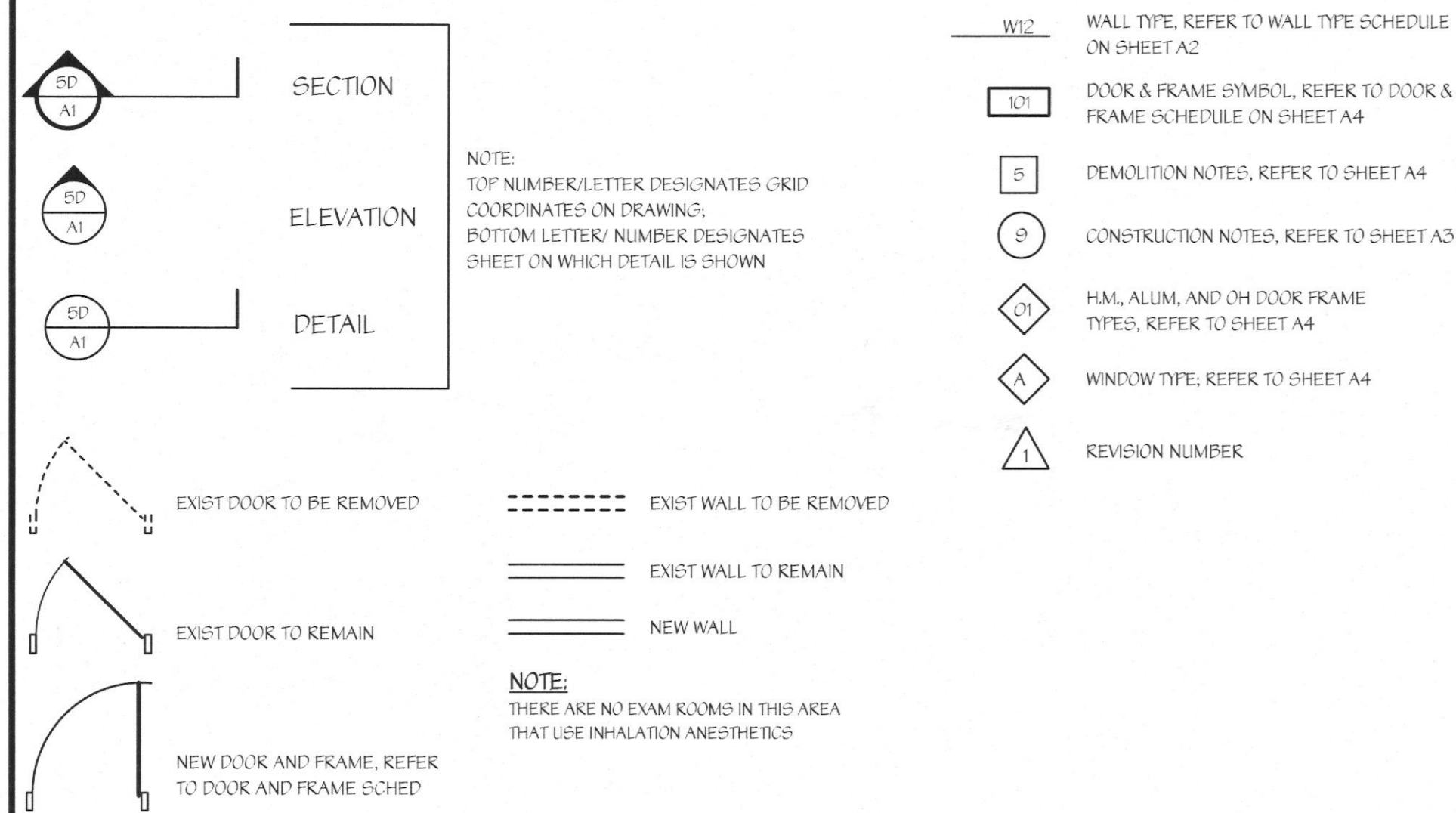


ARCHITECTURAL SYMBOLS



PROJECT INFO

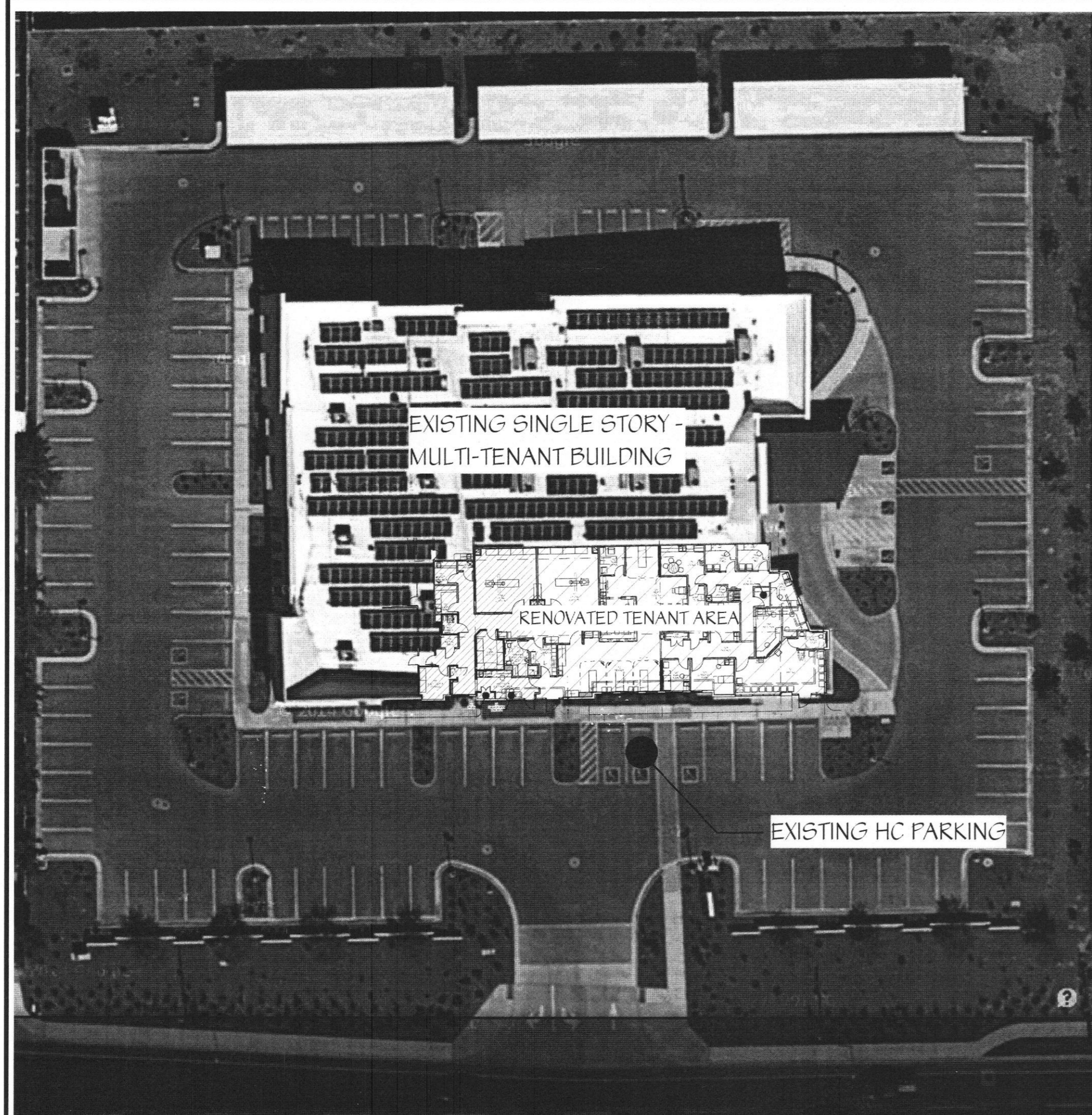
PLEASE REFER TO THE FUNCTIONAL PROGRAM THAT IS PART OF THE PLAN REVIEW APPLICATION THAT IS ATTACHED WITH THESE DRAWINGS.

NOTE: AS INDICATED IN THE FUNCTIONAL PROGRAM THIS CLINIC WILL NOT BE OFFERING SERVICES / PROCEDURES THAT WILL USE GENERAL ANESTHESIA NOR WILL LIFE-SUPPORT EQUIPMENT BE USED DURING ANY SERVICES / PROCEDURES PERFORMED IN THIS CLINIC. THEREFORE, PER 2012 NFPA 101, CHAPTER 20, 20.2.9.2 AN ESSENTIAL ELECTRICAL SYSTEM IS NOT REQUIRED FOR THIS AMBULATORY HEALTH CARE FACILITY AND, ACCORDINGLY, HAS NOT BEEN PROVIDED.

FURTHERMORE, PER 2012 NFPA 99, 4.1 THIS CLINIC HAS BEEN DESIGNATED AS A CATEGORY 3, AS DEFINED IN 4.1.3.

IN ADDITION, ALL OF THE PATIENT CARE EQUIPMENT USED DURING PROCEDURES HAS BEEN PROVIDED WITH AN BOARD BATTERY BACK UP THAT IS CAPABLE OF ALLOWING THE EQUIPMENT TO CONTINUE TO RUN IN THE CASE OF THE LOSS OF POWER FOR A TIME LONG ENOUGH TO ALLOW THE PROCEDURES TO BE STOPPED IN A SAFE AND ORDERLY MANNER SO THAT PATIENT CAN BE MOVED TO A RECOVERY AREA AND/OR EVACUATED FROM THE BUILDING AS MAYBE INDICATED.

EXISTING SITE PLAN



TENANT RENOVATIONS FOR:  
**Lifeline Access Center**

7362 West Thunderbird Road, Ste 103  
Peoria, Arizona 85381

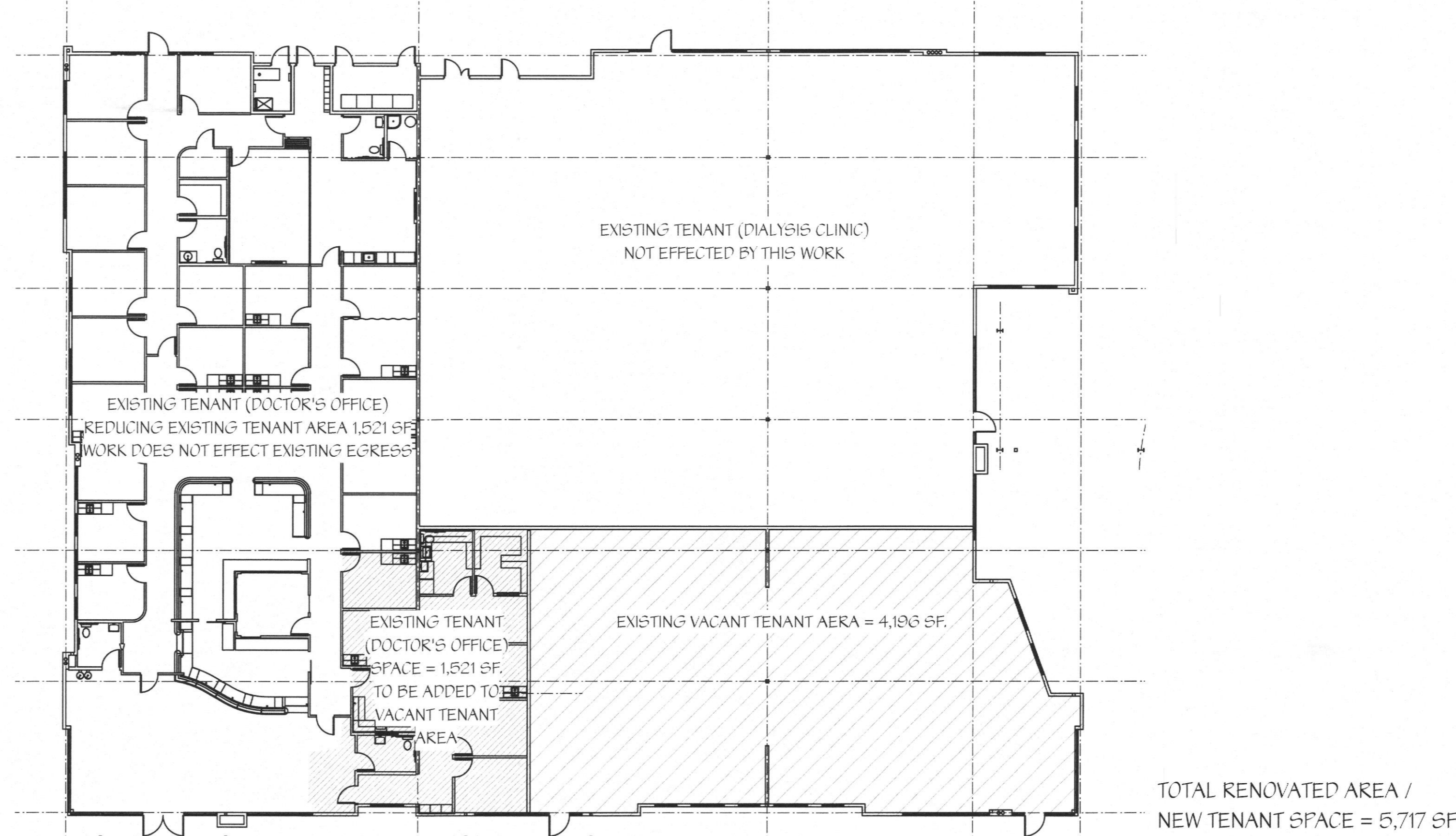
DRAWING INDEX:

ARCHITECTURAL	
T1	TITLE SHEET
A1	FLOOR PLAN & ROOM FINISH SCHEDULE
A2	DIMENSION PLAN AND WALL TYPES / DTL'S
A2.1	FIRE DETAILS & WALL DETAILS
A3	NOTED FLOOR PLAN AND CONSTRUCTION NOTES
A4	CEILING & DEMO PLANS, DOOR/FRAME SCHEDULE
A5	INTERIOR ELEVATIONS AND DETAILS
A6	MEDICAL GAS PLAN
M1	FLOOR PLAN-DEMO (HVAC/PIPING)
M2	FLOOR PLAN-NEW WORK (HVAC)
M3	FLOOR PLAN-NEW WORK (EXHAUST)
M4	FLOOR PLAN-NEW WORK (PIPING)
M5	FLOOR PLAN-NEW WORK (PLUMBING)
M6	RISERS
M7	DETAILS
M8	SCHEDULES
M9	MECHANICAL OUTLINE SPECIFICATIONS
M10	ENERGY CALCULATIONS (COM CHECK)
E1	NOTES, SYMBOLS, DETAILS AND SCHEMATIC
E2	FLOOR PLAN - LIGHTING & SCHEDULES & DEMO
E3	FLOOR PLAN - POWER & SCHEDULES
E4	RISER DIAGRAMS AND SCHEDULES
E5	ELECTRICAL SPECIFICATIONS
FP-1	FIRE SPRINKLER PLAN AND DETAILS
FA-1	FIRE ALARM PLAN AND DETAILS

MECHANICAL / ELECTRICAL	
DON PENN CONSULTING ENGINEERS 635 WESTPORT PARKWAY, SUITE 300 GRAPEVINE, TEXAS 76051 OFFICE 817-251-8411 FAX 817-251-8411	

OVERALL BUILDING PLAN



CODE ANALYSIS

INTERNATIONAL BUILDING CODE, 2012 EDITION (IBC), AS AMENDED BY CITY OF PEORIA  
INTERNATIONAL ENERGY CONSERVATION CODE, 2012 EDITION (IECC), AS AMENDED  
INTERNATIONAL FIRE CODE, 2012 EDITION (IFC), AS AMENDED  
INTERNATIONAL MECHANICAL CODE, 2012 EDITION (IMC), AS AMENDED  
INTERNATIONAL PLUMBING CODE, 2012 EDITION (IPC), AS AMENDED  
NATIONAL ELECTRIC CODE, 2011 EDITION (NEC), AS AMENDED

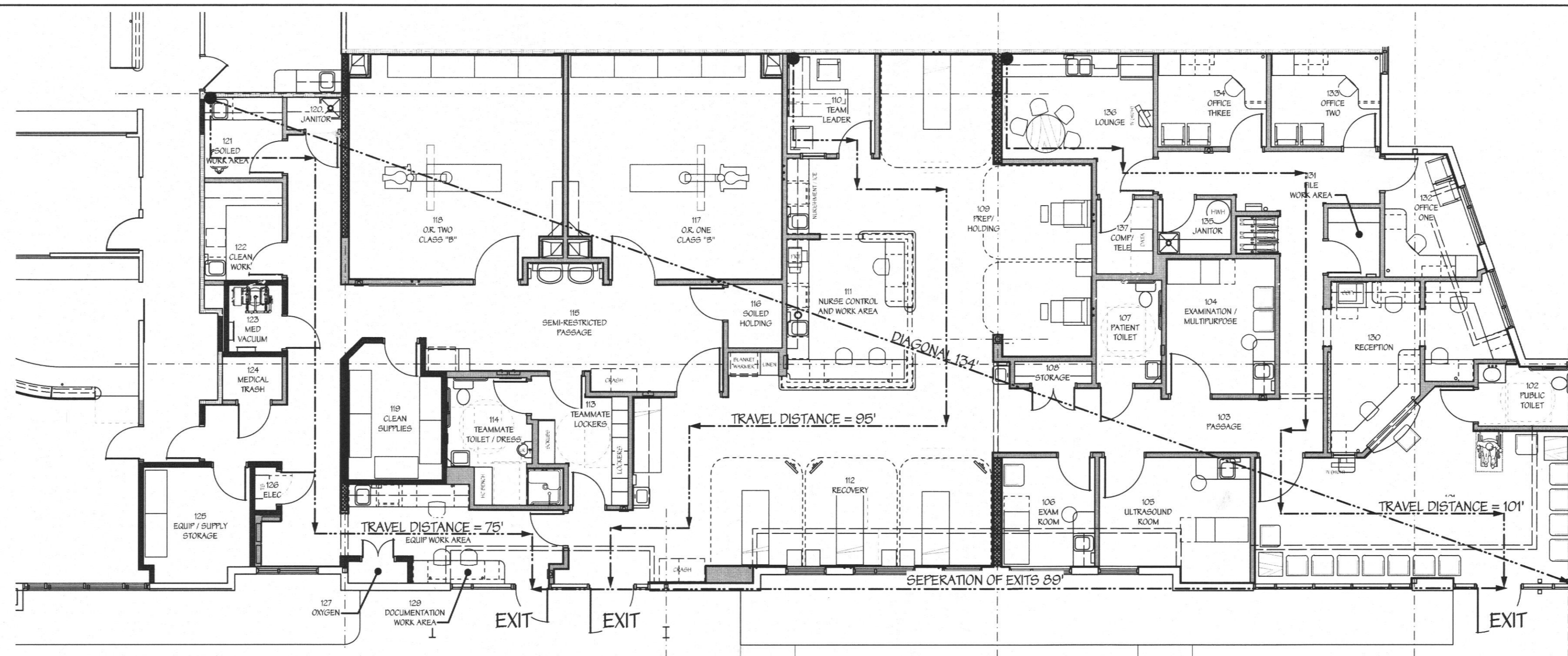
	EXISTING BLDG	PROPOSED RENOVATIONS
OCCUPANCY CLASSIFICATION	B - BUSINESS	UNCHANGED
TYPE OF CONSTRUCTION	V-B (LIN PROTECTED)	UNCHANGED
NUMBER OF FLOORS	ONE	UNCHANGED
SPRINKLER SYSTEM	YES	YES
EXISTING VACANT TENANT SPACE	4,193	
RENOVATED EXISTING TENANT SPAL	1,521	
NEW TENANT SPACE		5,717
OCCUPANT LOAD (B OCCUPANCY CLASSIFICATION @ 100 PER OCCUPANT)		55
NUMBER OF EXITS REQUIRED		TWO
NUMBER OF EXITS PROVIDED		3

NOTE - RENOVATIONS TO EXIST TENANT SPACE DO NOT IMPACT THE EGRESS FROM THIS AREA

SEISMIC DESIGN CATEGORY B; SEISMIC DESIGN USE GROUP III  
(REFERENCE SHELL BUILDING DRAWINGS, PERMIT #1102100, SHEET S10)

NOTE: THIS FACILITY MEETS THE 2012 IBC DEFINITION OF "AMBULATORY CARE FACILITY" IN CHAPTER 2, SECTION 202. PER THE USE AND OCCUPANCY CLASSIFICATIONS IN CHAPTER 3, SECTION 304, AMBULATORY CARE FACILITIES ARE PART OF THE BUSINESS USE GROUP. THIS PROJECT HAS BEEN DESIGNED TO MEET THE SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY, CHAPTER 4, SECTION 422 AMBULATORY CARE FACILITIES.

EGRESS PLAN



VICINITY MAP



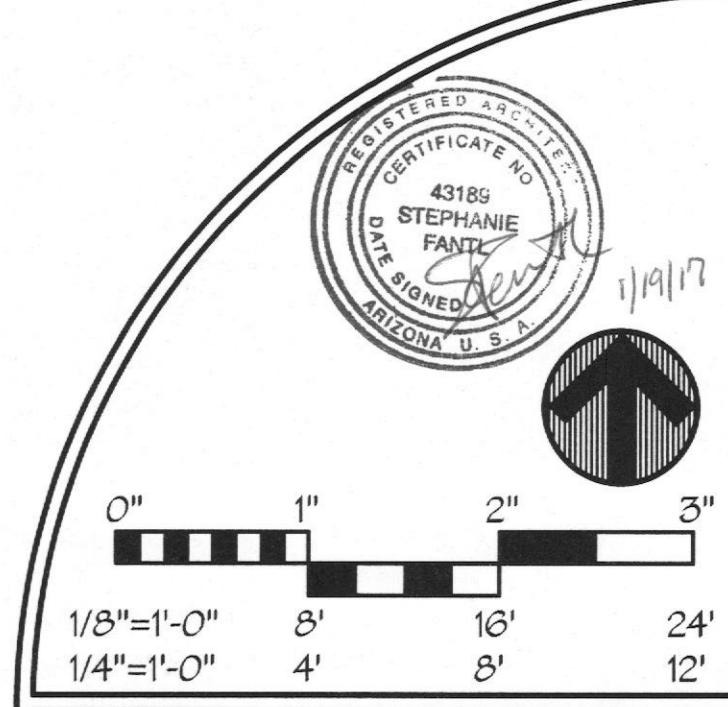
PROJECT INFORMATION

TENANT AREA IS ON THE FIRST (GROUND) FLOOR OF EXISTING SINGLE STORY BUILDING  
RENOVATED TENANT AREA - REQUIRED SEPARATION IN SPINKLERED BUILDING = 134/3 OR 45 FEET  
MAXIMUM ALLOWABLE TRAVEL DISTANCE = 300'  
MAXIMUM ALLOWABLE COMMON PATH OF TRAVEL DISTANCE = 100'

NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD

PLUMBING FIXTURE REQUIREMENTS - 2012 IBC TABLE 403.2 AND 2012 IFC TABLE 403.1  
REQUIREMENTS = NO-2  
CLASSIFICATION-BUSINESS B;  
TOTAL OCCUPANTS = 55 WHICH, AT 50% EACH SEX IS 28 MEN AND 28 MEN  
MEN - WATER CLOSETS 1/25 = 28/25 = 2 WATER CLOSETS REQUIRED - PER SECTION 410.2 OF THE INTERNATIONAL PLUMBING CODE NO MORE THAN 50% OF REQUIRED WATERCLOSETS CAN BE SUBSTITUTED WITH URINALS. THEREFORE ONE WATER CLOSET AND ONE URINAL HAVE BEEN PROVIDED  
LAVATORIES 1/40 = 28/40 = 1 LAVATORIES REQUIRED - ONE HAS BEEN PROVIDED  
SHOWER NOT REQUIRED - ONE PROVIDED  
WOMEN - WATER CLOSETS 1/25 = 28/25 = 2 WATER CLOSETS REQUIRED - TWO HAVE BEEN PROVIDED  
LAVATORIES 1/40 = 28/40 = 1 LAVATORIES REQUIRED - ONE HAS BEEN PROVIDED  
SHOWER NOT REQUIRED

DRINKING FOUNTAIN 1/100 - 55/100 = 1 DRINKING FOUNTAIN REQUIRED - PIPED WATER BOTTLE FILLER HAS BEEN PROVIDED TO MEET THE DRINKING FOUNTAIN REQUIREMENT.  
SERVICE SINK - 1 REQUIRED - TWO HAVE BEEN PROVIDED.



TITLE SHEET

REVISIONS		
REV#	DATE	DESCRIPTION
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2nd ROUND
3	10/29/15	PERMIT REVIEW COMMENTS - 3rd ROUND
	1/11/17	ARIZONA STATE ASC PLAN REVIEW

DRAWING NO.	T1
SHEET	OF
DATE	DRAWN BY
7/14/15	BFC
JOB NUMBER	CHECKED BY
11212	KDY

ISSUED FOR ARIZONA  
STATE ASC PLAN REVIEW

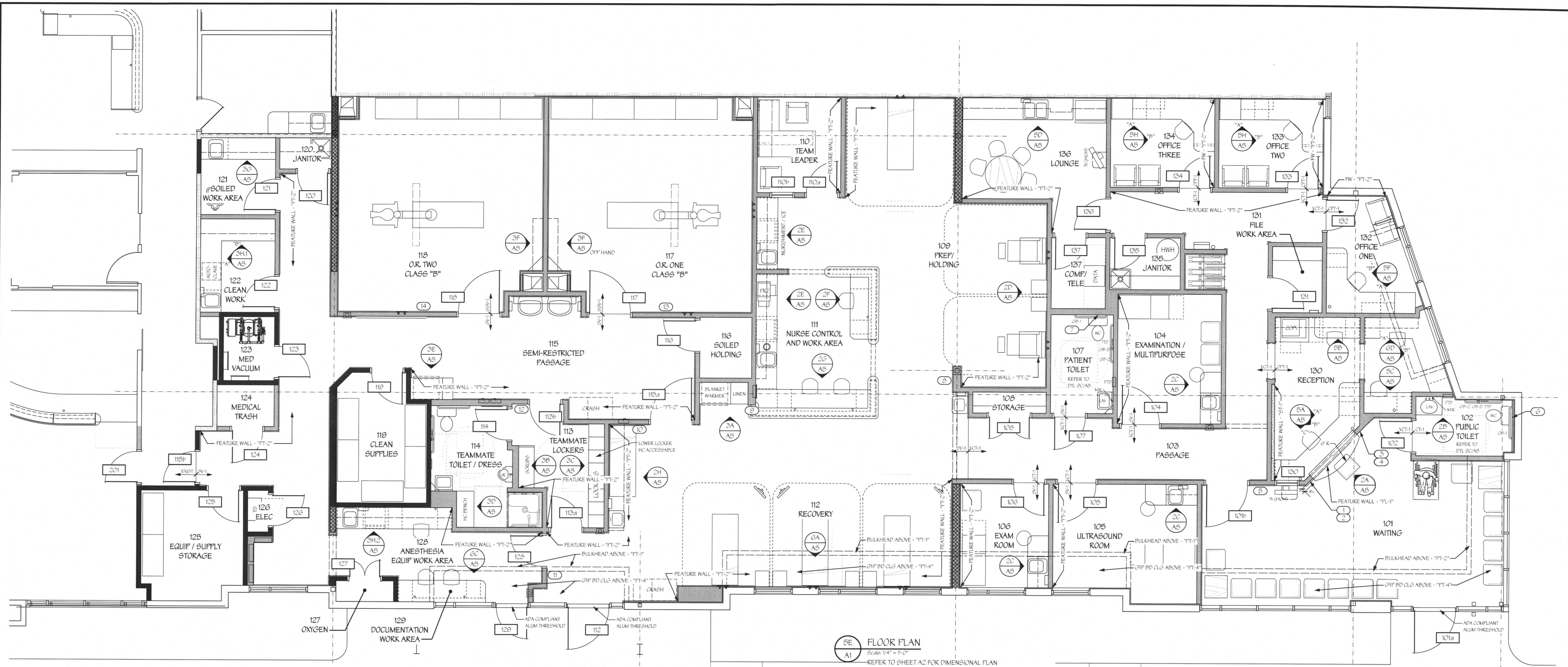
635 Westport Parkway  
Suite 300  
Grapevine, Texas 76051  
Phone 817-251-8411  
Fax 817-251-8411

**d p c e**  
don penn consulting engineer

TENANT RENOVATIONS FOR:  
**LIFELINE Access Center**  
7362 W. Thunderbird Rd., Ste 103  
Peoria, Arizona 85381

**Lifeline**  
Vascular Access

**In Sync**  
ARCHITECTURAL DESIGNS, INC.  
Whiteford, MD 21160  
1215 Old Pylesville Road  
Office 410-452-8006  
Fax 410-452-8046



**FLOOR PLAN**  
Scale: 1/4" = 1'-0"  
REFER TO SHEET A2 FOR DIMENSIONAL PLAN  
REFER TO SHEET A3 FOR CONSTRUCTION NOTES  
REFER TO SHEET A4 FOR DEMOLITION PLAN  
REFER TO SHEET A4 FOR DOOR SCHEDULE  
REFER TO SHEET A4 FOR CEILING PLAN  
REFER TO SHEET A5 FOR TOILET ROOM ACCESSORIES SCHEDULE

**InPro CORPORATION**  
Interior and Exterior Architectural Products

**Sydney Sign Collection**

**HERITAGE ROOMS 219-233**

LETTERS - COLOR "MARLOT" SIZE AND FONT TO BE SELECTED  
LAM 2 - FACE SIGN COLOR - PHOTOPOLYMER WOOD GRAIN SIGN FACE  
LAM 4 - BACKGROUND SIGN COLOR - PHOTOPOLYMER WOOD GRAIN SIGN FACE

NOTE: ALL SIGNAGE FOR ACCESSIBLE AREAS SHALL BE IN COMPLIANCE WITH ADAAG SECTION 4.30 AND SHALL BE TACTILE SIGNS IN ACCORDANCE WITH ANSI SECTION 703.3

**INTERIOR SIGNAGE:**  
SIGNS BELOW TO BE LOCATED ADJACENT TO DOOR INTO ROOM. COORDINATE EXACT PLACEMENT WITH OWNER.

Room #	Signage by Door
101	WAITING (located on 103 Passage side)
102	PUBLIC TOILET
103	PASSAGE
104	CONSULT / ULTRASOUND ROOM
105	ULTRASOUND ROOM
106	PATIENT ASSESSMENT
107	HOT TOILET SIGN
108	STORAGE
109	PREP/HOLDING
110	TEAM LEADER
111	NURSE CONTROL / WORK
112	RECOVERY
113	STAFF LOCKERS (2 REQUIRED)
114	TEAMMATE LOCKERS
115	HOT TOILET SIGN "STAFF TOILET"
116	SOILED HOLDING
117	PROCEDURE ROOM ONE
118	PROCEDURE ROOM TWO
119	CLEAN SUPPLIES
120	JANITOR
121	SOILED WORK AREA
122	CLEAN WORK AREA
123	MEDICAL VACUUM / ELECTRICAL
124	MEDICAL TRASH
125	EQUIPMENT STORAGE
126	ELECTRICAL
127	MEDICAL OXYGEN
128	ANESTHESIA EQUIPMENT WORK AREA
129	DOCUMENTATION WORK AREA
130	RECEPTION
131	FILE WORK AREA
132	OFFICE ONE
133	OFFICE TWO
134	OFFICE THREE
135	JANITOR
136	LOUNGE
137	COMPUTER/TELEPHONE

NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD

**ROOM FINISH SCHEDULE:**  
NOTE: ALL FINISHES SHALL BE IN ACCORDANCE WITH IBC 903.1 CLASS B FLAME SPREAD 20-75; SMOKE DEVELOPED 0-450  
ALL FLOOR FINISHES SHALL BE SLIP RESISTANT IN ACCORDANCE WITH IBC 903.2.6

Room #	Scheduled Name	Floor Fin	Base Type	Wall Fin	Ceiling Type	Trim	Special	Notes
101	WAITING	VCT-1	RB-1	FT-1	AC-2	10'-0"	FT-3	BULKHEAD - "FT-2"
102	PUBLIC TOILET	CT-1	CTB-1	CT-2/PT-2	AC-2	8'-6"	FT-3	SEE 2B/AS
103	PASSAGE	VCT-1	RB-1	FT-1	AC	8'-0"	FT-3	BULKHEADS: FT-1
104	CONSULT / ULTRASOUND ROOM	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	NOTE #1
105	ULTRASOUND ROOM	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	BULKHEADS: FT-1
106	PATIENT ASSESSMENT	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	NOTE #1 & #2
107	HOT TOILET SIGN	SV-1	SV-1	WALL TYPE ONE	AC	8'-0"	FT-3	NOTE #1 & #2
108	STORAGE	VCT-1	RB-1	FT-1	GWP/PT-4	8'-0"	FT-3	NOTE #1
109	PREP/HOLDING	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	NOTE #1
110	TEAM LEADER	SV-1	SV-1	FT-1	AC	8'-0"	FT-3	NOTE #1
111	NURSE CONTROL / WORK	SV-1	SV-1	FT-1	AC	8'-0"	FT-3	BULKHEADS: FT-1
112	RECOVERY	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	NOTE #1 & #2
113	STAFF LOCKERS (2 REQUIRED)	SV-1	SV-1	FT-1	AC	8'-0"	FT-3	NOTE #1
114	TEAMMATE LOCKERS	SV-1	SV-1	WALL TYPE ONE	AC	8'-0"	FT-3	GWP/PT-4 CLG AT SHOWER
115	SOILED HOLDING	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	NOTE #1
116	PROCEDURE ROOM ONE	SV-1	SV-1	FT-1	GWP/PT-4	8'-0"	FT-3	*SCUFFABLE WALL FIN
117	PROCEDURE ROOM TWO	SV-1	SV-1	FT-1	GWP/PT-4	8'-0"	FT-3	*SCUFFABLE WALL FIN
118	CLEAN SUPPLIES	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	
119	JANITOR	SV-1	SV-1	FT-1	GWP/PT-4	8'-0"	FT-3	
120	SOILED WORK AREA	SV-1	SV-1	FT-1	AC	8'-0"	FT-3	
121	CLEAN WORK AREA	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	
122	MEDICAL VACUUM / ELECTRICAL	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	
123	MEDICAL TRASH	SV-1	SV-1	FT-1	GWP/PT-4	8'-0"	FT-3	
124	EQUIPMENT STORAGE	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	
125	ELECTRICAL	SV-1	SV-1	FT-1	AC-1	8'-0"	FT-3	
126	MEDICAL OXYGEN	SV-1	SV-1	FT-1	GWP/PT-4	8'-0"	FT-3	
127	ANESTHESIA EQUIPMENT WORK AREA	SV-1	SV-1	FT-1	AC-1	10'-0"	FT-3	NOTE #1
128	DOCUMENTATION WORK AREA	SV-1	SV-1	FT-1	AC-1	10'-0"	FT-3	NOTES #1 & #2
129	RECEPTION	CTB-1	CTB-1	FT-1	AC-2	10'-0"	FT-3	NOTES #1 & #2
130	FILE WORK AREA	SV-1	SV-1	FT-1	AC	10'-0"	FT-3	
131	OFFICE ONE	CTB-1	CTB-1	FT-1	AC	10'-0"	FT-3	NOTES #1 & #2
132	OFFICE TWO	CTB-1	CTB-1	FT-1	AC	10'-0"	FT-3	NOTES #1 & #2
133	OFFICE THREE	CTB-1	CTB-1	FT-1	AC	10'-0"	FT-3	NOTE #1
134	JANITOR	VCT-1	RB-1	FT-1	GWP/PT-4	8'-0"	FT-3	
135	LOUNGE	VCT-1	RB-1	FT-1	AC	8'-0"	FT-3	NOTE #1
136	COMPUTER/TELEPHONE	VCT-1	RB-1	FT-1	AC	8'-0"	FT-3	

**WALL FINISH TYPE ONE**

**ROOM FINISH MATERIALS:**

**FLOOR FINISH:**  
CT-1 = CARPETING  
CTB-1 = 4'-0" HIGH CARPET BASE MATCHING CARPET  
SV-1 = SHEET VINYL - MEET CODE REQUIRED "COMMERCIAL GRADE"  
SV-1 = ARMYSTRONG CONNECTION COLOR (COLOR: "DESERT SAND" (205703) WITH HEAT WELDED BEAMS)  
SV-1 = BEAMLESS WELDED BEAM SHEET VINYL  
SV-1 = ARMYSTRONG MEDICINE COLOR: "FRESH PEACH" (204855) WITH MATCHING ARMYSTRONG WELD BEAD  
6" HIGH INTEGRAL BASE  
NOTE - PROVIDE AN ADO ALTERNATE FOR PROVIDING A MOISTURE RESISTANT TO THE SLAB AREAS WHERE SV-1 AND SV-1 ARE TO BE INSTALLED TO PROTECT FROM FUTURE MOISTURE ISSUES

**BASE TYPE:**  
CB-1 = 4'-0" HIGH CARPET BASE MATCHING CARPET  
CTB-1 = MATCHING 6"X6" COVE BASE TILE  
SV-1 = 4" HIGH SHEET VINYL-INTRUSAL COVE BASE WITH 3/4" RADIUS COVE AND CONTINUOUS ALUMINUM CAP  
SV-1 = BEAMLESS WELDED BEAM SHEET VINYL-INTRUSAL COVE 6" HIGH WITH 3/4" RADIUS COVE AND CONTINUOUS ALUMINUM CAP  
RB-1 = RUBBER COVE - Koppie TP 77P22 1/8" RB-1 - KOPPE RUBBER BASE FINNACLE 703 SERIES - 10 BROWN

**WALL FINISH:**  
FT-1 = PAINTED WALLS  
FT-1 = 2" DUN EDWARDS DE6389 PALE BEACH IN AN EGG SHELL FINISH  
FT-2 = PAINTED WALLS - FEATURE WALLS (CONSTRUCTION NOTE #37)  
FT-2 = 2" DUN EDWARDS DE6350 GLEN FALLS IN AN EGG SHELL FINISH  
FT-3 = PAINTED TRIM - DOOR FRAMES  
FT-3 = 2" DUN EDWARDS DE6407 BLACK IN A SEMI-GLOSS FINISH  
CT-2 = CERAMIC FLOOR TILE  
CT-2 FLOOR TILE - DALLIE PGM - GUMMETAL - 10'X10" WITH MATCHING 6"X6" COVE BASE TILE LIGHT GREY MARCA SELECTED BY ARCHITECT

**CEILING TYPE:**  
AC = TYPICAL ACoustICAL TILE (2'X4')  
AC-1 = SQR SQUARE ACoustICAL TILE (2'X4')  
AC-2 = ACoustICAL TILE - REGULAR EDGE (2'X2')  
GWP/PT-4 = Gypsum Wall Board / PAINTED  
FT-4 = SHEET VINYL - CEILING WHITE - FLAT

**PLASTIC LAMINATE:**  
FLAS LAM "FL-1" - CABINETS  
FL-1 FINITE HP 330 AFTERNOON SHOWERS  
FLAS LAM "FL-2" - COUNTERTOPS  
FL-2 WILSON ART 4544-53 MONROE ZEPHYR  
FL-2 BATHROOM COUNTER - COLOAN - 60NCR

**FEATURE COUNTERTOPS:**  
GRANITE COUNTERTOP "FT-2"  
FT-2 CRISTAL BEACH CACTUS STONE SLAB GRANITE  
SOLID SURFACE COUNTERTOP "CT-3"  
CT-3 BATHROOM COUNTER - COLOAN - 60NCR

**DOORS:**  
"HWT" - WOOD DOORS TO BE STAINED - COLOR TO MATCH HWT-1 SPACA EMER 000 #200 2512  
DOOR HARDWARE:  
DOOR HARDWARE TO BE FINISHED US200 - SATIN CHROME  
PLUMBING FIXTURE TRIM  
WITH THE EXCEPTION OF THE PUBLIC TOILET, ALL PLUMBING FIXTURES WILL BE WHITE WITH CHROME FINISH  
**SPECIALTY ITEMS**  
BLINDS - 605 "DARK PRINCE"  
CONNER GUARDS - INFLO COLOR "CHINO" 0268  
DOOR GUARD - INFLO COLOR "CHINO" 0268  
WALL PROTECTION / PFP - WP-1 - INFLO WALL PANEL ELEMENTS - 96210  
WP-2 - MARLITE FRP "SALER" PHS  
CURTAIN FABRIC - FROM 1025 FR POLYESTER CURTAIN FABRIC INFLO PATO MOCHA FROM THE SILVER SERIES, HIDDEN MESH, CURTAIN STYLE 1  
ELECTRICAL DEVICES - WHITE WITH STAINLESS STEEL COVER PLATES - TYPICAL THROUGHOUT

**GENERAL NOTES:**  
ALL UNDER FLOOR PLUMBING ROUGH-INS, DEMOLITION AND OTHER LOUD WORK SHALL BE DONE DURING OFF-HOURS AND CAREFULLY COORDINATED WITH LANDLORD TO INSURE MINIMAL DISRUPTION TO ADJACENT SPACES.  
OWNER WILL PROVIDE INTERIOR SIGNAGE TO BE MOUNTED BY THE CONTRACTOR. COORDINATE WITH OWNER.  
REFER TO CONSTRUCTION NOTES FOR NEW FIRE EXTINGUISHERS - A MINIMUM OF FOUR FIRE EXTINGUISHERS ARE TO BE PROVIDED.  
CONTRACTOR TO REVIEW LOCATIONS WITH CODE OFFICIAL TO INSURE PLACEMENT OF THESE UNITS MEETS CODE REQUIREMENTS. CONTRACTOR SHALL PROVIDE ADDITIONAL FIRE EXTINGUISHERS AS MAY BE DETERMINED BY THIS REVIEW.  
ALL ACCESSIBLE CONTROLS, OPERATING MECHANISMS AND HARDWARE SHALL COMPLY WITH SECTION 309 OF ICC/ANSI A117.1.

**FLOOR PLAN & ROOM FINISH SCHEDULE**

REV#	DATE	DESCRIPTION
1	5/25/15	PERMIT REVIEW COMMENTS
2	10/15/15	PERMIT REVIEW COMMENTS - 2nd ROUND
3	10/29/15	PERMIT REVIEW COMMENTS - 3rd ROUND
	1/11/17	ARIZONA STATE ASC PLAN REVIEW

REVISIONS

DRAWING NO. **A1**

SHEET 1 OF 2

DATE: 1/11/17

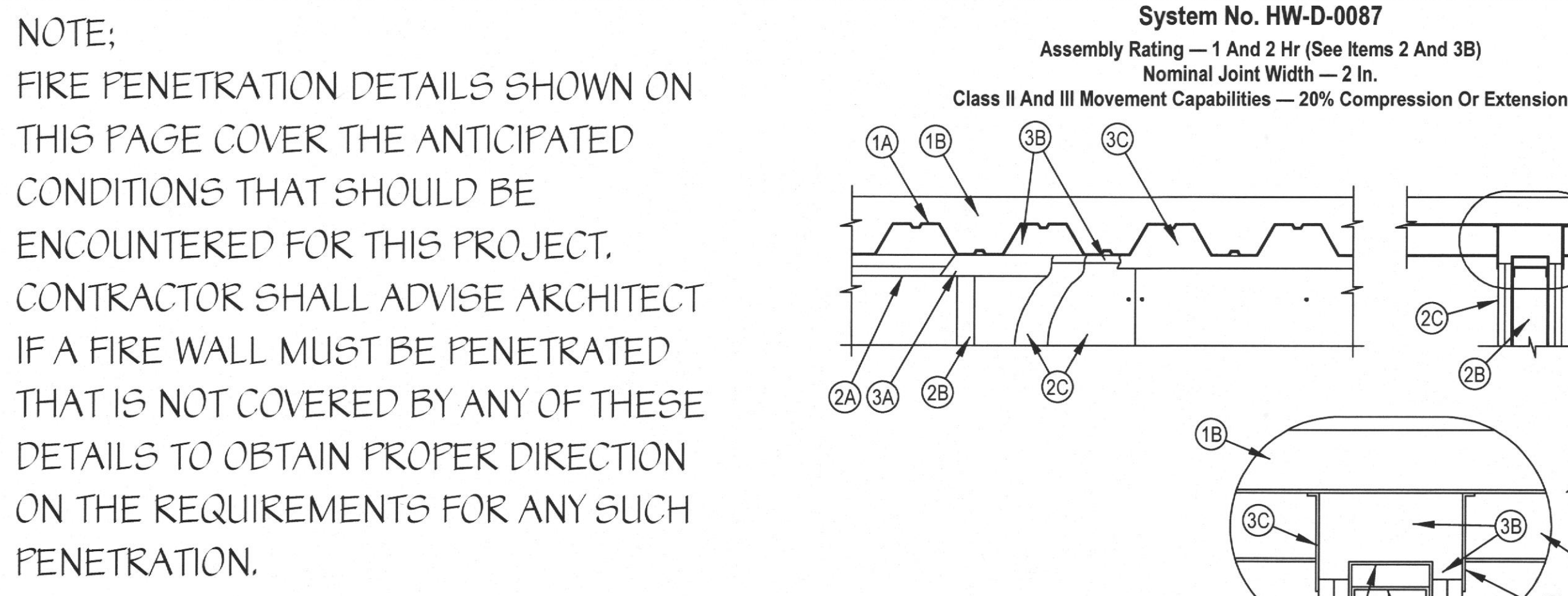
JOB NUMBER: 11212

CHECKED BY: [Signature]

DATE: 1/11/17

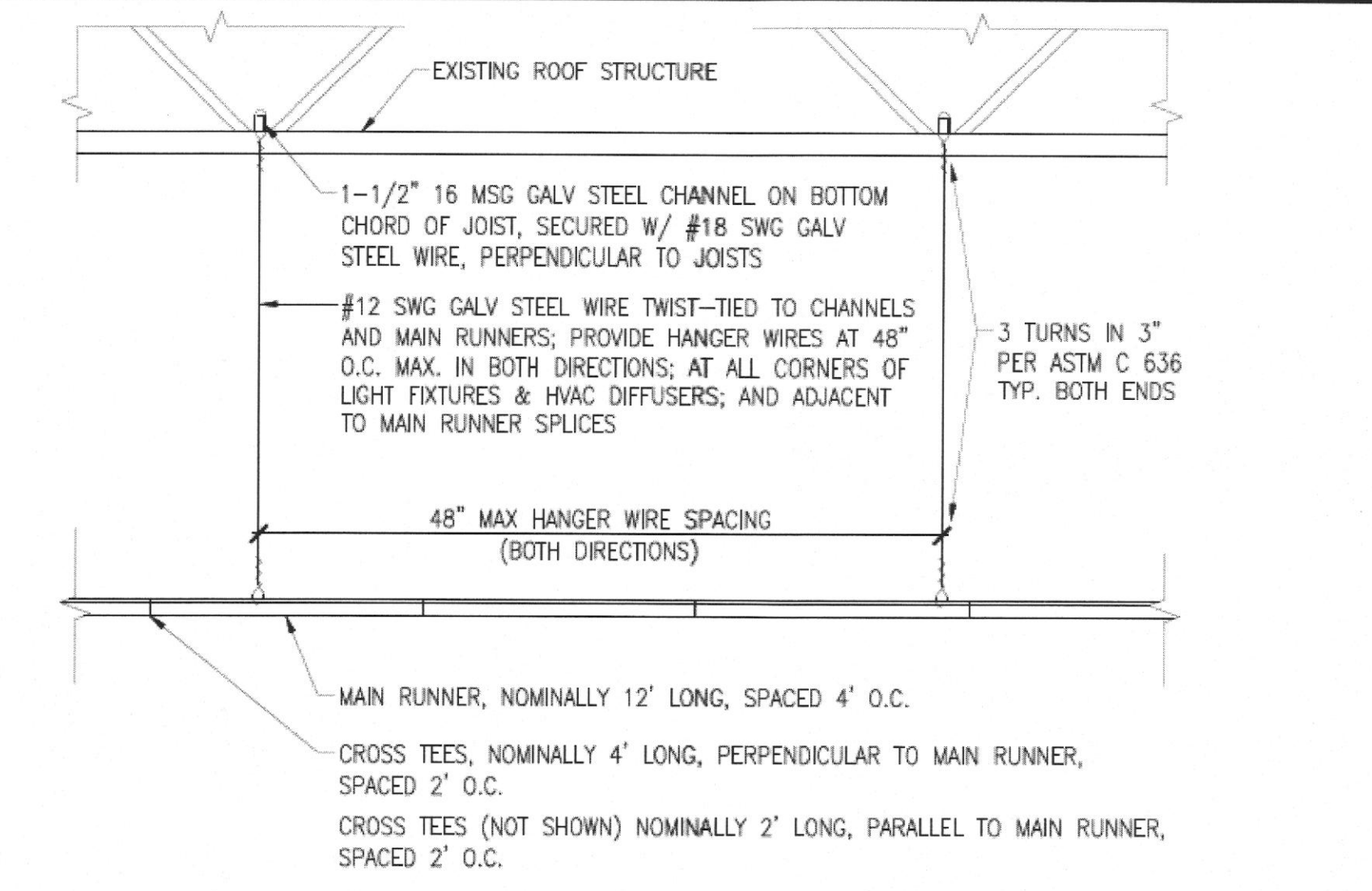
SCALE: 1/8" = 1'-0" / 1/4" = 1'-0"





**System No. HW-D-0087**  
Assembly Rating — 1 And 2 Hr (See Items 2 And 3B)  
Nominal Joint Width — 2 In.  
Class II And III Movement Capabilities — 20% Compression Or Extension

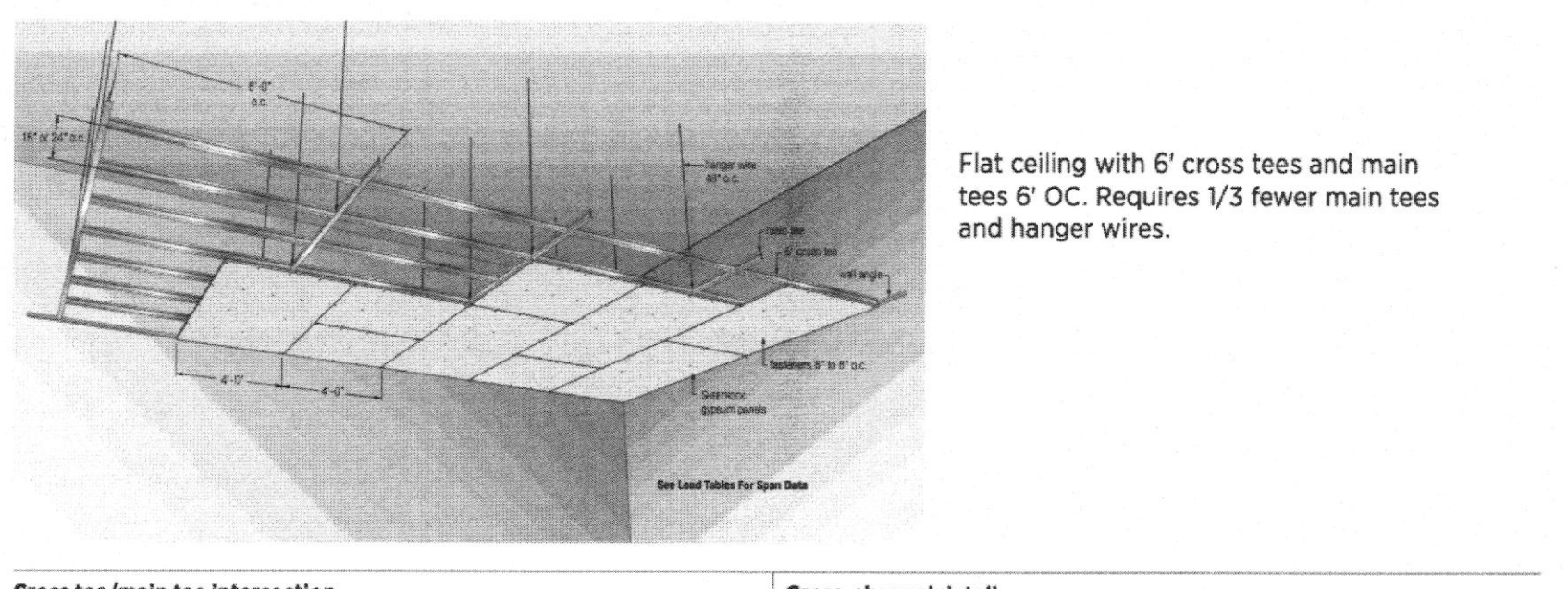
1 Floor Assembly - The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Steel Floor and Form Units\* - Max 3 in. (76 mm) deep galv steel fluted floor units.  
B. Concrete - Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.  
C. Spray-Applied Fire Resistant Material\* - Prior to the installation of the deflection channel, Forming Material and Fill Void or Cavity Material (Items 2A, 2B, 2C) the steel floor units may be sprayed with a min 5/8 in. (2) min 1/4 in. (4) mm thickness of fire resistive material. W.K. GRACE & CO. - GONN - Type MK-G-H  
1A. Key-Framing\* - (Not Shown) - An alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner specified in the individual UBCO Series Key-Framing Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:  
A. Steel Roof Deck - Max 3 in. (76 mm) deep galv steel fluted roof deck.  
B. Key-Framing\* - Min 2-1/4 in. (67 mm) thick poured insulating concrete, as measured from the top plane of the floor units.  
1B. Key-Framing\* - An alternate to Items 1 and 1A, a fire rated protected fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner specified in the individual UBCO Series Key-Framing Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:  
A. Steel Roof Deck - Max 3 in. (76 mm) deep galv steel fluted roof deck.  
B. Spray-Applied Fire Resistant Material\* - (Not Shown) Prior to the installation of the steel ceiling runners, Forming Material and Fill Void or Cavity Material (Items 2A, 2B, 2C) the steel ceiling runners shall be sprayed with the type and thickness of fire resistive material indicated in the individual UBCO Series Key-Framing Design.  
2. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Steel Floor and Ceiling Runners - Floor and ceiling runners of wall assembly shall consist of galv steel channel sized to accommodate steel studs (Item 2B). Ceiling runner to be provided with 1 in. (25 mm) flange. Ceiling runner installed within the U-shaped deflection channel (Item 2A) with a 1-1/2 in. (38 mm) gap maintained between the top of ceiling runner and top of deflection plate.  
A1. Light Gauge Framing\* - Slotted Ceiling Runner - (For use in applications where the nominal joint width does not exceed 1-1/2 in. (38 mm)) - An alternate to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flange sized to accommodate steel studs (Item 2B). Slotted ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 2A) shall not be used. When optional spray-applied material is used on the steel deck, slotted ceiling runner secured through spray-applied material to each valley of the steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC. Metal-Lite Inc. - METAL-LITE INC. - SLP-TRK A2. Light Gauge Framing\* - Vertical Deflection Ceiling Runner - (For use in applications where the nominal joint width does not exceed 1 in. (25 mm)) - An alternate to the ceiling runner in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted flange mechanically fastened within runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flange sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item 2A) shall not be used. When optional spray-applied material is used on the steel deck, vertical deflection ceiling runner secured through spray-applied material to each valley of the steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC. THE STEEL NETWORK INC. - VerticalTrack VTD20, VTD25, VTD40, VTD50 and VTD60 A3. Light Gauge Framing\* - Clipped Ceiling Runner - An alternate to the ceiling runner in Items 2A and 2A1, clipped ceiling runner to consist of galv steel channel with clips performed in track flanges which penetrate along the inside flange of the steel studs (Item 2B). Track sized to accommodate steel studs (Item 2B). Track flange to be min 3/4 in. (19 mm). Clipped ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When clipped ceiling runner is used, deflection channel (Item 2A) shall not be used. When optional spray-applied material is used on the steel deck, clipped ceiling runner secured through spray-applied material to each valley of the steel deck with min 3/16 in. (5 mm) diam steel masonry anchors spaced max 12 in. (305 mm) OC. TOTAL STEEL SOLUTIONS L.L.C. - Sharp Track



**NOTES TO CONTRACTOR:**  
SUSPENDED CEILING TO BE INSTALLED IN ACCORDANCE WITH ASTM C 636.  
DO NOT SUSPEND CEILING GRID FROM HVAC EQUIPMENT OR DUCTWORK.

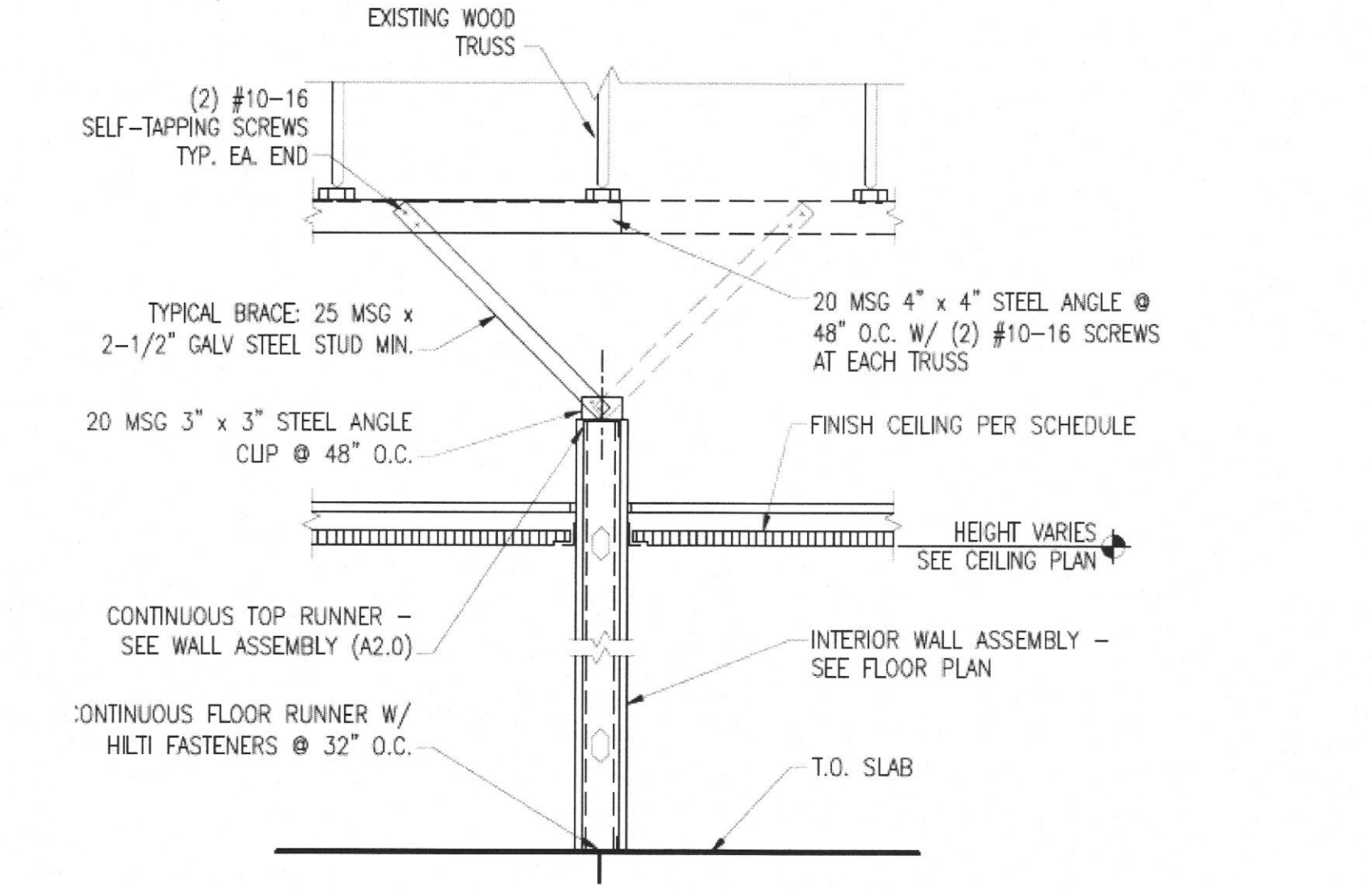
NOTE - PER ASTM C 636, SEISMIC COMPRESSION STRUTS AND SPLAY BRACING ARE NOT REQUIRED FOR THIS SEISMIC ZONE (SEE CODE INFORMATION ON TITLE SHEET)

**TYPICAL SUSPENDED CEILING DETAIL**  
Scale: 3/4" = 1'-0"  
NOTE - SUSPENDED GYPSUM BOARD CEILING TO BE SIMILARLY CONSTRUCTED USING MAIN TEES AND CROSS TEES DESIGNED FOR GYP BOARD INSTALLATION AND SIZED AND INSTALLED PER MANUFACTURER'S STANDARD PRODUCT INFORMATION AND DETAILS AND IN ACCORDANCE WITH ASTM C 754  
Layout with 6' cross tees and main tees 6' OC

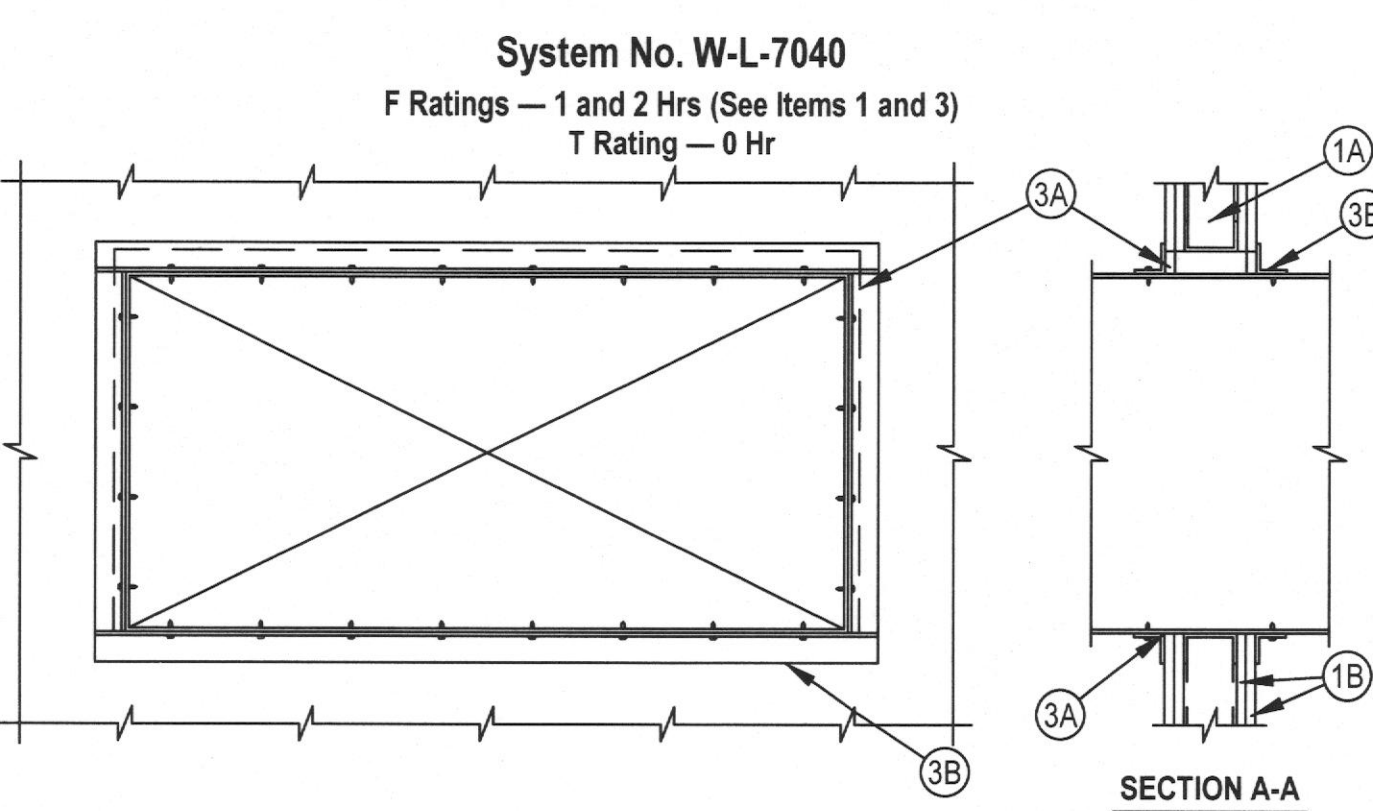


**Cross tee/main tee intersection**  
12 ga hanger wire  
Sheetrock gypsum panel  
fire expansion notch  
cross tee  
main tee splice  
A B

**Cross-channel detail**  
12 ga hanger wire  
Sheetrock gypsum panel  
fire expansion notch  
cross channel  
main tee splice  
A B

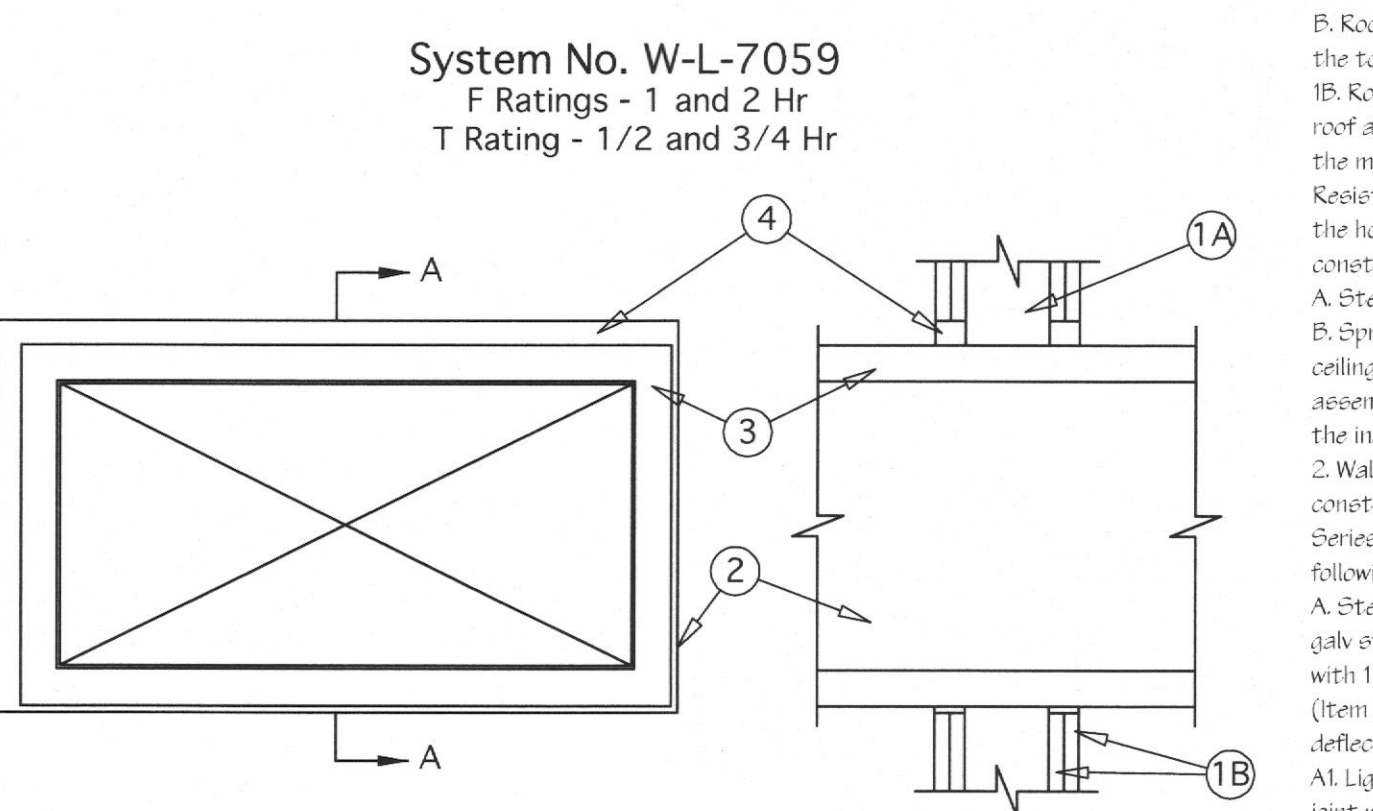


**TYPICAL INTERIOR WALL BRACING**  
Scale: 3/4" = 1'-0"  
NOTES:  
1. PROVIDE (1) BRACE IN ALTERNATING DIRECTIONS AT UNSUPPORTED WALLS @ 48" O.C. MAX.  
2. PROVIDE (1) BRACE IN ALTERNATING DIRECTIONS AT EACH SIDE OF DOOR & WINDOW OPENINGS.



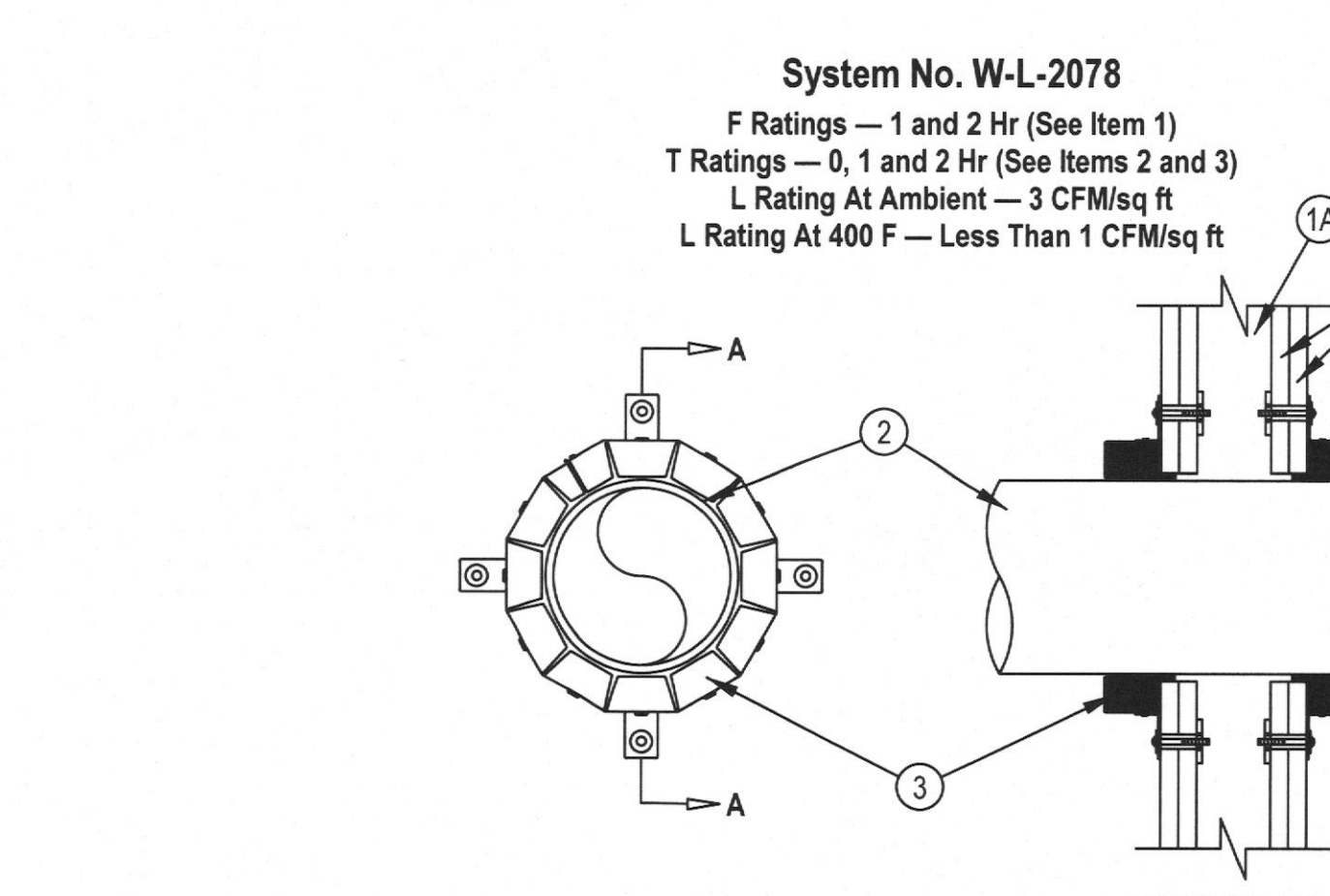
**System No. W-L-7040**  
F Ratings — 1 and 2 Hrs (See Items 1 and 3)  
T Rating — 0 Hr

1 Wall Assembly - The fire-rated gypsum wallboard/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the Fire Resistance Directory and shall include the following construction features:  
A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. Additional framing members shall be used to completely frame around opening.  
B. Gypsum Board\* - Nom 5/8 in. thick with square or tapered edges. The gypsum wallboard type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max area of opening is 1500 in. with the dimension of 60 in. The hourly rating of the freestop system is equal to the hourly fire rating of the wall assembly in which it is installed.  
2. Steel Stud - Nom 2 1/2 in. (or smaller) No. 24 gauge (or heavier) galv steel stud to be installed within the freestop system. The annular space shall be min 0 in. (point contact) in. to a max 2 in. Stud to be rigidly supported on both ends of the wall assembly.  
3. Freestop System - The freestop system shall consist of the following:  
A. Void or Cavity Material\* - Sealant - Min 5/8 in. thickness of fill material applied within annular flush with both surface of wall. At point contact location, a min 1/2 in. diam bead of fill material shall be applied at the wall/duct interface on both surface of wall.  
B. Steel Retaining Angle - No. 18 MS2 (2045 in.) galv steel angle cut to fit contour of duct with a 2 in. overlap on the duct and a min 1 in. overlap on the gypsum board assembly on both surfaces of wall 2 in. leg of angle secured to duct with min No. 8 by 3/4 in. long sheet metal screws, spaced a max of 6 in. OC. When bead of fill material is used, at joint contact locations, angle shall be installed prior to full material curing.  
\*Bearing the UL Classification Mark



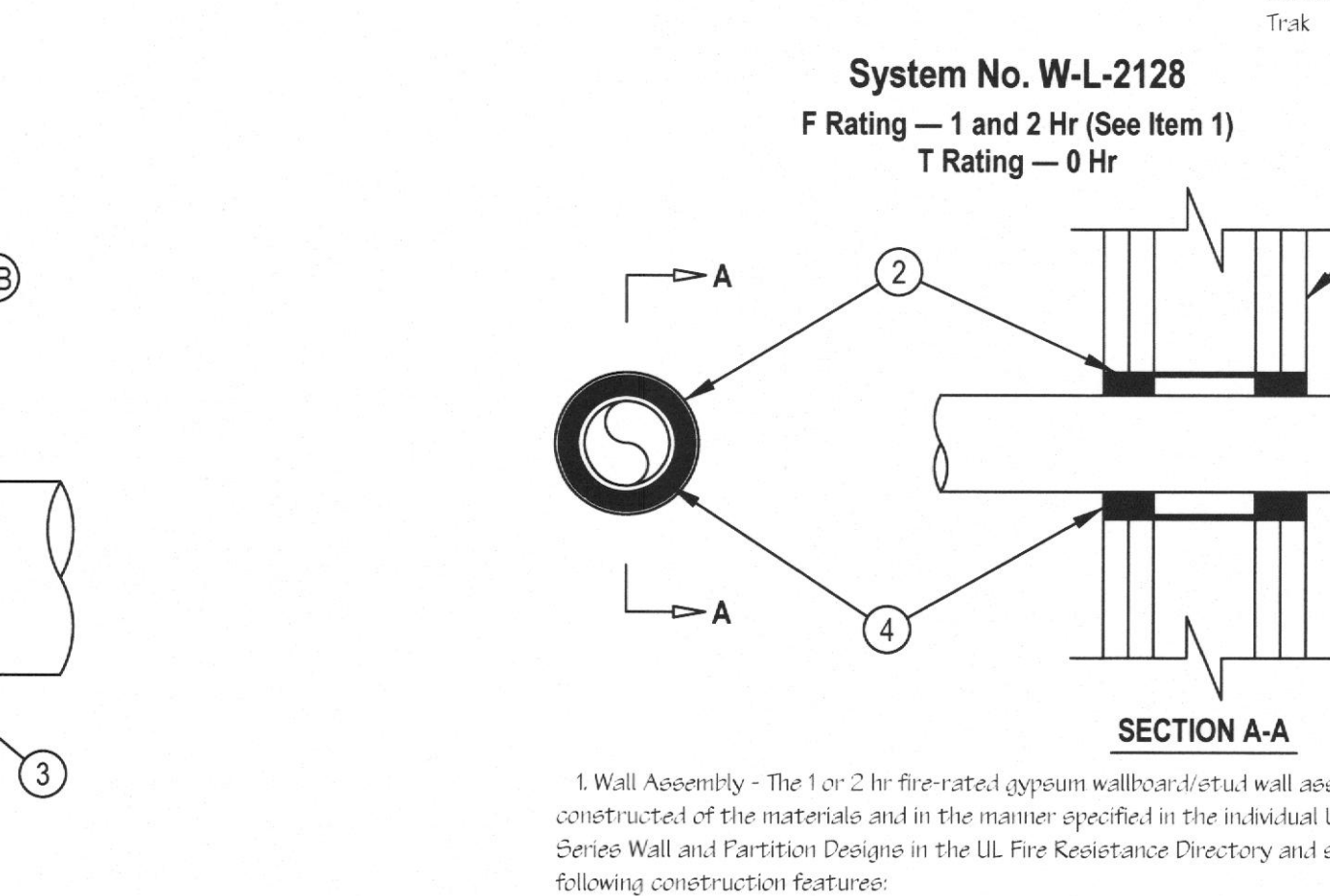
**System No. W-L-7059**  
F Ratings - 1 and 2 Hr  
T Rating - 1/2 and 3/4 Hr

1 Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to be min 2-1/2 in. wide and spaced max 24 in. OC. The opening in the wall to accommodate the steel duct (Item 2) shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end. The framed opening in the wall shall be a nom 6 in. wide and 12 in. or higher than the width and height of the steel duct.  
B. Wallboard - Gypsum\* 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual UBCO or U400 Series Design in the UL Fire Resistance Directory. Max area of opening is 360 sq. in. with max dimensions of 24-3/4 in. for steel studs.  
2. Steel Duct - Nom 2 1/2 in. (or smaller) 24 gauge (or heavier) steel duct, to be installed eccentrically within the opening. The annular space shall be min 1 in. to max 1/4 in. Duct to be rigidly supported on both ends of steel wall assembly.  
3. Batt and Blanket\* - Max 1-1/2 thick glass fiber batt or Blanket (min. 3.4 per ft) packed on the outside with a foil-in-kraft facing, compressed 50% such that the annular space within the freestop system shall be min 1/4 in. to max 1 in. See Batt and Blanket (BSM) category in the Building Materials Directory for various manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.  
4. Fill Void or Cavity Material\* - Sealant - Min 5/8 in. (or 1-1/4 in. thickness of fill material applied within the annular flush with both surface of wall for 1 or 2 hr rating, respectively. In duct, develop after the fill material cures, the void shall be sealed with additional fill material.  
\*Bearing the UL Classification Mark



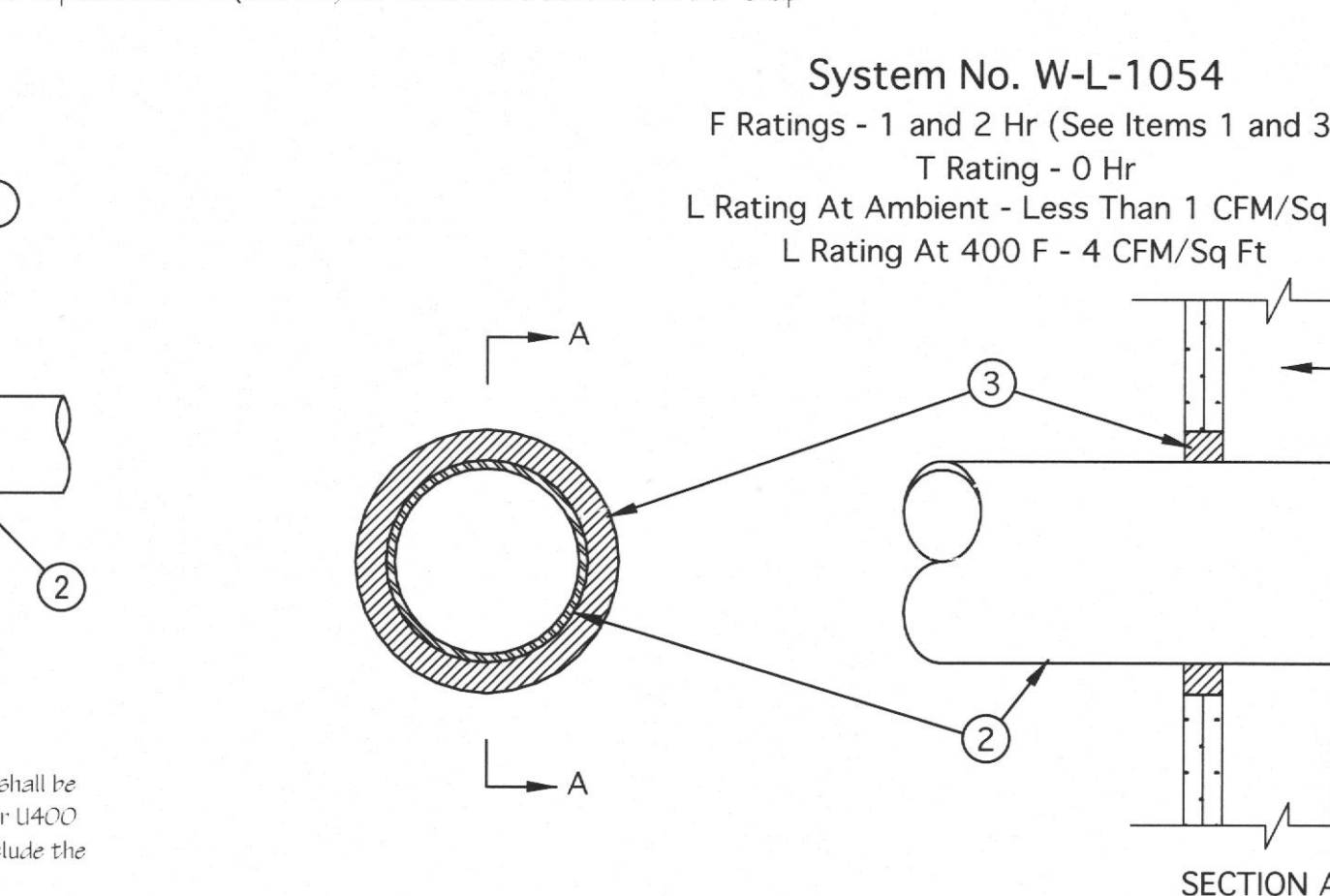
**System No. W-L-2078**  
F Ratings — 1 and 2 Hr (See Item 1)  
T Ratings — 0, 1 and 2 Hr (See Items 2 and 3)  
L Rating At Ambient — 3 CFM/Sq Ft  
L Rating At 400 F — Less Than 1 CFM/Sq Ft

1 Wall Assembly - The fire-rated gypsum wallboard/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.  
B. Gypsum Board\* - Nom 5/8 in. thick gypsum board, as specified in the individual Wall and Partition Design. Max area of opening is 11-1/2 in. The hourly F Rating of the freestop system is equal to the hourly fire rating of the wall assembly in which it is installed.  
2. Through-Framing\* - One nonmetallic pipe, conduit or tubing to be installed within the freestop system. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. Pipe or conduit to be rigidly supported on both ends of the wall assembly. The following types and sizes of nonmetallic pipe may be used:  
A. Polyvinyl Chloride (PVC) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 solid core or cellular core PVC pipe for use in closed (pressure or supply) or vented (drain, waste or vent) piping systems.  
B. Chlorinated Polyvinyl Chloride (CPVC) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 PVC pipe for use in closed (pressure or supply) piping systems.  
C. Acrylonitrile Butadiene Styrene (ABS) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 solid-core or cellular core ABS pipe for use in closed (pressure or supply) or vented (drain, waste or vent) piping systems.  
D. Flame Retardant Polypropylene (FRPP) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 FRPP pipe for use in closed (pressure or supply) or vented (drain, waste or vent) piping systems.  
E. Polyethylene Fluoride (PVDF) Pipe - Nom 1/2 in. diam (or smaller) PVDF pipe for use in closed (pressure or supply) or vented (drain, waste or vent) piping systems.  
When max 1/2 in. diam pipe is used, T Rating is equal to the hourly fire rating of the wall.  
When nom 3/4 in. or 1 in. diam pipe is used, T Rating is 0 Hr.  
3. Freestop Device - Freestop Collar - Freestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to both sides of the wall using the anchor hooks provided with the collar. (Minimum two anchor hooks for 1-1/2 and 2 in. diam pipes, three anchor hooks for 3 and 4 in. diam pipes, four anchor hooks for 6 in. diam pipes). The anchor hooks are to be secured to the surface of wall with 3/16 in. diam by 2-1/2 in. long steel toggle bolts along with washers. An alternate for pipe sizes of 2-1/2 in. diam or less, min No. 10 by 1-1/2 in. long drywall or laminate screw with min 2-1/4 in. steel washers may be used. When the drywall or laminate screw is used, T Rating shall not exceed 1 hr.  
4. Fill Void or Cavity Material\* - Sealant - (Not Shown) - Min 1/2 in. thickness of sealant applied within the annular space for nom 3/4 in. and 1 in. diam pipes, flush with each side of wall. Sealant in annular space is optional for nom 3/4 in. diam pipes. A min 1/4 in. thickness of sealant is required within the annular space, flush with each side of wall, to attain the L Rating for max 6 in. diam pipes.  
\*Bearing the UL Classification Mark



**System No. W-L-2128**  
F Rating — 1 and 2 Hr (See Item 1)  
T Rating — 0 Hr

1 Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.  
B. Gypsum Board\* - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet shall be as specified in the individual Wall and Partition Design. Max area of opening is 2-1/2 in.  
2. Metallic Sleeve Optional - Nom 3-1/2 in. (or smaller) cylindrical sleeve fabricated from min 0.075 in. thick (28 gauge) galv steel and having a min 1/4 in. lap along longitudinal edge. Length of sleeve to be installed flush with wall surface.  
3. Through-Framing\* - One nonmetallic pipe installed within the freestop system. Pipe may be installed at an angle not greater than 45 degrees from perpendicular. Pipe to be rigidly supported on both ends of wall assembly. The annular space between pipe and periphery of opening shall be min 1/4 in. to max 1/8 in. The following types and sizes of nonmetallic pipe may be used:  
A. Polyvinyl Chloride (PVC) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 PVC pipe for use in closed (pressure or supply) or vented (drain, waste or vent) piping systems.  
B. Chlorinated Polyvinyl Chloride (CPVC) Pipe - Nom 1/2 in. diam (or smaller) Schedule 40 CPVC pipe for use in closed (pressure or supply) piping systems.  
4. Fill Void or Cavity Material\* - Sealant - For 1 hr Rating, min 5/8 in. thickness of fill material applied within the annular flush with both surface of wall. For 2 hr Rating, min 1-1/4 in. thickness of fill material applied within annular flush with both surface of wall.  
\*Bearing the UL Classification Mark



**System No. W-L-1054**  
F Ratings - 1 and 2 Hr (See Items 1 and 3)  
T Rating - 0 Hr  
L Rating At Ambient - Less Than 1 CFM/Sq Ft  
L Rating At 400 F - 4 CFM/Sq Ft

1 Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual UBCO or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of steel channel, the opening shall be framed on all 6 in. wide and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.  
B. Gypsum Board\* - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual UBCO or U400 Series Design in the UL Fire Resistance Directory. Max area of opening is 32-1/4 in. for steel stud wall. Max diam of opening is 11-1/2 in. for wood stud wall. The F Rating of the freestop system is equal to the fire rating of the wall assembly.  
2. Through-Framing\* - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the freestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both ends of wall assembly. The following types and sizes of metallic pipe, conduit or tubing may be used:  
A. Steel Pipe - Nom 3/8 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.  
B. Iron Pipe - Nom 3/8 in. diam (or smaller) cast or ductile iron pipe.  
C. Conduit - Nom 4 in. diam (or smaller) rigid electrical metallic tubing or 6 in. diam steel conduit.  
D. Copper Tubing - Nom 3/8 in. diam (or smaller) Type L (or heavier) copper tubing.  
E. Copper Pipe - Nom 3/8 in. diam (or smaller) regular (or heavier) copper pipe.  
3. Fill Void or Cavity Material\* - Sealant - Min 5/8 in. thickness of fill material applied within the annular flush with both surface of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe/wall interface on both surface of wall.  
\*Bearing the UL Classification Mark

NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD

633 Westport Parkway  
Suite 300  
Phoenix, Arizona 85015  
Phone: 817-410-2858  
Fax: 817-251-8411

**d p c e**  
don penn consulting engineer

TENANT RENOVATIONS FOR:  
**LIFELINE**  
**Access Center**  
7362 W. Thunderbird Rd., Ste 103  
Phoenix, Arizona 85031

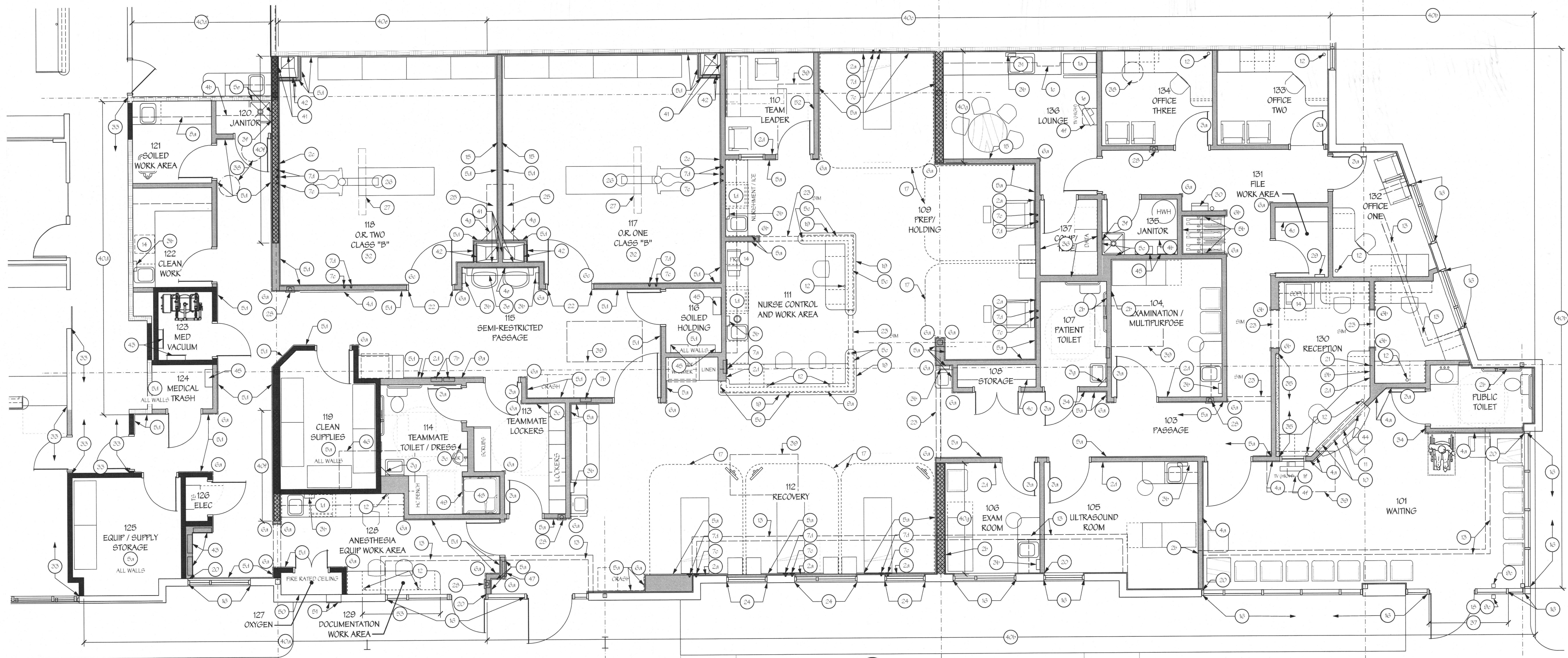
**Lifeline**  
Vascular Access

**In Sync**  
ARCHITECTURAL DESIGNS, INC.  
Whiteford, MD 21160  
1215 Old Myrtle Road  
Office 410-462-5046

**FIRE DETAILS AND WALL DETAILS**

REV#	DATE	DESCRIPTION	REVISIONS
1	8/25/15	PERMIT REVIEW COMMENTS	
2	10/6/15	PERMIT REVIEW COMMENTS - 2nd ROUND	
3	10/29/15	PERMIT REVIEW COMMENTS - 3rd ROUND	
	1/11/17	ARIZONA STATE ASC PLAN REVIEW	

DRAWING NO. **A2.1**  
SHEET 05  
DATE 7/4/15  
JOB NUMBER 11212  
DRAWN BY  
CHECKED BY



**FLOOR PLAN - CONSTRUCTION NOTES**  
Scale: 1/4" = 1'-0"

**CONSTRUCTION NOTES**

- 27 CONSTRUCTION NOTE DESIGNATION
- GENERAL NOTE: CAREFULLY SAW CUT EXISTING SLAB AS REQUIRED TO INSTALL NEW UNDERSLAB PLUMBING. PATCH SLAB WITH 3,500 PSI CONCRETE IN THICKNESS MATCHING EXISTING SLAB FOLLOWING INSTALLATION OF NEW UNDERSLAB PIPING. CONTRACTOR SHALL CAREFULLY COORDINATE NEW MIX DESIGN WITH THE REQUIREMENTS OF THE FLOORING CONTRACTOR TO INSURE THAT MOISTURE CONTENT AND ALKALI FLOORING PREPARATION TESTS MEET FLOORING MANUFACTURER'S RECOMMENDATIONS.
- ALL INTERIOR FINISHES SHALL COMPLY WITH THE CLASSIFICATION REQUIREMENTS OUTLINED IN APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE FOR THE AREAS BEING INSTALLED.
- OWNER WILL PROVIDE APPROXIMATE SO VARIOUS TYPES OF INTERIOR SIGNAGE PERKES (INCLUDING SIGNAGE FOR TOILETS), WHICH ARE TO BE INSTALLED BY THE CONTRACTOR. CONTRACTOR SHALL COORDINATE THE DELIVERY AND INSTALLATION WITH OWNER.
- PROVIDE THE FOLLOWING APPLIANCES. REMOVE ALL PACKING MATERIAL / INSTALL AND VERIFY EACH APPLIANCE IS OPERATING PROPERLY.
    - FULL SIZE (OR APPROVED EQUAL) REFRIGERATOR - LARGE UNIT THAT WILL FIT INTO 36" WIDE SPACE. UNIT TO BE OVER UNDER (NOT SIDE BY SIDE). FREEZER CAN BE EITHER TOP OR BOTTOM. UNIT SHALL HAVE AN ICE MAKER AND WATER DISPENSER. IS NOT USED ON THIS PROJECT.
      - MICROWAVE - 1,000 WATT (OR APPROVED EQUAL) MICROWAVE THAT WILL FIT IN THE SPACE SHOWN ON THE INTERIOR ELEVATIONS (ABOUT 22" WIDE X 18" HIGH X 14" DEEP).
      - UNDER COUNTER REFRIGERATOR - LOCKABLE "MEDICATION" UNDERCOUNTER REFRIGERATOR. SUMMIT S5 CU FT FREEZEE FREE ALL REFRIGERATOR WITH LOCK. CONTRACTOR MAY CONTACT THE DAVITA VENDOR - STEVE LINDELL - SUMMIT APPLIANCE DIVISION, P.O. BOX 100, 770 GARRISON AVE, BROOKLYN NY 10474 - FAX 718-242-3093 FOR DAVITA PRICING. THIS IS THEIR ITEM #17.
      - WALL MOUNTED COMBINATION TV/VIDEO - 32" TO 25" FLAT SCREEN (OR APPROVED EQUAL) TV WITH A COMBINATION DVD/CD (EITHER BUILT-IN OR ATTACHED). PROVIDE WALL MOUNTING BRACKET DESIGNED FOR SELECTED TV AND DVD/CD UNIT AND THAT PROVIDES MOVEMENT TO ALLOW TV TO FACE ALL PARTS OF ROOM. MOUNT HIGH ON THE WALL IN THE CORNER INDICATED. COORDINATE EXACT LOCATION WITH OWNER. PROVIDE BLOCKING FOR WALL BRACKET.
        - WALL MOUNTED TV - 32" TO 36" FLAT SCREEN (OR APPROVED EQUAL) TV. PROVIDE WALL MOUNTING BRACKET DESIGNED FOR SELECTED TV THAT PROVIDES MOVEMENT TO ALLOW TV TO FACE ALL PARTS OF ROOM. MOUNT HIGH ON THE WALL IN THE CORNER INDICATED. COORDINATE EXACT LOCATION WITH OWNER. PROVIDE BLOCKING FOR WALL BRACKET.
    - NURSE CALL SYSTEM. REFER TO ELECTRICAL DRAWINGS FOR COMPONENT SPECIFICATIONS. ALL COMPONENTS TO BE PROVIDED BY EXISTING SYSTEMS - CONTACT GEORGE POWERS AT 800-243-8251 (gpowe@expedit.com). THE FOLLOWING COMPONENTS ARE TO BE PROVIDED AT THE DESIGNATED LOCATIONS.
      - POSITION HELP CALL ON PENDENT WITH LINEN CLIP.
      - WALL MOUNTED CALL SWITCH ACTIVATED BY PULL ON CHORD.
      - EMERGENCY CALL (CODE BLUE) WALL MOUNTED CALL BUTTON WITH HINGED "ELBOW PLATE" TO FACILITATE EMERGENCY ACTIVATION.
      - EMERGENCY CALL / HELP / CALL PANEL.
    - PROVIDE THE FOLLOWING ACCESSORY ITEMS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
      - COAT HOOK EQUAL TO B632 BY BOBRICK TO BE MOUNTED ON THE ROOM SIDE OF DOOR, IN CENTER OF DOOR AT A HEIGHT OF 4'-6" AFF.
      - PAPER TOWEL DISPENSER EQUAL TO MODEL B-2021 BY BOBRICK. WASHROOM EQUIPMENT ADJACENT TO SINK. (REFER TO CASEWORK ELEVATIONS) COORDINATE EXACT MOUNTING WITH OWNER.
      - 24"x20" HIGH MIRROR (BOBRICK B-165). MOUNT TOP OF MIRROR AT 6'-8" AFF.
      - NOT USED ON THIS PROJECT.
      - 3" DEEP X 72" LONG STAINLESS STEEL SHELF EQUAL TO B282(4S) BY BOBRICK. MOUNT SHELF TO PLASTIC LAMINATE BACK SPLASH, CENTERED HORIZONTALLY WITH TOP OF SHELF AT 4'-8" AFF.
      - MOP AND BROOM HOLDER - EQUAL TO TYPE B-225(24) BY BOBRICK. MOUNT AT 5'-0" AFF.
      - 31"x12" X 1/2" CLASS CORNER SHELF EQUAL TO FRESCA OTTOMO BATHROOM CORNER SHELF WITH RAILINGS.
    - PROVIDE THE FOLLOWING PLASTIC LAMINATE ITEMS. LAMINATE COLOR SHALL BE "T-1" UNLESS NOTED OTHERWISE.
      - PLAS LAMINATE CHAIR RAIL AROUND PERIMETER OF WAITING ROOM. CHAIR RAIL TO BE REFER TO DETAIL 91A/AA.
      - 2" X 1/2" DEEP PLAS LAMINATE SHELVES WITH ADJUSTABLE SHELF HARDWARE W/ MINIMUM OF THREE ADJUSTABLE SHELF STANDARDS - 3" LONG. TOP OF SHELF STANDARDS TO BE 18" FROM FINISH CEILING.
      - 3" X 1/2" DEEP PLAS LAMINATE SHELVES WITH ADJUSTABLE SHELF HARDWARE W/ MINIMUM OF THREE ADJUSTABLE SHELF STANDARDS - 5" LONG. TOP OF SHELF STANDARDS TO BE 18" FROM FINISH CEILING.
      - PLASTIC LAMINATE MOUNTING BOARD FOR LEAD FROM HANGING RACK (RACK PROVIDED BY OWNER. INSTALLED BY CONTRACTOR). MOUNTING BOARD SHALL BE FROM 3/4" PLYWOOD AND SHALL BE 6'-8" WIDE X 4'-0" HIGH WITH TOP AT 6'-0" ABOVE FINISH FLOOR. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF RACK (ON PLY LAM MOUNTING BOARD) WITH OWNER.
      - PLASTIC LAMINATE BACK SPLASH BEHIND SINK. SPLASH SHALL BE FROM 3/4" PLYWOOD AND SHALL BE 6'-0" WIDE X 4'-0" WITH TOP AT 6'-0" ABOVE FINISH FLOOR.
      - PLAS LAMINATE SHELF FOR TV EQUIPMENT. SHELF TO BE 18" WIDE BY 18" DEEP WITH 3" RADIUS CORNERS. MOUNT SHELF NEAR TV. COORDINATE EXACT PLACEMENT WITH OWNER.
        - PLAS LAMINATE SHELF IN CORNER. 18"x18". MOUNT TOP OF SHELF AT 4'-3" AFF. PLAS LAM COLOR "A".
    - PROVIDE WALL PROTECTION WAINSCOT. REFER TO ROOM FINISH SCHEDULE FOR SELECTION. INSTALL ON TOP OF WALL BASE AND CALK JOINT BETWEEN BASE AND BOTTOM OF FRK. INSTALL VERTICAL DIVIDER BARS, TOP HORIZONTAL TRIM AND INSIDE CORNER TRIM PIECES MANUFACTURED BY WALL PANEL MANUFACTURE TO MATCH PANELS. PANELS AND TRIM SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND STANDARD DETAILS. REFER TO THE FOLLOWING SUPPLY FOR ADDITIONAL REQUIREMENTS.
      - 51 1/2" HIGH "W-1" WAINSCOT ALONG WALLS INDICATED. MOUNT WALL CAP. CALK TOP OF PANELS. CALL TOP OF WALL CAP.
      - 51 1/2" HIGH "W-2" WAINSCOT ALONG WALLS INDICATED. MOUNT 48" HIGH SHEET PER DETAIL 91A/2. CALK TOP TRIM BETWEEN WALL AND TRIM. IT IS THE INTENT THAT THIS WAINSCOT BE CONTINUOUS ALONG WALLS BETWEEN NOTES.
      - SIMILAR TO 51 ON WALLS BEHIND AND NEXT TO SINK. EXTEND 4" FROM CORNER.
    - PROVIDE THE FOLLOWING IPC DUCK AND WALL PROTECTION SYSTEMS PRODUCTS BY INFRO CORPORATION AT SUFFIX LOCATIONS INDICATED. SEE ROOM FINISH SCHEDULE FOR COLOR SELECTIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS WITH ALL ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.
      - MODEL #3345 CORNER GUARDS (90 DEGREE AND 135 DEGREE AS REQUIRED) IPC DUCK AND WALL PROTECTION SYSTEMS BY INFRO CORPORATION AT LOCATIONS INDICATED UNITS SHALL BE 48" LONG WITH 5" LEGS, MOUNTED AT TOP OF WALL BASE.
      - SIMILAR TO CORNER GUARD UNITS ABOVE WITH ONE AT EACH WALL CORNERS DESK TO COVER END OF WALL WITHOUT OVERLAPPING.
      - FRAME PROTECTOR GUARDS 400C-04-DPS 240 IPC DUCK AND WALL PROTECTION SYSTEMS BY INFRO CORPORATION AT LOCATIONS INDICATED.
    - OXYGEN SYSTEM COMPONENTS AT THE LOCATIONS INDICATED BELOW. REFER TO OXYGEN PLAN SHEET AS.
      - MED GAS SYSTEM MASTER ALARM
      - OXYGEN/VACUUM SYSTEM ZONE VALVE BOXES.
      - OXYGEN STATION OUTLET @ ABOUT 44" AFF (SHOULD BE IN LINE WITH ELECTRICAL OUTLETS).
      - VACUUM SILENOR OUTLET @ ABOUT 44" AFF (SHOULD BE IN LINE WITH ELECTRICAL OUTLETS).
    - PROVIDE HEAVY DUTY WHITE WIRE SHELF UNITS IN THE CONFIGURATIONS AND LOCATIONS INDICATED AS FOLLOWS. PROVIDE ADEQUATE BLOCKING IN WALL TO SUPPORT ANCHORS. PROVIDE MID SPAN SUPPORT AS REQUIRED.
      - TWO HEAVY DUTY 1/2" DEEP WHITE WIRE SHELVES MOUNTED PER DETAIL 30744 FOR FULL LENGTH BETWEEN WALLS.
    - FLUSH PADDLE FOR POWER ASSISTED DOOR OPENER. PADDLE SHALL HAVE "HC" MARKINGS. COORDINATE WITH HARDWARE SCHEDULE. EXTERIOR DOOR CONTROL DIAGRAM 9274 AND ELECTRICAL DRAWINGS. COORDINATE EXACT LOCATIONS WITH OWNER. REFER TO NOTE #19 FOR DOOR PELL PER ELECTRICAL DRAWINGS.
      - FLUSH PADDLE FOR POWER ASSISTED DOOR OPENER MOUNTED IN WALL. PADDLE SHALL NOT HAVE "HC" MARKINGS. COORDINATE WITH HARDWARE SCHEDULE AND ELECTRICAL DRAWINGS. COORDINATE EXACT LOCATIONS WITH OWNER.
      - FLUSH PADDLE FOR POWER ASSISTED DOOR OPENER AT MAIN ENTRY DOOR. MOUNT IN WALL ABOVE COUNTER. PADDLE SHALL HAVE "HC" MARKINGS. COORDINATE WITH HARDWARE SCHEDULE. EXTERIOR DOOR CONTROL DIAGRAM 9274 AND ELECTRICAL DRAWINGS. COORDINATE EXACT LOCATIONS WITH OWNER.
    - PROVIDE ALUMINUM PEDESTAL MOUNTED TO EXISTING CONCRETE SLAB WHICH IS DESIGNED TO ACCOMMODATE HC ACCESS DOOR FLUSH PADDLE. PADDLE TO BE MOUNTED IN PEDESTAL. REFER TO NOTE #19 FOR DOOR PELL PER ELECTRICAL DRAWINGS ABOVE DOOR PADDLE IN PEDESTAL.
    - PROVIDE GYP BOARD CASSED OPENING PER INTERIOR ELEVATIONS.
    - PROVIDE HEAVY DUTY COMMERCIAL GRADE ALUMINUM SLIDING TRACK DESIGNED FOR TWO INDEPENDENT SECTIONS OF GLASS. TRACK SHALL BE ON ALL FOUR SIDES OF OPENING. RECESS BOTTOM TRACK INTO COUNTERTOP SUCH THAT TOP EDGE OF TRACK IS FLUSH WITH TOP OF COUNTERTOP. INSTALL TWO EQUAL SIZED SLIDING GLASS PANELS IN OPENING. GLASS EDGES SHALL BE ROUND SMOOTH AND MEETING SECTIONS SHALL OVERLAP A MINIMUM OF 1/2". PROVIDE LOCKING DEVICES TO SECURE GLASS IN A CLOSED POSITION. PROVIDE RUBBER STIPS IN ALUMINUM FRAME AND HANDLES MOUNTED TO INSIDE FACE OF GLASS TO ALLOW OPENING OF GLASS IN ANY DIRECTION.
    - PROVIDE 2" DIAMETER CABLE ACCESS HOLE IN COUNTER. PROVIDE PLASTIC GROMMET WITH CABLE COVER. COORDINATE EXACT LOCATION WITH OWNER.
    - EXISTING GYP BOARD BULKHEAD AND GYP BOARD CEILING AT EXTERIOR WINDOWS TO REMAIN. REFER TO MECHANICAL AND ELECTRICAL FOR APPLICABLE NEW WORK IN THESE AREAS. REPAIR AND FINISH AS REQUIRED TO PREPARE FOR THE APPLICATION OF NEW FINISHES. REFER TO FINISH FLOOR PLAN FOR REQUIRED FINISHES.
    - COORDINATE INSTALLATION OF OWNER PROVIDED EQUIPMENT.
    - CONTRACTOR TO INSTALL OWNER PROVIDED BULLETIN BOARD OR MARKER BOARD. COORDINATE WITH OWNER.
    - CLEAN EXISTING WINDOWS AND FRAME, INSIDE AND OUTSIDE. INSTALL DARK TINTED UV PROTECTION FILM EQUAL TO MICROBEEB FILM TINTING BY 3M AND #1148 OVER GLASS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL 1" METAL HORIZONTAL MINI BLINDS EQUAL TO LEVOLOR KIVIERA FAMILY PRODUCTS WITH OPERATING WANDS LOCATED TOWARD CENTER OF ROOM AND NOT OBSTRUCTED BY ABUTTING GYP BOARD WALLS. SEE ROOM FINISH SCHEDULE FOR "BLINDS" COLOR SELECTION. REFER TO NOTE #40 FOR REQUIREMENTS FOR EXISTING GWS ADJACENT, ABOVE AND BELOW THE WINDOWS.
    - EXISTING HOSPITAL CLINICAL CURTAIN SYSTEM, INCLUDING TRACK AND ALL NECESSARY HARDWARE FOR A COMPLETE INSTALLATION EQUAL TO THE PRODUCTS OF IMPERIAL FASTENER COMPANY, MODEL IFC-95 CURTAIN TRACK WITH IFC-100 ROLLER CARRIERS. SEE ROOM FINISH SCHEDULE FOR "CURTAIN CURTAIN FABRIC" MATERIAL SELECTION. CURTAIN SHALL BE PROVIDED WITH #42 (FINE) MESH THAT EXTENDS 18" BELOW CEILING AND 74-18 7/8" OPEN AND SHALL HANG 10" ABOVE FINISH FLOOR PER NFPA 13 SECTION 6.5.2.2 CURTAIN LENGTH SHALL BE BASED ON A 30% GATHER FACTOR. PROVIDE THE BACK(S) AT DRESSING ROOM. PROVIDE SURFACE MOUNTED TRACK THAT IS DESIGNED TO MOUNT DIRECTLY TO CEILING. COLOR SHALL BE WHITE. INSTALL PER RECOMMENDATIONS OF MANUFACTURER.
    - INSTALL DOOR BELL SYSTEM PER ELECTRICAL DRAWINGS. NOTE THAT THERE ARE TWO DOOR BELLS REQUIRED AND EACH SHOULD HAVE A DISTINCT RINGS. MOUNT ADJACENT TO POWER DOOR PADDLE AS APPLICABLE (REFER TO DTI 8C/A4).
    - 12" WIDE WRITING SURFACE PER DETAIL 91A/AS. REFER TO INTERIOR ELEVATIONS.
    - ALIGN NEW WALL WITH JAMBS OF EXISTING STOREFRONT FRAMING PER DIMENSION PLAN. PROVIDE BREAK METAL MATCHING STOREFRONT TO COVER END OF WALL IN FINISHED AREA.
    - SECURITY SWITCH FOR ENTRY DOOR. REFER TO DETAIL 9C/A4.
    - INSTALL DOUBLE HEAVY GALLIE PUCK STUDS AT THE BOTH JAMBS OF EXISTING FRAME AND EXTEND CONTINUOUS FROM FLOOR SLAB TO ROOF STRUCTURE ABOVE. PROVIDE 45 DEGREE LATERAL BRACING FROM JUST ABOVE CEILING TO ROOF STRUCTURE ABOVE RUNNING PERPENDICULAR TO THE DIRECTION OF WALL IN BOTH DIRECTIONS.
    - BULKHEAD ABOVE PER DETAIL 9E/AS. BULKHEAD HEIGHT AT 7'-6" AT "51M" LOCATIONS. REFER TO REFLECTED CEILING PLAN.
    - REFER TO NOTE #16 FOR BLINDS. MAKE SURE BLINDS HAVE BEEN INSTALLED AND REMAIN CLOSED TO CONCEAL NEW WORK. REFER TO DIMENSION PLAN ON SHEET A3 AND INTERIOR ELEVATION DETAIL 6A/AS FOR WINDOW INFILL. NOTE THAT NEW WORK IS TO STOP AT THE EXISTING WINDOW MULLION THAT IS ABOUT 2" AFF. TOP OF INFILL SHALL HAVE A 3" VENTED REEVAL TO MODEL AFF. ARCHITECTURAL SURFACE MOUNTED REEVAL BY VINYL CORP.
    - INSTALL OWNER PROVIDED HC TOILET SIGNAGE. SIGN TO BE MOUNTED 5'-0" AFF TO CENTER OF SIGN AND EDGE OF SIGN SHALL BE 2" FROM DOOR FRAME.
    - FEATURE WALL - STONE WALL - 157-1". STONE VENEER WALL FROM FINISH FLOOR TO 6" ABOVE CEILING. STONE TO BE INSTALLED OVER 5/8" DUKAROLD BOARD AND PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE INSTALLATION OF OWNER PROVIDED GRAPHIC SIGNAGE TO THE DIRECTION OF STONE.
    - PROVIDE 2"x3/4" BC PLYWOOD MOUNTING BOARD FROM 6" ABOVE FINISH FLOOR TO FULL LENGTH OF WALL. PAINT TO MATCH ADJACENT WALLS BY VINYL CORP.
    - REMOVE EXISTING STOREFRONT IN THIS AREA. TURN REMOVED STOREFRONT / DOORS OVER TO LANDLORD. PROVIDE NEW STOREFRONT SYSTEM TO MATCH EXISTING STOREFRONT SYSTEM EXCEPT THAT 1" INSULATED GLASS WITH UV PROTECTION SHALL BE INSTALLED. INSTALL NEW DOOR WHERE APPLICABLE PER DETAIL 91A/2. DOOR TO MATCH EXISTING. INSTALL 1" METAL HORIZONTAL MINI BLINDS EQUAL TO LEVOLOR KIVIERA FAMILY PRODUCTS WITH OPERATING WANDS LOCATED TOWARD CENTER OF ROOM AND NOT OBSTRUCTED BY ABUTTING GYP BOARD WALLS. SEE ROOM FINISH SCHEDULE FOR "BLINDS" COLOR SELECTION. REFER TO NOTE #40 FOR REQUIREMENTS FOR EXISTING GYPBOARD ADJACENT, ABOVE AND BELOW THE WINDOWS.
    - NEW ROOF TOP EXHAUST FAN. REFER TO MECHANICAL PLANS FOR LOCATION AND SETTING REQUIREMENTS. CURB TO BE WORKED INTO EXISTING ROOFING PER ROOFING MANUFACTURER'S RECOMMENDATIONS TO MAINTAIN EXISTING ROOFING WARRANTY. COORDINATE WITH LANDLORD AND USE LANDLORD'S ROOFING COMPANY IF REQUIRED BY EXISTING ROOFING WARRANTY.
    - APPROXIMATE LOCATION OF NEW ROOF TOP UNIT PER MECHANICAL DRAWINGS. CONTRACTOR TO CONFIRM WITH LANDLORD'S STRUCTURAL ENGINEER THAT NEW UNITS AND INDICATED LOCATIONS ARE ACCEPTABLE. REFER TO MECHANICAL PLANS FOR SETTING, PIPING AND INSTALLATION OF THIS UNIT. PROVIDE CURB AND FLASH TO ROOFING PER ROOFING MANUFACTURER'S STANDED LOCATIONS DETAILS AND RECOMMENDATIONS. COORDINATE WITH LANDLORD TO INSURE EXISTING ROOFING WARRANTY IS MAINTAINED.
    - EXISTING WALL TO REMAIN. REFER TO FOLLOWING SUPPLY FOR REQUIREMENTS. SEE WALL SCHEDULE FOR OTHER WALL REQUIREMENTS.
      - EXISTING EXTERIOR GYP BOARD WALL. REWORK EXISTING GYP BOARD AS REQUIRED TO INSTALL NEW ELECTRICAL WORK AND BLOCKING. PATCH GYP BOARD FOR A SMOOTH UNIFORM APPEARANCE IN PREPARATION OF INSTALLATION OF NEW FINISHES.
      - EXISTING EXTERIOR WOOD STUD WALL. FOLLOWING INSTALLATION OF NEW ELECTRICAL WORK, PLUMBING AND BLOCKING INSTALL NEW 3" SOUND BATT INSULATION AND 5/8" GYPBOARD (USE MOISTURE BOARD IN WET LOCATIONS) RETURN NEW GYP BOARD TO WINDOW FRAMES AND PROVIDE METAL "J" BEAD AROUND PERIMETER OF WINDOW OPENING.
        - EXISTING INTERIOR WOOD STUD DEMISING WALL. WALL TO BE CONSTRUCTED TO PROVIDE A ONE HOUR FIRE RATED DEMISING WALL. CONTRACTOR TO VERIFY THAT THE EXISTING GYP BOARD IS INSTALLED IN 5/8" GYP BOARD THAT EXTENDS FULL HEIGHT TO THE BOTTOM OF THE ROOF DECK. ADVISE ARCHITECT IF THIS IS NOT THE CASE. FOLLOWING INSTALLATION OF NEW ELECTRICAL WORK, PLUMBING AND BLOCKING INSTALL NEW 3" SOUND BATT INSULATION AND 5/8" GYPBOARD (USE MOISTURE BOARD IN WET LOCATIONS AND LEAD LINE WHERE INDICATED). WALL TO BE FULL HEIGHT AND CONSTRUCTED PER THE REQUIREMENTS OF IBC 2012 TABLE 721(2) ITEM 14-1.3. WALL TO BE FIRE CALKED ON BOTH SIDES. REFER TO DEMOLITION PLAN FOR REMOVED / RE-LOCATED WALLS AND IN-FILL OPENINGS WITH MATCHING WALL CONSTRUCTION PER DIMENSION PLAN. REWORK EXISTING GYP BOARD AS REQUIRED TO INSTALL NEW ELECTRICAL WORK AND BLOCKING. PATCH GYP BOARD FOR A SMOOTH UNIFORM APPEARANCE IN PREPARATION OF INSTALLATION OF NEW FINISHES.
        - EXISTING INTERIOR GYP BOARD WALL. WALL TO BE CONSTRUCTED TO PROVIDE A ONE HOUR FIRE RATED DEMISING WALL. CONTRACTOR TO VERIFY THAT THE EXISTING GYP BOARD IS INSTALLED ON BOTH SIDES OF THIS WALL IS 5/8" GYP BOARD. ADVISE ARCHITECT IF THIS IS NOT THE CASE. WALL WILL NEED TO BE EXTENDED FROM EXISTING CEILING TO BOTTOM OF ROOF DECK. WALL TO BE FULL HEIGHT AND CONSTRUCTED PER THE REQUIREMENTS OF IBC 2012 TABLE 721(2) ITEM 14-1.3. WALL TO BE FIRE CALKED ON BOTH SIDES. REFER TO DEMOLITION PLAN FOR REMOVED / RE-LOCATED WALLS AND IN-FILL OPENINGS WITH MATCHING WALL CONSTRUCTION PER DIMENSION PLAN. REWORK EXISTING GYP BOARD AS REQUIRED TO INSTALL NEW ELECTRICAL WORK AND BLOCKING. PATCH GYP BOARD FOR A SMOOTH UNIFORM APPEARANCE IN PREPARATION OF INSTALLATION OF NEW FINISHES.
        - EXISTING INTERIOR GYP BOARD WALL. WALL TO BE CONSTRUCTED TO PROVIDE A ONE HOUR FIRE RATED DEMISING WALL PER NOTE #40 ABOVE. REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING GYP BOARD IN PROCEDURE ROOM. AFTER ALL NEW ELECTRICAL AND PLUMBING WORK HAS BEEN INSTALLED, INSTALL NEW BATT INSULATION AND INSTALL ONE LAYER OF 5/8" GWS W/ 1/8" LEAD BACKING OVER EXISTING WALL STUDS. LEAD TO EXTEND TO 7'-0" AFF SIMILAR TO WALL TYPE W8. REFER TO CONSTRUCTION NOTE #25 FOR WORK BARRIER REQUIREMENTS AROUND ROOM.
        - EXISTING GYP BOARD FINISHED STRUCTURAL SHEAR WALL. CONTRACTOR SHALL NOT ALTER THE STRUCTURAL CAPACITY OF THIS WALL. PENETRATIONS OF THE STRUCTURAL SHEATHING ARE TO BE KEPT TO A MINIMUM AND SHALL NOT EXCEED 1 SQUARE FOOT IN AREA WITH-OUT A STRUCTURAL ENGINEER'S REVIEW / APPROVAL. REWORK EXISTING GYP BOARD AS REQUIRED TO INSTALL NEW ELECTRICAL WORK AND BLOCKING. PATCH GYP BOARD FOR A SMOOTH UNIFORM APPEARANCE IN PREPARATION OF INSTALLATION OF NEW FINISHES.
        - EXISTING UNFINISHED STRUCTURAL SHEAR WALL. COMPLY WITH STRUCTURAL REQUIREMENTS OUTLINED IN NOTE #40 ABOVE. FOLLOWING INSTALLATION OF NEW ELECTRICAL WORK, PLUMBING AND BLOCKING INSTALL NEW 3" SOUND BATT INSULATION AND 5/8" GYPBOARD (USE MOISTURE BOARD IN WET LOCATIONS AND LEAD LINED GYP BOARD WHERE INDICATED) ON BOTH SIDES OF WALL.
    - EXTEND WALL LEAD (1/8" SHEET LEAD TO 7'-0" AFF) BEHIND RETURN AIR DUCT CHASE AND THE LEAD INTO LEAD LINED GYP BOARD FOR A CONTINUOUS BARRIER.
    - REFER TO MECHANICAL DRAWINGS FOR LOW RETURN AIR DUCT AND 18"x20" RETURN AIR GRILL TO BE MOUNTED WITH BOTTOM 6" AFF.
    - ELECTRICAL PANELS PER ELECTRICAL DRAWINGS.
    - REFER TO ELEVATIONS 2A/AS FOR PLAS LAMINATE WALL PROTECTION UNDER COUNTERTOP.
    - REFER TO MECHANICAL DRAWINGS FOR NEW HUMIDIFIER IN THIS AREA. HOLD UNIT AS HIGH AS POSSIBLE. INSTALL TO ALLOW ACCESS TO FILTERS AND FOR MAINTENANCE.
    - EXISTING ROOF TOP UNIT TO BE REMAIN / REWORKED. REFER TO MECHANICAL PLANS.
    - REFER TO MECHANICAL AND ELECTRICAL FOR ELECTRIC WALL HEATER
    - REFER TO MECHANICAL PLANS FOR SHOWER. CAREFULLY CHIP AWAY EXISTING CONCRETE DECK AS REQUIRED TO INSTALL SHOWER UNIT TO MEET ADA/HIC REQUIREMENTS (MAX 1/2" THRESHOLD) AND PATCH FRANKS WITH EQUAL THICKNESS 3,500 PSI CONCRETE. COORDINATE GYP BOARD WALL ENCLOSURE DIMENSIONS WITH RUGH-IN DIMENSIONS FOR SHOWER UNIT.
    - PROVIDE A WHITE SHOWER CURTAIN, WITH PLASTIC RINGS, AT HC SHOWER.
    - 2x2x6 BOARD ACROSS BACK WALL. REFER TO DETAIL ON OXYGEN PLAN - SHEET AS. INSTALL HOOKS AND CHAIN TO HOLD OXYGEN FRANKS IN PLACE. COORDINATE WITH OWNER FOR THE INSTALLATION OF FLOOR PROTECTION MAT BELOW TANKS.
    - LOCATE CONTROLS FOR THE PROCEDURE ROOM HVAC UNITS IN THIS AREA. COORDINATE WITH MECHANICAL PLANS.
    - LOW WALL IN FRONT OF WINDOWS IN THIS AREA. REFER TO NOTE #16 FOR WINDOW REQUIREMENTS. MAKE SURE BLINDS HAVE BEEN INSTALLED AND REMAINED CLOSED.

**FLOOR PLAN - CONSTRUCTION NOTES**

REV#	DATE	DESCRIPTION
1	8/25/15	PERMIT REVIEW COMMENTS
2	10/15/15	PERMIT REVIEW COMMENTS - 2nd ROUND
3	10/29/15	PERMIT REVIEW COMMENTS - 3rd ROUND
	1/11/17	ARIZONA STATE ASC PLAN REVIEW

DRAWING NO. **A3**

SHEET **OF**

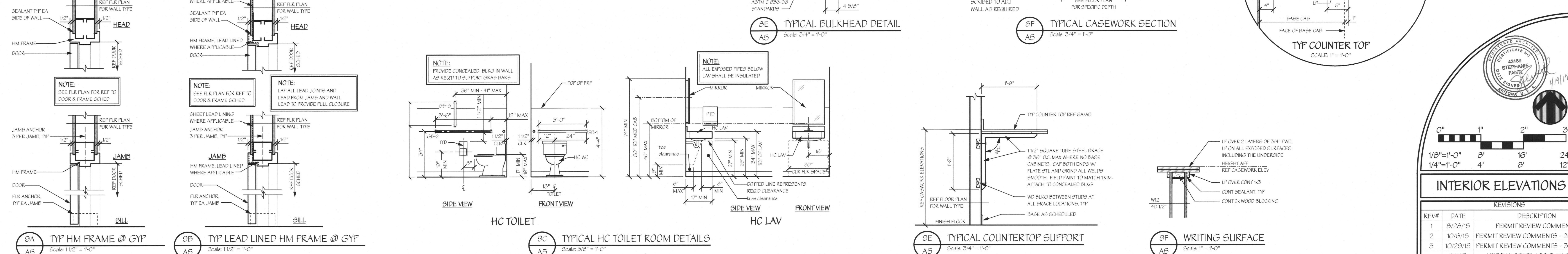
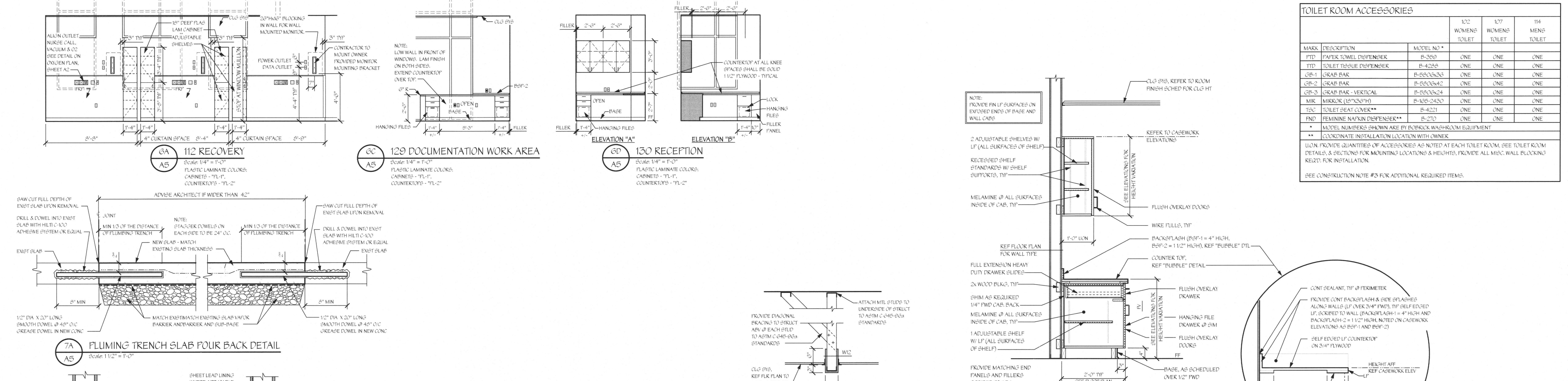
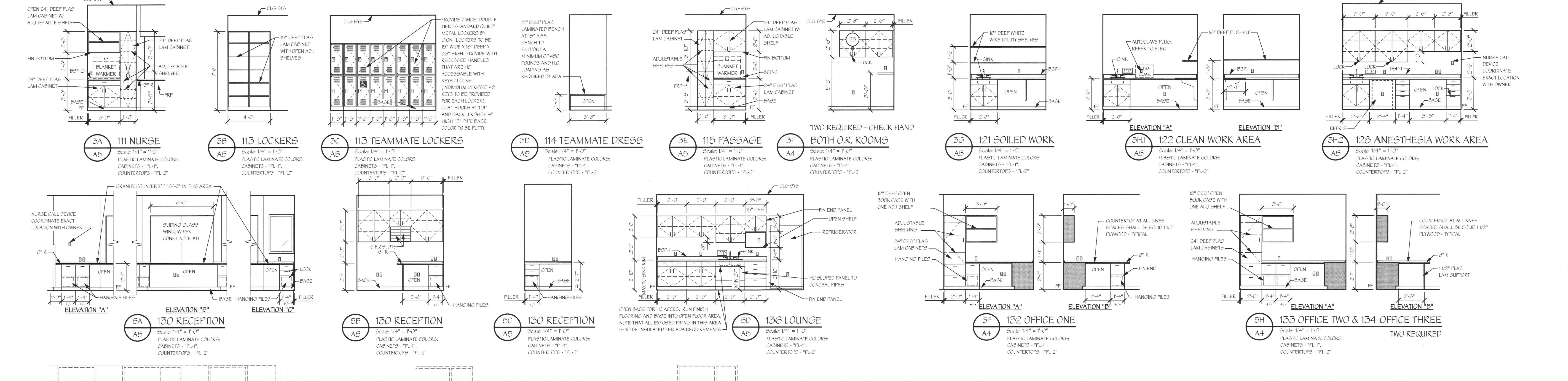
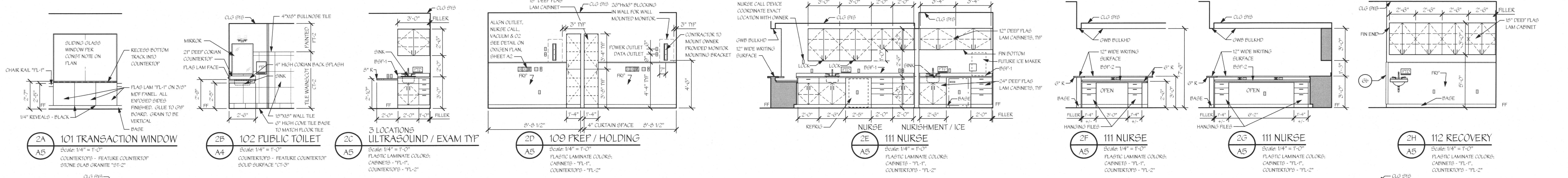
DATE **7/14/15** DRAWN BY **PC**

JOB NUMBER **11212** CHECKED BY **PC**

OFFICE **410-462-8048**

NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD





**TOILET ROOM ACCESSORIES**

MARK	DESCRIPTION	MODEL NO *	102 WOMEN'S TOILET	107 WOMEN'S TOILET	104 MEN'S TOILET
PTD	PAPER TOWEL DISPENSER	B-260	ONE	ONE	ONE
TID	TOILET TISSUE DISPENSER	B-4250	ONE	ONE	ONE
GRB-1	GRAB BAR	B-5500-24	ONE	ONE	ONE
GRB-2	GRAB BAR - VERTICAL	B-5500-24	ONE	ONE	ONE
MIR	MIRROR (8"X20")	B-450-240	ONE	ONE	ONE
TSC	TOILET SEAT COVER**	B-421	ONE	ONE	ONE
FND	FEMININE NAPKIN DISPENSER**	B-270	ONE	ONE	ONE

\* MODEL NUMBERS SHOWN ARE BY EXAMPLE. WASHROOM EQUIPMENT  
\*\* COORDINATE INSTALLATION LOCATION WITH OWNER

UNLESS OTHERWISE NOTED, QUANTITIES OF ACCESSORIES AS NOTED AT EACH TOILET ROOM. SEE TOILET ROOM DETAILS & SECTIONS FOR MOUNTING LOCATIONS & HEIGHTS. PROVIDE ALL MISC. WALL BLOCKING REQ'D FOR INSTALLATION.

SEE CONSTRUCTION NOTE #3 FOR ADDITIONAL REQUIRED ITEMS.

**INTERIOR ELEVATIONS AND DETAILS**

REV#	DATE	REVISIONS
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2nd ROUND
3	10/29/15	PERMIT REVIEW COMMENTS - 3rd ROUND
	1/1/17	ARIZONA STATE ASC PLAN REVIEW

DRAWING NO. **A5**

SHEET **174/15** OF **174/15**

DATE **7/14/15**

JOB NUMBER **11212**

DRAWN BY **BRFC**

CHECKED BY **KCF**

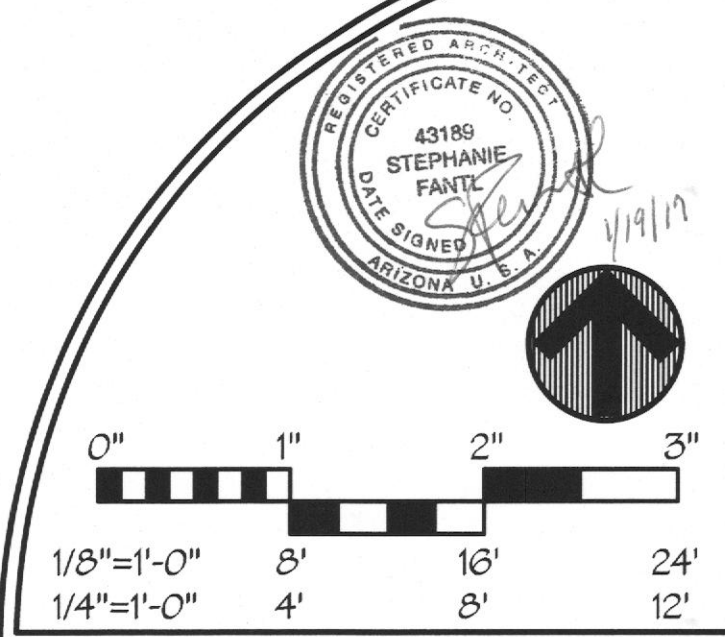
635 Westport Parkway  
Suite 300  
Flagstaff, AZ 86001  
Phone: 907-740-2650  
Fax: 907-751-8411

**d p c e**  
don penn - consulting engineer

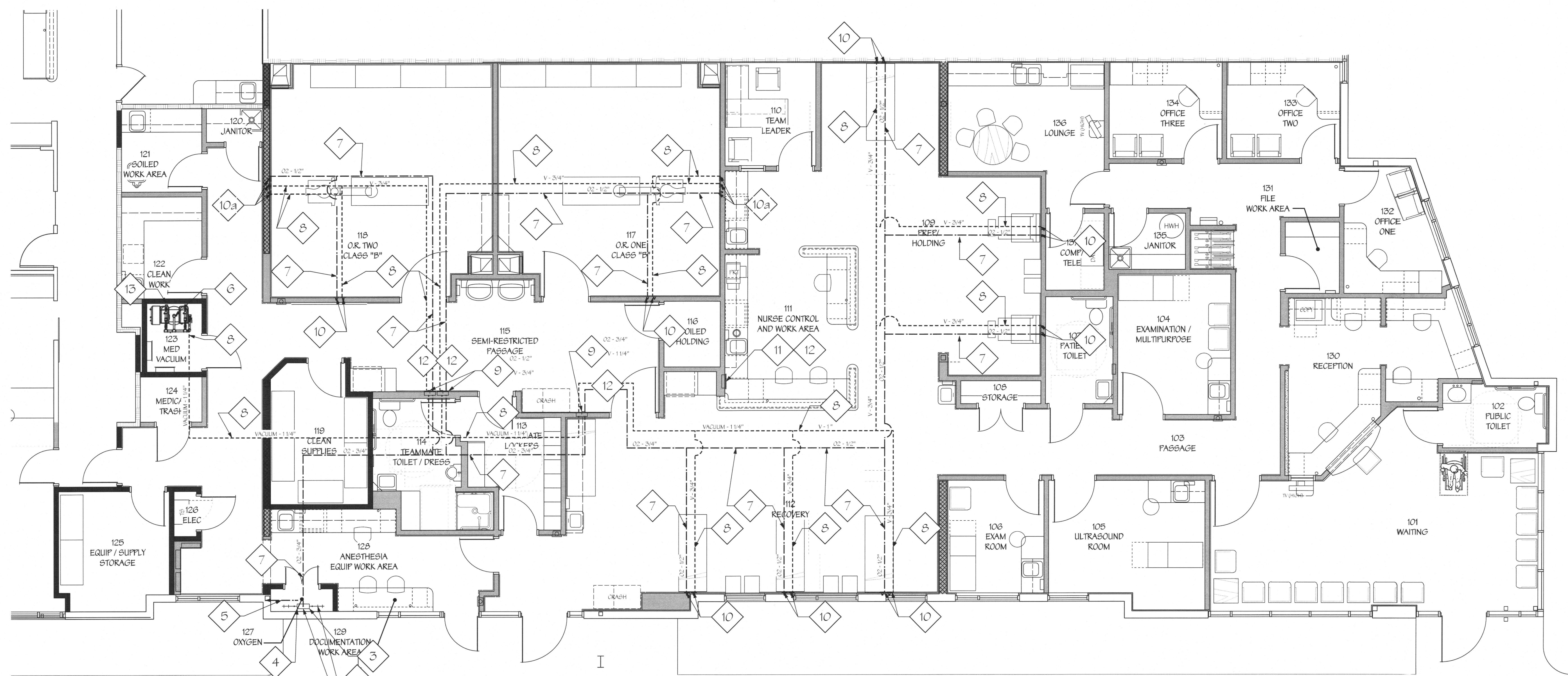
TENANT RENOVATIONS FOR:  
**Lifeline Access Center**  
7362 W. Thunderbird Rd., Ste 103  
Peoria, Arizona 85501

**Lifeline**  
Vascular Access

**In Sync**  
ARCHITECTURAL DESIGN, INC.  
1215 Old Knoxville Road  
Whiteford, MD 21160  
Office 410-452-5006



NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD



**4C PIPED OXYGEN / VACUUM PLAN**  
Scale: 1/4" = 1'-0"

NOTE:  
LIFELINE HAS A NATIONAL SALES RELATIONSHIP WITH THE FOLLOWING CONTACTS:  
CLARK NIEKMEYER - OHIO MEDICAL CORPORATION - 200-443-0770

NOTE:  
SYSTEM IS DESIGNED TO MEET THE 2012 NFPA 99 AND ALL COMPONENTS AND INSTALLATION METHODS ARE TO BE IN ACCORDANCE WITH 2012 NFPA 99

**OXYGEN & VACUUM SYSTEM NOTES**

◇ DESIGNATES A OXYGEN / VACUUM SYSTEM NOTE

GENERAL NOTE - INSTALL 1/8" GAUGE CONTROL WIRING PER MANUFACTURE'S REQUIREMENTS/RECOMMENDATIONS BETWEEN PRESSURE/VACUUM SWITCHES, MANIFOLD, CONTROL PANEL AND MASTER ALARM PANEL AND AREA ALARM PANEL LOCATIONS.

- OXYGEN MANIFOLD. UNIT SHALL BE OHIO MEDICAL CORPORATION MODEL #263432-02 WITH A 2X2 HEADER BAR, 1/2" RELIEF VALVE (SET AT 75psi) #232000 AND PIPE AWAY FOR RELIEF VALVE #232002. FULLY AUTOMATIC MANIFOLD SHALL HAVE A NEMA 4X ENCLOSURE AND BE UL LISTED. PRESSURE CONTROL CABINET SHALL CONTAIN DUAL PRESSURE REGULATORS AND SWITCHES THAT INSURE AN UNINTERRUPTED FLOW OF GAS TO THE PIPELINE. THE CABINET SHALL HAVE THREE PRESSURE GAUGES, ONE FOR EACH SUPPLY SIDE AND ONE FOR PIPELINE DELIVERY. IT SHALL BE AUTOMATIC SWITCH. HEADERS BARS SHALL BE MODULAR IN DESIGN, ALLOWING FOR FUTURE EXPANSION. EACH INLET PORT SHALL BE EQUIPPED WITH AN INDIVIDUAL CHECK VALVE. HEADER BAR SHALL INCLUDE A MASTER SHUTOFF VALVE.
- HEADER BAR ON EACH SIDE OF MANIFOLD PER NOTE 1 ABOVE. PROVIDE DETAILS FOR CONNECTION TO CYLINDERS (BY OWNER). COORDINATE EXACT INSTALLATION LOCATION OF HEADERS WITH OWNER. MANIFOLD AND HEADERS SHALL BE INSTALLED PER NFPA REQUIREMENTS AND IN COMPLIANCE WITH MANUFACTURE'S RECOMMENDATIONS.
- LOCKABLE VALVE FOR SYSTEM SHUTDOWN ADJACENT TO MANIFOLD ASSEMBLY. VALVE SHALL BE 261600-05 BY OHIO MEDICAL CORPORATION WITH LABEL KIT 261645. MINIMUM SIZE OF 3/4" FOR OXYGEN AND 1" FOR VACUUM. INSTALL PER MANUFACTURE'S RECOMMENDATIONS TO COMPLY WITH NFPA REQUIREMENTS.
- PROVIDE GAS SPECIFIC DEMAND CHECK ASSEMBLY CONSISTING OF OHIO MEDICAL CORPORATION MAINLINE PRESSURE SWITCH #261709 AND P500-GAUGE-100 FOR OXYGEN AND P-500-GAUGE-VAC FOR VACUUM UTILIZING PART #2619333 AND INSTALLED PER MANUFACTURE'S RECOMMENDED INSTALLATION DIAGRAM. PROVIDE 1/2" OXYGEN SUPPLY PIPE UP WALL TO CEILING FOR DISTRIBUTION PER DRAWING.
- PRESSURE RELEASE VENT PIPING FOR PRESSURE RELIEF VALVE(S) TO THE OUTSIDE PER MANUFACTURE'S RECOMMENDATIONS. CONTRACTOR SHALL SELECT AN APPROPRIATE DISCHARGE POINT AND SHALL COORDINATE EXACT LOCATION WITH THE LANDLORD. TERMINATE PIPING PER MANUFACTURE'S RECOMMENDATIONS.
- MEDICAL VACUUM EQUIPMENT TO BE OHIO MEDICAL HEALTHCARE® SYSTEM MODEL NO 83008-T2V PACKAGED SYSTEM PART NO 83000-A-T2-V50 - 3 HP ELECTRIC MOTOR DRIVEN PUMPS, A 20 GALLON RECEIVER AND A UL LISTED DUPLEX ELECTRICAL CONTROL SYSTEM MOUNTED IN A NEMA 12 ENCLOSURE. ALL SYSTEM COMPONENTS SHALL BE INSTALLED FOR A COMPLETELY OPERATIONAL MEDICAL VACUUM SYSTEM.
  - FOR MOTOR PROTECTION, THE EQUIPMENT SHOULD NOT BE OPERATED IN AN AMBIENT TEMPERATURE ABOVE 104°F.
  - EQUIPMENT CONFORMS TO THE NATIONAL ELECTRICAL CODE.
  - THE SYSTEM SHALL MEET NFPA 99 2005 REQUIREMENTS AND IFC 3008.
  - SYSTEM MUST BE CERTIFIED BY AN APPROVED MEDICAL GAS CERTIFICATION COMPANY AFTER INSTALLATION.

7 OXYGEN DISTRIBUTION PIPING IN CEILING. SEE PLAN FOR MAIN PIPE SIZES (1/2" MIN). PIPING SHALL BE INSTALLED PER NFPA AND MANUFACTURE'S REQUIREMENTS AND PER THE MATERIAL SPECIFICATIONS. (SEE SPEC BOOK).

8 VACUUM DISTRIBUTION PIPING IN CEILING. SEE PLAN FOR MAIN PIPE SIZES (3/4" MIN). PIPING SHALL BE INSTALLED PER NFPA AND MANUFACTURE'S REQUIREMENTS. PIPING SHALL BE SIZED PER MANUFACTURE'S RECOMMENDATIONS FOR THE VARIOUS LOCATIONS/DEMANDS.

9 OXYGEN AND VACUUM PIPING (SEE PLAN FOR PIPE SIZES) (SEE NOTES #7 & #8) DOWN IN WALL TO ZONE VALVE BOX. SEPARATE LINES FOR EACH VALVE BOX. VALVE BOX SHALL BE OHIO MEDICAL CORPORATION BRAND MODEL #231623-XXX WITH GAUGE PORT. IT SHALL BE CONSTRUCTED OF STEEL AND THE FRAME ALUMINUM WITH A TINTED, FLEX-GLASS FULL OUT WINDOW. THE VALVE SHALL BE OXYGEN CLEANED, FULL PORT, THREE-PIECE BALL TYPE. COORDINATE MOUNTING HEIGHT WITH OWNER AND LOCAL JURISDICTION REQUIREMENTS AND INSTALL PER MANUFACTURE'S RECOMMENDATIONS. OXYGEN AND VACUUM PIPING (SEE NOTES #7 & #8) UP IN WALL DISTRIBUTION PIPING IN CEILING.

10 OXYGEN AND VACUUM PIPING (SEE NOTES #7 & #8) DOWN IN WALL TO MEDICAL GAS AND VACUUM OUTLET (VACUUM OUTLET TO INCLUDE SLIDE BRACKET NEXT TO VACUUM OUTLET). MEDICAL GAS OUTLETS SHALL BE OHIO MEDICAL CORPORATION BRAND, DIAMOND QUICK-CONNECT - FOR OXYGEN PART #261010-1-T15 - FOR VACUUM PART NUMBER #261010-5 WITH VR-C30T-02M4T VACUUM WALL REGULATOR WITH OHMEDA WALL INLET AND NIPPLE CONNECTOR. FOR VACUUM SLIDE PART NUMBER 261620. VERIFY LOCATION OF SLIDE PLATE WITH OWNER PRIOR TO INSTALLATION. OUTLETS SHOULD INCLUDE ONE PIECE, HIGH IMPACT, FLAME-RETARDANT IVORY TRIM PLATE. ALL OUTLETS SHALL BEAR THE UL LABEL AND BE CLEANED FOR OXYGEN SERVICE. OUTLETS SHOULD INCLUDE PRIMARY AND SECONDARY CHECK VALVES. WALL OUTLETS SHALL HAVE GAS SPECIFIC BACK BODY WITH A STEEL MOUNTING PLATE. COORDINATE EXACT MOUNTING HEIGHT LOCATION WITH OWNER PRIOR TO INSTALLATION. NOTE - AT NOTE #10 PROVIDE TWO VACUUM OUTLETS WITH SLIDE BRACKET.

11 COMBINATION MASTER/AREA ALARM FOR OXYGEN AND VACUUM SYSTEMS. UNIT SHALL BE A OHIO MEDICAL CORPORATION COMBINATION 10 POINT MASTER ALARM/GAS AREA/10 POINT MASTER ALARM WITH \*LONWORKS #261995-10212. ALLOWING IT TO INTERFACE WITH A FUTURE BUILDING AUTOMATION SYSTEM. IT SHALL COMPLY WITH FCC PART 15. IT SHALL HAVE HIGH VISIBILITY LED READOUTS. IT SHALL BE EQUIPPED WITH REMOTE SENSORS (REFER TO NOTE 8 BELOW). COORDINATE EXACT LOCATION OF INSTALLATION WITH CASEWORK AND OWNER PRIOR TO INSTALLATION.

12 REMOTE SENSORS, ONE FOR OXYGEN AND ONE FOR VACUUM, LOCATED ON THE DOWN STREAM (SOURCE) SIDE OF THE DISTRIBUTION PIPING AFTER EACH OF THE ZONE VALVE BOXES. PROVIDE ALL ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION PER MANUFACTURE'S RECOMMENDATIONS.

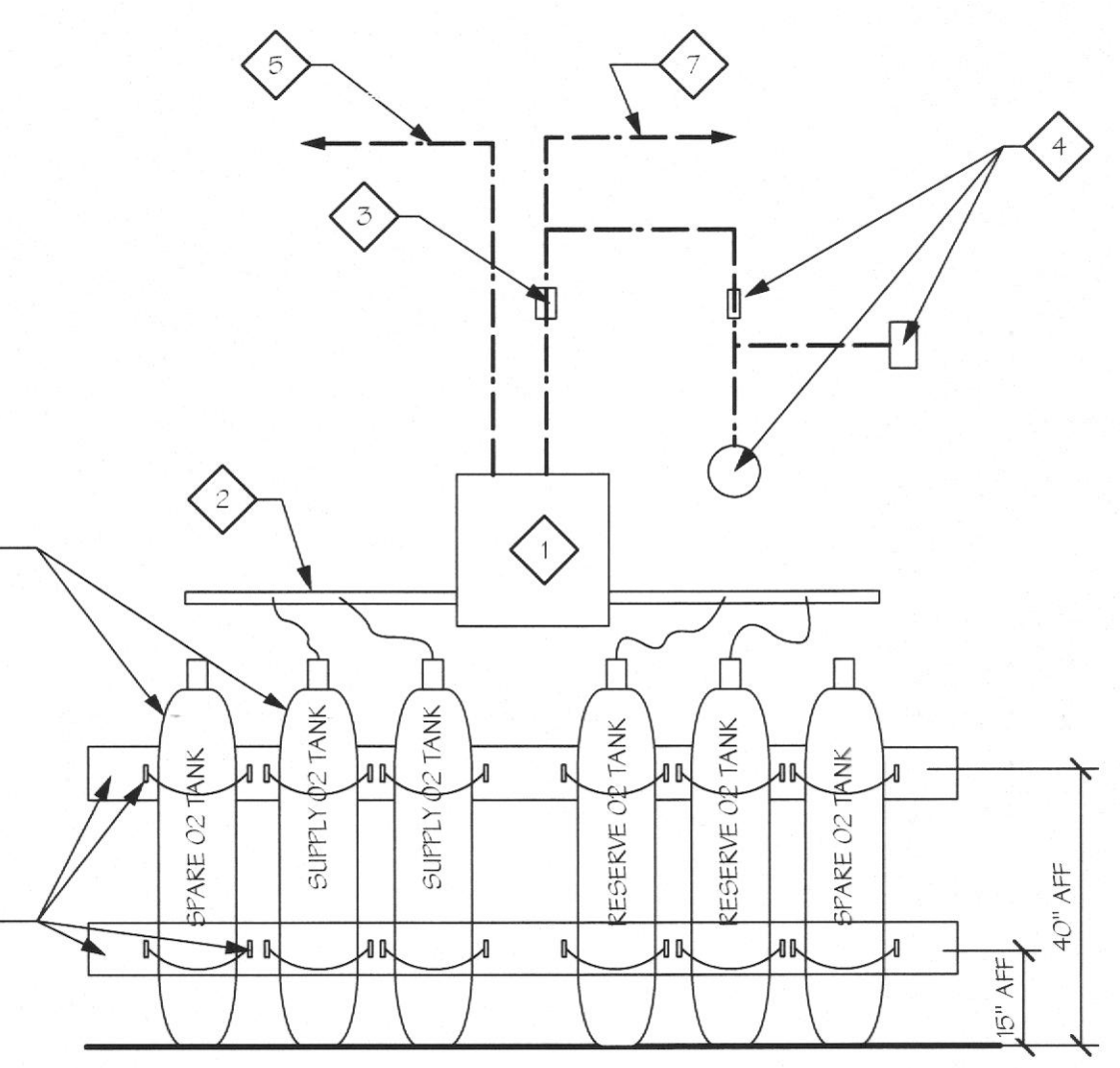
13 VACUUM EXHAUST EXHAUST PIPING TO THE OUTSIDE PER MANUFACTURE'S RECOMMENDATIONS. CONTRACTOR SHALL SELECT AN APPROPRIATE DISCHARGE POINT AND SHALL COORDINATE EXACT LOCATION WITH THE LANDLORD. SELECTED LOCATION SHALL BE A MIN OF 10 FEET FROM ANY INTAKE DEVICE OR ANY WINDOWS OR DOORS. TERMINATE PIPING PER MANUFACTURE'S RECOMMENDATIONS.

NOTE:  
THE VACUUM SOURCE SHOWN ON THESE PLANS IS FOR SURGICAL MEDICAL VACUUM SOURCES ONLY. THIS IS NOT A WAGD VACUUM SYSTEM.

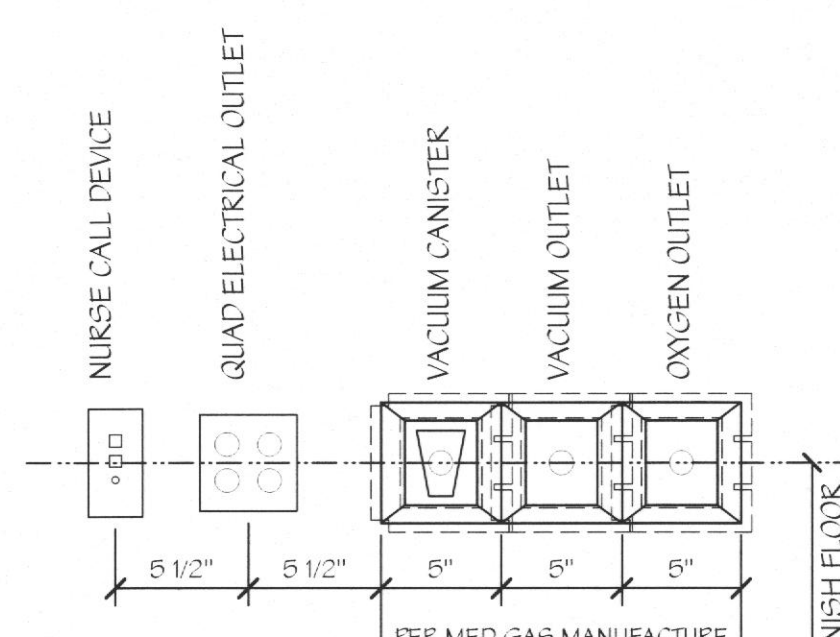
NOTE:  
CONTRACTOR TO MAKE A DEFERRED SUBMITTAL OF THE MEDICAL GAS COMPONENTS PRIOR TO INSTALLATION. THIS SUBMITTAL SHALL SHOW ALL THE COMPONENTS OF THIS SYSTEM AND SHALL INDICATE THEY EACH MEET THE REQUIREMENTS OF NFPA 99, INCLUDING, BUT NOT LIMITED TO MEETING THE VACUUM ALARM REQUIREMENTS PER 5.1.3.7.4, THAT THE STATION OUTLETS COMPLY WITH 5.1.5 IN ITS ENTIRETY AND THE HEADERS AT TANKS COMPLY WITH 5.1.3.5.9

\*IF CYLINDERS OF OXYGEN, EACH CYLINDER HOLDS 282 CUBIC FEET OF OXYGEN WHEN FULL.

OXYGEN TANK RESTRAINTS: PROVIDE TWO - 2x6 BOARD ACROSS BACK WALL. INSTALL HOOKS AND CHAIN TO HOLD OXYGEN TANKS IN PLACE. CHAIN TO BE NON-SPARK COIL CHAIN - BRKAGE 1/4" - 200# TYPICAL.



**9C PIPED OXYGEN ENLARGEMENT**  
Scale: NOT TO SCALE



**9D MED GAS OUTLET DETAIL**  
Scale: 1/16\"/>

NOTE: CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THIS BUILDING AND TENANT AREA AND BE FAMILIAR WITH ALL THE EXISTING CONDITIONS PRIOR TO CONTRACT AWARD





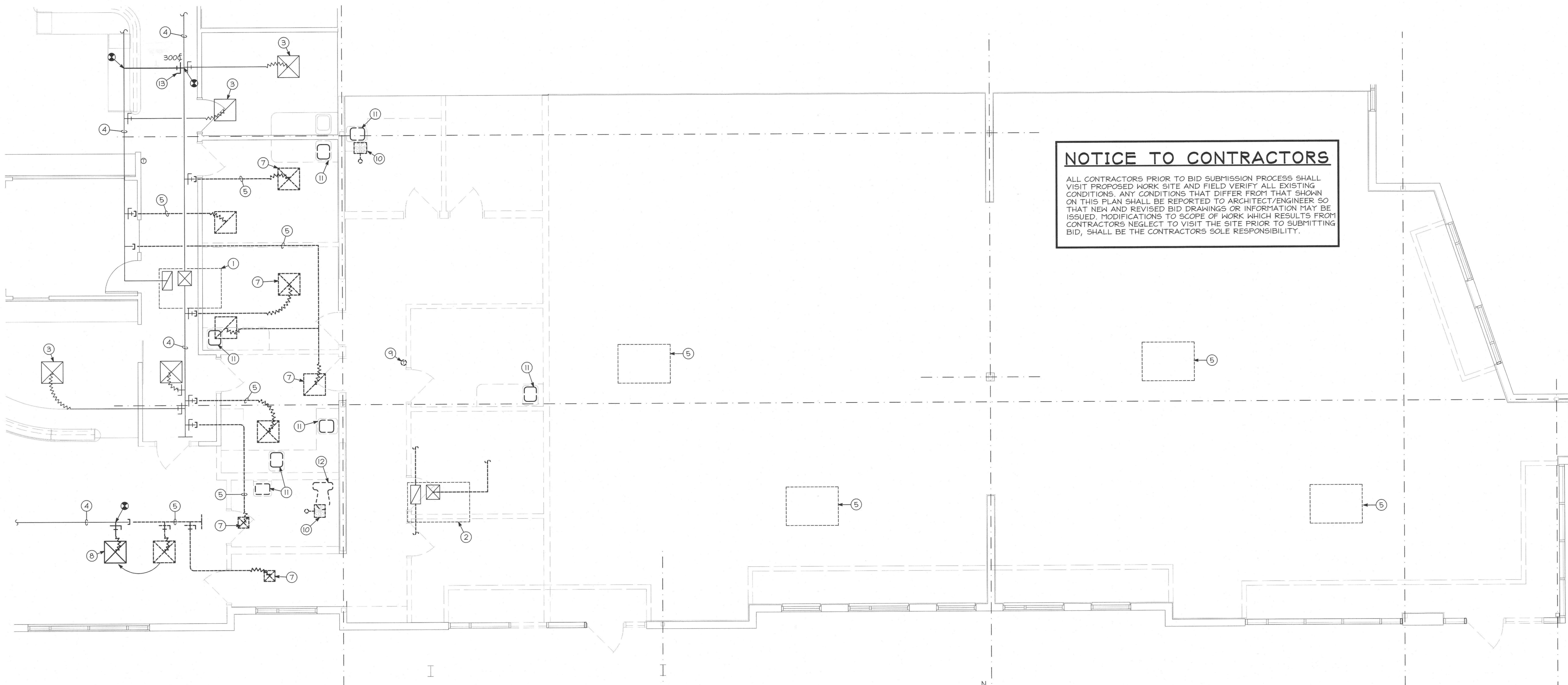
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TENANT RENOVATIONS FOR:  
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**IA**  
DRAWING NO. M1  
DATE 7/7/15 DRAWN BY DJL  
JOB NUMBER CHECKED BY 11212 DJL



**NOTICE TO CONTRACTORS**  
ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFER FROM THAT SHOWN ON THIS PLAN SHALL BE REPORTED TO ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

**FLOOR PLAN-EXISTING CONDITIONS/  
DEMOLITION (HVAC/PIPING)**  
SCALE: 1/4"=1'-0"

**MECHANICAL LEGEND**

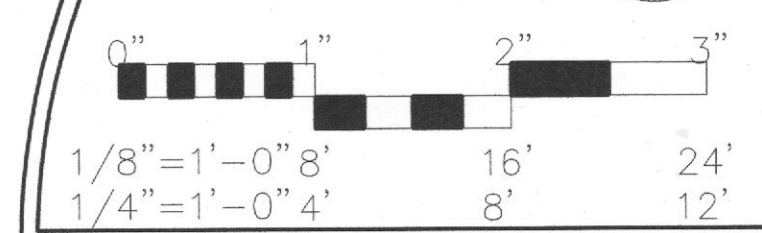
- |  |                                      |  |                              |
|--|--------------------------------------|--|------------------------------|
|  | FLEXIBLE CONNECTION                  |  | PIPE DOWN                    |
|  | TURNING VANES                        |  | PIPE UP                      |
|  | SUPPLY DUCT DOWN                     |  | CLEANOUT                     |
|  | SUPPLY DUCT UP                       |  | BALL VALVE                   |
|  | RETURN DUCT DOWN                     |  | UNION                        |
|  | RETURN DUCT UP                       |  | ANGLE STOP VALVE             |
|  | EXHAUST DUCT DOWN                    |  | EX. EXISTING                 |
|  | EXHAUST DUCT UP                      |  | RTU ROOFTOP UNIT             |
|  | FIRE DAMPER                          |  | C.F.M. CUBIC FEET PER MINUTE |
|  | AIR-TITE FITTING W/<br>VOLUME DAMPER |  | TYP. TYPICAL                 |
|  | FLEXIBLE DUCT                        |  | FD FLOOR DRAIN               |
|  | SUPPLY AIR                           |  | FS FLOOR SINK                |
|  | RETURN AIR                           |  | F-1 EXHAUST FAN              |
|  | EXHAUST AIR                          |  |                              |
|  | DIRECTION OF AIR FLOW                |  |                              |
|  | THERMOSTAT                           |  |                              |
|  | DRAWING NOTE                         |  |                              |
|  | SANITARY PIPE                        |  |                              |
|  | VENT PIPE                            |  |                              |
|  | COLD WATER PIPE                      |  |                              |
|  | HOT WATER PIPE                       |  |                              |
|  | HOT WATER RECIRC PIPE                |  |                              |

**GENERAL NOTES (HVAC/PIPING)**

- ALL ITEMS INDICATED BOLD SHALL BE CONSIDERED NEW UNLESS OTHERWISE NOTED.
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, STATE, AND CITY/COUNTY CODES.
- COORDINATE ALL THERMOSTAT LOCATIONS WITH FINAL PARTITION/FURNITURE LAYOUT.
- PROVIDE ACCESS PANELS EQUAL TO ARCHITECTURAL ACCESS DOORS, MODEL AHD BY METROPOLITAN DOOR INDUSTRIES WITH CYLINDER LOCK AND KEY. THESE PANELS SHALL BE PROVIDED ANYWHERE THERE ARE VOLUME DAMPERS, CONTROLS ACTUATORS, ETC THAT HAVE TO BE LOCATED ABOVE DRYWALL CEILINGS AND SHALL BE LOCATED AND SIZED TO ALLOW ACCESS TO THESE ITEMS ABOVE THE DRYWALL CEILINGS. COORDINATE THESE LOCATIONS WITH INSTALLATION OF THE GYP BOARD CEILING. ANY ACCESS PANELS INSTALLED IN THE PROCEDURE ROOM MUST BE GASKETED TYPE ONLY AND MUST MEET THE MONOLITHIC REQUIREMENTS OF THE CEILING. PRIOR TO PURCHASE/INSTALL COORDINATE WITH THE CONSTRUCTION MANAGER.
- EXISTING SANITARY PIPING SHOWN IS ASSUMED/APPROXIMATE LOCATION. EXISTING SANITARY PIPING MUST BE ACTUALLY FIELD DETERMINED FOR EXACT LOCATION AND FLOW DIRECTION PRIOR TO INSTALLATION.
- PLUMBING ROUGH-IN CONNECTIONS ARE APPROXIMATE LOCATIONS. ALL ROUGH-IN CONNECTIONS TO BE COORDINATED IN THE FIELD BY THE PLUMBING CONTRACTOR.
- PROVIDE TRIM PANELS FOR SUPPLY DIFFUSER MOUNTED IN DRYWALL CEILING.
- THE BALANCING OF AIRFLOWS IS TO BE PERFORMED BY A AARC CERTIFIED BALANCING CONTRACTOR ONLY. FINAL AIRFLOW BALANCING REPORT WILL BE MADE AVAILABLE PRIOR TO THE FINAL INSPECTION.
- ALL DOMESTIC WATER PIPING TO BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION.
- BEFORE ANY ROOF WORK IS PERFORMED THE MECHANICAL CONTRACTOR IS TO CONTRACT THE ORIGINAL ROOFING CONTRACTOR TO VERIFY THAT ANY WORK PERFORMED WILL NOT VOID ANT WARRANTIES. ALL ROOF PENETRATION AND/OR REPAIR WORK ON THE ROOF IS TO BE COORDINATED WITH THE LANDLORD'S ROOFING CONTRACTOR SO WORK MAY BE PERFORMED.
- PRIOR TO THE INSTALLATION OF THE ROOFTOP UNITS ON THE ROOF A STRUCTURAL ENGINEER WILL NEED TO SIGN OFF ON THE NEW HVAC EQUIPMENT BEING MOUNTED ON THE EXISTING ROOF.
- ALL COLOR SELECTIONS FOR PLUMBING FIXTURES TO BE MADE BY THE ARCHITECT.
- FIRE STOPPING MATERIAL (NON-COMBUSTIBLE) FOR WALLS, FLOORS AND CEILINGS SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED TO MAINTAIN ANY FIRE SEPERATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL FIRE STOPPING WORK, RESULTING FROM INSTALLATION OF NEW PIPING, DUCTWORK, ETC. THE CONTRACTOR IS RESPONSIBLE FOR FILLING ALL VOIDS IN WALLS, CEILINGS AND FLOORS TO WITHIN 1/2" OF EACH PENETRATION WITH MATERIAL TO MATCH THE ADJACENT SURFACES AND/OR CONSTRUCTION, UNLESS TIGHTER CLEARANCES ARE REQUIRED BY CODE. THE CONTRACTOR SHALL CORRECT ANY DEFICIENCIES PRIOR TO INITIATION OF FIRE STOPPING.
- PRIOR TO ANY PIPING AND/OR DUCTWORK BEING INSTALLED MECHANICAL/PLUMBING CONTRACTOR IS TO COORDINATE ALL WORK WITH THE ELECTRICAL CONTRACTOR TO AVOID ANY NEC VIOLATIONS. ALSO COORDINATE INSTALL WITH EACH OTHER TOO.
- PROVIDE/INSTALL A CLEAR VENTED LOCKABLE COVER FOR ALL THERMOSTATS LOCATED THROUGHOUT THE SPACE.
- DRAWINGS SHALL BE CONSIDERED SCHEMATIC IN NATURE AND SHALL REPRESENT A COMPLETED PROJECT. ACTUAL INSTALLATION AND METHODS OF ACHIEVING A SATISFACTORY AND INTENDED INSTALLATION ARE THE RESPONSIBILITY OF THE CONTRACTOR. LOCATIONS OF EQUIPMENT ARE INTENDED TO SHOW A GENERAL ARRANGEMENT AND INTENDED FUNCTION. COORDINATE WITH ALL CONTRACT DOCUMENTS, OWNER-PROVIDED EQUIPMENT (IF ANY), EQUIPMENT DRAWINGS, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL CONTRACT DOCUMENTS. COORDINATE WITH OTHER TRADES. AS DRAWINGS ARE SCHEMATIC IN NATURE, DO NOT SCALE DRAWINGS. MINOR MODIFICATIONS OF WORK TO COMPLY SHALL BE PROVIDED.
- ALLOWANCES ARE TO BE INCLUDED FOR UNFORSEEN CONDITIONS THAT MAY EFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN THAT ALLOWANCE.
- ALL EXHAUST FAN OUTLETS INCLUDING THE SANITARY VENTS THROUGH THE ROOF MUST BE LOCATED A MINIMUM OF 15'-0" FROM ANY FRESH AIR INTAKES.
- MECHANICAL CONTRACTOR MUST COORDINATE AND INSTALL THE NEW EXHAUST FANS AND OUTDOOR UNITS WITH NEW CURBS AS REQUIRED. ALL PROVISIONS MUST BE MADE TO MAINTAIN A WEATHER TIGHT ROOF. COORDINATE ALL WORK ON THE ROOF WITH THE ORIGINAL/LANDLORD'S ROOFING CONTRACTOR FOR WORK TO BE DONE.
- CONTRACTOR TO PROVIDE/INSTALL BATT INSULATION UP INSIDE ALL NEW ROOF CURBS TO BE INSTALL TO BE NEATLY AND EVENLY INSTALLED MADE WEATHER TIGHT.

**DRAWING NOTES**

- OUTLINE OF EXISTING ROOFTOP UNIT MOUNTED ROOF TO REMAIN.
- OUTLINE OF A EXISTING ROOFTOP UNIT MOUNTED ON ROOF TO REMAIN. REMOVE EXISTING DUCTWORK IN IT'S ENTIRETY BACK TO UNIT CONNECTION INCLUDING AIR DEVICES, ETC. THROUGHOUT SPACE.
- EXISTING AIR DEVICE TO REMAIN. MAINTAIN EXISTING AIRFLOW (TYPICAL).
- EXISTING DUCTWORK SUPPORTED FROM STRUCTURE ABOVE CEILING TO REMAIN.
- OUTLINE OF EXISTING ROOF CURB ON ROOF TO REMAIN.
- REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED AND CAP.
- REMOVE EXISTING AIR DEVICE (TYPICAL).
- RELOCATE EXISTING AIR DEVICE, ALONG WITH EXISTING AIRTITE FITTING WITH DAMPER AND FLEXIBLE DUCTWORK. BALANCE TO 350 CFM.
- REMOVE EXISTING THERMOSTAT AND STOCKPILE FOR REUSE.
- CONTRACTOR TO FIELD VERIFY/LOCATE EXISTING CEILING MOUNTED EXHAUST FAN AND REMOVE. REMOVE ASSOCIATED DUCTWORK UP THROUGH ROOF. COORDINATE THE ROOF PATCHED WORK WITH THE ORIGINAL/LANDLORD'S ROOFING CONTRACTOR TO BE WEATHERTIGHT.
- CONTRACTOR TO FIELD VERIFY/LOCATE EXISTING PLUMBING FIXTURE AND REMOVE, INCLUDING ALL EXISTING DOMESTIC HOT AND COLD WATER PIPES ASSOCIATED WITH THE EXISTING PLUMBING FIXTURE BACK TO ORIGINAL TENANT SPACE AND CAP. REMOVE EXISTING SANITARY VENT PIPE UP TO JUST BELOW THE ROOF LINE OF EXISTING SANITARY VENT THROUGH ROOF AND CAP. ALSO REMOVE EXISTING SANITARY PIPE DOWN JUST BELOW SLAB AND CAP.
- CONTRACTOR TO FIELD VERIFY/LOCATE EXISTING PLUMBING FIXTURE AND REMOVE, INCLUDING ALL EXISTING DOMESTIC HOT WATER PIPE ASSOCIATED WITH THE EXISTING PLUMBING FIXTURE BACK TO ORIGINAL TENANT SPACE AND CAP. REMOVE EXISTING SANITARY VENT THROUGH ROOF AND CAP. ALSO REMOVE EXISTING SANITARY PIPE DOWN JUST BELOW SLAB AND CAP.
- AIR-TITE FITTING WITH DAMPER AND ADHESIVE GASKET. BALANCE TO AIRFLOW INDICATED.



**FLOOR PLAN-DEMOLITION (HVAC/PIPING)**

REVISIONS		DESCRIPTION
1	8/28/15	Permit Review Comments
2	10/6/15	Permit Review Comments-2nd Round
3	10/27/15	Permit Review Comments-3rd Round
	1/11/17	Arizona State ASC Plan Review



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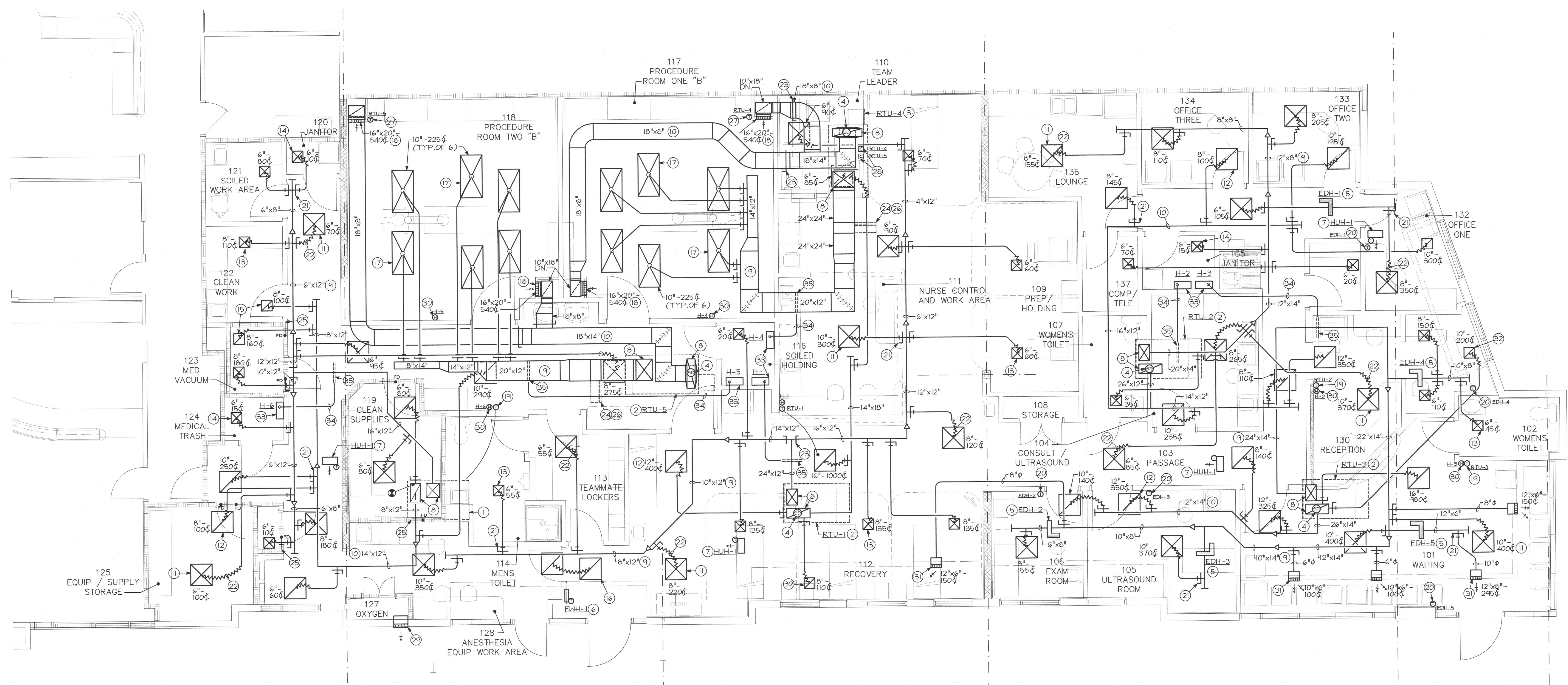
TENANT RENOVATIONS FOR:  
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**IA**

DRAWING NO.  
**M2**

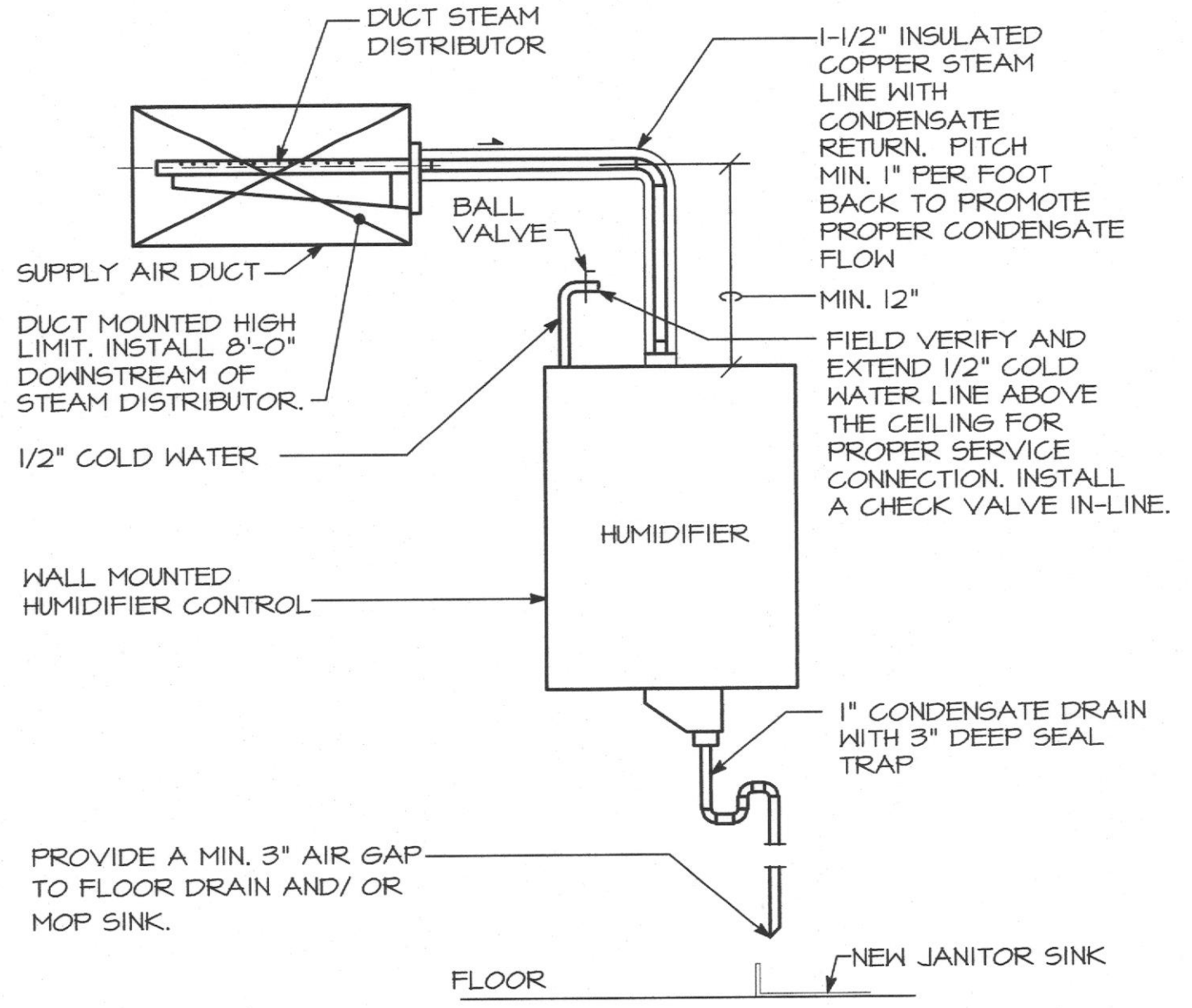
SHEET OF  
DATE DRAWN BY  
7/14/15 DJL  
JOB NUMBER CHECKED BY  
11212



**FLOOR PLAN-EXISTING CONDITIONS/  
NEW WORK (HVAC)**  
SCALE: 1/4"=1'-0"

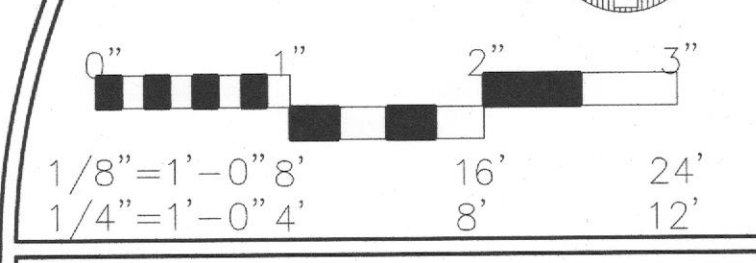
**DRAWING NOTES**

- OUTLINE OF EXISTING ROOFTOP UNIT MOUNTED ROOF CURB TO REMAIN. REBALANCE EXISTING ROOFTOP UNIT TO DELIVER 1,200 CFM SUPPLY AIR AND 160 CFM FRESH AIR INTAKE.
- OUTLINE OF NEW ROOFTOP UNIT MOUNTED ON EXISTING ROOF CURB. PROVIDE/INSTALL A ROOF CURB ADAPTER AS REQUIRED. REFER TO SHEET M3 FOR SIZE AND CAPACITY (TYPICAL).
- OUTLINE OF NEW ROOFTOP UNIT MOUNTED ON ROOF ON NEW ROOF CURB. REFER TO SHEET M3 FOR SIZE AND CAPACITY.
- DUCT MOUNTED SMOKE DETECTOR. SMOKE DETECTOR SHOWN FOR INFORMATION ONLY. COORDINATE LOCATION OR SPECIAL REQUIREMENTS WITH FIRE ALARM VENDOR AND ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR PROVIDE A 12"x12" ACCESS DOOR IN DUCTWORK FOR INSPECTIONS. COORDINATE WITH ELECTRICAL CONTRACTOR. REFER TO SHEET M3 FOR SEQUENCE OF OPERATION.
- DUCT MOUNTED ELECTRIC HEATER SUPPORTED ABOVE CEILING. REFER TO SHEET M3 FOR SIZE AND CAPACITY.
- ELECTRIC WALL MOUNTED HEATER. REFER TO SHEET M3 FOR SIZE AND CAPACITY.
- ELECTRIC HORIZONTAL UNIT HEATER WITH INTEGRAL THERMOSTAT TO BE SUPPORTED ABOVE THE CEILING. REFER TO SHEET M3 FOR SIZE AND CAPACITY (TYPICAL).
- SUPPLY/RETURN AIR DUCTWORK UP TO NEW/EXISTING ROOFTOP UNIT. TRANSITION DUCTWORK AS REQUIRED TO NEW ROOFTOP UNIT'S CONNECTION. PROVIDE FLEXIBLE CONNECTION IN DUCTWORK AT NEW UNIT CONNECTIONS. MAINTAIN EXISTING SMOKE DETECTOR.
- SUPPLY AIR DUCTWORK SUSPENDED FROM STRUCTURE ABOVE CEILING (TYPICAL).
- RETURN AIR DUCTWORK SUSPENDED FROM STRUCTURE ABOVE CEILING (TYPICAL).
- 24"x24" LOUVERED FACE SUPPLY AIR DEVICE MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 24"x24" RETURN AIR GRILLE MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 12"x12" LOUVERED FACE SUPPLY AIR DEVICE MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 12"x12" LOUVERED FACE SUPPLY AIR DEVICE MOUNTED IN DRYWALL CEILING WITH NECK SIZE AND AIR VOLUME INDICATED.
- 12"x12" RETURN AIR GRILLE MOUNTED WITHIN 24"x24" PANEL MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 24"x24" RETURN AIR GRILLE MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH AIR TRANSFER ASSEMBLY WITH FIRE DAMPER. REFER TO SHEET M3 FOR MORE INFORMATION.
- 24"x48" SUPPLY AIR LAMINAR FLOW DIFFUSER MOUNTED WITHIN DRYWALL CEILING WITH NECK SIZE (10"φ) AND AIR VOLUME INDICATED (TYPICAL).
- STAINLESS STEEL RETURN AIR GRILLE MOUNTED ±6" ABOVE FINISHED FLOOR IN WALL WITH NECK SIZE AND AIR VOLUME INDICATED.
- NEW THERMOSTAT TO BE MOUNTED ±48" ABOVE FINISHED FLOOR ON WALL TO CONTROL NEW ROOFTOP UNIT. PROVIDE A CLEAR VENTED LOCKABLE COVER FOR THERMOSTAT.
- HEATING ONLY THERMOSTAT TO BE MOUNTED ±47" ABOVE FINISHED FLOOR ON WALL TO CONTROL DUCT MOUNTED ELECTRIC HEATER. PROVIDE A CLEAR VENTED LOCKABLE COVER FOR THERMOSTAT.
- AIR-TITE FITTING WITH DAMPER AND ADHESIVE GASKET (TYPICAL).
- INSULATED/PLENUM RATED FLEXIBLE DUCTWORK (TYPICAL).
- VOLUME DAMPER (TYPICAL).
- FILTER PULL ACCESS AREA ABOVE THE CEILING FOR FACTORY SUPPLIED FILTER. CLEARLY/NEATLY IDENTIFY ON THE CEILING GRID WITH 1/4" HIGH LETTERS JUST BELOW FILTER.
- INSTALL A FIRE DAMPER IN DUCTWORK ABOVE THE CEILING. REFER TO SHEET M3 FOR DETAIL "HORIZONTAL DUCT FIRE DAMPER DETAIL" FOR MORE INFORMATION. CLEARLY/NEATLY IDENTIFY ON THE CEILING GRID WITH 1/4" HIGH LETTERS JUST BELOW FIRE DAMPER.
- 24"x24"x11 1/2" HEPA FILTER IN A 24"x24" FILTER PULL RACK ABOVE THE CEILING. PROVIDE HIGH CAPACITY FILTER AS MANUFACTURED BY CAMFIL AIR FILTER, FILTRA 2000, (FA 1560-01-01). FILTER SHALL HAVE NO MORE THAN 1.0" PRESSURE DROP. ALSO INCLUDED A MERV 8 CAMFIL 30/30 24"x24"x2" PREFILTER. CLEARLY/NEATLY IDENTIFY ON THE FILTER BOX AND ON THE CEILING GRID WITH 1/4" HIGH LETTERS HEPA FILTER. FILTER RACK WILL HOUSE THE HEPA AND PRE FILTERS AS MANUFACTURED BY CAMFIL, MAGNAPACK 70713202 M/P 4-12 PF 1 x 1. LASTLY PROVIDE/INSTALL PER MANUFACTURER'S RECOMMENDATIONS A DWYER 0-2" GAGE WITH A605 KIT.
- DIGITAL TEMPERATURE/HUMIDITY SENSOR TO BE MOUNTED ON THE WALL ±48" ABOVE FINISHED FLOOR. INTERLOCK WITH THE AAO'S VCMX CONTROLLER LOCATED IN THE ROOFTOP UNIT. HUMIDITY SENSOR TO SERVE AAO'S DEHUMIDIFICATION SYSTEM AND TEMPERATURE SENSOR FOR HEATING/COOLING TEMPERATURE CONTROL. HUMIDITY AND TEMPERATURE READINGS FROM THE PROCEDURE ROOM WILL BE SENT TO AAO'S VCMX CONTROLLER AT THE ROOFTOP UNIT TO BE PROCESSED. THE DIGITAL TEMPERATURE/HUMIDITY SENSOR WILL HAVE A DIGITAL TEMPERATURE READOUT WITH THE CAPABILITIES TO ALLOW A MANUAL 2 DEGREE AIR TEMPERATURE ADJUSTMENT CHANGE WITHIN THE PROCEDURE ROOM.
- THE AAO SYSTEM MANAGER DIGITAL DISPLAY/CONTROLLER TO BE MOUNTED ±48" ABOVE FINISHED FLOOR ON WALL TO CONTROL ROOFTOP UNIT (AAO) UNIT. THE SYSTEM MANAGER WILL TAKE HUMIDITY AND TEMPERATURE READINGS FROM THE VCMX CONTROLLER AS SENSED IN THE PROCEDURE ROOMS. ALL TEMPERATURE AND HUMIDITY SETPOINTS WILL BE SET FROM THE SYSTEM MANAGER.
- PROVIDE BRICK VENT VENTILATION LOUVER AS MANUFACTURER BY COOK, MODEL BVI (16 1/2" x 4 3/4") IN EXTERIOR WALL WITH FULL SIZE PLENUM EXTENSION THROUGH THE WALL WITH OPEN DUCT AND 1/2"x1/2" WIRE MESH SCREEN OVER OPENING. MOUNT ONE LOW AT 6" ABOVE FINISHED FLOOR AND ONE HIGH 6" FROM THE CEILING.
- HUMIDISTAT THERMOSTAT TO BE MOUNTED ±48" ABOVE FINISHED FLOOR TO CONTROL HUMIDIFIER. PROVIDE A CLEAR VENTED LOCKABLE COVER FOR HUMIDISTAT. CLEARLY/NEATLY IDENTIFY ABOVE THE HUMIDISTAT WITH 1/4" HIGH LETTERS "HUMIDISTAT TO BE FULLY OPERATIONAL DURING THE WINTER/NON OPERATIONAL DURING THE SUMMER".
- SUPPLY AIR REGISTER MOUNTED UP INSIDE OF BULKHEAD WALL WITH FULL SIZE PLENUM BOX EXTENSION AND NECK SIZE AND AIR VOLUME INDICATED. DEFLECT THE AIRFLOW 45° DOWN.
- 12"x12" RETURN AIR GRILLE MOUNTED UP WITHIN BULKHEAD CEILING WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- WALL MOUNTED HUMIDIFIER. MOUNT AS HIGH AS POSSIBLE ON WALL JUST BELOW THE CEILING. REFER TO SHEET M3 FOR SIZE AND CAPACITY AND DETAIL ON THIS SHEET FOR MORE INFORMATION (TYPICAL).
- SUPPORT 1 1/2" COPPER STEAM/CONDENSATE RETURN LINE ABOVE CEILING.
- DUCT MOUNTED STEAM DISTRIBUTOR. REFER TO DETAIL ON SHEET M3 FOR MORE INFORMATION.



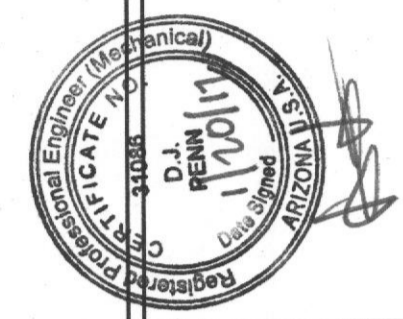
**HUMIDIFIER DETAIL**  
NO SCALE

- NOTES:
- HUMIDIFIER TO BE PROVIDED WITH AN AIR PROOFING SWITCH AND HIGH LIMIT HUMIDISTAT SENSOR.
  - CONTRACTOR TO REFER TO THE MANUFACTURER'S INSTALLATION MANUAL FOR PROPER CONDENSATE RETURN.
  - HUMIDISTAT TO BE PROVIDED WITH HUMIDIFIER FROM MANUFACTURER.
  - MAXIMUM DISTANCE FROM THE DUCT MOUNTED MANIFOLD TO THE WALL MOUNTED HUMIDIFIER IS 2'-0".
  - \*5. FROM APRIL THROUGH OCTOBER THE HUMIDIFIER IS TO BE TURN OFF AND FROM OCTOBER TO APRIL THE HUMIDIFIER IS TO BE TURN ON.

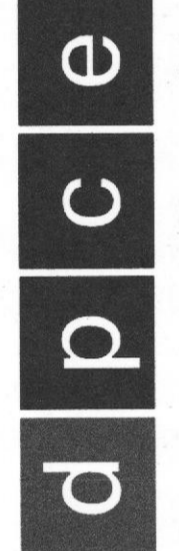


**FLOOR PLAN-NEW WORK (HVAC)**

REVISIONS		
REV#	DATE	DESCRIPTION
1	8/28/15	Permit Review Comments
2	10/6/15	Permit Review Comments-2nd Round
3	10/27/15	Permit Review Comments-3rd Round
1	11/17	Arizona State ASC Plan Review



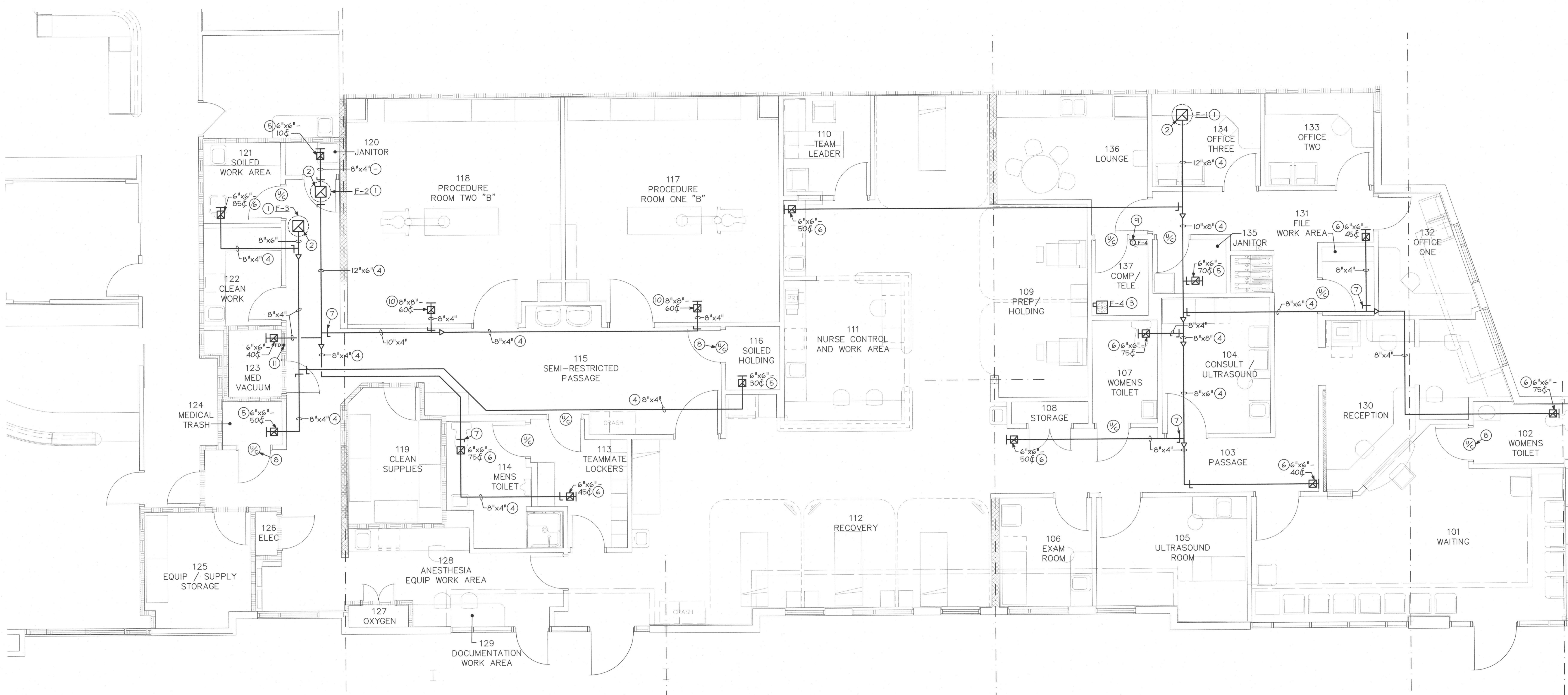
655 Westport Parkway  
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don penn - consulting engineer

TENANT RENOVATIONS FOR:  
LIFELINE  
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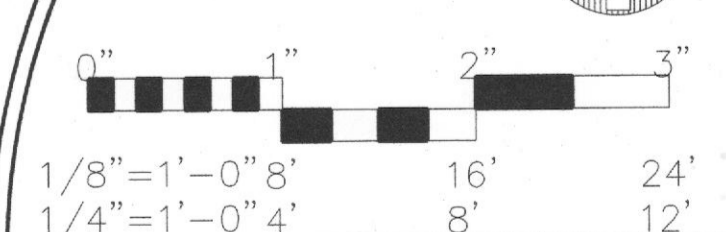
InSync  
ARCHITECTURAL DESIGNS, INC.  
1213 Old Pylesville Road Whiteford, MD 21160  
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**FLOOR PLAN-EXISTING CONDITIONS/  
NEW WORK (EXHAUST)**  
SCALE: 1/4"=1'-0"

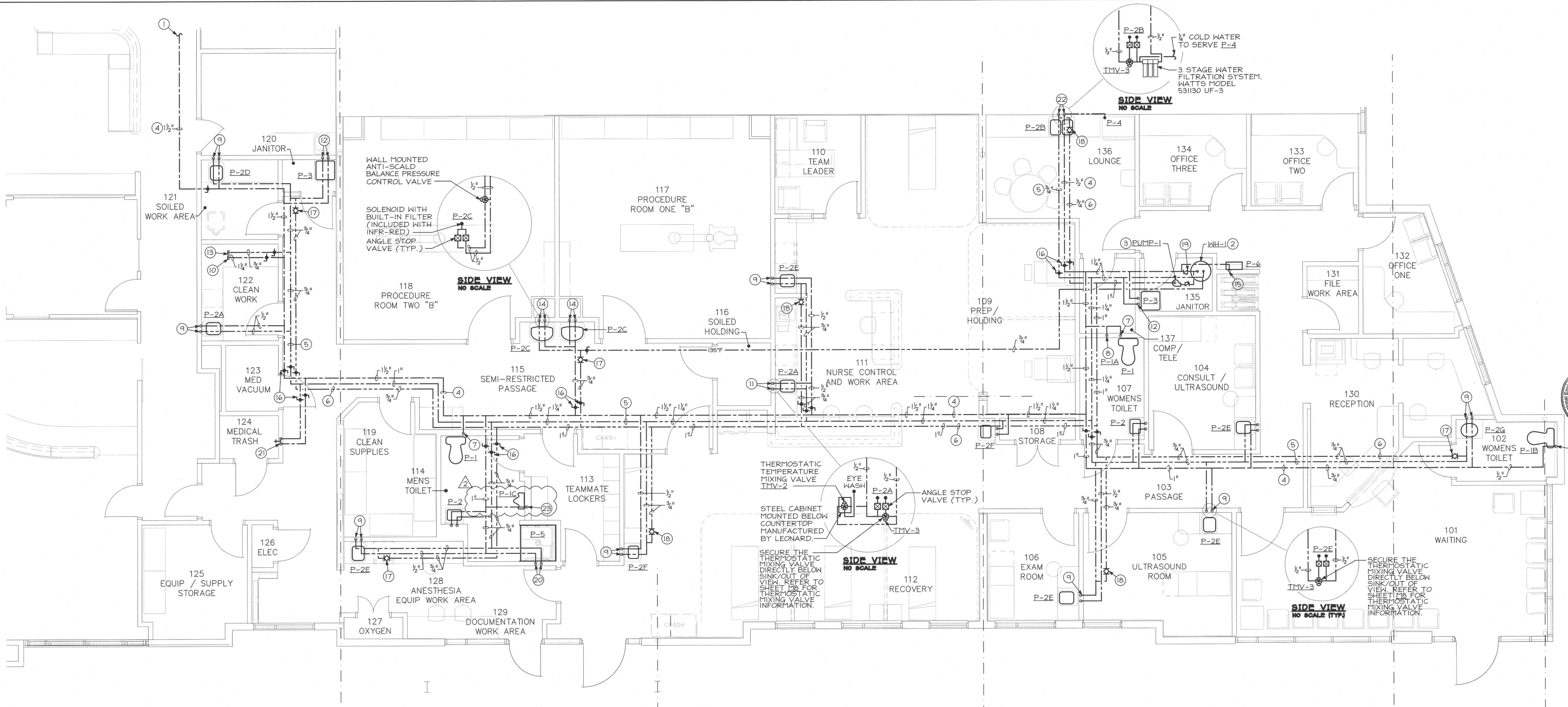
**DRAWING NOTES**

- 1 OUTLINE OF EXHAUST FAN MOUNTED ON ROOF. REFER TO SHEET M8 FOR SIZE AND CAPACITY. PRIOR TO INSTALLING THE ROOF MOUNTED EXHAUST FAN THE MECHANICAL CONTRACTOR MUST COORDINATE THE EXACT MOUNTING LOCATION WITH THE BUILDING OWNER.
- 2 EXTEND A 14"x14" EXHAUST AIR DUCTWORK PLENUM BOX DOWN ±36" BELOW ROOF LINE AND UP THROUGH EXISTING ROOF TO ROOF MOUNTED EXHAUST FAN. TRANSITION DUCTWORK AS REQUIRED TO UNIT'S CONNECTION. PROVIDE FLEXIBLE CONNECTION AT DUCTWORK CONNECTION TO UNIT.
- 3 CEILING MOUNTED VENTILATION FAN SUPPORTED FROM STRUCTURE ABOVE. DISCHARGE INTO PLENUM. REFER TO SHEET M8 FOR SIZE AND CAPACITY.
- 4 EXHAUST AIR DUCTWORK SUPPORTED ABOVE THE CEILING/TIGHT TO STRUCTURE (TYPICAL).
- 5 EXHAUST AIR GRILLE MOUNTED IN DRYWALL CEILING WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 6 EXHAUST AIR GRILLE MOUNTED WITHIN ACOUSTICAL CEILING TILE WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 7 VOLUME DAMPER (TYPICAL).
- 8 1" DOOR UNDERCUT BY OTHERS (TYPICAL).
- 9 REVERSE ACTING THERMOSTAT TO BE MOUNTED ±48" ABOVE FINISHED FLOOR ON WALL TO CONTROL VENTILATION FAN.
- 10 STAINLESS STEEL EXHAUST AIR GRILLE MOUNTED IN DRYWALL CEILING WITH NECK SIZE AND AIR VOLUME INDICATED.
- 11 INSTALL A FIRE DAMPER IN DUCTWORK ABOVE THE CEILING. REFER TO SHEET M17 FOR DETAIL "HORIZONTAL DUCT FIRE DAMPER DETAIL" FOR MORE INFORMATION. CLEARLY/NEATLY IDENTIFY ON THE CEILING GRID WITH 1/4" HIGH LETTERS JUST BELOW FIRE DAMPER.



**FLOOR PLAN-NEW WORK (EXHAUST)**

REVISIONS		DRAWING NO. M3
REV#	DESCRIPTION	
1	8/28/15 Permit Review Comments	SHEET DATE 7/14/15 DRAWN BY DJL JOB NUMBER CHECKED BY 11212 DJL
2	10/6/15 Permit Review Comments-2nd Round	
3	10/27/15 Permit Review Comments-3rd Round	
	1/11/17 Arizona State ASC Plan Review	



**FLOOR PLAN-EXISTING CONDITIONS/  
NEW WORK (PIPING)**  
SCALE: 1/4"=1'-0"

**DRAWING NOTES**

- ① CONTRACTOR TO FIELD VERIFY/LOCATE EXISTING SERVICE WATER ROOM/ EXISTING WATER METER AND EXTEND 1/2" DOMESTIC COLD WATER PIPE FOR PROPER CONNECTION TO CAPPED TENANT DOMESTIC WATER PIPE. COORDINATE NEW PIPE ROUTING AND PIPE CONNECTION WITH THE LANDLORD PRIOR TO INSTALL.
- ② 52 GALLON ELECTRIC WATER HEATER MOUNTED ON FLOOR. REFER TO DETAIL ON SHEET 116 FOR PIPING AND MOUNTING DETAIL. ALSO REFER TO SHEET 118 FOR SIZE AND CAPACITY.
- ③ HOT WATER RECIRCULATION IN-LINE PUMP, PROVIDE AND INSTALL FROM STRUCTURE ABOVE AS MANUFACTURED BY TACO, MODEL #0011-BF4 WITH 6.0 GPM FLOW AT 3,250 RPM, 1/8 HP, 115V/1Ø WITH ALL BRONZE CONSTRUCTION.
- ④ DOMESTIC COLD WATER PIPING SUPPORTED ABOVE CEILING (TYPICAL).
- ⑤ DOMESTIC HOT WATER PIPING SUPPORTED ABOVE CEILING (TYPICAL).
- ⑥ DOMESTIC HOT WATER RECIRCULATION PIPING SUPPORTED ABOVE CEILING (TYPICAL).
- ⑦ 1/2" DOMESTIC COLD WATER PIPING DOWN IN WALL TO SERVE TOILET P-1 (TYPICAL).
- ⑧ 1/2" DOMESTIC COLD WATER PIPING DOWN IN WALL TO SERVE P-1A. PRIOR TO INSTALLATION COORDINATE EXACT LOCATION WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD. CONTRACTOR TO STUB PLUMBING FIXTURE P-1A THROUGH WALL AS REQUIRED AND SUPPLY SPRAY NOZZLE TO THE OWNER SEPARATELY AFTER THE PUNCH OUT DONE BY THE ARCHITECT.
- ⑨ 1/2" DOMESTIC HOT AND COLD WATER PIPING DOWN IN WALL TO SERVE SINK WITH POINT OF USE THERMOSTATIC MIXING VALVE ITMV-1. REFER TO SHEET 118 BELOW PLUMBING FIXTURE SCHEDULE FOR MANUFACTURED/MODEL (TYPICAL).
- ⑩ 1" DOMESTIC COLD WATER PIPE CAPPED ABOVE CEILING FOR FUTURE CLINIC SERVICE SINK AND WALL MOUNTED FAUCET.
- ⑪ EXTEND 1/2" DOMESTIC HOT AND COLD WATER LINE DOWN IN WALL TO SERVE P-2A NURSE WORK SINK. INSTALL A THERMOSTATIC TEMPERATURE CONTROLLER BELOW COUNTERTOP ITMV-2. REFER TO SHEET 118 BELOW PLUMBING FIXTURE SCHEDULE FOR MANUFACTURED/MODEL. PROVIDE TEMPERATURE CONTROLLER WITH FACTORY OPTION STEEL CABINET WITH COVER MOUNTED ON WALL BELOW SINK.
- ⑫ 3/4" DOMESTIC HOT AND COLD WATER PIPINGS DOWN IN WALL TO SERVE P-3 MOP SINK.
- ⑬ 3/4" DOMESTIC HOT WATER PIPE CAPPED ABOVE CEILING FOR FUTURE WALL MOUNTED FAUCET.
- ⑭ EXTEND 1/2" DOMESTIC HOT AND COLD WATER PIPING WITHIN WALL TO SERVE P-2C SCRUB SINK. INSTALL A BRADLEY, MODEL #559-2005 BALANCED PRESSURE VALVE, ANTI-SCALD BALANCED PRESSURE VALVE, MOUNTED ON WALL 4" ABOVE SCRUB SINK ON THE RIGHT HAND SIDE OF THE SINK. WALL MOUNTED ANTI-SCALD BALANCED PRESSURE VALVE TO WORK IN CONJUNCTION WITH INFRA-RED GOOSENECK FAUCET. REFER TO SHEET 118 FOR MORE INFORMATION.
- ⑮ 1/2" DOMESTIC COLD WATER PIPE DOWN IN WALL TO P-6 WATER FOUNTAIN.
- ⑯ BALL VALVE (TYPICAL).
- ⑰ BALANCING VALVE. BALANCE AT 1.0 GPM.
- ⑱ BALANCING VALVE. BALANCE AT 0.5 GPM.
- ⑲ CHECK VALVE (TYPICAL).
- ⑳ 1/2" DOMESTIC HOT AND COLD WATER PIPING DOWN IN WALL TO P-5 SHOWER SHOWER BALANCING VALVE.
- ㉑ 1/2" DOMESTIC HOT AND COLD WATER PIPING DOWN WITHIN WALL TO SERVE FAUCET #8344.112 WITH TOP BRACE, STOPS, 10-1/2" SPOUT, 3/4" HOSE THREAD ON SPOUT, INTEGRAL VACUUM BREAKER, AND ADJUSTABLE UNION COUPLINGS AS MANUFACTURED BY AMERICAN STANDARD. MOUNT SERVICE FAUCET ON WALL 43'-0" ABOVE FINISHED FLOOR.
- ㉒ 1/2" DOMESTIC HOT AND COLD WATER PIPING DOWN IN WALL TO SERVE SINK WITH FILTRATION SYSTEM AND POINT OF USE THERMOSTATIC MIXING VALVE ITMV-3. REFER TO SHEET 118 BELOW PLUMBING FIXTURE SCHEDULE FOR MANUFACTURED/MODEL OF ITMV-3. BRANCH 1/2" DOMESTIC COLD WATER PIPING DOWN WITHIN WALL TO SERVE P-4 REFRIGERATOR ICE MAKER VALVE BOX.
- ㉓ 3/4" COLD WATER PIPE DOWN IN WALL TO SERVE URINAL.

**WATER CALCULATIONS**

ADDED FIXTURE UNITS THIS T.I.  
 3 LAV 2 FU = 6  
 3 WC (FLUSH TANK) 5 FU = 15  
 1 URINAL 5 FU = 5  
 1 DF .25 FU = .25  
 12 SINK 7 FU = 8.4  
 2 MS 3 FU = 6  
 1 SHOWER 1.4 FU = 1.4

TOTAL ADDED FIXTURE UNITS = 42.05 FIXTURE UNITS  
 EXISTING FIXTURE UNITS THIS BUILDING = 75.5  
 TOTAL FIXTURE UNITS = 117.55 @ 47 GPM  
 EXISTING 1-1/2" WATER METER @ MAXIMUM 80 GPM  
 DISTANCE FROM MAIN TO FURTHEST FIXTURE = 240'  
 EQUIVALENT LENGTH = 240' x 1.20 = 288'

APPROX. MAIN PRESSURE = 60 PSI  
 FIXTURE MIN. = 20 PSI  
 ELEV. 10 x 43 = 4.3 PSI  
 METER DROP = 5 PSI  
 RPPB = 8 PSI

SYSTEM DROP = 37.3 PSI  
 (MAIN PRESSURE 60 PSI) - (SYSTEM DROP 37.3 PSI) = 22.7 PSI  
 22.7 PSI / 288 FT x 100 = 7 PSI/100' FOR FRICTION LOSS

PIPE SIZING CHART	TANK
1/2" = 3 GPM	3 FU
3/4" = 8 GPM	10 FU
1" = 18 GPM	26 FU
1 1/4" = 32 GPM	58 FU
1 1/2" = 48 GPM	119 FU

NOTE: PIPE SIZING CHART SIZED WITH 2012 IPC FIGURE E103.(5) @ 8 PSI/100' FOR FRICTION LOSS AND TABLE E103.3(3) FLUSH TANKS

REVISIONS

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DRAWING NO. M4 OF 4  
 SHEET 11 OF 11  
 DATE 7/14/15  
 JOB NUMBER CHECKED BY DLJ

ISSUED FOR ARIZONA  
STATE ASC PLAN REVIEW

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**d p c e**  
don perm - consulting engineer

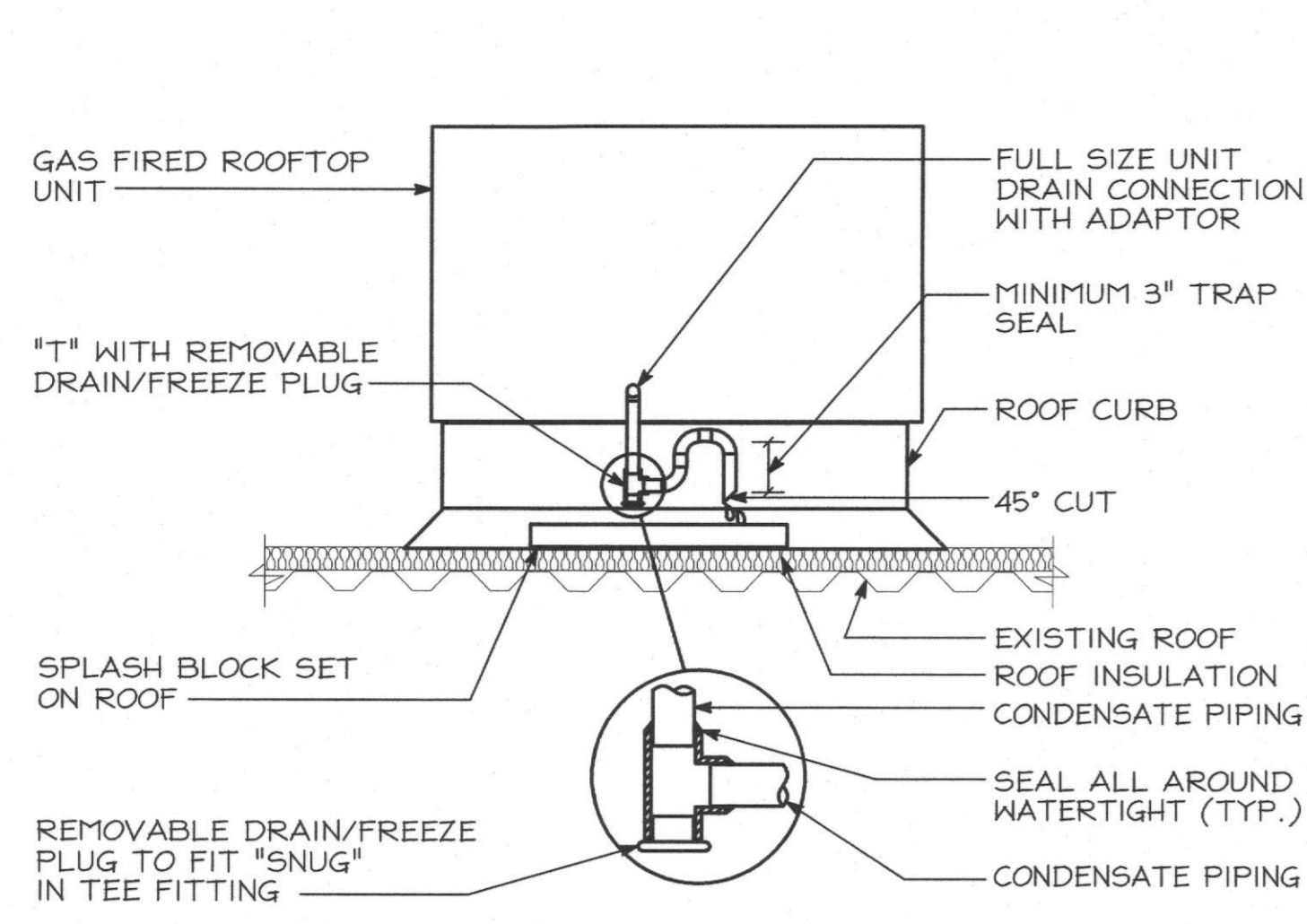
TENANT RENOVATIONS FOR:  
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7362 W. Thunderbird Rd., Ste 103  
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1215 Old Peville Road Whiteford, MD 21160  
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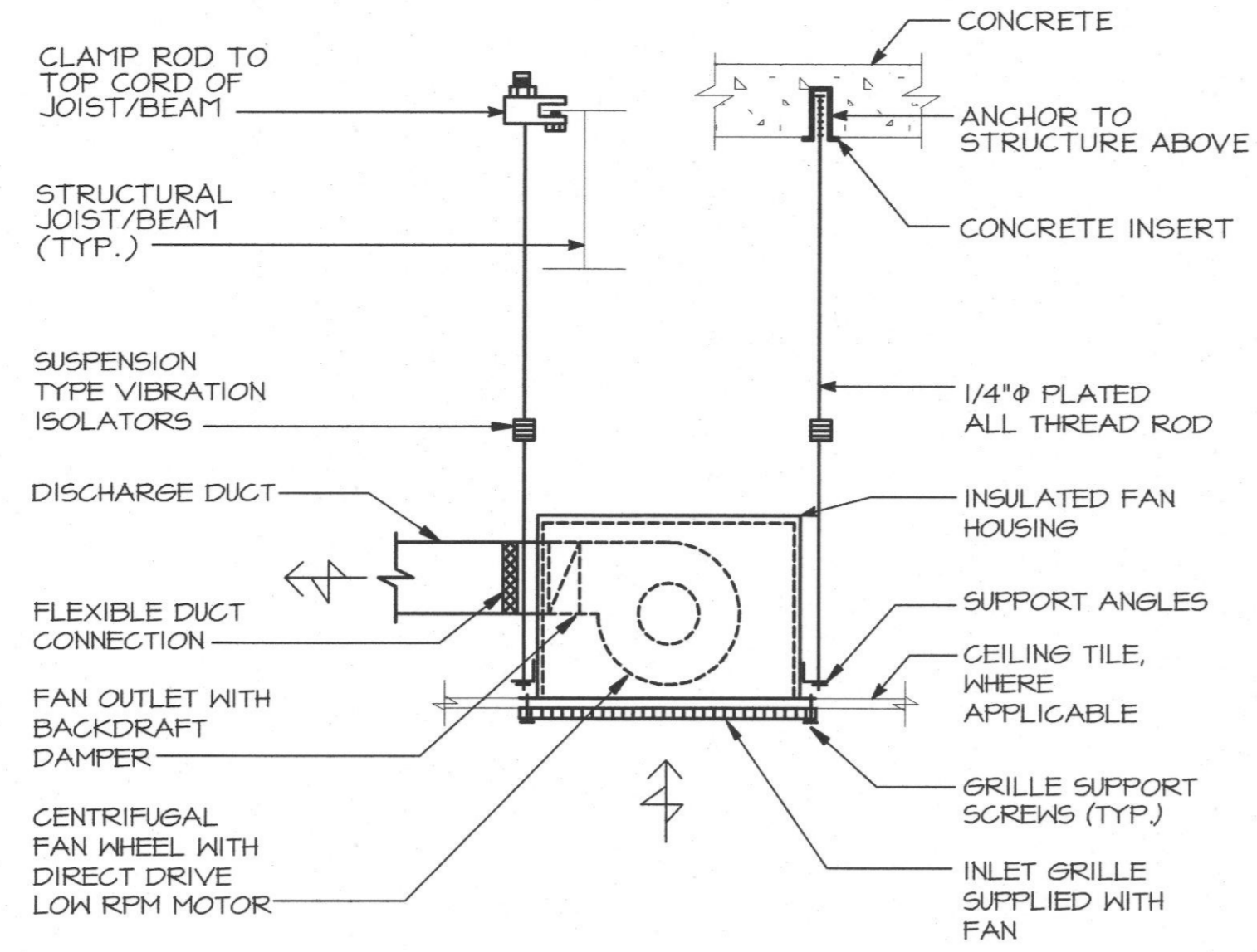
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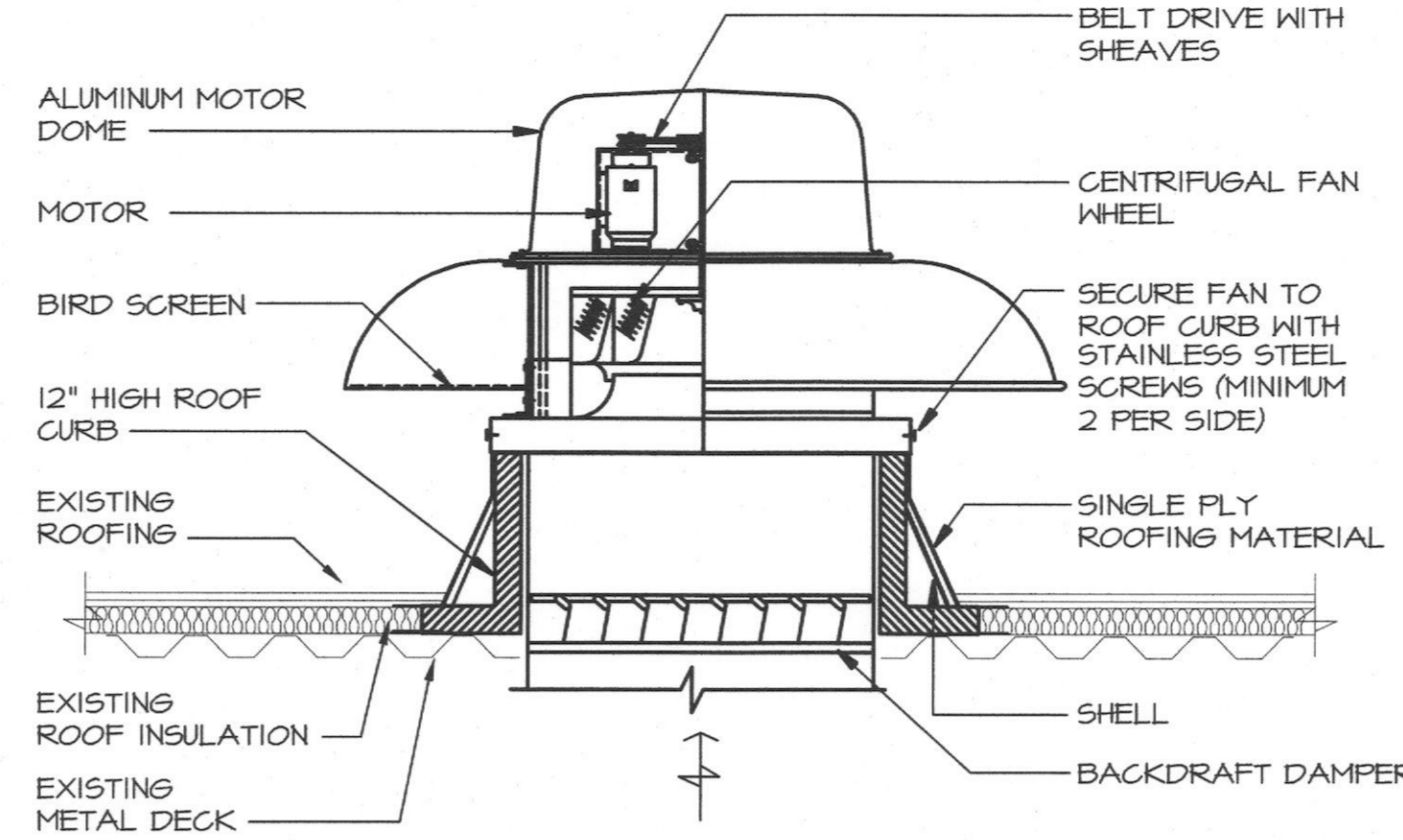




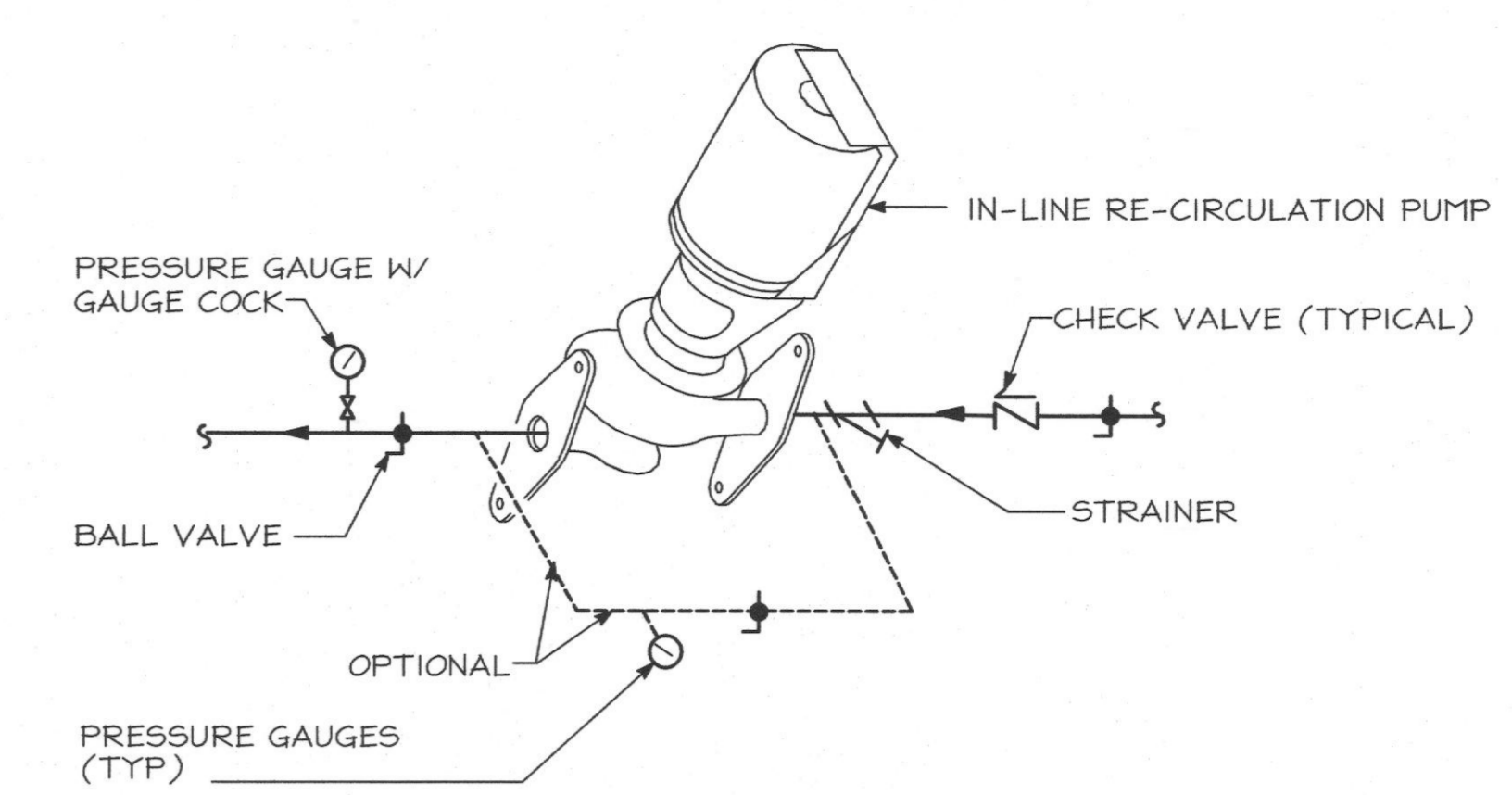
**ROOFTOP UNIT CONDENSATE TRAP DETAIL**  
NO SCALE



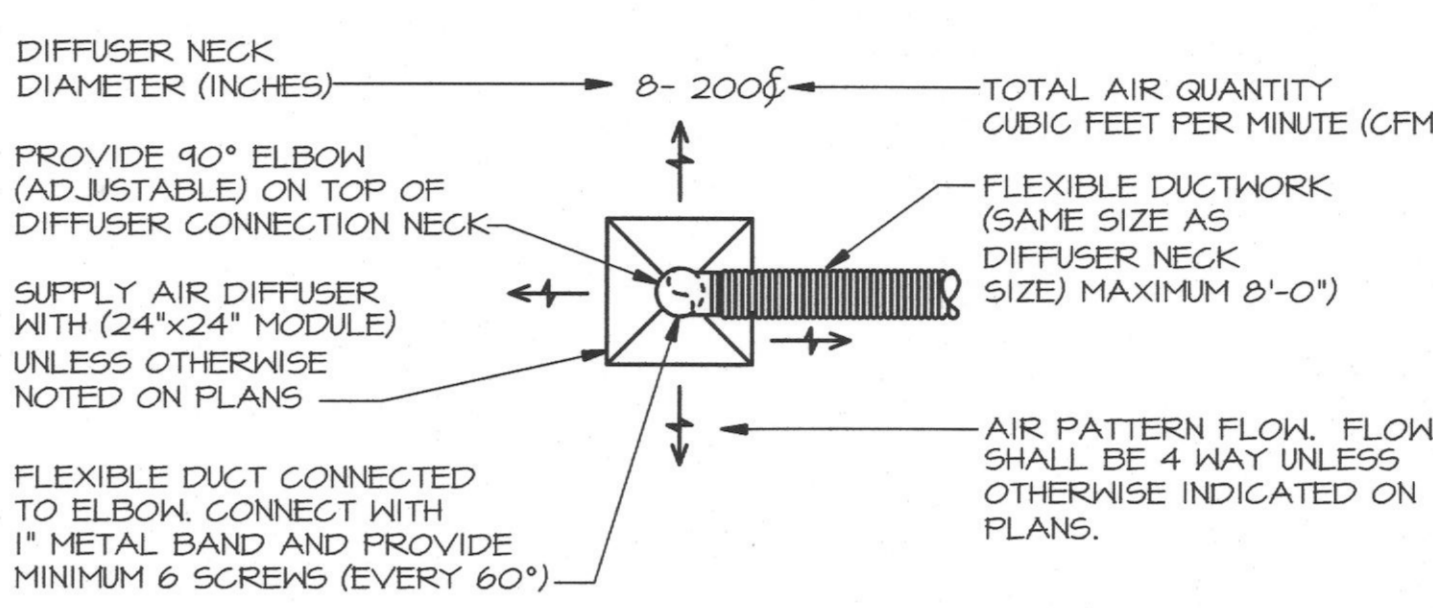
**CEILING MOUNTED EXHAUST FAN DETAIL**  
NO SCALE



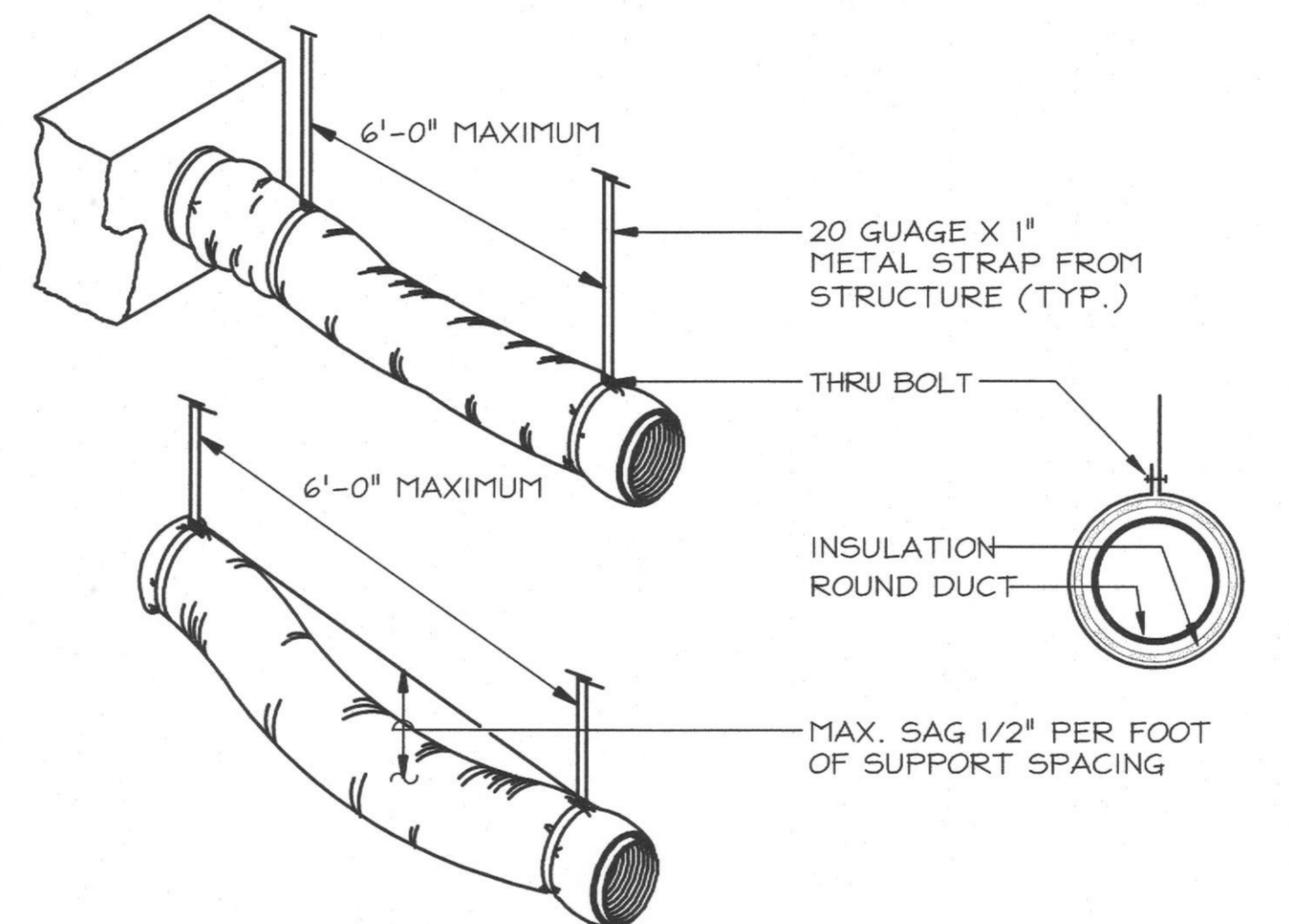
**ROOF MOUNTED EXHAUST FAN DETAIL**  
NO SCALE



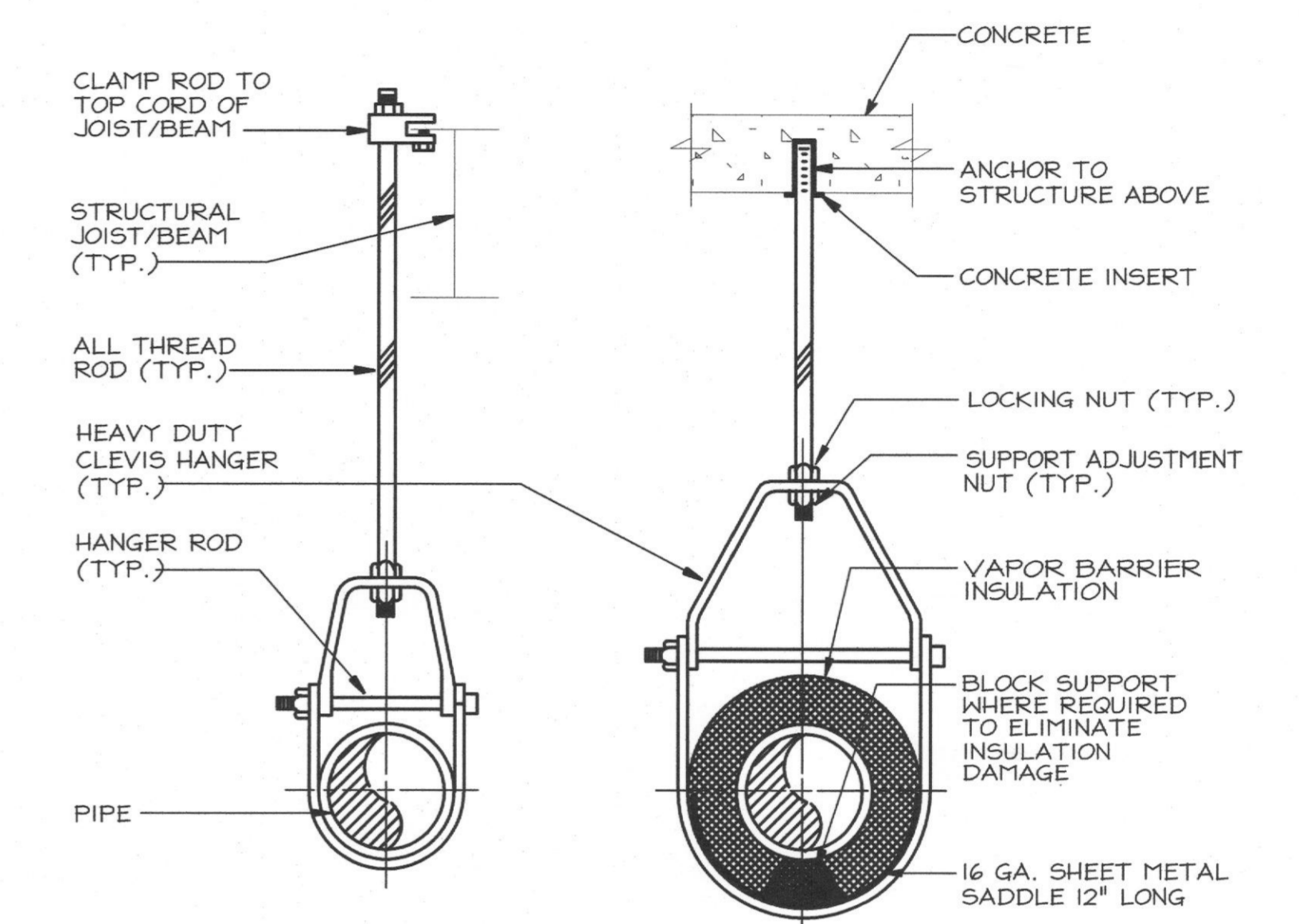
**IN-LINE RE-CIRCULATING PUMP PIPING**  
NO SCALE



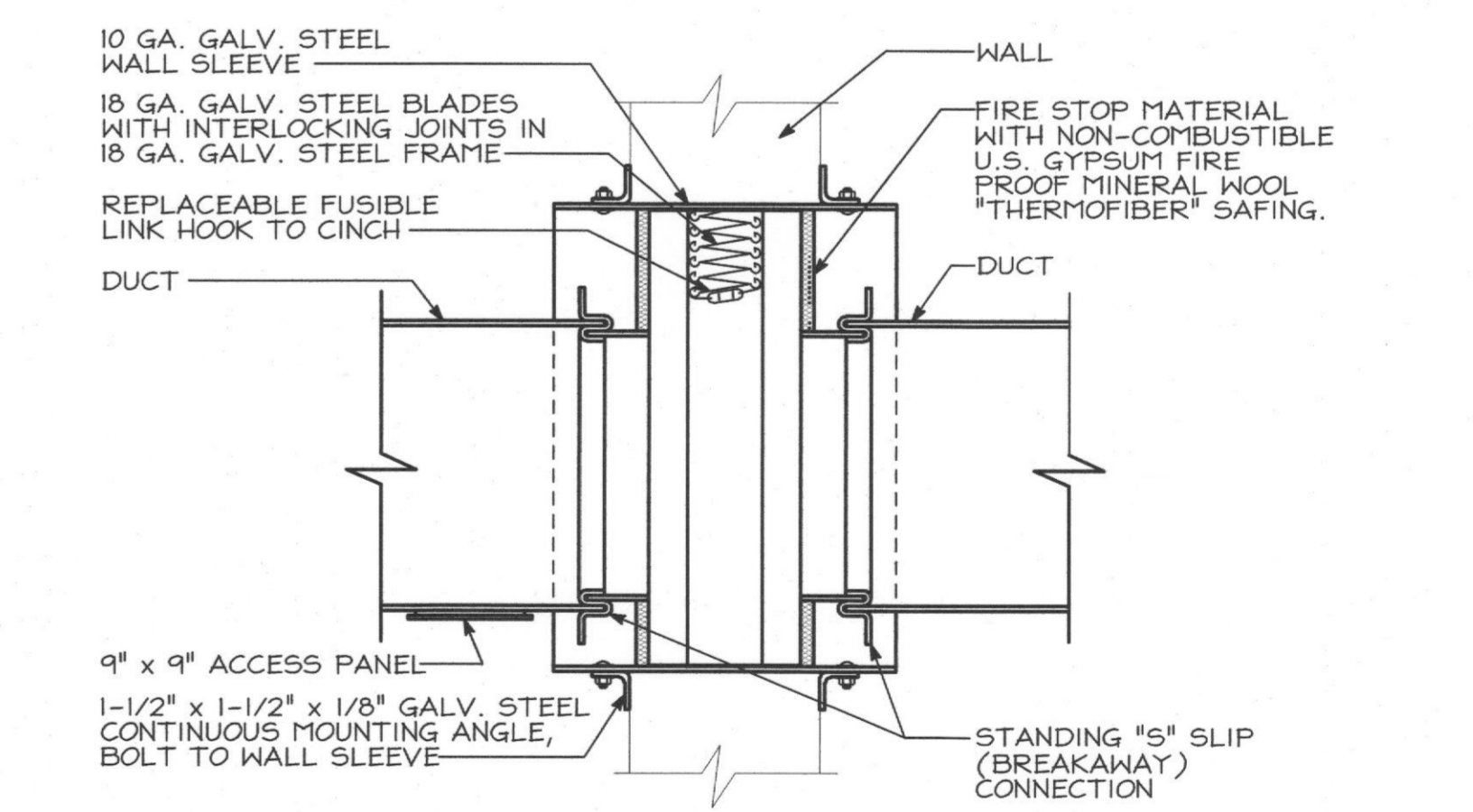
**SUPPLY AIR DIFFUSER KEY**  
NO SCALE



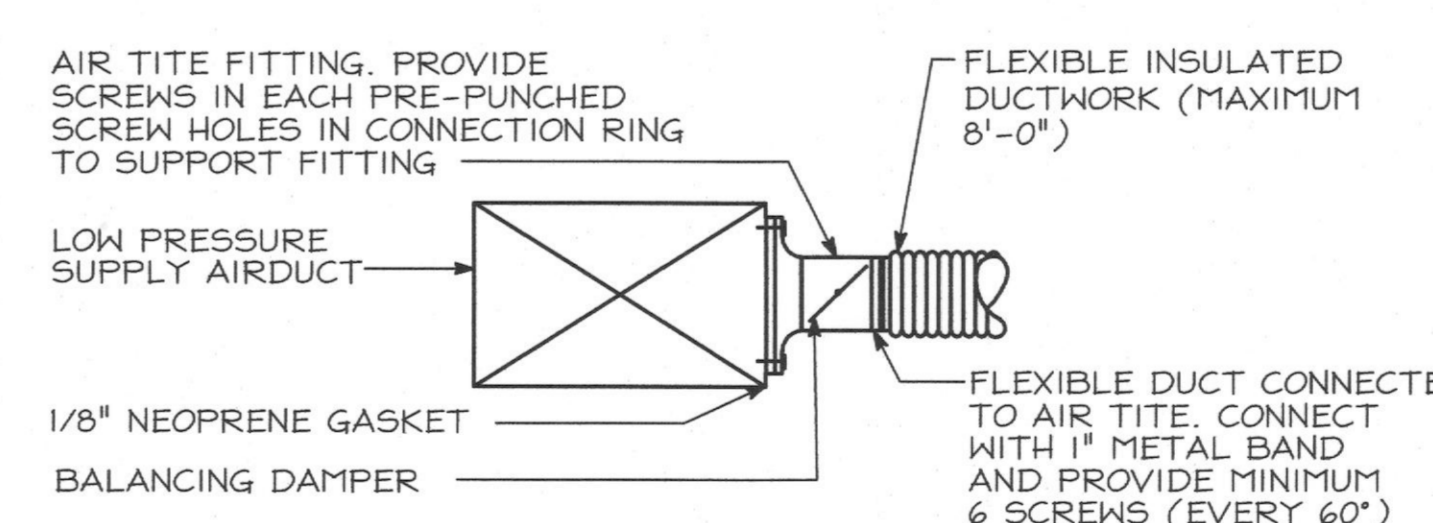
**FLEXIBLE DUCT RUN-OUT SUPPORT DETAIL**  
NO SCALE



**PIPE SUPPORT DETAIL**  
NO SCALE



**HORIZONTAL DUCT FIRE DAMPER DETAIL**  
NO SCALE



**AIR TITE FITTING DETAIL**  
NO SCALE

AIR TITE SIZE CHART			
DUCT SIZE	CONNECTION RING	DUCT SIZE	CONNECTION RING
5"	8"	9"	12"
6"	9"	10"	13"
7"	10"	11"	14"
8"	11"	12"	15"

NOTE:  
1) WHERE CONNECTION RING SIZE IS LARGER THAN SUPPLY DUCT, THEN CONNECTION RING SHALL BE CRIMPED OVER DUCT AND CONNECTED, SCREWED AND SEALED ON TOP AND BOTTOM OF SUPPLY DUCT.

REQUIRED VENTILATION Per IMC 2012, Table 403.3

VENTILATION AIR SCHEDULE														
Room	Description	Area (ft <sup>2</sup> )	Area Outdoor Air Rate per IMC Table 403.3 (Ra)	Area Outdoor Air (RaAz)	Occupant Load per IMC Table 403.3 (People/1000 ft <sup>2</sup> )	Occupancy C x F/1000 (Fz)	Occupant Load Rate per IMC Table 403.3 (RpPz)	Breathing Zone Outdoor Air (Vbz-RpPz)	Zone Air Distribution Effectiveness (Ez)	Zone Outdoor Air (Voz-Vbz-Ez)	Supply Air Design (Vpz)	Outdoor Air Fraction (Zp=Voz/Vpz)	Outdoor Air Fraction (Zp=Voz/Vpz)	
RTU-1	110	TEAM LEADER	72	0.06	4.3	5	.36	5	1.8	6.1	0.8	7.6	90	.08
111	NURSE WORK AREA	180	0.06	10.8	5	.9	5	4.5	15.3	0.8	19.1	300	.06	
128	ANESTHESIA WORK AREA	225	0.06	13.5	5	1.2	5	6	19.5	0.8	24.3	350	.07	
109	PREP/HOLDING	540	-	-	20	10.8	15	162	-	-	-	-	-	
112	RECOVERY	450	-	-	20	9	15	135	-	-	-	-	-	
130	RECEPTION	122	0.06	7.2	30	3.6	5	18.3	25.5	0.8	31.8	370	.09	
132	OFFICE	94	0.06	5.6	5	.47	5	2.3	7.9	0.8	10	350	.03	
136	LOUNGE	150	0.06	9	50	7.5	5	37.5	46.5	0.8	58	155	.38	
103	PASSAGE	370	0.06	22.2	-	-	-	-	-	-	-	190	-	
134	OFFICE	85	0.06	5.1	5	.42	5	2.1	7.2	0.8	9	205	.04	
133	OFFICE	85	0.06	5.1	5	.42	5	2.1	7.2	0.8	9	205	.04	
104	CONSULT/ULTRASOUND	125	0.06	7.5	5	.63	5	3.1	10.6	0.8	13.3	265	.05	
101	WAITING	340	0.06	20	30	9.7	5	48.6	68.6	0.8	85.7	1445	.06	
RTU-2	-	SM. OFFICE	60	0.06	3.6	5	.30	5	1.5	5.1	0.8	6.3	260	.02
105	ULTRASOUND	140	0.06	8.4	5	.70	5	3.5	11.9	0.8	14.8	370	.04	
106	EXAM ROOM	90	0.06	5.4	5	.45	5	2.2	7.6	0.8	9.5	155	.06	
EX-RTU	122	CLEAN WORK	63	0.06	3.8	5	.32	5	1.6	5.4	0.8	6.7	100	.07
121	SOILED WORK	50	0.06	3.0	5	.25	5	1.3	4.3	0.8	5.3	80	.07	
115	SEMI-RESTRI'D PASSAGE	295	0.06	17.7	5	1.5	5	7.5	25.2	0.8	31.5	370	.09	

**ROOFTOP UNIT #1**  
\*Occupant Diversity\*  
D=Ps/\_ all zones Pz  
D=3/2.46  
D=1.2  
\*Uncorrected O.A.\*  
Vou=D\_ all zones RpPz+ all zones RaAz  
132=1.2 x 12.3 + 40.9

Vot=Vou/Ev  
Vot=63/.8  
Total Required Outdoor Air 75 cfm  
+ 264 cfm  
Thru the unit Actual O.A. 330 cfm  
Percentage of Outdoor Air 18%

PREP HOLDING AND RECOVERY AREAS "OUTSIDE AIR" REQUIREMENTS FROM ASHRAE'S Ventilation of Health Care Facilities.  
AS FOLLOWS: PREP HOLDING = 2 AIR CHGS PER HR.  
= 4,320 cuf ft x 2 ac = 144 cfm  
60 min  
RECOVERY AREA = 2 AIR CHGS PER HR.  
= 3,600 cuf ft x 2 ac = 120 cfm  
60 min

**ROOFTOP UNIT #2**  
\*Occupant Diversity\*  
D=Ps/\_ all zones Pz  
D=10/13.04  
D=.77  
\*Uncorrected O.A.\*  
Vou=D\_ all zones RpPz+ all zones RaAz  
132=.77 x 65.4 + 104.9

Vot=Vou/Ev  
Vot=132/.8  
Total Required Outdoor Air 165 cfm  
Thru the unit Actual O.A. 280 cfm  
Percentage of Outdoor Air 16%

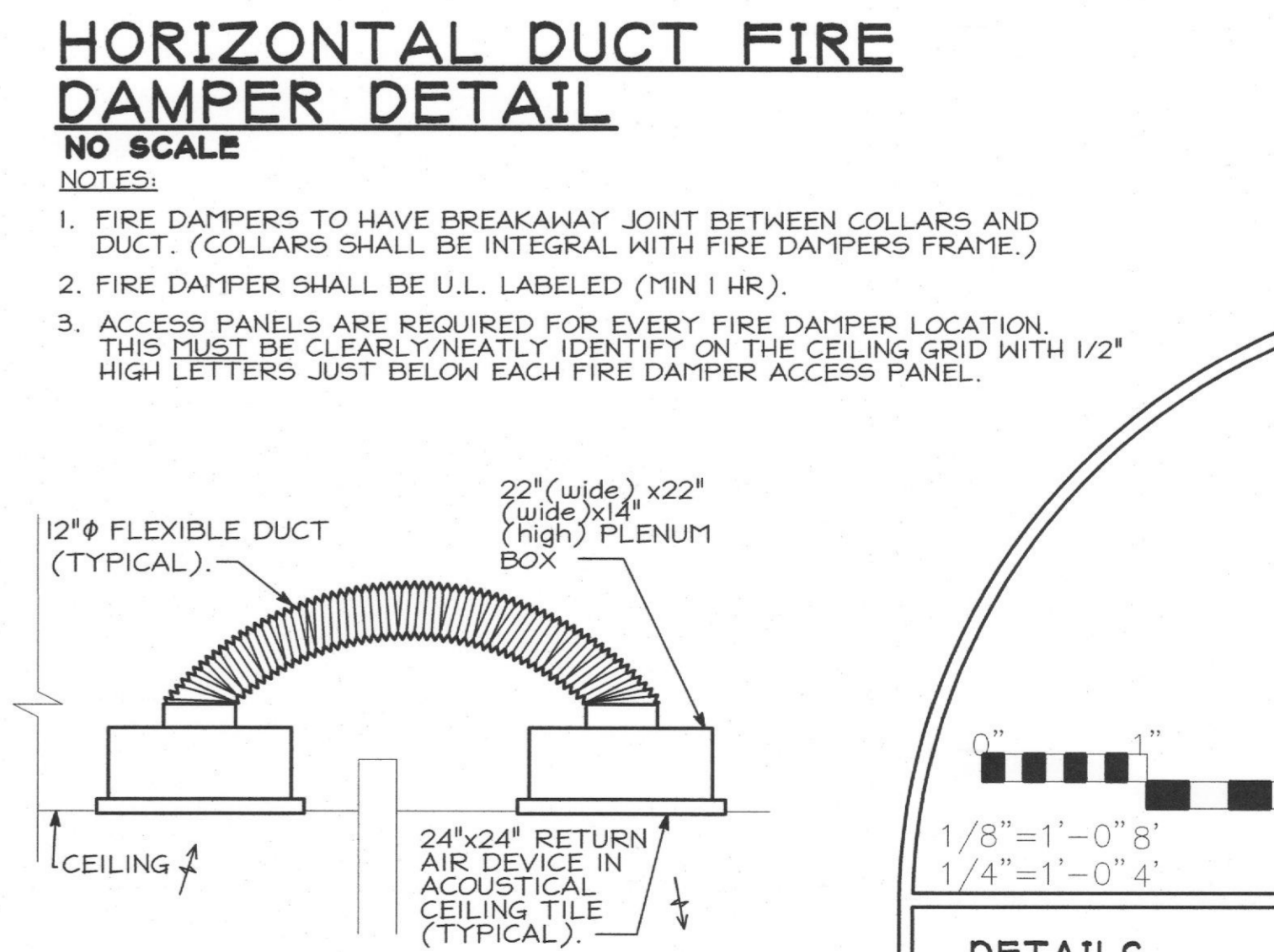
**ROOFTOP UNIT #4 & #5**  
PROCEDURE ROOMS "OUTSIDE AIR" REQUIREMENTS FROM ASHRAE'S Ventilation of Health Care Facilities AS FOLLOWS:  
PROCEDURE ROOM ONE B = 4 AIR CHGS PER HR.  
= 3,600 cuf ft x 4 ac = 240 cfm  
60 min  
PROCEDURE ROOM TWO B = 4 AIR CHGS PER HR.  
= 3,600 cuf ft x 4 ac = 240 cfm  
60 min  
ACTUAL FRESH AIR FOR EACH 15 270 CFM

**ROOFTOP UNIT #3**  
\*Occupant Diversity\*  
D=Ps/\_ all zones Pz  
D=17/11.15  
D=1.5  
\*Uncorrected O.A.\*  
Vou=D\_ all zones RpPz+ all zones RaAz  
223=1.5 x 55.8 + 93.2

Vot=Vou/Ev  
Vot=223/.8  
Total Required Outdoor Air 278 cfm  
Thru the unit Actual O.A. 280 cfm  
Percentage of Outdoor Air 12%

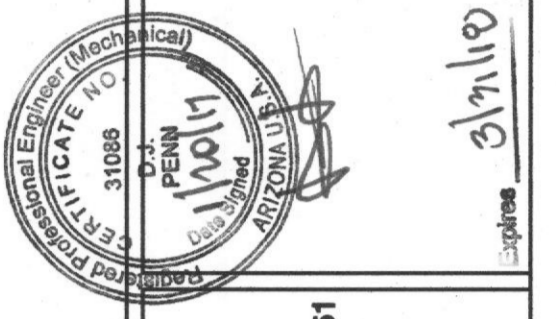
**EX. ROOFTOP UNIT**  
\*Occupant Diversity\*  
D=Ps/\_ all zones Pz  
D=4/2.07  
D=1.93  
\*Uncorrected O.A.\*  
Vou=D\_ all zones RpPz+ all zones RaAz  
87=1.93 x 10.4 + 34.9

Vot=Vou/Ev  
Vot=87/.8  
Total Required Outdoor Air 110 cfm  
Thru the unit Actual O.A. 160 cfm  
Percentage of Outdoor Air 13%



**AIR TRANSFER ASSEMBLY**  
NO SCALE

REVISIONS			DRAWING NO.
REV#	DATE	DESCRIPTION	
1	8/28/15	Permit Review Comments	M7 OF SHEET DATE 7/14/15 DRAWN BY DJL JOB NUMBER CHECKED BY 11212
2	10/8/15	Permit Review Comments-2nd Round	
3	10/27/15	Permit Review Comments-3rd Round	
1	1/11/17	Arizona State ASC Plan Review	



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1215 Old Pylesville Road  
Whiteford, MD 21160  
Office 410-452-8006

ISSUED FOR ARIZONA  
STATE ASC PLAN REVIEW

**SEQUENCE OF OPERATION**

**ROOFTOP UNITS:**

- DURING OCCUPIED PERIOD AS PROGRAMMED ON ASSOCIATED ROOFTOP THERMOSTAT, BLOWER FAN SHALL RUN CONTINUOUSLY AND OUTSIDE AIR DAMPERS OPEN TO MAXIMUM POSITION.
- ON A CALL FOR HEATING, COMPRESSOR SHALL BE ENERGIZED AND SHALL RUN UNTIL SETPOINT IS SATISFIED.
- DURING NIGHT SETBACK PERIOD AS PROGRAMMED ON ASSOCIATED ROOFTOP UNIT THERMOSTAT, BLOWER FAN SHALL BE OFF AND OUTSIDE AIR DAMPERS SHUT TO IT'S SCHEDULED MINIMUM POSITION. ON A CALL FOR HEATING OR COOLING, THE OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED AND THE FAN OR ASSOCIATED ELECTRIC HEATING COIL OR COMPRESSOR CYCLE UNTIL SPACE SETPOINTS ARE SATISFIED.
- UNIT SHALL BE DE-ENERGIZED IF EXISTING SMOKE DETECTOR SENSES SMOKE OR ANY SAFETY/CONTROL EXCEEDS ITS LIMITS.

**ENTHALPY ECONOMIZER CONTROL (ROOFTOP RTU-3 ONLY):**

- WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 70°F, THE ENTHALPY OF THE OUTDOOR AIR IS LOWER THAN THE ENTHALPY OF THE RETURN AIR, THE SPACE TEMPERATURE IS ABOVE THE SETPOINT THE OUTDOOR AIR DAMPER SHALL MODULATE OPEN, THE RELIEF/POWER EXHAUST SHALL ENERGIZE PROPORTIONALLY TO THE BUILDING PRESSURE ALONG WITH AIR DAMPER SHALL MODULATE OPEN AND THE RETURN AIR DAMPER SHALL MODULATE CLOSED PROPORTIONALLY TO MAINTAIN THE DISCHARGE AIR SETPOINT OF 55°F (ADJUSTABLE). A DIFFERENTIAL PRESSURE SENSOR SHALL MONITOR BUILDING PRESSURE AND ENERGIZE THE POWER EXHAUST AS REQUIRED TO MAINTAIN PROPER BUILDING PRESSURE.

- RTU-4, RTU-5 SHALL OPERATE IN THE OCCUPIED MODE 24/7 AND DURING THE UNOCCUPIED PERIOD THE OUTSIDE AIR DAMPERS SHALL MODULATE TO IT'S MINIMUM POSITION. ALL BOTH OF THESE ROOFTOP UNITS WILL GO INTO A NIGHT TEMPERATURE SETBACK LIKE THE OTHERS (3) THREE ROOFTOP UNITS DURING THE UNOCCUPIED MODE AS SCHEDULED BELOW.

\*\*ALL ROOFTOP UNITS DURING UNOCCUPIED MODES WILL HAVE NIGHT TEMPERATURE NIGHT SETBACK AS FOLLOWS:

RTU-1, RTU-2, RTU-3 \* EXISTING ROOFTOP UNIT COOLING NIGHT SETBACK TEMPERATURE TO BE 76°F AND HEATING SETPOINT TO BE 68°F.

RTU-4 & RTU-5 COOLING NIGHT SETBACK TEMPERATURE TO BE 70°F AND HEATING SETPOINT TO BE 63°F.

\*\*ALL OCCUPIED AND UNOCCUPIED MODES ARE TO BE SET FOR THE SAME TIME FOR ALL THE ROOFTOP UNITS.

**EXHAUST/VENTILATION FANS**

- ROOF MOUNTED EXHAUST FAN F-1 SHALL BE INTERLOCKED WITH NEW RTU-2 (THROUGH RTU-1 THERMOSTAT). UPON ACTIVATION OF OCCUPIED MODE FOR RTU-1, EXHAUST FAN SHALL BE ENERGIZED AND REMAIN ENERGIZED UNTIL RTU-1 GOES INTO THE UNOCCUPIED MODE.
- ROOF MOUNTED EXHAUST FAN F-2 SHALL BE INTERLOCKED WITH NEW RTU-1 (THROUGH RTU-1 THERMOSTAT). UPON ACTIVATION OF OCCUPIED MODE FOR RTU-1, EXHAUST FAN SHALL BE ENERGIZED AND REMAIN ENERGIZED UNTIL RTU-1 GOES INTO THE UNOCCUPIED MODE.
- EXHAUST FAN F-3 SHALL OPERATE 24 HOURS/7 DAYS A WEEK.
- COMP/TELE ROOM EXHAUST FAN F-4 SHALL BE INTERLOCKED WITH WALL MOUNTED REVERSE ACTING THERMOSTAT. UPON A RISE IN SPACE TEMPERATURE ABOVE (78°F ADJUSTABLE) FAN SHALL BE ENERGIZED. MAKE-UP AIR SHALL BE TRANSFERRED FROM ADJACENT STORAGE SPACE. FAN SHALL RUN UNTIL SETPOINT IS SATISFIED. UPON SATISFYING THERMOSTAT SETPOINT FAN SHALL BE DE-ENERGIZED.

**ELECTRIC DUCT HEATER**

- ELECTRIC DUCT HEATER SHALL BE INTERLOCKED WITH HEATING ONLY REMOTE THERMOSTAT AND DUCT MOUNTED SENSOR (SETPOINT 71°F). UPON AIRFLOW AIR PROVING SWITCH, BEING SATISFIED, SHALL ALLOW ELECTRIC HEATER TO BE ENERGIZED UPON A CALL FOR HEAT. UPON REACHING SETPOINT HEATER SHALL BE DE-ENERGIZED.

**HUMIDIFIER**

- REFER TO DETAIL ON SHEET FOR MORE INFORMATION. THE \*STAND ALONE\* HUMIDIFICATION SETPOINT IS TO BE SET FOR 40% RH.
  - FROM APRIL THROUGH OCTOBER THE HUMIDIFIER IS TO BE SET DOWN TO 30% RH. FROM OCTOBER TO APRIL THE HUMIDIFIER IS TO BE SET AT 40% RH.

**PROCEDURE ROOM AIRFLOW STATION**

\*\*ALL NEW AAO UNITS WILL THAT SERVE THE PROCEDURE ROOM WILL HAVE AN AIRFLOW STATION. AIRFLOW READINGS WILL BE PROVIDED FOR THE SUPPLY, RETURN AND FRESH AIRFLOWS. INSTALL AIRFLOW PROBES IN THE SUPPLY, RETURN AND FRESH AIR DUCT MAINS. PARAGON CONTROLS, INC (PCI) WILL BE USED TO ACCOMPLISH THIS. A MicroTransig AIRFLOW SIGNAL PROCESSOR WILL BE UTILIZE WITH THE AIRFLOW STATION WHICH WILL COMMUNICATE BACK TO THE Wattmaster CONTROLLER AND FRISH SOFTWARE. CONTACT Jeff Cox at HAVTECH 410-724-3703 FOR PARAGON EQUIP.

MECHANICAL CONTRACTOR MUST BE CERTAIN THAT ALL NEW DOMESTIC WATER AND SPRINKLER PIPES INSTALLED THROUGHOUT WILL NOT FREEZE. THE CONTRACTOR MUST MAKE PROVISIONS TO PREVENT ANY PIPE FROM FREEZING THROUGHOUT OF OUR AREA OF WORK. IF NEEDED INSTALL MORE ELECTRIC HEATERS WHERE REQUIRED.

**PACKAGED HEAT PUMP ROOFTOP UNIT SCHEDULE "CARRIER"**

ITEM#	AREA SERVED	NOMINAL TONS	FAN DATA					COOLING DATA			HEATING DATA			HEAT PUMP HEATING DATA						ELECTRICAL DATA	WEIGHT (LBS.)	MODEL #	MANUFACTURER	REMARKS
			C.F.M.	E.S.P.	B.H.P.	R.P.M.	C.F.M. O.A.	TOTAL BTU/HR	SENSIBLE BTU/HR	EER	TYPE	BTU/HR.	K.W.	HI-TEMP. BTU/HR.	HEAT 47 O.A.T. K.W.	C.O.P.	LOW-TEMP. BTU/HR.	HEAT 17 O.A.T. K.W.	C.O.P.					
RTU-1	RECOVERY AND NURSE WORK AREA	6	1,895	.80"	2.9	1,200	330	60,700	58,150	11.15	ELECTRIC	-	-	65,000	-	-	35,200	-	-	208v/3Ø/60HZ	890	50TCGA07	CARRIER	NEW
RTU-2	RECEPTION, OFFICES AND LOUNGE, ETC.	5	1,785	.75"	2.0	1,100	280	51,800	51,600	11.15	ELECTRIC	-	-	58,000	-	-	31,200	-	-	208v/3Ø/60HZ	840	50TCGA06	CARRIER	NEW
RTU-3	WAITING AREA AND ULTRASOUND ROOM	7½	2,425	.80"	2.9	670	280	71,000	70,100	11.20	ELECTRIC	-	-	86,000	-	3.30	48,000	-	2.25	208v/3Ø/60HZ	1,220	50TCGD08	CARRIER	NEW

**NOTES:**

- ROOFTOP UNITS #1 AND 3 TO BE PROVIDED WITH FULL MODULATING OUTSIDE AIR DAMPER, FACTORY SUPPLIED ENTHALPY ECONOMIZER WITH POWER EXHAUST AND BELT DRIVEN MOTOR.
- ALL PACKAGED ROOFTOP UNITS TO BE PROVIDED WITH 24 HOURS/7DAY PROGRAMMABLE THERMOSTATS capable of full modulating OA damper operations.
- PRIOR TO INSTALL OF THESE THE NEW ROOFTOP UNITS THE CONTRACTOR MUST HAVE THEM REVIEWED BY A STRUCTURAL TO BE INSTALLED ON THE EXISTING ROOF.
- COOLING TEMPERATURE SETPOINT TO BE 74°F AND HEATING SETPOINT TO BE 70°F.
- ALL ROOFTOP UNIT CAPACITIES ARE BASED ON 115° F AMBIENT TEMPERATURE WITH 85°F EDB/67°F ENB.
- EACH ROOFTOP UNIT TO BE PROVIDED WITH AN ADAPTER ROOF CURB AS REQUIRED, ALONG WITH FACTORY OPTION CONVENIENCE OUTLETS.
- ROOFTOP UNIT #1 AND 2 ARE SINGLE STAGE WITH SINGLE SPEED INDOOR FAN MOTOR. ROOFTOP UNIT #3 IS 2-STAGE COOLING WITH SINGLE SPEED INDOOR FAN MOTOR.

**PACKAGED HEAT PUMP ROOFTOP UNIT SCHEDULE "AAON"**

ITEM#	AREA SERVED	NOMINAL TONS	FAN DATA					COOLING DATA			HEATING DATA			HEAT PUMP HEATING DATA						HSFP	ELECTRICAL DATA	WEIGHT (LBS.)	MODEL #	MANUFACTURER	
			C.F.M.	E.S.P.	B.H.P.	R.P.M.	C.F.M. O.A.	TOTAL BTU/HR	SENSIBLE BTU/HR	EER	TYPE	BTU/HR.	K.W.	HI-TEMP. BTU/HR.	HEAT 47 O.A.T. K.W.	C.O.P.	LOW-TEMP. BTU/HR.	HEAT 17 O.A.T. K.W.	C.O.P.						
RTU-4	PROCEDURE ROOM 117	5	1,350	2.5"	2	2,009	40 min max 270 max	41,970	41,970	-	ELECTRIC	25,598	7.5	61,900	-	3.40	40,800	-	2.63	N/A	208v/3Ø/60HZ	1,014	RO-005-B-V-EGM-11A; LOO-EG1-OKD-DAC; QM-FR2-00-00000TB	AAON	
RTU-5	PROCEDURE ROOM 118	5	1,350	2.5"	2	2,009	40 min max 270 max	41,970	41,970	-	ELECTRIC	25,598	7.5	61,900	-	3.40	40,800	-	2.63	N/A	208v/3Ø/60HZ	1,014	RO-005-B-V-EGM-11A; LOO-EG1-OKD-DAC; QM-FR2-00-00000TB	AAON	

**NOTES:**

- EACH ROOFTOP UNIT WILL HAVE CAPACITIES CONTROLS DOWN TO WITHIN 10% OF TOTAL CAPACITY WITH MODULATING COMPRESSORS, DIRECT DRIVE SUPPLY FAN WITH VFD, MODULATING HOT GAS REHEAT FOR DEHUMIDIFICATION, UNIT CASING WITH SOLID DOUBLE WALL CONSTRUCTION WITH FOAM INSULATION AND STAINLESS STEEL DRAIN PAN. ALSO ROOFTOP UNIT TO HAVE FACTORY SUPPLIED 2" MERV 8 FILTERS IN THE RETURN. CONTROLS TO BE PROVIDED IS THE AAO SYSTEM MANAGER TO BE LOCATED IN THE SITE MANAGER'S OFFICE WITH REMOTE TEMPERATURE/HUMIDITY SENSORS TO BE LOCATED IN EACH PROCEDURE ROOM. THE REMOTE TEMPERATURE/HUMIDITY SENSOR WILL ALLOW ONLY THE TEMPERATURE TO BE ADJUSTED IN THE PROCEDURE ROOMS IF SO DESIRED AND NOTHING ELSE. DOWNLOAD THE "FRISH" SOFTWARE ONTO THE TENANT PC. INTERLOCK WITH THE SYSTEM MANAGER TO ALLOW FOR WEB BASE INTERNET ACCESS. AAO ROOFTOP UNITS ARE TO ONLY BE INSTALLED AND COMMISSIONED BY FACTORY TRAINED/CERTIFIED CONTRACTORS. PROVIDE OUTSIDE AIR DAMPER OPERATION SO THAT MINIMUM OUTSIDE AIRFLOW IS OBTAINED DURING UNOCCUPIED MODE AND MAXIMUM OUTSIDE AIRFLOW IS OBTAINED DURING OCCUPIED MODE AS SCHEDULED ABOVE.
- AAON ROOFTOP UNIT COOLING TEMPERATURE SETPOINT TO BE 66°F AND HEATING SETPOINT TO BE 63°F.
- CONTRACTOR WILL (NO SUBSTITUTES) ONLY PURCHASE/OBTAIN THE AAO EQUIPMENT FROM THE FOLLOWING: CONTACT: GRAHAME ELDRIDGE WITH WINDY CITY REPRESENTATIVES Phone (630) 590-6933 CELL (708) 790-1122
- THE ELECTRICAL CONTRACTOR TO PROVIDE THE DISCONNECT SWITCH FOR THE AAO UNIT AND POWERED GFI CONVENIENCE OUTLETS WILL BE PROVIDED WITH THE UNIT AND POWERED THROUGH THE ROOFTOP UNIT. ALSO PROVIDE 14" HIGH ROOF CURB FOR ROOFTOP UNIT #4 AND AN CURB ADAPTER FOR ROOFTOP UNIT #5.
- BOTH ROOFTOP UNITS CAPACITIES ARE BASED ON 115°F db/70°F wb AMBIENT TEMPERATURE

**FAN SCHEDULE**

ITEM #	AREA SERVED	G.F.M.	E.S.P.	HP/WATTS	R.P.M.	CONTROL	ELEC. DATA	SONES	MODEL #	MFGR.
F-1	TOILET ROOMS AND JANITORS CLOSET	410	.45"	.167 HP	1,302	INTERLOCK W/ ROOFTOP UNIT #2	120v/1Ø	6.8	100 ACEB	COOK
F-2	JANITORS CLOSET AND MED VAC	290	.375"	.167 HP	1,152	INTERLOCK W/ ROOFTOP UNIT #1	120v/1Ø	5.0	80 ACEB	COOK
F-3	TRASH ROOM AND SOILED LINEN AREA	165	.375"	.167 HP	1,222	24 HOURS/7 DAYS A WEEK REVERSE ACTING THERMOSTAT	120v/1Ø	6.3	70 ACEB	COOK
F-4	TELE./COMP.	240	.375"	.226 W	677		120v/1Ø	2.7	GC-640	COOK

**NOTES:**

- MANUFACTURER FAN SELECTIONS SHALL INCLUDE EXTERNAL PRESSURE DROP AND FAN DRIVE LOSS.
- VENTILATION FAN F-4 TO BE PROVIDED WITH FACTORY OPTION ADJUSTABLE SPEED CONTROLLER TO BE MOUNTED ON SIDE OF FAN HOUSING. SPEED CONTROLLER FOR FINAL AIR BALANCING.

**PLUMBING FIXTURE SCHEDULE**

ITEM #	DESCRIPTION	PIPE SIZES				TRAP TYPE	REMARKS
		C.W.	H.W.	SAN.	VENT		
P-1	WATER CLOSET	½"	-	4"	2"	INTEGRAL	HANDICAPPED
P-1A	BEDPAN CLEANER	½"	-	-	-	-	-
P-1B	PUBLIC WATER CLOSET	½"	-	4"	2"	INTEGRAL	HANDICAPPED
P-1C	URINAL	¾"	-	2"	2"	INTEGRAL	HANDICAPPED
P-2	WALL HUNG SINK	½"	½"	2"	2"	"P"	HANDICAPPED
P-2A	NURSE/CLEAN WORK SINK	½"	½"	2"	2"	"P"	ONLY THE NURSE WORK SINK TO BE PROVIDED WITH EYE WASH
P-2B	LOUNGE SINK	½"	½"	2"	2"	"P"	-
P-2C	SCRUB SINK	½"	½"	2"	2"	"P"	-
P-2D	SOILED WORK AREA	½"	½"	2"	2"	"P"	12" DEEP BOWL
P-2E	PATIENT RECOVERY COUNTERTOP HAND SINK	½"	½"	2"	2"	"P"	HANDICAPPED
P-2F	PATIENT RECOVERY WALL MTD. HAND SINK	½"	½"	2"	2"	"P"	HANDICAPPED
P-2G	PUBLIC HAND SINK	½"	½"	2"	2"	"P"	HANDICAPPED
P-3	JANITOR'S SINK	¾"	¾"	3"	2"	"P"	-
P-4	REFRIG. ICE MAKER	½"	-	-	-	-	-
P-5	SHOWER	½"	½"	2" SD	2"	"P"	HANDICAPPED
P-6	WATER FOUNTAIN	½"	-	2"	2"	"P"	HANDICAPPED

**NOTES:**

- ALL EQUIPMENT SHALL BE AS SCHEDULED OR EQUAL.
  - ELECTRIC DUCT HEATERS HEATING ONLY THERMOSTATS (PULSE-TYPE) BY INDEECO.
  - ELECTRIC DUCT HEATER TO BE QUA SLIP-IN HEATER (OPEN COIL) WITH CONTROL SCR CONTROLLER (OPTION K) AND AIR PROVING SWITCH.
  - ALL ELECTRIC HORIZONTAL HEATERS TO BE PROVIDE AND INSTALLED WITH FACTORY OPTION MOUNTING BRACKETS.
  - ELECTRIC WALL HEATER TO BE 2" SEMI RECESSED TYPE AND INSTALLED WITH FACTORY OPTION 2" SEMI RECESSED MOUNTING FRAME.
- TMV-1 THERMOSTATIC MIXING VALVE (POINT OF USE AT THE WATER HEATER ONLY)  
LEONARD (SYMMONS OR LEONARD) THERMOSTATIC TEMPERATURE CONTROLLER MODEL #XL-82, ASSE 1017 CERTIFIED. FIELD SET TEMPERATURE AT 120°F MAXIMUM LEAVING WATER HEATER.  
PLUMBING CONTRACTOR SHALL INSTALL AND PIPE THERMOSTATIC MIXING VALVE PER THE MANUFACTURER'S INSTRUCTIONS.
- TMV-2 THERMOSTATIC MIXING VALVE (EYEWASH)  
LEONARD MODEL #TA-300 THERMOSTATIC MIXING VALVE WITH WITH TEMPERATURE LIMIT STOP, DIAL THERMOMETER ON THE OUTLET, MOUNTING BRACKETS, MIN. FLOW OF 1/2 GPM @ 5 PSI SUPPLY PRESSURE, 1/2" INLETS, ANGLE CHECKSTOP ON INLETS, AND ROUGH BRONZE FINISH. ASSE 1071 CERTIFIED.
- NOTE: FIELD SET TEMPERATURE ±75°F
- TMV-3 THERMOSTATIC MIXING VALVE (POINT OF USE AT ALL SINKS EXCEPT P-2C)  
SYMMONS (LAWLER OR LEONARD) "MAXLINE" MODEL #5-210-CX-NI THERMOSTATIC MIXING VALVE WITH 3/8" INLET AND OUTLET WITH COMPRESSION FITTINGS, BRASS AND BRONZE BODY, STAINLESS STEEL FLOW CONTROL COMPONENTS, VANDAL RESISTANT LOCKABLE HANDLE, SEPARATE CHECKS, WALL BRACKETS, ROUGH CHROME FINISH. ASSE 1070 CERTIFIED. FIELD SET TEMPERATURE AT 110°F MAXIMUM.

**MISCELLANEOUS HEATING SCHEDULE**

ITEM#	AREA SERVED	HEATER TYPE	G.F.M.	K.W.	BTU/HR	ELEC. DATA	STEPS OF CONTROL	CONTROL	MANUFACTURER/ MODEL #
EDH-1	OFFICES	ELECTRIC DUCT HEATER	555	5.0	17,065	208/3	2	WALL MTD. THERMOSTAT	INDEECO/SLIP-IN
EDH-2	EXAM ROOM	ELECTRIC DUCT HEATER	155	1.0	3,413	208/1	1	WALL MTD. THERMOSTAT	INDEECO/SLIP-IN
EDH-3	ULTRASOUND ROOM	ELECTRIC DUCT HEATER	370	3.5	11,945	208/3	2	WALL MTD. THERMOSTAT	INDEECO/SLIP-IN
EDH-4	RECEPTION SIDE OFFICE	ELECTRIC DUCT HEATER	305	3.0	10,239	208/3	1	WALL MTD. THERMOSTAT	INDEECO/SLIP-IN
EDH-5	ENTRANCE	ELECTRIC DUCT HEATER	250	3.5	11,945	208/3	1	WALL MTD. THERMOSTAT	INDEECO/SLIP-IN
HUH-1	ABOVE THE CEILING	ELECTRIC UNIT HEATER	350	3.0	10,239	208/1	1	INTEGRAL THERMOSTAT	BERKO/HUHAA-320
ENH-1	SIDE ENTRANCE	ELECTRIC WALL HEATER	100	2.0	6,826	208/1	1	INTEGRAL THERMOSTAT	BERKO/FRA-4020

**NOTES:**

- ALL EQUIPMENT SHALL BE AS SCHEDULED OR EQUAL.
- ELECTRIC DUCT HEATERS HEATING ONLY THERMOSTATS (PULSE-TYPE) BY INDEECO.
- ELECTRIC DUCT HEATER TO BE QUA SLIP-IN HEATER (OPEN COIL) WITH CONTROL SCR CONTROLLER (OPTION K) AND AIR PROVING SWITCH.
- ALL ELECTRIC HORIZONTAL HEATERS TO BE PROVIDE AND INSTALLED WITH FACTORY OPTION MOUNTING BRACKETS.
- ELECTRIC WALL HEATER TO BE 2" SEMI RECESSED TYPE AND INSTALLED WITH FACTORY OPTION 2" SEMI RECESSED MOUNTING FRAME.

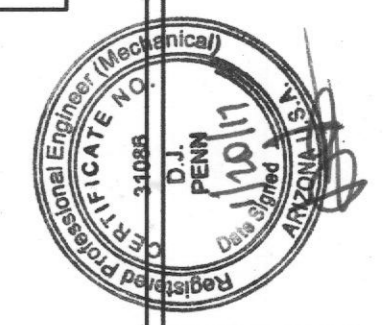
**ELECTRIC WATER HEATER SCHEDULE**

ITEM #	AREA SERVED	KW ELEMENT	HEIGHT (IN.XIN.)	SIZE DIAMETER (IN.XIN.)	RECOVERY RATE (GPH)	TANK CAPACITY (GALLONS)	PIPE CONNECTIONS INLET (IN.) OUTLET (IN.)	ELEC. DATA	MANUFACTURER/ MODEL #
WH-1	TOILET RMS, LOUNGE, ETC.	9.0	55½"x21¾"		37	52	¾" ¾"	208v/3Ø	STATE/CSB 52 9 IFE

**NOTE:**

- PROVIDE 100°F TEMPERATURE WATER RISE FOR 40°F ENTERING WATER TEMPERATURE.

ISSUED FOR ARIZONA STATE ASC PLAN REVIEW

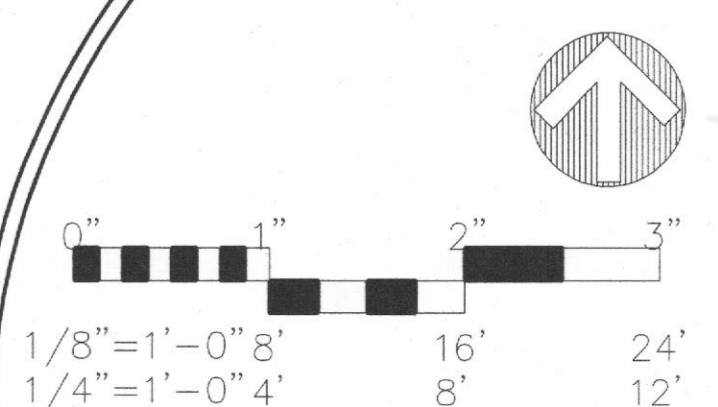


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**SCHEDULES**

REV#	DATE	REVISIONS DESCRIPTION
1	8/28/15	Permit Review Comments
2	10/6/15	Permit Review Comments-2nd Round
3	10/27/15	Permit Review Comments-3rd Round
1	1/11/17	Arizona State ASC Plan Review

DRAWING NO. M8  
SHEET OF  
DATE 7/14/15 DRAWN BY  
JOB NUMBER 111212 CHECKED BY  
DLI



# MECHANICAL OUTLINE SPECIFICATION

## 1. Section 15010 - Basic Mechanical Requirements

- A. The work of each of the mechanical sections includes furnishing and installing the material, equipment, and systems complete as specified and/or indicated on the drawings. The mechanical installations, when finished, shall be complete and coordinated, ready for satisfactory service of the build out.
- B. All work under this contract shall be done in strict accordance with all applicable municipal, state, 2012 NFPA, BCCA, international codes and County/City Public Work, that govern each particular trade.
- C. The contractor shall make applications and pay all charges for all necessary permits, licenses and inspections as required under the above codes. Upon completion of the work, the customary certifications of approval shall be furnished.
- D. No materials or equipment shall be used in the work until approved. Before submission of the shop drawings, and not more than fifteen (15) days after award of the contract, the contractor shall submit for approval a complete list of materials and equipment which he intends to furnish, giving manufacturer and catalog numbers.
- E. The contractor shall examine all drawings and specifications and shall. Failure to comply with this requirement will not relieve the contractor of responsibility for complying with the intent of the contract documents.
- F. The drawings indicate the general arrangement of the mechanical installations. Details of proposed mechanical departures due to actual field conditions or other causes shall be submitted for approval prior to installation. Reworking of completed items due to improper field coordination shall be at the contractor's expense.
- G. Provide sufficient access and clearance for all items of equipment requiring servicing and maintenance, such as valves, drains, vents, etc..
- H. The contractor shall prepare three (3) copies of a record and information booklet. The booklet shall be bound in a three-ring loose-leaf binder. Provide the following data in the booklet:
  - 1) Catalog data on each piece of equipment furnished.
  - 2) Approved shop drawings on each piece of equipment furnished.
  - 3) Maintenance, operation and lubrication instruction on each piece of equipment furnished.
  - 4) Simplified temperature control diagram.
  - 5) Manufacturer's and contractor's guarantees.
  - 6) Air balancing reports.
  - 7) Commissioning reports.
  - 8) Schedule/description of all service work/maintenance inspections required by paragraphs P, Q and R of this section.

Upon completion of each scheduled inspection, the contractor shall deliver to the building owner/owner's representative within forty-eight (48) hours of completion, two (2) copies of the completed inspection report for record purposes.

- R. The mechanical or service contractor shall, at the ninth month, advise the owner of the termination date of the above service. This contractor shall also provide the owner with a detailed proposal, reflecting annual escalation, for the continuation of the service and inspections described above.

## 2. Section 15050 - Basic Mechanical Piping Material & Methods

- A. Provide all labor and materials necessary to furnish and install all piping systems on this project, including sanitary, sanitary vent, domestic water, condensate drain and refrigerant piping systems.
- B. Piping and valves shall be as follows:

### 1) Sanitary drains below grade.

Pipe	Standard weight cast iron uncoated bell and spigot soil pipe.
Fittings	Standard weight cast iron bell and spigot uncoated soil pipe fittings.
Joints	Neoprene push-lock fittings.

### 2) Sanitary wastes and vent piping above floor inside building.

Pipe	Cast iron no-hub soil pipe
Fittings	Cast iron no-hub soil pipe fittings
Joints	No-hub stainless steel gasketed fittings

### 3) Domestic hot, cold and recirc. water piping inside building.

Pipe	All water lines above grade - hard copper type L. All domestic lines below grade - hard copper type K.
Fittings	Solder type wrought copper - lead free solder.

Ball valves	Two piece body, 150 lb. chrome plated full port bronze body and stem, reinforced the seat rings, Nibco S-585-70.
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Unions	125 lb. Wrought copper, ground joint solder ends.
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### 4) Refrigerant piping.

Pipe	Type "L" hard copper refrigerant tube, dehydrated and sealed.
Fittings	Wrought copper solder type with silfos.

### 5) Fire protection.

Piping and fittings as required by NFPA regulations and as hereinafter specified.

- C. Copper pipe shall be reverse, anaconda, or chase types "I" hard drawn, with approved solder fittings.

- D. Cast iron piping shall be service weight drainage piping and shall conform to the requirements of the C.I.S.P.I. Each length of pipe and each fitting shall be clearly marked with the manufacturer's initials and pipe classifications.

- E. Steel piping shall be similar and equal to national tube company, republic, or Bethlehem black or zinc-coated (galvanized) steel as hereinbefore specified. Pipe shall be free from all defects which may affect the durability of the intended use. Each length of pipe shall be stamped with the manufacturer's name.

- F. All hangers for copper piping shall be copper clad, split ring swivel type, having rods with machine threads and threaded copper clad ceiling flange. Cast iron and steel piping supports shall be similar without copper clad and prime paint finish.

- G. Provide dielectric couplings where non-ferrous metal piping is joined to ferrous metal piping. The gasket material shall be capable of withstanding the temperatures and pressures within the piping system in which installed. Submit dielectric coupling and gasket material for approval.

## 3. Section 15250 - Mechanical Insulation

- A. All supply, return and outside air ductwork throughout and all domestic water piping systems and horizontal condensate piping (in our space) shall be insulated with plenum rated, fiberglass insulation, insulate all refrigerant piping with 1" Armaflex throughout.

- \*\*Prior to purchase of Armaflex insulation the contractor must contact the manufacturer and verify 1" thick pipe insulation is suited for 115F ambient temperatures. If not then provide the corrected thickness per the manf.

- B. Pipe insulation shall be 1-1/2" premoiled fiberglass insulation with an all service jacket, Owens Corning fiberglass SSL-II. Fittings shall be insulated and covered with pvc covers.

- C. Ductwork shall be insulated with 3" flexible duct wrap or if determined to be less by the contractor than provide data to support using less duct wrap during the submittal phase, Owens Corning fiberglass type 75 with foil faced vapor barrier. Insulation shall be neatly installed. Any insulation damaged during construction shall be properly fixed.

- \*\*Install all insulation per manufacturer's recommendations

## 4. Section 15300 - Fire Protection

- A. All work, materials, equipment, and accessories shall comply with the standards of the National Fire Protection Association and all state and local regulations.
- B. The sprinkler contractor shall extend the wet pipe sprinkler system to properly cover/protect the new tenant layout. Final density flow per square foot shall be determined by the marshal.
- C. The installation shall include, but are not limited to valves, flow switches, sprinkler heads and escutcheons, piping, fittings, hangers and signs and other identification markings, as required.
- D. The sprinkler contractor shall carefully examine all documents during the bidding period. He shall familiarize himself with project conditions such as building construction and pipe and ductwork locations and elevations.
- E. Sprinkler heads shall be installed to properly cover and protect the new tenant layout. Sprinkler heads shall be installed to protect the entire structure. Any sprinkler heads installed in finished ceilings shall be brushed chrome semi recessed type.
- F. The contractor shall arrange for approval of the sprinkler systems, and conduct tests in accordance with NFPA 13.
- G. The sprinkler contractor shall provide a detailed shop drawing showing piping layout, head locations, elevations and coordination with all building structure, electrical and plumbing trades. The contractor shall submit detailed sprinkler shop drawings with actual heads for architect approval prior to any fabrication.

- H. The sprinkler contractor must submit one set of sprinkler shop drawings to the county fire department, Fire Marshal prior to any fabrication or construction.

Provide sprinkler coverage per NFPA within the Oxygen Room as required by NFPA. This can be accomplished using dry pendent or dry side wall sprinklers to prevent freezing of pipes. Installation method to be per fire protection contractor and NFPA.

## 5. Section 15400 - Plumbing

- A. The work covered by this section of the specifications consists of furnishing all labor, equipment and materials in connection with the rough-in, final setting and connections to all plumbing fixtures. The contractor shall carefully review the conditions at the site and all of the contract drawings to determine the extent of the plumbing work required.
- B. All plumbing fixtures shall be complete in every detail with all trimmings and connections. All fixtures shall be designed to prevent the backflow of polluted water or waste into the water supply system. Fixtures P-1, P-1A AND P-2 shall be American Standard or approved equal as follows:

P-1 Water closet (handicapped). #2377100 Cadet, 16-1/2" high elongated toilet, water saver 1.6 gallon flush with vitreous china construction, pressure-assisted siphon jet flush action, close-coupled tank, bolt caps, Church open front white seat with cover, rigid supply with angle stop valve. Provide a toilet with alternate configuration #3109.203 to accommodate P-1A in Patient Toilet room only.

P-1A Bedpan Cleaning Assembly. #7880.191 assembly which includes vacuum breaker, nozzle with hook and loose key supply.

P-1B Water closet (handicapped). Kohler #K-3503-47 Devonshire, 16-1/2" high elongated toilet, water saver 1.6 gallon flush with vitreous china construction, class five flushing system, close-coupled tank, bolt caps, Church open front white seat with cover, rigid supply with angle stop valve.

P-1C Urinal (handicapped). #K-5016-ET Kohler Dexter, 1.0 gallon per flush vitreous china urinal, siphon jet action with integral trap, 3/4" top inlet spud, Sloan #186-1 top spud flush valve, J.R. Smith fig. 635F urinal support. Mount at handicapped height. Coordinate with local authorities.

P-2 Wall Hung Sink (handicapped). #0355.012 Lucerne, vitreous china construction, front overflow, faucet ledge. Lavatory to be fitted with Delta #21C145, 6" wrist blade handles, 2.0 gpm laminar flow, complete with grid drain, tailpiece, cast brass "p" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies and chair carrier. All exposed waste piping and hot and cold water piping shall be insulated with truebro handi lav-guard model 102 insulation kit with white finish.

P-2A Nurse and Clean Work Sink. #R-1722 by Elkay, 18 gauge-type 302-self rim bowl. Faucet shall be #2871B4 by Zurn, 12-1/8" high gooseneck spout with 6" wrist blade handles and a 2 gpm laminar flow. Sink to be complete with grid drain, tailpiece, cast brass "p" trap, wall escutcheon and supply valves with chrome supplies. Provide deck mounted eye wash by Guardian #G5022 with duct covers, internal flow control and filter to remove impurities (eyewash for the Nurse Work sink only-refer to note 11 on sheet M4 for water temperature control).

P-2B Lounge Sink. #GECR3321 by Elkay, 20 gauge-type 302-self rim bowl double bowl sink @ 14 x15-3/4 x5-5/8" each, overall, 33 x22-1/4" 4-hole for faucet. #S-2W by Symmons with 4" handles, swinging hi-spout and retractable hose/spray and water flow restrictor (2.2 gpm max.). Sink to be complete with grid drain, tailpiece, cast brass "p" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies.

P-2C Scrub Sink. #25460 by Zurn, (No substitutions), wall mounted vitreous china surgeon sink, low front rim with large deep basin, single faucet hole, complete with concealed floor mounted arm carrier/support brackets. Faucet shall be polished chrome plated sensor activated, solid brass solenoid with built-in filter solenoid valve with servicable "y" strainer filter and 2.2 gpm laminar flow. Metal jacketed wire protection for sensor and solenoid leads. Gooseneck faucet shall have a surgical bend spout, 8" trim plate and plug-in transformer. Faucet WILL be Sloan, model # ETf-700-5-8P. (No substitutions). Sink to be complete flat metal grid drain with 1-1/2"x4" tailpiece. Also include P trap, tubing to wall escutcheon and supply valves with chrome supplies.

P-2D Sailed Work Sink. #DLR-2222-12 by Elkay, 19"x16"x12" DEEP BOWL, (3-hole), 18 gauge-type 302-self rim bowl. Faucet shall be #2871B4 by Zurn, 12-1/8" high gooseneck spout with 6" wrist blade handles and 2 gpm laminar flow. Sink to be complete with grid drain, tailpiece, cast brass "p" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies.

P-2E Patient Recovery Sink. #R-1722 by Elkay, 18 gauge-type 302-self rim bowl. Faucet shall be #2871B4 by Zurn, 12-1/8" high gooseneck spout with 6" wrist blade handles and a 2 gpm laminar flow. Sink to be complete with grid drain, tailpiece, cast brass "p" trap, wall escutcheon and supply valves with chrome supplies.

P-2F Patient Recovery Hand Sink. Briggs Milton #6620, vitreous china 20"x18" wall hung lavatory, front overflow, 4" o.c., Faucet Delta 27C4835. Gooseneck faucet with deck plate, 6" wrist blade handles; 2.2 gpm aerator, 4" cover plate with chrome trim. Sink to be complete with grid drain, tailpiece, cast brass "p" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies and chair carrier. All exposed waste piping and hot and cold water piping shall be insulated with truebro handi lav-guard model 102 insulation kit with white finish.

P-2G Under-Mount Sink (handicapped). Kohler #K-2350-47 Devonshire, vitreous china construction, front overflow. Lavatory to be fitted with Kohler #K-394-4, widespread lavatory faucet, 8" on ctr., 1.5 gpm laminar flow, complete with grid drain, tailpiece, cast brass "p" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies and chair carrier. All exposed waste piping and hot and cold water piping shall be insulated with truebro handi lav-guard model 102 insulation kit with white finish.

P-3 Janitor's Sink. #MSB-2424 by Fiat, 24" X 24" X 10" deep molded stone mop service basin color white. The factory installed drain body shall be stainless steel, and designed to provide for a lead caulk or OOD-3 joint to a 3" drain pipe. Service faucet #8345.115 American Standard with bottom brace, stops, 10-1/2" spout, 3/4" hose thread on spout, integral vacuum breaker, adjustable union couplings, stop shanks and 30" flexible hose.

P-4 Refrigeration Ice Maker. Contractor shall provide wall mounted recessed box with shut off valve for connection to refrigerator ice maker by others. Extend 1/4" water line to unit with in-line cartridge filter. Verify exact line size. Box shall be Datex Model S2K with chrome ball valve.

P-5 Shower Unit (handicapped). Crane model 3636.01F R with 36" x 36" stall, one-piece fiberglass construction. Unit shall come with factory option, cast brass drain with chrome plated strainer, acrylic antibacterial protection, white finish, shower curtain, solid padded vinyl seat, slide guide (for hand held shower attachment), swivel fitting, 69" flexible stainless steel hose, and in-line breaker and pressure balanced single lever mixing valve with check stops.

P-6 Drinking Fountain (handicapped). Halsey Taylor, model Contour HRFE, barrier-free, wall-hung unit. Unit shall be constructed of non-corrosive series stainless steel with brush satin finish and pushbutton activation on the front of each fountain. Drinking fountain must be mounted per ADA requirements.

Floor Drain Zurn Z-415-B. Round cast iron body with flashing collar, 5" round nickel bronze adjustable strainer head with secured square hole grate, bottom waste outlet and trap primer connection. Automatic trap primer manufactured by P.P.P or Proset Trap Guard drain. Proset only if code allows.

- C. Sanitary vents thru roof shall be flashed with seamless lead flashing assemblies. Flashing shall have a conical seal. The contractor shall submit detailed sprinkler shop drawings with actual heads for architect approval prior to any fabrication.

- D. Potable water systems shall be disinfected prior to use. The method to be followed shall be that prescribed by the health authority and code requirements.

## 6. Section 15500 - Heating, Ventilating & Air Conditioning (HVAC)

- A. The work to be performed shall include all labor, materials and equipment necessary to furnish and install complete, all hvac mechanical equipment as shown on drawings and/or hereinafter specified. It is the intent that the systems be installed complete with all items necessary to provide satisfactory service.
- B. All heating, ventilating and air conditioning equipment which contains compressors shall be provided with extended warranties (minimum four (4) years) for the compressors.
- C. New HVAC heating and cooling unit:
  - \*\* Carrier units scheduled on sheet M3 will be Carrier unit. No substitutes. Refer to sheet M3 rooftop unit schedule for factory requirements.
  - \*\* Aeon units scheduled on sheet M3 will be Aeon unit. No substitutes. Refer to sheet M3 rooftop unit schedule for factory requirements.

## 7. Section 15880 - Air distribution

- A. Furnish all labor and materials necessary to complete the sheet metal work associated with the heating, ventilating, air conditioning and exhaust systems, and other miscellaneous items shown and required.
- B. All ductwork shall be constructed and installed in accordance with the sheet metal and air conditioning contractors national association (smacna) standards, ashrae standards and bcca standards.
- C. Flexible ductwork shall be Hart & Cooley type F218 or approved equal. Flexible duct shall comply with NFPA bulletin 90a and shall be U.L. listed as class 1 air duct and connector, standard 181.
- D. Support horizontal ducts with hangers spaced not more than six (6) feet apart. Use strap hangers for ducts up to thirty (30) inches wide, angle hangers or rods for ducts over thirty (30) inches wide. Strap hangers to be one (1) inch wide, 20 gauge minimum; fasten to sides and bottom of duct with sheet metal screws.
- E. Ducts shall be straight and smooth on the inside, with joints neatly finished. Ducts shall be suspended from the construction and shall be free from vibration. Curved elbows shall have a center radius equal to one and one-half (1-1/2) times the width of the duct. All square turns shall be vanned. Vanes consisting of curved metal blades shall permit the air to make abrupt turns without turbulence.
- F. All joints in the heating, ventilating, air conditioning and exhaust system ductwork shall be sealed.

Sealant shall be as manufactured by United Inc. or approved equal, sealant shall be smacna and ul approved, with a flame spread of 10 and a smoke developed of 0, non-toxic and non-flammable. Sealant shall be approved for operating temperatures from 0 degrees f. to 200 degrees f.

Sealant system shall be installed in strict accordance with the manufacturer's recommendations and when applied shall provide a permanent seal without any deterioration.

Square ductwork air devices:

- 1) Supply air diffusers shall have all steel construction, Titus model TMS with vaned face and finished with #26 off-white enamel. Air device to come with factory optional molded insulation blanket.
- 2) Return air grille shall have all steel construction, Titus model 25R with louvered face and finished with #26 off-white enamel.
- 3) Exhaust air grille shall have all steel construction, Titus model 25R with louvered face and finished with #26 off-white enamel.
- 4) Supply air registers shall have all steel construction with 3/4" spaced, double deflection louvers, opposed blade damper and finished with #26 off-white enamel. Titus model 300F.
- 5) Supply air devices for the Procedure Room shall be laminar flow diffuser panels (LFD) with airflow dampers. Air device shall be of aluminum construction as manufactured by Price to make up a complete isolation system through controlled air patterns for the Procedure Rooms. Supply air device to come with factory optional insulation blanket on the back side of the air device.
- 6) Return air grille shall be of stainless steel construction, Price model 700H with louvered face. For Procedure Room only.

\*\* The supply and exhaust air devices to be located in the Team Make Toilet Room is to be of aluminum construction.

- 8. Section 15950 - Controls
  - A. The contractor under this heading shall furnish and install all wiring necessary for a complete electric system of automatic temperature control. The system shall include all necessary thermostats, relays, switches, etc. required for successful operation. Electrical work in connection with the temperature control system shall be performed by the control contractor.
  - B. New rooftop unit hvac unit shall be controlled by a single wall mounted heating/cooling programmable thermostat, as needed, with seven (7) day twenty-four (24) hour program clock control as manufactured by Carrier or equal. Provide a new thermostat if existing thermostat is not as specified here.
  - C. New air handling hvac unit (Aeon) wall mounted heating/cooling thermostat. Refer to sheet M3 for more information on Aeon unit controls.
    - \*\* Control contractor to provide/install a differential pressure sensor in the ductwork before and after the filter rack housing the MERV (pre-filter) and the HEPA and interlock with the Magnehelic gauge. Mount above ceiling in plain view for the maintenance contractor to see.
  - D. The automatic temperature control contractor shall be responsible for the commissioning of the project to assure a fully functional, fine-tuned hvac system upon occupancy.

The commissioning of the project shall be performed in accordance with american society of heating, refrigerating and air conditioning engineers, inc. (ASHRAE) pamphlet 1-1989 guideline for commissioning of hvac systems.

Commissioning is defined as verification of the proper operation of all equipment, alarms, safeties and control and energy management systems serving mechanical systems installed or modified on this project as defined within the specifications and indicated on the contract drawings.

Proper operation is defined as the activation of all controls, field or factory installed, to assure the correct sequencing of equipment and systems, including activation of all operating and safety controls, as hereinbefore described.

The automatic temperature control contractor shall report all system deficiencies to the mechanical contractor. The mechanical contractor shall instruct the proper trade to correct any deficiencies reported by the automatic temperature control contractor so that the project commissioning can be completed.

Prior to the commencement of any commissioning work, the automatic temperature control contractor shall provide the engineer with a commissioning report format for review and approval. The report format shall be delivered to the engineer not more than thirty (30) days after award of the atc contract or not less than sixty (60) days prior to start of atc work, whichever is earlier.

Commissioning report format shall include a list of all items to be verified with the initials of the mechanic who verified the particular item/control and the date on which each item/control operation was verified.

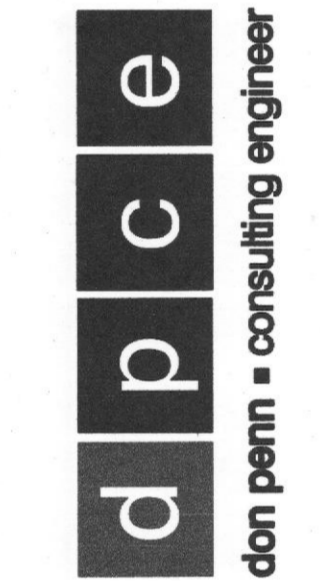
Three (3) commissioning reports are req'd. The first report shall be completed during the initial commissioning of the project prior to occupancy. The second and third reports shall be completed no more than two (2) months (1 report/month) after occupancy of the building. The final report shall also contain the signature of the owner or owner's representative for each item verified.

The controls contractor shall provide the LifeLine management team an instructional "hands on" demonstration of the HVAC automation system.

- E. Refer to drawing, sheet M3, sequence of operations.
- F. All control wiring installed above the ceiling is to be approved for ceiling/plenum installation.



688 Westward Parkway  
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Grapevine, Texas 76051  
Phone: 817-410-2669  
Fax: 817-261-9411



TENANT RENOVATIONS FOR:  
LIFELINE  
Access Center  
7362 W. Thunderbird Rd., Ste 103  
Peoria, Arizona 85361

InSync  
ARCHITECTURAL DESIGNS, INC.  
1213 Old Pylesville Road  
Whiteford, MD 21160  
Office 410-452-8006

1/8" = 1'-0" 8'  
1/4" = 1'-0" 4'  
16'  
24'  
12'

### SPECIFICATIONS

REV#	DATE	REVISIONS	DESCRIPTION
1	8/28/15	Permit Review	Comments
2	10/6/15	Permit Review	Comments-2nd Round
3	10/27/15	Permit Review	Comments-3rd Round
	1/11/17	Arizona State ASC Plan Review	

DRAWING NO. M3 OF SHEET DATE 7/14/15 DRAWN BY DJL NUMBER CHECKED BY 11212 DJL



# COMcheck Software Version 3.9.2 Mechanical Compliance Certificate

2012 IECC

## Section 1: Project Information

Project Type: Addition  
 Project Title: LifeLine - Arizona  
 Construction Site: Peoria, Arizona  
 7362 W. Thunderbird Road  
 Peoria, AZ 85381  
 Owner/Agent: LifeLine  
 Designer/Contractor: Don Penn Consulting Engineer  
 655 Westport Parkway  
 Grapevine, TX 75051  
 817-41-2858

## Section 2: General Information

Building Location (for weather data): Peoria, Arizona  
 Climate Zone: 2b

## Section 3: Mechanical Systems List

- Quantity System Type & Description**
- HVAC System RTU-1 (Single Zone) - Rooftop Packaged Heat Pump  
 Heating Mode: Capacity = 58000 kBtu/h,  
 Proposed Efficiency = 11.15 COP/Required Efficiency = 3.20 COP  
 Cooling Mode: Capacity = 60000 kBtu/h, No Economizer, Economizer exception: High Efficiency Equipment  
 Proposed Efficiency = 11.15 EER/Required Efficiency = 10.45 EER  
 Fan System: None
  - HVAC System RTU-2 (Single Zone) - Rooftop Packaged Heat Pump  
 Heating Mode: Capacity = 58000 kBtu/h,  
 Proposed Efficiency = 11.15 COP/Required Efficiency = 3.20 COP  
 Cooling Mode: Capacity = 60000 kBtu/h, No Economizer, Economizer exception: High Efficiency Equipment  
 Proposed Efficiency = 11.15 EER/Required Efficiency = 10.45 EER  
 Fan System: None
  - HVAC System RTU-3 (Single Zone) - Rooftop Packaged Heat Pump  
 Heating Mode: Capacity = 65000 kBtu/h,  
 Proposed Efficiency = 11.15 COP/Required Efficiency = 3.20 COP  
 Cooling Mode: Capacity = 72000 kBtu/h, Air Economizer  
 Proposed Efficiency = 11.15 EER/Required Efficiency = 10.45 EER  
 Fan System: None
  - HVAC System RTU-4 (Single Zone) - Rooftop Packaged Heat Pump  
 Heating Mode: Capacity = 26000 kBtu/h,  
 Proposed Efficiency = 11.30 COP/Required Efficiency = 3.20 COP  
 Cooling Mode: Capacity = 42000 kBtu/h, No Economizer, Economizer exception: High Efficiency Equipment  
 Proposed Efficiency = 11.30 EER/Required Efficiency = 10.45 EER  
 Fan System: None
  - HVAC System EDH-1 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 17065 kBtu/h  
 Fan System: None
  - HVAC System EDH-2 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 3413 kBtu/h  
 Fan System: None
  - HVAC System EDH-3 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 11945 kBtu/h

Project Title: LifeLine - Arizona  
 Data filename: C:\Users\Domnic\Documents\COMcheck\LifeLine SweetWater.rck Report date: 06/20/15  
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- Fan System: None
- HVAC System EDH-4 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 10239 kBtu/h  
 Fan System: None
  - HVAC System EDH-5 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 11945 kBtu/h  
 Fan System: None
  - HVAC System EWH-1 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 6826 kBtu/h  
 Fan System: None
  - HVAC System HUH-1 (Single Zone)  
 Heating: 1 each - Unit Heater, Electric, Capacity = 10239 kBtu/h  
 Fan System: None

## Section 4: Requirements Checklist

### Requirements Specific To: HVAC System RTU-1 :

- Equipment minimum efficiency: Heat Pump: 3.20 COP 10.45 EER
- Integrated economizer is required for this location and system.

### Requirements Specific To: HVAC System RTU-2 :

- Equipment minimum efficiency: Heat Pump: 3.20 COP 10.45 EER
- Integrated economizer is required for this location and system.

### Requirements Specific To: HVAC System RTU-3 :

- Equipment minimum efficiency: Heat Pump: 3.20 COP 9.50 EER (0.6 IEER)
- Integrated air economizer is required for individual cooling systems and allows modulation of outdoor air and return air dampers to provide up to 100% of the design supply air quantity as outdoor air for cooling. All air economizers shall be capable of automatically reducing outdoor air intake to the design minimum outdoor air quantity when outdoor air intake will no longer reduce cooling energy usage.
- Air economizer dampers can be sequenced with the cooling equipment and not controlled exclusively by mixed air temperature.
  - System controlled from space temperature (such as single-zone systems).
- Cooling system provides a means to relieve excess outdoor air during economizer operation.

### Requirements Specific To: HVAC System RTU-4 :

- Equipment minimum efficiency: Heat Pump: 3.20 COP 10.45 EER
- Integrated economizer is required for this location and system.

### Requirements Specific To: HVAC System EDH-1 :

- None

### Requirements Specific To: HVAC System EDH-2 :

- None

### Requirements Specific To: HVAC System EDH-3 :

- None

### Requirements Specific To: HVAC System EDH-4 :

- None

### Requirements Specific To: HVAC System EDH-5 :

- None

### Requirements Specific To: HVAC System EWH-1 :

- None

### Requirements Specific To: HVAC System HUH-1 :

- None

### Generic Requirements: Must be met by all systems to which the requirement is applicable:

- Plant equipment and system capacity no greater than needed to meet loads.
  - Exception(s):

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- Standby equipment automatically off when primary system is operating
- Multiple units controlled to sequence operation as a function of load
- Minimum one temperature control device per system
- Minimum one humidity control device per installed humidification/dehumidification system
- Load calculations per ASHRAE/ACCA Standard 183.
  - Automatic Controls: Setback to 55°F (heat) and 65°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup.
    - Exception(s):
  - Continuously operating zones
  - 2 kW demand or less, submit calculations
- Automatic start controls that can automatically adjust the daily start time of the HVAC system are provided for each system.
- Outside-air source for ventilation: system capable of reducing OSA to required minimum
- R-8 supply and return air duct insulation in unconditioned spaces
  - R-8 insulation between ducts and the building exterior when ducts are part of a building assembly.
    - Exception(s):
  - Ducts located within equipment
    - Ducts with interior and exterior temperature difference not exceeding 15°F.
- Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts: UL 181A or 181B tapes and mastic
- Pipe serving heating and/or cooling systems is insulated per Section C403.2.2. General applicable insulation requirements are:
 

Fluid Temp Range (°F)	Insulation
> 350	< 1.0" pipe = 4.5" insulation, otherwise 5.0" insulation
251-350	< 1.0" pipe = 3.0" insulation, < 1.5" pipe = 4.0" insulation, otherwise 4.5" insulation
201-250	< 1.0" pipe = 2.5" insulation, otherwise 3.0" insulation
141-200	< 1.5" pipe = 1.5" insulation, otherwise 2.0" insulation
105-140	< 1.5" pipe = 1.0" insulation, otherwise 1.5" insulation
40-60	< 1.5" pipe = 0.5" insulation, otherwise 1.0" insulation
< 40	< 1.0" pipe = 0.5" insulation, < 6.0" pipe = 1.0" insulation, otherwise 1.5" insulation

  - Piping within HVAC equipment.
  - Fluid temperatures between 60 and 105°F.
  - Fluid not heated or cooled with renewable energy.
  - Piping within room fan-coil (with AHR1440 rating) and unit ventilators (with AHR1840 rating).
  - Strainers and valves associated with piping < 1.0".
  - Direct buried piping with fluid temperatures < 60°F.
- Operation and maintenance manual provided to building owner
- Demand control ventilation (DCV) present for high design occupancy areas (>25 person/1000 ft<sup>2</sup> in spaces >500 ft<sup>2</sup>) and served by systems with any one of 1) an air-side economizer; 2) automatic modulating control of the outdoor air damper; or 3) a design outdoor airflow greater than 3000 cfm.
  - Exception(s):
  - Systems with heat recovery.
  - Multiple-zone systems without DDC of individual zones communicating with a central control panel.
  - Systems with a design outdoor airflow less than 1200 cfm.
  - Spaces where the supply airflow rate minus any make-up or outgoing transfer air requirement is less than 1200 cfm.
  - Ventilation for process loads only.
- Total cooling capacity without economizers must be less than 14400 kBtu/h. This project lists 162000 kBtu/h capacity without economizers.
- Motorized, automatic shut-off dampers required on exhaust and outdoor air supply openings.
  - Exception(s):
  - Gravity dampers acceptable in buildings < 3 stories
- Automatic controls for freeze protection systems present
- Each fan system has an energy recovery system when one of the following conditions are met:
  - 50% >> PCA < 60% AND DAF >> 25,000 cfm
  - 50% >> PCA < 70% AND DAF >> 12,000 cfm
  - 70% >> PCA AND DAF >> 5,000 cfm
 where PCA = Percent outdoor air at full design airflow rate and DAF = Design supply fan airflow rate.
  - Exception(s):
  - Laboratory fume hood systems with a total exhaust rate <= 5000 cfm.
  - Systems serving spaces that are not cooled and heated to <= 60°F.

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 Data filename: C:\Users\Domnic\Documents\COMcheck\LifeLine SweetWater.rck Report date: 06/20/15  
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- Systems with more than 60% of the outdoor heating energy is provided from site-recovered or site solar energy.
- Systems exhausting toxic, flammable, paint, or corrosive fumes or dust.
- Systems requiring dehumidification with cooling coil energy recovery in series with the cooling coil.
- Systems expected to operate < 20 hrs per week when outdoor air percentage >> 30%.
- Where the largest exhaust source is less than 75% of the design outdoor airflow.
- Mechanical systems shall meet commissioning and completion requirements in Section C408.2.

## Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC, Chapter 8, requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Don Penn, PE Name - Title Signature Date 1/10/15

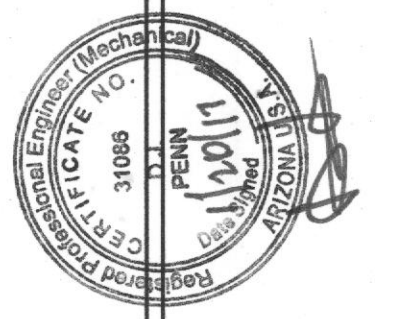
## Section 6: Post Construction Compliance Statement

- HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
  - HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
  - Written HVAC balancing and operations report provided to the owner.
- The above post construction requirements have been completed.

Principal Mechanical Designer-Name Signature Date

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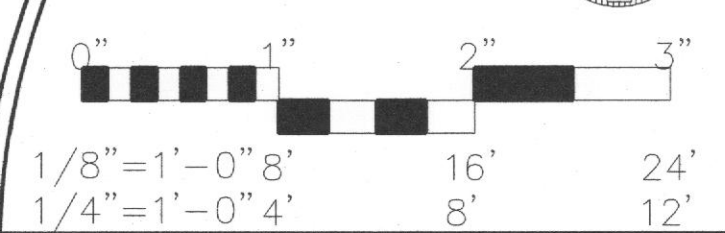
ISSUED FOR ARIZONA  
 STATE ASC PLAN REVIEW



655 Westport Parkway  
 Suite 300  
 Grapevine, Texas 75051  
 Phone: 817-281-2858  
 Fax: 817-281-2811  
 dpce  
 don penn = consulting engineer

TENANT RENOVATIONS FOR:  
 LIFELINE  
 Access Center  
 7362 W. Thunderbird Rd, Ste 103  
 Peoria, Arizona 85381

InSync  
 ARCHITECTURAL DESIGNS, INC.  
 1213 Old Pyeaville Road Whiteford, MD 21160  
 Office 410-452-8006 Fax 410-452-8046



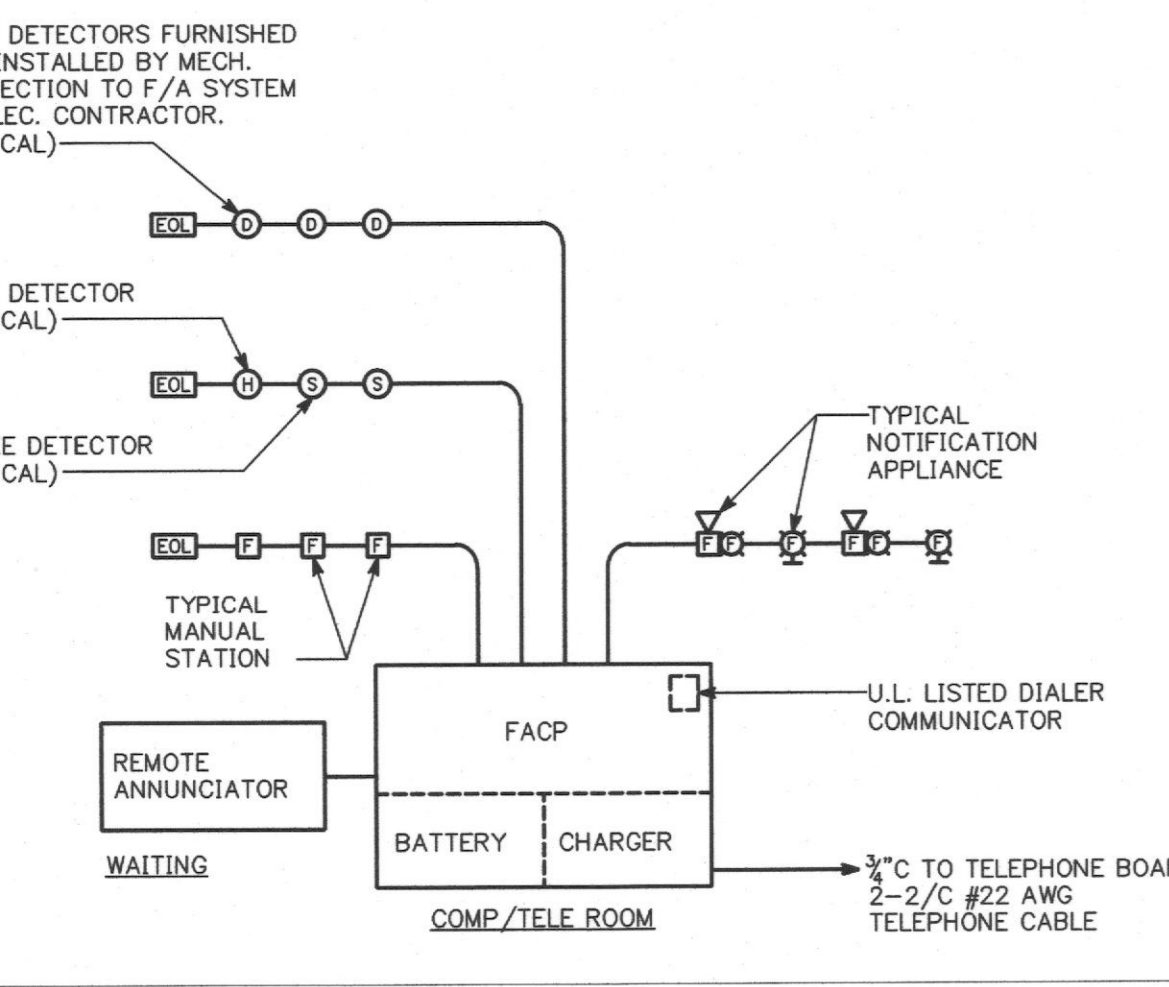
## ComCheck

REV#	DATE	DESCRIPTION
1	8/28/15	Permit Review Comments
2	10/6/15	Permit Review Comments-2nd Round
3	10/27/15	Permit Review Comments-3rd Round
	1/11/17	Arizona State ASC Plan Review

REVISIONS	DRAWING NO.
M10	
DATE: 7/14/15	DRAWN BY: DLI
JOB NUMBER CHECKED BY: 11212	DLI

ELECTRICAL SYMBOLS LIST

Table with columns: SYMBOL, DESCRIPTION. Lists various electrical symbols and their corresponding descriptions, including fixtures, switches, and junction boxes.



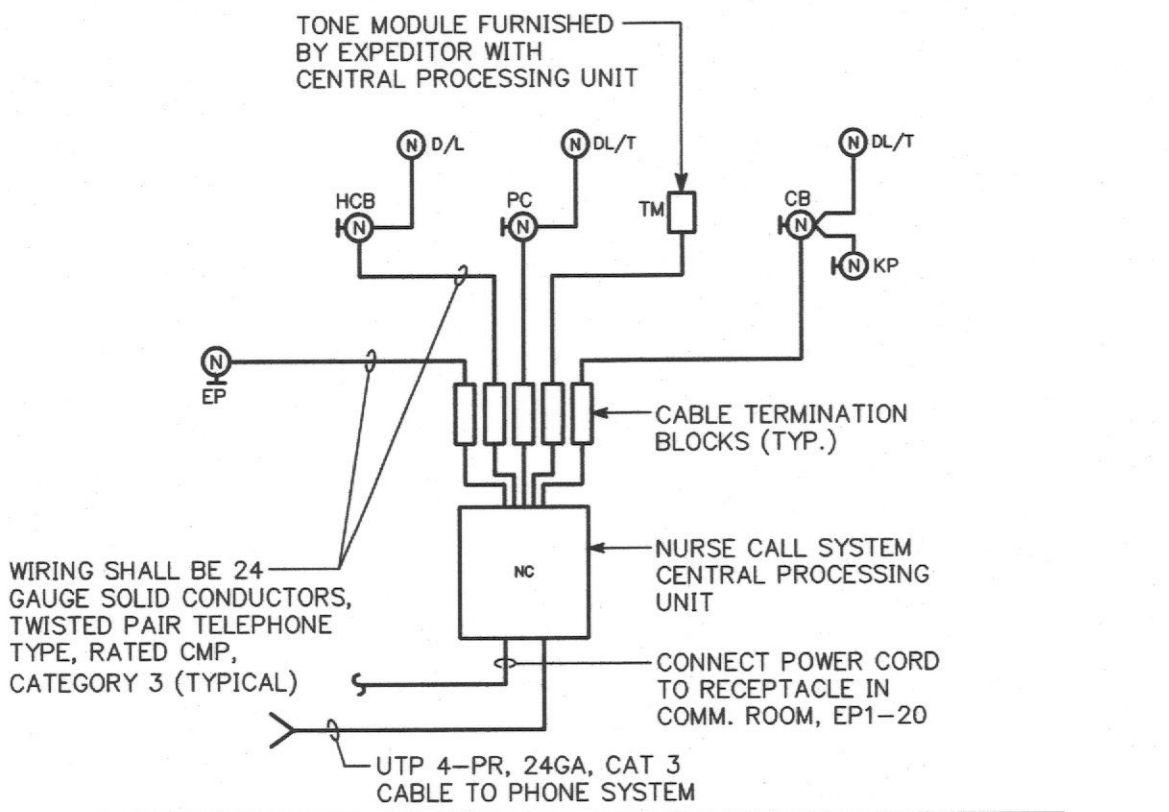
FIRE ALARM SYSTEM NOTE: LAYOUT AND ZONING IS SCHEMATIC FOR BIDDING ONLY. FIRE ALARM SYSTEM VENDOR SHALL PREPARE COMPLETE SYSTEM SHOP DRAWINGS AND SUBMIT TO LOCAL FIRE MARSHAL FOR APPROVAL PRIOR TO ROUGH-IN. ZONING SHALL BE PROVIDED AS DIRECTED BY FIRE MARSHAL.

FIRE ALARM RISER DIAGRAM NO SCALE

- SYSTEM OPERATION
1. UPON ACTIVATION OF ANY PULL STATION, AUTOMATIC DETECTION DEVICE OR SPRINKLER FLOW SWITCH (IF APPLICABLE) THE SYSTEM SHALL:
A. ANNUNCIATE THE ALARMED DEVICE TYPE AND ZONE LOCATION AT THE FIRE ALARM CONTROL PANEL.
B. ACTIVATE THE AUDIBLE ALARM EVACUATION SIGNAL THROUGHOUT THE PROPERTY AND...
C. ACTIVATE THE VISUAL ALARM INDICATING APPLIANCES THROUGHOUT THE PROPERTY.

FIRE ALARM NOTES

- SYSTEM SHALL BE CLASS "B" OR AS REQUIRED BY LOCAL AUTHORITIES.
1. F.A.C.P. - GAMEWELL, FIRE LITE, OR APPROVED EQUAL.
A. SPACE FOR 24 ZONES WITH FUTURE SPACE FOR 8 ZONES.
B. NFPA 71, 72 A,B,C,D POWER LIMITED APPLICATIONS FOR NEC 760 AND FED. REGISTER VOL. 56 3144 JULY 28, 1991.
C. FM APPROVED AND U.L. LISTED.
D. CHARGER AND BATTERY PACK FOR MIN. 60 HOURS STAND-BY SERVICE ON EMERGENCY POWER.



NURSE CALL SYSTEM NOTE: LAYOUT IS SCHEMATIC AND FOR INFORMATION ONLY. NURSE CALL SYSTEM VENDOR SHALL PREPARE COMPLETE SYSTEM SHOP DRAWINGS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO ROUGH-IN.

NURSE CALL SYSTEM SCHEMATIC NO SCALE

ABBREVIATIONS LIST:

Table with columns: ABBREVIATION, DESCRIPTION. Lists abbreviations such as AFF (Above Finished Floor), AHU (Air Handling Unit), CU (Condensing Unit), etc.

LIGHTING FIXTURE SCHEDULE

Table with columns: TYPE, LAMPS, INPUT WATTS, MOUNTING, DESCRIPTION, VOLTS, CATALOG NO. Lists various lighting fixtures like recessed ceiling grids, surface drywall, and emergency battery units.

NOTE: ALL LIGHTING FIXTURES SHALL BE APPROVED BY THE OWNER AND ARCHITECT PRIOR TO ORDERING.

NURSE CALL SYSTEM

Table with columns: TYPE, LOCATION, DESCRIPTION, CATALOG #. Lists nurse call system components and their locations, such as patient prep/patient recovery, nurse work/site manager, and emergency call buttons.

VOLTAGE DROP SCHEDULE 20 AMPERE CIRCUITS

Table with columns: WIRE LENGTH, WIRE SIZE, MINIMUM CONDUIT SIZE. Provides wire size requirements for 120V and 277V circuits based on length.

- NOTES:
1. CIRCUIT LENGTH AS GIVEN SHALL BE THE WIRE LENGTH BETWEEN THE FIRST AND LAST OUTLET TO THE CIRCUIT. HOMERUN LENGTH GIVEN SHALL BE THE WIRE LENGTH BETWEEN THE FIRST OUTLET AND THE PANELBOARD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT ROUTING OF WIRING AND CONDUITS AND SHALL BE RESPONSIBLE FOR SIZING ALL BRANCH CIRCUIT WIRING TO LIMIT VOLTAGE DROP TO 3%. CONTRACTOR SHALL SIZE CONDUIT TO ACCOMMODATE WIRING PER NEC. 20 AMPERE CIRCUITS SHALL BE SIZED AS SHOWN IN SCHEDULE ABOVE.

GENERAL ELECTRICAL NOTES:

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2008 NATIONAL ELECTRICAL CODE AND ALL LOCAL COUNTY CODES AND AMENDMENTS. WIRING METHODS SHALL BE IN ACCORDANCE WITH THE N.E.C., LOCAL CODES AND STANDARDS. THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES AND PERMITS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF THE ELECTRICAL SERVICE WITH THE LOCAL POWER COMPANY; NEW AND/OR UPGRADED.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. SCALE DIMENSIONS SHALL NOT BE USED. IN AS MUCH AS THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DUE TO THE SCALING OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES, AS MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE SITE PRIOR TO SUBMISSION OF BID TO DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES, RECEPTACLES, TELEPHONE/DATA OUTLETS, ETC. SHALL BE DETERMINED FROM ARCHITECTS DRAWINGS UNLESS NOTED OTHERWISE.

DEMOLITION NOTES:

- D1. DEMOLITION DRAWING IS PROVIDED TO SHOW THE GENERAL SCOPE OF THE DEMOLITION WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM ALL DEMOLITION WORK THAT IS NECESSARY TO ACCOMPLISH NEW WORK. THE DEMOLITION DRAWING MAY NOTE TYPICAL ITEMS IN SOME AREAS, WHICH APPLY IN OTHER AREAS (AND DESIGNATED WITH DASHED LINES OR SOLID SHADE). COORDINATE ALL DEMOLITION WORK WITH ALL ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE TO REFERENCE ALL DRAWINGS/SPECIFICATIONS TO CONFIRM EXTENT OF WORK.
D2. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING AND UNDERSTANDING EXISTING DRAWINGS PRIOR TO BIDDING.
D3. ALL ACCESSIBLE ITEMS OF ELECTRICAL EQUIPMENT, CONDUITS, WIRING, LIGHTS, RECEPTACLES, AND PANELS TO BE DEMOLISHED BY THE RENOVATION WORK AND NOT REQUIRED IN THE COMPLETED WORK SHALL BE CAREFULLY REMOVED. ANY DAMAGED WALLS, FLOORS, CEILING, ETC. SHALL BE PATCHED AND FINISHED TO MATCH THE EXISTING ADJACENT SURFACES. MAINTAIN EXISTING FIRE RATING WHERE OCCURS AND WHERE POSSIBLE. DURING DEMOLITION, REMOVED ITEMS SHALL BE PROPERLY DISPOSED OF OFF SITE AND NOT REUSED EXCEPT AS NOTED. TURN OVER ALL EXISTING EQUIPMENT DESIRED BY BUILDING OWNER TO BUILDING OWNER.



TENANT RENOVATIONS FOR: LIFELINE ACCESS CENTER

inSync ARCHITECTURAL DESIGNS, INC. 1213 Old Fayetteville Road Whiteford, MD 21160 Office 410-452-8006

SCHEDULES, SYMBOLS AND NOTES. Includes a scale bar, revision table, and drawing information.

REVISIONS table with columns: REV# DATE DESCRIPTION. Lists revisions to the drawing.

DRAWING NO. E1 SHEET 8 OF 8 DATE 7/14/15 DRAWN BY JWC JOB NUMBER DEQD BY 11212 MSW



635 Westport Parkway  
Suite 300  
Columbus, Texas 76801  
Phone: 817-410-2658  
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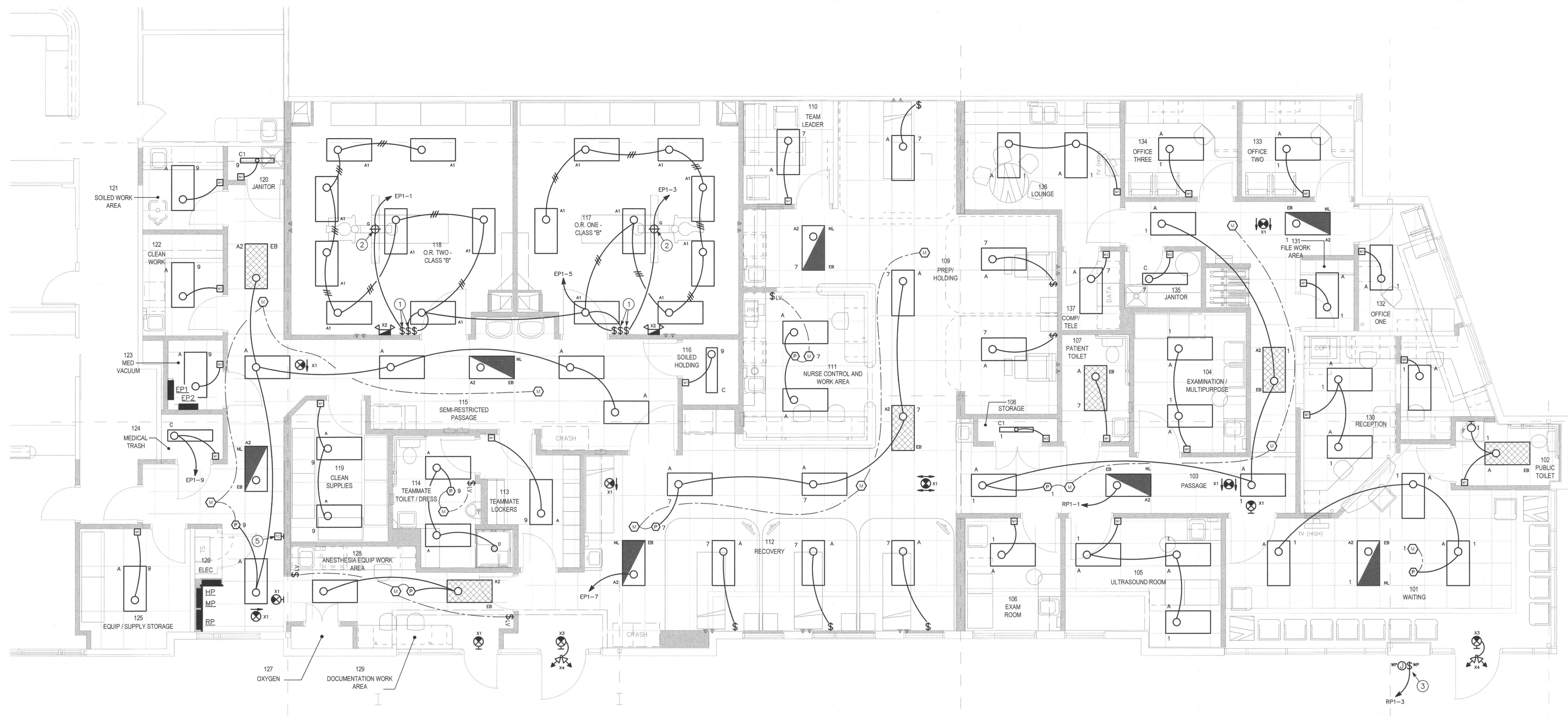
**d p c e**  
david p cline consulting engineer

TENANT RENOVATIONS FOR:  
**LIFELINE  
ACCESS CENTER**  
7362 W. Thunderbird Rd., Suite 103  
Peoria, Arizona 85381

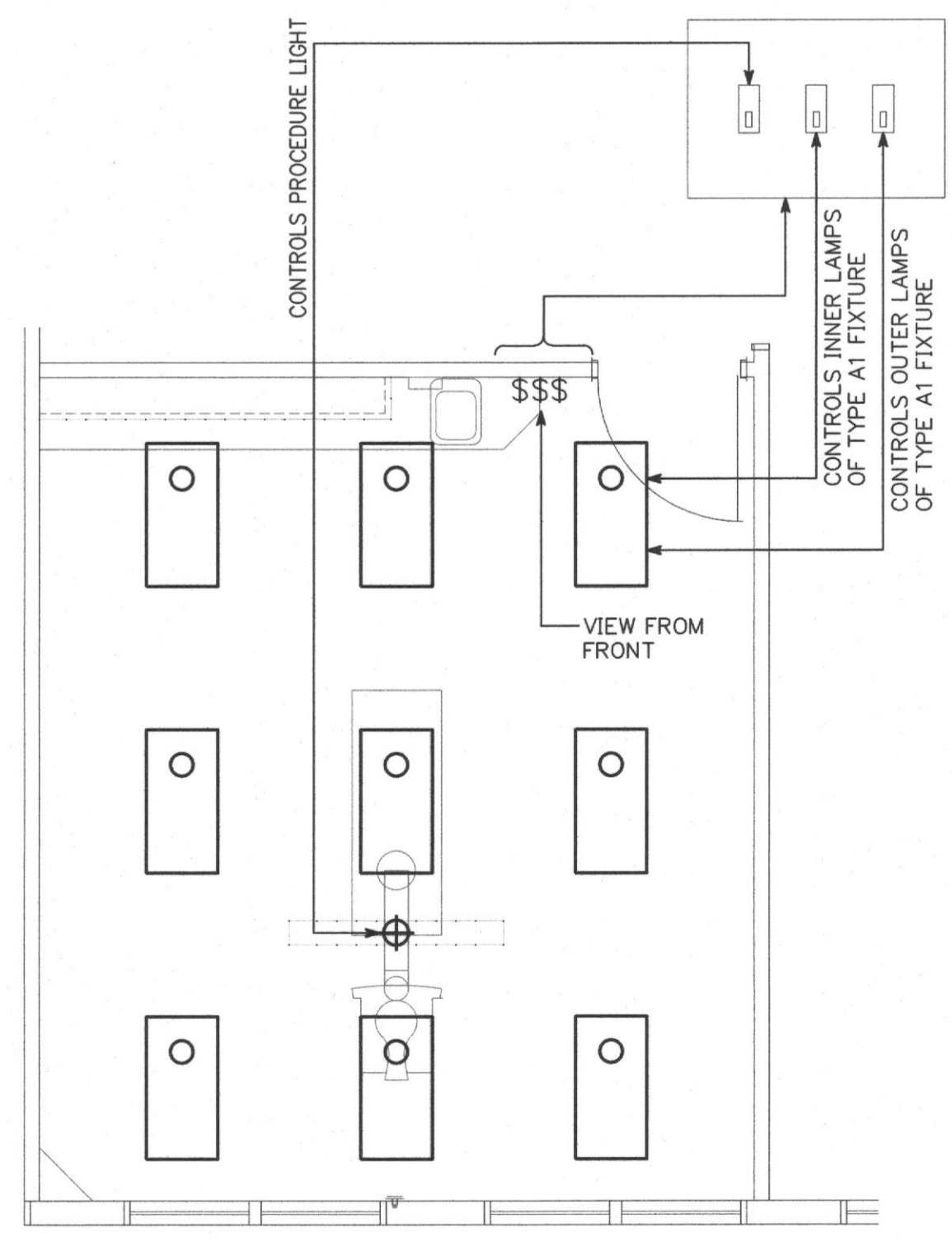
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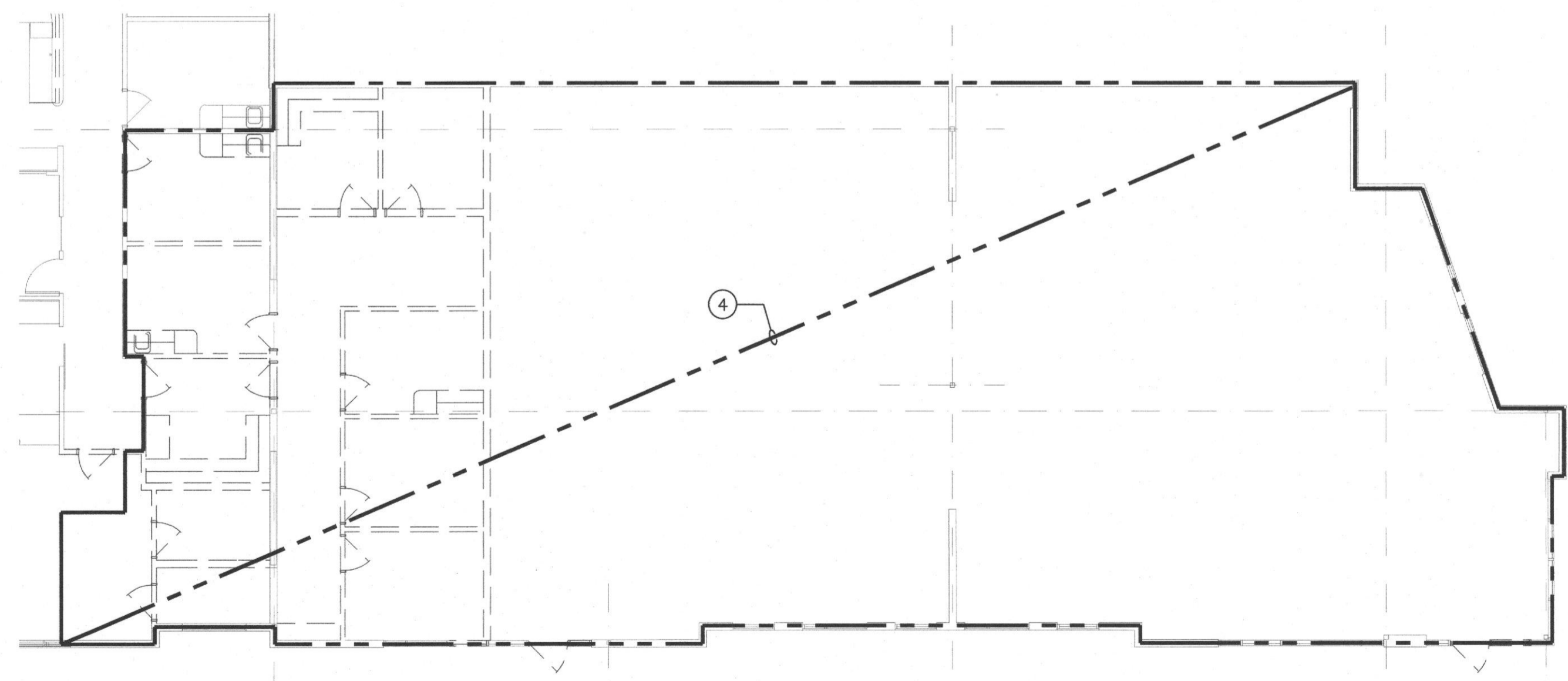
DRAWING NO.  
**E2**  
SHEET OF 5  
DATE DRAWN BY  
7/14/15 JCW  
JOB NUMBER DESIGNED BY  
112.12 MSW



**1 FLOOR PLAN - LIGHTING**  
SCALE: 1/4"=1'-0"



**3 TYPICAL PROCEDURE RM  
WALL SWITCH DETAIL**  
NO SCALE



**2 FLOOR PLAN - DEMOLITION**  
SCALE: 1/16"=1'-0"

**GENERAL LIGHTING NOTES:**

- ALL LIGHTING FIXTURES ARE TYPE 'A' UNLESS OTHERWISE NOTED.
- MULTIPLE SWITCHES AT ONE (1) LOCATION SHALL BE GANGED TOGETHER AND HAVE ONE (1) SWITCH PLATE.
- MOUNT ALL SWITCHES 42" A.F.F. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
- REFER TO TYPICAL PROCEDURE ROOM WALL SWITCH DETAIL ON THIS DRAWING FOR LIGHT SWITCH CONTROL.
- CONNECT EXIT LIGHTS, EMERGENCY BATTERY UNITS AND NIGHT LIGHTS (NL) TO THE UNSWITCHED PORTION OF LOCAL BRANCH LIGHTING CIRCUIT SERVING RESPECTIVE AREA.
- FIXTURES WITH EMERGENCY BALLAST (EB) SHALL BE WIRED PER MANUFACTURERS PRINTED INSTALLATION INSTRUCTIONS SO THAT IN THE EVENT OF A POWER FAILURE THE FIXTURE ENERGIZES REGARDLESS OF SWITCH POSITION.
- CERTIFICATION FOR ALL ELECTRICAL WORK AND EQUIPMENT SHALL BE IN COMPLIANCE WITH ALL APPLICABLE LOCAL CODES AND LAWS AND ALL MATERIALS ARE CURRENTLY APPROVED AND LISTED BY A RECOGNIZABLE TESTING LABORATORY.

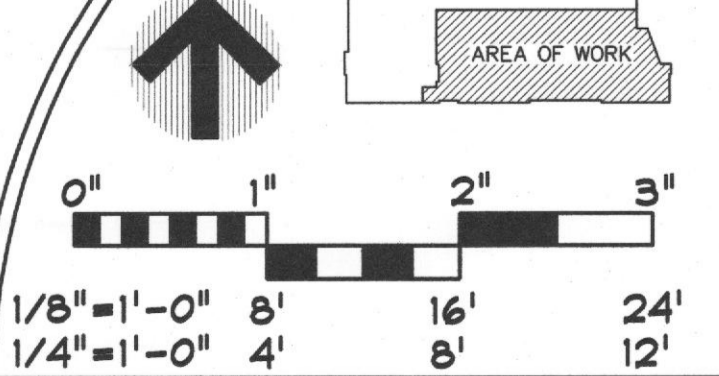
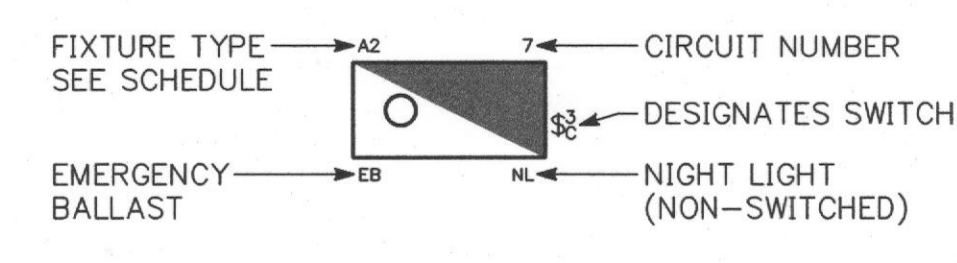
**COORDINATION NOTES:**

- REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL JOB SPECIFIC NOTES.
- MECHANICAL, PLUMBING AND ELECTRICAL SUBCONTRACTORS ARE REQUIRED TO COORDINATE WITH EACH OTHER AND TO REFER TO ALL SHEETS IN THE SET FOR CONSTRUCTION CONDITIONS, NOT JUST THE DRAWINGS PERTAINING TO THEIR DISCIPLINE.
- FINAL LOCATION OF ALL SURFACE FEATURES ARE TO BE VERIFIED WITH ARCHITECTURAL DRAWINGS AND/OR ARCHITECT PRIOR TO INSTALLATION.
- ALL EXPOSED PIPE, CONDUIT, DUCTWORK TO BE PREPPED BY TRADE FOR PRIME AND FINAL PAINT BY G.C. SEE ARCHITECTURAL SPECIFICATIONS.

**DRAWING NOTES:**

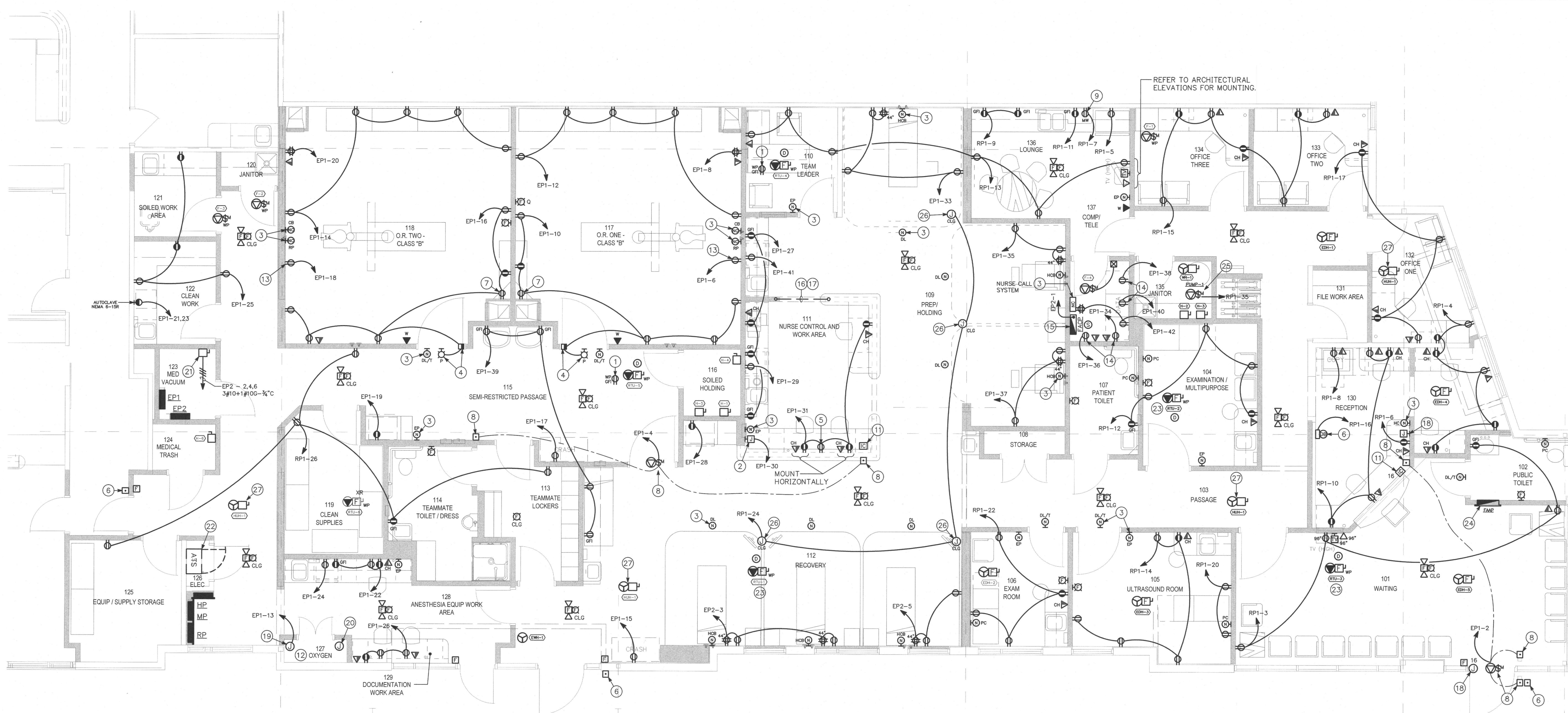
- ONE SWITCH SHALL CONTROL THE INNER LAMPS AND ONE SWITCH SHALL CONTROL THE OUTER LAMPS FOR 50% LIGHT LEVEL OF THE 2X4 FIXTURES.
- OWNER SHALL BE RESPONSIBLE FOR FURNISHING PROCEDURE LIGHT FIXTURE. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING PER MANUFACTURERS PRINTED INSTRUCTIONS AND NEC. COORDINATE REQUIREMENTS WITH OWNER PRIOR TO ROUGH IN.
- IF REQUIRED, ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL JUNCTION BOX AND WEATHERPROOF SWITCH FOR TENANT EXTERIOR BUILDING MOUNTED SIGN. COORDINATE LOCATION IN FIELD.
- DISCONNECT AND REMOVE ALL PANELBOARDS, LIGHTS, RECEPTACLES, EMERGENCY BATTERY UNITS, EXIT SIGNS, FIRE ALARM DEVICES, ETC. FROM EXISTING SPACE BEING DEMOED UNLESS OTHERWISE NOTED TO REMAIN ON NEW WORK PLANS. REMOVE ALL ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE. COORDINATE WITH LANDLORD ANY OVERLAPPING CIRCUITS OR PANELS THAT NEED TO BE RELOCATED IN ADJACENT SPACE.
- TIMESWITCH, 2 CHANNEL, 24 HOUR, 120 VOLT COIL, NEMA 1 FLUSH MOUNTED ENCLOSURE, ELECTRONIC WITH BATTERY BACKUP. PARAGON, INTERMATIC, TORK OR APPROVED EQUAL.

**TYPICAL FIXTURE LEGEND**



**LIGHTING PLAN AND NOTES**

REV#	DATE	DESCRIPTION
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2ND ROUND
3	10/27/15	PERMIT REVIEW COMMENTS - 3RD ROUND
	1/11/17	ARIZONA STATE ASC PLAN REVIEW



1 FLOOR PLAN - POWER  
SCALE: 1/4"=1'-0"

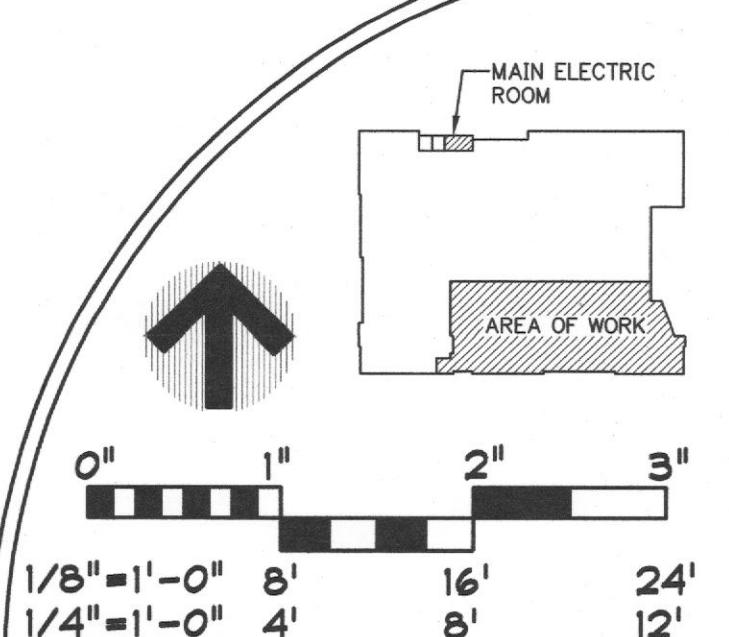
**MECHANICAL EQUIPMENT CONNECTION SCHEDULE**

EQUIP #	AREA SERVED	TONS	LOAD		VOLTAGE	PHASE	DISCONNECT @ UNIT		BRANCH CIRCUIT		WIRE	NOTES
			HP/KW	FLA/MCA			NFSS	FSS	BRKR	CIRCUIT #		
RTU-1	RECOVERY / WORK AREA	6	12.3 KVA	40.0	208	3	-	3P50A	3P50A	MP-1,3,5	3#8+1#10G-1" C	1,4,5,6
RTU-2	RECEPTION / LOUNGE	5	10.0 KVA	31.0	208	3	-	3P45A	3P45A	MP-2,4,6	3#6+1#10G-1" C	1,4,5,6
RTU-3	WAITING AREA / ULTRA SOUND	7.5	16.0 KVA	48.6	208	3	-	3P60A	3P60A	MP-7,9,11	3#4+1#10G-1-1/4" C	1,4,5,6
RTU-4	PROCEDURE ROOM 1	5	10.1 KVA	28.0	208	3	-	3P45A	3P45A	EP2-7,9,11	3#8+1#10G-1" C	1,4,5,6
RTU-5	PROCEDURE ROOM 2	5	10.1 KVA	28.0	208	3	-	3P45A	3P45A	EP2-8,10,12	3#8+1#10G-1" C	1,4,5,6
RTU-6 (EX)	CLEAN ROOM / SOILED	3	7.3 KVA	20.3	208	3	-	3P30A	3P30A	MP-8,10,12	3#10+1#10G-3/4" C	1,4,5,6
F-1 (ROOF)	TOILET ROOMS	-	.167 HP	-	120	1	-	1P15A	RP1-28	2#12+1#12G-1/2" C	1,2,5,10	
F-2 (ROOF)	JANET CLOSET / MED VAC	-	.167 HP	-	120	1	-	1P15A	RP1-30	2#12+1#12G-1/2" C	1,2,5,9	
F-3 (ROOF)	TRASH RM AND SOILED AREA	-	.167 HP	-	120	1	-	1P15A	RP1-32	2#12+1#12G-1/2" C	1,2,5,10	
F-4	TELE / COMP	-	226 W	-	120	1	-	1P15A	EP1-32	2#12+1#12G-1/2" C	1,2,6,8	
EDH-1	OFFICES	-	5.0 KW	-	208	3	-	3P20A	3P20A	MP-13,15,17	3#10+1#10G-3/4" C	1,4
EDH-2	EXAM ROOM	-	1.0 KW	-	208	1	-	2P15A	2P15A	MP-20,22	2#12+1#12G-1/2" C	1,4
EDH-3	ULTRASOUND ROOM	-	3.5 KW	-	208	3	-	3P15A	3P15A	MP-14,16,18	3#12+1#12G-1/2" C	1,4
EDH-4	RECEPTION SIDE OFFICE	-	3.0 KW	-	208	3	-	3P15A	3P15A	MP-19,21,23	3#12+1#12G-1/2" C	1,4
EDH-5	ENTRANCE	-	3.5 KW	-	208	1	-	2P25A	2P25A	MP-24,26	2#10+1#10G-1/2" C	1,4
EW-1	RECOVERY ENTRANCE	-	2.0 KW	-	208	1	-	2P15A	2P15A	RP1-40,42	2#12+1#12G-1/2" C	1
HUH-1	ABOVE THE CEILING	-	3 KW	-	208	1	2P20A	-	2P20A	RP1-19,21 RP1-23,25 RP1-27,29 RP1-33,35	2#12+1#12G-1/2" C	1,3
H-1	RTU-1	-	6.6 KW	-	208	3	3P30A	-	3P25A	HP-1,3,5	3#10+1#10G-3/4" C	1,3
H-2	RTU-2	-	6.6 KW	-	208	3	3P35A	-	3P25A	HP-2,4,6	3#12+1#12G-1/2" C	1,3
H-3	RTU-3	-	13.3 KW	-	208	3	3P60A	-	3P50A	HP-7,9,11	3#6+1#10G-1" C	1,3
H-4	RTU-4	-	3.3 KW	-	208	3	3P30A	-	3P15A	HP-8,10,12	3#12+1#12G-1/2" C	1,3
H-5	RTU-5	-	3.3 KW	-	208	3	3P30A	-	3P15A	HP-13,15,17	3#12+1#12G-1/2" C	1,3
H-6	RTU-6	-	3.3 KW	-	208	3	3P30A	-	3P15A	HP-14,16,18	3#12+1#12G-1/2" C	1,3
WH-1	FLOOR	-	9 KW	-	208	3	3P60A	-	3P35A	RP1-37,39,41	3#8+1#10G-1" C	1,3

- NOTES:**
- COORDINATE ALL EQUIPMENT LOCATIONS, CONNECTIONS AND ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND LABEL / NAMEPLATE OF EQUIPMENT PRIOR TO ROUGH-IN.
  - PROVIDE THERMAL MOTOR SNAP SWITCH, NEMA 3R WHERE LOCATED OUTSIDE; COORDINATE WITH MECHANICAL.
  - PROVIDE DISCONNECT SWITCH, NEMA 3R WHERE LOCATED OUTSIDE.
  - PROVIDE DISCONNECT SWITCH, FUSED PER MANUFACTURER'S RECOMMENDATION, NEMA 3R WHERE LOCATED OUTSIDE.
  - EQUIPMENT MOUNTED ON ROOF.
  - USE FUSE SIZE OR "HACR" CIRCUIT BREAKER PER MANUFACTURER'S UL LISTING.
  - ELECTRICAL CONTRACTOR TO PROVIDE A GFCI/WP RECEPTACLE WITH 25' OF ALL ROOF MOUNTED EQUIPMENT FOR MAINTENANCE USE.
  - CONTROL VIA REVERSE ACTING THERMOSTAT PROVIDED BY MECHANICAL; ELECTRICAL CONTRACTOR PROVIDE WIRING.
  - 24/7 OPERATION - COORDINATE WITH MECHANICAL CONTRACTOR.
  - CONTROL OF MECHANICAL EQUIPMENT SHALL BE INTERLOCKED WITH ROOFTOP UNIT. REFER TO MECHANICAL DRAWINGS.
  - SHARES BRANCH CIRCUIT.

**DRAWING NOTES:**

- PROVIDE RECEPTACLE AT MECHANICAL EQUIPMENT FOR MAINTENANCE USE. CIRCUIT RP1-2.
- PROVIDE A JUNCTION BOX FOR OXYGEN MASTER ALARM PANEL. COORDINATE EXACT ELECTRICAL REQUIREMENTS IN FIELD WITH OXYGEN VENDOR.
- EXPEDITER NURSE CALL SYSTEM DEVICE LOCATION. CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE NURSE CALL SYSTEM. PROVIDE CONDUIT FROM EACH OUTLET LOCATION TO CEILING SPACE ABOVE. COORDINATE ALL WORK WITH OWNER'S VENDOR, EXPEDITER SYSTEMS (1-800-843-9651). REFER TO SCHEDULE ON SHEET E4. COORDINATE ALL LOCATIONS WITH OWNER. (TYPICAL)
- MOUNT "IN-USE" SIGN OVER DOOR AND INTERLOCK WITH DOOR CONTACT SWITCH SO THAT SIGN ENERGIZES WHEN DOOR IS CLOSED. DOOR SWITCH TO BE EDWARDS #503A OR APPROVED EQUAL.
- MOUNT BELOW COUNTER IN KNEE SPACE. COORDINATE WITH OWNER.
- HARD WIRED ELECTRONIC DOOR CHIME WITH 3 SEPARATE TONES FOR EACH PUSHBUTTON LOCATION. COORDINATE LOCATION OF PUSHBUTTONS AND DOOR CHIME WITH OWNER AND ARCHITECT. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ELECTRONIC DOOR CHIME, 16 VOLT TRANSFORMER, PUSHBUTTONS AND ALL WIRING ASSOCIATED WITH DOOR CHIME SYSTEM. NUTONE OR APPROVED EQUAL.
- PROVIDE A RECEPTACLE FOR RADIO. COORDINATE LOCATION OF RECEPTACLE IN FIELD.
- POWER ASSISTED DOOR AND PUSHBUTTON FURNISHED BY OTHERS AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE OUTLET BOX NEXT TO PADDLE BUTTON IN RECEPTION 110 FOR AUTOMATIC DOOR SWITCH CONTROL. COORDINATE WITH VENDOR SPECIFICATIONS PRIOR TO ROUGH-IN.
- MOUNT AT MICROWAVE SHELF.
- PROVIDE GFI RECEPTACLE UNDER SCRUB SINK FOR INFRARED SENSOR BY PLUMBING CONTRACTOR.
- PROVIDE AND INSTALL HARDWIRED LOW VOLTAGE DOOR INTERCOM SYSTEM. PROVIDE MASTER STATION AT RECEPTION DESK. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION, ELEVATIONS AND SYSTEM DETAILS. COORDINATE SYSTEM DETAILS WITH LIFELINE PROJECT MANAGER. INTERCOM SYSTEM MAY BE COMBINED WITH DOOR CHIME SYSTEM FOR ONE COMPLETE SYSTEM. USE BRANCH CIRCUIT RP1-16 FOR 120V POWER.
- ALL ELECTRICAL EQUIPMENT, CONDUIT, WIRE, ETC. IN THIS ROOM SHALL BE INSTALLED PER NEC AND LOCAL BUILDING CODES. FURNISH AND INSTALL ELECTRICAL ITEMS PER NEC AND LOCAL BUILDING CODES.
- PROVIDE A GREY DEDICATED RECEPTACLE FOR TENANT PROVIDED UPS.
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHT FOR OUTLETS IN COMP/TELE ROOM WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN OR MOUNTING OF ANY BOXES.
- FIRE ALARM CONTROL PANEL SHALL BE PERMANENTLY LABELED WITH PANEL DESIGNATION AND CIRCUIT NUMBER PER NFPA 72.
- PROVIDE 1-1" EMPTY CONDUIT WITH PULL STRING IN SLAB FROM NURSES STATION COUNTER AREA AND TURN UP AT NEAREST WALL TO CEILING SPACE FOR VOICE/DATA CABLES TO THE NURSES STATION COUNTER AREA. SAW CUT AND PATCH EXISTING FLOOR AS REQUIRED. COORDINATE CONDUIT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
- PROVIDE 1-1" CONDUIT WITH 2#12+1#12G IN SLAB FROM NURSES STATION COUNTER AREA AND TURN UP AT NEAREST WALL TO CEILING SPACE FOR POWER WIRING TO THE NURSES STATION COUNTER AREA. EXTEND HOMERUN TO PANEL AS REQUIRED. SAW CUT AND PATCH EXISTING FLOOR AS REQUIRED. COORDINATE CONDUIT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
- PROVIDE JUNCTION BOX ABOVE DOOR AND AT RECEPTIONS DESK FOR ELECTRIC DOOR SECURITY STRIKE POWER AND CONTROL. PROVIDE 120V POWER TO LOW VOLTAGE TRANSFORMER - CIRCUIT NUMBER RP1-16. REFER TO ARCHITECTURAL DRAWINGS FOR SYSTEM AND ADDITIONAL INFORMATION.
- OXYGEN CABINET - MOUNT FLUSH IN WALL AND MAKE FINAL CONNECTIONS. REFER TO VENDORS SPECIFICATIONS FOR SIZE OF JUNCTION BOX.
- PROVIDE A FLUSH MOUNTED JUNCTION BOX WITH 3/4" CONDUIT TO CEILING SPACE FOR LOW VOLTAGE OXYGEN EQUIPMENT WIRING. EXTEND TO NURSE STATION COORDINATE LOCATION AND ROUTING IN FIELD WITH VENDOR PRIOR TO ROUGH-IN.
- VACUUM PUMP - 2 @ 2HP, 208V, 3Ø PROVIDE A 3P30A NON FUSED SAFETY SWITCH FOR VACUUM PUMP. COORDINATE LOCATION AND ALL ELECTRICAL REQUIREMENTS WITH EQUIPMENT VENDOR AND MANUFACTURER PRIOR TO ROUGH-IN.
- APPROXIMATE LOCATION OF FUTURE AUTOMATIC TRANSFER SWITCH. PROVIDE CONDUITS AND TERMINATE ABOVE CEILING AS SHOWN ON RISER WITH PULL STRING FOR FUTURE GENERATOR. EXTEND CONDUITS TO EXTERIOR OF BUILDING AT LOCATION DETERMINED BY RMS LIFELINE PROJECT MANAGER. SEE RISER DIAGRAM ON DWG E3 FOR ADDITIONAL INFORMATION. COORDINATE EXACT LOCATION OF AUTOMATIC TRANSFER SWITCH PRIOR TO ROUGH-IN.
- ROOFTOP UNIT PROVIDED FROM FACTORY WITH INTEGRAL GFCI RECEPTACLE.
- COORDINATE LOCATION AND MOUNTING REQUIREMENTS WITH FIRE MARSHALL FOR APPROVED FIRE ALARM ANNUNCIATOR PANEL (FAAP) LOCATION PRIOR TO ROUGH-IN.
- RE-CIRCULATION PUMP BY MECHANICAL CONTRACTOR - 1/8HP, 120/1Ø. COORDINATE ELECTRICAL REQUIREMENTS AND LOCATION WITH CONTRACTOR PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR SHALL MAKE ALL ELECTRICAL CONNECTIONS TO PUMP.
- PROVIDE JUNCTION BOX ABOVE CEILING FOR FUTURE TV POWER. LABEL OUTLET BOX WITH "CIRCUIT NUMBER AND FUTURE TV POWER" FOR EASY IDENTIFICATION. COORDINATE EXACT LOCATION WITH TENANT.
- UNIT HEATER BY MECHANICAL MOUNTED ABOVE CEILING. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR BRANCH CIRCUIT INFORMATION.

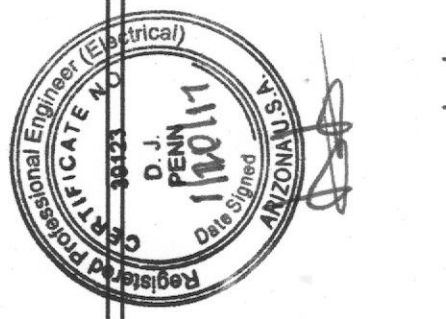


**POWER PLAN AND NOTES**

REV#	DATE	DESCRIPTION
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2ND ROUND
3	10/27/15	PERMIT REVIEW COMMENTS - 3RD ROUND
1	11/17/17	ARIZONA STATE ASC PLAN REVIEW

DRAWING NO.  
**E3**  
SHEET OF 5  
DATE DRAWN BY  
7/14/16 JCW  
JOB NUMBER CHECKED BY  
11212 MSW

ISSUED FOR ARIZONA  
STATE ASC PLAN REVIEW

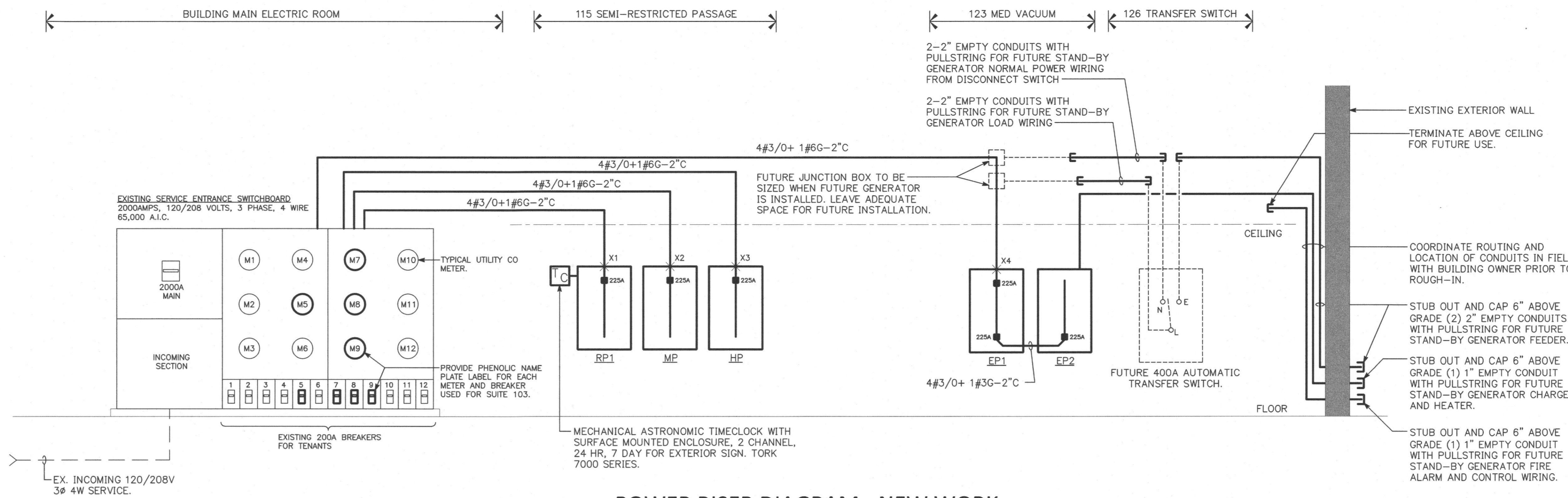


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TENANT RENOVATIONS FOR:  
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7362 W. Thunderbird Rd. Suite 103  
Peoria, Arizona 85381

**InSync ARCHITECTURAL DESIGNS, INC.**  
1215 Old Pyleville Road Whiteford, MD 21160  
Office 410-452-8006

LOAD TYPE	CONNECTED KVA	DEMAND FACTOR	COMPUTED KVA
* LIGHTING	11.4	125%	14.3
SIGN CIRCUIT	1.2	125%	1.5
** RECEPTACLES	26.6	**	18.3
ROOF TOP UNITS (A/C)	63.3	100%	63.3
WATER HEATERS	9.0	100%	9.0
ELECTRIC HEATING	60.9	100%	60.9
MISCELLANEOUS LOAD	22.7	100%	22.7
<b>TOTAL KVA</b>	<b>195.1 KVA</b>		<b>190.0 KVA</b>
<b>TOTAL AMPS</b>	<b>542 AMPS</b>		<b>527 AMPS</b>
* PER NEC 210-20(a) AND TABLE 220-12 HEALTH CARE 2 w/s.f. 11.4 KVA			
** PER NEC 220-13 1st 10KW @ 100% BALANCE @ 50% = 18.3 KVA			
TOTAL TENANT AREA	5,700 s.f.		
MAIN SERVICE VOLTAGE 208/120 Volts 3 Phase 4 Wire			
TENANT SERVICE SIZE 800 Amp			



PANEL RP1												
208 / 120 VOLTS 3 PHASE 4 WIRE 225 AMP MAIN LUGS ONLY A.I.C. = 42,000												
CKT No.	DESCRIPTION	KVA	C/B			A	B	C	KVA	DESCRIPTION	CKT No.	
			POLE	AMP	AMP							
1	CONF / OFFICE / WAITING LIGHTS	1.6	1	20	1	1	20	0.6	ROOF EQUIP MAINT RECEP	2		
3	SPARE	---	---	---	---	---	---	---	OFFICE 1 / RECEPTION RECS.	4		
5	LOUNGE REFRIG	0.8	1	20	5	1	20	0.6	PRINTER	6		
7	LOUNGE MW	1.0	1	20	7	1	20	1.0	COPIER	8		
9	LOUNGE RECEP	0.4	1	20	9	1	20	0.8	RECEPTION RECEP	10		
11	CONFERENCE ROOM RECEP	1.0	1	20	11	1	20	1.0	CONSULT RECEP	12		
13	LOUNGE / TEAM RECEP	1.2	1	20	13	1	20	1.0	ULTRASOUND RECEP	14		
15	OFFICE 3 RECEP	1.4	1	20	15	1	20	0.4	DOOR BELL SYSTEM / INTERCOM	16		
17	OFFICE 1 & 2 RECEP	0.8	1	20	17	1	20	1.2	SIGN	18		
19	HUH-1	3.0	2	20	19	1	20	0.4	ULTRASOUND RECEP	20		
21	SPARE	---	---	---	---	---	---	---	EXAM ROOM RECEP	22		
23	HUH-1	3.0	2	20	23	1	20	0.8	TV RECEP - RECOVERY	24		
25	SPARE	---	---	---	---	---	---	---	CLEAN SUPPLY RECEP	26		
27	HUH-1	3.0	2	20	27	1	15	0.5	F-1	28		
29	HUH-1	3.0	2	20	29	1	30	1	F-2	30		
31	HUH-1	3.0	2	20	31	1	32	1	F-3	32		
33	SPARE	---	---	---	---	---	---	---	SPACE	34		
35	PUMP P-1	0.3	1	15	35	1	36	---	SPACE	36		
37	SPARE	---	---	---	---	---	---	---	SPACE	38		
39	WATER HEATER	9.0	3	35	39	1	40	2	15	2.0	EW-1	40
41	SPARE	---	---	---	---	---	---	---	---	---	---	42
TOTALS		29.5	KVA			13.9			KVA			

PANEL HP												
208 / 120 VOLTS 3 PHASE 4 WIRE 225 AMP MAIN LUGS ONLY A.I.C. = 42,000												
CKT No.	DESCRIPTION	KVA	C/B			A	B	C	KVA	DESCRIPTION	CKT No.	
			POLE	AMP	AMP							
1	RTU-1	12.3	3	50	1	1	2	3	45	10.0	RTU-2	2
3	RTU-1	12.3	3	50	3	1	4	3	45	10.0	RTU-2	4
5	RTU-1	12.3	3	50	5	1	6	3	45	10.0	RTU-2	6
7	RTU-1	12.3	3	50	7	1	8	3	45	10.0	RTU-2	8
9	RTU-3	16.0	3	60	9	1	10	3	30	7.3	RTU-6	10
11	RTU-3	16.0	3	60	11	1	12	3	30	7.3	RTU-6	12
13	EDH-1	5.0	3	20	13	1	14	3	15	3.5	EDH-3	14
15	EDH-1	5.0	3	20	15	1	16	3	15	3.5	EDH-3	16
17	EDH-1	5.0	3	20	17	1	18	3	15	3.5	EDH-3	18
19	EDH-4	3.0	3	15	19	1	20	2	15	1.0	EDH-2	20
21	EDH-4	3.0	3	15	21	1	22	2	15	1.0	EDH-2	22
23	SPACE	---	---	---	---	---	---	---	---	---	SPACE	24
25	SPACE	---	---	---	---	---	---	---	---	---	SPACE	26
27	SPACE	---	---	---	---	---	---	---	---	---	SPACE	28
29	SPACE	---	---	---	---	---	---	---	---	---	SPACE	30
TOTALS		36.4	KVA			101			AMPS			

PANEL EP1													
208 / 120 VOLTS 3 PHASE 4 WIRE 200 AMP MAIN LUGS ONLY A.I.C. = 42,000													
CKT No.	DESCRIPTION	KVA	C/B			A	B	C	KVA	DESCRIPTION	CKT No.		
			POLE	AMP	AMP								
1	PROCEDURE RM 2 OVH LIGHT	1.2	1	20	1	1	20	0.8	POWER ASSISTED DOOR	2			
3	PROCEDURE RM 1 OVH LIGHT	1.2	1	20	3	1	20	0.8	POWER ASSISTED DOOR	4			
5	PROCEDURE RM LIGHTING	1.2	1	20	5	1	20	0.2	PROCEDURE RM # 1 RECEP	6			
7	RECOVERY LIGHTING	0.9	1	20	7	1	20	0.4	PROCEDURE RM # 1 RECEP	8			
9	CLEAN WORK/SOILED LIGHTS	1.1	1	20	9	1	10	1.2	PROCEDURE RM # 2 RECEP	10			
11	SPARE	---	---	---	---	---	---	---	PROCEDURE RM # 1 RECEP	12			
13	OXYGEN CABINET	0.2	1	20	13	1	14	1	20	1.0	PROCEDURE RM # 2 RECEP	14	
15	CRASH CART	0.8	1	20	15	1	16	1	20	1.2	PROCEDURE RM # 2 RECEP	16	
17	CRASH CART	0.8	1	20	17	1	18	1	20	0.2	PROCEDURE RM # 2 RECEP	18	
19	BLANKET WARMER	1.0	1	20	19	1	20	0.4	PROCEDURE RM # 2 RECEP	20			
21	AUTOClave	2.0	2	15	21	1	22	1	20	0.8	ANESTHESIA RECEP	22	
23	SPARE	---	---	---	---	---	---	---	0.6	ANESTHESIA REFRIG	24		
25	CLEAN WORK RECEP	0.8	1	20	25	1	26	2	1	20	0.6	ANESTHESIA RECEP	26
27	NURSE WORK RECEP	0.8	1	20	27	1	28	1	20	1.0	BLANKET WARMER	28	
29	REFRIGERATOR	0.6	1	20	29	1	30	1	20	0.1	OXYGEN MASTER PANEL	30	
31	NURSE WORK RECEP	0.8	1	20	31	1	32	1	15	0.6	INFRARED RECEP	32	
33	PREP HOLDING RECEP	1.0	1	20	33	1	34	1	20	0.2	TELE/COMP RECEP	34	
35	PREP HOLDING RECEP	0.8	1	20	35	1	36	1	20	0.2	TELE/COMP RECEP	36	
37	PREP HOLDING RECEP	0.8	1	20	37	1	38	1	20	0.2	TELE/COMP RECEP	38	
39	NURISHMENT RECEP	0.8	1	20	39	1	40	1	20	0.2	TELE/COMP RECEP	40	
41	NURISHMENT REFRIGERATOR	0.6	1	20	41	1	42	1	20	0.4	TELE/COMP RECEP	42	
TOTALS		17.4	KVA			11.9			KVA				

### FAULT CURRENT CALCULATIONS

BASED ON POINT-TO-POINT METHOD

#### X1 - Service Equipment to PANEL RP1

Fault Current - Service Line terminals	65000	Amperes
Number of Parallel Feeder Conductor Runs	1	Run(s)
Feeder Length from Service Equipment	115	Feet
Wire Size and C**	3/0 Cu	*
Fault Current at Panel RP1	12,844	Amperes
**C = Constant	11,118	Amperes

#### X2 - Service Equipment to PANEL MP

Fault Current - Service Line terminals	65000	Amperes
Number of Parallel Feeder Conductor Runs	1	Run(s)
Feeder Length from Service Equipment	120	Feet
Wire Size and C**	3/0 Cu	*
Fault Current at Panel RP1	12,844	Amperes
**C = Constant	10,731	Amperes

#### X3 - Service Equipment to PANEL HP

Fault Current - Service Line terminals	65000	Amperes
Number of Parallel Feeder Conductor Runs	1	Run(s)
Feeder Length from Service Equipment	125	Feet
Wire Size and C**	3/0 Cu	*
Fault Current at Panel RP1	12,844	Amperes
**C = Constant	10,371	Amperes

#### X4 - Service Equipment to PANEL EP1

Fault Current - Service Line terminals	65000	Amperes
Number of Parallel Feeder Conductor Runs	1	Run(s)
Feeder Length from Service Equipment	95	Feet
Wire Size and C**	3/0 Cu	*
Fault Current at Panel RP1	12,844	Amperes
**C = Constant	12,991	Amperes

### IECC COMPLIANCE CERTIFICATE

**COMcheck Software Version 4.0.0**  
**Interior Lighting Compliance Certificate**

Project Information:  
Energy Code: 2012 IECC  
Project Title: Lifeline Access Center  
Project Type: New Construction

Construction Site: 7362 W. Thunderbird Rd, Peoria, AZ 85381  
Owner/Agent: Lifeline  
Designer/Contractor: Don Penn Consulting Engineers, 635 Westport Parkway, Peoria, AZ 85381, 617-410-2808

Additional Efficiency Package:  
High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

1-Health care clinic	A		B		C		D	
	Area Category	Floor Area (sq ft)	Allowed Watts / ft2	Allowed Watts / ft2 (90% C)	Area Category	Floor Area (sq ft)	Allowed Watts / ft2	Allowed Watts / ft2 (90% C)
1-Health care clinic		5700	1	5700				
Total Allowed Watts = 5700								

Proposed Interior Lighting Power	A		B		C		D	
	Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	Lamps / Fixture	# of Fixture	Watt.	Area Category	Floor Area (sq ft)	Allowed Watts / ft2	Allowed Watts / ft2 (90% C)
1-Health care clinic	Linear Fluorescent 1: A: 40' T8 32W Premium efficiency	2	49	166	2744			
	Linear Fluorescent 2: A1: 40' T8 32W Premium efficiency	4	18	119	476			
	Exception Medical/Dental Procedure Lighting	2	11	36	616			
	Linear Fluorescent 3: A2: 40' T8 32W Premium efficiency	1	3	28	84			
	Linear Fluorescent 4: C: 40' T8 32W Premium efficiency	1	2	35	90			
	LED 1: D: LED PAR 12W	1	1	12	12			
	Incandescent 1: F: Incandescent 100W	2	1	200	200			
Total Proposed Watts = 3708								

Interior Lighting PASSES: Design 35% better than code

Interior Lighting Compliance Statement  
Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Name: Title Signature Date

Project Title: Lifeline Access Center  
Data filename: P:\Active Projects\COMCHECK\ILLine - Sweetwater, AZ.ccx

**INSync ARCHITECTURAL DESIGNS, INC.**  
1215 Old Pyleville Road Whiteford, MD 21160  
Office 410-452-8046

**POWER RISER AND SCHEDULES**

REV#	DATE	DESCRIPTION
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2ND ROUND
3	10/27/15	PERMIT REVIEW COMMENTS - 3RD ROUND
1/11/17		ARIZONA STATE ASC PLAN REVIEW

DRAWING NO. **E4**  
SHEET OF 5  
DATE DRAWN BY 7/14/15 JCV  
JOB NUMBER ORDERED BY 11212 MSW  
WDC-15038

ISSUED FOR ARIZONA STATE ASC PLAN REVIEW

TENANT RENOVATIONS FOR: LIFELINE ACCESS CENTER, 7362 W. Thunderbird Rd, Suite 1103, Peoria, Arizona 85381

d p c e don penn consulting engineer

635 Westport Parkway Suite 300 Peoria, AZ 85381 Phone 617-410-2808 Fax 617-251-8411

# ELECTRICAL SPECIFICATIONS

## GENERAL ELECTRICAL REQUIREMENTS

- 1.1 **Requirements:**  
A. The work covered by this Section of the specification includes furnishing of all labor, equipment, supplies and materials and performing all operations including excavation and backfilling, cutting, channeling and chasing necessary for the installation of wiring systems, as shown on the drawings, as hereinafter specified, and as directed by the Engineer.  
B. The Contractor shall perform all work hereunder in strict accordance with the rules and regulations of all applicable municipal, state and other local codes and in accordance with applicable provisions of the latest adopted edition of the National Electrical Code.  
C. The Contractor shall make application for all necessary permits, licenses and inspections as required under the above codes and shall pay all fees and charges appurtenant thereto.  
D. The electrical contractor shall make application for electrical service with the local electrical utility and forward anticipated electrical loads for the project. In addition, the electrical contractor shall be responsible for coordinating the installation of the permanent electrical service with the utility company to assure completion at the earliest possible date so as not to delay the project.  
E. The general arrangement of conduit, wiring and equipment shall be as shown on the contract drawings. The Contractor shall carefully examine all contract drawings and shall be responsible for the proper fitting of materials and equipment in each location as indicated, without substantial alteration. In as much as the drawings are generally diagrammatic and due to the small scale of the drawings, it is not possible to indicate all offsets, fittings and accessories, as may be required. The Contractor shall carefully investigate the site, structural, and finish conditions affecting his work and shall arrange such work accordingly, furnishing such fitting and accessories as may be required to meet such conditions, at no additional cost to the Owner. The right to make any reasonable change in location of apparatus, outlets or routing of conduit and wiring, up to the time of rough-in is reserved by the Engineer without involving any additional expense to the Owner.

- 1.2 **Materials:**  
A. All materials shall be new and the best of their respective kinds, suitable for the conditions and duties imposed on them after installation. All such material shall be as found in the approved list of the National Board of Fire Underwriters. All equipment and systems shall be UL approved.  
B. Where material or equipment is identified by proprietary name, model number and/or manufacturer, furnish the named item or equal thereof, subject to acceptance by the Engineer. Substituted items shall be equal or better in quality and performance and must be suitable for the available space, required arrangement of application. Submit any and all data necessary to determine the suitability of substituted items. The suitability of only the named item has been verified. Where more than one item is named, only the first item has been verified as suitable.  
C. Examine all materials and equipment before installation. No allowance will be made subsequently in this connection for any error or negligence in the Contractor's part.  
D. Shop Drawings:  
A. The Contractor shall prepare and submit detailed shop drawings. In general, catalog cuts, specification sheets, descriptive data, etc., shall be acceptable for submittal of all equipment specified by standard catalog numbers, unless directed otherwise by the Engineer.  
E. Low Voltage Testing:  
A. The Contractor shall furnish all labor, materials, instruments, fuel and power required to perform all necessary tests. All tests shall be performed to the satisfaction of the Engineer. All defective materials and/or workmanship discovered as a result of these tests, shall be removed and replaced at the Contractor's expense and the test repeated.  
B. A thorough test shall be made to demonstrate that the system is entirely free from ground faults, short circuits, and open circuits; that the resistance to ground all non-grounded circuits, before and after connection of equipment meets the requirements of the National Electrical Code.  
F. Identification:  
A. Mark and permanently identify all motor starters, switches, controls, panelboards and other equipment in accordance with the project nomenclature. Identification plates shall be laminated plastic, black and white engraved letters. Lettering for panels and other equipment shall be 3/8" high. Attach identification plates by permanent means.  
B. No embossed plastic tape markers or hand written marker pens will be permitted for use in marking equipment.  
G. Guarantees:  
A. The material and workmanship of all parts of the electrical installation specified herein shall be guaranteed unconditionally for a period of one (1) year from date of acceptance against mechanical and electrical defects arising from faulty materials or workmanship. Either replacement or repairs shall be made promptly on any defective materials or workmanship without charge during that period.  
H. Record Drawings:  
A. Upon completion of the electrical installation, the Contractor shall deliver to the Owner one (1) set of prints of electrical contract drawings which shall be legibly marked in red pencil to show all additions, changes and departures of the installation as compared with the original design. They shall be suitable for use in preparation of Record Drawings.  
I. Record and Information Manual:  
A. The Contractor shall have prepared three (3) copies of the Record and Information Manual and deliver three copies of the booklet to the Owner. The manuals shall include copies of all specifications, shop drawings and maintenance instructions for all electrical equipment provided.  
J. Cutting and Patching:  
A. All cutting and patching necessary for the installation of the electrical work shall be done by the electrical contractor. Any damage done to the work already in place by reason of this work shall be repaired at the Contractor's expense. Patching shall be uniform in appearance and shall match with the surrounding surface.  
K. Mounting Heights:  
A. The following mounting heights of the various electrical outlets and devices are for guidance. The Contractor shall study the Architectural Drawings for exact locations coordinated with door swings, glass partitions, etc.  
L. Switches & Pull Stations ..... 48" to center of outlet box above floor.  
M. Receptacles ..... 18" to center of outlet box above floor (unless otherwise noted).  
N. Voice/Data Outlets ..... 18" to center of outlet box above floor (unless otherwise noted).  
O. Fire Alarm Horns/Flashing lights... 80" min to 84" max to top of device.  
1.2 **Motor Connections and Control Wiring:**  
A. Provide all power wiring and connections from source to starter, starter to disconnect, and disconnect to motor or device, except where such wiring is provided by equipment manufacturer. All automatic temperature control wiring shall be furnished and installed under Division 15 - Mechanical, unless indicated or specified otherwise. However, Electrical Contractor shall provide and install all starters and make all power connections. Manual control switches shall be furnished and/or installed by the Electrical Contractor as indicated.  
B. Furnish and install a disconnect for each motor. Disconnects shall be fused or unfused safety switches as required.  
1.3 **Connections and Alterations To Existing Work:**  
A. Any electrical work which will interfere with the normal use of the building in any manner shall be done at such times as mutually agreed upon between the Contractor and the Owner's representative.  
B. All existing electrical systems in occupied areas shall be kept in operation during the progress of the work. Temporary electrical connections shall be provided to all systems and equipment where necessary to maintain continuous operation until the new systems and equipment are ready for operation.  
C. When existing electrical work is removed, all conduit, ducts, wiring and apparatuses shall be removed to a point below the finished floors or behind finished walls and capped. Such points shall be for rough behind finished surfaces to allow for the installation of the normal thickness of finish material.  
D. When the work specified herein connects to any existing conduit, wiring or other equipment, the Contractor shall perform all necessary alterations, cutting and fitting of the existing work as may be necessary or required to make satisfactory connections between the new and existing work and shall leave the completed work in a finished and workmanlike condition, to the entire satisfaction of the Engineer.  
E. When the work specified herein or under other divisions of this contract necessitates relocation of existing conduit, wiring or electrical equipment, the Contractor shall perform all work and make all necessary changes to existing work as may be required to leave the completed work in a finished and workmanlike condition to the entire satisfaction of the Engineer.  
F. All existing electrical materials not reused under this division and not salvaged by the Owner shall become the property of the Contractor and shall be disposed of in a proper manner off the project site.  
G. Removal of existing equipment and feeder renovations shall be closely coordinated with the Owner's representative where they impact critical areas. Interruption of electrical service to critical equipment shall be kept to a minimum and performed on off hours as designated by the Owner's representative.

- 1.4 **Electrical Demolition:**  
A. In areas indicated to be renovated, remove that portion of the existing electrical installation to complete the new work on all equipment, wiring, conduit and receptacles not required in the completed installation. All unused conduit and wiring exposed after demolition shall be removed back to the point of concealment.  
B. Where electrical systems pass through the renovated areas to serve other portions of the facility, they shall be suitably relocated and the system restored to normal operation.  
C. The extent of electrical demolition and relocation is not specifically indicated on the drawings. The Contractor shall visit the site prior to submitting a bid and thoroughly review the existing installations and the proposed construction to include the full scope of electrical demolition and relocation. The Contractor shall review all areas of the proposed renovation and the required removal and relocation of existing electrical work. In addition, the Contractor shall review in detail, the architectural drawings for areas of demolition and removal of existing construction and review in detail, the associated existing electrical installations of the site. This review shall include all necessary costs in the bid to make the necessary adjustments to the existing electrical work to meet the proposed building construction. No allowances or change orders will be made after the bid for insufficient review and/or cost for the electrical demolition.  
1.5 **Conduits and Fittings:**  
A. General:  
1) Install all wiring in conduit (except where noted under Wire and Cable) and provide empty conduit for special systems described elsewhere.  
2) Minimum conduit size shall be 1/2". All conduit embedded in concrete shall be 3/4" minimum. All exterior underground conduit shall be 1" minimum.  
3) In finished areas, install all conduit concealed unless otherwise indicated. Where conduit cannot be concealed utilize surface metal raceway as manufactured by Wiremold. All surface metal raceway shall be run inconspicuously and painted to match adjacent wall/ceiling finishes. Conduit may be run exposed on unfinished walls, in mechanical equipment spaces and elsewhere as indicated.  
4) Support all conduit not embedded in concrete or masonry so that strain is not transmitted to outlet boxes and pull boxes, etc. Supports to be sufficiently rigid to prevent distortion of conduits during wire pulling.  
B. Conduit:  
1) Provide hot-dip galvanized, rigid steel conduit for work exposed to weather and for embedded work in concrete or masonry and in or below the concrete slab on grade (above the vapor barrier).  
2) Provide galvanized, (inside and out) electrical metallic tubing (EMT) for interior exposed work, for concealed work above suspended ceilings and within interior partitions or non-masonry walls.  
3) Provide polyvinylchloride (PVC) schedule 40 conduit for exterior underground direct burial and exterior underground concrete encased installation.  
C. Supports:  
1) All parts and hardware used for support of equipment, conduits and fittings, shall be galvanized.  
2) Support single runs of suspended feeder conduit with adjustable hangers using threaded rods attached to the structure above.  
3) Support groups of suspended conduits run in parallel on trapeze hangers constructed of "Kindorf" channels and conduit straps suspended with threaded rods attached to the structure above. No tie wires or building wire shall be used for strapping conduits.  
4) Support surface runs of conduit using one hold pipe straps or two hold pipe straps. Strap spacing maximum 6 ft. on centers.  
5) Fasten pipe straps and hangers to concrete using inserts or expansion bolts and to hollow masonry using toggle bolts. Wooden plugs and shields will not be permitted. All supports in bar joist construction shall be attached to the top cord of the joists using suitable clamps approved for the purpose.  
6) Support conduits from joists and beams using clamps and/or Caddy clips approved for the purpose.  
1.6 **Wire and Cable (600 Volt):**  
A. Building wire, unless otherwise indicated, shall be 600 volt, type THHN/THWN-2 insulation for interior use and exterior use within conduit. Conductors shall be sized and run as indicated. Conductors shall be soft drawn copper of not less than 98% conductivity. Branch circuits (rated 60 amperes or less), installed above ceilings and within walls, where permitted by code, may be type MC cable (with ground wire). No Romex or BX cable is permitted.  
B. No wire smaller than number twelve (12) AWG shall be used unless otherwise indicated. The wire size indicated in the homerun shall be used throughout the circuit. Conductors shall be continuous from outlet to outlet and from terminal board to point of final connection, and no splice shall be made except within outlet, junction boxes. All conductors shall be of the sizes as indicated. All wires number eight (8) AWG and larger shall be stranded. The Contractor shall make wiring connections of all electrical equipment requiring electric service. Wires and cables shall be as manufactured by Plastic Wire & Cable Corporation, Okonite Company, General Electrical or equivalent.  
C. A color coding system, as listed below, shall be used for throughout the building's network of feeders and circuits and used as a basis of balancing the load. Selection shall be based on applicable work covered by this Contract.

System	Phase A	Phase B	Phase C	Neutral	Ground
120/208V	Black	Red	Blue	White	Green
277/480V	Brown	Orange	Yellow	Gray	Green

- D. All control wiring shall be color coded with wires of colors different from those to designate phase wires. All isolated ground conductors shall be green with a yellow tracer.  
1.7 **Disconnects (Safety Switches):**  
A. Furnish and install safety switches where indicated and as required for motor outlets or other equipment. Switches shall be of size, number of poles and fused or unfused, as required for job conditions and the National Electrical Code.  
B. Switches shall be equipped with fuse contacts and jaws which insure positive fuse and jaw contact by means of reinforcing spring clips or other approved means. All current carrying parts shall be silver plated. Hinges shall be non-current carrying. Switches shall be so designed that they can be locked in either open or closed position. Switches used with Class R fuses installed shall have rejection clip provisions.  
C. All safety switches shall be quick-make, quick-break, and have interlocking cover with handle that may either be front or side operating with a padlocking provision, as manufactured by Square D or approved equal. Provide NEMA 3R enclosures where required to be weatherproof.  
1.8 **Motor Starters:**  
A. Provide starters, H-O-A switches and pilot lights for all motors. All temperature control wiring and components shall be under Division 15 - Mechanical.  
B. Thermal manual motor starting switches shall be provided for all fractional horsepower, single phase motors, unless otherwise specified. Manual motor starters shall be of the snap-switch type containing thermal overload protection and a self-indicating trip-free handle. Starting switches shall be combined with a three-position hand-off-automatic selector switch when motor is controlled automatically. (Refer to mechanical equipment schedules.) Pilot indicating light shall be mounted in all starter enclosures where noted. The starters shall be Square D Company, Class 2510, Allen Bradley Bulletin 600, or approved equal. Enclosures shall be NEMA 1 for interior use.  
C. Magnetic motor starters shall be provided for all three phase motors unless otherwise specified. Motor starters shall be 3 pole, 60 hertz, full-voltage, magnetic type with NEMA 1 enclosures, as required. Starters shall be provided with three element overloads. Where shown, starters shall be of the combination fused or unfused disconnect type. Starters shall be equipped with hand-off-automatic selector switch when automatically controlled, a pilot indicating light and auxiliary contacts. Each magnetic starter shall have a 120 volt coil, an individual control power transformer and a fuse for protection of control wiring. Starters shall be Square D Company, Class 8536 and Class 8538 as required or approved equal.  
1.9 **Wiring Devices:**  
A. The following wiring devices shall be furnished and installed where called for on the drawings. Miscellaneous items not included below shall be Underwriters' Laboratories Standard conforming to the N.E.C. All devices shall be of the same manufacturer. Devices shall be Arrow Hart, General Electric, Circle F, or Hubbell or equal.  
1) **Wall Switches:** Toggle switches shall be of the silent mechanical type rated 20 amperes. Three and four-way switches shall be of the same manufacturer and grade.  
2) **Receptacles:** Receptacles for wall outlets shall be rated 20 amperes, 125 volts, duplex, three-wire with third pole grounded. GFI shall be rated 20 amperes, 120 volt, isolated ground (IG) receptacles shall be orange in color and be isolated ground type.  
3) **Special Wiring Devices:** Shall be provided as shown on the drawings.  
4) **Dimmers:** Shall be solid state, full wave, incandescent or fluorescent (based on the load controlled), rated 120 volt 1000/1500/2000 watts as required by the circuit. Provide Lutron "Nova" slide series or Prescrite "P" series.

- 5) Ground, phase and neutral conductors shall be pig-tailed in outlet boxes or multi-outlet assembly for receptacles so that ground and electrical service will not be disturbed to other receptacles on the same multi-wire circuit if receptacle is removed.  
6) **Device Plates:** A device plate shall be provided for each outlet requiring one. All plates shall be manufactured of satin finish, .032 stainless steel, Type 430, except where specifically called for to be otherwise in these specifications. Telephone blank plates shall be of similar construction.  
7) Where wiring devices are noted to be weatherproof, they shall be mounted with clear Lexan, hinged lid type covers which allow the plug to remain in while the cover is closed (intermatic or equal).  
1.10 **Grounding:**  
A. The main service grounding system shall consist of three branches, one being a grounding conductor to the water piping system which shall be sized in accordance with the National Electrical Code, the second being a grounding conductor to the reinforcing steel and the concrete footings, the third being a grounding conductor to the electrode grounding system (driven ground rods) which shall be sized in accordance with the National Electrical Code. In all instances, the grounding conductor shall be bonded at both ends to the conduit which it is installed. The main service ground to the water piping system shall be connected to the street side of the water meter, or on a cold water pipe as near as practicable to the water service entrance to the building. Bonding jumpers shall be provided where required by the National Electrical Code. Bond all structural steel of the building to the main service ground bus.  
B. Contractor shall provide a grounding system consisting of driven ground rods with interconnecting cables. Ground rods shall be installed with two feet of cover and cables electrothermally welded. Ground rods shall be 3/4" diameter by 10 feet long copper clad steel, one piece, Copweld #9450, or approved equal. Ground grid conductors shall be #1/0 bare direct buried. The ground system shall be so constructed that the resistance between the equipment and the ground shall not exceed 25 ohms.  
C. Provide equipment grounding conductors in all raceways and cables sized in accordance with the NEC.

- 1.11 **Service and Distribution:**  
1.1 **Electrical:**  
A. Electrical service to the site is underground 120/208 volt, 3 phase, 4 wire service. Coordinate metering requirements with utility company. All work shall be in accordance with the utility companies Commercial Construction Handbook - latest edition. All charges for permanent service by the utility company shall be paid for by the Owner.  
1.2 **Panelboards:**  
A. Furnish and install, where indicated on the drawings, automatic circuit breaker panelboards complete with enclosing cabinets. Enclosures shall be NEMA 1 for recessed or surface mounting as indicated. Where panelboards are recessed mounted, they shall be provided with a minimum of 3 @ 3/4" spare conduits per backbox to the accessible ceiling space above and terminated for future use. Panelboards and enclosing cabinets shall conform to standards established by Underwriters' Laboratories, Inc., and requirements of the NEC.  
B. The Contractor shall balance the loading on all panelboards as closely as possible and to the satisfaction of the Engineer.  
C. All panelboards interiors shall be factory assembled, complete with circuit breakers as scheduled on the drawings. All circuit breakers shall be quick-make and shall be trip indicated.  
D. The circuit numbers used on the drawings are for identification only and the circuit number in the panel need not necessarily correspond. Each circuit in the panels, however, shall be accurately indexed as specified herein. Circuits shall be arranged in panels so that all lighting circuits are together, motor circuits are together, etc.  
E. As specifically designated on the drawings, panelboards shall be 120/208 volt, and 277/480 volt, three phase employing ball-bearings on breakers of not less than the symmetrical A.I.C. ratings indicated on the drawings. Provide isolated ground bus and 200kV neutral bus as designated on the drawings. Furnish type Square D, General Electric or Westinghouse as indicated on the panelboard schedule as follows:  

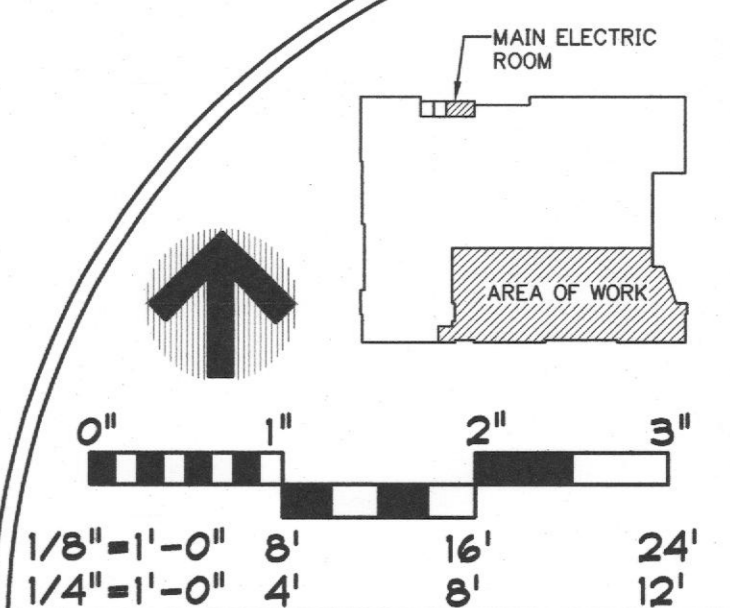
Manufacturer	120/208V	277/480V
Square D	NOOD	NF
AD	AE	AE
General Electric	POW-R-LINE	POW-R-LINE-2
Cutler-Hammer		

  
F. Distribution panels 600 amperes and larger shall be provided as scheduled on the drawings and shall accept branch breakers up to the main rating of the panel. Panels shall be as manufactured by Square D - I-Line construction or equal.  
1.3 **Fuses:**  
A. Fuses for service entrance and distribution equipment shall be U.L. listed class RK-1 and L current limiting type. All fused switches shall incorporate rejection clips to insure only current limiting replacement fuses. Provide fuses "low peak" or equal by Gould-Shawmut. Provide a spare set of three fuses to the owner for each amperage size and type used.  
1.4 **Dry Type Transformers:**  
A. Furnish and install where indicated on the drawings, self-cooled, dry type transformers of KVA, phase, and voltage ratings indicated on the drawings. Provide K-13 transformers suitable for use with non-linear loads where noted. Where transformers are not indicated to be "K" rated they shall be energy efficient type meeting NEMA TP-1 standards.  
B. Transformers shall be enclosed in a suitable housing arranged for conduit entrance on the primary and secondary side. Cases shall be provided with adequate louvered openings to allow suitable ventilation and cooling. Transformers shall have Class H (220 degrees C) insulation for continuous operation at rated load in a 40 degree C ambient with a temperature rise not exceeding 150 degrees C.  
C. Transformers shall have four 2-1/2% full rated KVA taps below and two 2-1/2% above rated primary voltage. Transformers shall have a noise level not exceeding 45 db based on standard NEMA test procedures.  
D. E. The transformers shall be wall or floor mounted as indicated. Wall mounted units shall be bracketed off the wall and structurally supported from the overhead structure with steel supports sufficiently sized to accommodate the transformer weight. All units shall be mounted on suitable vibration isolators.  
F. Neutrals of all dry type transformers shall be grounded in accordance with the N.E.C. All transformers: immediate connections to and from transformer shall be through flexible conduit. Complete shop drawings and details shall be submitted to the Engineer for approval. Transformer shall be Hevi-Dup Electric Company, General Electric, Sorgel or Acme.

- 1.12 **Lighting:**  
1.1 **Scope:**  
A. Furnish and install a complete lighting fixture for each lighting fixture symbol shown on the drawings, of the type and quality described herein. Fixtures shall be installed complete with lamps of the wattage indicated, sockets, housing, ballast (if required), shades, diffusers, supports, etc., and wired for operation.  
1.2 **Requirements:**  
A. The Contractor shall be completely responsible for the proper and accurate position of sockets in all fixtures so that the filament of the size and type lamps specified, when installed in such sockets, will be in correct relation to the center of the fixture as specified by the manufacturer of the various lighting fixtures and glass units specified.  
B. All sockets shall be approved by Underwriters' Laboratories, Inc. Fluorescent sockets shall be thru-slot type and incandescent lamp sockets shall be 250 volt code standard. Motor starters shall be 3 pole, 60 hertz, full-voltage, magnetic type with 300 watts and larger. They shall be of Bryant, Hubbell, Arrow, Benjamin, General Electric or approved equal.  
C. All fixtures shall be wired for polarized system with one wire in each fixture to be distinctly marked for its entire length. Wire shall bear the label of approval of the Underwriters Laboratories, Inc. Fixture wiring for fluorescent fixtures and branch circuit wiring in fluorescent fixture channels shall be type THHN or THW (90 degree C. rated). All channels in fluorescent lighting fixtures shall be approved for through wiring. Type AF wire shall only be used for interior incandescent fixture wiring.  
D. All fixtures shall be in accordance with all local Municipal and State Requirements governing same and shall be U.L. approved.  
E. All plastic diffusers shall be 100 percent virgin acrylic (nominal 1/8 inch thick) and all Lexan diffusers shall be Lexan type MF-4000, or equal.  
F. Each fixture shall be completely equipped with lamps of the size, type, wattage and shape indicated and specified. All lamps shall be manufactured by the General Electric Co., Westinghouse Mfg. Co., Sylvania or approved equal, of standard schedule make. Lumen output and life of lamps shall be proper voltage for the building. Exact voltage shall be checked before ordering fixtures.  
G. Fluorescent lamps shall be Sylvania F032T84100K or approved equal, unless otherwise specified. Lamps shall be energy saver type.  
H. All fluorescent lighting fixtures shall have energy saving, solid state electronic ballasts.  
I. At the location of outlets indicated on the various drawings, the type of fixture required is designated by a type letter. All fixtures shall be furnished in the quantities, sizes and types as indicated on the drawings.

- J. Recessed incandescent and fluorescent fixtures in ceilings may not be supported from the suspended ceiling construction. Box and fixture supports shall be fastened securely to concrete slab or bar joist except as noted. Where fixtures are surface mounted, neat holes shall be cut in the hung ceilings as required for the fixture supports. All support hangers, channels, bolts, etc., shall be galvanized or Galv-Krom.  
K. Provide adequate supports for all fixtures separate from the suspended ceiling system. Contractor shall furnish and install all necessary accessories, as required, to support the fixtures. Provide a minimum of two (2) galvanized steel #12 gauge hanger wires (alternate corners) on all recessed fixtures.  
1.13 **COMMUNICATION SYSTEMS:**  
1.1 **Scope:**  
A. The Contractor shall furnish and install all material, labor and incidentals necessary for the complete installation and successful operation of the following systems:  
(1) Telephone (conduit rough-in)  
1.2 **Telephone System:**  
A. Telephone service shall be extended by Telephone Company. Provide wall and floor telephone outlet boxes, conduits, backboards, sleeves, receptacles, and other equipment shown on the drawings for use by the Telephone Company. All charges by the Utility Company shall be paid by the Owner.  
B. Wall outlets for telephone shall consist of 4" square boxes with single gang ring coverplate and 3/4" empty conduit to the nearest accessible ceiling.  
C. Furnish 3/4" plywood backboard for telephone equipment, where indicated on drawings or as directed in field.  
D. All elbows in conduit runs shall be wide sweep field bends. Install pull boxes as required and where directed by the Telephone Company and/or as required by the National Electrical Code.  
E. Provide nylon pull wire in all conduits left empty. All conduits shall be terminated with nylon insulating bushings.

- 1.14 **FIRE ALARM SYSTEM:**  
1.1 **Scope:**  
A. The Contractor shall furnish and install all material, labor and incidentals necessary for the new fire alarm system throughout the existing and new building. All work shall be coordinated with the existing building and the local fire marshal.  
1.2 **Fire Alarm System:**  
A. Provide an integrated, automatic fire/smoke detection system complete with all wiring, conduit, boxes, controls, automatic and manual initiation devices, annunciators, microphone stations, audible speaker/horns and visual devices.  
B. The system shall be manufactured by Notifier, Gemwell, Edwards or approved equal. Match existing system when applicable. New system shall be a microprocessor based, multi-line system "addressable" initiating devices and be 100% compatible with existing system.  
C. The voice evacuation portion (if required) of the system shall be a continuous voice/tone speaker alarm type. The voice evacuation shall include an electronic pre-recorded message and remote microphone stations in locations shown on the drawings.  
D. The system shall meet all requirements of the NFPA and local requirements. The manufacturer shall submit shop drawings to the fire marshal or authority having jurisdiction and obtain approval prior to starting any rough-in work.  
E. The contractor and his fire alarm vendor shall prepare equipment cuts and rough-in drawings showing all devices and associated wiring requirements and zoning. Submit this information to the engineer for approval and to the authority having jurisdiction for approval.  
F. SYSTEM COMPONENTS:  
1. Strobe lights and horn/speaker notification devices shall meet the requirements of the ADA as defined in UL Standard 1971 and shall consist of a xenon flash tube and associated lens/reflector. Strobe shall produce one flash per second with continuously applied minimum voltage. Audibility shall meet the requirements of NFPA over the facility's ambient level.  
2. Manual Fire Alarm Stations shall be non-break glass type, equipped with key lock for testing without operating the handle. Stations shall be constructed of red Lexan and the word FIRE shall appear on the front of the station in raised white letters.  
3. Ionization Type Area Smoke Detectors shall be two-wire, 24 VDC type using a dual unipolar chamber. Each detector shall contain an LED output and a built-in test switch. Visual indication of an alarm shall be provided by a latching Light Emitting Diode (LED), on the detector, which may be seen from floor level.  
4. Duct Smoke Detectors shall be 24 VDC, ionization type with visual alarm and power indicators, and a reset switch. Each detector shall be installed upon the composite supply/return air duct(s), with properly sized air sampling tubes. Detector shall be provided with a remote alarm LED and test switch flush mounted on the ceiling below.  
5. Automatic Heat Detectors shall be combination rate of rise and fixed temperature rated at 135 degrees Fahrenheit for areas where ambient temperatures do not exceed 100 degrees, and 200 degrees for areas where the temperature does not exceed 150 degrees.  
G. INSTALLATION:  
1. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, as directed by the fire marshal and as recommended by the major equipment manufacturer.  
2. All conduit, junction boxes, conduit supports and hangers shall be independent of all other wiring systems. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.  
H. TEST:  
1. Provide the service of a factory-trained engineer or technician to supervise and participate during all of the adjustments and tests for the system.  
I. INSTRUCTION:  
1. Provide instruction as required to the building personnel and fire and safety personnel. "Hands-on" demonstrations of the operation of the system shall be provided.  
J. WRING:  
1. The Contractor shall furnish and install non-specified equipment required to make each system fully functional as per stated intent, without additional cost. This shall include major components, if required.  
2. The installation and design of the fire alarm and detection system shall comply with Chapter 2, "Basic Requirements" of NFPA Standard 72A.  
3. Install fire alarm and detection system wiring in conduit (3/4 inch minimum). Fire alarm BX cable may be provided for all circuits concealed above ceilings and within walls.  
4. Minimum wire size: No. 18 AWG solid copper for initiation and annunciator circuits; No. 14 AWG solid copper for indicating circuits; No. 12 AWG solid copper for 120 volts circuits.  
5. No wiring other than that directly associated with the fire alarm or auxiliary functions shall be permitted in the fire alarm conduits or cables. Wiring splices are to be avoided to the extent possible. Transposing or changing color coding of wires shall not be permitted. All conductors in conduit containing more than one shall be color coded and be labeled on each end with "E-Z Markers" or equivalent. All fire alarm junction boxes shall be painted red. Conductors in cabinets shall be carefully formed and harnessed so that each drops off directly opposite to its terminal. Cabinet terminals shall be numbered and coded. All controls, functions switched, etc. shall be clearly labeled on all equipment panels.  
6. Location for all ceiling - mounted equipment shall be coordinated with lights, air outlets and other ceiling fixtures and shall be acceptable to the Engineer.  
7. Mount end-of-line device for each indicating and indicating circuit in a separate box located not more than 6 feet above the finished floor. Device shall be mounted on a terminal strip attached to the box cover with an engraved punch plate.  
K. PROJECT ACCEPTANCE, GUARANTEE AND MAINTENANCE:  
1. Test the procedures for the acceptance of the alarm and detection system shall be conducted in accordance with provisions of Chapter 2 and 4 of NFPA 72H.  
2. As-built drawings in conformance with the provision of Chapter 1 of NFPA 72H shall be provided prior to the acceptance test. Drawings provided shall be reproducible velum or sepia with a minimum scale of 1/8 inch equal to 1 foot. Three sets of maintenance manuals and a complete acceptance test report shall be provided.  
3. The Contractor shall guarantee labor, materials and equipment provided under this contract against defects for a period of 1 year after the date of the final acceptance of this work by the Owner.

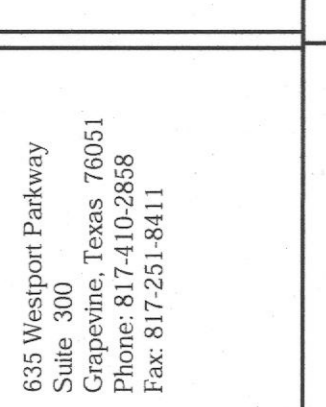


## ELECTRICAL SPECIFICATIONS

REV#	DATE	REVISIONS
1	8/28/15	PERMIT REVIEW COMMENTS
2	10/6/15	PERMIT REVIEW COMMENTS - 2ND ROUND
3	10/27/15	PERMIT REVIEW COMMENTS - 3RD ROUND
1/11/17		ARIZONA STATE ASC PLAN REVIEW

DRAWING NO.	ES
SHEET	OF 5
DATE	7/14/15
DRAWN BY	JCW
JOB NUMBER	11212
CREATED BY	MSW

ISSUED FOR ARIZONA STATE ASC PLAN REVIEW



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