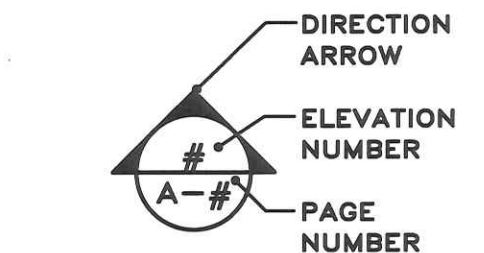
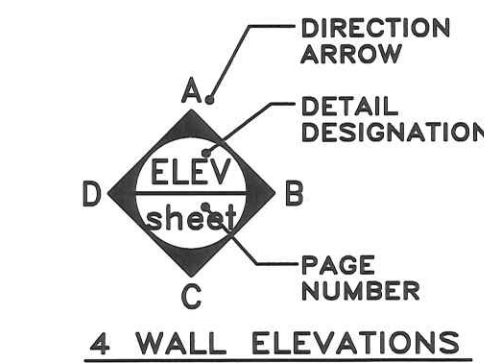


PROPOSED ALTERATIONS
HENRY COUNTY COMMISSIONERS
1805 OAKWOOD AVENUE
NAPOLEON, OHIO 43545

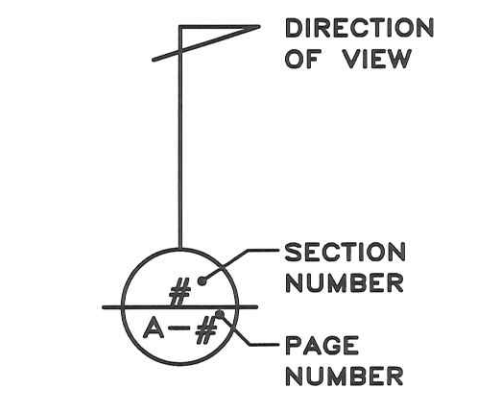
PREVIOUS PLAN APPROVAL FOR THIS
OCCUPANCY: B16-0953

#	DOOR NUMBER
A	WINDOW DESIGNATION
#	KEYNOTE DESIGNATION
#	REVISION NUMBER
#	COLUMN LINE NUMBER OR LETTER
EP	ELECTRICAL PANEL
DS	DOWNSPOUT
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT
G.C.	GENERAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
A.F.F.	ABOVE FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
U.N.O.	UNLESS NOTED OTHERWISE
N.I.C.	NOT IN CONTRACT
M.O.	MASONRY OPENING
R.O.	ROUGH OPENING
P.T.	PRESERVATIVE TREATED
F.R.T.	FIRE RETARDANT TREATED
P.E.M.B.	PRE-ENGINEERED METAL BUILDING

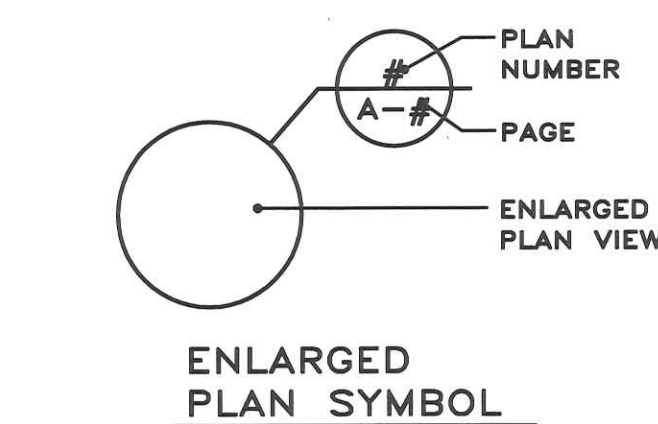
DWG. SYMBOLS & NOTATIONS



WALL ELEVATION SYMBOL



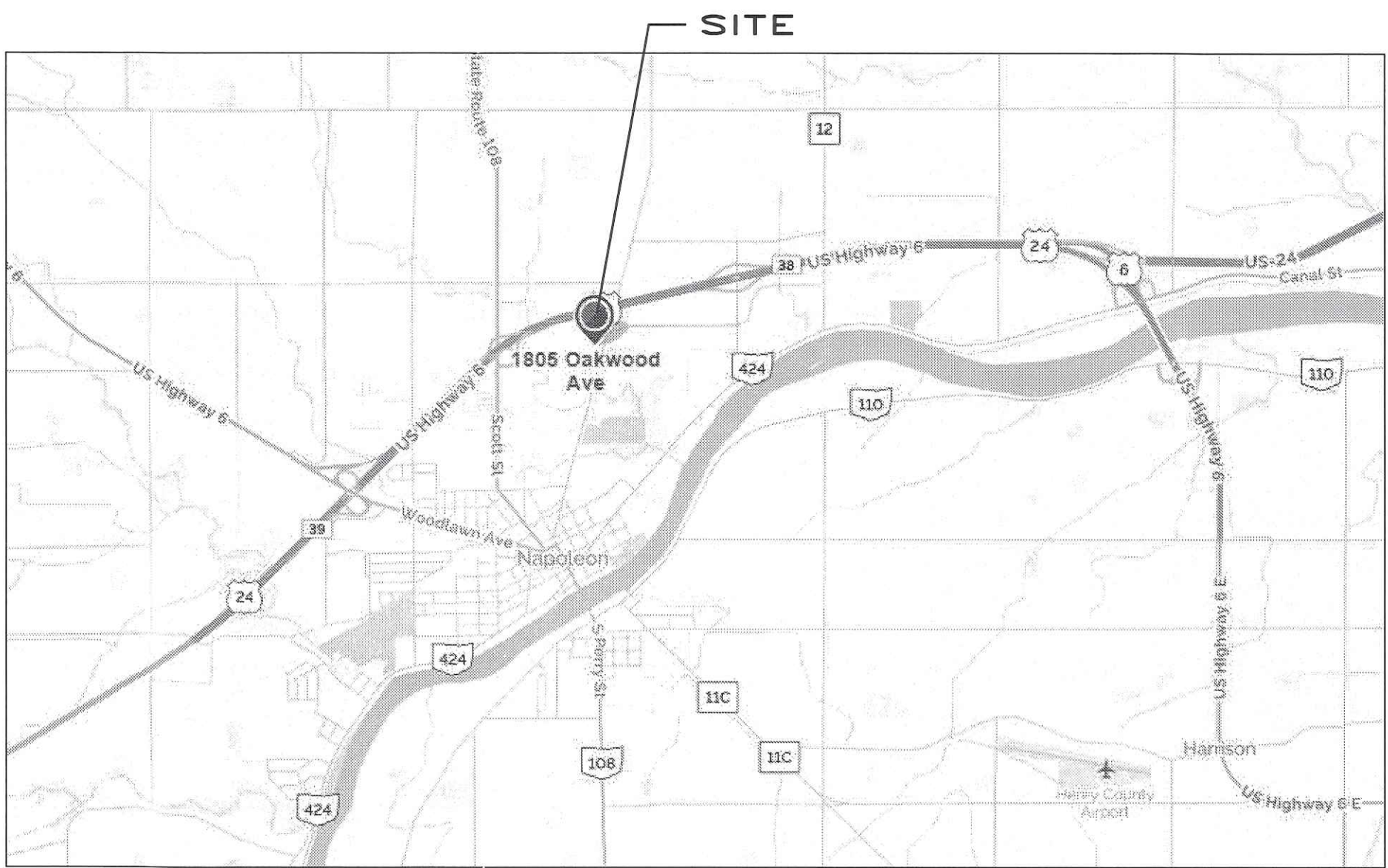
BLDG./WALL SECTION SYMBOL



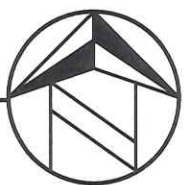
CROSS REFERENCES

DRAWING INDEX

COVER	CODE COMPLIANCE DATA, DESIGN CRITERIA, SITE LOCATION MAP
ARCHITECTURAL	
A101	FLOOR PLAN & KEYNOTE LEGEND
A102	EXIST. MEZZANINE PLAN, CABINET & MISC. DETAILS
A201	BUILDING ELEVATIONS, DOOR SCHEDULE & DOOR & FRAME TYPE, ENLARGED FLOOR PLAN W/ ACCESSORIES SCHEDULE & ACCESSIBILITY MOUNTING DETAILS
PLUMBING	
P100	PLUMBING DEMO PLANS
P101	PLUMBING FLOOR PLANS
P201	PLUMBING SANITARY ISOMETRIC
P901	PLUMBING SCHEDULES, DETAILS & SPECIFICATIONS
MECHANICAL	
M100	MECHANICAL DEMO PLANS
M101	MECHANICAL FLOOR PLANS
M901	MECHANICAL SCHEDULES & SPECIFICATIONS
ELECTRICAL	
E100	ELECTRICAL DEMO PLANS
E101	ELECTRICAL PLAN
E601	SINGLE LINE DIAGRAM, PANEL SCHEDULES, LEGEND & GENERAL NOTES
E901	ELECTRICAL SPECIFICATIONS



NAPOLEON, OHIO
SITE LOCATION MAP
NO SCALE

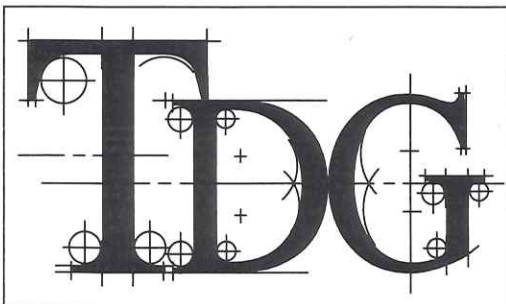


2011 OBC CODE COMPLIANCE DATA		
OWNER	NAME	HENRY COUNTY COMMISSIONERS
	ADDRESS	1805 OAKWOOD AVENUE NAPOLEON, OHIO 43545
	PHONE	419-592-4876
	FAX	419-592-4016
	E-MAIL	commissioners@henrycountyohio.com
SUBMITTER	NAME	TECHNICON DESIGN GROUP, INC.
	ADDRESS	1800 NORTH PERRY ST., SUITE 102 OTTAWA, OHIO
	PHONE	419-523-5323
	FAX	419-523-9441
	E-MAIL	INFO@TECHNICONDESIGNGROUP.COM
DESIGNER	TYPE	O ARCHITECT O ENGINEER O CERTIFIED DESIGNER
	DESIGN CRITERIA	TYPE OF CONSTRUCTION 5B CURRENT USE GROUP S-1 PROPOSED USE GROUP S-1 BUILDING HEIGHT 24'-0" NUMBER OF STORIES ONE OCCUPANT LOAD 60 STORAGE HEIGHT 12' MAX STORAGE AISLE WIDTH 4' MIN. MIXED USE GROUP N/A SEPARATED N/A NON-SEPARATED N/A
BUILDING AREA	EXISTING MAIN FLOOR BUILDING AREA	28,808 S.F.
	EXIST MECH PLATFORM BUILDING AREA	2,279 S.F.
	TOTAL BUILDING AREA	31,807 S.F.
	AREA OF ALTERATION	25,393 S.F.
	OPEN AREA INCREASE	UNLIMITED
SPECIAL INSPECTIONS	FIRE SUPPRESSION INCREASE	N/A
	TOTAL ALLOWABLE AREA	UNLIMITED
	SPECIAL INSPECTIONS	NOT REQUIRED

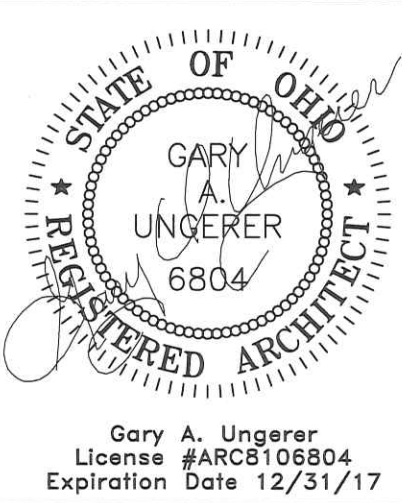
BUILDING IS EQUIPPED WITH AN NFPA 13 FIRE SUPPRESSION SYSTEM. SELECTED FIRE SUPPRESSION CONTRACTOR/DESIGNER SHALL PROVIDE ALL REQUIRED DRAWINGS, CALCULATIONS AND MATERIAL DATA SHEETS FOR ALL ALTERATIONS TO THE SYSTEM FOR REVIEW AND APPROVAL BY THE AHJ PRIOR TO INSTALLATION.

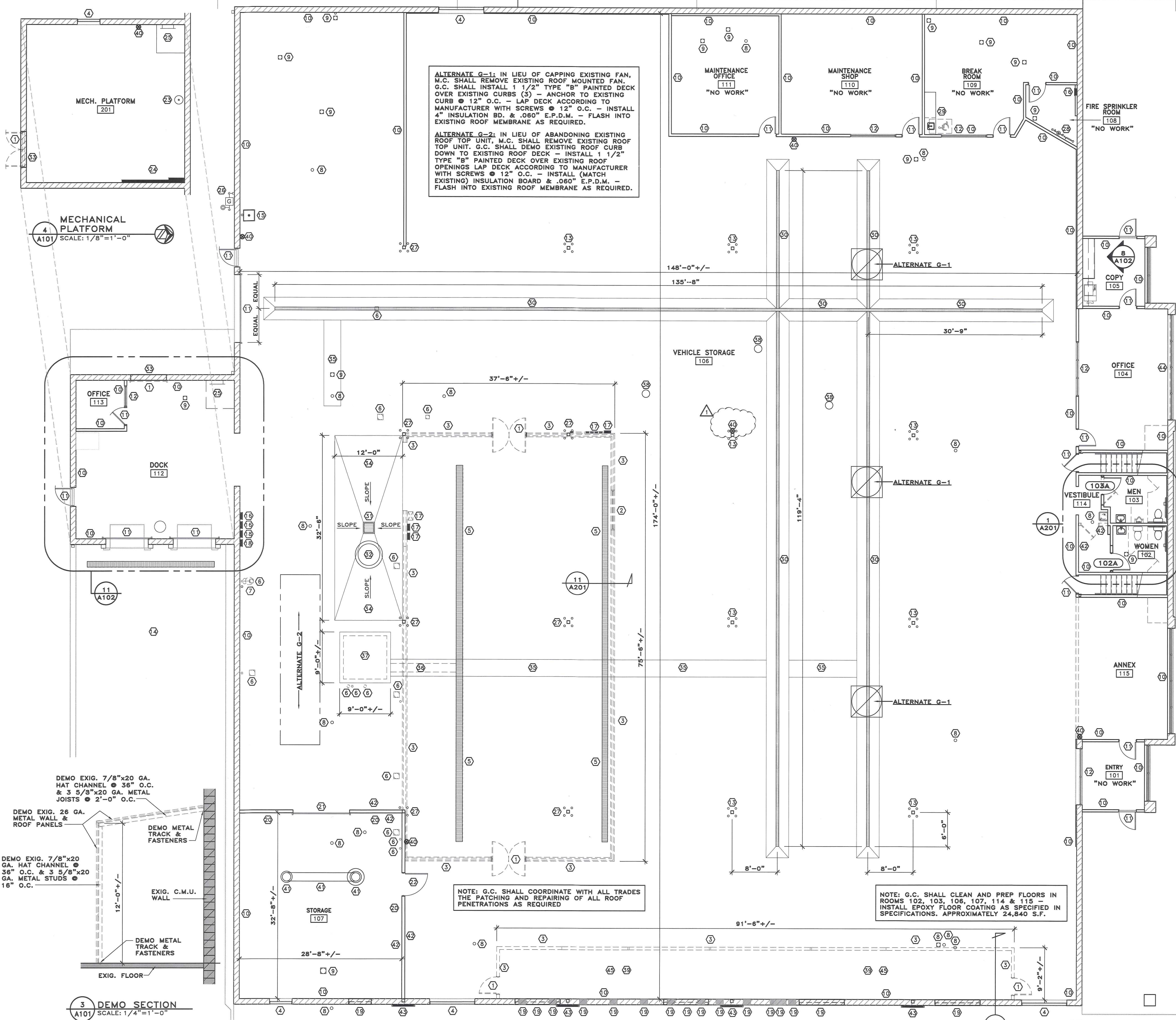
DESIGN LOAD DATA		
GRAVITY LOADS	FLOOR LIVE UNIFORMLY DISTRIBUTED (TABLE 1607.1)	125 PSF
	CONCENTRATED (lbs)	2,000 PSF
	ROOF LIVE	20 PSF
	ROOF DEAD	10 PSF
SNOW LOADS	GROUND SNOW LOAD (Pg)	20 PSF
	FLAT SNOW LOAD (Pf)	20 PSF
	SNOW EXPOSURE FACTOR (Ce)	1.0
	SNOW LOAD IMPORTANCE FACTOR (Is)	1.0
	THERMAL FACTOR (Ct)	1.0
WIND LOADS	BASIC WIND SPEED (mph)	90 MPH 3 SG
	IMPORTANCE FACTOR (Iw)	1
	WIND EXPOSURE	B
	SEISMIC USE GROUP & IMPORTANCE FACTOR	II
EARTHQUAKE DESIGN DATA	SPECTRAL RESPONSE	Sds 0.139 g
	COEFFICIENTS (g)	Sd1 0.067 g
	MAPPED ACCELERATIONS	SS 27.31 g
		S1 5.92 g
	SEISMIC DESIGN CATEGORY	B
	SITE CLASS	D
	SEISMIC RESPONSE COEFFICIENT (Cs)	0.067
	RESPONSE MODIFICATION FACTOR (R)	3
	DESIGN BASE SHEAR	0.065
	ANALYSIS PROCEDURE	ELF
SPECIAL LOADS	COLLATERAL ROOF LOAD	N/A
	FLOOD LOAD	LOCATED IN FLOOD-HAZARD AREA NO
SOIL	ASSUMED SOIL BEARING CAPACITY	1,500 PSF

ISSUED DATE
05-17-17 OWNER REVIEW
06-13-17 OWNER REVIEW
06-22-17 FOR BIDS/PERMITS
07-25-17 RESUBMITTAL



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- KEYNOTE LEGEND**
- G.C. SHALL REMOVE EXIG. DOOR & FRAME.
 - G.C. SHALL REMOVE EXIG. WINDOW & FRAME.
 - G.C. SHALL REMOVE EXIG. WALL FRAMING.
 - EXIG. LOUVER SHALL REMAIN - SEE MECHANICAL DRAWINGS
 - EXIG. TRENCH DRAIN SHALL REMAIN - P.C. SHALL CLEAR EXIG. TRAP & PIPING OF ANY DEBRIS & VERIFY DRAIN OPERATION AS REQ'D. - G.C. SHALL CLEAN EXIG. TRENCH DRAIN & GRATING. REPLACE ANY DAMAGED OR CUT GRATING - MATCH EXIG. - SEE PLUMBING PLAN
 - G.C. SHALL CUT AND DEMO EXIG. CONC. FLOOR AROUND EXIG. F.D. OR C.O. COORDINATE WITH P.C. - P.C. SHALL REMOVE EXIG. F.D. OR C.O. AND CAP EXIG. PIPING 6" MIN. BELOW EXIG. FLOOR - G.C. SHALL BACKFILL WITH COMPACTED STONE FILL AND INSTALL CONCRETE FLOOR PATCH TO MATCH EXIG. FLOOR. - SEE PLUMBING PLAN
 - P.C. SHALL FULLY DEMO EMERGENCY WASH. - SEE PLUMBING PLAN
 - EXIG. FLOOR C.O. SHALL REMAIN.
 - EXIG. F.D. SHALL REMAIN - P.C. SHALL CLEAR EXIG. TRAP OF ANY DEBRIS & VERIFY DRAIN OPERATION, INSTALL NEW TRAP SEAL AS REQ'D. CLEAN & REPLACE EXIG. STRAINER.
 - EXIG. WALL SHALL REMAIN
 - EXIG. DOOR SHALL REMAIN
 - EXIG. WINDOW SHALL REMAIN
 - EXIG. BUILDING COLUMN & 4" PIPE BOLLARDS SHALL REMAIN
 - EXIG. TRUCK DOCK (NO WORK)
 - EXIG. SINK SHALL REMAIN
 - EXIG. ELECTRICAL PANEL SHALL REMAIN
 - EXIG. ELECTRICAL - E.C. SHALL DEMO ALL BRANCH CIRCUITS (PANELS, CONDUITS, WIRES, TRANSFORMERS, DEVICES, ETC.) DEMO PANEL & BREAKERS, DEMO CONDUIT AND WIRES FEEDING PANEL BACK TO ITS SERVICE BREAKER. LEAVE THE SERVICE BREAKER IN AN "OFF" POSITION LABELING IT "SPARE"
 - EXIG. ELECTRICAL PANEL - LIGHTING - EXIG. BREAKERS SHALL REMAIN - E.C. SHALL TERMINATE NEW LIGHTING CIRCUITS TO EXIG. BREAKERS AS REQUIRED - SEE ELECTRICAL PLAN
 - M.C. SHALL DEMO EXIG. LOUVER AND ALL DUCTWORK AND FLASHINGS - G.C. SHALL PATCH HOLES AS REQUIRED W/ MATCHING C.M.U.s - SEE ELEVATIONS & MECHANICAL DRAWINGS ALSO SEE DETAILS 4, 5 & 6/A102
 - EXIG. 2 HOUR FIRE BARRIER: 6" METAL STUD W/ 2 LAYERS OF 5/8" TYPE "X" GYP. BD. EACH SIDE TERMINATED @ ROOF DECK - G.C., E.C. & P.C. SHALL DEMO ALL ABANDONED PIPING THROUGH RATED WALL ASSEMBLY AS REQ'D. - G.C. SHALL FILL AND PATCH ALL HOLES W/ 5/8" TYPE "X" GYP. BD. AS REQ'D.
 - EXIG. 2 HR. RATED COILING SHUTTER ASSEMBLY
 - EXIG. 2 HR. RATED DOOR ASSEMBLY
 - EXIG. N.GAS W.H. - SEE MECHANICAL DRAWINGS
 - EXIG. ELECTRICAL MDP - SEE ELECTRICAL DRAWINGS
 - EXIG. LADDER & HATCH
 - EXIG. N.GAS SERVICE - SEE MECHANICAL DRAWINGS
 - EXIG. BUILDING COLUMN - G.C. SHALL 4" STEEL PIPE BOLLARDS MATCH EXIG. SEE DETAIL 13/A201
 - EXIG. FIRE SUPPRESSION RISER
 - EXIG. ACCESSIBLE COUNTER AND SINK
 - NEW FLOOR TRENCH DRAIN - SEE PLUMBING DRAWINGS & TRENCH DRAIN DETAIL 7/A102 - ALL NEW CONCRETE SHALL BE 4,000 PSI @ 28 DAYS
 - NEW CATCH BASIN - SEE PLUMBING DRAWINGS & CATCH BASIN DETAIL 10/A102
 - NEW OIL INTERCEPTOR - SEE PLUMBING DRAWINGS & DETAIL 2/P901
 - G.C. SHALL INSTALL NEW C.M.U.'s MATCH EXIG. - SEE ELEVATIONS & SEE DETAIL 6/A102
 - G.C. SHALL DEMO 32'-8"x12'-0" OF EXIG. CONC. FLOOR FOR NEW WASH BAY - INSTALL #34 & #35 - INSTALL NEW 4" CONC. SLOPED FLOOR W/ #4 CONTIN. BARS @ 24" O.C. E.W. W/ #4 DOWELS @ 24" O.C. - 4" MIN. EMB. INTO EXIG. FLOOR @ PERIMETER OVER 4" MIN. COMPACTED STONE BASE - ALL NEW CONCRETE SHALL BE 4,000 PSI @ 28 DAYS
 - G.C. SHALL DEMO EXIG. CONC. FLOOR COORDINATE WIDTH REQUIRE W/ P.C. FOR NEW PLUMBING - INSTALL NEW 4" CONC. FLOOR W/ (2) #4 CONTIN. BARS @ 24" O.C. W/ #4x20" DOWELS @ 24" O.C. - 4" MIN. EMB. INTO EXIG. FLOOR @ PERIMETER OVER 4" MIN. COMPACTED STONE BASE - ALL NEW CONCRETE SHALL BE 4,000 PSI @ 28 DAYS
 - G.C. SHALL CUT OUT ALL STEEL FRAMING IMBEDDED IN FLOOR FOR GRATING - P.C. SHALL PIPE - G.C. SHALL BACKFILL AND COMPACT STONE FILL & INSTALL NEW 4" CONC. FLOOR W/ (2) #4 CONTIN. BARS @ 24" O.C. W/ #4x20" DOWELS @ 24" O.C. - 4" MIN. EMB. INTO EXIG. FLOOR @ PERIMETER - ALL NEW CONCRETE SHALL BE 4,000 PSI @ 28 DAYS
 - EXIG. CONC. SUMP - SEE DETAIL 3/A102 AND PLUMBING DRAWINGS - ALL NEW CONCRETE SHALL BE 4,000 PSI @ 28 DAYS
 - DEM. EXIG. THROUGH ROOF VENTS & EXHAUST STACKS AS REQUIRED. INSTALL NEW ROOF DECKING & INSULATION BOARD AS REQUIRED MATCHING EXIG. INSTALL NEW .060 EPDM ROOF PATCH.
 - G.C. SHALL REMOVE EXIG. CLG./ROOF STRUCTURE FRAMING.
 - FIRE EXTINGUISHER SEE 10/A201
 - G.C. SHALL REMOVE ABANDONED EXHAUST STACKS, PIPING & ECONOMIZER ON ROOF. INSTALL NEW ROOF DECKING & INSULATION BOARD AS REQUIRED MATCHING EXIG. INSTALL NEW .060 EPDM ROOF PATCH. SEE PLUMBING DRAWINGS
 - G.C. SHALL FILL, PATCH AND FINISH ALL HOLES IT EXIG. GYP. BD. AS REQUIRED - COORDINATE WITH ALL TRADES
 - PILASTER SCREEN - SEE ELEVATIONS & 5/A201
 - G.C. SHALL DEMO ALL EXIG. GYP. BD. & INFILL FRAMING @ EXIG. WINDOW - REPAIR & PATCH ANY DAMAGE C.M.U. UNITS - CLEAN ALL WINDOW & FRAMING SURFACES - PRIME & PAINT HEAD, JAMBS & SILL - COLOR SHALL MATCH EXIG.
 - G.C. SHALL RETAIN THE SERVICES OF A LICENSED FIRE SUPPRESSION DESIGNER & CONTRACTOR TO MODIFY THE FIRE SUPPRESSION IN THE BUILDING AS REQUIRED TO REMOVE, ADD OR RELOCATE SPRINKLER HEADS AS REQUIRED BY NFPA 13.

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PROPOSED ALTERATIONS
HENRY COUNTY COMMISSIONERS
1805 OAKWOOD AVENUE
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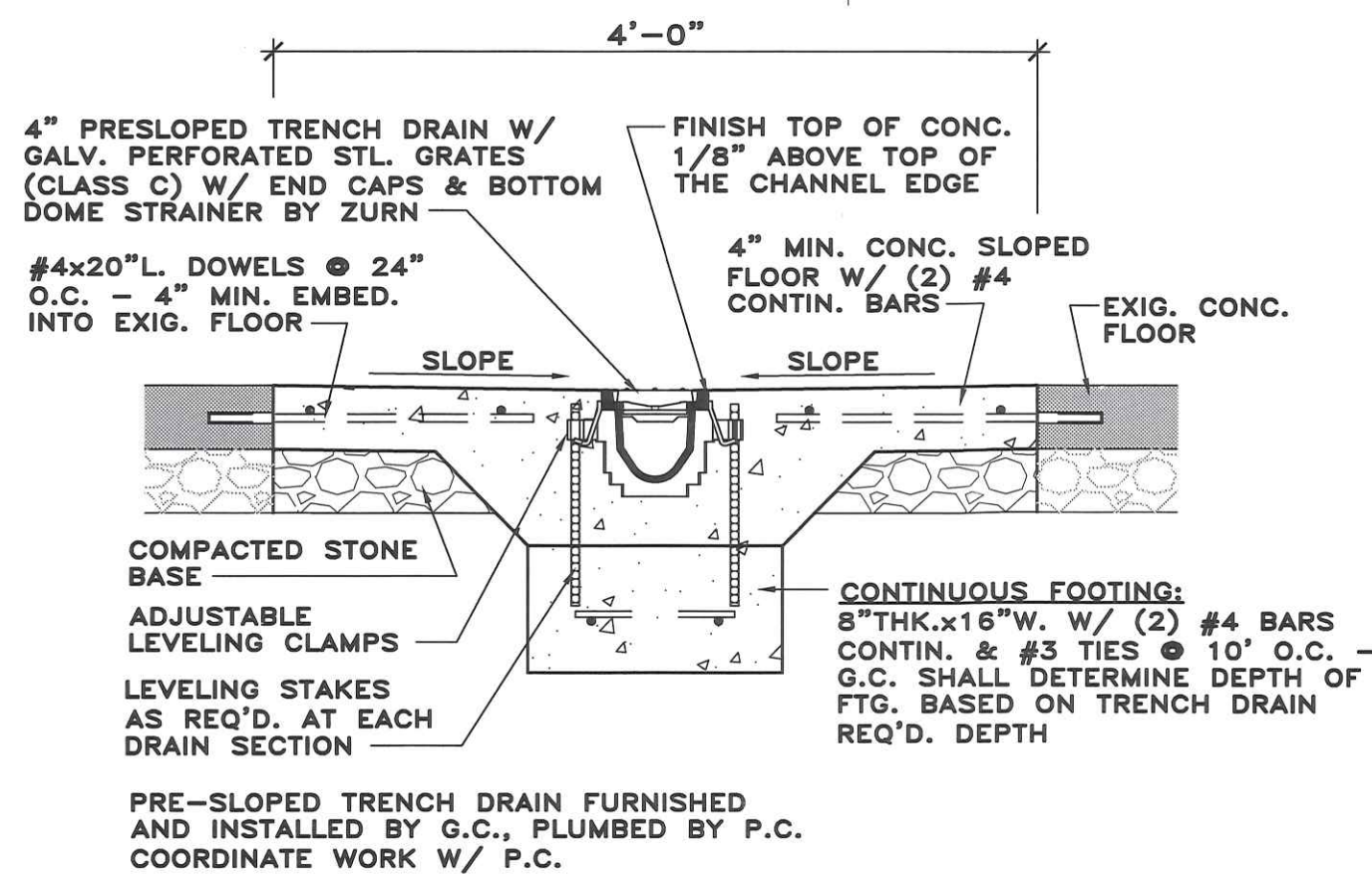
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DO NOT SCALE FROM DRAWINGS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY QUANTITIES OF MATERIALS AND LOCATIONS OF BUILDING COMPONENTS SCALED FROM THESE DRAWINGS.

FLOOR PLAN KEYNOTES

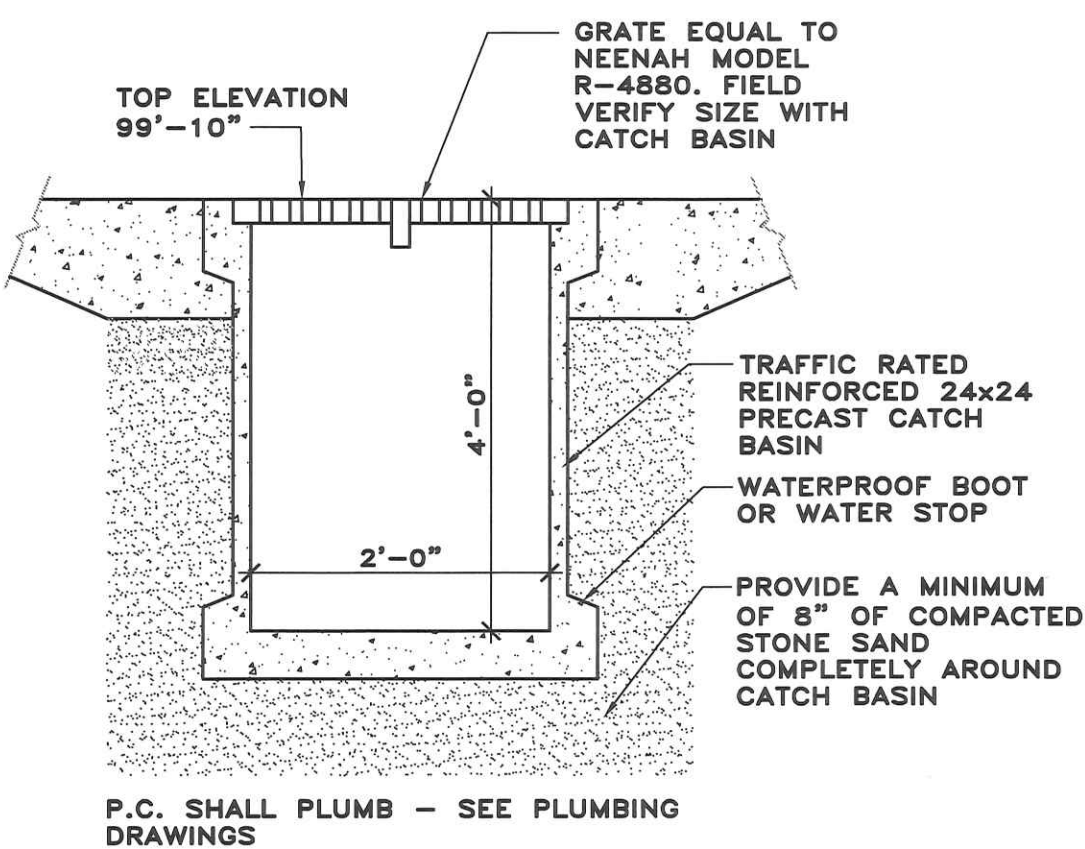
ISSUED DATE	
04-20-17	OWNER REVIEW
05-17-17	OWNER REVIEW
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS
07-25-17	RESUBMITTAL

DRAWN BY:	GTG
CHECKED BY:	GAU
DATE:	01-17
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	A101
OF	SHEETS



NOTE: THE DRAIN MFR'S. INSTALLATION INSTRUCTIONS OFFER SEVERAL DRAIN INSTALLATION METHODS. THE G.C. SHALL BE RESPONSIBLE TO SELECT ONE OF THE INSTALLATION METHODS OFFERED BY THE RESPECTIVE DRAIN MFR. & SHALL FOLLOW MFR. INSTRUCTIONS FOR METHOD SELECTED. THIS DETAIL IS BASED ON ZURN Z886 DRAIN SYSTEM.

7 TRENCH DRAIN DETAIL
A102 SCALE: 1"=1'-0"



10 CATCH BASIN DETAIL
A102 SCALE: N.T.S.

GENERAL ROOF NOTES:

1) ROOF DETAILS ILLUSTRATED ON THESE DRAWINGS ARE GENERIC IN NATURE. ROOFING CONTRACTOR SHALL SUBMIT DETAILS RECOMMENDED BY THE SELECTED ROOFING SYSTEM MANUFACTURER BEST SUITED TO MATCH THE INTENT OF THE GENERIC DETAILS SHOWN.

2) ROOF CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO STARTING ANY WORK.

3) ALL ROOF TO WALL TERMINATIONS SHALL BE TERMINATE UNDER NEW TOP OF WALL COPINGS. CONTRACTOR SHALL VERIFY SPECIAL CONDITIONS WITH OWNER/ARCHITECT PRIOR TO ALL INSTALLATIONS.

4) ROOF CONTRACTOR SHALL COORDINATE WITH ELECTRICIAN TO FIX, REPAIR, EXTEND, DISCONNECT AND RECONNECT ANY AND ALL ELECTRICAL DEVICES AS REQUIRED.

5) ROOF CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO FIX, REPAIR, EXTEND, DISCONNECT AND RECONNECT ANY AND ALL MECHANICAL DEVICES AS REQUIRED.

6) CONTRACTOR SHALL VERIFY EXISTING ROOF SLOPES PRIOR TO ORDERING ANY MATERIALS. MATCH EXISTING ROOF SLOPES - ALL ROOFS SHALL HAVE POSITIVE DRAINAGE TO EXISTING ROOF GUTTER - SEE ALL PLANS AND DETAILS.

7) ALL NEW MEMBRANE ROOFS SHALL BE .060" THK. MIN. (UNLESS OTHERWISE NOTED)

8) CLEAN ALL SURFACES AS REQUIRED FOR NEW MATERIALS AND SEALANTS. (REMOVE ALL EXISTING MASTICS AND SEALANTS).

9) CONTRACTOR SHALL REMOVE ALL EXISTING COPINGS AND FLASHINGS FROM ROOF SYSTEM, RETAIN FOR OWNER.

10) CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL ROOF PENETRATIONS PRIOR TO STARTING ANY WORK.

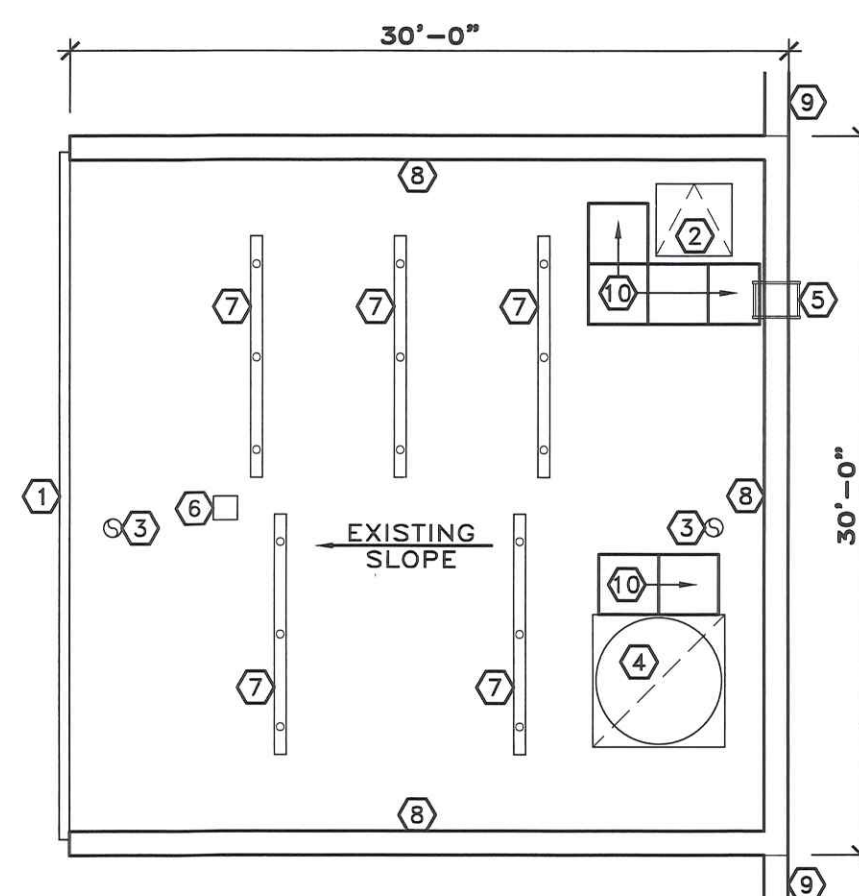
11) CONTRACTOR SHALL VERIFY WITH OWNER ANY AND ALL CAPS, VENT PIPES, ABANDONED CONDUITS, DUCTS, CURBS - ITEMS THAT ARE TO BE ABANDONED SHALL BE CUT OFF OR REMOVED TOO BELOW EXISTING ROOF DECK AND FULLY CAPPED, SEALED AND SECURED. PATCH EXISTING ROOF DECK AS REQUIRED. - SEE PAGE A101 KEYNOTE #38

12) CONTRACTOR SHALL INSTALL "RUSS" AT ALL HORIZONTAL TO VERTICAL TRANSITIONS AS REQUIRED BY MANUFACTURER.

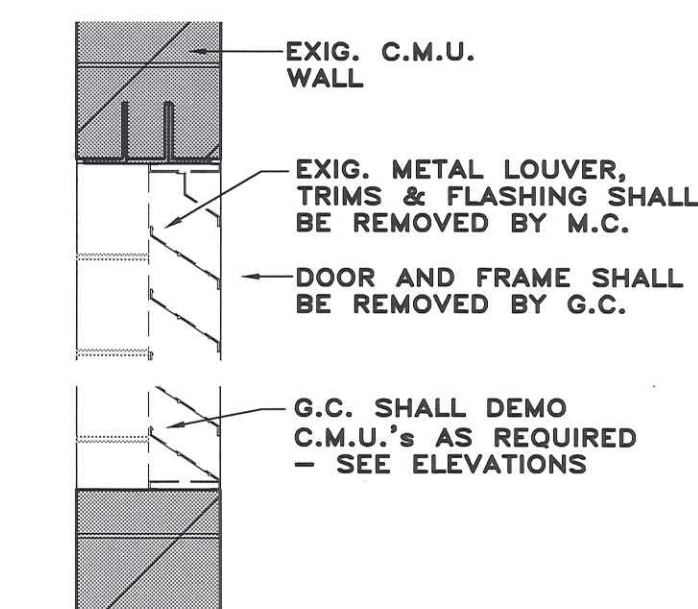
13) CONTRACTOR SHALL MECHANICALLY FASTEN INSULATION SYSTEM ON ALL STEEL DECK SYSTEMS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS (FM I-90).

ROOF DETAIL SCHEDULE		
MARK	DESCRIPTION	DETAIL
1	EXIG. GUTTER & DOWNSPOUT SHALL REMAIN	GT2
2	EXIG. ROOF HATCH	RC3
3	EXIG. HOT STACK	P1
4	EXIG. EXHAUST FAN	P1
5	EXIG. ROOF LADDER	RC4
6	DEMO EXIG. ROOF BOX	
7	DEMO EXIG. BEAM & COLUMNS TO BELOW DECK	
8	DEMO EXIG. COPING & REPLACE WITH NEW COPING	E1
9	EXIG. COPING SHALL REMAIN	
10	WALK PADS 30"x30" EPDM	W1

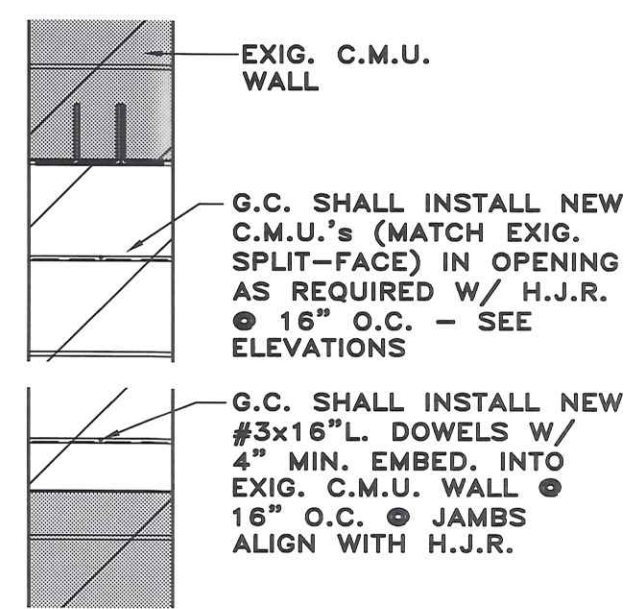
NOTES:
1. REMOVE EXISTING SEALANT, CLEAN ALL COMPONENTS & INSTALL NEW SEALANT



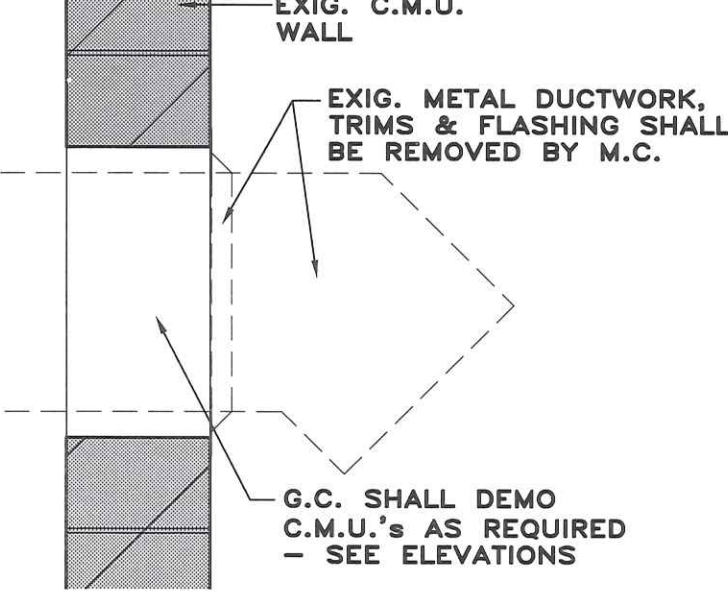
11 ROOF PLAN
A102 SCALE: 1/8"=1'-0"



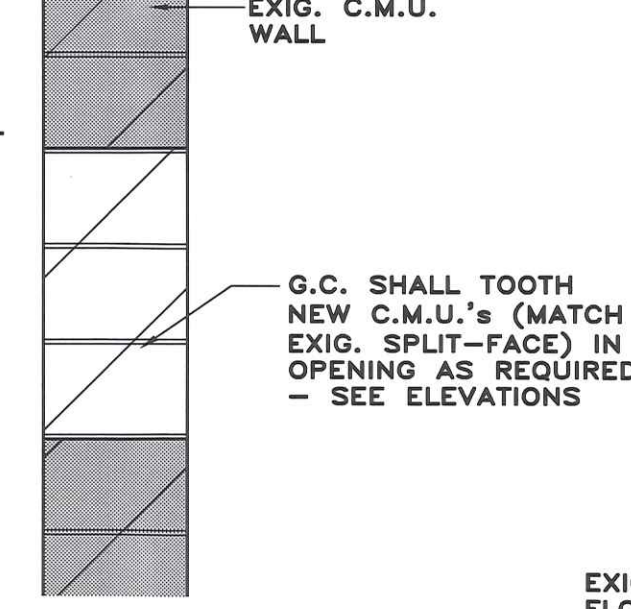
DEMOLITION



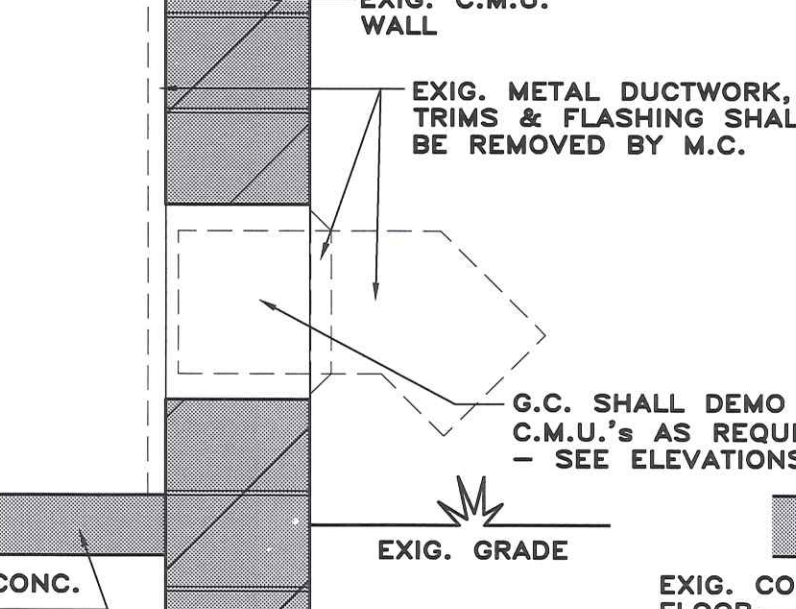
NEW CONSTRUCTION



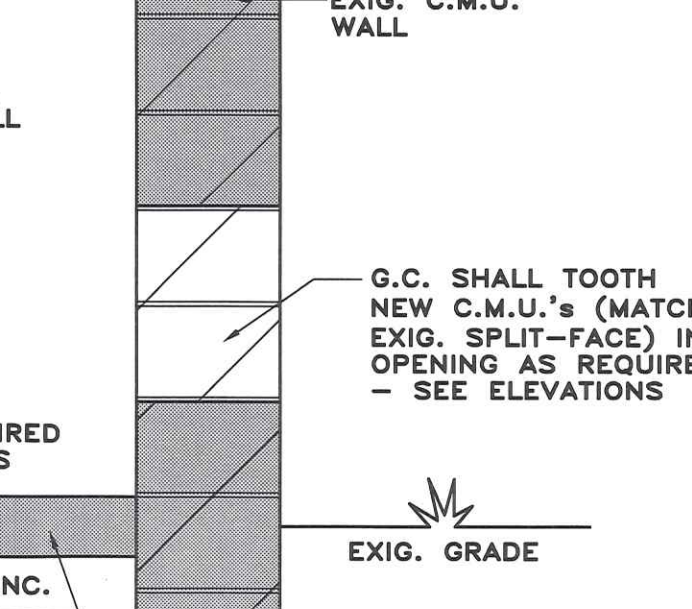
DEMOLITION



NEW CONSTRUCTION



DEMOLITION



NEW CONSTRUCTION

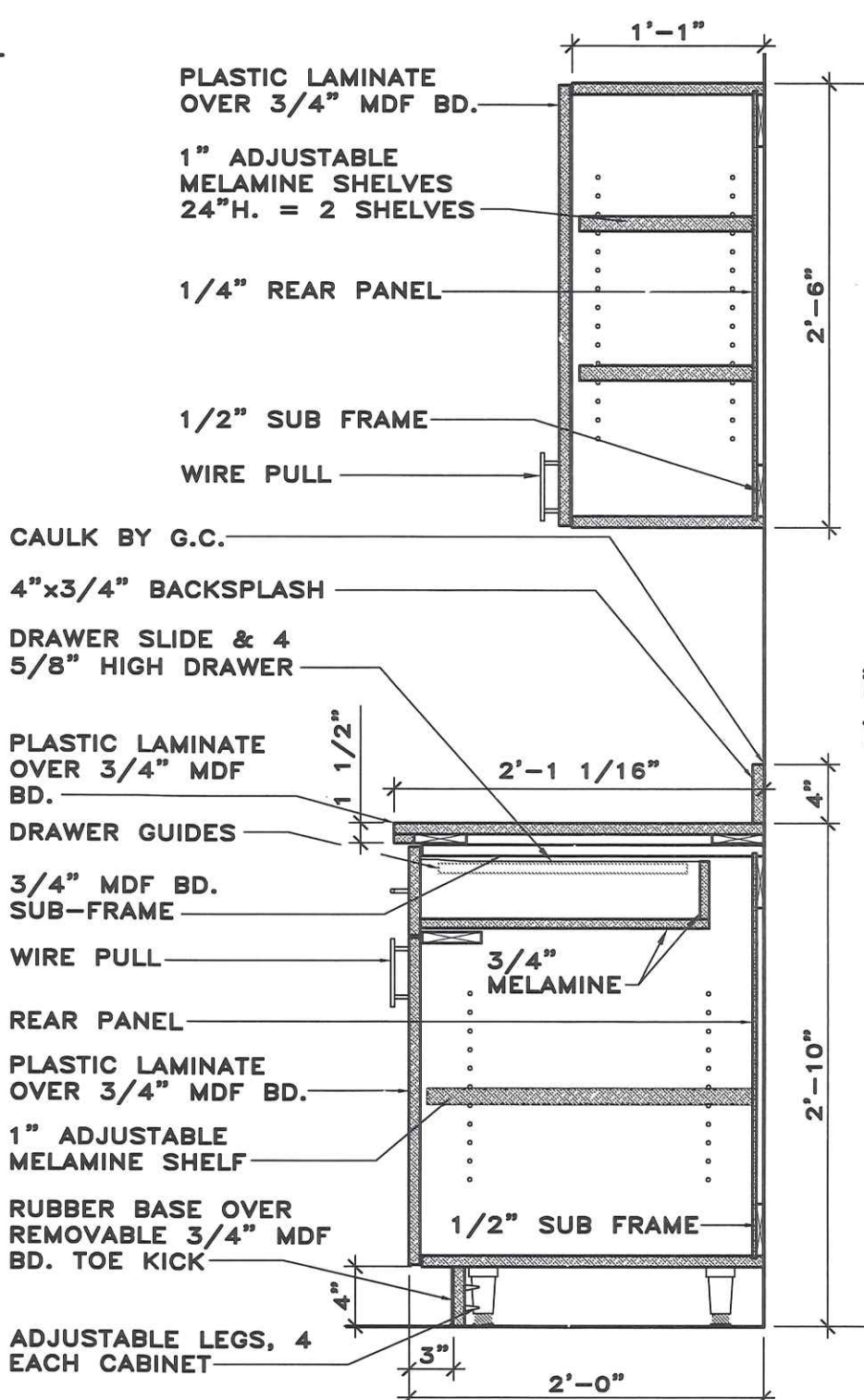
6 DETAIL
A102 SCALE: 3/4"=1'-0"

5 DETAIL
A102 SCALE: 3/4"=1'-0"

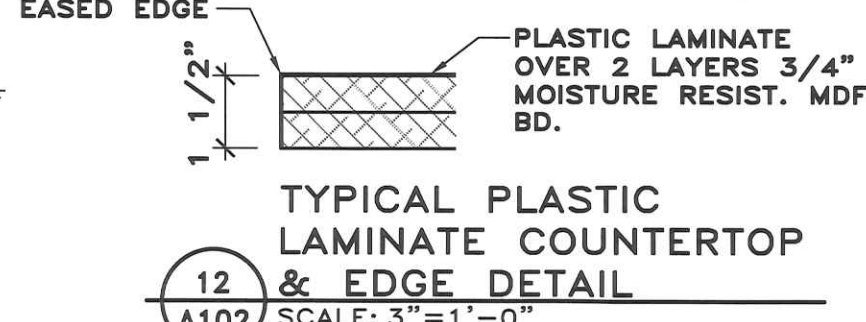
4 DETAIL
A102 SCALE: 3/4"=1'-0"

GENERAL NOTES - CASEWORK

- FIELD VERIFY ALL DIMENSION PRIOR TO FABRICATION.
- CASEWORK FABRICATOR SHALL OBTAIN FROM THE PLUMBING CONTRACTOR A CUTOUT TEMPLATE FOR EACH COUNTERTOP MTD. SINK &/OR LAV. USED. CASEWORK FABRICATOR SHALL THEN VERIFY CLEARANCES IN ALL SINK BASE CABINETS PRIOR TO FABRICATION OF UNITS. CASEWORK FABRICATOR SHALL BE SOLELY RESPONSIBLE FOR ALL REWORK OF CABINETS & COUNTERTOPS IF VERIFICATION PROCESS IS NOT COMPLETELY PERFORMED.
- ALL COUNTERTOPS SHALL HAVE FINISHED EDGES.
- DOOR & DRAWER PULLS SHALL BE 192 MM PULL BAR, AMEROCK #19012 S.S.
- LAMINATED PLASTIC AND MELAMINE COLORS TO BE SELECTED BY ARCHITECT.
- DRAWER ASSEMBLIES SHALL CONSIST OF PLASTIC LAMINATE OVER 3/4" MDF BD. DRAWER SLIDES TO HAVE SELF-CLOSING FEATURE, BUILT-IN DRAWER FRONT BUMPERS, 100# LOAD CAPACITY & ADJUSTMENT CAPABILITIES.
- CASEWORK EXTERIOR SHALL BE CLAD IN LAMINATED PLASTIC, INTERIOR SURFACES AND SHELVING SURFACED WITH MELAMINE. TYPICALLY WALL CABINETS ARE 12" DEEP AND BASE CABINETS ARE 24" DEEP. WALL CABINETS ARE 8" DEEP AT THE RESTROOMS.
- PROVIDE CONCEALED EURO TYPE 125° HINGES.
- PROVIDE LOCKS ON DOORS AND DRAWERS AS INDICATED ON CASEWORK ELEVATIONS. KEY AS DIRECTED BY OWNER, PROVIDE 3 SETS OF KEYS TO OWNER.
- FURNISH & INSTALL FILLERS WHERE REQ'D.
- PROVIDE WATER-RESISTANT MDF BOARD AT COUNTERTOPS & BACKSPLASHES W/ SINKS OR WITHIN 4'-0" OF A SINK.
- PROVIDE BLOCKING IN WALLS AS REQ'D. TO SUPPORT CABINETS, COUNTERTOPS, STANDARDS, BRACKETS, ETC.



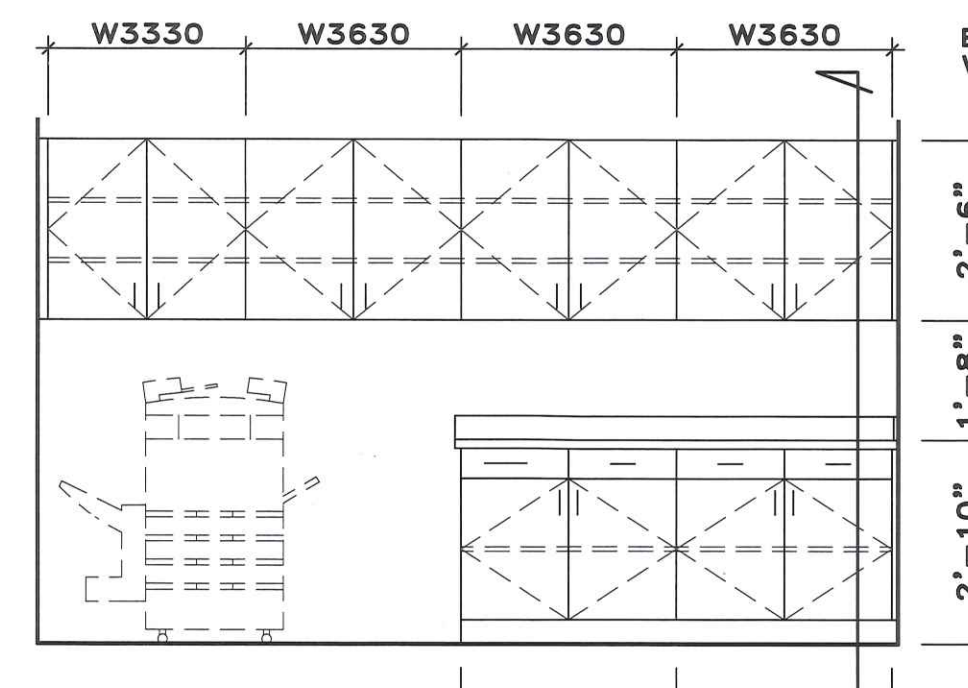
9 CABINET SECTION
A102 SCALE: 1"=1'-0"



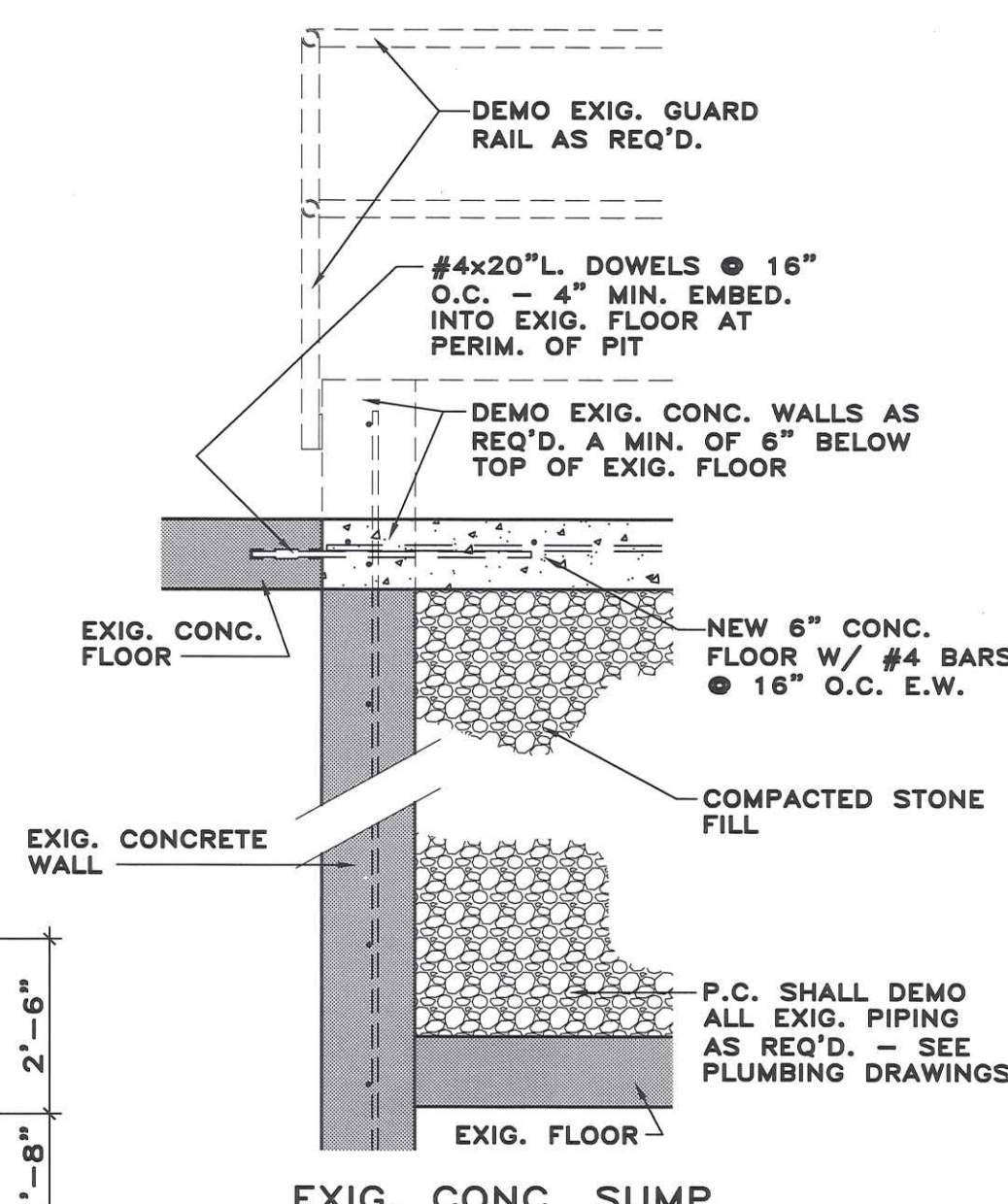
12
A102 SCALE: 3"=1'-0"

CASEWORK NOTATION LEGEND		
B	=	BASE CABINET
DB	=	DRAWER BASE CABINET
SB	=	SINK BASE CABINET
BS	=	BASE SHELF CABINET
W	=	WALL CABINET
MC	=	MICROWAVE CABINET

EXAMPLE:		
CABINET TYPE	CABINET WIDTH	CABINET HEIGHT (WALL CABINETS)
DB	16	30



8 COPY 105
A102 SCALE: 3/8"=1'-0"

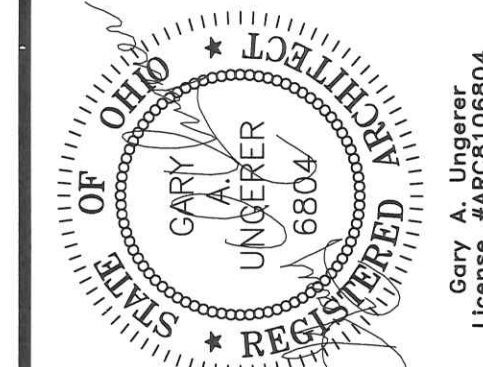
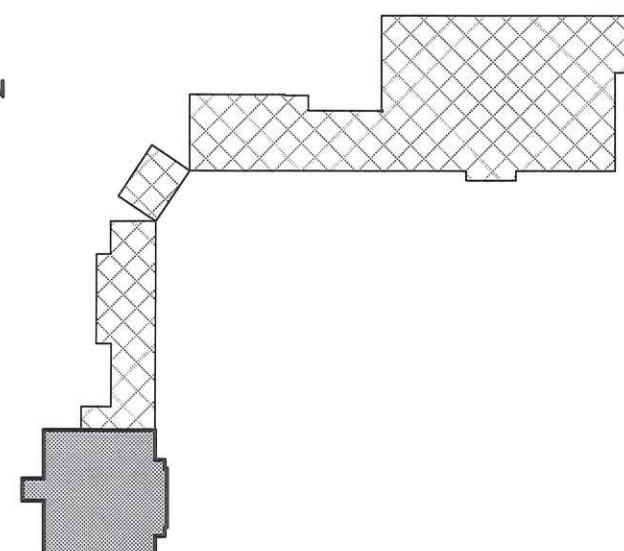


3 DETAIL
A102 SCALE: 3/4"=1'-0"

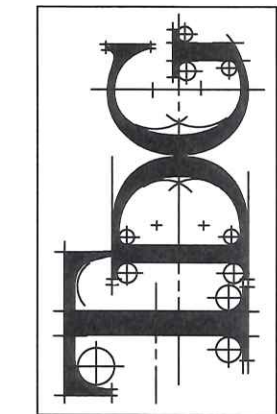
GENERAL NOTES - DEMOLITION

- ALL CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROTECTION OF SURROUNDING, ADJACENT OR ATTACHED COMPONENTS AND MATERIALS DURING DEMOLITION.
- ALL CONTRACTORS SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND UTILITY LOCATIONS PRIOR TO BIDDING & BEGINNING WORK. IN THE EVENT OF CONFLICTS, CONTRACTOR SHALL SEEK RESOLUTION FROM OWNER AND/OR ARCHITECT PRIOR TO BEGINNING WORK.
- THE OWNER SHALL RETAIN RIGHTS OF OWNERSHIP FOR ALL SALVAGEABLE MATERIALS AND EQUIPMENT REMOVED. SALVAGED ITEMS SHALL BE RELOCATED OR PLACED IN STORAGE AS DIRECTED BY OWNER. NON-SALVAGEABLE MATERIALS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
- WHERE EXISTING WALLS, CEILINGS, FLOORS, ETC. TO REMAIN ARE DAMAGED DURING DEMOLITION AND CONSTRUCTION, THE G.C. SHALL PATCH AND REPAIR EXISTING DAMAGED SURFACES TO MATCH EXISTING ADJACENT SURFACE MATERIALS, INCLUDING LOCATIONS WHERE PLUMB., MECHANICAL & ELECTRICAL ARE REMOVED, SEE PLUMB., MECH. & ELEC. DEMOLITION DWGS. FOR LOCATIONS.
- FIELD VERIFY LOCATIONS OF EXISTING ELECTRICAL PANELS.
- REFER TO PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR FURTHER DEMOLITION & NEW WORK AND NOTES.
- G.C. SHALL PROVIDE ALL NECESSARY SHORING REQ'D. FOR SUPPORT OF WALLS, CEILINGS, FLOORS AND OTHER STRUCTURAL MEMBERS DURING DEMOLITION. SHORING SHALL BE LEFT IN PLACE UNTIL NEW WORK IS IN PLACE.
- SAW CUTTING AND REMOVAL OF CONCRETE FLOORS AS REQ'D. FOR INSTALLATION OF NEW UNDERGROUND UTILITIES SHALL BE BY THE G.C. U.N.O., ALL TRENCHING AND BACKFILL SHALL BE BY THE P.C., M.C. OR E.C. RESPECTIVELY U.N.O. THE G.C. SHALL PATCH AND REPAIR ALL CONCRETE. COORDINATE WORK BETWEEN TRADES, SEE DEMOLITION & MEP DRAWINGS.
- THE G.C. SHALL TURN OVER ALL RECYCLEABLE MATERIALS REMOVED DURING DEMOLITION, INCLUDING BUT NOT LIMITED TO WALL PANELS, ETC. TO THE OWNER.

2 EXISTING MEZZANINE PLAN
A102 SCALE: 1/8"=1'-0"



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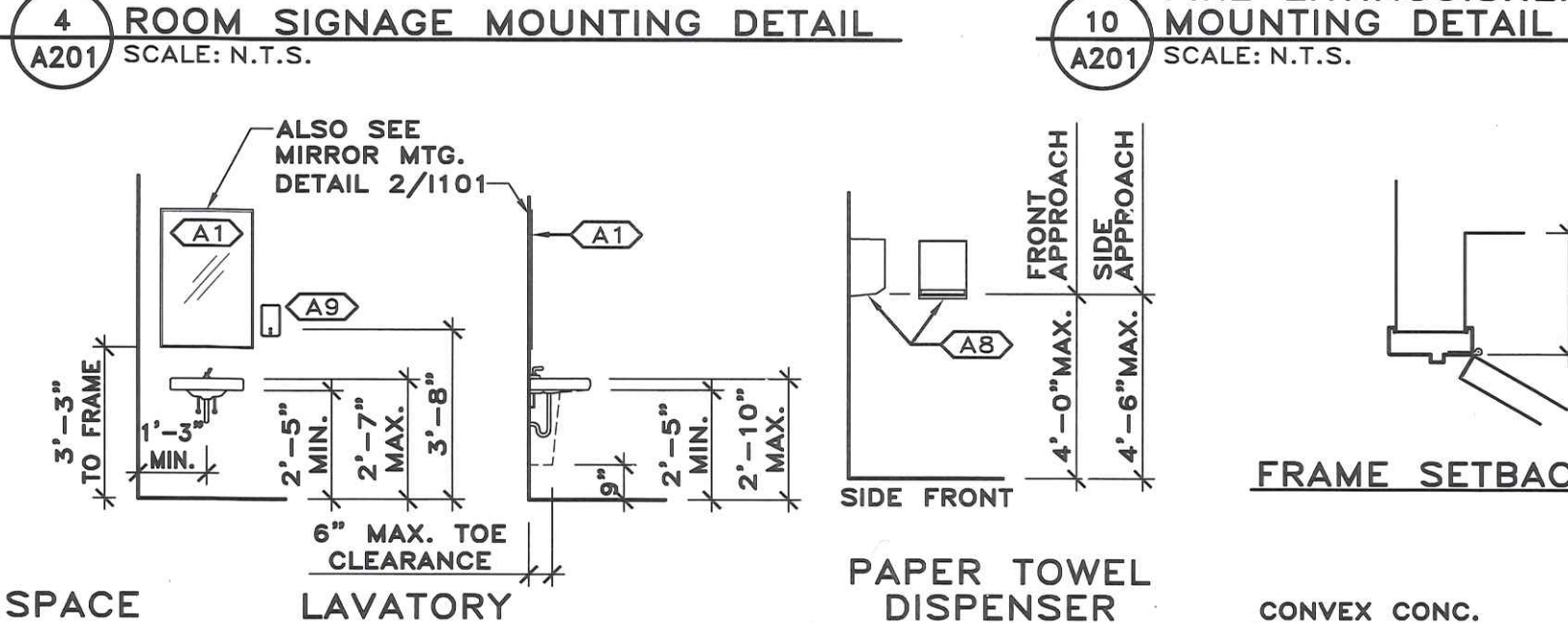
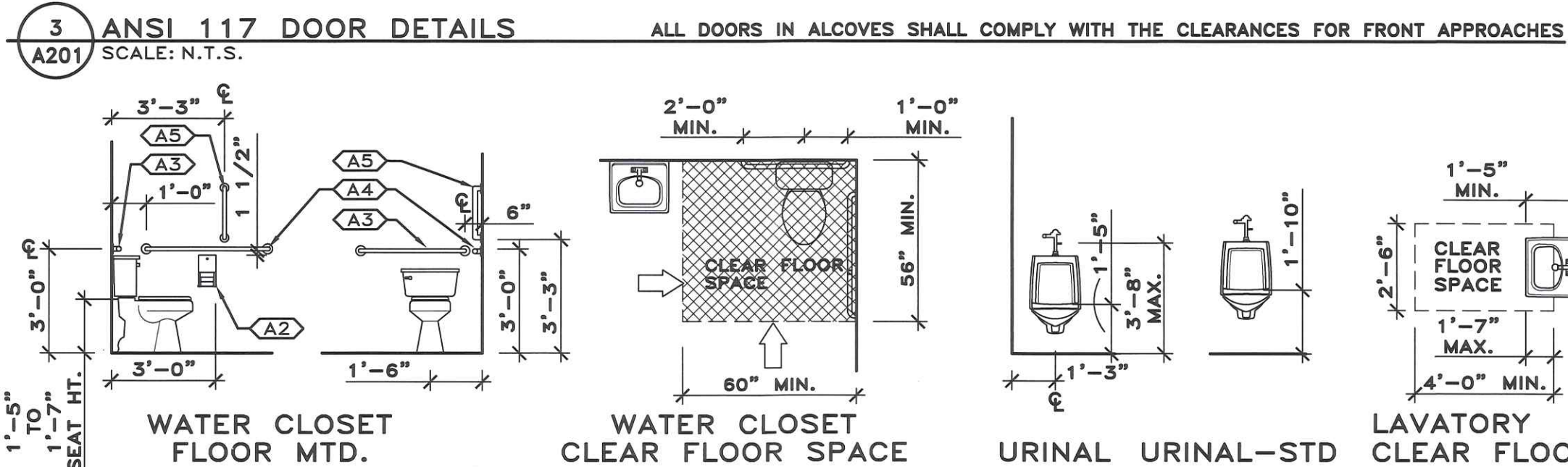
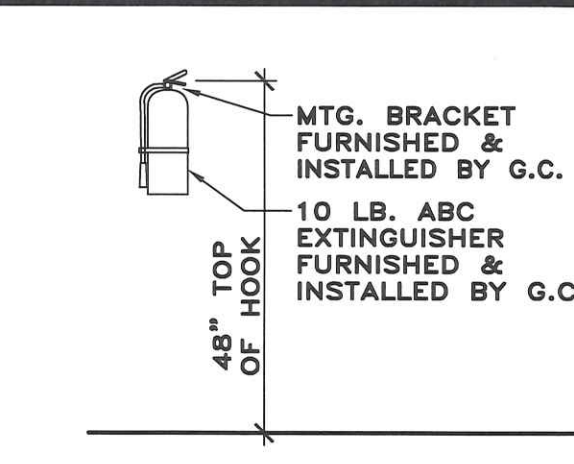
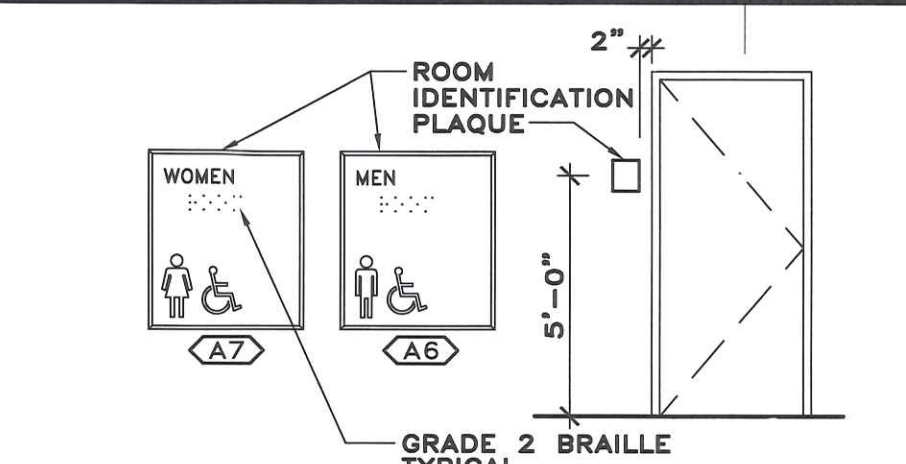
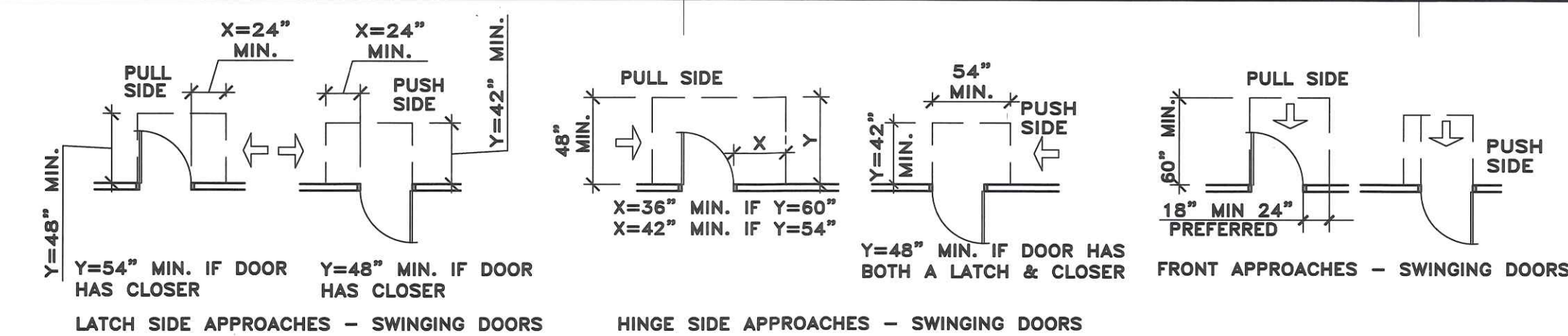
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PLANS, CABINETS & MISC. DETAILS

ISSUED DATE	
04-20-17	OWNER REVIEW
05-17-17	OWNER REVIEW
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS

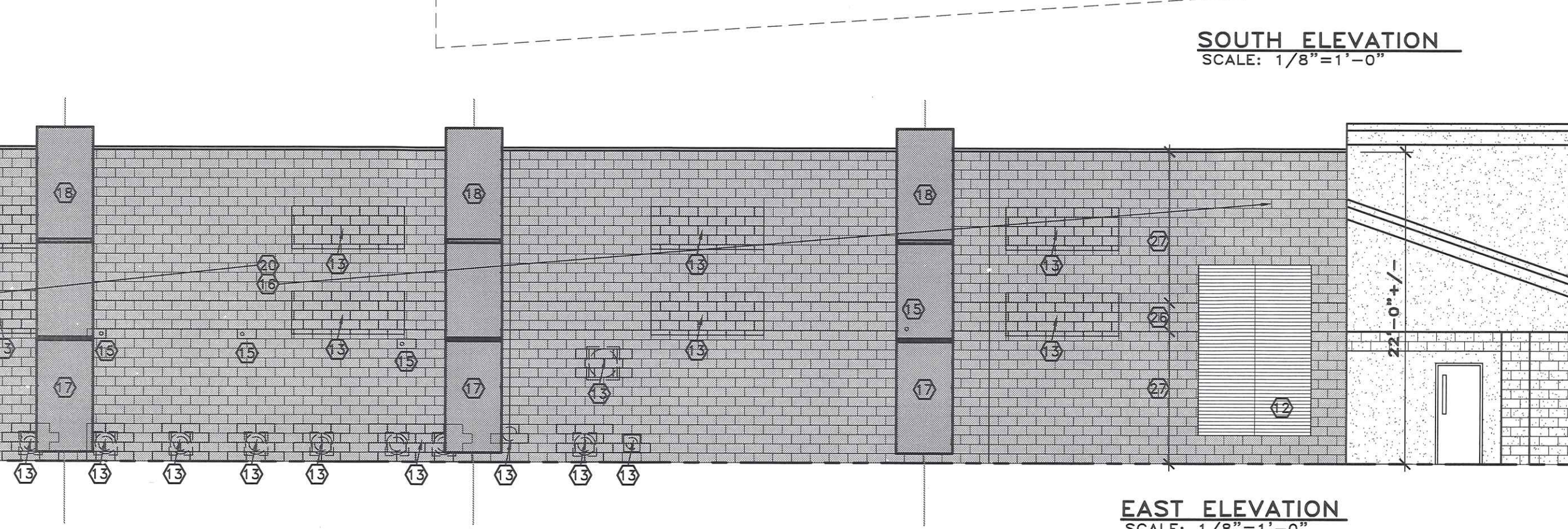
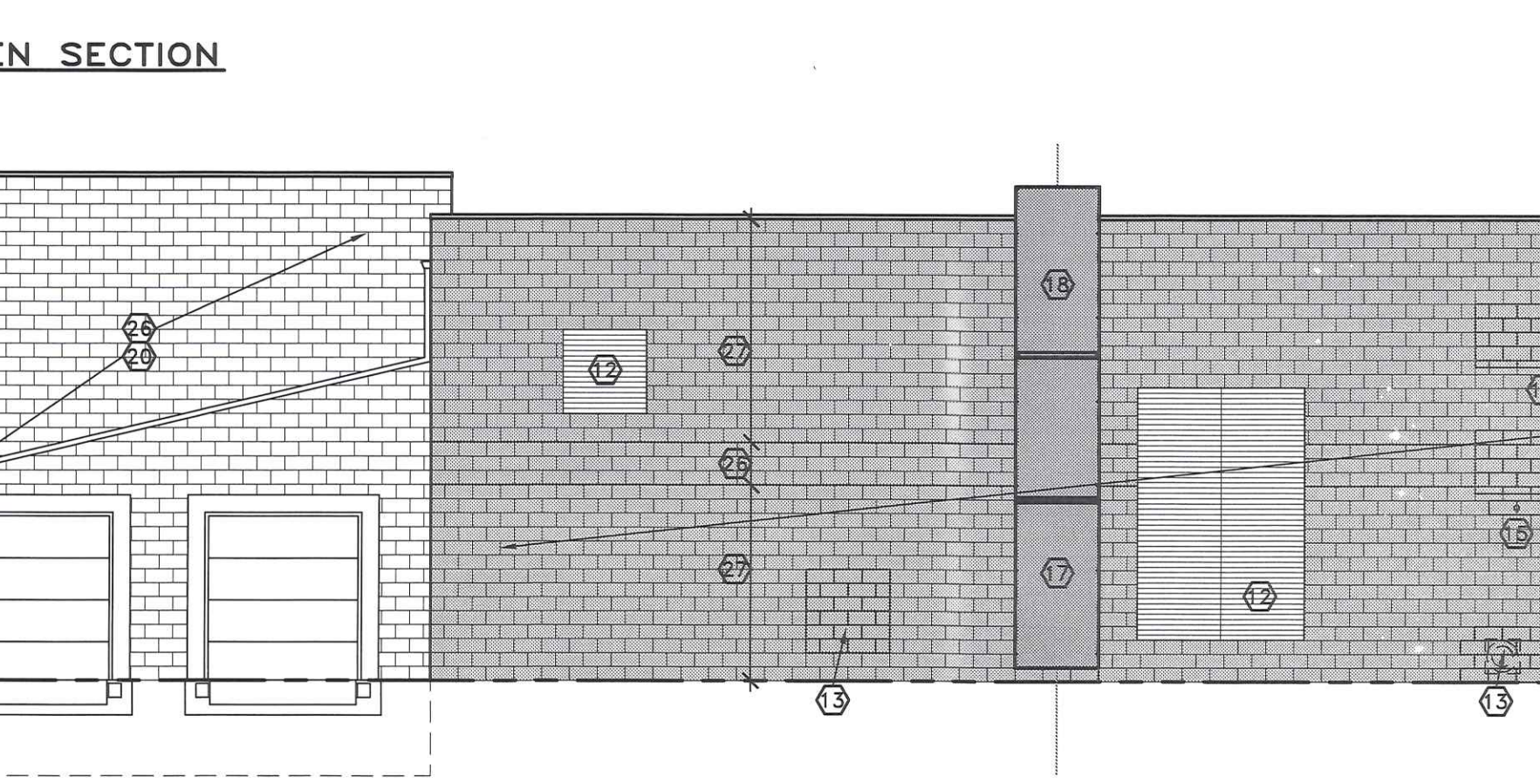
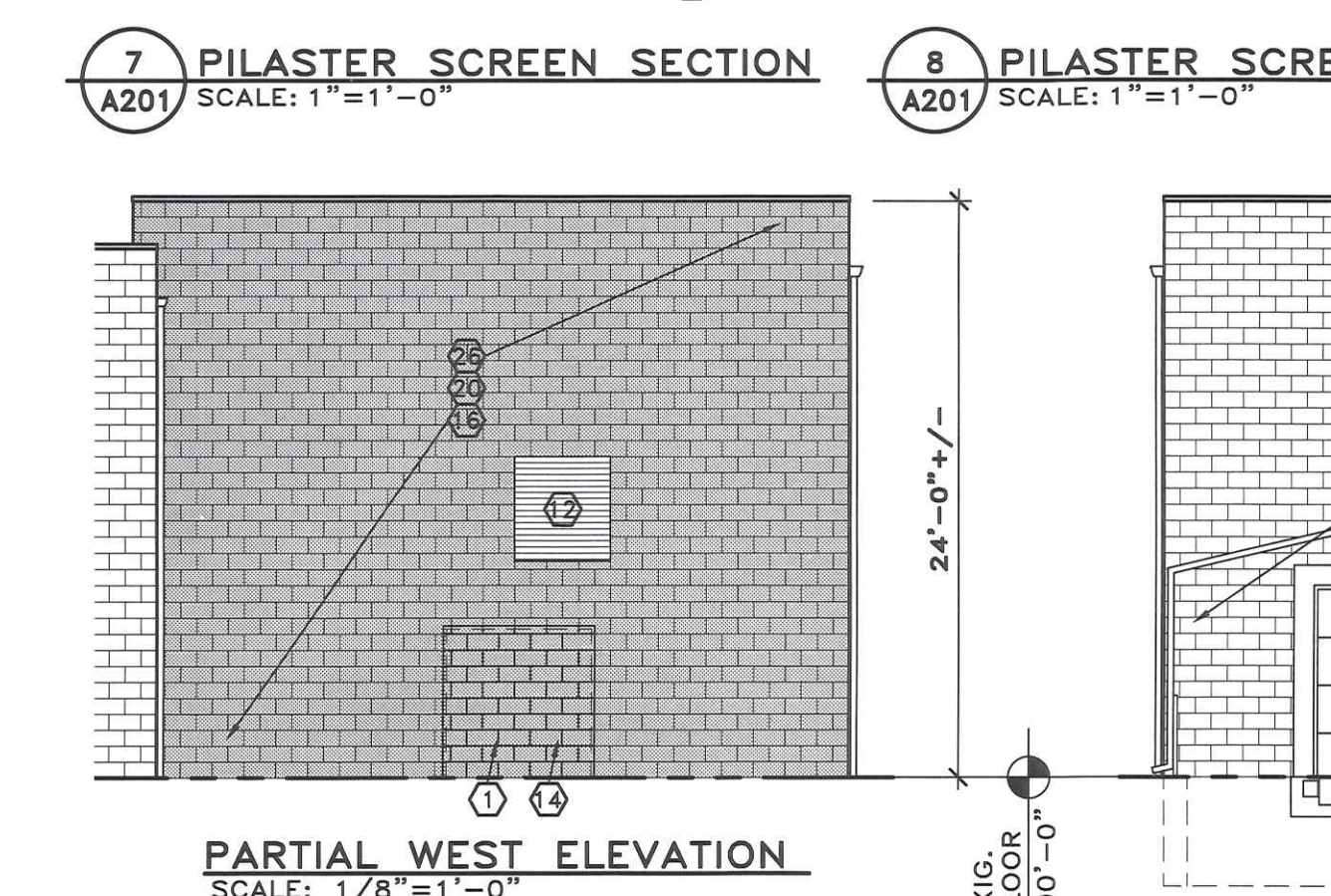
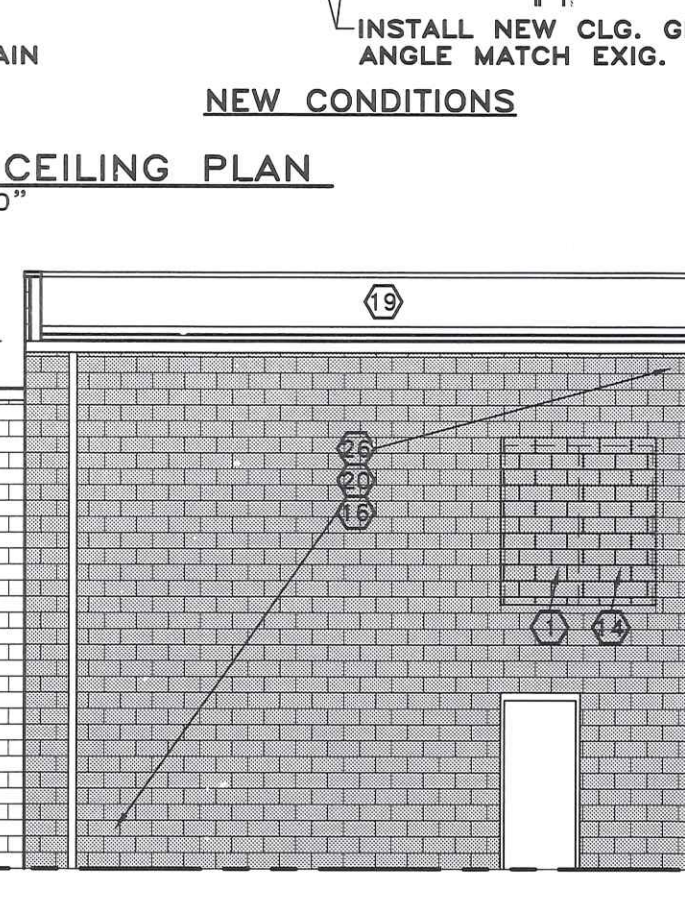
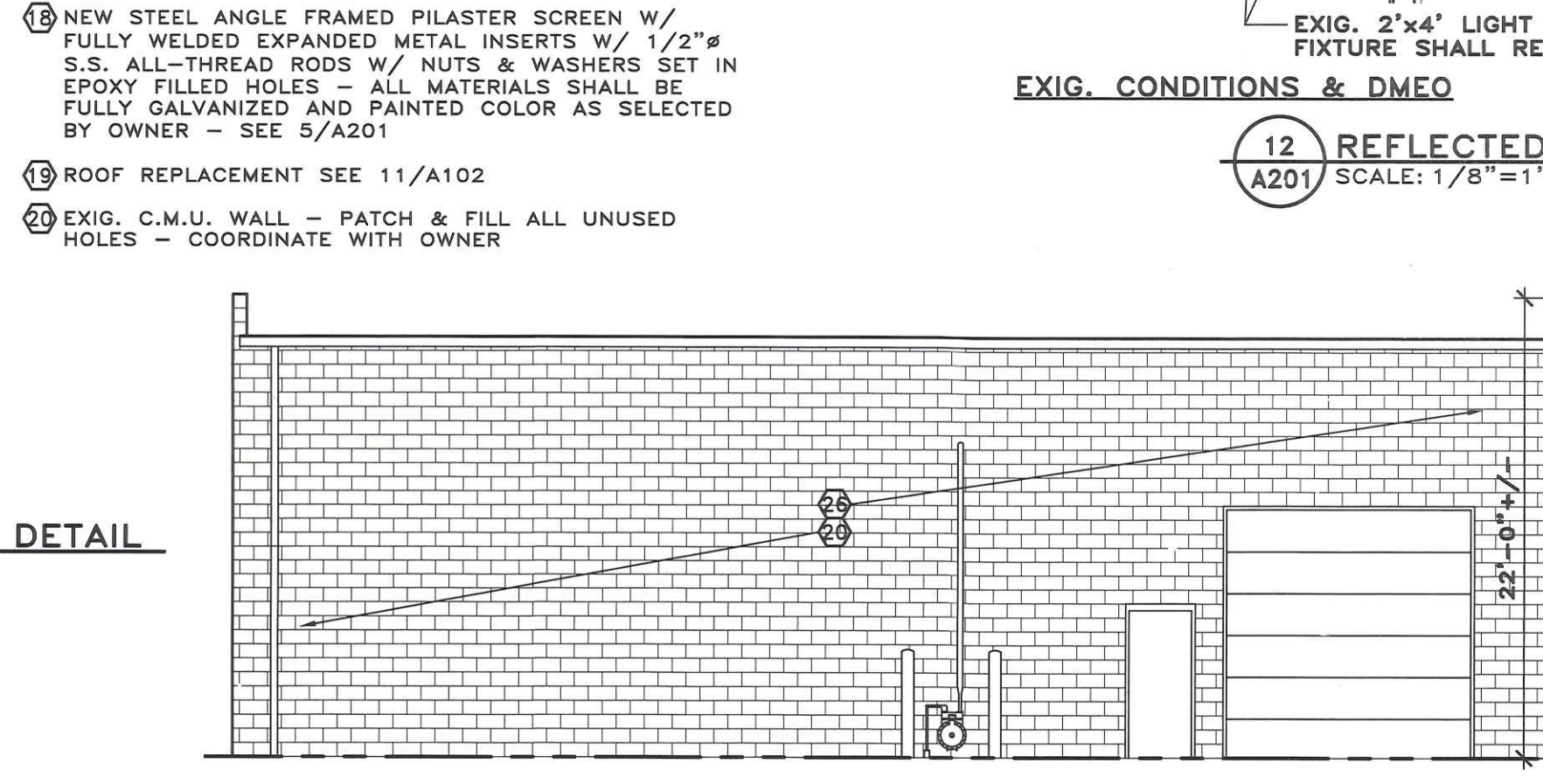
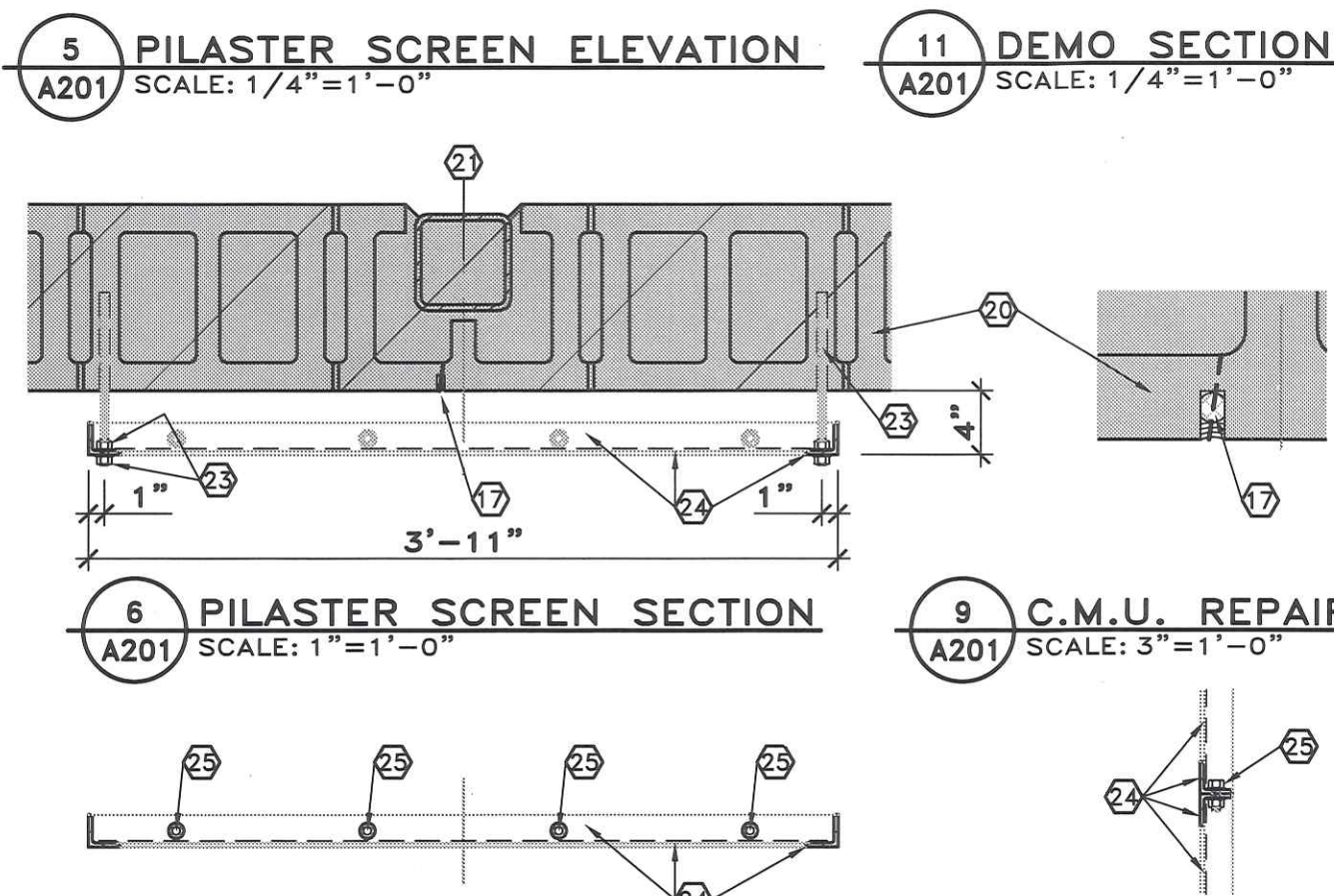
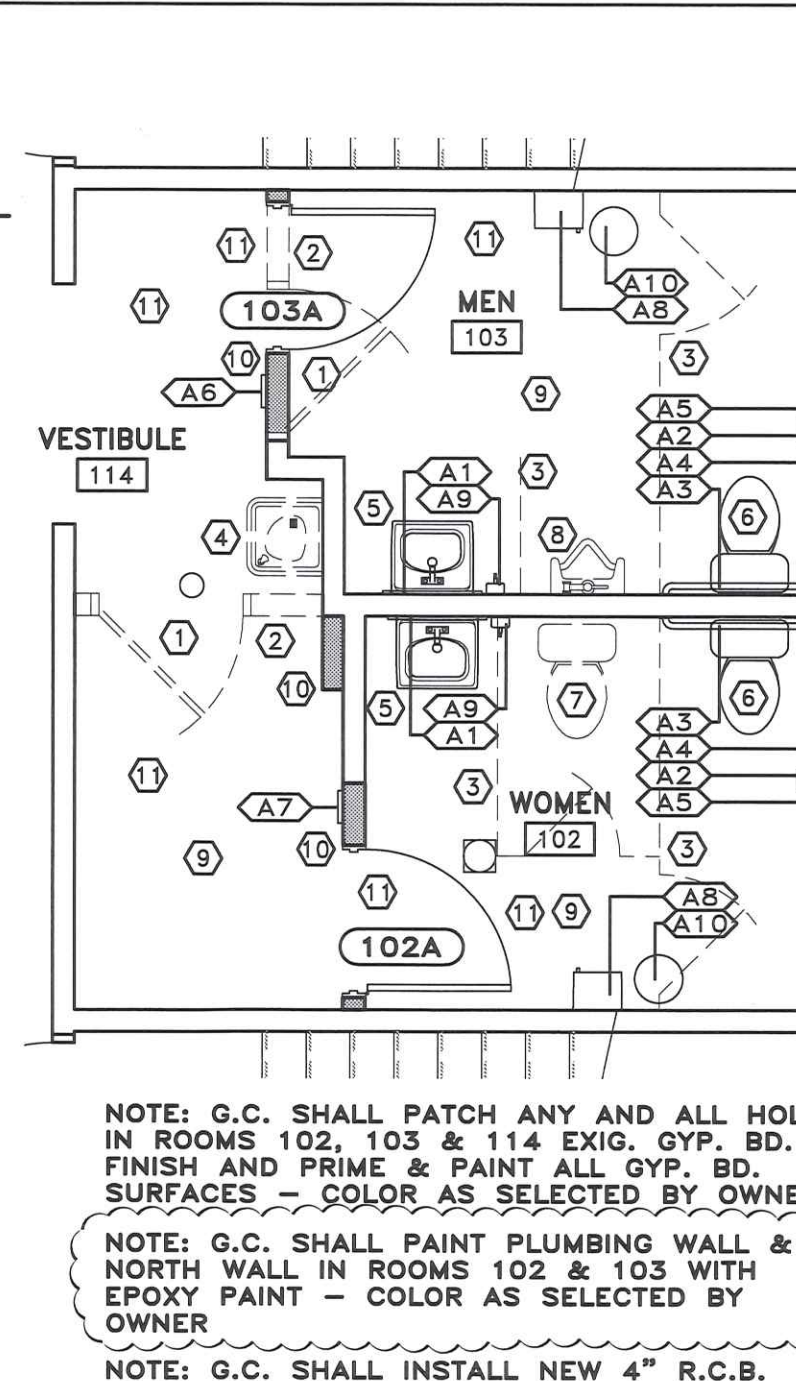
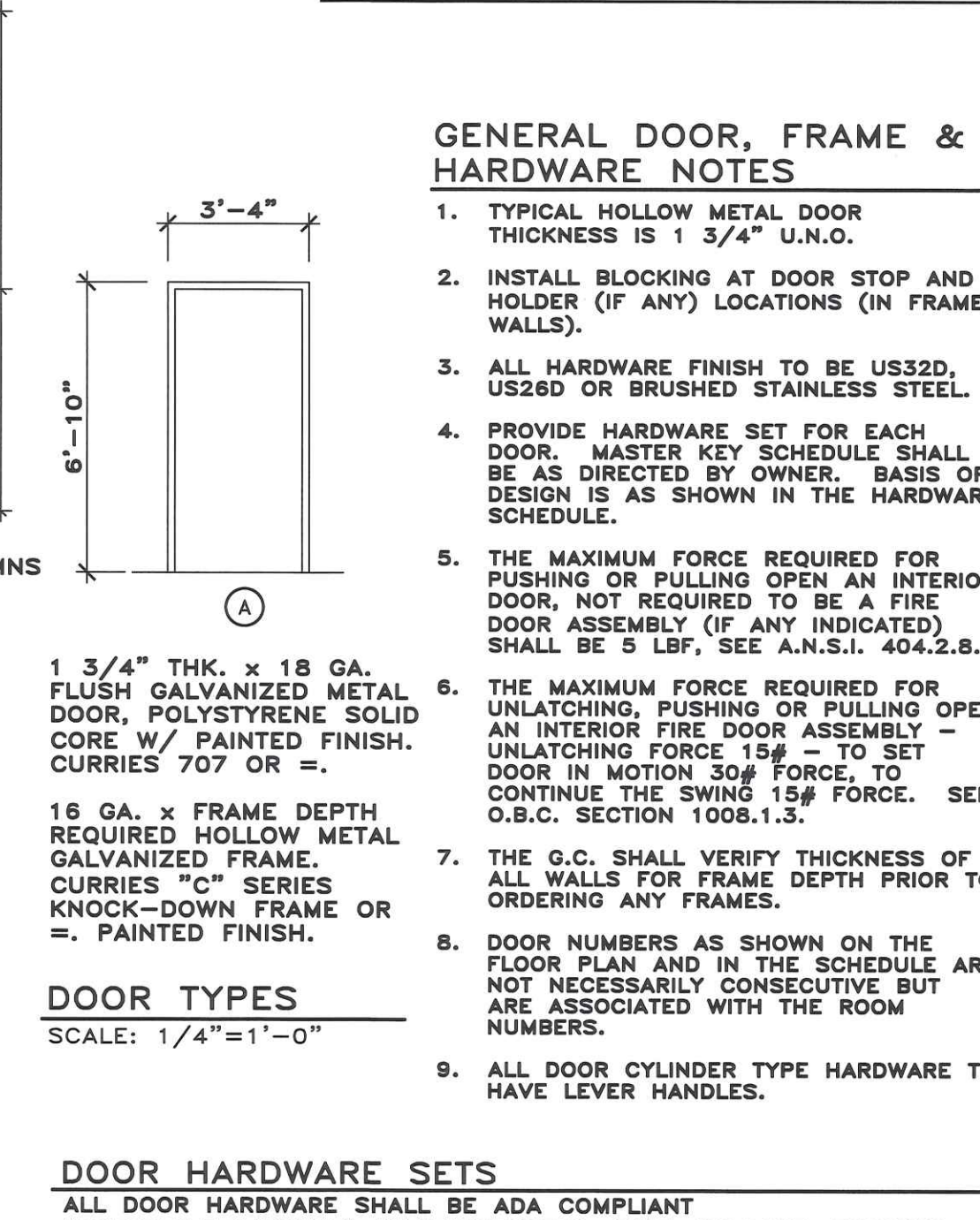
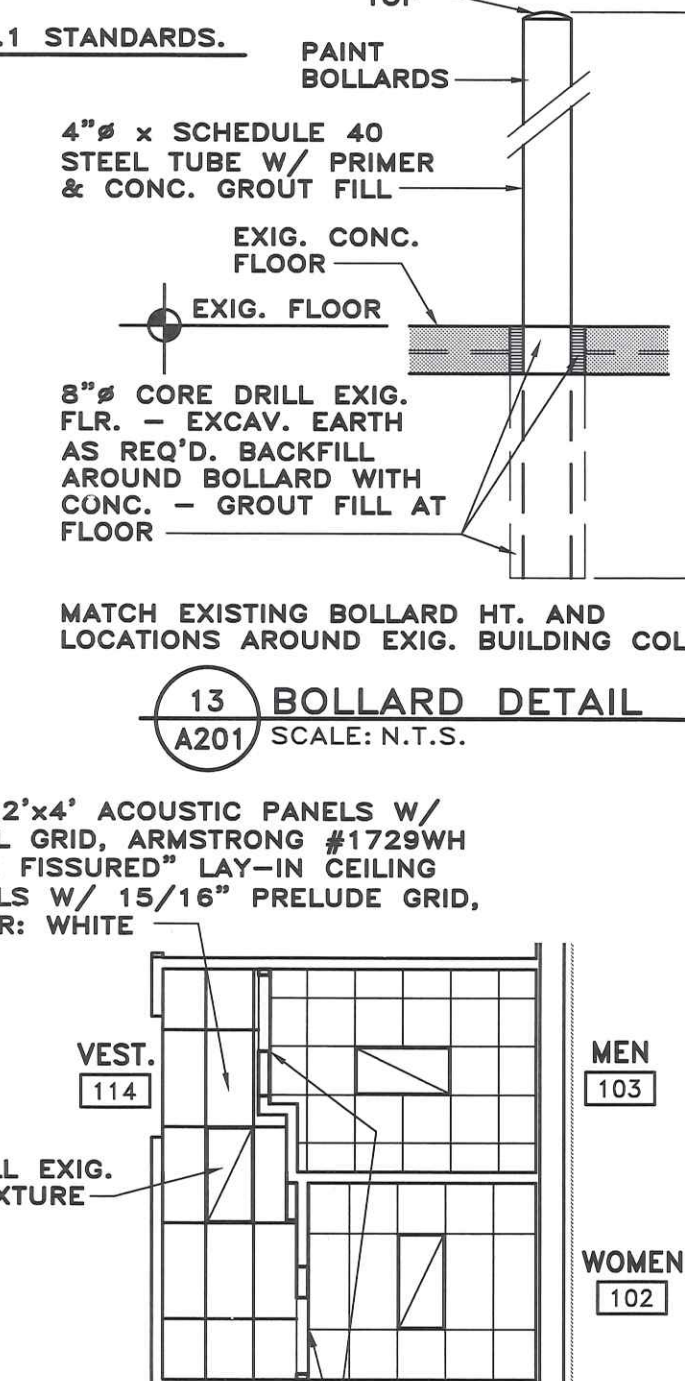
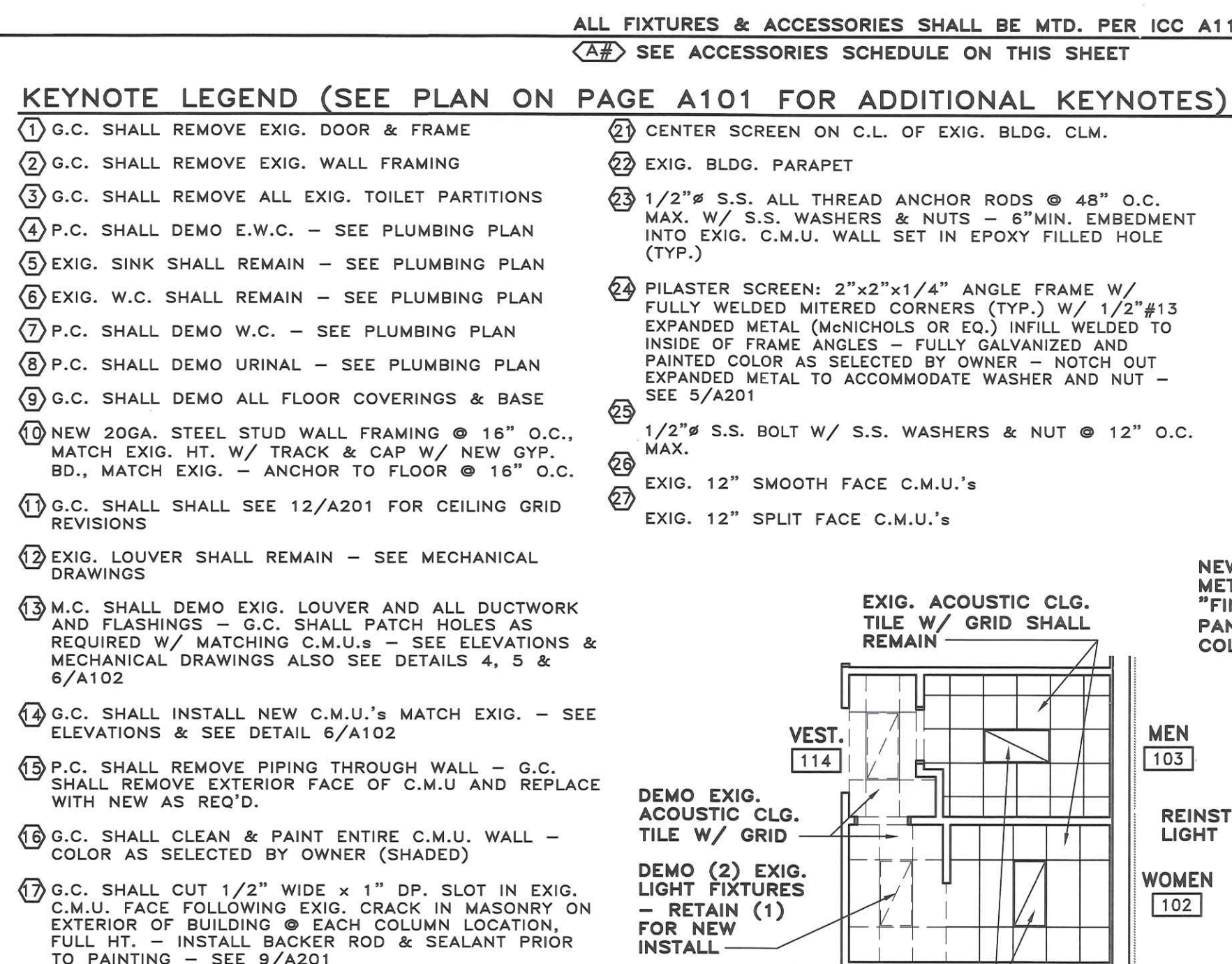
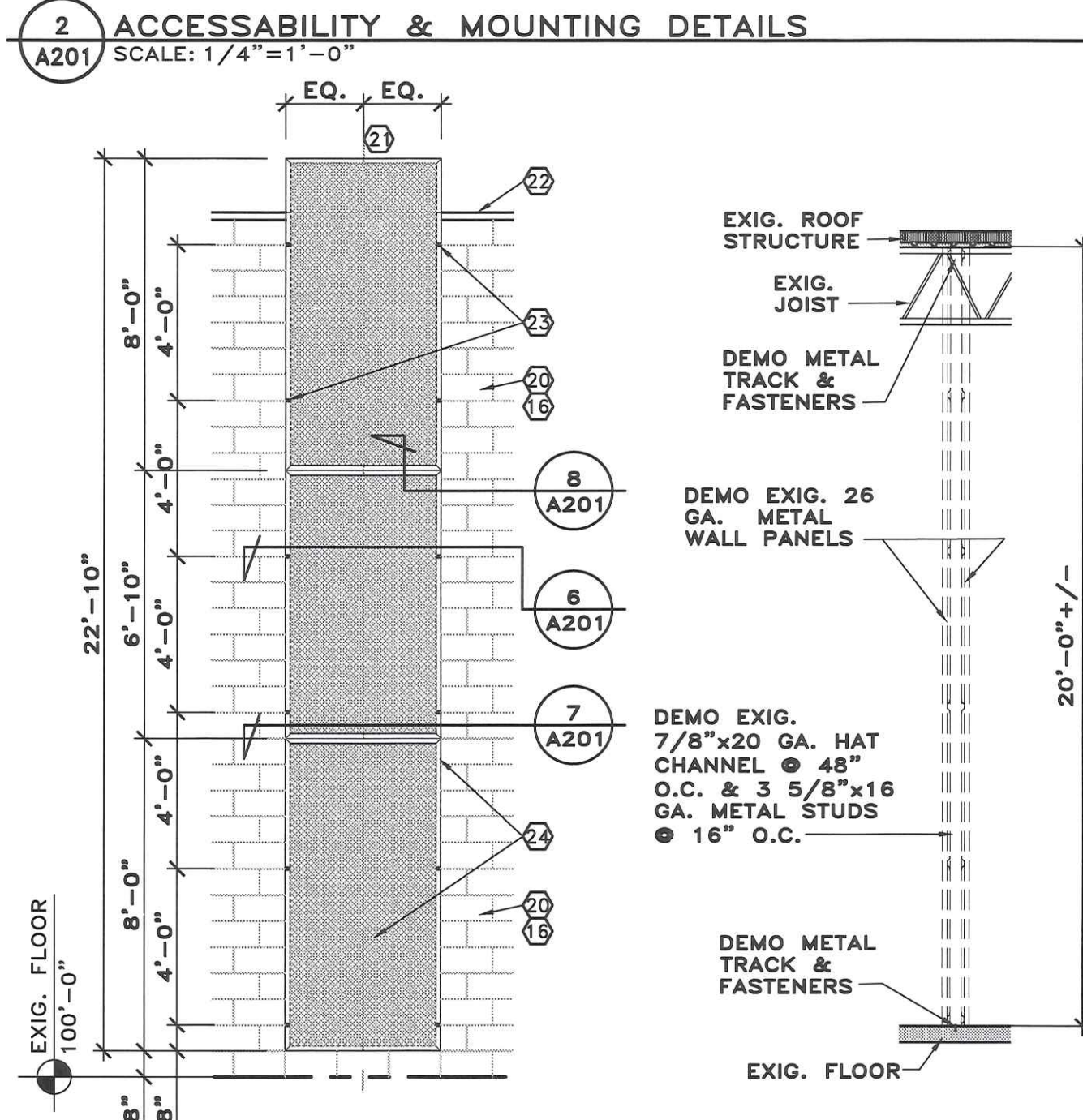
DRAWN BY:	GTG
CHECKED BY:	GAU
DATE:	01-17
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	A102
OF	SHEETS



ACCESSORIES SCHEDULE			
MARK	DESCRIPTION	MANUFACTURER	REMARKS
A1	Mirror, 24"x36"	Bobrick B-165-2436	Bot. at 39" A.F.F. to edge
A2	Toilet paper holder (surface mtd.)	Furnished & Installed by Owner	Detail 2/A201
A3	36" Grab bar	Bobrick B-6806	Detail 2/A201
A4	42" Grab bar	Bobrick B-6806	Detail 2/A201
A5	18" Grab Bar - Vertical	Bobrick B-6806	Detail 2/A201
A6	Sign: "MEN" (with hdep.)	Rowmark "Ultra Mattes"	Detail 4/A201
A7	Sign: "WOMEN" (with hdep.)	Rowmark "Ultra Mattes"	Detail 4/A201
A8	Paper Towel Dispenser	Furnished & installed by Owner	Detail 2/A201
A9	Soap Dispenser	Furnished & installed by Owner	Detail 2/A201
A10	Waste Receptacle	Furnished & installed by Owner	Detail 2/A201

DOOR SCHEDULE									
MARK	SIZE	DOOR	FRAME	GLAZING	SETBACK (X)	HARDWARE	SET	NOTES	
	W H THK	MATL ELEV	GLAZING TYPE W H						
102A	3'-0" 6'-8" 1-3/4"	HM A			4"	HM	1		
103A	3'-0" 6'-8" 1-3/4"	HM A			4"	HM	1		

MATERIAL LEGEND	GLAZING TYPE LEGEND	NOTES LEGEND
HM Insul. hollow metal	A 1/4" tempered	
AL Aluminum	B 1" insul. tempered	
WD Wood	C 1/2" insul. Tempered	
INS MTL Insulated Metal		



OF OHIO * LICENSED
GARY A. UNGERER
UNREGISTERED
6804
* REGISTERED

Gary A. Ungerer
Lic. # 6804
Expiration Date 12/31/17

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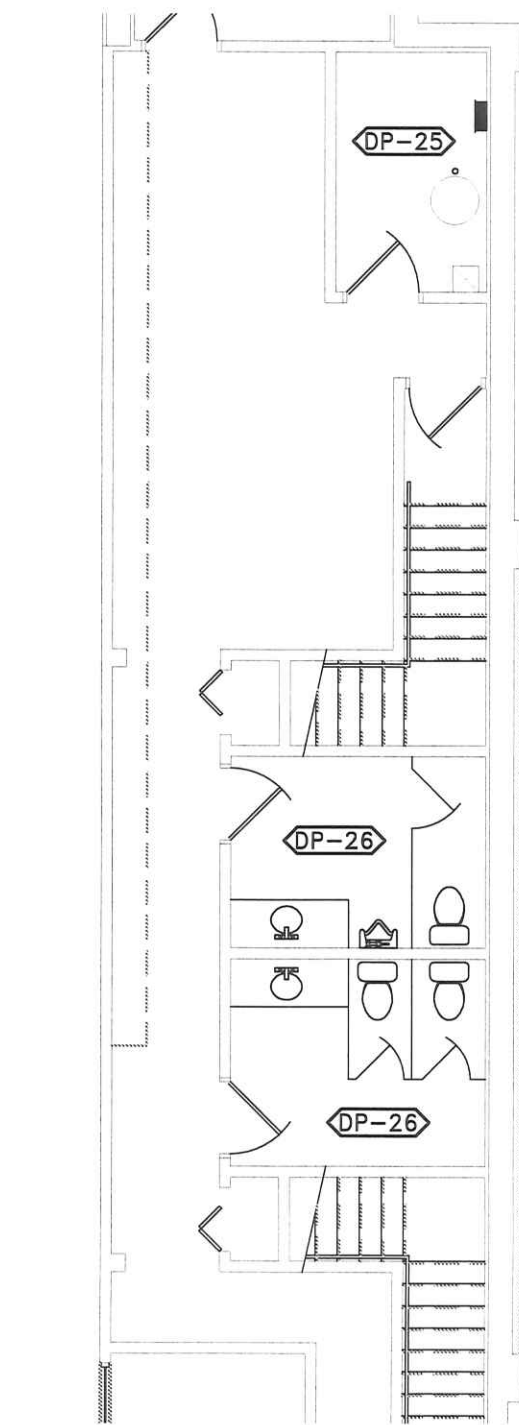
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ELEVATIONS

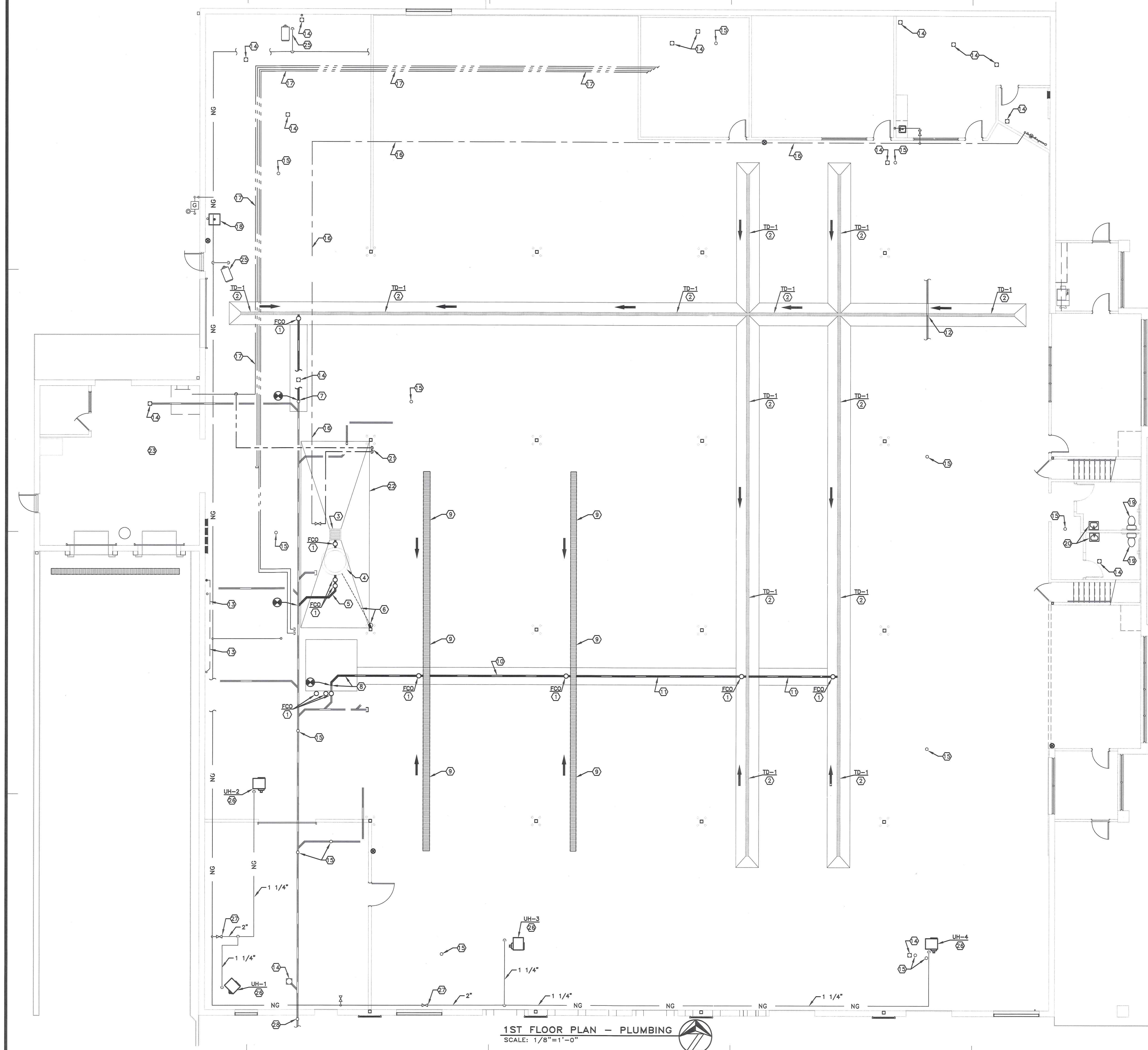
ISSUED DATE	
04-20-17 OWNER REVIEW	
05-17-17 OWNER REVIEW	
06-13-17 OWNER REVIEW	
06-22-17 FOR BIDS/PERMITS	
07-25-17 RESUBMITTAL	

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DATE:	01-17
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	A201
OF	SHEETS



OF 4 SHEETS

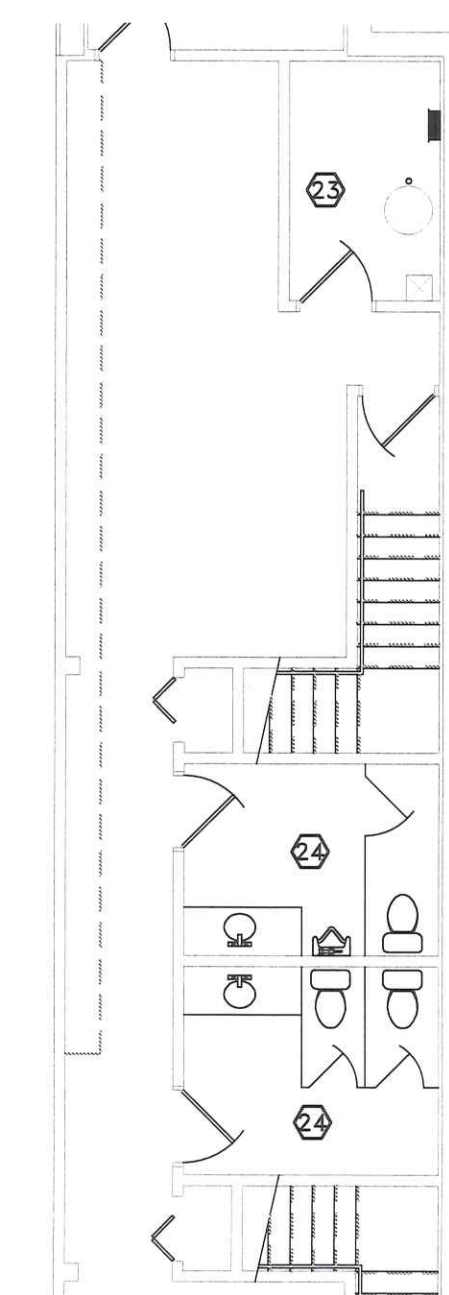
OF 4 SHEETS



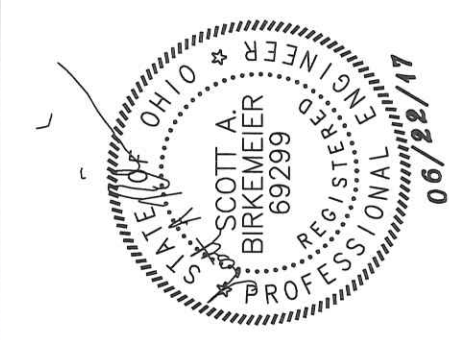
1ST FLOOR PLAN - PLUMBING
SCALE: 1/8"=1'-0"

KEY NOTES

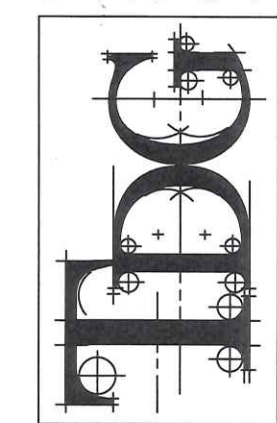
1. INSTALL FLOOR CLEANOUT. SEE FLOOR CLEANOUT DETAIL '1' ON SHEET P801. COORDINATE FLOOR ELEVATION HEIGHT WITH G.C.
2. G.C. TO PROVIDE AND INSTALL 4" TRENCH DRAIN EQUAL TO ZURN Z886. PLUMBING CONNECTIONS, TRAP AND CLEANOUT BY P.C. SEE TRENCH DRAIN DETAIL '7' ON SHEET A102. SEE SANITARY ISOMETRIC ON SHEET P201.
3. G.C. TO PROVIDE AND INSTALL CATCH BASIN. PLUMBING CONNECTIONS, TRAP AND CLEANOUT BY P.C. SEE CATCH BASIN DETAIL '10' ON SHEET A102. SEE SANITARY ISOMETRIC ON SHEET P201.
4. PROVIDE AND INSTALL TRAFFIC RATED, PRECAST CONCRETE OIL INTERCEPTOR PER LOCAL CODE REQUIREMENTS. OIL INTERCEPTOR SHALL BE EQUAL TO HANSON PIPE AND PRECAST MODEL 01140TR. SEE SANITARY ISOMETRIC ON SHEET P201. SEE OIL INTERCEPTOR DETAIL '2' ON SHEET P801.
5. NEW 4" SAN FROM OIL INTERCEPTOR TO EXISTING SAN MAIN. CONTRACTOR SHALL F.V. THE INVERT DEPTHS.
6. ROUTE 3" VENT ROUTED UNDERGROUND FROM OIL INTERCEPTOR TO EXISTING COLUMN, UP COLUMN, THRU ROOF AND TERMINATE A MINIMUM OF 2'-0" ABOVE ROOF. ROOF PENETRATION SHALL BE A MINIMUM OF 6'-0" FROM EDGE OF ROOF AND 10'-0" FROM OUTSIDE AIR INTAKES. G.C. TO PROVIDE FLASHING AT ROOF PENETRATION.
7. ROUTE 4" SAN FROM EXISTING CLEANOUT TO NEW TRENCH DRAIN.
8. ROUTE 6" SAN FROM NEW TRENCH DRAIN TO EXISTING 6" DRAINS IN SUMP BASIN. ROUTE THRU EXISTING CONCRETE TRENCH PRIOR TO FILLING IN OF TRENCH.
9. EXISTING TRENCH DRAINS TO REMAIN. REPLUMB DRAIN PIPING TO NEW SAN MAIN BEING ROUTED UNDER TRENCH DRAINS.
10. ROUTE 6" SAN BETWEEN EXISTING TRENCH DRAIN. RECONNECT TO EXISTING DRAINS ON TRENCH DRAINS. REMOVE EXISTING SAN PIPING AS NECESSARY TO INSTALL NEW PIPING. G.C. TO CUT AND PATCH CONCRETE AS NECESSARY. P.C. TO EXCAVATE AND BACKFILL AS NECESSARY.
11. ROUTE NEW 4" SAN FROM EXISTING TRENCH DRAIN TO NEW TRENCH DRAIN. G.C. TO CUT AND PATCH CONCRETE AS NECESSARY. P.C. TO EXCAVATE AND BACKFILL AS NECESSARY.
12. VERIFY EXISTING SAN MAIN IS BELOW NEW TRENCH DRAIN. REPAIR ANY DAMAGE TO EXISTING SAN PIPE THAT IS THE RESULT OF EXCAVATION.
13. REWORK EXISTING SAN VENT PIPING. HORIZONTAL PIPING SHALL BE REROUTED TO A MINIMUM OF 15'-0" A.F.F. AND THEN RECONNECTED IN FOR VENT THRU ROOF.
14. EXISTING FLOOR DRAIN TO REMAIN.
15. EXISTING FLOOR CLEANOUT TO REMAIN.
16. EXISTING DCW TO REMAIN.
17. EXISTING DHW TO REMAIN.
18. EXISTING SERVICE SINK TO REMAIN.
19. EXISTING WATER CLOSET TO REMAIN.
20. EXISTING LAVATORY TO REMAIN.
21. INSTALL 3/4" DCW AND DHW DROPS DOWN TO SEPARATE HOSEBIBBS MOUNT TO EXIS. BLDG. COLUMN.
22. SLOPED FLOOR FOR VEHICLE WASH DOWN AREA.
23. EXISTING WATER HEATER AND RECIRCULATION PUMP ON SECOND FLOOR TO REMAIN.
24. EXISTING UPSTAIRS RESTROOM AND FIXTURES TO REMAIN.
25. EXISTING GAS FIRED UNIT HEATER AND NG PIPING TO REMAIN UNCHANGED.
26. ROUTE 1" NG TO FURNACE FROM GAS MAIN. CONNECT TO UNIT PER MANUFACTURER INSTALLATION GUIDE. SEE GAS CONNECTION DETAIL '3' ON SHEET P801. M.C. SHALL INSTALL UNIT HEATER. SEE MECHANICAL DRAWINGS.
27. CONNECT NEW 2" NG TO EXISTING NG MAIN. F.V. EXISTING MAIN SIZE AND PROVIDE NECESSARY TRANSITIONS. ROUTE TO NEW UNIT HEATERS AS SHOWN. ROUTE PIPING AS HIGH AS POSSIBLE.
28. EXISTING CLEANOUT AT GRADE TO REMAIN.



PARTIAL
2ND FLOOR PLAN - PLUMBING
SCALE: 1/8"=1'-0"



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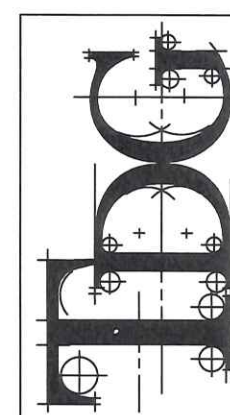
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PLUMBING FLOOR PLANS

ISSUED DATE	
05-17-17	OWNER REVIEW
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS

DRAWN BY:	SAB
CHECKED BY:	SAB
DATE:	01-17
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	P101
OF	4 SHEETS



OF 4 SHEET



[illegible]

1. REFERENCED STANDARDS & QUALITY ASSURANCE: ASME B31.9 "BUILDING SERVICES PIPING" FOR MATERIALS, PRODUCTS, AND INSTALLATION. SAFETY VESSELS SHALL BEAR THE APPROPRIATE ASME LABEL.
- A. 2011 OPC-OHIO PLUMBING CODE
- B. NATIONAL RECOGNITION TESTING LABORATORY AND NEMA COMPLIANCE (NRTL): HANGERS, SUPPORTS AND COMPONENTS SHALL BE LISTED AND LABELED BY A NRTL WHERE USED FOR FIRE PROTECTION PIPING OSHA REGULATION 1910.7
- C. NFPA-NATIONAL FIRE PROTECTION ASSOCIATION
- D. QUALITY ASSURANCE: TESTING AND INSPECTION PROCEDURES ARE REQUIRED TO BE IMPLEMENTED ON THIS PROJECT AND SHALL COMPLY WITH ALL APPLICABLE PORTIONS OF ASMI B31.1, "CODE FOR PRESSURE PIPING" LATEST EDITION
15. POTABLE WATER SYSTEM SHALL BE THOROUGHLY FLUSHED AND DISINFECTED BEFORE BEING PUT INTO SERVICE AS REQUIRED BY THE WATER DEPARTMENT, HEALTH DEPARTMENT OR AUTHORITY HAVING JURISDICTION. AFTER SAMPLES HAVE BEEN APPROVED, OBTAINED CERTIFICATION OF ACCEPTANCE FROM THE HEALTH DEPARTMENT AND FORWARD CERTIFICATE TO THE OWNER. DISINFECTING METHOD SHALL BE COMPLETED IN CONFORMANCE WITH AWWA C651 "STANDARD FOR DISINFECTING WATER MAINS".
16. PIPING GENERAL: ALL PIPING SHALL BE INSTALLED PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING WALLS AND WITH A PITCH OF ACCEPTED PIPING STANDARDS. ALL PIPING SHALL BE INSTALLED WITHOUT FORCING AND SHALL CLEAR ALL DOORS, DUCTWORK, AND OTHER BUILDING OBSTRUCTIONS.
17. UNDERGROUND SANITARY WASTE PIPING: UNDERGROUND SANITARY WASTE AND STORM PIPING SHALL BE SLOPED AS INDICATED IN 2011 OHIO PLUMBING CODE. PIPING SHALL BE AS FOLLOWS:
- A. ASPHALT-COATED SERVICE WEIGHT CAST IRON, NO-HUB PATTERN WITH HEAVY DUTY COUPLINGS UTILIZING 4 STAINLESS STEEL CLAMPS, COUPLINGS SHALL BE EQUAL TO HUSKY MODEL HD-2000.
- B. PLASTIC PVC, SCHEDULE 40 ASTM D2685-82, DWV WITH SOLVENT WELDED SOCKET JOINTS. INSTALLATION SHALL FOLLOW GUIDELINES IN ASTM D 2564-80 AND ASTM D 2685-82.
18. ABOVE GROUND SANITARY WASTE & VENT PIPING INSIDE BUILDINGS: ABOVE GROUND SANITARY WASTE AND VENT AND STORM PIPING SHALL BE SLOPED AS INDICATED IN 2011 OHIO PLUMBING CODE. PIPING SHALL BE AS FOLLOWS:
- A. ASPHALT-COATED SERVICE WEIGHT CAST IRON, NO-HUB PATTERN WITH HEAVY DUTY COUPLINGS UTILIZING 4 STAINLESS STEEL CLAMPS, COUPLINGS SHALL BE EQUAL TO HUSKY MODEL HD-2000.
- B. PLASTIC PVC, SCHEDULE 40 ASTM D2685-82, DWV WITH SOLVENT WELDED SOCKET JOINTS. INSTALLATION SHALL FOLLOW GUIDELINES IN ASTM D 2564-80 AND ASTM D 2685-82. (NOT PERMITTED IN RETURN AIR PLENUMS).
19. DOMESTIC WATER PIPING INSIDE ABOVEGROUND:
- A. 4" AND SMALLER: TYPE "L" HARD AMERICAN CONFORMING TO ASTM B-88-83A. CONTRIVOR SHALL UTILIZE COPPER TUBE PRESS FITTINGS EQUAL TO VIEGA PRO-PRESS FITTINGS. FITTINGS SHALL CONFORM WITH ASME B16.18 AND ASME B16.22, AND PERFORMANCE CRITERIA OF IAPMO PS 117. SEALING ELMENTS OF FITTINGS SHALL BE EPDM AND SHALL BE FACTORY INSTALLED. FITTINGS SHALL BE RATED FOR A MAXIMUM PRESSURE RATING OF 125 PSI AND AMBIENT TEMPERATURES BETWEEN -40°F TO 180°F.
- B. BALL VALVES:
1. 1 1/2" AND SMALLER: 125 PSI, TWO PIECE, BRONZE BODY, BLOWOUT PROOF PRESSURE RETAINING STEM, FULL PORT, EXTENDED HANDLE SLEEVE FOR INSULATION. EQUAL TO NIBCO MODEL S-590
2. 2" AND LARGER: 125 PSI, THREE PIECE, BRONZE BODY, BLOWOUT PROOF PRESSURE RETAINING STEM, FULL PORT, EXTENDED HANDLE SLEEVE FOR INSULATION. EQUAL TO NIBCO MODEL S-590. BALL VALVES 2" AND LARGER SHALL BE DISASSEMBLED PRIOR TO SOLDERING TO PREVENT DAMAGE TO VALVE SEATS. RE-ASSEMBLE VALVE AFTER SOLDER JOINTS ARE COOL.
- C. CHECK VALVES: 125 PSI, HORIZONTAL SWING, BRONZE BODY, RENEWABLE DISC, EQUAL TO NIBCO MODEL S-413.
- D. PROVIDE DIELECTRIC INSULATING UNIONS WHERE STEEL AND COPPER PIPES ARE JOINED. DIELECTRIC UNIONS SHALL BE EQUAL TO CS SERIES AS MANUFACTURED BY CAPTROL MANUFACTURING COMPANY.
- E. MANUFACTURERS: WATTS, CRANE, GRINNELL, NORDSTROM, NIBCO, STOCKHAM, SMITH, MILWAUKEE.
20. SHOCK ELIMINATORS (OR WATER HAMMER ARRESTORS - WHA) SHALL BE INSTALLED AS REQUIRED BY THE GOVERNING CODE OR SHOWN ON DRAWINGS. SHOCK ELIMINATORS SHALL BE MANUFACTURED BY ZURN INDUSTRIES, J.R. SMITH, JOSAM OR PRECISION PLUMBING PRODUCTS, INC. AND SHALL HAVE P.D.I. DESIGNATIONS ON DRAWINGS OR CORRESPONDING WITH DRAINAGE FIXTURE UNITS. INSTALL ACCESS DOORS IN CHAS WALLS, FILING CEILINGS, ETC. FOR ACCESS TO SHOCK ELIMINATORS.
21. TRAPS: ALL FIXTURES REQUIRING TRAPS SHALL BE FURNISHED WITH HEAVY DUTY STAINLESS STEEL P-TRAPS WITH CLEANOUT, TAIL PIECES AND TUBING DRAINS. AT HANDICAPPED LAVATORIES, PROVIDE OFFSET STRAINER/TALPIECE AND EXTENSION AND INSTALL TRAP CLOSE AS POSSIBLE TO WALL. ROUGH-IN SANITARY OFF CENTER SO TRAP CAN BE INSTALLED PARALLEL TO WALL IF NECESSARY.
22. NATURAL GAS PIPING: NATURAL GAS PIPING INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "INTERNATIONAL FUEL GAS CODE" REQUIREMENTS AND LOCAL GAS SUPPLIER REQUIREMENTS. THE SERVICE LINE SHALL BE INSTALLED AS RECOMMENDED BY THE GAS SUPPLIER.
- A. THE PLUMBING CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS WITH THE GAS COMPANY AND PAY ALL FEES FOR THE INSTALLATION AND REQUIRED TESTS.
- B. NATURAL GAS PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL CONFORMING TO ASTM A-53 GRADE B & ASTM A106 WITH 150 LB. MALLEABLE IRON Banded SCREWED FITTINGS.
- NATURAL GAS PIPING BELOW GRADE SHALL BE PLASTIC PIPE, TUBE AND FITTING CONFORMING TO ASTM D-2513 AND LOCAL GAS SUPPLIER REQUIREMENTS. PIPE TO BE USED SHALL BE MARKED "GAS" AND "ASTM D-2513".
- NATURAL GAS PIPING SHALL NOT BE INSTALLED BELOW GRADE WITHIN A BUILDING.
- C. UNIONS SHALL BE INSTALLED AT CONNECTIONS TO EQUIPMENT AND AS REQUIRED TO MAKE UP OR DISCONNECT PIPING. UNIONS SHALL BE CLASS 150, MALLEABLE IRON THREADED PIPE UNIONS CONFORMING TO ASME B16.39.
- D. INSTALL FULL SIZE DIRT LEG AT PRIOR TO EACH EQUIPMENT CONNECTION. DIRECT GAS COCK CONNECTIONS IS PROHIBITED. VALVES SHALL BE EQUAL TO ROCKWELL FIGURE 142, SEMI-STEEL BODY, 175 PSI, LUBRICATED PLUG VALVES
- E. EXTERIOR ABOVE GRADE PIPING SHALL BE PAINTED WITH ONE COAT RUST INHIBITOR PAINT. G.C. SHALL PAINT TWO COATS OF FINISH ENAMEL TO MATCH ADJACENT BUILDING COLOR.
- F. 2" PIPE AND SMALLER LESS THAN 5 PSI ABOVE GROUND SHALL BE THREADED FITTINGS 2 1/2" PIPE AND LARGER, AND ALL PIPING GREATER THAN 5 PSI SHALL BE WELDED W/ STD. WEIGHT WELDED FITTINGS. ALL FITTINGS AT CONCEALED LOCATIONS SHALL BE WELDED.
- G. ALL REGULATOR VENTS SHALL BE TERMINATED ON THE EXTERIOR OF THE BUILDING A MINIMUM OF 10'-0" FROM ANY AIR INLET. INSTALL BIRDSCREENS ON TOPS OF ALL VENT PIPES.
- H. NATURAL GAS PIPING SYSTEMS SHALL BE TESTED AND PURGED PER "INTERNATIONAL FUEL GAS CODE" AND ANY OTHER APPLICABLE CODES AND STANDARDS.

23. PIPE INSULATION: ALL INSULATION, UNLESS OTHERWISE NOTED, SHALL HAVE A COMPOSITE RATING INCLUDING INSULATION ADHESIVES, JACKET, ETC. AS FOLLOWS. THE COMPOSITE ASSEMBLY SHALL HAVE A FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NOT HIGHER THAN 50.
- A. INSULATION SHALL BE MANUFACTURED BY OWENS-CORNING, KNAUF, JOHNS MANVILLE, OR ARMSTRONG AND THERMALLY EQUIVALENT TO THE OWENS-CORNING MATERIALS SPECIFIED.
- B. THE PIPING INSTALLATION MATERIAL SHALL BE A UL-RATED, NON COMBUSTIBLE PIPING INSULATION RECOMMENDED FOR BOTH HOT AND COLD PIPING. INSULATION SHALL BE HEAVY DENSITY SECTIONAL PIPE INSULATION JACKETED WITH AN EMBOSSED VAPOR BARRIER LAMINATED ALL-SERVICE JACKET WITH SELF-SEALING LAP ADHESIVE. LAP AND SEAL ALL JOINTS TO INSURE VAPOR BARRIER THERMAL CONDUCTIVITY (K) SHALL NOT EXCEED 0.24 BTU/H SQUARE FOOT F/INCH. INSULATION SHALL EQUAL OWENS-CORNING FIBERGLASS 25 ASJ/SSL THICKNESS AS PER TABLES IN OTHER SECTIONS OF THESE SPECIFICATIONS. IF STAPLES ARE USED ON COLD WATER LINES, APPLY WHITE VAPOR BARRIER MASTIC OVER STAPLES. AT HANGERS, PROVIDE GALVANIZED SHIELD EXTENDING 12" ON EACH SIDE OF HANGER.
- C. WHERE FIBERGLASS INSULATION ON PIPING IS USED, PIPE FITTINGS SHALL BE COVERED WITH INSULATING CEMENT OF A THICKNESS EQUAL TO ADJACENT PIPE INSULATION AND WRAPPED WITH GLASS CLOTH.
- D. IN LIEU OF BUILDING UP A FITTING WITH INSULATING CEMENT, A PRE FORMED INSULATING FITTING COVER SUCH AS ZESTON 25/50 RATED PVC INSULATED FITTING COVER WITH FIBERGLASS INSERT MAY BE USED.
- E. SEE PIPING INSULATION SCHEDULE ON SHEET P901 FOR INSULATION THICKNESS.
24. PLUMBING FIXTURES SHALL BE AS FOLLOWS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION & MOUNTING HEIGHTS OF FIXTURES, ETC. WITH PLUMBING & ARCHITECTURAL DRAWINGS. ALL FIXTURES AND FACTORY SUPPLIED ACCESSORIES SHALL BE PROVIDED BY CONTRACTOR INCLUDING ALL TRAPS, SUPPLY STOPS, RISERS, STRAINERS, ETC. UNLESS INDICATED OTHERWISE.
- A. ACCEPTABLE MANUFACTURERS:
1. MISCELLANEOUS TRIM (TRAPS, SUPPLIES, STRAINERS) - DEARBORN BRASS, T&S BRASS, MCGUIRE, CHICAGO FAUCET, KOHLER, AMERICAN STANDARD, BRASS CRAFT, ROYAL BRASS
2. PLUMBING SPECIALTIES (DRAINS, CLEANOUTS, ETC.) - ZURN, JOSAM, SMITH, ANCON
- B. FCO
- FLOOR CLEANOUTS SHALL BE EQUAL TO ZURN MODEL ZN-1400-K "LEVEL-TROL" COMPLETE WITH DURA-COATED CAST IRON BODY, GAS AND WATER TIGHT AES TAPERED-THREADED PLUG, AND ROUND SCORRATED POLISHED NICKEL BRONZE SECURED TOP. CLEANOUT BODY SHALL BE PROVIDED WITH ANCHOR FLANGE. SEE FLOOR CLEANOUT DETAIL '1' ON SHEET P901.
- C. TD-1
- TRENCH DRAIN SHALL BE PROVIDED AND INSTALLED BY G.C. PLUMBING TO TRENCH DRAIN SHALL BE BY P.C.
- TRENCH DRAIN SHALL BE 4" WIDE AND EQUAL TO ZURN Z886. PLUMBING CONNECTIONS, TRAP AND CLEANOUT BY P.C. SEE TRENCH DRAIN DETAIL '7' ON SHEET A102.
- D. OIL INTERCEPTOR
- OIL INTERCEPTORS SHALL BE EQUAL TO HANSON PIPE MODEL Q1140TR. INTERCEPTOR SHALL BE CONSTRUCTED OF PRE-CAST REINFORCED CONCRETE BODY WITH REINFORCING MEETING ASTM C-478 AND JOINT CONSTRUCTION CONFORMING TO ASTM C-443. INTERCEPTOR SHALL HAVE A CAPACITY OF 140 GALLON AND SHALL BE TRAFFIC RATED. SEE OIL INTERCEPTOR DETAIL '2' ON SHEET P901.
- P.C. GENERAL NOTES:**
1. COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
 2. PLACEMENT OF FIXTURES AND PIPE ROUTING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL.
 3. FIELD VERIFY LOCATION OF EQUIPMENT, FIXTURES, AND PIPING TO AVOID INTERFERENCES WITH FIELD CONDITIONS.
 4. ALL PLUMBING WORK SHALL BE COORDINATED WITH OTHER TRADES AT INSTALLATION.
 5. ALL PIPE ROUTING IS SCHEMATIC IN NATURE. FIELD CHANGES AND HORIZONTAL OFFSETS, CONTINGENCIES, AND ETC. SHALL BE REQUIRED AND SHALL MINIMIZE OFFSETS WITH FIELD CONDITIONS.
- PLUMBING LEGEND**
- | |
|--|
| PLUMBING CONTRACTOR |
| GENERAL CONTRACTOR |
| MECHANICAL CONTRACTOR |
| ELECTRICAL CONTRACTOR |
| AUTHORITY HAVING JURISDICTION |
| ABOVE FINISHED FLOOR |
| FIELD VERIFY |
| SOIL, WASTE OR SANITARY SEWER - ABOVE FINISHED FLOOR |
| SOIL, WASTE OR SANITARY SEWER - BELOW FINISHED FLOOR |
| VENT |
| DOMESTIC COLD WATER (UNCONDITIONED) |
| DOMESTIC HOT WATER |
| NATURAL GAS |
| COMPRESSED AIR |
| WATER HAMMER ARRESTER |
| PLUMBING DRAINAGE INSTITUTE 'SIZE' |
| VENT THRU ROOF |
| FLOOROUT PLUG |
| FLOOR CLEANOUT |
| CLEANOUT TO GRADE |
| CONNECT TO EXISTING |
| SHUTOFF VALVE |



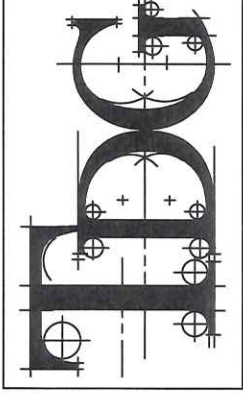
<u>ROOM</u>	<u>AREA</u>
WASH DOWN AREA	390 FT ²

$$\begin{aligned} & 6 \text{ FT}^3 \text{ FOR FIRST } 100 \text{ FT}^2 \\ & 1 \text{ FT}^3 \text{ FOR EACH ADDITIONAL } 100 \text{ FT}^2 \\ & 6 \text{ FT}^3 + 290 \text{ FT}^2 (1 \text{ FT}^3 / 100 \text{ FT}^2) = 8.9 \text{ FT}^3 \text{ (MINIMUM)} \\ & 8.9 \text{ FT}^3 * 7.5 \text{ GAL/FT}^3 = 66.8 \text{ GAL (MINIMUM)} \end{aligned}$$

2 OIL INTERCEPTOR DETAIL
P901 SCALE: NONE



PIPING INSULATION SCHEDULE						
SERVICE	PIPE SIZE					
	ALL PIPING	RUNOUTS	1" & BELOW	1 1/4" - 2"	2 1/2" - 4 "	ABOVE 4"
DOMESTIC COLD WATER, DCW	---	---	1/2"	1/2"	1"	1"
DOMESTIC HOT WATER, DHW	---	---	1/2"	1"	1"	1 1/2"



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PLUMBING SCHEDULES, DETAILS, AND SPECIFICATIONS

ISSUED DATE
05-17-17 OWNER REVIEW
06-13-17 OWNER REVIEW
06-22-17 FOR BIDS/PERMITS

DRAWN BY: SAB

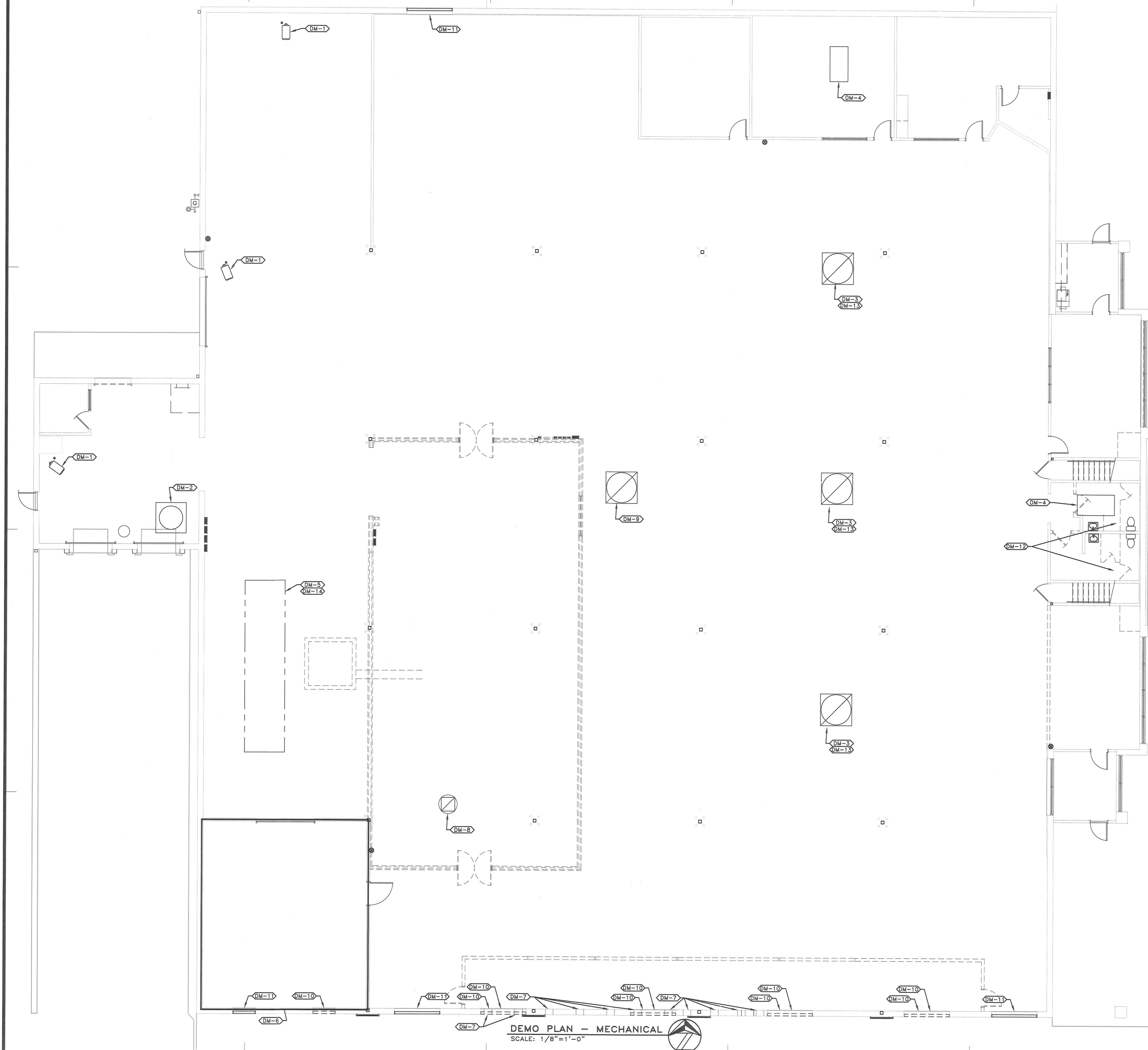
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DATE:	01-17
PLOT SCALE:	1:1

JOB NO. 51-2246-16

SHEET
P901

OF 4 SHEETS



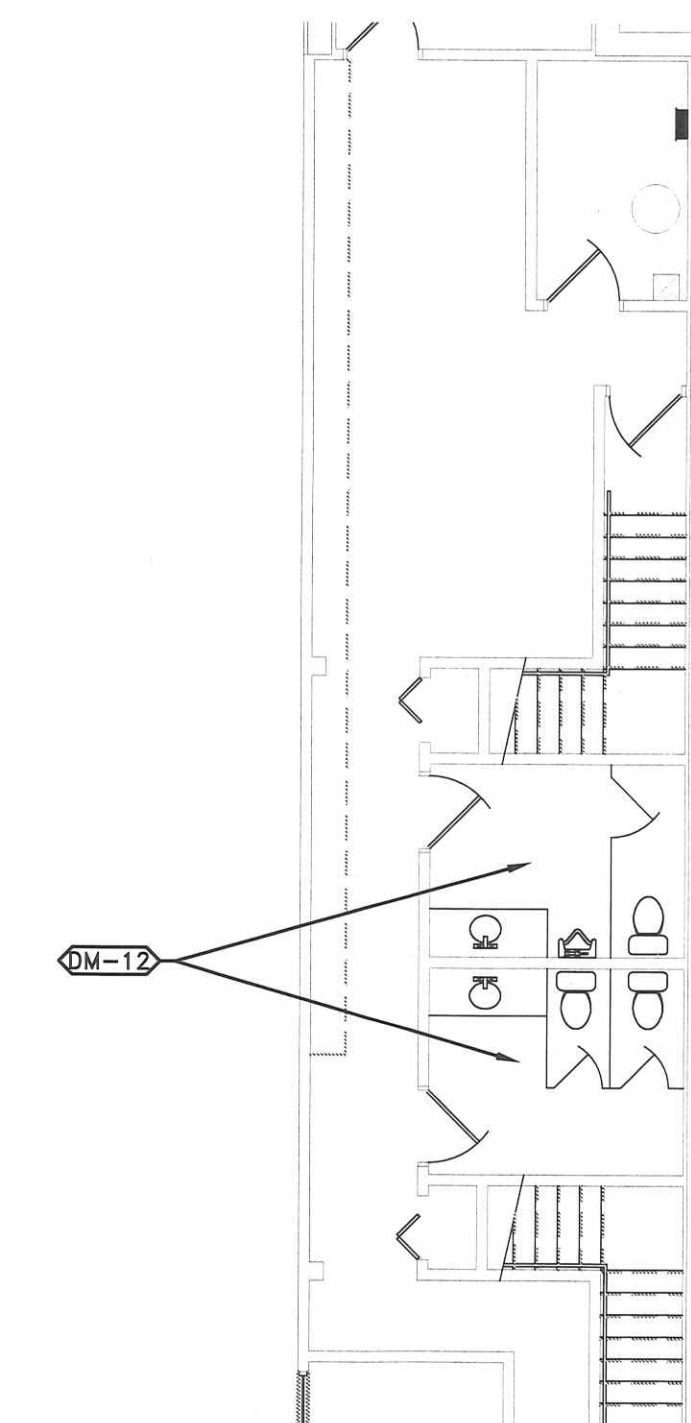
DEMO PLAN - MECHANICAL
SCALE: 1/8"=1'-0"

M.C. GENERAL NOTES

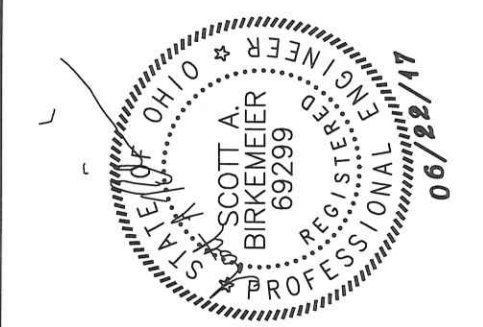
1. COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, RULES AND REGULATIONS.
2. ALL MECHANICAL WORK SHALL BE COORDINATED WITH GENERAL CONTRACTOR, PLUMBING CONTRACTOR, AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
3. FIELD VERIFY LOCATION OF EQUIPMENT AND DUCTWORK TO ENSURE NO INTERFERENCES WITH FIELD CONDITIONS.
4. OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10'-0" FROM SANITARY VENTS, EXHAUST AIR OUTLETS, GAS REGULATORS, OR OTHER CONTAMINANT SOURCES.
5. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW ALL ELEVATION CHANGES AND HORIZONTAL OFFSETS. CONTRACTOR SHALL FIELD ADJUST AS REQUIRED AND SHALL MINIMIZE OFFSETS WHERE POSSIBLE.
6. ANY EQUIPMENT THAT IS SUBSTITUTED SHALL FIT IN THE PROVIDED SPACE WITH ADEQUATE ROOM FOR SERVICING, INCLUDING SUBSTITUTED EQUIPMENT LISTED IN SPECIFICATIONS.
7. ALL DUCTWORK AND PIPING SHALL BE SUPPORTED INDEPENDENTLY FROM EQUIPMENT.
8. FABRICATE ALL DUCTWORK IN ACCORDANCE WITH SPECIFICATIONS AND SMACNA STANDARDS.
9. DUCT SIZES LISTED ARE CLEAR INSIDE DIMENSION, UNLESS OTHERWISE NOTED.
10. DUCTWORK ROUTING SHALL BE COORDINATED WITH OTHER CONTRACTORS TO VERIFY NO CONFLICTS WITH LIGHT FIXTURES, PIPING, AND STRUCTURAL MEMBERS.
11. ALL THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.
12. E.C. SHALL PROVIDE AND INSTALL CONDUIT AND LINE VOLTAGE POWER WIRING TO ALL EQUIPMENT. M.C. SHALL PROVIDE AND INSTALL CONDUIT AND CONTROL WIRING.
13. TEST AND BALANCE ALL HVAC SYSTEM IN ACCORDANCE WITH NEBB STANDARDS. SEE SPECIFICATIONS FOR GUIDELINES. REPORT SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

MECHANICAL DEMOLITION PLAN NOTES

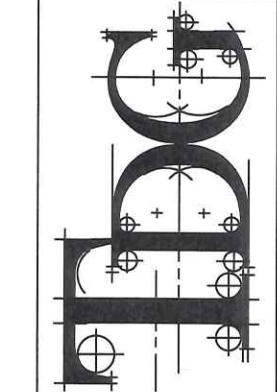
1. EXISTING 100,000 BTU/HR UNIT HEATER TO REMAIN.
2. BASE BID: EXISTING EXHAUST FAN ON ROOF AND INTAKE LOUVER TO REMAIN.
3. EXISTING EXHAUST FAN ON ROOF TO REMAIN. M.C. SHALL FABRICATE SHEET METAL CAP FOR TOP OF FAN. SEE KEYNOTE 3 ON SHEET M101.
4. EXISTING PACKAGED ROOFTOP UNITS SERVING EXISTING OFFICE SPACE. SYSTEMS SHALL REMAIN UNCHANGED.
5. BASE BID: EXISTING PACKAGED ROOFTOP UNIT TO BE ABANDONED IN PLACE. ALL ASSOCIATED DUCTWORK SHALL REMAIN.
6. M.C. SHALL REMOVE BOILER STACK AND STACK ECONOMIZER LOCATED IN THIS AREA BOTH WITHIN ROOM AND ON ROOF. F.V. STACK LOCATION AND SIZE.
7. M.C. TO REMOVE EXISTING DRYER DUCTWORK. WALL OPENING SHALL BE PATCHED BY G.C. SEE ARCHITECTURAL PLANS.
8. M.C. TO REMOVE EXISTING ROOF MOUNTED EXHAUST FAN. E.C. TO DISCONNECT POWER.
9. EXISTING ROOF MOUNTED FAN TO REMAIN. CONTRACTOR TO VERIFY FLOW RATE. EXCEEDS 18,300 CFM. M.C. SHALL INSTALL CONTROLS AND INTERLOCK WITH DAMPER ACTUATORS AS INDICATED IN CONTROL SEQUENCE ON SHEET M901.
10. EXISTING LOUVER AND DAMPER TO BE REMOVED BY M.C. WALL OPENING SHALL BE PATCHED BY G.C. SEE ARCHITECTURAL PLANS EAST ELEVATION.
11. REMOVE EXISTING DAMPER ACTUATOR. DAMPER AND MECHANISM OPERATION SHALL BE VERIFIED AND REPAIRS SHALL BE MADE AS NECESSARY. LOUVERS AND DAMPER SHALL BE CLEANED.
12. EXISTING EXHAUST FAN SERVING RESTROOM SHALL REMAIN.
13. ALTERNATE G-1: M.C. SHALL REMOVE EXISTING ROOF MOUNTED FAN. G.C. SHALL PATCH ROOF. SEE ARCHITECTURAL PLANS.
14. ALTERNATE G-2: M.C. SHALL REMOVE EXISTING ROOFTOP UNIT AND DISPOSE OF LEGALLY. G.C. SHALL PATCH ROOF. SEE ARCHITECTURAL PLANS. ALL DUCTWORK SHALL REMAIN AND BE ABANDONED IN PLACE.



PARTIAL
DEMO PLAN - MECHANICAL
SCALE: 1/8"=1'-0"



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MECHANICAL DEMO
PLANS

ISSUED DATE
05-17-17 OWNER REVIEW
06-13-17 OWNER REVIEW
06-22-17 FOR BIDS/PERMITS

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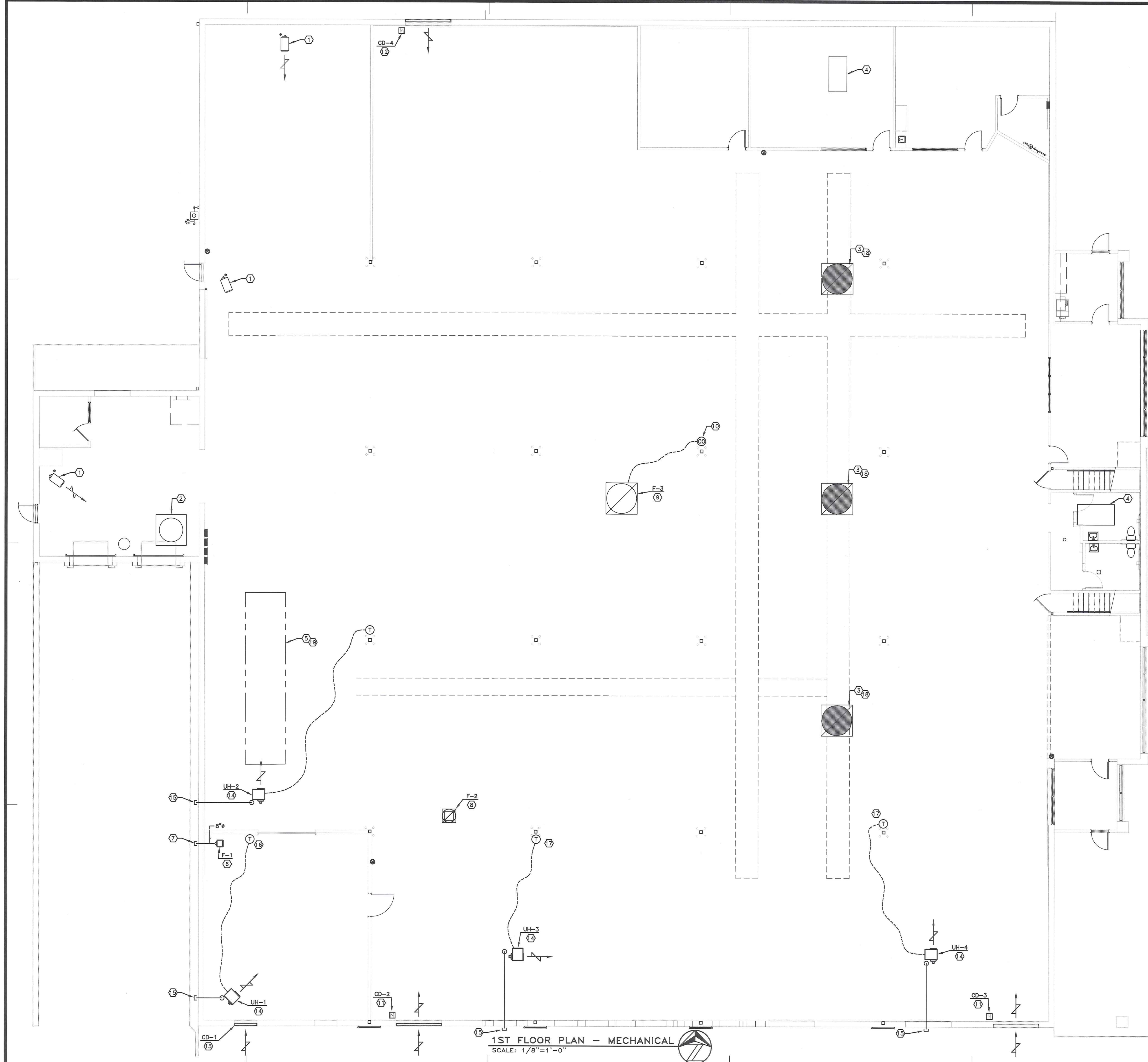
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JOB NO. 51-2246-16

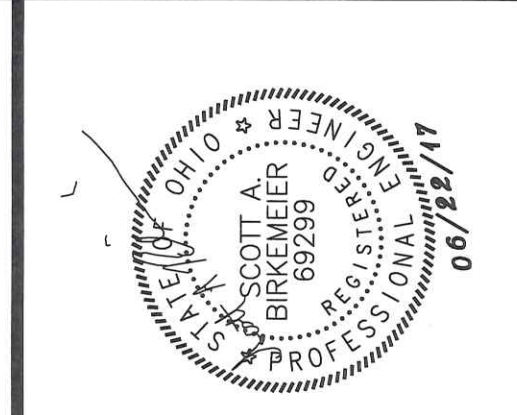
SHEET
M100
OF 3 SHEETS



1ST FLOOR PLAN - MECHANICAL
SCALE: 1/8"=1'-0"

- KEY NOTES
1. EXISTING 100,000 BTU/HR UNIT HEATER TO REMAIN.
 2. EXISTING EXHAUST FAN ON ROOF TO REMAIN.
 3. EXISTING EXHAUST FAN ON ROOF TO REMAIN. M.C. SHALL FABRICATE 20 GA SHEET METAL CAP FOR TOP OF FAN. CAP SHALL WRAP AROUND EDGE OF FAN AND SHALL ATTACH TO FAN SHROUD. CAP SHALL BE WEATHERTIGHT AND INTERNALLY LINED.
 4. EXISTING PACKAGED ROOFTOP UNITS SERVING EXISTING OFFICE SPACE. SYSTEMS SHALL REMAIN UNCHANGED.
 5. EXISTING PACKAGED ROOFTOP UNIT TO BE ABANDONED IN PLACE. ALL ASSOCIATED DUCTWORK SHALL REMAIN.
 6. INSTALL INLINE EXHAUST FAN PER INSTALLATION GUIDE. MOUNT FAN APPROXIMATELY 12'-0" A.F.F. ROUTE DUCT FROM FAN DISCHARGE TO WALL CAP. SEE FAN SCHEDULE ON SHEET M601. SEE SPECIFICATIONS ON SHEET M901.
 7. WALL CAP EQUAL TO GREENHECK MODEL WC-8. M.C. SHALL PROVIDE WALL PENETRATION AND ENSURE INSTALLATION IS WEATHERTIGHT.
 8. INSTALL ROOF MOUNTED EXHAUST FAN ON EXISTING ROOF CURB. F.V. THE EXISTING CURB SIZE AND PROVIDE CURB ADAPTER AS NECESSARY. SEE FAN SCHEDULE ON SHEET M601. SEE SPECIFICATIONS ON SHEET M901.
 9. EXISTING ROOF MOUNTED FAN TO REMAIN. CONTRACTOR TO VERIFY FLOW RATE EXCEEDS 18,300 CFM. M.C. SHALL INSTALL CONTROLS AND INTERLOCK WITH DAMPER ACTUATORS AS INDICATED IN CONTROL SEQUENCE ON SHEET M901.
 10. MOUNT CARBON MONOXIDE DETECTION SYSTEM ON COLUMN. SEE CONTROL SEQUENCE ON SHEET M901.
 11. REPLACE ACTUATOR ON EXISTING 86x144 (F.V.) DAMPER. ACTUATOR SHALL BE INTERLOCKED WITH EXISTING EXHAUST FAN (KEYNOTE 9).
 12. REPLACE ACTUATOR ON EXISTING 96x36 (F.V.) DAMPER. ACTUATOR SHALL BE INTERLOCKED WITH EXISTING EXHAUST FAN (KEYNOTE 9).
 13. REPLACE ACTUATOR ON EXISTING 48x48 (F.V.) DAMPER. ACTUATOR SHALL BE INTERLOCKED WITH NEW EXHAUST FAN (F-1).
 14. FURNISH AND INSTALL GAS FIRED UNIT HEATER. TOP OF UNIT HEATER SHALL BE MOUNTED AT APPROXIMATELY 14'-0" A.F.F. ROUTE 4" VENT FROM UNIT HEATER THRU EXTERIOR WALL, AND TERMINATE PER MANUFACTURER'S INSTALLATION GUIDE. NG PIPING SHALL BE BY P.C. SEE PLUMBING DRAWINGS.
 15. FLUE VENT FOR UNIT HEATER SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION GUIDE.
 16. INSTALL THERMOSTAT FOR UNIT HEATER ON WALL AT APPROXIMATELY 4'-0" A.F.F. INSTALL PER MANUFACTURER'S REQUIREMENTS.
 17. INSTALL THERMOSTAT FOR UNIT HEATER ON COLUMN AT APPROXIMATELY 4'-0" A.F.F. INSTALL PER MANUFACTURER'S REQUIREMENTS.
 18. ALTERNATE G-1: IN LIEU OF CAPPING FAN, M.C. SHALL REMOVE EXISTING ROOF MOUNTED FAN. G.C. SHALL PATCH ROOF. SEE ARCHITECTURAL PLANS.
 19. ALTERNATE G-2: IN LIEU OF ABANDONING ROOFTOP UNIT, M.C. SHALL REMOVE EXISTING ROOFTOP UNIT AND LEGALLY DISPOSE OF. G.C. SHALL PATCH ROOF. SEE ARCHITECTURAL PLANS. ALL DUCTWORK SHALL REMAIN AND BE ABANDONED IN PLACE.

PARTIAL 2ND
FLOOR PLAN - MECHANICAL
SCALE: 1/8"=1'-0"



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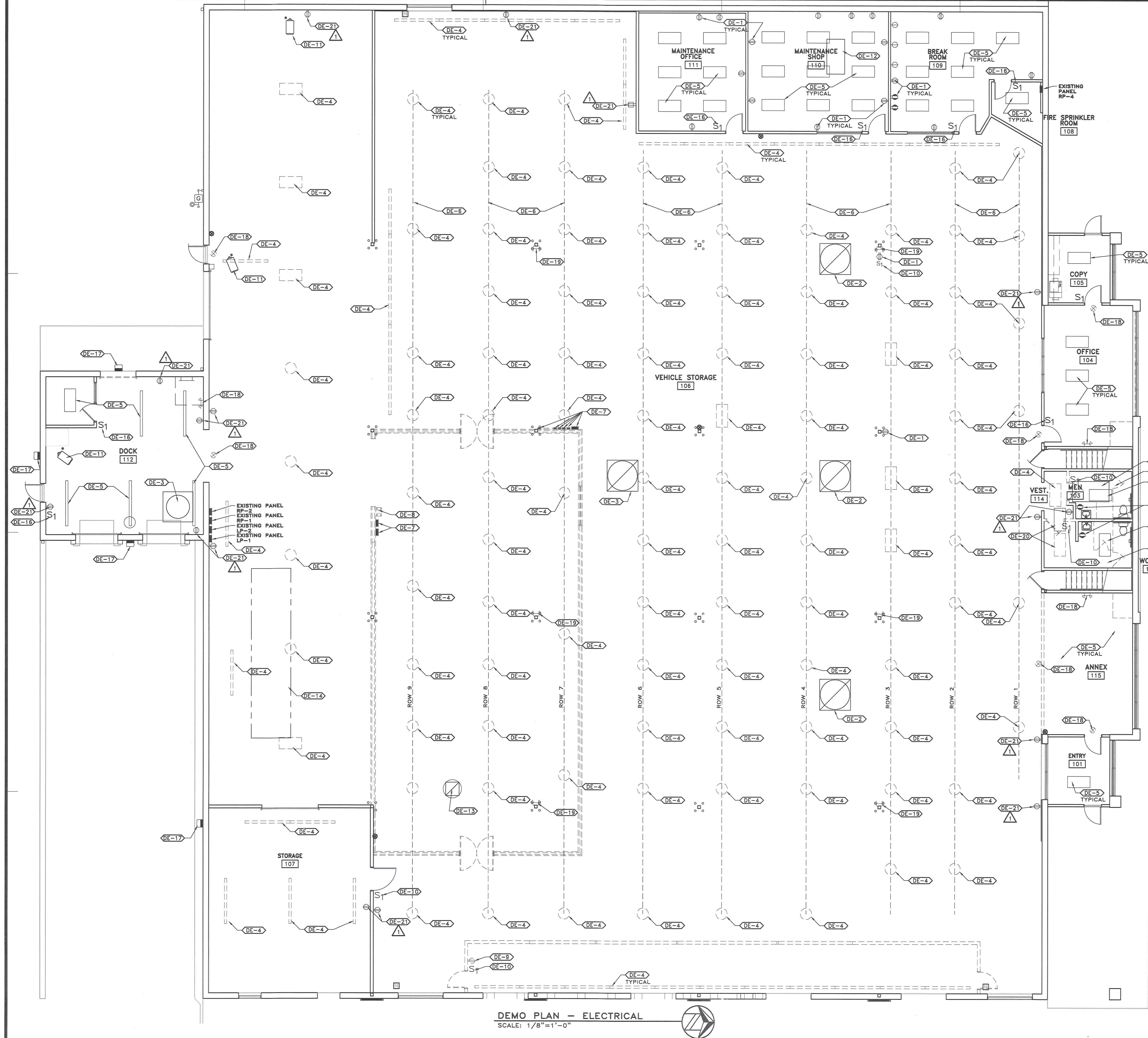
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MECHANICAL FLOOR PLANS

ISSUED DATE	
05-17-17	OWNER REVIEW
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS

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DATE:	01-17
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	M101
OF	3 SHEETS



DEMO PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"

ELECTRICAL DEMOLITION PLAN NOTES

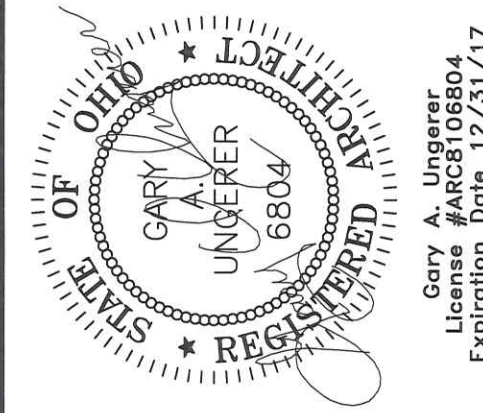
- EXISTING RECEPTACLE TO REMAIN, E.C. TO TRACE & LABEL CIRCUIT AT PANEL SCHEDULE & RECEPTACLE COVER PLATE.
- EXISTING EXHAUST FAN TO BE DISCONNECTED, E.C. TO REMOVE BRANCH CIRCUIT, CONDUIT & WIRE BACK TO ITS SERVICE BREAKER & LEAVE BREAKER AS SPARE.
- EXISTING EXHAUST FAN ON ROOF TO REMAIN, E.C. TO TRACE & LABEL FAN CIRCUIT, E.C. TO CONNECT TO EXISTING PANEL IF FAN IS SERVICED BY AN EXISTING PANEL THAT IS BEING DISCONNECTED AND REMOVED, E.C. TO COORDINATE WORK W/ M.C. SEE MECHANICAL DRAWINGS.
- EXISTING LIGHT FIXTURE TO BE DISCONNECTED, E.C. TO REMOVE FIXTURE, CONDUIT & WIRE BACK TO EXISTING WIREWAY.
- EXISTING LIGHT FIXTURE TO REMAIN, E.C. TO RE-LAMP FIXTURE, E.C. TO VERIFY PANEL FEEDING THE LIGHTING CIRCUIT AND RE-FEED IF SERVICED BY EXISTING PANEL BE REMOVED, E.C. TO LABEL CIRCUIT AS REQUIRED.
- EXISTING WIREWAY TO REMAIN, E.C. TO LOOK OVER AND VERIFY EXISTING CONNECTIONS AND WIRE TERMINATIONS ARE PROPERLY TERMINATED PER N.E.C. E.C. TO TERMINATE POWER SUPPLY AT PANEL.
- EXISTING ELECTRICAL PANEL TO BE DISCONNECTED, E.C. TO REMOVE PANEL, CIRCUIT BREAKERS, CONDUIT & WIRE AS REQUIRED, E.C. TO TERMINATE BACK TO SERVICE PANEL.
- EXISTING ELECTRICAL TRANSFORMER TO BE DISCONNECTED, E.C. TO REMOVE TRANSFORMER, WIRE & CONDUIT AS REQUIRED.
- EXISTING RECEPTACLE TO BE DISCONNECTED AND REMOVED, E.C. TO REMOVE EXISTING CONDUIT, BOX & WIRE BACK TO SERVICE PANEL.
- EXISTING LIGHT SWITCH TO BE DISCONNECTED AND REMOVED, E.C. TO REMOVE EXISTING CONDUIT, BOX & WIRE BACK TO THE EXISTING LIGHT FIXTURE ITS SERVICING AND ALSO BACK TO THE SERVICE PANEL.
- EXISTING UNIT HEATER TO REMAIN, E.C. TO VERIFY & LABEL CIRCUIT FEEDING HEATER, IF PANEL SERVICING HEATER IS BE REMOVED, E.C. TO INSTALL NEW FEEDERS, CONDUIT AND BREAKER AS REQUIRED.
- M.C. TO REMOVE EXISTING ROOF MOUNTED EXHAUST FAN, E.C. TO DISCONNECT POWER, E.C. TO REMOVE ALL CONDUIT & WIRE BACK TO SERVICE PANEL.
- EXISTING PACKAGED ROOFTOP UNIT TO BE ABANDONED IN PLACE, E.C. TO DISCONNECT POWER, REMOVE ALL CONDUIT, WIRE AND SERVICE DISCONNECTS TO UNIT.
- EXISTING EXHAUST FAN SERVING RESTROOM SHALL REMAIN, IF PANEL SERVICING FAN IS BE REMOVED, E.C. TO INSTALL NEW FEEDERS, CONDUIT AND BREAKER AS REQUIRED.
- EXISTING LIGHT SWITCH TO REMAIN, E.C. TO VERIFY & LABEL CIRCUIT FEEDING LIGHT SWITCH, IF PANEL SERVICING LIGHTS IS BE REMOVED, E.C. TO INSTALL NEW FEEDERS, CONDUIT AND BREAKER AS REQUIRED.
- EXISTING LIGHT FIXTURE TO REMAIN, E.C. TO VERIFY PANEL FEEDING THE LIGHTING CIRCUIT AND RE-FEED IF SERVICED BY EXISTING PANEL BE REMOVED, E.C. TO LABEL CIRCUIT AS REQUIRED.
- EXISTING EMERGENCY LIGHT FIXTURE TO BE DISCONNECTED AND REMOVED, E.C. TO INSTALL NEW FIXTURE AS REQUIRED, SEE SHEET E101 FOR NEW LIGHT LAYOUT.
- EXISTING EMERGENCY LIGHT FIXTURE TO BE DISCONNECTED AND REMOVED, E.C. TO DISCONNECT POWER, REMOVE ALL CONDUIT, WIRE BACK TO SERVICE PANEL, SEE SHEET E101 FOR NEW EGRESS LIGHTING.
- EXISTING LIGHT FIXTURE SHALL BE REMOVED AND BE RELOCATED IN NEW GRID SYSTEM SEE 12/A501 AND ALSO REFER TO DE-5.
- REMOVE EXISTING RECEPTACLE - INSTALL NEW G.F.I. RECEPTACLE E.C. TO TRACE & LABEL CIRCUIT AT PANEL SCHEDULE & RECEPTACLE COVER PLATE.

NOTE: ALL MATERIAL THAT THE E.C. REMOVES SHALL BE HANDED OVER TO THE OWNER, E.C. TO COORDINATE W/ OWNER WHAT CAN BE RECYCLED OR RE-USED.

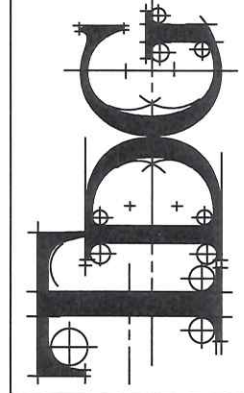
NOTE: E.C. TO COORDINATE W/ G.C. PATCHING OF HOLES FROM REMOVAL OF CONDUITS.

NOTE: NO WORK IS BEING DONE UNDER THIS PERMIT ON THE SECOND FLOOR

PARTIAL 2ND
DEMO PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"



TECHNICON DESIGN GROUP INC.
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Ottawa, Ohio 43875 P:419.523.5323
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PROPOSED ALTERATIONS
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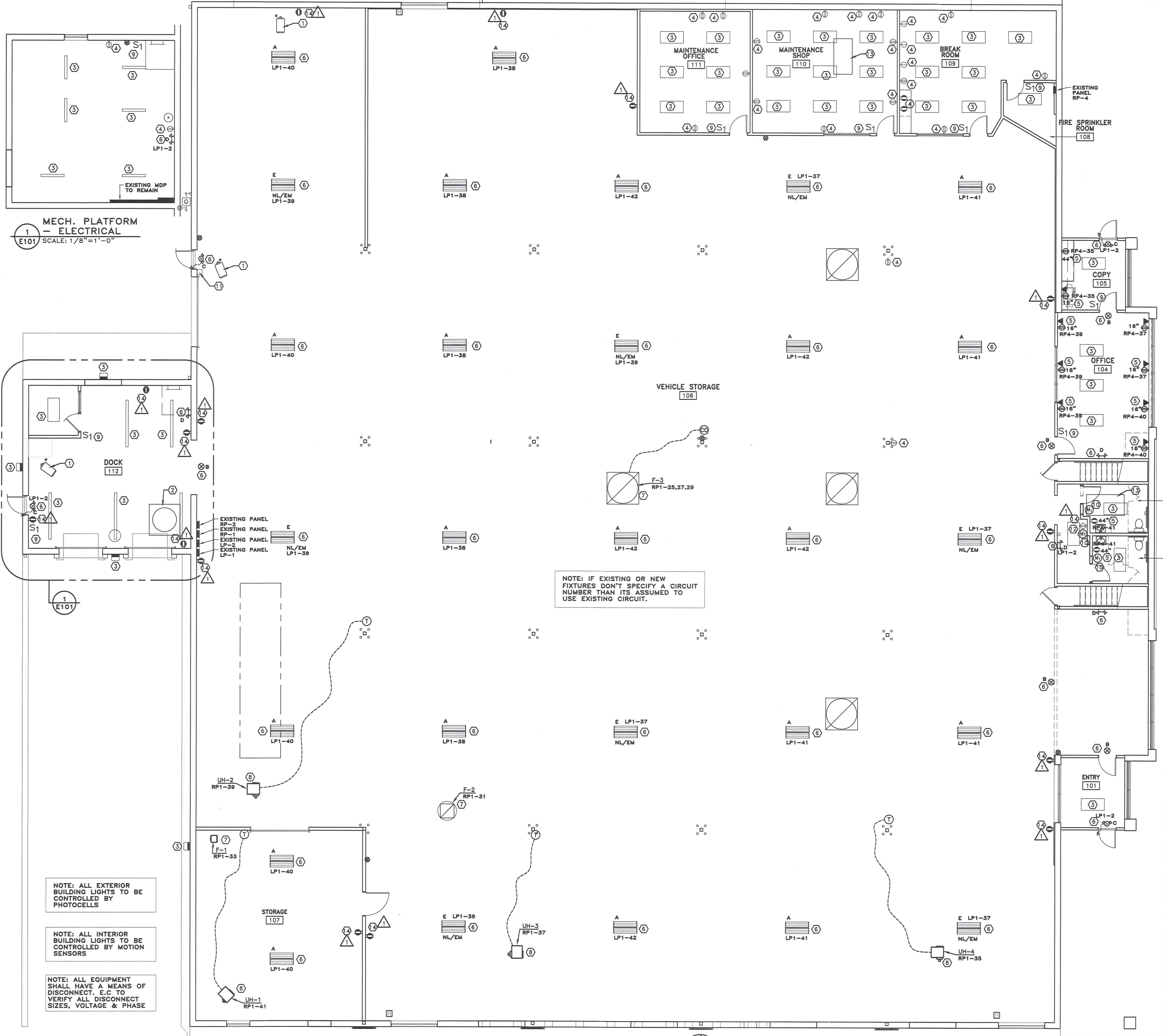
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ELECTRICAL DEMO PLAN

ISSUED DATE	
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS
07-25-17	RESUBMITTAL

DRAWN BY:	GTG
CHECKED BY:	KAN
DATE:	09-16
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	E100
OF	4 SHEETS



- KEY NOTES
- EXISTING UNIT HEATER TO REMAIN. E.C. TO VERIFY EXISTING CIRCUIT.
 - EXISTING EXHAUST FAN ON ROOF TO REMAIN. E.C. TO VERIFY EXISTING CIRCUIT.
 - EXISTING LIGHTS TO REMAIN. E.C. TO VERIFY EXISTING CIRCUIT.
 - EXISTING RECEPTACLE TO REMAIN. E.C. TO VERIFY EXISTING CIRCUIT.
 - NEW RECEPTACLE, COORDINATE W/ G.C. PATCHING OF DRYWALL/MATERIALS AS REQUIRED.
 - E.C. TO INSTALL NEW LIGHT FIXTURE - SEE LIGHTING LEGEND
 - NEW EXHAUST FAN, E.C. TO COORDINATE WORK W/ M.C. ON ELECTRICAL CONNECTION & DISCONNECT AS REQUIRED.
 - NEW UNIT HEATERS, E.C. TO COORDINATE WORK W/ M.C. ON ELECTRICAL CONNECTION & DISCONNECT AS REQUIRED.
 - EXISTING LIGHT SWITCH TO REMAIN. E.C. TO VERIFY WHICH LIGHT FIXTURE IT CONTROLS.
 - E.C. TO INSTALL NEW MOTION SENSOR TO CONTROL EXISTING LIGHTS. E.C. TO ROUTE CONDUIT IN CEILING SPACE AS REQUIRED.
 - EXISTING DOOR OPENER TO REMAIN. E.C. TO VERIFY EXISTING CIRCUIT.
 - RELOCATED EXISTING LIGHT FIXTURE.
 - EXISTING PACKAGED ROOFTOP UNITS SERVING EXISTING OFFICE SPACE. SYSTEMS SHALL REMAIN UNCHANGED. E.C. TO VERIFY & LABEL CIRCUIT FEEDING UNIT. IF PANEL SERVICING UNIT IS BE REMOVED, E.C. TO INSTALL NEW FEEDERS, CONDUIT AND BREAKER AS REQUIRED.
 - NEW G.F.I. RECEPTACLE. E.C. TO VERIFY EXISTING CIRCUIT.

NOTE: E.C. TO REVIEW SHEET E100 FOR ALL WORK REQUIRED FOR EXISTING RECEPTACLES & LIGHTING

NOTE: E.C. TO REVIEW ALL DOCUMENTS & SPECIFICATION FOR COMPLETE SCOPE OF WORK REQUIRED. E.C. ALSO TO COORDINATE WORK REQUIRED WITH OTHER TRADES

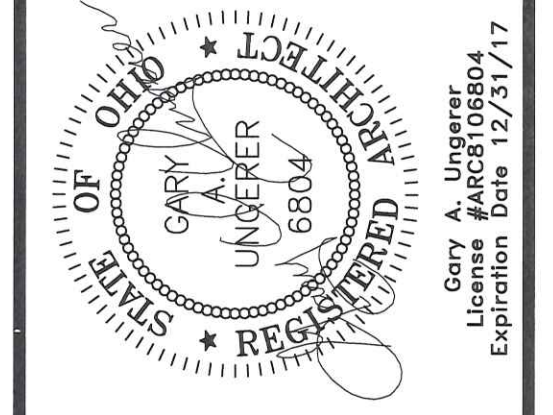
NOTE: ALL EXTERIOR BUILDING LIGHTS TO BE CONTROLLED BY PHOTOCELLS

NOTE: ALL INTERIOR BUILDING LIGHTS TO BE CONTROLLED BY MOTION SENSORS

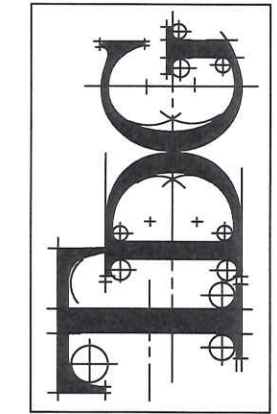
NOTE: ALL EQUIPMENT SHALL HAVE A MEANS OF DISCONNECT. E.C. TO VERIFY ALL DISCONNECT SIZES, VOLTAGE & PHASE

1ST FLOOR PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"

PARTIAL 2ND FLOOR PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"



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ELECTRICAL PLAN

ISSUED DATE	
06-13-17	OWNER REVIEW
06-22-17	FOR BIDS/PERMITS
07-25-17	RESUBMITTAL

DRAWN BY:	GTG
CHECKED BY:	KAN
DATE:	09-16
PLOT SCALE:	1:1
JOB NO.	51-2246-16
SHEET	E101
OF	4 SHEETS

GENERAL ELECTRICAL NOTES:

1. THE CONTRACTOR SHALL KEEP COPIES OF DRAWINGS MARKED IN RED TO CLEARLY INDICATE ALL CHANGES MADE AND THE EXACT LOCATIONS OF CONDUITS CONCEALED UNDER CONCRETE OR PAVING. A COPY OF THESE DRAWINGS SHALL BE SENT TO THE OWNER UPON COMPLETION OF THE JOB. THESE DRAWINGS SHALL BE MARKED AS "ELECTRICAL AS-BUILT DRAWINGS"

2. THE MINIMUM SPACING BETWEEN AND THE CLEARANCE AROUND ELECTRICAL PANELS, SAFETY SWITCHES AND CONTACTORS SHALL BE AS REQUIRED BY THE LATEST ADDITION OF THE NATIONAL ELECTRICAL CODE ARTICLE 110-26, TABLE 110-26a, CONDITIONS 2 AND 3, AS NOTED ON THE DRAWINGS OR AS REQUIRED BY LOCAL ORDINANCES.

3. CONDUCTORS SHALL BE AS FOLLOWS:
1.A. ALL CONDUCTORS SHALL BE COPPER STRANDED.
2.B. ALL CONDUCTORS SHALL BE TYPE "THWN" OR "THHN" UNLESS SHOWN OR NOTED IN SPECIFICATIONS OTHERWISE.
3.C. CONDUCTOR COLOR CODE SHALL BE AS FOLLOWS:

PHASE	120/208V	277/480V
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
EQ. GROUND	GREEN	GREEN

4. ALL EQUIPMENT EXPOSED TO THE WEATHER OR WET CONDITIONS SHALL BE NEMA 4X OR NEMA 3R WHERE INDICATED.

5. INSTALL A NEATLY TYPED COPY OF THE APPLICABLE PANEL SCHEDULE INSIDE EACH PANEL DOOR AND PLACE INSIDE A PLASTIC COVER. USE PANEL SCHEDULE SHEETS AS A GUIDE.

6. ALL CONDUIT SHALL HAVE EQUIPMENT GROUND WIRE INCLUDING LIGHTING AND RECEPTACLE CIRCUITS.

7. ALL CONDUITS, APPROVED FOR DIRECT BURIAL, SHALL BE BURIED PER N.E.C. TABLE 300.5 AND SHALL BE A MINIMUM OF 1" IN DIAMETER, UNLESS OTHERWISE NOTED.

8. SPICES: CONDUCTORS SHALL NOT BE SPICED EXCEPT IN OUTLETS OR JUNCTION BOXES, TROUGHS, AND GUTTERS OR WIREWAYS. JUNCTION BOXES MAY BE UTILIZED WHERE REQUIRED. CONDUCTORS #10 AWG AND SMALLER SHALL BE SPICED BY TWISTING AND INSTALLATION OF 3M "SCOTCH-LOKS" OR T&B "PIGGY" CONNECTORS. CONDUCTORS #8 AWG AND LARGER SHALL BE SPICED WITH APPROVED MECHANICAL CONNECTORS, PLUS GUM TAPE, UNDERWRITER'S LABORATORIES LISTED, FOR USE AS SOLE INSULATION. THE GUM TAPE SHALL BE APPLIED SO AS TO COVER ALL EDGES AND FORM A SMOOTH SURFACE FOR PLASTIC TAPE. THE FINISHED CONNECTION SHALL HAVE AN INSULATION VALUE EQUAL TO THAT OF THE CONDUCTOR INSULATION.

9. JUNCTION BOX TO BE SUPPORTED FROM JOISTS OR PURLINS USING BRACKETS LISTED TO MAINTAIN BOX STABILITY WITH CABLE SUSPENDED FROM IT.

10. PROVIDE BONDING FOR ALL METAL RACEWAYS THAT CONTAINS GROUNDING ELECTRODE AS PER LATEST EDITION OF THE NEC, 250-92 (3).

11. CONTRACTOR SHALL VISIT AND SURVEY THE SITE THOROUGHLY TO INSPECT CONDITIONS AFFECTING THE WORK. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL CONDITIONS INCLUDING BUT NOT LIMITED TO ACCESS AND WORK SPACE LIMITATIONS.

12. E.C. SHALL VERIFY CONDUCTOR SIZES SHOWN ARE SIZED FOR THE RUN LENGTHS FROM PANEL TO PROVIDE POWER WITHIN VOLTAGE DROP LIMITS.

13. FIELD VERIFY DIMENSIONS AND EXACT LOCATIONS OF ALL NEW MATERIALS AND COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND ALL OTHER TRADES PRIOR TO FABRICATING OR INSTALLING ANY WORK.

14. ELECTRICAL CONTRACTOR SHALL COORDINATE FINAL POWER CONNECTIONS FOR ALL MECHANICAL EQUIPMENT & FABRICATING EQUIPMENT WITH THE M.C. & OWNER.

15. ALL LAMPS TO BE SUPPLIED BY FIXTURE SUPPLIER.

16. RECEPTACLE & SWITCH MOUNTING HEIGHT IS TO BOTTOM OF BOX, U.N.O., SEE PLANS & LEGENDS FOR HT.

17. ALL BREAKERS USED FOR SWITCHING SHALL BE DUTY RATED.

18. VERIFY VOLTAGE, AMPERAGE, CIRCUITS, WIRE AND CONDUIT SIZE OF ALL FIXTURES AND EQUIPMENT PRIOR TO INSTALLATION.

19. ALL UNDERGROUND P.V.C. CONDUIT SHALL BE INSTALLED BY E.C.. E.C. TO INSTALL PER THE LATEST ADDITION OF THE N.E.C. REQUIREMENTS. ALL ELBOWS UP THRU SLAB SHALL BE OF GALVANIZED RIGID CONDUIT (G.R.C.)

20. VERIFY POWER LOADS AT EACH BRANCH CIRCUIT PRIOR TO INSTALLATION.

21. THE ELECTRICAL CONTRACTOR SHALL VERIFY W/ THE OWNER THAT THE LOCAL ZONING AUTHORITY HAS REVIEWED THE DRAWINGS FOR COMPLIANCE W/ ANY LIGHT SPILLAGE OR TRESPASSING ORDINANCES THAT MAY APPLY AT THIS LOCALITY.

22. E.C. TO REVIEW CATV RECEPTACLE (IF ANY INDICATED) & DATA/PHONE LOCATIONS W/ OWNER TO VERIFY PROPER HEIGHT & EXACT LOCATIONS BEFORE STARTING WORK.








ELECTRICAL ABBREVIATIONS

ELECTRICAL CONTRACTOR	E.C.
PLUMBING CONTRACTOR	P.C.
GENERAL CONTRACTOR	G.C.
MECHANICAL CONTRACTOR	M.C.
FIRE PROTECTION CONTRACTOR	F.P.C.
AUTHORITY HAVING JURISDICTION	A.H.J.
ABOVE FINISHED FLOOR	A.F.F.
UNLESS NOTED OTHERWISE	U.N.O
COVER PLATE	C.P.
NATIONAL ELECTRIC CODE	N.E.C.
NIGHT LIGHT	NL
COPPER CONDUCTORS	CU
ALUMINUM CONDUCTORS	ALUM
ARC-FAULT CIRCUIT INTERRUPTER	AFCI
GROUND-FAULT CIRCUIT INTERRUPTER	GFCI
UNDERGROUND OR OVERHEAD CONDUIT	-----

ELECTRICAL BRANCH CIRCUITS (1Ø)	
AMP/VOLT/PHASE	WIRE & CONDUIT
20/120/1	3 #12 THHN WIRES W/ #12 GRD. IN 1/2" C. MIN. — OR — MC (METAL-CLD) CABLE SHALL BE INSTALLED ACCORDING TO ARTICLE 330 N.E.C.
20/208/1	3 #12 THHN WIRES W/ #12 GRD. IN 1/2" C. MIN.
30/208/1	3 #10 THHN WIRES W/ #10 GRD. IN 1/2" C. MIN.
40/208/1	3 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
50/208/1	3 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
208V WIRE SIZE AS NOTED OR PER AMPERAGE REQUIRED WITH GROUND, 2 POLE WIRES AS PER N.E.C.	

ELECTRICAL BRANCH CIRCUITS (3Ø)	
AMP/VOLT/PHASE	WIRE & CONDUIT
40/208/3	4 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
50/208/3	4 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
60/208/3	4 #6 THHN WIRES W/ #8 GRD. IN 1" C. MIN.
70/208/3	4 #4 THHN WIRES W/ #8 GRD. IN 1 1/4" C. MIN.
80/208/3	4 #4 THHN WIRES W/ #8 GRD. IN 1 1/4" C. MIN.
208V WIRE SIZE AS NOTED OR PER AMPERAGE REQUIRED WITH GROUND, 3 POLE WIRES AS PER N.E.C.	

ELECTRICAL BRANCH CIRCUITS 480V (3Ø)	
AMP/VOLT/PHASE	WIRE & CONDUIT
20/480/3	4 #12 THHN WIRES W/ #12 GRD. IN 1/2" C. MIN.
30/480/3	4 #10 THHN WIRES W/ #10 GRD. IN 1/2" C. MIN.
40/480/3	4 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
50/480/3	4 #8 THHN WIRES W/ #10 GRD. IN 3/4" C. MIN.
60/480/3	4 #6 THHN WIRES W/ #8 GRD. IN 1" C. MIN.
480V. WIRE SIZE AS NOTED OR PER AMPERAGE REQUIRED WITH GROUND, 3 POLE WIRES AS PER N.E.C.	

Power Legend										
TYPE	Description	MFR	Model	Mounting Height (A.F.F.)	Cover Plate Color	V	PH	Amps	Nema	NOTES
	Heavy Duty Safety Switch	Square D							1R/3R	1
	G.F.I. Receptacle	Hubbell	GF5362W	44"	White	120	1	20		9,10
	Duplex Receptacle	Hubbell	5352WHI	16"	White	120	1	20		9,10
	Thermostat			48" to Top						3
	Up-Stop-Down Overhead Door Opener									
	Single Pole Switch	Hubbell	CS120W	44"	White	120	1	20		9
	3-Way Switch	Hubbell	CS320W	44"	White	120	1	20		9
	Motion Switch - Occupancy Sensor	Wattstopper		44"	White	120	1	20		9
	Junction Box			See Plan	Blank					5
	Data/Communication Outlet		Cat 5E Wire	16"	White					6,7

NOTES LEGEND									
1	E.C. to verify size w/ equipment & mount per N.E.C.								
2	E.C. to verify NEMA configuration w/ equipment								
3	M.C. to furnish & install. See mechanical drawings								
4	Battery Backup								
5	Wiring and/or conduit from J-box to panel								
6	Owner to Contract w/ Data Contractor to install patch panels, jacks etc.								
7	E.C. To provide wall box & route wiring to data/com board location. E.C. to verify locaiton w/ owner.								
8	Owner to Contract w/ Cable Contractor to furnish & install jacks & testing as req'd.								
9	E.C. to verify color of devices, cover plates, etc. w/ owner before starting work								
10	E.C. to furnish galvanized cover plates at shop area								

LIGHT FIXTURE SCHEDULE													
TYPE	MARK	DESCRIPTION	MFR	MODEL	MOUNTING	LENS	FINISH	LAMPS			Color Temp.		NOTES
								V	NO	TYPE			
☐	A	LED HIGH BAY LIGHT	Lithonia or = by Cooper or Phillips	IBH 24000LM SD080 MD MVOLT QZ10 LAOZU 40K 70CRI WH	Suspended - Ceiling			120	1	LED 221W		221 Watt	1,4,6
⊙	B	Exit/Emerg. Light	Lithonia or = by Cooper or Phillips	ECBR LED M6	Surface - Wall		White	120	3	6W		6 Watt	1
⚡	C	Exit/Emerg. Lt. w/ Remote	Lithonia or = by Cooper or Phillips	ECBR LED M6 ELA Q LED	Surface - Wall		White	120	3	9W		9 Watt	1,3
↑	D	Egress Light	Lithonia or = by Cooper or Phillips	EI.M2 LED	Surface - Wall		White	120	2	6W		10 Watt	1,5
☐	E	LED HIGH BAY LIGHT W/ 90 MIN EMERG. BATTERY BACKUP W/ SELF DIAGNOSTICS	Lithonia or = by Cooper or Phillips	IBH 24000LM SD080 MD MVOLT QZ10 LAOZU 40K 70CRI WH	Suspended - Ceiling			120	1	LED 221W		221 Watt	1,4,6
NOTES LEGEND													
1	Lamps by fixture supplier												
2	Owner to Select Finish												
3	E.C. to furnish remote head w/ exit light												
4	E.C. to furnish & install a twist lock receptacle at each light fixture												
5	Mount fixture at 7'-4"A.F.F.												
6	E.C. to furnish air craft cable and hardware as required to suspend from existing roof structure.												

ELECTRICAL PANEL RP-1												
208 VOLTS			AMPS		225 Breaker		TYPE		NQOD			
3 PHASE			4 WIRE		MAIN		MOUNTING		Surface		1	
							NEMA CABINET					
NO	BREAKER	DESCRIPTION	KVA	A	B	C	KVA	DESCRIPTION	BREAKER	NO		
1			0.00	0.00			0.00			2		
3	30A3P	Boiler #2	0.00		0.00		0.00	Boiler #1	100A3P	4		
5			0.00			0.00	0.00			6		
7			0.00	0.00			0.00	Heat Tape	20A1P	8		
9	20A3P	Cart Wash	0.00		0.00		0.00	Spare	20A1P	10		
11			0.00			0.00	0.00	Spare	20A1P	12		
13	20A1P	Cart Wash Control	0.00	0.00			0.00	Spare	20A1P	14		
15	20A1P	Spare	0.00		0.00		0.00	Spare	20A1P	16		
17	20A1P	Spare	0.00			0.00	0.00	Spare	20A1P	18		
19	20A1P	Spare	0.00	0.00			0.00	Spare	20A1P	20		
21	20A1P	Spare	0.00		0.00		0.00	Spare	20A1P	22		
23	20A1P	Spare	0.00			0.00	0.00	Spare	20A1P	24		
25	60A		3.84	3.84			0.00			26		
27		F-3	3.84		3.84		0.00	Conveyor	20A3P	28		
29	3P		3.84			3.84	0.00		20A1P	30		
31	20A1P	F-2	0.24	0.24			0.00	Space	20A1P	32		
33	20A1P	F-1	0.24		0.24		0.00	Space	20A1P	34		
35	20A1P	UH-4	0.20			0.20	0.00			36		
37	20A1P	UH-3	0.20		0.20		0.00	Chemical Pumps	40A3P	38		
39	20A1P	UH-2	0.20			0.20	0.00			40		
41	20A1P	UH-1	0.20			0.20	0.00	Pump Control	20A1P	42		
SUBTOTALS			4.28	4.28		4.24						
TOTAL LOAD			12.80 KVA			35.5 AMPS						

NOTE: E.C. TO VERIFY ALL CIRCUITS ARE BEING UTILIZED. ALL CIRCUITS/BREAKERS THAT ARE NOT BEING USED, E.C. TO REMOVE CONDUIT & WIRE FROM SPECIFIC BREAKERS AND MARK THE BREAKERS AS SPARE. E.C. TO UPDATE ALL PANEL SCHEDULES WITH A TYPED PANEL SCHEDULE DESCRIPTION IN EACH PANEL DOOR.

ELECTRICAL PANEL RP-2												
208 VOLTS			AMPS		100				TYPE		NQOD	
3 PHASE					MAIN		Breaker				Surface 1	
4 WIRE									MOUNTING			
									NEMA CABINET			
NO	BREAKER	DESCRIPTION	KVA	A	B	C	KVA	DESCRIPTION	BREAKER	NO		
1			0.00							2		
3	40A3P	Dryer #3			0.00			Dryer #1	30A3P	4		
5						0.00				6		
7			0.00							8		
9	40A3P	Dryer #4			0.00			Dryer #2	30A3P	10		
11						0.00				12		
13	40A3P	Dryer #5			0.00			Dryer #9	20A3P	14		
15						0.00				16		
17										18		
19			0.00							20		
21	40A3P	Dryer #6				0.00		Dryer #10	20A3P	22		
23							0.00			24		
25			0.00							26		
27	40A3P	Dryer #7			0.00			Dryer #11	20A3P	28		
29						0.00				30		
31			0.00							32		
33	40A3P	Dryer #8			0.00			Small Compressor	30A2P	34		
35										36		
37	20A1P	Space			0.00			Space	20A1P	38		
39	20A1P	Space				0.00		Space	20A1P	40		
41	20A1P	Space				0.00		Space	20A1P	42		
SUBTOTALS			0.00	0.00	0.00	0.00						
TOTAL LOAD			0.00	KVA	0 AMPS							

General Scope:

(A) The Contractor or E.C. referred to in this section shall be the Electrical Contractor. The Contractor shall furnish all labor, materials, tools and other equipment necessary to install a complete electrical system in the building in accordance with the drawings and these specifications. All electrical work will comply with the requirements of article 27 of OBC and the National Electrical Code (NEC) NFPA 70 and is subject to approval of the governing agencies and the electrical inspector assigned.

(B) All Contractors bidding the work shall visit the site and acquaint themselves with existing conditions before submitting their bid, as they will be held responsible for the installation of the system complete in every detail. The Contractor shall verify and secure all measurements of the site. All bidders shall report any discrepancies to the Architect prior to submitting their bid. No additional compensation will be given after the bids have been selected.

(C) Verification: before running any conduits, ducts, piping, etc., Within the building, this Contractor shall assure himself that they can be installed as contemplated without trapping or interfering with columns, beams, piping, fixtures, etc.. Any necessary major deviation shall be referred to the Architect for adjustment before lines are run, at no increase in contract price. Of necessity, openings, supporting steel, field-built curbs, electrical ducts, space requirements, etc., were designed around specific parameters. When the Contractor determines the make of equipment to be provided for the job, it shall be his responsibility to verify and coordinate unit dimensions with the General Contractor and all other interested Contractors on the job. It shall also become the Contractor's responsibility to change as necessary, through the Architect, all required dimensions so that openings, supporting steel, curbs, electrical data, etc., Will fit the equipment supplied. Any additional cost will be the sole responsibility of this Contractor. In addition, electrical power, interlock and control diagrams and piping arrangements were designed around one specific manufacturer. If additional wiring, piping, etc., Are required for other equipment, this contractor shall include the cost of the same in his price. Dimensions, elevations and relative locations of existing equipment, sewers, pipes, ducts, conduits, etc., In place as shown on the drawings, are taken from as-built and record drawings and in no so for general layout is concerned. Such dimensions shall not be used for layout drawings nor detailing of components. The responsibility for checking in place items will be the contractors. All measurements, the exact determination of the location of the equipment, the securing of the equipment of all given elevations and the obtaining of all necessary additional information to insure the proper fit and coordination of all conduit equipment, ducts, and piping shall be the responsibility of the Contractor. The Contractor shall carefully examine the general building plans and all mechanical plans on his work so as not to delay or interfere with the work of other trades. He shall obtain in writing from the Contractors, such data as necessary to coordinate his work with other branches.

(D) As-built Drawings: The Contractor shall note changes made from contract drawings and specifications. He/she shall neatly and correctly enter in colored crayon any deviations on drawings affected and shall keep drawings available for inspection. Extra set of drawings will be furnished for this purpose. Give to Owner at completion and be marked "as built drawings-electrical."

(E) Cutting & Patching: Provide cutting and patching of all materials necessary for the installation as indicated or specified. Neatly remove and legally dispose of electrical components and items no longer in use. Protect the structure, furnishings, finishes and materials adjacent to the cutting and patching. Patch existing finished surfaces and equipment using new materials and methods, to match adjacent work, utilizing experienced installers. Patching of fire rated partitions, ceilings and other assemblies, shall match the rating of the rated barrier with materials listed and identified for such use, and shall comply with the ratings of the general trades specifications. As the work nears completion, all cutting and patching shall be authorized by the Architect prior to starting work.

(F) Submittals: Prior to ordering any materials, the Contractor shall submit for Architects review, detailed drawings, equipment cut sheets indicating physical size, ratings, capacities, rough-in sizes, etc. for all materials to be used under this contract.

(G) Equals: Where the phrase "or an approved equal" appears, it shall refer to the approval of the Architect and the material or equipment involved. Equipment of similar types shall be on the same manufacturer, except where specifically indicated otherwise. Where the Contractor elects to substitute materials or equipment approved by the Architect and/or Owner for those specified, the Contractor will be held responsible for all structural, mechanical and electrical changes required for the installation of the substituted materials, at no additional cost to the Owner.

(H) Permits: The Contractor shall procure all necessary permits from the governing agency having jurisdiction. The Contractor shall arrange for all tests required on any and all parts of his work by local authorities and paying any additional charges including inspection fees. Also obtain all certificates of inspection and approval from all required authorities and the underwriters. Underwriters certificates in duplicate shall be furnished to the Owner at the completion of the project if requested.

(I) Codes: Nothing contained in these specifications or shown on the drawings shall be so construed as to conflict with any local, municipal or state laws or regulations governing the installation of electric or other work specified herein, and all such ordinances and regulations shall be observed. The National Electrical Code shall be incorporated and made a part of these specifications. All such requirements shall be satisfied by the Contractor and at no additional expense to the Owner.

(J) Equipment Wiring: Provide power wiring connections and terminations to equipment provided by others. All necessary starters and controls will be furnished with the equipment unless noted otherwise. Wiring and connections shall be as required by the equipment manufacturer and shall not be modified without the manufacturer's approval. The equipment, or degrades it's function or warranty. Where not furnished with equipment, provide a local disconnect within sight of each motor and appliance. All control wiring, devices, systems and required interlocks will be provided by others. Furnish and install power wiring for the automatic power door operators furnished complete with a prewired control package. Powered door remote control devices shall be furnished by the equipment supplier, and installed and connected by the E.C. per the supplier's wiring diagrams. All outlet requirements and locations for the laundry equipment (if any) shall be verified with the supplier prior to rough-in electrical requirements of the electric heat tracing (furnished and installed by others; if any) shall be field verified and shall be provided with a 30 millamp GFCI type breaker for the branch circuit serving the heat tracing.

(K) Grounding: Ground and bond all metal raceways, boxes, fixtures, enclosures, etc., per NEC article 250. Ground and/or derivate systems shall be bonded to the grounding electrode system. Grounding conductors in PVC raceway shall be extended to the building structural steel, incoming point of the interior metal water line, and supplemental ground rod(s). Bonding conductors shall also be extended to the interior metal gas piping system, interior water lines, and main telephone backboard where installed. All feeders and branch circuits shall include an insulated equipment grounding conductor, routed with the circuit, sized per NEC 250.122.

(L) Close-out: Contractor shall provide field testing, check-out and system demonstrations to owner to assure proper performance and adjustment of items provided under the contract. Remove all debris created by the electrical work and clean all fixtures, panels, boxes, etc., inside and outside. Provide a binder which includes: copies of all shop drawings, maintenance procedures, operation and instruction manuals, literature supplied with electrical equipment, and a list of all contractor's supplier's names, addresses and phone numbers, for all materials. Provide instruction to personnel selected by the Owner, to familiarize them with the location of significant equipment, train them on equipment functions, review maintenance procedures and coordinate information available in the binder.

(M) Chases & Openings: The General Contractor will provide chases and openings in walls, floors, ceilings and partitions of new construction to receive conduits, ducts and other equipment so as to predetermine the exact size and location of the opening of same. The Electrical Contractor shall advise the General Contractor of the exact size and location of all chases and openings required for the installation of his work, and shall check the size and location of all such chases and openings provided by the General Contractor.

(N) Sleeves: Electrical Contractor shall furnish and place all sleeves required for conduits and ducts passing through floors, beams, walls and ceilings before such new general construction. The Electrical Contractor shall place all sleeves and all inserts required for hangers and supports, as general construction progresses, so that unnecessary cutting of construction work will be eliminated.

(O) Materials: The materials used throughout shall be new, and the best of their respective kinds and shall be labeled or listed by underwriters laboratories where such standards have been established. All work shall be executed in a neat and workmanlike manner skilled in the particular branch of work assigned to them.

(P) Drawings & Specifications: All electrical work shown on the drawings and not specifically referred to in the specifications or visa versa shall be considered a part of the contract work. These specifications are to be used as a guide for the quality of workmanship and materials, quantities, etc., And are intended to cover all parts of the system, but the omission of express mention, either in the specifications or on the drawings of items which are obviously necessary for the proper functioning of the system, shall not relieve the electrical contractor from responsibility for providing same and the necessary labor and installation.

(Q) Discrepancies: Electrical Contractor shall check all drawings included under this contract, and drawings included under other contracts and shall report to the Architect any discrepancies noticed before the opening of bids.

(R) Disposal: Upon completion of the work, all waste materials and rubbish resulting from the contract work shall be removed from the building and premises and properly disposed of.

(S) Tests & Inspections: When the installation is reported in writing by the Contractor to be complete and ready for acceptance, tests and inspection shall be made by the Contractor in the presence of the Architect, to ascertain whether it complies with the specifications and contract, and upon its failure to do so, the Contractor shall at once remedy all deficiencies and shortcomings, and any additional tests that may be required shall be entirely at the contractor's expense. All of the testing work shall be done when and as directed by the Architect before the system is accepted.

(T) Schematic Drawings: Electrical layouts are schematic and exact locations shall be determined by structural and other conditions. The Contractor shall make minor changes as required, as long as the changes are in accordance with N.E.C. and approved by the assigned electrical inspector. Due to the small scale of the drawings, it is not possible to indicate all conduits, conductor, fittings, boxes, switches and similar parts which may be required. Therefore, the drawings are schematic and the Contractor shall be responsible for the Contractor shall investigate the structural and finish conditions affecting the work, and arrange all work accordingly furnishing such parts and equipment as may be required to meet building conditions.

(U) Layout of Work: This Contractor shall layout his work from dimensions of architectural and structural drawings and actual dimensions of equipment being installed layouts in congested area should not be scaled from mechanical and electrical drawings.

(V) Temporary Electrical Services: During construction, Electrical Contractor shall arrange and provide temporary service from existing power service for lighting and power outlets. This includes all incidentals such as light bulbs, fixtures, and other miscellaneous items. The Owner shall pay electrical demand services for temporary service.

(W) High & Low Voltage: All high voltage wiring (120/208/240/480v), low and high voltage conduit, boxes, etc. To be furnished and installed by the Electrical Contractor. All systems control equipment for the heating and/or fire alarm systems shall be as noted or specified. Where the circuit length exceeds 100 feet, from the panel to the farthest device, utilize #10 AWG minimum. Phase conductors for 240 volt (and lower) systems shall be red, black & blue; associated neutrals white. Connections and taps for wire #4 AWG and larger shall be made with solderless pressure type connectors and lugs. All low voltage cable shall be multi-conductor, copper, with wire size, shield, jacket, color-coded insulation, terminations, etc., as recommended by the system supplier. Insulating and jacket materials shall be suitable for the installation environment (I.E. underground, plenum, high ambient temperature, etc.).

(X) Wiring: Furnish and install all wire, terminations and connection devices as shown or required. Unless otherwise noted, all line voltage circuits shall be stranded, copper, 600 volt insulated: (75 degrees C THHN/THWN for circuits #14 AWG thru #2 AWG; 90 degrees C THHN for circuits #1 AWG and larger). Branch circuit wiring shall be #12 AWG minimum. Where the circuit length exceeds 100 feet, from the panel to the farthest device, utilize #10 AWG minimum. Phase conductors for 240 volt (and lower) systems shall be red, black & blue; associated neutrals white. Connections and taps for wire #4 AWG and larger shall be made with solderless pressure type connectors and lugs. All low voltage cable shall be multi-conductor, copper, with wire size, shield, jacket, color-coded insulation, terminations, etc., as recommended by the system supplier. Insulating and jacket materials shall be suitable for the installation environment (I.E. underground, plenum, high ambient temperature, etc.).

(Y) Branch Circuits: Branch circuit wiring shall correspond to the circuit numbering shown on the plans, but the Contractor will be permitted minor changes to optimize the piping required. The quantity of circuits shall not be reduced, nor shall separate circuits be combined. Routing shall be at the discretion of the contractor but the installation shall meet all other specified criteria. In general, 1-pole, 120V, branch circuits shall be provided with individual equipment disconnects and the requirement for multiple breakers (See NEC 210.43) the quantity of current carrying conductors in a conduit shall be limited to nine. The ampacity of branch circuits routed across roofs or otherwise exposed to sunlight, shall be properly upized, as required to meet the derating factors of NEC 310.15(B)(2). Where "home runs" are shown on plan, the quantity of these runs shall be maintained as a minimum.

(Z) Renovations: Rework the existing electrical installation as required to accommodate the finished conditions and the new system. New equipment shall be concealed in finished spaces wherever practically possible. Existing boxes and enclosures shall not be rendered inaccessible due to the new work of any trade. Panel directories in renovated areas shall be neatly updated interruptions to existing systems shall be performed at off hours, unless scheduled otherwise with the Owner.

(AA) Data/Communications: Provide cabling as indicated on drawings. Equipment, terminations, receptacles, jacks, handsets, switching equipment, and cross-cuts, patch panels, ect. will be provided by others under a separate contract.

(BB)Electrical Site Work: Coordinate all exterior work with affected utilities and the Lead Contractor. Provide the excavation, backfill, compaction and testing, necessary to install the underground, handholes, and equipment foundations shown on the plans. All paving shall be sawcut prior to removal. Repair all lawns, plantings, pavement, and other exterior finishes to match the adjacent areas at the completion of the project.

(CC)Service entrance: selected panels or safety switches, as indicated, shall be utilized and be U.L. rated as service entrance equipment. These shall be complete with an insulated solid neutral assembly, removable bonding link, and ground lugs for the conductors shown or required. Provide grounding bushings as required, and additional labeling to denote service entrance usage.

(DD)Supports: Furnish and install all required miscellaneous steel supports for mounting of panels, raceways, fixtures, cabinets, boxes, ect. All equipment shall be rigidly supported from the building structure, with components rated for twice the actual load or weight. All interior supports shall be painted steel strut with matching fittings and hardware, plated threaded rod, and auxiliary structural steel. Exterior supports shall be galvanized strut with matching fittings and stainless steel hardware. Field cut galvanized supports shall be coated with Z.R.C. cold galvanizing spray or other rust-inhibiting material after installation. Provide a 4 inch high concrete housekeeping pad for all floor mounted equipment.

Description Of Work
The work to be performed under this section and accompanying drawings consists of the following:

(A) A complete wiring system for light and power including cable from main distribution panels, sub-panels, switches, panels feeders, ducts, conduit, branch circuit wiring to each and every electrical outlet as indicated on the drawings, including the lighting units on the exterior of the building. The system shall include all lighting fixtures shown on the drawings, including lamps.

(B) Circuits shall be so connected to the panel boards that the total load is distributed as nearly as possible equally between each line and neutral.

(C) Furnish a printed or typewritten directory behind plastic on the inside of each panel showing circuit numbers, a complete description of all outlets and fixtures on each circuit.

(D) Labels: provided an engraved plastic laminate nameplates, securely fastened to equipment, for all new panels, large floor boxes, and major components. Nameplates shall be 1" x 3", minimum black letter on white field.

Excavation And Backfill

(A) The Electrical Contractor shall do all excavating required for the installation of any underground ducts and/or wire for electrical equipment as shown on the drawings.

(B) Underground ducts shall be installed below finish grade not less than the requirements of table 300.5 NEC. Ducts shall be installed at depth required to properly enter building.

(C) After the underground ducts are installed and tested, the Contractor shall backfill all excavation with selected earth placed in layers not exceeding 6 inches in thickness, with each layer thoroughly compacted. Compaction to be in accordance with compaction requirements listed in other sections of the specifications.

(D) All surfaces shall be restored to their original conditions, including paved or unpaved streets, roadway and turf, to the satisfaction of the Owner.

Electrical System Grounds

(A) Furnish and install all electrical system grounds as required by the National Electric Code and the power company the following shall be solidly grounded: switch and panel board enclosures, conduit system, boxes, etc., Motor framework, neutral leads of secondary service.

Lighting And Power Panels: (if any indicated)

(A) Panelboards: Panels shall be dead front, and equipped with bolted type, thermal-magnetic molded case circuit breakers as indicated. Unless noted otherwise, enclosures shall be made gauge steel, with galvanized tub, nominal 5 3/4"deep by 20" wide, NEMA 1, with concealed trim clamp design, surface or flush trim as indicated, hinged and locking door, and copper or aluminum bus, amper rating as indicated. Panels shall be bear a U.L. rating indicating the maximum number of breaker poles permitted. Panels exceeding 42 useable poles shall be permitted only where the manufacturer's nameplate reflects this listing. Provide grouping of multi-wire branch circuits as required by NEC 210.4(D), where lighting circuits are controlled only from the panel breakers, provide "switching duty" rated breakers. Provide HACR, GFCP and shunt trip rated breakers where noted or required. Receptacle panels shall be rated for 120/208 or 120/240 volts, with breakers rated; Square D Co. QOB series or equal by Siemens, General Electric, or Cutler-Hammer.

(B) Furnish a new printed or typewritten directory behind plastic on the inside of each panel door showing "As installed" circuit numbers, load descriptions, a complete description of all outlets and fixtures on each circuit.

Circuit Breakers

(A) All new circuit breakers to be same manufacturer and type as the panels. Breakers to match panel.

Safety Switches & Motor Starters

(A) Disconnects: Safety switches shall be heavy duty, H.P./Rated, 250 or 600 volts AC rated to match the circuit shown, with ground lug, rejection style fuse clips and NEMA 1 enclosure indoors or NEMA 3R enclosure outdoors; as manufactured by Square D, Siemens, General Electric, or Cutler-Hammer.

(B) Fuses: Fuses shall be dual-element, time-delay, rejection style, Class RK-5 for fuses up to 600 amperes; Bussmann type "FRN" (250 bolt) or type "FRS" (600 volt). Larger fuses shall be Class L, bolt-in style; Bussmann "Hi-cap". Equal fuses manufactured by Chase-Shawmut or Littelfuse, will be acceptable. Provide one set of three spare fuses for each size and type installed.

Wiring Devices

(A) Devices shall be commercial grade, complete with thermoplastic face or handle, of the type, rating, and configuration as indicated on the drawings. Devices shall be supplied from a single manufacturer, wherever possible, to standardize on color and replacements. Device color shall be as selected by the Architect/Owner, to match the building finishes. Cover plates shall be smooth high impact matching plastic in office areas, galvanized in vehicle storage areas, and gasketed, flip-type plastic "in-use" type in outdoor areas. Wiring devices and cover plates shall be as manufactured by Taymac, Hubbell, Pass & Seymour, Leviton, Cooper, or Slater.

Outlet Boxes

(A) Boxes: Flush device boxes shall be deep, galvanized, stamped steel boxes, with plaster rings where required. Exposed device boxes shall be cast malleable iron type FD with threaded hubs. Interior pull and junction boxes shall be NEMA 1 galvanized or painted stamped steel with screw covers. In fire rated walls and ceilings, boxes shall be two-gang maximum, and carefully located to maintain fire ratings; I.E. no more than 100 square inches of boxes in 100 square feet of wall/ceiling with boxes on opposite sides of wall separated by 24 horizontal inches minimum, unless wrapped with fire proofing putty. Small exterior boxes shall be cast type with gasketed covers, or NEMA 3R stainless steel or larger boxes. Flush-in-grade exterior boxes shall be non-metallic, 12"x12"x12" minimum, with matching cover, Quazite PC Series, Synertech S Series, or equal.

(B) Boxes for telephone and cable TV system (if any indicated) shall be of type approved by the respected company.

(C) Boxes at exterior of building or poles shall be cast iron, watertight, with gaskets and plaster rings and shall have two screw holes for mounting receptacles etc., Mounted on exterior walls of the building or other exterior locations shall be of weather tight construction. Interior boxes in finished areas such as Offices shall be flush mounted in finished areas unless directed otherwise by the Architect or Owner.

(D) Only such holes in boxes as are to be used for the entering conduit shall be open; all other holes must be closed. Any box installed with open holes other than for the entering conduit, must be removed and be replaced.

(E) Where the space limitations or other conditions influence the arrangement and details of the outlet, special forms and design of outlet boxes shall be used to secure a proper, complete and workmanlike arrangement at the outlet

(F) Bracket outlet boxes shall be firmly anchored in place and shall be provided with fixture studs.

(G) Diamond expansion, cinch or rawl plug anchors shall be used in all cases for securing boxes to block or brick walls or partitions.

(H) All outlet boxes which require covers shall be provided with same and they shall be of such construction and design as to exactly fit and match the box in which they are installed.

(I) Panel boxes to have separate covers designed for easy alignment.

(J) Ceiling and wall outlet boxes generally shall be 4 inches square or octagon with plaster rings and shall have two screw holes for mounting receptacles when same are specified. Gang boxes and adjustable covers shall be used where dissimilar services are installed.

Thermal switches furnished by other Contractor's to the Electrical Contractor for installation, will have separate wall plates and may be mounted separately but adjacent to wall switches. Boxes for telephone and cable TV system shall be of type approved by the respected company.

Location Of Outlets

(A) The approximate location of ceiling, switch and other outlets is given on the drawings. The exact locations shall be determines at the building as the work progresses.

(B) Any outlet installed by the Contractor in such a location as to be out of proper relation to beams, walls or other details of the building, shall be corrected by and at the expense of the Contractor.

(C) Unless otherwise indicated, outlet boxes in walls shall be located as indicated on drawings to bottom of box. If no elevations are noted, the following elevations above finished floor: wall switches: 44" A.F.F. min., except if height is noted on drawings or directed differently by Owner. Power receptacles: See schedule or plan for height. E.C. shall verify all receptacles, switches, controls, etc. with Architect and/or Owner for location and height prior to installation.

(D) These heights may be changed to meet building condition, in which case the contractor shall use new dimensions given him/her by the Architect and/or Owner.

Conductors And Feeders

(A) Conductors for lighting, power, and receptacle circuits, and for panel and equipment feeders, shall be No. 12 AWG minimum. All conductors shall be stranded copper, annealed and uncoated, in accordance with the physical and electrical properties indicating in the ICEA standards.

(B) Conductors No. 2 AWG and larger installed in dry locations shall have 600 volt, 75 degree C, cross-linked polyethylene XLP or XHHW insulation. Conductors No. 2 and larger installed in wet locations or underground ducts, shall have 600 volt, 75 degree C, RHW/JUSE type insulation.

(C) Conductors smaller than No. 2 AWG shall have 600 volt, 75 degree C, type THHN/THWN or XHHW type insulation.

(D) All wiring installed in lighting fixture channels used for raceways shall be wired with 90 degree C insulation on conductors, with the raceway insulation may be type RHH or THHN. Use type SF-1 from outlet box to inaccessient fixtures.

(E) Where conductors are located in ambient temperatures regularly exceeding 60 Degrees C, Type FEPB insulation shall be used.

(F) All branch circuit wiring, including motor leads shall be No. 12 minimum. Where the circuit length exceeds 100 feet (for 120 Volts), or 200 feet (for 277 Volts), from the panel to the farthest device, utilize #10AWG minimum or larger where so indicated.

(G) All 120 volt control wiring shall be No. 14 AWG minimum; provide wiring as specified.

(H) Conductors shall be as manufactured by the General Cable, Triangle, Colonial, Essex or Pirelli.

(I) Each bundle of cable shall bear the maker's name and the underwriters label, together with the grade, size, length and manufacturing date. Similar information shall be included on the insulation jacket of the conductors. Conductors shall comply with N.E.C. 310.

(J) All conductors shall be color-coded with a separate color for each phase and neutral used consistently throughout the installation. Color coding shall be in accordance with the National Electrical Code.

(K) All conductor sizes shown on the drawings and herein specified are based on copper. All conductors shall be installed to conform with the National Electrical Code. Aluminum conductor will be permitted for the service cable from the meter/C.B. to the electrical panel only.

(L) Conduits and Raceways: Provide raceways of material & size as indicated on drawings for new wiring. Raceways shall be installed, concealed within new and existing construction, unless noted otherwise. Raceways installed outdoors, or underground, cast in concrete, within exterior walls, or exposed in unfinished spaces, shall be rigid, metal conduit, schedule 40, hot-dipped galvanized, 3/4 inch trade size minimum installed per NEC 344, complete with threaded fittings, double lock-nuts and bushings at boxes and cabinets. Conduit within interior walls, mounted on roof structure and not subject to abuse, and above suspended ceilings, in trade sizes 1/2 inch thru 2 inch diameter, shall be electrical metallic tubing (EMT), installed per NEC 342, complete with steel compression or set-screw fittings. In dry interior locations, conduit in trade sizes 2 inch thru 4 inch diameter, may be intermediate metal conduit, installed per NEC 344, complete with threaded fittings and lock-nuts and bushings at boxes and cabinets. Underground exterior raceways may be schedule 40 PVC sizes per N.E.C. 352, as indicated on drawings complete w/ insulated ground wire, and RGS elbows where riser is exposed. Provide warning ribbon or tape placed 12 inches above service laterals & branch feeders and buried in concrete. Table 300.5 NEC. Interior underground conduit may be schedule 40 PVC, in trade sizes 3/4 inch thru 3" inch diameter, complete with insulated ground wire, and RGS elbows where riser is exposed. Connections to recessed fixtures, and other items subject to vibration or occasional motion, shall be made with flexible nylon, zinc-coated steel conduit, complete with steel fittings, in lengths not to exceed 6 feet, installed per NEC 348. For kitchen equipment, or where subject to dampness or oily environments, flexible conduit shall be neoprene jacketed, complete with approved fittings and may be exposed to view.

Splices

(A) All splicing shall be done in outlet boxes, junction boxes, etc. And not in the conduit. The splices shall be made according to the requirements of the NEC. The Contractor splices may be made with solderless connectors and then insulated as required or covered by composite vulcanized covers. Pressure connectors shall be used at motor-operated equipment on other vibrating equipment. Solderless connectors shall be as manufactured by 3m Scotchlok, Ideal Industries, Inc., Buckanan, or equal as approved by the Architect.

Switches And Dimmers

(A) At each local lighting wall switch indicated on the drawings, furnish and install with proper ganged face plate, flush, mechanically operated, quiet operating, 20 amperes, 120/277 volt switch of the following of equal make as accepted by the Architect. Acceptable equals of the same grade of the switches specified in the legend may be: Hubbell, Pass and Seymour, Leviton or Cooper.

(B) Where wall switches with pilot lights are indicated or required, furnish and install switch as specified in legend or equaled by above with red jewel indicator.

(C) Light wiring shall be polarized so that only the black or fused wire shall be broken by a single-pole switch.

(D) All switches shall be of the same manufacturer.

(E) Dimmers shall be rotary or slide operation as noted on legend. E.C. to verify and coordinate with dimmer wattage to insure proper size dimmer is installed. Gang dimmers as recommended by manufacturer. Provide separate wall boxes for dimmer if located near a gang of switches. Acceptable equals of the same grade of dimmers specified in the legend may be: Hubbell, Synergy, Pass and Seymour, Leviton or Cooper.

Convenience Outlets

(A) At each duplex receptacle noted 20 amperes, furnish and install new receptacles w/ face plates. A 20 amper flush duplex receptacle with ground blade as per legend or equal grade of the following: Hubbel, P & S, Leviton or Cooper.

(B) All receptacles shall be furnished by the same manufacturer, except where specifically indicated otherwise. Receptacles and local wall switches shall be of the same manufacturer.

Lighting Fixtures

(A) Fixture numbers in the specifications have been taken from the catalogs of fixture manufacturers listed on the drawings. Fixture numbers and descriptions are intended to denote a standard of quality and type. Fixtures of other manufacturers may be used. Provided a complete comparable schedules is submitted to the Architect for review before proceeding with the order.

(B) Light Fixtures: Furnish and install the light fixtures as indicated on the plans and schedules. Fixtures shall be complete with lamps, sockets, canopies, suspension accessories, reflectors, ballasts, lenses, louvers, plate frames, etc. Prismatic lenses shall be 100% acrylic, one-eighth inch nominal thickness. Fluorescent tube sockets shall be twist and lock. Fluorescent ballasts shall be universal voltage, electronic, high power factor, minimum 90% ballast factor, 10% THD maximum, instant start for T8, as manufactured by General Electric, Sylvania, Philips, or Advance. Fluorescent fixtures controlled by occupancy sensor switches shall be complete with programmed start ballast. Fluorescent fixture controlled by only timers or photocells may have an instant start ballast. Electronic LED drivers and power supplies shall be rated for long life, and shall comply with the ratings of the general trades specifications. General Electric, Sylvania, Philips, Venture or Eye Lighting. Self-contained emergency lighting units shall include built-in batteries, charger, transfer relay; such unit equipment shall be connected to the normal or night light circuit in the space, but ahead of any local switches, lighting contractors or relays. Fixtures shall not rely entirely on the ceiling suspension system for mounting, but shall also be supported from the structure. Provide a separate power connection for each fixture or continuous and contiguous fixture row (through-wiring not permitted). Exterior fixtures shall also be provided with the anchor bolts, grounding, low temperature ballasts, etc., as noted or required.

C) Fire Rating: Openings around conduits or in sleeves for conduits penetrating fire-rated floor slabs, walls, partitions, ceilings, or smoke partitions (if any indicated), shall be sealed at both sides of the penetration. Insulation shall not extend through slabs, walls, partitions, ceilings, or smoke partitions. Pack gaskets, Dow Corning 3-6548 RTV silicon foam. 3M CP25 caulk, or 303 putty fire barrier system or material having the same fire-rating as the floor or wall penetrated. Fiberglass is not acceptable.

Warranty

(A) The Contractor guarantees by his acceptance of the contract that all work will be free from defects in workmanship and/or materials and that all apparatus will develop capacities and characteristics specified for a period of one year after date of Substantial Completion. Should any defects in workmanship, and/or materials require redesign of any part of the electrical, mechanical, plumbing, or architectural system, All such redesign and all new drawings and detailing required thereof shall, with the approval of the Architect, be prepared by the Contractor at his own expense. Where such approved deviation required a different quantity and arrangement of ductwork, piping, wiring, conduit and/or equipment from that specified or detailed on the drawings, with the approval of the Architect, the Contractor shall furnish and install all such materials and/or equipment required by the system at no additional cost to the owner.

Connections To Existing Work

(A) Plan the installation of new work and connections to existing work to insure minimum interference with the regular operation of the existing facilities. Submit to the Architect, for his approval, a progress schedule indication all necessary temporary existing work and equipment shall be removed or replaced as such times as will not interfere with regular operation of the existing facilities and only after written approval from the Architect.

New Work

(A) Unless otherwise noted, all work indicated throughout these drawings shall be considered to be new work and shall be included as an integral part of this contract.

(B) Contractor is responsible for coordinating with other trades the placement of new plumbing and mechanical equipment, piping, ductwork, meters, and fixtures to avoid possible conflicts.

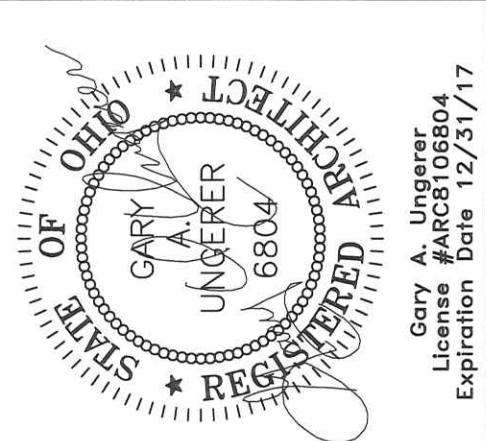
(C) E.C. is responsible for saw cutting and patching to match existing.

(D) Contractor shall not install any work knowingly in error. All work shall be in accordance with all local and state codes and requirements.

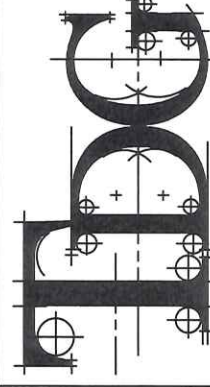
Cabling

(A) Telephone/Data Cabling System: E.C. shall furnish and install a complete system of raceways, receptacles, cabling and terminations as indicated for the Owner's telephone/data system, including outlets, jacks, cover plates, conduit and sleeves. Conduit shall be 3/4" trade size minimum. All metal raceways shall be terminated with bushings and bonded together and to the building grounding system. Provide a pull string in each empty raceway for future use. Each outlet shall be provided with a duplex, modular, 8/C, category 5E jack labeled "Voice & Data", with T568B configuration. Each jack shall be individually cabled at the existing data panel, with a plenum rated 8/C, 24 AWG solid, unshielded twisted pair cable rated for category 5E. See specs below for low voltage cabling support and installation means, voice and data cables shall be terminated separately, complete with labeling provisions. Receptacles and patch panels shall be as manufactured by Hubbell, AT&T, Panduit, T&B, Ortronics or Siemon. Cable installation shall meet all requirements of EIA/TIA 568, and shall be field tested per approved means to verify its compliance. Cabling shall be as manufactured by Berkktek, Avaya, West Penn or AMP. Cable work, terminations and testing shall be supervised by a qualified and trained technician who shall certify in writing, that the complete installation meets the specified performance criteria. Run cabling down to I.T. building data panel; terminate and label at building data panel. Telephone handsets, switching equipment, patch panels, data equipment, servers, hubs and patch cords will be provided by others.

(B) Open cable systems: Where specified herein, low voltage cables shall be neatly routed "open" through the accessible ceiling plenum, or exposed along structural roof steel members, and shall be protected by conduit, or other means. All cable members to field verify where air handling plenums are used so that approved plenum rated cables are installed. Provide cable rungs, J-Hooks, or other means for supporting and organizing bundles of cables. See NEC 725.58, 760.58, 800.24, 800.133, 820.24, and 830.24 where applicable. Cable trays shall be supported from the building structure, and conduits, fixtures, piping, duct work, etc. nylon tie wraps are not acceptable for supports. Cable drops to wall mounted devices shall be enclosed in conduit sleeves with bushings and appropriate outlet boxes for concealing cable connections.



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ELECTRICAL SPECS

ISSUED DATE
