

MIDWEST DENTAL
 Equipment • Services • Supplies
 2429 109th Street
 Grand Prairie, Texas 75050
 Toll Free: 800 766 2025

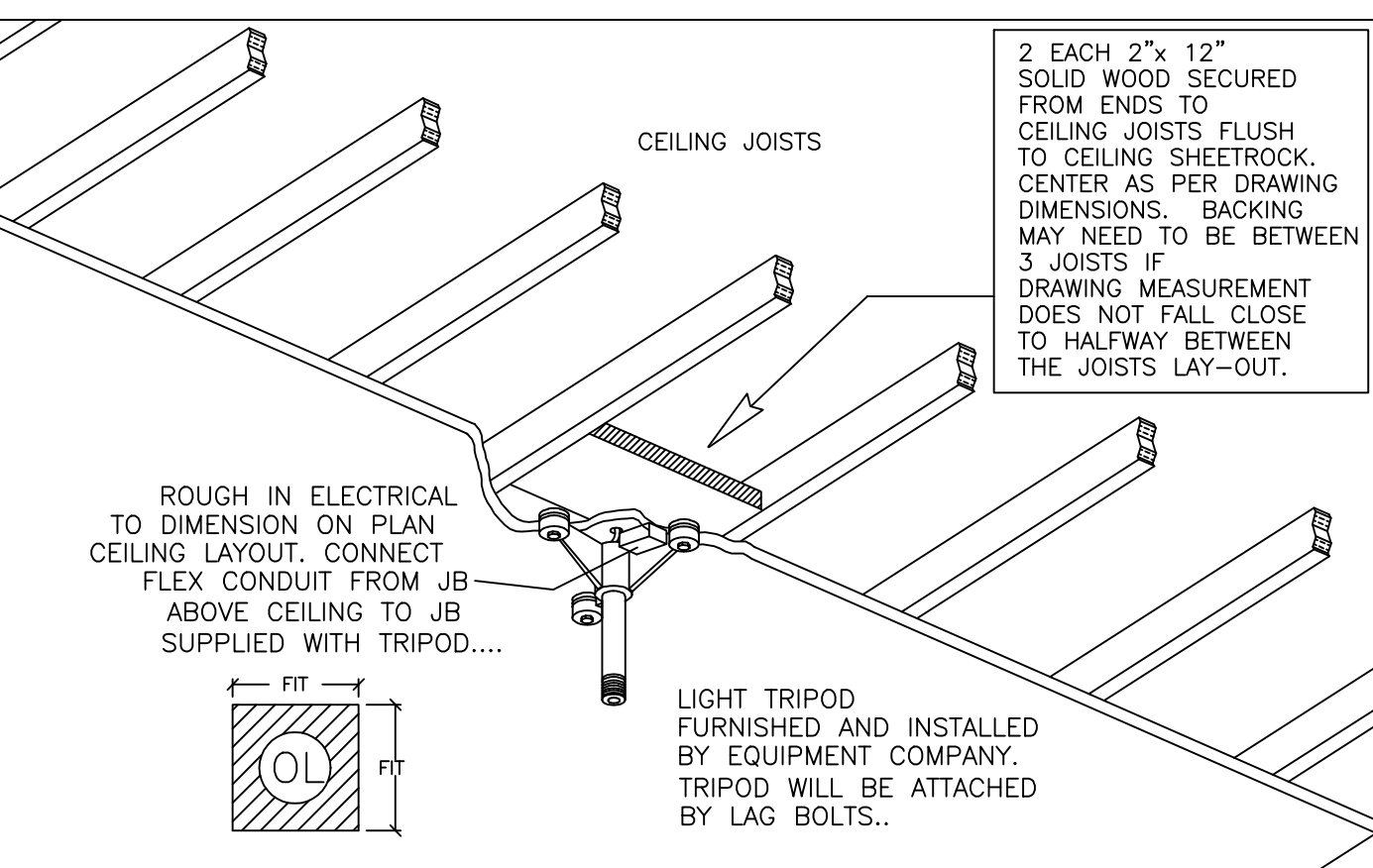
Dr. Asha Patel
 TBD.
 Austin, TX 78727

Equipment Rep:	Scott Jovich
Date:	April 19, 2024
Drawn By:	DOS
Checked By:	WC
Architect:	William Cruz, AIA

Dental Equip. Specs.

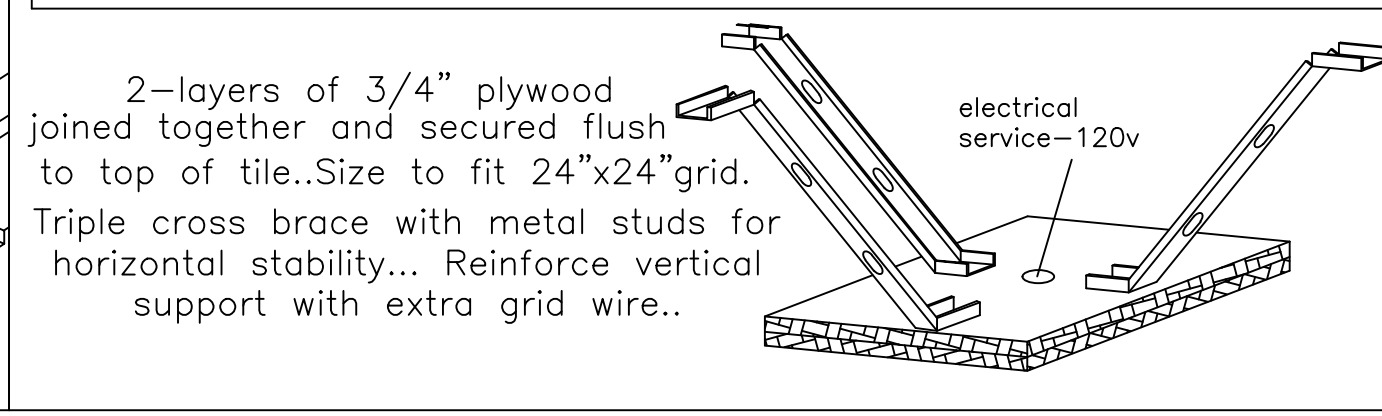
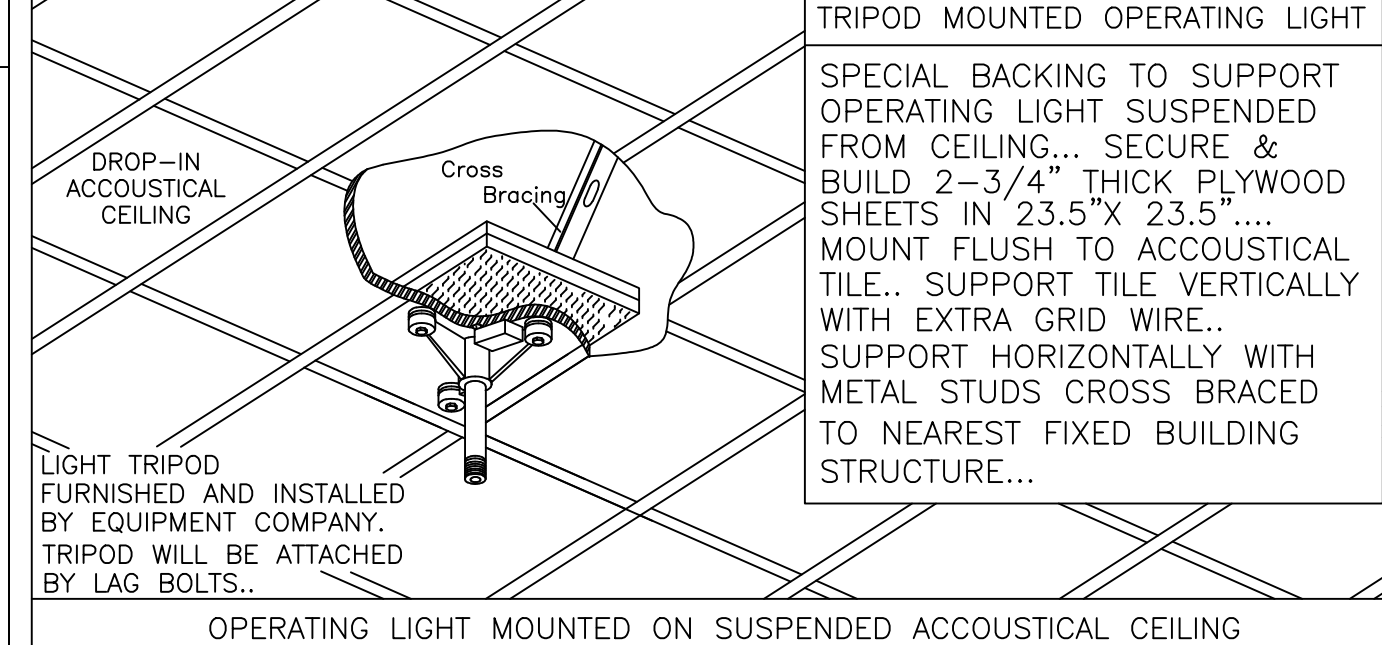
Scale: SEE SCALED RULER

OPERATING LIGHT (DENTAL).....Supplied by doctor and installed by dental equipment company; requires contractor to provide backing to support 200 lbs. dead weight (see attached suggestion for different ceiling configurations). Electrician supplies 120 volt with pigtail from ceiling JB with 5 amp. use
 SPECIAL NOTE: General lighting fixtures, HVAC duct, sprinkler heads, etc. will be located to allow precedence to Operating Light...CRITICAL.....

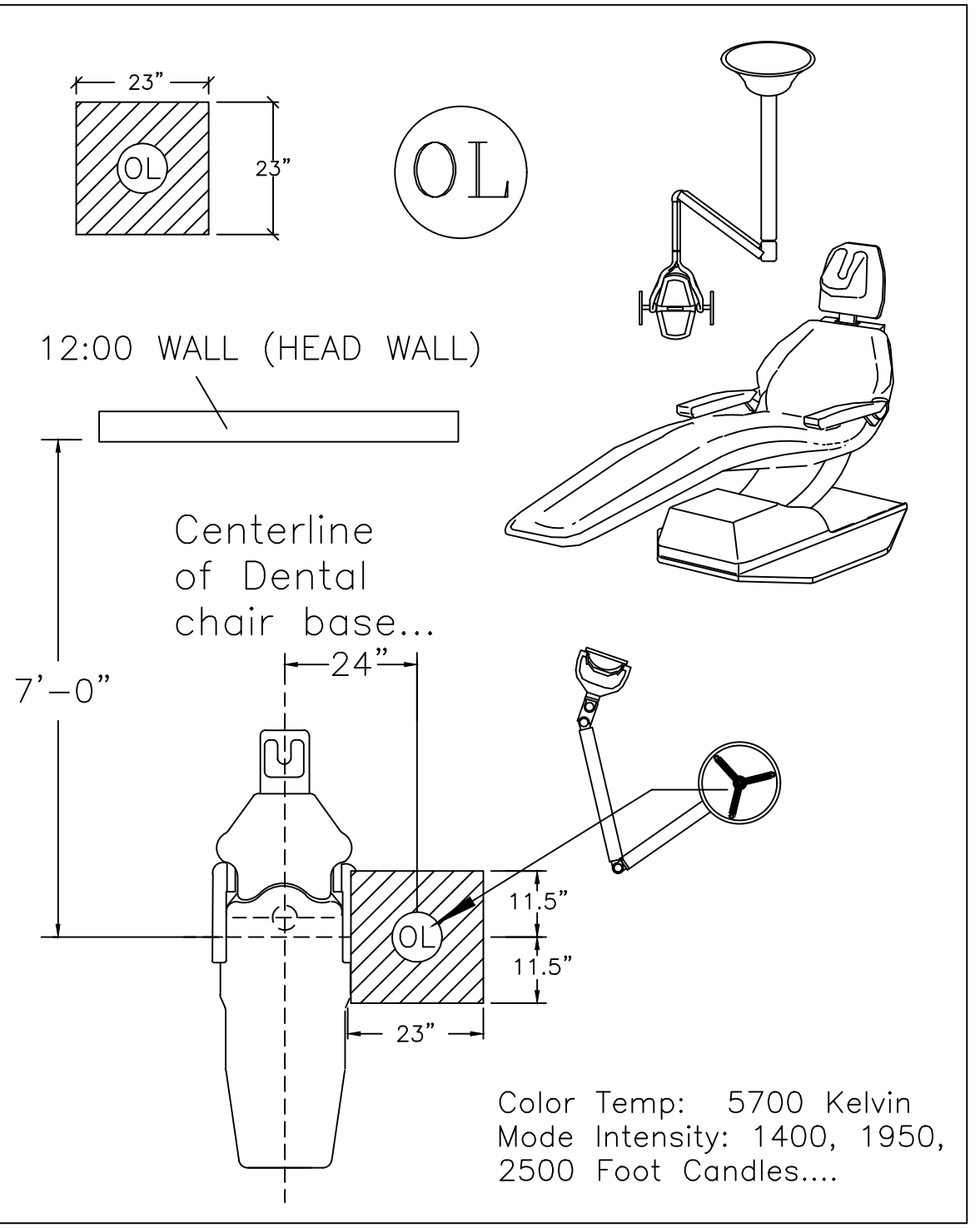
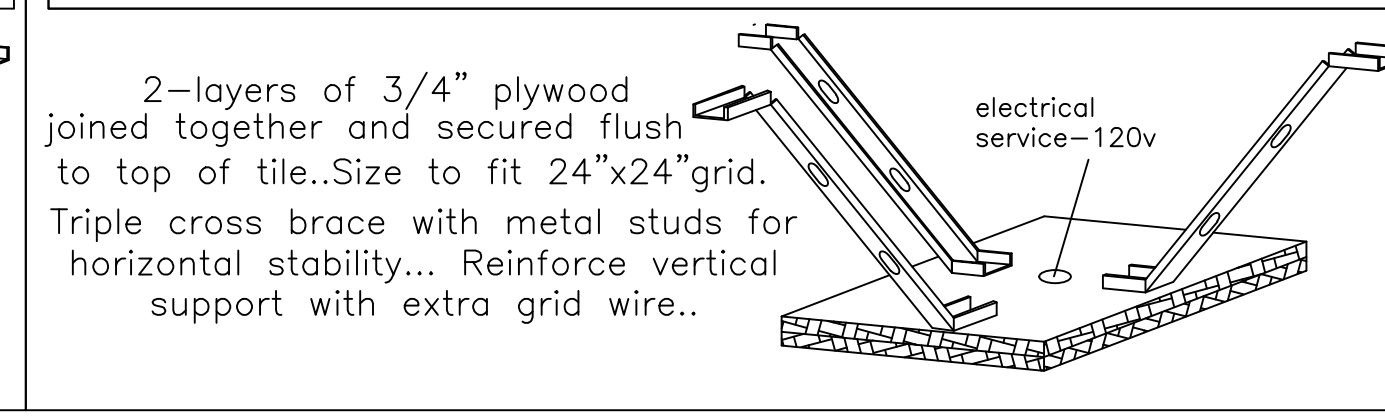
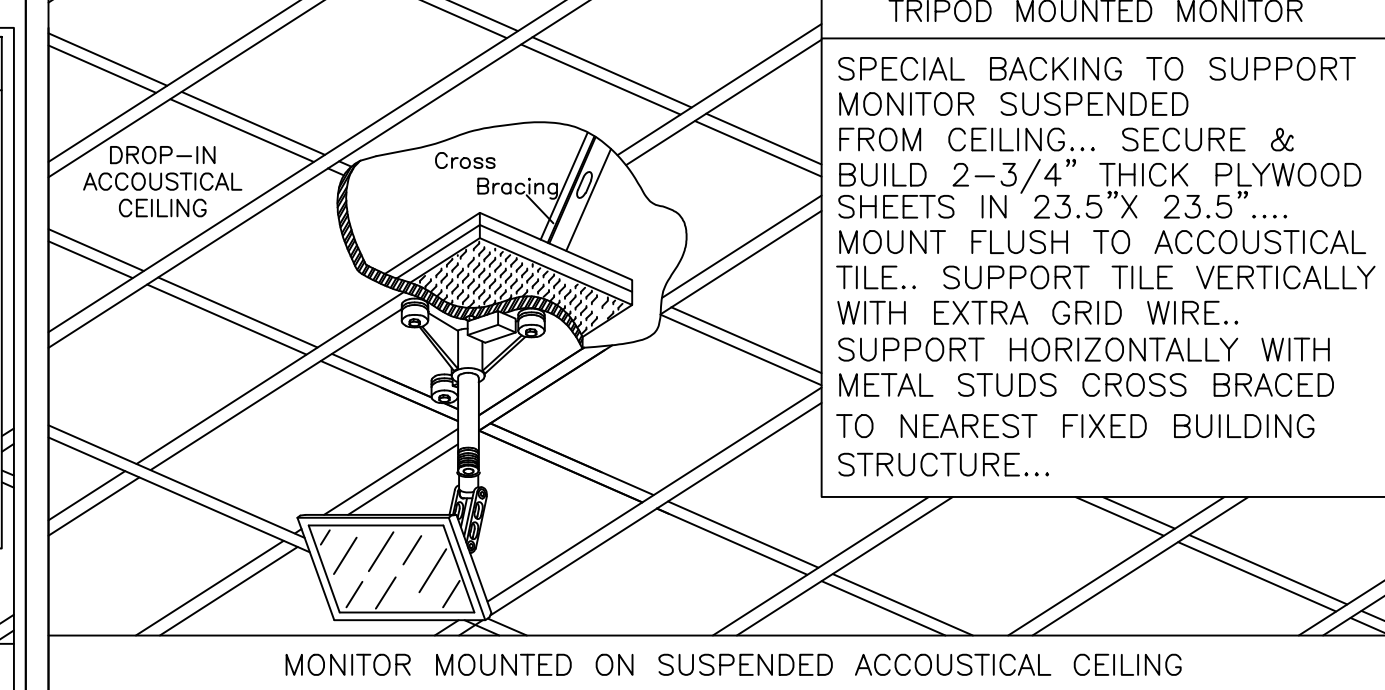


OPERATING LIGHT MOUNTED ON JOIST & DRY WALL CEILING

OPERATING LIGHT (DENTAL).....Supplied by doctor and installed by dental equipment company; requires contractor to provide backing to support 200 lbs. dead weight (see attached suggestion for different ceiling configurations). Electrician supplies 120 volt with pigtail from ceiling JB with 5 amp. use
 SPECIAL NOTE: General lighting fixtures, HVAC duct, sprinkler heads, etc. will be located to allow precedence to Operating Light...CRITICAL.....



MONITOR ARM.....Supplied by doctor and installed by IT service; requires contractor to provide backing to support 100 lbs. dead weight..... Electrician supplies 120 volt grounded OUTLET per CODE... 5 amp. use requirements.....
 SPECIAL NOTE: Ceiling mounted light fixtures, stereo speakers, HVAC duct, etc. will be located to allow precedence to MONITOR ARM location...



Color Temp: 5700 Kelvin
 Mode Intensity: 1400, 1950,
 2500 Foot Candles...

SYMBOL DESCRIPTIONS FOR DENTAL ELECTRICAL-Catogory 3

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GENERAL NOTE: HVAC REQUIREMENTS ARE APPROX. 1 TON PER 275 SQ. FT. WITH NORMAL WINDOW EXPOSURES TO THE SOUTH AND EAST...ZONE OPERATORIES SEPARATE AND ON THEIR OWN THERMOSTAT CONTROL... CLASS A ELECTRICAL SERVICE SHOULD BE IN THE 400-500 AMP. RANGE...SINGLE PHASE..... MECHANICAL ROOM SHOULD BE A MINIMUM OF 5'-6" X 5'-6" & VENTED PROPERLY PLUS SOUND PROOF WALLS..GENERAL LIGHTING SHOULD BE 1:10 RATIO OF OPERATING LIGHTS.. NORMAL OPERATING LIGHTS ARE APPROX. 2500 FOOT CANDLES.. GENERAL LIGHTING SHOULD BE IN THE 250 FOOT CANDLE RANGE... STANDARD CEILING HEIGHT FOR CLINICAL AREAS (OPERATORIES, STERILE, XRAY, LAB, AND MECHANICAL) IS 9'-0"... NOTIFY DENTAL COMPANY IF CEILING IS OUT OF THIS RANGE... DENTAL EQUIPMENT COULD BE NEGATIVELY AFFECTED...

GENERAL NOTE: CABINETS SUPPLIED BY CONTRACTOR THAT WILL HOUSE COMPUTERS MUST BE DESIGNED TO HAVE FREE FLOW VENTALATION AND DUST FILTRATION SYSTEM FOR THE PRESERVATION OF HARDWARE COMPONENTS....PROPER VENTS SIZED TO A MINIMUM OF 3" HIGH X 4" WIDE SHOULD BE PLACED IN A POSITION TO ENHANCE AIR FLOW AND MINIMIZE DUST COLLECTION...LOUVERED COVERS ARE REQUIRED AND SOME FORM OF SECONDARY FILTER INSERTED TO COLLECT DUST THAT IS PULLED IN BY THE COMPONENTS FAN COOLING SYSTEM... CABINETS SUPPLIED BY CONTRACTOR THAT WILL HOUSE SPECIALTY DENTAL EQUIPMENT MAY REQUIRE ACCESS HOLES DRILLED TO ACCOMODATE SERVICES... ALL HOLES OF THIS NATURE WILL BE DRILLED BY CONTRACTOR OR CABINETMAKER.....

AVERAGE DENTAL EQUIPMENT LOADS (In Amps)...Note: all dental equipment is single phase...

Each.	Dental Chair... 115V.... 5.0 amp.....general service... CATAGORY 3 medical code...
Each.	Operating Light... 115V/24V transformed... 2.0 amp.....general service... CATAGORY 3 medical...
Each.	Drive Gas Compressor...230V max...Confirm amp breaker from cut sheet attached..
Each.	Vacuum System230V max...Confirm amp. breaker from cut sheet attached...
Each.	Computer Server ... 115V...4.0 amp...dedicated 10 amp. breaker....
Each.	Dental Delivery Unit ...115V...2.0 amp....general service... CATAGORY 3 medical code...
Each.	Digital Film Processing ...115V... 1.0 amp....general service...
Each.	Intraoral Xray Unit ...115V...8.0 amps @ emission..15 amp. dedicated circuit..CAT 3 medical code.
Each.	Model Trimmer ...115V...8.0 amp....general service...
Each.	Lathe ...115V...6.0 amp....general service...
Each.	Sterilizer ...115V...12 amp...15 amp breaker...dedicated...50/60hz....
Each.	Pano X-ray Unit...115V..dedicated...Confirm breaker with attached cut sheet..CAT 3 medical..
Each.	Ultrasonic Cleaner ...115V dedicated...10 amp breaker.... CATAGORY 3 medical code..
Each.	Med Gas tank room electrical ..115V... 1.5 amp....general service...
Each.	Master Water Control system ..115V/24v transformed.. 1.5 amp....general service....

DENTAL X-RAY

Dental Dealer... There is no require-ment in our regulations for lead walls.... Because dental x-ray is typically low dose, the standard of 6 feet (from the x-ray tube to the operator or any other person besides the one getting the x-ray exam) or a normal construction sheet-rock wall should provide sufficient protection. If you have any further questions, let me know and we will get you the answers.....

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Scale:	NOT TO SCALE

ELECTRICAL LEGEND

A: All electrical outlets & locations of utility call-outs will be measured to the center of a 2X4 or 4X4 electrical box.... Electrical outlets not specified are 18" AFF or 4" above countertop. All outlets above cntrtop should be verified with cabinet elevations for conflict with backsplash.

B: If dims of electrical and utility locations are not specified, verify and discuss with owner....

C: Midwest equipment installers are not licensed contractors, thus all of the final "hard" dental equipment connections must be made by the applicable sub contractors at the time of the dental equipment installation....

4. Do not locate electrical panel in dental mech. room.. Clear Space required by code will not allow proper positioning of dental mechanical systems...

5. The contractor shall verify location and access to existing building utilities, including water, gas, air, vacuum, vents, electrical and waste lines when not designated on plans. Obtain approval of building owner before discontinuing service prior to hook up.

6. Contractor connects all dental equipment to code...

Ceiling mounted light fixtures, sterio speakers, hvac duct, sprinkler heads, etc. will be located to allow precedence to "Operating Light" location.

CONTRACTOR...Make sure the Mech. Room has proper air circulation.... Room should be kept at constant 40 to 104 degrees F...HVAC damper should be restricted from heating.. A FAN SYSTEM should operate to cool room to the desired 40^o-104^o F. The fan should be of the "exhaust" style set to remove heat.. An opposing intake louver should be located near the exhaust fan leading to conditioned air source.. Sound proof all mech. room walls with insulation or equal...

D: Operating Lighting information:
1. Style of task lighting mounted under upper wall-hung cabinetry.
2. See plans by others for general & decorative lighting and wall switching.
3. Emergency lighting to be provided per code....



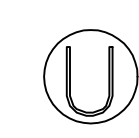
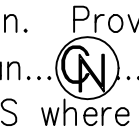
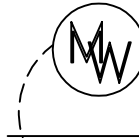
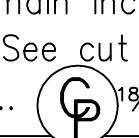

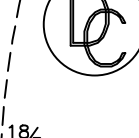



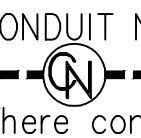


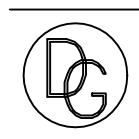
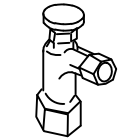




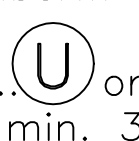

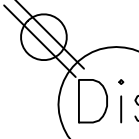
I.T. SPECS
ALL I.T. CABLES, CONNECTIONS, MONITOR MOUNTS, MONITORS, TELEVISION UNITS, (UNLESS CONTRA-INDICATED) WILL BE PROVIDED AND INSTALLED BY OWNER PROVIDED I.T. SUB-CONTRACTOR..... CONTRACTOR IS REQUESTED TO GIVE A MINIMUM OF 10 DAY NOTICE BEFORE SHEETROCK IS TO BE INSTALLED SO THAT CABLES CAN BE PULLED PRIOR TO THE CLOSING OF WALLS.....

ELECTRICAL CONTRACTOR PROVIDES:
"RING AND STRING" service to each data drop location shown on IT plan.. This plan is to be supplied by owner's IT/Computer sub-contractor...
Electrician provides single gang sheetrock ring and a pull string to above wall plate.
Electrician provides access hole in top wall plate for string.. Secure string to nearest conduit run above ceiling.....

MIDWEST DENTAL EQUIPMENT DOCUMENTS ARE TO BE APPLIED TO CONTRACTOR'S CONSTRUCTION DOCUMENTS BEFORE SUBMITTAL TO CITY FOR PERMITS..NO OTHER DOCUMENTS WILL BE SUPPLIED BY MIDWEST DENTAL OTHER THAN MFG. SPECS AND CUT SHEETS FOR DENTAL EQUIPMENT..... ANY ENGINEERING DRAWINGS, POWER AND/OR LOAD CALCULATIONS, IBC SUBMITTALS, ADA/TAS COMPLIANCE REQUIREMENTS, NFPA CODE INTERPRETATIONS, ELECTRICAL CODES, AND UNITED PLUMBING CODES ARE THE RESPONSIBILITY OF THE CONTRACTOR.....

A COMPLETE SET OF CONSTRUCTION DOCUMENTS SHOULD BE SUPPLIED BY THE CONTRACTOR TO THE CITY FOR PLAN REVIEW BEFORE ANY DEMOLITION OR TRENCHING PROCEEDS....

SYMBOL DESCRIPTIONS FOR DENTAL PLUMBING & ELECTRICAL—Catagory 3



-  UNIT w/VACUUM utility center location. Provide drive gas with shut-off valve, vacuum line, and 120v on flex conduit per CAT 3 medical specs. Add 2" conduit chase where indicated on plans...
Keep all Utilities within 5" RADIUS where indicated on plans.. Cap if marked "FUTURE"....
Add "water treatment" supply line when indicated..See cut sheet for details.....
-  UNIT—Dental utility center location. Provide CAT 3 medical 120v & 1/2" drive gas per cut sheet...
Provide 2" conduit chase per plan......A utility box will cover the chase, drive gas, and electrical...
Keep all Utilities within 5" RADIUS where indicated on plans.. Cap if marked "FUTURE".....
Utility box supplied and installed by dental company...
-  MASTER WATER shut-off / by-pass valve location. Provide water from suite's main incoming water line for shut-off of all water. Valve by Midwest, contractor/plumber to install...See cut sheet for size...
Electrician provide 120 volt outlet and run 18/3 L.V. to control panel.....
-  CONTROL PANEL for switching dental mechanical... Installation by electrician to:
vacuum pump(s), drive gas compressor(s), and water shut-off valve. Install appropriate number of 18/3 low voltage wires to Control Panel supplied by Midwest and Installed by electrician in appropriate sized wall box.....
-  DRIVE GAS COMPRESSOR—Dental location. Provide voltage & breaker to code per Mfg. Cut Sheet...
See attached Cut Sheet for amps to circuit breaker.. Single phase...Provide wiring per mfg's specifications.
Install 18/3 LV wires to control panel location per mfg. specs.. Catagory 3 drive gas requires Disconnect Switch(es).. Notify Midwest of voltage variance in building electrical supply.
Electrician to provide "Buck or Boost" transformer if voltage is out of Mfg's. Cut Sheet range...
-  VACUUM—dental motor pump location. Provide electrical service to code per Mfg's. Cut Sheet...
See attached Cut Sheet for amp breaker size per mfg. specs... Electrician confirm usage/breaker ratio...
Install 18/3 LV wires to control panel location per mfg. specs...
Electrician provide "Buck or Boost" transformer if voltage is out of Mfg's. Cut Sheet range...
Motors are single phase, 60 hz...
Catagory 3 requires Disconnect switch & must be fusable and sized per UL98, UL489, or UL508.
Plumber Provide waste drain to sewer and cold water hookup if required  Min. 30 PSI to Max. 70 PSI...
Provide piping continuous to location shown and size per plan and mfg. specs.
Provide 1.5" copper or galvanized pipe to outside of building for exhaust of pump per mfg specs.
Confirm code separation.. Most cities require 10' minimum separation...
Ambient temperature must be between 40 degrees and 104 degrees F...
See cut sheets provided by Midwest designed for specifics on vacuum for this project....
-  CONDUIT NETWORK... Electrician provide & install EMPTY 2" conduit unless noted otherwise.
---------- Indicates conduit routing...cut excess off at finished floor at cabinets & Utility boxes...
Where conduit used for I.T. cables terminates in wall, run 2" conduit up wall to above ceiling grid...
Use standard 90'sNOTE: long sweep 90's will NOT be needed for dental equipment or I.T. cables...
CHASE TO BE USED BY DENTAL COMPANY and/or I.T. ONLY....
-  EXHAUST FAN.....
Dental Mechanical & Server Rooms exhaust fan should be thermostatically controlled to "ON" at 75 degrees F...Lab exhaust (if required) to have separate control switch...
See plans by others for additional exhaust fans that may be required, i.e.. restrooms, etc...
CONTRACTOR...Make sure the Mechanical Room & Server Room have proper air circulation...Rooms should be kept at a constant 40 to 104 degrees F... A HVAC damper is not recommended because of heating cycle in Winter...
A fan of the "exhaust" style with a thermostat set to the recommended temperature should be installed at a high point in the room with an opposing intake louver for "conditioned air" set at a low point in the room in order to circulate "conditioned air" up thru the heat producing units and out to atmosphere for year round temp. control.
-  COLD WATER valve. Contractor furnish and install 1/2" cold water supply with 1/2"x 3/8" compression right angle shut-off for model trimmer and/or vacuum pump(s) if required...back flow prevention to code....
-  DRIVE GAS location...1/2" air supply from dental air...Terminate with 1/2" x 3/8" compression right angle shut-off...center at "above finished floor" dimension next to symbol on plan...
-  DENTAL SINK and hardware part of dental equipment supplied by Midwest. Contractor provide plumbing requirements indicated on plan... See cut sheets provided by Midwest.
Plumber to connect per manufacturer's specifications and do final plumbing connections.
-  "ISLAND" sinks require loop vents or "studer" vents... verify to code...STUDER VENTS PREFERRED...
Plumber to connect per manufacturer's specifications and do final plumbing connections.
See cut sheets provided by Midwest.
-  SINK... Contractor furnish and install sink, hardware and shut-off valves. Sink to be specified by owner..... Note: Typical sink size and type where applicable: (Verify with tenant)
Install vegetable sprayer in lounge, sterile, and lab areas on large, deep sink specified by owner...
Lavatories and staff lounge: per building standards, accessible codes, and/or tenant specs.
Provide foot controlled faucets or electric eye faucets as specified by tenant.
-  WATERLINE TREATMENT system.....
See attached detail for installation instructions...Supplied by Midwest Dental...Installed by Plumber...
"HOME RUN" supply lines from this unit to dental cabinet delivery system marked..... or 
Main unit requires drive gas line, main city water supply min. 30 PSI—max.70 PSI, drain, and backflow prevention to code...SEE ATTACHED CUT SHEET
-  DISTILLER for sterilizer water...Supplied by dental company and installed on cold water line to sink by plumber...
Special faucet supplied with distiller..Plumber installs distiller "WAND" on sink in leau of vegetable sprayer...Electrician supplies 120v GFI outlet under sink...
CONTRACTOR—PLEASE CONFIRM PLUMBER SUPPLIES SINK WITH VEGITABLE SPRAYER HOLE....


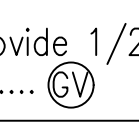

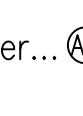
PLUMBING TERMINATIONS FOR EQUIPMENT REQUIRED BY DENTAL CO.
ALL VACUUM LINES RUN UNDER SLAB UNLESS NOTED....


Vacuum Systems:
Operatory – 1/2" female pvc fitting with male cap or plug for test.
Pump – DWV fittings sized to pump...
Water – 1/2" x 3/8" compression fitting (angle stop)
Water pressure requires Min. 30 PSI to Max. 70 PSI...
Test – Negative pressure to not less than 19 HgV for 24 hours..
Less than 12 HgV drop is acceptable.
NFPA99 (2012) SECTION 5.3.12.2.8.1 thru SECTION 5.3.12.2.8.3.....



SLOPE A MIN. OF ¼" IN 10 FEET WITH LOW END TOWARDS PUMP..
USE DRAIN, WASTE, AND VENT (DWV) FITTINGS...
IF AN IN-LINE LOW SPOT IS UNAVOIDABLE, PLACE IT IN A KNOWN LOCATION AND ADD A CLEAN-OUT...
ALL WORK MUST COMPLY WITH 2012 NFPA 99c...


Drive Gas Compressor Systems: NFPA 2012 99.5.3.7
At compressor – 1/2" female pipe thread...
Operatory termination – 1/2" x 3/8" compression right angle stop..
TEST—To not less than 150 psi for 24 hours with nitrogen...
Less than 5 psi drop is acceptable...
NFPA (2012) SECTION 99.5.3.7

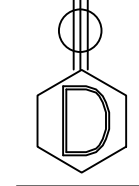

-  Distiller for ULTRA-PURE WATER to sterilizers & lounge...
Supplied by dental Co. and installed in Mechanical Room
on cold water line in location by Plumber... Special faucet supplied with distiller to be installed at sterile sinks and in staff lounge...Run special 1/4" ID tubing supplied by dental co. from distiller in mech. room to sterilization sinks and lounge...
Plumber installs faucet on sinks in leau of vegitable sprayer and connects tubing to faucet supplied with Distiller.....
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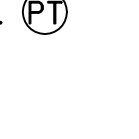
-  GAS (Natural) VALVE location. Provide 1/2" rigid pipe thread (black iron) code approved through wall and install valve supplied by owner....
-  AIR VALVE location. Provide 1/2" copper air line through wall @ 46"off and install air valve by owner...


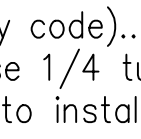
-  VACUUM ONLY...run under slab, up nearest wall to 12"off and turn out of wall 6"...
This vacuum line terminates under noted sink with a reducing 1/2" female pvc fitting...
Vacuum horizontal trunk line to be 2".I.D. pvc...reduce to 3/4" riser...reduce to 1/2" FPT...
"Plug" this fitting with a 1/2" male cap for testing and leave cap installed...
Dental company will make final connection to dental equipment...
***** NOT RECOMMENDED FOR ULTRASONIC CLEANERS WHEN USED WITH DRY VACUUM SYSTEM!!!

-  AMALGAM SEPARATOR—REQUIRED BY NEW CODE OF 2017...
Designed to remove trace amalgum residue from non-potable water being dumped into City sewer system... Supplied by Dental Co. and installed by licensed plumber to vacuum intake...

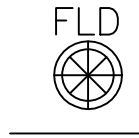
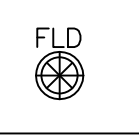
-  FILM PROCESSORProvide Water – 3/4" male "garden hose" bib fitting on 1/2" cold water supply and drain – separate "P" trap for processor with silver saver to code..
Back flow prevention to code....



-  DISINFECTOR for dental instrument cleaning..Designed and plumbed similar to a typical under counter dishwasher... 
See attached Cut Sheet for plumbing & electrical details...

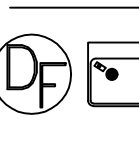
-  PLASTER TRAP.....To UPC requirements...Plumber install per mfg. specs included with trap... 
Gleco Trap (United Plumbing Code Approved) or equal will be supplied by plumber...
The 64-ounce Gleco Plaster Trap requires a 15.5 inch minimum clearance from center of outlet to base of cabinet...The 32-ounce (special order only) requires 13.5 inch minimum clearance...

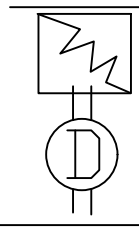
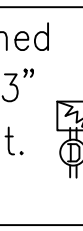
-  MODEL TRIMMER...installed by plumber to drain with UPC plaster trap (confirm city code)... 
Requires cold water supply with STANDARD shut-off above countertop...(do not use 1/4 turn valve)...
Provide 120 volt power (GFCI/20amp breaker)..See cut sheet for details..Plumber to install...

-  MOP SINK to code...   FLOOR SINK to code... 

-  FLOOR DRAIN (standard) to code...For Emergency water leaks in office Mechanical Room... Other floor drains may be required by code... 

-  FLOOR DRAIN (STERILE) to code...For sterilizer gravity drain tube... Requires self-priming device to code.. Locate 16" from wall under Sterilization Sink...
 Sterilization Sink module requires access panel in floor of sink cabinet.....

-  DRINKING FOUNTAIN only if required by code or owner.. Not recommended by Dental Co. for dental facilities... Plumber & Electrician supplies services as required by mfg. specs.... GFCI PER CODE...

-  ULTRASONIC CLEANER...Provide 120 volt outlet on dedicated 15 amp breaker at ht. above finished floor indicated on plan... Supply dishwasher type drain "I" fitting to nearest sink, "I" to be 23" maximum height. If recessed in countertop, see manufacturer's templates provided by Midwest. 
GFCI PER CODE...

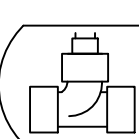
Provide insulation in Mech. Room for sound reduction

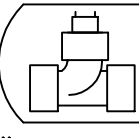
PLUMBING LEGEND

- A: If dimensions of plumbing and utility locations are not specified, verify and discuss with Midwest, designer, and owner / tenant.
- B: Midwest equipment installers are not licensed contractors thus the final "hard" dental connections must be made by the applicable sub contractors at the time of equipment installation.
- C: The contractor shall verify location and access to existing building water, gas, air, vacuum, vents, electrical and waste lines when designated on plans. Incoming water pressure must be between 30#–70#
Notify and obtain approval of building manager, if applicable, before discontinuing service prior to hookup.
- D: All vacuum pumps & air compressors to be hooked up by contractor as well as sinks, control valves, nitrous controls and outlets.
- E: Most areas require back flow prevention—consult local codes and install as necessary.

CONTRACTOR CONFIRM BEFORE CONSTRUCTION IF "PLENUM" RATED ELECTRICAL WILL BE REQUIRED FOR THIS PROJECT.....

SUGGESTED PIPING LAYOUT, SEE MFG.'S SPECIFICATIONS, TYPICAL.
Run 1/2" copper drive gas line. Terminate all locations with compression shut-offs. Termination of above finished floor (aff) will be noted on plan...
Provide 24 hour leak test at 100 PSI with oilless clean air. Where indicated on rough-in plan, cap lines for future use.

UNDER SLAB FLOOR VACUUM LINE SPECIFICATIONS: Sanitary 
Dental vacuum lines. Use schedule 40 PVC pipe (DO NOT USE COPPER)...
2" dia. PVC main trunk line... slope 1/4" for every 10 feet of run toward pump location. AVOID 90 DEGREE CONNECTIONS..... Use DWV fittings or equal...
Elbow (Sanitary Tee) off of main trunk line with 1" risers to termination point...Reduce to 3/4" pvc female fitting with test plug at termination connection...Run Sanitary Tee with flow...
SEE ATTACHED PIPING SCHEMATIC FOR PARTS DETAILS...
Final hook up by plumber. Vacuum lines to run sub grade and to follow trench layout.
LEVEL 3 PIPING PERMITTED UNDERGROUND/UNDER FLOOR...NFPA99(2005) section 5.3.10.10.5.2(A)
Waste Pipe... 2" pvc schedule 40 with DWV fittings...Trap & Drain lines min. 2 sizes larger than waste...Trap seal min. 4" deep..Vents must extend min. of 6" above tank top before turning horizontal.. Exhaust ("HOT") vent 1.5" copper or galvanized and dedicated (not tied to plumbing vents)...All joints must be oil tight...Slope all horizontal lines toward vacuum unit.
Terminate exhaust pipe a sufficient distance from rubber roof material...Shroud & screen outside end to prevent entry of water, debris, & creatures...Locate to code from air intake..
Standard separation is 10'-0" min, but confirm with city code enforcement...
Follow NFPA 99c 2005 Edition, mfg. instructions, and local code...

OVERHEAD VACUUM LINE SPECIFICATIONS: Sanitary 
Use DWV fittings or equal..Make inverted "P" trap with 4-3/4"PVC ells...
Use Sanitary Tee to 90 up off of main horizontal line with 3/4" risers to inverted "P" trap. Make turns and run down wall in 1/2"pvc...Use 1/2" FPT pvc fitting at termination connections on 1/2"PVC ell..Final hook up by plumber. Vacuum lines to run overhead as per attached detail sheet...Highest point of Inverted P trap not to exceed 12'-0" off "maximum lift"....
Run 1/2" PVC "dry line" with vacuum relief valve per mfg. drawings...Attach scavenger line for Med Gas to "dry line" per mfg. drawings...VRV to be above inverted "P" trap...
Waste Pipe...2" pvc schedule 40 with DWV fittings...Trap & Drain lines 2 sizes larger than waste...Trap seal min. 4" deep..Vents must extend min. of 6" above tank top before turning horizontal.. Exterior exhaust pipe to be 1.5" copper or glvanized..dedicated (not tied to plumbing vents)...All joints must be oil tight...Slope all horizontal lines toward vacuum unit..
Terminate exhaust pipe a sufficient distance from rubber roof material...Shroud & screen outside end to prevent entry of water, debris, & creatures...Locate to code from air intake..
Follow NFPA 99c 2005 Edition (confirmed to 2012), mfg. instructions, and local code...



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TBD.
Austin, TX 78727

Equipment Rep:	Scott Jovich
Date:	April 19, 2024
Drawn By:	DOS
Checked By:	WC
Architect :	William Cruz, AIAA
Dental Equip. Specs.	
Scale:	NOT TO SCALE

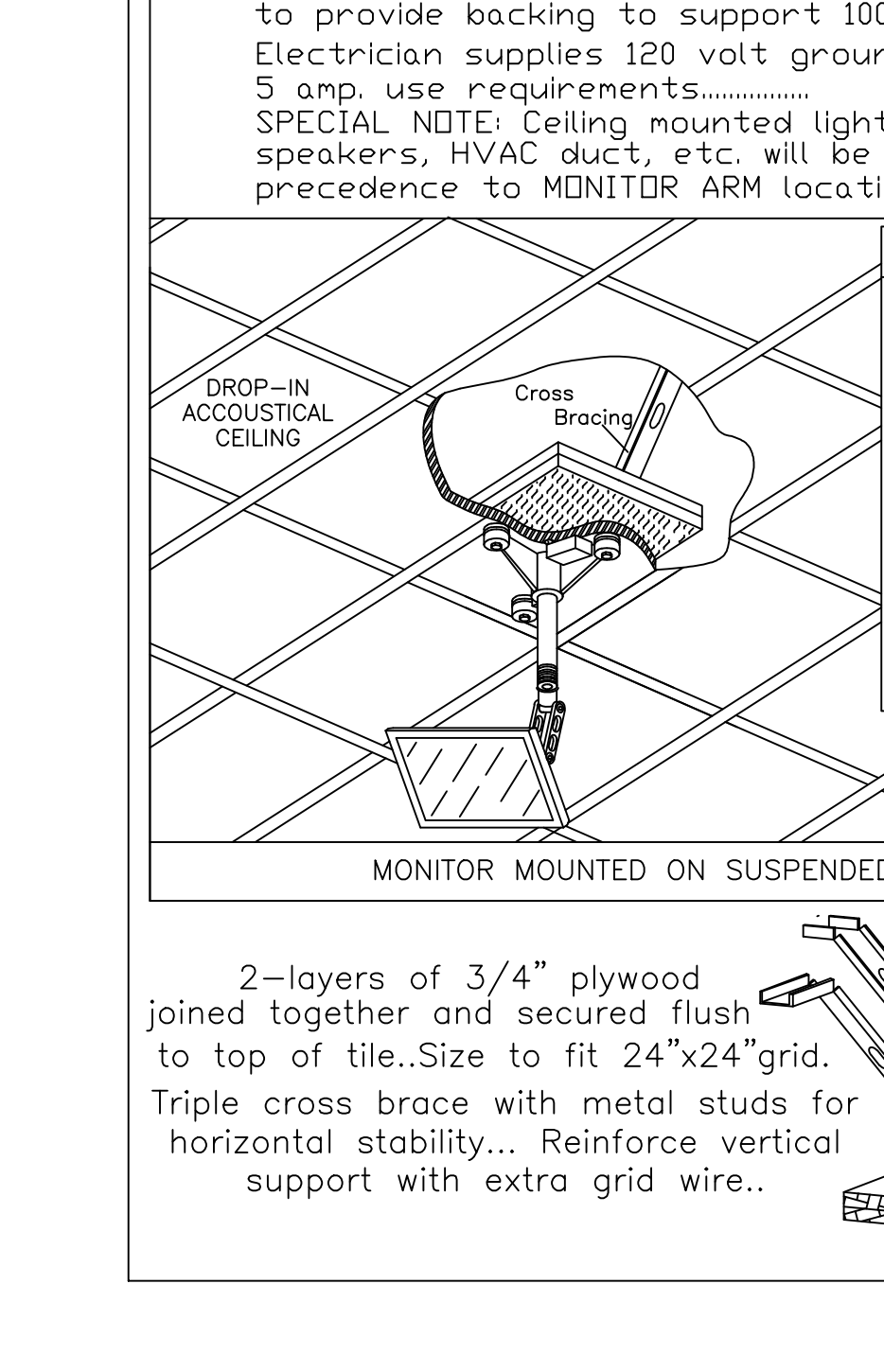
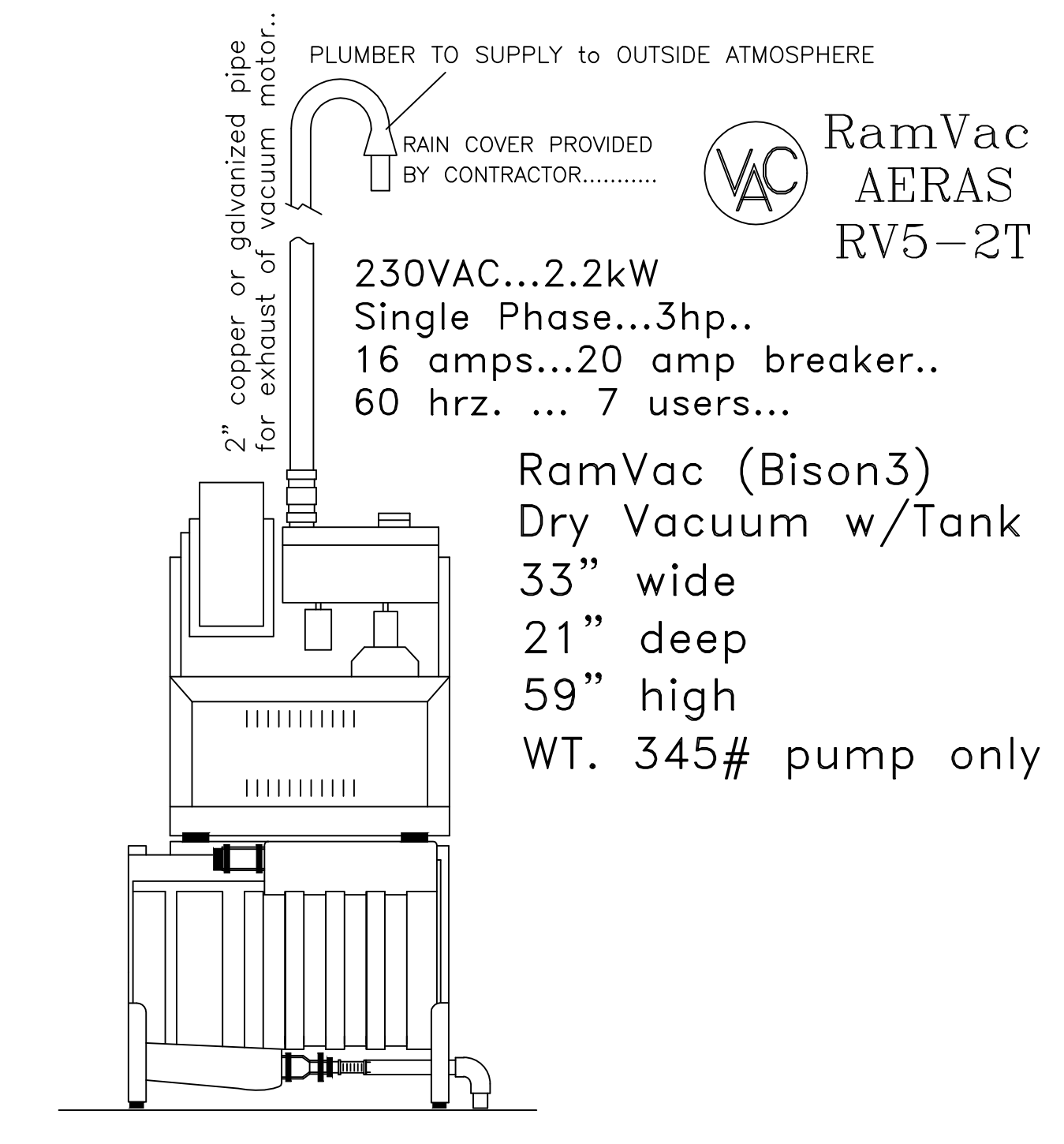
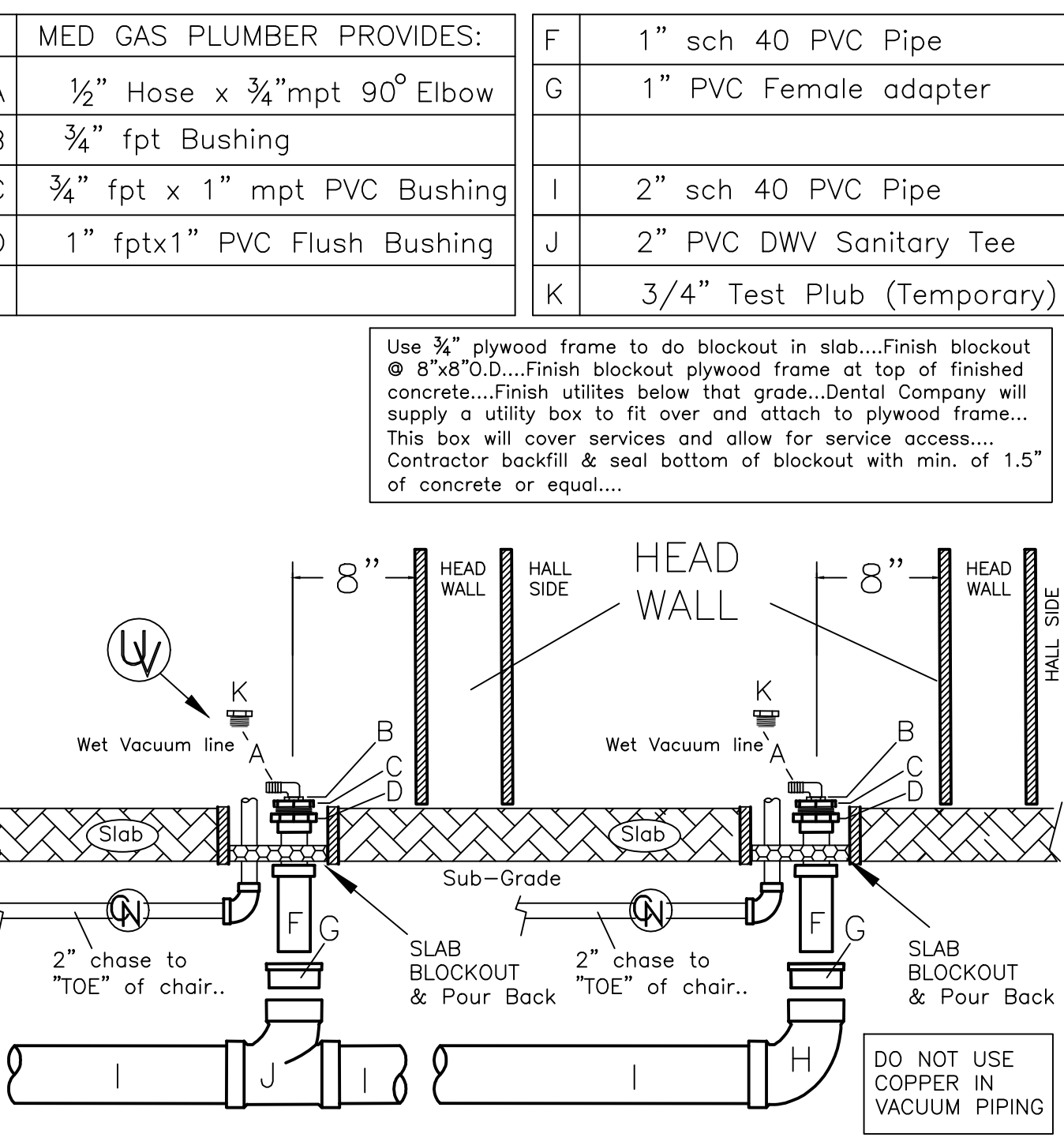
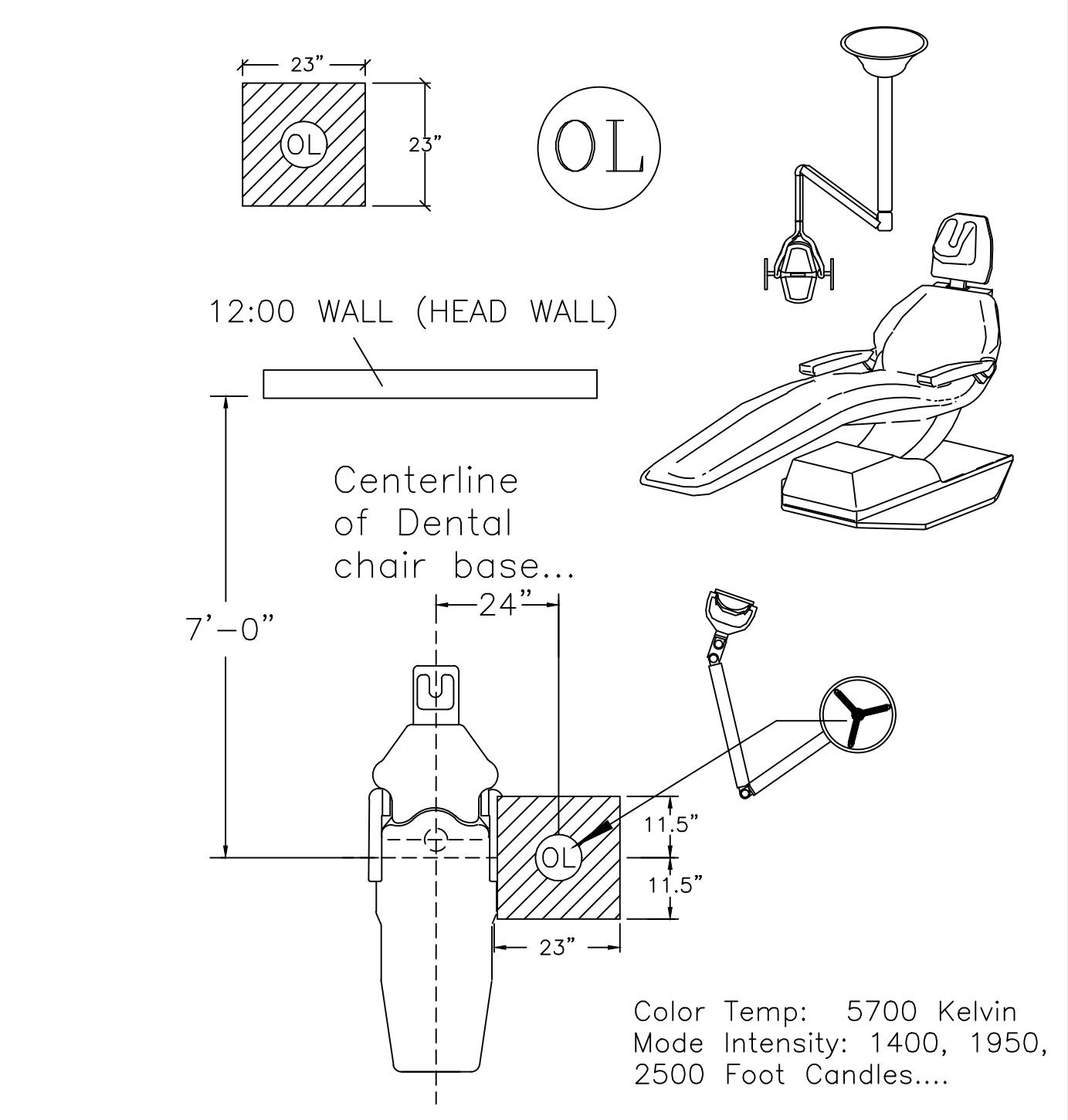
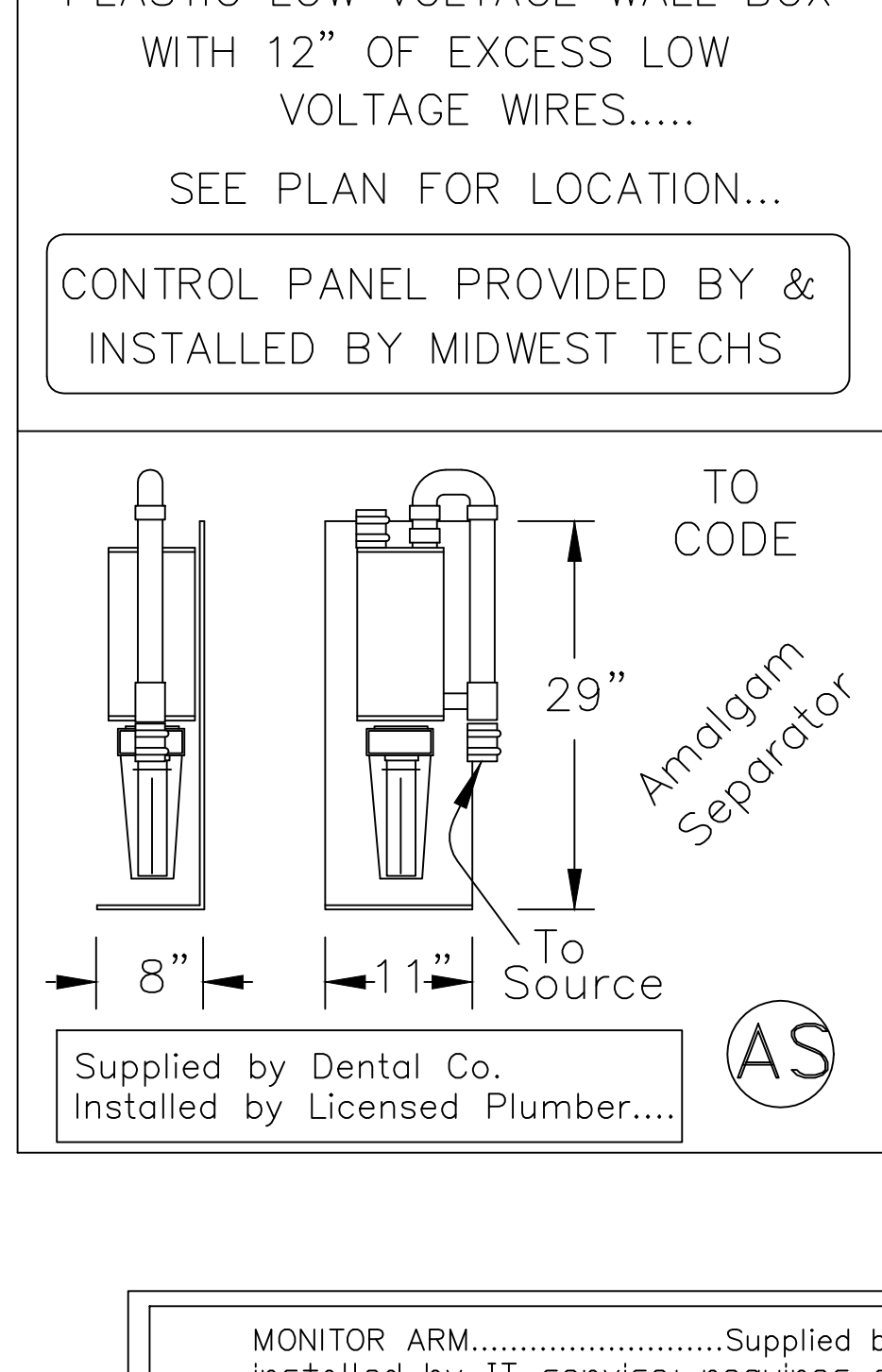
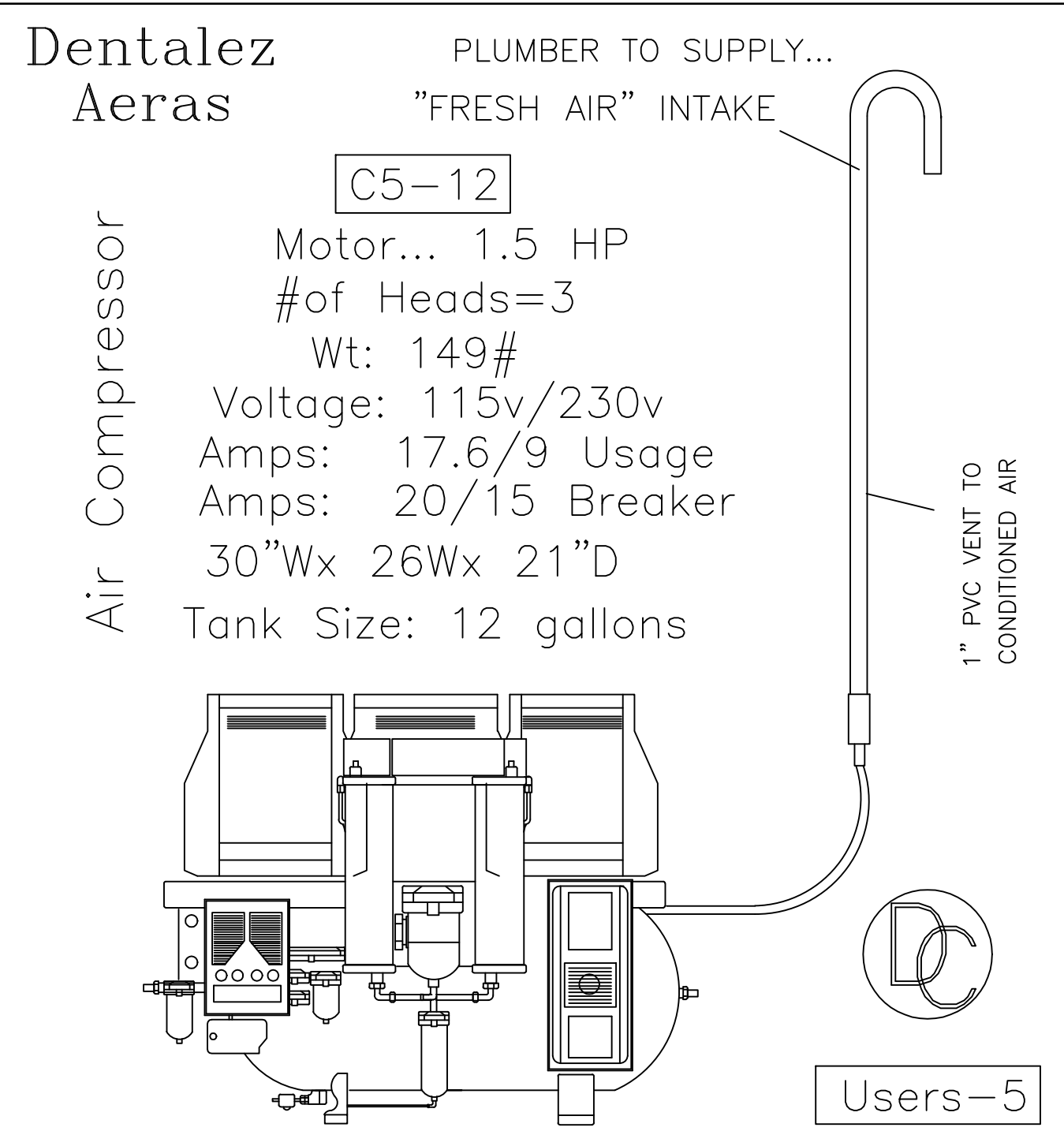
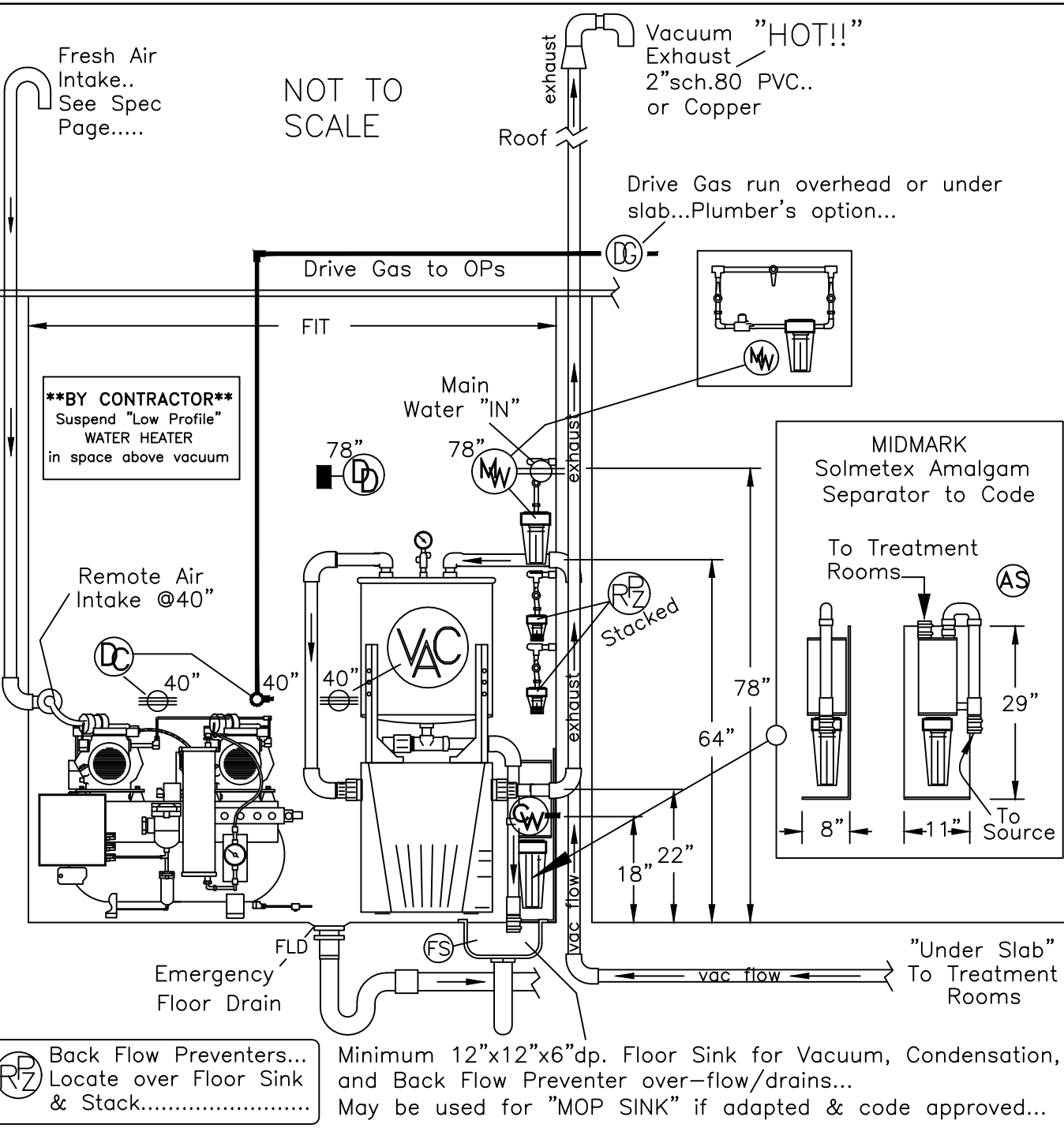
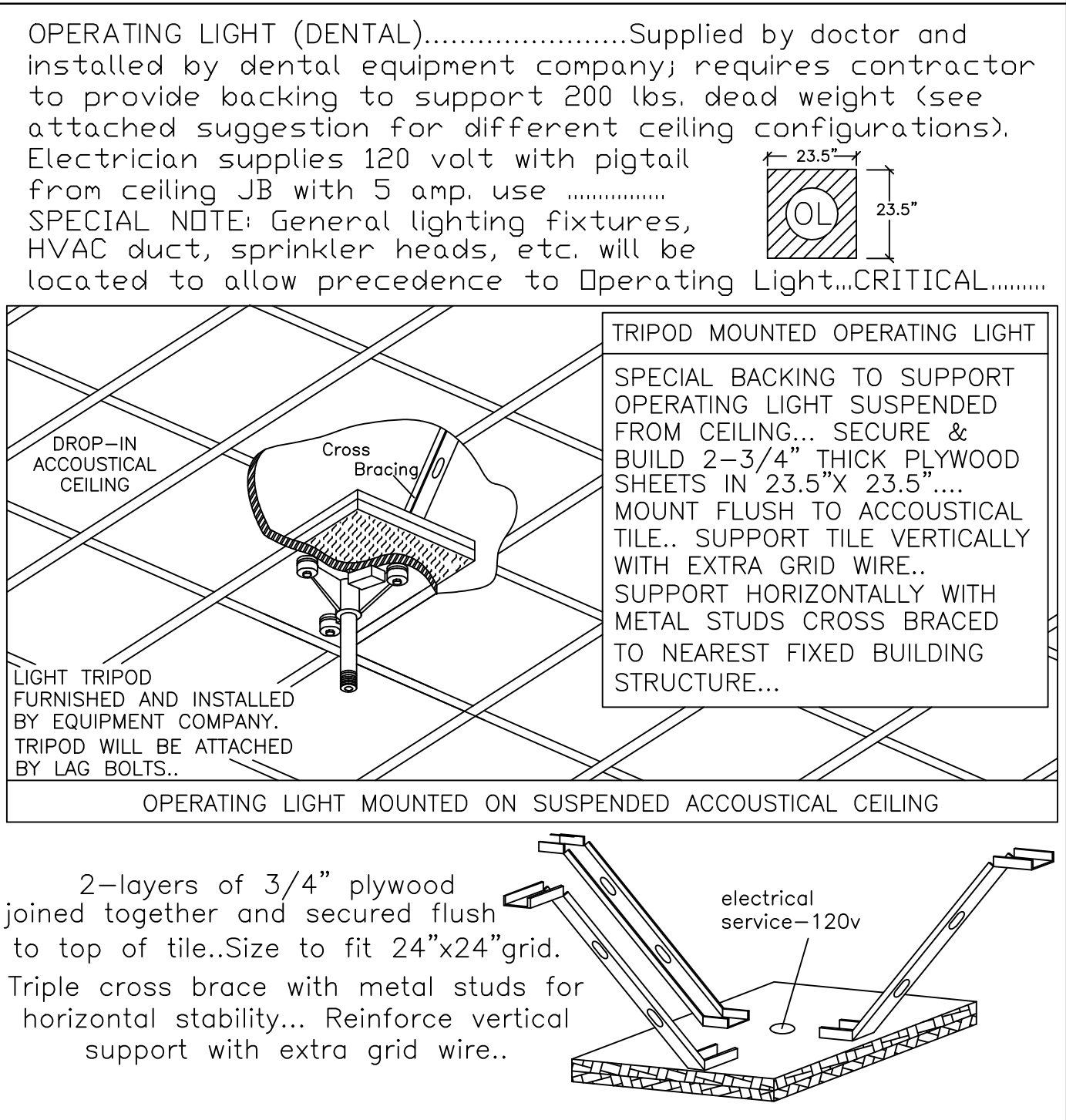
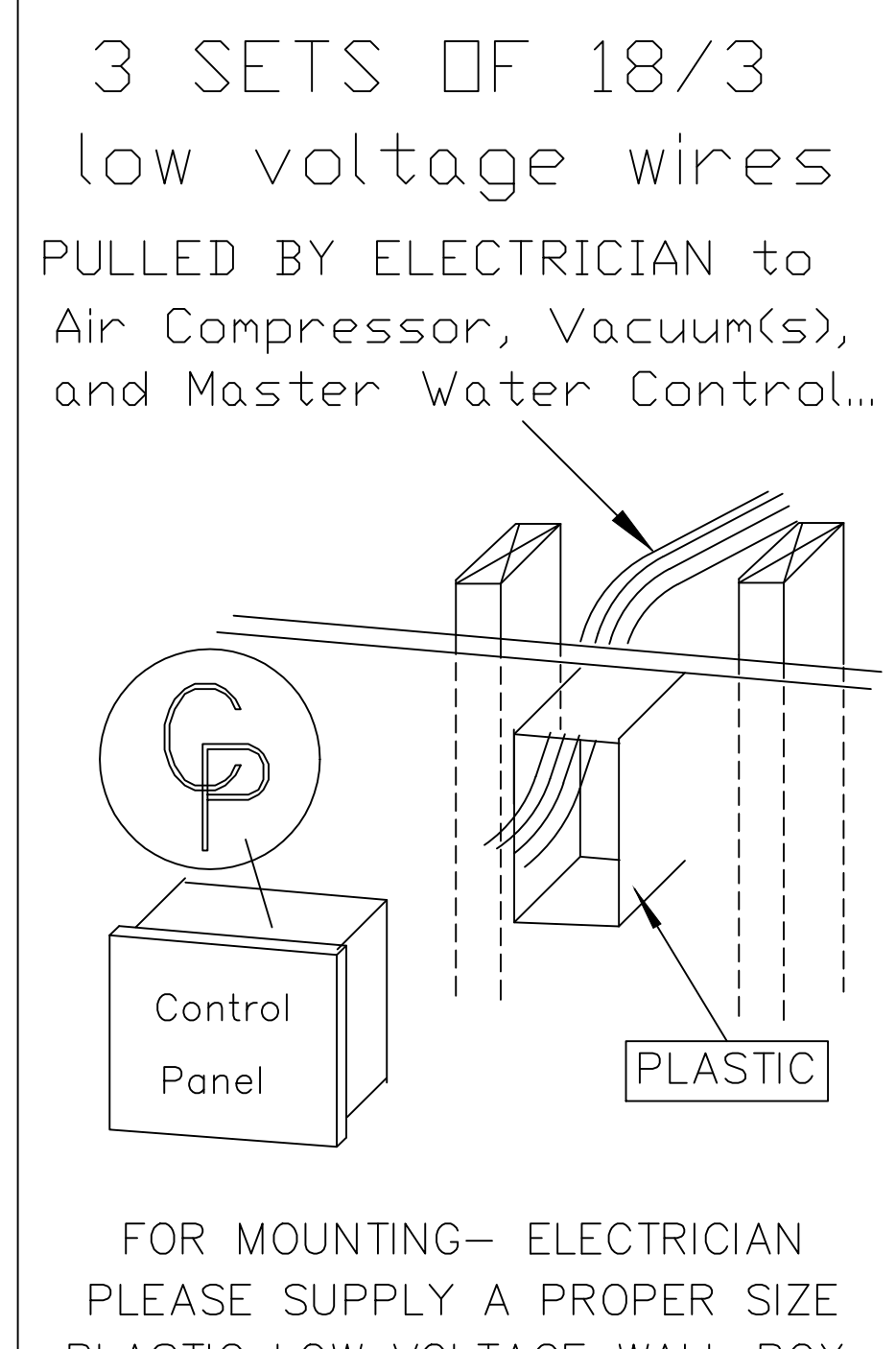
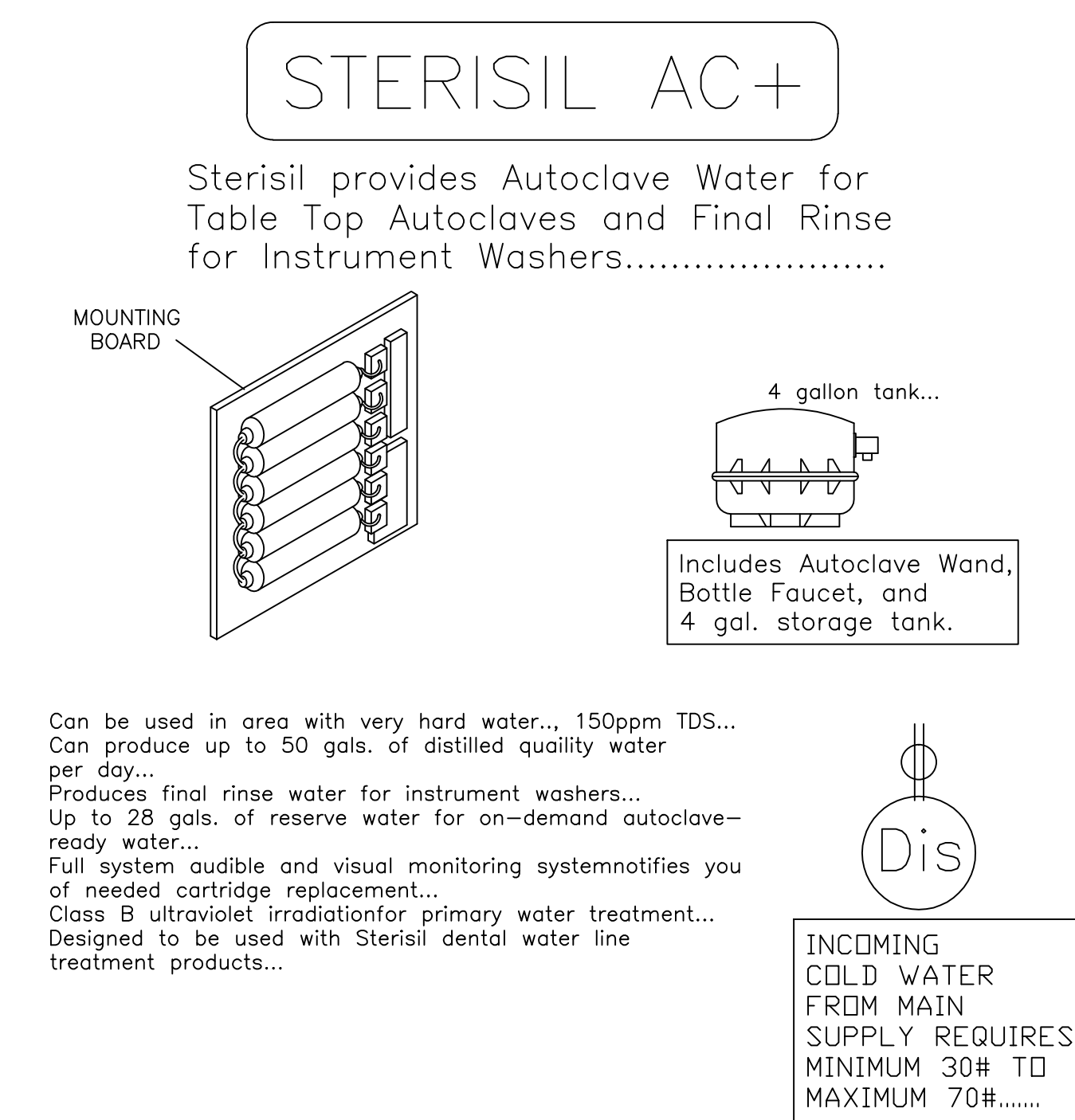
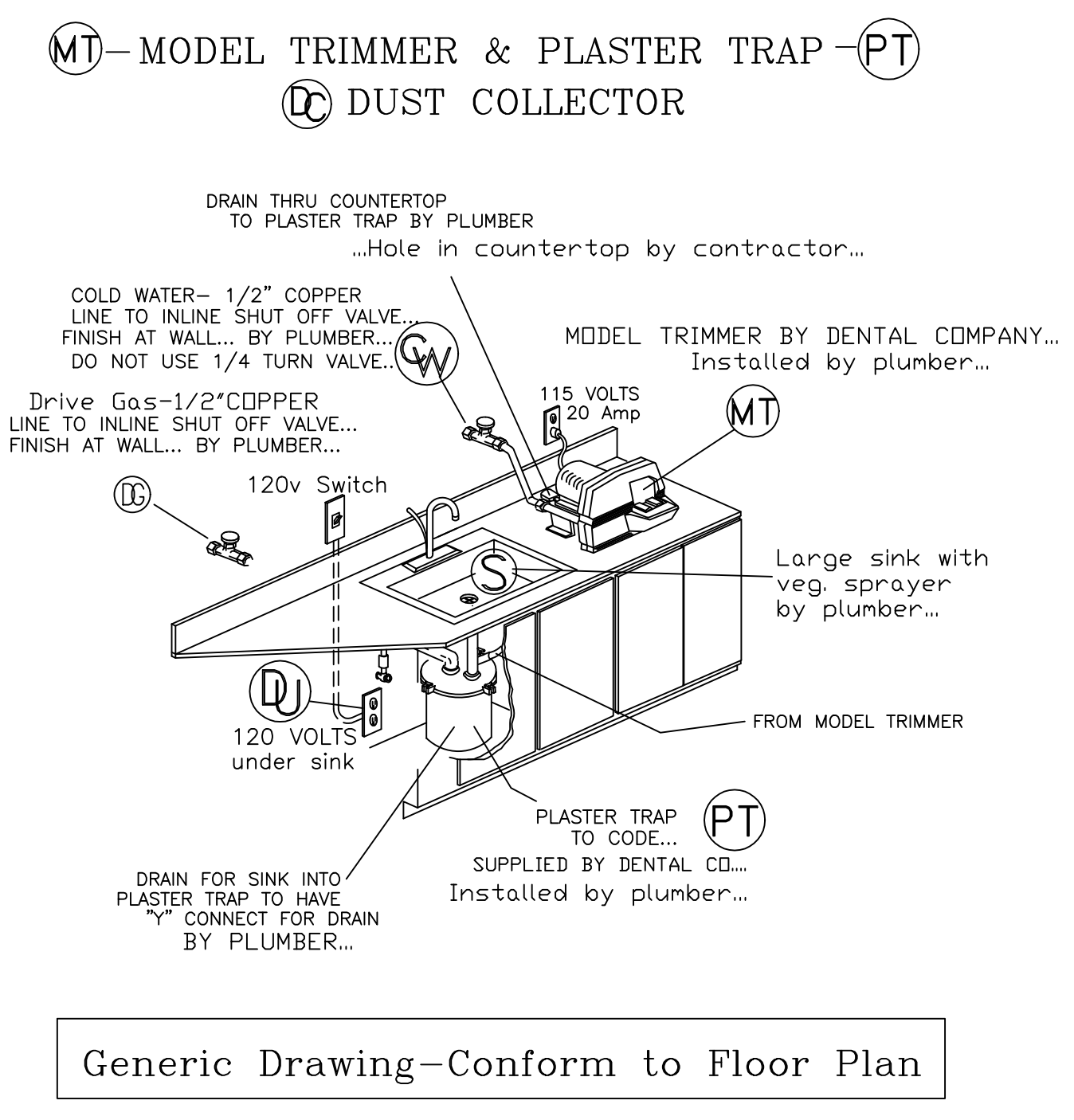
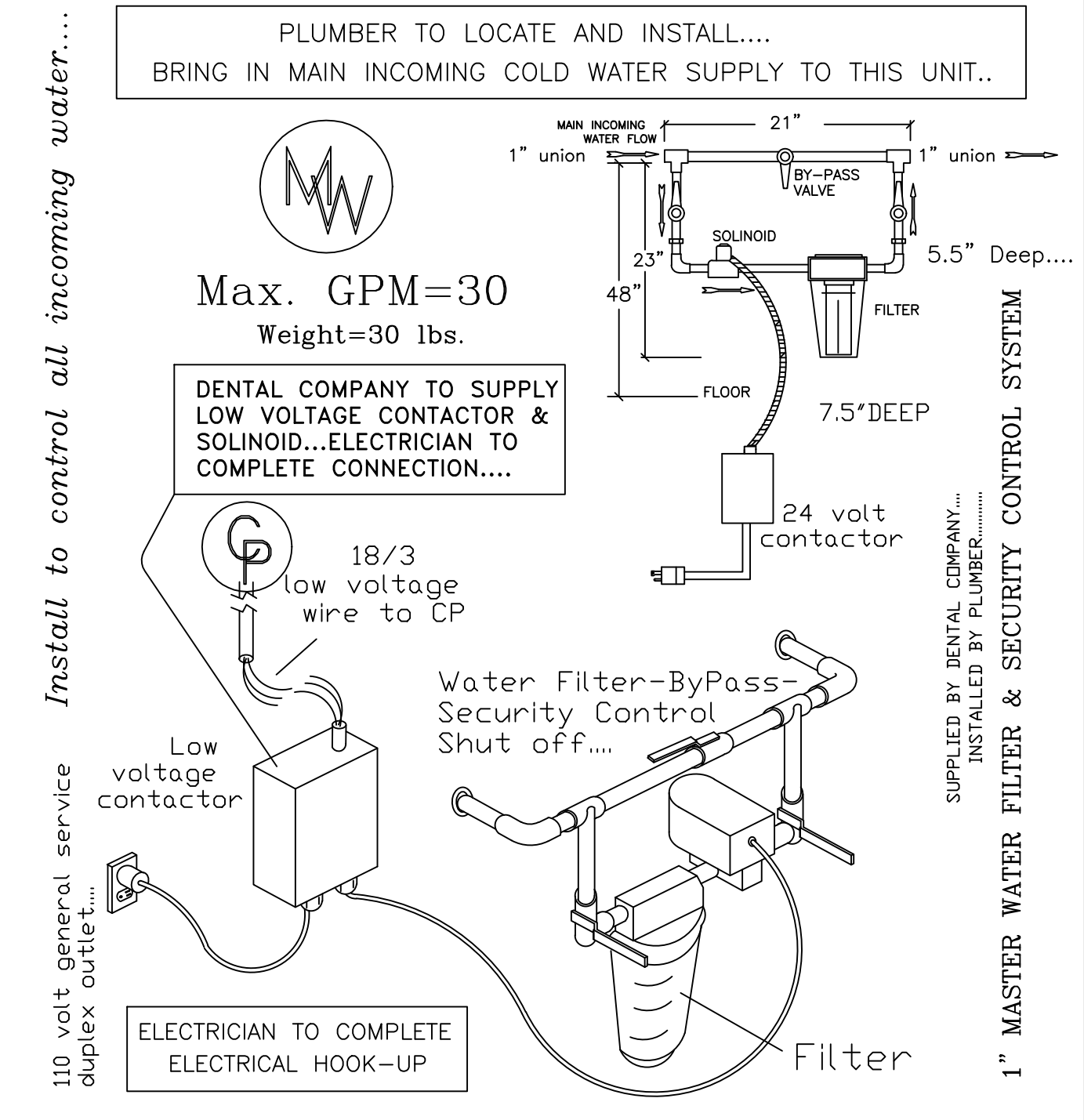
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Dental Equip. Cut Sheet
Scale: NOT TO SCALE



MONITOR ARM.....Supplied by doctor and installed by IT service; requires contractor to provide backing to support 100 lbs. dead weight..... Electrician supplies 120 volt grounded OUTLET per CODE... 5 amp. use requirements..... SPECIAL NOTE: Ceiling mounted light fixtures, stereo speakers, HVAC duct, etc. will be located to allow precedence to MONITOR ARM location....

TRIPOD MOUNTED MONITOR
SPECIAL BACKING TO SUPPORT MONITOR SUSPENDED FROM CEILING... SECURE & BUILD 2-3/4" THICK PLYWOOD SHEETS IN 23.5" X 23.5".... MOUNT FLUSH TO ACCOUSTICAL TILE... SUPPORT TILE VERTICALLY WITH EXTRA GRID WIRE... SUPPORT HORIZONTALLY WITH METAL STUDS CROSS BRACED TO NEAREST FIXED BUILDING STRUCTURE...

2-layers of 3/4" plywood joined together and secured flush to top of tile..Size to fit 24"x24"grid. Triple cross brace with metal studs for horizontal stability... Reinforce vertical support with extra grid wire..

Cat 3-Dental

NFPA 99 (2012ed)-Category 3 Piped Gas Systems:
 Sedation levels limited to minimal/light & moderate/medium sedation,,**NO ANESTHESIA**.
 Patients remain conscious & "capable of self-preservation".
 Appointments are "Elective"...
 Patients may **NOT** be kept overnight.
 "Systems serving occupancies where interruption of the piped medical gas would terminate procedures but would not place patients at risk of morbidity or mortality." (PIP)

Confirm Compliance to NFPA Standard 99(2015 Edition)

Manifold Systems comply with requirements for Category 3, Non-Flammable Medical Gas Systems established by the National Fire Protection Association NFPA 2012 99.5.3.6
 Confirmed code to year 2015....

At this time, NFPA 2005, 2012, & 2015 are in use in North America...Consult with your local municipality to confirm which code(s) they have currently adopted...

Use specs only for Symbols on Plan

NO NITROUS OXIDE AND OXYGEN MANIFOLD location. Provide copper tubing per code and install continuously to MED GAS locations. Manifold supplied by Midwest, plumbing contractor to install per MFG. specs. Nitrous storage closet to be constructed per NFPA Guidelines. Installation by Medical Gas Certified plumber. Vent to NFPA code...NFPA 2012 99.5.3.6
NO CONTRACTOR to install tank restraints provided with manifold per cut sheet & to NFPA code...

Nitrous oxide and oxygen "tubing", when run within floor slabs and underground, must be installed in one (or more) continuous conduit sleeves...No joints permitted within conduit...
 NFPA (2012) 99.5.3.6

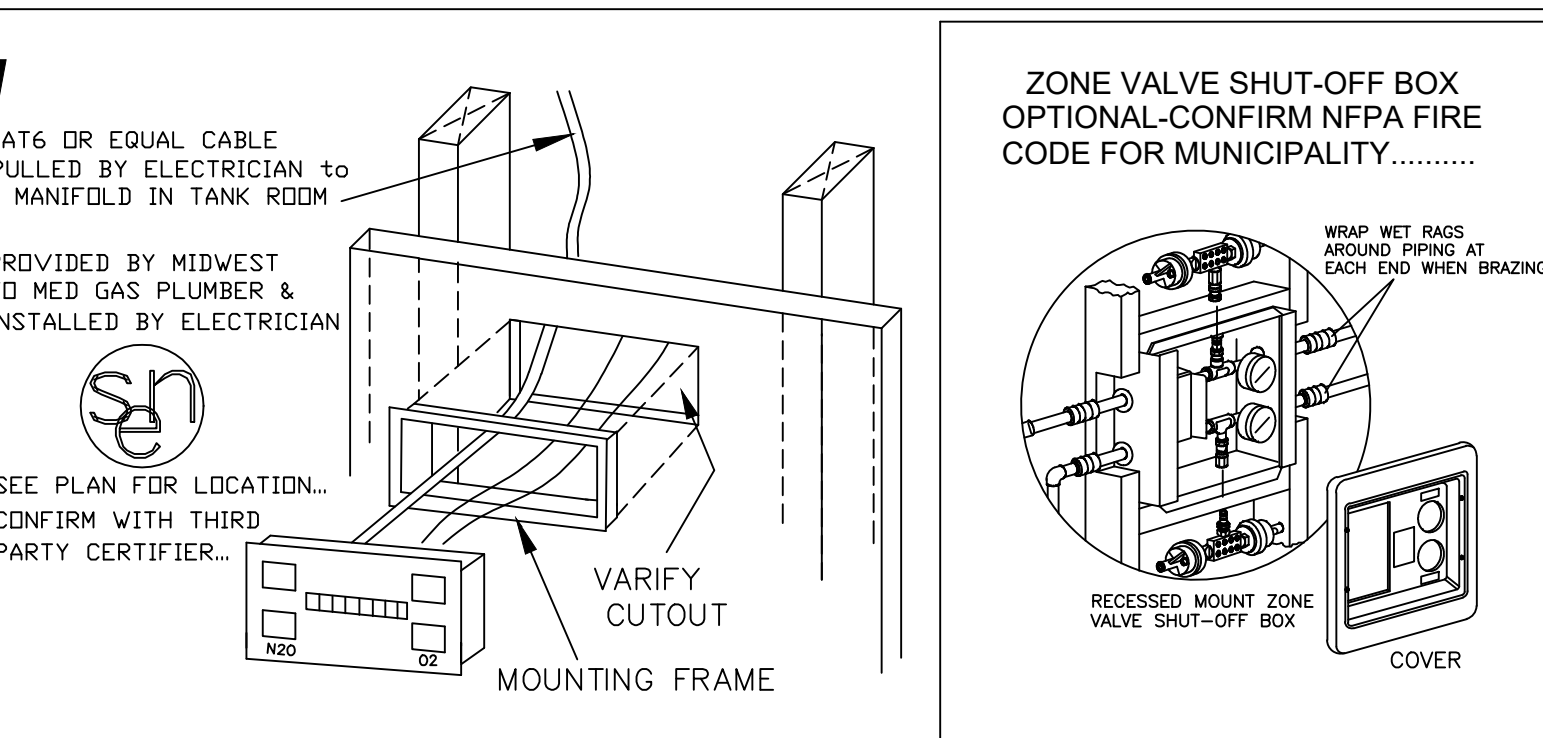
NO NITROUS OXIDE & OXYGEN outlet location. Provide copper tubing per codes. NFPA 2012 99.5.3.6 Risers or Dual Outlet Station supplied by dental company... Contractor install per codes. Must be Medical Gas Certified Plumber.....See cut sheets provided by Midwest Dental.....

NO NITROUS OXIDE, OXYGEN & VACUUM outlet location. Provide copper piping per codes. Triple Outlet Station supplied by dental company... Med Gas plumber install per codes. Must be Medical Gas Certified... Oxygen & Nitrous 99.5.3.6 Vacuum=NFA 2012 99.5.3.8...

SP SENTINEL/ALARM system for med gas...Required by fire code...
 Measurement on plan is from finished floor to center of Sentinel box...
 Run special cable (Cat6, Ethernet4 twisted pr.,RJ45 end connects) from tank room to sentinel/alarm location...
 Electrician to acquire above cable from Med Gas Plumber...
NO Med Gas Manifold to be installed by Med Gas Licensed Plumber....

Electrician install:
 120v duplex in tank room no more than 4'-0" from manifold and above 60" from floor...
NO **Sentinel must be located at a point in the office where it can be continually visually monitored by staff during working hours...
 Confirm location approval with Med Gas third party certifiers.... ***

Z ZONE VALVE for nitrous oxide and oxygen with wiring per manufacturer's specifications. Valve provided by Midwest installed by med gas licensed plumber...
 Electrician provide cat6 or equal from Tank Room manifold to Zone valve... **Z**



Category 3 Non-Flammable Medical Gas Systems (ref. 2015 99.5.3)

- Have not more than 3000 cu. ft. total capacity of all gases (excluding nitrogen and air) connected and in storage at one time.
- Have a listed pressure regulator directly connected to each cylinder.
- Supply either a single treatment facility.
- Supply system storage location shall be provided with 2 louvered openings having a minimum of 72 square inches each...(IBC standards require 36 sq. inches each)
- Supply system locations that are remote must be locked...
- Where the central gas supply system is remote from the outlet stations, a zone valve (pressure sensitive shut-off valve) is required...

Category 3 Medical Gas Piping (ref. 2015 99.5.1.10)

- Piping to be annealed (soft temper) ASTM B819 (Type K or L) copper tubing that has been cleaned for oxygen service, and capped prior to installation.
- Joints to be brazed without use of flux.

TO PREVENT CROSS CONNECTION OF OXYGEN AND NITROUS OXIDE:

- All oxygen tubing to be 1/2" O.D.
- All nitrous oxide tubing to be 3/8" O.D.
- All vacuum tubing to be 5/8" O.D.

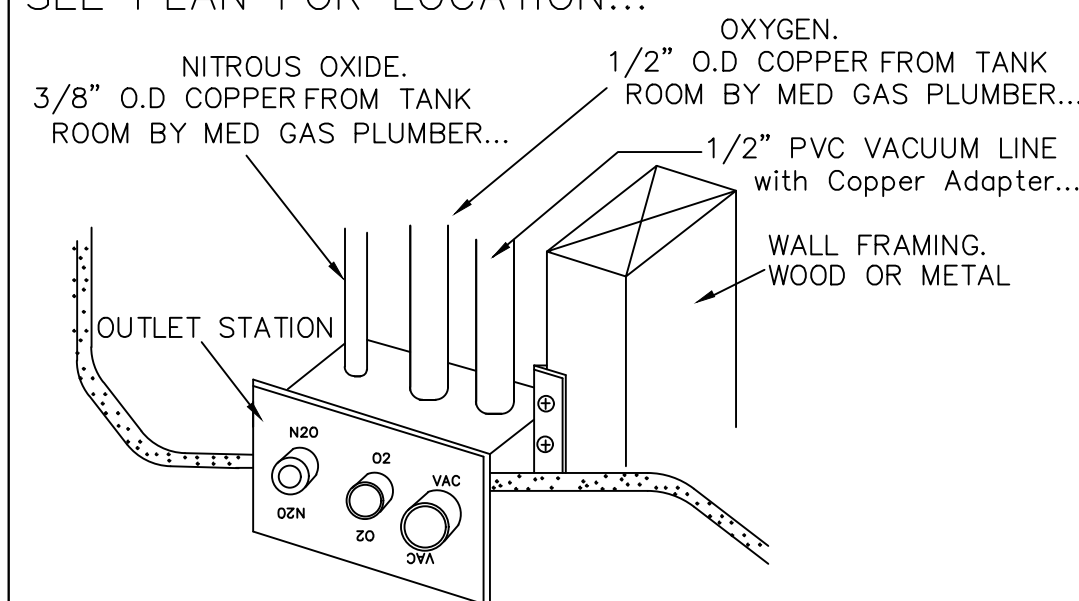
- While brazing, purge piping system with low flow oil-free dry nitrogen to prevent formation of copper oxide in the lines.
- After brazing of all joints, pressurize piping system to 150 psig with oil-free dry nitrogen and leak test all joints by means of soapy water or other equally effective means of leak detection safe for use with oxygen.
- Allow piping system to remain pressurized to 150 psig for 24 hours with source shut-off valve closed. Maximum allowable pressure loss is 5 psig.
- Blow piping system clear with oil-free dry nitrogen.
- Purge piping system with intermittent high flow oil-free dry nitrogen to remove particulate matter. Flow each outlet fully until purging produces no discoloration in a white cloth.
- Cap piping system. No further brazing shall be performed.

Category 3 Non-Flammable Medical Gas Systems (ref. 2015 99.5.3.10.1.6)

MED GAS PLUMBER TO CONFER WITH CITY CODE OFFICIALS TO DETERMINE VACUUM, DENTAL AIR, AND MED GAS LINE ROUTING.. TO RUN DENTAL GAS (AIR, NITROUS OXIDE, & OXYGEN) UNDER A SOLID CONCRETE FLOOR, REQUIRES A PVC SLEEVE SEPARATING THE COPPER LINE FROM ANY CONTACT WITH CONCRETE DUE TO THE NEGATIVE CHEMICAL REACTION BETWEEN THE TWO MATERIALS.. NFPA CLARIFICATION FOR 2015 PERMITS THE UNPROTECTED RUN OF DENTAL GAS IN FILL DIRT.. RESPONSIBILITY OF MEETING THESE CODES, BOTH WITH THE CITY AND WITH THE THIRD PARTY CERTIFICATION AUTHORITY REQUIRED BY THE STATE, WILL BE MET BY LICENSED MED GAS PLUMBER.....

DIFFERENT OPTIONS ARE SHOWN WITH THESE PLANS TO ASSIST IN MEETING THE MECHANICAL NEEDS OF THE DENTAL EQUIPMENT AND LOCAL CODES...

SEE PLAN FOR LOCATION...

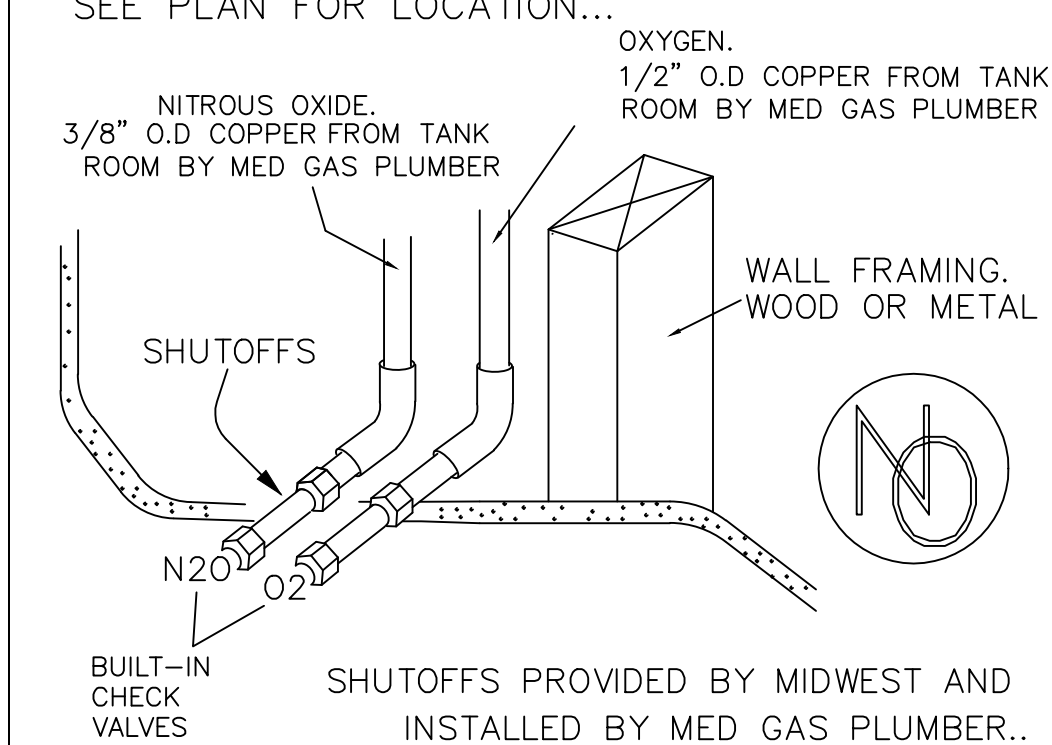


PROVIDED BY MIDWEST DENTAL SUPPLY AND INSTALLED BY MED GAS PLUMBER...

N2O-O2-VAC "TRIPLE OUTLET STATION"

"CHECK VALVE RISERS"

SEE PLAN FOR LOCATION...



Category 3 Medical Gas Varifier (ref. 2015 99.5.3.12.1.2)

Central Storage (ref. 2015 99.5.3.3.4)

Dental Air Supply System (ref. 2015 99.5.3.3.6.1)

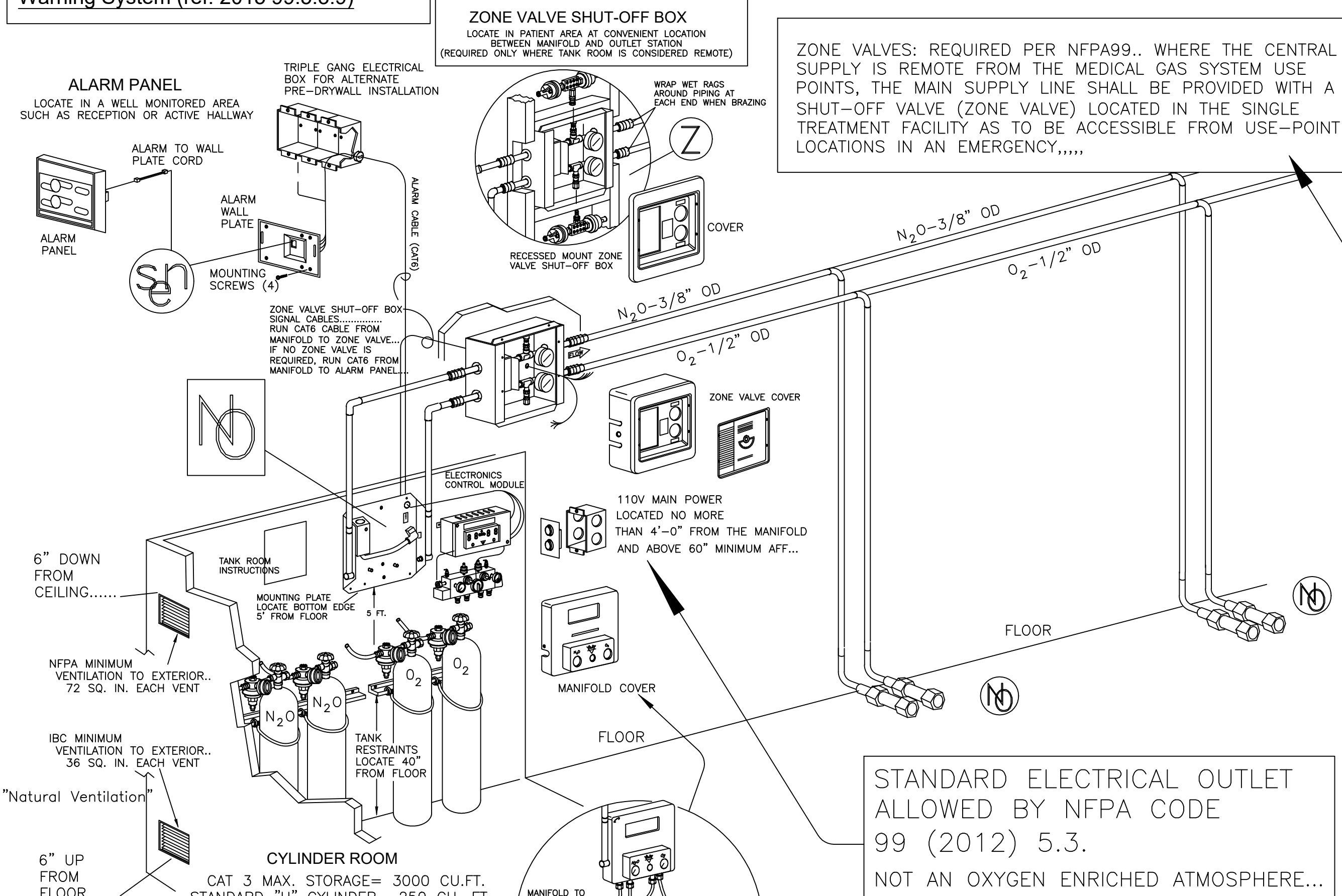
Emergency Shutoff System (ref. 2015 99.5.3.4.1)

Emergency Shutoff System (ref. 2015 99.5.3.4.1)

Warning System (ref. 2015 99.5.3.9)

Only If Required by Code

A MEDICAL GAS LICENSED PLUMBER MUST BE RESPONSIBLE FOR THE INSTALLATION OF THE CATEGORY 3 MEDICAL GAS SYSTEM.....
 PLUMBER MUST HAVE ASSE 6010 ACCREDITATION..
 VARIFIER MUST HAVE ASSE 6030 ACCREDITATION..

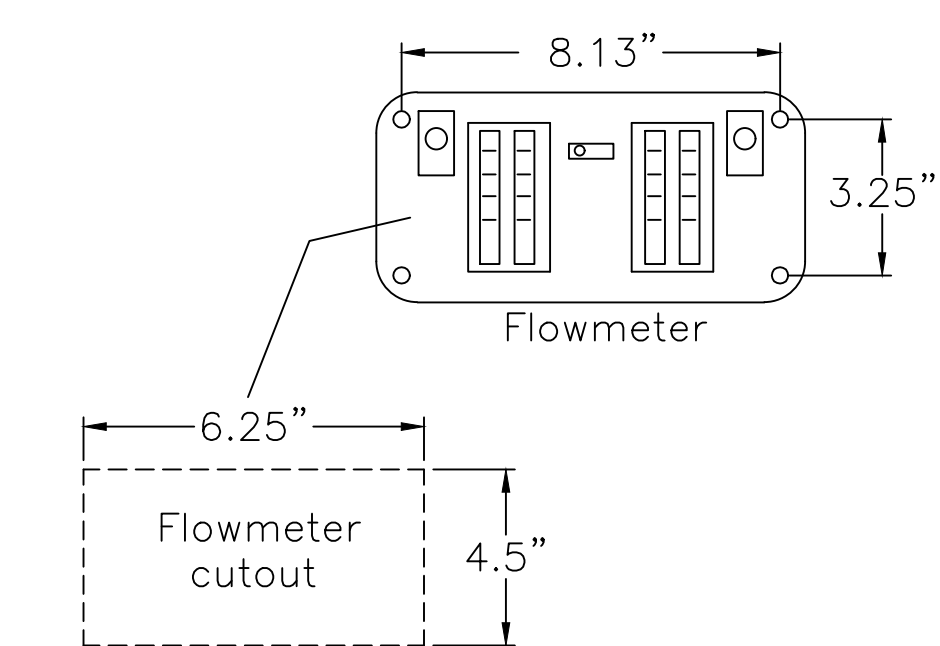


Category 3 Non-Flammable Medical Gas Systems (ref. 2015 99.3.6.5.2.1)

NFPA 99 (2012)...Section 5.3. Med gas room must have a 1 hr. fire resistance rating per NFPA Code 2012...
 "Natural Ventilation"...two louvered openings consisting of minimum 72 sq. inches each of free flow ventilation in each vent...
 One vent at 12" below ceiling and one vent at 12" above floor...
 CAT 3 piped gas and vacuum systems...
 If "Natural Ventilation" cannot be achieved, add "force fan" at ceiling vent blowing into room to force air exhaust thru lower vent...
 Both vents should be routed to outside.....
 Confirm "room changes per hour" rating of fan...
 Fan system should be "continuous run" (24/7)...
 Consult IBC code for sprinkler requirements.....

Manifold and Alarm System Installation

ACCUTRON ULTRA PC FLOWMETER 36800 CUTOUT FOR CABINET...



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Some cities have adopted the following code:
 Contractor confirm with local municipality if this code is being enforced at time of construction...
 Confirm Compliance to NFPA Standard 99(2021 Edition) Chapter 15.4.2.6.1
 Chapter 15.4.2.6.1 "All (dental) medical gas systems shall have an emergency shutoff valve accessible from all use-point locations in an emergency."
 Thus... a Zone Valve will be required in the facility when the municipality has adopted this edition of the NFPA Standard 99 code...

PAGE 7 OF 7

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