

**PROJECT NOTES:**

1. NO UTILITY RELOCATION INVOLVEMENT IS ANTICIPATED. SHOULD ANY CONFLICTS BE ENCOUNTERED DURING CONSTRUCTION REQUIRING ADJUSTMENT AND/OR RELOCATION OF THE AGENCIES' EXISTING FACILITIES, THE NECESSARY RELOCATION WORK SHALL BE ACCOMPLISHED BY THE RESPECTIVE AGENCIES' FORCES, AS DIRECTED BY THE DISTRICT ENGINEER. ANY ADJUSTMENT AND/OR RELOCATIONS OF MUNICIPALLY OWNED FACILITIES SHALL BE DONE BY THE STATES CONTRACTOR IN ACCORDANCE WITH THE RESPECTIVE AGENCIES STANDARD SPECIFICATIONS AS DIRECTED BY THE DISTRICT ENGINEER.
2. NO ENVIRONMENTAL PERMITS ARE REQUIRED FOR THIS WORK PROVIDED NO JURISDICTIONAL WETLANDS OR WATERS ARE IMPACTED. IF THERE IS ANY QUESTION AS TO WHETHER OR NOT A WATER OR WETLAND IS JURISDICTIONAL, CONTACT THE DEL DOT ENVIRONMENTAL SECTION AT 302-760-2264.
3. IT IS ANTICIPATED THAT ALL WORK WILL OCCUR WITHIN DELDOT'S EXISTING RIGHT OF WAY OR EASEMENTS AREAS. SHOULD THE NEED OCCUR TO TRESPASS ONTO PRIVATE PROPERTY, IT WILL BE THE RESPONSIBILITY OF THE PROJECT MANAGER TO SECURE SUCH TRESPASS NEEDS.
4. IT IS ANTICIPATED THAT ALL WORK WILL OCCUR WITHIN DELDOT'S RIGHT OF WAY. SHOULD THE NEED OCCUR TO TRESPASS ONTO RAILROAD PROPERTY, INCLUDING THE HIGHWAY-RAIL CROSSING, IT WILL BE THE RESPONSIBILITY OF THE THE PROJECT MANAGER TO CONTACT THE RAILROAD CHIEF ENGINEER AND OBTAIN WRITTEN AUTHORIZATION BEFORE ENTERING.
5. THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR COORDINATION WITH THE TRAFFIC SECTION RELATING TO ANY IMPACTS TO TRAFFIC SECTION FACILITIES (INCLUDING BUT NOT LIMITED TO TRAFFIC LOOPS, JUNCTION WELLS ETC.) AT LEAST 4 WEEKS IN ADVANCE OF THE THE START OF THE ACTIVITY. PRIOR TO INITIATING ANY WORK ON THIS CONTRACT (OR SITES), THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING FOR APPROVAL OF THE SAFETY SECTION, A MAINTENANCE OF TRAFFIC PLAN, SUFFICIENT TIME SHALL BE PROVIDED FOR THE REVIEW AND APPROVAL OF THE PLAN. THE MAINTENANCE OF TRAFFIC PLAN SHALL INCLUDE PROPOSED TIME RESTRICTIONS ON THE CLOSURE OF TRAVEL LANES SUBJECT TO THE APPROVAL OF THE SAFETY SECTION.
6. THE PROJECT MANAGER IS RESPONSIBLE FOR ENSURING ANY REQUIRED DOCUMENTS AND ANALYSIS AS PART OF THE ADOPTED WORK ZONE SAFETY AND MOBILITY PROCEDURES AND GUIDELINES HAS BEEN COMPLETED PRIOR TO ANY WORK STARTING ON THIS CONTRACT.

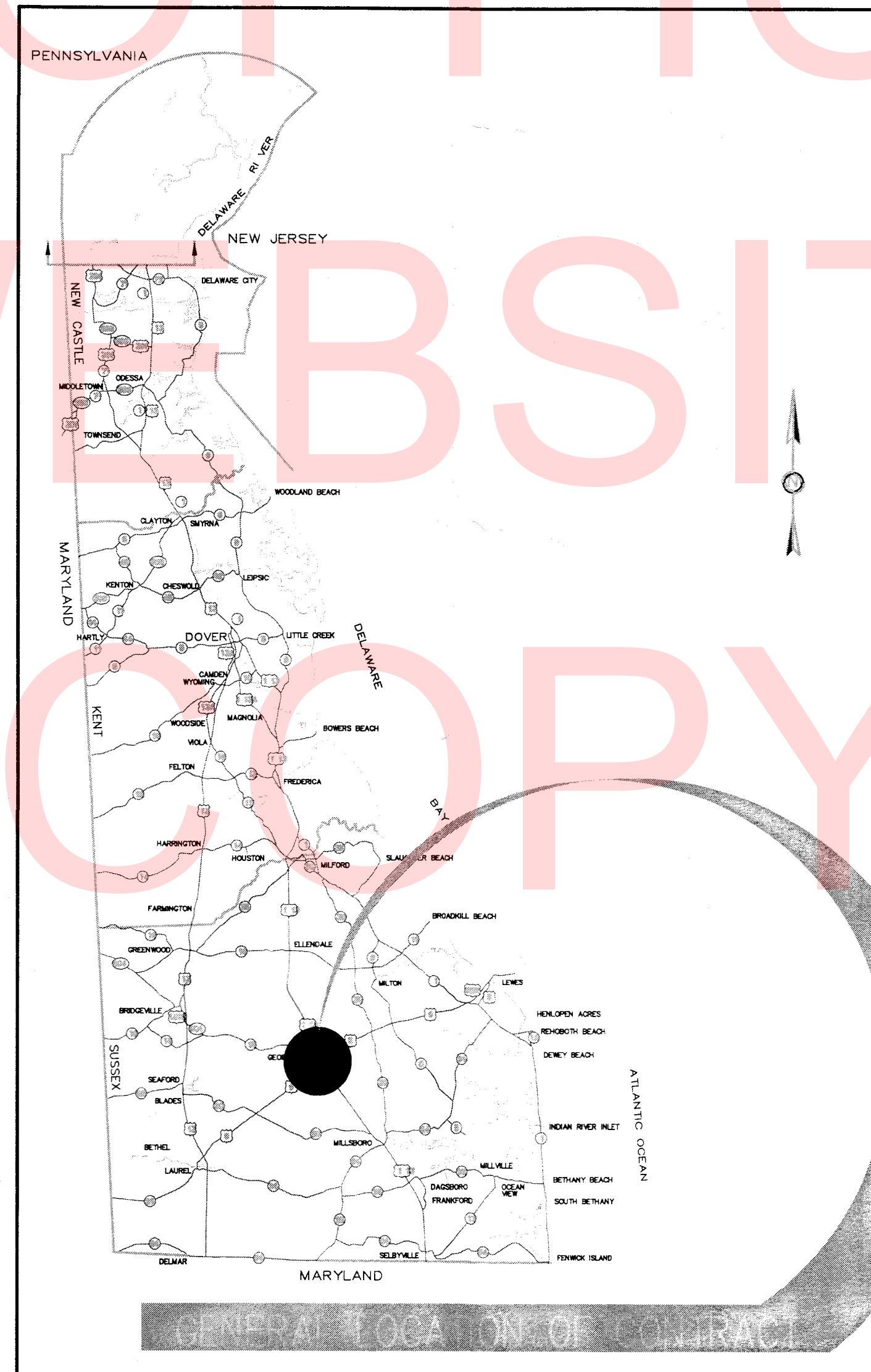
# THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION



## GRAVEL HILL SIGN SHOP IMPROVEMENTS

CONTRACT NUMBER: T201880104

COUNTY: SUSSEX M.R. #: \_\_\_\_\_



LOCATION MAP

SCALE: N. T. S.

U.S. CUSTOMARY  
UNITS

DESIGN DESIGNATION

FUNCTIONAL CLASS: N/A	D.H.V. PROJECTED: N/A	YEAR: N/A
TYPE OF CONSTRUCTION: N/A	DESIGN SPEED: N/A	
A.A.D.T. CURRENT: N/A	YEAR: N/A	TRUCKS: N/A
A.A.D.T. PROJECTED: N/A	YEAR: N/A	DIRECTION OF DISTRIBUTION: N/A

INDEX OF SHEETS

DWG. No.	SHT. No.	TABLE OF CONTENTS
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A101	3	NEW WORK PLANS
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M-101	5	MECHANICAL DEMOLITION AND NEW WORK PLAN
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P-102	9	PLUMBING NEW WORK PLAN
P-501	10	PLUMBING DETAILS, SCHEDULES, & RISER DIAGRAMS
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ED-101	12	ELECTRICAL DEMOLITION WORK PLAN
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TOTAL SHEETS: 13

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

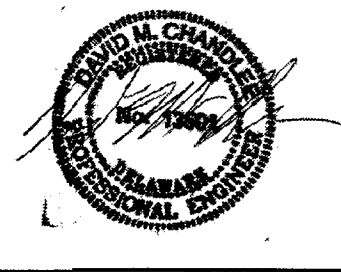
ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME

PREPARED BY  
THE CONSULTING FIRM OF



**JOHNSON, MIRMIIRAN & THOMPSON**  
Engineering A Brighter Future  
121 Continental Drive, Suite 300 Newark, Delaware 19713  
302-266-9600



SEAL

*David M. Decker*

5/18/2018

RECOMMENDED

DATE

RECOMMENDED

*M. Decker* 07.31.18  
MAINTENANCE ENGINEER DATE

*[Signature]* 7-31-18  
DISTRICT ENGINEER DATE

*[Signature]* 7/27/18  
STATEWIDE SUPPORT SERVICES ENGINEER DATE

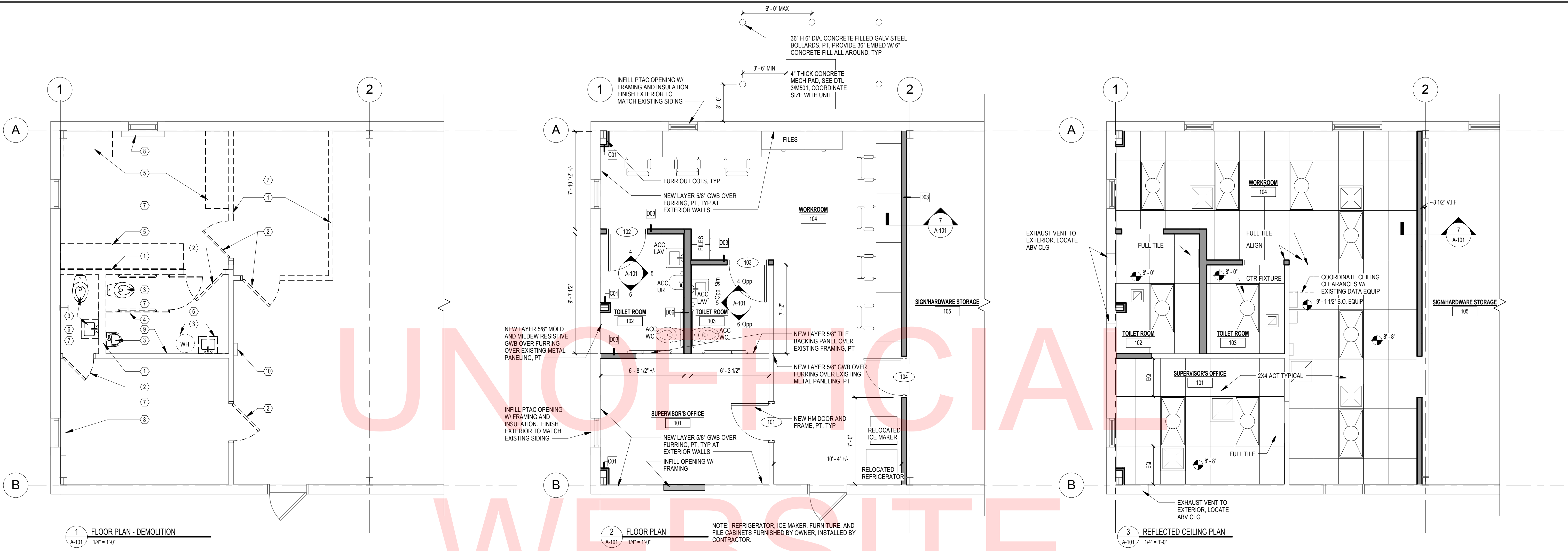
*[Signature]* 7/31/18  
ASSISTANT DIRECTOR STATEWIDE SUPPORT SERVICES DATE

RECOMMENDED  
AS TO PROCESS

*Mark J. Luba* for  
CHIEF ENGINEER  
DATE 8/7/18



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**DEMOLITION KEYNOTES:**

- 1 REMOVE EXISTING WALL.
- 2 REMOVE EXISTING DOOR AND FRAME.
- 3 REMOVE EXISTING PLUMBING FIXTURE, REFER TO PLUMBING.
- 4 REMOVE EXISTING TOILET PARTITION.
- 5 REMOVE EXISTING CASEWORK.
- 6 REMOVE EXISTING FINISH FLOORING AND BASE.
- 7 REMOVE EXISTING CEILING AND LIGHTING.
- 8 REMOVE EXISTING PTAC UNIT, SEE MECHANICAL.
- 9 REMOVE EXISTING LAYER OF GYPSUM WALLBOARD AT RESTROOM.
- 10 SEE ELECTRICAL DRAWINGS FOR EQUIPMENT TO REMAIN AND TO BE REMOVED.

**DOOR SCHEDULE**

MARK	DOOR			FRAME			RATING	HDW	NOTES	
	WIDTH	HEIGHT	THK	MATL	ELEV	MATL				DEPTH
101	3'-0"	7'-0"	1 3/4"	F	HM	1	HM	5 3/4"	2	PT DR AND FRAME
102	3'-0"	7'-0"	1 3/4"	F	HM	1	HM	5 3/4"	1	PT DR AND FRAME
103	3'-0"	7'-0"	1 3/4"	F	HM	1	HM	5 3/4"	1	PT DR AND FRAME
104	3'-0"	7'-0"	1 3/4"	F	HM	1	HM	5 3/4"	3	PT DR AND FRAME

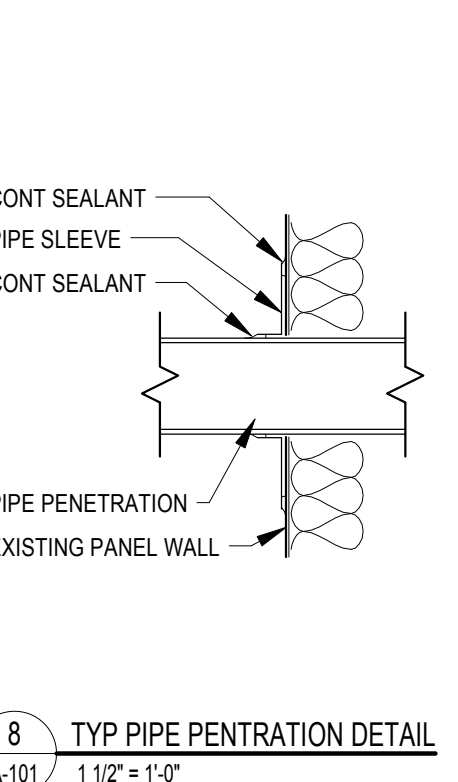
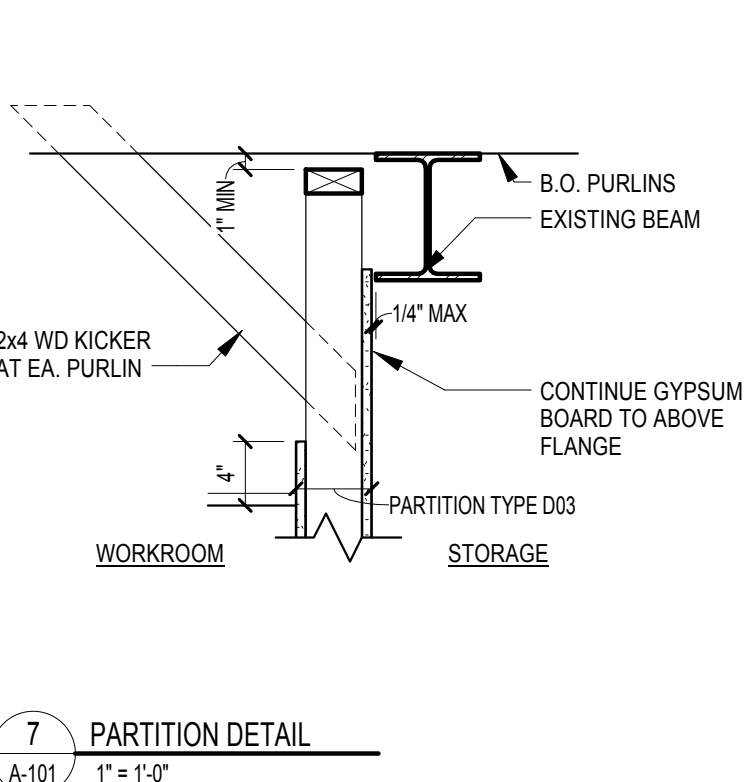
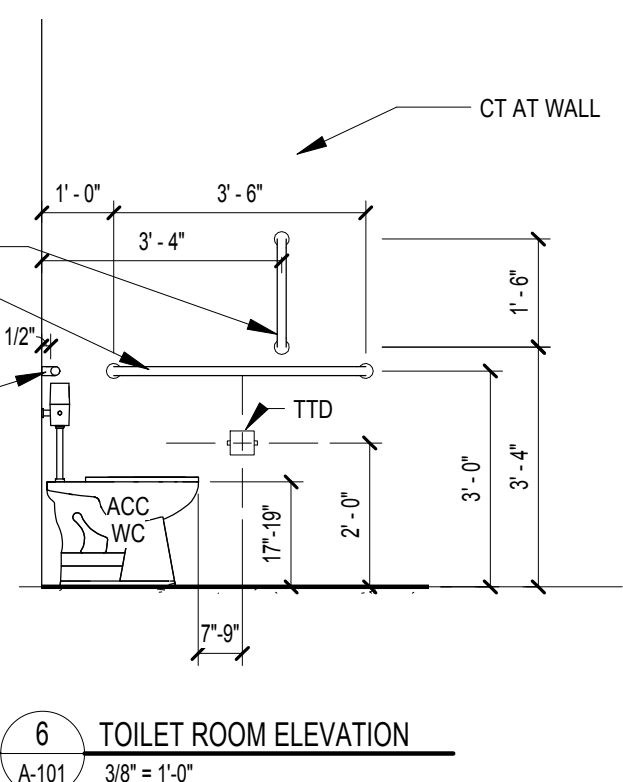
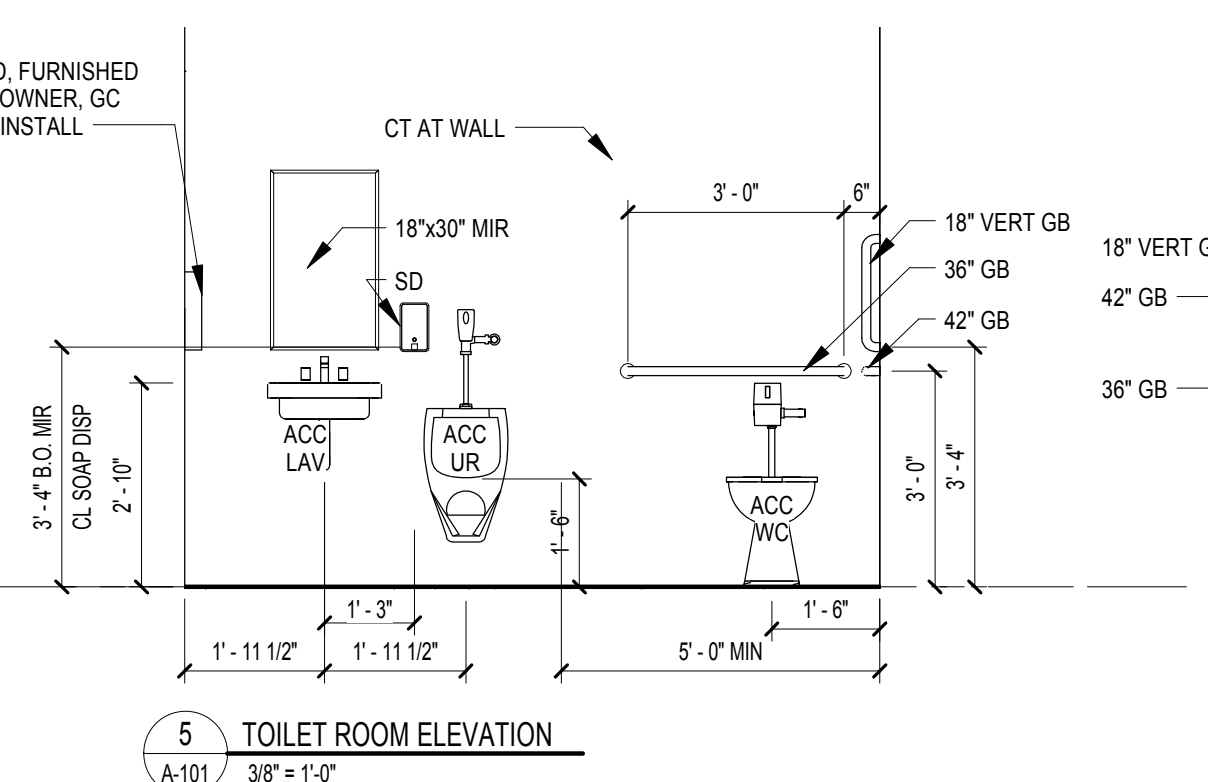
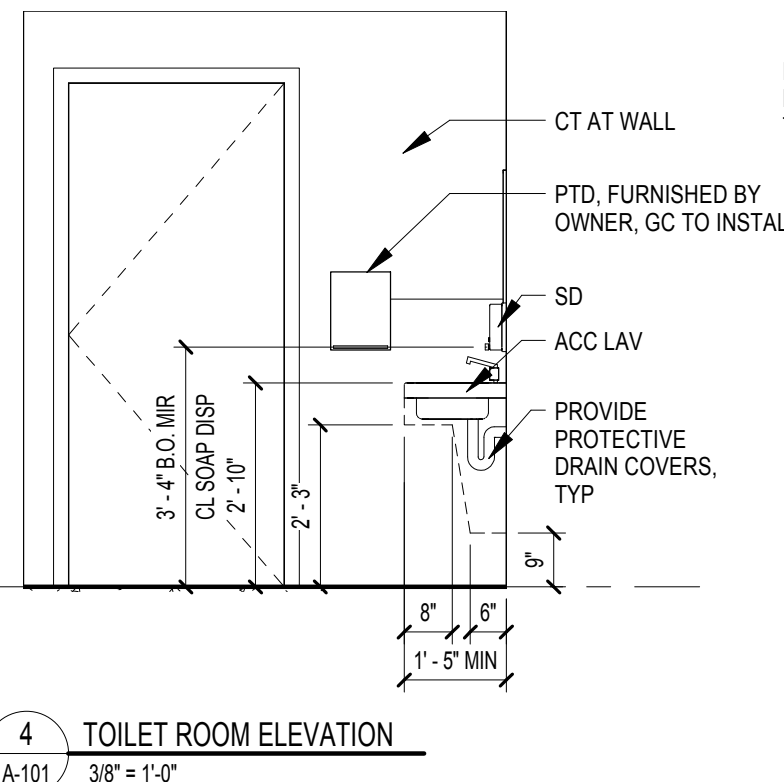
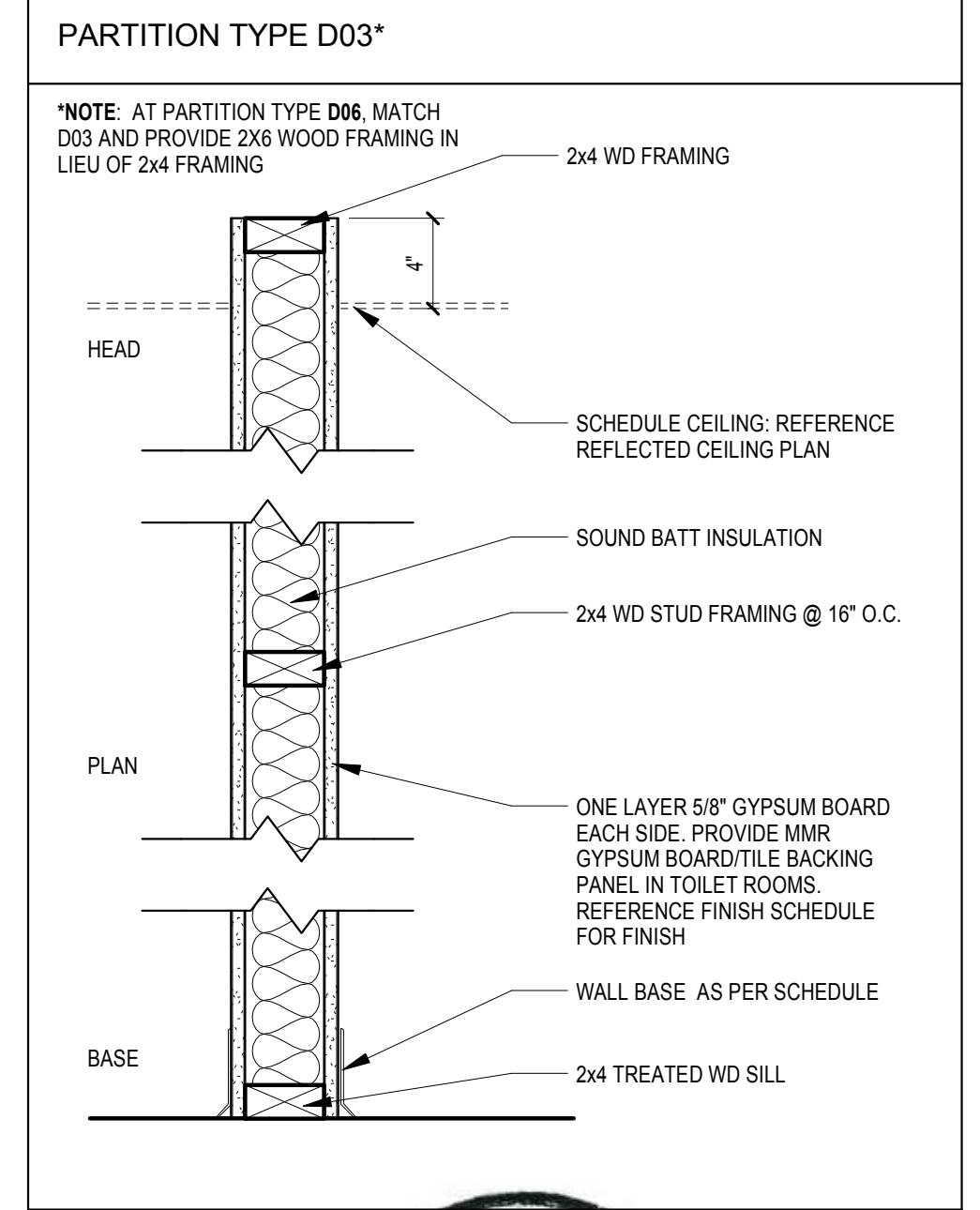
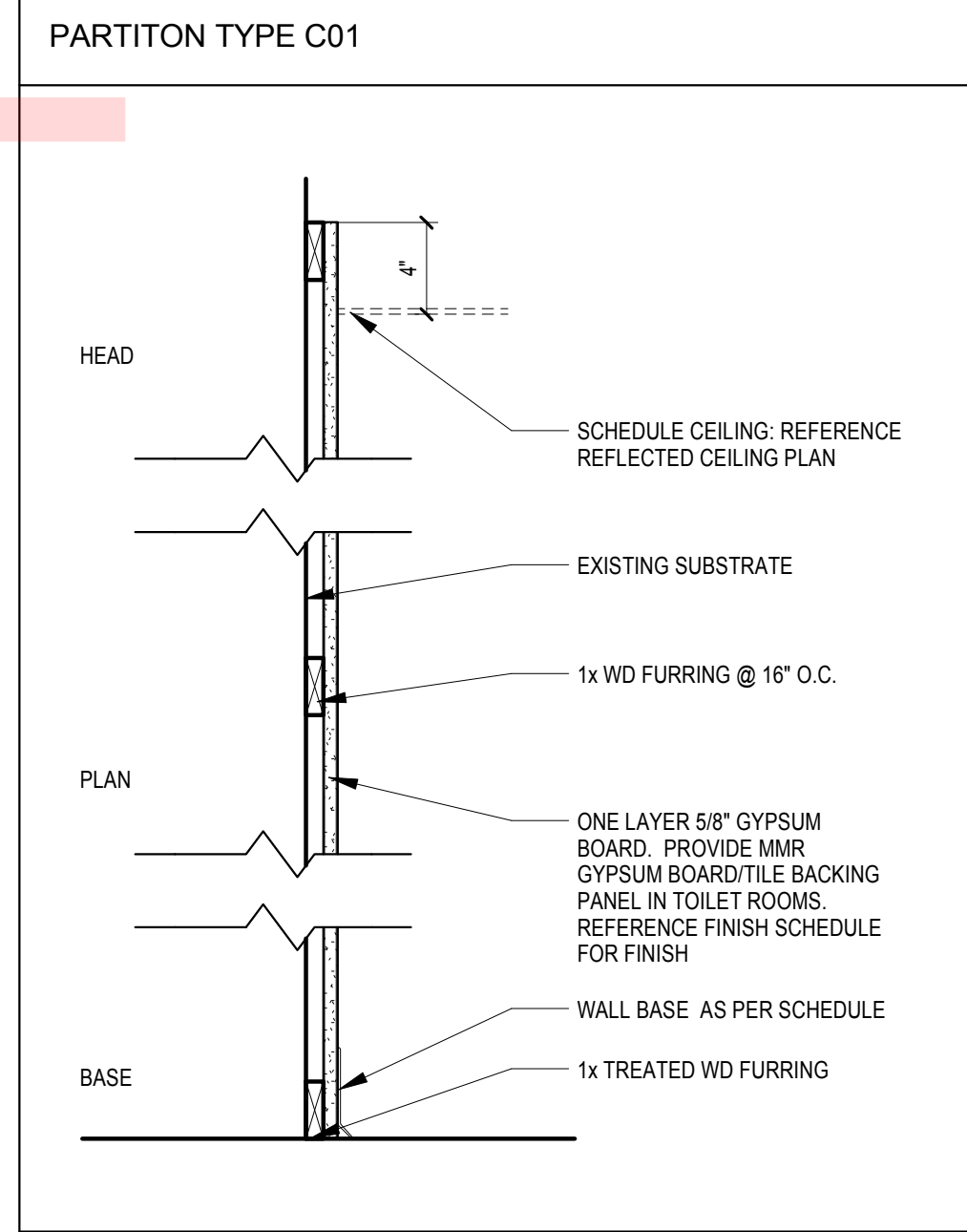
SEE SPECIFICATIONS FOR HARDWARE SET DESCRIPTIONS.

**TOILET ROOM ACCESSORY SCHEDULE**

ABBR	ACCESSORY	MODEL
MIR	MIRROR:	BOBRICK B-290 1830
18" GB	GRAB BAR, 18":	BOBRICK B-5806X18
36" GB	GRAB BAR, 36":	BOBRICK B-5806X36
42" GB	GRAB BAR, 42":	BOBRICK B-5806X42
SD	SOAP DISPENSER:	BOBRICK B-2111
TTD	TOILET TISSUE DISPENSER:	BOBRICK B-6999
PTD	PAPER TOWEL DISPENSER:	BOBRICK B-262, FURNISH BY OWNER

**ROOM FINISH SCHEDULE**

NO	ROOM NAME	FLOOR			CEILING		MILLWORK	COMMENTS
		MATL	BASE	WALL	MATL	HT		
101	SUPERVISOR'S OFFICE	VCT	VB	PT	ACT	---	---	---
102	TOILET ROOM	CT	CTB	PT/CT	ACT	---	---	CT FULL HT @ 3 WET WALLS
103	TOILET ROOM	CT	CTB	PT/CT	ACT	---	---	CT FULL HT @ 3 WET WALLS
104	WORKROOM	VCT	VB	PT	ACT	---	---	---
105	SIGN/HARDWARE STORAGE	EXIST	EXIST	EXIST	EXIST	EXIST	---	PAINT NEW WALL AND PROVIDE VB



**A-101**

**MECHANICAL LEGEND**

SYMBOL	DESCRIPTION
	PIPE (SOLID) OVER PIPE (BROKEN)
	DUCT (FIRST FIGURE SIDE SHOWN)
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	MANUAL VOLUME DAMPER
	SQUARE TO ROUND DUCT TRANSITION
	FLEXIBLE CONNECTION
	DUCTWORK SOUND LINING; 1" THICK
	ACCESS DOOR
	MOTOR OPERATED DAMPER
	DUCT TRANSITION
	RECTANGULAR BRANCH TAKE-OFF
	BELL MOUTH BRANCH TAKE-OFF
	ROUND BRANCH TAKE-OFF
	CIRCULAR DUCT DROP OFF BOTTOM
	SUPPLY AIR DEVICE WITH 2'x2' LAY-IN PANEL
	RETURN AIR DEVICE WITH 2'x2' LAY-IN PANEL
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DIAMETER
	POINT OF CONNECTION, NEW TO EXISTING
	POINT OF DISCONNECTION FROM EXISTING
	SYMBOL FOR SPECIFIC NOTE; NOTE APPLIES TO DRAWING ON WHICH IT OCCURS

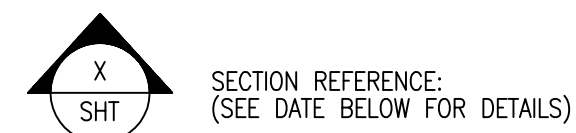
**ABBREVIATIONS**

AHU	AIR HANDLING UNIT
CFM	CUBIC FEET PER MINUTE
D	SUPPLY AIR DIFFUSER
DIA, Ø	DIAMETER
DWG	DRAWING
EF	EXHAUST FAN
EX	EXISTING
FT, '	FOOT, FEET
HP	HEAT PUMP
HTR	HEATER
IN, "	INCH, INCHES
OAI	OUTDOOR AIR INTAKE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
R	RETURN/EXHAUST
RA	RETURN AIR
REFR	REFRIGERANT
RX	REMOVE EXISTING
SA	SUPPLY AIR
TYP	TYPICAL

**GENERAL NOTES**

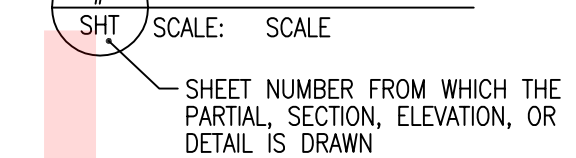
- WORK SHALL CONFORM TO THE CONTRACT DRAWINGS, SPECIFICATIONS AND THE LATEST APPLICABLE INTERNATIONAL MECHANICAL CODE. WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND NATIONAL SAFETY CODE REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPLICATIONS AND FEES ASSOCIATED WITH APPLICABLE PERMITS FOR CONSTRUCTION.
- THE SCOPE OF WORK INDICATED IN THESE DOCUMENTS SHALL INCLUDE MECHANICAL SYSTEMS, FULLY ADJUSTED, TESTED AND READY TO USE. PROVIDE ITEMS NECESSARY TO COMPLETE THE SYSTEMS. EXAMINE WORK INDICATED FOR TRADES IN ORDER TO DETERMINE THE EXTENT OF THE WORK REQUIRED TO BE COMPLETED.
- IT IS THE INTENTION OF THESE DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE, TESTED AND READY FOR USE."
- THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW EVERY COMPONENT AND/OR ACCESSORY REQUIRED FOR A COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE ITEMS NECESSARY FOR A PROPERLY WORKING SYSTEM IN COMPLIANCE WITH ACCEPTED INDUSTRY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
- PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE SITE AND IDENTIFY ITEMS THAT MAY AFFECT THEIR BID. PRIOR TO THE INSTALLATION, FABRICATION, REMOVAL, OR RELOCATION OF ANY WORK, THE CONTRACTORS SHALL REVIEW THE ACTUAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND SHALL COORDINATE WORK WITH THE PLANS, EXISTING EQUIPMENT AND SYSTEMS, BUILDING STRUCTURE AND WORK OF OTHER TRADES. WHERE CONFLICTS OCCUR, OR IF CONNECTIONS THERETO CAN NOT BE MADE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO MATERIAL FABRICATION OR INSTALLATION.
- WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF ANOTHER, THE CONTRACTOR SHALL WORK OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITIONS IN A MANNER ACCEPTABLE TO THE OWNER AND THE CONTRACTOR SHALL BEAR THE COST OF SUCH CORRECTIONS.
- THE CONTRACTOR SHALL LOCATE EQUIPMENT WHICH MUST BE SERVICED, OPERATED, OR MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, MOTORS, CONTROLLERS, DRAIN PANS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THE PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ALLOW FOR BETTER ACCESSIBILITY.
- WORK IN OCCUPIED SPACE SHALL BE COORDINATED WITH THE OWNER. SHOULD ANY OUTAGES BE REQUIRED IN THE COURSE OF THIS PROJECT, THE CONTRACTOR SHALL COORDINATE SUCH OUTAGES WITH THE OWNER'S DESIGNATED REPRESENTATIVE, SCHEDULING ANY OUTAGES DURING THE NON WORKING HOURS, SO AS NOT TO AFFECT FACILITY OPERATIONS, 5 BUSINESS DAYS NOTICE WILL BE REQUIRED PRIOR TO ANY OUTAGE. NO OUTAGE MAY BE EXECUTED PRIOR TO APPROVAL OF THE OWNER'S DESIGNATED REPRESENTATIVE AND THE FACILITY MANAGER.
- THE CONTRACTOR SHALL LEAVE THE ENTIRE MECHANICAL SYSTEM INSTALLED UNDER THIS CONTRACT IN PROPER WORKING ORDER AND SHALL, WITHOUT CHARGE, REPLACE ANY WORK OR MATERIALS WHICH DEVELOP DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR, WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL, DURING THE ONE YEAR WARRANTY PERIOD, BE RESPONSIBLE FOR PROPER REPAIR AND ADJUSTMENTS OF MECHANICAL SYSTEMS AND EQUIPMENT, APPARATUS, DEVICES ETC. INSTALLED BY HIM, AND DO WORK NECESSARY TO ENSURE EFFICIENT AND PROPER FUNCTIONING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND SHALL INCUR FINANCIAL RESPONSIBILITIES FOR, ANY DAMAGES CAUSED BY OR RESULTING FROM DEFECTS IN HIS WORK.
- WHEREVER PIPES, CONDUITS, OR OTHER ITEMS PASS THROUGH FIRE RATED WALLS AND FLOORS, THE SPACE BETWEEN THE ITEM AND THE MASONRY OR THE SPACE BETWEEN THE ITEM AND THE SLEEVE SHALL BE ADEQUATELY FIRE STOPPED WITH A NON COMBUSTIBLE, NON MELTING MATERIAL IN ACCORDANCE WITH NFPA STANDARDS.
- WALL OPENINGS RESULTING FROM DEMOLITION SHALL BE CLOSED AND FINISHED TO MATCH EXISTING.
- FINISHES DAMAGED DURING THE PROJECTS SHALL BE REPAIRED TO MATCH EXISTING.
- THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO THE LOCAL CODE, STATE LAWS, AGA, IBC, NBFU, NFPA, ASME, AND ALL OTHER GOVERNING AUTHORITIES.
- INSTALL NEW EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

**DESIGNATIONS**

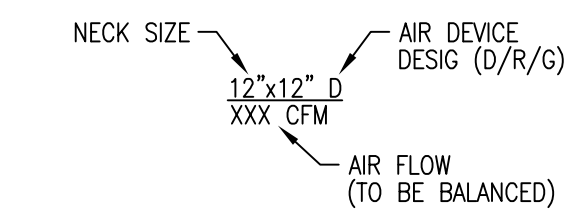
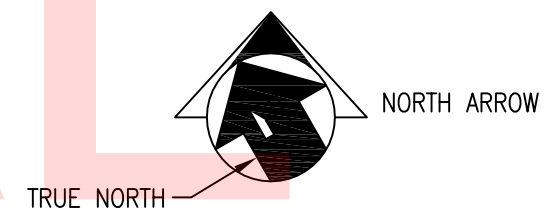


DETAIL = LETTER/SECTION = NUMBER

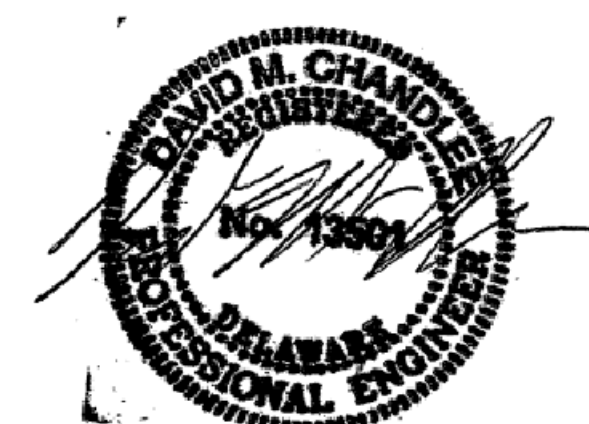
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PLAN NORTH



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M-001

<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS		<p>GRAVEL HILL SIGN SHOP RENOVATION</p>	CONTRACT	BRIDGE NO.	N/A	<p>MECHANICAL-LEGEND, ABBREVIATIONS, &amp; NOTES</p>	SHEET NO.
				COUNTY	DESIGNED BY: DPC			TOTAL SHTS.
				SUSSEX	CHECKED BY: TCK			13

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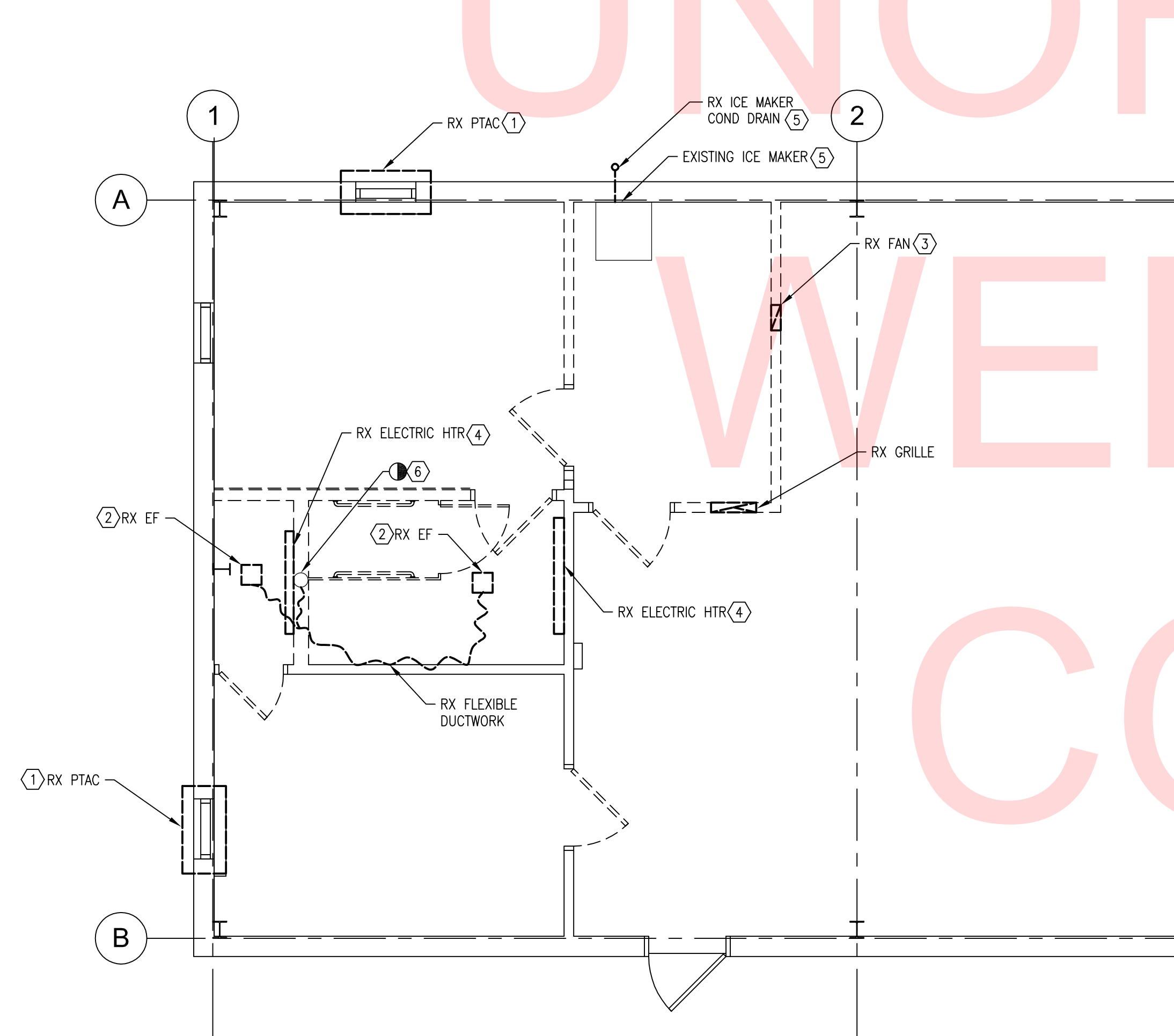
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**SHEET KEYNOTES:**

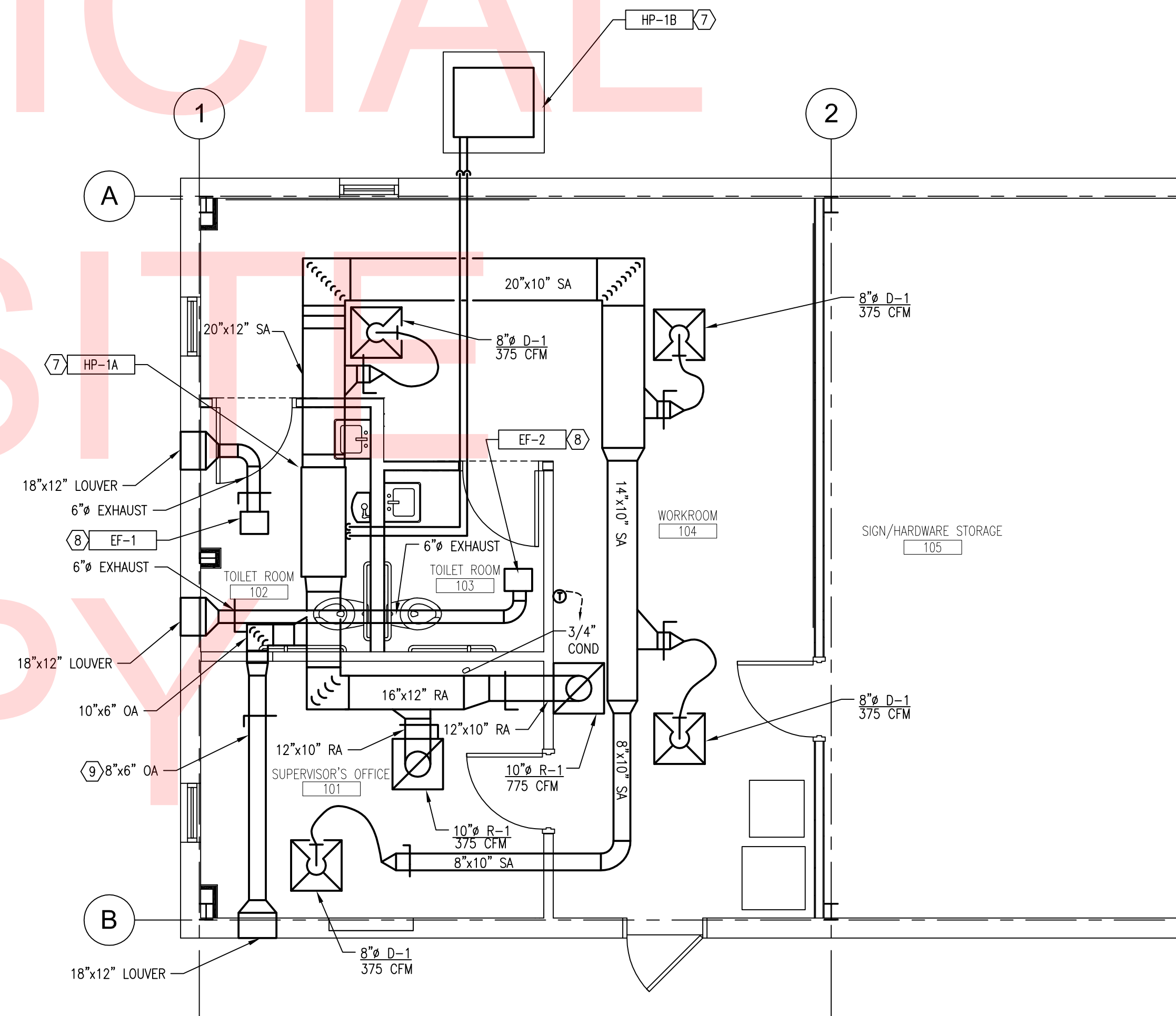
- ① REMOVE EXISTING PTAC AND EXISTING ELECTRICAL CONNECTION BACK TO SOURCE. PROVIDE PTAC UNIT TO DELDOT FOR REUSE.
- ② REMOVE EXISTING EXHAUST FAN, ASSOCIATED DUCTWORK AND EXISTING ELECTRICAL CONNECTION BACK TO SOURCE.
- ③ REMOVE EXISTING THROUGH WALL EXHAUST FAN TO SHOP AREA. REMOVE ELECTRICAL CONNECTION BACK TO SOURCE.
- ④ REMOVE EXISTING ELECTRIC HEATERS AND EXISTING ELECTRICAL CONNECTION BACK TO SOURCE.
- ⑤ REMOVE AND PROTECT ICE MACHINE FOR REINSTALLATION FOLLOWING CONSTRUCTION COMPLETION. EXISTING CONDENSATE PIPING TO BE REMOVED WHEN ICE MAKER IS RELOCATED AND CONDENSATE OPENING WILL BE PATCHED.
- ⑥ REMOVE EXISTING FLEXIBLE DUCTWORK CONNECTED TO EXHAUST FAN, MAINTAIN EXISTING VENT THROUGH ROOF FOR RECONNECTION TO NEW SANITARY VENT. REFER TO PLUMBING DRAWINGS.
- ⑦ INSTALL INDOOR AHU SUSPENDED FROM ROOF STRUCTURE ABOVE FINISHED CEILING AND OUTDOOR CONDENSING UNIT PER MANUFACTURER REQUIREMENTS. ROUTE REFRIGERANT PIPING ABOVE CEILING. PROVIDE NEW CONCRETE EQUIPMENT PAD FOR NEW OUTDOOR CONDENSING UNIT. CONTRACTOR TO COORDINATE CONCRETE PAD LOCATION WITH EXISTING STORM DRAIN.
- ⑧ INSTALL NEW RESTROOM EXHAUST FANS TO BE DUCTED TO THE OUTSIDE. PROVIDE AND INSTALL NEW WALL LOUVER AND SCREEN CONSTRUCTED OF GALVANIZED STEEL, 1/2-INCH-SQUARE MESH AND 0.041-INCH WIRE TO PREVENT INSECTS AND PESTS FROM ENTERING THE BUILDING AT EXHAUST DUCT TERMINATION. CONTRACTOR TO ENSURE EXHAUST OUTLET IS A MINIMUM OF THREE (3) FEET FROM THE NEAREST WINDOW, DOOR, BUILDING INTAKE OR OPENING. EXHAUST FAN SHALL BE CONTROLLED FROM LOCAL SWITCH.
- ⑨ INSTALL NEW OUTDOOR AIR INTAKE TO BE DUCTED FROM THE FRONT WALL OF THE BUILDING. PROVIDE AND INSTALL NEW WALL LOUVER AND SCREEN CONSTRUCTED OF GALVANIZED STEEL, 1/2-INCH-SQUARE MESH AND 0.041-INCH WIRE TO PREVENT INSECTS AND PESTS FROM ENTERING THE BUILDING AT DUCT TERMINATION.

**GENERAL SHEET NOTES:**

1. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
2. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE MECHANICAL AND RELATED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.
3. UNLESS OTHERWISE NOTED, MECHANICAL ITEMS SHOWN HEAVY SOLID (—) SHALL BE NEW WORK, MECHANICAL ITEMS SHOWN LIGHT SOLID (---) SHALL BE EXISTING AND MECHANICAL ITEMS SHOWN HEAVY DASHED (---) SHALL BE REMOVED.
4. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



1 MECHANICAL- DEMOLITION PLAN  
M101 SCALE: 1/4" = 1'-0"



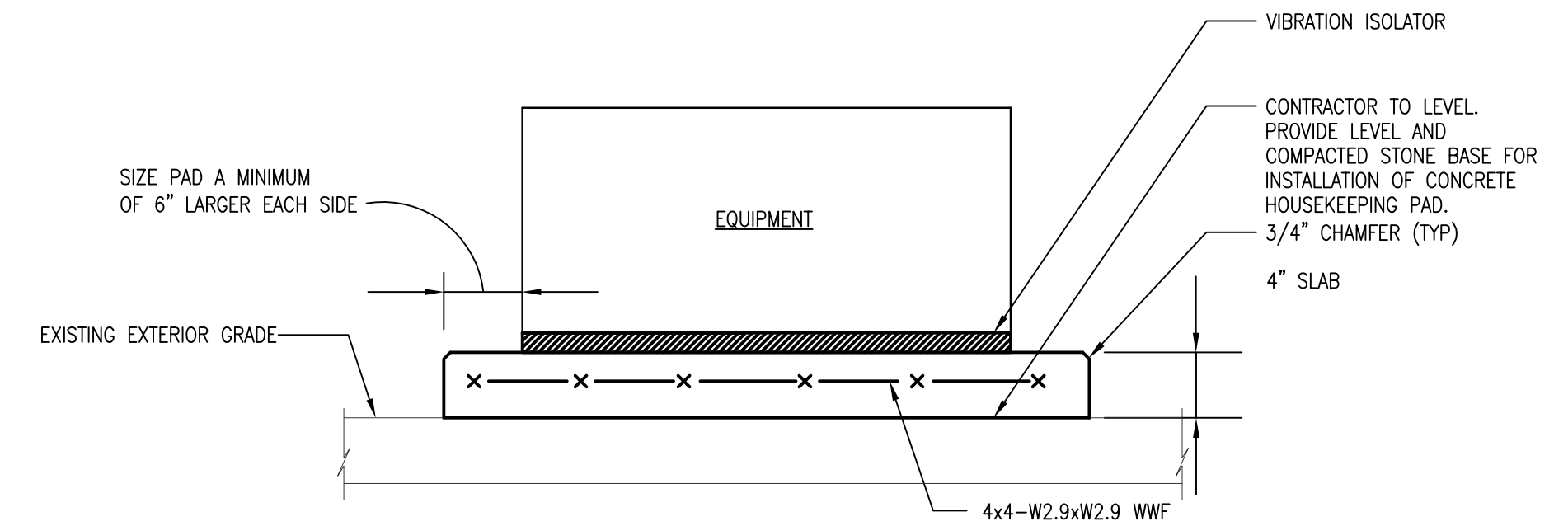
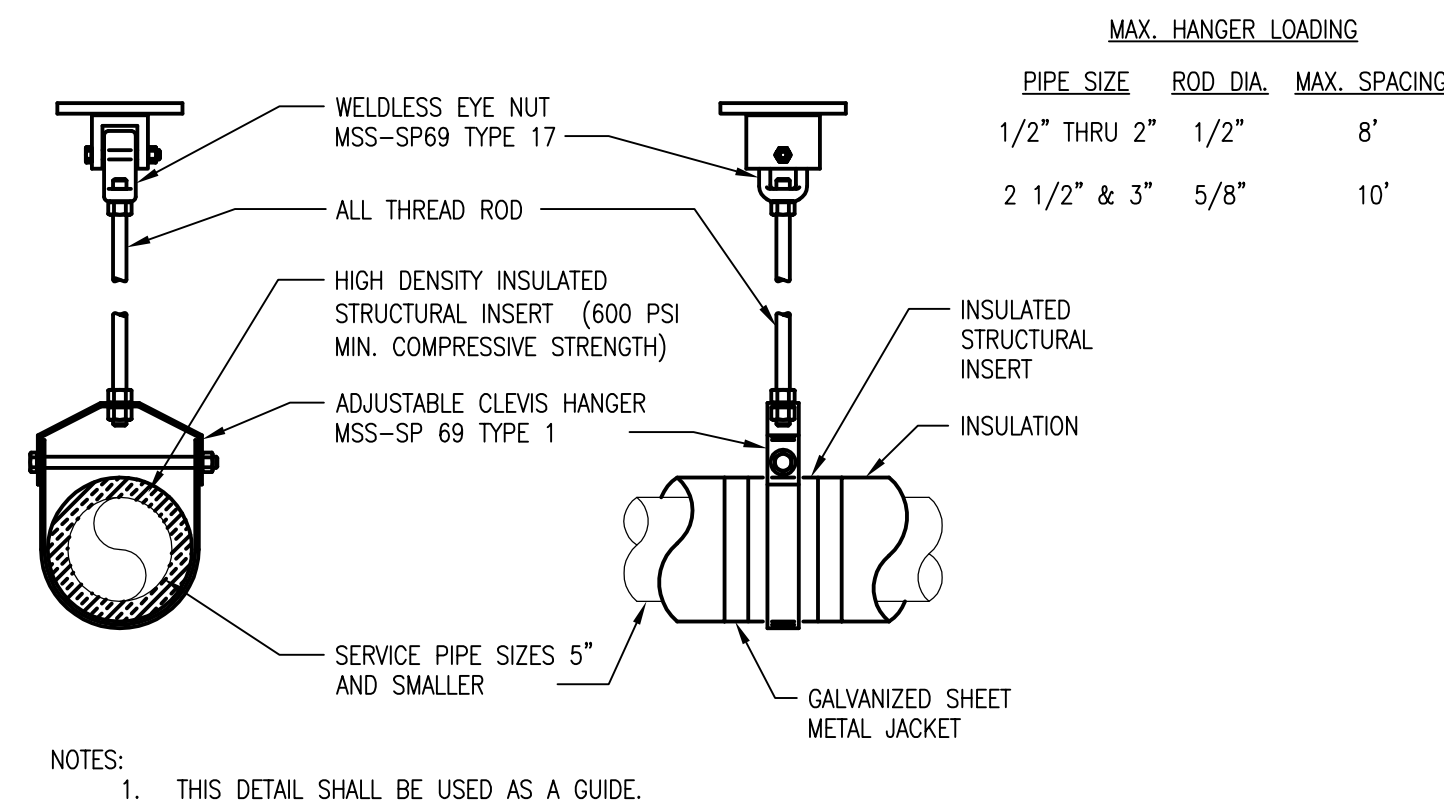
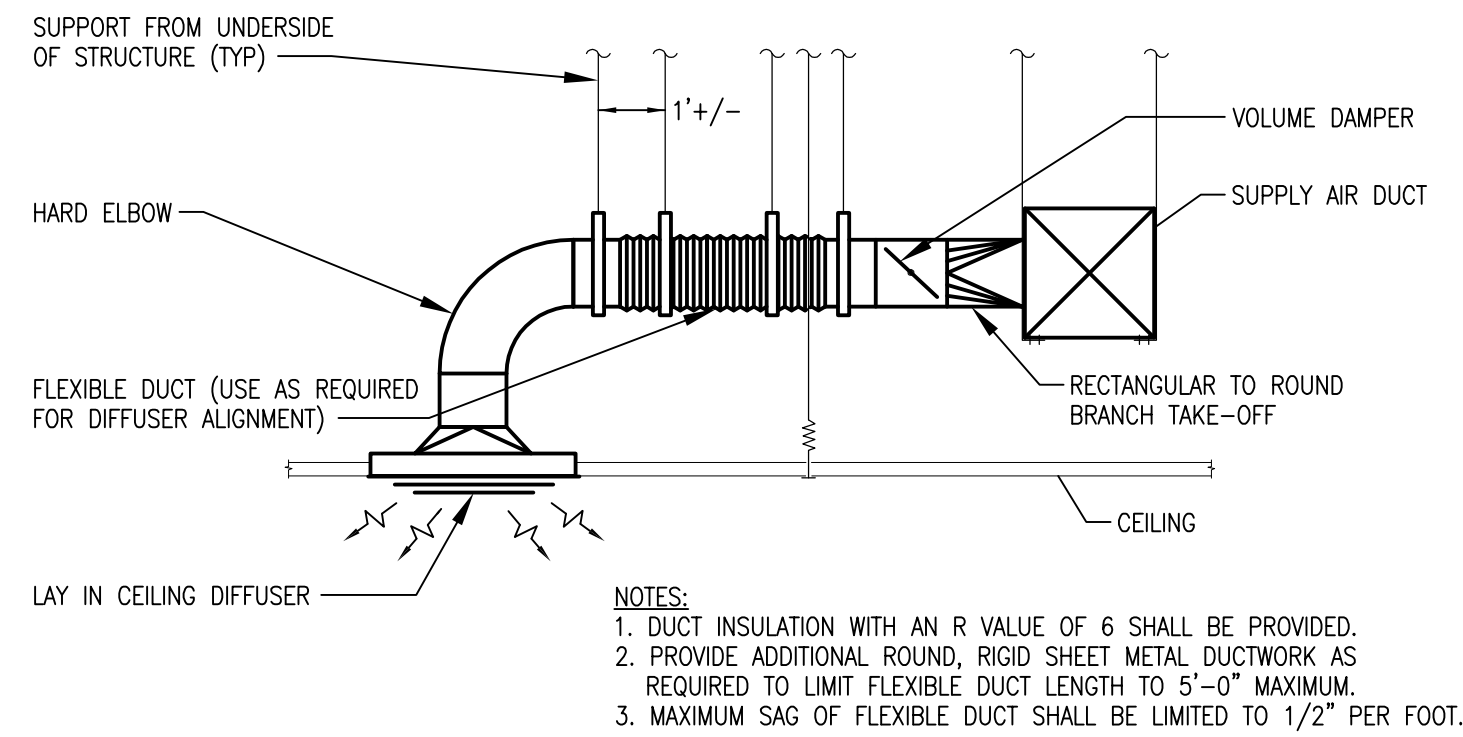
2 MECHANICAL - NEW WORK PLAN  
M101 SCALE: 1/4" = 1'-0"



M-101

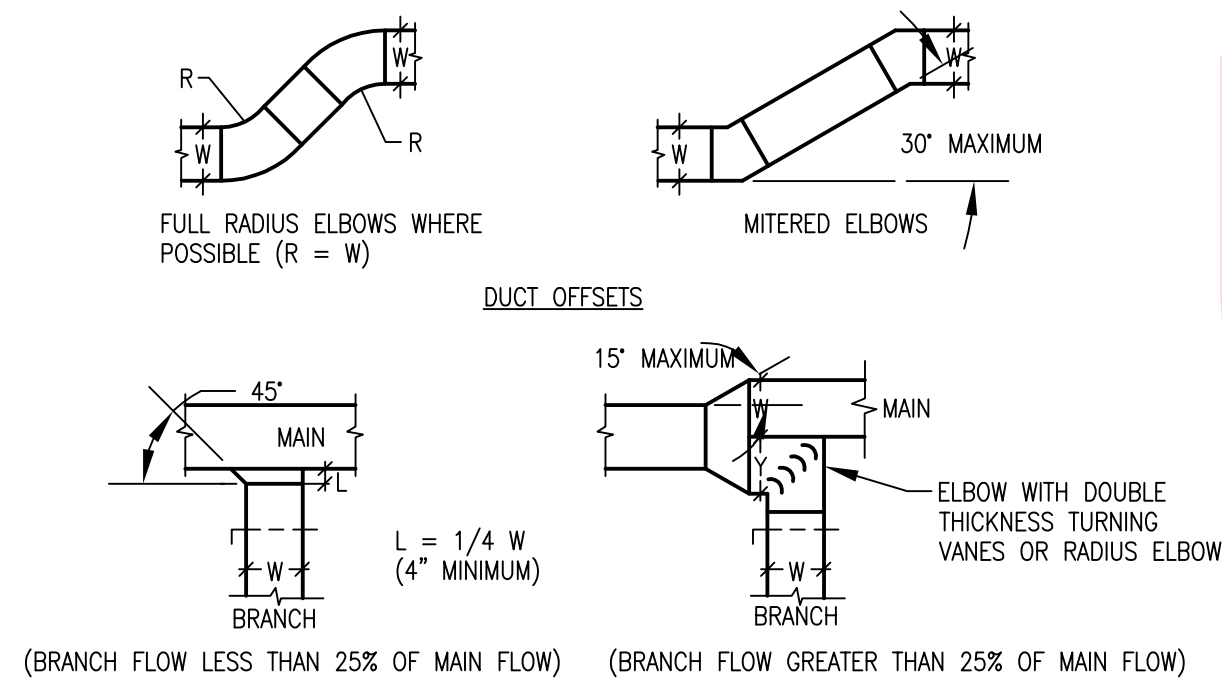
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	DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	GRAVEL HILL SIGN SHOP RENOVATION	CONTRACT BRIDGE NO. N/A COUNTY DESIGNED BY: DPC SUSSEX CHECKED BY: TGC	MECHANICAL-DEMOLITION AND NEW WORK	SHEET NO. 5 TOTAL SHTS. 13



3 CONDENSING UNIT HOUSEKEEPING PAD  
 M501 SCALE: NOT TO SCALE

1 DIFFUSER / BRANCHLINE  
 M501 SCALE: NTS



4 DUCT FITTINGS  
 M501 SCALE: NTS

2 HANGER SUPPORT  
 M501 SCALE: NTS

AIR DEVICE SCHEDULE								
DESIG.	DUTY	FACE SIZE	NECK SIZE	CFM	BLOW	DEVICE TYPE	BASIS	NOTES
D1	SUPPLY	24"x24"	8" DIA.	375	4-WAY	DIFFUSER	TITUS TMSA	1
R1	RETURN	24"x24"	10" DIA.	375-775	1-WAY	REGISTER	TITUS PAR	1

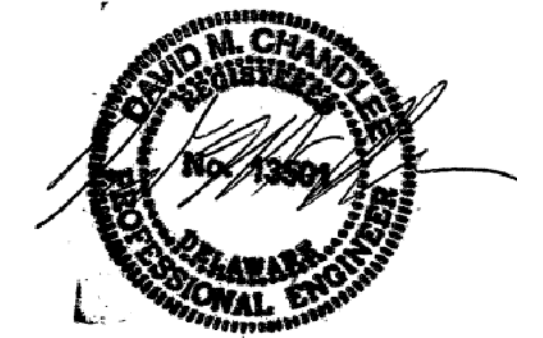
NOTES:  
 1. PROVIDE WITH OPPOSED BLADE DAMPER

FAN SCHEDULE														
DESIG.	LOCATION	SERVES	CFM	SP IN. W.G.	FAN RPM	MOTOR HP	TYPE	DRIVE	ELEC VOLT/PH	MAX SONES	DAMPER SIZE (IN)	APPROX WEIGHT (LBS)	BASIS	NOTES
EF-1	CEILING	TOILET ROOM 102	140	0.537	900	0.03	CEILING MOUNT	DIRECT	115/1	4.4	11X14	24	GREENHECK SP-A200	1,2,3,4
EF-2	CEILING	TOILET ROOM 103	70	0.498	935	0.00	CEILING MOUNT	DIRECT	115/1	0.5	11X14	12	GREENHECK SP-80-VG	1,2,3,4

NOTES:  
 1. PROVIDE BIRDSCREEN  
 2. PROVIDE GRAVITY BACKDRAFT DAMPER  
 3. PROVIDE FACTORY STARTER  
 4. PROVIDE FACTORY DISCONNECT

DUCTED SPLIT SYSTEM SCHEDULE																				
DESIG.	LOCATION	CFM	OA CFM	EVAPORATOR SECTION DATA						OUTDOOR SECTION DATA										
				TOTAL COOLING (MBH)	TOTAL HEATING (MBH)	ELECTRICAL			DESIG.	LOCATION	SERVES	COOLING CAPACITY (MBH)	LIQUID LINE SIZE (IN)	VAPOR LINE SIZE (IN)	ELECTRICAL			BASIS	NOTES	
						VOLT/PH	MCA	FLA							VOLT/PH	MCA	FLA			
HP-1A	ABOVE TOILET ROOM 102	1500	350	35	31.9	240/1	92.5	-	GUARDIAN RFCX38CE12MP22	HP-1B	OUTSIDE BUILDING	HP-1A	35.0	3/8"	3/4"	240/1	20.5	1.3	RHP14L35B21S	1,2,3

NOTES:  
 1. PROVIDE WITH MANUFACTURER'S PROGRAMMABLE HEAT PUMP THERMOSTAT CAPABLE OF PROVIDING 7 DAY 24 HOUR TEMPERATURE PROGRAMMING.  
 2. PROVIDE FACTORY INSTALLED DISCONNECT.  
 3. PROVIDE FACTORY TECHNICIAN INSTALLED RAWAL VALVE.



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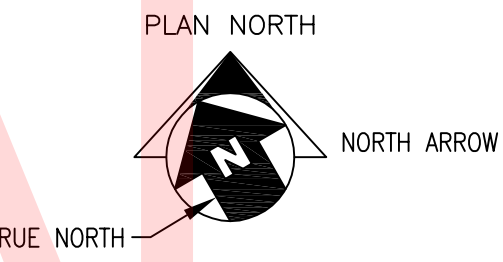
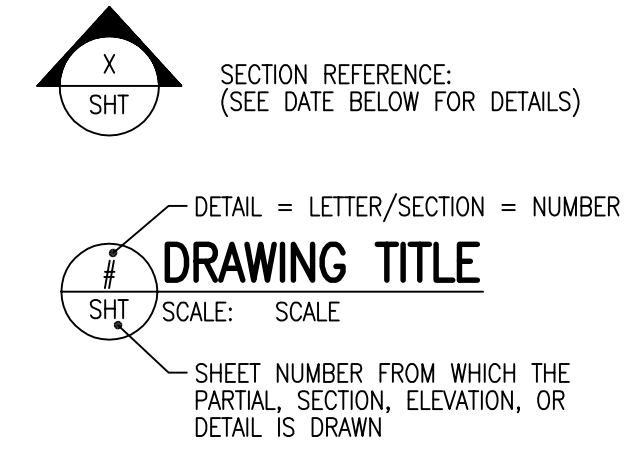
**PLUMBING LEGEND**

SYMBOL	DESCRIPTION
	SANITARY PIPE
	DOMESTIC COLD WATER PIPE
	DOMESTIC HOT WATER PIPE
	PIPE CAP
	BRANCH TAKE OFF
	PIPE DROP TEE
	PIPE RISE TEE
	PIPE (SOLID) OVER PIPE (BROKEN)
	DIAMETER
	POINT OF CONNECTION, NEW TO EXISTING
	POINT OF DISCONNECTION FROM EXISTING
	SYMBOL FOR SPECIFIC NOTE; NOTE APPLIES TO DRAWING ON WHICH IT OCCURS
	SHUT OFF VALVE

**ABBREVIATIONS**

COND	CONDENSATE
C.O.	CLEAN OUT
CW	DOMESTIC COLD WATER
DIA, Ø	DIAMETER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EX	EXISTING
FDR	FLOOR DRAIN
FT, "	FOOT, FEET
HW	DOMESTIC HOT WATER
IN, "	INCH, INCHES
RX	REMOVE EXISTING
SAN	SANITARY
VTR	VENT TO REMAIN

**DESIGNATIONS**



**GENERAL NOTES**

- WORK SHALL CONFORM TO THE CONTRACT DRAWINGS, SPECIFICATIONS AND THE LATEST APPLICABLE INTERNATIONAL PLUMBING CODE. WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND NATIONAL SAFETY CODE REQUIREMENTS.
- THE SCOPE OF WORK INDICATED IN THESE DOCUMENTS SHALL INCLUDE PLUMBING SYSTEMS, FULLY ADJUSTED, TESTED AND READY TO USE. PROVIDE ITEMS NECESSARY TO COMPLETE THE SYSTEMS. EXAMINE WORK INDICATED FOR TRADES IN ORDER TO DETERMINE THE EXTENT OF THE WORK REQUIRED TO BE COMPLETED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPLICATIONS AND FEES ASSOCIATED WITH APPLICABLE PERMITS FOR CONSTRUCTION.
- IT IS THE INTENTION OF THESE DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE, TESTED AND READY FOR USE."
- THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW EVERY COMPONENT AND/OR ACCESSORY REQUIRED FOR A COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE ITEMS NECESSARY FOR A PROPERLY WORKING SYSTEM IN COMPLIANCE WITH ACCEPTED INDUSTRY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
- PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE SITE AND IDENTIFY ITEMS THAT MAY AFFECT THEIR BID. PRIOR TO THE INSTALLATION, FABRICATION, REMOVAL, OR RELOCATION OF ANY WORK, THE CONTRACTORS SHALL REVIEW THE ACTUAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND SHALL COORDINATE WORK WITH THE PLANS, EXISTING EQUIPMENT AND SYSTEMS, BUILDING STRUCTURE AND WORK OF OTHER TRADES. WHERE CONFLICTS OCCUR, OR IF CONNECTIONS THERETO CAN NOT BE MADE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO MATERIAL FABRICATION OR INSTALLATION.
- WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF ANOTHER, THE CONTRACTOR SHALL WORK OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITIONS IN A MANNER ACCEPTABLE TO THE OWNER AND THE CONTRACTOR SHALL BEAR THE COST OF SUCH CORRECTIONS.
- THE CONTRACTOR SHALL LOCATE EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, MOTORS, CONTROLLERS, DRAIN PANS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THE PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ALLOW FOR BETTER ACCESSIBILITY.
- ALL WORK SHALL BE PERFORMED AT SUCH A TIME AND IN SUCH A MANNER AS WILL LEAST INTERFERE WITH MAINTENANCE AND OPERATION OF OWNER'S ACTIVITIES. PROVISIONS SHALL BE MADE TO PERMIT OWNER'S USE OF ALL THE BUILDING AND OF EXISTING SYSTEMS AT ALL TIMES. WORK IN OCCUPIED SPACE SHALL BE COORDINATED WITH THE OWNER. SHOULD ANY OUTAGES BE REQUIRED IN THE COURSE OF THIS PROJECT, THE CONTRACTOR SHALL COORDINATE SUCH OUTAGES WITH THE OWNER'S DESIGNATED REPRESENTATIVE, SCHEDULING ANY OUTAGES DURING THE NON WORKING HOURS, SO AS NOT TO EFFECT FACILITY OPERATIONS. 72 HOURS NOTICE WILL BE REQUIRED PRIOR TO ANY OUTAGE. NO OUTAGE MAY BE EXECUTED PRIOR TO APPROVAL OF THE OWNER'S DESIGNATED REPRESENTATIVE AND THE FACILITY MANAGER.
- THE CONTRACTOR SHALL LEAVE THE ENTIRE PLUMBING SYSTEM INSTALLED UNDER THIS CONTRACT IN PROPER WORKING ORDER AND SHALL, WITHOUT CHARGE, REPLACE ANY WORK OR MATERIALS WHICH DEVELOP DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR, WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL, DURING THE ONE YEAR WARRANTY PERIOD, BE RESPONSIBLE FOR PROPER REPAIR AND ADJUSTMENTS OF PLUMBING SYSTEMS AND EQUIPMENT, APPARATUS, DEVICES ETC. INSTALLED BY HIM, AND DO WORK NECESSARY TO ENSURE EFFICIENT AND PROPER FUNCTIONING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND SHALL INCUR FINANCIAL RESPONSIBILITIES FOR, ANY DAMAGES CAUSED BY OR RESULTING FROM DEFECTS IN HIS WORK.
- WHEREVER PIPES, CONDUITS, OR OTHER ITEMS PASS THROUGH FIRE RATED WALLS AND FLOORS, THE SPACE BETWEEN THE ITEM AND THE MASONRY OR THE SPACE BETWEEN THE ITEM AND THE SLEEVE SHALL BE ADEQUATELY FIRE STOPPED WITH A NON COMBUSTIBLE, NON MELTING MATERIAL IN ACCORDANCE WITH NFPA STANDARDS.
- WALL OPENINGS RESULTING FROM DEMOLITION SHALL BE CLOSED AND FINISHED TO MATCH EXISTING.
- FINISHES DAMAGED DURING THE PROJECTS SHALL BE REPAIRED TO MATCH EXISTING.

UNOFFICIAL  
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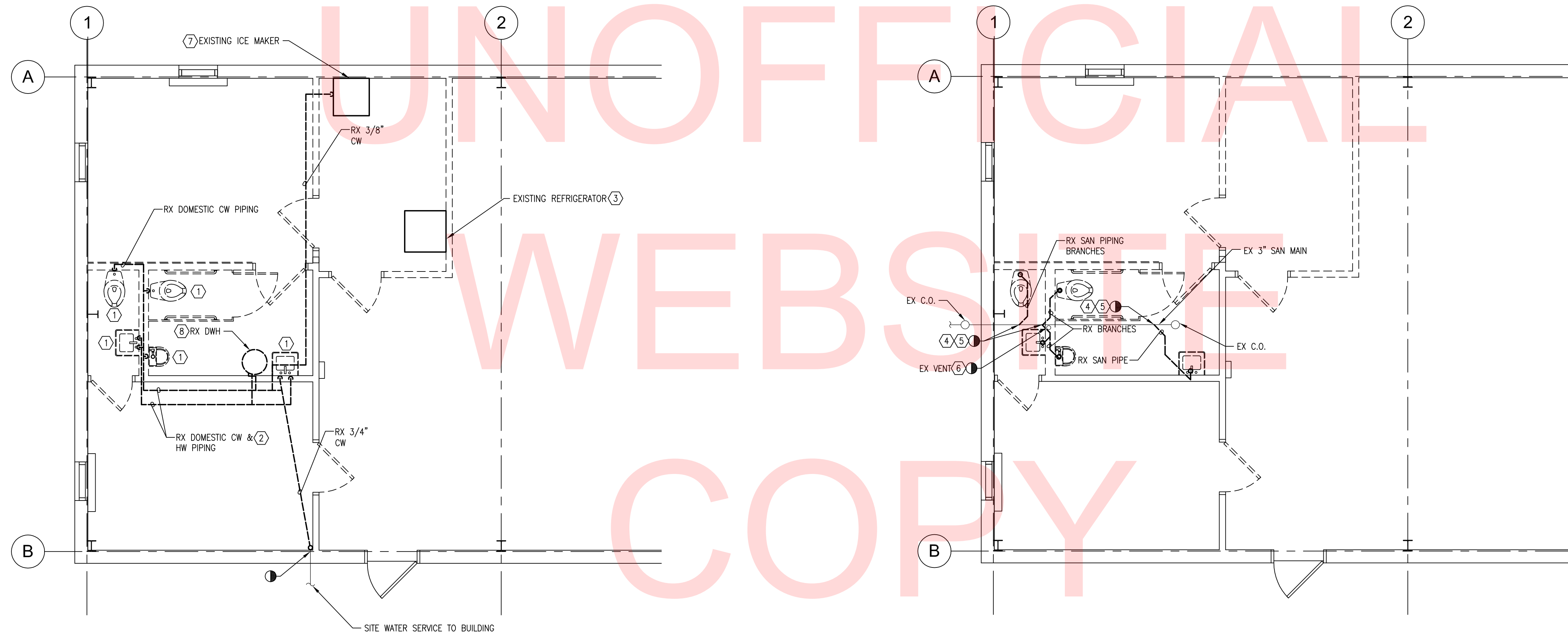
<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS		<p>GRAVEL HILL SIGN SHOP RENOVATION</p>	CONTRACT	BRIDGE NO.	N/A	<p>PLUMBING—LEGEND, ABBREVIATIONS, &amp; NOTES</p>	SHEET NO.
				COUNTY	DESIGNED BY: DPC	7		TOTAL SHTS.
				SUSSEX	CHECKED BY: TCK	13		

**SHEET KEYNOTES:**

- ① REMOVE EXISTING FIXTURES AND ASSOCIATED DOMESTIC WATER PIPING.
- ② EXISTING DOMESTIC WATER PIPING LOCATIONS ARE APPROXIMATE AND MUST BE CONFIRMED BY THE CONTRACTOR PRIOR TO DEMOLITION. REMOVE DOMESTIC WATER PIPING CURRENTLY LOCATED IN EXISTING WALL. CONTRACTOR SHALL BE RESPONSIBLE FOR OPENING AND REPAIRING WALL AS REQUIRED TO COMPLETE THIS WORK. PIPING SHOWN OUTSIDE WALL FOR CLARITY.
- ③ REMOVE AND PROTECT REFRIGERATOR FOR REINSTALLATION FOLLOWING CONSTRUCTION COMPLETION.
- ④ EXISTING SANITARY PIPING LOCATIONS ARE APPROXIMATE AND MUST BE CONFIRMED BY THE CONTRACTOR PRIOR TO DEMOLITION. CONTRACTOR IS RESPONSIBLE FOR OPENING AND REPAIRING CONCRETE FLOOR AS REQUIRED.
- ⑤ REMOVE EXISTING BRANCH SANITARY AND VENT PIPING. MAINTAIN SANITARY MAIN FOR RECONNECTION OF NEW PLUMBING FIXTURES. CONTRACTOR SHALL CLOSE AND SEAL ANY AND ALL CONNECTION POINTS TO THE SANITARY MAIN.
- ⑥ REMOVE EXISTING VENT PIPING UP TO POINT OF DISCONNECT IMMEDIATELY BELOW ROOF PENETRATION, CONTRACTOR SHALL MAINTAIN EXISTING VENT THROUGH ROOF FOR RECONNECTION AND REUSE WITH NEW RESTROOM VENT.
- ⑦ REMOVE AND PROTECT ICE MACHINE AND ASSOCIATED FILTER ASSEMBLY FOR REINSTALLATION FOLLOWING CONSTRUCTION COMPLETION. CONTRACTOR TO REMOVE EXISTING CONDENSATE PIPING & PATCH OPENING THROUGH WALL.
- ⑧ DEMOLISH EXISTING DOMESTIC WATER HEATER AND REMOVE ELECTRICAL CONNECTIONS BACK TO THE SOURCE.

**GENERAL SHEET NOTES:**

- 1. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
- 2. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY MECHANICAL AND RELATED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.
- 3. UNLESS OTHERWISE NOTED, PLUMBING ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND PLUMBING ITEMS SHOWN LIGHT SOLID (——) SHALL REMAIN.
- 4. DO NOT LOCATE ABOVE ELECTRICAL PANELS OR EQUIPMENT.



1 PLUMBING - DOMESTIC WATER DEMOLITION PLAN  
P101 SCALE: 1/4" = 1'-0"

2 PLUMBING - SANITARY DEMOLITION PLAN  
P101 SCALE: 1/4" = 1'-0"



P-101



DELAWARE  
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NO.	DATE	DESCRIPTION

GRAVEL HILL  
SIGN SHOP RENOVATION

CONTRACT	BRIDGE NO.	N/A
COUNTY	DESIGNED BY:	DPC
SUSSEX	CHECKED BY:	TGK

PLUMBING - DEMOLITION  
WORK

SHEET NO.	8
TOTAL SHTS.	13

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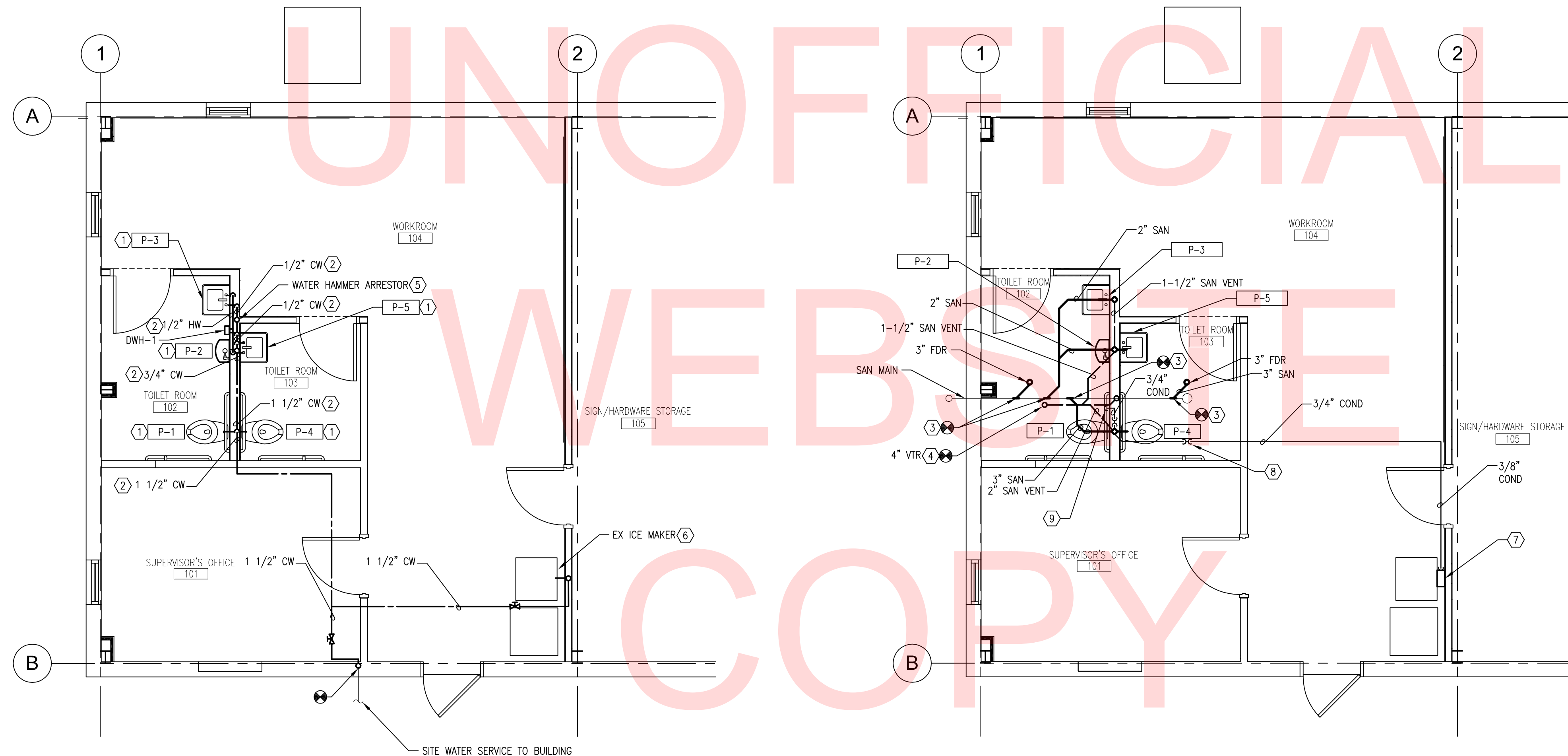


**SHEET KEYNOTES:**

- ① INSTALL NEW PLUMBING FIXTURES AND ASSOCIATED DOMESTIC WATER PIPING.
- ② ALL PIPING SHOULD BE LOCATED WITHIN THE WALL, STRUCTURE OR ABOVE THE FINISHED CEILING. CONTRACTOR SHALL CONFIRM EXISTING DOMESTIC WATER PIPE SIZES PRIOR TO INSTALLATION OF NEW WORK.
- ③ INSTALL NEW PLUMBING FIXTURES AND ASSOCIATED SANITARY PIPING. CONNECT ALL SANITARY BRANCHES TO EXISTING SANITARY MAIN. CONTRACTOR SHALL CONFIRM EXISTING SANITARY PIPE SIZES PRIOR TO INSTALLATION OF NEW WORK.
- ④ INSTALL NEW VENT PIPING THROUGH ROOF AND ALTAR EXISTING ROOF PENETRATION TO FIT SPECIFIED VENT PIPE SIZE.
- ⑤ INSTALL NEW SOUIX CHIEF WATER HAMMER ARRESTOR OR APPROVED EQUAL PER MANUFACTURER INSTRUCTIONS.
- ⑥ REINSTALL EXISTING ICE MACHINE WITH ASSOCIATED FILTER ASSEMBLY.
- ⑦ INSTALL LITTLE GIANT VCMX CONDENSATE PUMP OR APPROVED EQUAL. CONDENSATE SHALL BE PUMPED ABOVE CEILING. HORIZONTAL CONDENSATE PIPING SHALL HAVE A CONTINUOUS 1/8" SLOPE ON THE HORIZONTAL RUN TOWARD THE SANITARY CONNECTION.
- ⑧ INSTALL P-TRAP ON CONDENSATE PIPING FOR CONNECTION TO SANITARY DRAIN.
- ⑨ RUN CONDENSATE PIPING FROM INDOOR AHU TO SANITARY DRAIN.

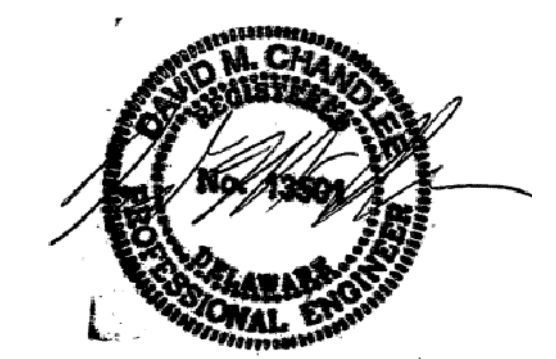
**GENERAL SHEET NOTES:**

1. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
2. UNLESS OTHERWISE NOTED, PLUMBING ITEMS SHOWN HEAVY SOLID (————) SHALL BE NEW WORK AND PLUMBING ITEMS SHOWN LIGHT SOLID (-----) SHALL BE EXISTING.
3. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.



1 PLUMBING -- DOMESTIC WATER NEW WORK PLAN  
P102 SCALE: 1/4" = 1'-0"

2 PLUMBING -- SANITARY NEW WORK PLAN  
P102 SCALE: 1/4" = 1'-0"



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ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	N/A
COUNTY	DESIGNED BY:	DPC
SUSSEX	CHECKED BY:	TGK

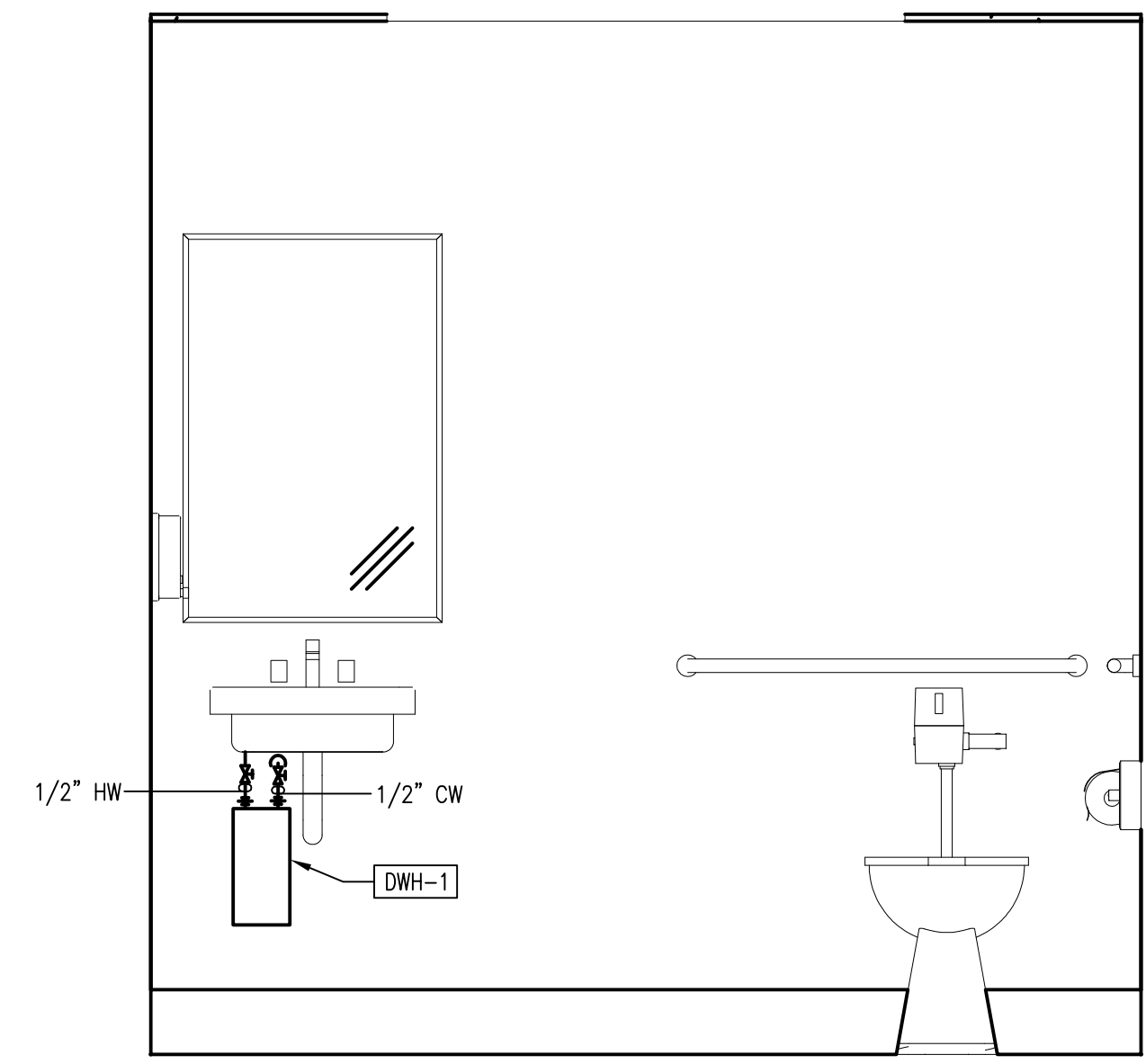
PLUMBING FIXTURE ROUGH-IN SCHEDULE									
DESIG.	FIXTURE	BASIS				REMARKS			
		CW	HW	VENT	SAN				
P-1	WATER CLOSET	1-1/2"	--	1-1/2"	3"	AMERICAN STANDARD 3461.576	1.2.5		
P-2	URINAL	3/4"	--	1-1/2"	2"	AMERICAN STANDARD 6590.506	1.6		
P-3	LAVATORY SINK	1/2"	1/2"	1-1/2"	2"	AMERICAN STANDARD LUCERNE	1.3		
P-4	WATER CLOSET	1-1/2"	--	1-1/2"	3"	AMERICAN STANDARD 3461.576	1.2.5		
P-5	LAVATORY SINK	1/2"	1/2"	1-1/2"	2"	AMERICAN STANDARD LUCERNE	1.3		
FDR	FLOOR DRAIN	--	--	--	3"		4		

NOTES:  
 1. ADA COMPLIANT  
 2. FLUSH VALVE TRAP PRIMER  
 3. UNDER SINK GUARD FOR EXPOSED PIPING  
 4. FLUSHOMETER TRAP PRIMER  
 5. SLOAN 110/111 ES-S FLUSHOMETER  
 6. SLOAN 186 ES-S FLUSHOMETER

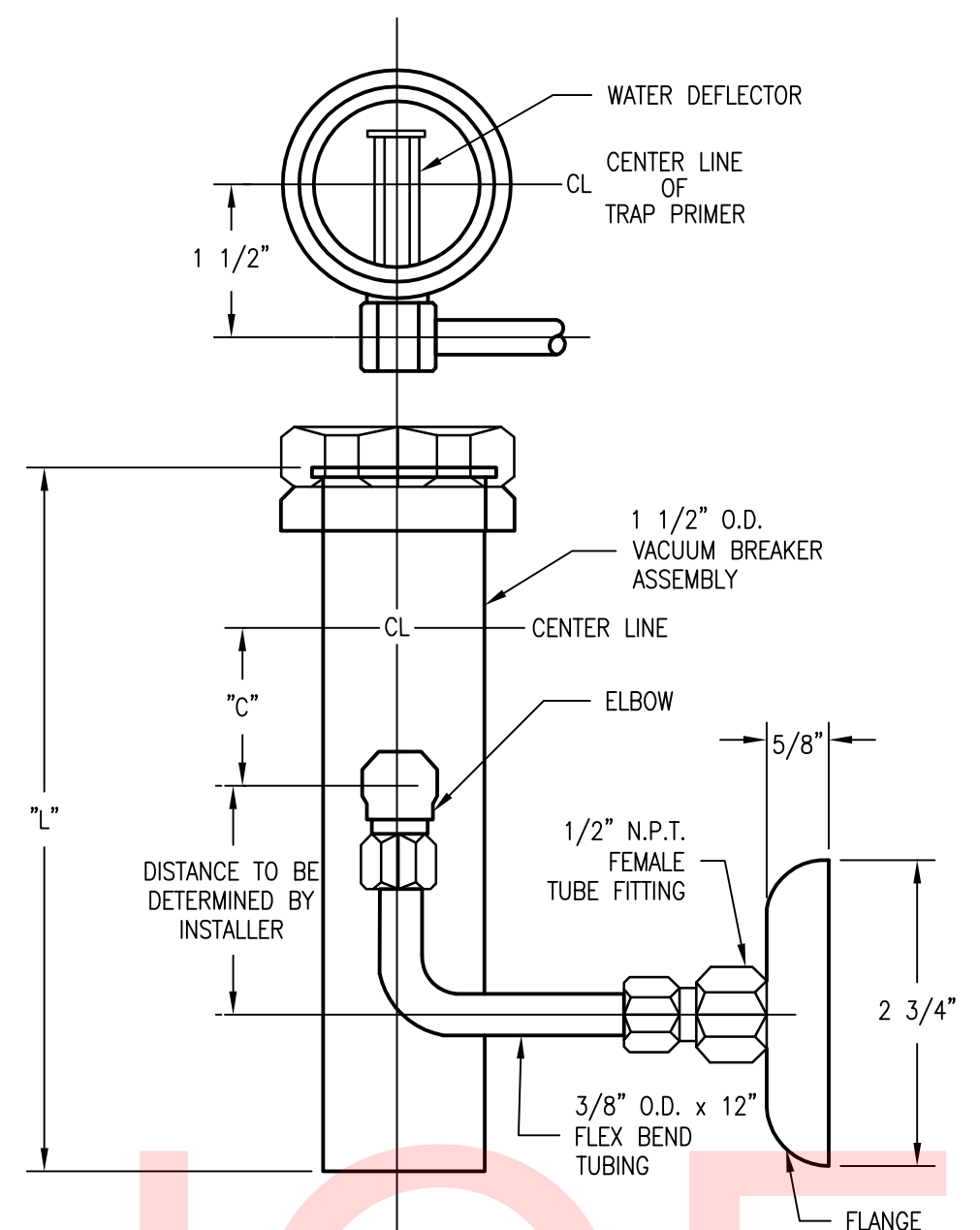
WATER HEATER											
DESIG.	LOCATION	BURNER		ELECTRIC		WATER			SHIPPING WEIGHT (LBS)	BASIS	NOTES
		INPUT MBH	OUTPUT MBH	KW	VOLT/PH	TEMP RISE (°F)	GPM	CAPACITY (GAL)			
DWH-1	TOILET ROOM 102	--	--	7.5	240/1	50	1.0	0.0	3.0	BRADFORD WHITE EFT-7500-4-S-10	1

NOTES: 1. DISCONNECT SHALL BE PROVIDED

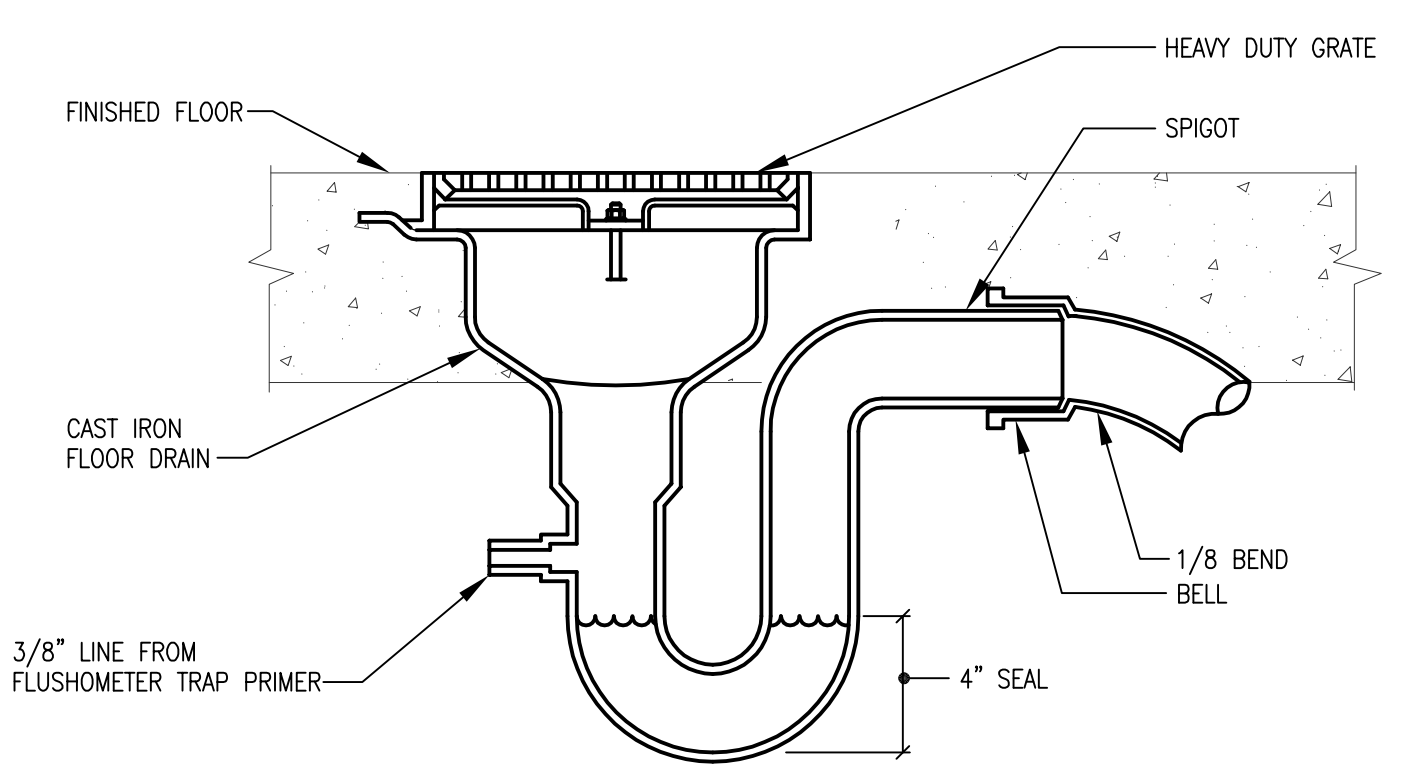
MISCELLANEOUS EQUIPMENT SCHEDULE		
DESIG.	DESCRIPTION	BASIS
CONDENSATE PUMP	CONDENSATE PUMP INSTALLED FOR ICE MACHINE CONDENSATE, CONDENSATE SHALL HAVE A MINIMUM DOWNWARD SLOPE OF 1% ON THE HORIZONTAL RUN TOWARD THE SANITARY RISER AND INCLUDE A P-TRAP PRIOR TO CONNECTION.	LITTLE GIANT VCMX-20UL
WATER HAMMER ARRESTOR	WATER HAMMER ARRESTOR TO BE INSTALLED ON DOMESTIC COLD WATER LINE BETWEEN HOT WATER HEATER AND LAVATORY.	SIoux CHEF 653B



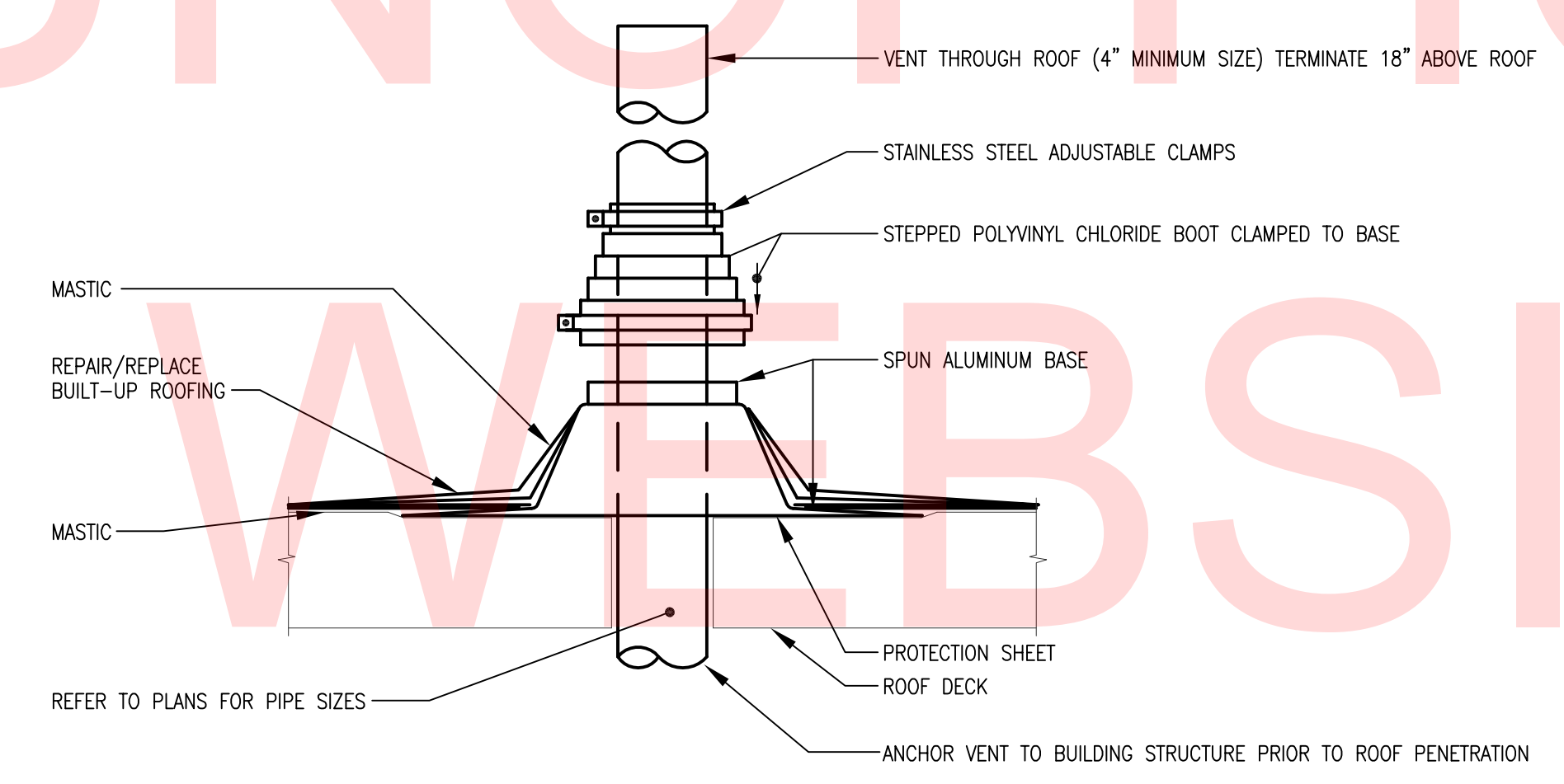
1 POINT OF USE DOMESTIC WATER HEATER  
 P501 SCALE: NONE



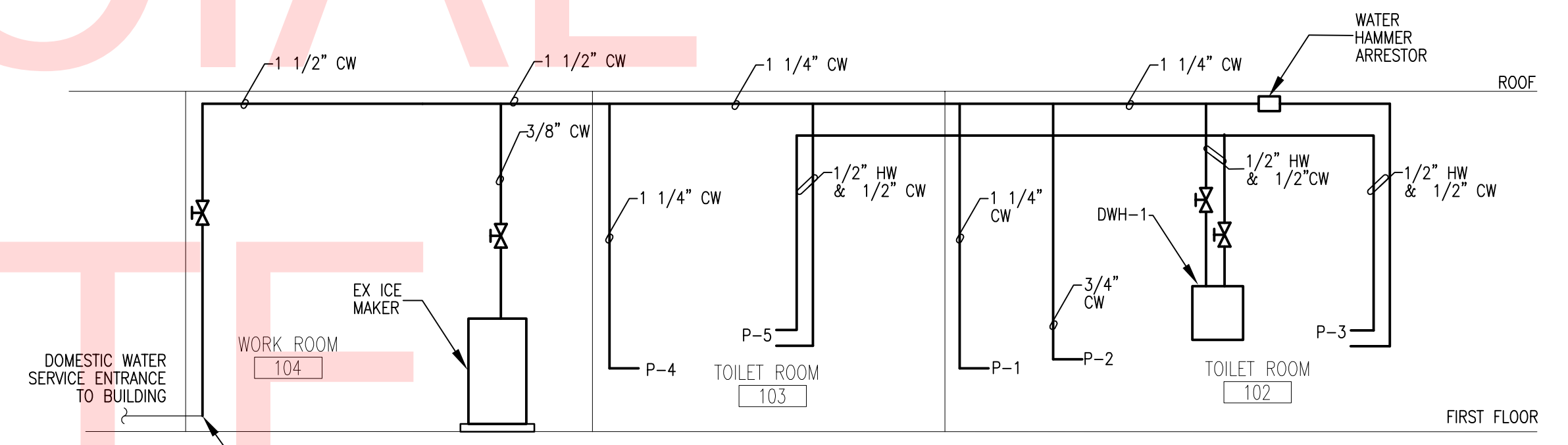
2 TRAP PRIMER  
 P501 SCALE: NONE



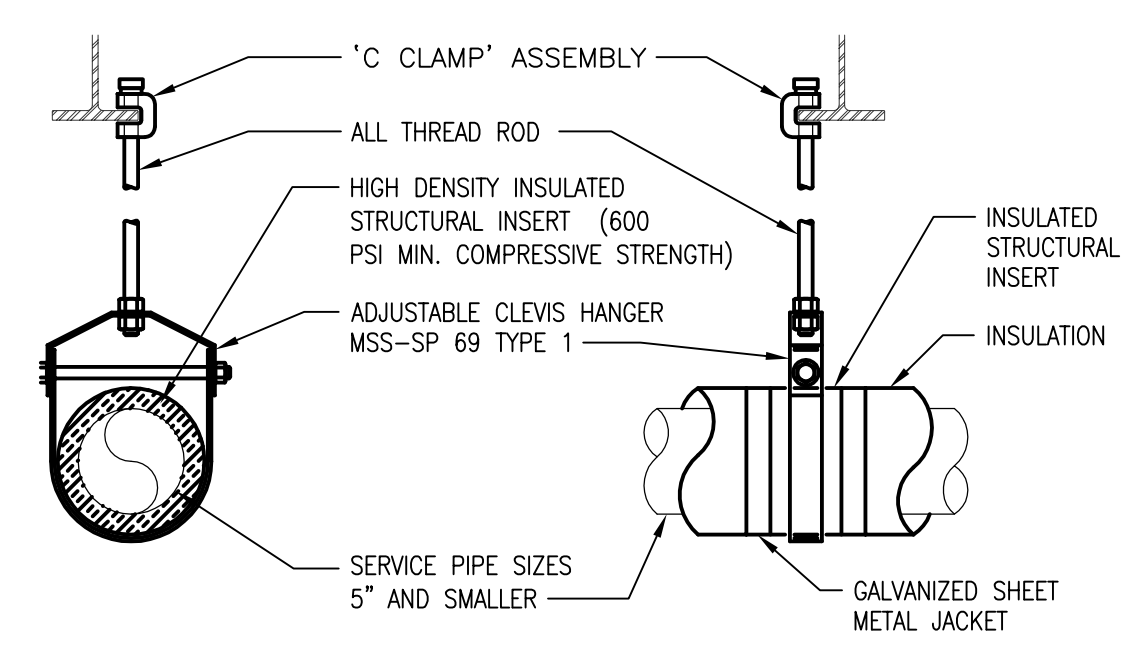
3 FLOOR DRAIN  
 P501 SCALE: NONE



4 SANITARY VENT THRU ROOF  
 P501 SCALE: NONE



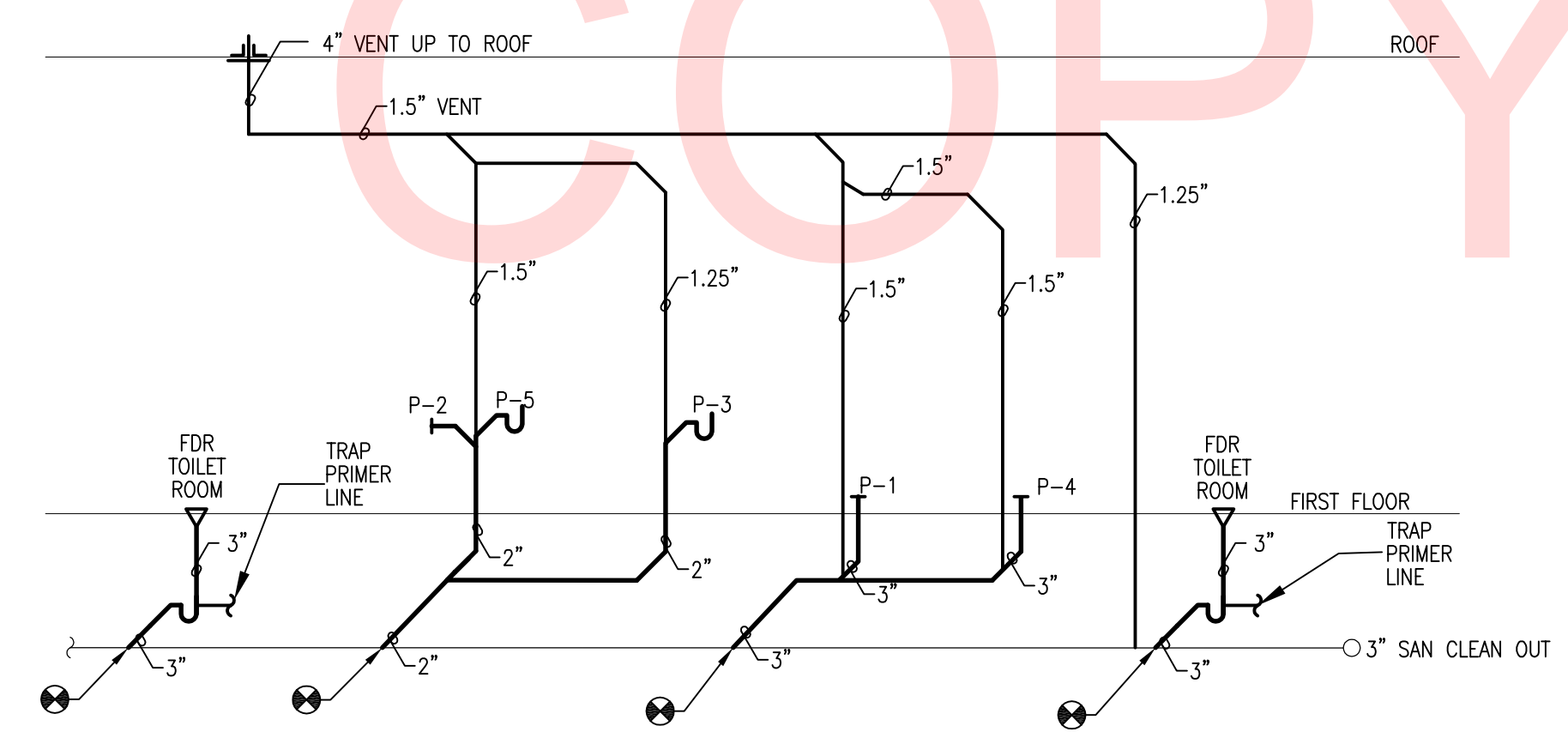
6 PLUMBING - DOMESTIC WATER RISER  
 P501 SCALE: NO SCALE



NOTES:  
 1. THIS DETAIL SHALL BE USED AS A GUIDE. ALL HANGERS SHALL MEET THE REQUIREMENTS OF SPECIFICATIONS SECTION 23-0529 'HANGERS AND SUPPORTS'.

MAX. HANGER LOADING		
PIPE SIZE	ROD DIA.	MAX. SPACING
1/2" THRU 2"	1/2"	8'
2 1/2" THRU 5"	5/8"	10'

5 HANGER SUPPORT  
 P501 SCALE: NONE



7 PLUMBING - SANITARY RISER  
 P501 SCALE: NO SCALE



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ADDENDUMS / REVISIONS

**GRAVEL HILL SIGN SHOP RENOVATION**

CONTRACT	BRIDGE NO.	N/A
COUNTY	DESIGNED BY:	DPC
SUSSEX	CHECKED BY:	TGK

**PLUMBING - SCHEDULES, DETAILS, & RISER DIAGRAMS**

SHEET NO.	10
TOTAL SHTS.	13

SYMBOL LEGEND

GENERAL NOTES CONTINUED

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	PANELBOARD, SURFACE MOUNTED	= =
	2' X 4' RECESSED MOUNTED LIGHT FIXTURE	= =
	LED EXIT SIGN - WALL OR CEILING MOUNTED (NUMBER OF FACES AND ARROWS AS INDICATED ON DRAWING)	AS INDICATED
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP RECEPTACLE "2" DENOTES CIRCUIT NUMBER	CORD. WITH FURNATURE
	250 VOLT, 2 POLE, 3 WIRE, 20 AMP SIMPLEX RECEPTACLE	CORD. WITH FURNATURE
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP DOUBLE DUPLEX RECEPTACLE	CORD. WITH FURNATURE
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP DUPLEX RECEPTACLE EQUIPPED WITH INTEGRAL GROUND CURRENT FAULT INTERRUPTER	CORD. WITH FURNATURE
	SWITCH, TOGGLE OS = DENOTES OCCUPANCY SENSOR WALL SWITCH 3" DENOTES 3-WAY SWITCH	48"
	CEILING MOUNTED OCCUPANCY SENSOR	= =
	JUNCTION BOXES	= =
	POWER PACK MOUNTED ABOVE CEILING	= =
	COMBINATION DATA/VOICE OUTLET	CORD. WITH FURNATURE
	DATA OUTLES "X" DENOTES NUMBER OF RJ-45 JACKS	CORD. WITH FURNATURE
	MANUAL MOTOR DISCONNECT	= =
	HOMERUN TO PANELBOARD, ARROWS INDICATE NUMBER OF CIRCUITS, LETTERS INDICATE PANEL DESIGNATION AND NUMBER INDICATE CIRCUIT DESIGNATION	= =
	SECURITY CAMERA	= =
	MOTION DETECTOR	= =
	NON-FUSED DISCONNECT SWITCH, SIZE AS INDICATED WHERE: "AF" - INDICATES AMPERE SWITCH SIZE "NF" - DENOTES NON-FUSED "P" - DENOTES POLE "3R" - DENOTES NEMA TYPE ENCLOSURE "4X" - DENOTES STAINLESS STEEL ENCLOSURE	= =

ELECTRICAL CONVENTIONS			
LIGHTING			
	LUMINAIRE TYPE - SEE LUMINAIRE SCHEDULE	1	PANEL CIRCUIT NUMBER
	CONTROL POINT DESIGNATION	Q	
	LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK		
GENERAL ABBREVIATIONS			
A	AMPERES	KVA	KILOVOLT AMPERES
ADA	AMERICANS WITH DISABILITIES ACT	KW	KILOWATTS
ADT	SECURITY	LTG	LIGHTING
AFB	ABOVE FINISH FLOOR	LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
AFG	ABOVE FINISH GRADE	MAU	MAKE-UP AIR UNIT
AHJ	AUTHORITY HAVING JURISDICTION	MC	METAL CLAD CABLE
AHU	AIR HANDLING UNIT	MCB	MAIN CIRCUIT BREAKER
AIC	AMPERE INTERRUPTING CAPACITY	MCC	MOTOR CONTROL CENTER
AL	ALUMINUM	MCP	MOTOR CIRCUIT PROTECTOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MISC	MISCELLANEOUS
ARCH	ARCHITECT	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED
ATC	AUTOMATIC TEMPERATURE CONTROL	NEC	NATIONAL ELECTRIC CODE
AWG	AMERICAN WIRE GAUGE	NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
BFG	BELOW FINISH GRADE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
BLDG	BUILDING	NO	NORMALLY OPEN OR NUMBER
C	CONDUIT	NTS	NOT TO SCALE
CASS	CONTROLLED ACCESS SECURITY SYSTEM	OMU	OFFICE OF MAINTENANCE AND UTILITY
CAT	CATALOG	P	POLE
CB	CIRCUIT BREAKER	PB	PUSHBUTTON
CBM	CERTIFIED BALLAST MANUFACTURERS	PNL	PANEL
CKT	CIRCUIT	PENDOT	PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
CL	CENTERLINE	PVC	POLYVINYL CHLORIDE
CLF	CURRENT LIMITING FUSE	PWR	POWER
COL	COLUMN	QTY	QUANTITY
CPT	CONTROL POWER TRANSFORMER	REL	RELOCATE EXISTING/RELOCATED EXISTING
CT	CURRENT TRANSFORMER	REQ'D	REQUIRED
CU	COPPER	REX	REMOVE EXISTING
DWG	DRAWING	RMC	RIGID METAL CONDUIT
EC	ELECTRICAL CONTRACTOR	RMS	ROOT MEAN SQUARED
ECB	ENCLOSED CIRCUIT BREAKER	RNMC	RIGID NON-METALLIC CONDUIT
EF	EXHAUST FAN	RTU	ROOF TOP UNIT
EM	EMERGENCY	SP	SPARE
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EPO	EMERGENCY POWER OFF	SYM	SYMMETRICAL
ETR	EXISTING TO REMAIN	TEL	TELEPHONE
EWC	ELECTRIC WATER COOLER	TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
EX	EXISTING	UG	UNDERGROUND OR UNDERGRADE
F	FUSE	UL	UNDERWRITERS LABORATORIES
FA	FIRE ALARM	V	VOLT
FLA	FULL LOAD AMPERES	VT	VOLTAGE TRANSFORMER
FMC	FLEXIBLE METAL CONDUIT	W	WIRE
FT	FEET	WH	WATER HEATER
G	GROUND OR GROUNDING	WP	WEATHER PROOF
GRMC	GALVANIZED RIGID METALLIC CONDUIT	WPS	WASHINGTON PROFESSIONAL SYSTEMS
HOA	HAND, OFF, AUTOMATIC SWITCH	XFMR	TRANSFORMER
IEEC	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS	Δ	DELTA
IMC	INTERMEDIATE METAL CONDUIT	Y	WYE
INT	INTERLOCK	ϕ	PHASE

10. THE LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE AND REQUIRE COORDINATION WITH ALL OTHER TRADES AND VERIFICATION OF EXISTING CONDITIONS. ROUTING OF CONDUIT IS DIAGNOSTIC IN NATURE AND NOT INTENDED TO SHOW ALL REQUIRED OFFSETS AND DETAILS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING ASSOCIATED EQUIPMENT AND CONDITIONS. COORDINATE THE LOCATION OF ALL EQUIPMENT WITH THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OTHER TRADES' DRAWINGS AND SPECIFICATIONS AND COORDINATING WITH ALL OTHER TRADES DURING BIDDING AND CONSTRUCTION.
11. MAINTAIN CONTINUITY OF ALL POWER, CONTROL, AND COMMUNICATION FUNCTIONS TO ALL AREAS AFFECTED BY DEMOLITION AND/OR NEW CONSTRUCTION.
12. CONTRACTOR SHALL NOT CUT ANY ACTIVE ELECTRICAL OR COMMUNICATIONS LINES DURING CONSTRUCTION. IF THE CONTRACTOR ACCIDENTALLY CUTS A LINE, THEY SHALL CONTACT THE ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH FURTHER WORK.
13. REPAIR AND PATCH ANY DISTURBED AREAS TO MATCH EXISTING CONDITIONS.
14. WHERE ELECTRICAL SYSTEMS PASS THROUGH AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, SYSTEMS SHALL BE SUITABLY PROTECTED TO PREVENT DAMAGE AND THE SYSTEMS RESTORED TO NORMAL OPERATION. ANY OUTAGES IN SYSTEMS SHALL BE COORDINATED WITH THE ENGINEER.
15. CONTRACTOR SHALL SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT AND MATERIALS USED ON THE PROJECT.
16. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INCLUDE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
17. ANY WORK THAT MAY POTENTIALLY CAUSE ANY OUTAGE SHALL BE PERFORMED DURING NON PEAK HOURS FROM MIDNIGHT THROUGH 5:00 AM. ALL EQUIPMENT OUTAGES SHALL BE COORDINATED WITH BUILDING OPERATIONS, DRBA AND THE ENGINEER. PROVIDE AT LEAST 10 DAYS ADVANCE WRITTEN NOTICE FOR ANY EQUIPMENT OUTAGES.
18. ELECTRICAL EQUIPMENT AND DEVICES WITHIN DEMOLITION AREA SHOWN TO BE DEMOLISHED, SHALL BE DEMOLISHED ALONG WITH ALL ASSOCIATED FEEDER BRANCH CIRCUITS AND CONDUITS, UNLESS OTHERWISE NOTED. WIRING SHALL BE REMOVED BACK TO SOURCE. REMOVE ALL CONDUITS ASSOCIATED WITH DEMOLISHED EQUIPMENT EXCEPT CONDUIT CONCEALED IN WALLS OR FLOOR SLABS. CONTRACTOR SHALL DISCONNECT, MAKE SAFE, AND REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT AND ALL ASSOCIATED CIRCUITRY WITHIN THIS AREA. THE OWNER SHALL HAVE FIRST RIGHTS TO ALL DEMOLISHED EQUIPMENT AND FIXTURES. UPON THE WRITTEN REFUSAL, REMOVE ALL DEMOLISHED ITEMS AND DEBRIS FROM THE WORK SITE AND DISPOSE OF PROPERLY. FIELD VERIFY ALL SUPPLY CIRCUITS FOR DEMOLISHED AND RELOCATED EQUIPMENT. UPDATE ALL PANELBOARD DIRECTORIES. IDENTIFY ALL SPARE CIRCUIT BREAKER POSITIONS AND SHOW DATE WHEN SPARE WAS CONFIRMED. FIELD VERIFY ALL SUPPLY SOURCES FOR ALL EQUIPMENT LOCATED IN WORK AREAS.
19. DISCONNECT AND MAKE SAFE ANY EQUIPMENT TO BE REMOVED BY OTHERS (I.E. MOTORS, ETC.). COORDINATE REMOVAL OF EQUIPMENT WITH OTHER TRADES PRIOR TO DEMOLITION.
20. IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADE'S WORK, CAREFULLY REMOVE AND STORE ANY OR ALL ELECTRICAL ITEMS IN PATH OF WORK, REINSTALLING AND RECONNECTING SAME AS REQUIRED, IN ACCORDANCE WITH THE PLANS AND/OR AS DIRECTED AFTER COMPLETION OF OTHER TRADE'S WORK IN THAT AREA.
21. PRIOR TO THE START OF DEMOLITION, CONTRACTOR SHALL FIELD VERIFY ALL BRANCH CIRCUITS AND MAINTAIN THOSE CIRCUITS THAT EXTEND OUTSIDE OF THE SCOPE OF WORK.
22. AFTER RENOVATING EXISTING ELECTRICAL WORK, THE CONTRACTOR SHALL ENSURE THAT ALL REMAINING AND NEW EQUIPMENT WILL OPERATE PROPERLY.
23. ALL ELECTRICAL WORK INDICATED TO REMAIN SHALL BE SUITABLY PROTECTED TO PREVENT ANY DAMAGE.

ELECTRICAL CONVENTIONS	
PRESENTATION	
	ELECTRICAL EQUIPMENT DESIGNATED BY SOLID HEAVY LINE WEIGHT INDICATES NEW WORK TO BE PROVIDED.
	ELECTRICAL EQUIPMENT DESIGNATED BY SOLID LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT TO REMAIN, UNLESS OTHERWISE INDICATED.
	ELECTRICAL EQUIPMENT DESIGNATED BY DASHED HEAVY LINE WEIGHT REPRESENTS EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED, UNLESS INDICATED TO BE REMOUNTED, RELOCATED, OR TURNED OVER TO OWNER.
WIRING	
	HOMERUN TO PANEL "LP2A", CIRCUITS #1,3,5 (VIA 20A-1P C/P'S), PROVIDE INSULATED GROUND CONDUCTOR IN ACCORDANCE WITH SPECIFICATIONS. NUMBER OF CIRCUITS INDICATED BY QUANTITY OF ARROW HEADS.
	HASH MARKS INDICATE QUANTITY OF #12 AWG COPPER CONDUCTORS IN CONDUIT. WHEN NO HASH MARKS ARE INDICATED, CONDUIT SHALL CONTAIN (2)#12 WIRES AND (1)#12 GROUND WIRE. PROVIDE 3/4" DIAMETER CONDUIT UNLESS NOTED OTHERWISE. EXAMPLE SHOWN AT LEFT INDICATES 2 HOT, 2 NEUTRAL (LONG LINES), AND 1 GROUND WIRES.
	CONCEALED CONDUIT AND/OR WIRING.
	BELOW GRADE CONDUIT AND/OR WIRING.
ANNOTATION	
	SHEET KEYNOTE NUMBER

- ### GENERAL NOTES (APPLICABLE TO ALL ELECTRICAL SHEETS)
1. PROVIDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, COORDINATION, ADDITIONAL DESIGN AND ALL INCIDENTALS NECESSARY TO PROVIDE A COMPLETE AND OPERABLE SYSTEM AS DETAILED ON PLANS TO THE SATISFACTION OF THE ENGINEER. COORDINATE ALL WORK WITH THE ENGINEER BEFORE THE START OF WORK.
  2. ALL WORK SHALL BE PERFORMED BY A QUALIFIED ELECTRICAL CONTRACTOR LICENSED IN THE STATE OF DELAWARE THAT HAS PREVIOUSLY PERFORMED WORK OF THIS SIZE AND TYPE UNLESS NOTED OTHERWISE. ALL WORK SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
  3. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE DESIGN DOCUMENTS AND BRING TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES AND MISSED ITEMS.
  4. PERFORM WORK AS REQUIRED BY APPLICABLE CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES WITH LAWFUL JURISDICTION. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
  5. MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE AS APPLICABLE. MATERIAL AND INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE.
  6. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE NOTICES, PLANS, PERMITS, LICENSES, FEES, BACK CHARGES AND APPROVALS REQUIRED FOR THIS PROJECT.
  7. MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE AND CURRENT AND AVAILABLE FOR INSPECTION WHEN REQUESTED. SUBMIT PROJECT AS BUILTS FOR ALL WORK AT THE END OF THE PROJECT. SUBMIT HARD COPY AND ELECTRONIC FORMAT THAT IS ACCEPTABLE TO DELDOT.
  8. COORDINATE ALL ELECTRICAL ITEMS WITH EXISTING FIELD CONDITIONS. LOCATIONS SHOWN ARE APPROXIMATE AND MAY REQUIRE MINOR ADJUSTMENT IN THE FIELD TO SATISFY THE DESIGN INTENT.
  9. DAMAGE TO EXISTING FACILITIES AND EQUIPMENT SHALL BE REPAIRED OR REPLACED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

\\jmt.com\local\jmt\tdts\2015\151152\_019\_Gravel\_Hill\_Sign\_CADD\Electrical\EG-001 - GENERAL NOTES, LEGEND, & ABBREVIATIONS.dwg

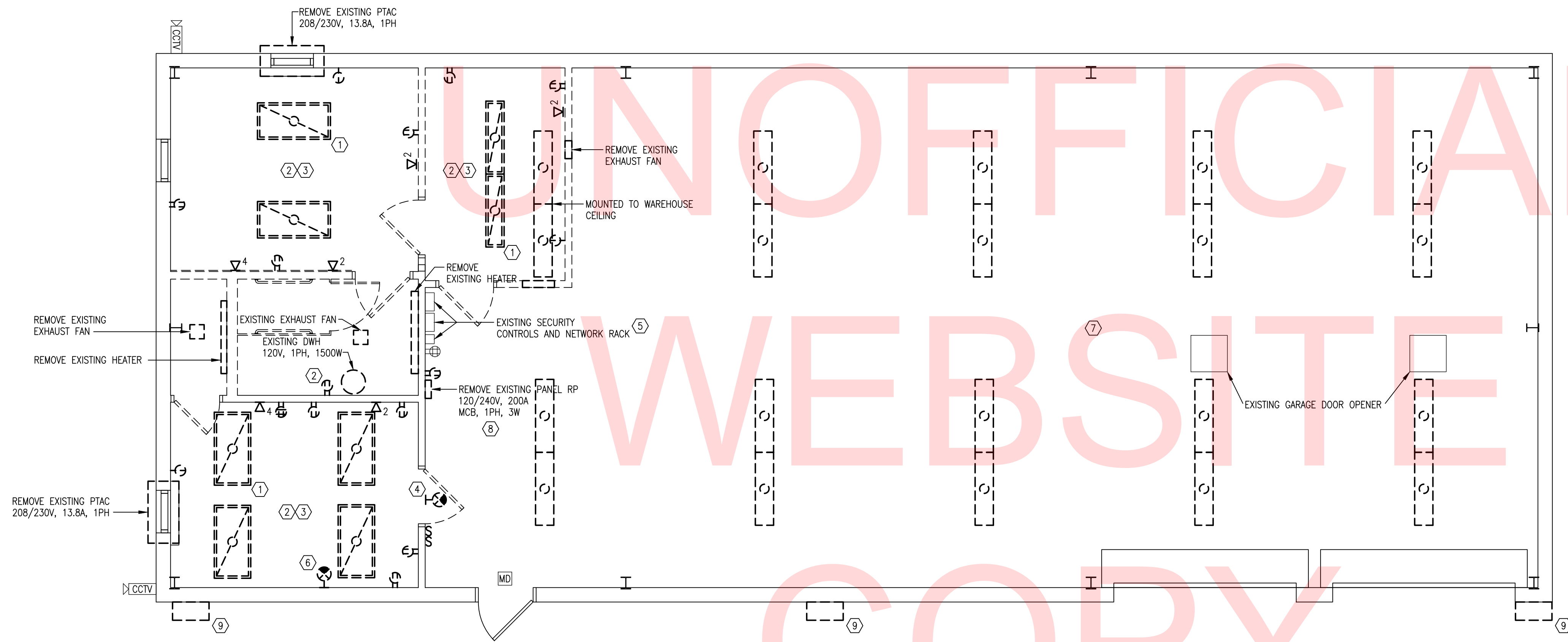


**GENERAL SHEET NOTES:**

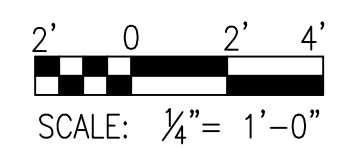
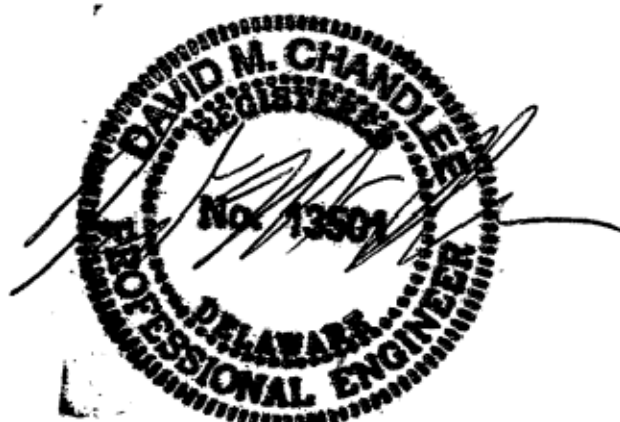
1. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAVE BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS IN DETAIL OR DIMENSION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.
2. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED ( - - - - ) SHALL BE REMOVED, AND ELECTRICAL ITEMS SHOWN LIGHT SOLID ( \_\_\_\_\_ ) SHALL BE EXISTING TO REMAIN.
3. FOR ALL MECHANICAL EQUIPMENT, DISCONNECT AND REMOVE ASSOCIATED STARTER/DISCONNECT SWITCH, JUNCTION BOXES, WIRING AND CONDUIT. REMOVE WIRING AND CONDUIT BACK TO SOURCE.

**SHEET KEYNOTES:**

- 1 REMOVE EXISTING LIGHTING FIXTURES, CONDUIT, WIRE, AND CONTROLS BACK TO SOURCE.
- 2 REMOVE EXISTING RECEPTACLES IN THIS SPACE AND ASSOCIATED WIREMOLD, CONDUIT AND WIRING BACK TO SOURCE.
- 3 REMOVE EXISTING DATA RECEPTACLES IN THIS AREA, AND ASSOCIATED WIREMOLD, CONDUIT, AND WIRING BACK TO SOURCE.
- 4 REMOVE BOTH SIDES OF EXISTING EXIT SIGN AND ALL ASSOCIATED CONDUIT AND WIRING.
- 5 EXISTING IT EQUIPMENT SHALL BE LEFT UNDISTURBED TO THE GREATEST EXTENT POSSIBLE AND SHALL REMAIN IN PLACE TO BE ABOVE NEW DROP CEILING. MAINTAIN EXISTING CIRCUITS AND DATA CONNECTIONS FOR ALL IT EQUIPMENT AND CAMERAS.
- 6 REMOVE EXISTING EXIT SIGN AND ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE OR NEXT DEVICE.
- 7 REMOVE ALL EXISTING LIGHTING FIXTURES, CONTROLS, CONDUIT AND WIRE IN THIS AREA.
- 8 REMOVE EXISTING PANELBOARD RP AND ASSOCIATED CONVENIENCE RECEPTACLE. MAINTAIN EXISTING CONDUIT AND FEEDER FOR RECONNECTION TO NEW PANEL. SEE SHEET EP-101 FOR MORE INFORMATION.
- 9 REMOVE ALL EXISTING WALL PACK FIXTURES ON BUILDING PERIMETER. REMOVE ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE.



**1 ELECTRICAL - DEMOLITION**  
 ED101 SCALE: 1/4" = 1'-0"



ED-101

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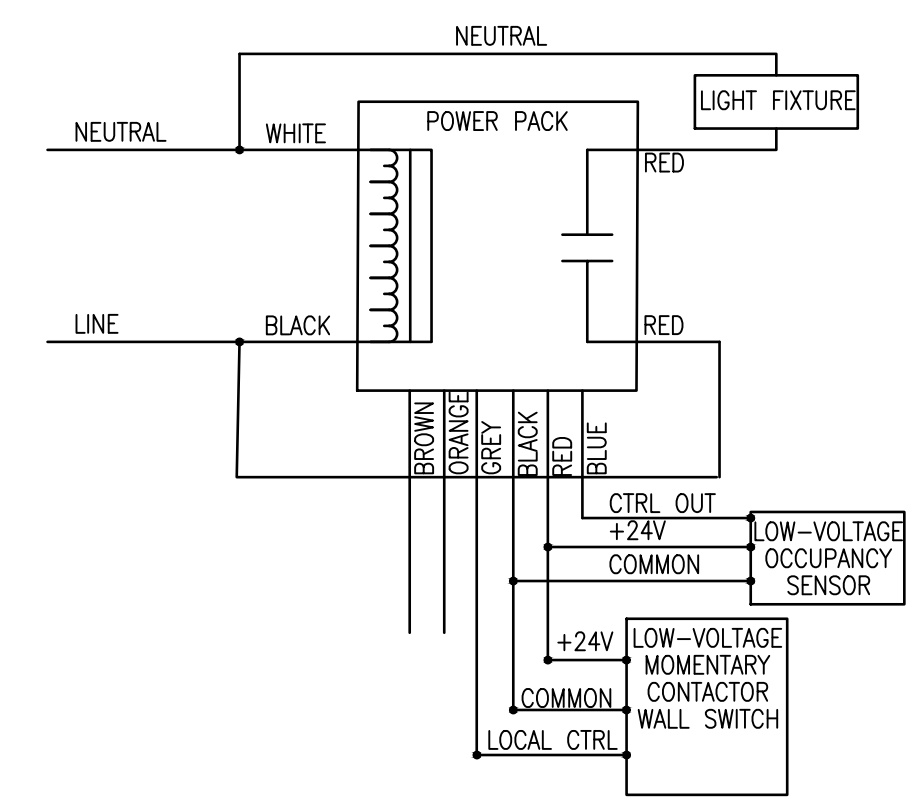
<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS		<p>GRAVEL HILL SIGN SHOP RENOVATION</p>	CONTRACT	BRIDGE NO.	N/A	SHEET NO.
				COUNTY	DESIGNED BY: PDC		12
				SUSSEX	CHECKED BY: JWL		TOTAL SHTS.
							13

**GENERAL SHEET NOTES:**

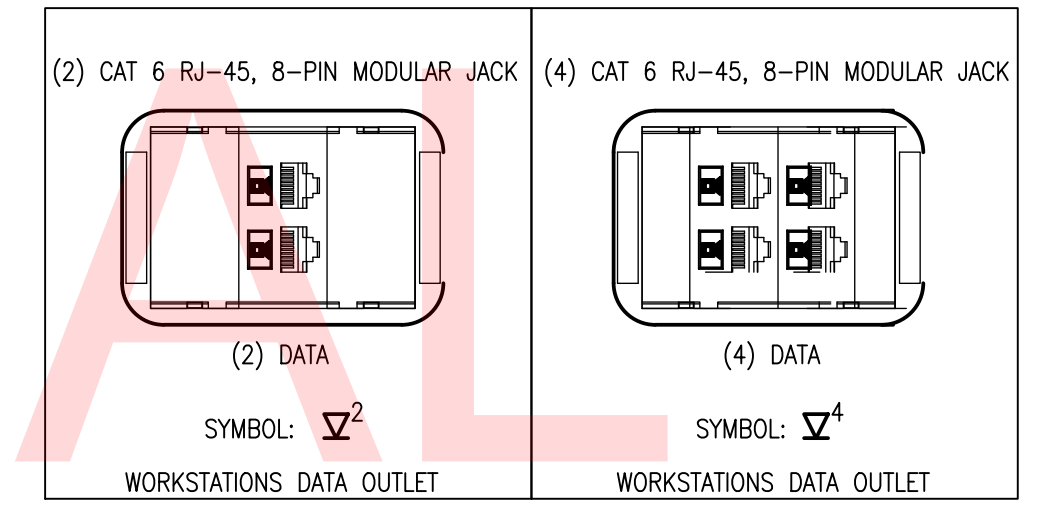
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- UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN LIGHT SOLID ( ) SHALL BE NEW, AND ELECTRICAL ITEMS SHOWN LIGHT SOLID ( ) SHALL BE EXISTING TO REMAIN.
- CONTRACTOR SHALL FIELD VERIFY EXISTING CIRCUITS AND MAINTAIN NECESSARY CONNECTIONS.

**SHEET KEYNOTES:**

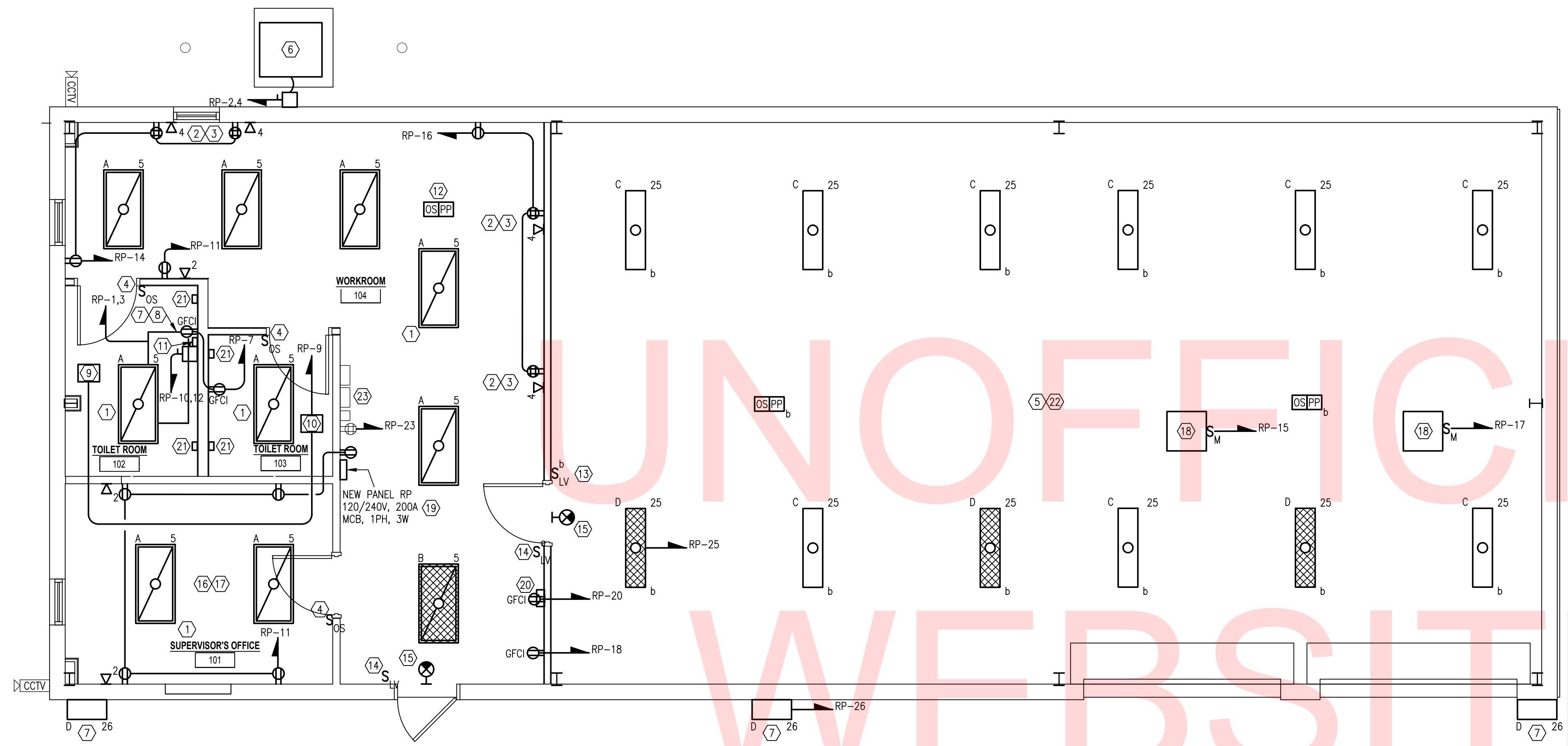
- PROVIDE NEW 2'x4' RECESSED LED FIXTURE. SPACE FIXTURES EQUALLY APART IN NEW CEILING GRID. FIXTURES SHALL BE CONTROLLED BY LOCAL SWITCHES AND SENSORS. PROVIDE 2#12 AWG AND 1#12 AWG GROUND IN 3/4" EMT CONDUIT. CIRCUIT FIXTURES TOGETHER TO 20A BREAKER IN PANEL RP.
- PROVIDE NEW 20A DOUBLE DUPLEX RECEPTACLES MOUNTED ABOVE DESKS IN THIS AREA AS SHOWN IN DRAWING. RECEPTACLES SHALL BE INSTALLED BETWEEN DESKS. PROVIDE 2#12 AWG AND 1#12 AWG IN 3/4" EMT CONDUIT TO 20A BREAKER IN PANEL RP.
- PROVIDE NEW 4-PORT ETHERNET DATA RECEPTACLES MOUNTED ABOVE DESKS AND CAT6 CABLE IN THIS AREA AS SHOWN IN DRAWING. RECEPTACLES SHALL BE INSTALLED BETWEEN DESKS. ROUTE DATA CABLE TO NEAREST IT DATA RACK. CABLE SHALL BE IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TECHNOLOGY AND INFORMATION STANDARDS ON CABLING AND INSTALLATION.
- PROVIDE NEW SWITCH WITH BUILT-IN OCCUPANCY SENSOR. PROVIDE REQUIRED WIRING TO CONTROL FIXTURES AND EXHAUST FAN IN THIS SPACE.
- MAINTAIN ANY EXISTING RECEPTACLE CIRCUITS IN THIS AREA. COMBINE AND EXTEND CIRCUITS TO NEW BREAKERS IN PANEL RP AS NECESSARY.
- OUTDOOR CONDENSING UNIT HP-1B. 208/230V, 1PH, 30.8 MCA. PROVIDE 60A/NF/2P/NEMA 3R DISCONNECT. PROVIDE 2#10 AND 1#10 GROUND IN OUTDOOR PVC COATED LIQUID TIGHT FLEXIBLE METAL CONDUIT TO DISCONNECT ON WALL, TRANSITIONING WITH PROPER FITTINGS TO 3/4" EMT CONDUIT INDOORS. PROVIDE 35A, 2P BREAKER IN PANEL RP.
- PROVIDE NEW LED WALL PACK LIGHT FIXTURES ALONG PERIMETER OF BUILDING. PROVIDE 2#12 AND 1#12 GROUND IN 3/4" EMT CONDUIT TO ALL FIXTURES BACK TO NEW 20A BREAKER IN PANEL RP.
- ELECTRIC HEAT HP-1A. 208/230V, 1PH, 92.5A MCA. PROVIDE 2#3 AND 1#8 GROUND IN 1" EMT CONDUIT. PROVIDE 125A, 2P BREAKER IN PANEL RP.
- EXHAUST FAN EF-1. 115V, 1PH, 1.10 FLA. INTEGRAL STARTER AND DISCONNECT PROVIDED WITH MECHANICAL EQUIPMENT UNDER DIVISION 23. PROVIDE 2#12 AND 1#12 GROUND IN 3/4" EMT CONDUIT. PROVIDE 15A, 1P BREAKER IN PANEL RP. PROVIDE REQUIRED WIRING TO OPERATE WITH SWITCH IN THIS SPACE.
- EXHAUST FAN EF-2. 115V, 1PH, 1.10 FLA. INTEGRAL STARTER AND DISCONNECT PROVIDED WITH MECHANICAL EQUIPMENT UNDER DIVISION 23. PROVIDE 2#12 AND 1#12 GROUND IN 3/4" EMT CONDUIT. CIRCUIT TO 15A, 1P BREAKER IN PANEL RP WITH EF-1. PROVIDE REQUIRED WIRING TO OPERATE WITH SWITCH IN THIS SPACE.
- DOMESTIC WATER HEATER DWH-1. 240V, 1PH, 3.5KW. PROVIDE 2#8 AND 1#10 GROUND IN 3/4" EMT CONDUIT. PROVIDE 60A/NF/2P/NEMA 1 DISCONNECT. PROVIDE 40A, 2P BREAKER IN PANEL RP.
- PROVIDE CEILING MOUNTED OCCUPANCY SENSOR AND POWERPACK. SENSOR SHALL CONTROL FIXTURES IN THE SPACE.
- PROVIDE WALL MOUNTED LOW-VOLTAGE SWITCH TO CONTROL FIXTURES IN STORAGE SPACE. SEE WIRING DIAGRAM 3 ON THIS PAGE FOR MORE INFORMATION.
- PROVIDE LOW VOLTAGE MOMENTARY CONTACT SWITCH TO ACT AS TEMPORARY OVERRIDE OF OCCUPANCY SENSOR FOR CONTROL OF FIXTURES IN WORKROOM. SWITCHES SHALL WORK TOGETHER WITH OCCUPANCY SENSOR AS NECESSARY FOR A COMPLETE LIGHTING CONTROL SYSTEM. SEE DETAIL 3 ON THIS SHEET AND MANUFACTURERS SPECIFICATIONS FOR MORE INFORMATION.
- PROVIDE NEW EXIT SIGN AND CONNECT AHEAD OF SWITCH TO LIGHTING CIRCUIT 5.
- PROVIDE NEW 2-PORT ETHERNET DATA RECEPTACLES AND CABLING. ROUTE CABLE TO NEAREST DATA RACK. CABLE SHALL BE IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TECHNOLOGY AND INFORMATION STANDARDS ON CABLING AND INSTALLATION.
- PROVIDE NEW DUPLEX RECEPTACLES SPACED EQUALLY ALONG OFFICE WALLS.
- EXISTING GARAGE DOOR OPENER. 120V, 1/2HP. GARAGE DOOR OPENERS SHALL BOTH BE HARDWIRED TO A SINGLE 20A BREAKER IN PANEL RP. PROVIDE 2#12 AND 1#12 GROUND PER OPENER IN 3/4" EMT CONDUIT. PROVIDE DISCONNECT FOR EACH OPENER.
- PROVIDE NEW 120/240V, 200A, 1PH, 3W, 30-POLE RECESSED PANELBOARD WITH 200A MAIN CIRCUIT BREAKER. ALL CONDUIT SHALL BE RECESSED BEHIND NEW GYPSUM WALL BOARD. PROVIDE NEW 20A DUPLEX CONVENIENCE RECEPTACLE.
- NEW CONDENSATE PUMP SHALL BE POWERED BY GFCI RECEPTACLE.
- PROVIDE 2#12 AND 1#12 GROUND IN 3/4" CONDUIT TO POWER ALL FLUSH VALVE AND FAUCET TRANSFORMERS ON A SINGLE 120V CIRCUIT. PROVIDE 4"x4"x2-1/2" 2-GANG BOXES AS REQUIRED FOR CONNECTION TO ALL TRANSFORMERS, SENSORS, AND SOLENOIDS. COORDINATE LOCATION OF DEVICES WITH PLUMBING DRAWINGS.
- PROVIDE NEW LED LIGHT FIXTURES IN THIS AREA MOUNTED TO EXISTING I-BEAMS. PROVIDE 2#12 AND 1#12 GROUND IN 3/4" CONDUIT. PROVIDE JUNCTION BOXES AND WHIPS TO FIXTURES AS NECESSARY. FIXTURES SHALL BE CONTROLLED BY NEW CEILING MOUNTED OCCUPANCY SENSORS AND WALL MOUNTED LOW-VOLTAGE SWITCH. SEE WIRING DIAGRAM 3 ON THIS PAGE FOR MORE INFORMATION. CIRCUIT TO NEW 20A BREAKER IN PANEL RP.
- EXISTING IT EQUIPMENT. MAINTAIN ALL POWER AND DATA CONNECTIONS. RECONNECT POWER TO NEW PANEL AND RECEPTACLES AS NECESSARY.



WIRE COLORS AND CIRCUITING MAY VARY BETWEEN MANUFACTURERS  
**3 TYPICAL LOW-VOLTAGE WIRING DIAGRAM**  
 EP-107 SCALE: NONE



**2 VOICE/DATA OUTLET CONNECTOR ASSEMBLY**  
 EP-107 SCALE: NONE



**1 ELECTRICAL - NEW WORK**  
 EP107 SCALE: 1/4" = 1'-0"

LIGHTING FIXTURE SCHEDULE							
FIXTURE TYPE	DESCRIPTION	BASIS OF DESIGN MANUFACTURER & CATALOG NUMBER	ALT. MANUFACTURER & CATALOG NUMBER	LAMPS			
				TYPE	COLOR TEMPERATURE	VOLTAGE	LUMENS
A	2' x 4' RECESSED MOUNTED, VOLUMETRIC LED, TROFFER; ACRYLIC LINEAR PRISMATIC DIFFUSER; WHITE FINISH; 4000 LUMENS	LITHONIA LIGHTING 2BLT4-40L-ADP-120-EZ1-LP840	COLUMBIA LIGHTING LCAT24-40VLG-ED1U PHILIPS DAY-BRITE 2EYG74L840-4-D-UNV-DIM	34W LED	4000K	120V	4000 MIN.
B	2' x 4' RECESSED MOUNTED, VOLUMETRIC LED, TROFFER; ACRYLIC LINEAR PRISMATIC DIFFUSER; WHITE FINISH; 6000 LUMENS; EMERGENCY BATTERY PACK	LITHONIA LIGHTING 2BLT4-60L-ADP-120-EZ1-LP840-EL14L	COLUMBIA LIGHTING LCAT24-40HLG-ED1U PHILIPS DAY-BRITE 2EYG54L840-4-D-UNV-DIM	53W LED	4000K	120V	6000 MIN.
C	1' x 4' SURFACE MOUNTED, LINEAR LOW-BAY FIXTURE; ACRYLIC LOUVERED PRISMATIC DIFFUSER; WHITE FINISH; 4000 LUMENS	LITHONIA LIGHTING MSL-4000-SBL-MVOLT-GZ10-40K-80CRI-CS93W-WH	COLUMBIA LIGHTING LRO-4-40-LW-E-U	30W LED	4000K	120V	4000 MIN.
D	1' x 4' SURFACE MOUNTED, LINEAR LOW-BAY FIXTURE; ACRYLIC LOUVERED PRISMATIC DIFFUSER; WHITE FINISH; 4000 LUMENS; EMERGENCY BATTERY PACK	LITHONIA LIGHTING MSL-4000-SBL-MVOLT-GZ10-40K-80CRI-CS93W-WH-E10WLCP	COLUMBIA LIGHTING LRO-4-40-LW-E-U-ELL14	30W LED	4000K	120V	4000 MIN.
E	SURFACE MOUNTED WALL PACK LED; ACRYLIC LINEAR PRISMATIC DIFFUSER; BLACK FINISH; PHOTO CELL ADJUSTABLE 1000 TO 5000 LUMENS	LITHONIA LIGHTING TWP-LED-ALO-40K-T3M-MVOLT-PE-DBLXD	COLUMBIA LIGHTING PVL3-180L-3K-U-BL-PTB-1	48W LED	4000K	120V	4000 MIN.
F	LED EMERGENCY EXIT SIGN; FACE LIT, ACRYLIC PANEL; THERMOPLASTIC HOUSING; RED LETTERS; FACES AND ARROWS AS INDICATED ON DRAWINGS	LITHONIA LIGHTING LQM-S-W-3-R-120/277-GMR-120/277	DUAL LITE EVE-U-R-W PHILIPS CXL-3-R-W	3W LED	RED LED	120V	N/A

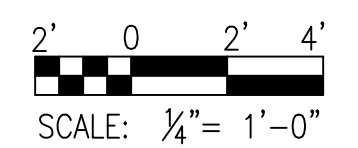
NOTE: FIXTURE MANUFACTURER AND TYPE SHOWN AS LEVEL OF QUALITY AND MINIMUM STANDARD.

**PANEL: RP**      **AMP: 225**      **VOLT: 120/240**  
**MOUNTING: SURFACE**      **PHASE: 1**      **3 WIRE + GND**  
**MAIN: 200 MCB**      **AIC: 10K**      **AMPS RMS SYM**

Branch Circuit Load Description	KVA Load		Trip Poles	Ckt. No.	Phase	Ckt. No.	Trip Poles	KVA Load		Branch Circuit Load Description		
	A	B						A	B			
3-TON AHU /W ELEC HEAT	9.00		100/2	1	A	2	35/2	2.00		OUTDOOR CONDENSING UNIT		
**		9.00	**	3	B	4	**	2.00	**	**		
LIGHTING	0.40		20/1	5	A	6	20/1	0.00		SPARE		
BATHROOM RECEP		0.36	20/1	7	B	8	20/1		0.00	SPARE		
EF1, EF2	0.25		15/1	9	A	10	40/2	3.85		WATER HEATER		
PRINTER		0.40	20/1	11	B	12	**		3.85	**		
SUPERVISOR RECEP	0.72		20/1	13	A	14	20/1	0.90		DESK RECEP 1		
GARAGE DOOR OPENER 1		0.70	20/1	15	B	16	20/1		0.90	DESK RECEP 2		
GARAGE DOOR OPENER 2	0.70		20/1	17	A	18	20/1	0.60		FRIDGE RECEP		
FAUCETS AND FLUSH VALVES		0.17	20/1	19	B	20	20/1		0.40	ICE + COND. PUMP RECEP		
PANEL RECEP	0.18		20/1	21	A	22	20/1	0.36		STORAGE RECEPS		
EXIST. RECEP		0.18	20/1	23	B	24	20/1		0.00	SPARE		
STORAGE ROOM LIGHTS	0.40		20/1	25	A	26	20/1	0.20		EXTERIOR WALL PACK LIGHTS		
SPARE		0.00	20/1	27	B	28	20/1		0.00	SPARE		
SPARE	0.00		20/1	29	A	30	20/1	0.00		SPARE		
								11.65	10.81	<< PHASE SUB-TOTALS >>	7.91	7.15

MECH EQUIP CIRCUIT BREAKERS SHALL BE HACR RATED  
**PROVIDE THE FOLLOWING:**

PHASE A	19.56	kVA
PHASE B	17.96	kVA
	37.52	kVA TOTAL CONNECTED LOAD
	32.56	kVA TOTAL DEMAND LOAD



EP-101

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