12/18/2023
21394357

MEDICAL OFFICE BUILD-OUT

UNIT NUMBERS 1 & 2

22904 LYDEN DRIVE

ESTERO , FLORIDA 33928

OCCUPANCY / USE:

BUSINESS OCCUPANCY "B"

3,560SQ. FT. / 150 PER = 23 OCCUPANTS

INDEX OF DRAWINGS

ARCHITECTUAL DRAWINGS:

A - 1 CONCRETE SLAB PLAN
A - 2 OFFICE PLAN - NOTES
A - 2.1 HANDICAP TOILET DETAILS
A - 3 OFFICE PLAN - DIMENSIONS
A - 4 OFFICE NOTES / SCHEDULE
A - 5 CEILING DESIGN PLAN
LSP-1 LIFE SAFTY PLAN

MECHANICAL DRAWINGS:

M - 1 HVAC FLOOR PLAN
M - 2 HVAC SCHEDULES, LEGEND, NOTES AND DETAILS

PLUMBING DRAWINGS:

P - 1 PLUMBING FLOOR PLAN - SANITARY
P - 2 PLUMBING FLOOR PLAN - DOMESTIC WATER
P - 3 PLUMBING ISOMETRICS
P - 4 PLUMBING SCHEDULES, LEGEND, NOTES DETAILS

ELECTRICAL DRAWINGS:

E - 1 ELECTRICAL FLOOR PLAN - LIGHTING
E - 2 ELECTRICAL FLOOR PLAN - POWER
E - 3 ELECTRICAL SCHEDULES & LOAD CALCS.
E - 4 ELECTRICAL SPECIFICATIONS, NOTES LEGEND & DETAILS

APPLICABLE CODES:

BUILDING CODE : FLORIDA BUILDING CODE 2020, 7TH EDITION
MECHANICAL CODE : FLORIDA BUILDING CODE MECH. 2020, 7TH EDITION
PLUMBING CODE : FLORIDA BUILDING CODE PLUMBING 2020, 7TH EDITION
ELECTRICAL CODE : NAT. ELECTRIC CODE (2017 NEC)
LIFE SAFTY CODE : 2020 FLORIDA FIRE PREVENTION CODE, 7TH EDITION
ACCESSIBILITY CODE : FLORIDA BUILDING CODE 2020, 7TH EDITION
ENERGY CODE : FLORIDA BUILDING CODE 2020, 7TH EDITION

BUILDING IS SPRINKLED : YES (EXISTING)
FIRE SPRINKLER APPLICATION / PERMIT TO FILED SEPARATELY BY OTHERS
LESS THEN 40 HEADS
NO GIG IS REQUIRED

SEAL FOR STRUCTURAL ONLY, NOT M.E.P. ENG.

JOSEPH C. KOSINSKI LICENSE No. 52280 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Joseph C. Kosinski
Date: 2023.12.15 14:52:04 -05'00'

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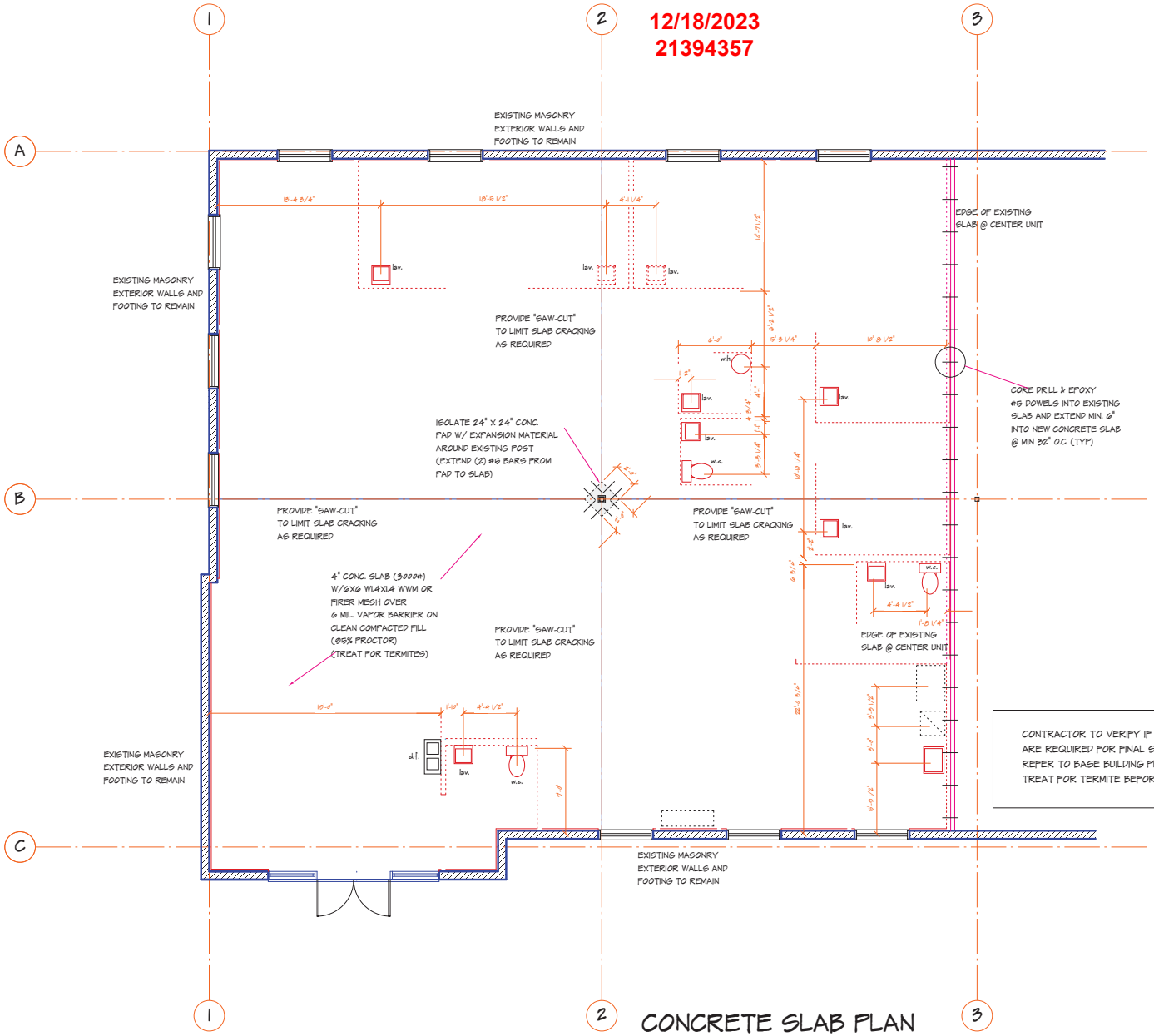
SCOPE OF WORK

OFFICE INTERIOR BUILD-OUTOF EXISTING BASE BUILDING.(NEW CONSTRUCTION) CONSTRUCTION DRAWING AND M.E.P. DRAWINGS AS REQUIRED.

LATEST DATE: 12 - 11 - 23

REVIEWED FOR CODE COMPLIANCE 001

12/18/2023
21394357



CONTRACTOR TO VERIFY IF FILL AND/OR GRAVEL ARE REQUIRED FOR FINAL SLAB ELEVATION. REFER TO BASE BUILDING PLANS. TREAT FOR TERMITE BEFORE SLAB IS POURED

CONCRETE SLAB PLAN

GENERAL CONTRACTOR TO COORDINATE W/ EXISTING BUILDING PLANS AND EXISTING CONDITIONS. REFER TO PLUMBING ENGINEERING FOR ADDITIONAL DETAILS.

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

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Revisions

Job Number	
Date	11 - 20 - 23
Drawn By	J.C.
Checked By	
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2 BUILDOUT
22004 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 1

REVIEWED FOR CODE COMPLIANCE 002

12/18/2023
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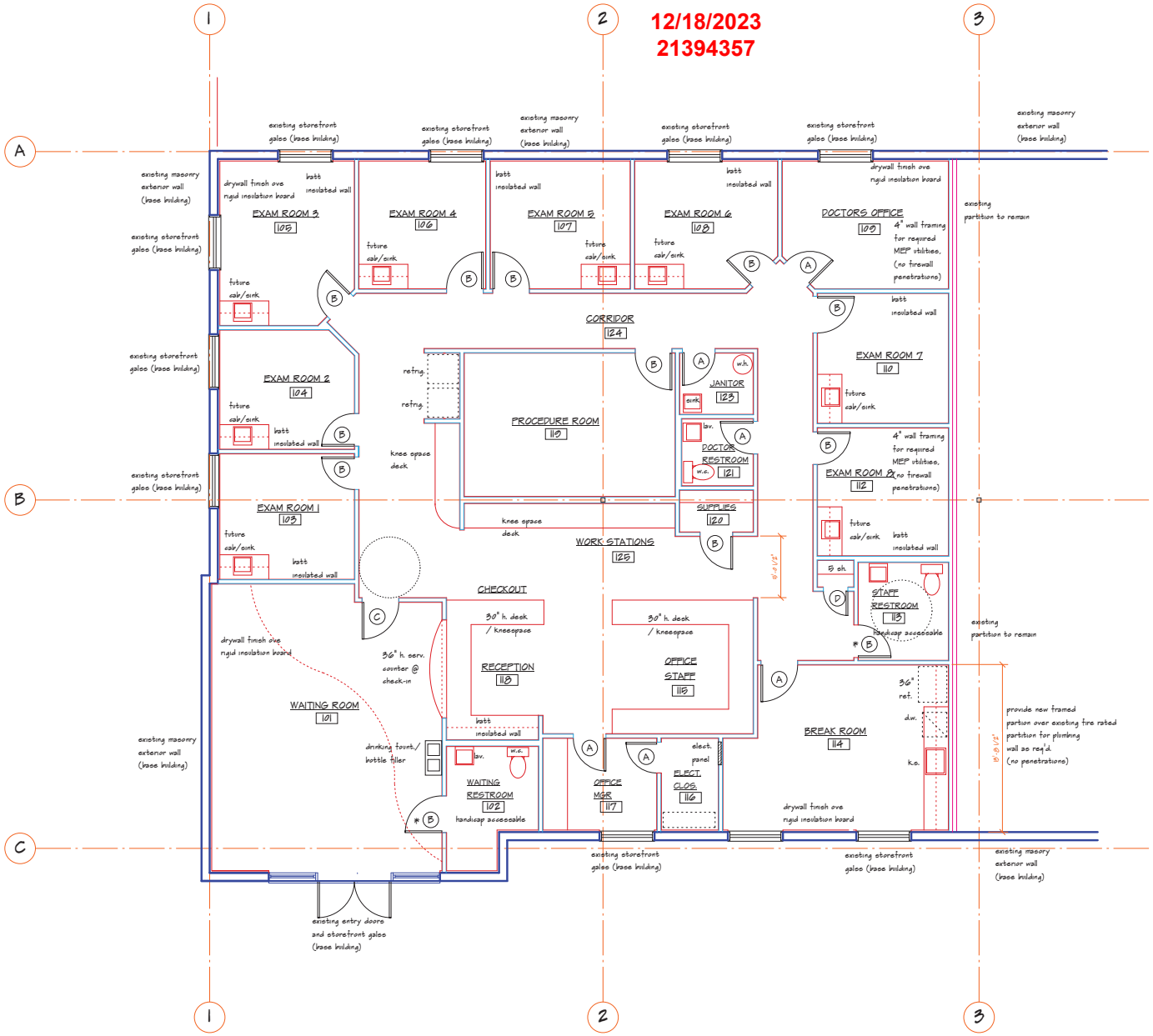

FLOOR PLAN

NOTES ONLY

APPROX. AREA..... 3,394 SQ. FT.

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

Revisions	

Job Number

Date 11 - 20 - 23

Drawn By J.C.

Checked By

Drawing Scale AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA
33901
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2 BUILDOUT
22004 LYDEN DRIVE
ESTERO, FLORIDA 33928

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SHEET #: A - 2

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12/18/2023
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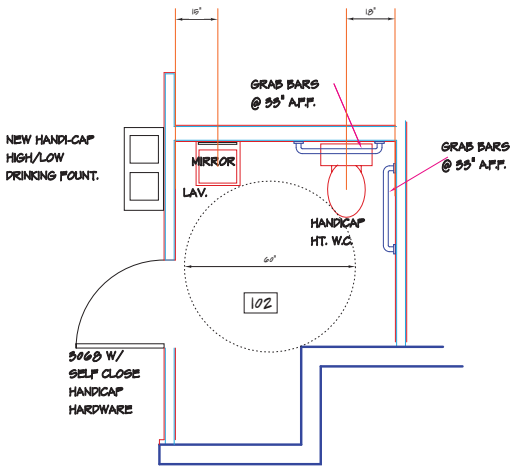
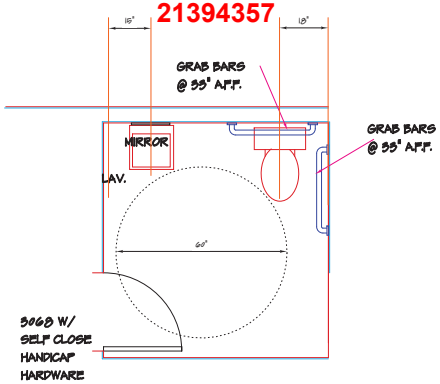


102 WAITING RESTROOM

HANDICAP ACCESSABLE

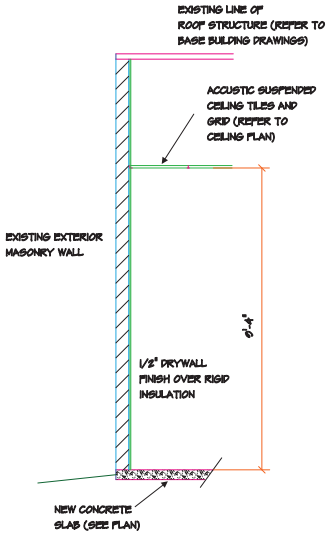
SCALE: 1/2"= 1'-0"



113 STAFF RESTROOM

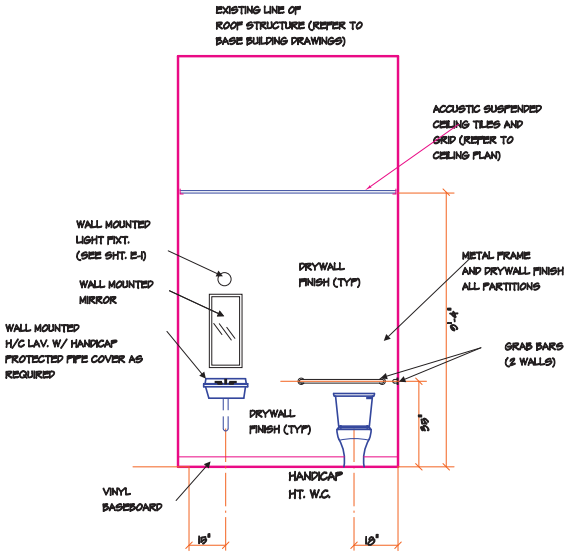
HANDICAP ACCESSABLE

SCALE: 1/2"= 1'-0"



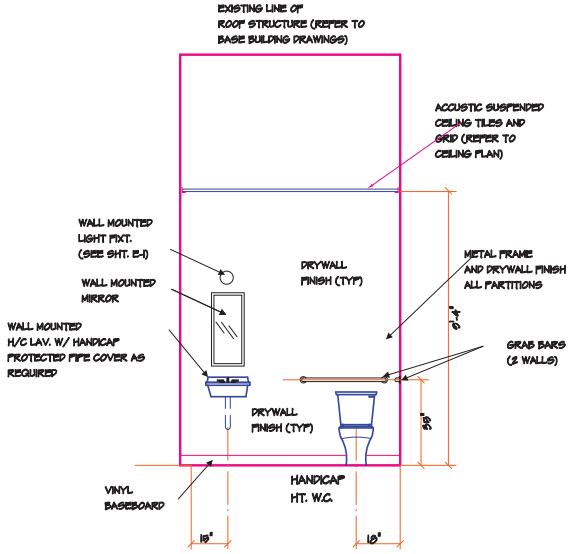
TYPICAL PARTITION DETAIL

SCALE: 1/2"= 1'-0"



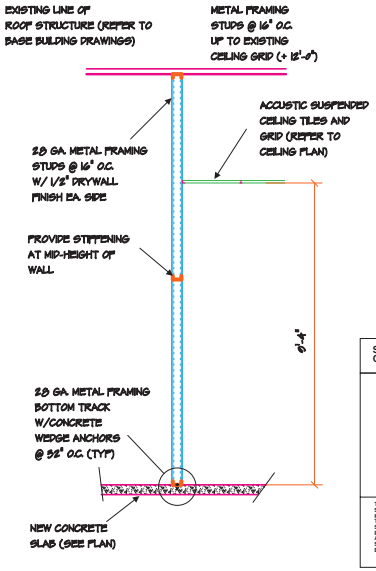
102 WAITING RESTROOM

SCALE: 1/2"= 1'-0"



113 STAFF RESTROOM

SCALE: 1/2"= 1'-0"



TYPICAL PARTITION DETAIL

SCALE: 1/2"= 1'-0"

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Revisions

Job Number	
Date	11 - 20 - 23
Drawn By	J.C.
Checked By	
Drawing Scale	AS NOTED

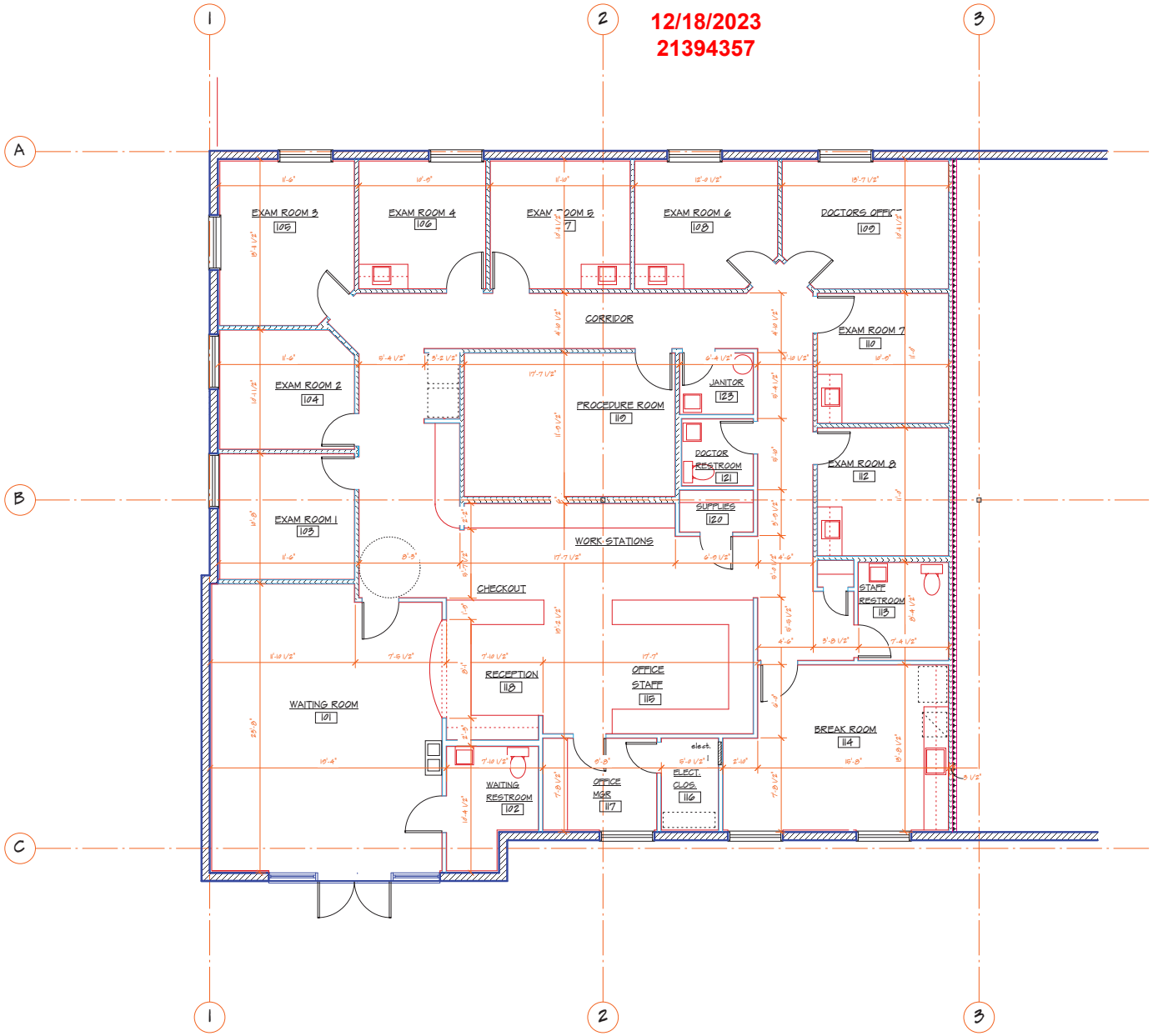
STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA
33901
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2
BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 2.1

REVIEWED FOR CODE COMPLIANCE 004

12/18/2023
21394357



FLOOR PLAN

DIMENSIONS ONLY

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

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Revisions

Job Number	
Date	11 - 20 - 23
Drawn By	J.C.
Checked By	
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA
33901
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2
BUILDOUT
22004 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 3

REVIEWED FOR CODE COMPLIANCE 005

12/18/2023
21394357

INTERIOR DOOR SCHEDULE

MARK	SIZE	FINISH	HARDWARE
A	2'-8" X 8'-0" H. SOLID WOOD	PER OWNER	PASS / LOCK
B	3'-0" X 8'-0" H. SOLID WOOD	PER OWNER	PASS / LOCK
B*	3'-0" X 8'-0" H. SOLID WOOD (HANDICAP ACCESS)	PER OWNER	HANDICAP SELF CLOSE
C	3'-0" X 8'-0" H. SOLID WOOD W/ GLASS	PER OWNER	PASS / LOCK
D	2'-0" X 8'-0" H. SOLID WOOD	PER OWNER	PASS / LOCK

ROOM SCHEDULE

ROOM	CEILING	FLOOR	WALLS
101	ACC. TILE DRYWALL	OWNER	PAINTED DRYWALL
102	ACC. TILE		
125	ACC. TILE		

Revisions

Job Number	
Date	11 - 20 - 23
Drawn By	J.C.
Checked By	
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
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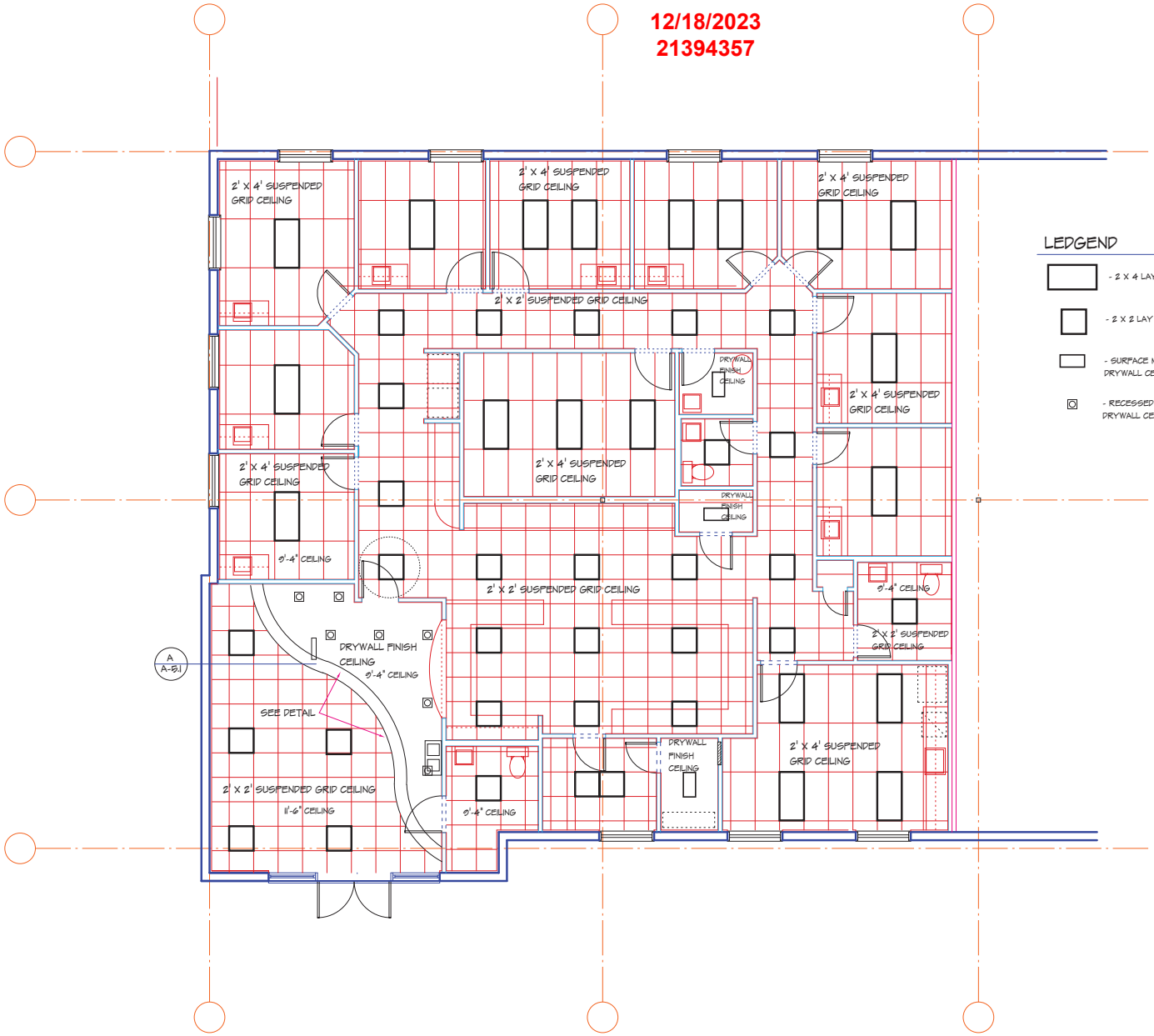
(239) 707-9365

PROJECT: MEDICAL OFFICE 2
BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 4

REVIEWED FOR CODE COMPLIANCE 006

12/18/2023
21394357



LEDGEND

- 2 X 4 LAY IN FIXTURE
- 2 X 2 LAY IN FIXTURE
- SURFACE MTD. FIXTURE DRYWALL CEILING
- RECESSED FIXTURE DRYWALL CEILING

REFLECTED CEILING PLAN

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

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Revisions

Job Number	
Date	8 / 28 / 23
Drawn By	J.C.
Checked By	
Drawing Scale	AS NOTED

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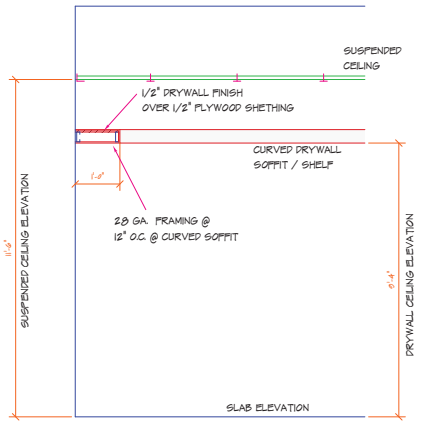
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2 BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 5

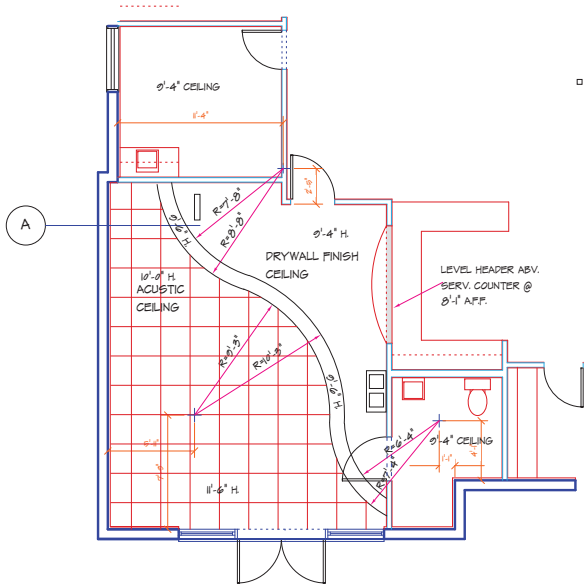
REVIEWED FOR CODE COMPLIANCE 007

12/18/2023
21394357



A
A-5.1 SECTION DETAIL @ LOBBY

SCALE: 1/2" = 1'-0"



LOBBY REFLECTED CEILING PLAN

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

LEDGEND

- 2 X 4 LAY IN FIXTURE
- 2 X 2 LAY IN FIXTURE
- SURFACE MTD. FIXTURE DRYWALL CEILING
- RECESSED FIXTURE DRYWALL CEILING

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Job Number	
Date	11 - 20 - 23
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Drawing Scale	AS NOTED

STUDIO one DESIGN
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CAPE CORAL, FLORIDA
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PROJECT: MEDICAL OFFICE 1&2 BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

SHEET #:
A - 5.1

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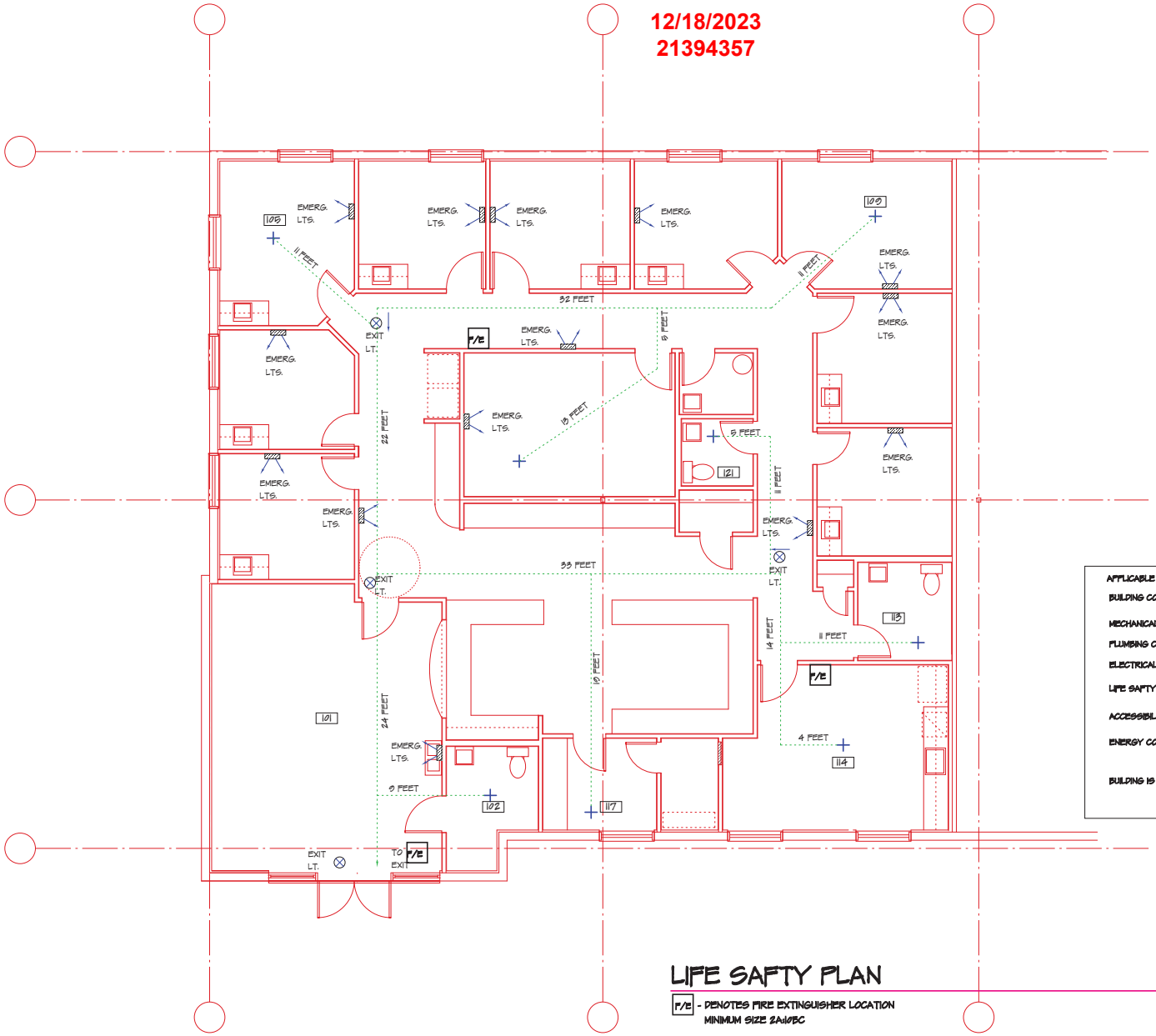

APPLICABLE CODES:

BUILDING CODE : FLORIDA BUILDING CODE
2020, 7TH EDITION
MECHANICAL CODE : FLORIDA BUILDING CODE
MECH. 2020, 7TH EDITION
PLUMBING CODE : FLORIDA BUILDING CODE
PLUMBING 2020, 7TH EDITION
ELECTRICAL CODE : NAT. ELECTRIC CODE
(2017 NEC)
LIFE SAFTY CODE : 2020 FLORIDA FIRE
PREVENTION CODE, 7TH EDITION
ACCESSIBILITY CODE : FLORIDA BUILDING CODE
2020, 7TH EDITION
ENERGY CODE : FLORIDA BUILDING CODE
2020, 7TH EDITION

BUILDING IS SPRINKLED :YES
SEPERATE APPLICATION TO BE FILED BY OTHERS

LIFE SAFTY PLAN

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

F/E - DENOTES FIRE EXTINGUISHER LOCATION
MINIMUM SIZE 2A10BC

S - SPRINKLERS LOCATED PER FIRESPRINKLER CONTRACTOR

EMERG. LTS.

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Revisions

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CAPE CORAL, FLORIDA
33901
(239) 707-9365

PROJECT: MEDICAL OFFICE 1&2 BUILDOUT
22004 LYDEN DRIVE
ESTERO , FLORIDA 33928

SHEET #:
LSP - 1

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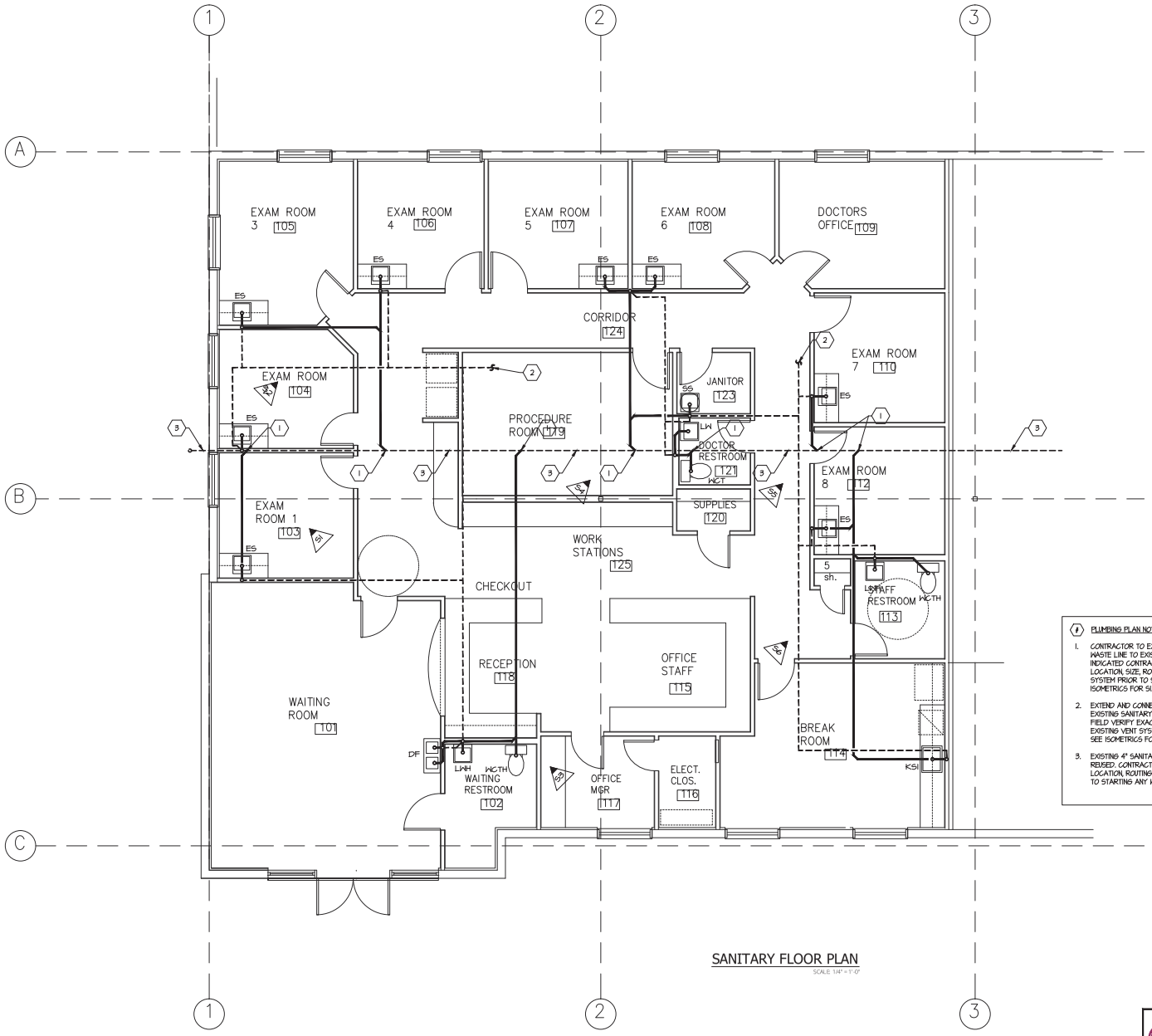

SANITARY FLOOR PLAN

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

PLUMBING PLAN NOTES:

1. CONTRACTOR TO EXTEND AND CONNECT NEW SANITARY WASTE LINE TO EXISTING SANITARY WASTE SYSTEM AS INDICATED CONTRACTOR TO FIELD VERIFY EXACT LOCATION, SIZE, ROUTING, ETC. OF EXISTING WASTE SYSTEM PRIOR TO STARTING ANY WORK. SEE ISOMETRICS FOR SIZING.
2. EXTEND AND CONNECT NEW SANITARY VENT LINE TO EXISTING SANITARY VENT SYSTEM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION, SIZE, ROUTING, ETC. OF EXISTING VENT SYSTEM PRIOR TO STARTING ANY WORK. SEE ISOMETRICS FOR SIZING.
3. EXISTING 4" SANITARY WASTE LINE TO REMAIN AND BE REUSED. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING, ETC. OF EXISTING SYSTEM PRIOR TO STARTING ANY WORK.

Revisions

1	-

Job Number	23-033
Date	11-29-2023
Drawn By	JRC
Checked By	JLZ
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

12/18/2023
21394357

PROJECT:
MEDICAL OFFICE BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

Digitally signed by Jeff L. Zenoniani on DN: c=US, o=Florida, ou=Florida Licensed, cn=JEFFREY L. ZENONIANI, email=jzenoniani@gmail.com, 2.16.840.1.113883.13.189.2.1.1=P20000051193, 2.16.840.1.113883.4.1=A00246201, 2.16.840.1.113883.13.14.1.1.3.2.4=0250 Zenoniani 2023.12.14 11:03:24 -05'00'
#44208

Jeffrey L. Zenoniani, PE, LLC.
ENGINEER #44208
CofA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990

SHEET #: P-1

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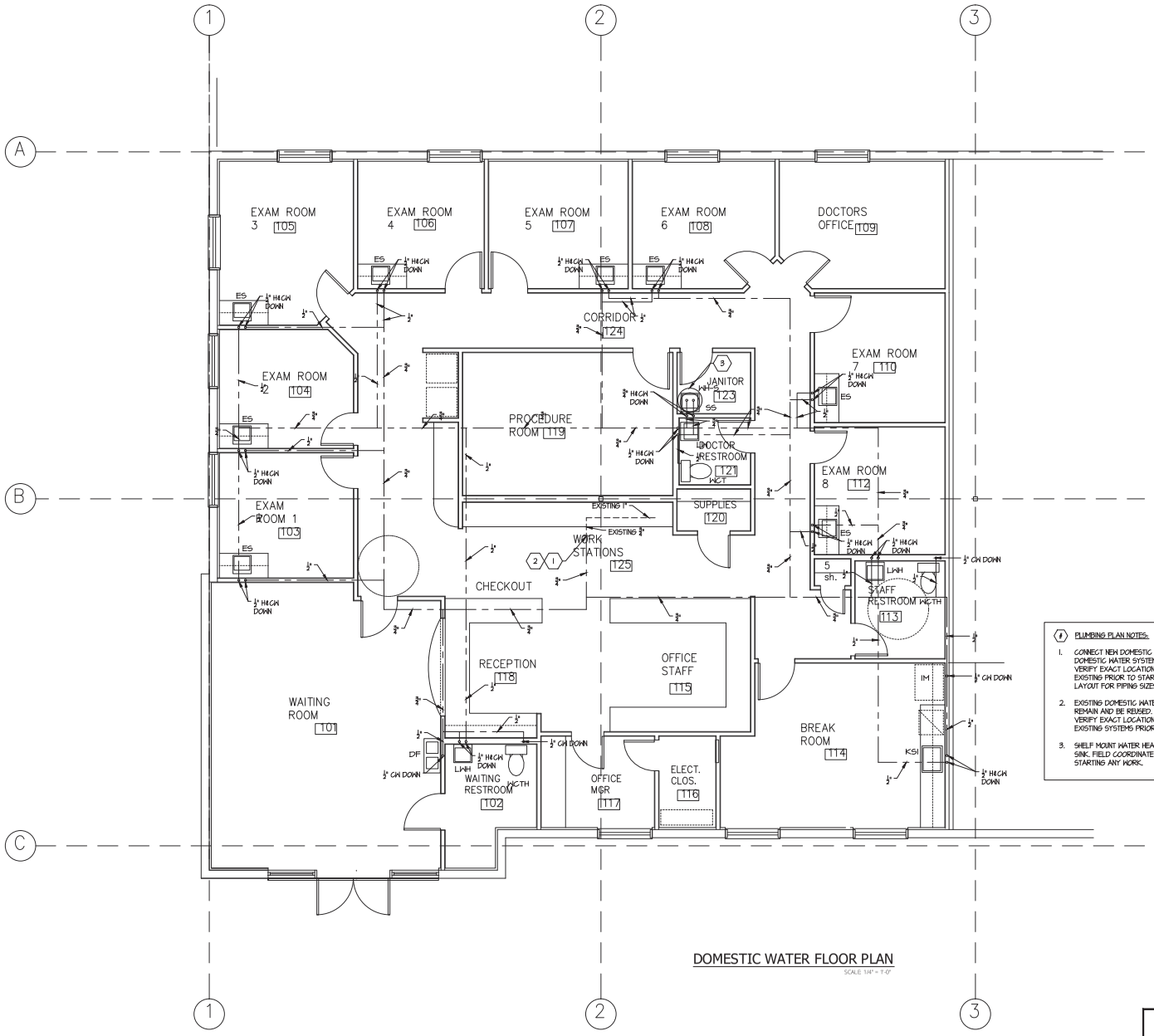

DOMESTIC WATER FLOOR PLAN

SCALE 1/4" = 1'-0"

PLUMBING PLAN NOTES:

1. CONNECT NEW DOMESTIC WATER PIPING TO EXISTING DOMESTIC WATER SYSTEM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION, SIZE, ROUTING, ETC. OF EXISTING PRIOR TO STARTING ANY WORK. SEE WATER LAYOUT FOR PIPING SIZES.
2. EXISTING DOMESTIC WATER STUB-OUT IN THIS AREA TO REMAIN AND BE REUSED. CONTRACTOR TO FIELD VERIFY EXACT LOCATION, SIZE, ROUTING, ETC. OF EXISTING SYSTEMS PRIOR TO STARTING ANY WORK.
3. SHELF MOUNT WATER HEATER (WH-5) ABOVE SERVICE SINK. FIELD COORDINATE LOCATION PRIOR TO STARTING ANY WORK.

Revisions

Job Number	23-033
Date	11-29-2023
Drawn By	JRC
Checked By	JLZ
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E. 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

12/18/2023
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PROJECT:
MEDICAL OFFICE BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

Jeffrey L. Zenoniani, PE, LLC.
ENGINEER #44208
CofA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990
#44208

SHEET #: P-2

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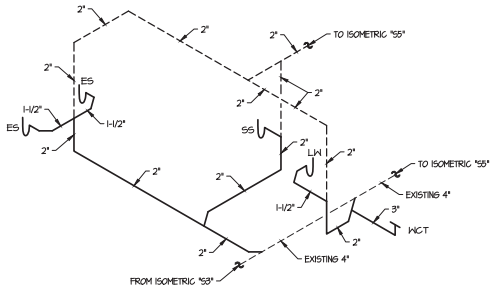
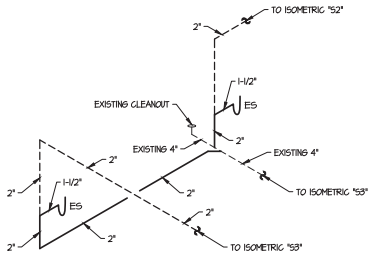


S4 SANITARY ISOMETRIC



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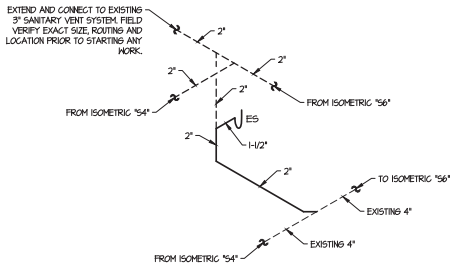

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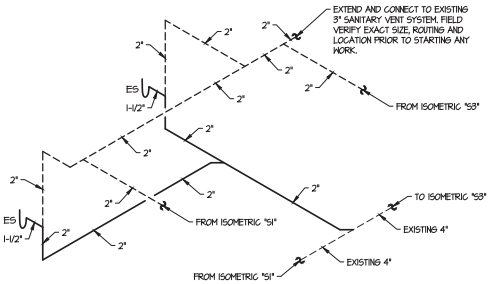
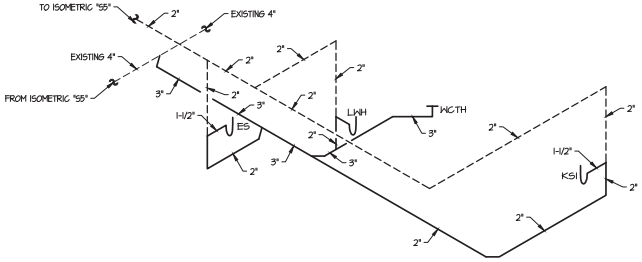
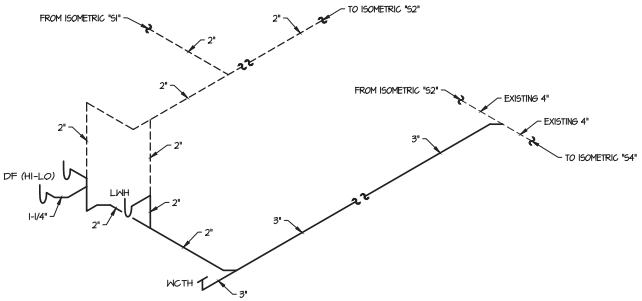


S2 SANITARY ISOMETRIC



S6 SANITARY ISOMETRIC



S3 SANITARY ISOMETRIC

Revisions	
1	-

Job Number	23-033
Date	11-29-2023
Drawn By	JRC
Checked By	JLZ
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

12/18/2023
21394357

PROJECT:
MEDICAL OFFICE BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

Jeffrey L. Zenoniani, PE, LLC.
ENGINEER #44208
CofA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990
#44208

SHEET #: P-3

REVIEWED FOR CODE COMPLIANCE 003

PLUMBING NOTES AND SPECIFICATIONS (FPC 2020 – 7TH EDITION)

1. THE PLUMBING PLAN SHALL COMPLY WITH THE STANDARD BUILDING CODES, THE STATE OF FLORIDA ENERGY CODE AND ALL LOCAL CODES AS MAY BE APPLICABLE. SIX SHOP DRAWINGS SUBMITTALS OF ALL MAJOR EQUIPMENT SHALL BE REQUIRED FOR APPROVAL PRIOR TO ORDERING AND PROCUREMENT OF SAME.
2. PLANS ARE DIAGRAMMATIC ONLY. THEY ARE INTENDED TO INDICATE CAPACITY, SIZE, LOCATION, DIRECTION AND GENERAL ARRANGEMENT, BUT NOT EXACT DETAILS OF CONSTRUCTION. THE FACT THAT ONLY CERTAIN FEATURES OF THE INSTALLATION ARE INDICATED MUST NOT BE TAKEN TO MEAN THAT OTHER SIMILAR OR DIFFERENT FEATURES WILL NOT BE REQUIRED.
3. THIS CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS TO INSURE THAT EACH TRADE SHALL HAVE SUFFICIENT SPACE TO INSTALL THEIR EQUIPMENT (DUCTWORK, PIPING, ELECTRICAL WORK, ETC.).
4. IN GENERAL, ALL PIPING SHALL BE RUN CONCEALED IN CEILING AND PIPE SPACES PROVIDED UNLESS NOTED OTHERWISE.
5. VERIFY ALL DIMENSIONS FORM ARCHITECTURAL PLANS FOR FIELD DIMENSIONS.
6. PROVIDE STOP OR ANGLE VALVES ON EACH WATER CONNECTION TO EACH PLUMBING FIXTURE.
7. BURIED PIPING NEAR FOUNDATION SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD PLUMBING CODE INSTRUCTIONS ON PROTECTION OF PIPES.
8. PLUMBING SYSTEM INSTALLER SHALL PROVIDE ALL STRUCTURAL MEMBERS, SUPPORT BRACKETS, FLASHING, HARDWARE, ETC., REQUIRED TO INSTALL A COMPLETE SYSTEM.
9. AN AIR CHAMBER/SHOCK ABSORBER WATER HAMMER ARRESTOR SHALL BE INSTALLED WHERE QUICK–CLOSING VALVES ARE USED TO PREVENT WATER HAMMER, SUCH AS ON WASHING MACHINES, ICE MAKERS, DISHWASHERS, AND DRINKING FOUNTAINS. THE ARRESTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, BE ACCESSIBLE, AND CONFORM TO ASSE 1010.
10. UNLESS NOTED OTHERWISE, ALL MATERIALS SHALL BE NEW, COMPLETE, INCLUDE MANUFACTURER'S WARRANTY AND SHALL BE U.L. APPROVED IF APPLICABLE. ALL WORK SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
11. ALL RISES AND DROPS IN PIPING NOT NECESSARILY SHOWN.
12. CONTRACTOR SHALL VERIFY ELEVATIONS OF UTILITY CONNECTIONS ON SITE PRIOR TO COMMENCING WORK.
13. COLD WATER PIPING SHALL BE TYPE "L" COPPER OR CPVC ABOVE GRADE AND SCHEDULE 40 SOLID PVC BELOW GRADE IN ACCORDANCE WITH FLORIDA BUILDING CODE – PLUMBING, TABLES 605.3 AND 605.4.
14. BELOW GRADE DRAINAGE PIPING SHALL BE MINIMUM SCHEDULE 40 SOLID PVC TYPE DWV. UNDER VEHICLE TRAFFIC ALL WASTE, VENT, SEWER AND STORM LINES SHALL BE OF CAST IRON SOIL PIPE AND FITTINGS AND SHALL CONFORM TO THE REQUIREMENTS OF CISPI STANDARD 301 OR ASTM A 888 FOR ALL PIPE AND FITTINGS. PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE OR RECEIVE PRIOR APPROVAL OF THE ENGINEER.

    ABOVE GRADE DWV PIPING SHALL BE AT A MINIMUM SCHEDULE 40 SOLID PVC TYPE DWV OR COEXTRUDED PIPING WITH CELLULAR CORE. ALL UNDER GROUND OR ABOVE GROUND DRAINAGE PIPING SHALL BE IN ACCORDANCE TO FLORIDA BUILDING CODE – PLUMBING, TABLES 702.1 AND 702.2.
15. FIXTURES SHALL BE AS SCHEDULED OR AS SELECTED BY ARCHITECT. SEE LIST OF ACCEPTABLE MANUFACTURERS.
    A. LAVS, SERVICE SINKS, WATER CLOSETS, URINALS, BATH TUBS: AMERICAN STANDARD, CRANE CO., ELJER PLUMBING WARE DIV., KOHLER CO.
    B. STAINLESS STEEL SINKS: AMERICAN STANDARD, ELKAY MFG. CO., DAYTON
    C. FAUCETS: AMERICAN STARDARD, CHICAGO FAUCET CO., DELTA FAUCET CO., ELJER PLUMBING WARE DIV., KOHLER CO., T&S BRASS, SPEAKER MAN.
    D. FLUSH VALVES: COYONE & DELNAY CO., SLOAN VALVE CO.
    E. WATER CLOSET SEATS: BEMIS MFG. CO., KOHLER CO., BENEKE CORP., FORBES–WRIGHT INDUSTRIES, INC., CHURCH PRODUCTS, OLSONITE CORP., OLSONITE SEATS.
    F. FIXTURE SUPPORTS: JOSAM MFG. CO., KOHLER CO., TYLER PIPE, ZURN INDUSTRIES INC., HYDRO–MECHANICS DIV.
16. THIS CONTRACTOR IS RESPONSIBLE FOR ALL HVAC CONDENSATE DRAINS INCLUDING PIPING, INSULATION THEREOF, AND DRYWELLS/RECEPTORS.
17. PLUMBING CONTRACTOR RESPONSIBILITY TO BE TO 5' BEYOND BUILDING LINE FINAL CONNECTION TO SITE UTILITIES TO BE PLUMBER'S RESPONSIBILITY.
18. PROVIDE CLEAN–OUTS AT EACH STACK RISER, AT EACH 90 DEGREE CHANGE IN HORIZONTAL DIRECTION, AND AT EACH EXIT FROM BUILDING.
19. PROVIDE MAIN SHUTOFF VALVE, RUBBER FACED CHECK VALVE, VACUUM, BREAKER AND HOSE BIB ON COLD WATER MAIN ENTERING THE BUILDING. PROVIDE SHUTOFF VALVE ON THE WATER SUPPLY PIPE TO EVERY WATER HEATER.
20. SILLCOCKS, HOSE BIBS, AND OTHER OPENINGS WITH A HOSE CONNECTION SHALL BE PROTECTED BY AN ATMOSPHERIC–TYPE VACUUM BREAKER OR PERMANENTLY ATTACHED HOSE CONNECTION VACUUM BREAKER.
21. CONNECT WATER MAIN TO VALVE OR STUB PROVIDED BY SITE UTILITY CONTRACTOR. PROVIDE FOR CHLORINATION OF FINAL WATER CONNECTION.
22. PROVIDE VENTING IN ACCORDANCE WITH FLORIDA BUILDING CODE – PLUMBING, CHAPTER 9.
23. PROVIDE AT ALL REFRIGERATOR LOCATIONS A MINIMUM 3/8" C.W. LINE TO 1/4" PETCOCK 6" ABOVE FLOOR. FURNISH 48" OF 1/4" SOFT COPPER TUBING FOR CONNECTION TO REFRIGERATOR.
24. INSULATE ALL DOMESTIC HOT WATER LINES WITH ARMAFLEX RUBBER INSULATION EXCEPT FOR CPVC PIPING.
25. WORK SHALL INCLUDE ALL LABOR, MATERIALS, PERMITS AND OTHER COSTS AS ARE NECESSARY FOR THE INSTALLATION OF A COMPLETE AND SATISFACTORY OPERATIONAL PLUMBING SYSTEM.
26. ALL EQUIPMENT FIXTURES, ETC. SHALL BE TESTED, ADJUSTED AND OPERATED AS INDICATED ON THE PLANS AND PLACED IN SATISFACTORY OPERATIONAL CONDITION BY THE PLUMBING CONTRACTOR. THIS CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP. MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY. THIS IS IN ADDITION TO ANY WARRANTY OR GUARANTEE FROM THE EQUIPMENT MANUFACTURER. FURNISH THE OWNER WITH THE MANUFACTURER'S WRITTEN CERTIFICATES.
27. NOTICE TO CONTRACTOR: REVISIONS TO THESE DRAWINGS AND CERTIFICATION THERETO WHICH MAY BE REQUIRED BECAUSE OF CONTRACTOR OPTED REVISIONS, SHALL BE COMPENSATED TO THE ENGINEER BY THE REQUESTING CONTRACTOR. PAYMENT SHALL BE REQUIRED AT THE TIME OF CERTIFICATION DELIVERY.
28. CONTRACTOR SHALL PROVIDE BACKFLOW PREVENTION DEVICE FOR ALL EXISTING AND NEW METERED LOCATIONS.

PLUMBING FIXTURE SCHEDULE

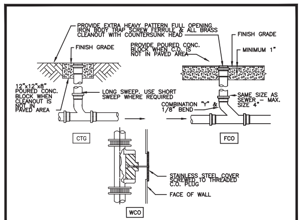
MARK	DESCRIPTION	MANUFACTURER	MODEL	SUPPLY FITTING	STOP & SUPPLY	WATER H	WATER C	WASTE FITTING	TRAP	REMARKS
WCTH	WATER CLOSET – TANK HANDICAP	BY PLMB. CONTRACTOR	--	INTEGRAL	1/2" x 1/2"	--	1/2"	INCLUDED	--	W/SEAT. NOTE 1, 2, 7
WCT	WATER CLOSET – TANK	BY PLMB. CONTRACTOR	--	INTEGRAL	1/2" x 1/2"	--	1/2"	INCLUDED	--	W/SEAT. NOTE 2, 7
LWH	LAVATORY WALL – HANDICAP	BY PLMB. CONTRACTOR	--	INCLUDED	1/2" x 1/2"	1/2"	1/2"	INCLUDED	1-1/4" C.P.	NOTE 1, 5, 7, 8, 9
LW	LAVATORY WALL	BY PLMB. CONTRACTOR	--	INCLUDED	1/2" x 1/2"	1/2"	1/2"	INCLUDED	1-1/4" C.P.	NOTE 5, 7, 8, 9
SS	SERVICE SINK	BY PLMB. CONTRACTOR	--	INCLUDED	3/4" x 3/4"	3/4"	3/4"	INCLUDED	2"	NOTE 5, 6, 7
ES	EXAM SINK	BY PLMG. CONTRACTOR	--	INCLUDED	1/2" x 1/2"	1/2"	1/2"	INCLUDED	1-1/2"	NOTE 7, 8, 9
KS1	KITCHEN SINK – SINGLE	BY PLMG. CONTRACTOR	--	INCLUDED	1/2" x 1/2"	1/2"	1/2"	INCLUDED	1-1/2"	NOTE 7, 8, 9
IM	ICE MAKER	--	--	INCLUDED	1/2" x 3/8"	--	1/2"	--	--	NOTE 3, 5, 7, 9
DF	DRINKING FOUNTAIN – HI/LOW	OASIS	MSSLPM-14G	INCLUDED	1/2" x 3/8"	--	1/2"	INCLUDED	1-1/4"	NOTE 1, 5, 7
WH-S	WATER HEATER – SHELF MTD.	STATE	PV-40-2RT	INTEGRAL	CRANE 438	3/4"	3/4"	--	--	NOTE 4, 5, 7, 10

NOTES

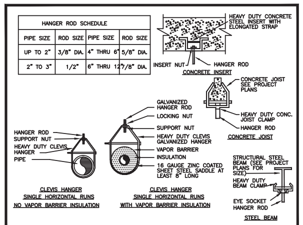
1. MOUNT AT WHEELCHAIR HEIGHT PER A.D.A.
2. 1.6 GALLONS PER FLUSH.
3. THIS CONTACTOR TO ROUGH-IN WATER AND WASTE AND MAKE FINAL PLUMBING CONNECTIONS TO ALL EQUIPMENT REQUIRING SAME THOUGH FURNISHED BY OTHERS.
4. 4.5 KW, 208-240V-1ø WITH WATTS X 100XL T&P RELIEF VALVE & #36A VACUUM BREAKER
5. PROVIDE WALL SUPPORT FRAMING.
6. PROVIDE #8C VACUUM BREAKER
7. PROVIDE WATER HAMMER ARRESTORS AT QUICK CLOSING VALVES.
8. PROVIDE GOOSENECK SPOUT AND 4" WRIST BLADE HANDLES.
9. PROVIDE WATER TEMPERING VALVE.
10. PROVIDE WALL BRACKETS & SHELF.

PLUMBING LEGEND

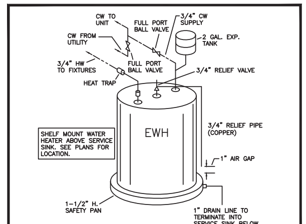
SYMBOL	DESCRIPTION	MATERIAL
———	SANITARY SOIL WASTE PIPING	PVC 1120
—GW—	GREASE WASTE PIPING	NO-HUB CI
– – – –	SANITARY VENT PIPING	PVC 1120
———	COLD WATER PIPING, OUTSIDE BUILDING	PVC 1120
———	COLD WATER PIPING, INSIDE BUILDING	CPVC
———	HOT WATER RETURN PIPING (1/2" ARMAFLEX INSULATION)	CPVC
—ST—	STORM DRAIN PIPING	PVC 1120
—R—	PRESSURE & TEMPERATURE RELIEF LINE	CPVC
—E—	EMERGENCY PAN DRAIN LINE	PVC 1120
—C—	CONDENSATE DRAIN LINE	PVC
—F—	FIRE PROTECTION PIPING	PER NFIPA
—G—	GAS PIPING	SCHED. 40 STEEL
—⋈—	LINE SIZE GATE VALVE	NIBCO T-111
—⊠—	GATE VALVE SET IN 8"PVC SLEEVE	NIBCO T-111
———	AIR PIPING	TYPE 'L' COPPER
———	VACUUM PIPING	SCHED. 40 PVC



TYPICAL CLEANOUT DETAILS
N.T.S.
1 / P-4



PIPE SUPPORT DETAIL
N.T.S.
2 / P-4



WATER HEATER DETAIL
N.T.S.
3 / P-4

Revisions
△ -
-

Job Number 23–033
Date 11–29–2023
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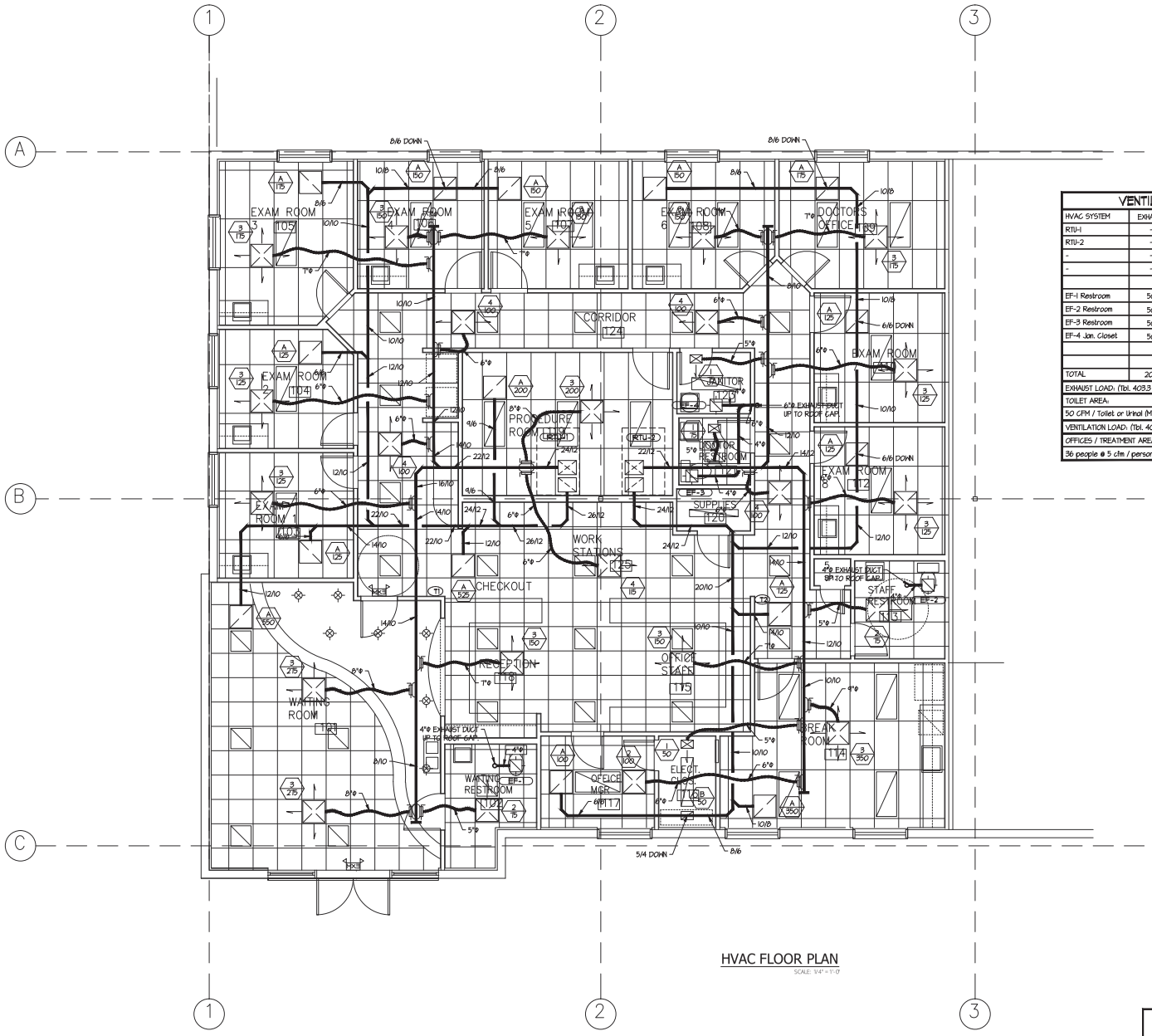
CAPE CORAL, FL 33915
PHONE: (239) 980-4990
#44208

SHEET #: P–4

12/18/2023
21394357
REVIEWED FOR CODE COMPLIANCE 004



HVAC FLOOR PLAN

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

VENTILATION SCHEDULE				
HVAC SYSTEM	EXHAUST	O/A INTAKE	RETURN	TOTAL
RTU-1	-	100	1,900	2,000
RTU-2	-	100	1,700	1,800
-	-	-	-	-
-	-	-	-	-
EF-1 Restroom	50	-	-	-
EF-2 Restroom	50	-	-	-
EF-3 Restroom	50	-	-	-
EF-4 Jan. Closet	50	-	-	-
		-	-	-
TOTAL	200	200	3,600	3,800
EXHAUST LOAD: (Tbl. 403.3 FBCM 2020)				
TOILET AREA:				
50 CFM / Toilet or Urinal (Minimum)				
VENTILATION LOAD: (Tbl. 403.3 FBCM 2020)				
OFFICES / TREATMENT AREAS: (3,543 sq. ft.)				
36 people @ 5 cfm / person = 180 cfm Required				

Revisions

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CAPE CORAL, FL 33915
PHONE: (239) 980-4990
#44208

SHEET #: M-1

REVIEWED FOR CODE COMPLIANCE 001

HVAC NOTES:

NOTE: THESE MECHANICAL DRAWINGS CONFORM TO ALL REQUIREMENTS OUTLINED IN THE 2020 FLORIDA BUILDING CODE – MECHANICAL, 7TH EDITION.

A. THE HVAC CONTRACTOR SHALL INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS TO COMPLETE THE AIR CONDITIONING, HEATING, AND VENTILATING WORK AS SHOWN ON THE DRAWINGS TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. ALL PERMIT FEES
2. ALL AIR CONDITIONING EQUIPMENT
3. EXHAUST FANS AND SYSTEMS
4. MOTORS AND STARTERS FOR EQUIPMENT FURNISHED UNDER THIS WORK
5. SUPPLY AND RETURN DUCTWORK
6. SUPPLY AND RETURN AIR GRILLES, REGISTERS, WEATHERPROOF LOUVERS AND DAMPERS
7. FILTERS AND STARTERS, ETC.
8. CONDENSATE DRAIN PIPING
9. CONTOLS INCLUDING THERMOSTATS AND LOW VOLTAGE WIRING
10. EQUIPMENT SUPPORTS, HANGERS, ETC.
11. TEST AND BALANCE OF ALL SYSTEMS

B. CONDENSATE PIPING

1. ALL AIR HANDLERS SHALL HAVE AUXILIARY DRAIN PANS WITH AUXILIARY DRAINS PIPED TO A CONSPICUOUS LOCATION AT THE EXTERIOR OF THE BUILDING. INSULATE CONDENSATE PIPE WITH 1/2" ARMAFLEX.

2. CONDENSATE AND EMERGENCY CONDENSATE DRAINS SHALL BE SCHEDULE 40 PVC ASTM 2665

3. SLOPE HORIZONTAL CONDENSATE DRAINS A MINIMUM OF 1/4" PER FOOT.

C. SUPPLY AND RETURN DUCTWORK

1. PROVIDE AND INSTALL ALL HEATING AND AIR CONDITIONING DISTRIBUTION DUCTWORK FABRICATED OF UL CLASS DUCT LISTING FOR UL TEST 181 AND MEETING NFPA 90A STANDARD, MADE OF RIGID DUCTBOARD WITH GLASS SCRIM REINFORCED VAPOR BARRIER FACING, WITH THERMAL CONDUCTIVITY OF 0.163 (R–6.0) AND 1–1/2" MINIMUM THICKNESS. DUCT SHALL BE EQUAL TO CertainTeed "ToughGuard" FIBERGLASS RECTANGULAR DUCT SYSTEM TYPE 800–FRK.

2. ALL SUPPLY AND RETURN FLEXIBLE DUCT SHALL BE 1 1/2" R–6.0 VINYL VAPOR BARRIER.

3. FRESH AIR INTAKE AND EXHAUST DUCT SHALL BE GALVANIZED SHEET METAL. NO INSULATION EXCEPT AS NOTED IN THE EXHAUST FAN SCHEDULE.

4. ALL SUPPLY COLLARS OFF MAIN TRUNK LINES SHALL HAVE MANUAL VOLUME DAMPERS.

5. ALL DUCT SHALL BE CONSTRUCTED AS PER THE LATEST EDITION OF SMACNA FIBERGLASS DUCT MANUAL.

6. ALL OUTSIDE AIR CONNECTIONS TO EACH SYSTEM SHALL BE PROVIDED WITH A MOTORIZED VOLUME DAMPER.

7. OUTSIDE AIR SHALL COMPLY WITH ASHRAE 62.

C1. SINGLE WALL SPIRAL DUCT:

ALL ROUND SPIRAL DUCT AND FITTINGS SHALL BE MANUFACTURED FROM G–90 GALVANIZED STEEL, CONFORMING TO ASTM AND SMACNA STANDARDS. STANDARD ELBOWS WILL HAVE 1.5 CENTERLINE RADIUS. OTHER RADII AND VANED ELBOWS MAY BE USED AS NEEDED. ELBOWS THROUGH 12" SHALL BE DIE FORMED, WITH STITCH WELDED JOINTS. ELBOWS 14" THROUGH 30" SHALL BE GORE–LOCKED CONSTRUCTION. ALL ELBOWS ABOVE 32" SHALL ALSO BE GORED, BUT WITH TACK WELD AND SEALED CONSTRUCTION FOR USE TO 4" W.G., OR SOLID WELDED FOR USE TO 10 W.G. BRANCH CONNECTIONS IN MEDIUM PRESSURE SYSTEMS SHALL BE CONICAL FOR 90 DEGREE TAPS, AND STRAIGHT FOR 45 DEGREES. SEAMS AND TAP CONNECTIONS SHALL BE TACK WELDED AND SEALED WITH MASTIC FOR USE UP TO 4" W.G., OR SOLID WELDED FOR USE TO 10 W.G. STANDARD CONNECTIONS ARE SLIP FIT WITH COUPLINGS. GASKETED (UP TO 36"), FLANGED, OR SPIRALMATE CONNECTIONS. (EQUAL TO DUCTMATE INDUSTRIES) OPTIONAL: PROVIDE WITH VAPOR BARRIER AND 1–1/2" (R–6.0) MINIMUM INSULATION WRAP.

D. EXHAUST SYSTEMS

1. EXHAUST OUTLETS FOR DUCTS CONVEYING NOXIOUS GASES, FLAMMABLE VAPORS, CORROSIVE VAPORS, AND DUCTS SERVING COMMERCIAL FOOD COOKING AND PROCESSING EQUIPMENT, SHALL TERMINATE OUTSIDE THE BUILDING AND SHALL BE LOCATED 10' FROM ANY ADJACENT BUILDING, PARKING AREA, ADJACENT PROPERTY LINE, WINDOW, DOOR OR AIR INTAKE OPENING AND SHALL BE LOCATED AT LEAST 10' ABOVE THE ADJOINING GRADE.

E. REFRIGERANT LINES

1. SIZE ALL REFRIGERANT LINES TO MEET THE MANUFACTURERS RECOMMENDATIONS. THESE MAY REQUIRE LONG LINE ACCESSORIES.

2. INSULATE ALL SUCTION LINES WITH 1/2" ARMAFLEX INSULATION, INSTALLED TO MEET THE MANUFACTURERS INSTRUCTIONS.

3. ANY REFRIGERANT LINES RUNNING UNDERGROUND SHALL BE WITHIN A PVC PIPE CHASE.

F. CEILING AND WALL DIFFUSERS

1. ALL CEILING AND WALL SUPPLY AND RETURN AIR DIFFUSERS SHALL BE OF ALUMINUM CONSTRUCTION, EXCEPT WHEN PENETRATING A RATED WALL OR CEILING ASSEMBLY WHEN STEEL DIFFUSERS RATED FOR THE PARTICULAR APPLICATION ARE REQUIRED.

2. ALL AIR DISTRIBUTION SHALL BE EQUAL TO THAT INDICATED ON THE DRAWINGS.

G. THERMOSTATS

1. EACH AIR CONDITIONING SYSTEM SHALL HAVE A 24 VOLT PROGRAMMABLE THERMOSTAT MOUNTED AT 5'–0" ABOVE FINISHED FLOOR. THERMOSTATS SHALL BE ONE STAGE COOL, ONE STAGE HEAT, WITH "AUTO–ON" FAN SWITCH AND "HEAT–OFF COOL" SYSTEM SWITCH. PROVIDE TWO STAGE COOL AND TWO STAGE HEAT THERMOSTATS FOR TWO STAGE UNITS, WHERE REQUIRED. PROVIDE LISTED THERMOSTATS THAT ARE SHOWN ON THE EQUIPMENT SCHEDULE.

2. HVAC CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING AND CONDUIT AS REQUIRED.

H. TESTING AND BALANCING

1. HVAC SUBCONTRACTOR SHALL PROVIDE AN INDEPENDENT (NOT EMPLOYED BY THE SUBCONTRACTOR) TEST AND BALANCE FIRM WHICH SPECIALIZES IN THE BALANCING AND TESTING OF HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS. THEY SHALL BALANCE AND ADJUST AIR MOVING EQUIPMENT AND AIR DISTRIBUTION AND EXHAUST SYSTEMS TO THE FLOW RATES INDICATED ON THE HVAC SCHEDULES AND PLANS. REPORTS SHALL BE ON STANDARD SMACNA OR ASSOCIATED AIR BALANCE COUNCIL FORMS AND SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO APPLICATION FOR FINAL PAYMENT.

2. TESTING AND BALANCE PERSONNEL SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE AND SHALL BE NEBB CERTIFIED AND SHALL PROVIDE PROOF OF HAVING SUCCESSFULLY COMPLETE AT LEAST FIVE (5) PROJECT OF SIMILAR SIZE AND SCOPE.

3. AIR BALANCE TESTING SHALL NOT BEGIN UNTIL SYSTEMS HAVE BEEN COMPLETED AND ARE IN FULL WORKING ORDER. THE HVAC CONTRACTOR SHALL MAKE ALL PRELIMINARY TESTS AND ADJUSTMENTS, SHALL PLACE ALL SYSTEMS AND EQUIPMENT INTO FULL OPERATION AND CONTINUE THE OPERATION DURING EACH WORKING DAY OF THE TESTING AND BALANCING.

4. INCLUDE AN EXTENDED WARRANTY OF TWELVE (12) MONTHS AFTER COMPLETION OF THE TEST AND BALANCE WORK, DURING WHICH TIME, REQUESTS MAY BE MADE TO RECHECK, OR FOR RESETTING OF ANY OUTLETS, SUPPLY FAN, OR EXHAUST AS LISTED IN THE TEST REPORT. PROVIDE ANY TECHNICIANS TO ASSIST IN MAKING ANY TEST REQUIRED. IF SYSTEM IS NOT WORKING PROPERLY, IT SHALL BE REBALANCED ANY TIME DURING THE FIRST YEAR OF OPERATION. AFTER THE SPACE IS OCCUPIED, ADDITIONAL BALANCING WILL BE REQUIRED TO ACCOMMODATE THE ACTUAL OCCUPANCY REQUIREMENTS. ALSO, PROVIDE FOR BALANCING DURING WINTER OR SUMMER OPERATION. ALL OF THE ABOVE SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. REPLACEMENT OF ADJUSTABLE PULLEYS, ADDITIONAL BALANCING DAMPERS, PRESSURE PORTS, AND FITTINGS, ETC., REQUIRED TO EFFECT PROPER AIR BALANCE SHALL BE FURNISHED AND INSTALLED BY THE HVAC SUBCONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

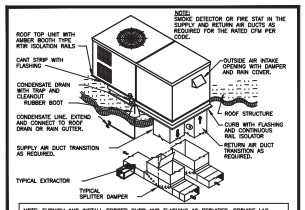
5. THE FINAL TEST AND BALANCE REPORT FURNISHED TO THE GENERAL CONTRACTOR SHALL INCLUDE A LIST OF ITEMS THAT REQUIRE REPAIR OR ADJUSTMENT.

6. ALL AIR FILTERS AND STRAINERS SHALL BE CLEANED OR REPLACED BY THE HVAC SUBCONTRACTOR BEFORE PROCEEDING WITH THE TEST AND BALANCE.

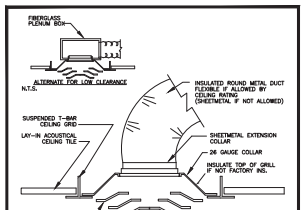
7. ALL PROGRAMMABLE THERMOSTATS SHALL BE SET SO THAT THE BLOWER OPERATES CONTINUOUSLY DURING ALL OCCUPIED TIMES TO INSURE THE PROPER AMOUNT OF VENTILATION AIR IS PROVIDED. THE BLOWER SHALL BE SET IN THE AUTO POSITION FOR ALL UNOCCUPIED PERIODS.

NOTICE TO CONTRACTOR: REVISIONS TO THESE DRAWINGS AND CERTIFICATION THERETO WHICH MAY BE REQUIRED BECAUSE OF CONTRACTOR OPTED REVISIONS, SHALL BE COMPENSATED TO THE ENGINEER BY THE REQUESTING CONTRACTOR. PAYMENT SHALL BE REQUIRED AT THE TIME OF CERTIFICATION DELIVERY.

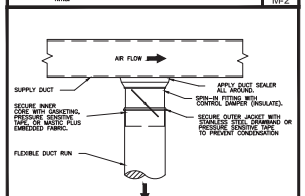
ALL HVAC EQUIPMENT IN THIS PROJECT CAN BE EQUIPPED WITH A FLOAT SWITCH IN LIEU OF SECONDARY DRAIN PAN. APPROVED UL LISTED FLOAT SWITCH SHALL ONLY BE ACCEPTABLE.



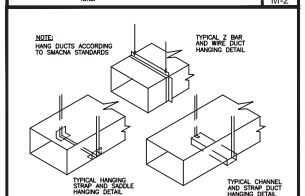
ROOF TOP UNIT DETAIL
N.T.S.
1
M-2



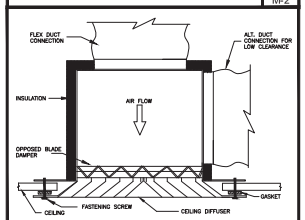
SUPPLY AIR GRILLE
N.T.S.
2
M-2



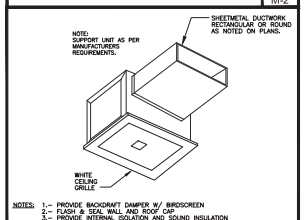
TYPICAL FLEXIBLE DUCT CONNECTION DETAIL
N.T.S.
3
M-2



METHOD OF HANGING DUCTS
N.T.S.
4
M-2



CEILING FLUSH MT. GRILL
N.T.S.
5
M-2



CABINET CEILING FAN DETAIL
N.T.S.
6
M-2

AIR DISTRIBUTION SCHEDULE

MARK	MFG.	MODEL	SIZE (W x H)	DIRECTION	REMARKS	CFM
1	METAL-AIRE	LD	12 x 6	1 WAY	OFF WHITE FINISH	50 - 80
2	METAL-AIRE	7000-6	24 x 24	1 WAY LAY-IN	OFF WHITE FINISH	SEE NOTE 1
3	METAL-AIRE	7000-6	24 x 24	4 WAY LAY-IN	OFF WHITE FINISH	SEE NOTE 1
3	METAL-AIRE	7000-6	24 x 24	2 WAY LAY-IN	OFF WHITE FINISH	SEE NOTE 1
A	METAL-AIRE	7000R	24 x 24	RETURN W/ FILTER	OFF WHITE FINISH	SEE NOTE 1

NOTE:
1. NECK SIZE TO MATCH DUCT SIZE.

EXHAUST FAN SCHEDULE (OR EQUAL)

MARK	MFG.	MODEL	TYPE	C.F.M.	S.P.	AMPS	R.P.M.	VOLT.	SONES	DRIVE	REMARKS
EF-1	NUTONE	ARN80	CEILING	50	.25	.37 AMPS	--	120/1/60	2.0	DIRECT	1, 2, 3, 4
EF-2	NUTONE	ARN80	CEILING	50	.25	.37 AMPS	--	120/1/60	2.0	DIRECT	1, 2, 3, 4
EF-3	NUTONE	ARN80	CEILING	50	.25	.37 AMPS	--	120/1/60	2.0	DIRECT	1, 2, 3, 4
EF-3	NUTONE	ARN80	CEILING	50	.25	.37 AMPS	--	120/1/60	2.0	DIRECT	1, 2, 3, 4

NOTES:
1. BACKDRAFT DAMPER.
2. INSECT/BIRD SCREEN.
3. PROVIDE WITH WALL SWITCH.
4. SUPPORT FROM STRUCTURE COMPLETE WITH VIBRATION ISOLATORS.

PACKAGED EQUIPMENT SCHEDULE (ELECTRIC HEAT)

GENERAL				COOLING @ ARI				HEATING					MISC
MARK	MODEL	MANUFACTURER	CFM/OA	BTUH TOTAL	VOLTAGE	FLA	SEER2	KW	MODEL	STG	VOLTAGE	MCB	ACCESSORIES
RTU-1	DAIKIN	DFC0601D	2000 / 100	59.0	240/1/60	28.4	13.4	5.0	EHD1506	1	240/1/60	60A	SEE NOTES FOR UNIT FEATURES. (DB2 LBS.)
RTU-2	DAIKIN	DFC0601D	1800 / 100	59.0	240/1/60	28.4	13.4	5.0	EHD1506	1	240/1/60	60A	SEE NOTES FOR UNIT FEATURES. (DB2 LBS.)

NOTES:
1. PROGRAMMABLE THERMOSTAT.
2. MOTORIZED DAMPER AND ECONOMIZER FOR FRESH AIR INTAKE.
3. SUPPLY AND/OR RETURN DUCT SMOKE DETECTOR, 5 TONS AND OVER.
4. BAROMETRIC RELIEF DAMPER.
5. POWERED CONVENIENCE OUTLET.
6. THROUGH-THE-BASE ELECTRICAL.
7. ROOF CURB.

COMPLY WITH 2020 FMC – 7TH EDITION, SECTION 401:
MECHANICAL VENTILATION SYSTEMS SHALL BE PROVIDED WITH MANUAL OR AUTOMATIC CONTROLS THAT WILL OPERATE SUCH SYSTEM WHENEVER THE SPACE IS OCCUPIED. AIR CONDITIONING SYSTEMS THAT SUPPLY REQUIRED VENTILATION AIR SHALL BE PROVIDED WITH CONTROLS DESIGNED TO AUTOMATICALLY MAINTAIN THE REQUIRED OUTDOOR AIR SUPPLY RATE DURING OCCUPANCY.

H.V.A.C. SYMBOLS AND LEGEND

SYMBOL	DESCRIPTION
	SUPPLY OUTLET
	OUTLET NUMBER AIR QUANTITY (CFM)
	RETURN/EXHAUST INLET
	INLET DESIGNATION AIR QUANTITY (CFM)
	SUPPLY DUCTWORK – NET INSIDE DIMENSION (WIDTH/DEPTH)
	RETURN DUCTWORK – NET INSIDE DIMENSION (WIDTH/DEPTH)
	EXHAUST DUCTWORK – NET INSIDE DIMENSION (WIDTH/DEPTH)
	FLEXABLE DUCTWORK – NET INSIDE DIMENSION (WIDTH/DEPTH)
	BRANCH TAKE-OFF WITH 45 DEGREE MITER CORNER ON UPSTREAM SIDE. MINIMUM 1/2 BRANCH DUCT WIDTH.
	TAKE-OFF OR TEE FITTING WITH 24 GAUGE GALVANIZED SHEET METAL SPLITTER DAMPER. PROVIDE WITH HINGE AND LOCKING OPERATING ROD.
	SINGLE THICKNESS TURNING VANES INSTALLED IN STRICT ACCORDANCE PER SMACNA "FIBROUS GLASS DUCT CONST", OR "HVAC DUCT CONSTRUCTION STANDARDS", WHICHEVER APPLIES. VANES IN FIBERGLASS SHALL BE DURO-DYNE "QUIETURN".
	THREE PIECE ELBOW (90 DEGREE TURN), WITH THROAT DIMENSION MINIMUM 1/2 DUCT WIDTH.
	OPPOSED BLADE VOLUME DAMPER
	FIRE DAMPER EQUAL TO GREENHECK MODEL DFD-150, 1-1/2 HR. UL LABELED, TYPE B, WITH 165 DEGREE FUSIBLE LINK.
T	THERMOSTAT-MOUNT AT 60 INCHES A.F.F. UNLESS OTHERWISE STATED
— C —	CONDENSATE DRAIN PIPING
— E —	EMERGENCY DRAIN PAN PIPING
— R —	REFRIGERANT LINE PIPING, ABOVE GROUND
— — R — —	REFRIGERANT LINE PIPING, BELOW GROUND. (PROVIDE PVC CHASE)

HVAC NOTE:

1. THE DUCTWORK LAYOUT IS SCHEMATIC. ACTUAL INSTALLED DUCT LAYOUT MAY VARY FROM THE LAYOUT INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS, TRANSITIONS FITTINGS, ADDITIONAL DUCTWORK AND ACCESSORIES REQUIRED TO ACCOMMODATE ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, CIVIL AND ELECTRICAL COMPONENTS WHETHER INDICATED ON THESE PLANS OR NOT.

Revisions

1	-

Job Number	23-033
Date	11-29-2023
Drawn By	JRC
Checked By	JLZ
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

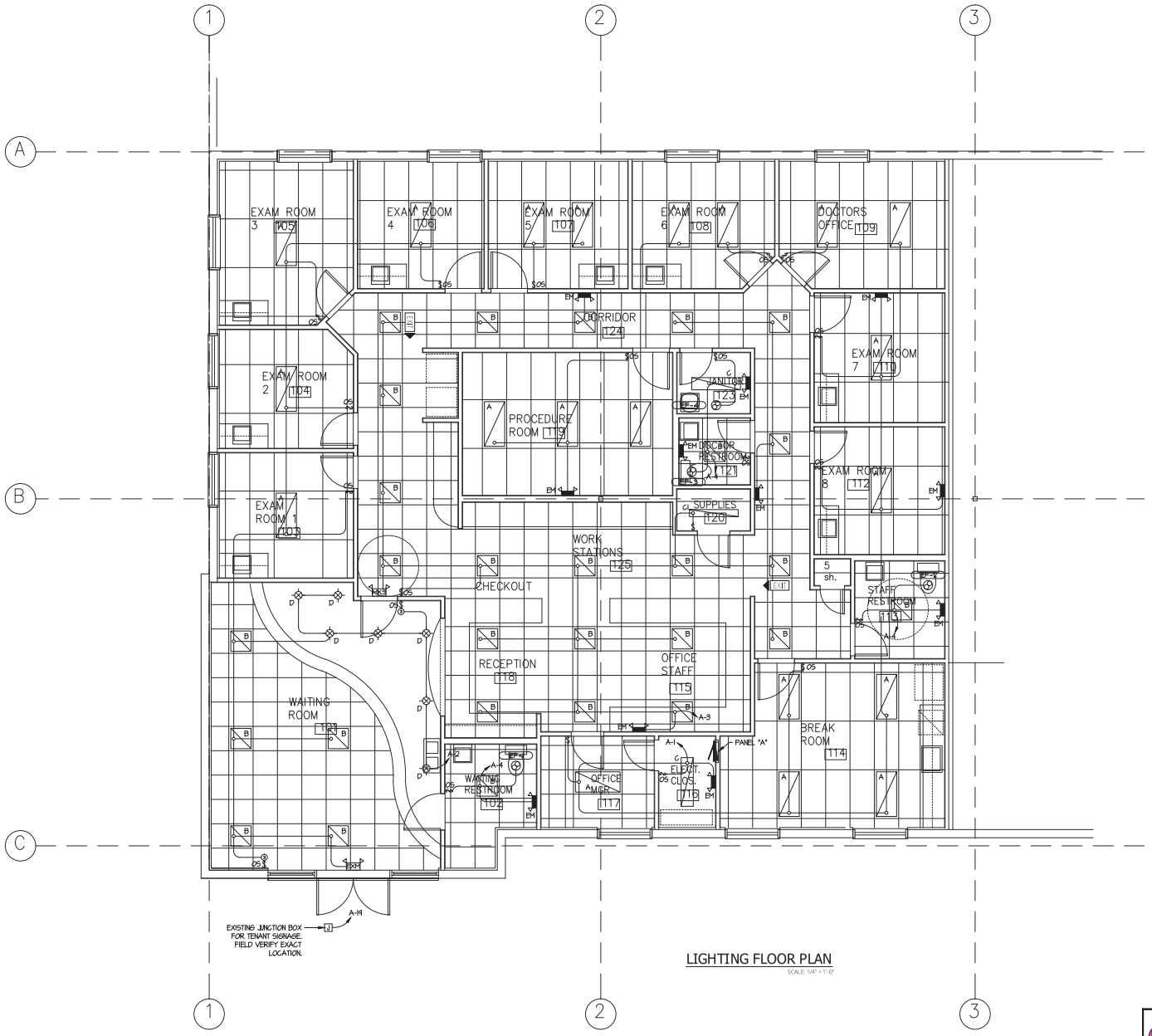
12/18/2023
21394357

PROJECT:
MEDICAL OFFICE BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

Jeffrey L. Zenoniani, PE, LLC.
ENGINEER #44208
CotA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990
#44208

SHEET #: M-2

REVIEWED FOR CODE COMPLIANCE 002



LIGHTING FLOOR PLAN

SCALE 1/4" = 1'-0"

Revisions	
A	-

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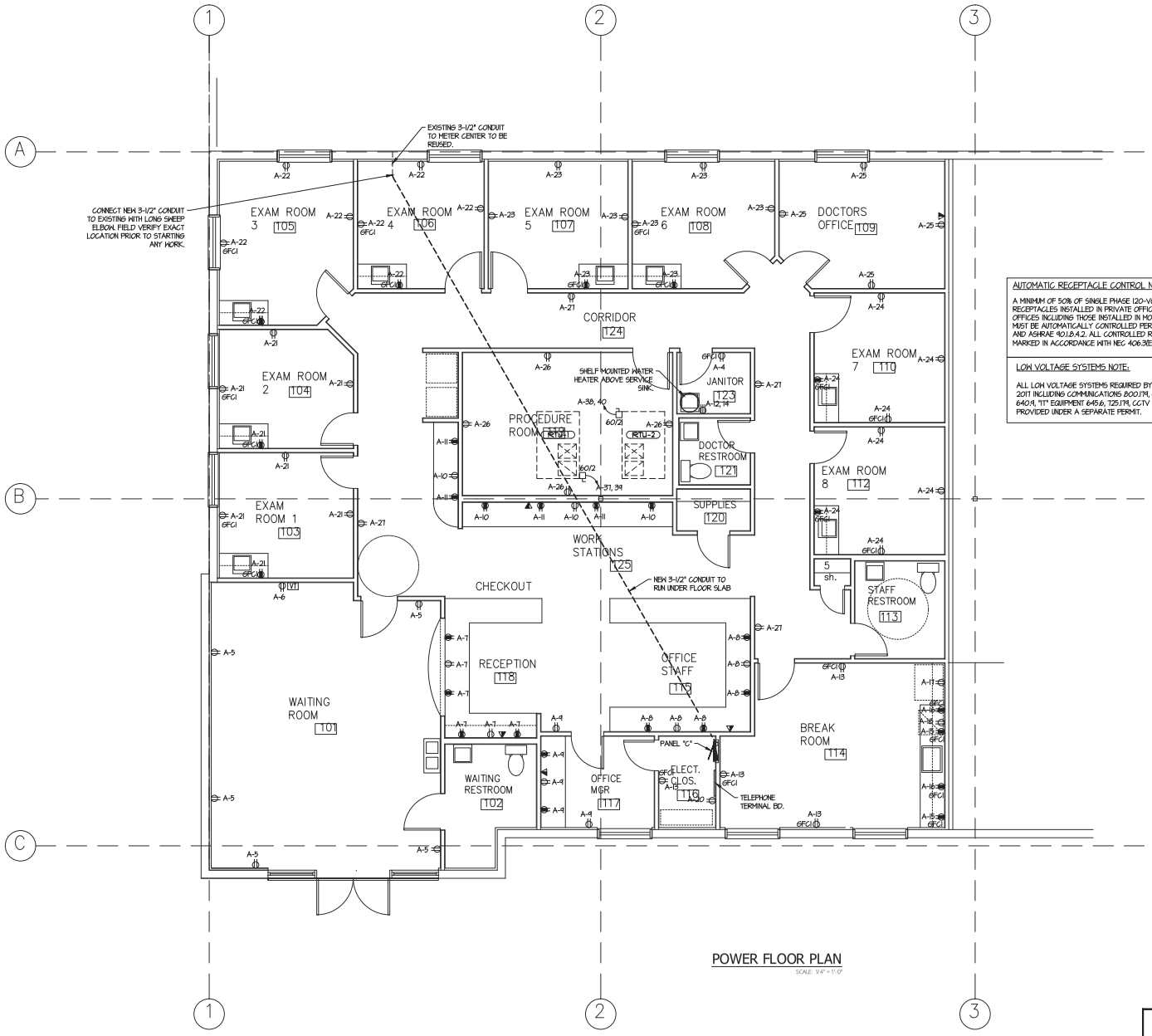
CoA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990

SHEET #: E-1

REVIEWED FOR CODE COMPLIANCE 001



POWER FLOOR PLAN

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

AUTOMATIC RECEPTACLE CONTROL NOTE:

A MINIMUM OF 50% OF SINGLE PHASE 120-VOLT 15 AND 20-AMP RECEPTACLES INSTALLED IN PRIVATE OFFICES AND OPEN OFFICES INCLUDING THOSE INSTALLED IN MODULAR PARTITIONS MUST BE AUTOMATICALLY CONTROLLED PER FBC 2020 C405.6.1 AND ASHRAE 90.1.9.4.2. ALL CONTROLLED RECEPTACLES TO BE MARKED IN ACCORDANCE WITH NEC 406.3(E).

LOW VOLTAGE SYSTEMS NOTE:

ALL LOW VOLTAGE SYSTEMS REQUIRED BY FBC 107.3.5 AND NEC 2017 INCLUDING COMMUNICATIONS 800.170, CATV 820.170, AUDIO 640.9, "IT" EQUIPMENT 645.6, 725.170, CCTV 725.154, ETC. TO BE PROVIDED UNDER A SEPARATE PERMIT.

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A	-

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CofA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 980-4990
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SHEET #: E-2

REVIEWED FOR CODE COMPLIANCE 002

LOAD CALCULATIONS	:	LYDEN DRIVE MEDICAL OFFICE – PANEL "A"				
LIGHTING	:	3,543 SQFT	x	3.5 VA/SF	=	12,401 VA
RECEPTACLES	:	180.0 VA	x	85 EA	=	15,300
SIGNAGE	:	1,500	x	1.0	=	1,500
WATER HEATER	:	4,500	x	1.0	=	4,500
SMALL APPLIANCE	:	1,500	x	2.0	=	3,000
HEAT (2 x 10.0 KW)	:	10,000	x	2.0	=	20,000
FANS (2 x 1.0 KW)	:	1,000	x	2.0	=	2,000
MISC. OFFICE EQUIPMENT	:	12,000	x	1.0	=	12,000
TOTAL	:				=	70,701 VA
AMPACITY DEMAND	:		@	240–1 V	=	294.59 AMPS
AMPACITY DESIGN	:		@	240–1 V	=	400.0 AMPS

SERVICE FEEDER : 3–1/2" CONDUIT WITH:
(2) #500 THHN/THWN–CU–Ø (1 x 380A) = 380.0 AMPS
(1) #300 THHN/THWN–CU–N
(1) #3 THHN/THWN–CU–BOND
DEDUCT ALTERNATE FOR ALUMINUM SERVICE
3–1/2" CONDUIT WITH:
(2) #600 MCM THHN/THWN–AL–Ø (1 x 340A) = 340.0 AMPS
(1) #400 MCM THHN/THWN–AL–N
(1) #1 THHN/THWN–AL–BOND

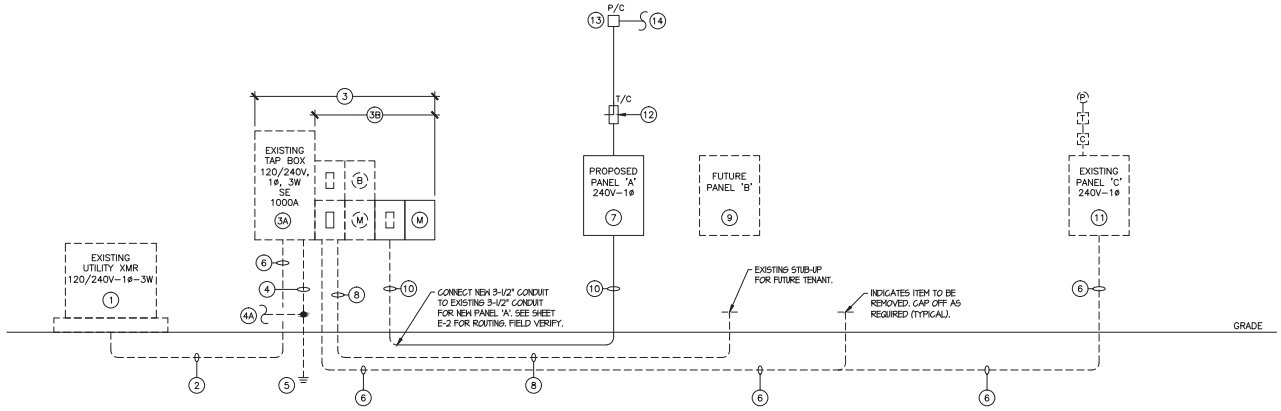
PANEL:	A	PANEL 'A' – ELECTRICAL CLOSET								
DESC.:	120/240V–1ø–3W–400 AMP MLO				SOURCE:	METER CENTER (EXISTING)				
BRAND:	SQUARE "D"				FEEDER:	(2) #500 Cu, (1) #300 Cu (1) #3 GROUND				
MODEL:	NQ042				CONDUIT:	3–1/2"				
NOTE:	SUBSTITUTION OF EQUAL SHALL BE ACCEPTABLE				NOTE:	–				
KW	DESCRIPTION	CB	#	Ø	#	CB	DESCRIPTION	KW		
.60	LTS/EMERG–BKRM/ER6–8/OFFICES	20	1		2	20	LTS/EMERG–ER1–5/WAITING	.51		
.84	LTS/EMERG–CORR/WORK AREA	20	3		4	20	LTS/EMERG/REC–BRM/J.CLST/GFCI	.80		
.90	RECEPTS – WAITING ROOM	20	5		6	20	RECEPT – TELEVISION	1.5		
1.08	RECEPTS – RECEPTION	20	7		8	20	RECEPTS – OFFICE STAFF	1.08		
.90	RECEPTS – OFFICE MGR.	20	9		10	20	RECEPTS – WORK STATIONS	.72		
.72	RECEPTS – WORK STATIONS	20	11		12	30	WATER HEATER	2.25		
.72	RECEPTS – BREAKROOM/GFCI	20	13		14	|	(3) #10 + E.G. – 3/4" CONDUIT	2.25		
1.5	SMALL APPLIANCE – GFCI	20	15		16	20	SMALL APPLIANCE – GFCI	1.5		
1.5	REFRIGERATOR	20	17		18	20	DISHWASHER	1.5		
1.5	SIGNAGE	20	19		20	20	RECEPT – TELEPHONE SYSTEM	1.5		
1.44	RECEPTS–EXAM ROOM 1 & 2	20	21		22	20	RECEPTS–EXAM ROOM 3 & 4	1.44		
1.44	RECEPTS–EXAM ROOM 5 & 6	20	23		24	20	RECEPTS–EXAM ROOM 7 & 8	1.44		
.72	RECEPTS – DOCTORS OFFICE	20	25		26	20	RECEPTS – PROCEDURE ROOM	.72		
.72	RECEPTS – CORRIDOR	20	27		28	–	SPACE	–		
–	SPACE	–	29		30	–	SPACE	–		
–	SPACE	–	31		32	–	SPACE	–		
–	SPACE	–	33		34	–	SPACE	–		
–	SPACE	–	35		36	–	SPACE	–		
5.0	RTU–1 (5.0 KW HEAT)	60	37		38	60	RTU–2 (5.0 KW HEAT)	5.0		
5.0	(4) #6 + GRD – 1" CONDUIT	|	39		40	|	(4) #6 + GRD – 1" CONDUIT	5.0		
–	SPACE	–	41		42	–	SPACE	–		
24.58	KW							27.21		
27.21	+ KW									
51.79	= KW CONNECTED									
51.79	= KW CONNECTED									
240–1	+ VOLTAGE–PHASE									
215.8	= AMPS									

NOTES – POWER RISER DIAGRAM

1. EXISTING POWER COMPANY PAD MOUNTED TRANSFORMER. FIELD VERIFY.
2. EXISTING INCOMING POWER COMPANY "U/G" SERVICE LATERAL. FIELD VERIFY.
3. EXISTING OWNER'S METERING/DISTRIBUTION EQUIPMENT 120–240V–1ø–3W–1000 AMP CONSTRUCTION CONSISTING OF:
   A. EXISTING TAP BOX: 120/240V–1P–3W, SE 1000 AMP IN NEMA–3R ENCLOSURE. FIELD VERIFY.
   B. EXISTING BRANCH DEVICES: (3) 400 AMP–120/240V–1P METERING DEVICES WITH MAIN CIRCUIT BREAKERS IN NEMA–3R ENCLOSURES (UNITS A – C) FIELD VERIFY.
4. EXISTING SERVICE GROUNDING CONDUCTOR: PROVIDE MINIMUM (1) #2/0 TO GROUNDING ELECTRODE. SEE SPECIFICATIONS 16340–2. FIELD VERIFY.
4A. EXISTING ALL COMMUNICATION, RADIO, TELEPHONE ANTENNA AND TELEVISION SYSTEMS SHALL BE BONDED TO BUILDING SERVICE GROUND WITH #6 AWG MINIMUM. FIELD VERIFY.
5. EXISTING GROUNDING ELECTRODE: PROVIDE (2) 5/8"ø X 8' DRIVEN ROD MAKE CONNECTIONS WITH APPROVED DEVICES. FIELD VERIFY.
6. EXISTING ELECTRICAL SERVICE FEEDER. FIELD VERIFY.
7. ELECTRICAL PANEL "A": 120/240V–1ø–3W–400 AMP M.L.O. SEE PANEL SCHEDULE FOR SIZE, CIRCUIT IDENTIFICATION, LOADING, ETC.
8. EXISTING 3–1/2" CONDUIT FOR FUTURE TENANT. FIELD VERIFY.
9. FUTURE ELECTRICAL PANEL "B": 120/240V–1ø–3W–400 AMP. FIELD VERIFY.
10. PANEL FEEDER: SEE LOAD CALCULATIONS AND PANEL SCHEDULES.
11. EXISTING ELECTRIC PANEL "C": 120/240V–1ø–3W–400 AMP M.L.O. FIELD VERIFY.
12. TIME CLOCK TO CONTROL EXTERIOR LIGHTS. PROVIDE (1) 20A–DPST–125V CLOCK WITH AUTOMATIC BATTERY BACK–UP IN NEMA–3R ENCLOSURE. INTERMATIC: ET27RC
13. PHOTOCELL FOR EXTERIOR SIGN CONTROL: OVERRIDE BY TIME CLOCK.
14. TO TENANT SIGN LIGHTING: SEE PANEL SCHEDULE.
15. AVAILABLE FAULT CURRENT: ALL SERVICE EQUIPMENT SHALL BE RATED FOR 22,000 AIC MINIMUM. SEE SPECIFICATION #16220–2. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE WITH POWER COMPANY REPRESENTATIVE.

ELECTRICAL NOTES:

1. A PERMANENT PLAQUE OR DIRECTORY SHALL BE INSTALLED AT EACH BUILDING SERVICE DISCONNECT LOCATION DENOTING ALL OTHER SERVICES AND THE AREA SERVED BY EACH. SECTION 230.2(E).
2. THE SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE FIELD MARKING SHALL INCLUDE THE DAY THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. SECTION 110.24(A).
3. ALL PANELBOARDS SUPPLIED BY A FEEDER SHALL BE FIELD MARKED TO INDICATE THE EQUIPMENT WHERE THE POWER ORIGINATES. SECTION 408.4(B).
4. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TABLE 250.122.



15 POWER RISER DIAGRAM
N.T.S.

Revisions

1	–
	–

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ENGINEER #44208
CotA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 480-4490
#44208

SHEET #: E–3

REVIEWED FOR CODE COMPLIANCE 003

SPECIFICATIONS

DIVISION 16000 – ELECTRICAL

16000 – GENERAL:

1. ALL ELECTRICAL WORK FOR THE ENTIRE PROJECT SHALL BE PERFORMED IN A NEAT AND CRAFTSMAN LIKE MANNER BY PERSONS SKILLED IN THE TRADE, AND SHALL BE DONE UNDER THE SUPERVISION OF A MASTER ELECTRICIAN LICENSED TO DO WORK IN THE AREA WHERE THE PROJECT IS TO BE CONSTRUCTED. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (2017 N.E.C.) PRESENTLY IN EFFECT AND NFPA 70.

16100 – SCOPE:

1. THE PROJECT INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION INCLUDING, BUT NOT LIMITED TO, POWER SERVICES (TEMPORARY, NORMAL, AND STAND–BY OR EMERGENCY), SWITCHBOARDS, AUTOMATIC TRANSFER SWITCHES, SERVICE ENTRANCE(S), DISCONNECTS, DISTRIBUTION PANELS, CONDUIT, WIRING, JUNCTION AND OUTLET BOXES, WIRING DEVICES AND COVER PLATES, LIGHTING FIXTURES, CONNECTION CORDS, SPECIAL CONNECTIONS AND OUTLETS, ALL AS ILLUSTRATED ON THE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES, UTILITY COMPANIES, AND GOVERNING AUTHORITIES.

2. THE ELECTRICAL CONTRACTOR TO FURNISH A MINIMUM 100 AMP SINGLE PHASE TEMPORARY SERVICE. POWER COMPANY FEES AND MONTHLY ELECTRIC BILL TO BE PAID BY THIS CONTRACTOR.

16110 – CODES:

1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ANSI, NFPA70, STATE OF FLORIDA LAWS, AND ALL LOCAL RULES AND REGULATIONS, INCLUDING THE NATIONAL ELECTRIC CODE AND THE FLORIDA ENERGY CODE PRESENTLY IN EFFECT.

16120 – PERMITS:

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAYING ALL FEES ASSOCIATED THEREWITH. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INSPECTIONS, INCLUDING ALL FEES ASSOCIATED WITH REINSPECTIONS.

16130 – DRAWINGS:

1. THE DRAWINGS ARE DIAGRAMMATIC, AND DO NOT SHOW ALL CHANGES IN HEIGHT, STRUCTURAL MEMBERS, DUCTWORK, PIPING, BRACKETS AND ANY OTHER NUMBER OF ITEMS WHICH MIGHT CAUSE A CONFLICT. THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES AS TO THE LOCATION OF HIS DEVICES AND NECESSARY AREAS FOR PANELS AND CONDUIT/WIRING RUNS. VERIFY AND COORDINATE ALL ELECTRICAL WORK WITH ALL TRADES TO PROVIDE A TIMELY INSTALLATION. ADDITIONAL CHANGES DUE TO LACK OF COORDINATION WILL NOT BE APPROVED.

16200 – MATERIAL:

1. ALL MATERIALS SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE LISTED BY AND BEAR THE U.L. LABEL WHERE SUBJECT TO APPROVAL. MATERIALS SHALL BE OF THE SAME MANUFACTURER OR BRAND FOR EACH TYPE OF MATERIAL, UNLESS DESIGNATED OTHERWISE.

16210 – FIXTURES:

1. ALL FIXTURES SHALL BE AS LISTED IN THE LIGHTING FIXTURE SCHEDULES/ RECOMMENDATIONS.

2. LIGHTING FIXTURES ARE TO BE FURNISHED, INSTALLED, AND LAMPED UNDER THIS CONTRACT.

16220 – PANELS:

1. ALL PANELS TO BE FURNISHED AS PER PANEL SCHEDULE. SQUARE D, CUTLER HAMMER AND ITE ARE ACCEPTABLE MANUFACTURERS.

2. ALL SWITCHBOARD AND OVERCURRENT DEVICES SHALL BE SERIES–RATED TO WITHSTAND THE AVAILABLE FAULT CURRENT; VERIFY WITH LOCAL UTILITY COMPANY. SEE PANEL SCHEDULE.

16230 – DEVICES:

1. EXTERIOR DISCONNECT SWITCHES SHALL BE NEMA 3R ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURER'S SPECIFICATIONS. (SEE MECHANICAL).

2. INTERIOR DISCONNECT SWITCHES SHALL BE NEMA 1 ENCLOSURES AND ELECTRICALLY PROTECTED AS PER MANUFACTURER'S SPECIFICATIONS. (SEE MECHANICAL).

3. SWITCHES SHALL BE 20 AMP, SPECIFICATION GRADE TOGGLE SWITCHES, SIDE WIRED WITH GROUNDING TERMINAL; COLOR SHALL BE WHITE (UNLESS NOTED OTHERWISE) WITH MATCHING COVERPLATE; MOUNTING HEIGHT SHALL BE +48" AFF TO BOTTOM.

4. RECEPTACLES SHALL BE 20 AMP (MINIMUM), SPECIFICATION GRADE, SIDE WIRED WITH GROUNDING TERMINAL; COLOR SHALL BE WHITE (UNLESS NOTED OTHERWISE) WITH MATCHING COVERPLATE; MOUNTING HEIGHT NOTED IN SYMBOL LEGEND OR ON DRAWING.

5. ALL RECEPTACLES INSTALLED IN KITCHENS, OR WITHIN 6 FEET (6") OF A WATER SUPPLY (i.e.: SINK), SHALL BE GROUND FAULT CIRCUIT INTERRUPTER (G.F.C.I.) DEVICES WITH DOWNSTREAM DEVICES IDENTIFIED.

6. ALL 120–VOLT, SINGLE PHASE, 20–AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN BATHROOMS SHALL HAVE GROUND–FAULT CIRCUIT–INTERRUPTER PROTECTION FOR PERSONNEL.

16240 – BRANCH CIRCUIT WIRING:

1. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE SPECIFIED ON PLANS.

2. MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG THWN COPPER.

EXCEPTION NO. 1: BRANCH CIRCUIT WIRING FOR DEDICATED LOADS, SUCH AS A PERMANENTLY INSTALLED APPLIANCE OR OTHER EQUIPMENT, SHALL BE SIZED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS FOR THAT APPLIANCE OR EQUIPMENT, OR BY THE N.E.C. PRESENTLY IN EFFECT, WHICHEVER IS GREATER. REFER TO PANEL SCHEDULES.

CONTRACTOR'S NOTES

COORDINATE NEW SERVICE LATERAL ENTRANCE DETAILS WITH A POWER COMPANY COMMERCIAL REPRESENTATIVE. REFER TO POWER RISER DIAGRAM FOR NEW SERVICE TO BUILDING.

LIMITED ENGINEERING FIELD INVESTIGATIONS HAVE BEEN CONDUCTED (AS AN AID TO THE CONTRACTOR), TO ILLUSTRATE EXISTING CONDITIONS. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO CONDUCT HIS OWN PERSONAL FIELD INVESTIGATION, WHICH MAY UNCOVER ADDITIONAL CONDITIONS, THUS IMPACTING THIS INSTALLATION.

EQUIPMENT ELECTRICAL ROUGH INs HAVE BEEN COORDINATED AND ARE LISTED IN PANEL SCHEDULES. THE CONTRACTOR IS CAUTIONED TO VERIFY THE ELECTRICAL REQUIREMENTS OF EACH PIECE OF EQUIPMENT PRIOR TO ROUGH–IN, WHICH MAY RESULT IN REVISING CERTAIN EQUIPMENT CIRCUITS. THE A/E SHALL BE ADVISED OF ANY AND ALL REVISIONS REQUIRED TO THESE CONSTRUCTION DOCUMENTS.

TYPICAL NOTES

1. SWITCHED RECEPTACLES: SWITCH TOP HALF OF RECEPTACLE; BOTTOM SHALL REMAIN HOT!

2. EQUIPMENT FURNISHED AND PHYSICALLY INSTALLED BY "OTHERS". ALL ELECTRICAL CONNECTIONS EXTERNAL TO THE EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. WIRE, CONDUIT, LUGS, RECEPTACLES, PIGTAILS, DISCONNECTS, ETC. AS REQUIRED FOR A COMPLETE, OPERABLE, ELECTRICAL INSTALLATION SHALL BE INCLUDED. NOTE: INCLUDE NORSE CONSTRUCTION IN PRICING. VERIFY ROUGH–IN LOCATIONS, TYPE OF CONNECTION AND AMPACITY REQUIRED FROM APPLICABLE EQUIPMENT DRAWINGS PRIOR TO INSTALLING ANY CONDUIT, CONDUCTORS OR BOXES.

3. PROVIDE CFL/LED RATED WALL DIMMER WITH TUNGSTEN SURGE AND RFI PROTECTION. SLIDE ACTION WITH "OFF" POSITION AT BOTTOM.

4. WALL TELEPHONE/DATA OUTLET. INSTALL 2–GANG BOX WITH MODULAR TELEPHONE DEVICE IN COVER PLATE. INSTALL (2) 3/4" EMT CONDUITS TO ACCESSIBLE CEILING SPACE OR HONEYRUN TO TELEPHONE/COMPUTER TERMINAL EQUIPMENT. HEIGHT, UNLESS NOTED, IS 18" ABOVE FINISH FLOOR. PROVIDE UNDER SEPARATE PERMIT.

5. PROVIDE LIGHT FIXTURE AND RECEPTACLE AT LOCATIONS INDICATED FOR HVAC MAINTENANCE LIGHTING. USE COMBINATION SWITCH AND RECEPTACLE FOR LIGHT CONTROL. FIELD DETERMINE EXACT LOCATION AND HEIGHT.

6. RECEPTACLES FOR DISHWASHER AND DISPOSAL SHALL BE 20 AMP DUPLEX, SPLIT–WIRED AS POWER SOURCE FOR BOTH. BRANCH CIRCUIT BREAKER MUST BE 2–POLE COMMON TRIP. FIELD LOCATE OUTLET FOR ACCESSIBILITY.

7. SWITCHED JUNCTION BOX IN CEILING FOR CEILING FAN OR LIGHT. NOTE: BOX MUST BE IDENTIFIED FOR FAN SUPPORT USE). ANCHOR TO STRUCTURE TO SUPPORT 75 LBS. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL FAN AND/OR LIGHT, AND ALL WIRING, INCLUDING SWITCH AND POWER LEGS. VERIFY AND COORDINATE FAN TYPE WITH OWNER.

16300 – INSTALLATION:

16310 – GENERAL:

1. ROUGH–IN LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, AS WELL AS EQUIPMENT SIZE, TO AVOID CONFLICT WITH OTHER TRADES.

2. PRIOR TO ROUGH–IN, THE ELECTRICAL CONTRACTOR SHALL RELOCATE, AS DIRECTED BY THE OWNER/ARCHITECT, ANY PIECE OF EQUIPMENT IN VERTICAL AND/OR HORIZONTAL DIRECTION UP TO 15'–0" FROM THE LOCATION SHOWN ON THE DRAWINGS AT NO ADDITIONAL COSTS TO THE OWNER.

16320 – WIRING METHODS:

1. BELOW GRADE: SINGLE– OR MULTI–CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED NONMETALLIC CONDUIT. CONDUIT MAY BE RUN IN OR BELOW CONCRETE, AND CONCEALED IN WALLS TO FIRST BOXES. ALL PVC COMPONENTS (PIPING, FITTINGS, CEMENT, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

2. EXTERIOR ABOVE GRADE: SINGLE– OR MULTI–CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC OR NONMETALLIC CONDUIT. ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

NOTE: MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL BE SIX FEET (6').

3. EXTERIOR EQUIPMENT: SINGLE– OR MULTI–CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED LIQUIDTIGHT FLEXIBLE METALLIC OR NONMETALLIC CONDUIT (MINIMUM 3/4"). ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER.

NOTE: MAXIMUM LENGTH OF FLEXIBLE CONDUIT BETWEEN MEANS OF DISCONNECT (OR JUNCTION BOX) AND EQUIPMENT SHALL BE THREE FEET (3').

4. INTERIOR: SINGLE– OR MULTI–CONDUCTOR COPPER WIRE WITH GROUND, MEETING N.E.C. AND NEMA REQUIREMENTS, IN APPROVED METALLIC (EMT) CONDUIT OR METAL CLAD CABLE (TYPE MC). ALL COMPONENTS (PIPING, FITTINGS, ETC.) SHALL BE FROM THE SAME MANUFACTURER. CONDUITS SHALL BE CONCEALED IN OR BEHIND CEILINGS, WALLS, OR FLOORS, EXCEPT WHERE EXPOSED RACEWAYS ARE SPECIFICALLY PERMITTED.

NOTE: EMT SHALL NOT BE INSTALLED IN LOCATIONS (1) SUBJECT TO SEVERE DAMAGE, (2) IN CONTACT WITH EARTH, (3) IN CONCRETE SLABS ON GRADE, (4) OTHER LOCATIONS AS LISTED IN N.E.C., ARTICLE 358.12.

5. ELECTRICAL SYSTEM EXPANSION: ANY PANELBOARD MOUNTED SO THAT ITS FRONT FACE IS FLUSH WITH THE FINISHED WALL SHALL HAVE ONE (1) 3/4" EMT CONDUIT INSTALLED FROM PANELBOARD TO ACCESSIBLE CEILING SPACE FOR EVERY FOUR (4) OR MAJOR FRACTION THEREOF, POLES INDICATED AS "SPACE" OR "SPARE" IN THE PANELBOARD SCHEDULE PER THESE DOCUMENTS.

EXCEPTION NO. 1: PANELBOARDS INSTALLED ON A WALL SURFACE, WHERE AT LEAST THREE (3) SIDES, NOT INCLUDING THE FRONT, REMAIN ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY SHALL NOT BE REQUIRED TO MEET (16320.5.

6. ELECTRICAL BOXES: ALL OUTLET, DEVICE, AND JUNCTION BOXES SHALL BE STANDARD 4" SQUARE GALVANIZED STEEL OR APPROVED PLASTIC, 1–1/2" DEEP, WITH DEVICE RINGS AS REQUIRED. ALL BOXES SHALL BE GALVANIZED STEEL. GALVANIZED BOXES SHALL BE MANUFACTURED BY APPLETON, MASTER, STEEL CITY, ORBIT, OR ORS. ALL ORS DEVICE RINGS. PLASTIC BOXES SHALL BE ALLIED, NELCO, CARLON, OR EQUAL. ALL ELECTRICAL BOXES MUST BE ACCESSIBLE AFTER CERTIFICATE OF OCCUPANCY.

7. THRU–FEEDS: MAINTAIN THRU–FEEDS ON ALL ELECTRICAL DEVICES AT C.O.

16330 – EQUIPMENT:

1. WIRE TO, AND MAKE CONNECTIONS TO, ALL PIECES OF EQUIPMENT FURNISHED BY OTHERS FOR COMPLETE AND SATISFACTORY OPERATION BY OTHERS.

2. THIS CONTRACT TO INCLUDE CONNECTION OF LINE VOLTAGE ONLY. CONTROL WIRING TO BE BY THE HVAC CONTRACTOR.

16340 – GROUNDING:

1. THE ENTIRE ELECTRICAL GROUNDING SYSTEM SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 250.66 AND 250.122 OF THE NATIONAL ELECTRIC CODE, INCLUDING BUT NOT LIMITED TO, THE ELECTRICAL SERVICE, ITS EQUIPMENT AND ENCLOSURE, CONDUITS AND OTHER CONDUCTIVE ENCLOSURES, NEUTRAL OR IDENTIFIED CONDUCTOR OF INTERIOR WIRING SYSTEM, MAIN PANELBOARD, POWER AND LIGHTING PANELBOARDS, NON–CURRENT–CARRYING METAL PARTS OF FIXED EQUIPMENT SUCH AS MOTORS, STARTER AND CONTROLLER CABINETS, INSTRUMENT CASES AND LIGHTING FIXTURES.

2. PROVIDE A SERVICE GROUND ACCORDING TO N.E.C. ARTICLE 250. THE MINIMUM INSTALLATION TO INCLUDE: BUILDING FOOTER/FOUNDATION REINFORCING STEEL TURNED UP OR OTHERWISE EXPOSED AT THE SERVICE LOCATION WITH APPROVED CONNECTOR TO BOND A GROUNDING CONDUCTOR SIZED PER TABLE 250 TO THE STEEL AND A DRIVEN ROD GROUND (MINIMUM 5/8" BY 8' DEEP) WITH #4 COPPER GROUNDING CONDUCTOR. IF AVAILABLE ON THE PREMISES, ALSO BOND METAL COLD WATER PIPING, METAL BUILDING FRAME AND GROUND RING WITH JUMPERS SIZED FROM 250–94.

5. ALL TELEPHONE, DATA, TELEVISION, AND OTHER TERMINAL EQUIPMENT SHALL BE BONDED TO THE GROUNDING ELECTRODE WITH MINIMUM #6 AWG–CU.

16350 – WARRANTY: NOTE

1. ELECTRICAL CONTRACTOR TO PROVIDE FULL WARRANTY (PARTS AND LABOR) ON ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE SCOPE OF WORK FOR A PERIOD OF ONE YEAR FROM THE CERTIFICATE OF OCCUPANCY.

2. E.C. SHALL PROVIDE OWNER WITH REPRODUCIBLE "AS–BUILT" DRAWINGS SHOWING ALL REQUIRED MODIFICATIONS THAT HAVE OCCURRED IN THE FIELD.

GENERAL NOTES: ELECTRICAL

THE ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL ELECTRICAL SERVICE ROUGH–IN AND INSTALLATION DETAILS, FEES, WITH THE LOCAL POWER COMPANY/UTILITY FIELD ENGINEER PRIOR TO AND INCLUDE IN BID!

THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH ALL STATE/LOCAL BUILDING CODES/ORDINANCES/REGULATIONS PRESENTLY IN EFFECT. IN ADDITION, COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (N.E.C.) PRESENTLY IN EFFECT.

THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE IN ORDER TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS, FAILURE TO DO SO WILL NOT WARRANT ANY ADDITIONAL CHARGES TO THE OWNER.

THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID, ANY CUTTING OR PATCHING OF CONCRETE/ASPHALT PAVEMENTS, ETC. TO RUN ELECTRICAL.

ALL EQUIPMENT, FIXTURES, ETC. SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION. THIS CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP, MATERIALS AND EQUIPMENT TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY (C.O.), AND SHALL REPAIR ANY SUCH DEFECTS WITHOUT COST TO THE OWNER. ALL EQUIPMENT SHALL BE COVERED FOR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY. THIS CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEE AND WARRANTIES.

"WAFER" OR "PIGGYBACK" BREAKERS SHALL NOT BE PERMITTED.

THE ELECTRICAL CONTRACTOR IS TO INSTALL MODULAR METERING SERVICE EQUIPMENT EITHER PROVIDED BY THE GOVERNING UTILITY COMPANY OR OF A TYPE APPROVED BY THE UTILITY COMPANY AND U.L. LISTED. IMMEDIATELY AFTER SUB–CONTRACT AWARD, CONTACT WITH THE UTILITY COMPANY SHALL BE MADE FOR COORDINATION OF SERVICE AND METERING DETAILS.

HVAC AIR HANDLER AND CONDENSING UNIT CIRCUIT BREAKERS MUST BE U.L. LISTED AS "HACR" RATED IN ORDER TO USE NON–AUTO DISCONNECTS AT HVAC EQUIPMENT. IF NOT LISTED, THEN A FUSED DISCONNECT IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S NAMEPLATE REQUIREMENTS MUST BE INSTALLED AT THE EQUIPMENT.

THE ELECTRICAL, GENERAL, HVAC, AND PLUMBING CONTRACTOR(S) SHALL STRICTLY ADHERE TO THE FOLLOWING ITEMS WHEN DEALING WITH ELECTRICAL EQUIPMENT CLEARANCES:

A.) NO PIPING OR DUCTWORK OF ANY KIND SHALL BE INSTALLED ABOVE ANY SWITCHBOARD OR PANELBOARD. THIS AREA TO REMAIN CLEAN FROM THE EQUIPMENT TO 25' ABOVE OR TO THE BOTTOM OF THE STRUCTURAL SLAB.

B.) A CLEARANCE OF 36" MINIMUM SHALL BE MAINTAINED IN FRONT OF ELECTRICAL EQUIPMENT FOR THE ENTIRE WIDTH OF THE EQUIPMENT, PLUS A MINIMUM OF 30" TOTAL LEFT/RIGHT CLEARANCE.

ALL "WEATHERPROOF" ("WP") DEVICES ARE TO BE INSTALLED WITH A WEATHER–SHIELDING COVER.

ALL ELECTRICAL CONDUITS NOT CONTAINING SPECIFIED CONDUCTORS SHALL HAVE A PULL WIRE INSTALLED.

DO NOT SCALE THE ELECTRICAL DRAWINGS; REFER TO THE ARCHITECTURAL PLANS FOR EQUIPMENT LOCATIONS, CABINETRY, CEILING GRIDS, DOOR SWINGS, ETC.

THE INTENT OF THESE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL ELECTRICAL INSTALLATION.

IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL DETAILS OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS SUCH AS HARDWARE, J–BOXES, CONDUIT FITTINGS, ETC., AS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM INSTALLATION.

TECHNICIANS SKILLED IN THEIR TRADE SHALL PERFORM ALL ELECTRICAL INSTALLATIONS IN A PROFESSIONAL MANNER.

WIRE TO, AND MAKE CONNECTIONS AS NECESSARY, TO ALL PIECES OF EQUIPMENT (FURNISHED BY OTHERS), FOR COMPLETE AND SATISFACTORY OPERATION BY THE OWNER.

PROVIDE CIRCUIT BREAKERS, AS NECESSARY, TO ACCOMMODATE ALL NEW CIRCUITS INSTALLED.

ALL SERVICE AND FEEDER CONDUITS SHALL HAVE EXPANSION FITTINGS WHEN PENETRATING SLABS, ETC. TO ALLOW FOR STRUCTURAL SETTLEMENT.

PROVIDE "PVC" CONDUITS STUBBED OUT, BELOW GRADE FOR ADDITIONAL SERVICES, IN ORDER TO PROVIDE CONCEALED TELEPHONE AND/OR DATA SERVICE ENTRANCE.

PROVIDE TIME CLOCKS WITH BATTERY BACK–UP TO CONTROL ALL SIGNAGE AND EXTERIOR LIGHTING CIRCUITS; SEE POWER RISER DIAGRAM FOR ADDITIONAL DETAILS.

ALL CONDUCTORS SHALL BE TYPE THHN/THWN, COPPER (CU) UNLESS OTHERWISE CALLED FOR ON THESE DOCUMENTS. SEE PANEL SCHEDULE.

ALL LIGHTING FIXTURES (INCLUDING THOSE PROVIDED BY OTHERS) ARE TO BE INSTALLED UNDER THIS CONTRACT. SEE SCHEDULE FOR FIXTURE RECOMMENDATIONS, LAMPS, ETC.

NOTICE TO CONTRACTORS: REVISIONS TO THESE DRAWINGS AND CERTIFICATION THEREOF WHICH MAY BE REQUIRED BECAUSE OF CONTRACTOR OFFER REVISIONS, SHALL BE COORDINATED TO THE ENGINEER(S) BY THE REQUESTING CONTRACTOR. PAYMENT SHALL BE REQUIRED AT THE TIME OF CERTIFICATION DELIVERY.

KITCHEN AREA: SECTION 210.8(B)(2) REQUIRES ALL 125V, SINGLE PHASE, 15 AND 20–AMPERE, SINGLE OR DUPLEX RECEPTACLE OUTLETS TO BE GFCI PROTECTED.

SECTION 210.8(B)(5), PROVIDE GFCI PROTECTION FOR ALL RECEPTACLE OUTLETS LOCATED WITHIN 6 FEET OF THE OUTSIDE EDGE OF ANY SINK.

ELECTRICAL SYMBOL LIST

(NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON PLAN.)

- FLUORESCENT OR LED LIGHT FIXTURE
- FLUORESCENT OR LED LIGHT FIXTURE–DOUBLE SWITCHED
- FLUORESCENT OR LED STRIP LIGHT
- INCANDESCENT, LED OR H.I.D. LIGHT FIXTURE
- INCANDESCENT, LED OR H.I.D. LIGHT FIXTURE–WALL MOUNTED
- LIGHT TRACK WITH FIXTURES – INCANDESCENT OR LED
- POLE MOUNTED SITE LIGHT
- FLOODLIGHT (ARROW INDICATES DIRECTION OF LIGHT)
- RECESSED INCANDESCENT OR LED DOWN LIGHT
- BATTERY POWERED EMERGENCY LIGHT
- SHADED FIXTURE INDICATES NIGHT LIGHT
- HALF SHADED FIXTURE INDICATES LIGHT PROVIDED WITH EMERGENCY BATTERY BACK UP POWER
- WALL TOGGLE SWITCH, 3–WAY,4–WAY, ETC. SPEED CONTROLLER, DIMMER, ETC.
- WALL TOGGLE SWITCH WITH PILOT LIGHT
- WALL DIMMER SWITCH
- WALL SWITCH WITH OCCUPANCY SENSOR
- WALL TOGGLE SWITCH & RECEPTACLE (SAME PLATE)
- DOOR SWITCH
- DOOR BELL / PUSH BUTTON
- TIME SWITCH
- PHOTOCELL
- SMOKE DETECTOR / CARBON MONOXIDE DETECTOR
- RECEPTACLE – DUPLEX – 120V – WALL
- RECEPTACLE – DUPLEX – 120V – PEDASTAL
- RECEPTACLE – DUPLEX – 120V – CEILING
- RECEPTACLE – DUPLEX – 120V – SPECIAL MOUNTING HEIGHT
- MOTOR (HP NOTED OVER 1/2)
- EXHAUST FAN CONNECTION
- CEILING FAN – PROVIDE ADEQUATE SUPPORT & FAN
- JUNCTION BOX – WALL, FLOOR OR GROUND
- JUNCTION BOX – CEILING – PROVIDE ADEQUATE SUPPORT FOR ATTACHED FIXTURE
- POWER PANEL – (SURFACE/RECESSED)
- DISCONNECT SWITCH
- RECESSED STEP LIGHT
- EXIT LIGHT
- EMERGENCY CALL BUTTON
- EMERGENCY LIGHT
- TELEVISION FLOOR OUTLET
- RECEPTACLE – DUPLEX – 120V – MOUNT ABOVE COUNTER
- RECEPTACLE – DUPLEX – 120V – TOP HALF SWITCHED
- RECEPTACLE – DUPLEX – 120V – FLUSH FLOOR MOUNT
- RECEPTACLE – 240V/2P – WALL MOUNTED
- RECEPTACLE – DUPLEX – 120V – SPLIT WIRE TO A 2–POLE BREAKER
- CLOCK OUTLET AND CLOCK
- TRANSFORMER
- TELEPHONE / DATA OUTLET
- TELEPHONE OUTLET
- TELEPHONE OUTLET – FLUSH FLOOR MOUNT
- TELEVISION OUTLET
- DOOR BELL OR CHIME
- INCANDESCENT OR LED LIGHT – PENDANT MOUNT

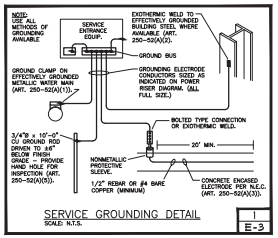
LIGHTING FIXTURE SCHEDULE

TYPE	USE	LAMPS	TOTAL WATTS	VOLTS	MOUNTING
A	GENERAL LIGHTING	LED (4000K)	40 W	120	CLG. / 2x4 LAY–IN
B	GENERAL LIGHTING	LED (4000K)	40 W	120	CLG. / 2x2 LAY–IN
C	UTILITY LIGHTING	LED (4000K)	40 W	120	CLG. / 1x4 SURFACE
C1	CLOSET LIGHTING	LED (4000K)	40 W	120	CLG. / 1'x48" SURFACE
D	RECESSED LIGHTING	LED (4000K)	19 W	120	CLG. / RECESS CAN
EX	EXIT LIGHT	LED	5 W	120	UNIVERSAL
EM1	EMT/EMERGENCY LITE W/ BATTERY BACK–UP	LED / (1) 50 MR–16	10 W	120	UNIVERSAL
EM	EMT/EMERGENCY LITE W/ BATTERY BACK–UP	(2) 50 MR–16	10 W	120	UNIVERSAL

NOTE:
BUILDING TENANT TO SELECT FIXTURE TYPE, STYLE, COLOR, ETC.

FIXTURE SCHEDULE NOTES:

- FIXTURES LISTED ARE FOR PURPOSES OF ESTABLISHING FUNCTION, APPEARANCE, AND QUALITY. LITHONIA, HALO, RSS, PROGRESS, LIGHTOLIER, AND TYPELT ARE ACCEPTABLE ALTERNATE MANUFACTURERS.
- ALL FIXTURES INDICATED IN ENCLOSED SPACES OR ROOMS SHALL MATCH THE IDENTIFIED FIXTURE.
- VERIFY LIGHTS MOUNTING HEIGHTS WITH OWNER AND/OR TENANT BEFORE COMMENCING WORK.
- RE–USE ALL EXISTING LIGHT FIXTURES, SWITCHES, OUTLETS, ETC. WHERE POSSIBLE. FIELD COORDINATE WITH BUILDING TENANT.



SERVICE GROUNDING DETAIL
SCALE: N.T.S.
1
E-3

Revisions

Job Number	23-033
Date	11-29-2023
Drawn By	JRC
Checked By	JLZ
Drawing Scale	AS NOTED

STUDIO one DESIGN
2223 S.E 15TH AVE.
CAPE CORAL, FLORIDA 33901
(239) 707-9365

12/18/2023
21394357

PROJECT:
MEDICAL OFFICE BUILDOUT
22904 LYDEN DRIVE
ESTERO, FLORIDA 33928

Jeffrey L. Zenoniani, PE, LLC.
ENGINEER #44208
CofA #30513
P.O. BOX 151681
CAPE CORAL, FL 33915
PHONE: (239) 480-4490
#44208

SHEET #:
E–4

REVIEWED FOR CODE COMPLIANCE 004