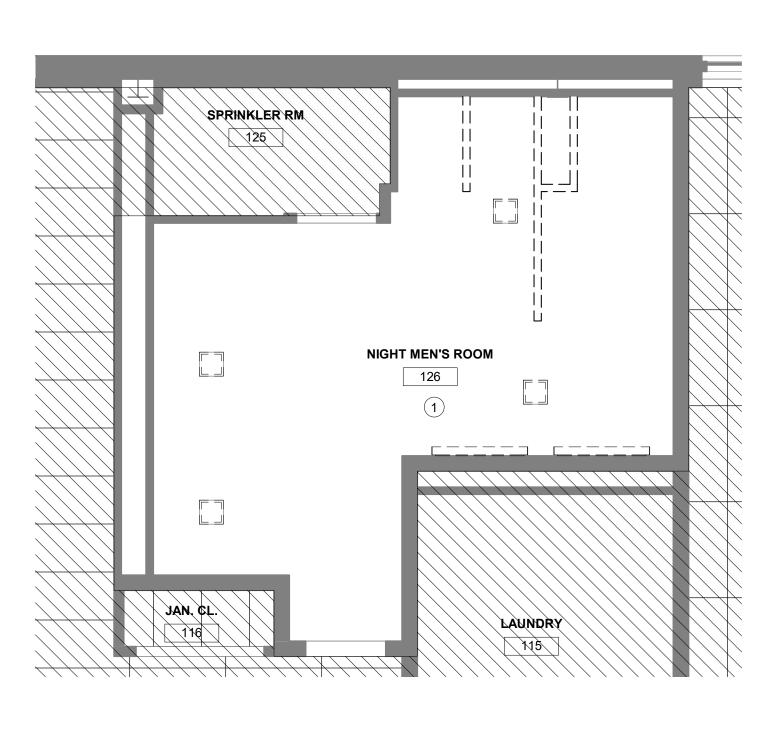
#### **DEMOLITION KEY NOTES**

EXISTING DOOR TO REMAIN, G.C. TO REPAIR ANY DAMAGE TO DOOR.

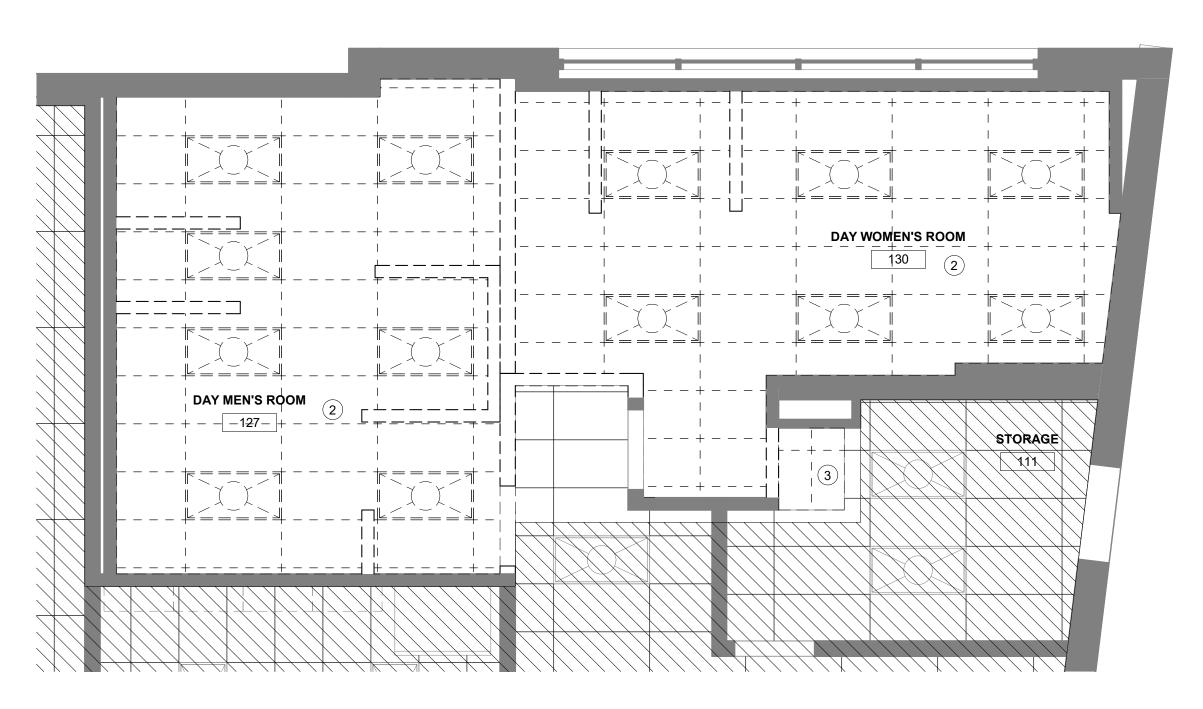
- REMOVE ALL TOILET PARTITIONS, GRAB BARS, MIRRORS, TOILET ACCESSORIES. REMOVE ALL WALL BASE, WALL TILE & FRP WALL PANELS. REMOVE CERAMIC FLOOR TILE. REMOVE ALL PLUMBING FIXTURES. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- MOP SINK TO REMAIN. CAREFULLY DEMO WALL NEXT TO SINK; REPAIR EDGE OF SINK IF DAMAGED DURING
- (3) REMOVE HAND DRYER & SALVAGE FOR RELOCATION. REFER TO ARCHITECTURAL PLAN FOR NEW LOCATION.
- (4) CUT ROUGH OPENING IN GWB WALL FOR NEW RECESSED HAND DRYER PANEL. REFER TO EQUIPMENT LEGEND
- (5) REMOVE ALL WALL TILE & FRP PANELS FROM WALLS. PREP WALLS TO RECEIVE NEW TILE FINISH.
- (6) REMOVE FINISH FLOOR. PREP SUBFLOOR TO RECEIVE SCHEDULED FINISH. (7) REMOVE SIGNAGE FROM DOOR & SALVAGE FOR RELOCATION.
- (8) REMOVE RESIDUE ON DOOR FROM REMOVED SIGN.
- 9 DOOR TO RECEIVE NEW HARDWARE. REMOVE PUSH/PULL HARDWARE & HASP. REMOVE CLOSER IF APPLICABLE. REPAIR DOOR WHERE HARDWARE WAS REMOVED.



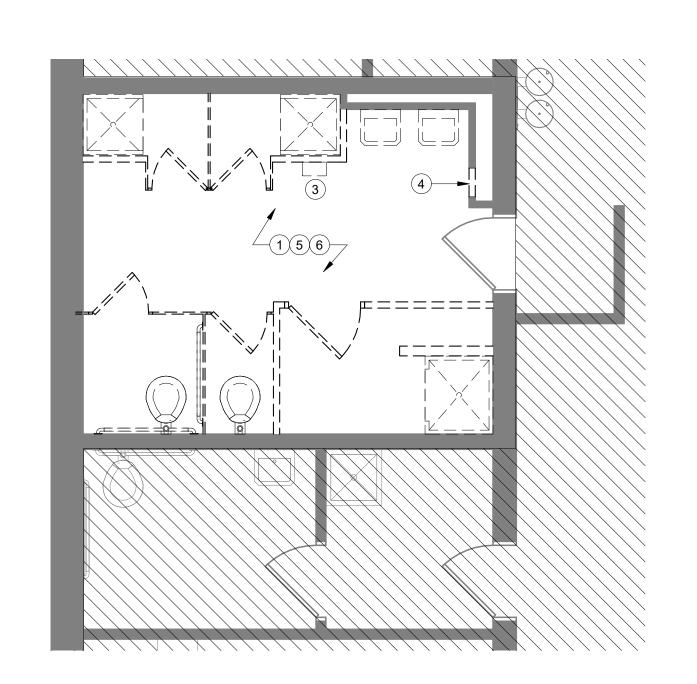
6 Demolition Reflected Ceiling Plan- Night Side Women's Toilet Room 1/4" = 1'-0"



Demolition Reflected Ceiling Plan- Night Side Men's Toilet Room



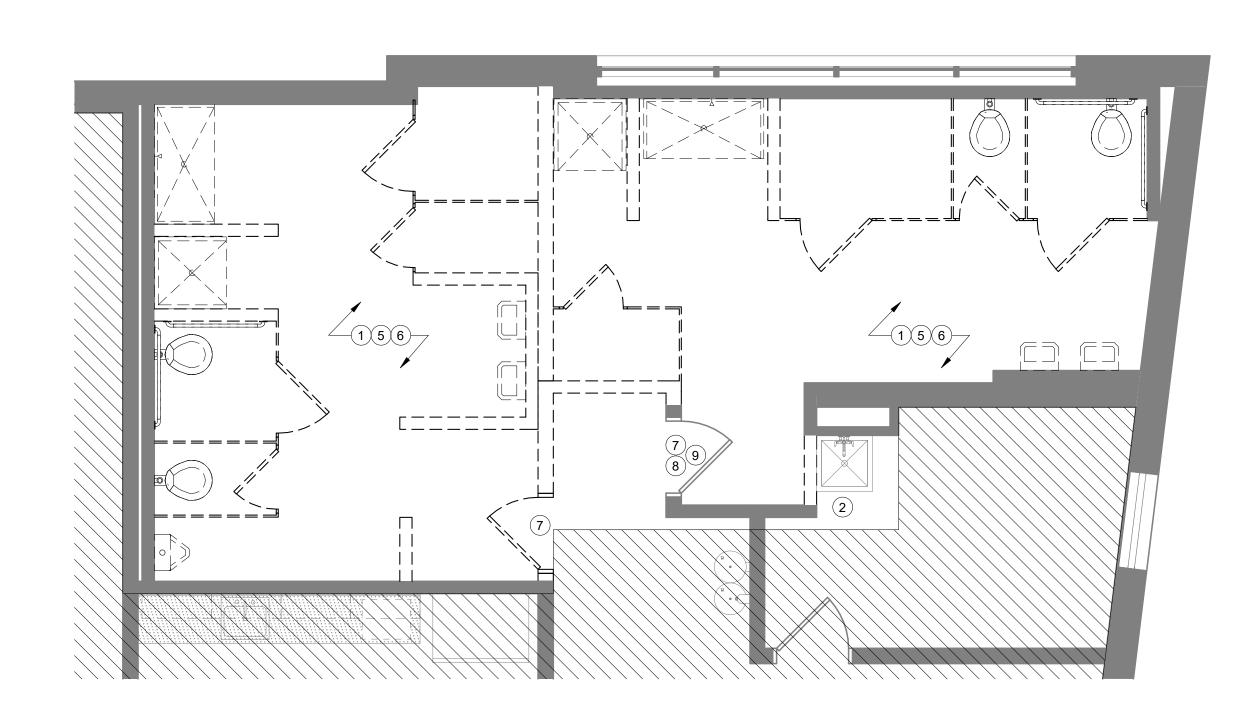
Demolition Reflected Ceiling Plan- Day Side Toilet Rooms



3 Demolition Plan- Night Side Women's Toilet Room 1/4" = 1'-0"

\_\_\_\_\_ **\_\_\_\_**\_\_\_

2 Demolition Plan- Night Side Men's Toilet Room 1/4" = 1'-0"



Demolition Plan- Day Side Toilet Rooms
1/4" = 1'-0"



Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title: DEMOLITION

**PLANS** 

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#### ARCHITECTURAL GENERAL NOTES

- DO NOT SCALE DRAWINGS.
   CONTRACTOR TO VERIFY ALL FIELD DIMENSIONS AND INFORM ARCHITECT OF ALL DISCREPANCIES PRIOR TO COMMENCEMENT OF ALL WORK.
   NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS IN THE LOCATION(S) OF NEW CONSTRUCTION. UPON COMPLETION OF PARTITION LAYOUT, NOTIFY THE ARCHITECT FOR VERIFICATION OF THE LAYOUT PRIOR TO PARTITION INSTALLATION.
- ALL WORK WILL CONFORM TO ALL APPLICABLE BUILDING REGULATIONS (STATE AND LOCAL). IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE A THOROUGH WORKING KNOWLEDGE OF ALL CODE ISSUES.
   CONTRACTOR SHALL VISIT THE PREMISES TO BECOME FAMILIAR WITH EXISTING CONDITIONS, VERIFY THE SCOPE OF WORK AND EVALUATE POTENTIAL PROBLEMS ATTENDANT TO ITS EXECUTION.
   THE SUBMISSION OF PRICING BY THE CONTRACTOR SHALL BE EVIDENCE THAT THE CONTRACTOR HAS FULLY EVALUATED POTENTIAL PROBLEMS. LATER ADDITIONAL COST CLAIMS FOR LABOR, EQUIPMENT,
- MATERIAL, AND HARDSHIP (EXCEPT FOR CONDITIONS CONCEALED) WILL NOT BE CONSIDERED.
  FOR INTERIOR DIMENSIONS: ALL DIMENSIONS ARE TO THE FINISHED FACE OF PARTITIONS, CENTERLINE OF COLUMNS, AND THE CENTERLINE OF MULLIONS, U.O.N.
  FOR EXTERIOR DIMENSIONS: ALL DIMENSIONS ARE TO THE EXTERIOR FACE OF STUDS., CENTERLINE OF COLUMNS, AND THE CENTERLINE OF MULLIONS, U.O.N.
- DIMENSIONS MARKED +/- MEAN A TOLERANCE OF NOT GREATER THAN 2 INCHES FROM INDICATED DIMENSION, UNLESS NOTED OTHERWISE.
   SET FINISH DOOR OPENINGS AT 6" FROM ADJACENT PERPENDICULAR PARTITION U.O.N.
   NEW CONSTRUCTION SHOWN ALIGNED WITH EXISTING CONSTRUCTION SHALL BE INSTALLED FLUSH AND
- SMOOTH

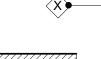
  12. ALL EXISTING SURFACES TO REMAIN SHALL BE PATCHED, FINISHED SMOOTH AND PREPARED AS REQUIRED TO RECEIVE NEW FINISHES.
- PROVIDE CONCEALED BLOCKING IN ALL PARTITIONS WHEN MOUNTING HANDRAILS, GRAB BARS,
   CABINETRY, SHELVING, COAT RODS AND SHELVES, COUNTERS AS WELL AS DOOR FRAMES AND HEADERS.
   FIRE-STOPPING IS REQUIRED AT ALL THRU-WALL/FLOOR PENETRATIONS. FIRE-RATING TO MATCH RESPECTIVE WALL/FLOOR.
- 15. ALL EXPOSED STEEL SURFACES TO BE PAINTED, U.O.N.
   16. UNLESS OTHERWISE NOTED, ALL FIRE EXTINGUISHERS TO BE CENTERED ON WALL LENGTH OR CENTERED BETWEEN COLUMNS AS SHOWN ON PLAN OR 18" FROM NEAREST ADJACENT CORNER OR DOOR AS SHOWN. PROVIDE FIRE EXTINGUISHERS IN QUANTITY REQUIRED BY CODE.

#### ARCHITECTURAL LEGEND

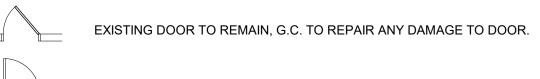
EXISTING PARTITION TO REMAIN

NEW PARTITION. REFER TO SHEET A3.1 FOR PARTITION TYPES.

PARTITION TYPE DESIGNATION



NEW PARTIAL HEIGHT PARTITION. REFER TO SHEET A3.1 FOR PARTITION TYPES.



NEW DOOR. REFER TO SHEET A3.2 FOR DOOR SCHEDULE.



AREA NOT IN SCOPE

— DOOR TAG

#### ARCHITECTURAL KEY NOTES

- 1) BUILD NEW PARTITION TIGHT AGAINST BACK EDGE OF EXISTING JANITOR'S SINK.
- 2 PROVIDE CONTINUOUS CAULK SEAM BETWEEN EXISTING CMU & NEW GWB PARTITION.
- 3 INSTALL HAND DRYER IN SAME LOCATION AS REMOVED DRYER AFTER INSTALLATION OF WALL TILE.
- TOILET PARTITION EXTENDS TO FINISH FLOOR AT SIDE OF SHOWER. PROVIDE STAINLESS STEEL SHOE BETWEEN BOTTOM OF PARTITION AND FLOOR.
- 5 PROVIDE NEW DOOR HARDWARE TYPE 04.
- 6 INSTALL EXISTING SALVAGED HAND DRYER.

#### Projec

## Joseph's House

BLACKNEY HAYES

ARCHITECTS

CONTACT PERSON: DARIN JELLISON

Moore Consulting Engineers, LLP

CONTACT PERSON: JEFF MOORE

phone: 215.560.0500 x110

phone: 215.829.0922

M/E/P/FP:

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

ARCHITECTURAL PLAN

Seal

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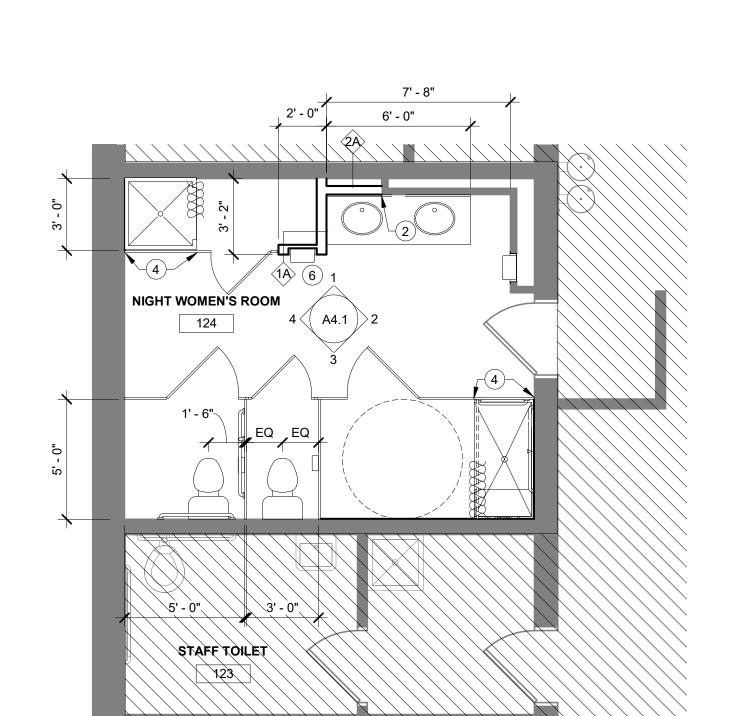
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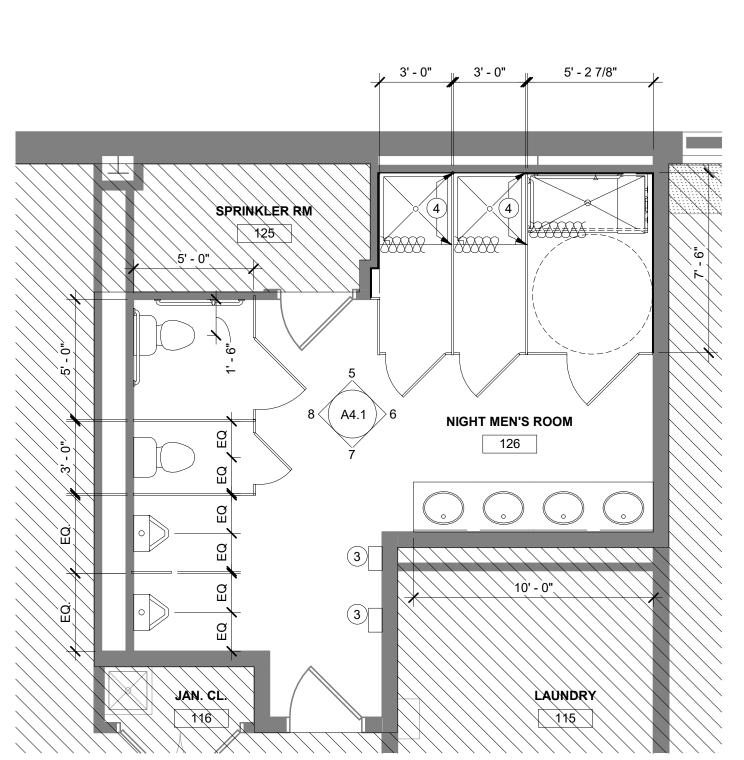
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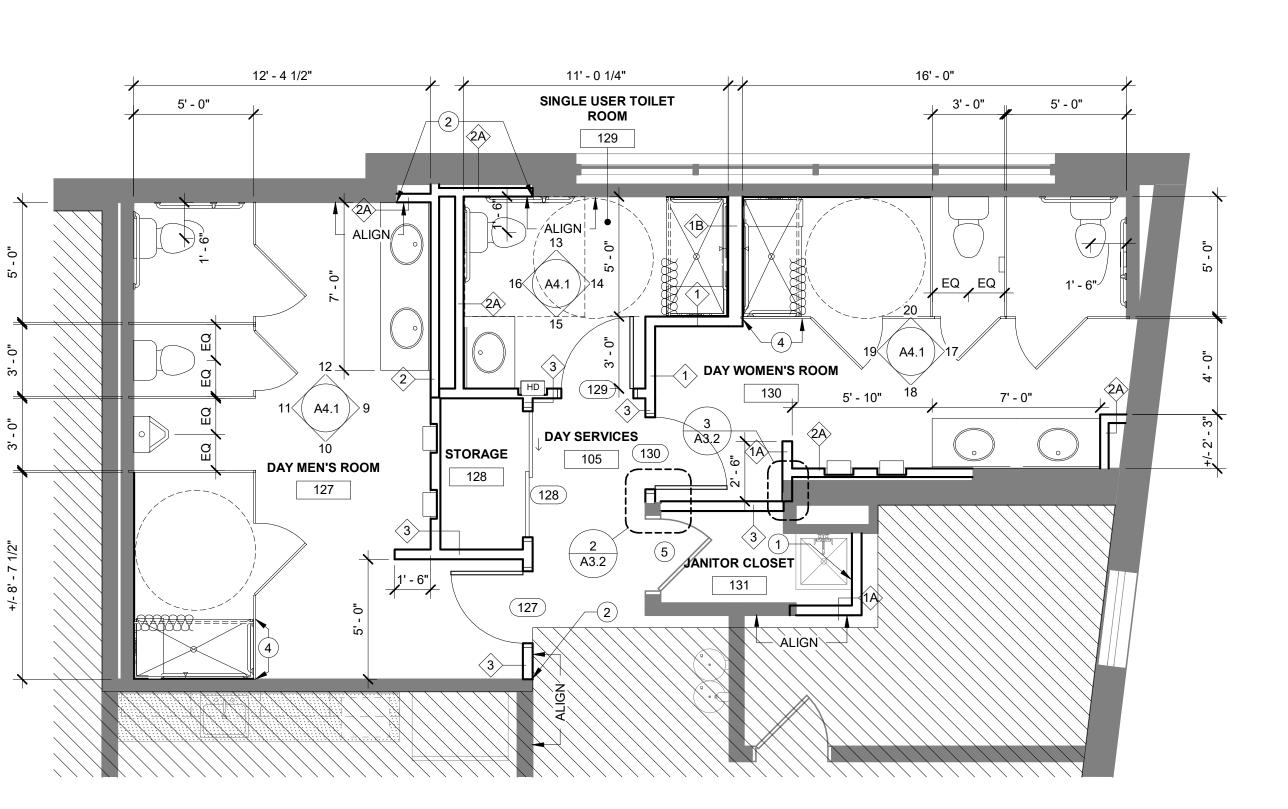
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3 Architectural Plan- Night Side Women's Toilet Room 1/4" = 1'-0"





# REFLECTED CEILING PLAN GENERAL NOTES

- THE CONTRACTOR SHALL DESIGN AND PROVIDE A FIRE SPRINKLER SYSTEM FROM THE EXISTING MAIN. THE WORK SHALL FULLY COMPLY WITH ALL APLLICABLE REQUIREMENTS OF NFPA13, LOCAL AUTHORITIES, LIFE SAFETY CODE 101 AND THE OWNER'S INSURANCE UNDERWRITER.
- EXISTING SPRINKLER HEADS TO REMAIN. CONTRACTOR TO RELOCATE SPRINKLER HEADS AS REQUIRED PER NEW LAYOUT. GC TO NOTIFY ARCHITECT OF ANY POSSIBLE CONFLICTS WITH HVAC AND/OR LIGHT
- FIXTURE LOCATIONS. CONTRACTOR TO PROVIDE EXTRA BLOCKING AT CEILING FOR ANY CEILING HUNG PROJECTION SCREENS, AV EQUIPMENT OR CAMERAS.
- CONTRACTOR TO COORDINATE LOCATION OF ALL CEILING HUNG EQUIPMENT WITH TENANT OR OWNER REPRESENTATIVE. CONTRACTOR TO REINSTALL ANY REMOVED LIFE/SAFETY DEVICES DURING INSTALLATION OF NEW
- CEILING GRID/TILE.
- WHERE CEILING DEVICES ARE TO BE REMOVED IN EXISTING-TO-REMAIN CEILINGS, CONTRACTOR TO PATCH/PAINT GWB ASSEMBLY OR REPLACE CEILING TILE AS REQUIRED.
- REFER TO DEMOLITION PLAN FOR EXTENTS OF CEILING DEMO. ALL NEW AND EXISTING GWB CEILINGS WITHIN SCOPE OF WORK TO BE PAINTED.

#### REFLECTED CEILING PLAN KEY NOTES

- 1) PATCH HOLE IN GWB CEILING. PROVIDE SMOOTH SURFACE & PREP FOR NEW PAINT.
- (2) ALIGN NEW CEILING GRID WITH EXISTING.
- (3) EXISTING GWB CEILING TO REMAIN. PATCH ENTIRE SURFACE & PREP FOR NEW PAINT, INCLUDING WHERE LIGHT FIXTURES & OTHER DEVICES WERE REMOVED.

#### REFLECTED CEILING PLAN LEGEND

**CEILINGS:** TYPE A: NEW 2'X4' ACT CEILING & GRID: ARMSTRONG ULTIMA #1913 SQUARE EDGE W/ 15/16" GRID. CENTER WITHIN SPACE (U.O.N.).

TYPE B: NEW GWB CEILING/SOFFIT

EXISTING ACT GRID

EXISTING GWB CEILING O.T.D.: OPEN TO DECK

X X'-XX" CEILING TAG CEILING HEIGHT CEILING TYPE

EXIT SIGN (EXISTING)

LIGHTING FIXTURES: \*NOTE: TAGGED FIXTURES ARE NEW. UNTAGGED FIXTURES ARE EXISTING TO REMAIN.

TYPE A: 2X4 SURFACE MOUNTED LIGHTING FIXTURE TYPE B: 2X2 SURFACE MOUNTED LIGHTING FIXTURE

NOTE: ALL LIGHTS TO HAVE COLOR TEMPERATURE OF 3000 K.

5' - 5 3/8"

SINGLE USER TOILET

DAY SERVICES

DAY WOMEN'S ROOM

STORAGE

# Joseph's House

BLACKNEY H A Y E S

ARCHITECTS

CONTACT PERSON: DARIN JELLISON

Moore Consulting Engineers, LLP phone: 215.560.0500 x110 CONTACT PERSON: JEFF MOORE

phone: 215.829.0922

M/E/P/FP:

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

REFLECTED **CEILING PLAN** 

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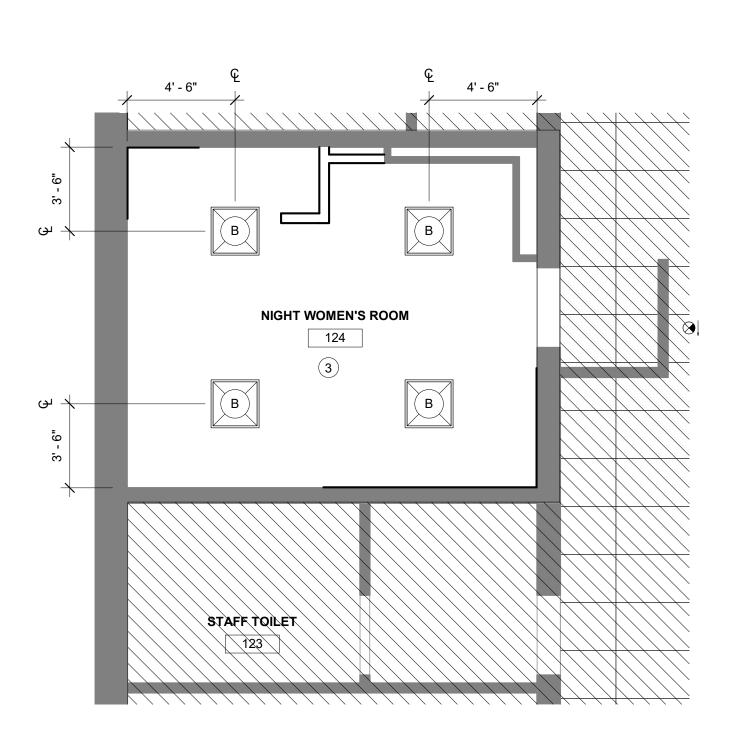
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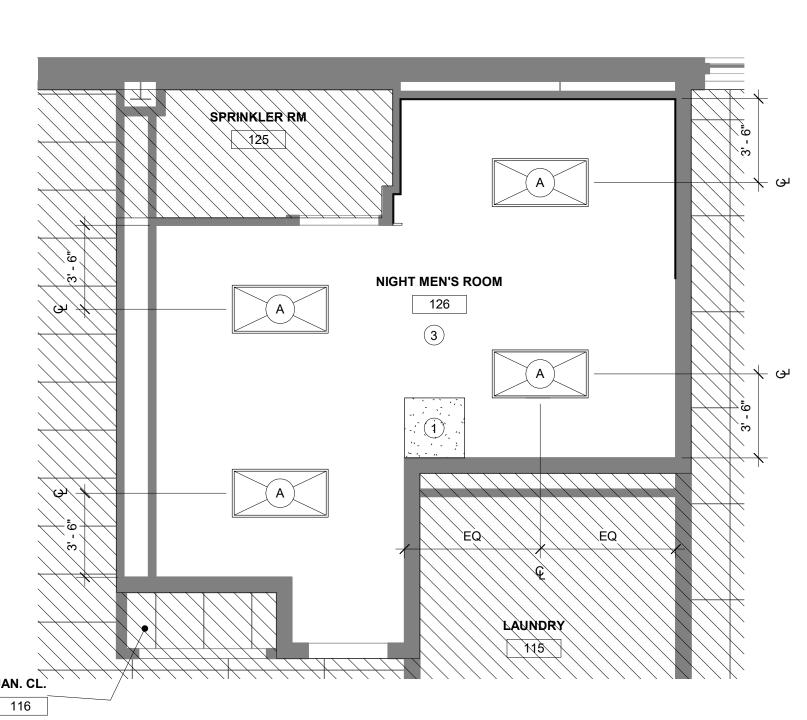
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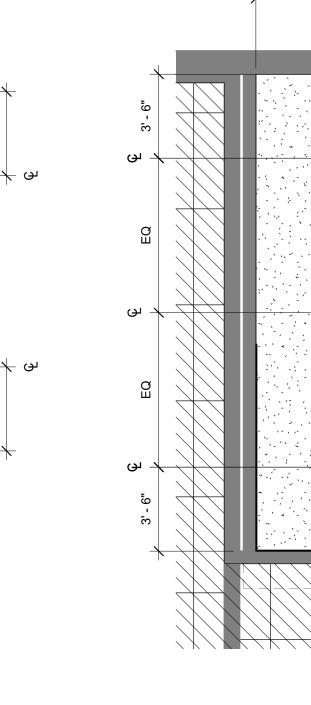
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3 Reflected Ceiling Plan- Night Side Women's Toilet Room 1/4" = 1'-0"





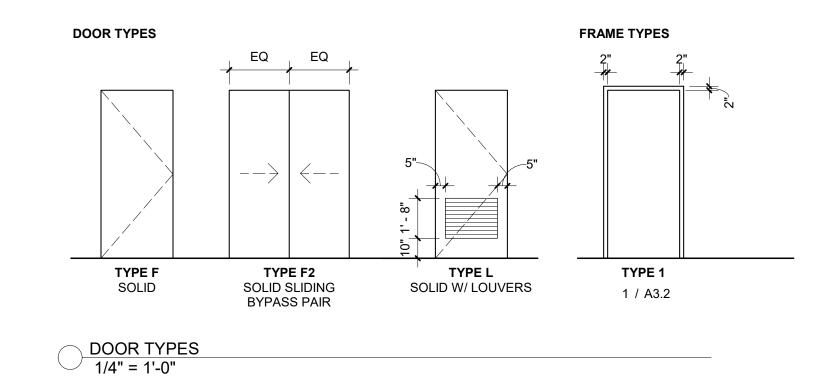
2 Reflected Ceiling Plan- Night Side Men's Toilet Room 1/4" = 1'-0"

1 Reflected Ceiling Plan- Day Side Toilet Rooms
1/4" = 1'-0"

DAY MEN'S ROOM

AG	NAME	MANUFACTURER	MODEL NO.	REMARKS
1	MIRROR	BOBRICK	WELDED FRAME 24"X36" #B-290 2436	INSTALL AT 40" FROM F.F. TP BTM. OF REFLECTED SURFACE.
2	SHOWER SOAP DISPENSER	BOBRICK	B-2012	WALL MOUNTED, AUTOMATIC, BATTERY OPERATED
3	HAND DRYER	EXCEL	XLERATOR Model XL- BW White Thermoset (BMC) Cover	-
3A	HAND DRYER RECESS KIT	EXCEL	XLERATOR HAND DRYER RECESS KIT 40502SP- WHITE	-
4	TOILET TISSUE DISPENSER	BOBRICK	B-4288	SURFACE-MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER
6	GRAB BARS	BOBRICK OR EQUAL	B-5806 SERIES 18", 36" & 42" LENGTHS	PROVIDE BLOCKING IN PARTITIONS. REFER TO ELEVATIONS FOR INSTALLATION HEIGHTS
7	SOAP DISPENSER	MEDICLINICS, S.A.	SURFACE AUTOMATIC LIQUID SOAP DISPENSER DJ0037AC	WALL MOUNTED, AUTOMATIC, HARDWIRED, FOAM, NON-PROPRIETARY REFILLS
9	SANITARY NAPKIN DISPOSAL	BOBRICK	B-35139	
10	SHOWER CURTAIN ROD & SHOWER CURTAIN	INPRO CLICKEZE SUPER BIO STAT VINYL SHOWER CURTAIN		PROVIDE STAINLESS STEEL CURTAIN ROD
11	ADA SHOWER SEAT	SEACHROME WALL MOUNTED BENCH-STYLE SHOWER TRANSFER SEATS WITH SWING DOWN LEGS	SSB2- 28"X15" PHENOLIC WHITE, 1 PIECE	
12	SHOWER GRAB BARS	BOBRICK		
13	SOLID SURFACE TOILET PARTITIONS	PRIVACY PLUS	FLOOR MOUNT W/ OVERHEAD BRACE	SS-3 PARTITIONS. 3/4" THICK PARTITIONS W/ 1/2" THICK DOORS. CONTINUOUS HINGES. FLOOR MOUNTED & OVERHEAD BRACED. URINAL SCREEN TO HAVE CONTINUOUS BRACKET ATTACHMENT. ALL TRIM TO BE STAINLESS STEEL. PROVIDE ALL HARDWARE FOR COMPLETE INSTALLATION.

							DO	OR SCHEDUL	E			
DOOR				FRAME				ROOM LOCATION				
DOOR NO.	DOOR TYPE	WIDTH	HEIGHT	MATERI AL	FINISH	FIRE RATING	TYPE	MATERIAL	FINISH	HARDWARE	COMMENTS	NAME
127	L	3' - 0"	7' - 0"	WD	STN		1	HM	PTD	01		DAY MEN'S ROOM
128	F2	2' - 6"	7' - 0"	WD	STN		1	HM	PTD	03		STORAGE
129	L	3' - 0"	7' - 0"	WD	STN		1	HM	PTD	02		SINGLE USER TOILET ROOI
130	L	3' - 0"	7' - 0"	WD	STN		1	HM	PTD	01		DAY WOMEN'S ROOM



DOOR HARDWARE SCHEDULE DESCRIPTION SET 01 STANLEY FBB168 & FBB179 3 HINGE ROCKWOOD 70C US32D PASSAGE 1 PUSH PLATE NO LATCH 1 DOOR PULL ROCKWOOD 126 X 70C US32D (SINGLE) 1 SURFACE CLOSER W/ HOLD OPEN NORTON 7500H SERIES 3 SILENCERS ROCKWOOD 410 SERIES 1 WALL STOP 1 KICK PLATE 1 MOP PLATE STANLEY FBB168 & FBB179 3 HINGE 1 PRIVACY FUNCTION LOCKSET PRIVACY BEST CYLINDRICAL 93K SERIES 15D TRIM X STANDARD KEYING (SINGLE) CYLINDER: BEST 1E74/1E72 STANDARD KEYING 1 SURFACE OVERHEAD CLOSER NORTON 7500 SERIES 3 SILENCERS ROCKWOOD 410 SERIES 1 WALL STOP 1 KICK PLATE 1 MOP PLATE 1 SLIDING BYPASS DOOR HARDWARE SET JOHNSON HARDWARE 200SD SERIES- INCLUDES TRACK, DOOR HANGERS, DOOR STOP, DOOR GUIDES, FLUSH PULLS SLIDING BYPASS 1 SLIDING CLOSET LOCK KNAPE & VOGT KVM-PB1068-US26D W/ LOCK (DOUBLE) \*NOTE: CONCEAL SLIDING BYPASS DOOR HARDWARE UNDER FINISHED DRYWALL. SET 04 1 STOREROM FUNCTION LOCKSET BEST CYLINDRICAL 93K SERIES 15D TRIM X STANDARD KEYING JANITOR CLOSET MODIFIED CYLINDER: BEST 1E74/1E72 STANDARD KEYING HARDWARE

#### **DOOR GENERAL NOTES**

1. TYPICAL INTERIOR DOORS TO BE SOLID CORE (PC-5) WOOD DOORS, VENEER FINISH TO MATCH EXISTING DOORS. SUPPLY AND INSTALL DOORS PER NWDA I.S-1.A AND AWI SECTION 1300 CUSTOM GRADE. 2. PROVIDE ALL HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION INCLUDING FLOOR AND WALL STOPS, ASTAGRALS, SEALS, FLUSH BOLTS, ETC.

3. ALL LOCKS TO MATCH BUILDING STANDARD KEYWAY AND KEYED TO MASTER SYSTEM. ALL EXISTING LOCKS TO BE

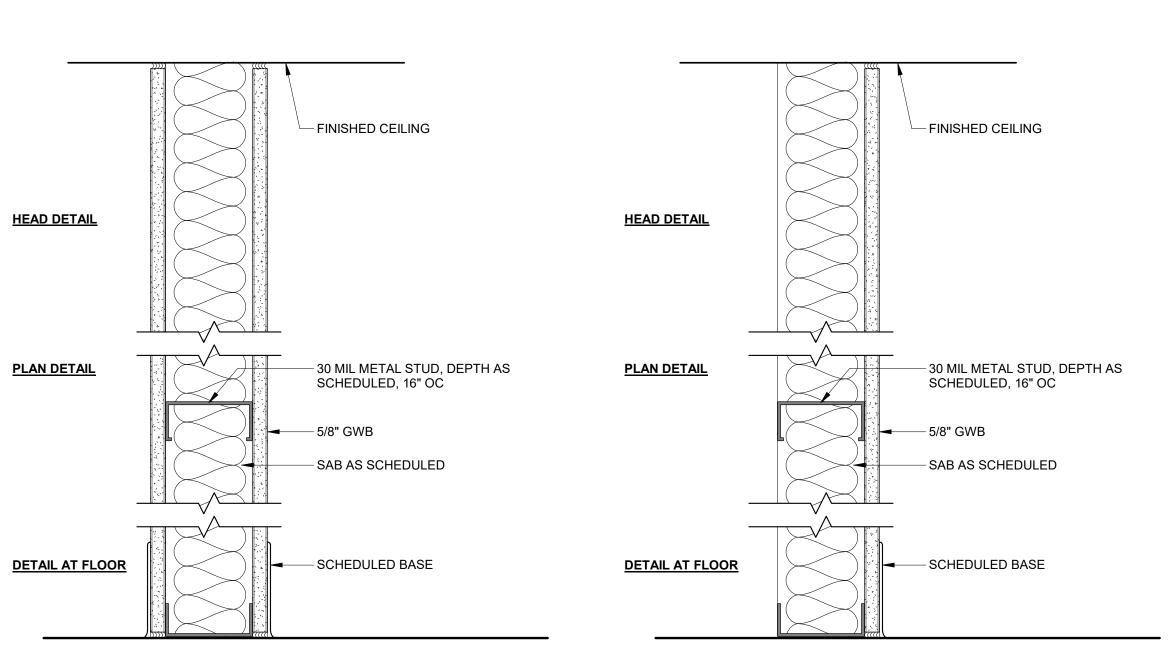
4. ALL HARDWARE TO BE REVIEWED WITH TENANT PRIOR TO ORDERING. ALL HARDWARE TO MEET ANSI A117.1-2017. 5. ALL LOCKSETS AND LATCHSETS SHALL HAVE LEVER HANDLE AND HAVE THE FOLLOWING REQUIREMENTS: 1. SHAPE OF LEVER SHALL BE EASY TO GRASP WITH ONE HAND AND NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF WRIST. 2. LOCKSETS AND LATCHSETS SHALL NOT REQUIRE MORE THAN 15 LBF TO RELEASE LATCH. LOCKS SHALL NOT REQUIRE USE OF A KEY, TOOL, OR SPECIAL KNOWLEDGE FOR OPERATION. A. PROVIDE HEAVY DUTY LOCKSETS AND LATCHSETS THAT COMPLY TO ANSI A156.13, SERIES 1000, GRADE 1 OPERATIONAL. FUNCTIONS AS LISTED IN HARDWARE SETS. B. LOCKSETS SHALL BE MANUFACTURED FROM HEAVY GAUGE STEEL, 1/8" MINIMUM LOCK CASE THICKNESS, CONTAINING COMPONENTS OF STEEL WITH A ZINC DICHROMATE PLATING FOR CORROSION RESISTANCE. C. LOCKSETS ARE TO HAVE A STANDARD 2 3/4" BACKSET WITH A FULL 3/4" THROW. DEADBOLT SHALL BE A FULL 1" THROW, CONSTRUCTED OF STAINLESS STEEL. D. LOCK SHALL BE EASILY HANDED WITHOUT OPENING THE LOCK CASE. E. LOCK TRIM SHALL BE THROUGH-BOLTED TO DOOR TO ASSURE CORRECT ALIGNMENT AND PROPER F. FINISH: FINISHES TO MATCH EXISTING HARDWARE. G. VIF AT EXISTING DOORS TO RECIEVE NEW LOCKSET.

6. CONTRACTOR TO PROVIDE DOOR HARDWARE SUBMITTALS, SHOP DRAWINGS & STAIN SAMPLE FOR APPROVAL PRIOR TO ORDERING MATERIALS.

7. SAFETY GLAZING IN ALL EGRESS DOORS AND SIDELIGHT PANELS AS PER IBC 2009.

8. ALL GLASS SHALL BE CLEAR, TEMPERED, U.O.N. GLAZING TONG MARKS SHALL NOT BE VISIBLE. CLEAN AND POLISH ALL GLASS PRIOR TO PROJECT COMPLETION.

#### NOTE: PROVIDE CEMENT BOARD IN LIEU OF GWB AT ALL WALLS TO RECEIVE WALL TILE. COORDINATE W/ FINISH PLAN.



TYPE	STUD SIZE	FIRE RATING (UL ASSEMBLY)	STC	GWB DESCRIPTION
1	3 5/8"	-	-	1 LAYER OF GWB EACH SIDE W/ SAB
1A	3 5/8"	-	-	1 LAYER OF GWB EACH SIDE
1B	6"	-	-	1 LAYER OF GWB EACH SIDE W/ SAB

TYPE	STUD SIZE	FIRE RATING (UL ASSEMBLY)	STC	GWB DESCRIPTION
2	3 5/8"	-	-	1 LAYER OF GWB W/ SAB
2A	3 5/8"	-	-	1 LAYER OF GWB

	KICK PARTITION AT 4' OC, AS REQD
	FINISHED ACT CEILING
HEAD DETAIL	——— FINISHED GWB CEILING
PLAN DETAIL	- 30 MIL METAL STUD, DEPTH AS SCHEDULED, 16" OC
	■ 5/8" GWB  SAB AS SCHEDULED
DETAIL AT FLOOR	- SCHEDULED BASE

TYPE	STUD SIZE	FIRE RATING (UL ASSEMBLY)	STC	GWB DESCRIPTION
3	3 5/8"	-	-	1 LAYER OF GWB EACH SIDE W/ SAB

CONTACT PERSON: DARIN JELLISON

BLACKNEY H A Y E S

ARCHITECTS

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Sheet Title:

SCHEDULES &

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Checked By:	CS
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phone: 215.829.0922 CONTACT PERSON: DARIN JELLISON

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Joseph's House

NOTE: GC TO COORDINATE SUPPORTS W/ LAVATORIES & FAUCETS.

- AUTOMATIC ADA FAUCET

W/ INTEGRAL APRON & BACKSPLASH. PROVIDE

2' - 0"

AS SCHED

AS SCHED

- SOLID SURFACE COUNTERTOP

SIDESPLASHES AT SIDE WALLS.

- INTEGRAL SOLID SURFACE SINK

- CRIPPLE STUD, 16" OC

SEALANT EACH SIDE

- MTL DOOR FRAME

FILL FRAME W/ SAB

- 20 GA MTL "U" STRAP @ 24" OC

BOXED STUDS, 33 MIL

SEALANT EACH SIDE

MTL DOOR FRAME

4 PER JAMB

DOOR THICKNESS + 3/16"

JAMB ANCHOR, MIN

- FILL FRAME W/ SAB

DOOR AS SCHED

DOOR AS SCHED

RUNNER STUD

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Sheet Title: DETAILS

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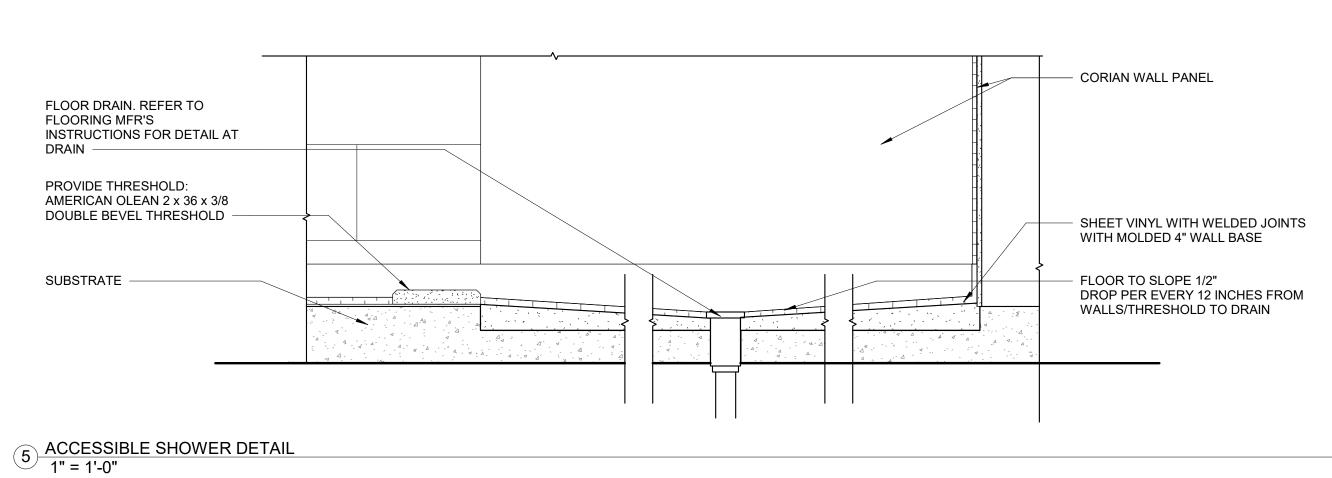
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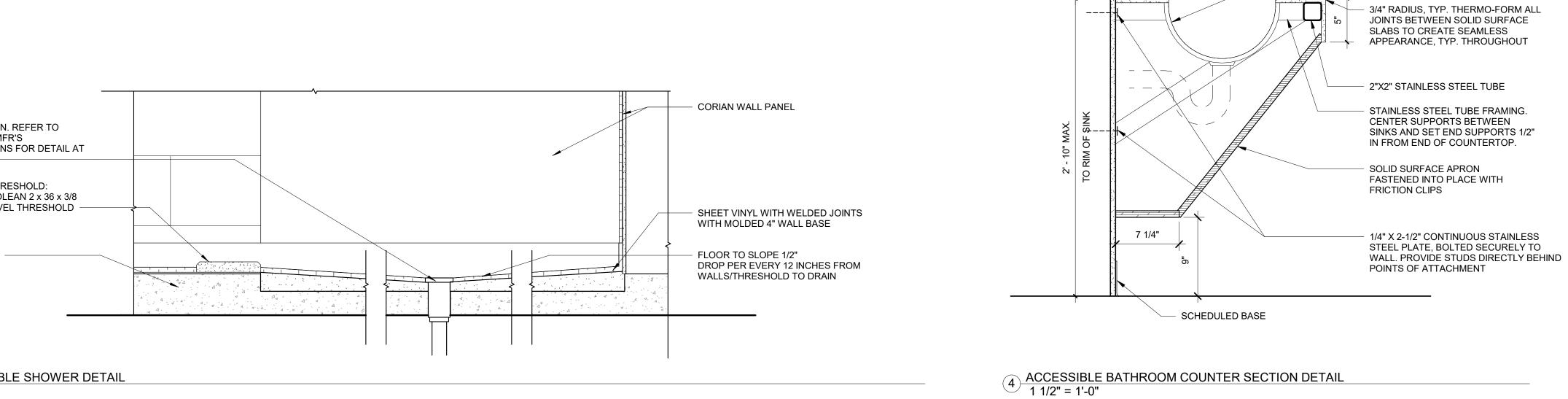
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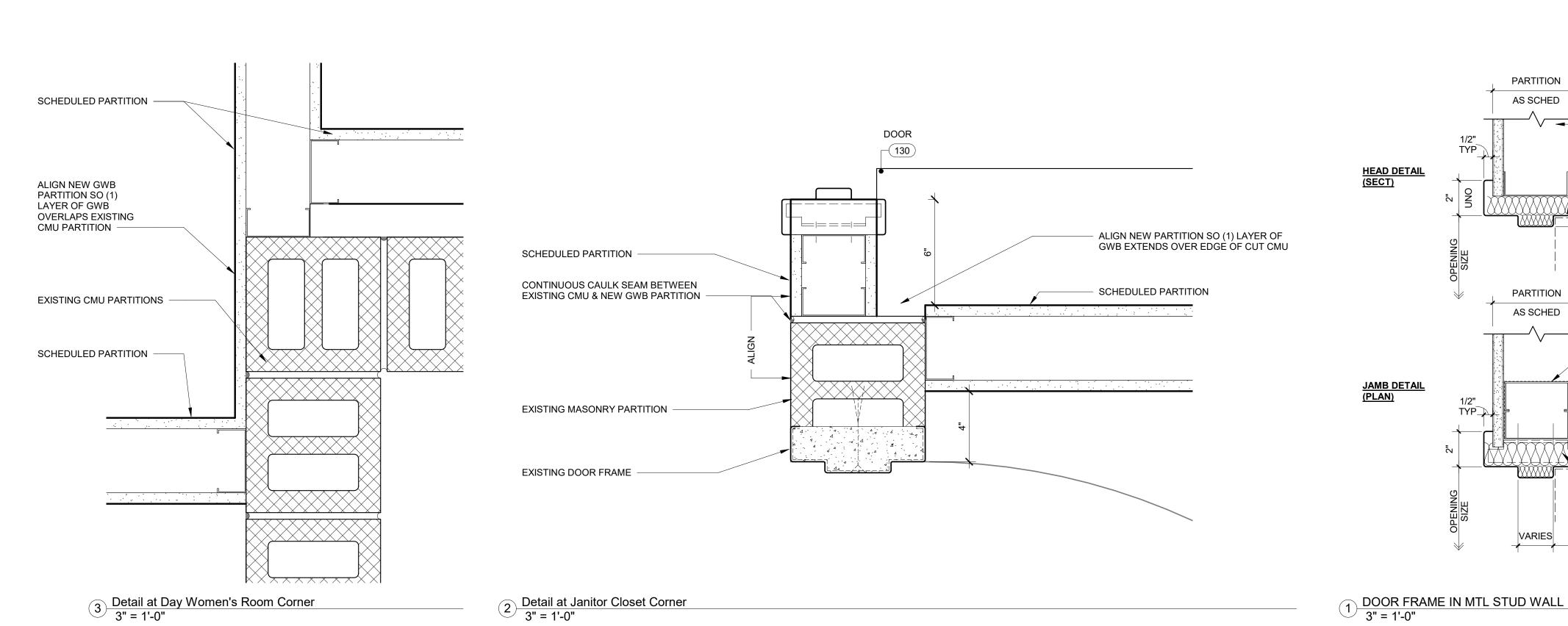


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Moore Consulting Engineers, LLP
phone: 215.560.0500 x110
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Joseph's House Toilet Rooms

Project Address:
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ELEVATIONS

Seal

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 20-004

 Scale:
 3/8" = 1'-0"

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 ET

 Checked By:
 CS

 Approved By:
 DJ

A4.1

#### FINISH LEGEND WALLS PAINT (PT) PT-1 MFR: SHERWIN WILLIAMS SHERWIN WILLIAMS PT-2 MFR: COLOR/NO: SW9085 TOUCH OF SAND COLOR/NO: SW7503 STICKS & STONES FINISH: SATIN FINISH: SEMI-GLOSS LOCATION: GENERAL LOCATION: TRIM SHERWIN WILLIAMS COLOR/NO: SW9085 TOUCH OF SAND FINISH: SATIN LOCATION: CEILING TILE (TL) FIBER REINFORCED PANELS (FRP) TL-1 MFR: FRP-1 MFR: MARLITE STYLE/NO: STANDARD FRP STYLE/NO: TBD COLOR/NO: COLOR/NO: S 100G WHITE LOCATION: JANITOR CLOSET LOCATION: WALL \*PROVIDE PROSPEC PROCOLOR STAIN GUARD GROUT ADDITIVE. **FLOORS** LUXURY VINYL TILE (LVT) SHEET VINYL (SV) LVT-1 MFR: PATCRAFT SV-1 MFR: ALTRO STYLE/NO: I421V TIMBER GROVE II STYLE/NO: WALKWAY 20 COLOR/NO: 00775 BOXWOOD-V2 COLOR/NO: TBD 6"X48" PLANK THICKNESS: 2.0 MM LOCATION: AS NOTED WEAR LAYER: 20 MIL LOCATION: AS NOTED SV-2 MFR: ALTRO STYLE/NO: AQUARIUS COLOR/NO: TBD THICKNESS: 2.0 MM LOCATION: SHOWERS 1. PROVIDE 4" INTEGRAL BASE AT ALL SHEET VINYL VINYL BASE (VB) LOCATIONS. PROVIDE AQUARIUS 20R COVE STICK W/ 1" RADIUS. PROVIDE VISEDGE VR AT TOP OF BASE WHERE VB-1 MFR: WALL TILE IS INSTALLED; PROVIDE CAP STRIP C4 STYLE/NO: 4" COVE WHERE WALL ABOVE IS NOT TILED. COLOR/NO: 140 FAWN 2. PREP SUBFLOOR WITH SELF LEVELER AND PATCH: LOCATION: AS NOTED UZIN NC150 & NC888. REP CONTACT: ERIC SAENZ, 215.932.9112, ESAENZ@SSTFLOOR.COM. 3. HEATWELD ALL SEAMS. CASEWORK SOLID SURFACE (SS) SS-2 MFR: COLOR/NO: TBD COLOR/NO: TBD LOCATION: COUNTER LOCATION: SINK BOWL SS-3 MFR: CORIAN SS-4 MFR: CORIAN COLOR/NO: TBD COLOR/NO: TBD LOCATION: SHOWER PARTITIONS LOCATION: SHOWER WALLS - EXTEND FROM FINISHED FLOOR; ALIGN TOP W/ TOP OF TOILET

#### FINISH PLAN GENERAL NOTES

- 1. ALL MATERIALS TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDED INSTRUCTIONS.
  2. PROVIDE REDUCER STRIPS AT CHANGE OF FLOOR MATERIALS AS REQUIRED. COLOR TO MATCH VINYL
- BASE. REDUCER STRIPS TO BE ADA COMPLIANT.

  3. WHERE ATYPICAL CONDITIONS OCCUR, CONTRACTOR IS TO VERIFY FINISH TREATMENT WITH ARCHITECT BEFORE PROCEEDING.
- ELECTROSTATICALLY PAINT ALL CONVECTOR COVERS TO MATCH ADJACENT SURFACES.
   SUB-FLOOR IS TO BE PATCHED, REPAIRED AND MADE SMOOTH AND LEVEL TO RECEIVE NEW FLOORING.
   ALL SOFFITS TO BE SAME FINISH AND COLOR AS ADJACENT WALL U.O.N.
- 7. ALL BASE TO BE 4" COVE U.O.N
  B. EXP = EXPOSED
  CONTRCATOR TO PAINT ALL TRIM, INCLUDING BUT NOT LIMITED TO STAIR STRINGERS, RAILINGS,
  UNDERSIDE OF METAL STAIRS, DOOR FRAMES, DOORS, CONVECTOR COVERS, ACCESS PANELS, EXPOSE
- UNDERSIDE OF METAL STAIRS, DOOR FRAMES, DOORS, CONVECTOR COVERS, ACCESS PANELS, EXPOSED CONDUITS, EXPOSED METAL PIPING AND SUPPORTS.

  10. CONTRACTOR TO REMOVE ALL ITEMS HUNG ON WALLS INCLUDING BUT NOT LIMITED TO, BULLETIN AND/OR WHITE BOARDS, HAND SANITIZERS, INTERIOR SIGNAGE AND CORNER GUARDS PRIOR TO PAINTING. STORE
- ITEMS IN SECURE/SAFE AREA AND RE-INSTALL AFTER PAINTING IS COMPLETE. PATCH SUBSTRATE AS REQUIRED IS DAMAGE OCCURS DURING REMOVAL.

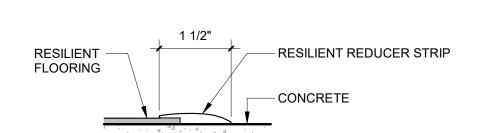
  11. CONTRACTOR TO REMOVE ALL FACEPLATES, COVERPLATES, PROTECTIVE COVERS, ETC PRIOR TO
- PAINTING. RE-INSTALL ONCE PAINTING IS COMPLETE. PROVIDE NEW FACPLATE IF EXISTING DOES NOT MEET TEMPLE UNIVERSITY'S STANDARD OF STAINLESS STEEL.

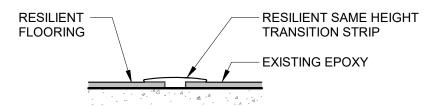
  12. ALL EXISTING WALLS IN AREA OF WORK TO BE PAINTED. ALL EXISTING DOOR FRAMES TO BE PAINTED.

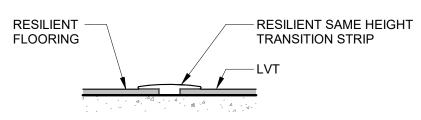
  13. PROVIDE SCHLUTER JOLLY TRIM AT ALL EXTERIOR TILED CORNERS, TYP.

#### FINISH PLAN KEY NOTES

- 1) FLOOR TRANSITION FROM SHEET VINYL TO LVT. SEE DETAIL 4 / A10.1
- 2 INSTALL FRP FROM FINISHED FLOOR TO 48" A.F.F. PAINT ABOVE.
- (3) INSTALL NEW LVT IN CONTINUOUS PATTERN FROM EXISTING. REMOVE EXISTING PLANKS AS REQUIRED TO MAKE NEW AREA OF LVT LOOK SEAMLESS.
- 4 FLOOR TRANSITION FROM SHEET VINYL TO EPOXY. SEE DETAIL 5 / A10.1
- 5 FLOOR TRANSITION FROM SHEET VINYL TO SEALED CONCRETE. SEE DETAIL 6 / A10.1

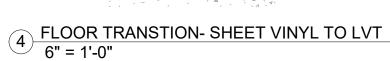


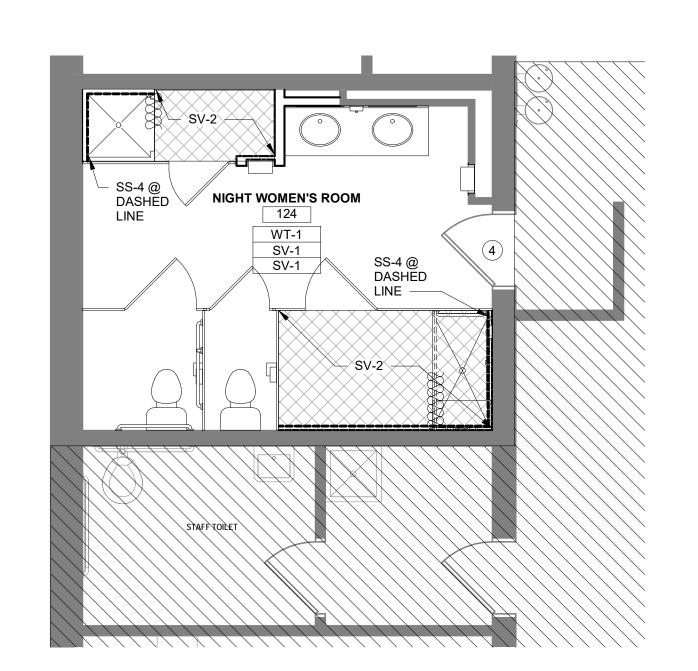


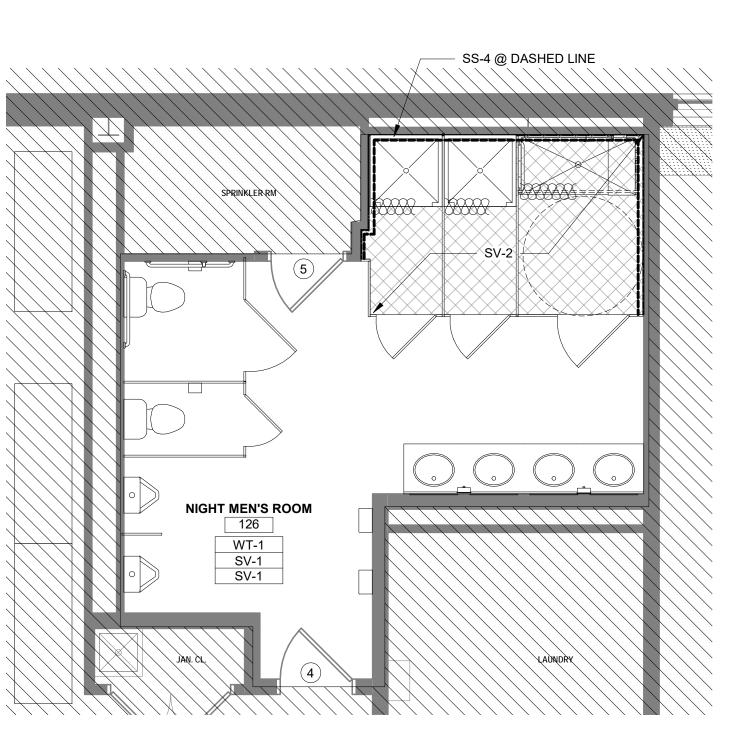


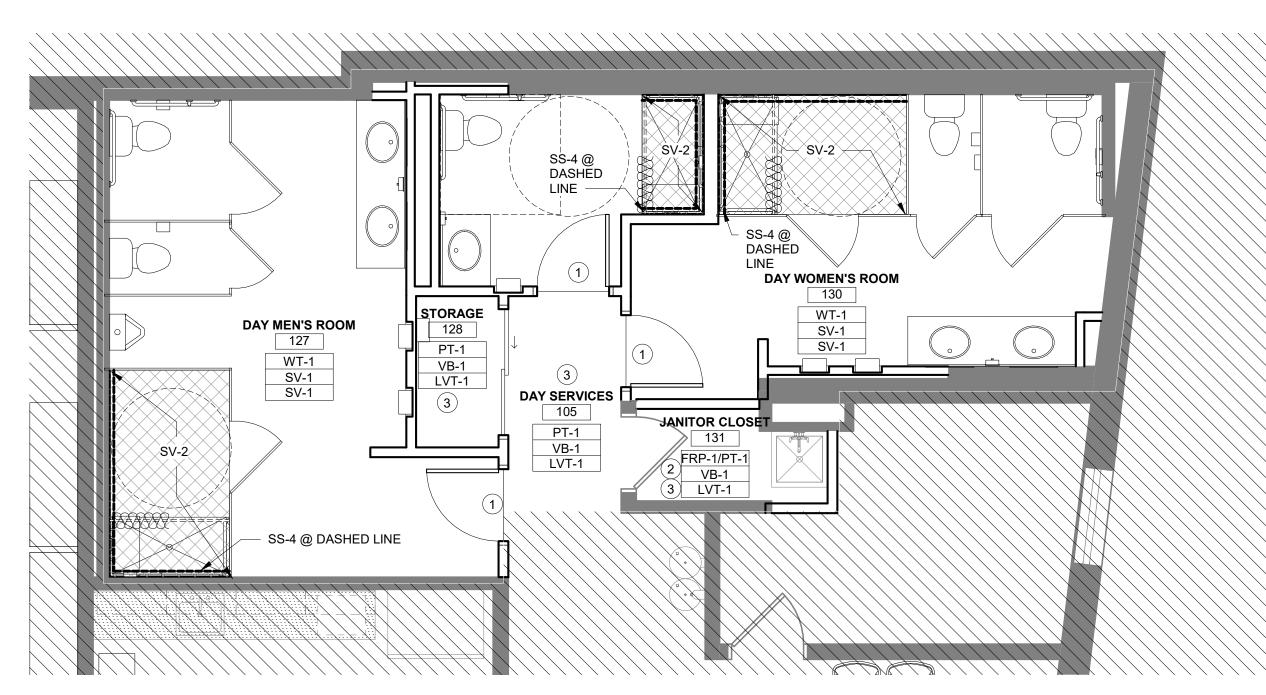
6 FLOOR TRANSTION- SHEET VINYL TO SEALED CONCRETE











3 FINISH- NIGHT WOMEN'S TOILET ROOM 1/4" = 1'-0" 2 FINISH- NIGHT MEN'S TOILET ROOM 1/4" = 1'-0"

1) FINISH- DAY TOILET ROOMS 1/4" = 1'-0" phone: 215.829.0922
CONTACT PERSON: DARIN JELLISON

M/E/P/FP:
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phone: 215.560.0500 x110
CONTACT PERSON: JEFF MOORE

Project:

#### Joseph's House Toilet Rooms

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:
FINISH PLAN

\_\_\_\_

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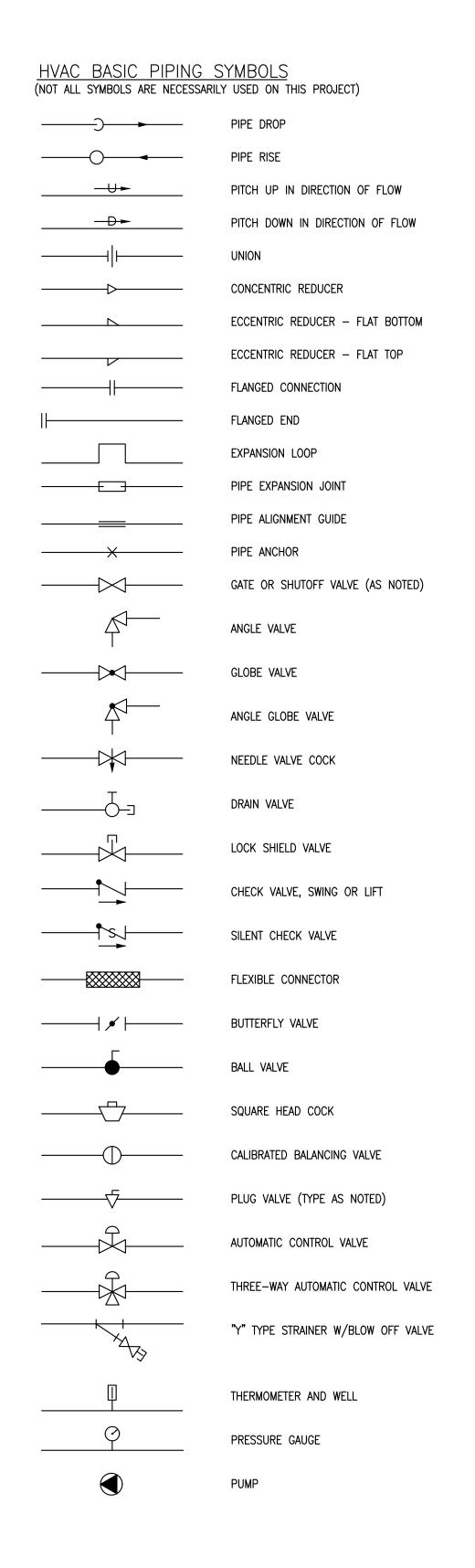
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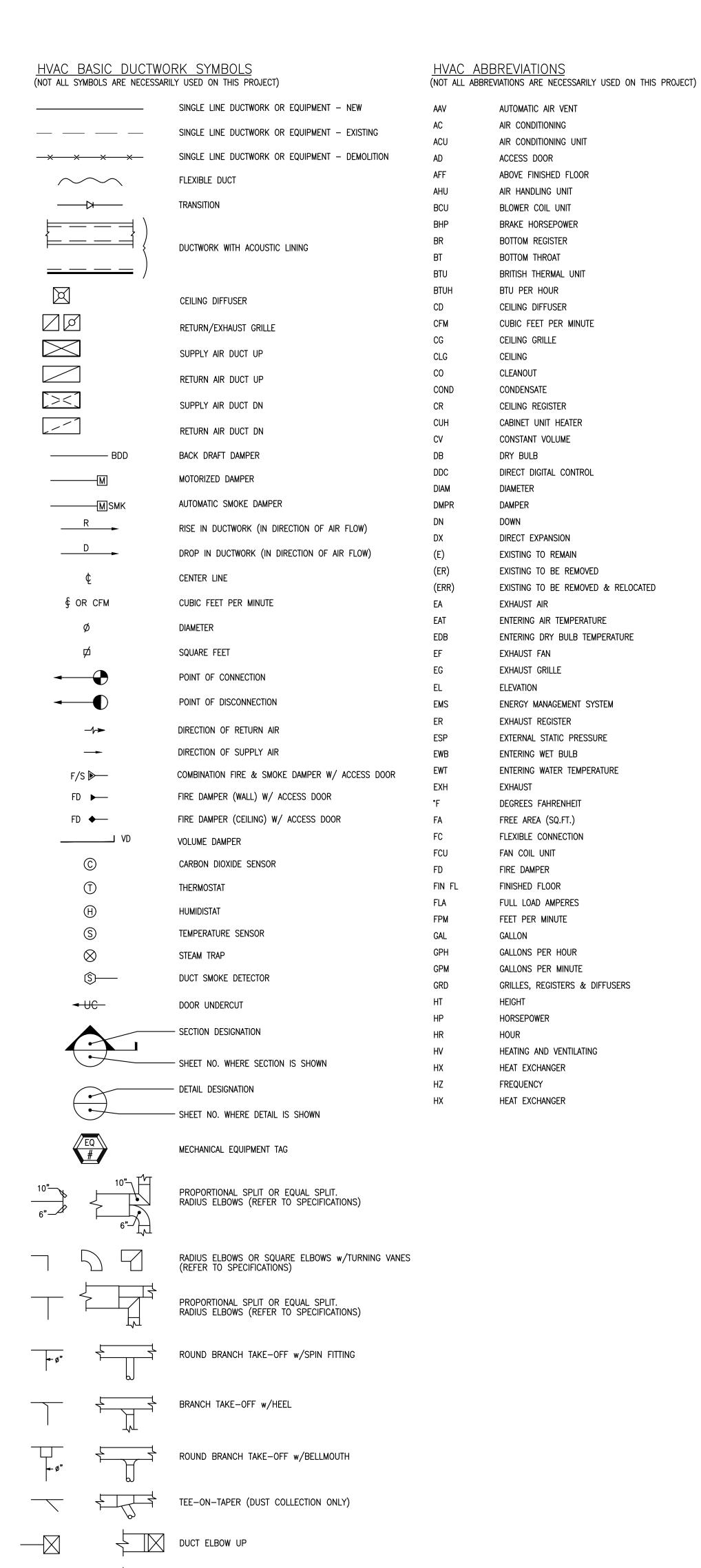
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Release		
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Checked By:	CS
Approved Bv:	DI

A10.1





#### MECHANICAL NOTES

INCH OR INCHES

LINEAR DIFFUSER

LINEAR FEET

MINIMUM

NUMBER

LEAVING AIR TEMPERATURE

LEAVING WET BULB TEMPERATURE

LEAVING WATER TEMPERATURE

MECHANICAL EQUIPMENT ROOM

THOUSAND BTU PER HOUR

MOTOR OPERATED DAMPER

NORMALLY CLOSED

NOT IN CONTRACT

NORMALLY OPEN

NOT TO SCALE

OUTSIDE AIR

PSI ABSOLUTE

PSI GAUGE

RETURN AIR

RETURN FAN

RETURN GRILLE

REHEAT COIL

RELATIVE HUMIDITY

RETURN REGISTER

SUPPLY AIR

SMOKE DAMPER

STATIC PRESSURE

SQUARE FEET

SPECIFICATION

TEMPERATURE

TOP REGISTER

TRANSITION

TYPICAL

WITH

WET BULB

WATER COLUMN

WATER GAUGE

WATER HEATER

WIRE MESH SCREEN

THERMOSTAT

UNIT HEATER

VOLUME DAMPER

VARIABLE FREQUENCY DRIVE

VARIABLE AIR VOLUME

VARIABLE INLET VANES

TRANS

T-STAT

TRANSFER GRILLE

TOTAL DYNAMIC HEAD

RUNNING LOAD AMPS

REVOLUTIONS PER MINUTE

EXISTING TO BE REMOVED

AND RETURN TO OWNER

ROOFTOP AIR HANDLING UNIT

RELOCATED EXISTING

OUTSIDE AIR INTAKE

POUNDS PER SQUARE INCH

OPEN END DUCT

- 1. PRIOR TO SUBMITTING A BID THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND VISIT THE SITE TO BECOME ACQUAINTED WITH THE CONSTRUCTION AND THE EXTENT OF THE WORK. NO EQUIPMENT OR MATERIAL IS TO BE ORDERED OR FABRICATED PRIOR TO FIELD VERIFICATION OF ALL MEASUREMENTS, CLEARANCES, POTENTIAL CONFLICTS WITH EXISTING CONDITIONS OR THAT OF OTHER TRADES ON THE JOB.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE, WHETHER SPECIFIED OR IMPLIED.
- 3. CONTRACTOR SHALL VISIT THE JOB PRIOR TO SUBMITTING A
- 4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE INTERNATIONAL BUILDING CODE, MECHANICAL CODE, FUEL GAS CODE, PLUMBING CODE, NEC CODE AND ALL OTHER STATE AND LOCAL AUTHORITIES HAVING JURISDICTION.
- 5. CONTRACTOR SHALL GIVE ALL NOTICES, OBTAIN AND PAY FOR ALL PERMITS, DEPOSITS AND FEES NECESSARY.
- 6. DO NOT SCALE THE DRAWINGS FOR EXACT DIMENSIONS. THE DESIGN DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LAYOUT AND CONNECTIONS. CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS, ETC. AT THE JOB SITE.
- CONTRACTOR SHALL REVIEW THE WORK OF OTHER TRADES TO PREVENT INTERFERENCE BETWEEN BEAMS, STRUCTURES, PIPING, LIGHTING FIXTURES ETC. BEFORE PROCEEDING WITH NEW WORK.
- 8. CONTRACTOR SHALL GUARANTEE THE ENTIRE JOB AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE BINDING REGARDLESS OF MANUFACTURER'S GUARANTEE AND CONTRACTOR SHALL REMOVE AND REPLACE ALL DEFECTIVE MATERIAL REGARDLESS OF CAUSE (EXCEPT FOR DEFECTS TRACEABLE TO IMPROPER MAINTENANCE OR MALICIOUS DESTRUCTION OCCURRING AFTER THE SYSTEM HAS BEEN TURNED OVER).
- 9. ALL MATERIALS USED ANYWHERE IN THE WORK SHALL HAVE NFPA RATING AS FOLLOWS:
- A. FLAME SPREAD— NOT OVER 25
  B. SMOKE DEVELOPED— NOT OVER 50
  C. FUEL CONTRIBUTED— NOT OVER 25
  ALL MATERIALS SHALL BE "SELF—EXTINGUISHING"
- 10. CONTRACTOR SHALL SUBMIT 1/4" SCALE SHEET METAL SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 11. SUBMIT TO THE ARCHITECT FOR APPROVAL, SPECIFICATION SHEETS OF ALL EQUIPMENT SUPPLIED OR INSTALLED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- A. AIR CONDITIONING UNITS
  B. GRILLES, REGISTERS, AND DIFFUSERS
  C. CONTROLS
  D. PIPING
  E. INSULATION

F. FANS

- 12. ALL MECHANICAL EQUIPMENT AND APPLIANCES INSTALLED SHALL BEAR THE LABEL OF AN APPROVED AGENCY.
- 13. EQUIPMENT AND MATERIALS ARE SPECIFIED TO ESTABLISH A STANDARD OF QUALITY. ALL MATERIALS AND EQUIPMENT USED FOR THIS CONTRACT SHALL BE NEW AND UNUSED AND OF THE LATEST MODEL OR DESIGN AVAILABLE.
- 14. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT INSULATION IS APPLIED.
- 15. CONTRACTOR SHALL PROVIDE 1—INCH THICK (R-5) FOAM BOARD INSULATION PAINTED TO MATCH THE ROOM'S FINISH FOR ALL THERMOSTAT'S MOUNTED ON MASONRY WALLS.
- 16. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL STEEL, SUPPORTS, BRACES, HANGERS, ETC., REQUIRED FOR HIS CONTRACT UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SUPPORT LOCATION AND INSTALLATION WITH ROOFING AND STRUCTURAL CONTRACTORS.
- 17. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR.
- FEET.

18. MAXIMUM ALLOWABLE LENGTH FOR FLEXIBLE DUCT IS SIX (6')

- 19. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING EITHER ENGAGING HIS OWN GENERAL SUBCONTRACTOR OR ONE QUALIFIED BY THE OWNER.
- OR DISCREPANCIES PRIOR TO PRECURSOR AND/OR FABRICATION OF ANY MATERIALS AND INSTALLATION.

21. INSTALL ALL EQUIPMENT IN ACCORDANCE TO THE

MANUFACTURER'S WRITTEN GUIDELINES.

20. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY QUESTIONS

22. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONNECTIONS, SUPPORTS, TERMINATIONS & ACCESSORIES ASSOCIATED WITH AIR HANDLING UNITS, FANS, ETC.

- ID THE CONTRACTOR SHALL EXAMINE
  ICATIONS AND VISIT THE SITE TO
  THE CONSTRUCTION AND THE

  23. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL
  CONTRACTOR WHO WILL PROVIDE POWER WIRING TO ALL
  MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL
  - PROVIDE ALL CONTROL AND INTERLOCK WIRING AND ALL THERMOSTATS AND ACCESSORIES.

    24. SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK WITH VIBRATION ISOLATION HANGERS AS REQUIRED TO PROVIDE A

VIBRATION FREE INSTALLATION.

- 25. ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED AND SEALED WITH A HIGH QUALITY SEALANT TO
- 26. PROVIDE VOLUME DAMPERS AT ALL DUCT BRANCHES AND RUNOUTS. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL REGISTERS, GRILLES AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN ON DRAWINGS OR

PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR.

- 27. PROVIDE AT MINIMUM 10 GAUGE STEEL SLEEVES FOR ALL DUCT PENETRATIONS THROUGH FIRE WALLS, FLOORS AND PARTITIONS. PROVIDE PIPE SLEEVES FOR ALL MECHANICAL PIPING PENETRATING THROUGH FIRE WALLS, FLOORS AND PARTITIONS. SEAL ALL ANNULAR SPACE BETWEEN SLEEVES AND DUCTWORK OR PIPING WITH A FIRE BARRIER MATERIAL.
- 28. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS AND PIPING CONNECTIONS TO ANY MOTOR DRIVEN MECHANICAL EQUIPMENT (I.E. FANS, AIR HANDLERS, PUMPS, ETC.) INSTALL FLEXIBLE COPPER GROUNDING STRAPS ACROSS ALL FLEXIBLE CONNECTIONS.
- 29. THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
- 30. ACCESS PANELS SHALL BE PROVIDED TO SERVICE ALL VALVES, DAMPERS, HEATERS, CONCEALED MECHANICAL EQUIPMENT, TRAPS, CLEANOUTS AND DISCHARGE SIDE OF ELECTRIC HEATERS.
- 31. FINAL LOCATIONS FOR MOUNTING ALL THERMOSTATS SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO INSTALLING ANY CONTROL WORK. ALL COMMON AREA THERMOSTATS SHALL BE EQUIPPED WITH A LOCKING COVERS. MOUNT ALL THERMOSTATS TO COMPLY WITH ADA REQUIREMENTS.
- 32. UPON COMPLETION OF THE WORK, REMOVE ALL EXCESS MATERIAL, DEBRIS, TOOLS AND EQUIPMENT FROM THE SITE, AND LEAVE THE PREMISES IN A BROOM CLEAN CONDITION.
- 33. CONTRACTOR SHALL PROVIDE THREE (3) COMPLETE SETS OF BOUND OPERATING AND MAINTENANCE INSTRUCTIONS.
  CONTRACTOR SHALL INSTRUCT THE OWNER OR HIS AGENT WITH REGARD TO THE PROPER USE OF THE SYSTEM UNTIL SUCH INSTRUCTION IS COMPLETE TO THE OWNER'S SATISFACTION.
- 34. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC OR NEBB STANDARDS.
- 35. CONTRACTOR SHALL ENSURE THAT ALL MECHANICAL DEVICES WILL BE INSTALLED IN LOCATIONS WHICH AFFORD ACCESSIBILITY FOR MAINTENANCE AND REPAIR. COORDINATE INSTALLATION AMONG ALL TRADES TO AVOID INTERFERENCES AND LOCATE EQUIPMENT TO PROVIDE CLEARANCES WHICH EXCEED THOSE RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- 36. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE SAFETY OF EXISTING STRUCTURE.
- 37. THERMOSTAT WIRING SHALL BE INSTALLED IN CONCEALED SPACE, WALL OR CHASE COORDINATE WITH THE OWNER REPRESENTATIVE.
- 38. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SCHEDULING AND ASSOCIATED HOISTING STAGING AND ERECTING OF MATERIALS. ALL ELEMENTS OF THE EXISTING PROPERTY SHALL BE PROTECTED AGAINST DAMAGE RESULTING FROM THESE ACTIVITIES.
- 39. THE LOCATION OF EXISTING SYSTEMS AND SYSTEM COMPONENTS WAS OBTAINED THROUGH EXISTING DRAWINGS AND FIELD SURVEYS. ONLY SYSTEM ELEMENTS THAT WERE CLEARLY VISIBLE HAVE BEEN IDENTIFIED. LOCATIONS AND SIZES OF EXISTING SYSTEMS MUST BE FIELD VERIFIED BY THE CONTRACTOR, PRIOR TO THE REMOVAL OF ANY EXISTING SYSTEM COMPONENTS AND CONNECTING NEW SYSTEMS TO EXISTING.
- 40. THESE DRAWINGS HAVE BEEN MADE BASED ON A VISUAL INSPECTION OF THE EXISTING SURFACES. SOME ASSUMPTIONS HAVE BEEN MADE AS TO ACTUAL CONSTRUCTION, MATERIALS, AND METHODS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ACTUAL FIELD CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, CONFLICTS, AND UNFORESEEN CONDITIONS. IN ADDITION, THESE DRAWINGS ASSUME THAT ALL EXISTING MATERIALS ARE IN GOOD STRUCTURAL SHAPE, GOOD WORKING ORDER, AND MEET ALL APPLICABLE CODES. THE GENERAL CONTRACTOR IS RESPONSIBLE TO INSPECT ALL THE EXISTING ELEMENTS OF THE STRUCTURE AND REPORT TO THE CLIENT AND TO THE ARCHITECT OF ANY SIGNS OF POTENTIAL PROBLEMS WITH THE STRUCTURE INCLUDING, BUT NOT LIMITED TO, WOOD DECAYING ORGANISMS, WATER PENETRATION, STRUCTURAL FRACTURES, STRESSED SURFACES, BRICK AND MASONRY WEAKENING AND WEAK STRUCTURAL CONNECTIONS.

#### GENERAL FIRESTOPPING NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OR EXCEEDING WALL/CEILING/FLOOR ASSEMBLY RATINGS FOR ALL PENETRATIONS. CONTRACTOR SHALL VERIFY LOCATION AND RATING OF ALL FIRE ASSEMBLIES AND PROVIDE INTUMESCENT COLLARS AT ALL PENETRATIONS AND FIRE RATED CAULKING AS REQUIRED.

### MECHANICAL EQUIPMENT SERVICING & AIR PRE-BALANCING REQUIREMENTS

PRE-BALANCING REPORTS ARE REQUESTED DUE TO THE VISUAL NATURE OF THE ENGINEERS' FIELD SURVEYS. SOME ASSUMPTIONS HAVE BEEN MADE DURING THE DESIGN WHICH SHALL BE CONFIRMED, ADJUSTED OR CORRECTED FOLLOWING REVIEW OF THESE PRE-BALANCING REPORTS. THE FOLLOWING REQUIREMENTS WILL ALLOW THE ENGINEER TO PROPERLY REVIEW THEIR ASSUMPTIONS:

- PRIOR TO ANY DEMOLITION OR PRE-BALANCING, THE CONTRACTOR SHALL CLEAN, ADJUST AND SERVICE ALL EXISTING MECHANICAL EQUIPMENT SERVING THE ASSOCIATED TOILET ROOMS AND ADJACENT SPACES FOR PROPER OPERATION. REPLACE ALL FILTERS IN UNITS AND ANY DAMAGED PARTS. RECHARGE REFRIGERANT AS NEEDED. CORRECT ANY OBJECTIONABLE NOISE AND VIBRATION. REPORT ANY UN-REPAIRABLE DEFICIENCIES TO ARCHITECT AND ENGINEER. THIS INCLUDES RTU-1, 2, AND DOAS-1.
- PRIOR TO ANY DEMOLITION, THE CONTRACTOR SHALL PROVIDE AIR BALANCING REPORTS, TO ARCHITECT AND ENGINEER, INCLUDING AIRFLOWS AT SUPPLY AND RETURN AIR MAINS FOR ALL AIR HANDLING UNITS SERVING THE ASSOCIATED TOILET ROOMS AND ADJACENT SPACES. ADDITIONALLY, PROVIDE AIRFLOW MEASUREMENTS AT ALL EXISTING BRANCH DUCTWORK, GRILLES, DIFFUSERS AND REGISTERS ASSOCIATED WITH EXISTING SYSTEMS. THIS INCLUDES RTU-1, 2, AND DOAS-1



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Project:

#### Joseph's House Toilet Rooms

Project Address:

555 Atlantic Avenue
Camden, NJ 08105

Sheet Title:

#### MECHANICAL COVERSHEET

Seal

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR

TO STARTING WORK:

Any party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represent

building. All parties relying on these documents represent that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for

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Checked By			SLC	

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MECHANICAL DAY SIDE TOILET

ROOM DEMOLITION PLAN

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

#### **DEMOLITION NOTES:**

- 1. THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF HVAC WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE OWNER/ENGINEER.
- 2. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING HVAC SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
- 3. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION. PATCH ALL EXISTING INTERIOR AND EXTERIOR WALLS, LEFT BY DEMOLITION, TO MATCH FXISTING
- 4. THE CONTRACTOR SHALL REMOVE ALL DUCT & PIPING SUPPORTS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING PIPING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL AND PROVIDE BYPASS CONNECTIONS NECESSARY.
- 5. ALL PIPING WHICH BECOMES EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
- 6. PORTIONS OF PIPING & DUCTWORK TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ACTIVE, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED.
- 7. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL BE DISPOSED OF BY THE MECHANICAL CONTRACTOR.
- 8. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- 9. THE SHUTDOWN OF EXISTING BUILDING HVAC SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.
- CONTRACTOR SHALL COMPLY WITH ALL FEDERAL STATE & LOCAL REQUIREMENTS REGARDING DISPOSAL OF REFRIGERANTS.
- 11. CONTRACTOR SHALL CLEAN THE EXISTING ROOFTOP UNITS, COILS, FANS, ETC, SO THAT EQUIPMENT IS IN PROPER WORKING CONDITION. REPLACE ALL AIR FILTERS AND BELTS, ADJUST BELTS AS REQUIRED. VERIFY PROPER REFRIGERANT CHARGE AND PROVIDE ADDITIONAL AS REQUIRED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- 12. PRIOR TO ANY DEMOLITION, CONTRACTOR SHALL PROVIDE AN AIR BALANCING REPORT, TO ARCHITECT/ENGINEER, REFER TO COVER SHEET FOR ADDITIONAL REQUIREMENTS.

#### DEMOLITION KEY NOTES:

- 1) REMOVE EXISTING SA REGISTER OR DIFFUSER. CLEAN, REPAIR AND REINSTALL. SEE NEW WORK FOR RELOCATION.
- DISCONNECT AND REMOVE EXISTING EXHAUST FAN EF-5, CURB AND ACCESSORIES, AS WELL AS, ASSOCIATED MAIN AND BRANCH DUCTWORK, INCLUDING HANGERS, SUPPORTS AND REGISTERS



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Project:

#### Joseph's House Toilet Rooms

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Sheet Title:

# MECHANICAL DEMOLITION PLAN

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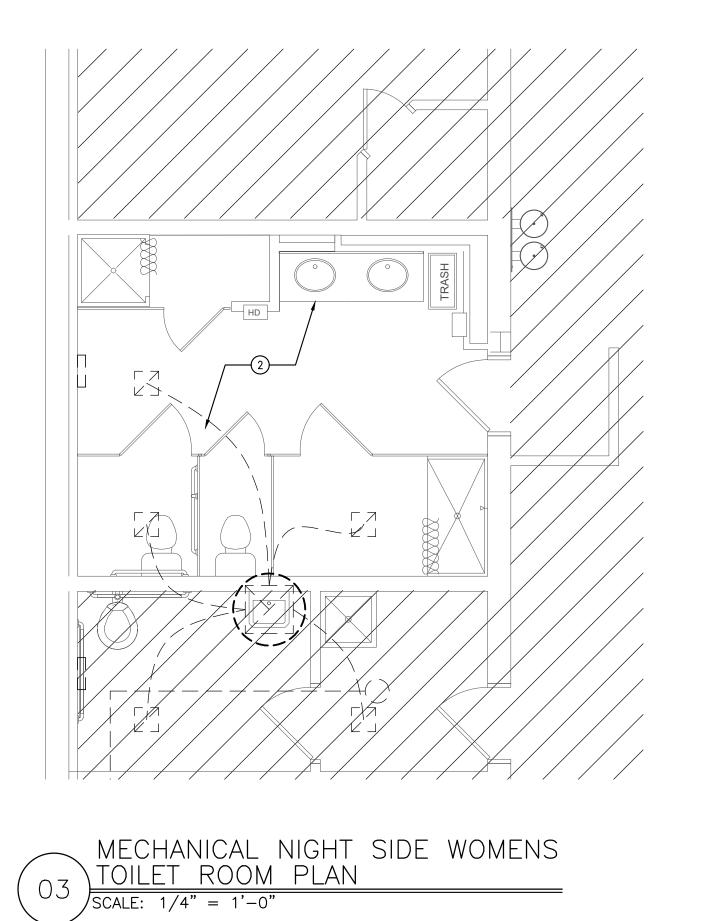
therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for their intended purposes unless noted in specific written exception beforehand.

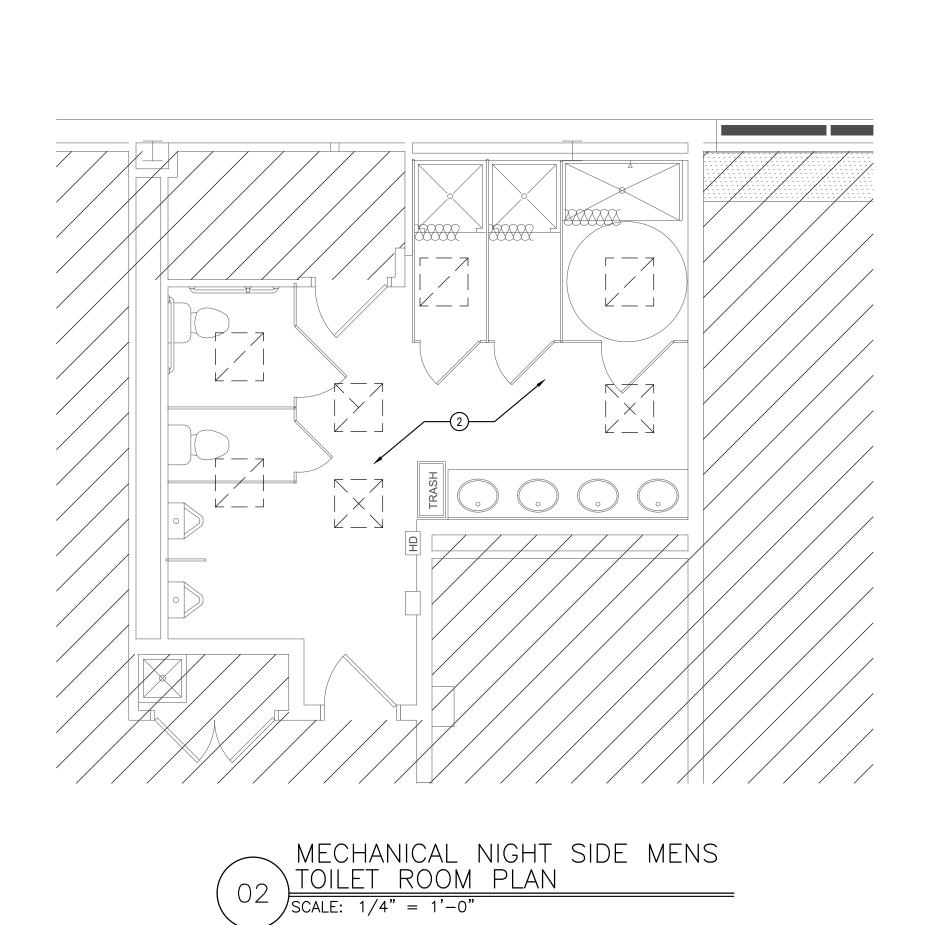
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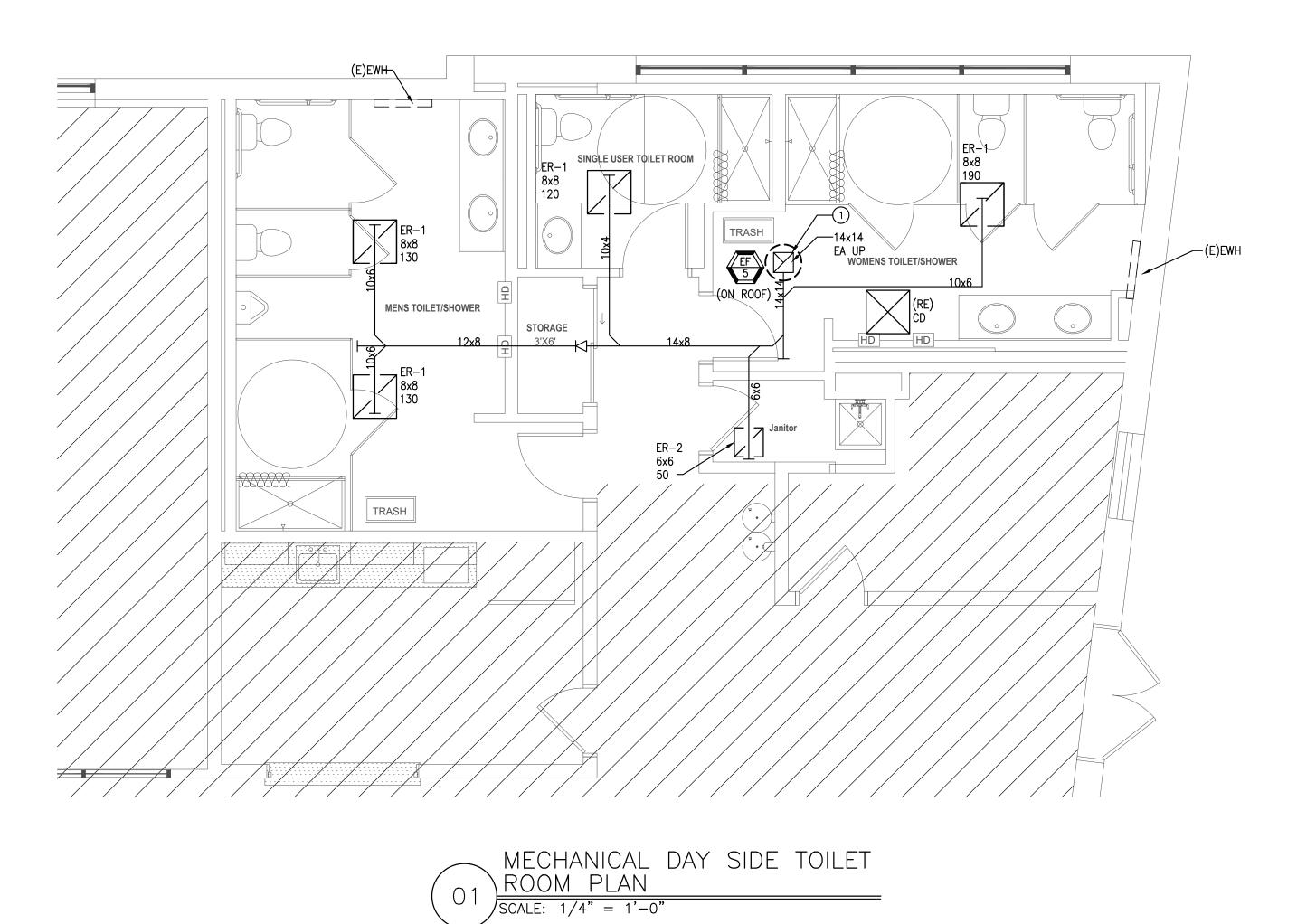
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DRAWING NOTES:

- DRAWINGS ARE DIAGRAMMATIC. PROVIDE ADDITIONAL OFFSETS, TRANSITIONS, ETC. AS REQUIRED TO AVOID INTERFERENCES ENCOUNTERED.
- 2. CONTRACTOR SHALL PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AND ACCESS TO ALL EQUIPMENT. COORDINATE LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS.
- SPACE ABOVE CEILING IS VERY LIMITED. COORDINATE WITH ALL TRADES FOR DUCTWORK ROUTING PRIOR TO FABRICATION AND INSTALLATION.
- 4. ALL KITCHEN EXHAUST AND BATHROOM EXHAUST SHALL TERMINATE ON EXTERIOR A MINIMUM OF 3 FEET FROM ALL OPERABLE WINDOWS AND OTHER OPENINGS TO BUILDINGS AND 10 FEET FROM MECHANICAL INTAKES.
- DOAS-1 WILL REQUIRE REBALANCING BASED ON PRE-BALANCING INFORMATION. PROVIDE REBALANCING OF UNIT IN MECHANICAL CONTRACTOR'S SCOPE.

KEY NOTES:

- 1) ROUTE NEW EXHAUST DUCT UP THRU ROOF TO NEW EF-B. EXTEND OPENING OR SEAL AS REQUIRED TO MATCH/COORDINATE WITH EXISTING.
- 2 RELOCATE GRILLS AS REQUIRED TO MATCH NEW RCP IN THIS SPACE.

B L A C K N E Y H A Y E S A R C H I T E C T S

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Project:

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Sheet Title:

# MECHANICAL FLOOR PLAN

Sea

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AIR [	DEVICE SCH	EDULE <u>note:</u> not all devices may be used on project.
<u>TAG</u>	FLOW PATTERN	<u>EXHAUST</u>
ER-1	SEE PLANS	24x24 EXHAUST GRILLE EQUAL TO TITUS MODEL PAR-AA, ALUMINUM CONSTRUCTION, 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, HEAVY GAUGE STEEL BACKPAN, OPPOSED BLADE DAMPER, NECK SIZE AS INDICATED ON DRAWINGS. COLOR BY ARCHITECT.
ER-2	SEE PLANS	12x12 EXHAUST GRILLE EQUAL TO TITUS MODEL PAR-AA, ALUMINUM CONSTRUCTION, 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, HEAVY GAUGE STEEL BACKPAN, OPPOSED BLADE DAMPER, NECK SIZE AS INDICATED ON DRAWINGS. COLOR BY ARCHITECT.

#### NOTES/ACCESSORIES: 1. FINISH/COLOR OF ALL DIFFU

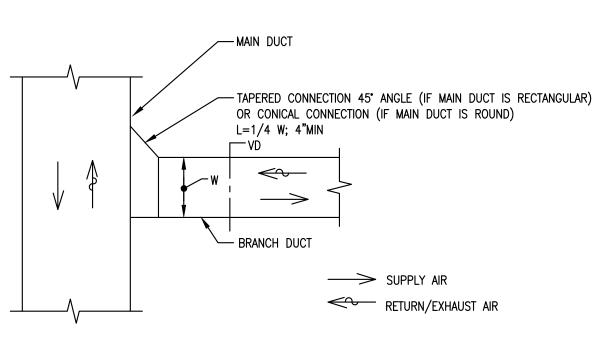
- 1. FINISH/COLOR OF ALL DIFFUSERS SHALL BE DETERMINED BY OWNER/ARCHITECT.
  2. PROVIDE 4-WAY THROW UNLESS NOTED (ARROWS) ON PLANS.
- MAXIMUM PRESSURE DROP FOR SUPPLY AIR DIFFUSERS SHALL BE 0.10" W.G.
   MECHANICAL CONTRACTOR SHALL COORDINATE BORDER TYPES WITH CEILING AND WALL CONSTRUCTION. REFER TO ARCH. REFLECTED CEILING PLAN. COORDINATE WITH GENERAL CONTRACTOR.
- OPPOSED BLADE DAMPERS MAY BE OMITTED WHERE ACCESSIBLE VOLUME DAMPERS ARE PROVIDED AT BRANCH RUNOUTS.
   PROVIDE RADIATION CEILING DAMPERS ON ALL DIFFUSERS, REGISTERS AND GRILLES WHERE RATED CEILING ASSEMBLIES ARE PENETRATED TO MAINTAIN RATINGS. COORDINATE WITH ARCHITECTURAL PLANS AND G.C. FOR LOCATIONS.
   DRAWING SYMBOL INFORMATION:
- OR TAG NECK SIZE CFM

FAI	N SCHEDULE											EF _
TAG	SERVICE	BASIS OF DESIGN MANUF.	MODEL NO.	TYPE	CFM	SP. IN. W.G.	FRPM	HP	VOLTAGE	NOISE LEVEL (SONES)	CONTROL	REMARKS
EF-5	DAY TOILETS	GREENHECK	G-099-VG	DIRECT DRIVE ROOF MOUNTED	620	0.50	1261	1/4	120/1¢/60	7.9	CONTINUOUS	ALL

NOTES/ACCESSORIES:

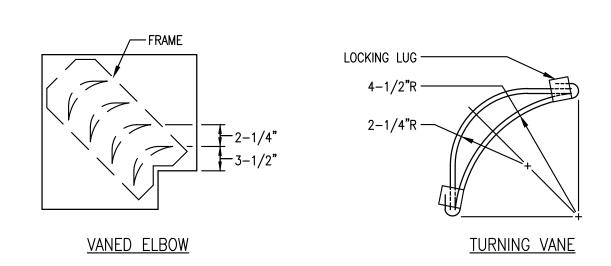
1. PROVIDE WITH SPEED CONTROLLER, DISCONNECT SWITCH, BACKDRAFT DAMPER, INSULATED ROOF CURB, LOCKABLE COVER AND BIRD SCREEN.

2. E.C.M. MOTOR.



<u>DETAIL NOTES:</u>
1. PROVIDE SIMILAR FOR TAKE-OFF/DROPS TO CEILING REGISTERS.





DETAIL NOTES:

1. LOCKING LUGS INTERNAL WITH VANE

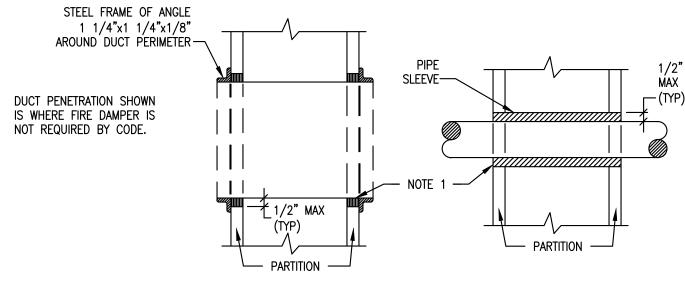
2. MAXIMUM UNSUPPORTED VANE LENGTH 48"

3. FRAMES — BOLTED OR RIVETED TO ELBOW

4. VANES AND FRAMES — SAME GAUGE AS ELBOW

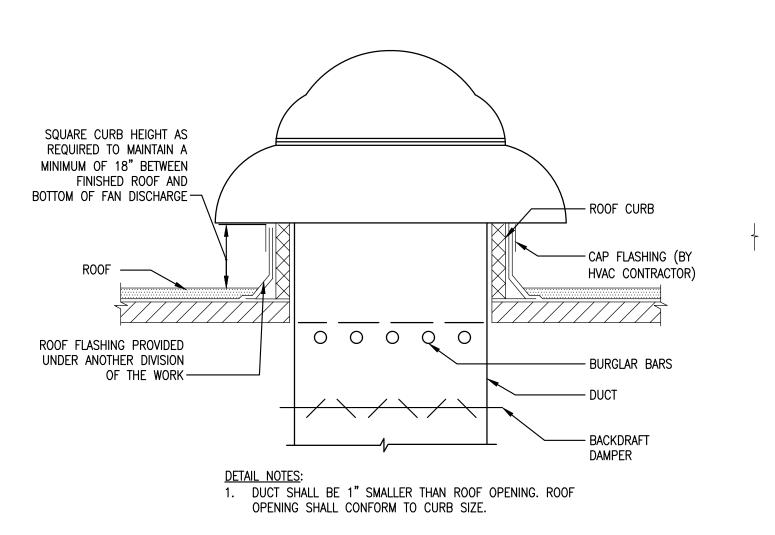
5. PROVIDE FOR ALL SQUARE ELBOWS.

03 DOUBLE THICKNESS TURNING VANE DETAIL SCALE: N.T.S.



DETAIL NOTES:
1. AT FIRE RATED PARTITIONS, ADD ADDITIONAL LAYER OF FIRE SAFING INSULATION AROUND PENETRATION SO AS TO FILL CAVITY.
2. DUCT AND PIPE PENETRATIONS THRU CORRIDOR WALLS ABOVE THE CEILING SHALL BE FIRE STOPPED AROUND THE PENETRATION.

02 DUCT AND PIPE PENETRATION DETAIL SCALE: N.T.S.



ROOF MOUNTED EXHAUST FAN DETAIL
SCALE: N.T.S.



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Project:

#### Joseph's House Toilet Rooms

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Sheet Title:

#### MECHANICAL SCHEDULES & DETAILS

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DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR
TO STARTING WORK:
Any party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the

specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represent that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for their intended purposes unless noted in specific

written exception beforehand.

Warning: Actual conditions may vary from conditions shown on this drawing. Confirm all information in the field before proceeding with any work and notify the Architect

in writing if a variation is discovered.

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#### HVAC SPECIFICATIONS

#### GENERAL

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- ALL APPLICABLE CODES. LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL. OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- INVESTIGATE EACH SPACE THOROUGHLY WHERE EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
- SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL. SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281 MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75 PERCENT OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER. PROVIDE SEISMIC RESTRAINTS AS REQUIRED BY CODE.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES, WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT APPROVAL.
- REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- H. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
- I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS. FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS
- AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND
- EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS L. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- N. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED. AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- O. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- P. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS. SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS. AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR.
- R. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING. EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR: EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.
- INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
- SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- W. DEFINITIONS
- 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT AS DETERMINED BY THE ENGINEER AND ARCHITECT.

#### 2. SCOPE OF WORK

- A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING. COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK
- SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR. AND FURNISH TO THE OWNER BEFORE FINAL BILLING. ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED
- CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK. C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN TWO YEARS FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES. BY OWNER. INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

#### SHOP DRAWINGS

INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME

#### CONTRACTOR. B. SUBMISSIONS

- SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE
- ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE. SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT THREE PRINTS TO THE ARCHITECT. THE ARCHITECT WILL FORWARD TWO PRINTS TO THE ENGINEER.
- SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) DUCTWORK LAYOUT DRAWINGS AND SHEET METAL DESIGNS.
- 2) SHEETMETAL CONSTRUCTION STANDARDS.
- AIR OUTLETS.
- 4) AIR BALANCE REPORT. 5) AC UNITS AND FANS.
- 6) OPERATING SEQUENCES.
- 7) VIBRATION ISOLATION AND SEISMIC RESTRAINTS.

#### D. COORDINATION

- THE CONTRACTOR SHALL ASSURE FULL COOPERATION OF ALL TRADES AND SHALL FURNISH IN WRITING ALL INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH LEAST POSSIBLE INTERFERENCE OR DELAY.
- PREPARE COORDINATED COMPOSITE DRAWINGS AT A SUITABLE SCALE NOT LESS THAN 1/4-INCH EQUALS ONE FOOT. ZERO INCHES. CLEARLY SHOWING HOW THE WORK OF THIS DIVISION IS TO BE INSTALLED IN RELATION TO THE WORK OF ALL TRADES. ANY WORK INSTALLED IN CONFLICT WITH THE WORK OF OTHER TRADES SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR MAY, SUBJECT TO THE ACCEPTANCE OF THE ARCHITECT AND WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF ALL TRADES OR FOR THE PROPER EXECUTION OF THE WORK MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE

GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE

CONDITIONS. WHERE SPACE CONDITIONS APPEAR INADEQUATE, THE

ARCHITECT SHALL BE NOTIFIED BEFORE INSTALLATION. DO NOT

PROCEED WITH THE INSTALLATION UNTIL RECEIVING CLARIFYING

CONTRACT. COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LOCATION OF DUCTWORK, PIPING AND FOUIPMENT. 5) THE CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYOUT WORK AND SHALL COORDINATE ALL TRADES TO VERIFY SPACES IN WHICH WORK SHALL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM OR SPACE

#### INSTRUCTIONS. 4. RECORD DRAWINGS AND EQUIPMENT OPERATION INSTRUCTIONS

- ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS. WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.
- RECORD (AS-BUILT) DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ENGINEER AFTER COMPLETION OF THE INSTALLATION. SHEET METAL WORK
- A. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. DUCT CONSTRUCTION STANDARDS, PRESSURE CLASSIFICATION 2 IN. W.G.
  - 1) FOR RECTANGULAR DUCTS, THE MINIMUM GAUGES SHALL BE: a. 24 GAUGE FOR DUCTS 30" (MAXIMUM DIMENSION) AND
  - 22 GAUGE FOR DUCTS WITH A MAXIMUM DIMENSION BETWEEN
  - 31" AND 54' 20 GAUGE FOR DUCTS WITH A MAXIMUM DIMENSION BETWEEN 18 GAUGE FOR DUCTS WITH A MAXIMUM DIMENSION LARGER
  - MAXIMUM REINFORCING DISTANCES SHALL BE: a. 7'-10" FOR DUCTS WITH A MAXIMUM DIMENSION OF 30" OR
  - b. 3'-9" FOR DUCTS WITH A MAXIMUM DIMENSION LARGER THAN
- PROVIDE MILL PHOSPHATIZED FINISH WHERE DUCTS ARE EXPOSED. B. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR
- ALL DUCTWORK SHALL BE FREE FROM PULSATION, CHATTER AND VIBRATION. IF ANY OF THESE DEFECTS APPEAR AFTER A SYSTEM IS IN
- OPERATION, CORRECT BY REMOVING AND REPLACING, OR REINFORCING THE DUCTWORK AT NO ADDITIONAL COST TO THE OWNER.
- D. ROUND SINGLE AND DOUBLE-WALL DUCTWORK: APPROVED MANUFACTURERS: MCGILL AIRFLOW, SEMCO, LINDAB, AND EASTERN SHEET
  - PROVIDE FACTORY-FABRICATED ROUND DUCTS. GAUGES AND CONSTRUCTION DETAILS SHALL COMPLY WITH THE REFERENCED SMACNA HVAC DUCT CONSTRUCTION STANDARDS AND SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS.
- 2) FOR DUCTWORK DIAMETERS UP TO AND INCLUDING 60 INCHES, PROVIDE SPIRAL LOCK-SEAM CONSTRUCTION. FOR DUCTWORK
- DIAMETERS OVER 60 INCHES, PROVIDE WELDED LONGITUDINAL SEAMS. PROVIDE DUCTS OF SPIRAL LOCK-SEAM CONSTRUCTION. 4) USE SLIP JOINTS, JOINTS WITH A DOUBLE-LIPPED EPDM JACKET, OR
- THE FOLLOWING JOINING SYSTEM FOR TRANSVERSE DUCT JOINTS AND FITTINGS. a. UP TO 20" DIAMETER: INTERIOR SLIP COUPLING BEADED AT CENTER AND FASTENED TO DUCT WITH SCREWS SHALL BE USED TO JOIN DUCTS. SEAL JOINT WITH A SEALING
- COMPOUND, CONTINUOUSLY APPLIED AROUND JOINT PRIOR TO ASSEMBLING AND AFTER FASTENING. MAKING CERTAIN THAT MAJORITY OF SEALANT RESIDES ON INTERIOR OF THE JOINT. 21" DIAMETER & ABOVE: INSTALL USING A THREE-PIECE, GASKETED FLANGED-JOINT CONSISTING OF TWO INTERNAL FLANGES. WITH INTEGRAL MASTIC SEALANT, AND ONE EXTERNAL CLOSURE BAND TO COMPRESS THE GASKET BETWEEN THE

INTERNAL FLANGES. APPROVED SYSTEMS: DUCTMATE

- SPIRALMATE ELBOWS FOR 3 THROUGH 12 INCH DIAMETER AND 90° BENDS SHALL BE TWO-SECTION STAMPED WITH WELDED SEAMS. ALL OTHER ELBOWS SHALL BE CONSTRUCTED OF MITERED SECTIONS WITH ALL SEAMS AND JOINTS WELDED IN ACCORDANCE WITH THE FOLLOWING
- SCHEDULE: a. THRU 35 DEGREES/2 GORES b. 36 THRU 71 DEGREES/3 GORES
- c. OVER 71 DEGREES/5 GORES 6) ELBOWS SHALL BE TWO-SECTION STAMPED WITH WELDED SEAMS. 7) CONSTRUCT ALL ELBOWS WITH A CENTERLINE RADIUS EQUAL TO 1.5
- TIMES THE DIAMETER. 8) MAKE ALL TAKE-OFF CONNECTIONS TO DUCT HEADERS USING TEE (90°), LATERAL (45°), TEE CROSS, LATERAL CROSS AND "Y" BRANCH FITTINGS OF THE CONICAL TYPE. ALL FITTINGS FABRICATED AS SEPARATE FITTINGS SHALL HAVE CONTINUOUS WELDS ALONG ALL SEAMS AND JOINTS.
- 9) THE USE OF TWO-PIECE, MITERED, VANED ELBOWS SHALL NOT BE PERMITTED.
- 10) THE USE OF BULLHEAD TEE FITTINGS IS NOT PERMITTED.
- 11) THE USE OF SQUARE THROAT RADIUS HEEL ELBOWS IS NOT PERMITTED.
- 12) SHOP-FABRICATED AND CONTRACTOR-DESIGNED FITTINGS ARE NOT PERMITTED.

- E. DUCTWORK SCHEDULE:
  - SUPPLY AIR: +2", 3% LEAKAGE −2", 3% LEAKAGE RETURN AIR:
  - EXHAUST AIR: -2", 3% LEAKAGE
- F. DUCT LEAKAGE TESTING

APPROVED EQUAL.

- DISASSEMBLE. REASSEMBLE. AND SEAL SEGMENTS OF SYSTEMS TO ACCOMMODATE LEAKAGE TESTING AND FOR COMPLIANCE WITH TEST REQUIREMENTS. SEAL ALL DUCTWORK WITH UL181 MASTIC OR
- 2) CONDUCT LEAKAGE TESTS, ON ALL DUCTWORK, AT STATIC PRESSURES EQUAL TO MAXIMUM DESIGN PRESSURE OF SYSTEM BEING TESTED. IF PRESSURE CLASSES ARE NOT INDICATED, TEST ENTIRE SYSTEM AT MAXIMUM SYSTEM DESIGN PRESSURE. DO NOT PRESSURIZE SYSTEMS ABOVE MAXIMUM DESIGN OPERATING PRESSURE. GIVE SEVEN DAYS' ADVANCE NOTICE FOR TESTING.
- MAXIMUM ALLOWABLE LEAKAGE: DUCTWORK LEAKAGE SHALL NOT EXCEED 4 PERCENT OF TOTAL SUPPLY AIRFLOW.
- REMAKE LEAKING JOINTS; APPLY ADDITIONAL SEALANT AND RETEST UNTIL LEAKAGE IS EQUAL TO OR LESS THAN MAXIMUM ALLOWABLE. ALL TESTS MUST BE WITNESSED AND RESULTS VERIFIED BY THE OWNER'S REPRESENTATIVE. SUBMIT FIELD TEST REPORT CERTIFYING THAT THE DUCTWORK DOES NOT EXCEED THE MAXIMUM ALLOWABLE LEAKAGE
- G. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL." EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT THE OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.
- H. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT
- PROVIDE MINIMUM 20 IN. X 14 IN. ON MAIN DUCTS. AND 12 IN. X 6 IN. ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS HUMIDIFIERS, DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.
- ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OUNCES
- PER SQ. YD. WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF
- J. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 IN. INSIDE RADIUS.
- K. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR
- WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 IN. WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME. M. LOW-PRESSURE FLEXIBLE DUCT: SHALL BE CONSTRUCTED WITH A CPE
- INNER FILM LINER LOCKED TO GALVANIZED STEEL HELIX WITH 1" THICK FIBERGLASS ENCLOSED WITH A REINFORCED FOIL/MYLAR SLEEVE. UL 181 LISTED AS CLASS 1 AIR DUCT COMPLYING WITH NFPA STANDARD 90A. SIMILAR TO FLEXMASTER TYPE 1M.
- N. CLEANING NEW & EXISTING SYSTEMS MARK POSITION OF DAMPERS AND AIR-DIRECTIONAL MECHANICAL
- DEVICES BEFORE CLEANING AND PERFORM CLEANING BEFORE AIR BALANCING a. USE SERVICE OPENINGS. AS REQUIRED, FOR PHYSICAL AND
- MECHANICAL ENTRY AND FOR INSPECTION. CREATE OTHER OPENINGS TO COMPLY WITH DUCT STANDARDS DISCONNECT FLEXIBLE DUCTS AS NEEDED FOR CLEANING AND
- REMOVE AND REINSTALL CEILING SECTIONS TO GAIN ACCESS DURING THE CLEANING PROCESS.
- 2) VENT VACUUMING SYSTEM TO THE OUTSIDE. INCLUDE FILTRATION TO CONTAIN DEBRIS REMOVED FROM HVAC SYSTEMS, AND LOCATE EXHAUST DOWN WIND AND AWAY FROM AIR INTAKES AND OTHER POINTS OF ENTRY INTO BUILDING.
- CLEAN THE FOLLOWING METAL DUCT SYSTEMS BY REMOVING SURFACE CONTAMINANTS AND DEPOSITS: a. AIR OUTLETS AND INLETS (REGISTERS, GRILLES, AND
- SUPPLY, RETURN, AND EXHAUST FANS INCLUDING FAN HOUSINGS, PLENUMS (EXCEPT CEILING SUPPLY AND RETURN
- PLENUMS), SCROLLS, BLADES OR VANES, SHAFTS, BAFFLES, DAMPERS, AND DRIVE ASSEMBLIES. AIR-HANDLING UNIT INTERNAL SURFACES AND COMPONENTS INCLUDING MIXING BOX, COIL SECTION, AIR WASH SYSTEMS, SPRAY ELIMINATORS, CONDENSATE DRAIN PANS, HUMIDIFIERS
- AND DEHUMIDIFIERS, FILTERS AND FILTER SECTIONS, AND CONDENSATE COLLECTORS AND DRAINS COILS AND RELATED COMPONENTS. RETURN-AIR DUCTS, DAMPERS, AND ACTUATORS EXCEPT IN CEILING PLENUMS AND MECHANICAL EQUIPMENT ROOMS.

SUPPLY-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING

- MECHANICAL CLEANING METHODOLOGY: CLEAN METAL DUCT SYSTEMS USING MECHANICAL CLEANING METHODS THAT EXTRACT CONTAMINANTS FROM WITHIN DUCT
- SYSTEMS AND REMOVE CONTAMINANTS FROM BUILDING USE VACUUM-COLLECTION DEVICES THAT ARE OPERATED CONTINUOUSLY DURING CLEANING. CONNECT VACUUM DEVICE
- TO DOWNSTREAM END OF DUCT SECTIONS SO AREAS BEING CLEANED ARE UNDER NEGATIVE PRESSURE c. USE MECHANICAL AGITATION TO DISLODGE DEBRIS ADHERED TO
- INTERIOR DUCT SURFACES WITHOUT DAMAGING INTEGRITY OF METAL DUCTS, DUCT LINER, OR DUCT ACCESSORIES. CLEAN FIBROUS-GLASS DUCT LINER WITH HEPA VACUUMING EQUIPMENT; DO NOT PERMIT DUCT LINER TO GET WET.

CLEAN COILS AND COIL DRAIN PANS ACCORDING TO NADCA

VISUALLY INSPECT METAL DUCTS FOR CONTAMINANTS

WHERE CONTAMINANTS ARE DISCOVERED, RE-CLEAN AND

2013. KEEP DRAIN PAN OPERATIONAL. RINSE COILS WITH CLEAN WATER TO REMOVE LATENT RESIDUES AND CLEANING MATERIALS: COMB AND STRAIGHTEN FINS. CLEANLINESS VERIFICATION:

#### 6. AIR OUTLETS

A. GENERAL MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND

REINSPECT DUCTS.

- SPECIFICATIONS. FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL
- CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS. 3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL
- 4) SUITABLE FOR OPERATION AT 20 PERCENT EXCESS AND 20 PERCENT LESS THAN NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20 PERCENT EXCESS AND 60 PERCENT LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS. MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT
- 5) DIFFUSERS, GRILLES AND REGISTERS SHALL BE SELECTED TO ACHIEVE NC 30 OR LESS WHEN INSTALLED.
- 6) ALL REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH OPPOSED BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLETS.
- REFER TO DRAWING SCHEDULES FOR SPECIFIC MODELS AND REQUIREMENTS. PROVIDE SCHEDULED MANUFACTURER AND MODELS OR COMPARABLE MODELS BY MANUFACTURER APPROVED BY

#### NOISE CONTROL

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

OPERATING RANGE.

#### 8. TESTING AND BALANCING

A. ALL AIR AND WATER BALANCING SHALL BE IN ACCORDANCE WITH AABC AND NEBB STANDARDS. B. PROVIDE PRE-BALANCING REPORTS AS INDICATED ELSEWHERE, AS WELL A FINAL BALANCING PER DOCUMENTS. FINAL BALANCING SHALL BE

DETERMINED BASED ON PRE-BALANCING REPORTS AND AS INDICATED ON

- C. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.
- D. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REBALANCE ANY EXISTING PORTIONS OF AIR DISTRIBUTION SYSTEM AND WATER DISTRIBUTION SYSTEM AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.
  - METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.

E. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW

- BALANCING REPORT SHALL BE PROVIDED ON AABC-TYPE FORMS.
- FANS, AIR HANDLING UNITS AND COILS SHALL BE BALANCED TO WITHIN +5 PERCENT OF THEIR DESIGN CAPACITIES. ALL OTHER AIR AND WATER QUANTITIES SHALL BE BALANCED TO WITHIN +10 PERCENT OF THE DESIGN
- H. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY A
- CERTIFIED NEBB OR AABC TECHNICIAN. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE
- DEMONSTRATED BY THE CONTRACTOR.

#### VIBRATION ISOLATION, WIND AND SEISMIC RESTRAINTS

- 1) PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND DUCTWORK.
- 2) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROVIDE LEVELING DEVICES AND APPROVED RESILIENT RESTRAINING

DEVICES AS REQUIRED TO LIMIT EQUIPMENT AND PIPING MOTION IN

- EXCESS OF 1/4 IN. 4) ACCEPTABLE MANUFACTURERS
- a. MASON INDUSTRIES, INC.
- b. VIBRATION ELIMINATOR CO.
- c. KORFUND DYNAMICS CORP.
- FANS AND EQUIPMENT

#### 1) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE EQUIPMENT OR STRUCTURE CANNOT SUPPORT POINT LOADS.

- C. SEISMIC RESTRAINTS PROVIDE SEISMIC RESTRAINTS FOR ALL MECHANICAL EQUIPMENT AS REQUIRED BY CODE. SEISMIC RESTRAINTS SHALL BE CAPABLE OF SAFELY ACCEPTING EXTERNAL FORCES AS REQUIRED BY CODE WITHOUT FAILURE, AND SHALL MAINTAIN EQUIPMENT, PIPING, CONDUIT, DUCT AND PRESSURE REDUCING BOXES IN A CAPTIVE POSITION. SEISMIC RESTRAINTS SHALL NOT SHORT CIRCUIT ISOLATION SYSTEMS
- WIND RESTRAINTS

11. MOTOR CONTROLLERS

a. General

1) ALL ROOF AND GROUND MOUNTED EQUIPMENT SHALL BE FASTENED TO STRUCTURE OR BASE PER MANUFACTURERS MOUNTING RECOMMENDATIONS. PROVIDE INSTALLATION DETAILS SIGNED BY LICENSED PROFESSIONAL STRUCTURAL ENGINEER TO MEET 100 MPH

PROVIDED ON ALL EQUIPMENT SCHEDULES ON DRAWINGS.

OR TRANSMIT OBJECTIONABLE VIBRATION OR NOISE, AND SHALL BE

- MOTORS (UNDER HVAC WORK): IN ACCORDANCE WITH NEMA, IEEE AND
- ANSI C 50 STANDARDS. 1) STANDARD EFFICIENCY UNLESS OTHERWISE NOTED.
- 2) 1.15 SERVICE FACTOR.

WIND LOADING.

- SQUIRREL CAGE INDUCTION; OPEN DRIP-PROOF TYPE, 1750 RPM, NEMA TYPE B INSULATION CLASS AND CONTINUOUS DUTY, EXCEPT AS NOTED.
- PROVIDED BY HVAC CONTRACTOR AND INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. B. NEMA ENCLOSURE, WEATHERPROOF WHERE MOUNTED OUTDOORS.
- WITH OVERLOAD PROTECTION. COORDINATE ALL MOTOR CONTROLLER TYPES AND SIZES WITH MOTOR TYPES AND SIZES. 1/3 HP AND SMALLER: PROVIDE MANUAL STARTER EXCEPT USE MAGNETIC
  - TYPE WHERE AUTOMATICALLY CONTROLLED MANUAL TYPE: 2-POLE TOGGLE SWITCH WITH OVERLOAD PROTECTION AND PILOT LIGHT.
- E. 1/2 HP AND LARGER: PROVIDE MAGNETIC STARTER. COMBINATION UNFUSED DISCONNECT SWITCH AND MAGNETIC STARTER
- OVERLOAD PROTECTION IN EACH PHASE LEG WITH RESET IN ENCLOSURE.
- HOA SELECTOR SWITCH FOR AUTOMATICALLY OPERATED MOTORS. SAFETY CONTROLS COMMON TO BOTH CONTROLS
- 4) RED, GREEN AND AMBER PILOT LIGHTS. 5) SWITCHES: HORSE-POWER-RATED, EXTERNAL PADLOCKING TYPE.
- 6) HOLDING COILS: 10 WATT, 120 VOLT. 7) CONTACTS: MAIN LINE AND MINIMUM (2) - NORMALLY OPEN, (2) NORMALLY CLOSED 10 AMP AUXILIARIES, IN ADDITION TO CONTACTS REQUIRED FOR CONTROLS SPECIFIED.

MINIMUM 10-WATT COIL AND TWO 10 AMP CONTACTS.

8) CONTROL TRANSFORMER: FOR MOTORS OVER 120 VOLTS, TO STEP

DOWN CONTROL VOLTAGE TO 120 VOLTS; OF THE REQUIRED CAPACITY, WITH FUSE AND GROUND CONNECTION ON VOLTAGE SIDE.

EXCEPT AS NOTED.

- 9) FUSES: SIMILAR TO BUSSMAN. 10) RELAYS TO SUPPLEMENT AUXILIARY CONTACTS IN CONTROLLER.
- 11) TERMINALS: SUITABLE FOR CONDUCTORS NOTED AND AS APPROVED. ACCEPTABLE MANUFACTURERS

2) SQUARE D.

- CUTLER-HAMMER.
- 3) ALLEN BRADLEY.
- 12. EQUIPMENT FANS
  - GENERAL (APPLIES TO ALL FAN TYPES EXCEPT AS NOTED). a. PROVIDE CENTRIFUGAL TYPE, NON-OVERLOADING DESIGN EXCEPT AS NOTED WITH MINIMUM CAPACITIES AS NOTED AND WITH CERTIFIED RATINGS BY AMCA. WHEEL SHALL BE FACTORY BALANCED STATICALLY AND DYNAMICALLY. BRAKE HORSEPOWER RATINGS SHALL NOT BE MORE THAN 5 PERCENT ABOVE WHAT IS NOTED ON DRAWINGS. DRIVES SHALL BE MATCHED, MULTIPLE V-BELT DRIVE UNLESS OTHERWISE NOTED
  - WITH MINIMUM CAPACITY OF 1.4 TIMES RATED MOTOR HP. PULLEYS SHALL BE CAST IRON. b. MOTOR PULLEY SHALL BE VARIABLE PITCH DIAMETER EXCEPT FANS WITH VARIABLE INLET VANES. SUPPLY AND INSTALL ONE FIXED PITCH PULLEY CHARGE AS REQUIRED PER FAN TO BALANCE SYSTEMS. COMPANION SHEAVES SHALL MAINTAIN BELTS PARALLEL. BELT GUARDS SHALL BE IN COMPLIANCE WITH OSHA REGULATIONS AND WITH TACHOMETER OPENING FOR FAN SPEED MEASUREMENTS. MANUFACTURER SHALL PROVIDE
  - BALANCE SYSTEM. c. PROVIDE REMOVABLE FLANGED SCREENS AT INLETS OR

REPLACEMENT FIXED PITCHED SHEAVES WHERE NEEDED TO

OUTLETS WHERE NO CONNECTING DUCTWORK IS INDICATED. d. BEARINGS BALL ROLLER OR TAPER. PROVIDE PRESSURE TYPE LUBRICATING FITTINGS WITH PRESSURE RELIEF FITTINGS EXTENDED TO ACCESSIBLE LOCATIONS. MINIMUM L-10 LIFE RATING; 50,000 HOURS PER AFBMA STANDARD B-10 OR 250,000 HOURS AVERAGE (B-50) LIFE AT MAXIMUM CATALOG

2) ROOF MOUNTED CENTRIFUGAL EXHAUST FANS SHALL BE OF SPUN

NON-OVERLOADING FAN WHEELS, ADJUSTABLE BELT DRIVE OR DIRECT

DRIVE. MOTOR OUT OF AIR STREAM, INTERNAL VIBRATION ISOLATION.

BIRD SCREEN, PREFABRICATED ROOF CURB, SELF-ACTING BACKDRAFT

ALUMINUM CONSTRUCTION WITH BACKWARD INCLINED,

DAMPER AND MOTOR DISCONNECT SWITCH.



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**MECHANICAL** 

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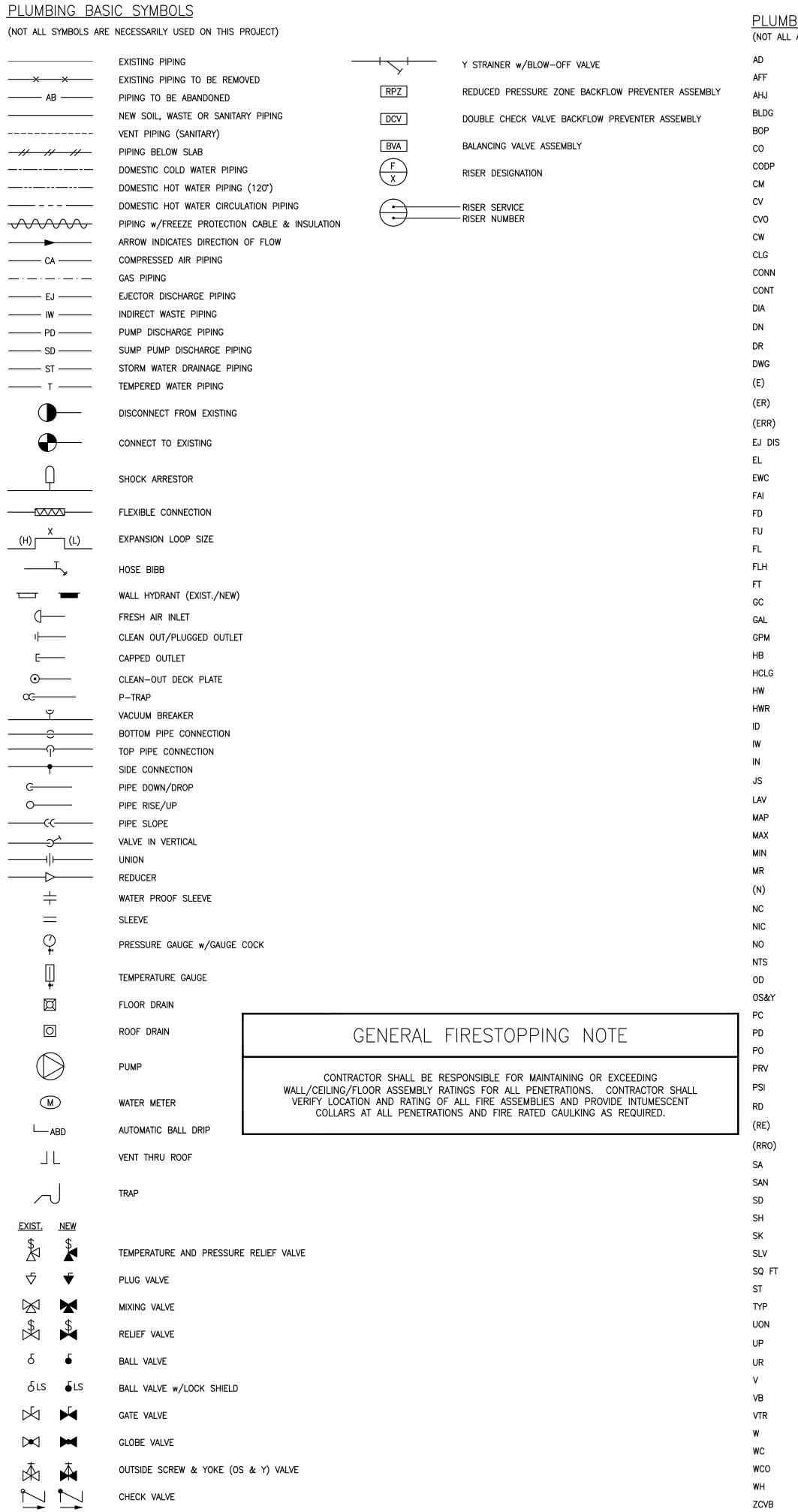
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PRESSURE REDUCING VALVE (PRV)

SOLENOID VALVE

FLOAT VALVE

#### PLUMBING ABBREVIATIONS

(NOT ALL ABBREV. ARE NECESSARILY USED ON THIS PROJECT) AREA DRAIN ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION BUILDING

BOTTOM OF PIPE CI FANOUT CLEANOUT DECK PLATE COFFEE MAKER CHECK VALVE

CAPPED AND VALVED OUTLET COLD WATER CEILING

CONNECT CONTINUATION DIAMETER DOWN (PENETRATES FLOOR SLAB)

EXISTING EXISTING TO BE REMOVED EXISTING TO BE REMOVED & RELOCATED

EJECTOR DISCHARGE ELECTRIC WATER COOLER FRESH AIR INLET FLOOR DRAIN FIXTURE UNIT FLOOR FLOOR HYDRANT

FEET GENERAL CONTRACTOR GALLONS GALLONS PER MINUTE HOSE BIBB

HUNG CEILING HOT WATER HOT WATER RETURN INSIDE DIAMETER INDIRECT WASTE

JANITOR'S SINK LAVATORY MEDICAL GAS ALARM PANEL MAXIMUM MINIMUM

MOP RECEPTOR NEW NORMALLY CLOSED NOT IN THIS CONTRACT NORMALLY OPEN NOT TO SCALE

SHOWER

SINK

SLEEVE

STORM

URINAL

VENT

TYPICAL

SQUARE FOOT

UNLESS OTHERWISE NOTED

(PENETRATES FLOOR SLAB)

VACUUM BREAKER

WATER CLOSET

WALL CLEANOUT

WALL HYDRANT

ZONE CONTROL VALVE BOX

VENT THROUGH ROOF

OUTSIDE DIAMETER OUTSIDE SCREW & YOKE GATE VALVE PLUMBING CONTRACTOR PUMP DISCHARGE

PLUGGED OUTLET PRESSURE REDUCING VALVE POUNDS PER SQUARE INCH (GAUGE) ROOF DRAIN

RELOCATED EXISTING EXISTING TO BE REMOVED AND RETURN TO OWNER SHOCK ARRESTOR SANITARY STORM DRAIN

20. ALL EQUIPMENT AND MATERIALS SHALL, AS A MINIMUM, HAVE A WORKING PRESSURE AS DETERMINED BY CODES,

21. CLEAN ALL PIPE BEFORE ERECTION. REAM ALL PIPE ENDS AFTER CUTTING.

22. FOR SCREWED JOINTS APPLY NON-CORROSIVE, NON-HARDENING TEFLON PIPE TAPE OR SUITABLE COMPOUND TO MALE THREADS ONLY. CAULKING AND PACKING OF THREADS IS PROHIBITED.

23. INSTALL EXPOSED PIPE LINES PARALLEL WITH BUILDING FILL, NOR INSTALL WHERE THERE IS A POSSIBILITY OF FREEZING.

24. PITCH PIPING TO PERMIT AIR VENTING THROUGH THE POINT DRAINAGE.

25. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR THE RELATED HVAC, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, ARCHITECTURAL, INTERIOR DECOR AND SITE ENGINEERING DRAWING TO BECOME FAMILIAR WITH THE FULL PROJECT SCOPE. IN ADDITION, THIS CONTRACTOR MUST COORDINATE WITH AN OWNER REPRESENTATIVE TO FULLY UNDERSTAND ALL REQUIREMENTS WHICH MAY NOT BE SPECIFIED HEREIN AND WHICH THE OWNER MAY CONSIDER PART OF THIS CONTRACT. DURING THE COURSE OF CONSTRUCTION COORDINATION AND ACTUAL CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO WORK CLOSELY WITH ALL ACCOMPANYING CONTRACTORS AND TRADESMEN IN ORDER TO ENSURE A SMOOTH RUNNING AND CAREFULLY COORDINATED INSTALLATION.

PLUMBING GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE AND PAY ALL FEES AND PERMITS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST INTERNATIONAL MECHANICAL CODE. INTERNATIONAL FUEL GAS CODE. NATIONAL STANDARD PLUMBING CODE, NEC CODE AND ALL OTHER STATE AND LOCAL AUTHORITIES HAVING JURISDICTION.

2. CONTRACTOR SHALL VISIT THE JOB SITE AND OBSERVE ALL EXISTING CONDITIONS. PRIOR TO SUBMITTING A BID.

3. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS. CONTRACTOR SHALL INSTALL ALL WORK WITHOUT CONFLICT WITH OTHER TRADES AND MAKE ALTERATIONS AS REQUIRED WITHOUT ADDITIONAL COST TO OWNER. CONTRACTOR SHALL INCLUDE ALL NEEDED OFFSETS, CHANGES IN DIRECTION, TRANSITIONS, COLLARS, FITTINGS, ETC. NEEDED FOR COMPLETE AND OPERATIONAL SYSTEMS.

4. ALL COMPONENTS OF THE DOMESTIC WATER SYSTEM SHALL CONFORM TO THE FEDERAL "REDUCTION OF LEAD IN DRINKING WATER ACT" AS DEFINED PER SDWA IN SECTION 1417(D). THE WETTED AREA EXPOSED TO DRINKING WATER SHALL BE LEAD FREE.

5. COORDINATE WORK WITH OTHER TRADES SO THAT ALL COMPONENTS SHALL BE INSTALLED IN THE PROPER PLACE AT THE PROPER TIME.

6. SANITARY PIPING SHALL BE SLOPED ON A DOWNWARD PITCH AT A MINIMUM OF 1/4" PER FOOT FOR 3" SIZES AND LESS. PIPING 4" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT. AND IN ALL CASES CONFORMING TO JURISDICTIONAL CODE REQUIREMENTS.

7. PROVIDE ACCESSIBLE DRAINAGE SYSTEM CLEANOUTS EFFECTIVELY PLACED FOR EACH TRAP, STACK, BASE, 90 DEGREE AND 45 DEGREE CHANGE IN LINE DIRECTION AND AT MAXIMUM INTERVALS OF 50 FEET IN HORIZONTAL LINES. PROVIDE ALL ADDITIONAL SYSTEM CLEANOUTS REQUIRED FOR THOROUGH CLEANING.

8. FOR SOLDERED JOINTS, CLEAN THE ENDS OF ALL COPPER TUBING BEFORE ASSEMBLY. APPLY FLUX AND TIN THE ENDS OF TUBING 2 INCHES AND LARGER.

BRANCH FROM THE DOMESTIC WATER SUPPLY MAINS AND ON EACH ISOLATED FIXTURE BRANCH.

10. PUBLIC USE HAND WASHING FACILITIES: WATER DISCHARGED FROM PUBLIC-USE HAND WASHING FACILITIES SHALL BE LIMITED TO A MAXIMUM TEMPERATURE OF 110^F USING A WATER TEMPERATURE LIMITING DEVICE COMPLYING WITH ASSE 1070.

11. FLUSH CONTROLS FOR WATER CLOSETS MUST BE LOCATED ON THE "APPROACH" OR OPEN SIDE OF THE TANK, TO COMPLY WITH UFAS SECTION 4.16.5.

12. ALL PIPING ON EXTERIOR WALLS SHALL BE PROTECTED FROM FREEZING.

13. PROVIDE DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR 14. EXPOSED PIPING AND FITTINGS AT FIXTURES SHALL BE

CHROME PLATED I.P.S. BRASS. 15. ESCUTCHEON PLATES SHALL BE PROVIDED ON ALL PIPE

WHICH PASS THROUGH WALLS, PARTITIONS, FLOORS OR CEILINGS AND SHALL BE THE SPLIT RING TYPE, STEEL CONSTRUCTION.

16. SLEEVES SHALL BE SCHEDULE 40 STEEL AND SHALL BE TWO PIPE SIZES LARGER THAN THE SYSTEM PIPE. SLEEVES SHALL BE LOCATED WHERE PIPE PASSES THROUGH WALLS, FLOORS OR PARTITIONS. ANNULAR SPACE BETWEEN SLEEVE AND PIPE SHALL BE SEALED WATER TIGHT AND FIRE STOPPED (IF APPLICABLE) TO ACHIEVE AN HOURLY RATING EQUAL OR GREATER TO THAT OF THE ASSEMBLY BEING PENETRATED.

17. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND DETAILS.

18. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADE AND THE LATEST CODE REQUIREMENTS. SYSTEM MATERIALS SHALL BE UNIFORM THROUGHOUT THE BUILDING.

19. ALL PIPING SHALL BE KEPT AS HIGH AS POSSIBLE, CONSISTENT WITH THE PROPER PITCH, TO MAINTAIN MAXIMUM HEADROOM. PIPING SHALL BE ACCURATELY CUT TO MEASUREMENTS ESTABLISHED AT THE BUILDING. PIPING SHALL BE WORKED INTO PLACE WITHOUT SPRINGING, FORCING OR CUTTING OF THE BUILDING STRUCTURE, AND SHALL BE INSTALLED AS DIRECTLY AS POSSIBLE BETWEEN CONNECTING POINTS PARALLEL WITH OR AT RIGHT ANGLES TO BUILDING CONSTRUCTION, EXCEPT AS REQUIRED TO OBTAIN PITCH.

ASME (OR SIMILAR OTHER BODY) AND OF NOT LESS THAN

WALLS OR STRUCTURE. DO NOT EMBED PIPING IN CINDER

FIXTURES. ALLOW FOR EXPANSION AND COMPLETE LOW

TO REVIEW THESE PLANS AND SPECIFICATIONS, AS WELL AS

26. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS INCLUDING BUT NOT LIMITED TO NATIONAL, CITY, STATE, LOCAL CODES AND ORDINANCES WHICH MAY BE IN EFFECT. ALL PLUMBING MATERIALS, INSTALLATION PROCEDURES AND SYSTEM LAYOUTS SHALL BE APPROVED BY ALL APPLICABLE CODE ENFORCEMENT AUTHORITIES WITHIN JURISDICTION, AND IT SHALL BE THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FOR

27. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE AND NOTE ALL EXISTING CONDITIONS AS WELL AS ALL CONDITIONS TO BE MET, PRIOR TO BID SUBMISSION. LACK OF A THOROUGH UNDERSTANDING OF THE PROJECT SCOPE AND CONDITIONS SHALL NOT CONSTITUTE AN EXCUSE FOR ERRORS OR OMISSIONS, NOR FOR A REQUEST FOR EXTRA COMPENSATION.

THIS INSTALLATION.

SYSTEMS, ETC.

28. IT IS CRITICAL THAT THE PLUMBING CONTRACTOR FIELD VERIFIES ALL INVERTS PRIOR TO BID SUBMISSION. IF ANY CONFLICTS EXIST BETWEEN THE NEW PLUMBING SYSTEMS AND THE EXISTING SITE LEVEL SYSTEMS, THEY SHOULD BE BROUGHT TO THE ATTENTION OF AN OWNER'S REPRESENTATIVE AND THE ENGINEER PRIOR TO BID SUBMISSION. EXTRA COMPENSATION SHALL NOT BE ALLOWED FOR ANY EXTRA WORK WHICH RESULTS FROM AN INABILITY TO MEET THE INVERTS OF THE EXISTING SITE LEVEL PIPING SYSTEMS.

29. THE PLUMBING CONTRACTOR SHALL PROVIDE A COMPLETE SET OF RECORD "AS-BUILT" DRAWINGS INDICATING THE PRECISE LOCATION OF ALL SYSTEMS, EQUIPMENT CONCEALED OR EMBEDDED PIPING, PIPING CONNECTIONS AND ACCESS DOORS. THESE DRAWINGS SHALL ALSO INCLUDE ALL CHANGES AND DEVIATIONS FROM BID DOCUMENTS.

30. RUN ALL DOMESTIC, WASTE, VENT AND GAS PIPING AS HIGH AS POSSIBLE THROUGHOUT ENTIRE BUILDING. INSTALL LONG RUNS OF PIPING WITHIN STEEL (JOIST) SPACE AND OTHER PIPING TIGHT TO BOTTOM OF STEEL. COORDINATE AND VERIFY WITH OTHER CONTRACTORS AS NOT TO INTERFERE WITH DUCTWORK, FIRE PROTECTION PIPING, LIGHTING

9. BALL TYPE CONTROL VALVES SHALL BE INSTALLED ON EACH 31. ALL EXPOSED HORIZONTAL AND VERTICAL PIPING SHALL BE INSTALLED IN A NEAT ARRANGEMENT IN LOCATIONS WHICH ARE THE MOST INCONSPICUOUS. VERTICAL DROP FINAL LOCATIONS SHALL BE COORDINATED AND RUN WITHIN CHASES, WALLS, SOFFITS WITH OTHER MECHANICAL / ELECTRICAL FEEDS. ALL SUCH LOCATIONS ARE TO BE REVIEWED WITH AN OWNER REPRESENTATIVE AND ARCHITECT PRIOR TO INSTALLATION.

> 32. FINAL CONNECTIONS TO ALL GAS FIRED APPLIANCES TO BE BY THE PLUMBING CONTRACTOR, REGARDLESS OF WHO PROVIDES APPLIANCE. THIS SHALL INCLUDE BUT NOT BE LIMITED TO HVAC EQUIPMENT, COOKING EQUIPMENT, EMERGENCY GENERATORS AND DOMESTIC HOT WATER HEATERS. EACH PIECE OF EQUIPMENT SHALL BE PROVIDED WITH A DIRT LEG, LUBRICATED PLUG VALVE, UNION, GAS SHUT-OFF VALVE AND A FLEXIBLE STAINLESS STEEL CONNECTION.

> 33. ALL PLUMBING FIXTURES / APPLIANCES SHALL HAVE THEIR OWN INDEPENDENT SHUT-OFF VALVES, INSTALLED IN AN EASILY ACCESSIBLE AND CONVENIENT LOCATION.

34. ALL DOMESTIC WATER BRANCH LINES SHALL HAVE THEIR OWN RESPECTIVE SHUT-OFF VALVES.

35. DOMESTIC WATER HEATER TEMPERATURE / PRESSURE RELIEF VALVES SHALL BE PIPED FULL SIZE TO THE NEAREST APPROVED STANDPIPE OR FLOOR DRAIN. THIS REQUIREMENT SHALL BE APPLICABLE TO ALL DOMESTIC WATER HEATERS.

36. ALL HAND SINKS SHALL HAVE IN-LINE WATER TEMPERING VALVES INSTALLED SO AS TO BE EASILY ACCESSIBLE. THESE TEMPERING VALVES SHALL BE SET TO DELIVER HOT WATER AT 105\*F.

37. WHERE APPLICABLE, DO NOT RUN VENTS THROUGH ROOF AT PRE-FINISH METAL ROOFING SYSTEMS. INSTEAD DIVERT VENT PIPING TO RUN UP THROUGH FLAT MEMBRANE ROOF. VENTS THROUGH ROOF SHALL NOT BE VISIBLE TO THE PUBLIC AND NOT LOCATED CLOSER THEN 10'-0" OF ROOFTOP EQUIPMENT.

38. THE PLUMBING CONTRACTOR SHALL RUN OUT ALL BUILDING DRAINAGE AND WASTE LINES AND MAKE ALL CONNECTIONS TO SITE LEVEL SYSTEMS AS INDICATED ON BID DOCUMENTS.

39. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS AND CONNECTIONS OF THE HOSE BIBB. PLUMBER TO FURNISH AND INSTALL ALL PIPING AND EQUIPMENT AS PER MANUFACTURER'S INSTRUCTIONS. FURNISH AND INSTALL AN ACCESSIBLE SHUT-OFF VALVE FOR THE HOSE BIBB BRANCH SUPPLY. FINAL CONNECTION & INSTALLATION BY PLUMBING CONTRACTOR.

40. PRIOR TO INSTALLING SYSTEMS, THE PLUMBING CONTRACTOR SHALL MEET WITH AN OWNER'S REPRESENTATIVE TO FIELD VERIFY THE EXACT LOCATION OF ALL PROPOSED EQUIPMENT WHICH MAY NOT BE CLEARLY INDICATED ON THE DRAWINGS.

41. THE PLUMBING CONTRACTOR SHALL COORDINATE THE ENTIRE UNDERGROUND PLUMBING PIPING SYSTEM LOCATIONS AND INVERTS WITH THE GRADE BEAMS, INCLUDING TRENCH DRAINS AS WELL AS ALL OTHER UNDERGROUND SYSTEMS.

42. RUN ALL INTERIOR PIPING (GAS, WATER, VENTS AND WASTE) AS TIGHT TO STEEL AS POSSIBLE.

43. PROVIDE TRAP PRIMERS TO ALL DRAINS ONLY WHEN REQUIRED BY CODE. VERIFY PRIOR TO SUBMITTING BID.

44. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE WALLS AND WALLS WHICH REQUIRE SEALING. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL FLOOR AND WALL PENETRATIONS WITH FIRE RATED SEALANT BEFORE FINAL PAYMENT.

45. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ALL INDIRECT WASTE PIPING — SHALL BE COPPER WITH SOLDER

46. PLUMBING CONTRACTOR SHALL RUN ALL PIPING TO AVOID REINFORCING AT ALL COLUMN LINES.

47. FOR MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES, SEE ARCHITECTURAL DRAWINGS. 48. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN-LIKE MANNER IN ACCORDANCE WITH LOCAL

CODES AND ALL AUTHORITIES HAVING JURISDICTION.

49. VALVES SHALL NOT BE INSTALLED WITH THE OPERATING HANDLE POINTING DOWNWARD. RUN PIPING GENERALLY

PARALLEL TO THE AXIS OF THE BUILDING, ARRANGED TO CONFORM TO THE BUILDING REQUIREMENTS AND TO SUIT THE NECESSITIES OF CLEARANCE OF DUCTS, FLUES, CONDUITS AND WORK OF OTHER TRADES AND CLOSE TO CEILING OR OTHER CONSTRUCTION AS PRACTICAL, FREE OF TRAPS OR BENDS.

50. PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO WATER, STORM AND SANITARY LATERALS INSTALLED BY SITE CONTRACTOR.

51. ALL PIPES, DUCT, CONDUIT AND OTHER PENETRATIONS OF RETURN AIR PLENUM, INCLUDING HANGERS AND SUPPORT SYSTEM PENETRATIONS OF TOP HORIZONTAL SHALL BE SEALED AIRTIGHT; DUCT PENETRATIONS SHALL BE NEATLY FRAMED WITH SHEETMETAL.

52. PLUMBING CONTRACTOR SHALL REPLACE ANY PIPING SYSTEM AND COMPONENTS WHICH DO NOT PASS TESTING PROCEDURES SPECIFIED AND RETEST REPAIRED PORTIONS OF THE SYSTEM.

53. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL PLUMBING EQUIPMENT, EQUIPMENT SUPPLIED BY OTHERS, INCLUDING REQUIRED FAUCETS, STOPS, VALVES, FITTINGS, TRAPS, ETC.

54. PLUMBING CONTRACTOR SHALL INSTALL PIPING SO AS NOT TO ENCROACH ON REQUIRED CLEARANCES ABOVE ANY ELECTRIC PANEL. NO PIPING SHALL BE INSTALLED DIRECTLY OVER ELECTRICAL PANELS AND NO PIPING SHALL BE INSTALLED WITH THE BOTTOM AT LESS THAN 66" ABOVE THE 4'-0" SPACE DIRECTLY IN FRONT OF ANY ELECTRIC

55. PLUMBING CONTRACTOR TO FURNISH AND INSTALL AIR CHAMBERS PER NATIONAL STANDARD PLUMBING CODE ON ALL WATER SUPPLIES TO PLUMBING FIXTURES WITH QUICK CLOSING VALVES.

56. PLUMBING CONTRACTOR SHALL ARRANGE FOR AND SHALL PAY ALL COSTS INCURRED FOR THE NEW GAS SERVICE AND METER.

57. PIPING HANGERS SHALL BE SPACED SO AS TO PREVENT SAG AND PERMIT PROPER DRAINAGE AND SHALL NOT BE SPACED MORE THAN EIGHT FEET APART UNLESS A GREATER SPACE IS DEFINITELY INDICATED ON THE DRAWINGS. A HANGER SHALL BE PLACED WITHIN (1) FOOT OF EACH HORIZONTAL ELBOW. HANGERS SHALL BE SIZED TO FIT OVER INSULATION AND BE PROVIDED WITH AN INSULATION

58. THE INSTALLATION OF ALL INSULATION SHALL BE PERFORMED BY AN EXPERIENCED CRAFTSMAN IN A NEAT WORKMAN-LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED.

59. ALL MATERIALS OF INSULATION SHALL BE OF THE TYPE AND QUALITY AS MANUFACTURED BY ARMSTRONG, CERTAINTEED, OWENS-CORNING OR SCHULLER.

60. ALL MATERIAL AND EQUIPMENT SPECIFIED TO BE INSULATED SHALL BE THOROUGHLY TESTED AND APPROVED PRIOR TO APPLYING THE INSULATION.

ELECTRICAL CONTRACTOR TO ASSURE DOMESTIC WATER AND ELECTRICAL WIRING ARE NOT INSTALLED IN SAME STUD BAY IN WALLS AND CEILINGS. 62. ALL PIPING IN RETURN AIR PLENUMS SHALL BE CAST IRON

OR CPVC. PVC PIPING IS PROHIBITED IN RETURN AIR

61. PLUMBING CONTRACTOR SHALL COORDINATE WITH

63. DRAINAGE SYSTEM TEST

A. WATER TEST: THE ENTIRE DRAINAGE AND VENTING SYSTEM SHALL HAVE ALL NECESSARY OPENINGS PLUGGED TO PERMIT THE ENTIRE SYSTEM TO BE FILLED WITH WATER TO THE LEVEL OF THE HIGHEST VENT STACK ABOVE THE ROOF. THE SYSTEM SHALL HOLD THIS WATER FOR 30 MINUTES WITHOUT LEAKAGE. WHERE A "PORTION" OF THE SYSTEM IS TO BE TESTED, THE TEST SHALL BE CONDUCTED IN THE SAME MANNER, EXCEPT THAT A VERTICAL STACK 10 FEET ABOVE THE HIGHEST HORIZONTAL LINE TO BE TESTED SHALL BE INSTALLED AND FILLED WITH WATER TO MAINTAIN SUFFICIENT PRESSURE, OR A PUMP MAY BE USED TO SUPPLY THE PRESSURE. THE PRESSURE SHALL BE MAINTAINED FOR 30 MINUTES.

B. AIR TEST: IF TEST IS DONE WITH AIR, A PRESSURE OF 5 PSIG SHALL BE APPLIED WITH A FORCE PUMP AND MAINTAINED AT LEAST 15 MINUTES WITHOUT LEAKAGE. A MERCURY-COLUMN GAGE REGISTERING 10" IN HEIGHT SHALL BE USED IN THE AIR TEST. AIR TESTS SHALL NOT BE USED EXCEPT WHERE PERMITTED BY CODES AND WHEN AMBIENT TEMPERATURES ARE LESS THAN 32 DEGREES FAHRENHEIT FOR 30 MINUTES.

64. DOMESTIC WATER PIPING SYSTEM

UPON COMPLETION OF THE ROUGH-IN AND BEFORE INSULATION OR SETTING OF FIXTURES, DOMESTIC HOT AND COLD WATER PIPING SYSTEMS SHALL BE TESTED AT A HYDROSTATIC PRESSURE OF 1-1/2 TIMES THE ACTUAL WATER PRESSURE BUT NOT LESS THAN 100 PSIG AND PROVEN TIGHT AT THIS PRESSURE FOR NOT LESS THAN 3

65. CLEANING OF PIPING SYSTEMS

FOLLOWING THE COMPLETION OF SYSTEM TESTS, ALL PIPING SYSTEMS SHALL BE THOROUGHLY CLEANED BY THE CONTRACTOR BY FLUSHING WITH WATER OR AS OTHERWISE SPECIFIED. ALL DIRT, SCALE, OIL, GREASE AND FOREIGN SUBSTANCES WHICH MAY HAVE ACCUMULATED IN THE SYSTEMS DURING INSTALLATION SHALL BE COMPLETELY

66. STERILIZATION OF POTABLE WATER SYSTEMS

A. BEFORE BEING PLACED IN SERVICE, THE COMPLETE DOMESTIC HOT AND COLD WATER PIPING WITHIN THE BUILDING SHALL BE STERILIZED IN ACCORDANCE WITH THE LATEST ISSUE OF AWWA SPECIFICATION C-651 AND PER NATIONAL STANDARD PLUMBING CODE SECTION 10.9. THE PIPING SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE AND SHALL BE VALVED OFF FOR 24 HOURS OR FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR AT LEAST 3 HOURS. FOLLOWING THE ALLOWED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH POTABLE WATER UNTIL NO CHLORINE REMAINS IN THE SYSTEM.

B. PRIOR TO STERILIZATION, SYSTEMS SHALL BE LEAK TESTED AND ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED BY A THOROUGH FLUSHING WITH WATER.



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# Joseph's House

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

# **COVERSHEET**

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK: my party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represen that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work

hereby certify that the documents are suitable for their intended purposes unless noted in specific written exception beforehand. Warning: Actual conditions may vary from conditions shown on this drawing. Confirm all information in the field before proceeding with any work and notify the Architect

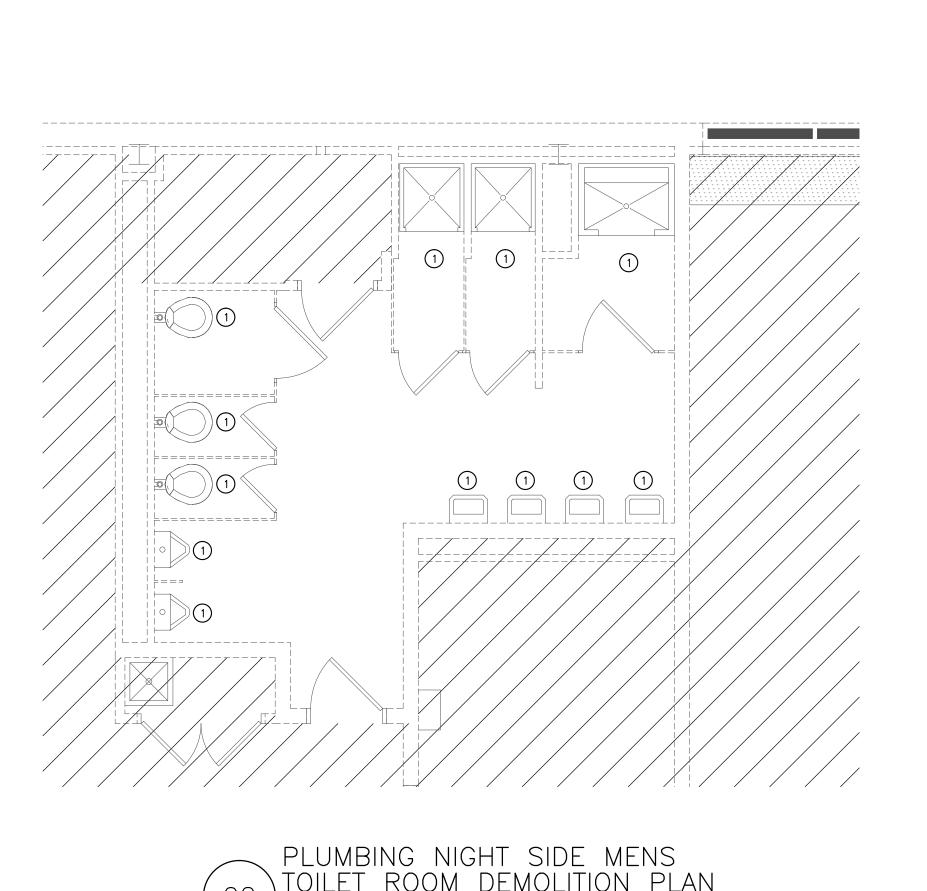
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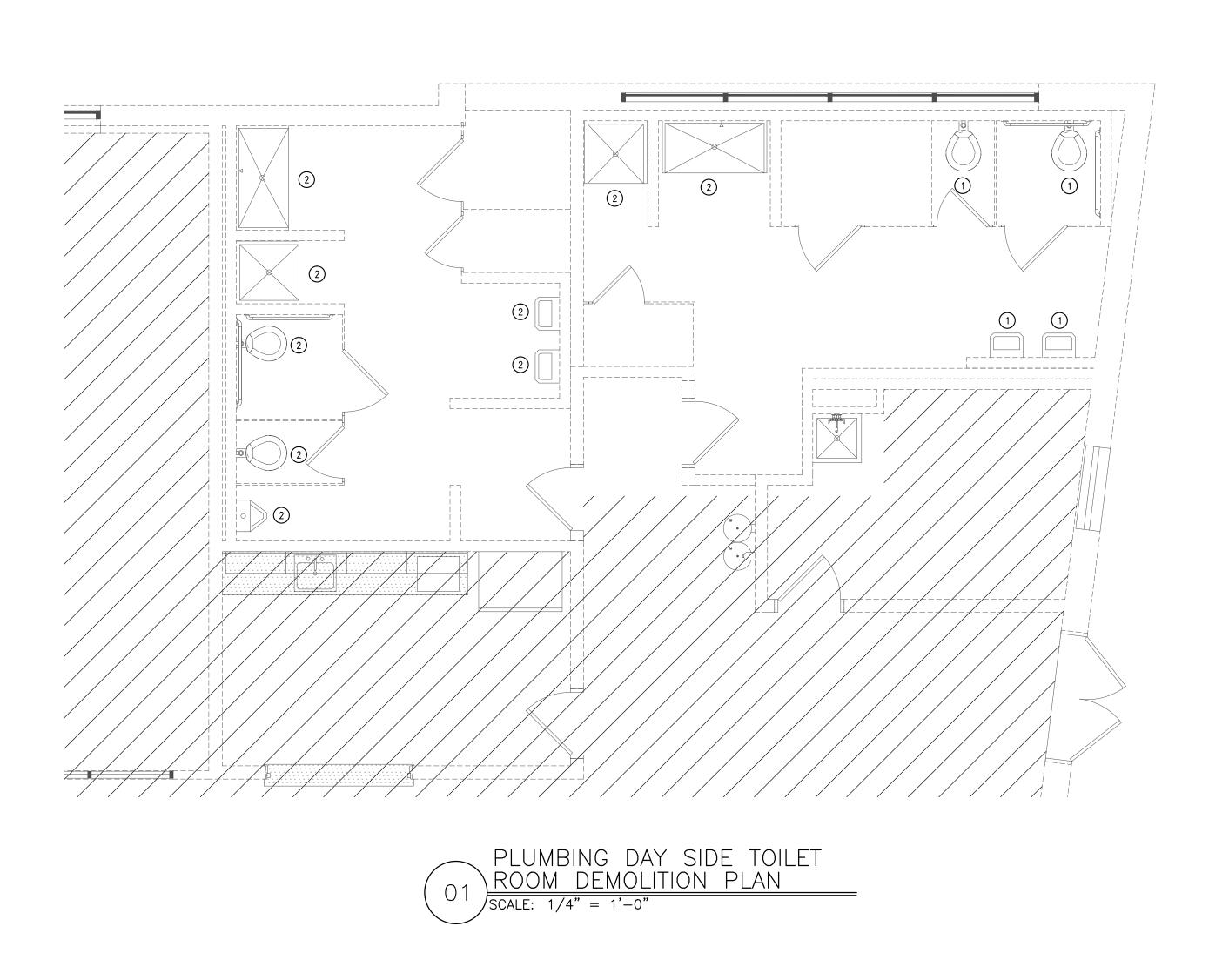
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BHA Job Nu	mber: 20-004	

Checked By:

As indicated

PLUMBING NIGHT SIDE WOMENS <u>xTOILET ROOM DEMOLITION PLAN</u> SCALE: 1/4" = 1'-0"





#### **DEMOLITION NOTES:**

- 1. INCLUDE IN PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF PLUMBING WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORSEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION SHALL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT.
- 2. REMOVE EXISTING EQUIPMENT AND PIPING IN THE AREA OF WORK, CUT AND CAP EXISTING WASTE, VENT, HW, AND CW LINES SERVING THESE FIXTURES SHALL BE TURNED OVER TO OWNER, DISPOSED OF OR SALVAGES AS DIRECTED BY OWNER ALL ABANDONED PIPING TO BE REMOVED..
- 3. CAREFULLY EXAMINE EXISTING CONDITIONS BEFORE STARTING AND WORK.
- 4. NOTIFY ARCHITECT/ENGINEER BEFORE REMOVING OR RELOCATING ANYEXISTING PIPING NOT INDICATED ON
- 5. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
- 6. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE OWNER.
- 7. THE SHUTDOWN OF EXISTING BUILDING PLUMBING SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.
- 8. INSPECT ALL PLUMBING SYSTEMS FOR DEFECTS OR FAILURES. NOTIFY THE ARCHITECT IF PROBLEMS ARE
- 9. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES, PIPING AND ACCESSORIES. CAP PIPING. FIELD VERIFY EXTENT OF REMOVAL WITH NEW WORK.
- 10. THESE DRAWINGS HAVE BEEN MADE BASED ON A VISUAL INSPECTION OF THE EXISTING SURFACES. SOME ASSUMPTIONS HAVE BEEN MADE AS TO ACTUAL CONSTRUCTION, MATERIALS, AND METHODS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ACTUAL FIELD CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, CONFLICTS, AND UNFORESEEN CONDITIONS.
- 11. FIELD VERIFY EXACT LOCATION AND INVERT PRIOR TO CONNECTING TO EXISTING PIPING.
- 12. THE CONTRACTOR SHALL CUT EXISTING FLOORING AND/OR CEILING BELOW TO ACCOMMODATE NEW WORK AND PATCH FLOORING/CEILING READY TO RECEIVE NEW FINISHES.

#### **SHEET NOTES:**

- REMOVE EXISTING FIXTURE. ALL EXISTING PIPING AND
- CONNECTIONS TO REMAIN.
- 2 REMOVE EXISTING FIXTURE AND DEMOLISH ALL EXISTING PIPING BACK TO ACTIVE MAIN.

BLACKNEY HAYES ARCHITECTS

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# Joseph's House

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

#### PLUMBING **DEMOLITION PLAN**

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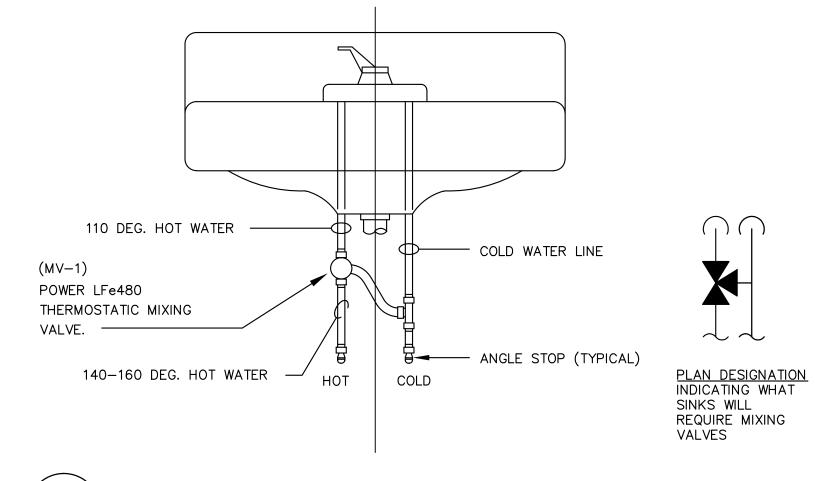
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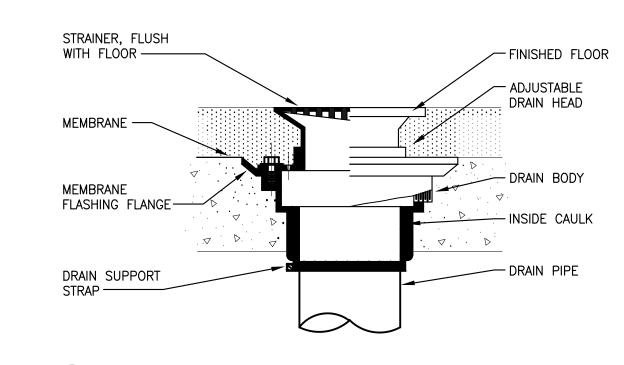
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BHA Job Number:	20-004
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Checked By:	
Approved By:	

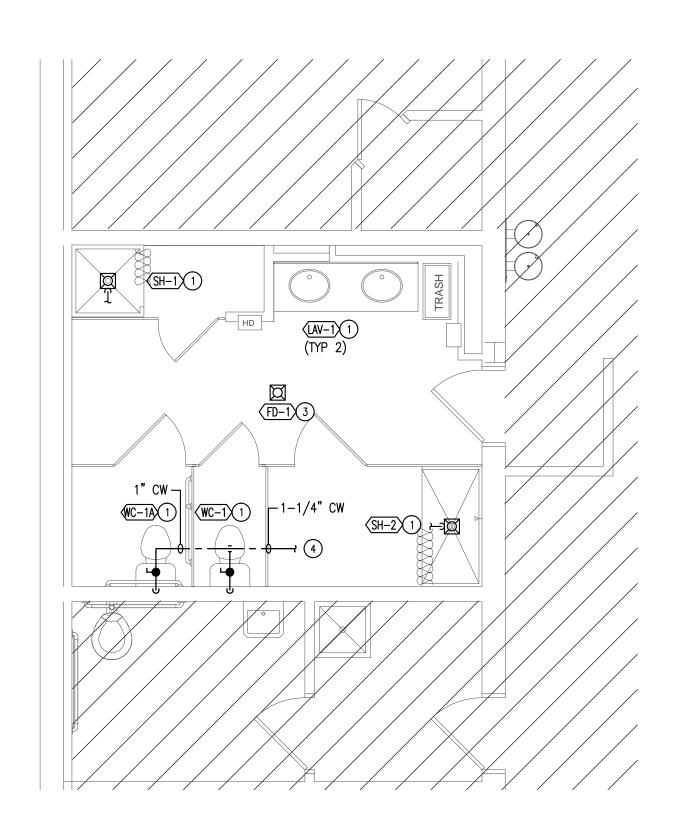
PLUMBIN	NG FIXTURE SCHEDULE									
KEY NO.	ITEM	MANUFACTURER	MODEL	CONTROL	CW	HW	SAN	VENT	FINISH	REMARKS
(LAV-1)	LAVATORY DROP IN	SEE ARCHITECT	TURAL PLANS	SLOAN HARD WIRED FAUCET SF-2400-4-PLG-TEE-C P-0.35GPM-MLM-IR	1/2"	1/2"	1-1/2"	1-1/2	WHITE VITREOUS CHINA	PROVIDE KOHLER K-8998 P-TRAP
⟨WC−1⟩	WATER CLOSET FLOOR MOUNTED FLUSH VALVE TYPE	KOHLER	K-96054-SS-0	SLOAN CX8158 HARD WIRED AUTOMATIC FLUSH VALVE	1"	N/A	4"	2"	WHITE VITREOUS CHINA	PROVIDE KOHLER K-4731-SC TOILET SEAT
₩C-1A	ADA WATER CLOSET FLOOR MOUNTED FLUSH VALVE TYPE	KOHLER	K-96054-SS-0	SLOAN CX8158 HARD WIRED AUTOMATIC FLUSH VALVE	1"	N/A	4"	2"		
⟨UR−1⟩	URINAL	KOHLER	K-4904-ET	SLOAN CX8198 HARD WIRED AUTOMATIC FLUSH VALVE	3/4"	N/A	4"	2"	WHITE VITREOUS CHINA	.125 GALLON PER FLUSH
(SH-1)	36x36X75 SHOWER	SEE ARCHITECT	TURAL PLANS	MOEN 8389EP15	1/2"	1/2"	1-1/2"	1-1/2	WHITE GELCOAT SURFACE	PRESSURE BALANCING MIXING VALVE, CURTAIN ROD AND/OR SHOWER CURTAIN.
⟨SH-2⟩	ACCESSIBLE SHOWER	SEE ARCHITECT	TURAL PLANS	SEE REMARKS	1/2"	1/2"	1-1/2"	1-1/2	-	INCLUDE GRAB BARS, FOLDING SEAT, HAND-HELD SHOWER ASSEMBLY WITH SLIDE BAR, PRESSURE BALANCING MIXING VALVE, SOAP DISH, CURTAIN ROD AND/OR SHOWER CURTAIN.
(FD-1)	FLOOR DRAIN	ZURN	FD2321-ST	N/A	N/A	N/A	_	<b>–</b>	_	_



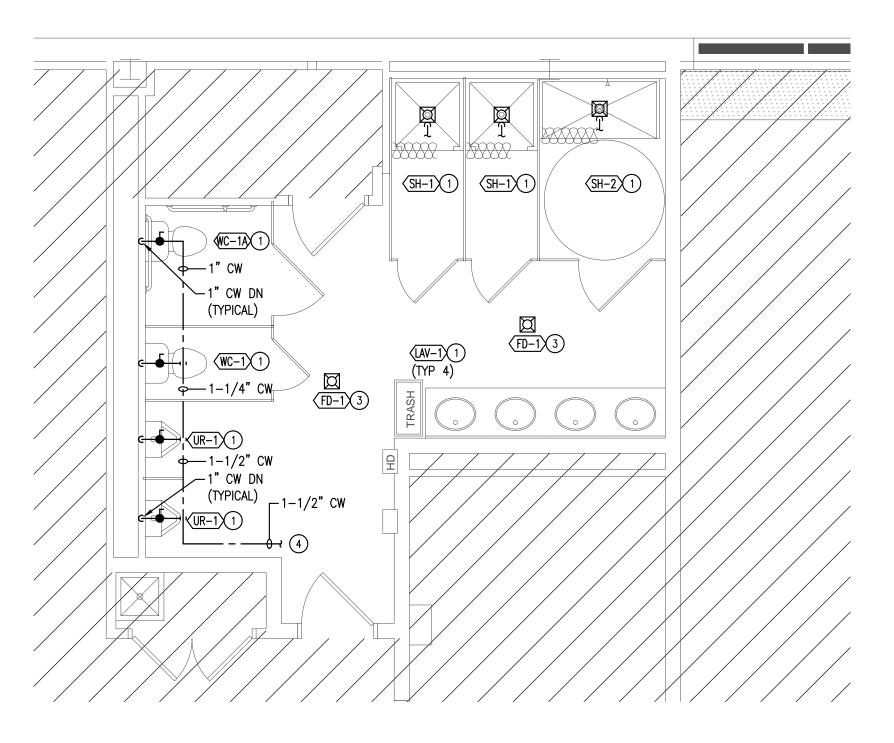


04 MIXING VALVE BELOW SINK DETAIL SCALE: N.T.S

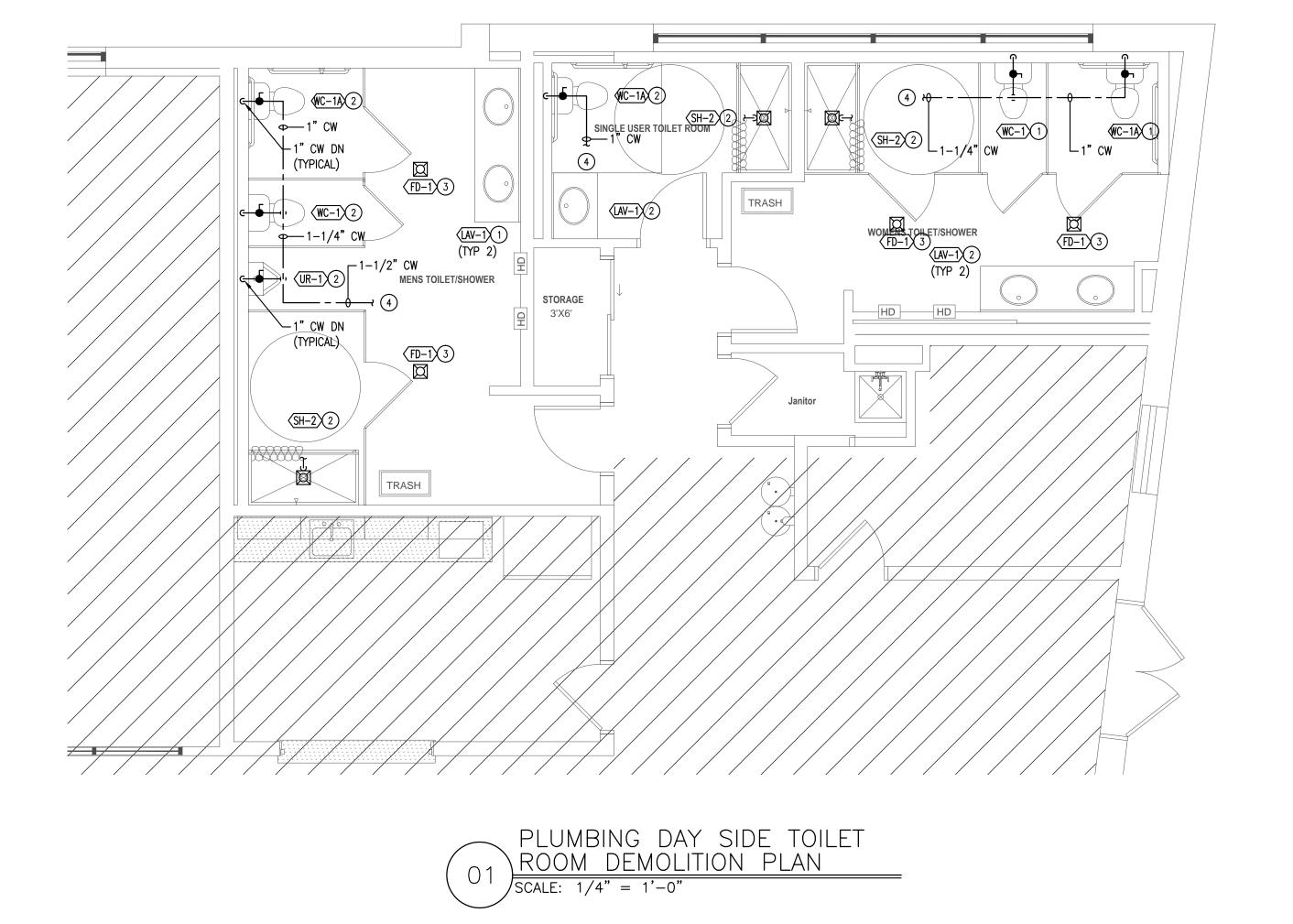




PLUMBING NIGHT SIDE WOMENS <u>xTOILET ROOM DEMOLITION PLAN</u> SCALE: 1/4" = 1'-0"







KEY NOTES FOR DETAILS 03 AND 04:

- ONNECT TO EXISTING PIPING CONNECTIONS FROM PREVIOUS PLUMBING FIXTURE
- © CONNECT TO EXISTING NEAREST PIPING FOR NEW PLUMBING FIXTURE.
- 3 CONNECT TO NEAREST 3" SANITARY PIPING. LOCATIONS ARE DESIRED LOCATIONS. UTILIZE EXISTING FLOOR DRAIN LOCATION IF CLOSE BY.
- (4) CONNECT TO NEAREST CW PIPE OF ADEQUATE SIZE WITH NO IMPACT ON EXISTING DOMESTIC WATER SYSTEM.



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Joseph's House

# Toilet Rooms

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

#### PLUMBING FLOOR PLAN

Seal

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Approved By: --

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#### PLUMBING SPECIFICATIONS

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, "AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES, WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT APPROVAL.
- F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES. AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL
- H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF
- I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS. FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK. K. SEAL OPENINGS THROUGH PARTITIONS. WALLS AND FLOORS WITH AN
- APPROVED NON-SHRINKING FIRE PROOF CAULKING OR OTHER APPROVED NONCOMBUSTIBLE MATERIAL. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- N. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- O. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED. AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- P. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- Q. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- R. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.
- INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- U. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
- V. PROVIDE ALL REQUIRED CUTTING, PATCHING, EXCAVATING AND BACKFILL 2. SCOPE OF WORK
- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE PHILADELPHIA PLUMBING CODE AND ALL OTHER APPLICABLE INDUSTRY. NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- B. THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

- SHOP DRAWINGS PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED
- 1) PROJECT NAME AND LOCATION

4) APPROVAL STAMP OF PRIME CONTRACTOR

- NAME OF ARCHITECT AND ENGINEER
- item identification
- C. SUBMISSIONS

- 1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- 2) SUBMISSIONS LARGER THAT 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) PIPE AND FITTINGS
- 2) VALVES
- PLUMBING FIXTURES AND TRIM
- 4) PIPING LAYOUTS

6) INSULATION

- 5) SUPPORTS, HANGERS AND GUIDES
- 7) PUMPS AND CONTROLS
- 8) FLOOR DRAINS COORDINATION
- 1) THE CONTRACTOR SHALL ASSURE FULL COOPERATION OF ALL TRADES AND SHALL FURNISH IN WRITING ALL INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH LEAST POSSIBLE INTERFERENCE OR DELAY.

2) PREPARE COORDINATED COMPOSITE DRAWINGS AT A SUITABLE SCALE

- NOT LESS THAN 1/4-INCH EQUALS ONE FOOT, ZERO INCHES, CLEARLY SHOWING HOW THE WORK OF THIS DIVISION IS TO BE INSTALLED IN RELATION TO THE WORK OF ALL TRADES. ANY WORK INSTALLED IN CONFLICT WITH THE WORK OF OTHER TRADES SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR MAY, SUBJECT TO THE ACCEPTANCE OF THE ARCHITECT AND WITHOUT EXTRA CHARGE, MAKE REASONABLE
- MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF ALL TRADES OR FOR THE PROPER EXECUTION OF THE WORK. 4) PLUMBING DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT.

COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND DETAILS FOR

- EXACT LOCATION OF DUCTWORK, PIPING AND EQUIPMENT. 5) THE CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYOUT WORK AND SHALL COORDINATE ALL TRADES TO VERIFY SPACES IN WHICH WORK SHALL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM OR SPACE CONDITIONS. WHERE SPACE CONDITIONS APPEAR INADEQUATE, THE ARCHITECT SHALL BE NOTIFIED BEFORE INSTALLATION. DO NOT PROCEED WITH THE INSTALLATION UNTIL RECEIVING CLARIFYING INSTRUCTIONS.
- 4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.
- GENERAL PROVISIONS FOR PLUMBING WORK
- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL, "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY. B. DEFINITIONS
- READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

"PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND

- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS. 6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION,
- INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES. 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- QUALITY ASSURANCE
- QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.
- D. PRODUCT DELIVERY, STORAGE AND HANDLING
- 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.
- PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC CHROMATE FOR OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. RED LEAD OR ZINC CHROMATE WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC CHROMATE
- PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE
- DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL PLUMBING FIXTURES SHALL BE VERIFIED BY ARCHITECT.
- H. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION. 6. PIPE AND FITTINGS
- A. SANITARY DRAINAGE, VENT AND STORM
- 1) PVC PIPE: ASTM D 2665, SOLID-WALL DRAIN, WASTE, AND VENT. a. PVC SOCKET FITTINGS, ASTM D 2665, SOCKET TYPE, MADE TO ASTM D 3311, DRAIN, WASTE, AMD VENT PATTERNS.
- b. PROVIDE ALL LONG RADIUS FITTINGS FOR ALL SANITARY TIED INTO PROCESSING SYSTEM.
- B. DOMESTIC WATER
  - 1) TYPE L HARD COPPER TUBING WITH CAST BRONZE OR WROUGHT COPPER FITTINGS AND 95/5 TIN ANTIMONY SOLDER JOINTS.
- 2) STANDARD WEIGHT RED BRASS PIPE WITH STANDARD WEIGHT CAST BRONZE THREADED FITTINGS.
- C. ALL EXPOSED PIPE AND FITTINGS SHALL BE CHROME-PLATED BRASS. D. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.

#### A. GATE VALVES

7. VALVES

1) BRONZE RISING STEM, CLASS 150 RISING STEM, UNION BONNET, SOLID WEDGE AND MANUFACTURED IN ACCORDANCE WITH MSS-SP80. MODEL NO. T134 AS MANUFACTURED BY NIBCO.

B. BALL VALVES

- 1) TWO-PIECE, BRONZE, END ENTRY, 600 PSI WWP; SIMILAR TO NIBCO #T585-70. 2) THREE-PIECE, STAINLESS STEEL, BUTT WELD, 2,000 PSI WWP;
- SIMILAR TO NIBCO #BM-590-S6-R-66-FS-LL. C. CHECK VALVES
- 1) BRONZE, THREADED CAP, TEFLON DISC; SIMILAR TO NIBCO #T433-Y.
- 8. INSULATION
- A. ALL INSULATION (INCLUDING JACKET, FACING AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255 AND UL 273; NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.
- PIPING SHALL HAVE A MINIMUM 4 LB DENSITY MOLDED FIBERGLASS. MAXIMUM 0.23 K-FACTOR AT 75 DEGREES F MEAN TEMPERATURE WITH FACTORY -APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING. ALL SERVICE JACKET SIMILAR TO JOHNS MANVILLE MICRO-LOK HP
- C. FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON
- D. ON VALVES AND FITTINGS PROVIDE PRE-MOLDED FIBERGLASS FITTINGS. VAPOR SEAL INSULATION ON "CW".
- "CW" PIPING: PROVIDE 1 IN. THICK FIBERGLASS SECTION PIPE COVERING WITH VAPOR BARRIER JACKET.
- "HW" PIPING: PROVIDE 1 IN. THICK FIBERGLASS SECTIONAL PIPE COVERING.
- PROVIDE ALL FIXTURES WITH STOP VALVES AND SUPPLIES AND FIXTURE TRAPS AS REQUIRED.
- B. ALL FIXTURES SHALL BE AS INDICATED ON THE ARCHITECTURAL AND PLUMBING DOCUMENTS.
- A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.
- PROVIDE TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS FOR
- GROUPED LINES AND SERVICES. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS
- INADEQUATE. SUBMIT FOR REVIEW. D. SUSPENDED HORIZONTAL PIPING

9. PLUMBING FIXTURES

2. PIPING SUPPORTS

- 1) SUPPORT ALL PIPING IN PROCESS AREAS INDEPENDENTLY FROM STRUCTURE USING FRP TYPE HANGERS, SIMILAR TO CENTURY COMPOSITES CC-HANGERS.
- 2) SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNELL CLEVIS
- 3) PROVIDE ELECTROPLATED SOLID-BAND HANGERS SIMILAR TO AUTO-GRIP, FOR TWO-INCH AND SMALLER PIPE.
- 4) PROVIDE WALL BRACKETS FOR WALL—SUPPORTED PIPING, AND PROVIDE PIPE SADDLES FOR FLOOR-MOUNTED PIPING.
- 5) PROVIDE SUPPORTS WITH COPPER LINING FOR UNINSULATED COPPER
- 6) SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCKNUT, STEEL FISH PLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNELL FIGURES 61, 87, 131, OR 225.
- 7) SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
- 8) PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.
- 9) SUPPORT BRANCH FIXTURE WATER PIPING IN CHASES WITH COPPER-PLATED METAL BRACKETS, SECURED TO STUDS, SIMILAR TO HOLDRITE NOS. 102–18, 107–18, 102–26, OR 101–26.
- PROVIDE 180-DEGREE ARC GALVANIZED METAL COVERING SHIELDS ON HANGERS FOR INSULATED PIPING WITHOUT INCOMPRESSIBLE INSULATING BLOCK IN INSULATION AT HANGERS.
- F. MAXIMUM HANGER SPACING AS INDICATED
- 1) PIPE 1 INCH AND SMALLER SHALL BE EVERY 8 FEET.
- 2) PIPE 1-1/4 INCH AND LARGER SHALL BE EVERY 10 FEET. 3) COPPER TUBING 1-1/4 INCH AND SMALLER SHALL BE EVERY 6
- 4) COPPER TUBING 1-1/2 INCH AND LARGER SHALL BE EVERY 10
- 5) CAST IRON: EVERY 5 FEET AND AT EVERY FITTING OR JOINT. G. VERTICAL PIPING
- 1) PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.
- 2) PROVIDE SPACING AS INDICATED THREADED PIPING SHALL BE EVERY OTHER FLOOR LEVEL, AT A MAXIMUM OF 25 FEET ON CENTERS.
- b. CAST IRON PIPING SHALL BE EVERY FLOOR LEVEL, MAXIMUM 20 FEET ON CENTERS; HUBBLESS PIPE IS THE EXCEPTION, REQUIRING A MAXIMUM OF 10 FEET ON CENTERS.
- TUBING SHALL BE EVERY FLOOR LEVEL MAXIMUM 10 FEET ON

#### 13. TESTS A. DOMESTIC WATER PIPING

- 1) TEST PIPING HYDROSTATICALLY AT A PRESSURE OF 125 PSI. 2) DURATION OF TEST SHALL BE 2 HOURS WITHOUT A LOSS IN
- DRAINAGE AND VENT PIPING
- 1) CAP ALL OUTLETS AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10 FEET ABOVE THE FLOOR.
- 2) THE WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT THE TEST DURATION OF 2 HOURS.
- ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER AND ARCHITECT OF TEST DATE AND TIME. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED.
- E. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE BUILDING AND ITS CONTENTS AS A RESULT OF SUCH TESTS. REPAIR ANY DAMAGE

TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN



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DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK: my party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represen

that they have expertise in the area of their responsibility

and are knowledgeable regarding industry standards,

product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable fo

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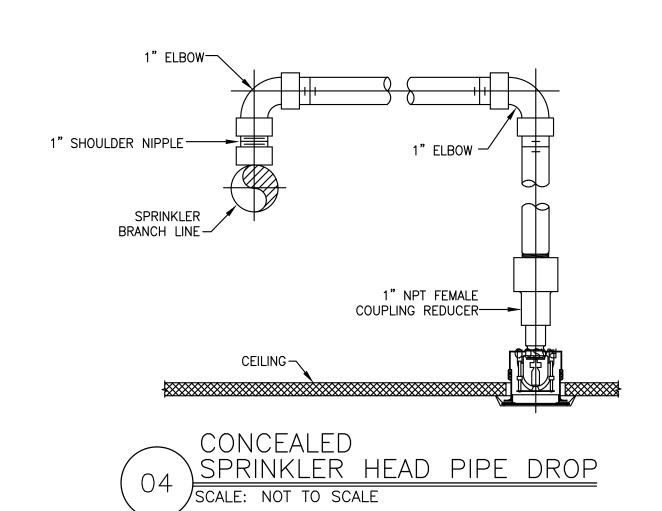
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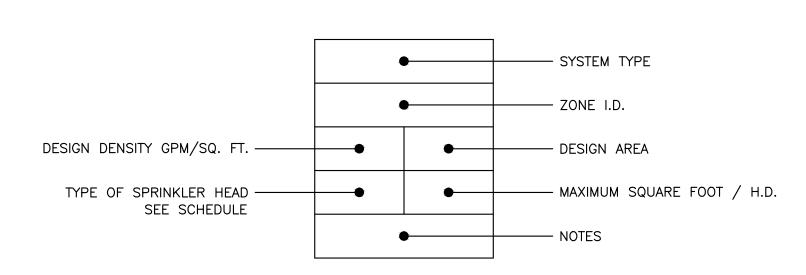
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20-004 BHA Job Number: Scale: As indicated Drawn By: Checked By: Approved By:

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Sheet No.





SPRIINKLER SYSTEM DESIGN CRITERIA TAG

	SPRINKLER SCHEDULE									
ID	TYPE	DESCRIPTION	TEMP RATING	K FACTOR	ORFICE	AREAS OF USE	MAX COVERAGE AREA	NOTES		
Α	VIKING MICROFAST	QUICK RESPONSE VK	155 <b>°</b>	5.6	1/2"	LIGHT HAZARD	PER NFPA	UL/FM		

#### GENERAL FIRESTOPPING NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OR EXCEEDING WALL/CEILING/FLOOR ASSEMBLY RATINGS FOR ALL PENETRATIONS. CONTRACTOR SHALL VERIFY LOCATION AND RATING OF ALL FIRE ASSEMBLIES AND PROVIDE INTUMESCENT COLLARS AT ALL PENETRATIONS AND FIRE RATED CAULKING AS REQUIRED.

> FIRE PROTECTION DESIGN SHALL BE BY THE PROJECT FIRE PROTECTION CONTRACTOR. THE INFORMATION SHOWN ON THESE DRAWINGS IS DIAGRAMMATIC AND FOR REFERENCE ONLY. COORDINATE ALL FIRE PROTECTION INSTALLATIONS WITH THE SIGNED AND SEALED DOCUMENTS PROVIDED BY THE FIRE PROTECTION CONTRACTOR.

#### **DEMOLITION NOTES:**

- OF WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED THE PHASING REQUIREMENTS OF THIS PROJECT. OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION SHALL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE OWNER/ENGINEER.
- 2. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND ALSO MUST BE COORDINATED WITH ALL ARCHITECTURAL, PLUMBING, MECHANICAL, FIRE PROTECTION, ELECTRICAL AND STRUCTURAL SYSTEMS.
- 3. EXISTING CONDITIONS, EQUIPMENT, MATERIALS & SIZES ARE SHOWN FOR REFERENCE ONLY. VERIFY EXISTING CONDITIONS & BRING ANY DISCREPANCIES TO THE ENGINEER'S ATTENTION IN WRITING PRIOR TO BID SUBMISSION.
- 4. THE CONTRACTOR SHALL VISIT THE SITE TO CAREFULLY EXAMINE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO BIDDING. SUBMISSION OF A PROPOSAL SHALL BE CONSIDERED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN PERFORMED. LATER CLAIMS FOR EXTRA LABOR OR MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED SHALL NOT BE RECOGNIZED.
- 5. ALL SYSTEMS TO BE REMOVED ARE NOT SHOWN. THE CONTRACTOR SHALL BECOME FAMILIAR WITH TOTAL SCOPE OF DEMOLITION WORK PRIOR TO SUBMITTING BID.
- 6. ALL PIPING BEING ABANDONED SHALL BE CUT BACK AND CAPPED BELOW FINISHED FLOOR, IN WALLS AND ABOVE CEILINGS SO NO PIPING SHALL BE EXPOSED.
- 7. CONTRACTOR TO PROVIDE DUST PROTECTION TO SATISFACTION OF THE BUILDING OWNER.
- 8. CONTRACTOR SHALL PATCH AND REPAIR ALL FLOOR, CEILING, WALL, AND ROOF PENETRATIONS, CREATED BY THE INSTALLATION OF NEW, TO MATCH THE EXISTING ADJACENT CONSTRUCTION AND FINISH.
- 9. ALL EXPOSED OBSOLETE PIPING NOT REQUIRED FOR THIS PROJECT SHALL BE REMOVED.
- 10. DISPOSE OF ALL MATERIALS AS DIRECTED BY OWNER'S REPRESENTATIVE.
- 11. ALL RELOCATED PIPING SHALL MATCH EXISTING MATERIALS.
- 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE DEMOLITION WORK AND NEW WORK WITH THE PHASING REQUIREMENTS OF THIS PROJECT.
- 13. EXISTING FIRE PROTECTION, PLUMBING, MECHANICAL AND ELECTRICAL SYSTEMS AND COMPONENTS ARE TO BE REMOVED AND RELOCATED AS INDICATED. ENSURE ALL ITEMS HAVE BEEN MADE SAFE PRIOR TO CUTTING OR DISCONNECTING; ELECTRICAL POWER HAS BEEN REMOVED, PRESSURE RELIEVED, TEMPORARY SUPPORTS AND BRACES ARE IN PLACE. ALL REMOVALS ARE TO BE MADE IN A SAFE AND LEGAL MANNER, DISPOSED OF IN APPROPRIATE, LEGAL LOCATIONS OFF THE SITE.
- 14. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
- 15. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION. PATCH ALL EXISTING INTERIOR AND EXTERIOR WALLS, LEFT BY DEMOLITION, TO MATCH EXISTING.
- 16. THE CONTRACTOR SHALL REMOVE ALL PIPING SUPPORTS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING PIPING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL AND PROVIDE BYPASS CONNECTIONS NECESSARY.
- 17. ALL PIPING WHICH BECOMES EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
- 18. PORTIONS OF PIPING TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ACTIVE, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED.
- 19. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS SHALL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
- 20. THE SHUTDOWN OF EXISTING BUILDING SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.
- 21. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL STATE & LOCAL REQUIREMENTS REGARDING DISPOSAL OF REFRIGERANTS.
- 22. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE AND ALSO SHALL BE COORDINATED WITH ALL ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND
- 23. EXISTING CONDITIONS, EQUIPMENT, MATERIALS & SIZES ARE SHOWN FOR REFERENCE ONLY. VERIFY EXISTING CONDITIONS & BRING ANY DISCREPANCIES TO THE ENGINEER'S ATTENTION IN WRITING PRIOR TO BID
- 24. THE CONTRACTOR MUST VISIT THE SITE TO CAREFULLY EXAMINE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO BIDDING. SUBMISSION OF A PROPOSAL SHALL BE CONSIDERED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN PERFORMED. LATER CLAIMS FOR EXTRA LABOR OR MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED SHALL NOT BE RECOGNIZED.
- 25. CONTRACTOR SHALL INSPECT EXISTING EQUIPMENT, VALVES, BACKFLOW PROTECTION DEVICES AND METER CHANGE ALL PACKING AS REQUIRE TO MAINTAIN THE EXISTING CONDITIONS AND ASSOCIATED DEVISES/EXISTING EQUIPMENT TO REMAIN.
- 26. ALL SYSTEMS TO BE REMOVED ARE NOT SHOWN. CONTRACTOR SHALL BECOME FAMILIAR WITH TOTAL SCOPE

OF DEMOLITION WORK PRIOR TO SUBMITTING BID.

- 1. THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS 27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE DEMOLITION WORK AND NEW WORK WITH
  - 28. INDICATED EXISTING SYSTEMS AND COMPONENTS ARE TO BE REMOVED. THIS INCLUDES EQUIPMENT, DUCTWORK, PIPING, AND OTHER MATERIALS. ENSURE ALL ITEMS HAVE BEEN MADE SAFE PRIOR TO CUTTING OR DISCONNECTING: ELECTRICAL POWER HAS BEEN REMOVED. PRESSURE RELIEVED. TEMPORARY SUPPORTS AND BRACES ARE IN PLACE. ALL REMOVALS ARE TO BE MADE IN A SAFE AND LEGAL MANNER, DISPOSED OF IN APPROPRIATE, LEGAL LOCATIONS OFF THE SITE.
  - 29. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS AND CONFIRM EXACT MODIFICATIONS NECESSARY IN THE
  - 30. THESE DRAWINGS HAVE BEEN MADE BASED ON A VISUAL INSPECTION OF THE EXISTING SURFACES. SOME ASSUMPTIONS HAVE BEEN MADE AS TO ACTUAL CONSTRUCTION, MATERIALS, AND METHODS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ACTUAL FIELD CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, CONFLICTS, AND UNFORESEEN CONDITIONS.
- FIRE PROTECTION SPECIALTIES AS NOTED. SYSTEMS SHALL BE DESIGNED, HYDRAULICALLY CALCULATED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
  - NFPA 13, 2013 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS NFPA 13R, 2013 – (RESIDENTIAL UNITS) STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 70, 2014 NATIONAL ELECTRIC CODE NFPA 72, 2013 - NATIONAL FIRE ALARM CODE
- UL FIRE PROTECTION LIST LATEST EDITION FM GLOBAL APPROVAL GUIDE - LATEST EDITION
- FIRE PROTECTION GENERAL NOTES

5. SPRINKLER PROTECTION SHALL BE BASED ON THE FOLLOWING CRITERIA:

-LIGHT HAZARD : 225 S.F. PER HEAD

WITH NFPA 13.

-ORDINARY HAZARD : 130 S.F. PER HEAD

- THE FIRE PROTECTION SYSTEM IS A WET AND DRY SYSTEM EMPLOYING AUTOMATIC SPRINKLERS ATTACHED TO PIPING SYSTEM CONTAINING WATER.
- SPRINKLER CONTRACTOR SHALL PROVIDE PIPING MAINS WITH SIZES AS SHOWN AND WITH BRANCH PIPING SIZED AS REQUIRED. PREPARE SIGN AND SEALED SHOP DRAWINGS PER NFPA 13 AND INCLUDE HYDRAULIC
- SPRINKLER CONTRACTOR IS RESPONSIBLE FOR SUBMITTAL OF PRODUCT DATA FOR SPRINKLER COMPONENTS
- AND ACCESSORIES. 4. SPRINKLER CONTRACTOR SHALL PERFORM FIELD ACCEPTANCE TESTS OF THE FIRE PROTECTION SYSTEM.
- 6. PROVIDE PERMANENT PLACARD AT EACH SPRINKLER RISER VALVE WITH HYDRAULIC DATA BASIS OF DESIGN. 7. SPRINKLER CONTRACTOR TO PROVIDE A MINIMUM OF 10% PRESSURE SAFETY MARGIN FOR THE HYDRAULIC CALCULATIONS.
- 8. PROVIDE SYSTEM AUXILIARY DRAINS FOR ALL TRAPPED PIPING ON WET AND DRY SYSTEMS IN ACCORDANCE
- 9. PRIOR TO PERFORMING HYDRAULIC CALCULATIONS, THE SPRINKLER CONTRACTOR SHALL OBTAIN THE MOST RECENT HYDRANT FLOW TEST. IF THE MOST RECENT DATA IS MORE THAN SIX (6) MONTHS TO DATE, A NEW TEST SHALL BE ORDERED AND PERFORMED.
- 10. SPRINKLER CONTRACTOR SHALL PROVIDE ALL REQUIRED TESTING OF WATER SUPPLIES FOR POTENTIAL (MIC) MICROBIOLOGICALLY INFLUENCED CORROSION PER NFPA 13 (WATER SUPPLY TESTING).
- 11. SPRINKLER SYSTEM FIRE MAINS SHALL BE SIZED NO LESS THAN 4" IN NOMINAL DIAMETER AND SHALL BE LOCATED IN CORRIDORS WHEREVER POSSIBLE.
- 12. SPRINKLERS INSTALLED IN AREAS WITH SUSPENDED CEILING TILES SHALL BE LOCATED AT THE CENTER OF TILES OR AT THE CENTER OF RECTANGULAR CEILING TILES AND NOT LESS THAN 12" FROM ANY EDGE.
- 13. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR A COMPLETE FIRE SUPPRESSION SYSTEM WHERE SHOWN ON DRAWINGS AND REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION, N.F.P.A. NO. 13, 14 AND 231, AND INSURANCE CARRIER.
- 14. FURNISH SIX (6) EXTRA SPRINKLER HEADS AND SPRINKLER HEAD CABINETS WITH ASSOCIATED WRENCHES FOR EACH TYPE OF SPRINKLER HEAD.
- 15. IF THERE ARE ANY QUESTIONS CONCERNING WHAT THE INSURANCE UNDERWRITER SHALL REQUIRE IN ORDER TO APPROVE THE COMPLETED INSTALLATION (PIPING SIZING, LOCATION OF RISERS, TEST STATIONS, HYDRANTS, ALARMS, ETC.) THE BIDDER SHALL CONSULT WITH THE INSURANCE UNDERWRITER BEFORE SUBMITTING HIS BID. FAILURE TO CONSULT WITH THE INSURANCE UNDERWRITER DOES NOT RELIEVE THIS CONTRACTOR FROM HIS RESPONSIBILITY BY THE COMPLETION OF ANY AND ALL WORK REQUIRED WITH NO EXTRA CHARGES TO THE
- 16. SPRINKLER HEADS SHALL NOT INTERFERE WITH LIGHTING FIXTURES, SPEAKERS, AIR CONDITIONING DIFFUSERS AND GRILLES, ETC. COORDINATE WITH ARCHITECT'S REFLECTED CEILING PRIOR TO SUBMITTING SHOP DRAWING.
- 17. GUARANTEE ALL WORK MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY.
- 18. ALL SPRINKLER PIPING TO RUN AS HIGH AS POSSIBLE. ALL MAINS SHALL BE RUN TIGHT TO STEEL.

COORDINATE LOCATIONS WITH GENERAL CONTRACTOR'S FIELD REPRESENTATIVE.

- 19. THE CONTRACTOR SHALL RUN A CERTIFIED FLOW TEST AS REQUIRED BY N.F.P.A. 13, APPENDIX B TO DETERMINE THE ADEQUACY OF THE WATER PRESSURE. PRIOR TO BID, COORDINATE WITH ARCHITECT/ENGINEER IF RESIDUAL WATER PRESSURE IS LOWER THAN THE DESIGN PRESSURE SPECIFIED ON DRAWINGS.
- 20. SHOP DRAWINGS BEARING THE APPROVAL OF THE INSURANCE UNDERWRITER SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE BEFORE ANY WORK IS STARTED.

SINGLE USER TOILET ROOM

TRASH

WOMENS TOILET/SHOWER

21. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, DETAILED CONSTRUCTION DRAWINGS AND HYDRAULIC CALCULATIONS TO THE ENGINEER AND FIRE SUB-CODE OFFICIAL, PRIOR TO THE INSTALLATION OF ANY EQUIPMENT. OBTAIN CERTIFICATE OF INSPECTION AND APPROVAL FROM THE SAME AGENCY HAVING JURISDICTION AFTER INSTALLATION. FIRE SUPPRESSION CONSTRUCTION DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF PENNSYLVANIA.

MENS TOILET/SHOWER

TRASH

**STORAGE** 

3'X**5**6'

- THE NEW CONSTRUCTION SHALL BE PROVIDED WITH A WET AND DRY FIRE SPRINKLER SYSTEMS AND OTHER

  22. EXACT LOCATION OF SPRINKLER HEADS AND PIPING SHALL BE COORDINATED WITH OTHER TRADES AND THE ARCHITECT'S REFLECTED CEILING PLAN BEFORE INSTALLATION.
  - 23. SPRINKLER HEADS LOCATED IN LIGHT HAZARD AREAS SHALL BE QUICK RESPONSE (QR) TYPE.
  - 24. REFER TO ARCHITECTURAL PLANS FOR FINAL REFLECTED CEILING PLANS.
  - 25. PROVIDE PERMANENT ENGRAVED STEEL PLACARD CHAINED TO SPRINKLER VALVE WITH HYDRAULIC CALCULATION 'BASIS OF DESIGN'.
  - 26. ALL PENETRATIONS THROUGH FIRE-RESISTANT ASSEMBLIES SHALL BE PROTECTED BY A UL-LISTED THROUGH-PENETRATION FIRESTOP SYSTEM. ALL PENETRATIONS THROUGH SMOKE PARTITIONS SHALL BE SEALED
    - WITH NON-COMBUSTIBLE MATERIAL.
    - 27. SPRINKLER HEADS SHALL BE INSTALLED IN THE CENTER OF ACOUSTICAL CEILING TILES.
    - DELINEATE HIS RESPECTIVE WORK ON THESE COORDINATION DRAWINGS. WHEN ALL WORK HAS BEEN PROPERLY SHOWN ON THE COORDINATION DRAWINGS, AND ALL CONTRACTORS AGREE THAT THEIR RESPECTIVE WORK CAN BE INSTALLED AND SHALL PROPERLY FIT TOGETHER, THEY SHALL SO ACKNOWLEDGE BY ENDORSING THE DRAWING(S). ANY WORK DONE PRIOR TO COMPLETION OF ABOVE COORDINATION PROCESS FOUND IN CONFLICT
    - SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE. 29. CONTRACTOR SHALL COORDINATE ALL SPRINKLER HEADS WITH THE LIGHTS, HVAC SYSTEMS, DIFFUSERS, SOFFITS BEFORE SUBMITTING SHOP DRAWINGS FOR REVIEW AND PROVIDE ALL ADDITIONAL HEADS AT NO COST TO THE

28. THE CONTRACTOR SHALL PREPARE FULLY DIMENSIONED MYLAR FIELD INSTALLATION DRAWINGS. THESE DRAWINGS

SHALL BE FORWARDED TO ALL CONTRACTORS. EACH CONTRACTOR SHALL SUBSEQUENTLY IN SUCCESSION

- 30. CONTRACTOR SHALL MAKE AN ALLOWANCE TO INSTALL A MINIMUM OF 25% ADDITIONAL SPRINKLER HEADS TO BE INSTALLED AS TO PROVIDE ADEQUATE COVERAGE DUE TO ANY OBSTRUCTION, LIGHTS, DIFFUSERS, DUCTWORK, PIPING ETC.. INSTALLED DURING CONSTRUCTION WHICH MAY ALTER THE ORIGINAL SPRINKLER
- 31. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL CONCERNING THE FIRE ALARM SYSTEM AND/OR FIRE SPRINKLER SYSTEM SHUTDOWN PLANS, PROCEDURES, AND FIRE WATCH PLANS THAT SHALL BE IMPLEMENTED FOR SYSTEM INTERRUPTIONS DURING DEMOLITION AND CONSTRUCTION.
- 32. SYSTEM SHUTDOWNS SHALL BE CLOSELY COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR AND HIS/HER WRITTEN PERMISSION OBTAINED SUBSTANTIALLY AHEAD OF TIME.
- 33. DO NOT ATTACHED ANY FIRE PROTECTION ACCESSORIES / MEMBERS TO UNDERSIDE OF ROOF DECK ONLY USE EXISTING / NEW STRUCTURAL FRAMING MEMBERS FOR ATTACHMENTS.
- 34. THE INSTALLING FIRE PROTECTION CONTRACTOR SHALL PROVIDE PROTECTION FROM FREEZING. PROVIDE DRY PIPE PIPING, HEADS AND/OR HEAT TRACING AND INSULATION AS REQUIRED FOR THE PROTECTION OF SPRINKLER PIPING AT NO ADDITIONAL COST TO THE OWNER.
- NOT REUSE ANY HEADS FROM THE EXISTING SYSTEM. 36. CONTRACTOR SHALL REVIEW THE REQUIRED COMMODITY CLASSIFICATION FOR ALL AREAS OF MATERIALS AND

35. CONTRACTOR SHALL REPLACE ALL EXISTING SPRINKLER HEADS THAT REQUIRE MODIFICATIONS WITH NEW. DO

MEET THE NFPA, INSURANCE AND AHJ REQUIREMENTS FOR SUCH CLASSIFICATION AND STORAGE HEIGHTS.



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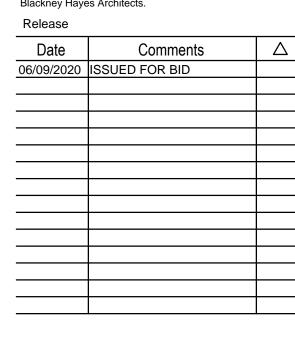
#### FIRE PROTECTION FLOOR PLAN

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK Any party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represent that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for

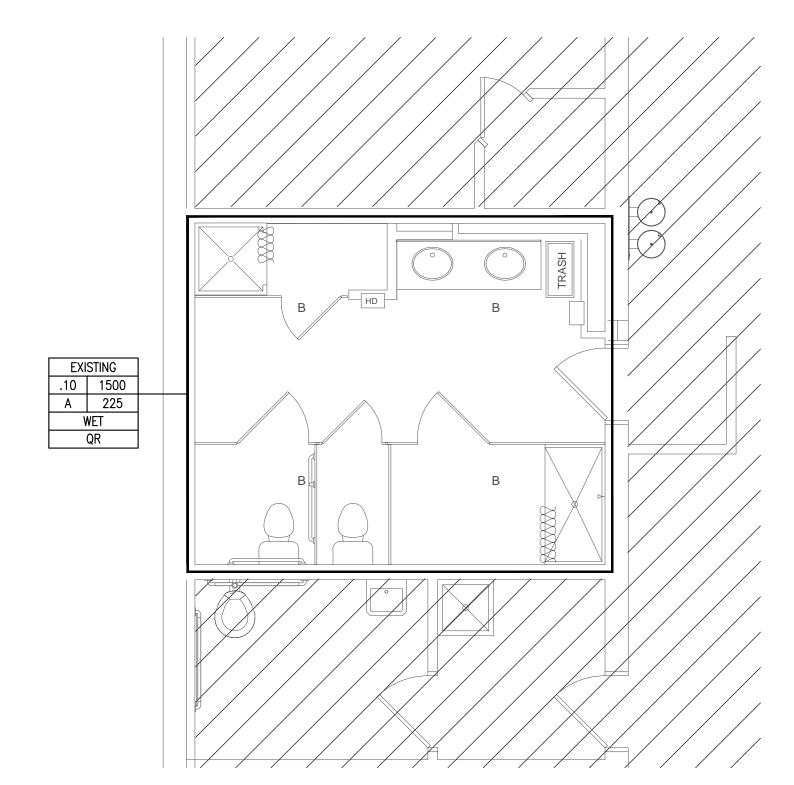
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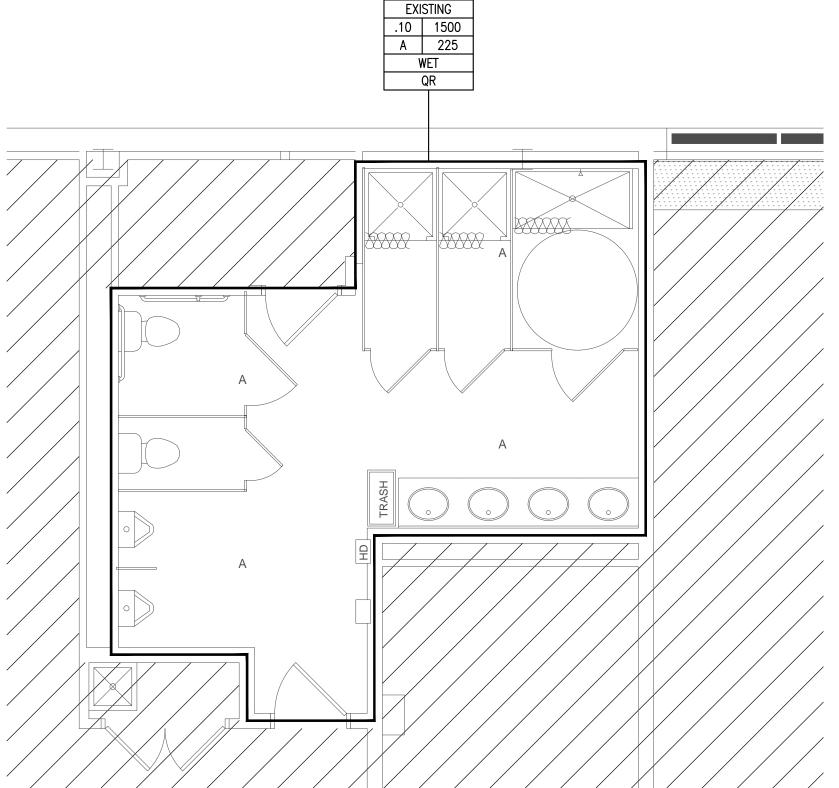
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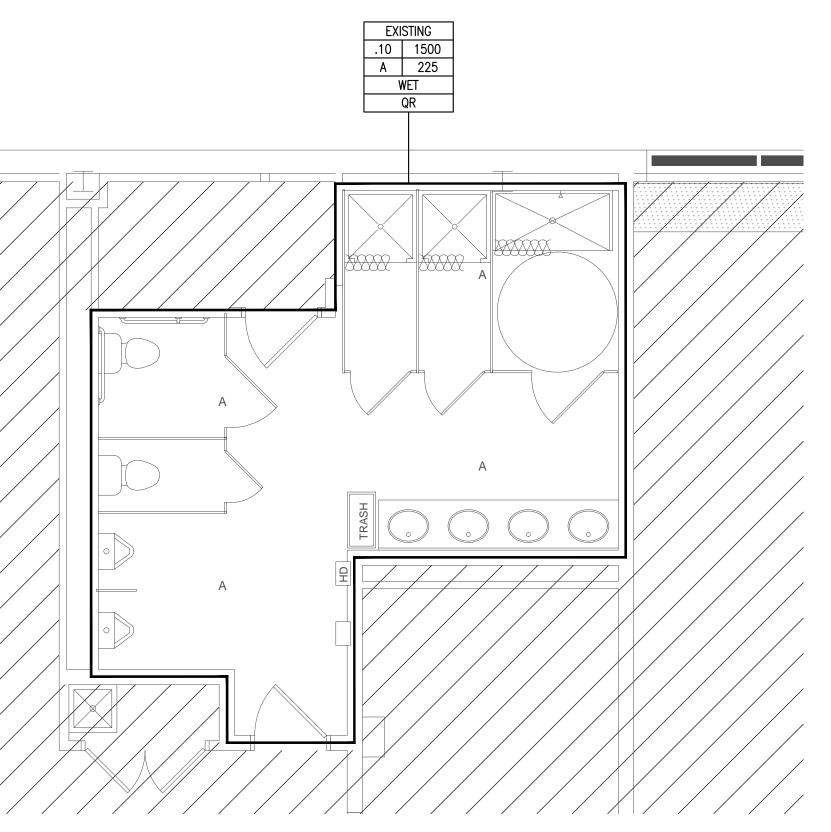
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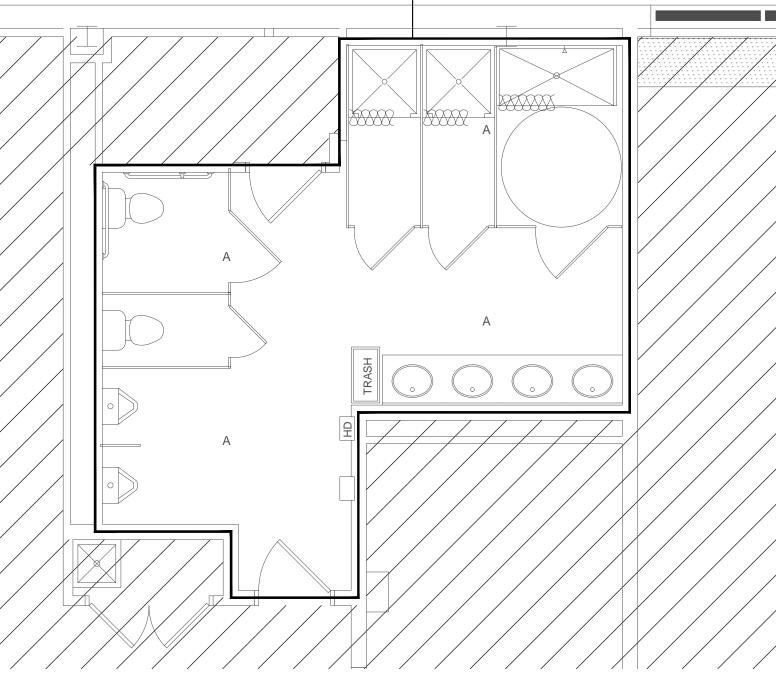






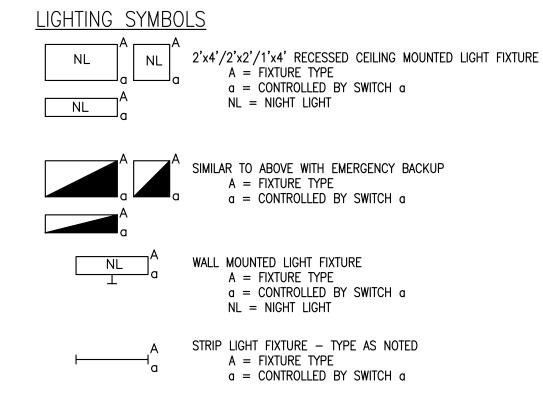






#### ELECTRICAL SYMBOLS LIST

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)



SIMILAR TO ABOVE WITH EMERGENCY BACKUP A = FIXTURE TYPEa = CONTROLLED BY SWITCH aUNDERCABINET LIGHT FIXTURE

> A = FIXTURE TYPECEILING MOUNTED/RECESSED FIXTURE A = FIXTURE TYPEa = CONTROLLED BY SWITCH a

SIMILAR TO ABOVE WITH EMERGENCY BACKUP A = FIXTURE TYPEa = CONTROLLED BY SWITCH aWALL MOUNTED LIGHT FIXTURE

A = FIXTURE TYPE

SIMILAR TO ABOVE WITH EMERGENCY BACKUP A = FIXTURE TYPEa = CONTROLLED BY SWITCH aACCENT LIGHT OR WALL WASHER A = FIXTURE TYPE

a = CONTROLLED BY SWITCH a

a = CONTROLLED BY SWITCH a

SIMILAR TO ABOVE WITH EMERGENCY BACKUP A = FIXTURE TYPEa = CONTROLLED BY SWITCH a

LIGHT TRACK-TYPE 'A' WITH TRACK MOUNTED FIXTURE TYPE 'B' CEILING MOUNTED EXIT LIGHT - DIRECTIONAL ARROWS WHERE INDICATED - SHADED AREAS INDICATE ILLUMINATED FACE/FACES W = WALL MOUNTED

E = END MOUNTED

C = CEILING MOUNTED

EMERGENCY BATTERY LIGHT UNIT A = FIXTURE TYPE

> REMOTE LIGHT HEADS FOR EMERGENCY BATTERY LIGHT UNIT - TYPE AS NOTED

#### POWER SYMBOLS

```
SINGLE POLE SWITCH
 2 = DOUBLE POLE
  3 = THREE-WAY
 4 = FOUR-WAY
 a = CONTROLS SWITCH LEG 'a'
 D = DIMMER
 DR = DOOR
 K = KEY OPERATED
 MO = MOMENTARY CONTACT
 T = TIMER SWITCH
 P = PILOT LIGHT
 LV = LOW VOLTAGE
DISCONNECT SWITCH - TOGGLE TYPE WITH THERMAL OVERLOAD -
```

DISCONNECT SWITCH - TOGGLE TYPE MOTOR RATED, 20A, 1P, UON

VACANCY SENSOR, WALL MOUNTED

VACANCY SENSOR, CEILING MOUNTED OCCUPANCY SENSOR, CEILING MOUNTED

OCCUPANCY SENSOR, WALL MOUNTED

PHOTOCELL SENSOR, WALL MOUNTED 20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED

CONTROLLED FROM WALL SWITCH "a" 20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED, TAMPER

20A, 125V DUPLEX RECEPTACLE WITH DUAL USB CHARGING OUTLETS FLUSH WALL MOUNTED

20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED, CONTROLLED

20A, 125V QUADRUPLEX RECEPTACLE - FLUSH WALL MOUNTED 20A, 125V ISOLATED GROUND, DUPLEX RECEPTACLE, FLUSH WALL

20A, 125V DUPLEX RECEPTACLE, FLUSH WALL MOUNTED, GFI TYPE

20A, 125V EMERGENCY DUPLEX RECEPTACLE, FLUSH WALL MOUNTED

SINGLE RECEPTACLE, FLUSH WALL MOUNTED

20A, 125V DUPLEX RECEPTACLE, FLUSH FLOOR MOUNTED 125V QUADRUPLEX RECEPTACLE, FLUSH FLOOR MOUNTED

PEDESTAL MOUNTED 20A, 125V DUPLEX RECEPTACLE

PEDESTAL MOUNTED 20A, 125V QUADRUPLEX RECEPTACLE

SPECIAL PURPOSE RECEPTACLE, FLUSH FLOOR MOUNTED, A = TYPE SPECIAL PURPOSE RECEPTACLE, FLUSH WALL MOUNTED,

WALL MOUNTED CLOCK D = DOUBLE FACEMOTOR CONTROLLER  $\bowtie$ COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH AMPS/# OF

POLES, VOLTAGE RATING AS REQUIRED UNFUSED DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED

FUSED DISCONNECT SWITCH SWITCH AMPS/FUSE AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED ENCLOSED CIRCUIT BREAKER TRIP AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED POWER POLE

SURFACE MOUNTED LIGHTING PANELBOARD FLUSH MOUNTED LIGHTING PANELBOARD

SURFACE MOUNTED POWER PANELBOARD FLUSH MOUNTED POWER PANELBOARD

FLUSH WALL MOUNTED JUNCTION BOX FLUSH FLOOR MOUNTED JUNCTION BOX

CEILING MOUNTED JUNCTION BOX

PUSH BUTTON K = KEY OPERATEDH = HOLD UPP = PANICEPO = EM. POWER OFF—×—×— EXISTING CONDUIT/EQUIPMENT TO BE REMOVED

— — UNDERGROUND CONDUIT/WIRING POINT OF CONNECTION POINT OF DISCONNECTION

#### FIRE ALARM SYMBOLS

DUCT SMOKE DETECTOR CEILING MOUNTED CARBON MONOXIDE DETECTOR SINGLE/MULTI STATION SMOKE ALARM SINGLE/MULTI STATION CARBON MONOXIDE ALARM SINGLE/MULTI STATION SMOKE/CARBON MONOXIDE ALARM THERMAL DETECTOR RATE-OF-RISE F = FIXED TEMPERATURESPRINKLER WATERFLOW SWITCH SPRINKLER PRESSURE SWITCH

CEILING MOUNTED SPACE SMOKE DETECTOR

F = MOUNTED UNDER RAISED FLOOR

SPRINKLER TAMPER SWITCH FIRE ALARM PULL STATION

FIRE ALARM TELEPHONE JACK COMBINATION FIRE ALARM SPEAKER AND STROBE LIGHT UNIT -FLUSH WALL MOUNTED

FIRE ALARM SPEAKER — FLUSH WALL MOUNTED C = CEILING MOUNTED

COMBINATION FIRE ALARM HORN AND STROBE LIGHT UNIT, FLUSH

FIRE ALARM HORN — FLUSH WALL MOUNTED C = CEILING MOUNTED

LOW FREQUENCY SOUNDER (520 HZ) - FLUSH WALL MOUNTED C = CEILING MOUNTED

COMBINATION FIRE ALARM BELL AND STROBE LIGHT UNIT, FLUSH WALL MOUNTED

FIRE ALARM BELL, FLUSH WALL MOUNTED

FIRE ALARM MONITOR MODULE FIRE ALARM CONTROL MODULE

DOOR HOLDERS

ELECTROMAGNETIC DOOR RELEASE ELEVATOR RECALL TIE-IN POINT

FLUSH WALL MOUNTED STROBE LIGHT UNIT

CEILING MOUNTED STROBE LIGHT UNIT REMOTE INDICATOR LIGHT

#### VOICE/DATA/P.A. SYMBOLS

WALL MOUNTED PUBLIC ADDRESS SPEAKER D = DUAL HORN

CEILING MOUNTED PUBLIC ADDRESS SPEAKER D = DUAL HORNVOICE & DATA OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN

 $\mathbb{T}$ #/# A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING #/# = # OF VOICE JACKS/# OF DATA JACKS VOICE OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING P = PUBLIC

F = FAXW = WALL MOUNTED# = # OF JACKSDATA OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90

DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING # = # OF JACKS TELEVISION OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A

90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING CLOSED CAPTION TV CAMERA OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CLG

CARD ACCESS STATION OUTLET LOCATION WITH 3/4" CONDUIT TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CLG **ABBREVIATIONS** 

(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT) SINGLE POLE ISOLATED POWER CENTER-X-RAY TWO POLE JUNCTION BOX THREE POLE THOUSAND CIRCULAR MILS AMPERE KILOVOLT ABOVE COUNTER KILOVOLT AMPERE AIR CIRCUIT BREAKER KILOWATT ABOVE FINISHED FLOOR KILOWATT HOUR ABOVE FINISHED GRADE LFMC LIQUIDTIGHT FLEXIBLE AUTHORITY HAVING JURISDICTION METALLIC CONDUIT AMPERE INTERRUPTING CAPACITY LFNC LIQUIDTIGHT FLEXIBLE ALUMINUM NON-METALLIC CONDUIT ALM ALARM LINE ISOLATION MONITOR AMMETER ABOVE RAISED FLOOR MEDICAL GAS ALARM PANEL ATS AUTOMATIC TRANSFER SWITCH METAL CLAD, MECH. CONTRACTOR AUTOMATIC MIN. CIRCUIT AMPERES AUDIO VISUAL AMERICAN WIRE GAUGE MAIN CIRCUIT BREAKER BELOW FINISHED CEILING MOTOR CONTROL CENTER BREAK GLASS SWITCH MAIN DISTRIBUTION PANEL BASIC IMPULSE LEVEL MECH MECHANICAL MECHANICAL ROOM CAB MANUFACTURER **CATALOG** MAIN FUSED SWITCH **CONDUIT** MANHOLE, METAL HALIDE CIRCUIT BREAKER **MICROPHONE** CCTV CLOSED CIRCUIT TELEVISION MINIMUM CIRCUIT MAIN LUG ONLY MAX. OVERCURRENT PROTECTION CENTER LINE MOCP MAX. OVERCURRENT PROTECTION MOPD CONTROL MTD CONDUIT ONLY MOUNTING COMMUNICATION MANUAL TRANSFER SWITCH CONNECTED NEUTRAL CONTINUATION NEW CURRENT TRANSFORMER NORMALLY CLOSED NOT IN CONTRACT CUH CABINET UNIT HEATER NORMALLY OPEN DECIBEL NOT TO SCALE DUAL ELEMENT FUSE(S) ON CENTER DEGREE OIL CIRCUIT BREAKER DEGREE CELSIUS OUTSIDE DIAMETER DEGREE FAHRENHEIT OVERHEAD DIAMETER DISC DISCONNECT PUBLIC ADDRESS DIVISION PULL BOX PUSH BUTTON SWITCH PHC DISTRIBUTION PANEL BOARD PIPE HEATING CABLE DISCONNECT SWITCH PHASE DWG PANEL DRAWING EXISTING TO REMAIN POTENTIAL TRANSFORMER ELECTRICAL CONTRACTOR REMOTE CONTROL SWITCH **ELECTRICAL** RELOCATED EXISTING ELEVATOR RECEPTACLE **EMERGENCY** REFRIGERATOR ELECTRICAL METALLIC TUBING REQUIRED ENCLOSURE ROOM **EQUIPMENT** RIGID GALVANIZED STEEL CONDUIT EXISTING SHALL BE REMOVED EXISTING SHALL BE REMOVED AND RETURN TO OWNER EXISTING SHALL BE REMOVED & RELOCATED ELECTRIC REHEAT COIL SPRINKLER ALARM PANEL ELECTRIC WATER COOLER SCHEDULE SERVICE ENTRANCE SECONDARY EXTERIOR SECT SECTION FIRE ALARM FIRE ALARM ANNUNCIATOR PANEL SOLID NEUTRAL FIRE ALARM CONTROL PANEL SPEC SPECIFICATION SPEAKER FURNISHED BY OTHERS **SPRINKLER** FCU FAN COIL UNIT SURGE PROTECTION DEVICE FUSED DISCONNECT SWITCH SWITCH SWBD **SWITCHBOARD FIXTURE** SYS SYSTEMS FI OOR SUBST SUBSTATION FULL LOAD AMPERES SWGR **SWITCHGEAR** FLEXIBLE TO BE DETERMINED FLUORESCENT TELEPHONE FIRE PROTECTION FREEZER **TEMPERATURE** FEET OR FOOT THERM THERMOSTAT TAMPER PROOF GENERAL CONTRACTOR TAMPER SWITCH GENERATOR TELEVISION GROUND FAULT INTERRUPTER TYPICAL UNIT HEATER HIGH INTENSITY DISCHARGE UNDERGROUND HORSE POWER HIGH PRESSURE CONTACT SWITCH UNLESS OTHERWISE NOTED VOLT OR VOLTAGE **VOLT AMPERE** HIGH VOLTAGE VARIABLE FREQUENCY DRIVE INSIDE DIAMETER **VOLTMETER** VAPORPROOF ISOLATED GROUNI WATT INCANDESCENT **WEATHERPROOF** INCLUDED INSTRUMENT WATERTIGHT ISOLATED POWER CENTER TRANSFORMER EXPLOSION PROOF

#### GENERAL FIRESTOPPING NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OR EXCEEDING WALL/CEILING/FLOOR FIRE ASSEMBLY RATINGS FOR ALL PENETRATIONS. CONTRACTOR SHALL VERIFY LOCATION AND RATING OF ALL FIRE ASSEMBLIES AND PROVIDE INTUMESCENT COLLARS AT ALL PENETRATIONS AND/OR FIRE RATED CAULKING AS REQUIRED.

#### **GENERAL ELECTRICAL NOTES:**

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS AND FIELD DIMENSIONS OF OTHER TRADES TO VERIFY SPACE CONDITIONS.
- MAINTAIN HEADROOM AND SPACE REQUIREMENTS. PERFORM ALL WORK IN STRICT ACCORDANCE WITH NATIONAL ELECTRICAL CODE (N.E.C.-2014) AS ADOPTED BY THE STATE OF NEW JERSEY, OSHA REQUIREMENTS, ALL FEDERAL, STATE,
- INCLUDE ALL TEMPORARY POWER AND LIGHTING, PERMIT, LICENSE, AND INSPECTION COSTS IN BID.
- 4. CONTRACTOR SHALL ISSUE IN WRITING TO ARCHITECT/ENGINEER ANY SCOPE OF WORK DISCREPANCIES AND/OR QUESTIONS PRIOR TO SUBMISSION OF BID.

AND LOCAL CODES AND ALL OWNER REQUIREMENTS.

- 5. CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS AND VISIT THE SITE TO BECOME ACQUAINTED WITH THE CONSTRUCTION, SITE AND THE EXTENT OF THE WORK PRIOR TO SUBMISSION OF BID.
- 6. COORDINATE ALL REQUIRED SHUTDOWNS WITH THE OWNER (AND UTILITY COMPANY WHERE APPLICABLE) A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE. INCLUDE OVERTIME COSTS IN BID TO PERFORM ALL SHUTDOWNS (INCLUDING SHUTDOWNS FOR AREAS WHICH MAY BE UNOCCUPIED DURING CONSTRUCTION) AFTER NORMAL WORKING HOURS AS COORDINATED WITH THE OWNER. NO EXTRA CLAIMS OR COMPENSATION SHALL BE GRANTED FOR OVERTIME COSTS ASSOCIATED WITH PERFORMING SHUTDOWNS.
- 7. SECURE ALL SUPPORTS TO BUILDING STRUCTURE BY STEEL FOR VERTICAL SUPPORT AND BY MEANS OF TOGGLE BOLTS ON HOLLOW MASONRY UNITS, EXPANSION SHIELDS IN CONCRETE OR BRICK. MACHINE SCREWS ON METAL SURFACE, AND WOOD SCREWS ON WOOD CONSTRUCTION. NAILS, RAWL OR WOOD PLUGS NOT PERMITTED. SUPPORT HORIZONTAL RUNS OR METALLIC CONDUITS NOT MORE THAN 10 FT. APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
- 8. PASS RACEWAYS OVER WATER, STEAM, OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY WITHIN 3 IN. OF STEAM OR HOT WATERS PIPES, OR APPLIANCES, EXCEPT CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 1 IN. FROM PIPE COVER.
- 9. FURNISH FISH WIRE IN EACH RACEWAY RUN OVER 10 FT IN
- WHICH WIRING IS NOT INSTALLED. 10. CUT STEEL CONDUIT ENDS SQUARE, REAM SMOOTH, PAINT MALE THREADS OF FIELD THREADED CONDUIT WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH CONDUIT COUPLINGS.
- 11. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS NOT PERMITTED.
- 12. ROUTE ALL CONDUITS AND CABLES PARALLEL OR PERPENDICULAR TO BUILDING LINES WHERE POSSIBLE.
- 13. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR
- 14. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. COMMON BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
- 15. LEAVE WIRE SUFFICIENTLY LONG TO PERMIT MAKING FINAL CONNECTIONS
- 16. WIRE COLOR CODING: PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE. CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT
- 17. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F (0°C). PROVIDE CABLE SUPPORTS FOR WIRE IN RISER CONDUITS AS REQUIRED BY CODE.

- 18. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
- 19. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHT OF ALL LIGHT FIXTURES, SWITCHES, RECEPTACLES, OUTLETS, FIRE ALARM DEVICES, VOICE/DATA DEVICES AND OTHER EQUIPMENT WITH ARCHITECTURAL DRAWINGS AND IN THE FIELD PRIOR TO ROUGH-IN. IN CENTERING OUTLETS AND LOCATION BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO
- 20. A "+" SYMBOL NEXT TO A DEVICE INDICATES A NON-STANDARD DEVICE MOUNTING HEIGHT - CONTRACTOR SHALL COORDINATE EXACT MOUNTING HEIGHT PRIOR TO ROUGH-IN.
- 21. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
- PROVIDE PULL BOXES AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE AND COORDINATE LOCATIONS WITH OTHER TRADES.
- 23. FOR EMPTY RACEWAY RUNS, PROVIDE PULL BOXES EVERY 100FT AND AS INDICATED. COORDINATE LOCATIONS WITH OTHER TRADES.
- JUNCTION AND PULL BOXES: LOCATE GENERALLY NOT EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE CONDUITS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE.
- 25. SUPPORT JUNCTION AND PULL BOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON CONDUITS
- 26. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
- 27. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION.
- 28. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCES THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION, SHOP AND RECORD DRAWINGS AND APPROVALS.
- 29. DEMONSTRATE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT.
- 30. AT COMPLETION OF PROJECT, PROVIDE NEW UPDATED TYPE WRITTEN PANELBOARD DIRECTORIES FOR ALL NEW PANELBOARDS AND ANY EXISTING PANELBOARDS THAT HAVE BEEN MODIFIED.
- 31. PROVIDE REPRODUCIBLE "AS BUILT" DRAWINGS INDICATING AS-INSTALLED CONDITIONS AFTER COMPLETION OF THE INSTALLATION.

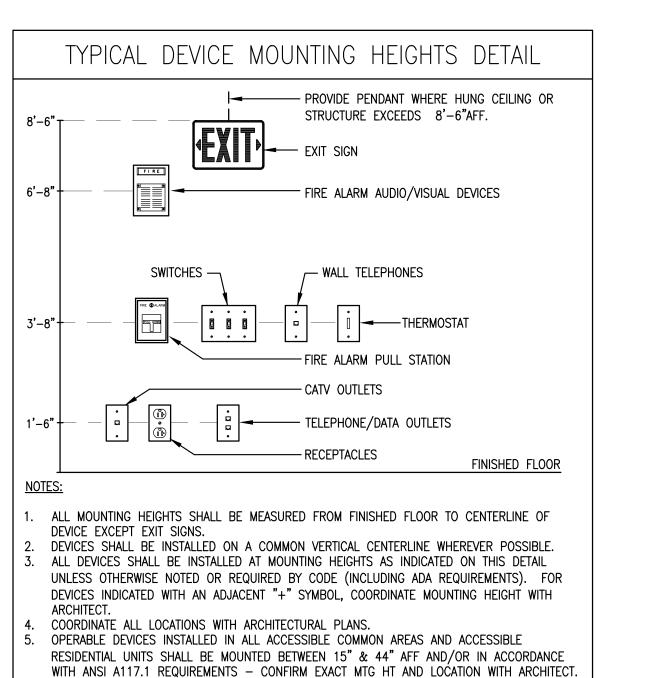
32. THE CONTRACTOR SHALL GUARANTEE AND SERVICE THE ENTIRE

THE FINAL ACCEPTANCE OF THE INSTALLATION.

INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF

- 33. THE CONTRACTOR SHALL, DURING THE PERIOD OF THE GUARANTEE, REPLACE OR REPAIR AT HIS OWN EXPENSE ANY PIECE OF EQUIPMENT AND/OR MATERIAL WHICH IS FOUND TO BE DEFECTIVE. THE REPLACEMENT OR REPAIR SHALL BE DONE AS SOON AS NOTIFIED BY THE ENGINEER OR AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ALSO REPAIR ALL DAMAGE TO SURROUNDING WORK CAUSED BY THE FAILURE, REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT.
- 34. THE CONTRACTOR SHALL COORDINATE LOCATION(S) OF ALL PLENUM RATED SPACE(S) WITH THE MC. EC SHALL PROVIDE METAL CONDUIT OR MC CABLE WITHIN PLENUM RATED SPACE(S).
- 35. THESE DRAWINGS HAVE BEEN DESIGNED AND ENGINEERED BASED ON VISUAL INSPECTIONS OF THE EXISTING BUILDING AND INFRASTRUCTURE PRIOR TO ANY DEMOLITION. SOME ASSUMPTIONS HAVE BEEN MADE AS TO ACTUAL CONSTRUCTION MATERIALS, AND METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL ACTUAL FIELD CONDITIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY

DISCREPANCIES, CONFLICTS, AND UNFORESEEN CONDITIONS.





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# Joseph's House

Project Address: 555 Atlantic Avenue Camden, NJ 08105

Sheet Title:

#### **ELECTRICAL COVERSHEET**

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK: my party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represer that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these

hereby certify that the documents are suitable for their intended purposes unless noted in specific written exception beforehand. Warning: Actual conditions may vary from conditions shown on this drawing. Confirm all information in the field before proceeding with any work and notify the Architect

documents must, prior to beginning work, submit all

the Architect in writing. All parties who begin work

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As indicated

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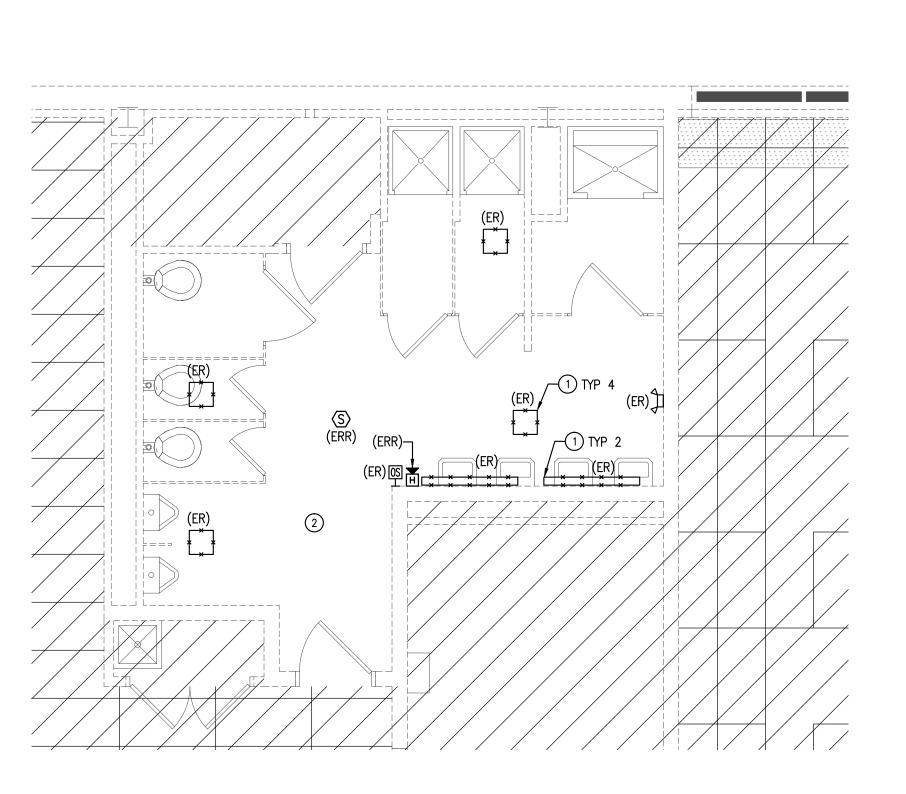
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Scale:

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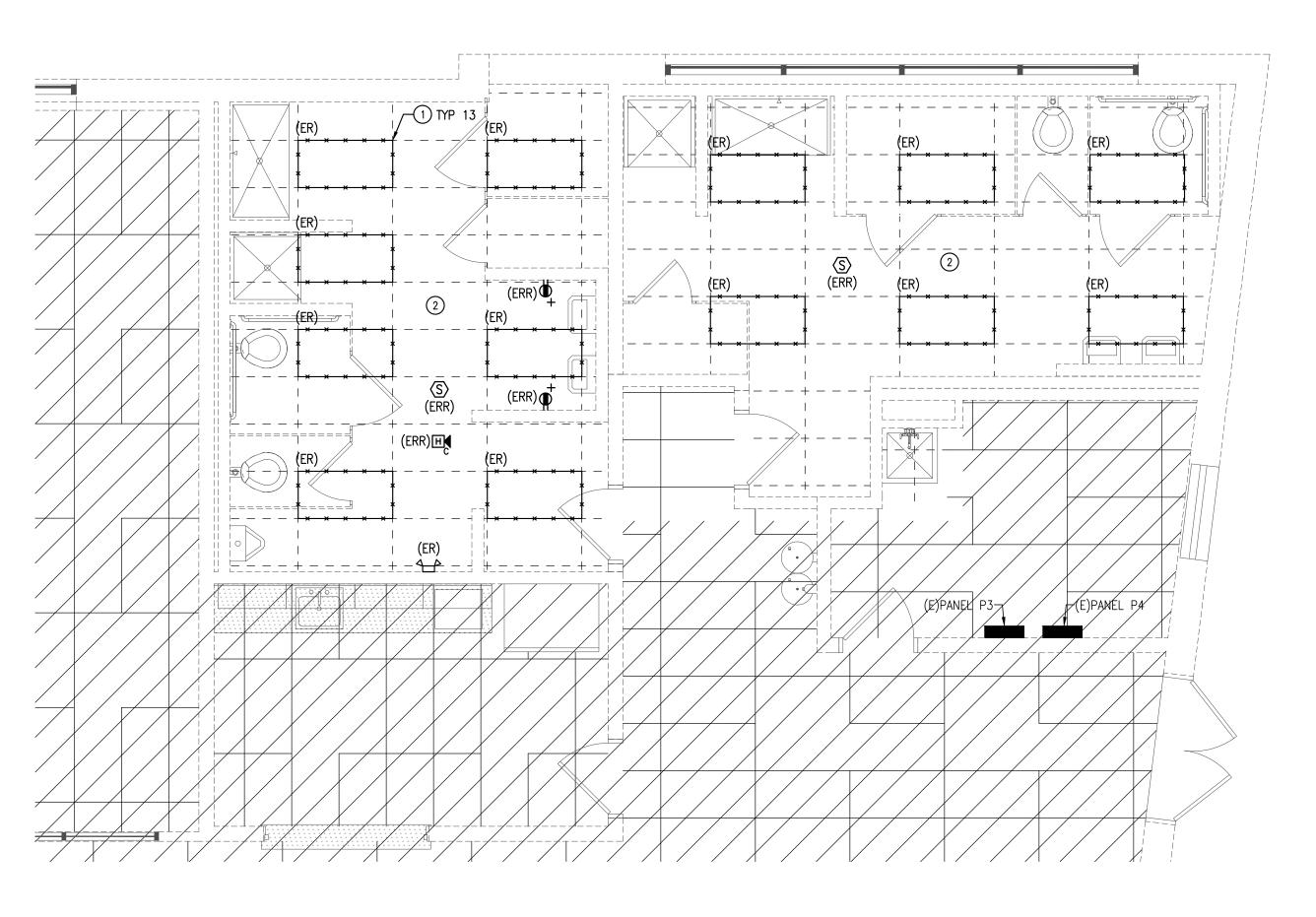
ELECTRICAL NIGHT SIDE MENS
TOILET ROOM DEMOLITION PLAN

#### ELECTRICAL DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH RELOCATION AND REMOVAL OF ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN ISSUES WHEN CONCEALED WORK HAS BEEN EXPOSED. NO ADDITIONAL CLAIMS FOR WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, UNLESS, IN CERTAIN CASES, CONSIDERED JUSTIFIABLE BY THE
- THE CONTRACTOR SHALL PERFORM REMOVAL AND DEMOLITION WORK WITH MINIMAL INTERFERENCE WITH EXISTING ELECTRICAL SYSTEMS. ALL AFFECTED ELECTRICAL SYSTEMS SHALL BE RESTORED AND RECONNECTED.
- 3. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR, PAINT OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGIANL CONDITION.
- 4. THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES, ETC., INCLUDING ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO PANELBOARD.
- 5. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ELECTRICAL AND ARCHITECTURAL LAYOUTS IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE POWER SUPPLY SOURCE.
- 6. EXISTING PANELBOARD DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE CHANGED TO REFLECT THE BRANCH CIRCUIT WIRING MODIFICATIONS.
- 7. ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS SHALL BE PROVIDED WITH MATCHING BLANK COVERS.
- 8. ALL RACEWAYS WHICH ARE EXPOSED AS A RESULT OF NEW WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
- 9. PORTIONS OF FEEDER RUNS THAT SHALL BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING FEEDER EXTENSIONS IN ALL ASPECTS INCLUDING BUT NOT LIMITED TO CABLE TYPE, CONDUIT SIZES, CONDUCTOR AMPACITY, ETC.
- 10. AS DIRECTED BY THE OWNER, ALL EXISTING EQUIPMENT AND MATERIAL IN USABLE CONDITION THAT IS REMOVED UNDER THIS CONTRACT SHALL REMAIN THE PROPERTY OF THE OWNER OR BE DISPOSED BY THE ELECTRICAL CONTRACTOR.
- 11. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW CLOSELY THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
- 12. THE SHUTDOWN OF EXISTING BUILDING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE APPROPRIATE ARRANGEMENTS AT LEAST 14 DAYS PRIOR TO A SHUTDOWN.

#### KEY NOTES:

- BRANCH CIRCUIT SERVING (ER)LIGHTING SHALL REMAIN IN
  PLACE FOR EXTENSION TO (N)LIGHTING. SEE DWG E1.0 FOR
  ADDITIONAL INFORMATION.
- 2 DISCONNECT AND REMOVE ALL LIGHTING CONTROLS LOCATED IN THIS SPACE



ELECTRICAL DAY SIDE TOILET ROOM DEMOLITION PLAN

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



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itle:

# ELECTRICAL DEMOLITION PLAN

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DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK:

Any party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts, scope of work, and suitability for constructing the building. All parties relying on these documents represent that they have expertise in the area of their responsibility and are knowledgeable regarding industry standards, product requirements and code requirements and therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work

hereby certify that the documents are suitable for their intended purposes unless noted in specific written exception beforehand.

Warning: Actual conditions may vary from conditions shown on this drawing. Confirm all information in the field before proceeding with any work and notify the Architect

in writing if a variation is discovered.

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Date	Comments	
06/09/2020	ISSUED FOR BID	
		_

BHA Job Number: 20-004

Scale: As indicated

Drawn By: KJC

Checked By: KHP

Approved By: JAM

FD1 0

LIGHT FIXTURE SCHEDULE									
TYPE	DESCRIPTION	MANUFACTURER/	LAMP DAT		·ΤΑ	FIXT	FIXT	MOUNTING	REMARKS
'''	DESCRIPTION	CATALOG #	QTY	TYPE	WATTS	WATTS	VOLTS	MICOIVIING	MINIMI
A	2 X 4 LED FLAT PANEL W/ SURFACE MOUNTING	ENVOY LIGHTING CAT#ELEDPNL24-35W-3 KMV-DLCPRM-BES	INCL	LED	36	36	UNV	SURFACE	PROVIDE W/ CAT#SMK SURFACE MOUNT KIT
В	2 X 2 LED FLAT PANEL W/ SURFACE MOUNTING	ENVOY LIGHTING CAT#ELEDPNL22-32W-3 KMV-DLCPRM-BES	INCL	LED	32	32	UNV	SURFACE	PROVIDE W/ CAT#LEDSMKT-22 SURFACE MOUNT KIT
EM	LED EMERGENCY LIGHT	COMPASS CAT#CU2	INCL	LED	1	2	UNV	SURFACE	_ _

LIGH	HTING CONTROL	DEVICE SCHEDULE
SYMBOL	WATTSTOPPER CAT #	NOTES
©S]⊣	DW-100	LINE-VOLTAGE WALL-MTD DUAL TECHNOLOGY W/MANUAL CONTROL BUTTON. COLOR BY ARCHITECT
DOSH	DW-311	LINE-VOLTAGE WALL-MTD DUAL TECHNOLOGY W/MANUAL CONTROL BUTTON AND 0-10V DIMMING CAPABILITIES. COLOR BY ARCHITEC
DR[0S]-I	DW-200	DUAL-RELAY LINE-VOLTAGE WALL-M DUAL TECHNOLOGY W/MANUAL CONTR BUTTON. COLOR BY ARCHITECT
L OSH	DW-100-24	LOW-VOLTAGE WALL-MTD DUAL TECHNOLOGY W/MANUAL CONTROL BUTTON. COLOR BY ARCHITECT
OS	DT-355	LINE VOLTAGE CLG MTD. DUAL—TECH SENSOR. COLOR BY ARCHITECT
L OS	DT-300	LOW VOLTAGE CLG MTD. DUAL-TECH SENSOR. COLOR BY ARCHITECT
<b>\</b> SH	DW-103	LINE-VOLTAGE WALL-MTD DUAL TECHNOLOGY W/MANUAL CONTROL BUTTON. COLOR BY ARCHITECT. ADJUST DIP SWITCH FOR MANUAL C "VACANCY "OPERATION
D <u>VS</u> H	DW-311	LINE-VOLTAGE WALL-MTD DUAL TECHNOLOGY W/MANUAL CONTROL BUTTON AND 0-10V DIMMING CAPABILITIES. COLOR BY ARCHITECT ADJUST DIP SWITCH FOR MANUAL C "VACANCY "OPERATION
L WS	DT-300	LOW VOLTAGE CLG MTD. DUAL—TECH SENSOR. COLOR BY ARCHITECT
PP	BZ-250	UNIVERSAL POWER PACK TO FEED LOW-VOLTAGE VACANCY SENSORS. S POWER PACK TO MANUAL ON OPERAT
1 <sub>RC</sub>	LMRC-211	SINGLE RELAY 0-10V CEILING MOUN' DIMMING ROOM CONTROLLER
2 RC	LMRC-212	DUAL-RELAY 0-10V CEILING MOUNT DIMMING ROOM CONTROLLER
3 RC	LMRC-213	3-RELAY 0-10V CEILING MOUNTED DIMMING ROOM CONTROLLER
R VS	LMDC-100	LOW VOLTAGE CLG MTD. DUAL—TEC ROOM CONTROLLER SENSOR. SET FO MANUAL—ON OPERATION COLOR BY ARCHITECT.
R OS	LMDC-100	LOW VOLTAGE CLG MTD. DUAL—TEC ROOM CONTROLLER SENSOR. SET FO AUTO—ON OPERATION FOR 50%. COL BY ARCHITECT.
	LVSW-101	LOW VOLTAGE SWITCH FOR CONTROL POWER PACK BZ-250
S <sup>LV</sup>	LMSW-100	LOW VOLTAGE SWITCH FOR CONTROL ROOM CONTROLLER. PROVIDE # OF BUTTONS AS REQUIRED
S <sup>LV,D</sup>	LMDM-101	DIMMING LOW VOLTAGE SWITCH FO CONTROL OF ROOM CONTROLLER
ELCU	ELCU-200	EMERGENCY LIGHTING CONTROL UN
R PS	LMLS-400	SINGLE ZONE SWITCHING AND DIMMII CLOSED LOOP ROOM CONTROLLER. PHOTOSENSOR FOR CONTROL OF RO CONTROLLER.

NOTES: WIRE ALL LIGHTING CONTROL DEVICES & POWER PACKS PER MANUFACTURER'S INSTRUCTIONS. MAKE ALL SETTING ADJUSTMENTS TO OCCUPANCY/VACANCY SENSORS NECESSARY FOR PROPER OPERATION PER MANUFACTURER'S INSTRUCTIONS AND OWNER'S PREFERENCES.

CONTROLLER.

#### DRAWING NOTES:

- 1. CONFIRM ALL DEVICE AND EQUIPMENT LOCATIONS WITH THE ARCHITECT AND OWNER PRIOR TO ANY PURCHASE OR ROUGH—IN.
- 2. CONFIRM ALL POWER OVERCURRENT PROTECTION, WIRING AND DEVICE/DISCONNECT REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ROUGH—IN AND REPORT ANY DISCREPANCY WITH THE DESIGN TO THE ARCHITECT AND OWNER FOR RESOLUTION.
- 3. PROVIDE ALL DISCONNECT SWITCHES AS HEAVY—DUTY TYPE RATED WITH VOLTAGE AS REQUIRED AND AMPS, FUSING AND POLES AS INDICATED. DISCONNECT SWITCHES FOR INTERIOR EQUIPMENT SHALL BE NEMA 1 RATED UON. DISCONNECT SWITCHES FOR EXTERIOR EQUIPMENT SHALL BE WEATHERPROOF LOCKABLE HEAVY DUTY TYPE, NEMA 3R UON.
- 4. COORDINATE ALL MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO ANY PURCHASE OR ROUGH-IN.
- 5. CONTRACTOR SHALL CLOSELY COORDINATE AND ADJUST ALL HVAC EQUIPMENT LOCATIONS WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH—IN SUCH THAT LIGHTING LAYOUT REMAINS AS INDICATED.
- 6. THESE DRAWINGS HAVE BEEN MADE BASED ON A VISUAL INSPECTION OF THE EXISTING SURFACES. SOME ASSUMPTIONS HAVE BEEN MADE AS TO ACTUAL CONSTRUCTION, MATERIALS, AND METHODS. THE INSTALLER SHALL BE RESPONSIBLE FOR VERIFYING ALL ACTUAL FIELD CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, CONFLICTS, AND UNFORESEEN CONDITIONS.
- EC SHALL FIRE CAULK ALL EXISTING AND NEW CONDUIT PENETRATIONS IN FIRE WALLS WITHIN CONTRACT AREA TO MAINTAIN FIRE WALL RATING.
- 8. ALL WORK PROVIDED ON EXISTING FIRE ALARM SYSTEM SHALL BE PROVIDED BY OWNERS SERVICE COMPANY TO ENSURE PROPER OPERATION OF SYSTEM WHILE NOT VOIDING ANY EXISTING WARRANTY OR MAINTENANCE CONTRACTS. PROVIDE NEW FIRE ALARM DEVICES, WIRING AND APPURTENANCES AS INDICATED AND REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. NEW FIRE ALARM DEVICES SHALL BE FULLY COMPATIBLE WITH AND UL LISTED FOR OPERATION WITH THE EXISTING FIRE ALARM SYSTEM. ALL CABLING AND SPLICES SHALL BE IN ACCORDANCE WITH NEC 760 - COORDINATE ALL PLENUM SPACES WITH ARCHITECT & GC. TIE FIRE ALARM DEVICES INTO EXIST BUILDING FIRE ALARM SYSTEM AND PROVIDE ALL DOCUMENTATION/SHOP DRAWINGS, PROGRAMMING/TESTING AND ANY OTHER WORK/EQUIPMENT/INFORMATION IN ACCORDANCE WITH ALL APPLICABLE CODES AND TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- INVERTERS TO LOCAL CONSTANT HOT EMERGENCY FEED AHEAD OF ANY SWITCHING UON.

9. CONNECT ALL EXIT SIGNS, EMERGENCY BALLASTS AND

- 10. LIGHTING CONTROLS SHALL BE TESTED BY THE EC IN ACCORDANCE WITH ASHRAE 90.1 SECTION 9.4.3.
- 11. UON AS (E) OR (RE) ALL EQUIPMENT AND DEVICES SHOWN ARE CONSIDERED TO BE NEW.

#### KEY NOTES:

- 1 FEED NEW LIGHTING IN KIND FROM EXISTING CIRCUIT PREVIOUSLY SERVING LIGHTING IN THIS AREA MADE SPARE VIA DEMOLITION. SEE DWG ED1.0 FOR ADDITIONAL INFORMATION.
- 2 PROVIDE NEW 20A/1P CB IN EXISTING PANEL P4 AND FEED NEW HAND DRYER VIA 2#12 + 1#12G WIRING IN 3/4"
- (3) PROVIDE NEW 20A/1P CB IN EXISTING PANEL P1 AND FEED NEW HAND DRYER VIA 2#12 + 1#12G WIRING IN 3/4" CONDUIT.
- 4 PROVIDE NEW 20A/1P CB IN EXISTING PANEL P4 AND FEED NEW RECEPTACLE(S) VIA 2#12 + 1#12G WIRING IN 3/4"
- 5) PROVIDE NEW 20A/1P CB IN EXISTING PANEL P1 AND FEED NEW RECEPTACLE VIA 2#12 + 1#12G WIRING IN 3/4"
- 6 PROVIDE NEW 20A/1P CB IN EXISTING PANEL P4 AND FEED AUTOMATIC SINK TRANSFORMERS, SOAP DISPENSERS AND FLUSH VALVES (AS APPLICABLE) VIA 2#12 + 1#12G WIRING IN 3/4" CONDUIT. COORDINATE FINAL REQUIREMENTS WITH PLUMBING CONTRACTOR PRIOR TO ROUGH—IN AND WIRE PER THE MANUFACTURER'S INSTRUCTIONS.
- 7 PROVIDE NEW 20A/1P CB IN EXISTING PANEL P1 AND FEED AUTOMATIC SINK TRANSFORMERS AND FLUSH VALVES VIA 2#12 + 1#12G WIRING IN 3/4" CONDUIT. COORDINATE FINAL REQUIREMENTS WITH PLUMBING CONTRACTOR PRIOR TO ROUGH—IN AND WIRE PER THE MANUFACTURER'S INSTRUCTIONS.
- 8 PROVIDE NEW 20A/1P CB IN EXISTING PANEL P4 AND FEED EF-5 VIA 2#12 + 1#12G WIRING IN 3/4" CONDUIT.



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# ELECTRICAL FLOOR PLAN

Sea

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK:

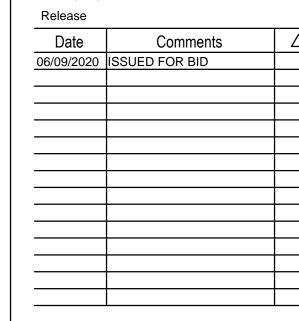
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hereby certify that the documents are suitable for

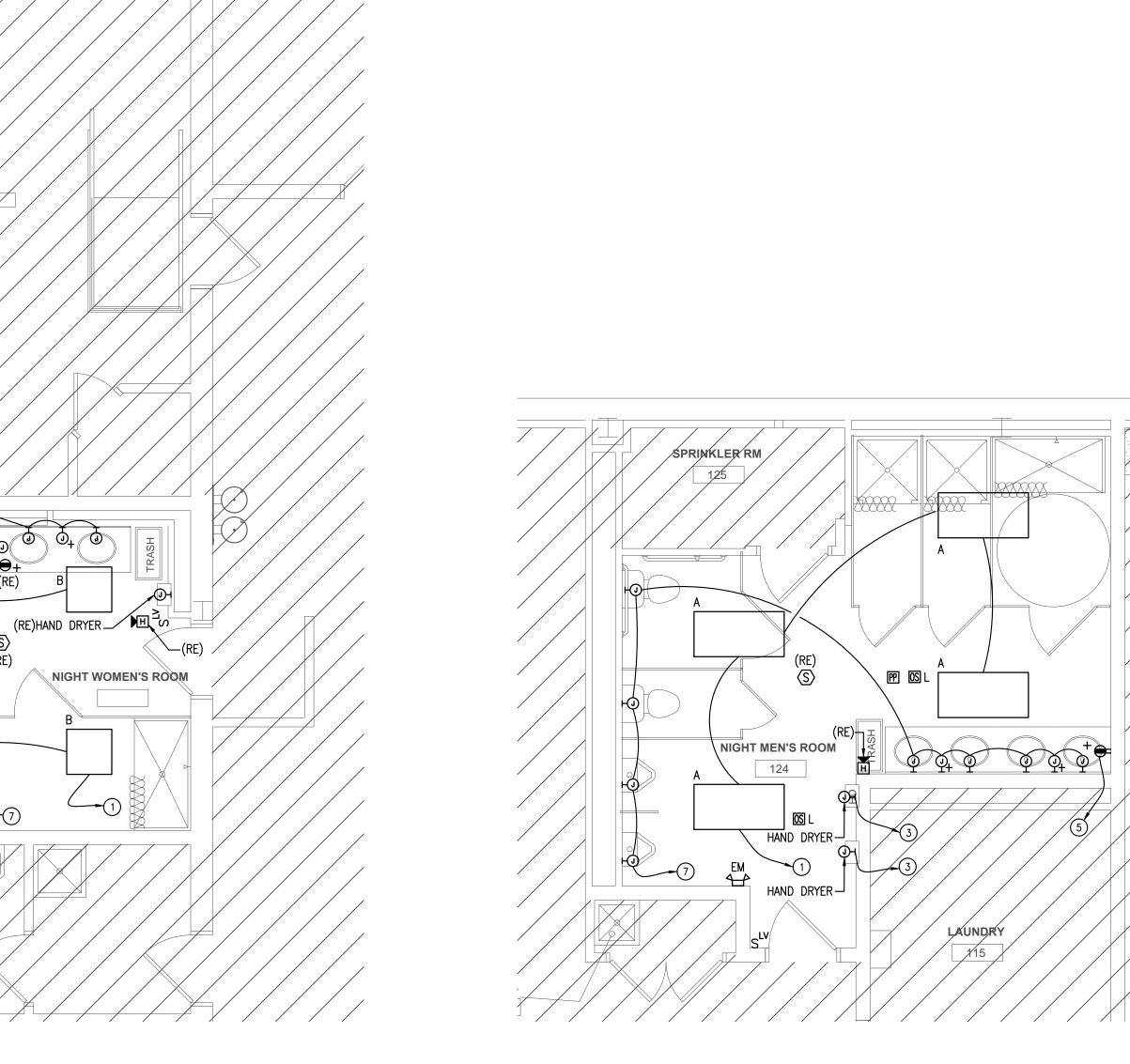
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	BHA Job Number:	20-004
	Scale:	As indicated
	Drawn By:	KJC
	Checked By:	KHP
	Approved By:	JAM

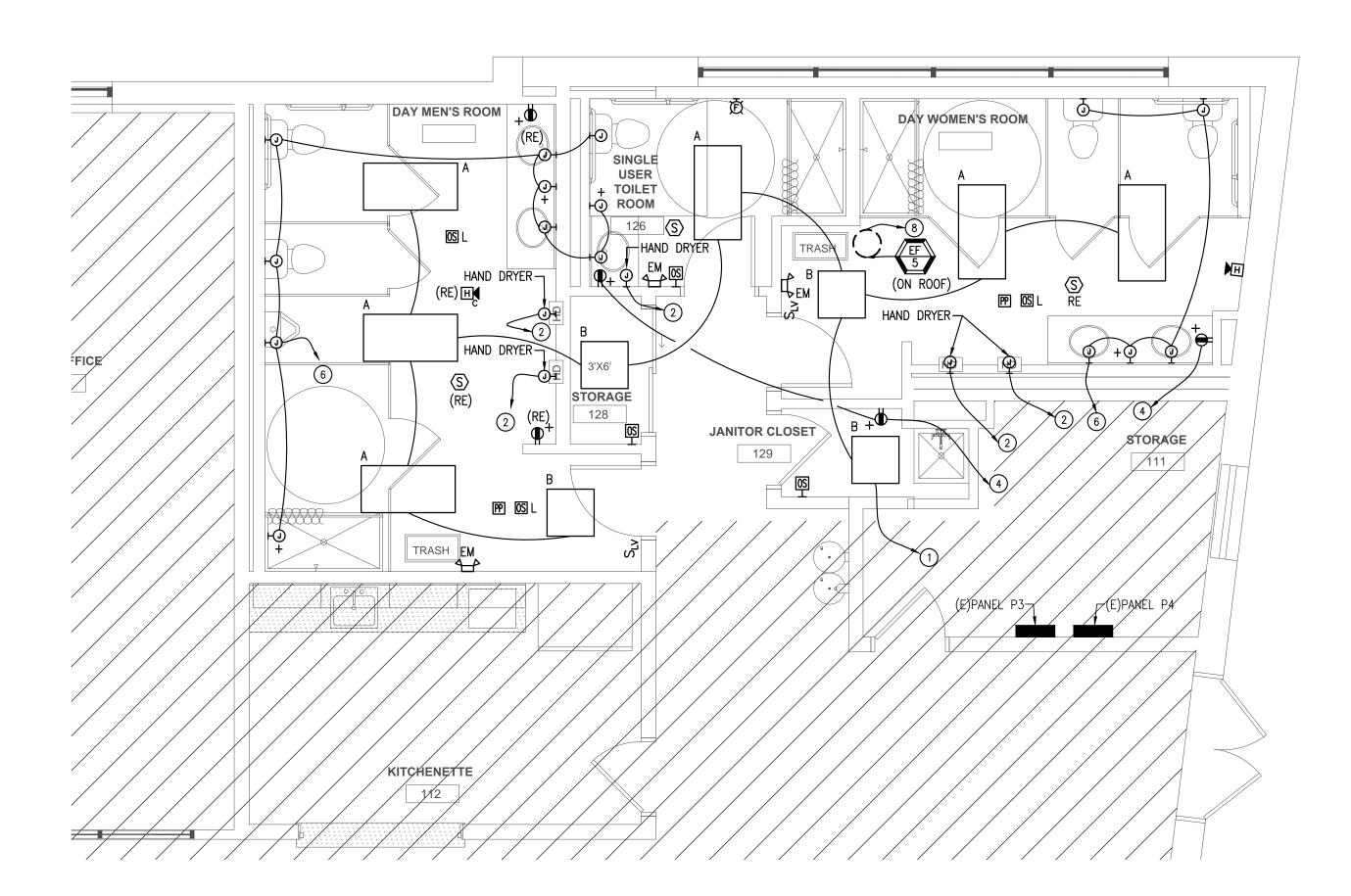
Sheet No.

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ELECTRICAL NIGHT SIDE WOMENS XTOILET ROOM DEMOLITION PLAN SCALE: 1/4" = 1'-0"





ELECTRICAL DAY SIDE TOILET ROOM DEMOLITION PLAN

#### ELECTRICAL SPECIFICATIONS

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS
- B. ALL APPLICABLE CODES, LAWS, REGULATIONS AND UTILITY REQUIREMENTS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER. PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION
- SHALL BE CORRECTED BY THE CONTRACTOR. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE

MOVED THROUGH ALL AREAS

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM
- AND SPACE CONDITIONS. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT
- CHANGES, WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT APPROVAL. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE
- AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
- DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING. EXTERIOR SPACES AND ADJACENT STREETS. SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR
- J. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL. ALL PENETRATIONS THROUGH NEW AND EXISTING RATED FIRE AND SMOKE PARTITIONS AND/OR FLOORS SHALL BE COMPLETELY SEALED USING MATERIALS AND METHODS DESCRIBED IN SUBSEQUENT "FIRE STOPPING" SPECIFICATIONS SECTIONS.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE. ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- M. ALL WORK SHALL BE DONE WHEN AND AS DIRECTED, IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- N. ALL WORK SHALL BE PERFORMED AND INSTALLED IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH THE GUIDELINES OF NECA STANDARD 1-2015 "GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION".
- THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- P. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS. WALLS. PARTITIONS AND OTHER MATERIALS IN TH EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL
- Q. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS
- SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR: EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING CONDUIT (SIZES, CLEARANCES, ETC) AND CONDITIONS.
- INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL. SCOPE OF WORK
- SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES, UTLITY REQUIREMENTS AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED
- THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE
- DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE. FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION AND UTILITY COMPANIES. OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING. ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

DEFECTS OCCUR. THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES

INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY

- SHOP DRAWINGS
- PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
- PROJECT NAME AND LOCATION
- 2) NAME OF ARCHITECT AND ENGINEER
- ITEM IDENTIFICATION
- 4) APPROVAL STAMP OF PRIME CONTRACTOR C. SUBMISSIONS
- SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT THREE PRINTS TO THE ARCHITECT. THE ARCHITECT WILL FORWARD TWO PRINTS TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) DISCONNECT SWITCHES
- 2) CIRCUIT BREAKERS
- WIRE AND CABLE
- 5) WALL SWITCHES 6) INSERTION RECEPTACLES
- 7) TIME SWITCHES
- 8) LIGHTING CONTROLS 9) SURFACE METAL RACEWAY
- 10) LIGHT FIXTURES
- 11) FIRE ALARM SYSTEM (PER 2015 IFC 907.1.2) 4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED
- THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- REPRODUCIBLE "AS-BUILT" DRAWINGS PREPARED IN COMPUTER AIDED DRAFTED (AUTO CAD) FORMAT SHALL BE PROVIDED TO THE OWNER INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. A COMPLETE "AS-BUILT" DRAWING FILE SHALL BE PROVIDED TO THE OWNER AFTER COMPLETION OF THE INSTALLATION. GENERAL PROVISIONS FOR ELECTRICAL WORK
- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- B. DEFINITIONS "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR
- SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED. 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED
- ACCESSORIES. "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS. "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED
- "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT AS DETERMINED BY THE ENGINEER AND ARCHITECT.
- THE DRAWING SHOWS THE APPROXIMATE LOCATIONS OF ALL APPARATUS, THE FXACT LOCATIONS OF WHICH ARE SUBJECT TO THE APPROVAL OF THE OWNER WHO RESERVES THE RIGHT TO MAKE ANY REASONABLE CHANGES IN THE LOCATION INDICATED WITHOUT EXTRA COST. WHILE THE GENERAL RUN OF CONDUIT AND CABLES ARE INDICATED ON THE DRAWING, IT IS NOT INTENDED THAT THE EXACT ROUTING OR LOCATIONS OF CONDUIT AND CABLES BE DETERMINED THEREFROM.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK TO CONFORM TO THE STRUCTURE, MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL TRADES. WIRE ALL FIXTURES, DEVICES, ETC., TO RESPECTIVE PANEL AND CONTROLS AS SHOWN ON PLANS IN SYMBOL FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP AND REMOVAL FROM
- THE SITE OF RESULTING DEBRIS UPON COMPLETION OF WORK UNDER THIS PROVIDE SEPARATE SYSTEMS AND ENCLOSURES FOR 120/208 VOLT POWER AND CONTROL WIRING AND FOR EMERGENCY AND NORMAL POWER. COMMON PULL

BOXES AND JB'S ARE NOT ACCEPTABLE

- LOCATIONS INDICATED FOR LOCAL WALL SWITCHES/CONTROLS ARE SUBJECT TO RELOCATIONS. AT OR NEAR DOORS INSTALL SWITCH INSIDE OPPOSITE HINGE VERIFY FINAL DOOR HINGE LOCATION IN FIELD PRIOR TO SWITCH OUTLET
- HEIGHTS OF OUTLET FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS SHALL CONFORM TO "ADA" CODE REQUIREMENTS UNLESS OTHERWISE NOTED. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH
- SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND. PROVIDE BARRIERS BETWEEN NORMAL ONLY AND NORMAL/EMERGENCY SWITCHES INSTALLED WITHIN A COMMON OUTLET BOX.
- 10) PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE O BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.
- TEMPORARY LIGHT AND POWER PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING HOURS OF ALL TRADES. OWNER WILL PAY FOR COST OF ENERGY. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.
- F. QUALITY ASSURANCE QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- ON COMPLETION OF THE WORK, THE ENTIRE WIRING SYSTEM SHALL BE ENTIRELY FREE FROM GROUNDS, SHORT CIRCUITS, OPENS, OVERLOADS AND IMPROPER VOLTAGES AND THOROUGH TEST SHALL BE MADE. FURNISH ALL LABOR AND MATERIALS AND INSTRUMENTS.
- GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. 4) CURRENT CHARACTERISTICS
- a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED
- DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL. HEIGHTS OF OUTLETS
- SEE TYPICAL DEVICE MOUNTING HEIGHT DETAIL ON DRAWINGS. b. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR: (1) RECEPTACLES AND TELEPHONES: 1 FT.-6 IN. UNLESS NOTED
- (2) WALL SWITCHES/CONTROLS: 4 FT.-0 IN.
- (3) WALL FIXTURES: 7 FT.-0 IN. UNLESS NOTED OTHERWISE (4) FIRE ALARM STROBE LIGHTS: 6 FT.-8 IN. OR 6 IN. BELOW CEILING (WHICHEVER IS LOWER)
- (5) FIRE ALARM GONGS AND HORNS: 6 FT.—8 IN. OR 6 IN. BELOW CEILING (WHICHEVER IS LOWER)
- (6) FIRE ALARM STATIONS: 4 FT.-0 IN. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS
- NOTED OR DIRECTED. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND
- CONFIRMING ALL MOUNTING HEIGHTS WITH ARCHITECT AND ARCHITECTURAL F. PRODUCT DELIVERY, STORAGE AND HANDLING
  - MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.
- G. MATERIALS NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH. CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
  - CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT
- INSERTS AND SUPPORTS a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
  - (1) SINGLE ROD: SIMILAR TO GRINNELL FIG. 281. (2) MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END
  - CAPS AND CLOSURE STRIPS. (3) CLIP FORM NAILS FLUSH WITH INSERTS.
  - (4) MAXIMUM LOADING 75 PERCENT OF RATING.

- b. STRUT: GALVANIZED U-CHANNEL (SIMILAR TO UNISTRUT OR KINDORF)
- (1) COLD FORMED FROM LOW-CARBON STEEL WITH HOT-DIPPED GALVANIZED FINISH (ASTM 653 33)
- (2) MAXIMUM LOADING 75 PERCENT OF RATING
- (3) ASSOCIATED FITTINGS (SPRING NUTS, PIPE STRAPS, ETC.) SHALL
- BE BY SAME MANUFACTURER AS STRUT. (4) FILE ALL CUT ENDS SMOOTH AND APPLY COLD GALVANIZING
- COMPOUND SPRAY (ZRC COLD GALVANIZING COMPOUND SPRAY OR SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS,
- STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES
- WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.
- H. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPEI GALVANIZED OR DIPPED IN ZINC CHROMATE FOR: OUTLET BOXES, JUNCTION BOXES CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. RED LEAD OR ZINC CHROMAT WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC CHROMATE PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK
- BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES/CONTROLS, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT, PRIOR TO
- K. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION. 6. DEMOLITION
- A. "SELECTIVE DEMOLITION": IS HEREBY DEFINED TO INCLUDE BUT IS NOT NECESSARILY LIMITED TO THE REMOVAL OF THE FOLLOWING EXISTING MATERIALS, ITEMS AND REFER TO ELECTRICAL DEMOLITION PLAN AND RELATED NOTES FOR EXTENT OF
- REFER TO EXISTING DRAWINGS AND SITE CONDITIONS FOR ALL REMOVAL OF WORK NECESSARY FOR COMPLETION OF NEW WORK AS SHOWN. EACH BIDDER SHALL CAREFULLY EXAMINE THE PREMISES AND DOCUMENTS DURING THE BIDDING PERIOD AND ASCERTAIN THE EXTENT OF REMOVAL OF EXISTING WORK. IF THE CONTRACTOR NOTES ADDITIONAL WORK, CALL IT TO THE ATTENTION OF THE ARCHITECT PRIOR TO SUBMITTING BID. BY SUBMITTING A BID. THE CONTRACTOR WILL HAVE DEEMED TO PROVIDE SUCH EXAMINATION. TO HAVE ACCEPTED SUCH CONDITIONS, AND TO HAVE MADE ALLOWANCES IN PREPARING
- 3) ITEMS OF SALVAGE SHALL BE CAREFULLY REMOVED WITHOUT DAMAGE; NAILS AND OTHER FASTENERS REMOVED THAT ARE NOT INTEGRAL TO THEIR CONSTRUCTION; AND STORED AND PROTECTED AT LOCATIONS DIRECTED BY THE OWNER. IDENTIFY AND TAG ALL SALVAGE MATERIALS REGARDING LOCATION IN EXISTING BUILDING AND RELATIONSHIP OF PARTS.
- ALL DEMOLISHED AND/OR REMOVED MATERIALS NOT REQUIRED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF IN A LEGAL MANNER, OFF-SITE.
- 5) CARE MUST BE TAKEN NOT TO DISTURB EXISTING WIRING, WHICH IS NOT AFFECTED BY DEMOLITION. RESTORE ALL CIRCUITS AND EQUIPMENT DISRUPTED OR DISTURBED BY THE REMOVAL OF ONLY PARTS OF EXISTING SYSTEMS. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AFFECTED BY THIS WORK. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. 6) PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO
- INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. CONNECT NEW WORK TO EXISTING IN A NEAT AND APPROVED MANNER RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO
- 8) ALL RACEWAYS TO BE ABANDONED SHALL BE REWORKED AS DEFINED WITHIN THE DEMOLITION NOTES. WHERE IT IS IMPRACTICAL TO REMOVE RACEWAY BACK TO SOURCE, DISCONNECT WIRING AT LOAD (EQUIPMENT) AND AT LINE SIDE, CUT AND CAP, FLUSH TO SURFACE. REMOVE CONDUCTORS FROM EXISTING RACEWAYS TO BE REWIRED. CLEAN RACEWAY AS REQUIRED PRIOR TO REWIRING.

9) ALL REQUIRED WORK FOR TIE-IN TO THE EXISTING EQUIPMENT SHALL BE

INSTALLATION OF THE ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME

- ACCOMPLISHED AFTER HOURS, THE EXACT DAY AND TIME SHALL BE DIRECTED BY OWNER, AND AT NO ADDITIONAL CHARGE. A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF THE EXISTING AND NEW CONSTRUCTION WORK, WHICH MAY BE REQUIRED FOR THE PROPER
- MATERIALS, WORKMANSHIP, AND FINISH, AND SHALL ACCURATELY MATCH ALL CORE BORING OF CONCRETE FLOORS AND/OR WALLS IF REQUIRED, IS THE
- RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. A. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EQUIPMENT WITH ARCHITECTURAL DRAWINGS. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS. ALLOW FOR OVERHEAD PIPES. DUCTS. AND MECHANICAL EQUIPMENT. VARIATIONS IN FIRE PROOFING AND PLASTERING. WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS, AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT
- EXPENSES TO THE OWNER EQUIPMENT FURNISHED BY OTHERS
- A. THE CONTRACTOR SHALL FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON DRAWINGS. COORDINATE WITH ALL OTHER TRADES OR DETAILS FOR INSTALLATION. THE TERM "WIRING" AS USED HERE-IN, INCLUDES, BUT IS NOT LIMITED TO, FURNISHING AND INSTALLING CONDUIT, WIRE, JUNCTION BOXES, DISCONNECTS AND MAKING CONNECTIONS. CONTRACTOR SHALL CHECK ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT TO BE INSTALLED BY OTHERS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WIRING AND NECESSARY ELECTRICAL ADJUSTMENTS TO EQUIPMENT TO CONFORM TO SPECIFIED REQUIREMENTS OF THE EQUIPMENT.
- LOW-VOLTAGE DISTRIBUTION EQUIPMENT A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS,
- PANELS AND TRANSFORMERS. B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS C. DISCONNECT SWITCHES SHALL BE FUSED OR NON-FUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NON-FUSED. LOAD BREAK. HAVING MAXIMUM RATINGS OF 30 AMP AT 600 VOLTS IN AN ALUMINUM NEMA 1 ENCLOSURE UON. TWO-POLE SWITCHES SHALL BE SIMILAR TO HUBBELL #HBL1372D. THREE-POLE SWITCHES SHALL BE SIMILAR TO HUBBELL
- #HBI 1379D. 1) KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE-QUICK-BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO SQUARE D CLASS 3110. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.
- D. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED RIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT TRIPPING, OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS,
- UNLESS OTHERWISE NOTED: 1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE. 2) 240 VOLTS, 100-AMP FRAME: 18,000 AMPS, 2 AND 3 POLES.
- 3) 240 VOLTS, 200-AMP FRAME: 50,000 AMPS, 2 AND 3 POLES WITH INTERCHANGEABLE TRIP. 4) CIRCUIT BREAKERS INSTALLED IN EXISTING PANEL BOARDS, SHALL BE OF THE SAME MANUFACTURER, TYPE AND A.I.C. RATING AS PRESENTLY IN USE. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO NEW OR
- EXISTING PANELS. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT.—6 IN. FROM FLOOR TO TOP SWITCH UNIT. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.
- G. PROVIDE DURABLE FIELD MARKING(S) LABEL INDICATING THE MAXIMUM AVAILABLE FAULT CURRENT AND THE DATE THE FAULT-CURRENT CALCULATION WAS PERFORMED IN COMPLIANCE WITH 110.24. MAINTAIN REQUIRED DEDICATED WORKING SPACE AROUND AND IN FRONT OF SERVICE EQUIPMENT.
- a. AN EQUIPMENT-GROUNDING CONDUCTOR, COMMONLY DESCRIBED AS A "GREEN WIRE" SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS PROTECTED BY OVERCURRENT DEVICES. "GREEN GROUND" WIRE SHALL ALSO BE PROVIDED FOR FLEXIBLE CONDUIT AND MOTOR CIRCUITS.

11. GROUNDING

B. MATERIALS

- 12. RACEWAYS PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN.
  - RACEWAYS a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED.

- b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED,
- c. RIGID NON-METALLIC CONDUIT (PVC): POLYVINYL CHLORIDE, SCHEDULE
- 40 OR 80, UL STANDARD ANSI/UL 651 d. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED.
- e. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT: GALVANIZED LOW CARBON STEEL CORE WITH UL BONDED STRIP, WITH A FLAME RETARDANT, SUNLIGHT RESISTANT PVC JACKET. UL LISTED AS LIQUIDTIGHT. f. WIREWAYS: DIMENSIONS AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH
- GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL 2) FITTINGS AND ACCESSORIES

d. FLEXIBLE METALLIC CONDUIT: SQUEEZE TYPE COMPRESSION FITTING WITH

e. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT: THREADED GASKETED MALLEABLE

a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION,

WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED.

VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND

ACCESSIBLE. PROVIDE BARRIERS IN RENOVATED BOXES BETWEEN

c. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER

FROM BUILDING STRUCTURE. INDEPENDENT OF CONDUIT. PROVIDE

FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND

b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON

DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN, SQUARE

OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2

IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES

FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH

WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET

BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.

(2) ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND

FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE

ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY

DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS

WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY

OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL

BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR

COVERS. EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR

120/208 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING.

TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES.

FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES

WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS

LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN

CHANNEL SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR

HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY

REMOVAL OF FIXTURE. SECURE TO BLACK IRON OR GALVANIZED STEEL

BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAPHANGERS, OR

RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER

CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB.

HUBBELL FIRE RATED POKE-THROUGH-FLOOR BOX SYSTEM. FOR ABOVE FLOOR

FITTINGS. TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX

RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN

UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT. ON CENTER FOR

METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING

SHALL BE 5 FT. ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED

ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND

BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD

SCREWS ON WOOD. AND PAN THROUGH STRAPS IN METAL DECK. NAILS. RAV

PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY

WALLS. PROVIDE CLEARANCE WITH WATER. STEAM OR OTHER PIPING (MINIMUM

3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES. EXCEPT 1 IN. FROM

PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG

CEILING OUTLETS. RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT

CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH

5) EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED

GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP

LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED

WAREHOUSE WALL) USE RIGID ONLY. EMT SHALL NOT BE PERMITTED IN RAISED

COUPLING, PVC CONDUITS AND FITTINGS (SCHEDULE 80 WHERE EXPOSED TO

MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO

11) CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD

12) ALL COUPLINGS ON EMT RACEWAYS SHALL BE COMPRESSION TYPE UP TO AND

13) EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT

INCLUDING 2 IN. CONDUIT. SET SCREW TYPE FITTINGS SHALL BE USED ON

2-1/2 IN. EMT CONDUIT AND LARGER EXCEPT FOR EXTERIOR INSTALLATIONS

CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE

MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR

14) RACEWAYS PASSING THROUGH FIRE—RATED CONSTRUCTION: SEAL OPENING WITH

15) PROVIDE INTERNAL VAPOR SEALING OF ALL CONDUITS PASSING FROM EXTERIOR

16) PROVIDE RACEWAYS CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID OR STRANDED (NO. 10 AND

INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA

STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH

LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN

(MC-TUFF) MAY BE UTILIZED FOR ALL NORMAL BRANCH CIRCUITS IN DRY HOLLOW

ARTICLE #330 & #517 OF THE NATIONAL ELECTRICAL CODE (APPLICABLE EDITION)

DOCUMENTS. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG COPPER WITH

CONDUCTOR IN DIRECT CONTACT WITH THE OUTER METAL JACKET.

THERMOPLASTIC WITH COLOR CODING AS FOLLOWS:

THE INSULATION OF ALL CONDUCTORS SHALL BE 90 DEGREES C RATED

ONLY, EXCEPT EXPOSED, UNLESS SPECIFICALLY OTHERWISE NOTED IN THE CONTRACT

INTEGRAL GREEN INSULATED CONTINUOUS GROUND CONDUCTOR AND BARE BONDING

STUD WALL LOCATIONS, ABOVE ACCESSIBLE CEILING AND WHERE PERMITTED BY

CIRCUITS PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).

PRE-MANUFACTURED STEEL ARMOR, SPECIFICATION GRADE METAL CLAD CABLE

CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS

AMBIENT TEMPERATURES OVER 90 DEGREES C. FOR UNGROUNDED ISOLATED BRANCH

SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO.

12 MINIMUM. AT 120 VOLTS AND OVER 100 FT. CIRCUIT LENGTH PROVIDE NO. 10

CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM.

AT 120 VOLTS AND OVER 200 FT. CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM.

FIRE SEALANT APPROPRIATE TO CONSTRUCTION TO MAINTAIN FIRE RATING OF

FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN.

ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS,

THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT

SPACES. EMT SHALL BE PERMITTED FOR FEEDERS WHERE HIDDEN OR NOT

EXPOSED TO POTENTIAL DAMAGE. WHERE DAMAGE IS A POSSIBILITY (I.E.

MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED.

6) RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH

7) EMT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. IN DRY

8) IN WET LOCATIONS, PROVIDE GALVANIZED RIGID CONDUIT WITH THREADED

DAMAGE) OR LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.

CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

WHERE ALL EMT FITTINGS SHALL BE RAINTIGHT TYPE.

WITH RACEWAY COUPLING.

CONSTRUCTION.

AWG EXCEPT AS NOTED.

TO CONDITIONED INTERIOR SPACES.

MAXIMUM RESISTANCE SHALL BE 25 OHMS.

9) ALL EMERGENCY BRANCH CIRCUIT WIRE SHALL BE RUN IN CONDUIT.

CIRCUITS. PAINT MALE THREADS OF FIELD—THREADED CONDUIT WITH

GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR

3) EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO

FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS

WALL BRACKETS. PROVIDE U-BOLTS AT FACH FLOOR LEVEL OF RISER

FOR THROUGH—THE—FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO

POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON

2) SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS.

STRUCTURE. FURNISH THROUGH BOLTS AND FISHPLATES.

TERMINAL CONNECTIONS.

PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS

SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL

INSULATED THROAT. ZINC-PLATED STEEL ONLY - ZINC DIE CAST NOT

IRON, STEEL OR ALUMINUM WITH INSULATED THROAT, UL LISTED FOR WET

a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON.

RECOMMENDED SOLVENT.

f. BUSHINGS: METALLIC INSULATED TYPE.

- ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS. ZINC-PLATED STEEL ONLY - ZINC DIE CAST NOT PERMITTED. TERMINATIONS. SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 b. ELECTROMETALLIC TUBING: COMPRESSION TYPE 2 IN. AND UNDER. SET SCREW TYPE 2-1/2 IN. AND LARGER. GALVANIZED RIGID STEEL ELBOWS,
- AND SMALLER SHALL UTILIZE COMPRESSION—TYPE OF TWIST—ON SPRING—LOADED 2 IN. OR LARGER. ZINC-PLATED STEEL ONLY - ZINC DIE CAST NOT PERMITTED. EXTERIOR EMT FITTINGS SHALL BE RAIN-TIGHT TYPE. c. PVC: SLIP-ON TYPE, UL CATEGORY DWTT, INSTALLED WITH MANUFACTURER
  - CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC

TAPING IN ACCESSIBLE LOCATIONS:

1) 120/208 VOLT SYSTEM

a. BLACK FOR A PHASE

b. RED FOR B PHASE

c. BLUE FOR C PHASE

COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTI-SEIZE COMPOUND ON TANG.

NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT.

PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR

FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND

TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR

EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE. CERTIFY IN WRITING AND

REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR

- NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEGREES F.
- LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER
- PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.
- PROVIDE ALL POWER WIRING TO ALL MOTORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS ON THE PROJECT. INCLUDE EXTENSIONS FROM CONTROLLERS TO MOTORS AND MOTOR CONNECTIONS. MOUNT AND WIRE ALL CONTACTORS AND POWER DEVICES FURNISHED UNDER ALL CONTRACTS.
- PROVIDE ALL CONTROL WIRING FOR MOTORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS AND AS SPECIFICALLY SHOWN ON THE DRAWINGS, EXCEPT AS NOTED FOR MECHANICAL/PLUMBING EQUIPMENT. INCLUDE MOUNTING AND WIRING OF ALL CONTROL DEVICES FURNISHED WITH EQUIPMENT.
- FURNISHED UNDER MECHANICAL/PLUMBING WILL BE PROVIDED UNDER DIVISION 15 CONTRACT. 16. DEVICES

A. LOCAL SWITCHES

E. DEVICE WIRING

1) CONVENTIONAL QUITE TOGGLE TYPE, RATED AT 20 AMP, 120/277 VOLT AC SIMILAR TO LEVITON #1221-2, 1223-2, 1224-2 OR EQUAL BY HUBBELL OR PASS & SEYMOUR. THE OWNER OR ARCHITECT SHALL SELECT TOGGLE COLOR. 2) PILOT LIGHT TOGGLE TYPE WITH NEON LAMP, RATED AT 20 AMP, 120/277 VOLT

CONTROL WIRING LESS THAN 120 VOLTS FOR MOTORS, ALARMS FOR EQUIPMENT

- FLUSH OR SURFACE MOUNTED TYPE WITH PILOT LIGHT. SIMILAR TO SQUARE D
- CLASS 2510, 2511 AND 2512 TYPE F. CONVENTIONAL SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLT, 2 POLE, 3 WIRE, 20 AMP WITH U GROUND SLOT GROUNDED, EXCEPT AS NOTED.
  - a. UL 488

DEVICE SHALL MEET OR EXCEED:

b. UL HOSPITAL GRADE c. UL FEDERAL SPECIFICATION WC-596 LISTING.

AC SIMILAR TO LEVITON #1221-PLC.

- d. NEMA WD—1 AND WD—6 e. DEVICE SHALL BE SIMILAR TO HUBBELL HBL5362 OR EQUAL BY LEVITON, PASS & SEYMOUR OR GE. OWNER OR ARCHITECT SHALL SELECT FACE COLOR. DEVICES USED ON EMERGENCY BRANCH CIRCUITS SHALL BE RED FACE ONLY.
- SIMILAR TO HUBBELL GFR5362 OR EQUAL BY LEVITON, PASS & SEYMOUR OR 3) SPECIAL RECEPTACLES

GROUND FAULT INTERRUPTER WITH SELF-PROTECTION AND LED INDICATOR LIGHT.

- a. THE TRADE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SPECIAL RECEPTACLES REQUIRED TO MATCH PROVIDED, EXISTING AND NEW EQUIPMENT PLUGS. 4) LIGHTING CONTROLS (SEE SCHEDULES/NOTES ON DRAWINGS)
- RECEPTACLE ORIENTATION CONTRACTOR SHALL COORDINATE ORIENTATION OF DEVICE WITH
- D. DEVICE PLATES BRUSHED 302 STAINLESS STEEL WITH ENGRAVED CIRCUIT IDENTIFICATION PLATE
- 1) ALL DEVICES SHALL BE SIDE—WIRED VIA SCREW TERMINALS PUSH—IN WIRING (AKA "QUICKWIRE") THROUGH THE BACK OF THE DEVICE IS NOT AN ACCEPTABLE WIRING METHOD.
- MANUFACTURE AND INSTALL LIGHTING FIXTURES IN ACCORDANCE WITH NEC ARTICLE
- PROVIDE ALL LIGHTING FIXTURES INDICATED, COMPLETE WITH LAMPS. INCLUDE ALL INTERIOR LIGHTING FIXTURES, AND ALL EXTERIOR FIXTURES MOUNTED ON THE
- FURNISH ALL PLASTER FRAMES OR DRY WALL AND DELIVER TO PROJECT SITE FOR INSTALLATION UNDER FINISHES, DIVISION 9. D. USE FIXTURES CONFORMING TO UL STANDARDS, AND BEARING UL LABEL AND UNION
- GENERAL CONSTRUCTION PLASTICS: 100 PERCENT VIRGIN ACRYLIC, REFER TO FIXTURE LIST FOR FURTHER DESCRIPTION.
- 10) FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING (1) MATERIAL: STEEL, ALUMINUM OR OTHER TYPES MENTIONED. FIXTURE: PROVIDE MINIMUM 4 FT. AND MAXIMUM 6 FT. LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX. TRANSFORMER AND OTHER VIBRATING (2) B & S GAUGE: NO. 22 MINIMUM FOR HOUSINGS, WITH EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. APPROPRIATE CROSS-SECTIONAL CONFIGURATION FOR FIXTURE
  - HOUSING; THINNER SHEET METAL ACCEPTABLE FOR BALLAST ENCLOSURES AND INCIDENTAL PURPOSES. (1) CORROSION PROTECTION: PLATING, BONDERIZING, PRIMING,

ELECTROSTATIC PAINTING, OR OTHER APPROVED MEANS.

- (2) COLORS: FACTORY STANDARD UNLESS OTHERWISE NOTED. (3) FINAL COATING: BAKED PAINT OR ENAMEL ON STEEL AND ALUMINUM; BAKED CLEAR LACQUER OR OTHER DURABLE TRANSPARENT FILM ON POLISHED METAL SURFACES.
  - EXTERIOR FIXTURES: ENCLOSED AND GASKETED, UNLESS OTHERWISE d. FLUORESCENT LAMP SOCKETS: WHITE FINISH, SILVER-PLATED CONTACT
  - e. LATCHES: QUICK-OPERATING TYPE WITHOUT NEED FOR TOOLS. UNLESS OTHERWISE NOTED: STAINLESS STEEL OR CADMIUM PLATED STEEL. EXPOSED HARDWARE: NOT ACCEPTABLE ON VISIBLE SURFACES OF TXTURES IN FINISHED AREAS UNLESS OTHERWISE NOTED.

OPERATING TEMPERATURE: NOT TO EXCEED 25 DEGREES C.

FASTENING CLIPS (EARTHQUAKE CLIPS) FOR LIGHTING FIXTURES THAT ARE SUPPORTED

WITH INSULATION TEMPERATURE RATING EQUAL TO OR HIGHER THAN THAT OR WIRE

- TEMPERATURE RISE OVER 40 DEGREES C, A MAXIMUM 90 DEGREES BALLAST HOT SPOT WHEN FLUORESCENT FIXTURE IS OPERATED IN 25 DEGREES C AMBIENT. MAXIMUM CASE TEMPERATURE SHALL NOT EXCEED 85 DEGREES C. PROVIDE APPROPRIATE MOUNTING ACCESSORIES FOR EACH FIXTURE. COMPATIBLE WITH THE VARIOUS STRUCTURAL CONDITIONS THAT WILL BE ENCOUNTERED. PROVIDE
- ASSEMBLE, WIRE AND INSTALL ALL LIGHTING FIXTURES AT THEIR RESPECTIVE OUTLETS AS INDICATED AND ASSUME RESPONSIBILITY FOR THEIR CONDITION UNTIL ACCEPTANCE BY OWNER. INSTALL PROPER LAMPS IN EACH FIXTURE. FIXTURE CONNECTIONS TO BRANCH CIRCUITS SHALL BE MADE USING STRANDED WIRE

FROM FRAMING MEMBERS OF SUSPENDED CEILINGS.

- SUPPLIED WITH THE FIXTURE. OR SPECIFIED BY FIXTURE MANUFACTURER. FIXTURES ARE TO BE CONNECTED TO BRANCH CIRCUITS VIA JUNCTION BOX USING FLEXIBLE CONDUIT OF LENGTHS BETWEEN 4 FT. MINIMUM AND 6 FT. MAXIMUM. THE USE OF FLEXIBLE CONDUIT, TO FIXTURES IN ANY LENGTH OVER 6 FT. IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED ALONG WITH THE CONDUCTORS INSIDE THE FLEXIBLE CONDUIT. IN THIS APPLICATION THE GROUND WIRE MUST BOND THE LIGHTING FIXTURE HOUSINGS TO EACH OTHER AND/OR TO THE JUNCTION BOX. ALL FLEXIBLE CONDUIT SHALL BE SUPPORTED AS REQUIRED BY NEC
- NOTE THAT SPECIFICATIONS FOR RECESSED FIXTURES GENERALLY DO NOT INCLUDE MOUNTING ACCESSORIES, AND THAT EACH FIXTURE TYPE MAY BE USED IN SEVERAL DIFFERENT CEILINGS, SUCH AS LAY-IN EXPOSED GRID, CONCEALED SPLINE TILE, OR DRYWALL. VERIFY MOUNTING DETAILS FOR EACH SPACE BEFORE ORDERING FIXTURES SO THAT PROPER QUANTITIES FOR EACH CONDITION WILL BE DELIVERED IN TIME TO AVOID CONSTRUCTION DELAYS.

AND SHALL BE INSTALLED IN A WORKMANLIKE MANNER.

- K. SECURELY FASTEN LIGHTING FIXTURES TO FRAMING MEMBERS OF SUSPENDED CEILINGS WITH FASTENING CLIPS, AS SPECIFIED. CLIP EACH FIXTURE TO ALL ADJOINING FRAMING MEMBERS TO PREVENT MOVEMENT OF THE MEMBERS AWAY FROM THE
- L. SUPPORT EXIT SIGNS IN TILE CEILINGS WITH RAILS THAT SPAN BETWEEN RUNNERS OF CEILING SUSPENSION SYSTEM. USE FLANGED FIXTURES FOR FINISHED APPEARANCE.
- SUPPORT FLUORESCENT FIXTURES IN DRYWALL CEILINGS FROM PLASTER FRAMES, WITH ADJUSTABLE LUGS ON SIDE OF FIXTURE OR YOKE MOUNTING AS RECOMMENDED BY FIXTURE MANUFACTURER. USE FLANGED FIXTURES FOR FINISHED APPEARANCE,
- N. LOCATE FIXTURE IN CENTER OF PANEL WHERE USED IN MODULAR TILE CEILINGS, UNLESS OTHERWISE NOTED. REFER TO REFLECTED CEILING PLAN.
- FLUORESCENT BALLASTS REFER TO LIGHTING FIXTURE LIST. UNLESS OTHERWISE NOTED, ALL FLUORESCENT BALLASTS SHALL BE ELECTRONIC HIGH POWER FACTOR WITH LESS
- A. A COMPLETE EMPTY RACEWAY SYSTEM CONSISTING OF BLANK 4-11/16 IN. SQ. X 2-1/8 INCHES DEEP OUTLET BOXES WITH SINGLE OR DOUBLE GANG DRYWALL FINISH COLLAR AS NOTED. METALLIC RACEWAY WITH PULL STRING SHALL BE PROVIDED AND INSTALLED WHERE SHOWN FOR THE FOLLOWING SYSTEMS.
- TELEPHONE/DATA (SINGLE GANG)
- 2) CABLE TELEVISION (SINGLE GANG) B. RACEWAY SIZE SHALL BE A MINIMUM OF 3/4 IN. OR AS DOCUMENTED IN PLANS AND
- ALL METALLIC RACEWAY SYSTEMS SHALL BE STUBBED UP AND TERMINATE IN ACCESSIBLE CEILING. END BUSHINGS AND PULL WIRES SHALL BE PROVIDED BONDING OF ALL RACEWAY SYSTEMS TO PROVIDE A COMMON GROUND PATH SHALL BE
- D. ACTUAL DEVICES, CONNECTORS, WIRING COMPLETE WITH TERMINATIONS AND BOX

COVERS SHALL BE PROVIDED BY THE OWNER.

- DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION SPECIFICATION SECTIONS, APPLY TO WORK
- B. PROVIDE ALL REQUIRED FIRE STOPPING. WORK INCLUDES FIRE-STOPPING PENETRATIONS OF FIRE-RESISTANCE RATED FLOORS, WALLS AND PARTITIONS IN NEW CONSTRUCTION, AS WELL AS PRE-EXISTING PENETRATIONS IN RENOVATION AREAS OF
- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA FOR EACH FIRE-STOPPING PRODUCE REQUIRED, INCLUDING INSTRUCTIONS FOR SUBSTRATE PREPARATION AND FIRE-STOPPING INSTALLATION.

FIRE RESISTANT JOINT SEALERS: PROVIDE MANUFACTURER'S STANDARD FIRE-STOPPING

SEALANT WITH ACCESSORY MATERIALS, HAVING FIRE RESISTANCE RATINGS INDICATED AS

ONE-PART FIRE-STOPPING SEALANT: ONE PART LATEX BASED INTUMESCENT

SYSTEM FOR SEALING OPENINGS AROUND CABLES, CONDUIT, PIPES AND SIMILAR

SEALANT FORMULATED FOR USE IN A THROUGH-PENETRATION FIRE-STOP

- ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES PER ASTM E814 BY UNDERWRITERS LABORATORY, INC. OR OTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. MATERIALS — PROVIDE THE FOLLOWING:
  - PENETRATIONS THROUGH WALLS AND FLOORS. ACCEPTABLE PRODUCTS/MANUFACTURERS INCLUDE THE FOLLOWING:

b. HILTI FS ONE MAX

INDICATE BALANCE.

a. SPEC SEAL LC150 SERIES

- A. BEFORE MAKING TESTS, COMPLETE ALL CONNECTIONS AT PANELS, FIXTURES AND OTHER EQUIPMENT. INSTALL FUSES AND HAVE ALL WIRING CONTINUOUS FROM SERVICE EQUIPMENT TO UTILIZATION OUTLETS. CORRECT ALL UNDESIRABLE GROUND, OPEN AND SHORT CIRCUIT CONDITIONS.
- B. PROVIDE SOURCE OF TEMPORARY POWER FOR MAKING TESTS IF NORMAL BUILDING POWER IS NOT AVAILABLE AT THE TIME. C. TAKE AND RECORD THE FOLLOWING READINGS ON SYSTEMS 600 VOLTS AND BELOW:
- AND CONDUIT GROUND. AMMETER READINGS ON ALL PHASES AND NEUTRAL OF EACH FEEDER TO

MEGGER TESTS OF ALL FEEDER CIRCUIT CONDUCTORS, GROUND CONDUCTORS,

DATA SHOWN ON THE DRAWINGS AND/OR MANUFACTURER'S RECOMMENDED

E. PROVIDE FUNCTIONAL TESTING FOR OCCUPANT SENSORS AND AUTOMATIC TIME SWITCH

OPERATIONAL. SUBMIT CERTIFICATION WITH CONTRACTOR'S REQUEST FOR FINAL

- AMMETER READINGS ON ALL PHASES OF EACH POLYPHASE MOTOR. INCLUDE NAMEPLATE FULL LOAD CURRENT OF EACH MOTOR ON DATA SHEET. 4) CERTIFY THAT ALL OVERLOAD DEVICES HAVE BEEN SET IN ACCORDANCE WITH
- D. SEND FINAL CERTIFIED TEST REPORTS AND CERTIFICATIONS TO THE ARCHITECT FOR APPROVAL AND TRANSMITTAL TO THE OWNER.
- IN ACCORDANCE WITH ARTICLE 9.4.3 OF THE 2013 EDITION OF ASHRAE STANDARD 21. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS A. SUBMIT WRITTEN CERTIFICATION THAT ELECTRICAL SYSTEMS ARE COMPLETE AND
- AT THE TIME OF FINAL REVIEW OF ELECTRICAL WORK, DEMONSTRATE THE OPERATION OF ELECTRICAL SYSTEMS. FURNISH LABOR, APPARATUS AND EQUIPMENT FOR SYSTEMS' DEMONSTRATION. THE VARIOUS TEST SHALL BE WITNESSED BY AND THE OWNER OR HIS REPRESENTATIVE.
- THE CONTRACTOR SHALL FURNISH ALL TEST EQUIPMENT, MATERIALS, LABOR, AND TEMPORARY POWER HOOK-UPS TO PERFORM START-UP AND ALL TESTS AS REQUIRED TO OBTAIN FINAL FIELD ACCEPTANCE FROM OWNER. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE. ALL TEST PROCEDURES SHALL CONFORM TO THIS SPECIFICATION AND APPLICABLE STANDARDS THE ANSI, IEEE, NEMA, OSHA, NEPA, ETC.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS AND TEST RECORD.

CONTRACTOR. TEST RECORD SHALL BE KEPT FOR EACH PIECE OF EQUIPMENT.

ALARM SYSTEM. THE CONTRACTOR SHALL CONSULT WITH THE EQUIPMENT VENDORS

UNDER THE DIRECT SUPERVISION OF COMPETENT AUTHORIZED SERVICE ENGINEERS

WHO SHALL BE IN THE EMPLOY OF THE RESPECTIVE EQUIPMENT MANUFACTURER.

TESTING SHALL BE PERFORMED BY AND UNDER THE IMMEDIATE SUPERVISION OF THE

- COPIES SHALL BE FURNISHED TO THE ENGINEER FOR REVIEW AND/OR APPROVAL. D. A VISUAL INSPECTION OF ALL ELECTRICAL EQUIPMENT, TO CHECK FOR THE FOREIGN MATERIAL, TIGHTNESS OR WIRING AND CONNECTION, PROPER GROUNDING, MATCHING NAMEPLATE CHARTS WITH SPECIFICATION, ETC., SHALL BE MADE PRIOR TO ACTUAL A COMPLETE OPERATIONAL TEST SHALL BE MADE ON THE REVISED LIFE SAFETY FIRE
- AND THEN SUBMIT FOR APPROVAL A STEP-BY-STEP PROCEDURE DESCRIBING THE METHOD OF MAKING THE TESTS. THE EQUIPMENT TO BE UTILIZED AND THE FEATURE TO BE CHECKED BY THE TEST. ALL INTERLOCKS AND PROTECTIVE FEATURES SHALL
- 22. SPECIAL ENGINEERING SERVICES A. IN THE INSTANCE OF COMPLEX OR SPECIALIZED ELECTRICAL SYSTEMS SUCH AS EMERGENCY SYSTEM FIRE ALARM OR SIMILAR MISCELLANEOUS SYSTEMS. THE INSTALLATION, FINAL CONNECTIONS AND TESTING OF SUCH SYSTEMS SHALL BE MADE
- B. ANY AND ALL EXPENSES INCURRED BY THESE EQUIPMENT MANUFACTURERS' REPRESENTATIVES RELATED TO THIS PROJECT, SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.

23. DESIGN MODIFICATIONS

THE DRAWINGS SHOW ELECTRICAL SYSTEMS, WHICH SUPPLY, CONTROL, AND/OR MONITOR SYSTEMS SPECIFIED ELSEWHERE. THE ELECTRICAL SYSTEM SHOWN HAS BEEN BASED ON SPECIFIC MANUFACTURERS DATA OR INFORMATION CONVEYED TO THE ELECTRICAL DESIGNER. WHERE ANY AGREEMENT OR CHANGE IS MADE TO SUPPLY EQUIPMENT OF LARGER CAPACITY OR DIFFERENT FLECTRICAL CHARACTERISTICS THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ELECTRICAL SYSTEM TO EFFECT SUCH CHANGES WITHIN THE INTENT OF THESE SPECIFICATIONS AND TO INFORM THE ENGINEER, IN WRITING, OF SUCH CHANGE. FOR EXAMPLE, IF HVAC COMPRESSORS AND/OR MOTORS ARE ALLOWED TO BE CHANGED TO 230 VOLTS RATHER THAN THE ORIGINALLY SPECIFIED 208 VOLTS. BOOSTING OR BUCKING TRANSFORMERS SHALL BE SUPPLIED, INSTALLED, AND WIRED TO ACCOMMODATE THE CHANGE AT NO ADDITIONAL COST.



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Sheet Title:

DUTY TO INSPECT CONTRACT DOCUMENTS PRIOR TO STARTING WORK: my party who relies in part or whole on the content of these Construction Documents shall, before beginning any work, be responsible for fully inspecting the complete set of Contract Documents, including all Drawings, Specifications, and Addenda, for completeness, conflicts

scope of work, and suitability for constructing the

building. All parties relying on these documents represen

that they have expertise in the area of their responsibility

and are knowledgeable regarding industry standards.

Warning: Actual conditions may vary from conditions

shown on this drawing. Confirm all information in the field

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product requirements and code requirements and

therefore are qualified to fully evaluate and interpret the contract documents. All parties relying on these documents must, prior to beginning work, submit all requests for clarifications and additional information to the Architect in writing. All parties who begin work hereby certify that the documents are suitable for their intended purposes unless noted in specific written exception beforehand.

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