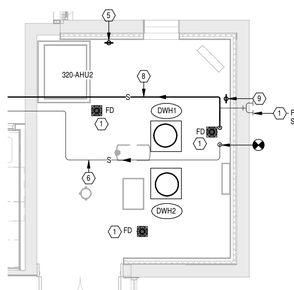
FULLY SPRINKLERED

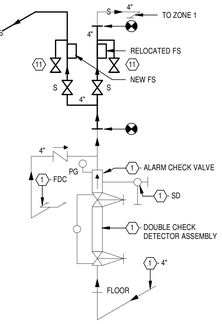
EXISTING FIRE SUPPRESSION TEST VALVE



GROUND FLOOR PLAN

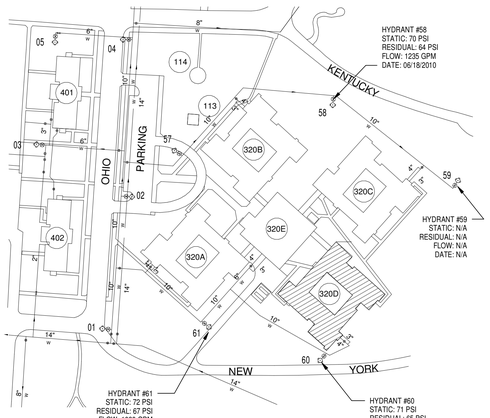
Scale: 1/4" = 1'-0"

PROJECT



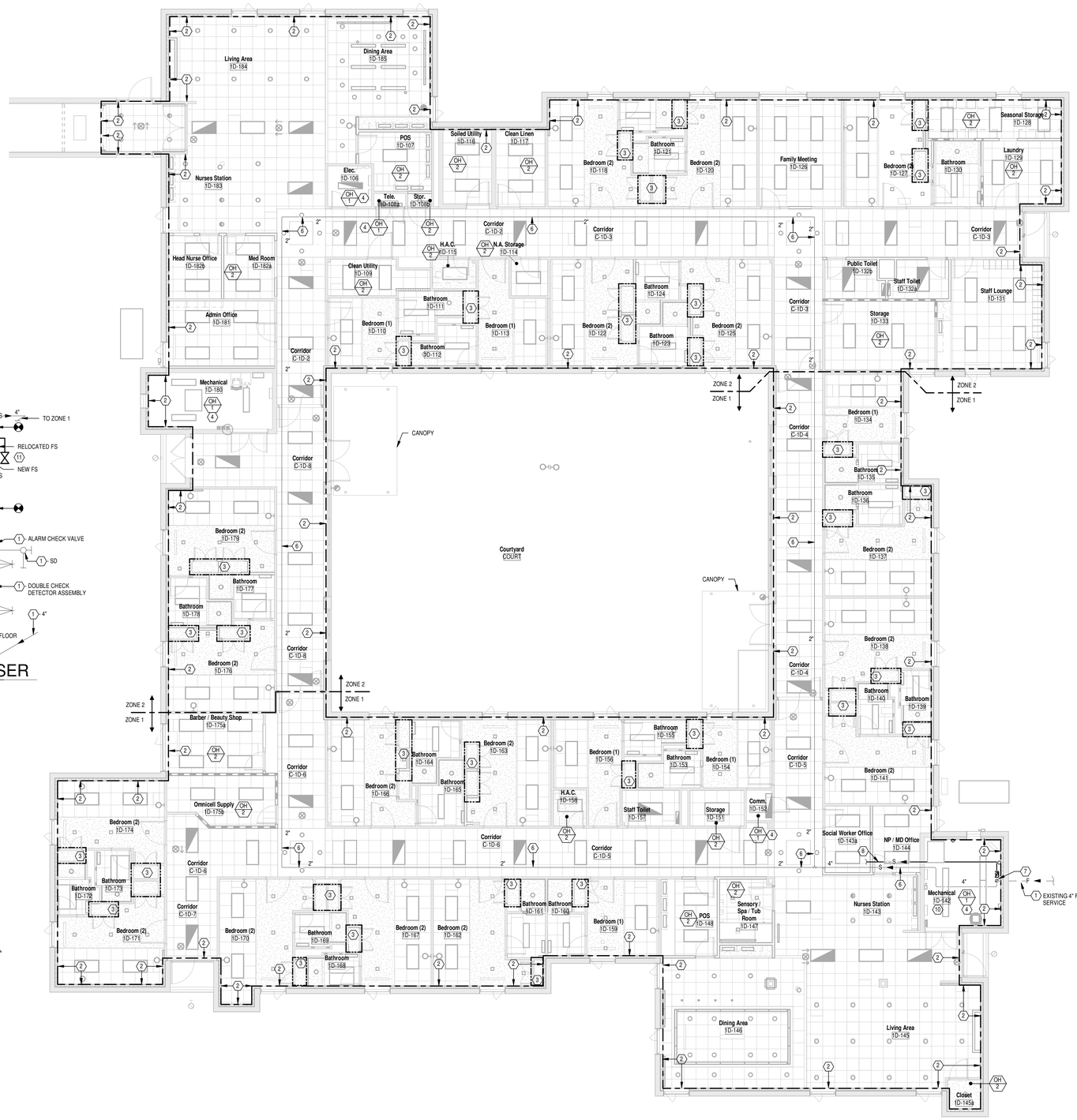
FIRE RISER

Scale: N.T.S.



SITE PLAN

SCALE: 1" = 125 FT. APPROX.



GROUND FLOOR PLAN

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

PROJECT

FIRE SUPPRESSION DESIGN NOTES

A PROVIDE A COMPLETE FIRE SUPPRESSION SPRINKLER SYSTEM IN THE ENTIRE RENOVATED AREA.

B COORDINATE WORK WITH VAMC AND ALL OTHER TRADES. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR OFFSETTING AND/OR RELOCATING SERVICES DETERMINED TO BE IN CONFLICT WITH WORK OF OTHER TRADES.

C DESIGN SERVICES SHALL FOLLOW ALL VAMC STANDARD DESIGN PRACTICES, DETAILS, SPECIFICATIONS AND SITE SPECIFIC C.O.R. REQUIREMENTS AS WELL AS WORK SHOWN ON THESE DOCUMENTS. ALL DEVIATIONS FROM AFOREMENTIONED REQUIREMENTS SHALL BE APPROVED BY THE C.O.R.

D VERIFY THAT THERE IS ADEQUATE SPACE TO INSTALL ALL NEW PIPING REQUIRED TO COMPLETE THIS WORK.

E ALL SPRINKLER PIPING SHALL BE LOCATED ABOVE THE CEILING (AT THE BOTTOM OF STRUCTURE IN EXPOSED STRUCTURAL AREAS) UNLESS OTHERWISE INDICATED.

F THE BASIS OF DESIGN OF SPACING AND SIZING FOR THE COMPLETE FIRE SUPPRESSION SPRINKLER SYSTEM IS FOR A WET PIPE SYSTEM HYDRAULICALLY CALCULATED AS FOLLOWS:

1 LIGHT HAZARD AREA LIMITED TO A MAXIMUM OF 225 SQ. FT. PER SPRINKLER WITH THE DENSITY OF 0.10 GPM/SQ. FT. OVER MOST THE MOST REMOTE 1500 SQ. FT. PROVIDE AN ADDITION OF 100 GPM HOSE ALLOWANCE. ALL AREAS SHALL BE CONSIDERED LIGHT HAZARD UNLESS OTHERWISE INDICATED OR REQUIRED BY VAMC GUIDELINES.

2 ALL MECHANICAL, ELECTRICAL AND ETC. AREAS SHALL BE ORDINARY HAZARD (GROUP 1) LIMITED TO A MAXIMUM OF 130 SQ. FT. PER SPRINKLER WITH A DENSITY OF 0.15 GPM/SQ. FT. OVER THE MOST REMOTE 1500 SQ. FT. PROVIDE AN ADDITION OF 250 GPM HOSE ALLOWANCE.

3 ALL STORAGE, TRASH, FILE STORAGE AND ETC. AREAS SHALL BE ORDINARY HAZARD (GROUP 2) LIMITED TO A MAXIMUM OF 130 SQ. FT. PER SPRINKLER WITH A DENSITY OF 0.20 GPM/SQ. FT. OVER THE MOST REMOTE 1500 SQ. FT. PROVIDE AN ADDITION OF 250 GPM HOSE ALLOWANCE.

G PROVIDE ALL SPRINKLER LOCATIONS AND RELATED PIPING LAYOUT AND SIZING.

H THE ENTIRE SPRINKLER SYSTEM SHALL CONFORM TO CURRENT VAMC, LOCAL, STATE AND NFPA STANDARDS, RULES AND REGULATIONS.

I CAREFULLY COORDINATE THE LOCATION OF ALL SPRINKLERS AND PIPING WITH ALL OTHER TRADES AND THE ARCHITECT.

J VERIFY THE LOCATION OF ALL LIGHTING FIXTURES AND AIR DEVICES BEFORE INSTALLATION OF SPRINKLERS.

K ALL SUPERVISED VALVE AND FLOW SWITCHES SHALL BE BY DIVISION 21. ALL WIRING WILL BE BY DIVISION 26.

L ALL SPRINKLER LOCATIONS MUST BE COORDINATED WITH ALL EQUIPMENT KINDRED TO OTHER TRADES. LOCATIONS MUST BE APPROVED BY THE ARCHITECT BEFORE WORK COMMENCES. REFER TO THE ARCHITECTURAL AND REFLECTIVE CEILING PLANS FOR ADDITIONAL INFORMATION ON ALL CEILING TYPES, HEIGHTS, AND OTHER ARCHITECTURAL FEATURES.

M SPRINKLER PIPING SHALL BE MINIMUM 1" SIZE. PROVIDE ALL RIGID PIPING, NO FLEXIBLE PIPING ALLOWED.

N SPRINKLERS (UNLESS OTHERWISE NOTED):
EXPOSED AREAS - UPRIGHT OR PENDENT TYPE - STANDARD BRASS
CEILING AREAS - RECESSED PENDENT TYPE ALL LAY-IN AND HARD DRYWALL CEILING AREAS. ALL SPRINKLERS SHALL BE UL LISTED AND FM APPROVED.

O SPRINKLERS SHALL BE "QUICK RESPONSE" TYPE IN ALL AREAS EXCEPT HIGH TEMPERATURE AREAS.

P ALL PENDENT TYPE SPRINKLERS LOCATED IN SUSPENDED CEILING TILE AREAS SHALL BE LOCATED IN THE CENTER OF THE CEILING TILE.

Q ANNULAR SPACE AT PIPE AND OTHER SIMILAR PENETRATION OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. REFER TO SPECIFICATION SECTION 07 84 00 FIRESTOPPING. REFER TO ARCHITECTURAL DRAWINGS FOR CONSTRUCTION, LAYOUT AND FIRE RATING OF FLOORS, WALLS, PARTITIONS AND OTHER BUILDING ELEMENTS.

R REFER TO SPECIFICATION SECTION 21 13 13 FOR FLOW TEST REQUIREMENTS.

S REFER TO ARCHITECTURAL DRAWING 320G100 FOR CODE DATA AND SMOKE COMPARTMENTS. ALL SPRINKLER ZONES SHALL MATCH SMOKE COMPARTMENTS.

T ALL EXPOSED DUCTWORK 48" WIDE AND LARGER SHALL BE PROVIDED WITH SPRINKLER PROTECTION BELOW THE DUCTWORK.

U ALL SYSTEMS SHALL BE TESTED PRIOR TO ANY REMOVAL WORK. TESTING SHALL BE WITNESSED BY C.O.R. IF SYSTEMS ARE NOT TESTED IT WILL BE ASSUMED ALL SYSTEMS WERE FULLY FUNCTIONAL AT START OF PROJECT. IF REPAIRS ARE REQUIRED, THEY SHALL BE MADE WITHOUT ANY COST TO THE GOVERNMENT.

PLAN NOTES

1 EXISTING TO REMAIN.

2 MODIFY EXISTING FIRE SUPPRESSION SPRINKLER SYSTEM IN THE INDICATED AREA AS REQUIRED TO CONFORM TO NEW LAYOUT.

3 EXTEND FIRE SPRINKLER SYSTEM INTO EACH PATIENT CLOSET.

4 DO NOT RUN SPRINKLER PIPING ABOVE ELECTRICAL EQUIPMENT.

5 REMOVE AND RELOCATE EXISTING FIRE SUPPRESSION TEST VALVE AND PIPING.

6 EXISTING FIRE SUPPRESSION SPRINKLER MAIN CURRENTLY SERVING POD AS ONE ZONE. MODIFY AS REQUIRED TO SERVE EACH OF THE TWO SPRINKLER ZONES SEPARATELY. PROVIDE NEW TEST & DRAIN VALVES AS REQUIRED.

7 EXISTING 4" FIRE SERVICE. REFER TO 1/4" SCALE PLAN.

8 EXTEND NEW FIRE SUPPRESSION PIPING AS REQUIRED TO SERVE SECOND SPRINKLER ZONE SEPARATELY. PROVIDE NEW TEST & DRAIN VALVES AS REQUIRED.

9 RELOCATE FIRE SUPPRESSION TEST VALVE AND PIPING TO APPROXIMATELY THIS LOCATION.

10 REFER TO 1/4" PLAN ON THIS SHEET.

11 TEST AND DRAIN VALVE. PIPE DISCHARGE TO EXTERIOR OF BUILDING AND PROVIDE SPLASH BLOCK.

LEGEND

—F—	FIRE SUPPRESSION PIPE
—S—	SPRINKLER PIPE (WET)
	DIRECTION OF FLOW
FR	FIRE RISER
SD	SPRINKLER DRAIN
OH 1	FIRE SUPPRESSION HAZARD CLASSIFICATION ORDINARY HAZARD / GROUP 1
SV	SUPERVISED VALVE
FS	FLOW SWITCH
3	"NOTE" SYMBOL (FOR NOTES ON SAME SHEET)
	CONNECT TO EXISTING
123	ROOM NUMBER

DRAWING INDEX - FIRE SUPPRESSION

SHEET	DESCRIPTION
320FX101	GROUND FLOOR PLAN

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: GROUND FLOOR PLAN

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320FX101

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

FULLY SPRINKLERED

LEGEND

- NEW SOIL AND OR WASTE PIPE (SP) OR (WP)
- EXISTING SOIL AND OR WASTE PIPE (SP) OR (WP)
- NEW VENT PIPE
- EXISTING VENT PIPE
- NEW DOMESTIC COLD WATER PIPE (DCW)
- EXISTING DOMESTIC COLD WATER PIPE (DCW)
- NEW DOMESTIC HOT WATER PIPE (DHW)
- EXISTING DOMESTIC HOT WATER PIPE (DHW)
- NEW DOMESTIC HOT WATER RETURN PIPE (DHWR)
- EXISTING DOMESTIC HOT WATER RETURN PIPE (DHWR)
- S — FIRE SUPPRESSION SPRINKLER PIPE
- S — EXISTING FIRE SUPPRESSION SPRINKLER PIPE
- STM — NEW STORM PIPING
- STM — EXISTING STORM PIPING
- EXISTING SHUT-OFF VALVE (BALL)
- EXISTING CHECK VALVE
- EXISTING PIPE TO BE REMOVED
- DIRECTION OF FLOW
- DIRECTION OF PITCH DOWN
- P103 — UP TO FIXTURE ABOVE
- 3 — "NOTE" SYMBOL (FOR NOTES ON SAME SHEET)
- "CONNECT TO EXISTING" SYMBOL
- C.O.R. — CONTRACTING OFFICER'S REPRESENTATIVE
- SS — SANITARY STACK (SOIL/WASTE)
- SR — SUPPLY RISER
- VS — VENT STACK
- CO — CLEANOUT
- VR — VENT RISER
- VTR — VENT THRU ROOF
- AP — ACCESS PANEL
- FD1 — FLOOR DRAIN
- 123 — ROOM NUMBER
- F.F.E. — FINISHED FLOOR ELEVATION
- BFP — EXISTING BACK FLOW PREVENTER
- P418 — PLUMBING FIXTURE DESIGNATION
- AFF — ABOVE FINISHED FLOOR
- DF — EXISTING DRINKING FOUNTAIN
- WH — EXISTING WALL HYDRANT
- WC — EXISTING WATER CLOSET
- WCB — EXISTING WASHER CONNECTION BOX
- SH — EXISTING SHOWER CONTROL VALVE AND HEAD
- LV — EXISTING LAVATORY
- FD — EXISTING FLOOR DRAIN
- RD — EXISTING ROOF DRAIN
- SD — EXISTING SHOWER DRAIN
- MS — EXISTING MOP SINK
- SK — EXISTING SINK
- CSS — EXISTING CLINIC SERVICE SINK
- FDC — EXISTING FIRE DEPARTMENT CONNECTION
- TP — EXISTING TRAP PRIMER
- P — PRESSURE GAUGE
- T — TEMPERATURE GAUGE
- TYP — TYPICAL
- AG — AIR GAP
- A — STACK OR RISER DIAGRAM REFERENCE SYSMBOL

GENERAL NOTES

A ALL PIPING IS ABOVE THE CEILING (AT THE UNDERSIDE OF STRUCTURE IN EXPOSED STRUCTURAL AREAS), UNLESS OTHERWISE NOTED.

B REFER TO SCHEDULES, DETAILS AND DIAGRAMS FOR PIPING, PIPE SIZES AND PIPELINE DEVICES NOT INDICATED ON THE FLOOR PLAN.

C ABOVE CEILING UTILITY SPACE IS LIMITED IN CERTAIN AREAS. COORDINATION WITH ALL TRADES IS CRITICAL, PRIOR TO INSTALLATION OF ANY WORK.

D LOCATIONS AND SIZES OF EXISTING PIPING HAVE BEEN DETERMINED FROM A REVIEW OF EXISTING DRAWINGS AND/OR SITE INSPECTION, WHERE POSSIBLE. FIELD VERIFICATION OF EXACT LOCATION, ELEVATIONS, INVERTS, SIZES, DIRECTION OF FLOW, ETC., SHALL BE REQUIRED PRIOR TO BEGINNING NEW WORK.

E ALL PIPING REQUIRING REMOVAL SHALL BE REMOVED BACK TO ACTIVE MAINS AND CAPPED, OR REMOVED BACK TO POINTS OF NEW WORK. INACCESSIBLE PIPING, WHERE SO NOTED, TO BE ABANDONED SHALL BE DISCONNECTED FROM ACTIVE MAINS AND CAPPED OR PLUGGED IN CONCEALED LOCATIONS.

F NEW CONNECTIONS TO EXISTING PIPING SHALL BE WITH THE SAME SIZE AS THE EXISTING PIPING UNLESS OTHERWISE NOTED.

G ALL REMOVED MATERIAL AND EQUIPMENT SO DESIGNATED BY THE C.O.R., SHALL BE TURNED OVER AND PLACED WHERE DIRECTED. ALL MATERIAL AND EQUIPMENT, WHICH THE C.O.R. DOES NOT WISH TO RETAIN, SHALL BECOME THE PROPERTY OF THE CONTRACTOR RESPONSIBLE FOR THE REMOVAL.

H ALL SYSTEMS SHALL BE TESTED PRIOR TO ANY REMOVAL WORK. TESTING SHALL BE WITNESSED BY C.O.R. IF SYSTEMS ARE NOT TESTED IT WILL BE ASSUMED ALL SYSTEMS WERE FULLY FUNCTIONAL AT START OF PROJECT. IF REPAIRS ARE REQUIRED TO PREVIOUSLY FUNCTIONAL SYSTEMS, THEY SHALL BE MADE WITHOUT ADDITIONAL COST TO THE GOVERNMENT.

I ALL ASBESTOS INSULATION WILL BE REMOVED BY THE ASBESTOS ABATEMENT CONTRACTOR PRIOR TO ANY PIPING REMOVAL BY DIVISION 22.

J ALL CUTTING AND PATCHING OF EXISTING SURFACES TO REMAIN THAT IS REQUIRED FOR THE PLUMBING WORK, SHALL BE INCLUDED IN THE PLUMBING CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK TO MATCH EXISTING.

K ABATEMENT, REMOVAL OR ENCAPSULATION OF EXISTING MATERIALS CONTAINING ASBESTOS IS INCLUDED IN THIS CONSTRUCTION CONTRACT. REFER TO DRAWINGS AND/OR SPECIFICATIONS FOR LOCATION OF ASBESTOS. ANY ASBESTOS WORK PERFORMED AS PART OF THIS PROJECT SHALL BE COMPLETED PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REFER TO SPECIFICATIONS FOR ASBESTOS ABATEMENT.

FIXTURE SCHEDULE

SYMBOL	MOUNTING HEIGHT	DESCRIPTION	FLOW GPM	FLOW GPF	FIXTURE UNITS DRAINS	FIXTURE UNITS WATER C/H	SUPPLY COLD	SUPPLY HOT	DRAINAGE CONNECTION OUTLET	VENT	DIRECT	INDIRECT	REMARKS
P102	18" TO RIM	WATER CLOSET / FLOOR SET / WALL OUTLET / BARIATRIC / ELONGATED BOWL / BEDPAN WASHER / ADA	- -	1.28	4	5/- -	1"	- -	4"	2"	●	- -	ELECTRIC POWERED / HARDWIRED / SENSOR OPERATED / FOLD-DOWN BEDPAN WASHER
P103	18" TO RIM	WATER CLOSET / WALL HUNG / ELONGATED BOWL / ADA	- -	1.28	4	5/- -	1"	- -	4"	2"	●	- -	ELECTRIC POWERED / HARDWIRED / SENSOR OPERATED / PROVIDE CLOSE NON-ADJUSTABLE WATER CLOSET CARRIER
P113	18" TO RIM	WATER CLOSET / WALL HUNG / ELONGATED BOWL / BEDPAN WASHER / ADA (TYPICAL PATIENT ROOM)	- -	1.28	4	5/- -	1"	- -	4"	2"	●	- -	ELECTRIC POWERED / HARDWIRED / SENSOR OPERATED / FOLD-DOWN BEDPAN WASHER / PROVIDE CLOSE NON-ADJUSTABLE WATER CLOSET CARRIER
P301	- -	BATHTUB / WALK-IN COMBO MASSAGE	15/1.5	- -	3	5/5	0.75"	0.75"	1.5"	1.5"	●	- -	COORDINATE INSTALLATION WITH DIVISION 26 AND THE GENERAL CONTRACTOR. COLOR BY COR
P418	34" TO RIM	LAVATORY / WALL HUNG / 20"x18" / ADA	0.5	- -	1	0.6/0.6	0.5"	0.5"	1.5"	1.5"	●	- -	ELECTRIC POWERED / HARD-WIRED / SENSOR OPERATED / GOOSENECK SPOUT / LAV SHIELD
P420	- -	LAVATORY / SOLID SURFACE BY G.C. / ADA	1.0	- -	1	0.6/0.6	0.5"	0.5"	1.5"	1.5"	●	- -	ELECTRIC POWERED / HARD-WIRED / SENSOR OPERATED / GOOSENECK SPOUT / INSULATED ADA COVERS
P421	- -	LAVATORY / SOLID SURFACE BY G.C. / ADA	1.0	- -	1	0.6/0.6	0.5"	0.5"	1.5"	1.5"	●	- -	MANUAL LEVER HANDLES / GOOSENECK SPOUT / INSULATED ADA COVERS
P502	FLOOR SET	MOP BASIN / 28"x28x12" / 6" DROP FRONT / TERRAZZO	- -	- -	3	2.25/2.25	0.5"	0.5"	3"	1.5"	●	- -	PAIL HOOK FAUCET / VACUUM BREAKER / CROSS HANDLES
P505	30" TO RIM	CLINICAL SERVICE SINK / WALL HUNG / BEDPAN WASHER	- -	- -	3	5/2.25	1" (2)0.5"	(2)0.5"	4"	2"	●	- -	WRIST BLADE HANDLES / FOOT CONTROL FLUSH VALVE & BEDPAN WASHER
P521	- -	LAUNDRY TUB / 20"x24"x11" / LEGS	- -	- -	2	2.25/2.25	0.5"	0.5"	1.5"	1.5"	●	- -	
P522	- -	SHAMPOO SINK / WALL HUNG / 18.75"Wx19.5"Dx8.75"H	- -	- -	2	1.5/1.5	0.5"	0.5"	1.5"	1.5"	●	- -	SINGLE HANDLE CONTROL / VACUUM BREAKER / SPRAY HOSE / COLOR BY COR
P528	- -	S.S. SINK/COUNTERTOP / SINGLE COMP'T / 20"x18"	1.0	- -	2	1.5/1.5	0.5"	0.5"	1.5"	1.5"	●	- -	WRIST BLADE HANDLES / GOOSENECK SPOUT
P529	- -	S.S. SINK/COUNTERTOP / SINGLE COMP'T / 31"x22"	1.0	- -	2	1.5/1.5	0.5"	0.5"	1.5"	1.5"	●	- -	WRIST BLADE HANDLES / GOOSENECK SPOUT
P609	36" TO LOW SPOUT	WATER COOLER / DRINKING FOUNTAIN / DUAL HEIGHT / ADA	- -	- -	0.5	0.75/- -	0.5"	- -	1.5"	1.5"	●	- -	SURFACE WALL MOUNTED
P701	SEE SPECS	SHOWER VALVE & DUAL HEADS / SHOWER ENCLOSURE BY G.C. / ADA	1.5	- -	2	1.5/1.5	0.5"	0.5"	F.D.	- -	●	- -	PRESSURE AND THERMOSTATIC BALANCING / FIXED AND HAND HELD HOSE / VACUUM BREAKER / DIVERTER
P801	24"	WALL HYDRANT	- -	- -	- -	- -	0.75"	- -	- -	- -	- -	- -	NON-FREEZE / INTEGRAL VACUUM BREAKER
P804	36"	HOSE BIBB/SINGLE FAUCET	- -	- -	- -	- -	0.5"	- -	- -	- -	- -	- -	CROSS HANDLE / VACUUM BREAKER
P808	44" TO C.L.	WASHING MACHINE SUPPLY AND DRAIN UNIT	- -	- -	3	1.5/1.5	0.5"	0.5"	2"	1.5"	●	- -	BALL TYPE SHUT-OFF VALVE / DRAIN CONNECTION
P811	48" TO C.L.	WATER SUPPLY BOX / REFRIGERATOR / ICE MACHINE	- -	- -	- -	0.5/- -	0.5"	- -	- -	- -	- -	- -	PROVIDE FLEXIBLE CONNECTOR TO EQUIPMENT

FIXTURE SCHEDULE NOTES:
1. SUPPLY PIPE SIZES IN THIS SCHEDULE ARE FIXTURE CONNECTION SIZES. DOMESTIC COLD WATER SUPPLY SIZES SERVING FLUSH VALVES SHALL BE MINIMUM ONE PIPE SIZE LARGER THAN THE INDICATED CONNECTION SIZE, OR SIZED AS SHOWN ON THE FLOOR PLANS. PIPING AT THE FLUSH VALVE CONNECTION, OF A SIZE EQUAL TO THE CONNECTION SIZE, SHALL BE LIMITED TO A MAXIMUM 2 FEET IN DEVELOPED LENGTH AND INCLUDE A MAXIMUM ONE 90 DEGREE ELBOW FITTING. FULL SIZE MANIFOLDS, WHERE INDICATED ON THE FLOOR PLANS, SHALL BE PROVIDED FULL SIZE THE LENGTH OF THE PIPING CHASE AND TERMINATED WITH A FULL SIZE CAP.
2. PROVIDE LAMINAR FLOW CONTROL DEVICE ON LAVATORY AND SINK FAUCET. DO NOT USE AERATORS.

DRAIN SCHEDULE

SYMBOL	DESCRIPTION	BODY C.I.	BODY S.S.	BODY C.R.	BODY BRASS	STRAINER / GRATE RD.	SQ.	ADJUST.	FLAT	RECESS	DOME	TOP FINISH NICKEL BRONZE	C.I.	C.R.	S.S.	NOTES
FD1	2" MEDIUM DUTY/DOUBLE DRAINAGE/VANDAL RESISTANT (TYPE C)	●	- -	- -	- -	●	- -	●	●	- -	- -	●	- -	- -	- -	1
FD2	3" MEDIUM DUTY/DOUBLE DRAINAGE/VANDAL RESISTANT (TYPE C)	●	- -	- -	- -	●	- -	●	●	- -	- -	●	- -	- -	- -	1

DRAIN SCHEDULE NOTES:
1. PROVIDE THREADED PLUG FOR ALL TRAP PRIMER CONNECTIONS NOT USED.

EQUIPMENT SCHEDULE

MARK	DESCRIPTION (1. PROVIDE ROUGH-IN. 2. INSTALL ALL "LOOSE" COMPONENTS. 3. PROVIDE ALL NECESSARY SUPPLIES, STOPS, TRAPS, FIX. DRAINS, CONTINUOUS WASTE, & ALL INDIRECT WASTE. 4. MAKE ALL FINAL CONNECTIONS.)	SUPPLY C.W.	SUPPLY H.W.	WASTE & VENT FIX. OUTLET	TRAP	FIX. DRAIN	WASTE-MIN.	VENT-MIN.	INDIRECT	AIRGAP	AIRBREAK	TO FLR. FR.	WASTE SYSTEM SANITARY	KITCHEN WASTE	ACID WASTE	REFER TO EQUIPMENT SCHEDULE NOTES
M1	ICE MACHINE/ COUNTERTOP	0.5"	- -	0.75"	1"	1"	1"	- -	●	●	- -	- -	●	- -	- -	1

EQUIPMENT SCHEDULE NOTES:
1 EXTEND FLEXIBLE COPPER TUBING FROM P811 TO ICE MACHINE. EXTEND INDIRECT COPPER DRAIN LINE TO TRAPPED AND VENTED AIR GAP FITTING LOCATED IN SINK CABINETWORK.

DRAWING INDEX - PLUMBING

SHEET	DESCRIPTION
320P001	LEGEND, SCHEDULES, NOTES & DRAWING INDEX
320PD101	GROUND FLOOR PLAN - REMOVALS
320PP100	FOUNDATION PLAN - NEW WORK
320PP101	GROUND FLOOR PLAN - NEW WORK
320P401	ENLARGED TYPICAL ROOM PLANS
320P501	DETAILS
320P901	SOIL, WASTE & VENT DIAGRAMS

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:
Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:
JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@ohnpoe.com

Drawing Title: LEGEND, SCHEDULES, NOTES & DRAWING INDEX

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320P001

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

FULLY SPRINKLERED

GENERAL NOTES

A REMOVE ALL FIXTURE CARRIERS ASSOCIATED WITH FIXTURE REMOVAL.

B REFER TO SHEET 320P001 FOR LEGEND, SCHEDULES, DETAILS, NOTES & DRAWING INDEX.

PLAN NOTES

1 EXISTING TO REMAIN.

2 REMOVE EXISTING FIXTURE OR ITEM OF EQUIPMENT (TYPE AS INDICATED) AND ALL EXTRANEOUS PIPING (INCLUDING ANY PIPING THAT MAY BE LEFT BEHIND AFTER ASBESTOS ABATEMENT) BACK TO MAIN OR POINT OF NEW CONNECTION. CAP PIPING IN WALLS WHERE WALLS ARE TO REMAIN OR ABOVE CEILING OR BELOW FLOOR SLAB WHERE WALLS ARE TO BE REMOVED. NO PIPE STUBS SHALL REMAIN VISIBLE IN FINISHED AREAS. REFER TO NEW WORK PLANS FOR POINTS OF NEW CONNECTION.

3 REMOVAL OF EXISTING RUNOUT PIPING BACK TO ISOLATION VALVES WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

4 REMOVE EXISTING WATER CLOSET, ASSOCIATED CARRIER AND ALL RELATED EXTRANEOUS PIPING BACK TO MAIN OR POINT OF NEW CONNECTION. CAP PIPING IN WALLS WHERE WALLS ARE TO REMAIN OR ABOVE CEILING OR BELOW FLOOR SLAB WHERE WALLS ARE TO BE REMOVED. NO PIPE STUBS SHALL REMAIN VISIBLE IN FINISHED AREAS. REFER TO NEW WORK PLANS FOR POINTS OF NEW CONNECTION.

5 REMOVE EXISTING FLOOR DRAIN, GRATE AND STRAINER, PLUG DRAIN OUTLET AND FILL DRAIN BODY WITH CONCRETE TO FLUSH WITH EXISTING FLOOR SLAB AND ABANDON.

6 REMOVE EXISTING CARRIER AND PIPE STUBS BACK TO POINT OF NEW CONNECTION. NO PIPE STUBS SHALL REMAIN VISIBLE IN FINISHED AREAS.

7 EXISTING FLOOR DRAIN TO REMAIN. REMOVE STRAINER FOR REPLACEMENT IN NEW WORK.

8 REMOVE EXISTING FIXTURE CARRIERS AND ALL RELATED PIPING LOCATED IN CHASE FOR PREVIOUSLY REMOVED FIXTURES.

9 REMOVE ISOLATION VALVE FOR REPLACEMENT IN NEW WORK.

10 REMOVAL OF ABANDONED SOLAR HEAT RECOVERY PIPING BY DIVISION 2.

11 REMOVE ABANDONED SOLAR HEAT RECOVERY STORAGE TANK.

12 REMOVE EXISTING STORAGE TANK CONCRETE PAD.

13 REMOVE EXISTING WATER HEATER AND ASSOCIATED PIPING, CONCRETE PAD, CONTROLS, ETC FOR REPLACEMENT IN NEW WORK.

14 EXISTING PIPING TO BE REMOVED BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.

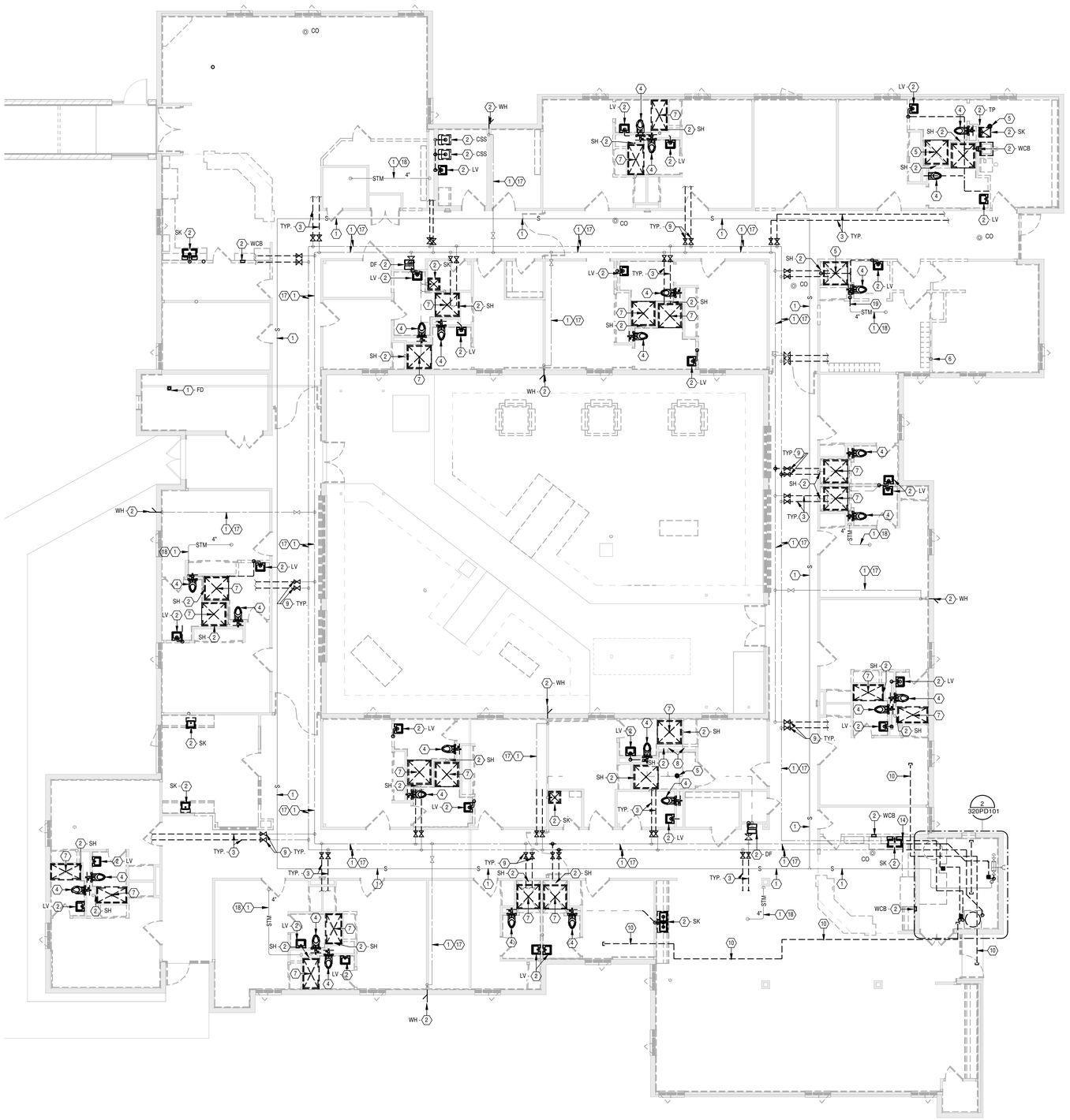
15 REMOVAL OF ALL DCW, DHW AND DHWR PIPING IN MECHANICAL ROOM WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

16 REMOVAL OF DHWR PUMP WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

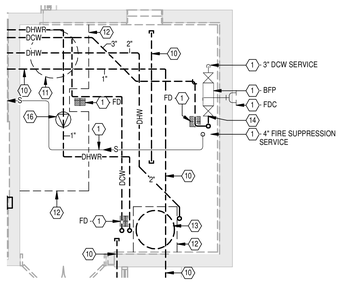
17 REMOVAL OF INSULATION FROM EXISTING DCW, DHW AND DHWR PIPING WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

18 REMOVAL OF INSULATION FROM EXISTING STORM PIPING WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION 02 82 11 AND SHALL TAKE PLACE PRIOR TO ANY OTHER PROJECT SITE WORK.

19 REMOVE EXISTING STORM PIPING FOR REPLACEMENT IN NEW WORK.



GROUND FLOOR PLAN
Scale: 1/8" = 1'-0"



2 MECHANICAL ROOM 1D-142
Scale: 1/4" = 1'-0"

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EDDICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: GROUND FLOOR PLAN - REMOVALS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320PD101

Dwg. of

Office of Construction and Facilities Management
Department of Veterans Affairs

FULLY SPRINKLERED

GENERAL NOTES

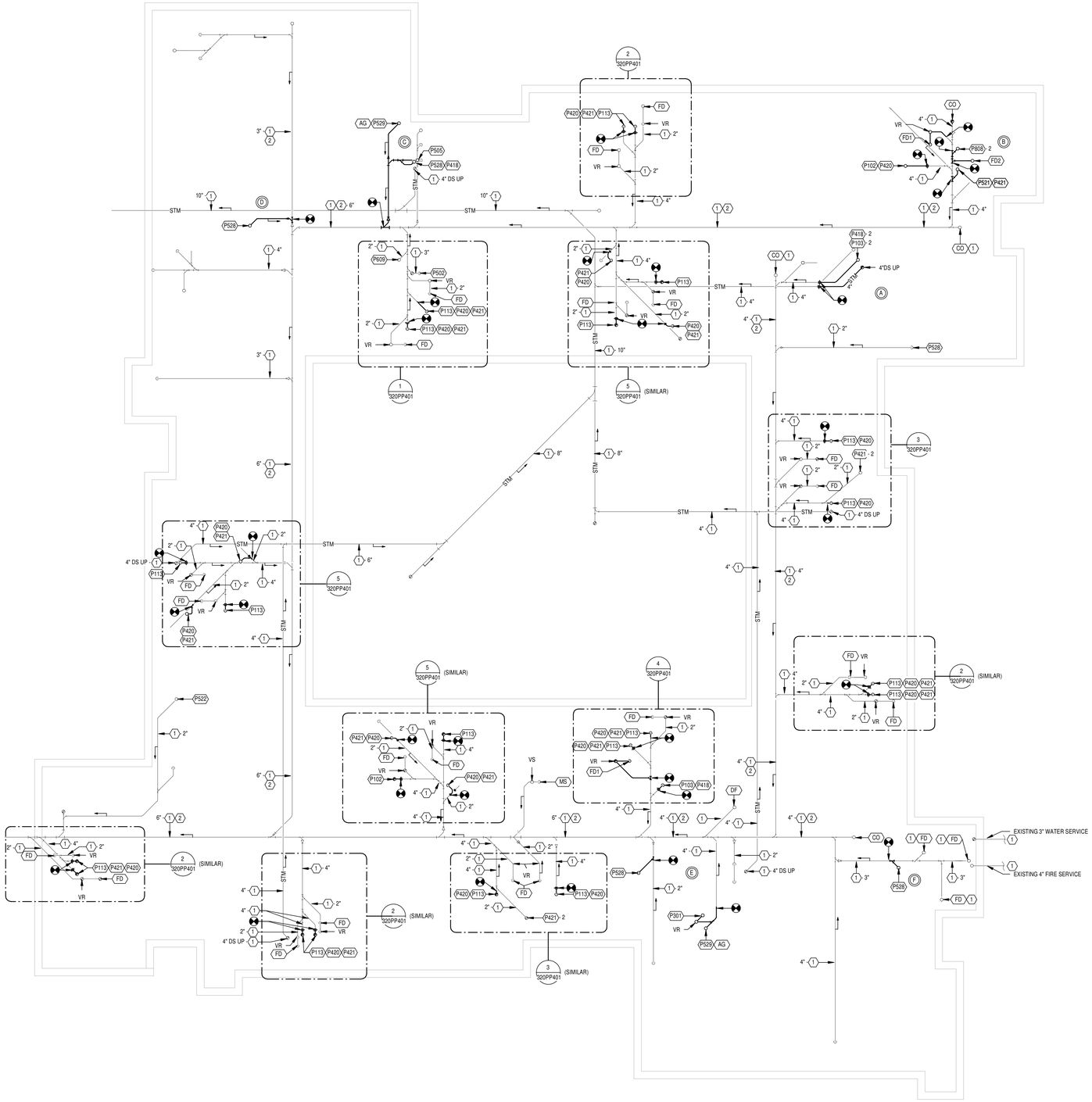
A ALL NEW PIPING ON THIS SHEET LOCATED BELOW EXISTING FLOOR SLAB. CUT, TRENCH AND RE-SURFACE AS REQUIRED.

B REFER TO SHEET 320P001 FOR LEGEND, SCHEDULES, DETAILS, NOTES & DRAWING INDEX.

PLAN NOTES

1 EXISTING TO REMAIN.

2 PROVIDE POWER CLEANING, FLUSHING AND VIDEO INSPECTION OF SEWER MAINS UNDER CORRIDOR FLOORS. LOCATION OF EXISTING PIPING HAS BEEN DETERMINED FROM EXISTING DRAWINGS AND SITE INSPECTION. FIELD VERIFY EXACT LOCATIONS, ELEVATIONS, INVERTS, SIZES, DIRECTION OF FLOW, ETC.



N

PROJECT

FOUNDATION PLAN

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

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@ohnpoe.com

Drawing Title: FOUNDATION PLAN - NEW WORK

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320PP100

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Office of Construction and Facilities Management

Department of Veterans Affairs

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GENERAL NOTES

A REFER TO SHEET 320P001 FOR LEGEND, SCHEDULES, DETAILS, NOTES & DRAWING INDEX.

PLAN NOTES

1 EXISTING TO REMAIN.

2 BOX MOUNTED TRANSFORMER LOCATED ABOVE THE CEILING TO CONTROL SENSOR OPERATED FAUCET ON FIXTURE(S) BELOW. 120V-1PH POWER WILL BE LOCATED IN A WIRING BOX ABOVE THE CEILING BY DIVISION 26. A 0.75" CONDUIT (FOR LOW VOLTAGE WIRING) STUBBED ABOVE THE CEILING AND EXTENDED DOWN TO AN ELECTRICAL WALL BOX LOCATED BELOW EACH LAVATORY WILL BE PROVIDED BY DIVISION 26. THE TRANSFORMERS AND LOW VOLTAGE WIRING SHALL BE BY DIVISION 22. COORDINATE ALL WORK WITH DIVISION 26.

3 NEW PIPING LOCATED BELOW FLOOR SLAB. CUT, TRENCH AND RE-SURFACE AS REQUIRED.

4 CONNECT TO EXISTING DCW AND DHW BRANCH PIPING AND EXTEND PIPING TO NEW FIXTURES. PROVIDE NEW SHUT-OFF VALVES.

5 PROVIDE 2" FULL SIZE DCW MANIFOLD ENTIRE LENGTH OF PLUMBING CHASE / WALL AND SERVE EACH FIXTURE INDIVIDUALLY FROM MANIFOLD.

6 EXTEND DCW, SANITARY & VENT PIPING FOR NEW FIXTURE. PROVIDE NEW ISOLATION VALVES.

7 BOX MOUNTED TRANSFORMER LOCATED ABOVE THE CEILING TO CONTROL SENSOR OPERATED FLUSH VALVE ON FIXTURE(S) BELOW. 120V-1PH POWER WILL BE LOCATED IN A WIRING BOX ABOVE THE CEILING BY DIVISION 26. A 0.75" CONDUIT (FOR LOW VOLTAGE WIRING) STUBBED ABOVE THE CEILING AND EXTENDED DOWN TO AN ELECTRICAL WALL BOX LOCATED ABOVE EACH WATER CLOSET WILL BE PROVIDED BY DIVISION 26. THE TRANSFORMER AND LOW VOLTAGE WIRING SHALL BE BY DIVISION 22. COORDINATE ALL WORK WITH DIVISION 26.

8 EXTEND VENT PIPING AS REQUIRED TO ACCOMMODATE NEW FIXTURE.

9 RE-INSULATE ALL EXISTING DCW, DHW AND DHWR MAIN AND BRANCH PIPING TO POINT OF NEW CONNECTIONS.

10 PROVIDE 24"x24" ACCESS PANEL APPROXIMATELY 6" AFF FOR ACCESS TO TUB PIPING.

11 COORDINATE LOCATION WITH ELECTRICAL EQUIPMENT.

12 PROVIDE NEW WALL HYDRANT IN EXISTING WALL BOX.

13 PROVIDE P102 FLOOR SET, BACK OUTLET WATER CLOSET AT THIS LOCATION IN LIEU OF THE WALL HUNG UNIT.

14 PIPING LOCATED IN CHASE / WALL ABOVE FLOOR SLAB.

15 PROVIDE NEW TRAP PRIMER ABOVE CEILING. EXTEND DISCHARGE TO EXISTING TRAP PRIMER LINE LOCATED BELOW FLOOR SLAB. REFER TO DETAIL E / 320P501.

16 PROVIDE EXTENDED FACEPLATE / WIDE PIPE CHASE SUPPORT AT WALL.

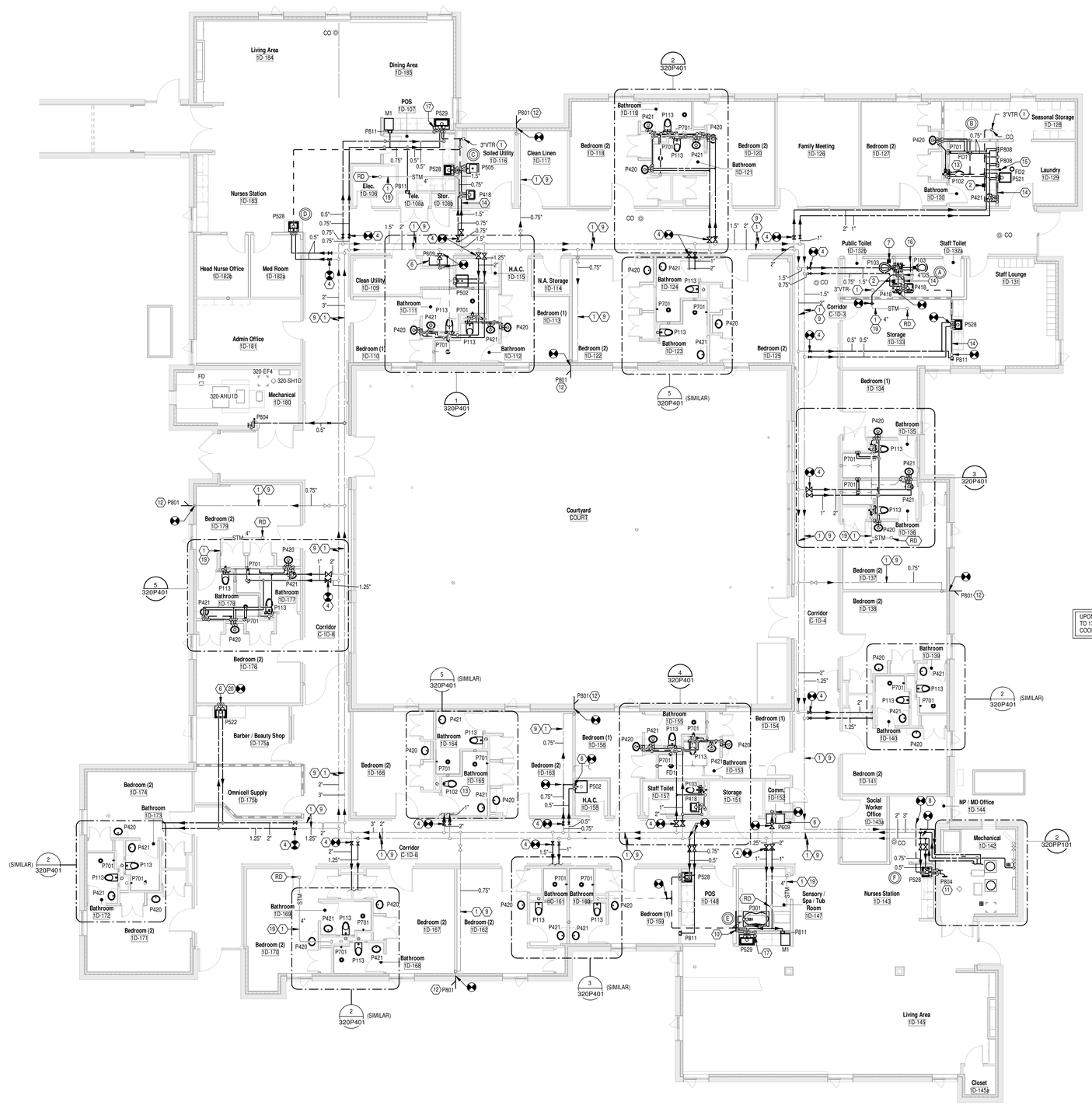
17 PROVIDE AIR GAP FITTING IN CABINET WORK BELOW SINK FOR 1" DRAIN FROM M1.

18 EXTEND 2" DCW, 2" DHW & 1" DHWR PIPING TO WATER HEATERS. REFER TO DETAIL G / 320P501.

19 RE-INSULATE ALL EXISTING HORIZONTAL STORM PIPING INCLUDING ROOF SUMP.

20 MODIFY FIXTURE CARRIER TO SUPPORT FIXUTRE MOUNTED ON CASEWORK. REFER TO ARCHITECTURAL DETAILS ON SHEET 320A405.

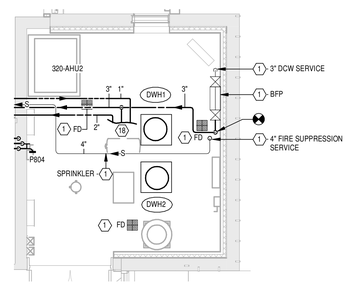
UPON COMPLETION OF STERILIZATION AND IMMEDIATELY PRIOR TO OCCUPANCY, HEAT DOMESTIC HOT WATER TO 170 DEG. F. CIRCULATE THROUGH THE SYSTEM AND FLUSH EACH FIXTURE FOR A MINIMUM OF 30 MINUTES. COORDINATE ALL ASPECTS OF PROCEDURE CLOSELY WITH C.O.R.



GROUND FLOOR PLAN

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

PROJECT



2 MECHANICAL ROOM 1D-142

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

Revisions		Date
	Bid Set	12/20/2013

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JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: GROUND FLOOR PLAN - NEW WORK

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320PP101

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

FULLY SPRINKLERED

PLAN NOTES

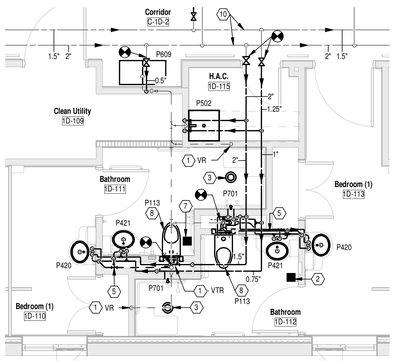
1. EXISTING TO REMAIN.
2. BOX MOUNTED TRANSFORMER LOCATED ABOVE THE CEILING TO CONTROL SENSOR OPERATED FAUCET ON FIXTURE(S) BELOW. 120V-1PH POWER WILL BE LOCATED IN A WIRING BOX ABOVE THE CEILING BY DIVISION 26. A 0.75" CONDUIT (FOR LOW VOLTAGE WIRING) STUBBED ABOVE THE CEILING AND EXTENDED DOWN TO AN ELECTRICAL WALL BOX LOCATED BELOW EACH LAVATORY WILL BE PROVIDED BY DIVISION 26. THE TRANSFORMERS AND LOW VOLTAGE WIRING SHALL BE BY DIVISION 22. COORDINATE ALL WORK WITH DIVISION 26.
3. EXISTING FLOOR DRAIN TO REMAIN. REPLACE STRAINER ONLY. ADJUST TO FLUSH WITH FLOOR FINISH. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR FINISHES.
4. PROVIDE 2" FULL SIZE DCW MANIFOLD ENTIRE LENGTH OF PLUMBING CHASE / WALL AND SERVE EACH FIXTURE INDIVIDUALLY FROM MANIFOLD.
5. PIPING LOCATED IN CHASE / WALL ABOVE FLOOR SLAB.
6. NEW PIPING LOCATED BELOW EXISTING FLOOR SLAB. CUT, TRENCH AND RE-SURFACE AS REQUIRED.
7. BOX MOUNTED TRANSFORMER LOCATED ABOVE THE CEILING TO CONTROL SENSOR OPERATED FLUSH VALVE ON FIXTURE(S) BELOW. 120V-1PH POWER WILL BE LOCATED IN A WIRING BOX ABOVE THE CEILING BY DIVISION 26. A 0.75" CONDUIT (FOR LOW VOLTAGE WIRING) STUBBED ABOVE THE CEILING AND EXTENDED DOWN TO AN ELECTRICAL WALL BOX LOCATED ABOVE EACH WATER CLOSET WILL BE PROVIDED BY DIVISION 26. THE TRANSFORMER AND LOW VOLTAGE WIRING SHALL BE BY DIVISION 22. COORDINATE ALL WORK WITH THE DIVISION 26.
8. NEW WATER CLOSET TO BE PROVIDED IN DIFFERENT LOCATION THAN EXISTING WATER CLOSET (HORIZONTALLY AND VERTICALLY). REFER TO SHEETS 320P501 AND 320A401 THRU 320A403 FOR NEW LOCATIONS. EXACT LOCATION OF CONNECTION TO EXISTING PIPING BELOW FLOOR SLAB PER SITE CONDITIONS.
9. IN BARIATRIC ROOM 1D-165, PROVIDE A P102 FLOOR SET, BACK OUTLET WATER CLOSET IN LIEU OF THE WALL HUNG UNIT.
10. RE-INSULATE ALL EXISTING DCW, DHW AND DHWR MAIN AND BRANCH PIPING TO POINT OF NEW CONNECTIONS.

GENERAL NOTES

A. REFER TO SHEET 320P001 FOR LEGEND, SCHEDULES, DETAILS, NOTES & DRAWING INDEX.

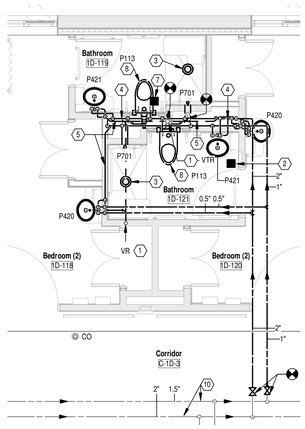
B. ASBESTOS INSULATION WILL BE REMOVED FROM ALL MAIN AND RUNOUT PIPING. PROVIDE NEW INSULATION ON EXISTING MAIN AND RUNOUT PIPING UPSTREAM OF SHUTOFF VALVE. MATCH INSULATION ON NEW PIPING.

C. ALL NEW WATER CLOSET CARRIERS SHALL BE CLOSE / COMPACT NON-ADJUSTABLE TYPE TO FIT IN EXISTING SIZE CHASE.



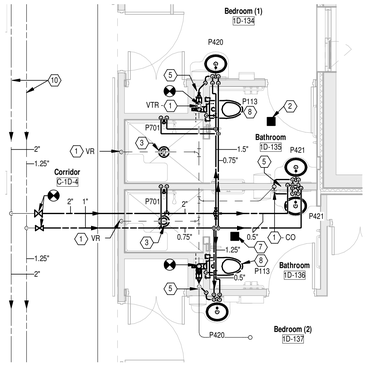
TYPICAL UNIT "D" ON ARCHITECTURAL DRAWINGS

1 BATHROOM GROUP 1D-111 / 1D-112
Scale: 1/4" = 1'-0"



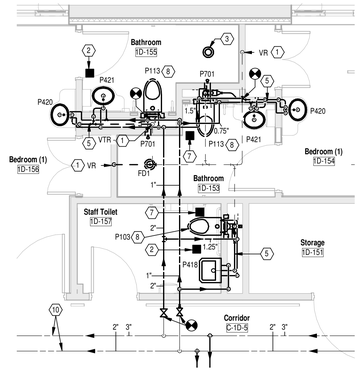
BATHROOM GROUPS 1D-139/1D-140, 1D-168/1D-169 & 1D-172/1D-173 (SIMILAR)
TYPICAL UNIT "A" ON ARCHITECTURAL DRAWINGS

2 BATHROOM GROUP 1D-119 / 1D-121
Scale: 1/4" = 1'-0"



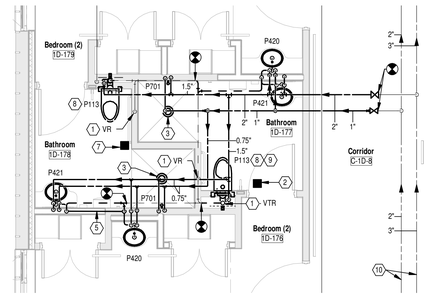
BATHROOM GROUP 1D-160/1D-161 (SIMILAR)
TYPICAL UNIT "C" ON ARCHITECTURAL DRAWINGS

3 BATHROOM GROUP 1D-135 / 1D-136
Scale: 1/4" = 1'-0"



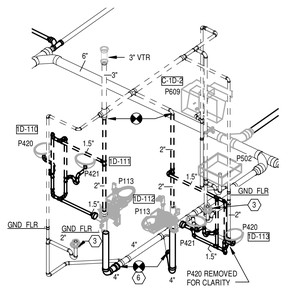
TYPICAL UNIT "D" ON ARCHITECTURAL DRAWINGS

4 BATHROOM GROUP 1D-153 / 1D-155
Scale: 1/4" = 1'-0"

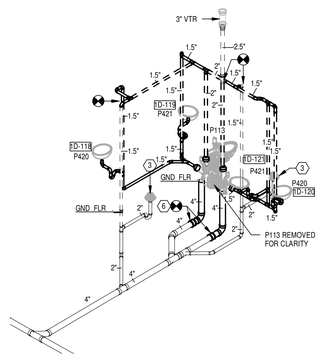


BATHROOM GROUP 1D-123/1D-124 & 1D-164/1D-165 (SIMILAR)
TYPICAL UNIT "B" ON ARCHITECTURAL DRAWINGS

5 BATHROOM GROUP 1D-177 / 1D-178
Scale: 1/4" = 1'-0"



SOIL, WASTE & VENT DIAGRAM
Scale: N.T.S.



SOIL, WASTE & VENT DIAGRAM
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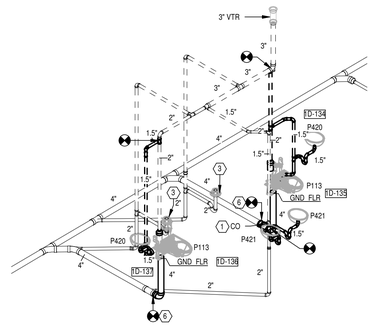

SOIL, WASTE & VENT DIAGRAM
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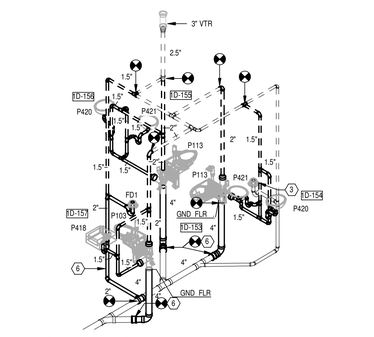

SOIL, WASTE & VENT DIAGRAM
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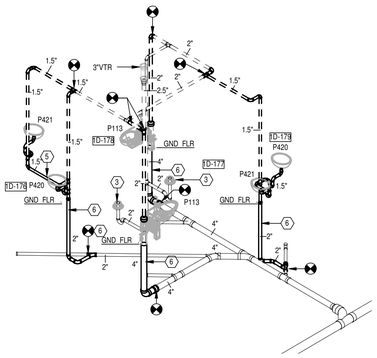
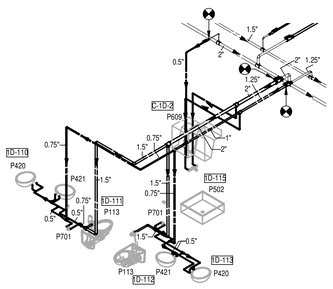
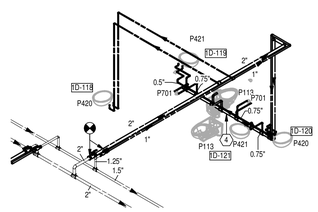


SOIL, WASTE & VENT DIAGRAM
Scale: N.T.S.



SUPPLY RISER DIAGRAM
Scale: N.T.S.



SUPPLY RISER DIAGRAM
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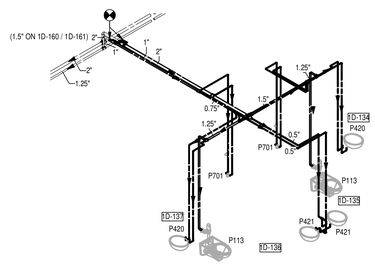

SUPPLY RISER DIAGRAM
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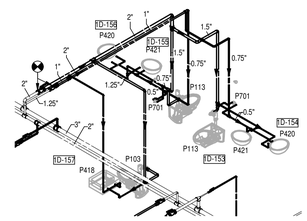
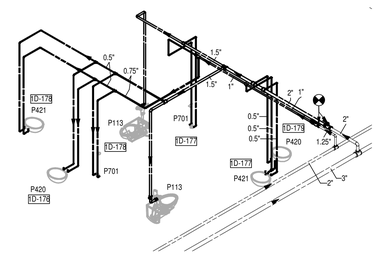


SUPPLY RISER DIAGRAM
Scale: N.T.S.



SUPPLY RISER DIAGRAM
Scale: N.T.S.

Revisions		Date
	Bid Set	12/20/2013

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116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: ENLARGED TYPICAL ROOM PLANS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320P401

Dwg. of

Office of Construction and Facilities Management
Department of Veterans Affairs

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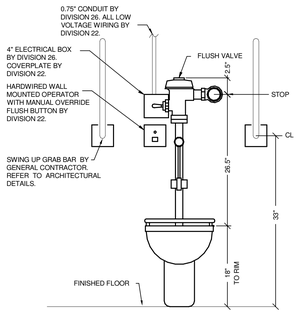
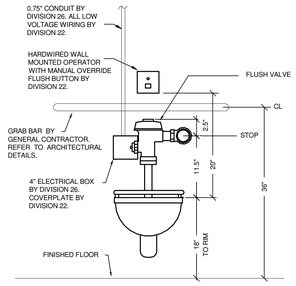


P113 WALL HUNG SIMILAR

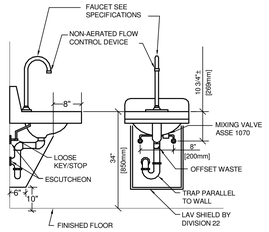
P102 WATER CLOSET (A / 320P501)

SCALE: NONE



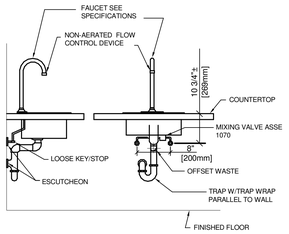
P103 WATER CLOSET (B / 320P501)

SCALE: NONE



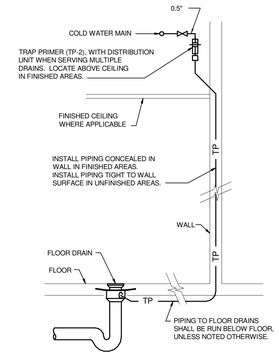
P418 WALL HUNG LAVATORY (C / 320P501)

SCALE: NONE



P420/421 WALL HUNG LAVATORY (D / 320P501)

SCALE: NONE



TRAP PRIMER (E / 320P501)

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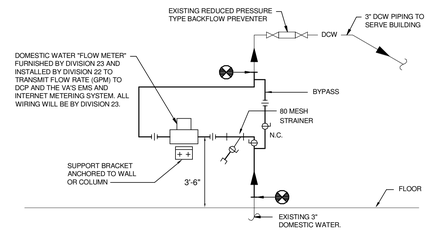
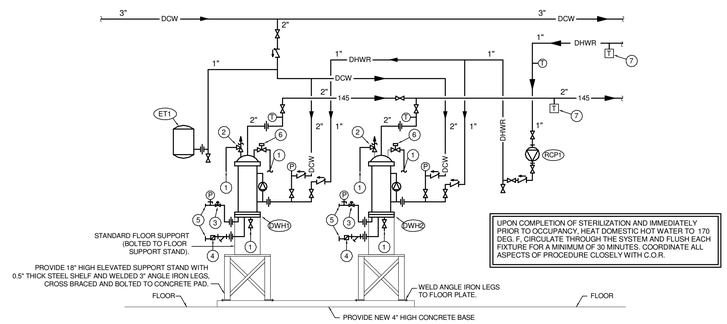


WATER METER INSTALLATION (F / 320P501)

SCALE: NONE



UPON COMPLETION OF STERILIZATION AND IMMEDIATELY PRIOR TO OCCUPANCY, HEAT DOMESTIC HOT WATER TO 170 DEG. F. CIRCULATE THROUGH THE SYSTEM AND FLUSH EACH FIXTURE FOR A MINIMUM OF 30 MINUTES. COORDINATE ALL ASPECTS OF PROCEDURE CLOSELY WITH C.O.R.

NOTES

1. AIR GAP OVER FLOOR DRAIN.
2. COMBINATION TEMPERATURE-PRESSURE RELIEF VALVE.
3. STEAM CONTROL VALVE(S) PROVIDED WITH WATER HEATER.
4. MAIN F&T STEAM TRAP PROVIDED WITH WATER HEATER.
5. ALL STEAM & CONDENSATE PIPING CONTINUED BY DIVISION 23.
6. OVER-TEMPERATURE VALVE PROVIDED WITH WATER HEATER.
7. DDC TEMPERATURE SENSOR.

DATA

DWH1, DWH2: DOMESTIC DOUBLE WALL WATER HEATER/SEMI INSTANTANEOUS STEAM TO WATER
CAPACITY: 18 GPM FROM 40 DEG. F. - 160 DEG. F. WITH 900 LB./HR. STEAM @ MINIMUM 25 LBS. LINE & 15 PSI BUNDLE PRESSURE
SET UNIT TO MAINTAIN 135 DEG. F.

ET1: DOMESTIC WATER SYSTEM EXPANSION TANK
CAPACITY: 6 GALLON / 12" DIA. X 13" HIGH
PROVIDE ADEQUATE SUPPORT

RCP1: DOMESTIC HOT WATER RECIRCULATION PUMP
CAPACITY: 5 GPM @ 15 FT. HEAD
MOTOR: 0.17 HP @ 120V-1PH
CONTINUOUS RUNNING

DOMESTIC WATER HEATER PIPING (G / 320P501)

SCALE: NONE

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@ohmpoe.com

Drawing Title: DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320P501

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

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GENERAL NOTES

A REFER TO SHEET 320P001 FOR LEGEND, SCHEDULES, DETAILS, NOTES & DRAWING INDEX.

PLAN NOTES

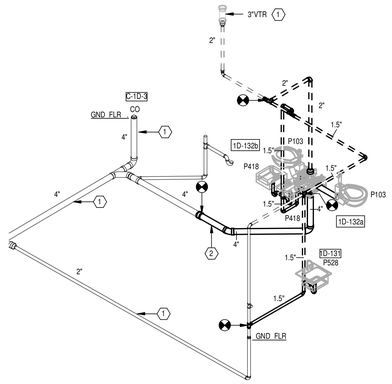
1 EXISTING TO REMAIN.

2 NEW PIPING LOCATED BELOW EXISTING FLOOR SLAB. CUT, TRENCH AND RE-SURFACE AS REQUIRED.

3 ABANDON SANITARY AND ASSOCIATED VENT PIPING (AS INDICATED) IN PLACE. REMOVE AS REQUIRED TO INSTALL NEW PIPING.

4 EXTEND EXISTING VENT PIPING AS REQUIRED TO ACCOMMODATE NEW FIXTURE AS INDICATED.

5 AIR GAP FITTING LOCATED IN CABINET WORK BELOW SINK.



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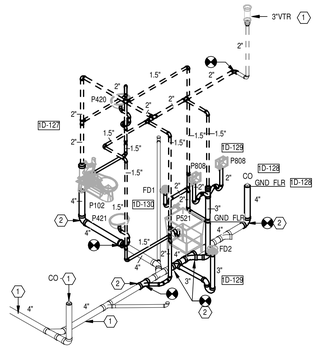

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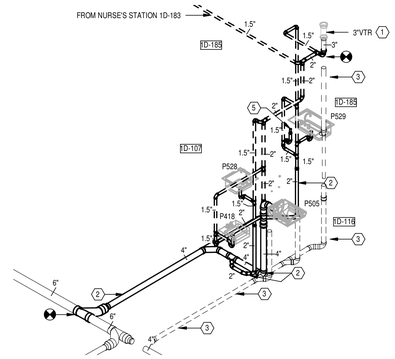

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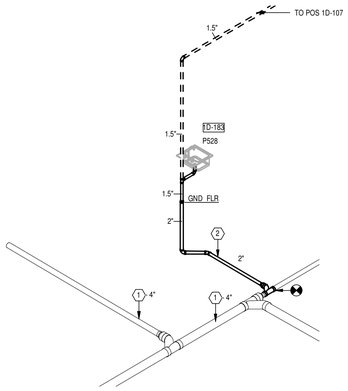

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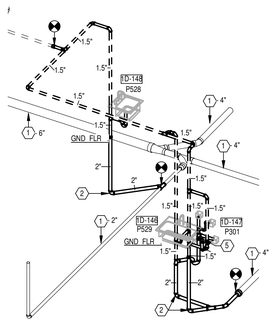

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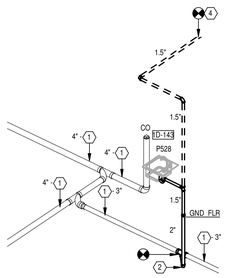

F

SOIL, WASTE & VENT

Scale: N.T.S.

Revisions		Date
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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
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ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SOIL, WASTE & VENT DIAGRAMS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: RLT | Drawn: WJS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320P901

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

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DRAWING SYMBOLS

- 2 / H4 — DETAIL NUMBER; DRAWING NUMBER WHERE DRAWN
- A / H7 — SECTION LETTER; DRAWING NUMBER WHERE DRAWN
- 1-SF3 — BUILDING NO. WHERE EQUIPMENT IS LOCATED; EQUIPMENT ABBREVIATION (SUPPLY FAN); SUPPLY FAN NO.3 IN BUILDING NO.1
- TYPICAL UNIT NO.
- 1-01 — TERMINAL UNIT DESIGNATION; AIR HANDLING UNIT NUMBER

DUCTWORK SYMBOLS

- UP DN — SUPPLY DUCT (UP & DOWN)
- UP DN — RETURN DUCT (UP & DOWN)
- UP DN — EXHAUST DUCT (UP & DOWN)
- CEILING DIFFUSERS (FOUR WAY BLOW UNLESS OTHERWISE NOTED)
- EXHAUST OR RETURN CEILING REGISTER OR GRILLE
- SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
- EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE, (WALL TYPE)
- EXHAUST OR RETURN TOP REGISTER OR GRILLE, (WALL TYPE)
- VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
- R — INCLINED RISE, IN DIRECTION OF AIR FLOW
- D — INCLINED DROP, IN DIRECTION OF AIR FLOW
- FC — FLEXIBLE CONNECTION
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
- STANDARD RADIUS ELBOW
- 10/8 — NEW DUCT - WIDTH X DEPTH
- CONNECT NEW DUCT TO EXISTING DUCT
- EXISTING DUCT TO REMAIN
- ACOUSTICAL DUCT LINING
- MANUAL VOLUME DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- BOD: 9'-6" — APPROXIMATE ELEVATION FROM FLOOR TO BOTTOM OF LISTED SIZE OF DUCT, DEVICE OR EQUIPMENT ITEM. (TO BE USED AS AN AID IN COORDINATING THE VARIOUS TRADES.)
- U/C — DOOR UNDERCUT BY GENERAL CONTRACTOR

PIPING SYMBOLS

HEATING

- MPS(30) — NEW MEDIUM PRESSURE STEAM SUPPLY
- MPS(30) — EXISTING MEDIUM PRESSURE STEAM SUPPLY
- MPR — NEW MEDIUM PRESSURE CONDENSATE RETURN
- MPR — EXISTING MEDIUM PRESSURE CONDENSATE RETURN
- HWS — NEW HEATING HOT WATER SUPPLY
- HWS — EXISTING HEATING HOT WATER SUPPLY
- HWR — NEW HEATING HOT WATER RETURN
- HWR — EXISTING HEATING HOT WATER RETURN
- V — NEW VENT LINE
- V — EXISTING VENT LINE
- PC — NEW PUMPED CONDENSATE RETURN
- PC — EXISTING PUMPED CONDENSATE RETURN

AIR CONDITIONING

- CHS — NEW CHILLED WATER SUPPLY
- CHS — EXISTING CHILLED WATER SUPPLY
- CHR — NEW CHILLED WATER RETURN
- CHR — EXISTING CHILLED WATER RETURN
- D — NEW DRAIN LINE
- D — EXISTING DRAIN LINE

GENERAL

- DIRECTION OF PIPE PITCH (DOWN)
- DIRECTION OF FLOW
- PIPE ANCHOR
- PIPE GUIDE
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION, 45 DEG. OR 90 DEG.
- BOTTOM CONNECTION, 45 DEG. OR 90 DEG.
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- ORIFICE UNION
- PIPE UP
- PIPE DOWN
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK.
- INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES (SEE STANDARD DETAIL)
- FLOAT AND THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES (SEE STANDARD DETAIL)
- THERMOSTATIC TRAP
- STRAINER
- THERMOMETER
- PRESSURE GAGE
- EXISTING PIPE TO BE REMOVED
- TEST PLUG (PRESSURE/TEMPERATURE)

VALVES

- GATE VALVE
- GLOBE VALVE
- GATE VALVE WITH 3/4" HOSE END ADAPTER
- CHECK VALVE
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- COMBINATION BALANCING/SHUT-OFF VALVE
- CIRCUIT SETTER
- STRAIGHT-THRU MODULATING CONTROL VALVE
- STRAIGHT-THRU TWO-POSITION CONTROL VALVE
- THREE-WAY MODULATING CONTROL VALVE
- MANUAL AIR VENT

CONTROLS

- T H — ROOM CONTROL: THERMOSTAT, HUMIDISTAT
- T — REMOTE BULB THERMOSTAT
- T — DUCT OR PIPE THERMOSTAT (NOTE 1: PROVIDE 12" MIN. LENGTH IN DUCT WHEN SPACE PERMITS)
- T — DUCT THERMOSTAT WITH AVERAGING ELEMENT
- T H — ROOM SENSOR: TEMPERATURE, HUMIDITY
- T — DUCT OR PIPE TEMP. SENSOR
- H — DUCT HUMIDITY SENSOR
- SP — DUCT STATIC PRESSURE SENSOR
- T — DUCT TEMPERATURE SENSOR WITH AVERAGING ELEMENT
- F S — SMOKE DETECTOR (SEE ELECTRICAL SPECIFICATIONS)
- H1 N — CONTROL CIRCUIT CONN.
- dP — DIFFERENTIAL PRESSURE SWITCH
- DP SP — DIFFERENTIAL OR STATIC PRESSURE TRANSMITTER
- CS — CURRENT SENSING RELAY

ABBREVIATIONS

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
ATC	AUTOMATIC TEMPERATURE CONTROLS
BG	BOTTOM GRILLE (WALL TYPE)
BHP	BRAKE HORSEPOWER
BIW	BACKWARD INCLINED WHEEL (FAN)
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CC	COOLING COIL
CD	CEILING DIFFUSER
CF	CENTRIFUGAL FAN
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
C.O.R.	CONTRACTING OFFICER'S REPRESENTATIVE
CR	CEILING REGISTER
CUH	CABINET UNIT HEATER
CW	COLD WATER (POTABLE)
D	DRAIN PIPING
Db	DRY BULB TEMPERATURE, DEG. F
DB	DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DI	DIGITAL INPUT
DIA	DIAMETER
DO	DIGITAL OUTPUT
DPS	DIFFERENTIAL PRESSURE SENSOR
DX	DIRECT EXPANSION
E.A.	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECC	ENGINEERING CONTROL CENTER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EX.	EXISTING
F	FAHRENHEIT
FC	FAN COIL UNIT
FCW	FOWARD CURVED WHEEL (FAN)
FD	FLOOR DRAIN
F&T	FLOAT AND THERMOSTATIC

ABBREVIATIONS

FLR.	FLOOR
FPM	FEET PER MINUTE
FT	FEET
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HD	HEAD
HP	HORSEPOWER
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
ICF	IN-LINE CENTRIFUGAL FAN
IN	INCHES
IN WC	INCHES WATER COLUMN
IN WG	INCHES WATER GAUGE
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MB	MIXING BOX
MBH	1000 BTUH
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MIN	MINIMUM
MV	MANUAL AIR VENT
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NOM	NOMINAL
O.A.	OUTSIDE AIR
OD	OUTSIDE DIAMETER
P	PUMP
PD	PRESSURE DROP (FEET OF WATER)
PEF	PROPELLER TYPE EXHAUST FAN
PF	PRE-FILTER
PH	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
R	REFRIGERANT PIPING AND SPECIALTIES
R.A.	RETURN AIR
RF	RETURN FAN
Rh	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
S.A.	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DETECTOR
SDR	SMOKE DAMPER (RETURN)
SDS	SMOKE DAMPER (SUPPLY)
SF	SUPPLY FAN
S.P.	STATIC PRESSURE (INCHES OF WATER)
SP. GR.	SPECIFIC GRAVITY
SPRV	STEAM PRESSURE REDUCING VALVE
SPS	STATIC PRESSURE SENSOR
SWSI	SINGLE WIDTH SINGLE INLET (FAN)
TG	TOP GRILLE (WALL TYPE)
TG	TRANSFER GRILLE
TR	TOP REGISTER (WALL TYPE)
TSTAT	THERMOSTAT
TSP	TOTAL STATIC PRESSURE
U/C	DOOR UNDERCUT BY GENERAL CONTRACTOR
UH	UNIT HEATER
V	VALVE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
Wb	WET BULB TEMPERATURE, DEG. F
W.B.E.	WHITE BAKED ENAMEL
WF	WATER FILTER
WG	WATER GAUGE

GENERAL NOTES

1. THESE NOTES APPLY EQUALLY TO THE FULL SET OF DOCUMENTS.
2. INSULATE DUCTWORK AND PIPING WHERE EXISTING INSULATION HAS BEEN DAMAGED AND/OR REMOVED IN THE PERFORMANCE OF WORK IN THIS PROJECT.
3. PROVIDE ALL ROOFING PENETRATION, REPAIR & REINFORCEMENT IN THE EXISTING BUILDING FOR WORK INDICATED. ENGAGE COMMAND ROOFING COMPANY TO PERFORM THE ROOFING WORK. WHERE ROOFING WORK IS REQUIRED, THE EXISTING ROOFING MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATERTIGHT CONDITION AND MAINTAIN EXISTING WARRANTY ON THE ROOFING SYSTEM.
4. THE CONTRACTORS SHALL REFER TO ALL SPECIFICATION SECTIONS AND THESE DRAWINGS FOR DETAILS OF BUILDING CONSTRUCTION TO ENSURE SPACE AND SATISFACTORY ARRANGEMENT FOR THEIR WORK. THE VARIOUS DRAWINGS COMPRISING THE SET ARE INTERDEPENDENT AND MUST BE USED JOINTLY AT ALL TIMES. EACH CONTRACTOR SHALL REFER TO THE GENERAL REQUIREMENTS OF THE CONTRACT. THE NOTES AND SYMBOLS INDICATED ON THE DRAWINGS ARE FOR THE GUIDANCE OF ALL TRADES INVOLVED IN THE PROJECT AND MUST BE FOLLOWED TO EXECUTE THE WORK AS INTENDED. IF DISCREPANCIES OCCUR, CONTACT THE COR THRU THE CONTRACTING OFFICER FOR CLARIFICATION BEFORE PROCEEDING.
5. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. SEE SPECIFICATIONS FOR MORE SPECIFIC DETAILS ON RESPONSIBILITIES.
6. EACH CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHERS. HE SHALL KEEP HIMSELF INFORMED OF THE PROGRESS AND DETAIL DEVELOPMENT OF THE WORK OF OTHERS AND SHALL BE RESPONSIBLE FOR COORDINATING AND EXPEDITING HIS WORK WITH OTHERS SO THAT THE PROGRESS OF THE TOTAL WORK SHALL BE KEPT ON SCHEDULE.
7. ALL WORK SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH ALL GOVERNING CODES AND STANDARDS.
8. EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON FIELD INVESTIGATION AND AVAILABLE DRAWING INFORMATION, AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
9. ABATEMENT, REMOVAL OR ENCAPSULATION OF EXISTING MATERIALS CONTAINING ASBESTOS IS INCLUDED IN THIS CONSTRUCTION CONTRACT. REFER TO DRAWINGS AND/OR SPECIFICATIONS FOR LOCATION OF ASBESTOS. ANY ASBESTOS WORK PERFORMED AS PART OF THIS PROJECT SHALL BE COMPLETED PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REFER TO SPECIFICATIONS FOR ASBESTOS ABATEMENT.
10. IF, IN THE PERFORMANCE OF THIS WORK, MATERIALS ARE OBSERVED WHICH ARE SUSPECTED TO CONTAIN ASBESTOS, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE COR. WORK THAT WOULD EXPOSE WORKERS TO THE INHALATION OF ASBESTOS PARTICLES SHALL BE TERMINATED. WORK MAY BE RESUMED ONLY AFTER A DETERMINATION HAS BEEN MADE AND UNSAFE MATERIALS HAVE BEEN REMOVED OR ENCAPSULATED AND THE AREA DECLARED SAFE.
11. SOME AREAS MAY BE NOTED ON FLOOR PLANS THAT ASBESTOS IS PRESENT. CONTRACTORS SHALL TAKE SPECIAL CARE WHILE WORKING ADJACENT TO ASBESTOS MATERIALS AND MUST BE PROPERLY PROTECTED WITH CLOTHING, BREATHING APPARATUS, ETC. VERIFY REQUIREMENTS OF VAMC'S INFECTION CONTROL RISK ASSESSMENT TEAM (ICRA).
12. REFER TO ARCHITECTURAL FIRE-RATED PARTITION PLAN(S) ON SHEET 320G100 FOR LOCATIONS AND FIRE-RATINGS OF NEW AND EXISTING WALL ASSEMBLIES. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE PROTECTED AND/OR FIRE-STOPPED AS REQUIRED TO MAINTAIN FIRE-RATINGS INDICATED. COORDINATE WITH ALL TRADES TO ENSURE FIRE-RATED PENETRATION REQUIREMENTS AND DETAILS ARE MET.
13. ANNULAR SPACE OF ALL PIPE, CONDUIT, DUCT & OTHER SIMILAR PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. IN ADDITION, PENETRATIONS THROUGH 0-HOUR RATED WALLS & FLOORS SHALL BE FIRESTOPPED TO RETARD PASSAGE OF FIRE & SMOKE.
14. ALL PIPING, DUCTS, CONDUITS, ETC. IN FINISHED ROOMS, CORRIDORS, ETC. SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.
15. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
16. PROVIDE DUCT ACCESS PANELS AS REQUIRED BY 23 31 00 FOR ACCESS TO SMOKE DETECTORS, AUTOMATIC CONTROL DAMPERS, AND HUMIDIFIER DISPERSION TUBES. REFER TO DETAIL ON SHEET 320M503 . COORDINATE SIZES AND LOCATIONS WITH ACCESSORIES PROVIDED BY OTHER TRADES.
17. ACCESS PANELS IN NON ACCESSIBLE SUSPENDED CEILINGS SHALL BE PROVIDED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, FLOW METERS, CONTROLS, ETC. COORDINATE SIZES AND LOCATIONS WITH OTHER TRADES.
18. FOR TYPICAL STEAM, WATER AND REFRIGERANT PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD DETAILS AND PIPING SCHEMATICS.
19. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
20. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
21. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
22. WHERE DUCTS OR PIPES ARE REMOVED THRU WALL/FLOOR/ROOF THAT IS TO REMAIN, PATCH WALL/FLOOR/ROOF OPENING TO MATCH EXISTING WHERE OPENING IS NOT RE-USED.
23. ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
24. ALL CUTTING AND PATCHING OF EXISTING SURFACES TO REMAIN THAT IS REQUIRED FOR THE HVAC WORK, SHALL BE INCLUDED IN THE HVAC CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK TO MATCH EXISTING.
25. IN GENERAL, KEEP DUCT AND PIPING MAINS NEXT TO UNDERSIDE OF STRUCTURE.
26. ANY REMOVED EQUIPMENT SHALL BE TURNED OVER TO THE VA. ITEMS NOT DESIRED BY THE VA SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
27. THE CONTRACT DRAWINGS ARE NOT INTENDED TO SHOW EVERY VERTICAL OR HORIZONTAL OFFSET WHICH MAY BE NECESSARY TO COMPLETE THE SYSTEMS. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY ANY DIFFICULTIES WHICH CAN BE ANTICIPATED.
28. FIELD VERIFY EXISTING CONDITIONS, INCLUDING DUCT, PIPE AND EQUIPMENT SIZES, SERVICES AND LOCATIONS PRIOR TO PERFORMING WORK.
29. HEPA FILTERED EXHAUST IS REQUIRED TO MAINTAIN A MINIMUM OF 0.01" W.G. NEGATIVE PRESSURE IN CONSTRUCTION AREAS. COORDINATE WITH GENERAL CONTRACTOR AND THE COR.
30. ALL ABANDONED EXTRANEOUS PIPING, DUCTWORK, SUPPORTS, CONTROLS, ETC. SHALL BE REMOVED.
31. TERMINATE PIPING AND DUCTWORK BELOW FLOORS, ABOVE CEILINGS, ETC., IN CONCEALED SPACES. ALL CUTTING AND PATCHING SHALL MATCH EXISTING FINISHES.
32. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DARK-DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.
33. ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF VALVES, FILTERS AND STRAINER, TRANSMITTERS, CONTROL DEVICES, ETC.
34. RUNOUT PIPING TO TERMINAL UNITS SHALL BE 0.75" SIZE UNLESS OTHERWISE NOTED.
35. APPROXIMATE ELEVATIONS NOTED ON FLOOR PLANS ARE TO THE BOTTOM OF DUCTS AND EQUIPMENT, AND TO THE CENTER OF PIPES.
36. CONTRACTOR RESPONSIBILITES ARE LISTED IN SPECIFICATION SECTION 23 09 23, SECTION 1.1.

DRAWING INDEX

SHEET	DESCRIPTION
320M001	LEGEND, INDEX AND GENERAL NOTES
320MD101	FIRST FLOOR PLAN - REMOVALS
320MH101	FIRST FLOOR PLAN - DUCTWORK
320MP101	FIRST FLOOR PLAN - PIPING
320M401	ENLARGED MECHANICAL ROOMS - REMOVALS AND NEW WORK
320M501	DETAILS
320M502	DETAILS
320M503	DETAILS
320M601	SCHEDULES
320M602	SCHEDULES
320M701	CONTROLS AND AUTOMATION

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STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: LEGEND, INDEX AND GENERAL NOTES

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Project No. — VA Project No. 552-14-101; JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320M001

Dwg. of

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Office of Construction and Facilities Management

Department of Veterans Affairs

FULLY SPRINKLERED

GENERAL NOTES

A REFER TO SHEET 320M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

B ALL SYSTEMS SHALL BE TESTED PRIOR TO ANY REMOVAL WORK. TESTING SHALL BE WITNESSED BY C.O.R. IF SYSTEMS ARE NOT TESTED IT WILL BE ASSUMED ALL SYSTEMS WERE FULLY FUNCTIONAL AT START OF PROJECT. IF REPAIRS ARE REQUIRED TO PREVIOUSLY FUNCTIONAL SYSTEMS, THEY SHALL BE MADE WITHOUT ADDITIONAL COST TO THE GOVERNMENT.

C PROVIDE ALL ROOFING PENETRATION, REPAIR & REINFORCEMENT IN THE EXISTING BUILDING FOR WORK INDICATED. ENGAGE COMMAND ROOFING COMPANY TO PERFORM THE ROOFING WORK. WHERE ROOFING WORK IS REQUIRED, THE EXISTING ROOFING MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATER TIGHT CONDITION AND MAINTAIN EXISTING WARRANTY ON THE ROOFING SYSTEM.

D ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.

NOTES

1 REMOVAL OF INSULATION FROM EXISTING PIPING MAINS WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

2 EXISTING PIPING TO REMAIN.

3 REMOVE EXISTING FAN COIL UNIT AND ASSOCIATED CONTROLS (INCLUDING THERMOSTAT). REMOVE EXISTING PNEUMATIC TUBING BACK TO POINT OF ACTIVE MAIN. CAP AND SEAL AIR TIGHT. REMOVAL OF EXISTING DUCTWORK AND RUNOUT PIPING WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

4 REMOVE EXISTING AIR DEVICE. REMOVE ASSOCIATED RUNOUT DUCTWORK IF NOT REMOVED AS PART OF ASBESTOS ABATEMENT. COORDINATE WITH SPECIFICATION SECTION 02 82 11.

5 REMOVE EXISTING SIDE WALL EXHAUST FAN AND ASSOCIATED DUCTWORK, CONTROLS, WIRING, ETC. PATCH WALL OPENING TO MATCH EXISTING.

6 REMOVE EXISTING SPLIT SYSTEM INDOOR UNIT FOR RELOCATION IN NEW WORK.

7 REMOVE EXISTING CONDENSING UNITS AND RETHERM UNITS AND ASSOCIATED CONDENSATE PUMPS, CONTROLS, PIPING, WIRING, ACCESSORIES, PADS, ETC AND TURN OVER TO C.O.R.

8 REMOVE EXISTING ROOF EXHAUST FAN AND ASSOCIATED ROOF CURB, DUCT, CONTROLS, ETC, FOR REPLACEMENT IN NEW WORK.

9 REMOVE EXISTING ROOF EXHAUST FAN AND ASSOCIATED ROOF CURB, DUCTWORK, CONTROLS, WIRING, ETC. PATCH ROOF OPENING TO MATCH EXISTING.

10 REMOVE EXISTING RADIANT HEATING PANEL AND ASSOCIATED CONTROLS (INCLUDING THERMOSTAT). REMOVE EXISTING PNEUMATIC TUBING BACK TO POINT OF ACTIVE MAIN. CAP AND SEAL AIRTIGHT. REMOVAL OF EXISTING RUNOUT PIPING WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.

11 REMOVAL OF EXISTING RUNOUT PIPING BACK TO MAIN WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. CAP PIPING AT MAIN UNLESS RECONNECTED IN NEW WORK.

12 REMOVE EXISTING FINNED TUBE RADIATOR AND ASSOCIATED PIPING, CONTROLS (INCLUDING THERMOSTAT), ETC. REMOVE EXISTING PNEUMATIC TUBING BACK TO POINT OF ACTIVE MAIN. CAP AND SEAL AIRTIGHT.

13 REFER TO REMOVAL PLAN ON SHEET 320M401 FOR ENLARGED PLAN OF THIS AREA.

14 EXISTING WALL MOUNTED SPLIT SYSTEM CONDENSING UNIT TO REMAIN.

15 ALL DUCTWORK TO BE REMOVED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REMOVE ALL HANGERS OR ANY OTHER ASSOCIATED COMPONENTS THAT MAY HAVE BEEN LEFT BEHIND.

16 REMOVE EXISTING BASE-MOUNTED PUMP AND ASSOCIATED VALVING, ACCESSORIES, CONTROLS, ETC. FOR REPLACEMENT IN NEW WORK.

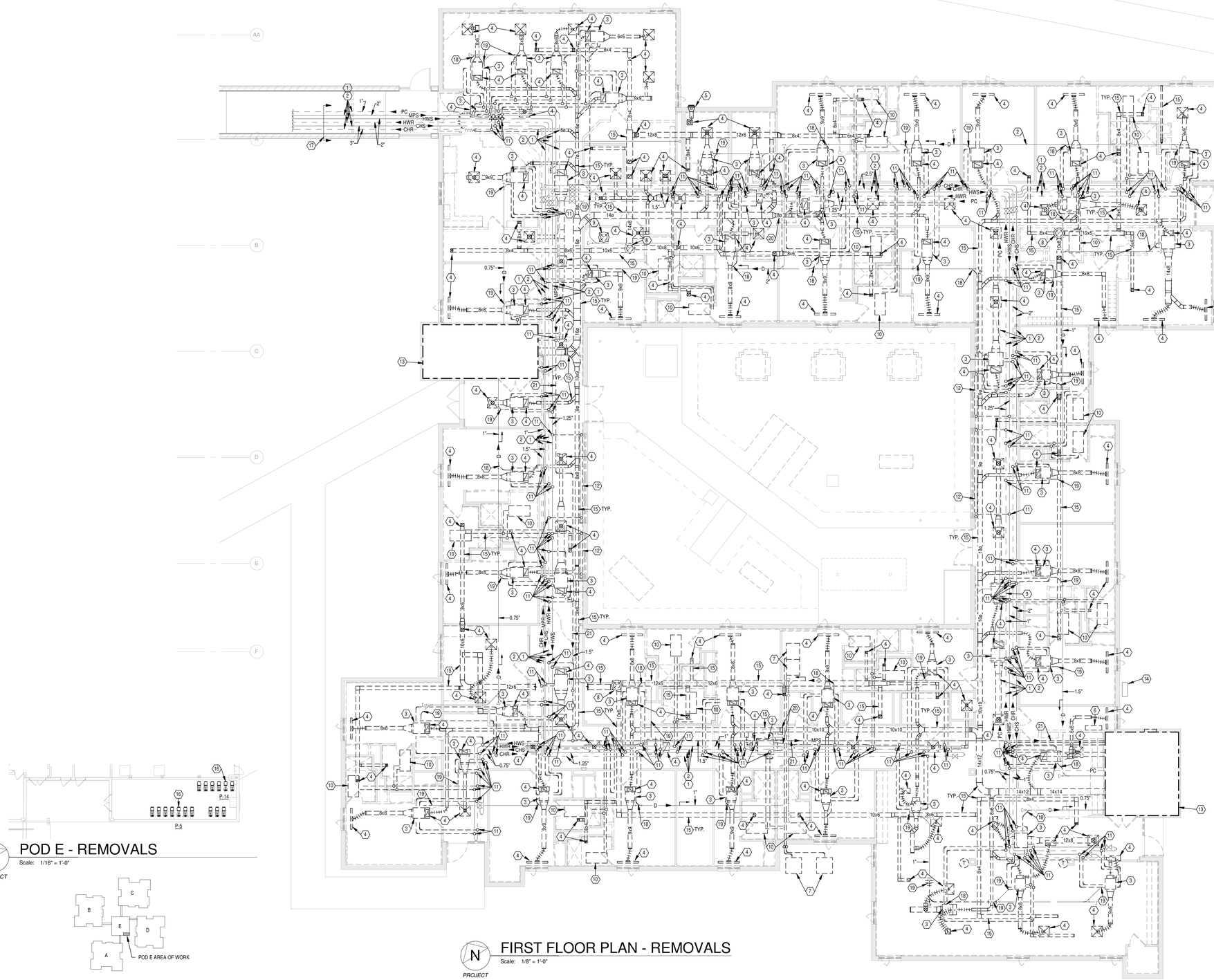
17 LIMIT OF REMOVAL OF INSULATION AND REINSULATION OF PIPING.

18 BRANCH PIPING REMOVAL WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. PIPING SHALL BE REMOVED BACK TO THIS POINT AND CAPPED.

19 BRANCH PIPING REMOVAL WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. PIPING SHALL BE REMOVED BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.

20 REMOVAL OF EXISTING FIRE/SMOKE DAMPER WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REMOVE EXISTING PNEUMATIC CONTROL TUBING BACK TO POINT OF ACTIVE MAIN, CAP AND SEAL AIR TIGHT.

21 REMOVAL OF EXISTING PIPING TO BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.



FIRST FLOOR PLAN - REMOVALS
Scale: 1/8" = 1'-0"

POD E - REMOVALS
Scale: 1/16" = 1'-0"

KEY PLAN POD E

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

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937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: FIRST FLOOR PLAN - REMOVALS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320MD101

Dwg. of

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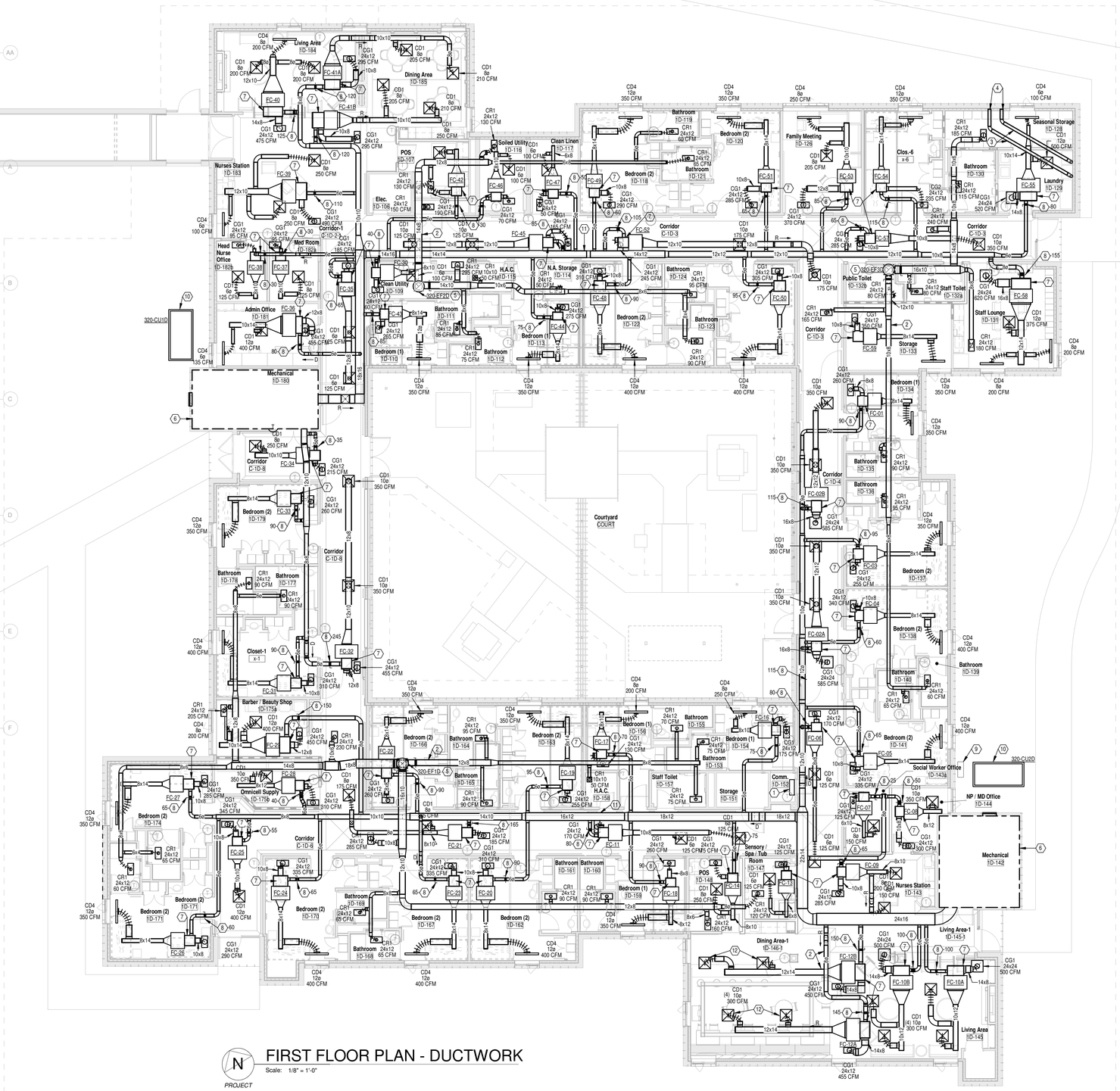

FIRST FLOOR PLAN - DUCTWORK

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

N PROJECT

GENERAL NOTES

A REFER TO SHEET 320M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

B PROVIDE ALL ROOFING PENETRATION, REPAIR & REINFORCEMENT IN THE EXISTING BUILDING FOR WORK INDICATED. ENGAGE COMMAND ROOFING COMPANY TO PERFORM THE ROOFING WORK. WHERE ROOFING WORK IS REQUIRED, THE EXISTING ROOFING MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATER TIGHT CONDITION AND MAINTAIN EXISTING WARRANTY ON THE ROOFING SYSTEM.

C PRIOR TO AIR BALANCING, ADJUST CD4 SLOT DIFFUSERS WITH THE 1 EXTERIOR EXPOSURE SLOT DIRECTED TOWARD WALL AND THE 2 INTERIOR EXPOSED SLOTS DIRECTED TOWARD THE ROOM. CD3 SLOT DIFFUSERS SHALL BE ADJUSTED TO 1-WAY FLOW PATTERN AS INDICATED ON FLOOR PLAN.

⬡ NOTES

1 RELOCATE SPLIT SYSTEM INDOOR UNIT TO THIS LOCATION. REFER TO SHEET 320MP101 FOR PIPING.

2 ROUTE DUCTWORK AS HIGH AS POSSIBLE. COORDINATE WITH WORK OF OTHER TRADES.

3 PROVIDE 6" DIAMETER HARD SHEETMETAL DRYER EXHAUST DUCT, FROM DRYER OUTLET TO WALL DISCHARGE.

4 PROVIDE DRYER EXHAUST VENT OUTLET WITH BACKDRAFT DAMPER. VENT SHALL NOT INCLUDE SCREEN.

5 PROVIDE EXHAUST FAN ON ROOF ABOVE. TRANSITION DUCT IN VERTICAL TO FULL SIZE OF EXHAUST INLET. PROVIDE ROOF CURB. REFER TO DETAIL ON SHEET 320M503. ADJUST AND REUSE EXISTING ROOF OPENING.

6 REFER TO SHEET 320M401 FOR ENLARGED VIEW OF THIS AREA.

7 PROVIDE 10" HIGH PLENUM BOX AT RETURN INLET OF FAN COIL UNIT INLET. REFER TO DETAIL ON SHEET 320M501.

8 PROVIDE MANUAL BALANCE DAMPER. BALANCE TO CFM INDICATED.

9 EXISTING DX SPLIT SYSTEM CONDENSING UNIT TO REMAIN.

10 PROVIDE 5" HIGH CONCRETE PAD.

11 DUCT CROSSING SMOKE BARRIER. DAMPER NOT REQUIRED PER NFPA 101.

12 PROVIDE STEEL 2 SLOT LOUVERED PLAQUE DIFFUSER. PAINT TO MATCH CEILING.

Revisions		Date
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937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: FIRST FLOOR PLAN - DUCTWORK

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

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Building Number: 320

Drawing Number: 320MH101

Dwg. of

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FULLY SPRINKLERED

GENERAL NOTES

A REFER TO SHEET 320M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

B RUNOUT PIPING TO FAN COIL UNITS SHALL BE 0.75" UNLESS OTHERWISE NOTED.

NOTES

1 EXISTING PIPING TO REMAIN. REINSULATE PIPING WHERE ASBESTOS INSULATION IS BEING REMOVED.

2 THERMOSTAT TO CONTROL BOTH FAN COIL UNITS SERVING THIS AREA.

3 DROP PIPING IN WALL TO SERVE FIN TUBE CONVECTOR AT FLOOR.

4 PROVIDE LINESET PER MANUFACTURERS RECOMMENDATIONS. INSTALL REFRIGERANT PIPING INSIDE 4" CONDUIT WHERE CROSSING CORRIDOR. APPROXIMATE ROUTE SHOWN. SEAL WATERTIGHT. NO LONGITUDINAL SEAMS ON BOTTOM.

5 REFER TO SHEET 320M401 FOR ENLARGED PLAN OF THIS AREA.

6 ROUTE REFRIGERANT PIPING DOWN EXTERIOR WALL TO CONDENSING UNIT. APPROXIMATE ROUTE SHOWN. PROVIDE KYNAR COATED COVERING. PAINT TO MATCH BUILDING EXTERIOR.

7 PROVIDE BASE-MOUNTED END-SUCTION HOT WATER PUMP. MOUNT ON EXISTING CONCRETE HOUSEKEEPING PAD. PROVIDE NEW VALVING AND ACCESSORIES PER DETAIL ON SHEET 320M502.

8 LIMIT OF REINSULATION OF PIPING.

9 MOUNT FAN COIL UNIT HIGH ENOUGH TO ALLOW CONDENSATE TO DRAIN BY GRAVITY TO EXISTING CONDENSATE DRAIN PIPE. EXTEND AND CONNECT TO MAIN DRAIN PIPE.

10 RELOCATE SPLIT SYSTEM INDOOR UNIT TO THIS LOCATION. MOUNT HIGH ENOUGH TO DRAIN CONDENSATE BY GRAVITY TO EXISTING CONDENSATE DRAIN PIPE.

11 PROVIDE BASE-MOUNTED END-SUCTION CHILLED WATER PUMP. MOUNT ON EXISTING CONCRETE HOUSEKEEPING PAD. PROVIDE NEW VALVING AND ACCESSORIES PER DETAIL ON SHEET 320M502.

12 PROVIDE DIFFERENTIAL PRESSURE SENSOR (2 TOTAL) ACROSS SUPPLY AND RETURN PIPING FOR CONTROL OF CHILLED WATER PUMP.

13 INTEGRATE CONTROL OF FIN TUBE RADIATOR WITH ASSOCIATED FAN COIL UNIT (FC-32, FC-02B). REFER TO CONTROLS DRAWING ON SHEET 320M701.

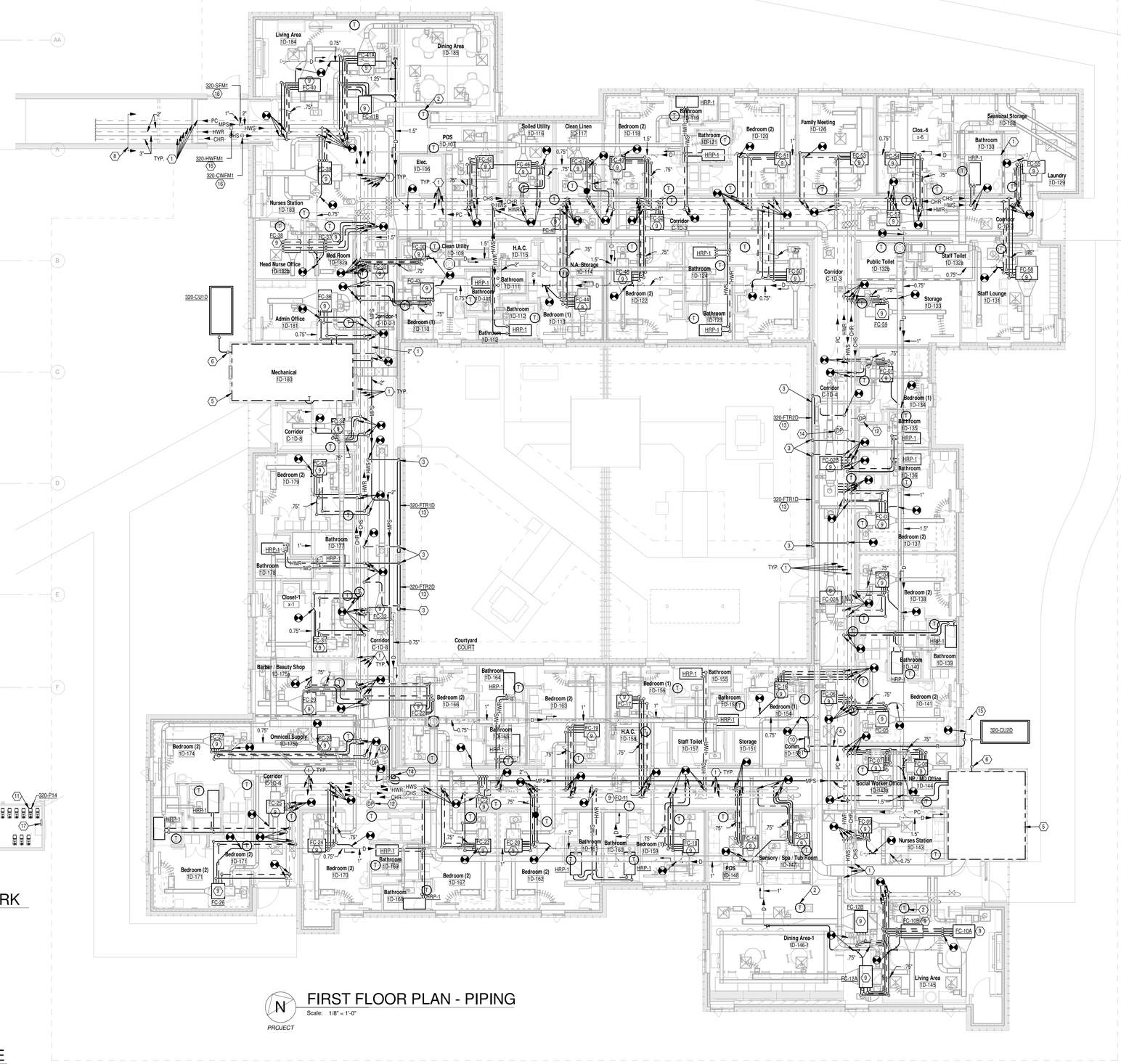
14 PROVIDE DIFFERENTIAL PRESSURE SENSOR (2 TOTAL) ACROSS SUPPLY AND RETURN PIPING FOR CONTROL OF HEATING HOT WATER PUMP.

15 EXISTING DX SPLIT SYSTEM CONDENSING UNIT TO REMAIN.

16 INSTALL FLOW METER IN EXISTING PIPE.

17 PROVIDE NEW DDC CONTROL PANEL. REFER TO SHEET 320M701 AND SPECIFICATION SECTION 23 09 23 FOR ADDITIONAL INFORMATION.

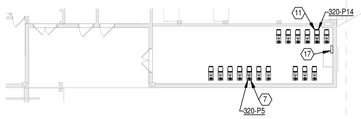
18 PROVIDE STEAM LINE DRIP ASSEMBLY WITH INVERTED BUCKET TRAP. REFER TO DETAIL ON SHEET 320M502.



N PROJECT

FIRST FLOOR PLAN - PIPING

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



N PROJECT

POD E - NEW WORK

Scale: 1/16" = 1'-0"

KEY PLAN POD E

Revisions		Date
	Bid Set	12/20/2013

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Drawing Title: FIRST FLOOR PLAN - PIPING

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

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Date: 12/20/2013 | Checked: JAC | Drawn: TEG

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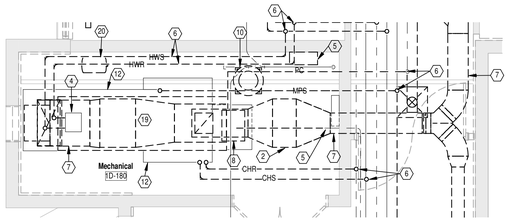
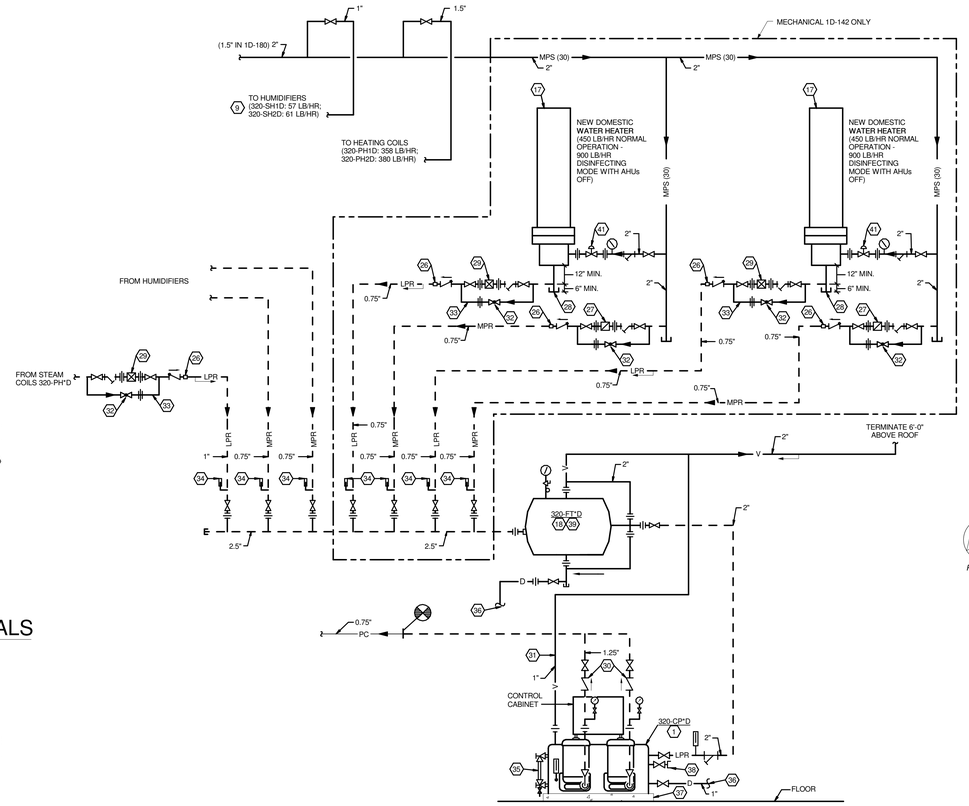


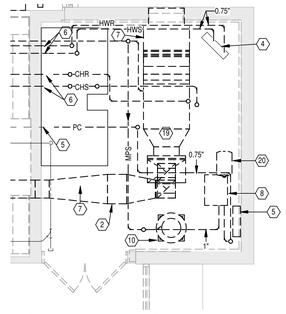
MECHANICAL ROOM AHU1 - REMOVALS

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



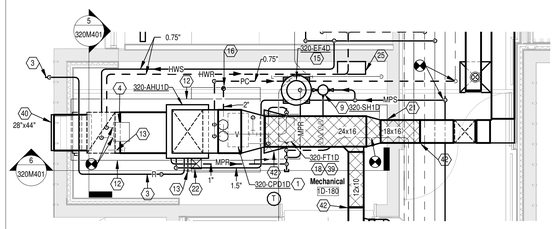
MECHANICAL ROOMS STEAM SCHEMATIC

SCALE: NONE



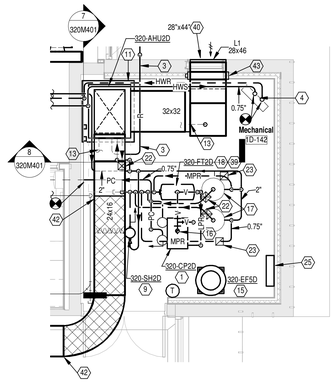
MECHANICAL ROOM AHU2 - REMOVALS

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



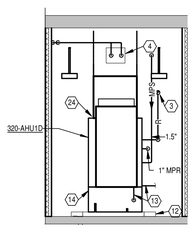
ENLARGED MECHANICAL ROOM - AHU1

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



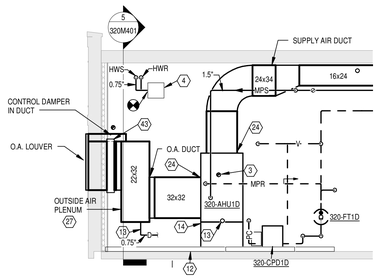
ENLARGED MECHANICAL ROOM AHU2

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



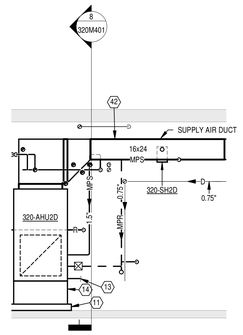
5 AHU1 SECTION 1

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



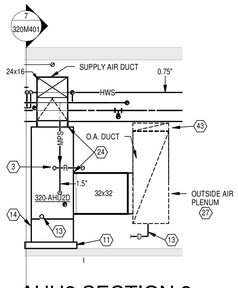
6 AHU1 SECTION2

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



7 AHU2 SECTION 1

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



8 AHU2 SECTION 2

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

GENERAL NOTES

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C ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DARK-DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.

NOTES

1 PROVIDE ELECTRIC STEAM CONDENSATE PUMP.

2 REMOVE FINAL FILTER BOX AND ALL ASSOCIATED HANGERS, SUPPORTS, ETC.

3 PROVIDE REFRIGERANT PIPING AND SPECIALTIES PER MANUFACTURER'S RECOMMENDATIONS. APPROXIMATE ROUTE SHOWN.

4 EXISTING UNIT HEATER TO REMAIN.

5 REMOVE EXISTING DDC PANEL.

6 REMOVAL OF EXISTING RUNOUT PIPING BACK TO MAIN WILL BE INCLUDED IN THE ASBESTOS ABATEMENT SCOPE OF WORK.PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. CAP PIPING TO POINT OF ACTIVE MAIN, CAP AND SEAL AIRTIGHT.

7 ALL DUCTWORK TO BE REMOVED IN THE ASBESTOS ABATEMENT SCOPE OF WORK PER SPECIFICATION SECTION 02 82 11 AND SHALL TAKE PLACE PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REMOVE ALL HANGERS OR ANY OTHER ASSOCIATED COMPONENTS THAT MAY HAVE BEEN LEFT BEHIND.

8 REMOVE EXISTING CONDENSATE PUMP AND ASSOCIATED PIPING, SPECIALTIES, CONTROLS, ETC.

9 PROVIDE DIRECT INJECTION STEAM HUMIDIFIER. REFER TO DETAIL ON SHEET 320M502 FOR STEAM HUMIDIFIER PIPING.

10 REMOVE EXISTING EXHAUST FAN AND ASSOCIATED ROOF CURB, DUCT, CONTROLS, ETC. FOR REPLACEMENT IN NEW WORK.

11 PROVIDE 5" CONCRETE PAD.

12 EXISTING HOUSEKEEPING PAD TO REMAIN.

13 PITCH FULL SIZE DRAIN PIPE IN DIRECTION OF FLOW AND RUN TO NEAREST FLOOR DRAIN IN MECHANICAL ROOM. REFER TO DRAIN TRAP DETAIL ON SHEET 320M503.

14 PROVIDE 18" HIGH ANGLE FRAME/COMBINATION ANGLE FRAME AND BASE RAIL TO PROVIDE REQUIRED HEIGHT FOR STEAM COIL CONDENSATE RETURN DRIP LEG AND TRAP ASSEMBLY. REFER TO STEAM COIL DETAIL ON SHEET 320M502 FOR ADDITIONAL I NFORMATION

15 PROVIDE EXHAUST FAN ON ROOF ABOVE. DUCT FULL SIZE OF FAN INLET. PROVIDE .5" x .5" HARDWARE CLOTH OVER OPENING. PROVIDE ROOF CURB. REFER TO DETAIL ON SHEET 320M503. ADJUST AND REUSE EXISTING ROOF OPENING.

16 STEAM VENT PIPING UP THROUGH ROOF. INSULATE ENTIRE LENGTH OF STEAM VENT PIPES INSIDE BUILDING. TERMINATE 2" PIPE 6'-0" ABOVE FINISHED ROOF. PROVIDE PIPE PENETRATION ROOF CURB AT ROOF OPENING.

17 NEW DOMESTIC WATER HEATER. REFER TO PLUMBING DRAWINGS.

18 PROVIDE FLASH TANK MOUNTED APPROX. 1'-1" AFF. REFER TO DETAIL ON SHEET 320M503 FOR MORE INFORMATION.

19 REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED CONTROLS, ETC. REMOVE ASSOCIATED PIPING AND DUCTWORK IF NOT REMOVED AS PART OF ASBESTOS ABATEMENT. COORDINATE WITH SPECIFICATION SECTION 02 82 11.

20 REMOVE FLASH TANK AND ASSOCIATED PIPING, SUPPORTS, ETC.

21 PROVIDE DRIP TRAY OVER PANEL.

22 PROVIDE F&T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET M502 FOR MORE INFORMATION.

23 PROVIDE STEAM LINE DRIP ASSEMBLY WITH INVERTED BUCKET TRAP. REFER TO DETAIL ON SHEET 320M502 FOR MORE INFORMATION.

24 TRANSITION DUCT TO FULL CONNECTION SIZE OF UNIT. PROVIDE FLEXIBLE DUCT CONNECTION AT UNIT CONNECTION.

25 PROVIDE NEW DDC CONTROL PANEL. REFER TO SHEET 320M701 AND SPECIFICATION SECTION 23 09 23 FOR ADDITIONAL INFORMATION.

26 DIELECTRIC FITTING (WHERE RETURN IS COPPER).

27 PROVIDE 2" THICK DOUBLE WALL INSULATED PLENUM.

28 SCALE POCKET.

29 F & T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET 411M504.

30 SPRING LOADED CHECK VALVE.

31 VENT PIPE FULL SIZE OF VENT OUTLET. APPROXIMATE SIZE SHOWN.

32 GLOBE VALVE.

33 INSTALL BYPASS IN HORIZONTAL PLANE LEVEL WITH TRAP OR VERTICAL PLANE AND BELOW TRAP. DO NOT BLACK ACCESS FOR SERVICING TRAP.

34 30-300 DEG. F THERMOMETER.

35 WATER LEVEL GAUGE.

36 EXTEND DRAIN PIPE TO FLOOR DRAIN.

37 5" HIGH CONCRETE BASE.

38 FLUSHING CONNECTION.

39 PROVIDE AN ANGLE FRAME TO SUPPORT FLASH TANK AND PIPING OFF FLOOR. REFER TO DETAIL AND SPECIFICATIONS.

40 NEW OUTSIDE AIR INTAKE LOUVER. APPROXIMATE SIZE LISTED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT SIZE AND MOUNTING LOCATION.

41 AUTOMATIC CONTROL VALVE PROVIDED WITH WATER HEATER.

42 PROVIDE STAINLESS STEEL DUCTWORK 3 FT UP STREAM AND 6 FT DOWNSTREAM OF HUMIDIFIER DISPERSION TUBE/MANIFOLD.

43 PROVIDE AUTOMATIC DAMPER FOR EXHAUST FAN MAKE-UP. REFER TO SHEET 320M701 FOR ADDITIONAL INFORMATION. PROVIDE 0.5" x 0.5" HARDWARE CLOTH OVER DUCT OPENING.

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: ENLARGED MECHANICAL ROOMS - REMOVALS AND NEW WORK

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

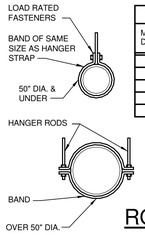
Drawing Number: 320M401

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

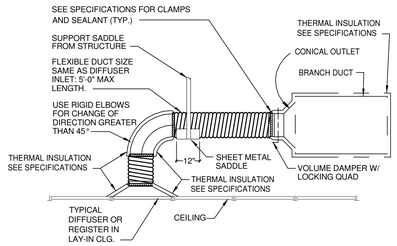
FULLY SPRINKLERED



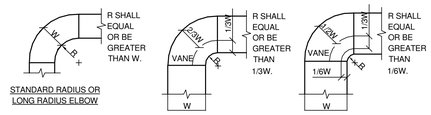
HANGER STRAPS OR RODS			
MAX. DUCT DIA. - IN.	QUANTITY/SIZE IN.	MAX. LOAD LBS.	MAX. SPACING IN.
26	ONE 1 x 22 GA. STRAP	260	144
36	ONE 1 x 18 GA. STRAP	420	144
50	ONE 1 x 16 GA. STRAP	700	144
60	TWO 3/8 DIA. RODS	1320	144
84	TWO 1/2 DIA. RODS	2500	144

NOTE:
TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

ROUND DUCT HANGERS



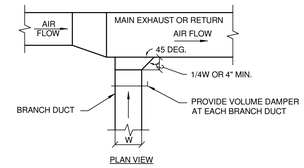
FLEXIBLE AIR DUCT CONNECTOR



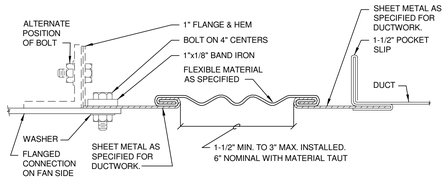
NOTES:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

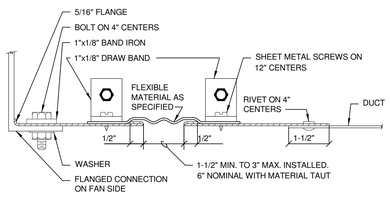
DUCTWORK RADIUS ELBOWS



EXHAUST OR RETURN BRANCH DUCTWORK

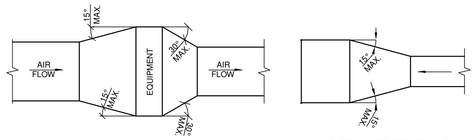


RECTANGULAR FLEXIBLE CONNECTION



ROUND FLEXIBLE CONNECTION

FLEXIBLE DUCT CONNECTIONS

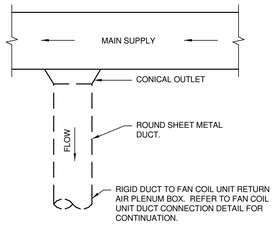


TYPICAL DUCTWORK TRANSITION WITH EQUIPMENT MOUNTED IN DUCT
PLAN OR SIDE VIEW

TYPICAL DUCTWORK TRANSITION
PLAN OR SIDE VIEW

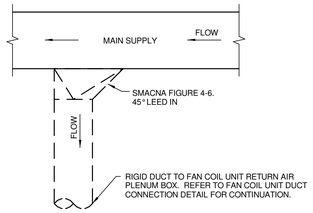
NOTE:
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

DUCTWORK TRANSITIONS



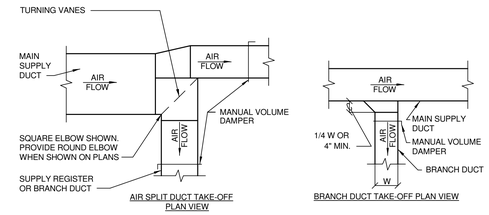
PLAN VIEW

OUTSIDE AIR DUCT TAKEOFF



PLAN VIEW

ALTERNATE OUTSIDE AIR DUCT TAKEOFF

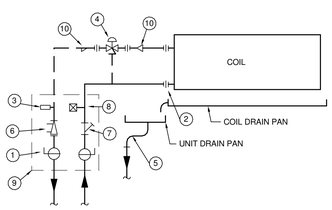


AIR SPLIT DUCT TAKE-OFF PLAN VIEW

BRANCH DUCT TAKE-OFF PLAN VIEW

THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME, AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES

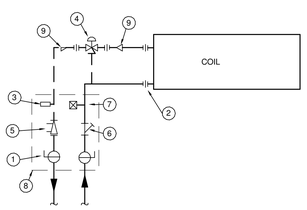
SUPPLY DUCTWORK TAKE-OFFS



NOTE: PROVIDE DIELECTRIC FITTING WHERE COPPER TUBING AND FERROUS METAL PIPES ARE JOINED.

FAN-COIL UNIT PIPING
COOLING COIL

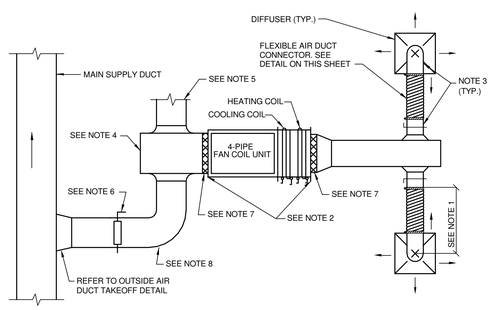
1. SHUT-OFF VALVE
2. UNION
3. MANUAL AIR VENT
4. AUTOMATIC - NORMALLY OPEN CONTROL VALVE. REFER TO FAN COIL UNIT SCHEDULE ON SHEET 320M601 & 320M602 FOR TWO-WAY OR THREE-WAY VALVE.
5. 3/4" CONDENSATE DRAIN PIPE. CONNECT TO UNIT PAN WITH FLEXIBLE POLYETHYLENE TUBING.
6. FLOW CONTROLLER WITH INTEGRAL PRESSURE-TEMPERATURE TEST PLUG
7. STRAINER
8. PRESSURE-TEMPERATURE TEST PLUG.
9. SAME SIZE AS RUNOUT PIPING AND FACTORY ASSEMBLED.
10. REDUCER, IF REQUIRED



NOTE: PROVIDE DIELECTRIC FITTING WHERE COPPER TUBING AND FERROUS METAL PIPES ARE JOINED.

FAN-COIL UNIT PIPING
HEATING COIL

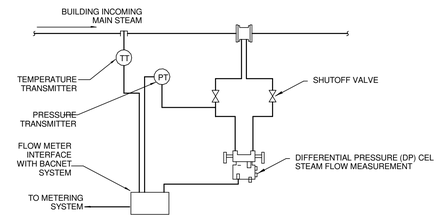
1. SHUT-OFF VALVE
2. UNION
3. MANUAL AIR VENT
4. AUTOMATIC - NORMALLY OPEN CONTROL VALVE. REFER TO FAN COIL UNIT SCHEDULE ON SHEET 320M601 & 320M602 FOR TWO-WAY OR THREE-WAY VALVE.
5. FLOW CONTROLLER WITH INTEGRAL PRESSURE-TEMPERATURE TEST PLUG
6. STRAINER
7. PRESSURE-TEMPERATURE TEST PLUG
8. SAME SIZE AS RUNOUT PIPING AND FACTORY ASSEMBLED.
9. REDUCER, IF REQUIRED



NOTES:

1. FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM FAN COIL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0". USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
2. COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION W/VAPOR BARRIER FOR CONNECTING DUCT SECTIONS.
3. DUCT RUNOUT TO DIFFUSERS SHALL BE SAME SIZE AS THE DIFFUSER NECK SIZE UNLESS OTHERWISE NOTED.
4. PROVIDE 10" DEEP PLENUM BOX AT RETURN INLET OF FAN COIL UNIT.
5. RETURN AIR DUCT TO ROOM GRILLE/REGISTER. REFER TO DETAIL ON THIS SHEET.
6. OUTSIDE AIR MANUAL BALANCE DAMPER. REFER TO FLOOR PLAN.
7. PROVIDE FLEXIBLE DUCT CONNECTION AT INLET AND OUTLET OF FAN COIL UNIT, PER DETAIL ON THIS SHEET.
8. BRANCH DUCT SIZES, UNLESS NOTED ON PLANS ARE TO BE SIZED AS FOLLOWS:
   100 CFM AND LESS - 6" DIA.
   101 CFM TO 250 CFM - 8" DIA.
   251 CFM TO 400 CFM - 10" DIA.
   401 CFM TO 700 CFM - 12" DIA.

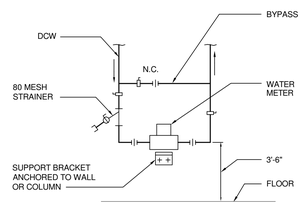
DUCT CONNECTIONS-FAN COIL UNITS



NOTE:

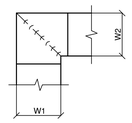
1. MAINTAIN UPSTREAM AND DOWN STREAM DISTANCES RECOMMENDED BY METER MANUFACTURERS

STEAM METER DETAIL



ELEVATION

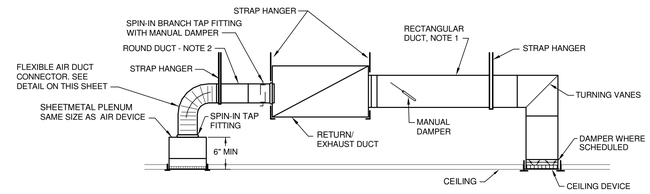
WATER METER INSTALLATION



NOTES:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.
4. WHEN W1 EQUALS W2 AND W1 IS GREATER THAN 20", VANES SHALL BE DOUBLE VANE TYPE.

DUCTWORK SQUARE VANE ELBOWS



NOTES:

1 BRANCH DUCT TAKE-OFF WITH MANUAL DAMPER.

2 BRANCH DUCT SIZES, UNLESS NOTED ON PLANS ARE TO BE SIZED AS FOLLOWS:
   100 CFM AND LESS - 6" DIA.
   101 CFM TO 250 CFM - 8" DIA.
   251 CFM TO 400 CFM - 10" DIA.
   401 CFM TO 700 CFM - 12" DIA.

RETURN OR EXHAUST GRILLE/REGISTER CONNECTION

Revisions		Date
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ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

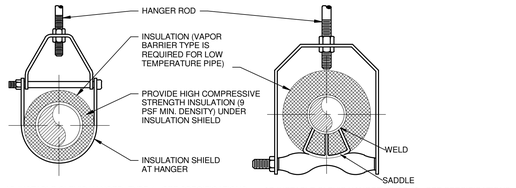
Drawing Number: 320M501

Dwg. of

Office of Construction and Facilities Management

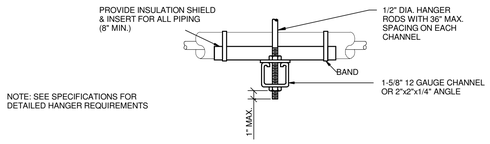
Department of Veterans Affairs

FULLY SPRINKLERED



ADJUSTABLE CLEVIS HANGER TYPE 1 - SEE SPECIFICATIONS

ADJUSTABLE CLEVIS HANGER TYPE 43 - SEE SPECIFICATIONS

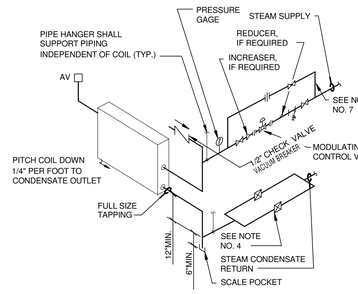


NOTE: SEE SPECIFICATIONS FOR DETAILED HANGER REQUIREMENTS

SIDE VIEW TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

MAXIMUM PIPE/TUBING SUPPORT SPACING																	
NOM. SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE	FT.	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING	FT.	5 FT	6	7	8	8	9	10	12	13	14	16	-	-	-	-	-	-	-
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																			

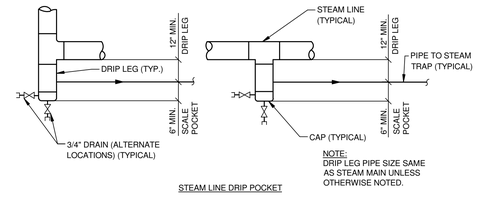
PIPE HANGERS



NOTES:

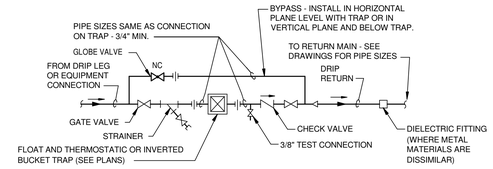
1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATOR UNITS, THE RUNOUT PIPING FOR CONNECTIONS TO COIL SHALL BE INSTALLED WITH SWING JOINTS TO ALLOW FOR THE VIBRATION.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALVES, OR EQUIPMENT.
3. TRAP EACH COIL SEPARATELY WHEN INSTALLED IN A BANK OF TWO OR MORE HIGH. ALSO PROVIDE SEPARATE VACUUM BREAKER FOR EACH COIL.
4. TWO TRAP ASSEMBLIES IN PARALLEL ARE SHOWN. TWO TRAPS REQUIRED WHEN CONDENSATE LOAD IS 5,000 LBS/HR [2400 KG/HR] OR GREATER.
5. SUPPLY & RETURN PIPES ARE SHOWN FROM SAME END. COIL MAY HAVE SUPPLY & RETURN PIPES FROM OPPOSITE ENDS.
6. WHERE THE DISTANCE FROM THE INTAKE OF TRAP TO BOTTOM OF COIL IS RESTRICTED, FLOAT AND THERMOSTATIC TRAP CAPACITIES SHALL BE SELECTED ON A LOWER PRESSURE DROP SUITED TO THE DISTANCE BETWEEN BOTTOM OF COIL AND TRAP INLET.
7. PROVIDE FULL SIZE BYPASS WITH GLOBE VALVE.

STEAM COIL - PIPING CONNECTIONS



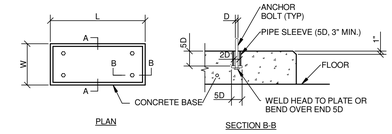
NOTE:
DRIP LEG PIPE SIZE SAME AS STEAM MAIN UNLESS OTHERWISE NOTED.

STEAM LINE DRIP POCKET



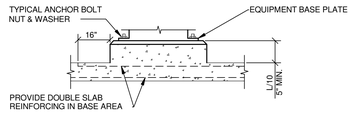
STEAM TRAP ASSEMBLY

STEAM LINE DRIP POCKET STEAM TRAP ASSEMBLY

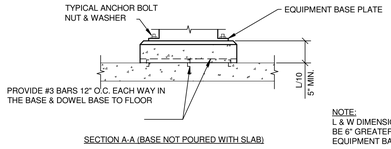


PLAN

SECTION B-B



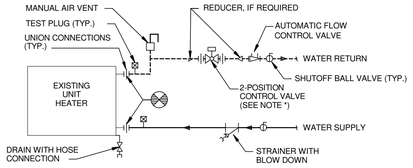
SECTION A-A (BASE POURED WITH FLOOR SLAB)



SECTION A-A (BASE NOT POURED WITH SLAB)

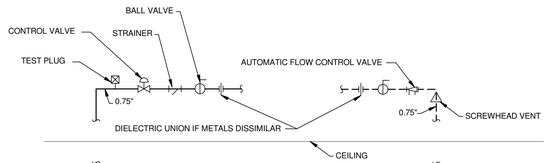
NOTE:
L & W DIMENSIONS SHALL BE 6" GREATER THAN THE EQUIPMENT BASE PLATE.

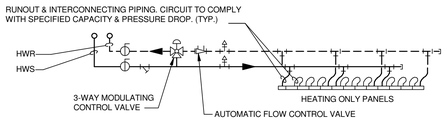
CONCRETE EQUIPMENT BASES



* REFER TO SHEET 320M701 FOR ADDITIONAL INFORMATION.

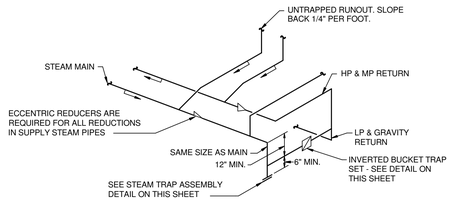
UNIT HEATER WATER COILS - PIPING CONNECTIONS





NOTE: PROVIDE DIELECTRIC FITTING WHERE COPPER TUBING AND FERROUS METAL PIPES ARE JOINED.

HYDRONIC RADIANT CEILING PANEL PIPING



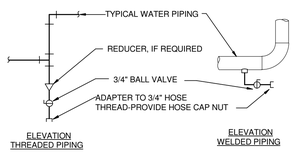
NOTES :

1 SLOPE MAINS AND BRANCHES DOWN 1" PER 40 FEET IN DIRECTION OF FLOW UNLESS SHOWN OTHERWISE.

2 LIMIT UNTRAPPED, COUNTERFLOW, RUNOUTS TO 10 FEET MAXIMUM.

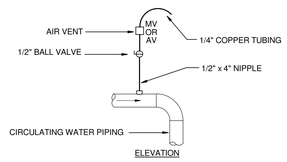
3 END OF MAIN SHOWN, LOW POINT IN STEAM MAIN SIMILAR.

TYPICAL STEAM LINE & DRIP PIPING



TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

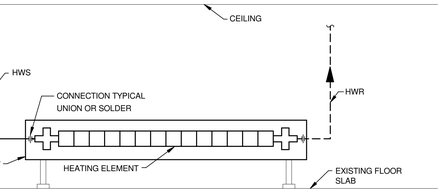
NOTES:
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS, LOCATE DRAIN AT BOTTOM OF SCALE POCKET.



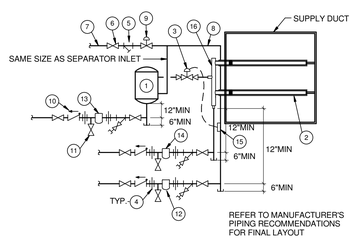
TYPICAL MANUAL AIR VENT

NOTES:
1. VENT ALL HIGH POINTS AS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO NEAREST DRAIN.

DRAIN VALVE AND AIR VENT CONNECTIONS (HYDRONIC SYSTEMS)



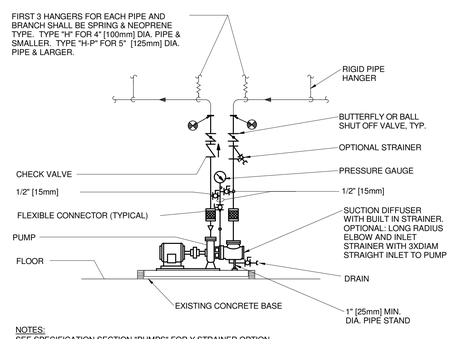
TYPICAL WATER PIPING CONNECTIONS TO FIN TUBE RADIATORS



NOTES :

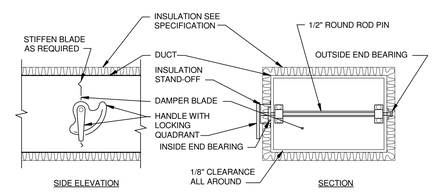
1. SEPARATOR. FURNISHED BY HUMIDIFIER MANUFACTURER.
2. STEAM JACKETED HUMIDIFIER DISPERSION TUBES. FURNISHED BY HUMIDIFIER MANUFACTURER. TYPE, QTY, SIZE AND SPACING PER MANUFACTURER.
3. MODULATING HUMIDIFIER CONTROL VALVE. FURNISHED BY HUMIDIFIER MANUFACTURER.
4. UNION.
5. STRAINER. TYPICALLY PROVIDED WITH HUMIDIFIER.
6. SHUT-OFF GATE VALVE.
7. MEDIUM PRESSURE (30 PSIG) STEAM SUPPLY PIPE.
8. STEAM JACKET PIPING.
9. LINE SIZE AUTOMATIC TWO-POSITION ISOLATION VALVE BY ATC. REFER TO SHEET 320M701 FOR CONTROL SEQUENCE.
10. CHECK VALVE.
11. 0.375" TEST CONNECTION.
12. STEAM JACKET TRAP. TYPE AS REQUIRED BY HUMIDIFIER MANUFACTURER. SOME MANURFACTURERS PROVIDE WITH HUMIDIFIER
13. SEPARATOR TRAP. TYPE AS REQUIRED BY HUMIDIFIER MANUFACTURER. SOME MANURFACTURERS PROVIDE WITH HUMIDIFIER
14. HEADER TRAP. TYPE AS REQUIRED BY HUMIDIFIER MANUFACTURER. SOME MANURFACTURERS PROVIDE WITH HUMIDIFIER
15. DDC CONDENSATE TEMPERATURE SWITCH. FURNISHED BY HUMIDIFIER MANUFACTURER.
16. HEADER. FACTORY OR FIELD FABRICATED. COORDINATE WITH FIELD CONDITIONS, QTY OF TUBES, ROUND VS RECTANGULAR DUCTWORK, ETC.

DUCT MOUNTED STEAM HUMIDIFIER



NOTES:
SEE SPECIFICATION SECTION "PUMPS" FOR Y STRAINER OPTION

SINGLE SUCTION FLOOR-MOUNTED PUMPS-CONNECTIONS WITH FLEXIBLE CONNECTORS



NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

VOLUME DAMPER DETAIL

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320M502

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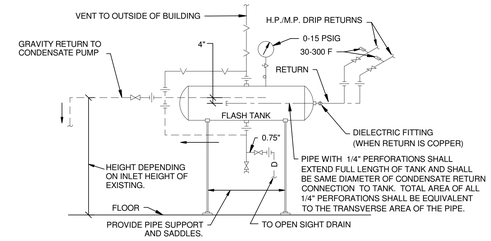
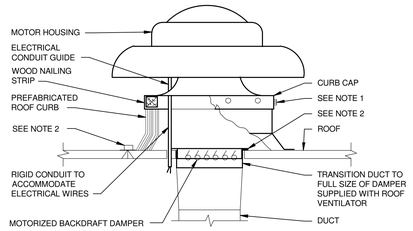


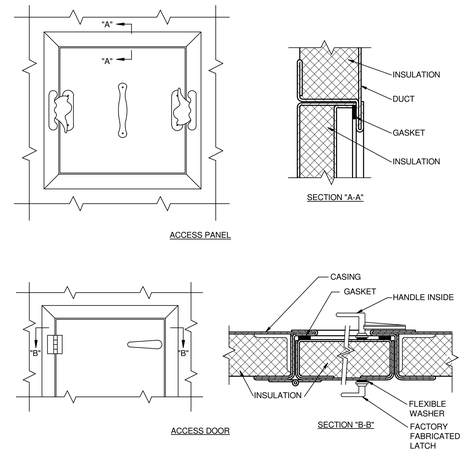
TYPICAL CONNECTIONS TO FLASH TANK



NOTES:

1. SECURE CURB CAP TO WOOD NAILING STRIP WITH 3/8" CADMIUM PLATED LAG BOLTS NOT OVER 12" ON CENTER.
2. SECURE ROOF CURB, DUCTWORK AND DAMPER TO ROOF WITH EXPANSION BOLTS (CONCRETE ROOF) OR RUST RESISTANT BOLTS (METAL DECK AND BAR JOIST ROOF).
3. SIZE OF DUCT THROUGH ROOF SHALL NOT BE LARGER THAN CURB SUPPLIED WITH ROOF VENTILATOR.
4. RUN ELECTRICAL LINES THROUGH CLEARANCE HOLE PROVIDED IN GRAVITY DAMPER, THEN THROUGH VENTILATOR ELECTRICAL CONDUIT GUIDE.

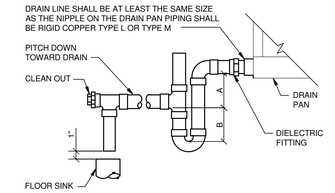
POWER ROOF VENTILATOR



NOTES:

1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15

ACCESS PANEL AND DOOR DETAIL



NOTE: 1. DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.

UNIT TYPE	A	B
DRAW THRU	2" PLUS X	X
BLOW THRU	1" MINIMUM	2X

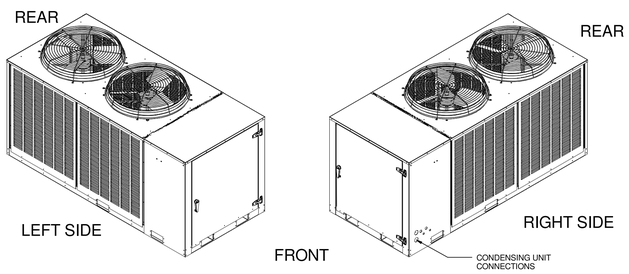
WHERE X = STATIC PRESSURE IN PAN

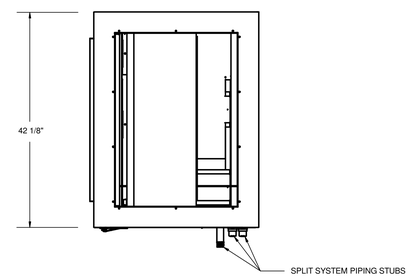
AIR HANDLING UNIT DRAIN TRAP DETAIL

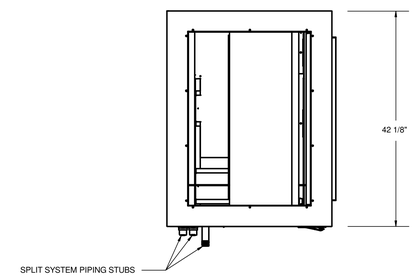
CLEARANCES

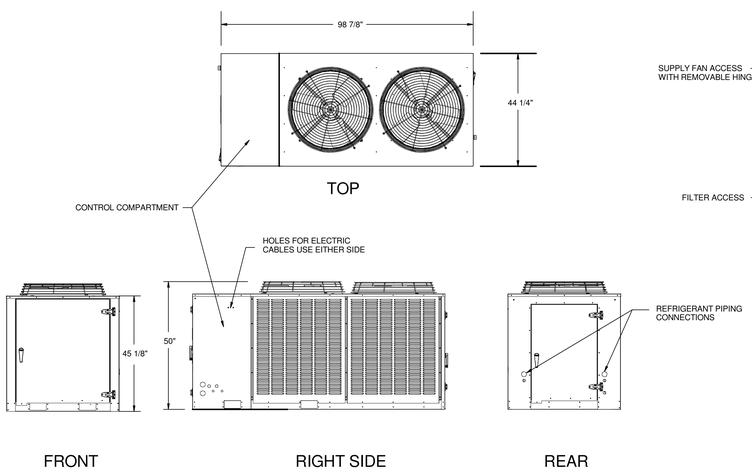
REAR	48"
FRONT	48"
LEFT SIDE	36"
RIGHT SIDE	36"
TOP	UNOBSTRUCTED

UNIT INFO		
	320-CU1D	320-CU2D
COMPRESSORS		
QUANTITY/NOMINAL TONS		
R-410A SINGLE STAGE SCROLL	2/6	2/8
R-410A VARIABLE CAPACITY SCROLL	1/6, 1/6 VAR.	1/8, 1/8 VAR.
NUMBER OF CIRCUITS	2	
CONDENSER FANS: QUANTITY/DIAMETER	2/30"	
hp	0.75	
LIQUID LINE CONNECTIONS	5/8"	
SUCTION LINE CONNECTIONS	1 1/8"	
HOT GAS LINE CONNECTIONS	1/2"	5/8"
DISCHARGE LINE CONNECTIONS	5/8"	3/4"
NOMINAL UNIT WEIGHT(LBS.)	980	1,054

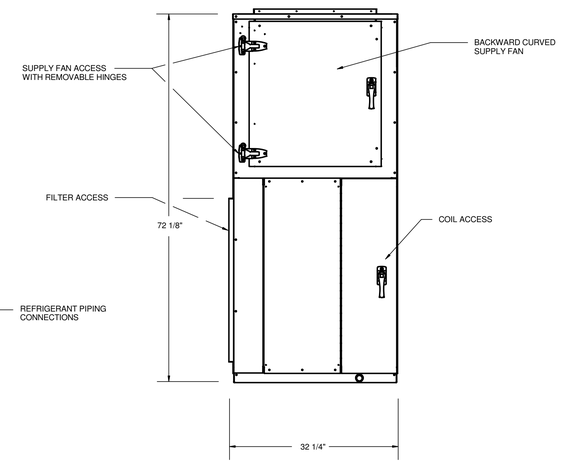




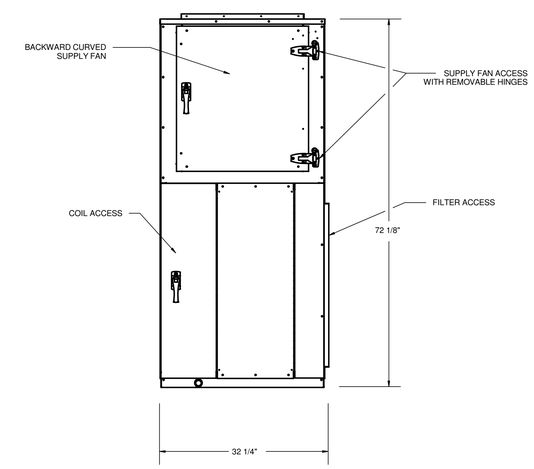




320-CU1D & 320-CU2D



320-AHU1



320-AHU2

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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
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ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@ohmpoe.com

Drawing Title: DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320M503

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Office of Construction and Facilities Management

Department of Veterans Affairs

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FAN SCHEDULE

FAN NO.	LOCATION	FAN CFM	FAN S.P.	FAN TYPE	DESCRIPTION	WHEEL TYPE	WHEEL MIN. DIA.	MAX. RPM	DRIVE	MAX. SONES	MOTOR MAX. BHP	MOTOR NOM. HP (3)	MOTOR VOLT-PHASE	MOTOR VFD	SEE NOTE
320-SF1D	320-AHU1D	2,670	3.0 (4)	CF	SWSI PLENUM FAN(S)	PL	18"	2,100	DIRECT	-	3.6	4	460-3	NO	1,4,5,6
320-SF2D	320-AHU2D	2,850	3.1 (4)	CF	SWSI PLENUM FAN(S)	PL	18"	2,100	DIRECT	-	3.6	4	460-3	NO	1,2,4,5
320-EF1D	POD D ROOF	2,070	0.8"	PRV	DOWNBLAST POWER ROOF VENTILATOR	BIW	18"	900	DIRECT	8.7	0.67	3/4	208-1	NO	5
320-EF2D	POD D ROOF	1,275	0.6"	PRV	DOWNBLAST POWER ROOF VENTILATOR	BIW	12"	1,725	DIRECT	11.2	0.45	1/2	115-1	NO	5
320-EF3D	POD D ROOF	1,355	0.65"	PRV	DOWNBLAST POWER ROOF VENTILATOR	BIW	12"	1,725	DIRECT	12.2	0.45	1/2	115-1	NO	5
320-EF4D	POD D ROOF	500	0.25"	PRV	DOWNBLAST POWER ROOF VENTILATOR	BIW	8"	1,725	DIRECT	7.9	0.15	1/6	115-1	NO	5
320-EF5D	POD D ROOF	375	0.25"	PRV	DOWNBLAST POWER ROOF VENTILATOR	BIW	8"	1,725	DIRECT	7.2	0.15	1/6	115-1	NO	5

NOTES :

1 SCHEDULED MAXIMUM BHP IS FOR SCHEDULED SP PLUS TEN PERCENT. IF UNIT COIL PRESSURE DROPS SUBMITTED ARE LESS THAN SCHEDULED, THEN THE SP REQUIREMENT MAY BE REDUCED ACCORDINGLY. MAXIMUM BHP MAY BE BASED ON THE REVISED SP PLUS TEN PERCENT.

2 FAN SIZED FOR DUCT LEAKAGE AND FUTURE LOADS PER VA CRITERIA. UNIT FAN SHALL BE BALANCED TO ATTAIN AN ADDITIVE AIRFLOW AT SUPPLY AIR DEVICES OF 2,585 CFM

3 MOTORS 1 HP AND ABOVE SHALL BE PREMIUM EFFICIENCY TYPE.

4 LISTED STATIC PRESSURE IS TOTAL STATIC PRESSURE INCLUDES AHU INTERNAL AND ENTRANCE/EXIT LOSSES. EXTERNAL STATIC PRESSURE FOR THIS FAN IS 1.25".

5 FAN SHALL HAVE EC MOTOR.

6 FAN SIZED FOR DUCT LEAKAGE AND FUTURE LOADS PER VA CRITERIA. UNIT FAN SHALL BE BALANCED TO ATTAIN AN ADDITIVE AIRFLOW AT SUPPLY AIR DEVICES OF 2,450 CFM

STEAM HUMIDIFIER SCHEDULE

HUMID. NO.	SYSTEM	CFM	ABSORP. DISTANCE (MAX.)	LVG. AIR Db °F	STEAM PSIG ENT. ON-OFF VALVE	STEAM PSIG ENT. CONTROL VALVE	ON-OFF & CONTROL VALVE LBS/HR	TRAP LBS/HR
320-SH1D	320-AHU1D	2,670	10"	72	30	15	57	19
320-SH2D	320-AHU2D	2,850	10"	72	30	15	61	20

STEAM HEATING COIL SCHEDULE

COIL NO.	TYPE	SYSTEM	CFM	MAX. FACE VEL. FPM	MAX. S.P. LOSS IN	TEMP. AIR °F ENT.	TEMP. AIR °F LVG.	MIN. BTUH	STEAM PSIG ENT. CONTROL VALVE	STEAM PSIG ENT. COIL	CONTROL VALVE LBS/HR	TRAP LBS/HR
320-PH1D	STEAM DIST.	320-AHU1D	2,670	550	0.1	-6.5	90.5	315,800	30	15	358	716
320-PH2D	STEAM DIST.	320-AHU2D	2,850	550	0.1	-6.5	85.1	335,000	30	15	380	760

DX COOLING COIL SCHEDULE

COIL NO.	SYSTEM	CFM	MAX. FACE VEL. FPM	MAX. S.P. IN	ENT. AIR °F Db	ENT. AIR °F Wb	LVG. AIR °F Db	LVG. AIR °F Wb	* MAX. SUCTION TEMP. @ COIL °F	TOTAL BTUH	HOT GAS REHEAT COIL LA DB/WB	HOT GAS REHEAT COIL CAPACITY MBH
320-CC1D	320-AHU1D	2,670	450	0.50	90.3	73.6	56.5	56.3	38.4	145,260	72/62	43
320-CC2D	320-AHU2D	2,850	450	0.50	90.3	73.6	55.9	55.7	35.2	168,230	89.5/67.3	106

* DIRECT EXPANSION COIL CAPACITY SHALL BE BASED ON A SUCTION TEMP. OF 2°F HIGHER THAN SUCTION TEMP. OF COMPRESSOR FURNISHED.

EQUIPMENT DATA

320-CU1D
14 TON AIR COOLED CONDENSING UNIT
SIZE: 95"L x 45"W x 50" HIGH
ELECTRIC: 28 FLA - 460 VOLT, 3 PHASE, 31 MCA, 40 MOCP
ADJUSTABLE FAN CYCLING (AMBIENT CONTROL TO 35 DEG. F)
EXTERNAL HOT GAS BYPASS & MODULATING HOT GAS REHEAT

320-CU2D
17 TON AIR COOLED CONDENSING UNIT
SIZE: 95"L x 45"W x 50" HIGH
ELECTRIC: 31 FLA - 460 VOLT, 3 PHASE, 34 MCA, 45 MOCP
ADJUSTABLE FAN CYCLING (AMBIENT CONTROL TO 35 DEG. F)
EXTERNAL HOT GAS BYPASS & MODULATING HOT GAS REHEAT

AIR FILTER SCHEDULE

FILTER NO.	CFM	SYSTEM	MERV RATING	EFFICIENCY	MAX. S.P. DROP (1) INITIAL	MAX. S.P. DROP (1) FINAL	HOUSING TYPE	MAX. FACE VELOCITY	SEE NOTE
320-PF1D	2,670	320-AHU1D	8	35%	0.33"	0.66"	SIDE ACCESS HOUSING	500	1,2,3
320-FF1D	2,670	320-AHU1D	13	85%	0.34"	0.68"	SIDE ACCESS HOUSING	500	1,2,3
320-PF2D	2,850	320-AHU2D	8	35%	0.33"	0.66"	SIDE ACCESS HOUSING	500	1,2,3
320-FF2D	2,850	320-AHU2D	13	85%	0.34"	0.68"	SIDE ACCESS HOUSING	500	1,2,3

NOTES:

1 STATIC PRESSURE REQUIREMENTS BASED ON 500 FPM FACE VELOCITY. FINAL PRESSURE DROPS BASED ON VA'S RECOMMENDED CHANGE OVER PRESSURE DROP.

2 FILTER HOUSING TO BE PART OF AIR HANDLING UNIT ASSEMBLY.

3 FILTER HOUSING TO INCLUDE BOTH PRE FILTERS AND FINAL FILTERS.

FOUR PIPE FAN COIL UNIT SCHEDULE

UNIT NO.	TYPE	FAN CFM	O.A. CFM	COOLING MIN. TOTAL MBH	COOLING MIN. SENS. MBH	COOLING ENT. AIR °F Db	COOLING ENT. AIR °F Wb	COOLING GPM	COOLING MAX. LOSS THRU COIL FT. WATER	COOLING AUTO VALVE TYPE	COOLING AUTO VALVE CV	COOLING RUN-OUT SIZE	HEATING MIN. MBH	HEATING ENT. AIR °F	HEATING GPM	HEATING MAX. LOSS THRU COIL FT. WATER	HEATING AUTO VALVE TYPE	HEATING AUTO VALVE CV	HEATING RUN-OUT SIZE	FAN MOTOR NOM. HP(W)	FAN MOTOR VOLT.-PHASE	APPROXIMATE SIZE L	APPROXIMATE SIZE W	APPROXIMATE SIZE H	NOTES
320-FC01	HORIZONTAL CONCEALED DUCTED	350	90	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	5.5	70	0.5	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC02A	HORIZONTAL CONCEALED DUCTED	700	115	13	11.7	78.0	65.0	2.3	5.0	3-WAY	1.5	0.75"	21.0	70	1.4	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC02B	HORIZONTAL CONCEALED DUCTED	700	115	13	11.7	78.0	65.0	2.3	5.0	3-WAY	1.5	0.75"	21.0	70	1.4	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC03	HORIZONTAL CONCEALED DUCTED	350	95	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	5.2	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC04	HORIZONTAL CONCEALED DUCTED	400	60	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	6.4	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC05	HORIZONTAL CONCEALED DUCTED	400	65	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	5.2	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC06	HORIZONTAL CONCEALED DUCTED	250	80	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.3	70	0.33	5.0	2-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC07	HORIZONTAL CONCEALED DUCTED	150	25	3.4	2.9	78.0	65.0	0.6	5.0	2-WAY	0.4	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(57)	115-1	33	25	10	1,2,3
320-FC08	HORIZONTAL CONCEALED DUCTED	350	50	6.59	6.54	78.0	65.0	1.2	5.0	3-WAY	0.8	0.75"	3.4	70	0.33	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC09	HORIZONTAL CONCEALED DUCTED	350	65	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	1.1	70	0.33	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC10A	HORIZONTAL CONCEALED DUCTED	600	100	13	12	78.0	65.0	2.3	5.0	3-WAY	1.5	0.75"	13.0	70	0.87	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC10B	HORIZONTAL CONCEALED DUCTED	600	100	13	12	78.0	65.0	2.3	5.0	2-WAY	1.5	0.75"	13.0	70	0.87	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC11	HORIZONTAL CONCEALED DUCTED	250	80	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.3	70	0.33	5.0	2-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC12A	HORIZONTAL CONCEALED DUCTED	600	145	13	12	78.0	65.0	2.3	5.0	3-WAY	1.5	0.75"	8.0	70	0.53	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC12B	HORIZONTAL CONCEALED DUCTED	600	150	13	12	78.0	65.0	2.3	5.0	2-WAY	1.5	0.75"	8.0	70	0.53	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC13	HORIZONTAL CONCEALED DUCTED	125	0	3.1	2.7	78.0	65.0	0.6	5.0	3-WAY	0.4	0.75"	1.0	70	0.33	5.0	3-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC14	HORIZONTAL CONCEALED DUCTED	250	75	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC16	HORIZONTAL CONCEALED DUCTED	250	75	4.6	4.1	78.0	65.0	0.8	5.0	3-WAY	0.5	0.75"	4.9	70	0.33	5.0	3-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC17	HORIZONTAL CONCEALED DUCTED	200	70	4.2	3.7	78.0	65.0	0.8	5.0	3-WAY	0.5	0.75"	6.1	70	0.5	5.0	3-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC18	HORIZONTAL CONCEALED DUCTED	350	90	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	5.8	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC19	HORIZONTAL CONCEALED DUCTED	350	95	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	7.1	70	0.5	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC20	HORIZONTAL CONCEALED DUCTED	400	90	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	6.1	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC21	HORIZONTAL CONCEALED DUCTED	350	165	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	2.7	70	0.33	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC22	HORIZONTAL CONCEALED DUCTED	350	90	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	5.7	70	0.5	5.0	3-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC23	HORIZONTAL CONCEALED DUCTED	400	65	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	7.0	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC24	HORIZONTAL CONCEALED DUCTED	400	65	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	6.4	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC25	HORIZONTAL CONCEALED DUCTED	400	55	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	4.2	70	0.33	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC26	HORIZONTAL CONCEALED DUCTED	350	60	6.59	6.54	78.0	65.0	1.2	5.0	3-WAY	0.8	0.75"	10.1	70	0.67	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC27	HORIZONTAL CONCEALED DUCTED	350	65	6.59	6.54	78.0	65.0	1.2	5.0	3-WAY	0.8	0.75"	8.6	70	0.57	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC28	HORIZONTAL CONCEALED DUCTED	350	40	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC29	HORIZONTAL CONCEALED DUCTED	600	150	11.8	10.7	78.0	65.0	2.0	7.0	2-WAY	1.3	0.75"	6.5	70	0.5	5.0	2-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3

NOTES:

1 PROVIDE HIGH STATIC FAN MOTOR OPTION.

2 FURNISH WITH CONDENSATE OVERFLOW DETECTION DEVICE. FLOAT SWITCH IN THE AUXILIARY DRAIN PAN TO STOP THE FAN WHEN WATER LEVEL IN THE PAN RISES TO A NEAR OVERFLOW LEVEL.

3 FURNISH WITH FAN SPEED CONTROL AND MOUNT CONTROLLER ON UNIT ABOVE CEILING.

DUCT PRESSURE CLASS & LEAKAGE TABLE

SYSTEM	DUCT INVOLVED	POSITIVE (P) OR NEGATIVE (N) PRESSURE	SMACNA CONST. CLASS W.G.	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS RECTANGULAR DUCT	SMACNA LEAKAGE CLASS ROUND DUCT
ALL SYSTEMS	ALL DUCTWORK EXCEPT AS LISTED BELOW.	P/N	± 2"	A	6	3
	SUPPLY AIR DUCTS FROM OUTLET OF AH-UNIT TO INLET OF FAN COIL UNITS.	P	2"	A	6	3
	SUPPLY AIR DUCTS FROM OUTLET OF FAN COIL UNITS TO SUPPLY AIR DEVICES	P	1"	A	6	3
	GENERAL EXHAUST DUCTS	N	-2"	A	6	3

HVAC DESIGN DATA

OUTDOOR DESIGN TEMPERATURES— 90.3 DEG. F Db SUMMER; 73.6 DEG. F Wb SUMMER; 0.6 DEG. F Db WINTER — DESIGN ALTITUDE: 1004 FT.

INDOOR AREA DESIGN CONDITIONS	SUMMER Db (°F)	SUMMER % HUMIDITY	WINTER Db (°F)	WINTER % HUMIDITY
BATHROOMS & TOILET ROOMS	-	-	68	30
OFFICES	72	50	72	30
PATIENT ROOMS	72	50	72	30
MECHANICAL ROOMS	80	-		-
ALL OTHER AREAS	72	50	72	30

AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	AREA SERVED	FAN NO.	CFM SUPPLY	CFM O.A.	EXTERNAL S.P. (1) IN.	SPECIFIED INTERNAL LOSSES (2) IN.	UNSPECIFIED INTERNAL LOSSES (3) IN.	FAN TOTAL S.P. (4) IN.	TYPE OF SYSTEM (5)
320-AHU1D	POD D MECH. RM. 1D-180	FIRST FLOOR NORTH AND WEST	320-SF1D	2,670	2,670	1.25	1.61	0.14	3.0	100% O.A. CAV
320-AHU2D	POD D MECH. RM. 1D-142	FIRST FLOOR SOUTH AND EAST	320-SF2D	2,850	2,850	1.25	1.61	0.24	3.1	100% O.A. CAV

NOTES:

1 SUM OF EXTERNAL STATIC PRESSURE REQUIRED AT DUCT CONNECTIONS TO INLET & OUTLET OF AHU. MEASUREMENTS SHALL BE TAKEN WITHIN 3 FT. OF INLET AND OUTLET AT A POINT OF MAXIMUM ACCURACY.

2 TOTAL OF MAXIMUM PRESSURE DROPS OF COMPONENTS WHICH ARE SPECIFIED SEPARATELY, I.E. PREFILTERS, FINAL FILTERS, HEATING AND COOLING COILS, DIFFUSER PLATE AND SOUND ATTENUATOR. AIR FILTER PRESSURE DROP SHALL BE SELECTED AT MID-LIFE.

3 INTERNAL LOSS ALLOWANCE SHALL INCLUDE LOSSES DUE TO ENTRANCE AND EXIT OF AHU, MIXING BOXES, HOT GAS REHEAT COIL, LOSSES DUE TO FAILURE TO PROPERLY CONVERT FAN DISCHARGE VELOCITY PRESSURE TO STATIC PRESSURE, FAN INLET CONDITIONS, CASINGS, HUMIDIFIERS, DAMPERS, ETC.

4 TOTAL FAN S.P = EXTERNAL STATIC PRESSURE + SPECIFIED INTERNAL LOSSES + UNSPECIFIED INTERNAL LOSSES. MANUFACTURER SHALL PROVIDE SUBMITTAL SHOWING ACTUAL LOSSES OF ALL EQUIPMENT PROVIDED. REFER TO FAN SCHEDULE FOR ADDITIONAL FAN SELECTION INFORMATION.

5 REFER TO AIR HANDLING UNIT DETAILS ON SHEET 320M503 FOR AH-UNIT LAYOUT AND COMPONENTS.

Revisions	Date
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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SCHEDULES

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STEAM CONDENSATE PUMP SCHEDULE

PUMP NO.	LOCATION	TYPE UNIT	GPM	DISCHARGE PRESSURE	LBS/HR	RECEIVER SIZE GALLONS	MOTOR NOM. HP	MOTOR VOLT.-PHASE	REMARKS
320-CPD1D	MECHANICAL 1D-180	DUPLEX	6	15 PSI	358	30	2 @ 1/3	460-3	1750 RPM MOTOR CAST IRON RECEIVER
320-CPD2D	MECHANICAL 1D-142	DUPLEX	6	20 PSI	449	30	2 @ 1/2	460-3	1750 RPM MOTOR CAST IRON RECEIVER

HVAC PUMP SCHEDULE

PUMP NO.	LOCATION	SYSTEM	CIRCULATING FLUID FLUID	GPM	PUMP HEAD FT. FLUID	TEMP °F	SP. GR.	% EFF.	TYPE	MOTOR NOM. HP	MOTOR VOLT.-PHASE	MOTOR RPM	VFD	NOTES
320-P5	MECH. ROOM POD E	BUILDING HEATING HOT WATER	WATER	45	62	200	1	52.4	BASE-MOUNTED END-SUCTION	2	208-3	1750	YES	1,2,3
320-P14	MECH ROOM POD E	BUILDING CHILLED WATER	WATER	80	63	42	1	55.9	BASE-MOUNTED END-SUCTION	3	208-3	1750	YES	1,2,3

NOTES:
1 MOTOR SHALL BE HIGH EFFICIENCY TYPE.
2 PUMP SHALL BE CAPABLE OF OPERATION DOWN TO 30 PERCENT MINIMUM FLOW.
3 PUMP SIZED TO HANDLE 100 PERCENT OF THE TOTAL LOAD.

FINNED TUBE RADIATION SCHEDULE

UNIT NO.	LOCATION	TYPE UNIT	MOUNTING	HTG. MBH	ENT. TEMP. DEG. F AIR	ENT. TEMP. DEG. F WATER	GPM	RUNOUT SIZE	AUTO VALVE TYPE	AUTO VALVE CV	APPROX. CABINET DIMS. LENGTH	APPROX. CABINET DIMS. HEIGHT	APPROX. CABINET DIMS. DEPTH	NOTES
320-FTR1D	SEE PLANS	CONTINUOUS CABINET HYDRONIC WALL FIN	PEDISTAL	7.4	65	180	0.75	0.75"	2-WAY	0.5	12'-0"	6"	4"	1,2
320-FTR2D	SEE PLANS	CONTINUOUS CABINET HYDRONIC WALL FIN	PEDISTAL	3.7	65	180	0.5	0.75"	2-WAY	0.33	6'-0"	6"	4"	1,2

NOTES:
1 FIELD VERIFY LENGTH OF FINTUBE RADIATORS PRIOR TO ORDERING.
2 PROVIDE CABINET END EXTENSIONS FOR CONTINUOUS WALL TO WALL APPEARANCE. CENTER HEATING ELEMENT WITH WINDOWS.

AIR DISTRIBUTION DEVICES

SYMBOL	DESCRIPTION	TYPE MOUNTING LAY-IN	TYPE MOUNTING SURFACE	MATERIAL STEEL	MATERIAL ALUM.	FINISH E.C.L.	FINISH W.B.E.	ACCESSORIES	SEE NOTE
CD1	STANDARD SQ. PLAQUE CEILING DIFFUSER ROUND NECK	◦		◦			◦		5
CD2	STANDARD SQ. PLAQUE CEILING DIFFUSER ROUND NECK		◦	◦			◦		5
CD3	LINEAR PLENUM SLOT ADJUSTABLE BLADE DIFFUSER	◦		◦			◦	INSUL. PLENUM	3,4,5
CD4	LINEAR PLENUM SLOT ADJUSTABLE BLADE DIFFUSER		◦	◦			◦	INSUL. PLENUM	3,4,5
CG1	EGGCRATE CEILING FILTER GRILLE	◦			◦		◦		2,5
CR1	EGGCRATE CEILING REGISTER	◦			◦		◦	OPPOSED BLADE DAMPER	5
TR1	ADJUSTABLE BLADE SUPPLY REGISTER		◦	◦			◦	OPPOSED BLADE DAMPER	1,5

NOTES:
1 DOUBLE DEFLECTION TYPE, HORIZONTAL FRONT BLADES.
2 FILTER GRILLE. DEVICE SHALL INCLUDE INTEGRAL 1" FILTER RACK AND HINGED FACE.
3 AIR DEVICE TO INCLUDE A CENTER NOTCH, AS REQUIRED, TO ACCOMMODATE A 2 FT. X 2 FT. CEILING GRID.
4 48" LENGTH, 3 - 1" SLOTS
5 AIR DEVICE SHALL NOT EXCEED .1" S.P.

FOUR PIPE FAN COIL UNIT SCHEDULE

UNIT NO.	TYPE	FAN CFM	O.A. CFM	COOLING REQUIREMENTS WITH 45°F ENT. WATER TEMP. MIN. TOTAL MBH	MIN. SENS. MBH	ENT. AIR °F Db	ENT. AIR °F Wb	GPM	MAX. LOSS THRU COIL FT. WATER	AUTO VALVE TYPE	AUTO VALVE CV	RUN-OUT SIZE	HEATING REQUIREMENTS WITH 180°F ENT. WATER TEMP. MIN. MBH	ENT. AIR °F	GPM	MAX. LOSS THRU COIL FT. WATER	AUTO VALVE TYPE	AUTO VALVE CV	RUN-OUT SIZE	FAN MOTOR NOM. HP(W)	FAN MOTOR VOLT.-PHASE	APPROXIMATE SIZE L	W	H	NOTES
320-FC30	HORIZONTAL CONCEALED DUCTED	100	40	2.5	2.0	78.0	65.0	0.5	5.0	2-WAY	0.33	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC31	HORIZONTAL CONCEALED DUCTED	400	90	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	5.3	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC32	HORIZONTAL CONCEALED DUCTED	700	245	17.1	15.2	78.0	65.0	2.9	5.0	3-WAY	1.9	0.75"	39.5	70	2.6	5.0	3-WAY	0.33	0.75"	(298)	115-1	56	25	10	1,2,3
320-FC33	HORIZONTAL CONCEALED DUCTED	350	90	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	6.1	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC34	HORIZONTAL CONCEALED DUCTED	250	35	4.6	4.1	78.0	65.0	0.8	5.0	3-WAY	0.5	0.75"	1.6	70	0.33	5.0	3-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC35	HORIZONTAL CONCEALED DUCTED	250	65	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.3	70	0.33	5.0	3-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC36	HORIZONTAL CONCEALED DUCTED	535	80	11.3	10.7	78.0	65.0	1.9	5.0	2-WAY	1.3	0.75"	4.8	70	0.33	5.0	2-WAY	0.33	0.75"	(100)	115-1	47	25	10	1,2,3
320-FC37	HORIZONTAL CONCEALED DUCTED	125	30	3.1	2.7	78.0	65.0	0.6	5.0	2-WAY	0.4	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC38	HORIZONTAL CONCEALED DUCTED	125	30	3.1	2.7	78.0	65.0	0.6	5.0	3-WAY	0.4	0.75"	2.1	70	0.33	5.0	3-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC39	HORIZONTAL CONCEALED DUCTED	600	110	11.8	10.7	78.0	65.0	2.0	5.0	2-WAY	1.3	0.75"	7.3	70	0.5	5.0	2-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC40	HORIZONTAL CONCEALED DUCTED	600	125	14	12.5	78.0	65.0	2.6	5.0	2-WAY	1.7	0.75"	19.7	70	1.3	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC41a	HORIZONTAL CONCEALED DUCTED	415	120	8.9	7.8	78.0	65.0	1.5	5.0	3-WAY	1.0	0.75"	6.0	70	0.5	5.0	3-WAY	0.33	0.75"	(70)	115-1	47	25	10	1,2,3
320-FC41b	HORIZONTAL CONCEALED DUCTED	415	120	8.9	7.8	78.0	65.0	1.5	5.0	2-WAY	1.0	0.75"	6.0	70	0.5	5.0	2-WAY	0.33	0.75"	(70)	115-1	47	25	10	1,2,3
320-FC42	HORIZONTAL CONCEALED DUCTED	250	30	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.0	70	0.33	5.0	2-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC43	HORIZONTAL CONCEALED DUCTED	350	85	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	4.9	70	0.33	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC44	HORIZONTAL CONCEALED DUCTED	350	75	6.59	6.54	78.0	65.0	1.2	5.0	3-WAY	0.8	0.75"	6.4	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC45	HORIZONTAL CONCEALED DUCTED	250	85	4.6	4.1	78.0	65.0	0.8	5.0	2-WAY	0.5	0.75"	1.0	70	0.33	5.0	3-WAY	0.33	0.75"	(84)	115-1	33	25	10	1,2,3
320-FC46	HORIZONTAL CONCEALED DUCTED	100	30	2.5	2.0	78.0	65.0	0.5	5.0	2-WAY	0.33	0.75"	1.5	70	0.33	5.0	2-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC47	HORIZONTAL CONCEALED DUCTED	100	50	2.5	2.0	78.0	65.0	0.5	5.0	2-WAY	0.33	0.75"	1.4	70	0.33	5.0	2-WAY	0.33	0.75"	(42)	115-1	33	25	10	1,2,3
320-FC48	HORIZONTAL CONCEALED DUCTED	400	90	7	6.8	78.0	65.0	1.3	5.0	2-WAY	0.8	0.75"	6.9	70	0.5	5.0	2-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC49	HORIZONTAL CONCEALED DUCTED	350	60	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	7.3	70	0.5	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC50	HORIZONTAL CONCEALED DUCTED	400	95	7	6.8	78.0	65.0	1.3	5.0	3-WAY	0.8	0.75"	5.9	70	0.5	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC51	HORIZONTAL CONCEALED DUCTED	350	65	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	5.6	70	0.5	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC52	HORIZONTAL CONCEALED DUCTED	350	105	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	2.3	70	0.33	5.0	3-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC53	HORIZONTAL CONCEALED DUCTED	455	85	9.8	8.5	78.0	65.0	1.7	5.0	2-WAY	1.1	0.75"	7.4	70	0.5	5.0	2-WAY	0.33	0.75"	(70)	115-1	47	25	10	1,2,3
320-FC54	HORIZONTAL CONCEALED DUCTED	350	115	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	4.7	70	0.33	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3
320-FC55	HORIZONTAL CONCEALED DUCTED	600	80	11.8	10.7	78.0	65.0	2.0	5.0	3-WAY	1.3	0.75"	9.8	70	0.65	5.0	3-WAY	0.33	0.75"	(162)	115-1	47	25	10	1,2,3
320-FC57	HORIZONTAL CONCEALED DUCTED	350	65	6.59	6.54	78.0	65.0	1.2	5.0	2-WAY	0.8	0.75"	4.1	70	0.33	5.0	3-WAY	0.33	0.75"	(110)	115-1	38	25	10	1,2,3
320-FC58	HORIZONTAL CONCEALED DUCTED	775	155	17.1	15.2	78.0	65.0	2.9	5.0	3-WAY	1.9	0.75"	12.1	70	0.8	5.0	3-WAY	0.33	0.75"	(298)	115-1	56	25	10	1,2,3
320-FC59	HORIZONTAL CONCEALED DUCTED	350	0	5.9	5.8	78.0	65.0	1.0	5.0	2-WAY	0.67	0.75"	3.9	70	0.33	5.0	2-WAY	0.33	0.75"	(72)	115-1	38	25	10	1,2,3

NOTES:
1 PROVIDE HIGH STATIC FAN MOTOR OPTION.
2 FURNISH WITH CONDENSATE OVERFLOW DETECTION DEVICE. FLOAT SWITCH IN THE AUXILIARY DRAIN PAN TO STOP THE FAN WHEN WATER LEVEL IN THE PAN RISES TO A NEAR OVERFLOW LEVEL.
3 FURNISH WITH FAN SPEED CONTROL AND MOUNT CONTROLLER ON UNIT ABOVE CEILING.

HYDRONIC RADIANT CEILING PANELS

PANEL NO.	PANEL SIZE	HEATING CAPACITY BTU/HR	AVERAGE WATER TEMP.	GPM	MAX. P.D.	PIPE RUNOUT SIZE	AUTO VALVE TYPE	AUTO VALVE CV	NOTES
HRP-1	24" x 48"	1600	178	0.25	1 FT.	0.75"	3-WAY	0.2	1,2

NOTES :
1 PERFORMANCE BASED ON 70 DEG. F. AIR TEMPERATURE, 67 DEG. F. A.U.S.T. AND NATURAL CONVECTION, WITH 1" INSULATION PLACED ON TOP.
2 REFER TO DRAWINGS FOR FOR QUANTITIES.

FLASH TANK SCHEDULE

UNIT NO.	LOCATION	APPROX. LENGTH IN.	APPROX. DIAMETER IN.
320-FT1D	MECH. RM. 1D-180	24	14
320-FT2D	MECH. RM. 1D-142	24	14

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CONSULTANTS:
Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO GARY S. EODICE E-52755 REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:
JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SCHEDULES
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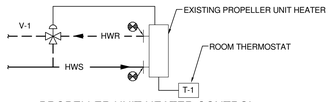
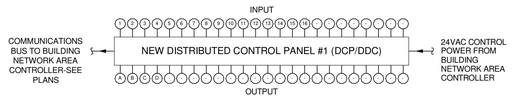
LEGEND (APPLIES TO AIR HANDLING UNITS 320-AHU1 & 320-AHU2)

C	CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF FANS.
D-1	TWO-POSITION OUTSIDE AIR DAMPER	OPENS IN RESPONSE TO DCP BEFORE SUPPLY FAN STARTS AND CLOSES WHEN SUPPLY FAN STOPS
DP-1	DIFFERENTIAL PRESSURE SENSOR	TRANSMITS DIFFERENTIAL PRESSURE TO DCP TO INDICATE FILTER CONDITION
DCP	DIRECT DIGITAL CONTROL PANEL	CONTROLS OPERATION OF AIR HANDLING UNIT IN ACCORDANCE WITH THE SEQUENCE OF OPERATION
DSD-1	DUCT SMOKE DETECTOR (FURNISHED AND WIRED TO FIRE ALARM PANEL BY DIVISION 26)	PROVIDE SMOKE SIGNAL TO DCP
ECC	ENGINEERING CONTROL CENTER	LOCATED IN ENGINEERING BUILDING FOR MONITORING OF SYSTEM OPERATIONS
ECM	ELECTRONICALLY COMMUTATED MOTOR	CONTROLS SUPPLY FAN MOTOR SPEED IN RESPONSE TO DCP
H-1	ROOM HUMIDISTAT	SENSES AND TRANSMITS SPACE HUMIDITY TO DCP FOR CONTROL AND INDICATION
H-2	SUPPLY AIR HUMIDITY SENSOR	SENSES AND TRANSMITS SUPPLY AIR HUMIDITY TO DCP FOR CONTROL AND INDICATION
SPS-1	SUPPLY DUCT HIGH LIMIT STATIC PRESSURE SENSOR	SENSES AND TRANSMITS DUCT STATIC PRESSURE NEAR SUPPLY FAN TO DCP
T-1	SUPPLY AIR TEMPERATURE SENSOR	SENSES AND TRANSMITS SUPPLY AIR DRY BULB TEMPERATURE TO DCP FOR INDICATION ONLY
T-2	OUTSIDE AIR TEMPERATURE SENSOR	SENSES AND TRANSMITS OUTSIDE AIR DRY BULB TEMPERATURE TO DCP FOR CONTROL AND INDICATION
T-3	FREEZESTAT	SENSES AND TRANSMITS PREHEAT AIR DRY BULB TEMPERATURE TO DCP FOR FREEZE CONDITION
T-4	COOLING COIL LEAVING AIR TEMPERTURE SENSOR	SENSES AND TRANSMITS COOLING COIL DISCHARGE AIR TEMPERATURE TO DCP FOR CONTROL AND INDICATION
T-5	PREHEAT COIL LEAVING AIR TEMPERATURE SENSOR	SENSES AND TRANSMITS PREHEAT COIL DISCHARGE AIR DRY BULB TEMP. TO DCP FOR CONTROL AND INDICATION
V-1	MODULATING STEAM CONTROL VALVE	PROPORTIONS FLOW OF STEAM TO PREHEAT COIL IN RESPONSE TO DCP
V-2	MODULATING STEAM CONTROL VALVE	PROPORTIONS FLOW OF STEAM TO HUMIDIFIER IN RESPONSE TO DCP
V-3	TWO-POSITION ISOLATION STEAM CONTROL VALVE	CONTROLS STEAM FLOW TO HUMIDIFIER



PROPELLER UNIT HEATER CONTROL

ROOM THERMOSTAT T-1 SHALL CONTROL FAN MOTOR AND VALVE V-1. ON A DROP IN TEMPERATURE BELOW SETPOINT, THERMOSTAT T-1 SHALL START THE FAN AND HEATING COIL CONTROL VALVE V-1 SHALL OPEN TO THE COIL TO MAINTAIN ROOM TEMPERATURE SETPOINT (INITIALLY SET FOR 72 DEGREES F., ADJUSTABLE).



CONTROL PANEL #1 POINTS LIST

POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
1	T1	COMMON HOT WATER SUPPLY TEMPERATURE SENSOR			X	
2	T2	COMMON HOT WATER RETURN TEMPERATURE SENSOR			X	
3	320-HWFM1	HOT WATER FLOW METER (GPM AND BTU MEASUREMENT)			X	
4	C1	HOT WATER PUMP 320-P5 STATUS CURRENT SWITCH	X			
5	DP1	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
6	DP2	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
7	320-DWFM1	DOMESTIC WATER FLOW METER (GPM)			X	
8	T3	COMMON DOMESTIC WATER SUPPLY TEMPERATURE SENSOR			X	
9	T4	COMMON DOMESTIC WATER RETURN TEMPERATURE SENSOR			X	
10	T5	COMMON CHILLED WATER SUPPLY TEMPERATURE SENSOR			X	
11	T6	COMMON CHILLED WATER RETURN TEMPERATURE SENSOR			X	
12	320-CWFM1	CHILLED WATER FLOW METER (GPM AND BTU MEASUREMENT)			X	
13	C2	CHILLED WATER PUMP 320-P14 STATUS CURRENT SWITCH	X			
14	DP3	CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE			X	
15	DP4	CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE			X	
16	320-SFM1	STEAM FLOW METER			X	
A	VSMC1	HOT WATER PUMP 320-P5 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
B	R1	HOT WATER PUMP 320-P5 START/STOP RELAY		X		
C	VSMC2	CHILLED WATER PUMP 320-P14 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
D	R2	CHILLED WATER PUMP 320-P14 START/STOP RELAY		X		

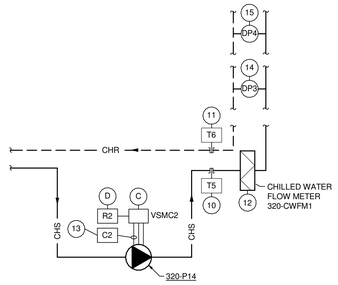
GENERAL NOTES

1 A COMPLETE SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS SHALL BE INSTALLED UNDER THIS CONTRACT AS REQUIRED TO ACCOMPLISH THE SEQUENCE OF CONTROL FOR VARIOUS ITEMS OF EQUIPMENT AND SYSTEMS AS DESCRIBED HEREINAFTER. THE SYSTEM SHALL BE A DIRECT DIGITAL CONTROL SYSTEM UTILIZING ELECTRIC ACTUATION.

2 ELECTRICAL WORK INCLUDES A POWER SOURCE TO THE MOTOR STARTERS. ALL HVAC POWER SOURCES REQUIRED BEYOND THESE STARTERS OR BEYOND SOURCES EXPLICITLY SHOWN ON THE ELECTRICAL DRAWINGS, SHALL BE PROVIDED UNDER THE ATC WORK. THIS WORK SHALL INCLUDE BUT NOT BE LIMITED TO WIRING, CONDUIT, TRANSFORMERS, RELAYS AND FUSES.

3 BULB WELLS FOR TEMPERATURE SENSING AS INDICATED SHALL BE FURNISHED UNDER THE ATC WORK AND INSTALLED AS PART OF THE HVAC PIPING WORK. PIPING WORK SHALL INCLUDE PROPERLY SIZED WELDOLET OR THREADOLET FITTINGS PLACED AS DIRECTED BY THE CONTROL SYSTEM MANUFACTURER.

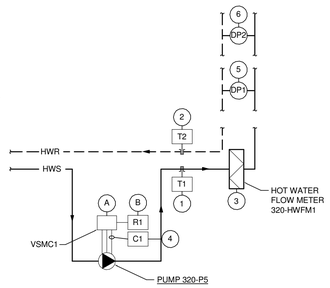
4 POINTS LIST IS SHOWN AS AN AID TO THE CONTRACTOR INDICATING THE MINUMUM POINTS REQUIRED FOR CONTROL AND MONITORING. ALL INPUT AND OUTPUT POINTS, AND THEIR REQUIRED INTERFACE AND ACCESSORY HARDWARE, SHALL BE PROVIDED FOR A COMPLETE AND FUNCTIONAL CONTROL SYSTEM. IF OR WHEN ADDITIONAL POINTS ARE REQUIRED TO ACCOMPLISH THE SEQUENCES OF CONTROL SPECIFIED, THESE POINTS, ALONG WITH ADDITIONAL DIRECT DIGITAL CONTROL PANEL(S) (IF REQUIRED), SHALL ALSO BE PROVIDED.



SECONDARY CHILLED WATER CIRCULATING PUMP AND FLOW METERING

ENABLE THE SECONDARY CHILLED WATER CIRCULATING PUMP, 320-P14, UPON A CALL FOR MECHANICAL COOLING. PUMP SHALL INCLUDE A CURRENT SENSING RELAY TO INDICATE PUMP STATUS. PROVIDE DIFFERENTIAL PRESSURE SENSORS BETWEEN CHILLED WATER SUPPLY AND RETURN PIPING MAINS WHERE INDICATED ON THE FLOOR PLANS. TO MODULATE CHILLED WATER PUMP VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN SETPOINT. WHEN THE CHILLED WATER SECONDARY PUMP IS ENABLED AND STATUS IS NOT PROVEN FOR ADJUSTABLE TIME DELAY (30 SEC.) OR WHEN PUMP IS NOT ENABLED AND STATUS IS PROVEN, AN ALARM SHALL BE GENERATED AT THE ECC. ENSURE ALL SENSORS ARE SATISFIED AT ALL TIMES.

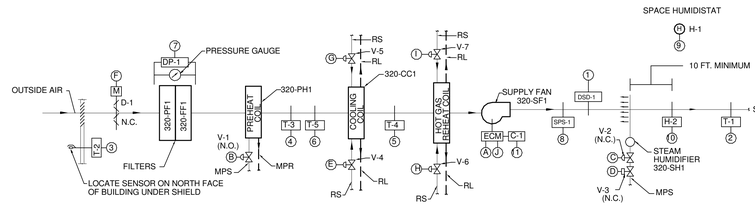
PROVIDE FLOW METERING AND BTUH METERING OF THE CHILLED WATER SYSTEM SERVING THIS POD. TRANSMIT FLOW INFORMATION TO THE DCP. UTILIZING FLOW READINGS AND TEMPERATURE READINGS FROM SUPPLY AND RETURN PIPE TEMPERATURE SENSORS T5 AND T6, DCP SHALL CALCULATE BTUH AND TRANSMIT THIS INFORMATION TO THE VA'S ENERGY MANAGEMENT SYSTEM (EMS) AND INTERNET METERING SYSTEM. COORDINATE EQUIPMENT AND INSTALLATION WITH COR AND THE VA'S ENERGY ENGINEER FOR COMPATIBILITY WITH VA'S EXISTING EQUIPMENT AND SYSTEMS. SEE FLOOR PLANS FOR LOCATION.



SECONDARY HEATING HOT WATER CIRCULATING PUMP AND FLOW METERING

HOT WATER PUMP 320-P5 SHALL RUN CONTINUOUSLY UPON A CALL FOR BUILDING HEAT, TO PROVIDE YEAR ROUND HOT WATER FOR SPACE TEMPERATURE CONTROL. PUMP SHALL INCLUDE A CURRENT SENSING RELAY TO INDICATE PUMP STATUS. PROVIDE DIFFERENTIAL PRESSURE SENSORS BETWEEN HOT WATER SUPPLY AND RETURN PIPING MAINS WHERE INDICATED ON THE FLOOR PLANS TO MODULATE HOT WATER PUMP VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN SETPOINT. WHEN THE HEATING HOT WATER SECONDARY PUMP IS ENABLED AND STATUS IS NOT PROVEN FOR ADJUSTABLE TIME DELAY (30 SEC.) OR WHEN PUMP IS NOT ENABLED AND STATUS IS PROVEN, AN ALARM SHALL BE GENERATED AT THE ECC. ENSURE ALL SENSORS ARE SATISFIED AT ALL TIMES.

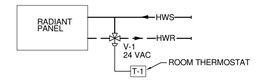
PROVIDE FLOW METERING AND BTUH METERING OF THE HEATING HOT WATER SYSTEM SERVING THIS POD. TRANSMIT FLOW INFORMATION TO THE DCP. UTILIZING FLOW READINGS AND TEMPERATURE READINGS FROM SUPPLY AND RETURN PIPE TEMPERATURE SENSORS T1 AND T2, DCP SHALL CALCULATE BTUH AND TRANSMIT THIS INFORMATION TO THE VA'S ENERGY MANAGEMENT SYSTEM (EMS) AND INTERNET METERING SYSTEM. COORDINATE EQUIPMENT AND INSTALLATION WITH COR AND THE VA'S ENERGY ENGINEER FOR COMPATIBILITY WITH VA'S EXISTING EQUIPMENT AND SYSTEMS. SEE FLOOR PLANS FOR LOCATION.



AIR HANDLING UNIT 320-AHU1 & 2

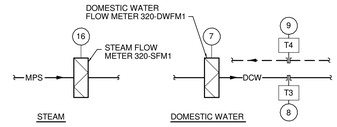
IT CLOSET TEMPERATURE MONITORING

WALL MOUNTED DDC TEMPERATURE SENSOR SHALL CONTINUOUSLY MONITOR SPACE TEMPERATURE IN TELE. 1D-108A AND COMM 1D-152. AN ALARM SHALL BE SENT TO THE DDC SYSTEM IF ROOM TEMPERATURE RISES ABOVE 78 DEG.F (ADJUSTABLE).



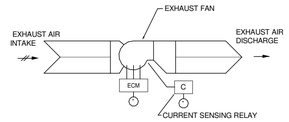
HOT WATER RADIANT HEATING PANEL CONTROL

RADIANT PANEL SHALL BE PROVIDED WITH A MODULATING VALVE V-1 AND ROOM THERMOSTAT T-1 UNDER THIS WORK. THERMOSTAT SHALL MODULATE TO MAINTAIN SETPOINT (INITIALLY SET FOR 72 DEGREES F., ADJUSTABLE).



PROVIDE FLOW METERING OF THE STEAM SYSTEM WHERE IT ENTERS POD D AND THE DOMESTIC WATER WHERE IT ENTERS THE MECHANICAL ROOM. SEE DIV. 22 DOCUMENTS FOR DOMESTIC WATER METER LOCATIONS. TRANSMIT INFORMATION TO THE DCP AND THE VA'S ENERGY MANAGEMENT SYSTEM (EMS) AND INTERNET METERING SYSTEM. COORDINATE EQUIPMENT AND INSTALLATION WITH COR AND THE VA'S ENERGY ENGINEER FOR COMPATIBILITY WITH VA'S EXISTING EQUIPMENT AND SYSTEMS.

FLOW METERING

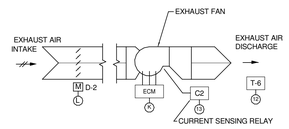


GENERAL EXHAUST FAN

* PROVIDE FAN START/STOP (DO) AND FAN STATUS (DI) FOR 320-EF1D, 320-EF2D AND 320-EF3D.

1 EXHAUST FAN CONTROLS

1.1 EXHAUST FAN SHALL BE STARTED AND STOPPED BY THE DCP OR REMOTELY AT THE ECC. EACH FAN SHALL BE SOFTWARE INTERLOCKED TO OPERATE WITH THE AIR HANDLING UNIT. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" SHALL BE USED ONLY FOR MAINTENANCE.



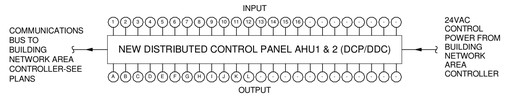
MECHANICAL ROOM EXHAUST FAN

1 EXHAUST FAN CONTROLS (320-EF4D & 320-EF5D)

1.1 EXHAUST FAN SHALL BE STARTED AND STOPPED BY THE DCP OR REMOTELY AT THE ECC. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" SHALL BE USED ONLY FOR MAINTENANCE.

1.2 WHEN MECHANICAL ROOM THERMOSTAT DETECTS TEMPERATURE IN EXCESS OF 80 DEG. F (ADJUSTABLE), THE ASSOCIATED MOTORIZED DAMPER AT THE INTAKE LOUVER SHALL OPEN AND EXHAUST FAN SHALL START. WHEN TEMPERATURE DROPS BELOW 75 DEG. F (ADJUSTABLE), EXHAUST FAN SHALL STOP, AND ASSOCIATED MOTORIZED DAMPER SHALL CLOSE. FAN SHALL START AND RUN FOR TEN MINUTES ONCE PER WEEK, AT THE SAME TIME EVERY WEEK, EXCEPT WHEN SYSTEM IS INACTIVE PER 1.3 BELOW.

1.3 BELOW 70 DEG.F OUTSIDE AIR TEMPERATURE, MECHANICAL ROOM VENTILATION SYSTEM SHALL BE INACTIVE, AND EXHAUST FANS SHALL NOT OPERATE.



CONTROL PANEL AHU1 & 2

CONTROL PANEL AHU1 & 2 POINTS LIST

POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
1	DSD-1	SUPPLY AIR DUCT SMOKE DETECTOR (FIRE SYSTEM SHUTDOWN)	X			
2	T-1	SUPPLY AIR TEMPERATURE SENSOR			X	
3	T-2	OUTSIDE AIR TEMPERATURE SENSOR (GLOBAL POINT)			X	
4	T-3	PREHEAT COIL LEAVING AIR TEMPERATURE THERMOSTAT (FREEZESTAT)	X			
5	T-4	COOLING COIL LEAVING AIR TEMPERATURE SENSOR			X	
6	T-5	PREHEAT COIL LEAVING AIR TEMPERATURE SENSOR			X	
7	DP-1	FILTER PRESSURE DROP			X	
8	SPS-1	SUPPLY DUCT HIGH STATIC SAFETY	X			
9	H-1	ROOM HUMIDISTAT			X	
10	H-2	SUPPLY AIR HUMIDITY SENSOR (HIGH LIMIT)			X	
11	C-1	SUPPLY FAN STATUS CURRENT SWITCH	X			
12	T-6	MECHANICAL ROOM THERMOSTAT			X	
13	C-2	MECHANICAL ROOM EXHAUST FAN STATUS CURRENT SWITCH	X			
14	T-8	IT CLOSET ROOM THERMOSTAT			X	
15	T-7	IT CLOSET ROOM THERMOSTAT			X	
A	ECM	SUPPLY FAN START-STOP		X		
B	V-1	MODULATING STEAM PREHEAT COIL VALVE				X
C	V-2	MODULATING STEAM HUMIDIFIER VALVE				X
D	V-3	TWO POSITION ISOLATION STEAM HUMIDIFIER VALVE		X		
E	V-4	DX COOLING COIL VALVE (CIRCUIT #1)				X
F	D-1	TWO-POSITION OUTSIDE AIR DAMPER		X		
G	V-5	DX COOLING COIL VALVE (CIRCUIT #2)				X
H	V-6	DX HOT GAS REHEAT VALVE (CIRCUIT #1)				X
I	V-7	DX HOT GAS REHEAT VALVE (CIRCUIT #2)				X
J	ECM	SUPPLY FAN SPEED				X
K	ECM	MECHANICAL ROOM EXHAUST FAN START-STOP		X		
L	D-2	TWO-POSITION EXHAUST AIR INTAKE DAMPER		X		

SEQUENCE OF OPERATION FOR 320-AHU1 & 2

1. GENERAL

1.1 UNIT IS NORMALLY STARTED AND STOPPED BY THE DCP OR REMOTELY AT THE ECC. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE.

1.2 WHEN THE UNIT IS "OFF" FOR ANY REASON, OUTSIDE AIR DAMPER D-1 SHALL BE CLOSED AND SUPPLY FAN SHALL BE OFF.

1.3 WHEN THE UNIT IS "ON", OUTSIDE AIR DAMPER D-1 SHALL OPEN, AND ONCE PROVED OPEN, SUPPLY FAN SHALL START.

1.4 OUTSIDE AIR TEMPERATURE SHALL BE SENSED BY OUTDOOR TEMPERATURE SENSOR T-2.

2. TEMPERATURE CONTROL

2.1 THE SUPPLY AIR DISCHARGE TEMPERATURE, SENSED BY T-1, SHALL BE MAINTAINED AT SETPOINT VIA DCP MODULATING PRE-HEAT COIL STEAM CONTROL VALVE V-1; DX COOLING COIL VALVES V-4 AND V-5 AND DX HOT GAS REHEAT VALVES V-6 AND V-7, IN SEQUENCE TO MAINTAIN THE DISCHARGE AIR RESET SCHEDULE AND CONTROL SEQUENCES DESCRIBED BELOW.

2.2 SUPPLY DISCHARGE AIR TEMPERATURE AT T-1 SHALL BE RESET BASED ON GREATEST ZONE COOLING DEMAND AS DETERMINED BY ZONE COOLING COIL VALVE POSITION:

GREATEST ZONE COOLING DEMAND 100%, 58 DEGREES F. DISCHARGE AIR
GREATEST ZONE COOLING DEMAND 50%, 70 DEGREES F. DISCHARGE AIR
GREATEST ZONE COOLING DEMAND 0%, 75 DEGREES F. DISCHARGE AIR

ALL CONTROL SETPOINTS SHALL BE FULLY ADJUSTABLE TO MEET JOB CONDITIONS

3. STEAM PRE-HEAT COIL CONTROL

3.1 WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 50 DEG. F. (ADJUSTABLE), PREHEAT COIL VALVE V-1 SHALL MODULATE TO MAINTAIN SUPPLY DISCHARGE AIR TEMPERATURE AS SENSED BY TEMPERATURE SENSOR T-1, PER 2.2 ABOVE.

3.2 WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 50 DEG. F. (ADJUSTABLE), PREHEAT COIL VALVE V-1 SHALL BE FULLY CLOSED.

4. DX COOLING COIL CONTROL

4.1 ON A RISE IN OUTSIDE AIR TEMPERATURE AT T-2 ABOVE SETPOINT (60 DEG. F. ADJUSTABLE), THE SOLENOID VALVES AND COMPRESSORS SHALL BE ENERGIZED IN SEQUENCE TO SATISFY THE COOLING COIL DISCHARGE AIR TEMPERATURE SETPOINT (55 DEG. F. ADJUSTABLE). PROVIDE ON AND OFF TIME DELAYS BETWEEN STEPS. WHEN THE MINIMUM STEP OF DX COOLING IS ENERGIZED AND THE DISCHARGE AIR TEMPERATURE FALLS BELOW 53 DEGREES F. DE-ENERGIZE DX COOLING COIL. INTERLOCK COOLING CONTROL WITH SUPPLY FAN STATUS CURRENT SWITCH, TO KEEP COOLING OFF UNLESS THE FAN IS OPERATING.

4.2 LEAD COMPRESSOR IS DIGITAL WITH HOT GAS REHEAT. WHEN THE LEAD COMPRESSOR IS AT 100% AND IS NOT ABLE TO MAINTAIN SETPOINT FOR A PERIOD OF TIME, THE LAG COMPRESSOR SHALL BE ENABLED AND THE DIGITAL COMPRESSOR SHALL GO TO 10% AND MODULATE UP AS NEEDED.

4.3 LAG COMPRESSOR SHALL INCLUDE HOT GAS BYPASS.

5 HUMIDITY CONTROL

5.1 WHEN THE DCP IS NOT CALLING FOR HUMIDITY, SENSED BY SPACE HUMIDITY SENSOR H-1, 2-WAY "ON-OFF" CONTROL VALVE V-3 SHALL REMAIN CLOSED. WHEN THE DCP IS CALLING FOR HUMIDITY, V-3 SHALL REMAIN OPEN.

5.2 SPACE HUMIDITY, SENSED BY H-1, SHALL BE MAINTAINED AT SETPOINT (30 PERCENT RH, ADJUSTABLE) VIA DCP BY MODULATING HUMIDIFIER CONTROL VALVE V-2 TO MAINTAIN THE DESIRED HUMIDITY. THE DCP SHALL OVERRIDE THIS CONTROL TO MAINTAIN A MAXIMUM HUMIDITY LEVEL OF 80 PERCENT AS SENSED BY H-2. DCP SHALL CLOSE VALVE V-3 WHENEVER THE SUPPLY FAN IS OFF. VALVE V-2 SHALL BE INTERLOCKED WITH TEMPERATURE SWITCH TO KEEP HUMIDIFIER OFF UNTIL CONDENSATE APPROACHES STEAM TEMPERATURE.

5.3 ON-OFF CONTROL VALVE V-3 SHALL REMAIN CLOSED WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE 55 DEG. F.

6 FREEZE PROTECTION

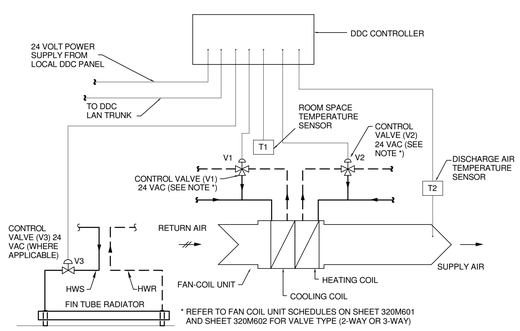
6.1 IF THE AIR TEMPERATURE AS SENSED BY T-3 FALLS BELOW 45 DEG. F, AN ALARM SIGNAL SHALL INDICATE AT THE DCP AND ECC. IF THIS TEMPERATURE FALLS BELOW 40 DEG.F, THE SUPPLY FAN SHALL SHUT DOWN AND A CRITICAL ALARM SHALL INDICATE AT THE DCP AND ECC.

7 AUTOMATIC SHUTDOWN / RESTART

7.1 WHEN SMOKE IS DETECTED BY SUPPLY DUCT SMOKE DETECTOR, DSD-1, THE SUPPLY AIR FAN SHALL SHUT "OFF". A SUPERVISORY SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM, AND A SUPERVISORY SIGNAL SHALL INDICATE AT THE DCP AND ECC. SUPPLY FAN SHALL RESTART WHEN THE FIRE ALARM CIRCUIT IS RESET.

8 HOT GAS REHEAT COIL CONTROL

8.1 WHEN DX COOLING IS ACTIVE, THE HOT GAS REHEAT COIL SHALL BE AVAILABLE. THE HOT GAS REHEAT VALVES V-6 AND V-7 SHALL MODULATE TO MAINTAIN SUPPLY AIR DISCHARGE TEMPERATURE AS SENSED BY TEMPERATURE SENSOR T-1, PER 2.2 ABOVE.



* REFER TO FAN COIL UNIT SCHEDULES ON SHEET 320M601 AND SHEET 320M602 FOR VALVE TYPE (2-WAY OR 3-WAY)

FOUR PIPE FAN-COIL UNIT CONTROLS

FAN-COIL CONTROL SEQUENCE

1.1 WHEN ROOM TEMPERATURE AT T1 IS BELOW SETPOINT, CHILLED WATER VALVE V2 SHALL BE CLOSED AND HOT WATER VALVE V1 SHALL MODULATE OPEN TO THE COIL TO MAINTAIN TEMPERATURE SETPOINT. IF HOT WATER VALVE V1 IS 100% OPEN (ADJUSTABLE) AND TEMPERATURE SETPOINT IS NOT MET, HOT WATER VALVE V3 (WHERE APPLICABLE) SHALL MODULATE OPEN TO RADIATOR TO MAINTAIN TEMPERATURE SETPOINT.

1.2 WHEN ROOM TEMPERATURE AT T1 IS ABOVE SETPOINT, HOT WATER VALVES V1 & V3 SHALL BE CLOSED AND CHILLED WATER VALVE V2 SHALL MODULATE OPEN TO THE COIL TO MAINTAIN TEMPERATURE SETPOINT.

1.3 THE UNIT FAN SHALL RUN CONTINUOUSLY.

1.4 EACH UNIT SHALL INCLUDE A DISCHARGE AIR TEMPERATURE SENSOR.

1.5 EXTEND 24 VOLT POWER TO THE FAN COIL UNIT CONTROLLER FROM THE NEAREST DDC CONTROL PANEL.

1.6 REFER TO HVAC DESIGN DATA SCHEDULE ON SHEET 320M601 FOR SPACE TEMPERATURE SETPOINTS IN BOTH OCCUPIED AND UNOCCUPIED MODES. ROOM SPACE TEMPERATURE SET POINT SHALL BE ADJUSTABLE FROM THE FRONT END COMPUTER INTERFACE.

1.7 PROVIDE SCHEDULED NIGHT SET-BACK CONTROL FOR CONTINUOUS FAN OPERATION DURING THE OCCUPIED PERIOD (24 HOURS A DAY, 7 DAYS A WEEK, ADJ.) AND CYCLED FAN OPERATION TO MAINTAIN REDUCED TEMPERATURE IN THE UNOCCUPIED PERIOD.

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

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Approved: Project Director

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Date: 12/20/2013 | Checked: JAC | Drawn: TEG

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320M701

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

FULLY SPRINKLERED

TECHNOLOGY SYMBOLS

AP EX/R 2	EXISTING CEILING MOUNTED WIRELESS ACCESS POINT TO BE REMOVED AND RE-INSTALLED IN NEW CEILING. REMOVE AND PROVIDE NEW 1-DATA DROP.PROVIDE 20' COIL IN DATA CABLE TO FACILITATE RELOCATION OF WAP.
	CONDUIT SLEEVE / FIRE RATED SLEEVE ASSEMBLY THRU WALL (1-2" SLEEVE UNLESS NOTED OTHERWISE).
D	WALL MOUNTED VOICE/DATA OUTLET (18" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT(S) TO ABOVE CORRIDOR CEILING. JACKS, FACEPLATE AND CABLE. REFER TO FACEPLATE DETAILS.
P	WALL MOUNTED PHONE OUTLET (46" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT TO ABOVE ACCESSIBLE CEILING, JACKS, FACEPLATE AND CABLE. REFER TO FACEPLATE DETAILS.
TV X	CEILING MOUNTED TV OUTLET WITH NURSE CALL INTERFACE.REFER TO FACEPLATE DETAILS. PROVIDE JACKS, FACEPLATE AND CABLING.
TV X	WALL MOUNTED TV OUTLET (84" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT. REFER TO FACEPLATE DETAILS. PROVIDE JACKS, FACEPLATE AND CABLING. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION.
X	TECHNOLOGY FLOOR BOX. PROVIDE APPROPRIATE CONNECTOR PLATE AND HINGED COVER. "X" INDICATES OUTLET TYPE. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION. REFER TO FACEPLATE DETAILS.
42	FLAT PANEL DISPLAY WITH WALL MOUNTING HARDWARE (84" MH UNLESS NOTED OTHERWISE). # INDICATES NOMINAL SCREEN DIAGONAL SIZE.
SC	CEILING MOUNTED PAGING/INTERCOM SYSTEM SPEAKER.
S	HORN TYPE PAGING/INTERCOM SYSTEM SPEAKER (80" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, GROMMETED FACEPLATE, SPEAKER, INSTALLATION AND WIRING.
V	PAGING/INTERCOM SYSTEM WALL MOUNTED SPEAKER VOLUME CONTROLLER (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX AND 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, VOLUME CONTROLLER WITH FACEPLATE, INSTALLATION AND WIRING.
CC X	CCTV SYSTEM CEILING MOUNTED CAMERA. REFER TO CAMERA SCHEDULE FOR MOUNTING HEIGHT AND CAMERA SPECIFICATIONS. SUBSCRIPT "X" INDICATES ENTRY IN CAMERA SCHEDULE.
PP	DESK MOUNTED PANIC/DURESS BUTTON.
CC X	CCTV SYSTEM WALL MOUNTED CAMERA (REFER TO CAMERA SCHEDULE FOR MOUNTING HEIGHT AND CAMERA SPECIFICATIONS). SUBSCRIPT "X" INDICATES ENTRY IN CAMERA SCHEDULE. 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, CAMERA AND CABLING.
CR	WALL MOUNTED PROXIMITY CARD READER (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING, CARD READER AND CABLING. REFER TO SECURITY ROUGH-IN DETAILS.
DM	DOOR POSITION SWITCH BY.G.C. WITH WIRING BY E.C. CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. REFER TO SECURITY ROUGH-IN DETAILS.
EM FA	ELECTRONIC MAG LOCK AND INSTALLATION BY OTHERS. LOW VOLTAGE WIRING. CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. REFER TO SECURITY ROUGH-IN DETAILS. "FA" INDICATES FIRE ALARM INTERFACE FOR RELEASE DURING ALARM.
HA	WALL/PEDESTAL MOUNT HANDICAP DOOR ACTUATOR BUTTON, FURNISHED BY OTHERS. BOX AS REQUIRED BY SYSTEM MANUFACTURER WITH INSTALLATION AND CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING . ALL LOW VOLTAGE WIRING AND INTERFACE WITH SMS AND DOOR MOTOR. REFER TO SECURITY ROUGH-IN DETAILS.
HD	HANDICAP DOOR OPERATOR MOTOR ASSEMBLY BY OTHERS. 120V POWER CONNECTION AND CONDUIT FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. LOW VOLTAGE WIRING AND INTERFACE WITH SMS AND DOOR ACTUATOR BUTTONS. REFER TO SECURITY ROUGH-IN DETAILS.
JB	SECURITY SYSTEM JUNCTION BOX TO BE LOCATED ABOVE ACCESSIBLE CEILING (MIN 6"X6"X4"). ROUTE LOCAL DOOR SECURITY WIRING CONDUITS/RACEWAYS TO JUNCTION BOX. EXTEND 1" CONDUIT WITH DOOR SECURITY WIRING TO LOCAL 2-DOOR CONTROL PANEL/REMOTE DOOR CONTROL PANEL AS INDICATED ON DRAWINGS. REFER TO SECURITY ROUGH-IN DETAILS FOR WORK.
K	WALL MOUNTED SECURITY KEYPAD ENTRY STATION (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. KEYPAD AND CABLING.
RX	REQUEST TO EXIT SWITCH IN DOOR HARDWARE BY OTHERS. LOW VOLTAGE WIRING, CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. REFER TO SECURITY ROUGH-IN DETAILS.
CM	VIDEO OUTLET FOR CCTV SYSTEM MONITOR INCLUDING RF VIDEO CABLE AND JACK. 1-GANG BOX, 84" MH, 0.75" CONDUIT TO ABOVE CEILING, JACK, FACEPLATE AND CABLING.
D RC R	1-DATA OUTLET FOR RTLS PORTAL. SUBSCRIPT "R" INDICATES WALL MOUNTED, 18" MH). SUBSCRIPT "RC" INDICATES ABOVE CEILING MOUNTED. FIELD VERIFY EXACT OUTLET LOCATION WITH VA PRIOR TO INSTALLATION. PROVIDE 10' SLACK IN DATA DROP, MANAGED ABOVE CEILING.
DB	DOOR BELL

ELECTRICAL SYMBOLS

3 $	DASH SYMBOL INDICATES PARTICULAR OUTLET OR DEVICE TO BE REMOVED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED.
3 $	EXISTING OUTLET OR DEVICE TO REMAIN. MAINTAIN EXISTING CIRCUITING.
	ELECTRICAL CONNECTION.
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (18" MH UNLESS NOTED OTHERWISE).
	20A-125V SINGLE RECEPTACLE, NEMA 5-20R (18" MH UNLESS NOTED OTHERWISE).
	SPECIAL PURPOSE RECEPTACLE. REFER TO NOTE ON PLAN.
	20A-125V DOUBLE DUPLEX RECEPTACLE. NEMA 5-20R, (18" MH UNLESS NOTED OTHERWISE) TWO GANG ASSEMBLY.
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R WITH BOTTOM OUTLET CONTROLLED BY WALL SWITCH. (18" MH UNLESS NOTED OTHERWISE).
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (46" MH UNLESS NOTED OTHERWISE).
GF	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, WITH GROUND FAULT CIRCUIT INTERRUPTER (18" MH UNLESS NOTED OTHERWISE).
WP	20A-125V WEATHERPROOF DUPLEX RECEPTACLE, NEMA 5-20R (HORIZONTAL 18" MH UNLESS NOTED OTHERWISE)
WP/GF	20A-125V WEATHERPROOF DUPLEX RECEPTACLE, NEMA 5-20R WITH GROUND FAULT CIRCUIT INTERRUPTER (18" MH UNLESS NOTED OTHERWISE).
EM	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, ON EMERGENCY POWER (18" MH UNLESS NOTED OTHERWISE).
T	20A-125V POWERLOCK GROUNDING TYPE RECEPTACLE, HOSPITAL USE (66" MH UNLESS NOTED OTHERWISE).
J	JUNCTION BOX.
AC	120V POWER SUPPLY FOR ACCESS CONTROL.
PT	120V POWER CONNECTION TO PATIENT LIFT SYSTEM.
$	SINGLE POLE SWITCH (46" MH UNLESS NOTED OTHERWISE).
2 $	TWO POLE WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
3 $	THREE-WAY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
4 $	FOUR-WAY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
P $	SWITCH WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" MH UNLESS NOTED OTHERWISE).
K $	KEY OPERATED WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
L $	LOW-VOLTAGE MOMENTARY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
DM $	LIGHTING DIMMER SWITCH (46" MH UNLESS NOTED OTHERWISE) 1000 WATTS UNLESS OTHERWISE INDICATED.
M $	FLUSH FRACTIONAL HORSEPOWER MOTOR STARTER WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" MH UNLESS NOTED OTHERWISE).
H $	HP RATED WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
OS $	WALL MOUNTED OCCUPANCY SENSOR (SWITCH STYLE).
	ELECTRICAL PANEL OR SWITCHBOARD PER DRAWINGS.
P/B	PULL BOX.
J	DISCONNECT SWITCH.
	MOTOR STARTER.
J	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH.
	ELECTRIC MOTOR.
A	HANDICAPTED DOOR OPERATOR. REFER TO AV SYMBOLS (HD)
UH	UNIT HEATER.
FC	FAN COIL.
AC	AIR CONDITIONER.
CU	CONDENSING UNIT.
UV	UNIT VENTILATOR.
T	LINE VOLTAGE THERMOSTAT.
DH	DUCT HEATER.
EB	ELECTRIC BASEBOARD HEATER.
M	INTERCOM SYSTEM DESK MOUNTED MASTER CONTROL STATION. SUBSCRIPT "W" INDICATES WALL MOUNT (46" MH UNLESS NOTED OTHERWISE).
T	INTERCOM STAFF STATION (46" MH UNLESS NOTED OTHERWISE).
H	INTERCOM HORN TYPE SPEAKER (84" MH UNLESS NOTED OTHERWISE).
S	INTERCOM SPEAKER FLUSH MOUNT IN CEILING.
	PUSHBUTTON (46" MH UNLESS NOTED OTHERWISE). REFER TO AV SYMBOLS (HA)
LC	LIGHTING CONTACTOR.
OS	CEILING MOUNTED OCCUPANCY SENSOR.

FIRE ALARM SYMBOLS

FACP	FIRE ALARM CONTROL PANEL.
FAAP	FIRE ALARM ANNUNCIATOR PANEL.
75 F	FIRE ALARM SPEAKER & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
75 F	FIRE ALARM BELL & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
75 F	FIRE ALARM CHIME & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
75 F	FIRE ALARM HORN & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
75	FIRE ALARM SIGNALING LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
S F	CEILING MOUNTED FIRE ALARM SPEAKER.
F K/LC	FIRE ALARM MANUAL STATION (46" MH UNLESS NOTED OTHERWISE). SUBSCRIPT "K" INDICATES KEY OPERATED. "LC" INDICATES CLEAR LEXAN PROTECTIVE COVER WITH TAMPER ALARM/SOUND.
S	CEILING MOUNTED SMOKE DETECTOR.
H	CEILING MOUNTED HEAT DETECTOR.
S S/R	DUCT MOUNTED SMOKE DETECTOR. SUBSCRIPT "S" INDICATES SUPPLY. SUBSCRIPT "R" INDICATES RETURN.
H S/R	DUCT MOUNTED HEAT DETECTOR. SUBSCRIPT "S" INDICATES SUPPLY. SUBSCRIPT "R" INDICATES RETURN.
C	ELECTRIC RELEASE DOOR CLOSER.
D	ELECTRO-MAGNETIC DOOR HOLDER.
FS	WATER FLOW SWITCH.
V	VALVE SUPERVISORY SWITCH.
W R	DUCT MOUNTED DETECTOR REMOTE TEST STATION AND ALARM INDICATOR LIGHT. SUBSCRIPT "W" INDICATES WALL MOUNTED.
SD	SMOKE DAMPER.
FT	FIRE FIGHTER'S TELEPHONE (60" MH UNLESS NOTED OTHERWISE).
PS	PRESSURE SWITCH.
AM C/I	ADDRESSABLE MODULE. SUBSCRIPT "I" INDICATES INPUT. SUBSCRIPT "C" INDICATES CONTROL.

LUMINAIRE SYMBOLS

A a	LIGHTING FIXTURE. CAPITAL LETTER DENOTES FIXTURE TYPE, LOWER CASE LETTER DENOTES SWITCHING ARRANGEMENT.
	LIGHTING FIXTURE ON NIGHT LIGHT OR EMERGENCY CIRCUIT.
	EXIT LIGHTING FIXTURE, ARROWS AS INDICATED.
	NIGHT LIGHT. WALL MOUNTED. 18" AFF.

NURSE CALL SYMBOLS

NCCP	NURSE CALL CONTROL PANEL.
NW W	NURSE CALL DESK MOUNTED MASTER CONTROL STATION (OUTLET AT 18" MH UNLESS NOTED OTHERWISE). SUBSCRIPT "W" INDICATES WALL MOUNT (46" MH UNLESS NOTED OTHERWISE).
NS	NURSE CALL STAFF STATION (46" MH UNLESS NOTED OTHERWISE).
NS C	NURSE CALL MULTI-PIN CATV JACK, MTD. 84" A.F.F.
NS P	NURSE CALL STAFF PRESENCE STATION MTD. 5'-0" A.F.F. UNLESS NOTED OTHERWISE.
NI	NURSE CALL DUTY STATION (46" MH UNLESS NOTED OTHERWISE).
NI T	NURSE CALL STATION WITH PULL CORD FOR PATIENT USE (33" MH IN TOILET ROOMS, 90" M.H. IN SHOWERS AND WET AREAS, 46" MH UNLESS NOTED OTHERWISE IN ALL OTHER AREAS). REFER TO GENERAL NOTE, SHEET 320ET101.
NC	NURSE CALL PATIENT STATION (46" MH UNLESS NOTED OTHERWISE). SHALL INCLUDE PILLOW SPEAKER (WITH TV INTERFACE), CODE BLUE, EMERGENCY, STAFF ASSIST AND CANCEL BUTTON.
NI	PATIENT NURSE CALL STATION (ONE OR TWO CORDS AS INDICATED, 46" MH UNLESS NOTED OTHERWISE).
N	CEILING MOUNTED NURSE CALL DOME LIGHT.
H N	WALL MOUNTED NURSE CALL DOME LIGHT (90" MH UNLESS NOTED OTHERWISE).
N R	CEILING MOUNTED COMBINATION DOME LIGHT AND BUZZER.
N Z	CEILING MOUNTED NURSE CALL ZONE LIGHT.
N E	NURSE CALL EMERGENCY BUTTON (46" MH UNLESS NOTED OTHERWISE).
N B	EMERGENCY CODE BLUE BUTTON (46" MH UNLESS NOTED OTHERWISE).
TV	NURSE CALL PATIENT STATION / TV INTERFACE MODULE TO CONTROL TV THRU N.C. PILLOW SPEAKER. BOX WITH CONDUIT TO ABOVE CEILING. REFER TO FACEPLATE DETAILS.

GENERAL FLOOR PLAN NOTES

B E2	DETAIL: B = DETAIL DESIGNATION E2 = SHEET WHERE DETAIL IS LOCATED
1 E2	SECTION: 1 = SECTION DESIGNATION E2 = SHEET WHERE DETAIL IS LOCATED
3	PLAN NOTE. APPLIES ONLY TO THE SHEET WHICH IT IS SHOWN.
3	DETAIL NOTE. APPLIES ONLY TO THE ASSOCIATED DETAIL.
	CABLE TRAY, 12" x 4" DEEP UNLESS NOTED OTHERWISE.
	WIRE & CONDUIT IN WALL OR ABOVE CEILING.
	WIRE & CONDUIT IN OR BELOW SLAB OR GRADE.
	CONDUIT TO BE REMOVED.
E	EXISTING WIRE & CONDUIT TO REMAIN.
CM	CABLE MANAGEMENT SYSTEM PATHWAY.
X - 1,2	EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT; "X" DENOTES PANEL NAME; NUMBER(S) DENOTES CIRCUIT(S).
	SURFACE MOUNTED RACEWAY.

NOTE: ALL SYMBOLS AND ABBREVIATIONS ARE SUBJECT TO MODIFICATIONS ON OTHER DRAWINGS.

ALL SYMBOLS OR ABBREVIATIONS MIGHT NOT NECESSARILY BE USED ON THIS PROJECT.

ABBREVIATIONS

AAP	- AREA ALARM PANEL - MEDICAL GAS
CC	- ACCESS
ADJ	- ADJUSTABLE
AF	- ARC FAULT CIRCUIT INTERUPTER
AFCI	- ARC FAULT CIRCUIT INTERUPTER
AFF	- ABOVE FINISHED FLOOR TO BOTTOM OF ITEM
AFG	- ABOVE FINISHED GRADE TO BOTTOM OF ITEM
ALT	- ALTERNATE
AP	- ACCESS PANEL
APPROX	- APPROXIMATE
ARCH	- ARCHITECT OR ARCHITECTURAL
ASSY	- ASSEMBLY
ATS	- AUTOMATIC TRANSFER SWITCH
BLDG	- BUILDING
BOE	- BOTTOM OF EQUIPMENT
BOT	- BOTTOM
BTWN	- BETWEEN
CFCI	- CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CKT	- CIRCUIT
CLG	- CEILING
CMU	- CONCRETE MASONRY UNIT
CONN	- CONNECT OR CONNECTION
CONTR	- CONTRACTOR
CORR	- CORRIDOR
CTR	- CENTER
D	- DEPTH
DET	- DETAIL
DIA	- DIAMETER
DIM	- DIMENSION
DIV	- DIVISION
DN	- DOWN
DWG	- DRAWING
EA	- EACH
EC	- ELECTRICAL CONTRACTOR (DIVISION 26)
EJ	- EXPANSION JOINT
ELEC	- ELECTRICAL
ELEV	- ELEVATION OR ELEVATOR
EM	- EMERGENCY
EQ	- EQUAL
EQS	- EQUIPMENT SUPPLIER
EQUIP	- EQUIPMENT
ETR	- EXISTING TO REMAIN
EX	- EXISTING
EXP	- EXPANSION
EXT	- EXTERIOR
EX/R	- EXISTING DEVICE TO BE REMOVED AND RELOCATED.
FCE	- FIRE CONTROL EQUIPMENT
FF	- FINISHED FLOOR ELEVATION
FLR	- FLOOR
FSC	- FIRE SUPPRESSION CONTRACTOR (DIVISION 21)
FT	- FEET
FTG	- FOOTING
GC	- GENERAL CONTRACTOR
GF	- GROUND FAULT CIRCUIT INTERRUPTER
GFCI	- GROUND FAULT CIRCUIT INTERRUPTER OR GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFFT	- GROUND FAULT FEED THRU
HC	- HVAC CONTRACTOR (DIVISION 23)
HP	- HORSE POWER OR HIGH POINT
HVAC	- HEATING, VENTILATING, AND AIR CONDITIONING
ID	- INSIDE DIAMETER
IN	- INCHES
KEC	- KITCHEN EQUIPMENT CONTRACTOR
L	- LENGTH
LBS	- POUNDS
MAP	- MASTER ALARM PANEL (MEDICAL GAS)
MAX	- MAXIMUM
MEZZ	- MEZZANINE
MFR	- MANUFACTURER
MH	- MANHOLE OR MOUNTING HEIGHT TO CENTER LINE OF ITEM
MIN	- MINIMUM OR MINUTE
MISC	- MISCELLANEOUS
MTD	- MOUNTED
MTG	- MOUNTING
NIC	- NOT IN CONTRACT
NOM	- NOMINAL
NTS	- NOT TO SCALE
OD	- OUTSIDE DIAMETER
OFCI	- OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	- OWNER FURNISHED OWNER INSTALLED
PC	- PLUMBING CONTRACTOR (DIVISION 22)
PLBG	- PLUMBING
RAD	- RADIUS
REC	- RECESSED
REQD	- REQUIRED
RI	- ROUGH-IN
S	- SURFACE MOUNTED
SC	- SECURITY CONTRACTOR
SCH	- SCHEDULE
SHT	- SHEET
SMS	- SECURITY MANAGEMENT SYSTEM
SPEC	- SPECIFICATIONS
SQ	- SQUARE
SS	- STAINLESS STEEL
STD	- STANDARD
STRUC	- STRUCTURAL OR STRUCTURE
SUC	- SITE UTILITY CONTRACTOR
TC	- TECHNOLOGY CONTRACTOR
TEMP	- TEMPERATURE
TOE	- TOP OF EQUIPMENT
TYP	- TYPICAL
UNO	- UNLESS NOTED OTHERWISE
VFD	- VARIABLE FREQUENCY DRIVE
VOL	- VOLUME
W/	- WITH
W/0	- WITHOUT
WP	- WEATHERPROOF
ZVC	- ZONE VALVE CABINET

GENERAL NOTES

A. ALL ELECTRICAL SPLICES FOR WIRE SIZES 6 AWG AND LARGER SHALL BE HYDRAULIC CRIMP TYPE.
B. THESE NOTES APPLY EQUALLY TO THE FULL SET OF DOCUMENTS.
C. SITE VISIT(S) SHALL BE AS OUTLINED IN PROJECT SPECIFICATIONS.
D. ANY ASBESTOS WORK PERFORMED AS PART OF THIS PROJECT SHALL BE COMPLETED PRIOR TO STARTING ANY OTHER PROJECT SITE WORK.
E. THE NOTES AND SYMBOLS SET DOWN ON THESE DRAWINGS ARE FOR THE GUIDANCE OF ALL TRADES INVOLVED IN THE PROJECT AND MUST BE FOLLOWED TO EXECUTE THE WORK AS INTENDED.
F. THE CONTRACTORS SHALL REFER TO ALL SPECIFICATION SECTIONS. AND ELECTRICAL DRAWINGS FOR DETAILS OF BUILDING CONSTRUCTION TO ENSURE SPACE AND SATISFACTORY ARRANGEMENT FOR THEIR WORK. THE VARIOUS DRAWINGS COMPRISING THE SET ARE INTERDEPENDENT AND MUST BE USED JOINTLY AT ALL TIMES. EACH CONTRACTOR SHOULD REFER TO THE GENERAL REQUIREMENTS OF THE CONTRACT. THESE NOTES AND SYMBOLS SET DOWN ON THE DRAWINGS ARE FOR THE GUIDANCE OF ALL TRADES INVOLVED IN THE PROJECT AND MUST BE FOLLOWED TO EXECUTE THE WORK AS INTENDED. IF DISCREPANCIES OCCUR, CONTACT THE COR THRU THE CONTRACTING OFFICER FOR CLARIFICATION BEFORE PROCEEDING.
G. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. SEE SPECIFICATIONS FOR MORE SPECIFIC DETAILS ON RESPONSIBILITIES.
H. ALL WORK MUST BE COORDINATED WITH THE COR TO MAINTAIN OPERATION OF THE EXISTING FACILITY.
I. FIELD VERIFY DIMENSIONAL INFORMATION PRIOR TO ORDERING EQUIPMENT. DO NOT SCALE DRAWINGS.
J. DIMENSIONS ARE TYPICALLY INDICATED TO THE FINISHED FACE OF WALLS OR PARTITIONS AND CENTER LINES OF COLUMNS UNLESS OTHERWISE INDICATED.
K. TITLES, CAPTIONS, HEADINGS, ETC. ARE INTENDED FOR GENERAL REFERENCE AND ARE NOT INTENDED TO LIMIT THE WORK REQUIRED IN ANY WAY.
L. COORDINATE ALL WORK WITH OTHER TRADES. CONTRACTOR SHALL KEEP HIMSELF INFORMED OF THE PROGRESS AND DETAIL DEVELOPMENT OF THE WORK OF OTHERS AND SHALL BE RESPONSIBLE FOR COORDINATING AND EXPEDITING HIS WORK WITH OTHERS SO THAT THE PROGRESS OF THE TOTAL WORK SHALL BE KEPT ON SCHEDULE.
M. ALL WORK SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH ALL GOVERNING CODES AND STANDARDS.
N. EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON AVAILABLE DRAWING INFORMATION AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
O. EACH CONTRACTOR AND/OR TRADE FITTING OR PLACING HIS WORK INTO OR ON THE WORK OF OTHERS DOES SO WITH THE UNDERSTANDING THAT THE INSTALLATION OF HIS WORK CONSTITUTES HIS ACCEPTANCE OF THE SUITABILITY OF THE WORK IN PLACE. IF THE WORK OF OTHERS IS NOT ACCEPTABLE, HE SHALL NOTIFY THE COR AND SUCH WORK SHALL BE CORRECTED. ANY NEW WORK INSTALLED IN UNSUITABLE EXISTING WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR TRADE INSTALLING THE NEW WORK. NO CLAIMS FOR ADDITIONAL COMPENSATION FOR CORRECTING WORK INSTALLED IN UNSUITABLE EXISTING CONDITIONS WILL BE CONSIDERED.
P. ANY STRUCTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, OR PLUMBING INFORMATION INDICATED ON THE ARCHITECTURAL DRAWINGS IS FOR REFERENCE PURPOSES ONLY UNLESS OTHERWISE INDICATED.
Q. IF, IN THE PERFORMANCE OF THE ELECTRICAL WORK, MATERIALS ARE OBSERVED WHICH ARE SUSPECTED TO CONTAIN ASBESTOS, THE ELECTRICAL CONTRACTOR SHALL IMMEDIATELY INFORM THE COR. WORK THAT WOULD EXPOSE WORKERS TO THE INHALATION OF ASBESTOS PARTICLES SHALL BE TERMINATED. WORK MAY BE RESUMED ONLY AFTER A DETERMINATION HAS BEEN MADE AND UNSAFE MATERIALS HAVE BEEN REMOVED OR ENCAPSULATED AND THE AREA DECLARED SAFE.
R. PROPER PERSONNEL PROTECTION EQUIPMENT SHALL BE WORN PER OSHA AND VA REQUIREMENTS WITH VAMC COR AND SAFETY OFFICER.
S. FIRESTOPPING ASSEMBLIES SHALL BE PROVIDED AT PENETRATIONS OF CONDUITS AND OTHER ELECTRICAL ITEMS THRU FIRE RATED FLOORS, FIRE RATED WALLS AND PARTITIONS AND FIRE RATED SHAFT WALLS AND PARTITIONS. ALL PENETRATIONS THROUGH 0-HOUR RATED WALLS SHALL BE CAULKED SMOKE-TIGHT. REFER TO SPECIFICATION SECTION 07 84 00.
T. REMOVE EXISTING ELECTRICAL SYSTEMS WHICH ARE MADE SUPERFLUOUS WHEN NEW SYSTEMS ARE INSTALLED INCLUDING ALL ASSOCIATED WIRING AND DEVICES. PROVIDE BLANK STAINLESS STEEL COVERPLATES PROPERLY SIZED FOR EXISTING BACKBOX AND WALL OPENING FOR ALL RECESSED WALL MOUNTED DEVICES REMOVED. ALL ABANDON RACEWAY, CONDUIT AND BOXES SHALL BE REMOVED.
U. REFER TO SPECIFICATION SECTION 01 00 00 GENERAL REQUIREMENTS FOR STATEMENT OF BID ITEM(S) AND DEDUCTIVE ALTERNATES.
V. ALL SYSTEMS SHALL BE TESTED PRIOR TO ANY REMOVAL WORK. TESTING SHALL BE WITNESSED BY COR. IF SYSTEMS ARE NOT TESTED IT WILL BE ASSUMED ALL SYSTEMS WERE FULLY FUCTIONAL AT START OR PROJECT. IF REPAIRS ARE REQUIRED, THEY SHALL BE MADE WITHOUT ANY ADDITIONAL COST TO THE GOVERNMENT.
W. ALL CUTTING AND PATCHING OF EXISTING SURFACES TO RAMAIN THAT IS REQUIRED FOR ELECTRICAL WORK, SHALL BE INCLUDED IN THE ELECTRICAL CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK. SHALL MATCH EXISTING.

DRAWINGS INDEX

Sheet Number	Sheet Name
320E001	SYMBOLS
320ED101	GROUND FLOOR PLAN - REMOVALS
320EL101	GROUND FLOOR PLAN - LIGHTING
320EP101	GROUND FLOOR PLAN - POWER
320EP102	GROUND FLOOR PLAN - POWER FAN COIL
320EP103	GROUND FLOOR PLAN UNIT E - POWER
320ET101	GROUND FLOOR PLAN - SIGNALS
320E501	LIGHTING FIXTURE DESCRIPTIONS-1
320E502	LIGHTING FIXTURE DESCRIPTIONS-2
320E503	LIGHTING FIXTURE DESCRIPTIONS-3
320E504	MOUNTING DETAILS
320E505	TECHNOLOGY DETAILS
320E506	SIGNALS CLOSET DETAILS
320E601	SINGLE LINE DIAGRAM
320E602	SCHEDULES

Revisions		Date
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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO
GARY S. EDDICE
E-52755
REGISTERED
PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SYMBOLS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E001

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

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GROUND FLOOR PLAN - REMOVALS
Scale: 1/8" = 1'-0"
PROJECT

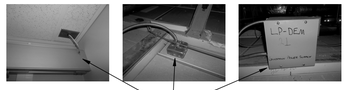
GENERAL NOTES

A. THE CONTRACTORS SHALL REFER TO ALL SPECIFICATION SECTIONS AND THESE DRAWINGS FOR DETAILS OF BUILDING CONSTRUCTION TO ENSURE SPACE AND SATISFACTORY ARRANGEMENT FOR THEIR WORK. THE VARICUS DRAWINGS COMPRISING THE SET ARE INTERDEPENDENT AND MUST BE USED JOINTLY AT ALL TIMES. EACH CONTRACTOR SHALL REFER TO THE GENERAL REQUIREMENTS OF THE CONTRACT. THE NOTES AND SYMBOLS INDICATED ON THE DRAWINGS ARE FOR THE GUIDANCE OF ALL TRADES INVOLVED IN THE PROJECT AND MUST BE FOLLOWED TO EXECUTE THE WORK AS INTENDED. IF DISCREPANCIES OCCUR, CONTACT THE COR THRU THE CONTRACTING OFFICER FOR CLARIFICATION BEFORE PROCEEDING.
B. ALL WORK MUST BE COORDINATED WITH THE CONTRACTING OFFICER AND COR (FOR ALL OTHERS) TO MAINTAIN OPERATION OF THE EXISTING FACILITY.
C. EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON AVAILABLE DRAWING INFORMATION, AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
D. ANY REMOVED EQUIPMENT SHALL BE TURNED OVER TO THE VA. ITEMS NOT DESIRED BY THE VA SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
E. ALL ABANDONED EXTRANEOUS CONDUITS, WIRING, DEVICES, ETC. SHALL BE REMOVED.
F. MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED AND/OR REQUIRED).
G. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE. ASSOCIATED WORK SHALL BE DONE IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.
H. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THRU REMOVATED AREAS SERVICING UNDISTURBED AREAS.
I. MAINTAIN EXISTING FIRE ALARM DEVICES AS INDICATED FOR RELOCATION UNDER NEW WORK PHASE.
J. MAINTAIN EXISTING PAGING CIRCUIT FOR NEW WORK.
K. TURN OVER ALL REMOVED FIRE ALARM DEVICES NOT REUSED TO COR FOR FUTURE USE.
L. ALL SYSTEMS SHALL BE TESTED PRIOR TO ANY REMOVAL WORK. TESTING SHALL BE WITNESSED BY COR. IF SYSTEMS ARE NOT TESTED IT WILL BE ASSUMED ALL SYSTEMS WERE FULLY FUCTIONAL AT START OR PROJECT. IF REPAIRS ARE REQUIRED, THEY SHALL BE MADE WITHOUT ANY ADDITIONAL COST TO THE GOVERNMENT.
M. DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EXISTING BACKBOXES NOT MAINTAINED FOR NEW WORK. PATCH AND REPAIR ALL EXISTING DRYWALL ASSOCIATED WITH REMOVAL WORK TO MATCH EXISTING CONDITIONS.
N. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE RF SITE-SURVEY OF EXISTING 802.11 WIRELESS NETWORK AFTER ALL WAPs HAVE BEEN RE-INSTALLED TO ASSURE PROPER WLAN COVERAGE AND RTLS TRACKING. CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR RELOCATION OF WAPs REQUIRED AS A RESULT OF THE RF-SURVEY.
O. REMOVAL OF WLAN WIRELESS ACCESS POINT SHALL INCLUDE CUTTING OF CEILING GRID ON EITHER SIDE OF WAP. SHALL BE DONE AFTER PROPER OPERATION HAS BEEN VERIFIED BY COR. TURN WAP OVER TO COR FOR STORAGE. RE-INSTALL ON NEW GRID WITH NEW/RE-USED HARDWARE AND CONNECT TO NEW DATA DROP.

NOTES

1. REMOVE EXISTING MANUAL STARTERS.
2. REMOVE EXISTING FIRE ALARM MONITORING MODULES AND ASSOCIATED SMOKE DETECTORS.
3. REMOVE EXISTING CONDENSATE PUMP ELECTRICAL CONNECTION AND ASSOCIATED CIRCUIT BACK TO SOURCE. MCP-D.
4. EXISTING DDC PANEL TO BE REMOVED BY DIV 23. REMOVE ASSOCIATED CIRCUIT BACK TO SOURCE.
5. EXISTING MOTOR CONTROL CENTER.
6. REMOVE INDUSTRIAL LIGHTING FIXTURE, SWITCH AND CIRCUITRY.
7. EXISTING PANEL AND TRANSFORMER TO REMAIN.
8. EXISTING PATIENT LIFT SYSTEM TO BE REMOVED BY DIVISION 1. DISCONNECT FIXTURE WHIP FROM LIFT, AND REMOVE CONTROL BOX. REMOVE CIRCUIT BACK TO SOURCE INDICATED ON EACH ENCLOSURE. ROOMS SHALL INCLUDE: 1D-110, 113, 118, 127, 134, 138, 163, 170.
9. REMOVE FEEDER TAPPING WIREWAY, DISCONNECTS AND BACKBOARD. REMOVE CIRCUITRY BACK TO SOURCE AS INDICATED ON DISCONNECT ENCLOSURE.
10. REMOVE EXISTING MANUAL STARTERS, BACKBOARD AND MOTOR STARTER/DISCONNECT. REMOVE CIRCUITRY BACK TO SOURCE.
11. EXISTING AIR HANDLING UNIT TO BE REMOVED BY DIV. 23. REMOVE ASSOCIATED CIRCUITRY BACK TO SOURCE (MCP-D).
12. EXISTING REAL-TIME-LOCATING-SYSTEM (RTLS) SHALL BE TEMPORARILY REMOVED. TURN OVER EXISTING DEVICE TO VA FOR STORAGE DURING CONSTRUCTION. PROVIDE RECORD OF PORTAL LOCATION BASED UPON SERIAL No. ("A") AND LOCATION No. ("B") TO HELP WITH REINSTALLATION DURING NEW WORK PHASE. COORDINATE ALL WORK, PRIOR TO REMOVAL, WITH VA's BioMed ENGINEER (MS. SUSAN HUESTON @ 937.268.6511, EXT 2775).
13. EXISTING CORRIDOR CEILING MOUNTED AeroScout EX5100+ EXCITER. DISCONNECT AND REMOVE EXISTING CEILING MOUNTED DEVICE, TAG WITH LOCATION, TURN OVER TO VA FOR STORAGE DURING DEMOLITION. PROVIDE NEW NETWORK DROP WITH 10' SLACK COIL, AND RE-INSTALL IN SAME LOCATION. PROVIDE SYSTEM RE-BALANCING AND TUNING AFTER COMPLETE SYSTEM IS RE-INSTALLED AND ACTIVATED.COORDINATE ALL WORK, PRIOR TO REMOVAL, WITH VA's BioMed ENGINEER (MS. SUSAN HUESTON @ 937.268.6511, EXT 2775).
14. EXISTING PATIENT ROOM CEILING MOUNTED AeroScout EX4200 ULTRASOUND EXCITER. DISCONNECT AND REMOVE EXISTING CEILING MOUNTED DEVICE, TAG WITH LOCATION, TURN OVER TO VA FOR STORAGE DURING DEMOLITION. PROVIDE NEW NETWORK DROP WITH 10' SLACK COIL, AND RE-INSTALL IN SAME LOCATION. PROVIDE SYSTEM RE-BALANCING AND TUNING AFTER COMPLETE SYSTEM IS RE-INSTALLED AND ACTIVATED.COORDINATE ALL WORK, PRIOR TO REMOVAL, WITH VA's BioMed ENGINEER (MS. SUSAN HUESTON @ 937.268.6511, EXT 2775).
15. EXISTING CORRIDOR CEILING MOUNTED AeroScout EX5000 EXTERNAL LF ANTENNA. DISCONNECT AND REMOVE EXISTING CEILING MOUNTED DEVICE, TAG WITH LOCATION, TURN OVER TO VA FOR STORAGE DURING DEMOLITION. PROVIDE NEW NETWORK DROP WITH 10' SLACK COIL, AND RE-INSTALL IN SAME LOCATION. PROVIDE SYSTEM RE-BALANCING AND TUNING AFTER COMPLETE SYSTEM IS RE-INSTALLED AND ACTIVATED.COORDINATE ALL WORK, PRIOR TO REMOVAL, WITH VA's BioMed ENGINEER (MS. SUSAN HUESTON @ 937.268.6511, EXT 2775).
16. EXISTING ROOF TOP EXHAUST FAN TO BE REMOVED BY DIVISION 23. DISCONNECT AND REMOVE BACK TO SOURCE. REMOVE ASSOCIATED WALL MOUNTED STARTER.
17. EXISTING SIGNALS AND EQUIPMENT CLOSET. REMOVE EXISTING DATA RACK INCLUDING ALL FIELD CABLING TO OUTLETS. EXISTING WALL MOUNTED FIBER AND VARIOUS SYSTEMS COMPONENTS TO BE MAINTAINED. RE-CABLE EXISTING DOOR CONTROL AND SECURITY WIRING AS REQUIRED AND AS INDICATED ON NEW WORK PLANS.
18. EXISTING RAULAND NURSE CALL HEAD END EQUIPMENT TO BE DISCONNECTED AND RELOCATED TO ADJACENT WALL TO ACCOMMODATE NEW TECHNOLOGY EQUIPMENT. REFER TO NEW WORK SIGNALS PLANS FOR NEW LOCATION AND ADDITIONAL NOTES.
19. EXISTING WIRELESS TEMPERATURE MONITORING SYSTEM EQUIPMENT SHALL BE REMOVED AND TURNED OVER TO VA.
20. EXISTING SPLIT SYSTEM TO BE REMOVED AND RELOCATED (CU TO REMAIN, AC TO RELOCATED) BY DIVISION 23. DISCONNECT AND REMOVE CIRCUITRY BACK TO SOURCE.
21. EXISTING RETHERM CARTS TO BE REMOVED AND TURNED OVER TO VA BY DIVISION 1. DISCONNECT FROM UNITS AND REMOVE CIRCUITRY BACK TO SOURCE (LP-D2-B).
22. EXISTING CONDENSING UNITS, ASSOCIATED WITH INDOOR RETHERM UNITS, TO BE REMOVED BY DIVISION 23. DISCONNECT AND REMOVE CIRCUITRY BACK TO SOURCE (LP-D2-B).
23. DISCONNECT BOOSTER PUMP AND REMOVE CIRCUITRY BACK TO SOURCE.
24. DISCONNECT FAN COIL UNIT AND REMOVE CIRCUITRY BACK TO SOURCE. APPROX. LOCATION OF FAN COIL. COORDINATE WITH DIVISION 23 FOR EXACT QUANTITY AND LOCATIONS.
25. DISCONNECT WATER HEATER AND REMOVE CIRCUITRY BACK TO SOURCE.

SITE PHOTOGRAPH
SCALE: NTS



SITE PHOTOGRAPH
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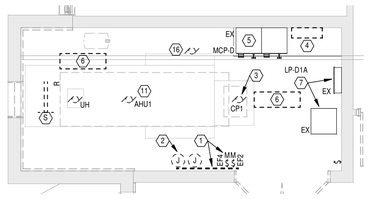
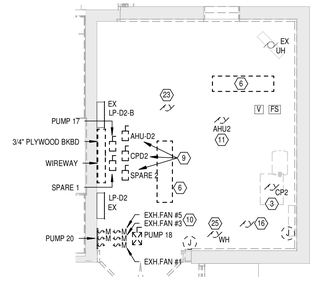
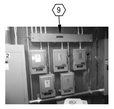


EXISTING HVAC ROOM 1D-180
Scale: 1/4" = 1'-0"
PROJECT

SITE PHOTOGRAPH
SCALE: NTS



EXISTING MECHANICAL ROOM 1D-142
Scale: 1/4" = 1'-0"
PROJECT



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SCALE: NTS

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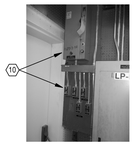

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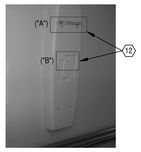

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Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: GROUND FLOOR PLAN - REMOVALS

Approved: Project Director

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Date: 12/20/2013 | Checked: MSG | Drawn: JAS

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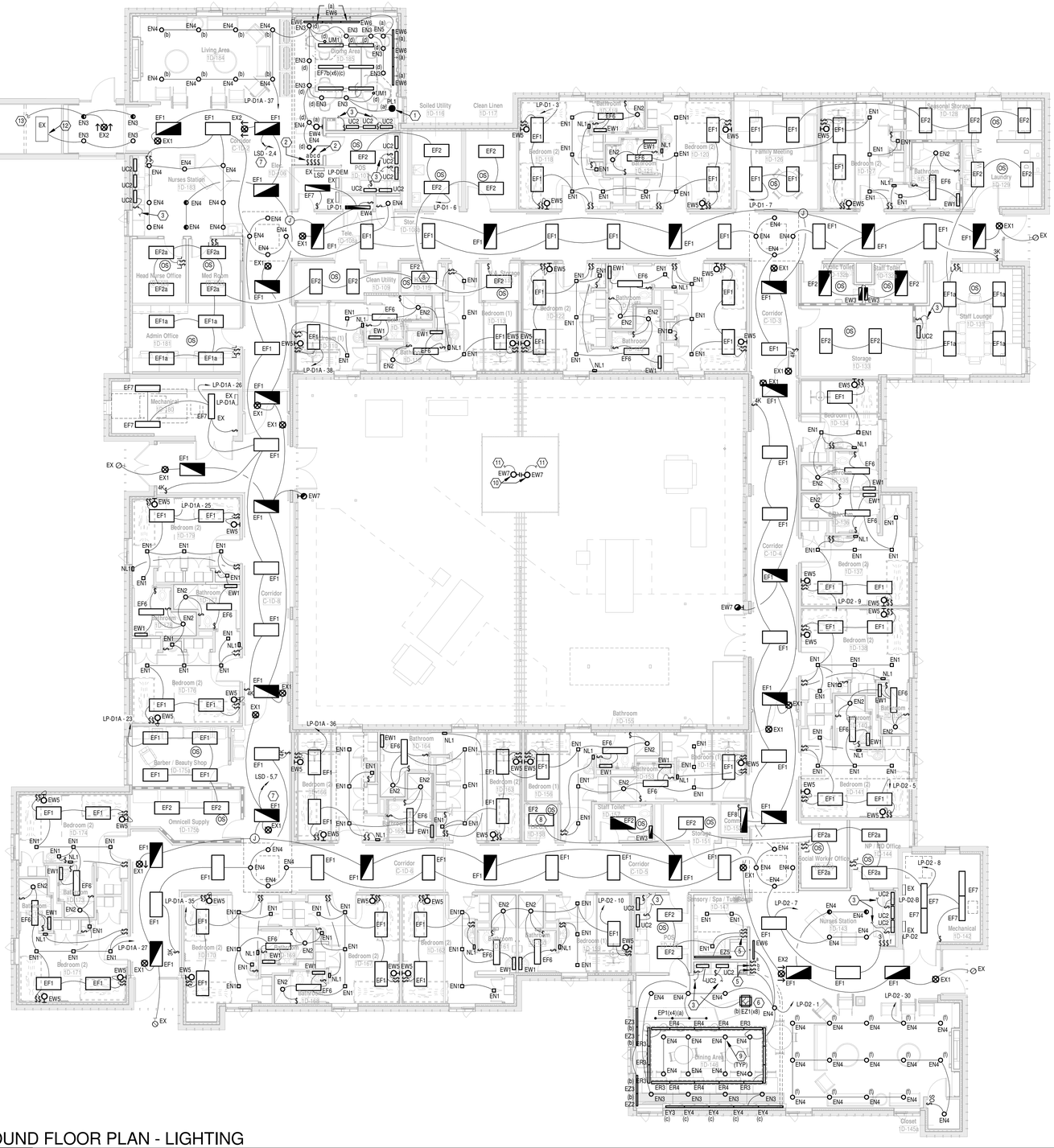

GENERAL NOTES

A. WHERE MULTIPLE OCCUPANCY SENSORS ARE SHOWN IN A COMMON ROOM OR CORRIDOR, WIRE SENSORS IN PARALLEL FOR COMMON ZONE CONTROL.
B. WHERE SWITCHES ARE SHOWN IN SPACES CONTROLLED BY OCCUPANCY SENSORS, WIRE SENSOR RELAY PACK AHEAD OF LOCAL SWITCHING (EXCEPT LIFE SAFETY CIRCUITS).
C. PROVIDE DEDICATED NEUTRAL FOR ALL 120V CIRCUITS.
D. COORDINATE ALL LIGHTING FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
E. OCCUPANCY SENSOR MANUFACTURERS SHALL SUBMIT AN /1/8" SCALE FLOOR PLAN SHOWING PROPOSED LAYOUT WITH DEVICES CLEARLY IDENTIFIED DURING SHOP DRAWING REVIEW. OCCUPANCY SENSOR SHOP DRAWING SUBMITTAL MISSING THIS INFORMATION WILL BE REJECTED. REQUEST AutoCAD FLOOR PLANS WELL IN ADVANCE OF SHOP DRAWINGS TO ENSURE REASONABLE TIME OF DELIVERY.
F. COORDINATE OCCUPANCY SENSOR AIMING AND PLACEMENT WITH MANUFACTURER PRIOR TO INSTALLATION.
G. WIRE ALL EXIT SIGNS AHEAD OF LOCAL SWITCHING.
H. CONTRACTOR SHALL INSTALL ELECTRICAL CONDUIT/FEEDERS TIGHT TO STRUCTURE TO ALLOW FOR REQUIRED CLEARANCES AROUND OTHER TRADES ABOVE CEILING EQUIPMENT.
I. PROVIDE PROGRAMMED RAPID START BALLASTS FOR ALL FLUORESCENT FIXTURES AND SUBMIT BALLAST INFORMATION DURING SHOP DRAWING REVIEW.
J. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND COMMON/SHARED GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
K. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.
L. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.
M. REFER TO ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS.
N. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF DEVICES MOUNTED ABOVE OR BELOW CASEWORK, FURNITURE, LAVATORIES, ETC.
O. PROVIDE PRINTED LABELS ON ALL RECEPTACLE AND SWITCH COVERPLATES INDICATING PANEL AND CIRCUIT NUMBER.
P. REFER TO LIGHTING FIXTURE DESCRIPTION SHEET FOR SPECIFIC INSTALLATION METHODS OF FIXTURE TYPE.
Q. WHERE LOW-VOLTAGE SWITCHES ARE SHOWN IN SPACES CONTROLLED BY OCCUPANCY SENSORS, WIRE LV SWITCHES TO POWER PACK / SENSOR AS "VACANCY SENSOR" (MANUAL ON, AUTO / MANUAL OFF). PROVIDE SECOND POWER PACK WHERE STEP DIMMING LIGHTING IS SHOWN.

NOTES

1. COORDINATE FINAL LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE SLIDE-OFF DIMMER SWITCH.
3. CONNECT TO LOCAL NORMAL POWER 120V RECEPTACLE CIRCUIT.
4. CONNECT TO LIGHTING CIRCUIT LP-D2-8.
5. PROVIDE COMPATIBLE WALL MOUNTED (FLUSH) DMX RGB CONTROLLER FOR LED "NEON" FIXTURE(S).
6. WRAP COLUMN WITH TWO(2) ROWS OF "NEON" LED 12" APART. COORDINATE HEIGHT WITH ARCHITECTURAL ELEVATIONS AND COR DURING CONSTRUCTION.
7. UTILIZE EXISTING 120V-20A/1P BREAKER IN EXISTING PANEL FOR NEW WORK.
8. PROVIDE FLANGE KIT FOR RECESSED DRYWALL INSTALLATION.
9. WITHIN 50'S DINNER, ALL DOWNLIGHT TRIM RINGS (QUANTITY OF 16) SHALL MATCH "SILVER" CEILING COLOR. VERIFY EXACT CEILING STYLE AND COLOR WITH ARCHITECTURAL DRAWINGS.
10. PROVIDE SINGLE GANG FINISHED BACKBOX FOR INSTALLATION OF WALL SCONCE TO WOOD BEAM. UTILIZE 0.75" CONDUIT FROM LIGHT FIXTURE TO RECEPTACLE LOCATED BELOW. PAINT CONDUIT TO MATCH THE COLOR OF THE WOOD FINISH.
11. CONNECT TO COURTYARD RECEPTACLE CIRCUIT. REFER TO POWER PLANS.
12. CONNECT TO EXISTING "NORMAL POWER" LIGHTING CIRCUIT PRESENTLY SERVING THIS AREA.
13. CONNECT TO EXISTING "LIFE SAFETY" LIGHTING CIRCUIT PRESENTLY SERVING THIS AREA.

N
PROJECT

GROUND FLOOR PLAN - LIGHTING

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

Revisions		Date
	Bid Set	12/20/2013

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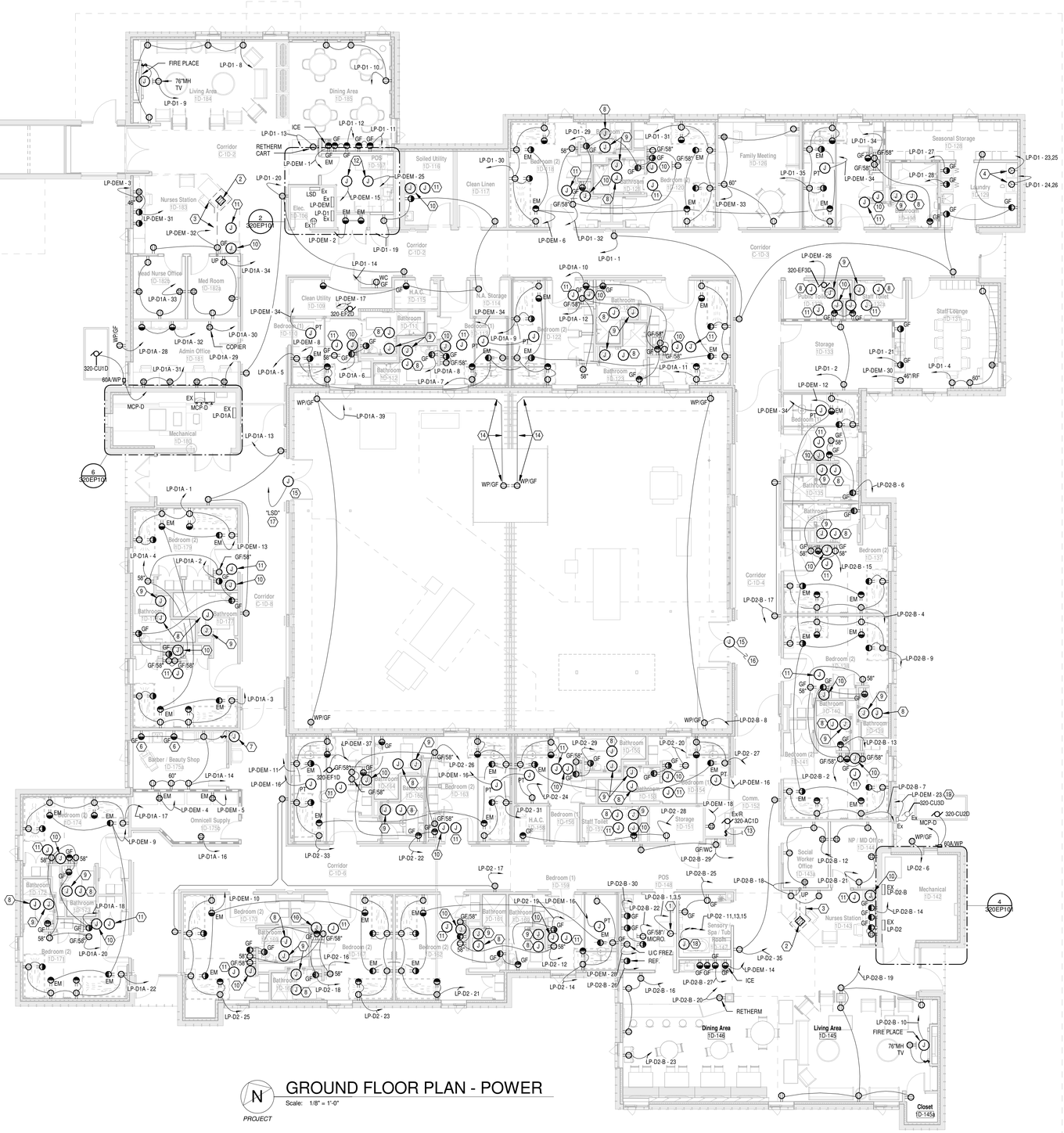
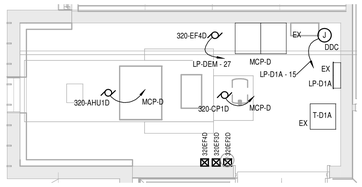


GENERAL NOTES

A. PROVIDE DEDICATED NEUTRAL FOR ALL 120V-20A CIRCUITS.
B. PROVIDE PRINTED LABELS ON ALL RECEPTACLE AND SWITCH COVERPLATES INDICATING PANEL AND CIRCUIT NUMBER.
C. EMT CONDUIT SHALL BE 0.75" MINIMUM.
D. REFER TO DIVISION 22/ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL PLUMBING EQUIPMENT.
E. CONTRACTOR SHALL INSTALL ELECTRICAL CONDUIT/FEEDERS TIGHT TO STRUCTURE TO ALLOW FOR REQUIRED CLEARANCES AROUND OTHER TRADES ABOVE CEILING EQUIPMENT.
F. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
G. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.
H. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING.
I. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.
J. REFER TO ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS.
K. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF DEVICES MOUNTED ABOVE OR BELOW CASEWORK, FURNITURE, LAVATORIES, ETC.
L. REFER TO ARCHITECTURAL PLANS FOR ROOMS WITH PATIENT LIFTS. LIFTS ARE SUPPORTED BY VERTICAL STEEL SUPPRT BEAMS WITHIN NEW WALL CAVITY. THIS WILL REQUIRE VERTICAL DROPS OF CIRCUITRY("UP-OVER-DOWN") IN LIEU OF HORIZONTAL RUNS.
M. TIE ALL NEW ROOF MOUNTED EQUIPMENT BACK INTO EXISTING LIGHTNING PROTECTION SYSTEM.

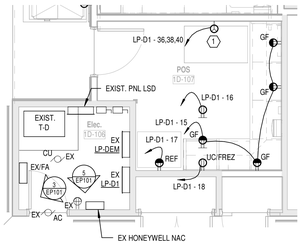
NOTES

1. PROVIDE 120/208-30A/3PH RECEPTACLE FOR RETHERM CARTS. COORDINATE EXACT NEMA CONFIGURATION OF OWNER PROVIDED EQUIPMENT WITH COR PRIOR TO ORDERING/INSTALLATION.
2. PROVIDE NON-METALLIC FLOOR BOX MADE OF HIGH-STRENGTH RIGID PVC CONSTRUCTION (NON-CORROSIVE). BOX MUST HAVE OVERSIZED 1.5" (DATA) AND 1" (POWER) CONDUIT HUB. MINIMUM DEPTH OF POUR SHALL NOT EXCEED 3". PROVIDE FLOOR BOX WITH UNIVERSAL CARPET FLANGE (MADE OF CAST ALUMINUM) AND COVER ASSEMBLY. PROVIDE WITH (4) 20A, 125V RECEPTACLES AND (4) KEYSTONE OPENINGS FOR DATA JACKS OR FLUSH A/V CONNECTORS. VERIFY COLOR FINISH WITH ARCHITECT / COR.
3. SAW CUT EXISTING FLOOR SLAB TO ACCOMMODATE NEW FLOOR BOX AND CONDUIT. PATCH AND REPAIR EXISTING SLAB TO ENSURE A PROPER / CLEAN INSTALLATION.
4. PROVIDE 125/250V-30A RECEPTACLE FOR DRYER(S). RUN 3-#10, 1-#10 GRD. IN 0.75"C.
5. --
6. INSTALL RECEPTACLE HORIZONTALLY IN BACK SPLASH.
7. RELOCATED BARBER SHOP POLE LIGHT. PROVIDE 120V CONNECTION AND WIRE THRU WALL SWITCH FOR CONTROL.
8. ABOVE CEILING, LOW VOLTAGE TRANSFORMER FOR SENSOR OPERATED FLUSH VALVE PROVIDED BY DIVISION 22.
9. PROVIDE RECESSED 4"SQ. J-BOX AND 0.75"C. TO ABOVE ACCESSIBLE CEILING FOR LOW VOLTAGE WIRING BY DIVISION 22. COVERPLATE BY DIVISION 22. COORDINATE EXACT M.H. WITH DIVISION 22 PRIOR TO ROUGH IN.
10. PROVIDE RECESSED SINGLE GANG J-BOX AND 0.75C. TO ABOVE ACCESSIBLE CEILING FOR LOW VOLTAGE WIRING BY DIVISION 22. PROVIDE GROMMETTED OPENING COVERPLATE. COORDINATE EXACT M.H. WITH DIVISION 22 PRIOR TO ROUGH IN.
11. ABOVE CEILING, LOW VOLTAGE TRANSFORMER FOR SENSOR OPERATED FAUCET PROVIDED BY DIVISION 22.
12. PROVIDE TWO(2) 120V-20A CIRCUITS FOR LOW VOLTAGE TRANSFORMERS. ALL L.V. TRANSFORMERS WITHIN NON-SECURE SIDE SHALL BE ON CIRCUIT "1" AND ALL REMAINING L.V. TRANSFORMERS WITHIN SECURE SIDE SHALL BE ON CIRCUIT "2".
13. WIRE THRU OUTDOOR UNIT.
14. CORE DRILL EXISTING BRICK TO GAIN ACCESS TO EXTERIOR COURTYARD RECEPTACLE. UTILIZE RIGID LB (APPROX 12" OFF GRADE) FITTING AND CONDUIT TO DROP BELOW GRADE. TRENCH EXISTING GRADE TO ACCESS CENTER COURTYARD RECEPTACLES. UTILIZE RIGID CONDUIT TO RISE ABOVE GRADE INTO RECEPTACLE FINISHED BACKBOX.
15. PROVIDE 120V CONNECTION TO AUTO DOOR MOTORS.
16. CONNECT TO NON-SECURE COURTYARD AUTO DOOR CIRCUIT.
17. PROVIDE 120V-20A/1P BREAKER IN EXISTING PANEL FOR NEW WORK.
18. PROVIDE THREE(3) INDIVIDUAL DEDICATED 120V-20A CIRCUITS TO THERAPY TUB. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 22 DURING CONSTRUCTION.
19. UTILIZE EXISTING WP DISCONNECT AND FLEX CONNECTION TO OUTDOOR UNIT FOR NEW WORK. PROVIDE NEW SOURCE AS INDICATED.

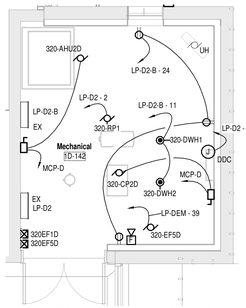


6 **MECHANICAL ROOM 1D-180**
SCALE: 1/4" = 1'-0"

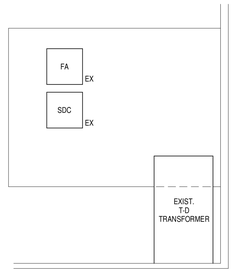
EXISTING SOUTH WALL
5 **SITE PHOTOGRAPH**
SCALE: NTS



2 **ELECTRIC ROOM & STORAGE**
SCALE: 1/4" = 1'-0"



4 **MECHANICAL ROOM 117**
SCALE: 1/4" = 1'-0"



3 **UNIT D ELEVATION -ELEC ROOM PLAN**
SCALE: 1/2" = 1'-0"

N
PROJECT

GROUND FLOOR PLAN - POWER
Scale: 1/8" = 1'-0"

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: GROUND FLOOR PLAN - POWER

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 | JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320EP101

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Office of Construction and Facilities Management
Department of Veterans Affairs

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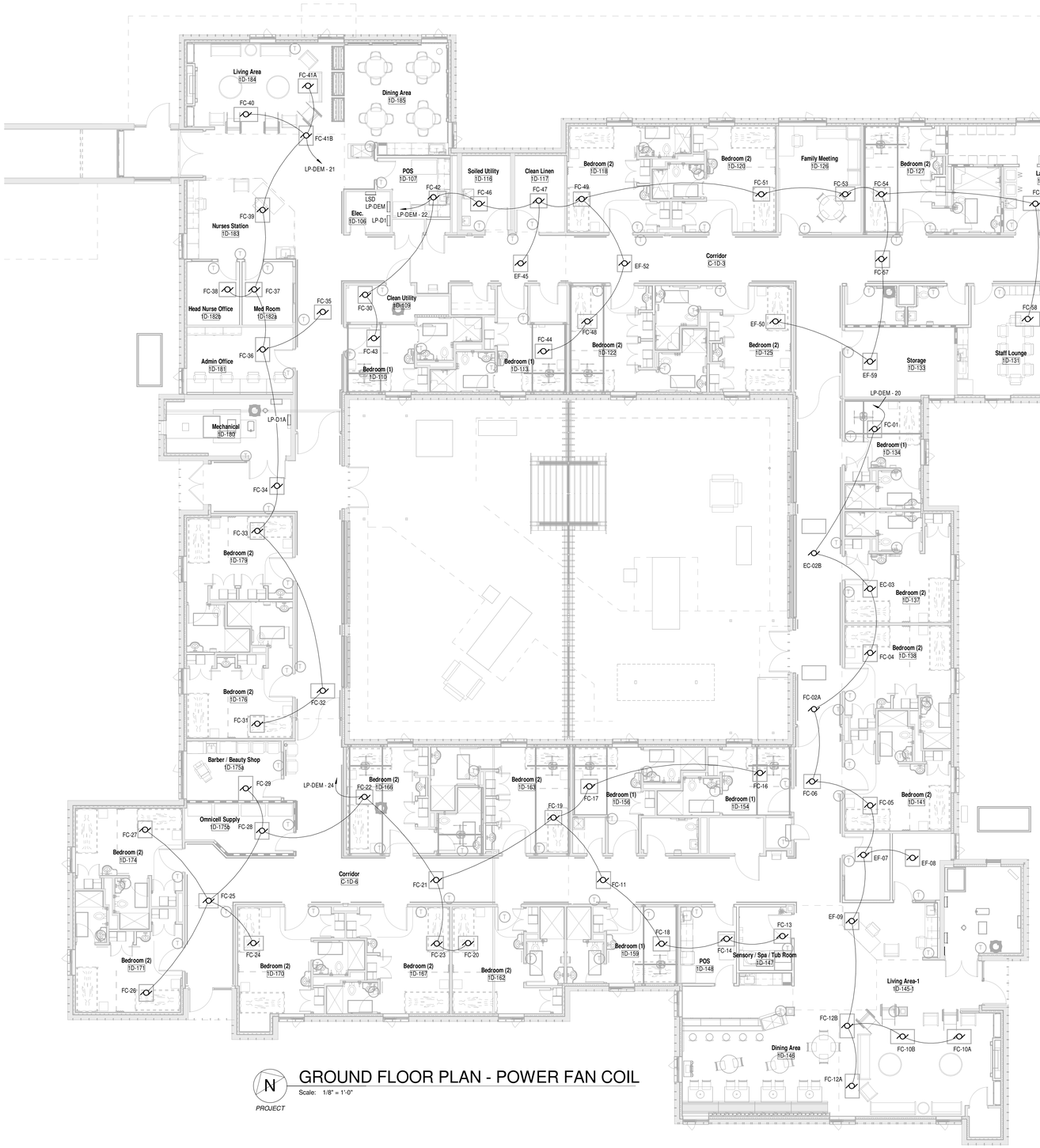

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GROUND FLOOR PLAN - POWER FAN COIL

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937 461 0280 FAX
jpa@johnpoe.com

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Approved: Project Director

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Project No.
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Building Number
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Drawing Number
320EP102
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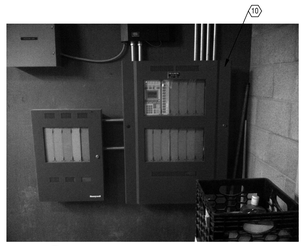

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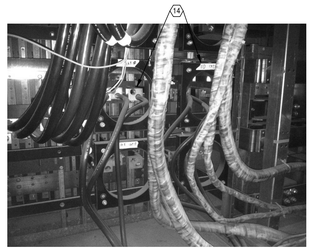

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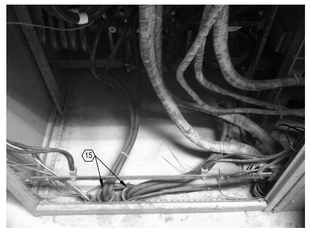

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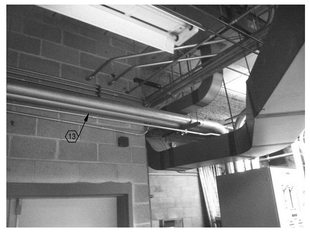
E SITE PHOTOGRAPH
SCALE: NONE



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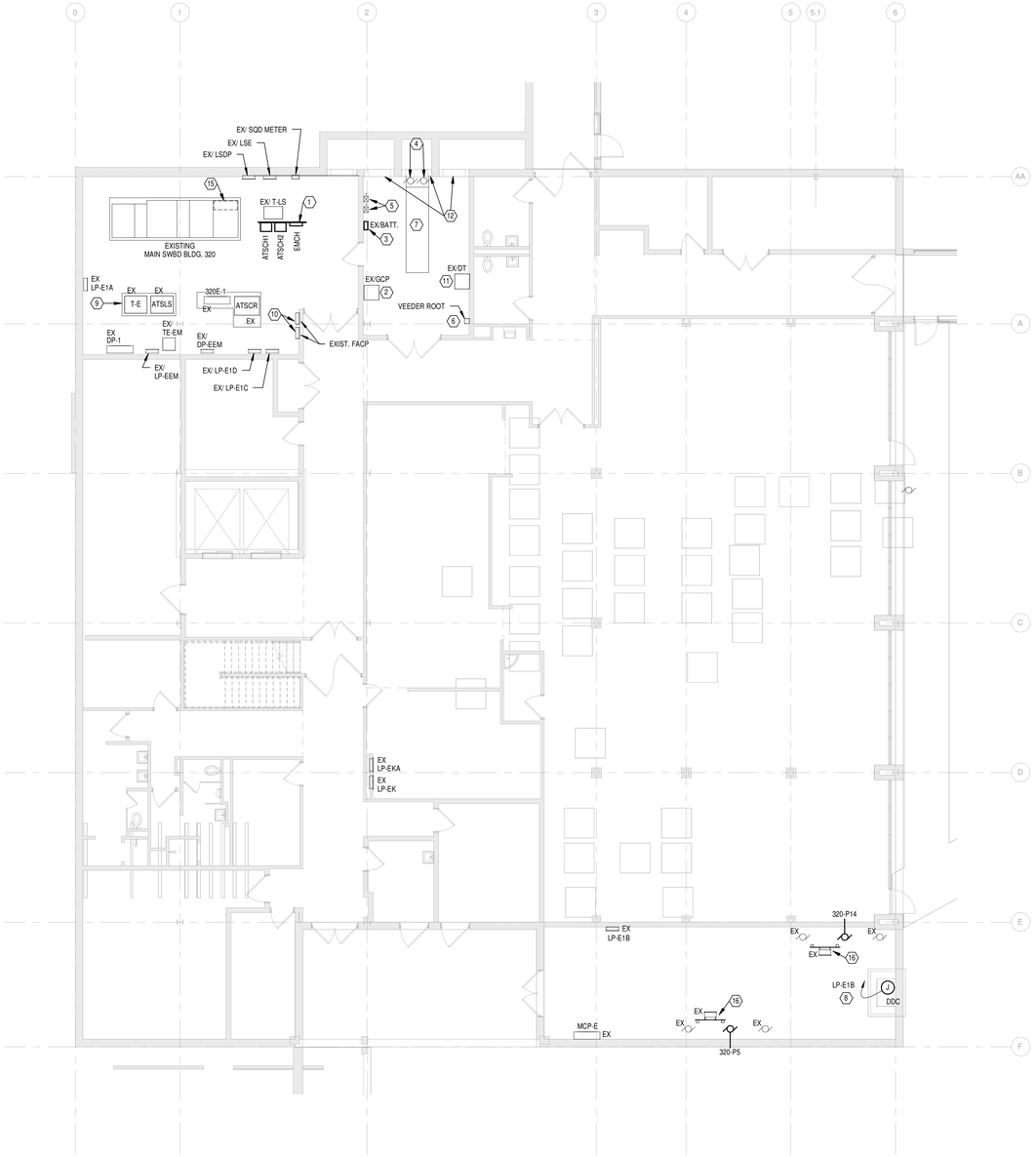

N
PROJECT

GROUND FLOOR PLAN UNIT E - POWER
Scale: 1/8" = 1'-0"

GENERAL NOTES

A. PROVIDE DEDICATED NEUTRAL FOR ALL 120V-20A CIRCUITS.
B. PROVIDE PRINTED LABELS ON ALL RECEPTACLE AND SWITCH COVERPLATES INDICATING PANEL AND CIRCUIT NUMBER.
C. EMT CONDUIT SHALL BE 0.75" MINIMUM.
D. REFER TO DIVISION 22/ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL PLUMBING EQUIPMENT.
E. CONTRACTOR SHALL INSTALL ELECTRICAL CONDUIT/FEEDERS TIGHT TO STRUCTURE TO ALLOW FOR REQUIRED CLEARANCES AROUND OTHER TRADES ABOVE CEILING EQUIPMENT.
F. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
G. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.
H. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING.
I. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.
J. REFER TO ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS.
K. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF DEVICES MOUNTED ABOVE OR BELOW CASEWORK, FURNITURE, LAVATORIES, ETC.
L. UNDER DEDUCT ALTERNATE 3, DELETE ALL WORK ASSOCIATED WITH THE CHILLER BACK FEED (X2) TO EMERGENCY POWER (INCLUDING BUT NOT LIMITED TO: RE- COMMISSIONING THE EXISTING 350KW CATERPILLAR GENERATOR, DISTRIBUTION PANEL "EMCH", AUTOMATIC TRANSFER SWITCHES "ATSCH1" AND "ATSCH2" AND ALL ASSOCIATED CONDUCTORS, CONDUIT AND SPLICES AS INDICATED ON THIS SHEET).

NOTES

1. PROVIDE NEW UNISTRUT FRAME/BRACING FOR INSTALLATION OF NEW ATS(x2) AND DISTRIBUTION PANEL.
2. EXISTING GENERATOR CONTROL PANEL.
3. EXISTING BATTERY CHARGER PROVIDE NEW AND BATTERIES.
4. EXISTING EXHAUST/INTAKE FAN MOTORS.
5. EXISTING FAN MOTOR STARTERS.
6. EXISTING FUEL MONITORING PANEL.
7. EXISTING/DECOMMISSIONED CATERPILLAR 350KW/437.5KVA DIESEL GENERATOR. REFUEL TANK, ENABLE START, FILL ALL FLUIDS, TEST GENERATOR ETC.
8. UTILIZE EXISTING 120V-20A/1P BREAKER FOR NEW WORK.
9. EXISTING 4" THICK CONCRETE HOUSEKEEPING PAD.
10. EXISTING MAIN FACP.
11. EXISTING DAY-TANK AND PIPING TO EXISTING GENERATOR.
12. EXISTING EXHAUST/INTAKE LOUVERS.
13. INTERCEPT EXISTING GENERATOR CONDUITS AND EXTEND TO "EMCH"..
14. UTILIZE/MAINTAIN EXISTING BREAKERS FOR NEW WORK.
15. UTILIZE SPACE WITHIN EXISTING SWITCHBOARD TO MAKE SPLICE OF CHILLER FEEDER(S).
16. EXISTING PUMP TO BE REMOVED AND REPLACED (IN KIND) BY DIVISION 23. DISCONNECT EXISTING CIRCUIT TO ALLOW FOR REPLACEMENT. NEW PUMPS SHALL UTILIZE VFD'S. PROVIDE UNISTRUT FRAME FOR INSTALLATION OF NEW VFD(S). LOCATE NEW VFD TO MAINTAIN ALL WORKING CLEARANCES REQUIRED BY 2011 NEC. INTERCEPT AND EXTEND EXISTING CIRCUIT THRU VFD TO NEW PUMP.

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Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

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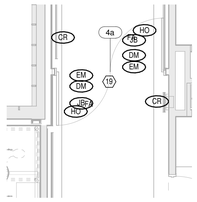
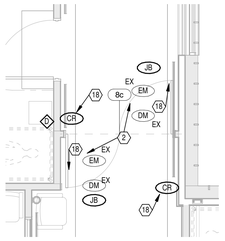
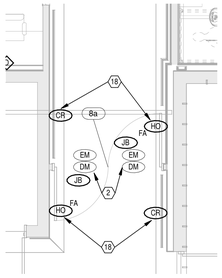


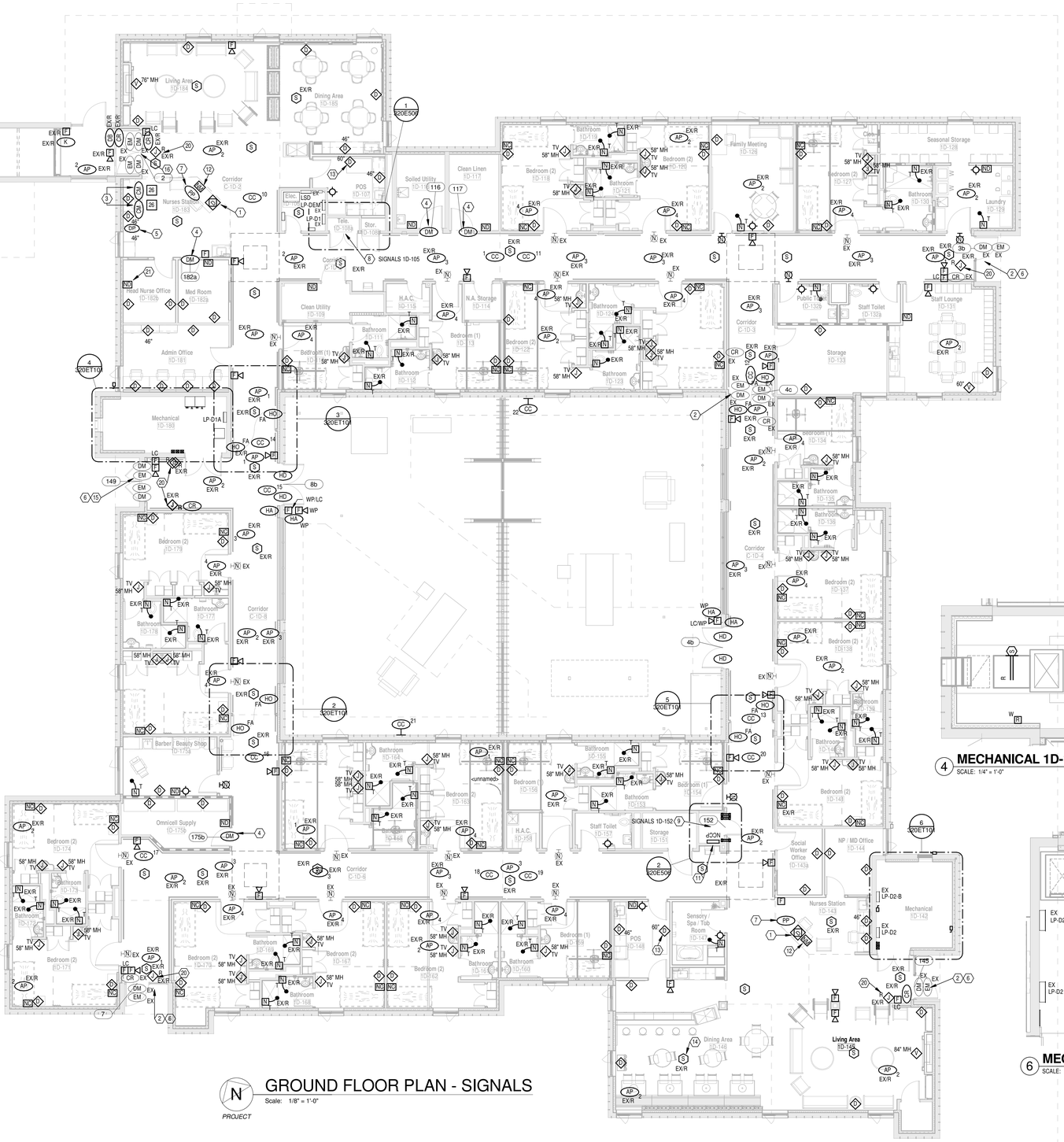
5 **DOOR CONTROL PLAN-DOOR 4A**
SCALE: 1/4" = 1'-0"



2 **DOOR CONTROL PLAN-DOOR 8C**
SCALE: 1/4" = 1'-0"

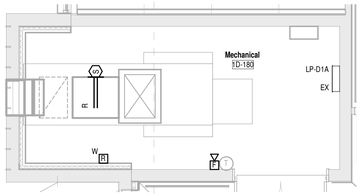


3 **DOOR CONTROL PLAN-DOOR 8A**
SCALE: 1/4" = 1'-0"

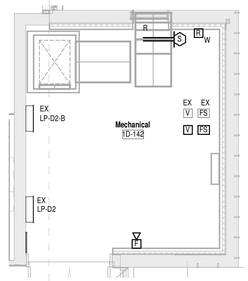


N
PROJECT

GROUND FLOOR PLAN - SIGNALS
Scale: 1/8" = 1'-0"



4 **MECHANICAL 1D-180**
SCALE: 1/4" = 1'-0"



6 **MECHANICAL 1D-142**
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. ALL NEW VOICE/DATA TO BE CABLED TO DATA ROOM 1D-152.
B. REFER TO ARCHITECTURAL PHASING PLAN AND INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING.
C. REQUIRED SHUT-DOWNS OF THE SMOKE DETECTION SYSTEM AND FIRE SUPPRESSION SPRINKLER SYSTEM SHALL NOT OCCUR CONCURRENTLY AND SHALL COMPLY WITH THE JOINT COMMISSION ON ACCREDITATION OF HEALTHCARE ORGANIZATIONS (JCAHO) INTERIM LIFE SAFETY MEASURES (ILSM). COORDINATION BETWEEN COR AND ALL TRADES SHALL BE REQUIRED BEFORE SHUT-DOWN OF THE SMOKE DETECTION SYSTEM OR FIRE SUPPRESSION SPRINKLER SYSTEM.
D. PROVIDE ALL NEW FIRE ALARM BOOSTER PANELS, TRANSPONDER PANELS, FIBER/COPPER BACKBONE, 120V POWER CIRCUITS, CONDUIT, ETC. AS REQUIRED TO SERVE NEW DEVICES. COORDINATE ALL NEW EQUIPMENT WITH MANUFACTURER.
E. EXISTING TOILET PULL STATIONS SHALL BE REMOVED AND REINSTALLED AT 46" A.F.F. TO ACCOMMODATE NEW HANDICAP GRAB BAR LOCATIONS. COORDINATE EXACT LOCATIONS WITH COR PRIOR TO ROUGH IN. PROVIDE NEW PULL CORD TO ACCOMMODATE NEW MOUNTING HEIGHT.
F. EXISTING SHOWER PULL STATIONS SHALL BE REMOVED AND REINSTALLED TO ACCOMMODATE NEW SHOWER ENCLOSURE. COORDINATE EXACT LOCATIONS WITH COR PRIOR TO ROUGH IN. REINSTALL AT EXISTING HEIGHT.
G. REFER TO ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS.
H. COORDINATE ALL NEW FIRE ALARM/FIRE SUPPRESSION ZONES WITH COR.
I. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF DEVICES MOUNTED ABOVE OR BELOW CASEWORK, FURNITURE, LAVATORIES, ETC.
J. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.
K. FIRE ALARM MASTER CONTROL PANEL IS LOCATED IN MAIN ELEC ROOM, POD E. UTILIZE EXISTING NAC PANEL LOCATED IN ELECTRIC ROOM #1D-106. MANUFACTURE IS REQUIRED, PER SPECS, TO SUBMIT VOLTAGE DROP CALCULATIONS DURING SHOP DRAWING PHASE.
L. COORDINATE WITH COR THE MANUFACTURE SELECTED FOR PATIENT TV'S PRIOR TO "JUMPER" CABLE ORDERING. MUST BE COMPATIBLE.
M. FINAL TV LOCATION SHALL BE SELECTED BY VA. COORDINATE EXACT RECEPTACLE AND JACK LOCATION WITH COR PRIOR TO ROUGH-IN.
N. PROVIDE NEW FACEPLATE FOR ALL EXISTING TO BE RELOCATED NURSE CALL TOILET STATIONS.
O. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE TESTING, BALANCING AND TUNING OF PATIENT ELOPMENT SYSTEM/RTLS AFTER ALL NODES HAVE BEEN RE-INSTALLED TO ASSURE PROPER COVERAGE AND TAG TRACKING/ATTIVATION. CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR RELOCATION OF NODES REQUIRED AS A RESULT OF THE SYSTEM TESTING/BALANCING. SYSTEM CONTACT IS SHIPCOM WIRELESS (MR. SCOTT SCHEUFLER @ 713.467.9462).
P. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE TESTING, BALANCING AND TUNING OF RTLS PORTALS SYSTEM AFTER ALL NODES HAVE BEEN RE-INSTALLED TO ASSURE PROPER COVERAGE AND TAG TRACKING/ATTIVATION. SYSTEM CONTACT IS SHIPCOM WIRELESS (MR. SCOTT SCHEUFLER @ 713.467.9462).

NOTES

1. REFER TO POWER PLANS FOR FLOOR BOX LOCATION AND ADDITIONAL DETAILS.
2. EXISTING DOOR AND FRAME BEING REPLACED. RE-INSTALL EXISTING ELECTRONIC DOOR HARDWARE ON NEW DOOR. EXISTING CARD READER AND CONTROL TO BE RE-PROGRAMMED AS REQUIRED. INTERFACE WITH EXISTING PATIENT EUPMENT SYSTEM.
3. PROVIDE VIDEO OUTLET BEHIND MONITOR FOR CONNECTION TO CCTV MULTIPLEXERS IN SIGNALS CLOSET 1D-108. REFER TO DETAILS SHEET 320E504.
4. PROVIDE NEW DPDT DOOR POSITION SWITCH AND CONNECT TO HONEYWELL BUILDING ACCESS SYSTEM TO PROVIDE DOOR PROPPED OPEN ALARMS AND CONNECT TO NEW LOCAL DOOR ALARM MONITOR SYSTEM. REFER TO DETAILS SHEET 320E504.
5. NEW DOOR POSITION SYSTEM MONITORING ANNUNCIATOR PANEL. REFER TO DETAILS SHEET 320E504.
6. REPLACE EXISTING DOOR SWITCH WITH NEW DPDT POSITION SWITCH. 1 POLE TO BE WIRED BACK TO EXISTING HONEYWELL CARD ACCESS SYSTEM. 2ND POLE TO BE WIRED TO NEW LOCAL EXTERIOR DOOR MONITORING PANEL. REFER TO DETAILS SHEET 320E504.
7. EXISTING WIRELESS PANIC DURESS BUTTON TO BE MAINTAINED.
8. SECURITY, CCTV, CATV DEVICES/OUTLETS TO BE CABLED TO SIGNALS CLOSET 1D-105 .
9. DATA, WAP, RFID PORTAL OUTLETS TO BE CABLED TO SIGNALS CLOSET 1D-152.
10. NOT USED.
11. RELOCATED RAULAND NURSE CALL HEAD END EQUIPMENT. COORDINATE NEW LOCATION WITH SOUNDCOM TO ALLOW FOR ADDITIONAL(NEW) HEAD END EQUIPMENT. EXTEND ALL EXITING CABLING, POWER CIRCUITRY TO NEW LOCATIONS.
12. RELOCATED DESK MOUNTED, MASTER NURSE CALL STATION WITH HAND SET. UTILIZE ONE OF THE KEY STONE OPENINGS WITHIN FLOOR BOX FOR LOW VOLTAGE NURSE CALL CABLING BACK TO NCCP (REFER TO POWER PLANS). COORDINATE JACK TYPE WITH SOUNDCOM FOR PROPER CONNECTION.
13. NETWORK OUTLET FOR WIRELESS TEMPERATURE CONTROL ROUTER. COORDINATE EXACT PLACEMENT LOCATION WITH COR.
14. COORDINATE SMOKE DETECTOR COLOR SELECTION WITH ARCH.
15. EXISTING DOOR AND DOOR CONTROLS TO BE MAINTAINED.
16. EXISTING DOOR BEING REPLACED (FRAME IS TO REMAIN). RE-INSTALL EXISTING ELECTRONIC DOOR HARDWARE ON NEW DOOR. EXISTING CARD READER AND CONTROL TO BE RE-PROGRAMMED AS REQUIRED. INTERFACE WITH EXISTING PATIENT ELOPMENT SYSTEM.
17. EXISTING DOOR FRAMES BEING PROVIDED WITH NEW DOORS. RE-USE AND RE-INSTALL EXISTING DOOR HOLD OPENS.
18. RE-INSTALL EXISTING DEVICE AT NEW LOCATION AND RE-CONNECT.
19. NEW CONTROLLED DOOR. PROVIDE INTERFACE WITH PATIENT ELOPMENT SYSTEM AND FIRE ALARM.
20. RE-INSTALL EXISTING RTLS PORTAL AND CONNECT TO NEW DATA DROP.
21. PROVIDE NURSE CALL ANNUNCIATOR PANEL.

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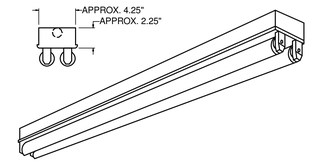


HOUSING CHANNEL: STEEL A MINIMUM OF 0.035" THICK; APPROPRIATE KNOCKOUTS ON TOP FOR OUTLET CONNECTIONS AND MOUNTING; NOTCHED STRAP FOR LAMP HOLDER SUPPORT; CAPTIVE NON-TURNING THREADED STUDS FOR BALLAST MOUNTING AND FIXTURE GROUNDING; WITH ALIGNER FOR HOUSING UNITS IN CONTINUOUS ROW.

END CAP: STEEL A MINIMUM OF 0.035" THICK; WITH KNOCKOUT; MAY BE USED AS ALIGNER BETWEEN UNITS IN CONTINUOUS ROW.

COVER: STEEL A MINIMUM OF 0.029" THICK; FORMED FOR STRENGTH; SECURED BY MINIMUM OF TWO LOCKING SCREW DEVICES.

FINISH: CHANNEL HOUSING, END CAP, AND COVER-BAKED WHITE ENAMEL OVER CORROSION RESISTANT PRIMER.

BALLAST: TWO-LAMP, HPF ELECTRONIC PROGRAMMED RAPID START BALLAST, 0.88BF, 120/277V.

LAMPS: 2-F32, T-8, RAPID START FLUORESCENT 4100K, 86 CRI FLUORESCENT.

TWO-LAMP OPEN FLUORESCENT STRIPLIGHT

E / F-8

LENGTH: REFER TO PLANS
WIDTH: 5 1/8"
DEPTH: 1 13/16"

HOUSING: INJECTION MOLDED WHITE PLASTIC;

DIFFUSER: WHITE, UV STABLE DIFFUSE ACRYLIC; SNAP-IN MOUNTING TO BODY.

FINISH: WHITE. DIFFUSER: TRANSLUCENT.

LAMP: 1-32, T8 RAPID START 4100K, 86 CRI FLUORESCENT.

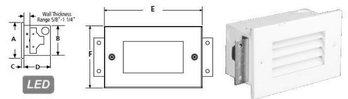
BALLAST: HPF., ELECTRONIC 120VAC.

UC2 - 24" 1-17W, T8
UC3 - 36" 1-25W, T8
UC4 - 48" 1-32W, T8

***** REFER TO ARCHITECTURAL SECTIONS FOR INSTALLATION DETAILS AND SPECIFIC LOCATION UNDER CABINETRY**

LOW PROFILE UNDER CABINET LIGHT

E / U-2/3/4



HOUSING:
1. ADA COMPLIANT.
2. 18-GAUGE CRS. WHITE POLYESTER POWDER COAT, 5-STAGE PRE-TREATMENT. UL LISTED FOR DAMP LOCATIONS

FACEPLATE:
18-GAUGE CRS, POWDER COATED, INTERNAL LOUVER POSITIONED BEHIND THE POLYCARBONATE CLEAR LENS.

ELECTRICAL:
1. 120V.
2. COLOR LED SHALL BE SELECTED BY ARCH/COR.
3. LED SHALL HAVE FIELD ADJUSTABLE LIGHT LEVEL CONTROL. FACTORY PRE-SET SHALL BE 100%
4. LED WATTAGE:
5. LED LUMEN OUTPUT:

FACEPLATE: F - 4.38" H x C - 0.30" THICK x E - 7" WIDE
HOUSING: A - 4.38" H x B - 3.25" H x D - 3.12" DEEP

RECESSED PATIENT ROOM NIGHT LIGHT

N / L-1

HOUSING AND CANOPY: MARINE GRADE VINYL CLAD ALUMINUM.

DOOR FRAME: HINGED WITH ALUMINUM REINFORCED POLYCARBONATE SHIELD.

FINISH: BLACK

INSCRIPTION PANEL(S): RED L.E.D. 6" LETTERS

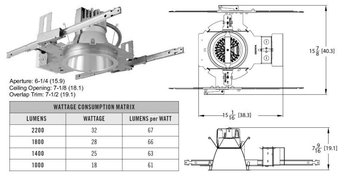
LAMPS: MULTIPLE L.E.D. LAMP ASSEMBLY WITH MINIMUM OF 20,000 HOURS LIFE.

NOTE: TYPE EN9DF DENOTE DOUBLE FACED FIXTURES. FURNISHED FIXTURES WITH DIRECTIONAL ARROWS WHERE SHOWN ON DRAWINGS AND WIRED FOR 120/277-VOLT OPERATION AS INDICATED.

LOCATION: CEILING MOUNT WHERE SHOWN. WALL MOUNT AT 7'-6" AFF WHERE SHOWN UNLESS OTHERWISE NOTED.

EXIT SIGN

E / X-1



WATTAGE CONSUMPTION MATRIX		
LUMENS	WATTAGE	LUMENS per WATT
2200	32	67
1800	28	65
1400	25	63
1000	18	61

SPECIFICATION GRADE LED RECESSED CLEAR LENSED DOWNLIGHT,

MECHANICAL:
1. ONE-PIECE 16 GAUGE GALVANIZED STEEL CONSTRUCTION. TELESCOPIC MOUNTING BARS MAXIMUM OF 32" WITH 4" VERTICAL ADJUSTMENT.
2. LIGHT ENGINE AND DRIVER SHALL BE ACCESSIBLE THRU APERTURE.
3. WET LOCATION LISTING

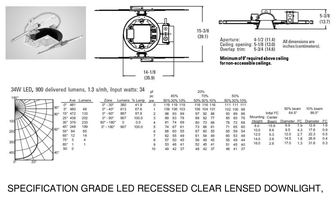
OPTICAL:
1. SELF-FLANGED, SEMI-SPECULAR LOWER REFLECTOR.
2. 45 DEG CUTOFF TO SOURCE AND SOURCE IMAGE.

ELECTRICAL:
1. LED LIGHT ENGINE SHALL PRODUCE 60,000 HOURS AT 70% LUMEN MAINTENANCE.
2. FULLY SERVICABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE.
3. 120V WITH 0-10V DIMMING (10-100%); RATED FOR 50,000 HOURS.

EN2 - 1000 LUMENS
EN3 - 1000 LUMENS
EN4 - 1400 LUMENS

RECESSED LED ROUND DOWNLIGHT

E / N - X



SPECIFICATION GRADE LED RECESSED CLEAR LENSED DOWNLIGHT,

MECHANICAL:
1. ONE-PIECE 16 GAUGE GALVANIZED STEEL CONSTRUCTION. TELESCOPIC MOUNTING BARS MAXIMUM OF 32" WITH 4" VERTICAL ADJUSTMENT.
2. LIGHT ENGINE AND DRIVER SHALL BE ACCESSIBLE THRU APERTURE.
3. WET LOCATION LISTING

OPTICAL:
1. SELF-FLANGED, MATTE-DIFFUSE HIGH-IMPACT POLYMER FINISHING TRIM WITH A DURABLE VAPOR DEPOSITION FINISH.

ELECTRICAL:
1. LED LIGHT ENGINE SHALL PRODUCE 50,000 HOURS AT 70% LUMEN MAINTENANCE.
2. FULLY SERVICABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE.
3. 120V WITH 0-10V DIMMING (10-100%); RATED FOR 50,000 HOURS.

RECESSED LED SQUARE DOWNLIGHT

E / N-1

SPECIFICATION GRADE RECESSED FLUORESCENT LIGHTING TROFFER WITH FLAT LOW-BRIGHTNESS LENS PANEL, NOMINAL 2' X 4' IN SIZE AND APPROXIMATELY 4.25 INCHES DEEP.

HOUSING: DIE FORMED AND EMBOSSED CODE GAUGE STEEL. END CAPS HINGED AND SCREWED TO HOUSING FOR RIGIDITY. DESIGNED FOR INSTALLATION IN CEILING TYPE SHOWN ON ARCHITECTURAL DRAWINGS. INTEGRAL T-BAR CLIPS. HARDWARE FOR MINIMUM 4 POINTS OF SUPPORT. SEPARATE NON-CAPTIVE STUD FOR FIXTURE GROUNDING.

REFLECTOR: HIGH REFLECTANCE BAKED WHITE ENAMEL AND SPECULAR SILVER INSERT.

FINISH: MULTI-STAGE PHOSPHATE BONDING TREATMENT AND HIGH REFLECTANCE BAKED WHITE ENAMEL.

SHIELDING: 100% PRISMATIC VIRGIN ACRYLIC, PATTERN 12, .125" THICK (NOMINAL). FLUSH DOOR WITH MITRED CORNERS, INCONSPICUOUS CAM ACTION LATCHES.

LAMPS: RAPID START 32W-T8 LAMPS, MIN CRI OF 85, 4100K.

BALLAST: HPF ELECTRONIC PROGRAMMED RAPID START BALLAST, 0.88BF, 120/277V.

VARIATIONS:

EF2: TWO LAMP FIXTURE WITH ONE STANDARD BALLAST.

EF2a: TWO LAMP FIXTURE WITH PROGRAMMED RAPID START STEP DIMMING BALLAST.

EF3: THREE LAMP FIXTURE WITH TWO STANDARD BALLASTS WHERE DUAL LEVEL SWITCHING IS SHOWN ON PLANS.

EF4: THREE LAMP WET LOCATION LISTED FIXTURE WITH ALUMINUM FRAME

EF5: 2' x 2' FIXTURE WITH 2-17W T8 LAMPS.

EF6: 1' x 4' FIXTURE WITH 2-32W T8 LAMPS.

RECESSED FLUORESCENT FIXTURE

E / Fx

RECESS, 2-LAMP, FLUORESCENT LIGHTING TROFFER WITH CURVED LUMINOUS HIGH EFFICIENCY LENS PANEL, NOMINAL 2' X 4' IN SIZE AND APPROX 4.5" DEEP.

HOUSING: STEEL A MINIMUM OF 0.035-INCH THICK; APPROPRIATE HARDWARE FOR A MINIMUM OF (4) POINTS OF SUPPORT IN APPLICABLE CALLING SYSTEM; WIRING AND BALLAST ACCESSIBLE FROM BELOW; SUPPORT CLIPS PROVIDED FOR WIRING; SEPARATE CAPTIVE NON-TURNING STUD FOR FIXTURE GROUNDING. PROVIDE FLANGE KIT WHERE NOTED ON DRAWINGS. REQUIRE HINGED DOOR CONSTRUCTION (NO "SQUEEZE" LENSES).

OPTICS: S/MH OF 1.2, FIXTURE EFFICEINCY MINIMUM 85.2%.

LAMPS: TWO--32W, T8 RAPID START 4100K, 86 CRI FLUORESCENT.

FINISH: HOUSING, DOOR AND TRIM FRAME-BAKED WHITE ENAMEL; REFLECTING SURFACES MINIMUM OF 85% REFLECTANCE BAKED WHITE ENAMEL.

BALLAST: TWO LAMP, HPF, ELECTRONIC TYPE AS SPECIFIED, UNIVERSAL VOLTAGE (277V/120V)

TYPE "A": SAME CONSTRUCTION AS ABOVE, EXCEPT WITH STEP DIMMING BALLAST.

TYPE "B": SAME CONSTRUCTION AS ABOVE, EXCEPT 2'x2' IN SIZE WITH 2-17W T-8 LAMPS.

RECESSED HIGH EFFICIENCY FLUORESCENT FIXTURE

E / F-1

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E--52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: LIGHTING FIXTURE DESCRIPTIONS-1

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E501

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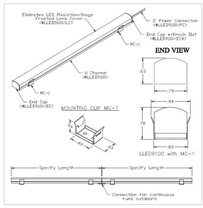
Department of Veterans Affairs

FULLY SPRINKLERED



SPECIFICATION GRADE, ACCENT, DECORATIVE LED FLEXIBLE LIGHT STRIP.

*** FIXTURE SAMPLES MUST BE SUBMITTED WITH SHOP DRAWINGS. IF NO SAMPLE IS SUBMITTED FIXTURE WILL BE REJECTED.**

LED'S SOURCE SHALL APPEAR CONTINUOUS AND UNIFORM BEHIND THE ROUNDED LENS. "HOT SPOTS" ARE NOT PERMITTED.

LEDs SHALL BE INTELLIGENT COLOR-CHANGING LED LIGHTING SYSTEMS AND SHALL BE CONTROLLABLE THRU A WALL MOUNTED SWITCH TYPE, DMX RGB REMOTE CONTROL STATION WHERE INDICATED ON PLANS.

24V FIXTURE. PROVIDE COMPATIBLE STEP DOWN TRANSFORMER AND DRIVER REQUIRED FOR AN OPERABLE LIGHTING SYSTEM. LOCATE ABOVE ACCESSIBLE CEILING SPACE.

WATTS / VOLTAGE 3.3W/FT @ 24V DC
65 LUMENS PER FOOT WITH A CRI OF 85
75 LUMENS PER WATT

MOUNTING: CLIP-ON MOUNTING

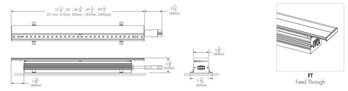
THE PRODUCT SHALL BE MITERED TO WRAP THE COLUMN TO ALLOW FOR THE LIGHT TO APPEAR CONTINUOUS

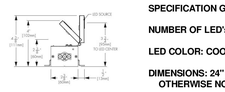
EZ1: 16" SECTION **EZ4: 48" SECTION**
EZ3: 36" SECTION **EZ4: 70" SECTION**

EY3: 36" SECTION, HIGH OUTPUT
EY4: 48" SECTION, HIGH OUTPUT

LED "NEON" WALL MOUNTED LIGHTING

E / Z - X





SPECIFICATION GRADE LED LIGHT STRIP.

NUMBER OF LED's: 11 PER FT

LED COLOR: COOL WHITE 4000k, CRI 80.

DIMENSIONS: 24" SECTIONS UNLESS OTHERWISE NOTED

WATTS / VOLTAGE: 5W/FT @ 24V DC

407 LUMENS/FOOT (RO VERSION)

120V

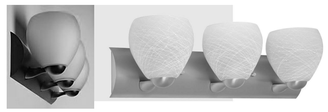
FEED THROUGH OPTION FOR END-TO-END INSTALLATION.

ER3: 36" SECTIONS

ER4: 48" SECTIONS

ADJUSTABLE LED COVE LIGHTING

E / R - X



DIMENSIONS:
7" DEEP x 6.875" H x 22.4" WIDE

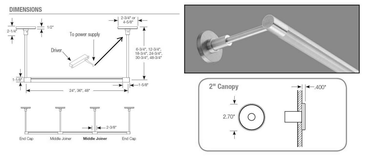
OPTICAL:
1. OPAL WHITE MATTE LENS ORIENTED IN AN UPWARD POSITION.

FINISH
1. POLISHED NICKEL FINISH

ELECTRICAL:
1. 120V
2. LAMPING: 13W GU CFL, 4100K

FLUORESCENT WALL LIGHT

E / W-1



SPECIFICATION GRADE. LED SIGN/DISPLAY, LIGHTING FIXTURE.

MECHANICAL:
1. EXTRUDED ALUMINUM HOUSING AND STEM.
2. 355 DEGREE FIXTURE ROTATION.
3. 6.75" STEM LENGTH.

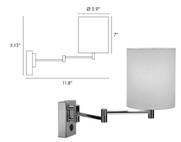
OPTICAL:
1. CLEAR LENS

ELECTRICAL:
1. LED LIGHT ENGINE SHALL PRODUCE 80,000 HOURS AT 70% LUMEN MAINTENANCE.
2. STANDARD OUTPUT: 410 LUMENS PER FOOT.
3. 3' OPTION: 24W
4. 24V FIXTURE. PROVIDE COMPATIBLE STEP DOWN TRANSFORMER AND DRIVER REQUIRED FOR AN OPERABLE LIGHTING SYSTEM. LOCATE ABOVE ACCESSIBLE CEILING SPACE.
5. COLOR TEMP: 4100 K.
6. 0-10V DIMMING CAPABILITIES

COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT DURING CONSTRUCTION.

LED WALL MOUNTED DISPLAY LIGHTING

E / W6



SOCKET/BULB: E26/SELFBALLASTED CFL 4100 K, 85 CRI MIN.

120V OPERATION

MATERIAL: STEEL

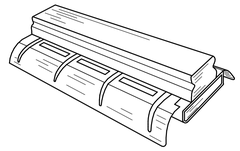
DIMENSIONS:
SHADE H: 5.9/7"
ARM L: 11.8
CANOPY W/W: 5.13/5.13"

FINISH: BRUSHED ALUMINUM

REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PATIENT WALL SCONCES. FIXTURE SHALL BE CENTERED ON BED SIDE FURNITURE.

FLUORESCENT WALL SCONCE

E / W5



CHAIN HUNG INDUSTRIAL FIXTURE.

CHANNEL: 20 GAGE STEEL FINISHED INSIDE AND OUTSIDE WITH BAKED WHITE ENAMEL AND WIRE GUARD.

REFLECTOR: 20 GAGE STEEL WITH WHITE ENAMEL FINISH INSIDE AND OUT. APERTURED FOR 10% UPLIGHT.

END CAPS: 20 GAGE STEEL FINISHED TO MATCH CHANNEL.

BALLAST: TWO LAMP, HPF, ELECTRONIC TYPE AS SPECIFIED, UNIVERSAL VOLTAGE (277V/120V)

LAMPHOLDER: TURRET TYPE.

LAMP: TWO 32, T8 RAPID START 4100K FLUORESCENT.

MOUNTING: SURFACE OR CHAIN HUNG AT 7'-6" AFF.

TYPE "b": SAME FIXTURE, EXCEPT INSTALLATION LOCATIONS SHALL BE COORDINATED WITH INTERIOR DESIGNER FOR ADEQUATE ILLUMINATION OF "CLOUD PANEL". INSTALL WITHIN BAR JOIST CAVITY

FLUORESCENT INDUSTRIAL FIXTURE

E / F-7

SPECIFICATION GRADE WALL MOUNTED LIGHTING FIXTURE.

HOUSING: 24" FIXTURE LENGTH. EXTRUDED ALUMINUM HOUSING WITH PERFORATED VERTICAL CURVED FACIA. SEPARATE NON-CAPTIVE STUD FOR FIXTURE GROUNDING.

REFLECTOR: HIGH REFLECTANCE STEEL OR ALUMINUM, MIN 85% REFLECTANCE.

FINISH: MULTI-STAGE PHOSPHATE BONDING TREATMENT AND WHITE BAKED ENAMEL.

LAMPS: RAPID START 17W-T8 LAMPS, MIN CRI OF 85, 4100K.

BALLAST: HPF ELECTRONIC PROGRAMMED RAPID START BALLAST, 0.88BF, 120/277V.

EW3: NOMINAL 48" IN LENGTH, 1-32W T8 LAMP.

FLUORESCENT VANITY FIXTURE

E / W-3

Revisions		Date
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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
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GARY S. EODICE
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PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: LIGHTING FIXTURE DESCRIPTIONS-2

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No.: VA Project No. 552-14-101; JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E502

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SPECIFICATION GRADE, DECORATIVE LED CORD HUNG PENDANT WITH GLASS DIFFUSER.

GLASS DIFFUSER: MAGMA FINISH.

ADJUSTABLE CORD LENGTH, FIELD ADJUSTABLE.

LED LIGHT SOURCE SHALL PROVIDE A MINIMUM OF 60,000 HOURS.

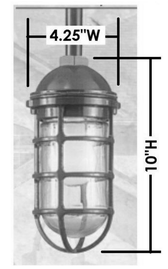
10W LED. 4100 K, 120V

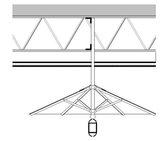
PROVIDE INTERNAL DRIVER WITHIN LAMP BASE.

SATIN NICKEL FINISH, FLAT CANOPY.

PENDANT MOUNTED LED

E / P1





SPECIFICATION GRADE, DECORATIVE LED JELLY JAR.

FINISH: FIVE STAGE PRETREATMENT PROCESS, COATED WITH A TGI POLYESTER POWDER COAT FINISH.

LED LIGHT SOURCE SHALL PROVIDE A MINIMUM OF 60,000 HOURS.

120V OPERATION

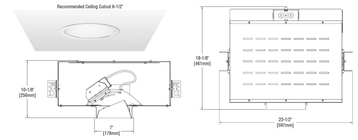
10W LED. 4100 K,
PROVIDE REQUIRED REMOTE DRIVER AND LOCATE ABOVE ACCESSIBLE CEILING SPACE.

MOUNTING: FIXTURE SHALL BE PROVIDED WITH TOP ENTRANCE, 3/4" TAPPED HUB. FIXTURE WILL BE REQUIRED TO MAKE A TRANSITION TO 1.5" RIGID CONDUIT ACTING AS THE UMBRELLA "POST". CONTRACTOR SHALL SUBMIT WITH SHOP DRAWING SUBMITTAL PROPOSED SOLUTION. REFER TO DETAIL FOR FINAL INSTALLATION INTENT.

MATERIAL: ALUMINUM DIE CAST BASE AND WIRE GUARD. 3" CLEAR GLASS. FINISH SHALL BE SELECTED BY ARCHITECT.

PENDANT MOUNTED LED

U / M-1



SPECIFICATION GRADE, RECESSED, LED ADJUSTABLE 6" DOWNLIGHT

LUMINAIRE SHALL USE 14 HO LEDs, TOLERANCE TO BE WITHIN A 2-STEP ELLIPSE. LOW BRIGHTNESS PARABOLIC SPUN ALZAK ALUMINUM CONE, 0.06" THICK WITH POLISHED RADIUS AND CONTINOUS SELF-FLANGE. SOFT SATIN GLOW CLEAR FINISH

358 DEGREE ROTATION AND 35 DEGREE MAX VERTICAL ADJUSTMENT, NARROW (25 DEGREE BEAM)

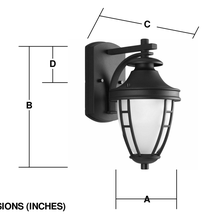
120V, 525mA DRIVE CURRENT

0-10V DIMMING, 4100 K,

LIGHT ENGINE, OPTICS AND DRIVER ACCESSIBLE FROM BELOW CEILING

RECESSED LED ROUND SPOT DOWNLIGHT

E / N5



DIMENSIONS (INCHES)
A - 6.5"
B - 11.75
C - 8.5
D - 3.75

LAMPING - 42W SELF BALLAST CFL, 4100 K, 84 CRI.

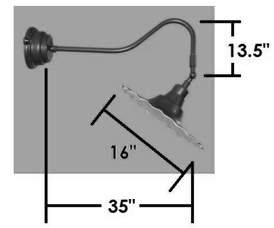
GENERAL:
ALUMINUM CONSTRUCTION ACORN SHAPE, TEMPERED ROUND TOP, TWIN BAR(TRIM) WITH ETCHED GLASS ENCLOSURE. BLACK HOUSING.

LABEL: UL-FOR WET LOCATIONS

PROVIDE FIXTURE WITH BUILT IN PHOTO-CELL CONTROL.

120V OPERATION

E



120V, 21W LED. 4100 K

PROVIDE REQUIRED REMOTE BALLAST AND LOCATE ABOVE ACCESSIBLE CEILING SPACE.

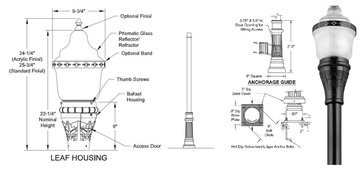
PROVIDE 1/2" DIAMETER ARM EXTENSION WITH DECORATIVE RADIAL SHADE.

COLOR SELECTIONS SHALL BE BY ARCHITECT.

120V OPERATION

LED WALL RADIAL SHADE

E / W4



OPTICAL ASSEMBLY: MOLDED THERMAL RESISTANT BOROSILICATE GLASS REFLECTOR AND REFRACTOR. THE UPPER PORTION OF THE SYSTEM INCORPORATES A SERIES OF REFLECTING PRISMS THAT REDIRECTS THE UPWARD LIGHT INTO THE CONTROLLING REFRACTOR WHILE ALLOWING A SOFT UPLIGHT. THE LOWER PORTION UTILIZES PRISMS TO CONTROL THE DISTRIBUTION AND CREATE UNIFORMITY.

120V BALLAST, 42W CFL, 4100K 85 CRI MIN.

FINISH: POLYESTER POWDER PAINT APPLIED AFTER A SEVEN STAGE PRETREATMENT PROCESS TO ENSURE DURABILITY. COLOR SELECTION BY ARCHITECT.

6' POLE WITH LEAF BALLAST HOUSING. COLOR SELECTION BY ARCHCHITECT.

FIXTURE SHALL MIMIC STYLE AND LOOK OF THE EXTERIOR STREET LIGHTING.

ARCHITECTURAL OUTDOOR POST TOP

E / L-1

Revisions		Date
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CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
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JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: LIGHTING FIXTURE DESCRIPTIONS-3

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No.
VA Project No. 552-14-101
JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E503

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Office of Construction and Facilities Management
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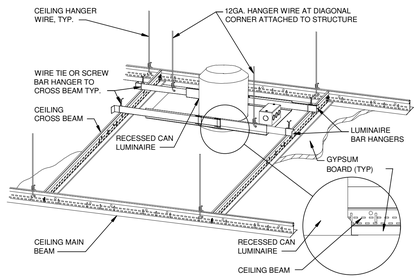
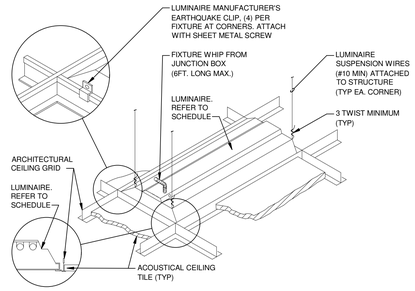


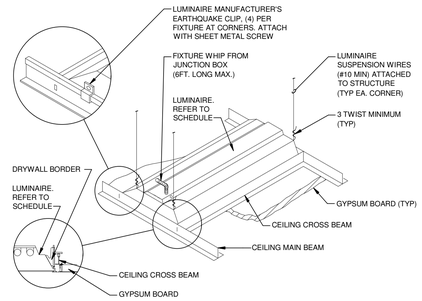
3 320E504 DOWNLIGHT MOUNTING - GYPBOARD CEILING

NTS



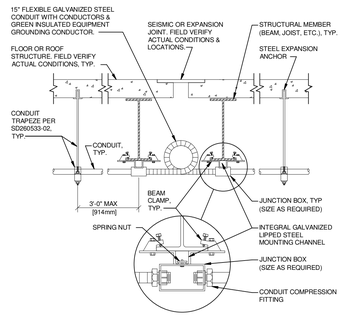
2 320E504 LUMINAIRE MOUNTING - LAY-IN CEILING

NTS



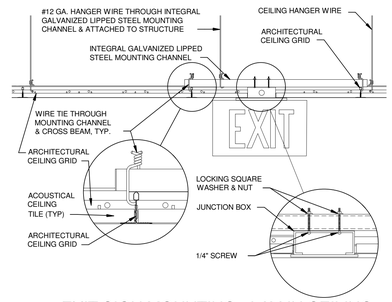
1 320E504 LUMINAIRE MOUNTING - GYPBOARD CEILING

NTS



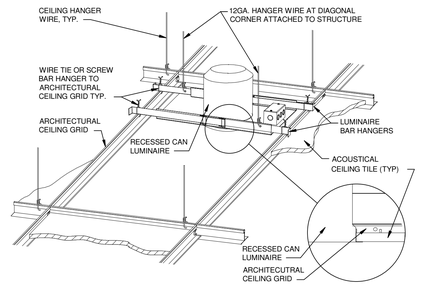
6 320E504 CONDUIT JOINT CROSSING DETAIL

NTS



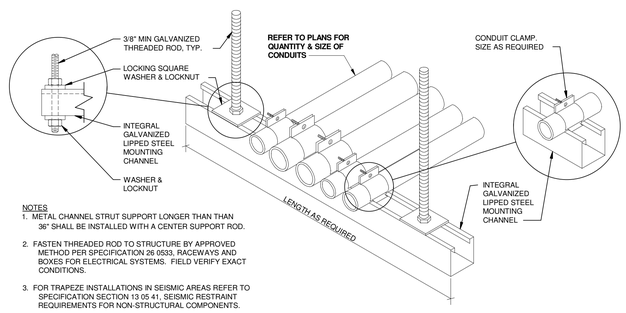
5 320E504 EXIT SIGN MOUNTING - LAY-IN CEILING

NTS



4 320E504 DOWNLIGHT MOUNTING - LAY-IN CEILING

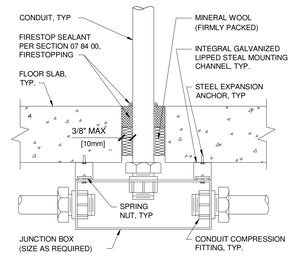
NTS



NOTES
1. METAL CHANNEL STRUT SUPPORT LONGER THAN THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION 26 0533, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.
3. FOR TRAPEZE INSTALLATIONS IN SEISMIC AREAS REFER TO SPECIFICATION SECTION 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS.

8 320E504 CONDUIT TRAPEZE MOUNTING DETAIL

NTS



7 320E504 FLOOR SLAB PENETRATION DETAIL

NTS

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Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: MOUNTING DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E504

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

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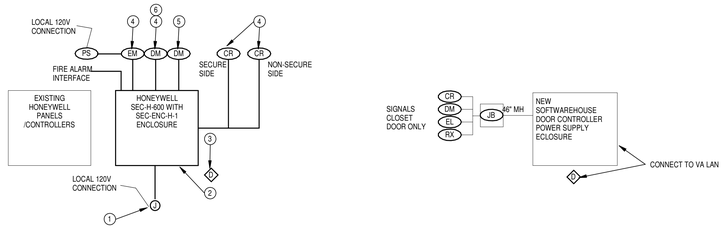
DETAIL NOTES

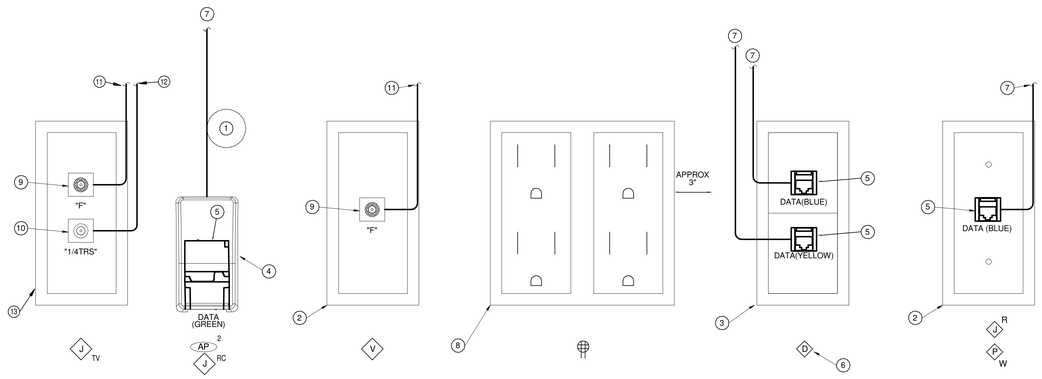
1. 120V-20A DEDICATED EMERGENCY CIRCUIT IN WALL MOUNTED JUNCTION BOX.
2. PROVIDE 120V DIRECT CONNECTION TO PANEL.
3. EXTEND DATA DROP FROM DEDICATED SECURITY NETWORK SWITCH INTO NEW CONTROL PANEL.
4. TYPICAL CONTROLLED DOOR DEVICES.
5. TYPICAL ALARM DEVICES.
6. REPLACE EXISTING CONTACTS WITH DPDT TO BE MONITORED BY BOTH THE CARD READER SYSTEM AND NEW LOCAL DOOR POSITION MONITORING SYSTEM. REFER TO DETAIL 3 THIS SHEET FOR DOOR MONITORING SYSTEM.



NOTE: THIS DIAGRAM IS SCHEMATIC IN NATURE ONLY. IT IS INTENDED TO SHOW GENERAL CONFIGURATION OF THE SYSTEM. REFER TO DRAWINGS AND SPECIFICATIONS FOR WORK REQUIRED.

2 ACCESS CONTROL DETAILS

SCALE: NONE

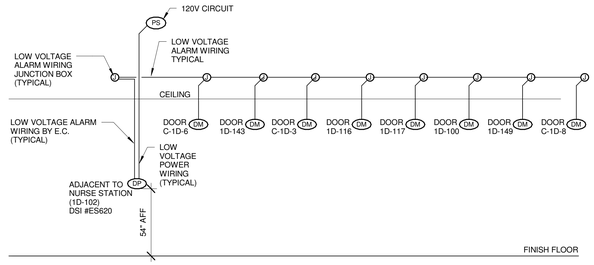


1 TECHNOLOGY OUTLET ELEVATIONS

SCALE: NONE

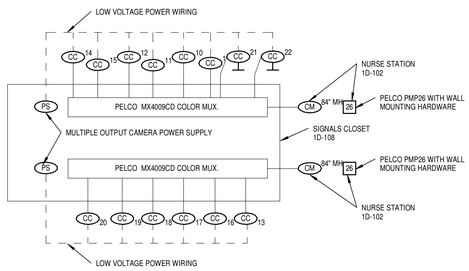
DETAIL NOTES

1. PROVIDE 20' SLACK CABLE IN MANAGED COIL FOR FIELD RELOCATION OF DEVICE.
2. 1-GANG 2 1/8" BOX (18" MH) WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING. SUBSCRIPT "W" INDICATES WALL PHONE MOUNTING PLATE (46" MH). REFER TO DRAWINGS FOR MOUNTING HEIGHT.
3. 1-GANG 2 1/8" DEEP BOX (18" MH) WITH 1" CONDUIT TO ABOVE ACCESSIBLE CEILING. REFER TO DRAWINGS FOR ALTERNATE MOUNTING HEIGHT.
4. SURFACE MOUNT ASSEMBLY FOR UTP DATA JACK ABOVE ACCESSIBLE CEILING.
5. UTP DATA JACK
6. DEFAULT OUTLET IS 3-DATA (1-BLUE/1-YELLOW). PROVIDE ALTERNATE CONFIGURATION IF INDICATED ON DRAWINGS.
7. RUN TO LOCAL DATA STATION CABLE TERMINATION EQUIPMENT IN NEW SIGNALS CLOSET 1D-152.
8. ELECTRICAL OUTLET.
9. CATV COAXIAL TYPE "F" CONNECTOR
10. 1/4" TRS JACK WITH CABLING TO LOCAL PATIENT STATION FOR TV CONTROL THROUGH NURSE CALL.
11. RUN TO LOCAL CATV DISTRIBUTION EQUIPMENT IN SIGNALS CLOSET 1D-108.
12. RUN TO LOCAL NURSE CALL PATIENT BED STATION WIRING PER MANUFACTURER'S REQUIREMENTS.
13. 1-GANG 2 1/8" BOX (60" MH) WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING AND FACEPLATE.



3 LOCAL DOOR MONITORING SYSTEM

SCALE: NONE



4 CCTV SYSTEM

SCALE: NONE

CAMERA SCHEDULE

NOTES:
1. EXISTING CAMERA INCLUDING CABLING TO BE REMOVED.

2. CAMERA TO BE CABLED TO NEW MULTIPLEXER AND POWER SUPPLY IN SIGNALS CLOSET 1D-108.

GENERAL				SPECIFICATIONS												TYPE AND MOUNTING								
	LOCATION			CAMERA TYPE				ANALYTICS		POWER		CABLE		INDOOR				OUTDOOR						
MARK	ROOM NO.	ROOM NAME	TECH CLOSET NO.	OPTION	LENS (mm)	RESOLUTION	PTZ	IP	CAM	SERV	POE	24V	120V	UTP	COAX	CLG RECESSED	CLG SURFACE	WALL SURFACE	CLG RECESSED	CLG SURFACE	POLE	WALL SURFACE	MOUNTING HEIGHT	SEE NOTE
1	C-1D-2	Corridor	1D-108		3-8	VGA					•			•	•	•								2
2	C-1D-2	Corridor			3-8	VGA					•			•	•	•								1
3					3-8	VGA					•			•	•	•								1
4	C-1D-6	Corridor			3-8	VGA					•			•	•	•								1
5	C-1D-4	Corridor			3-8	VGA					•			•	•	•								1
6	C-1D-3	Corridor			3-8	VGA					•			•	•	•								1
7	C-1D-3	Corridor			3-8	VGA					•			•	•	•								1
8	C-1D-8	Corridor			3-8	VGA					•			•	•	•								1
9	C-1D-6	Corridor			3-8	VGA					•			•	•	•								1
10	C-1D-2	Corridor	1D-108		3-8	VGA					•			•	•	•								2
11	C-1D-3	Corridor	1D-108		3-8	VGA					•			•	•	•								2
12	C-1D-3	Corridor	1D-108		3-8	VGA					•			•	•	•								2
13	C-1D-4	Corridor	1D-108		3-8	VGA					•			•	•	•								2
14	C-1D-8	Corridor	1D-108		3-8	VGA					•			•	•	•								2
15	C-1D-8	Corridor	1D-108		3-8	VGA					•			•	•	•								2
16	C-1D-6	Corridor	1D-108		3-8	VGA					•			•	•	•								2
17	C-1D-6	Corridor	1D-108		3-8	VGA					•			•	•	•								2
18	C-1D-6	Corridor	1D-108		3-8	VGA					•			•	•	•								2
19	C-1D-5	Corridor	1D-108		3-8	VGA					•			•	•	•								2
20	C-1D-5	Corridor	1D-108		3-8	VGA					•			•	•	•								2
21	EXT	EXTERIOR			3-8	VGA					•			•								•	9' - 0"	2
22	EXT	EXTERIOR			3-8	VGA					•			•								•	9' - 0"	2

Revisions		Date
	Bid Set	12/20/2013

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DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: TECHNOLOGY DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No.
VA Project No. 552-14-101
JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E505

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Office of Construction and Facilities Management

Department of Veterans Affairs

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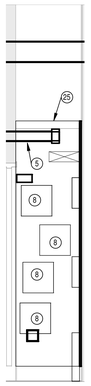
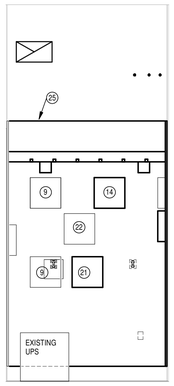
SHEET NOTES

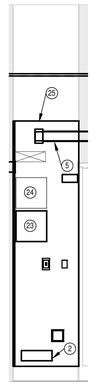
1. MAIN TELECOMMUNICATIONS GROUND BAR
2. TELECOMMUNICATIONS GROUND BAR
3. NEW RELAY RACK
4. FULL HEIGHT VERTICAL CABLE MANAGER.
5. 4" UL FIRE RATED CONDUIT SLEEVE ASSEMBLY THROUGH WALL. QUANTITY AS INDICATED.
6. 3/4" A/C FIRE TREATED PLYWOOD BACKBOARD, 8' HIGH, FULL WIDTH.
7. VERTICAL CABLE MANAGEMENT CHANNELS, MOUNTED TO BACKBOARD.
8. EXISTING HONEYWELL SECURITY AND ACCESS PANELS
9. EXISTING XI PANELS.
10. 1RU HORIZONTAL CABLE MANAGER
11. NEW FIBER TERMINATION PANEL TO SERVE EXISTING OSP FIBER AND NEW FIBER BACKBONE TO 1D-152. TERMINATE EXISTING AND NEW FIBER, UTILIZE LC CONNECTORS.
12. NEW DATA STATION CABLING 48 PORT PATCH PANELS
13. NEW DATA SWITCH, CISCO 3750-X SERIES, 48 PORT, POE+ SWITCH WITH SFP GIGABIT MODULE AND SX GIGABIT SFP AND FIBER JUMPER.
14. PROVIDE NEW CCTV SYSTEM VIDEO MULTIPLEXER WITH WALL SHELF.
15. DATA PATCH PANEL FOR WAP OUTLETS.
16. FLOOR MOUNTED UPS UNIT INCLUDING IP MODULE FOR NETWORK MONITORING AND ENVIRONMENTAL MONITORING AND PROBE.
17. PROVIDE RACK MOUNTED NETWORK IP CAMERA WITH CONNECTIVITY FOR OCIO REMOTE MONITORING OF CLOSET.
18. 12" WIDE OVERHEAD LADDER RACK, PROVIDE CABLE DROP OUTS FOR CABLING SUPPORT WHERE REQUIRED.
19. WALL FIELD FOR PAGING SYSTEM WIRING.
20. VOICE SERVICE ENTRANCE WALL FIELD.
21. NEW HONEYWELL PANELS FOR NEW DOOR CONTROLS AND ALARM MONITORING.
22. EXISTING IP CAMERA.
23. NEW WALL MOUNTED FIBER TERMINATION CABINET WITH LC CONNECTORS. PROVIDE 6 STRAND OM1 ARMORED PLENUM FIBER TO NEW SIGNALS CLOSET 1D-152 AND TERMINATE ON RACK MOUNTED FIBER TERMATION CABINET.
24. EXISTING FIBER TERMINATION CABINET.
25. EXISTING PLYWOOD BACKBOARD.



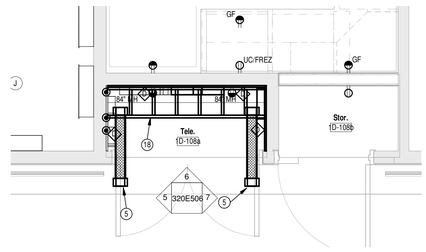
SIGNALS 1D-108 WEST WALL
5 SCALE: 1/2" = 1'-0"



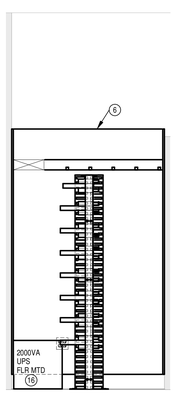
SIGNALS 1D-108 NORTH WALL
6 SCALE: 1/2" = 1'-0"



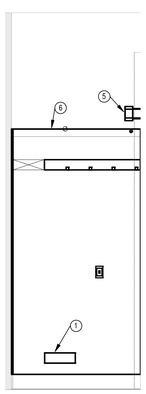
SIGNALS 1D-108 EAST WALL
7 SCALE: 1/2" = 1'-0"



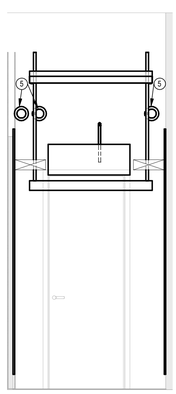
1 EXISTING SIGNALS CLOSET 1D-108
SCALE: 1/2" = 1'-0"



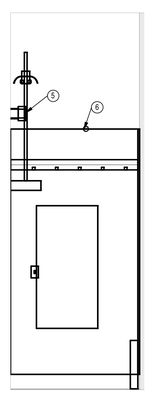
SIGNALS 1D-152 WEST WALL
8 SCALE: 1/2" = 1'-0"



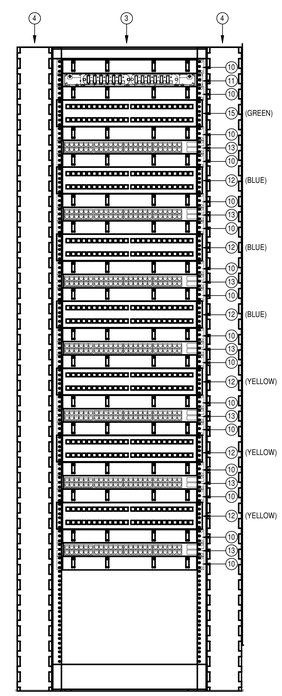
SIGNALS 1D-152 NORTH WALL
9 SCALE: 1/2" = 1'-0"



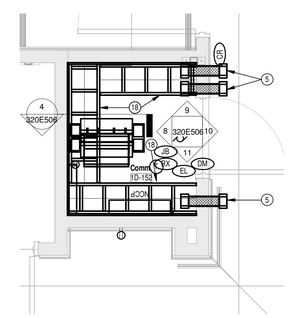
SIGNALS 1D-152 EAST WALL
10 SCALE: 1/2" = 1'-0"



SIGNALS 1D-152 SOUTH WALL
11 SCALE: 1/2" = 1'-0"



4 SIGNALS 1D-152 RACK ELEVATION
SCALE: 1 1/2" = 1'-0"



2 EXISTING SIGNALS CLOSET 1D-152
SCALE: 1/2" = 1'-0"

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
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JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SIGNALS CLOSET DETAILS

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E506

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Department of Veterans Affairs

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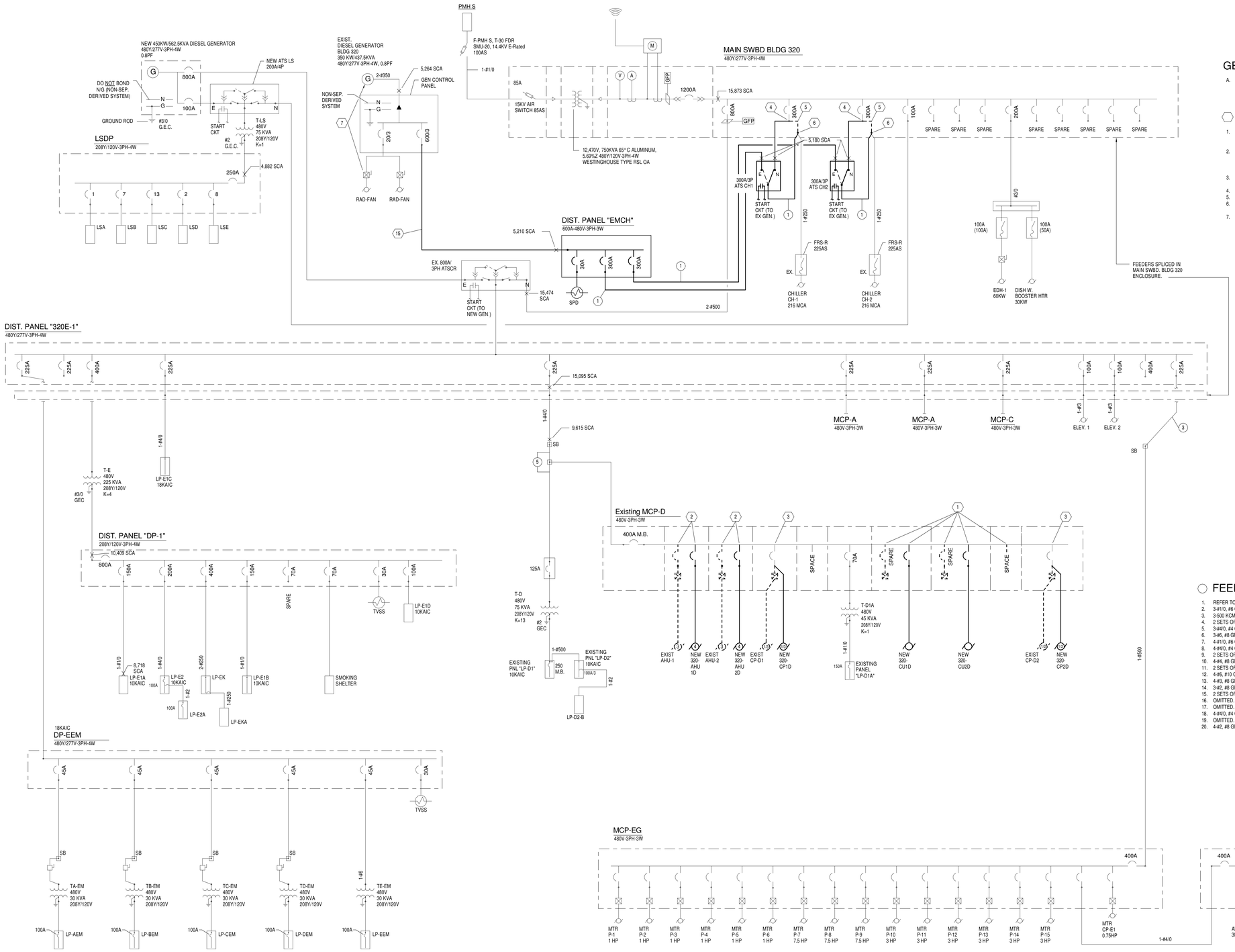

GENERAL NOTES

A. LIGHT LINEWEIGHT INDICATE EXISTING EQUIPMENT TO REMAIN. DARK SOLID LINEWEIGHT INDICATES NEW EQUIPMENT. DARK DASHED LINEWEIGHT INDICATES EQUIPMENT TO BE REMOVED. LIGHT DASHED LINEWEIGHT INDICATES FUTURE EQUIPMENT.

PLAN NOTES

1. REMOVE TWO(2) EXISTING SPARE MOTOR STARTERS AND MCP. PROVIDE ONE(1) NEW 480V-40A/3P AND ONE(1) NEW 480V-45A/3P THERMAL MAGNETIC CIRCUIT BREAKER IN EXISTING CUTLER HAMMER FREEDOM SERIES MCC.
2. UTILIZE EXISTING MOTOR CONTROL CENTER FOR NEW WORK. REMOVE EXISTING O/L AND MCP. AH UNIT SHALL BE PROVIDED WITH INTERNAL PHASE AND BROWNOUT MONITORS FOR MOTOR PROTECTION. REFER TO MSDC SCHEDULE FOR WIRE SIZES. PROVIDE NEW 480V-15A/3P THERMAL MAGNETIC CIRCUIT BREAKER IN MCC.
3. UTILIZE EXISTING MOTOR CONTROL CENTER FOR NEW WORK. REMOVE EXISTING O/L AND STARTER. PROVIDE NEW CIRCUITRY TO MOTOR AS INDICATED. REFER TO MSDC SCHEDULE FOR WIRE SIZES.
4. MAINTAIN/UTILIZE EXISTING BREAKER FOR NEW WORK.
5. DISCONNECT FEEDER FROM EXISTING SOURCE.
6. UTILIZE SPACE WITHIN EXISTING SWITCHBOARD TO INTERCEPT EXISTING FEEDER AND EXTEND TO NEW SOURCE.
7. FILL ALL FLUIDS, PERFORM STARTUP PROCEDURES AND TEST CURRENTLY DE-COMMISSIONED GENERATOR AND RADIATOR/FANS.

FEEDER SIZES

1. REFER TO DIST SCHEDULE.
2. 3-#1/0, #6 GRD. IN 1.5"C.
3. 3-500 KCMIL, #3 GRD. IN 4"C.
4. 2 SETS OF (4-600 KCMIL, #3/0 SBJ IN 4"C.)
5. 3-#4/0, #4 GRD. IN 2"C.
6. 3-#6, #8 GRD. IN 1"C.
7. 4-#1/0, #6 GRD. IN 2"C.
8. 4-#4/0, #4 GRD. IN 2.5"C.
9. 2 SETS OF (4-250 KCMIL, #2 GRD. IN 2.5"C.
10. 4-#4, #8 GRD. IN 1.25"C.
11. 2 SETS OF (4-#500 KCMIL, #1/0 GRD. IN 4"C.)
12. 4-#6, #10 GRD. IN 1"C.
13. 4-#3, #8 GRD. IN 1.25"C.
14. 3-#2, #8 GRD. IN 1.25"C.
15. 2 SETS OF (4-#300, #1 GRD. IN 3"C.)
16. OMITTED.
17. OMITTED.
18. 4-#4/0, #4 GRD. IN 2.5"C.
19. OMITTED.
20. 4-#2, #8 GRD. IN 1.25"C.

SITE PHOTOGRAPH
SCALE: NTS

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JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
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Drawing Title: SINGLE LINE DIAGRAM

Approved: Project Director

Project Title: B320 ENHANCE PATIENT ENVIRONMENT

Location: DAYTON, OHIO

Date: 12/20/2013 | Checked: MSG | Drawn: JAS

Project No. VA Project No. 552-14-101 JPA Project No. 13002.00

Building Number: 320

Drawing Number: 320E601

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Office of Construction and Facilities Management

Department of Veterans Affairs

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MOTORS, STARTERS, DISCONNECTS & CONTROLS

NOTES:
1. 320-AHU1D MANUFACTURER'S RECOMMENDED MOCP: 15A.
2. 320-ACU1D MANUFACTURER'S RECOMMENDED MOCP: 40A.
3. 320-AHU2D MANUFACTURER'S RECOMMENDED MOCP: 15A
4. 320-ECU2D MANUFACTURER'S RECOMMENDED MOCP: 45A.
5. STEAM CONDENSATE PUMPS ARE REDUNDANT. DUAL MOTORS WILL NOT RUN SIMULTANEOUSLY.
6. DISCONNECT IS PROVIDED WITH ROOFTOP EXHAUST UNIT.
7. LOCATE VFD IN FRONT OF MOTOR. REFER TO FLOOR PLAN.

		MOTOR											STARTER										DISCONNECT MEANS										CONTROL		FEEDER					
		CHARACTERISTICS									LOCATION		TYPE					LOCATION					TYPE					LOCATION													
MARK	NAMEPLATE	HORSEPOWER (HP)	LOAD (kVA)	120V-1PH	208V-1PH	208V-3PH	240V-1PH	240V-3PH	277V-1PH	480V-1PH	480V-3PH	ROOM NUMBER	ROOM NAME	NEMA SIZE	MANUAL	MAGNETIC	BUILT-IN MOTOR O.L.	2-SPEED	VFD	SEE NOTE	NEAR MOTOR	MOTOR CONT CENTER	EQUIP CONT PANEL	ROOM NUMBER	SEE NOTE	FURNISHED BY	DISC SWITCH	MANUAL STARTER	RECEPTACLE	FEEDER SW OR BREAKER	NEMA TYPE	DISC SIZE	FUSE SIZE	NEAR MOTOR	MOTOR CONT CENTER	EQUIP CONT PANEL	PANELBOARD	SEE NOTE	FURNISHED BY	INTERLOCK WITH MOTOR NO. BY E.C.	MANUAL AT STARTER	INTEGRAL WITH EQUIPMENT	FURNISHED BY	SEE NOTE	NUMBER OF CONDUCTORS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE	SEE NOTE
				•																																													
320-AHU1D	Air Handling Unit AHU1D	4	3.5							•	1D-137	Mechanical			•						•	137		Div 23	•								•				26 - Ex				Div 23	3	12	12	0.75	1
320-AHU2D	Air Handling Unit AHU2D	4	3.5							•	1D-142	Mechanical			•						•	137		Div 23	•								•				DIV 26				Div 23	3	12	12	0.75	3
320-CP1D	Condensate Pump	2 @ 1/3	0.76							•	1D-137	Mechanical			•						•	137		Div 23	•										•		DIV 23				Div 23	3	12	12	0.75	5
320-CP2D	Condensate Pump	2 @ 1/3	0.76							•	1D-142	Mechanical			•						•	137		Div 23	•										•		DIV 23				Div 23	3	12	12	0.75	5
320-CU1D	Condensing Unit CU1D		23.3							•					•						•	137		Div 23	•								•				DIV 26				Div 23	3	8	10	0.75	2
320-CU2D	Condensing Unit CU2D		25.8							•					•						•	137		Div 23	•								•				DIV 26				Div 23	3	6	10	0.75	4
320-EF1D	Roof Exhaust	3/4	1.77	•									Roof	0	•							117		Div 26	•								•			6	DIV 23				Div 23	2	12	12	0.75	
320-EF2D	Roof Exhaust	1/2	1.26	•									Roof	0	•							137		Div 26	•								•			6	DIV 23				Div 23	2	12	12	0.75	
320-EF3D	Roof Exhaust	1/2	1.26	•									Roof	0	•							137		Div 26	•								•			6	DIV 23				Div 23	2	12	12	0.75	
320-EF4D	Roof Exhaust	1/6	0.56	•									Roof	0	•							137		Div 26	•								•			6	DIV 23				Div 23	2	12	12	0.75	
320-EF5D	Roof Exhaust	1/6	0.56	•									Roof	0	•							117		Div 26	•								•			6	DIV 23				Div 23	2	12	12	0.75	
320-P5	Hot Water Pump	2	2.76			•							Mech Rm POD E					•	•				7	Div 26									•			Exist				Div 23	3	12	12	0.75	
320-P14	Chilled Water Pump	3	3.8			•							Mech Rm POD E					•	•				7	Div 26									•			Exist				Div 23	3	12	12	0.75	
320-RP1	Booster Pump	1/12	0.17	•							1D-142	Mechanical					•							Div 22			•								•	DIV 26				Div 22	2	12	12	0.75	

NOTES

A. ALL PANELS SHOWN (EXCLUDING NEW DIST PANEL "EMCH") ARE EXISTING PANELS TO BE MAINTAINED AND UTILIZED FOR NEW WORK. CONTRACTOR ARE ENCOURAGED TO UTILIZE ALL EXISTING BREAKERS MAINTAINED FROM DEMOLITION PHASE FOR NEW WORK UNLESS NOTED OTHERWISE. REFER TO THE "NOTES" SECTION OF PANEL SCHEDULES FOR ADDITIONAL DETAILS.

Panel: LSD

Location: Elec. 1D-106 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** Type 1 **Mains Type:**
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	COURTYARD LTG	20 A	1	1000...	1259...					1	20 A	Lighting Corridor	2
3							30 VA			1	20 A	Exit Signs	4
5	Lighting Corr	20 A	1					1019...	400 VA	1	20 A	EXIST FIRE ALARM	6
7	Exit Signs	20 A	1	30 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
			Total Load:	2.29 kVA		0.03 kVA		1.42 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	3738 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	4323 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	10 A
Lighting	2338 VA	125.00%	2923 VA	**Total Est. Demand:**	12 A
Motor	0 VA	0.00%	0 VA		
Receptacle	1400 VA	100.00%	1400 VA		
Resistive Heat	0 VA	0.00%	0 VA		

Notes:

TOTAL CONNECTED	ESTIMATED DEMAND
3.74 kVA	4.32 kVA (12 A)

DISTRIBUTION PANEL: EMCH (NEW)

Location: Electrical Distribution Room GE104 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** NEMA 1 **Mains Type:** M.L.O.
Voltage: 480/277 Wye-3PH-4W **Mains Rating:** 600 A
Feeder Size: 2 sets of (4-#350 KCMIL, #1 GRD in 3"C.) **Spec. Ref. #:** 26 24 16

CKT	CIRCUIT DESCRIPTION	APPROX. CONNECTED LOAD	FRAME SIZE	POLES	TRIP SETTING	BREAKER TYPE	NUMBER OF CONDUCTORS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE	SEE NOTE
1	EX CHILLER 1	179.58 kVA	300 A	3	300 A		3	250	4	2.5	
2	EX CHILLER 2	179.58 kVA	300 A	3	300 A		3	250	4	2.5	
3	SPD	0.00 kVA	30 A	3	30 A						
4	Spare	0.00 kVA	--	3	60 A	--	--	--	--	--	--
5	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
6	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
7	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
8	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
9	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
10	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
11	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
12	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
13	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
14	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
15	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
16	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
17	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
18	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
19	Space	0.00 kVA	--	--	--	--	--	--	--	--	--
20	Space	0.00 kVA	--	--	--	--	--	--	--	--	--

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Motor	359158 VA	112.50%	404053 VA		
Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	359158 VA
				Total Est. Demand:	404053 VA
				Total Conn.:	432 A
				Total Est. Demand:	486 A

NOTES:

TOTAL CONNECTED	ESTIMATED DEMAND
359.16 kVA	432 A

Panel: LP-D2-B (EXISTING)

Location: Mechanical 1D-142 **Mounting:** Surface **A.I.C. Rating:**
Supply From: LP-D2 **Enclosure:** Type 1 **Mains Type:**
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Retherm	30 A	3	2000...	720 VA					1	20 A	Receptacle	2
3	--	--	--			2000...	1080...			1	20 A	Receptacle	4
5	--	--	--					2000...	1080...	1	20 A	Receptacle	6
7	Receptacle	20 A	1	1080...	540 VA					1	20 A	Receptacle	8
9	Receptacle	20 A	1			1080...	360 VA			1	20 A	Fireplace/TV	10
11	320-DWH1/DWH2	20 A	1					340 VA	1080...	1	20 A	Receptacle	12
13	Receptacle	20 A	1	720 VA	900 VA					1	20 A	Receptacle	14
15	Receptacle	20 A	1			720 VA	540 VA			1	20 A	Receptacle	16
17	Receptacle	20 A	1					360 VA	360 VA	1	20 A	Receptacle	18
19	Receptacle	20 A	1	1080...	1200...					1	20 A	Retherm	20
21	Receptacle	20 A	1			1080...	1500...			1	20 A	Micro.	22
23	Juke Box	20 A	1					500 VA	540 VA	1	20 A	Receptacle	24
25	Receptacle	20 A	1	360 VA	1200...					1	20 A	Refrigerator	26
27	Receptacle	20 A	1			540 VA	0 VA			1	20 A	Spare	28
29	EWC	20 A	1					1310...	540 VA	1	20 A	Receptacle	30
			Total Load:	9.80 kVA		8.90 kVA		8.11 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	26810 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	21405 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	74 A
Lighting	0 VA	0.00%	0 VA	**Total Est. Demand:**	59 A
Motor	0 VA	0.00%	0 VA		
Receptacle	20810 VA	74.03%	15405 VA		
Resistive Heat	6000 VA	100.00%	6000 VA		

Notes: Utilize existing 30A/3P breaker 1,3,5 for new Retherm Cart. Remove existing 30A/3P breaker 2,4,6 and replace with three(3) new 20A/1P breakers.

TOTAL CONNECTED	ESTIMATED DEMAND
26.81 kVA	21.41 kVA (59 A)

Panel: LP-D2 (EXISTING)

Location: Mechanical 1D-142 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** Type 1 **Mains Type:** M.L.O.
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 250 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Lighting	20 A	1	1370...	170 VA					1	20 A	320-RP1	2
3	Spare	20 A	1			0 VA	100 VA			1	20 A	DDC	4
5	Lighting	20 A	1					804 VA	180 VA	1	20 A	Receptacle	6
7	Lighting	20 A	1	1506...	640 VA					1	20 A	Lighting	8
9	Lighting	20 A	1			638 VA	672 VA			1	20 A	Lighting	10
11	Therapy Tub	20 A	1					1000...	540 VA	1	20 A	Receptacle	12
13	Therapy Tub	20 A	1	1000...	720 VA					1	20 A	Receptacle	14
15	Therapy Tub HTR	20 A	1			500 VA	720 VA			1	20 A	Receptacle	16
17	Receptacle	20 A	1					540 VA	720 VA	1	20 A	Receptacle	18
19	Receptacle	20 A	1	720 VA	540 VA					1	20 A	Receptacle	20
21	Receptacle	20 A	1			1080...	720 VA			1	20 A	Receptacle	22
23	Receptacle	20 A	1					1080...	720 VA	1	20 A	Receptacle	24
25	Receptacle	20 A	1	1080...	720 VA					1	20 A	Receptacle	26
27	Receptacle	20 A	1			540 VA	540 VA			1	20 A	Receptacle	28
29	Receptacle	20 A	1					540 VA	375 VA	1	20 A	Lighting	30
31	Receptacle	20 A	1	1080...	0 VA					1	20 A	Spare	32
33	Receptacle	20 A	1			1080...	0 VA			1	20 A	Spare	34
35	Receptacle	20 A	1					360 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	9800...					3	100 A	Exist. Panel LP-D2-B	38
39	Spare	20 A	1			0 VA	8900...			--	--	--	40
41	Spare	20 A	1					0 VA	8110...	--	--	--	42
			Total Load:	19.35 kVA		15.49 kVA		14.97 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	49805 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	37534 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	138 A
Lighting	6005 VA	125.00%	7506 VA	**Total Est. Demand:**	104 A
Motor	170 VA	125.00%	213 VA		
Receptacle	37630 VA	63.29%	23815 VA		
Resistive Heat	6000 VA	100.00%	6000 VA		

Notes: Remove existing 20A/2P breakers 17,19 and 37,39 and replace with new 20A/1P breakers. Provide ground fault breakers for Therapy Tub circuits 11,13,15.

TOTAL CONNECTED	ESTIMATED DEMAND
49.81 kVA	37.53 kVA (104 A)

Panel: LP-D1A (EXISTING)

Location: Mechanical 1D-180 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** Type 1 **Mains Type:** M.B.
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 150 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle	20 A	1	1080...	720 VA					1	20 A	Receptacle	2
3	Receptacle	20 A	1			1080...	720 VA			1	20 A	Receptacle	4
5	Receptacle	20 A	1					540 VA	540 VA	1	20 A	Receptacle	6
7	Receptacle	20 A	1	540 VA	540 VA					1	20 A	Receptacle	8
9	Receptacle	20 A	1			1080...	720 VA			1	20 A	Receptacle	10
11	Receptacle	20 A	1					1080...	720 VA	1	20 A	Receptacle	12
13	Receptacle	20 A	1	540 VA	1260...					1	20 A	Receptacle	14
15	DDC	20 A	1			100 VA	360 VA			1	20 A	Receptacle	16
17	Receptacle	20 A	1					1080...	720 VA	1	20 A	Receptacle	18
19	Spare	20 A	1	0 VA	720 VA					1	20 A	Receptacle	20
21	Spare	20 A	1			0 VA	1080...			1	20 A	Receptacle	22
23	Lighting	20 A	1					384 VA	0 VA	1	20 A	Spare	24
25	Lighting	20 A	1	848 VA	1639...					1	20 A	Lighting	26
27	Lighting	20 A	1			775 VA	180 VA			1	20 A	Receptacle	28
29	Receptacle	20 A	1					720 VA	1000...	1	20 A	Copier	30
31	Receptacle	20 A	1	720 VA	360 VA					1	20 A	Receptacle	32
33	Receptacle	20 A	1			1080...	1080...			1	20 A	Receptacle	34
35	Lighting	20 A	1					848 VA	1339...	1	20 A	Lighting	36
37	Lighting	20 A	1	1024...	1334...					1	20 A	Lighting	38
39	Receptacle	20 A	1			540 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	11.33 kVA		8.80 kVA		8.97 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	29091 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	25689 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	81 A
Lighting	8191 VA	125.00%	10239 VA	**Total Est. Demand:**	71 A
Motor	0 VA	0.00%	0 VA		
Receptacle	20900 VA	73.92%	15450 VA		
Resistive Heat	0 VA	0.00%	0 VA		

Notes: Remove existing 3P breakers 1,3,5 / 7,9,11 and existing 2P breakers 2,4 / 6,8 and replace with new 20A/1P breakers for new work.

TOTAL CONNECTED	ESTIMATED DEMAND
29.09 kVA	25.69 kVA (71 A)

Panel: LP-D1 (EXISTING)

Location: Elec. 1D-106 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** Type 1 **Mains Type:** M.B.
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 250 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle	20 A	1	1080...	720 VA					1	20 A	Receptacle	2
3	Lighting	20 A	1			1238...	900 VA			1	20 A	Receptacle	4
5	Spare	20 A	1					0 VA	1088...	1	20 A	Lighting	6
7	Lighting	20 A	1	960 VA	720 VA					1	20 A	Receptacle	8
9	Fireplace/TV	20 A	1			360 VA	540 VA			1	20 A	Receptacle	10
11	Receptacle	20 A	1					360 VA	360 VA	1	20 A	Receptacle	12
13	Retherm	20 A	1	1000...	1130...					1	20 A	Receptacle	14
15	Receptacle	20 A	1			720 VA	180 VA			1	20 A	Receptacle	16
17	Refrig.	20 A	1					1200...	500 VA	1	20 A	U/C Refrig.	18
19	Receptacle	20 A	1	1080...	540 VA					1	20 A	Receptacle	20
21	Receptacle	20 A	1			360 VA	0 VA			1	20 A	Spare	22
23	Dryer	30 A	2					2500...	2500...	2	30 A	Dryer	24
25	--	--	--	2500...	2500...					--	--	--	26
27	Washer	20 A	1			1130...	1130...			1	20 A	Washer	28
29	Receptacle	20 A	1					540 VA	1080...	1	20 A	Receptacle	30
31	Receptacle	20 A	1	1080...	720 VA					1	20 A	Receptacle	32
33	Spare	20 A	1			0 VA	720 VA			1	20 A	Receptacle	34
35	Receptacle	20 A	1					1080...	2000...	3	30 A	Retherm	36
37	Spare	20 A	1	0 VA	2000...					--	--	--	38
39	Spare	20 A	1			0 VA	2000...			--	--	--	40
41	Spare	20 A	1					0 VA	0 VA	1	15 A	EXIST C.U. ROOF	42
			Total Load:	16.03 kVA		9.28 kVA		13.21 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	38516 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	29723 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	107 A
Lighting	3286 VA	125.00%	4108 VA	**Total Est. Demand:**	83 A
Motor	0 VA	0.00%	0 VA		
Receptacle	29230 VA	67.11%	19615 VA		
Resistive Heat	6000 VA	100.00%	6000 VA		

Notes:

TOTAL CONNECTED	ESTIMATED DEMAND
38.52 kVA	29.72 kVA (83 A)

Panel: LP-DEM (EXISTING)

Location: Elec. 1D-106 **Mounting:** Surface **A.I.C. Rating:**
Supply From: **Enclosure:** Type 1 **Mains Type:** M.B.
Voltage: 120/208 Wye-3PH-4W **Mains Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Ice	20 A	1	1200...	360 VA					1	20 A	Receptacle	2
3	Receptacle	20 A	1			360 VA	500 VA			1	20 A	Pyxis Mach.	4
5	Pyxis Mach.	20 A	1					500 VA	720 VA	1	20 A	Receptacle	6
7	Ex Rec Tele Rm 108	20 A	1	400 VA	1080...					1	20 A	Receptacle	8
9	Receptacle	20 A	1			720 VA	1260...			1	20 A	Receptacle	10
11	Receptacle	20 A	1					1080...	1260...	1	20 A	Receptacle	12
13	Receptacle	20 A	1	720 VA	800 VA					1	20 A	Ice	14
15	L.V. Transformer	20 A	1			500 VA	1104...			1	20 A	Receptacle	16
17	EF2	20 A	1					1260...	360 VA	1	20 A	Receptacle	18
19	Ex Rec Tele Rm 152	20 A	1	400 VA	1778...					1	20 A	FAN COILS	20
21	FAN COILS	20 A	1			1332...	1738...			1	20 A	FAN COILS	22
23	320-CU3D	20 A	1					1700...	1601...	1	20 A	FAN COILS	24
25	L.V. Transformer	20 A	1	500 VA	1260...					1	20 A	EF3	26
27	EF4	20 A	1			560 VA	500 VA			1	20 A	U/C Freezer	28
29	Ex Camera Pwr	20 A	1					400 VA	1500...	1	20 A	REF.	30
31	Receptacle	20 A	1	720 VA	540 VA					1	20 A	Receptacle	32
33	Receptacle	20 A	1			900 VA	900 VA			1	20 A	Receptacle	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	EF1	20 A	1	1770...	0 VA					1	20 A	Spare	38
39	EF5	20 A	1			560 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	11.53 kVA		10.93 kVA		10.38 kVA					

Load Classification	Connected...	Demand Factor	Estimated...	Panel Totals	
Cooling	0 VA	0.00%	0 VA		
Electric Clothes Dryer	0 VA	0.00%	0 VA	**Total Conn. Load:**	32843 VA
Existing Load	0 VA	0.00%	0 VA	**Total Est. Demand:**	28643 VA
HVAC	0 VA	0.00%	0 VA	**Total Conn.:**	91 A
Lighting	0 VA	0.00%	0 VA	**Total Est. Demand:**	80 A
Motor	13559 VA	103.26%	14001 VA		
Receptacle	19284 VA	75.93%	14642 VA		
Resistive Heat	0 VA	0.00%	0 VA		

Notes:

TOTAL CONNECTED	ESTIMATED DEMAND
32.84 kVA	28.64 kVA (80 A)

Revisions		Date
	Bid Set	12/20/2013

CONSULTANTS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
Nationally Recognized Leader in Sustainability / LEED
1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
HEAPY PROJECT No.: 2013-04003 FIRM LICENSE No.: 01528

STATE OF OHIO — GARY S. EODICE E-52755 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:
JOHN POE ARCHITECTS
116 EAST THIRD STREET
DAYTON, OHIO 45402-2130
937 461 3290 PHONE
937 461 0260 FAX
jpa@johnpoe.com

Drawing Title: SCHEDULES

Approved: Project Director

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Date: 12/20/2013 | Checked: MSG | Drawn: JAS

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Drawing Number: 320E602

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Office of Construction and Facilities Management

Department of Veterans Affairs