

GENERAL NOTES

Preliminary Drawings:

Preliminary drawings may be provided with a quote to indicate the location of vacuum equipment, piping, and hoses. Drawings may be used in direct coordination with Architects' and Engineers' plans for city/AHJ/client approval. Accurate and complete site plans must be provided to ensure the quality of your vacuum area to coordinate issues such as vacuum parking space width/angle, traffic flow, and hose reach.

Drawings are preliminary until the final system order is signed by the client.

Changes made to a vacuum system without Vacutech's consultation voids all Vacutech responsibility as well as the system warranty.

INSTALLATION NOTES

Installation By Others:

Installation drawings are provided with each project. Most projects require 2 or more installers and a forklift. Buried pipe, footings and concrete equipment pad(s) should be completed before installing Vacutech systems. J-bolt template kits for footings for vacuum arches and stanchions are available for purchase from Vacutech. Refer to drawings for footing requirements. Changes to vacuum piping, vacuum equipment location, and vacuum equipment enclosure will effect the performance of your system. Changes made to a vacuum system without Vacutech's consultation voids all Vacutech responsibility and the system warranty.

Vacutech System Install:

Vacutech offers installation as an option when bidding a project.

Please note that the scope of Vacutech's installation only includes work above ground. Vacutech will install vacuum arches/stanchions to concrete footings, install vacuum piping and set vacuum equipment in place.

Vacutech does not dig trenches, auger footings, dig/backfill/bury pipe or conduit, or provide any work below grade.

Vacutech does not pour footings, install J-bolts, install concrete trenches with covers, pour concrete pads, pour grout or do concrete work of any kind. Vacutech does not do core drilling through walls or patch any type of wall coring.

Vacutech does not do any type of roof penetration sealing. I.e. rubber boots, flat room mating, or any other type of material.

Vacutech does not wire lights, turbines, disconnects, VFDs, starters or any other electrical component. Vacutech does not pull wire through conduits. These items must be done by a Licensed Electrician.

WARRANTY NOTES

CHANGES MADE TO VACUUM SYSTEM WITHOUT VACUTECH CONSULTATION VOIDS ALL VACUTECH RESPONSIBILITY AND SYSTEM WARRANTY

Equipment warranty information: (if applicable)

When vacuum equipment is installed in an enclosure with 4 walls and a roof it must be ventilated. Enclosure door must be louvered and an exhaust fan with thermostat set at 85°F must be installed to turn over air every 15 min. Vacuum turbine must be exhausted outside with metallic pipe no smaller than 6" with exhaust pipe opening protected from elements. Equipment pad must be flat and level.

Variable frequency drive (VFD) warranty information: (if applicable)

VFDs must be wired from main distribution panel in separate conduit (sized per code; based on turbine H.P. and voltage) to each VFD and from each VFD to turbine motor.

A separate conduit, sized per code, must also be installed from VFD to vacuum pressure transducer installed on filter separator. If two (2) or more VFD's are installed in one (1) enclosure, a separate conduit must be installed for each VFD. Install separate conduit from enclosure to each turbine motor, and each filter separator if there is more than one (1).

PIPE NOTES

Piping systems above ground

Piping system shall be schedule 40 (or sch 80) solid core PVC or ABS plastic pipe, with plastic D.W.V. (drain, waste and vent) fittings. Zinc, aluminum, or galvanized tubing, with directional flow zinc fittings of no less than 16 gauge, designed specifically for central vacuum systems are also acceptable.

Buried piping systems cast iron no-hub

In-ground piping systems that are subject to ground freeze/thaw conditions or excessive movement shall be cast iron with no-hub fittings and no-hub couplings (w/ stainless steel band).

Buried piping systems PVC sch 40 (or sch 80)

In-ground piping systems using PVC pipe shall be sch 40 (or sch 80) solid core, with PVC D.W.V. (drain, waste, and vent) fittings. Plastic pipe installed in-ground have a potential of possible cracking and wear. All plastic pipe systems in-ground must be below freeze line.

System notes:

All interior surfaces shall be free of burrs and obstructions for a non-restrictive air flow. ABS and PVC piping shall be cut straight and removed of burrs. Piping shall be attached together using a primer, and a cement (clear PVC cement for PVC/ black abs cement for abs) for a 100% tight seal.

Overhead piping systems shall be supported by means of approved pipe hangers, and shall be installed at a maximum of six feet O.C. when using abs or PVC pipe and ten feet when using zinc or aluminum tubing. All fittings supporting vacuum drop/hose assemblies shall be supported with within one foot on each side of fitting connection.

Piping systems shall be tested to hold 10 psi for a minimum of 24 hours.

When vacuum system is installed in potentially explosive environment, the following may be required as a minimum: Explosion proof motor Class I - Group D & Class II - Group E, F & G. Aluminum piping with zinc fittings. Primary and filtered separators and hose assemblies require special grounding. Verify all conditions.

PVC and ABS plastic pipe are not U.V. rated and will discolor and soften/cause bowing when exposed to direct sunlight. It is recommended that all exposed plastic pipe and fittings be primed and painted to help prevent this. It is recommended to use zinc, or aluminum tubing and zinc fittings be used when exposed to sun.

Plastic pipe exposed to elements:

PVC pipe will become brittle at 40° f and can crack/split when moving debris collides with it, it is recommended to use cast iron, zinc, or aluminum tubing for colder conditions.

ADDITIONAL NOTES

VFD Systems:

Instructions for wiring VFD to Turbine and Filter Separator are available for your electrician. After wiring is complete, call our customer service to complete programming.

Arch Systems: How Awnings are ordered (Coolaroo/Weblon)

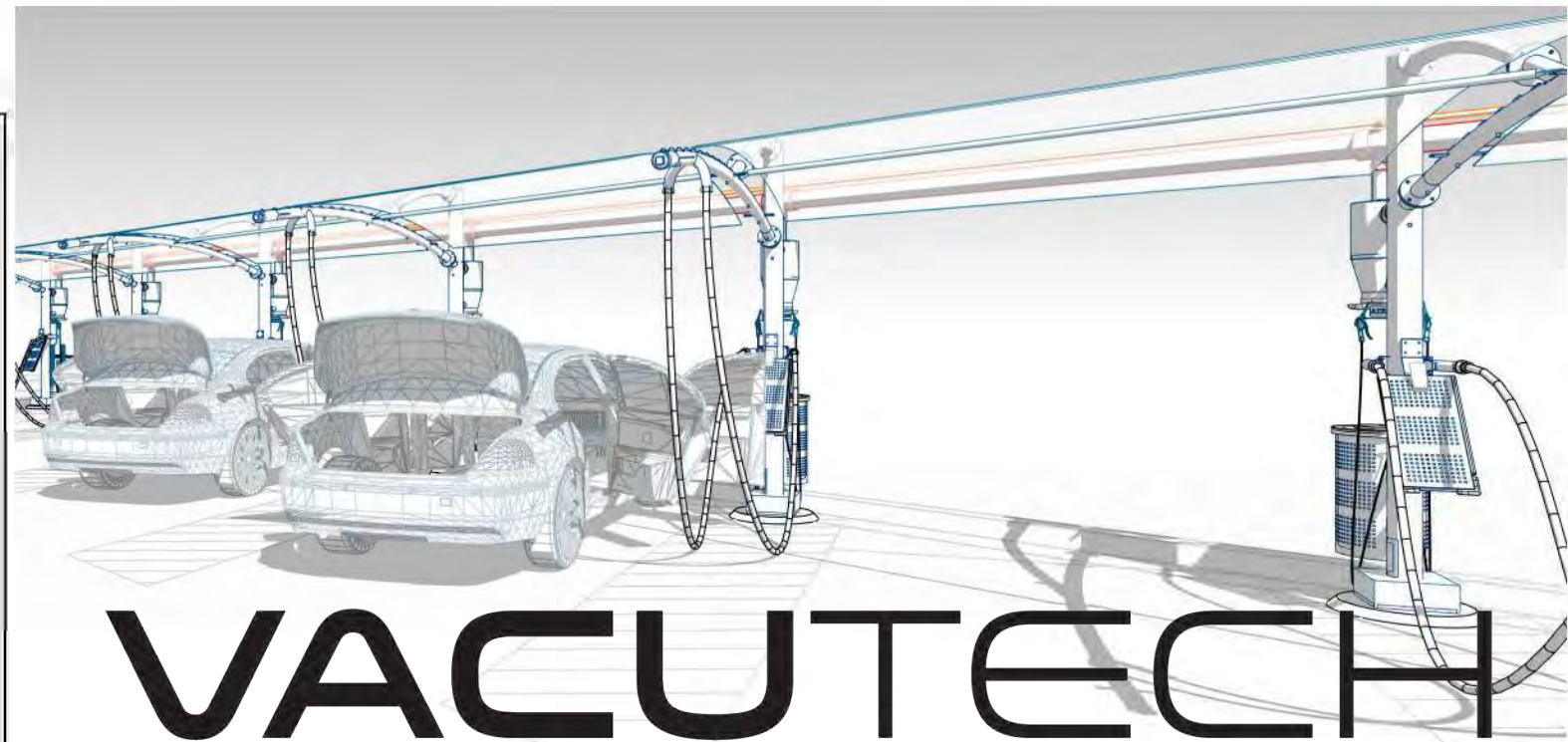
Step 1: Arches are to be completely installed on site.
Step 2: After installation, Vacutech will send an awning measurement form to be filled out with instructions on how and where to measure. The awning form must be filled out entirely, signed, dated, and faxed or emailed to Vacutech for production.
Step 3: Awnings are shipped to site w/ instructions.

Maintenance:

System longevity under continuous operation is extended by regular maintenance. Issues commonly result from failure to remove obstructions in the piping system, replace damaged or worn parts, or not regularly changing filter bags. Refer to Vacutech maintenance instructions

Assign a person to central vacuum maintenance:

To ensure continued trouble free central vacuum system operation and to avoid downtime during periods of heavy use, assign an employee to follow a strict maintenance schedule. Refer to Vacutech recommended maintenance schedule.



VACUTECH

Elevation: 348' ASL

AN **NCS** COMPANY

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V211	PIPE ISOMETRIC AREAS A&B	1
V212	PIPE ISO. B POLYFLO	1
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SHEET INDEX

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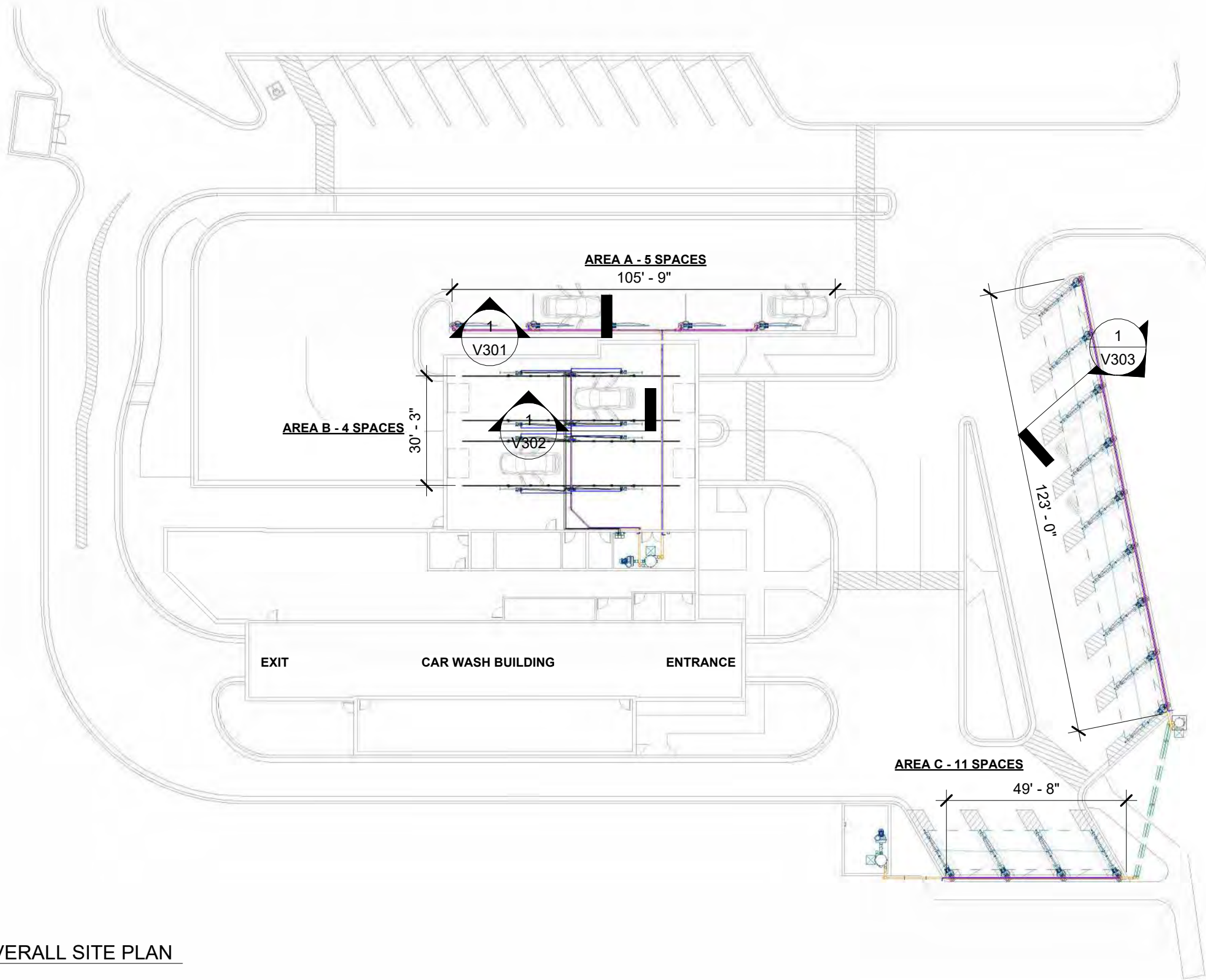
WHIP CLEAN CAR WASH

390 MUDDY BRANCH ROAD
GAITHERSBURG, MARYLAND 20878

#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

COVER SHEET		V001
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	SL	

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CONSTRUCTION NOTES

GENERAL NOTES:

- a. ALL DIMENSIONS TO BE FIELD VERIFIED BY OWNER
- b. IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
- c. PIER DESIGN AND REINFORCEMENT FOR CONCEPTUAL USE ONLY. CONSULT STRUCTURAL ENGINEER IN YOUR AREA FOR SPECIFIC DESIGN CRITERIA.
- d. COMPLY WITH ALL STATE/ COUNTY BUILDING CODES IN YOUR AREA

EQUIPMENT & MATERIAL:

- a. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION (BY OTHERS)
- b. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- c. 14'Lx4"Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS

VACUUM & PLUMBING:

- a. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT (PROVIDED BY OTHERS)
- b. ALL FITTINGS TO BE 'DWV'

1 OVERALL SITE PLAN

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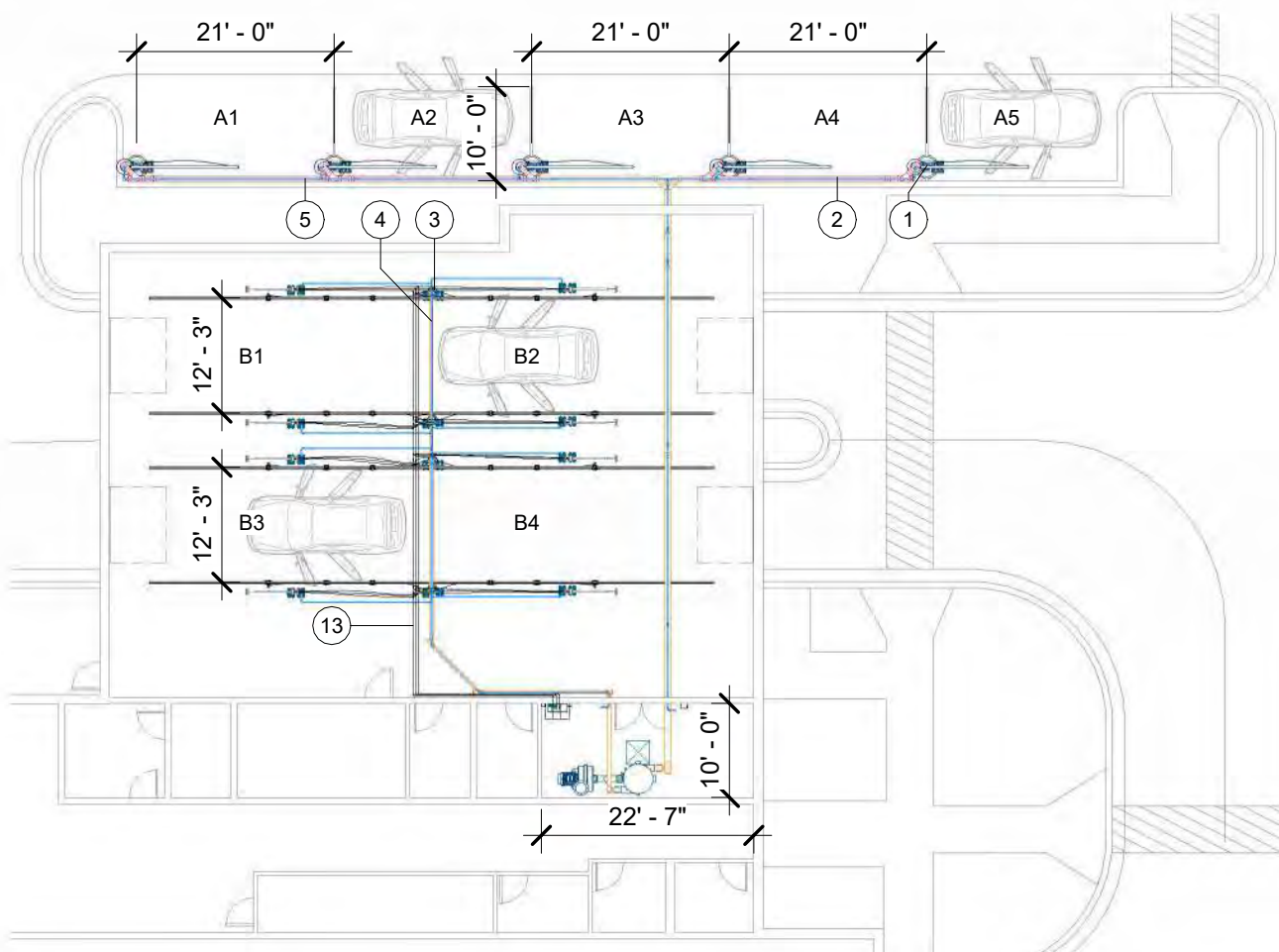
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1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

OVERALL SITE PLAN		V101
Project Number	269928	
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Drawn By	ML	
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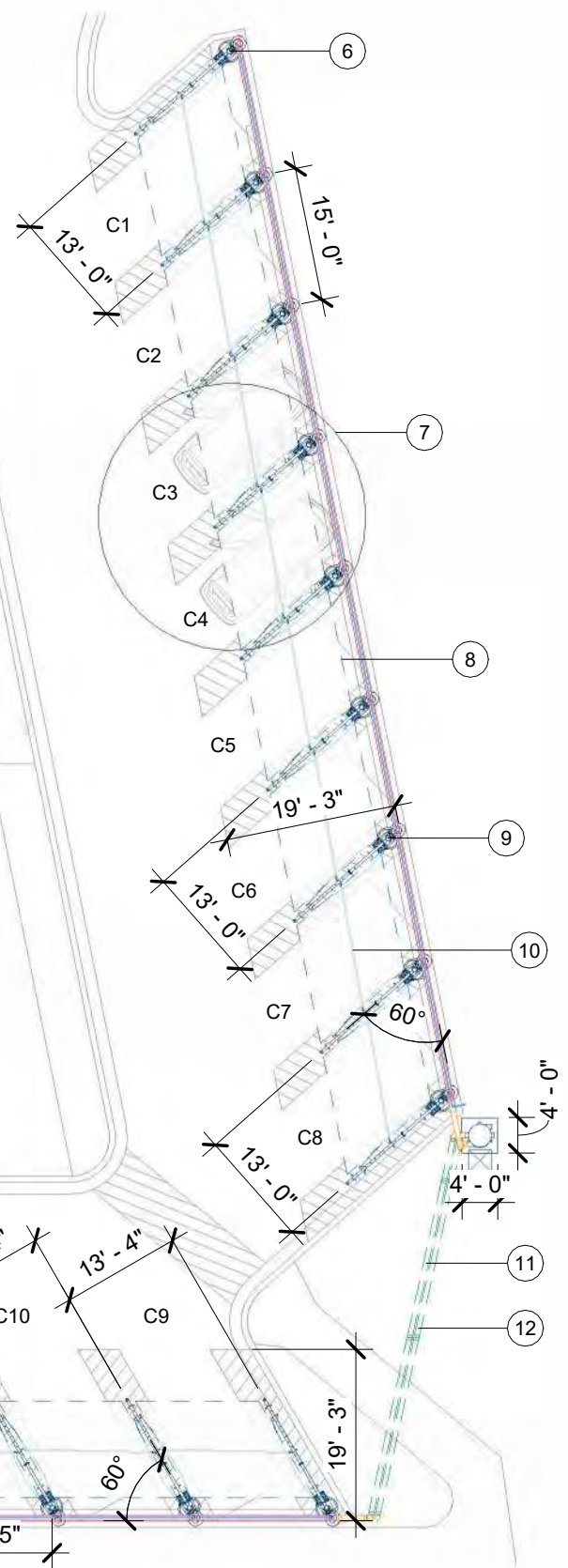


VACUUM AREA A

QTY	ITEM
5	SINGLE USER QUICK ARCH
5	CREVICE VACUUM TOOL & HOLDER
5	1-1/2"x15' RAPIDLOCK HOSE
5	AIR NOZZLE & HOSE
5	13" MAT RACK W/ DOOR PROTECTION
5	30 GALLON WASTE RECEPTACLE
5	AIR TOOL HANGER

VACUUM EQUIPMENT A&B

QTY	ITEM
1	50HP T4 DIRECT DRIVE TURBINE
1	8" T4 INDOOR EXHAUST MUFFLER
1	38x88 FILTER SEPARATOR
1	COMPACT CHEMICAL PUMPING STATION - 3 CHEMICALS



SITE PLAN	
ITEM	DESCRIPTION
1	SINGLE USER QUICK ARCH AT ENDS OF VACUUM SPACES
2	6" OVERHEAD ALUMINUM VACUUM TUBE
3	SINGLE USER CYCLONE SEPARATOR AT ENDS OF VACUUM SPACES
4	OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
5	1" RAPID AIR COMPRESSED AIR LINE
6	SINGLE USER PALM ARCH AT ENDS OF VACUUM SPACES
7	15' HOSE REACH
8	FABRIC AWNING (BY OTHERS)
9	DUAL USER PALM ARCH BETWEEN VACUUM SPACES
10	9' - 16'-6" ADJUSTABLE CROSSBAR
11	6" SCH. 40 SOLID CORE PVC BURIED PRIMARY VACUUM PIPE (BY OTHERS)
12	6" SCH. 40 SOLID CORE PVC BURIED BACK-UP VACUUM PIPE (BY OTHERS)
13	1/2" POLYFLO TUBE SUSPENDED FROM CEILING

VACUUM AREA B

QTY	ITEM
4	SINGLE USER CYCLONE SEPARATOR
36	CHEMICAL NOZZLE & HOSE
8	CREVICE TOOL HOLDER
4	3 CHEM 1 AIR MOUNTING BRACKET - CYCLONE MOUNT
8	3 CHEM 1 AIR MOUNTING BRACKET - CEILING MOUNT
8	1-1/2"x15' RAPIDLOCK HOSE
8	2"x25' VACUUM HOSE & 2" X 1-1/2" HOSE COUPLING
12	AIR NOZZLE & HOSE

VACUUM AREA C

QTY	ITEM
4	SINGLE USER PALM ARCH
9	DUAL USER PALM ARCH
22	CREVICE VACUUM TOOL & HOLDER
22	1-1/2"x15' RAPIDLOCK HOSE
22	AIR NOZZLE & HOSE
13	AIR TOOL HANGER
13	13" MAT RACK W/ DOOR PROTECTION
13	30 GALLON WASTE RECEPTACLE
11	9' - 16'-6" ADJUSTABLE CROSSBAR
11	FABRIC AWNING (BY OTHERS)

VACUUM EQUIPMENT C

QTY	ITEM
1	50HP T4 DIRECT DRIVE TURBINE
1	8" T4 INDOOR EXHAUST MUFFLER
1	38x88 FILTER SEPARATOR
1	31x60 PRIMARY SEPARATOR
2	96"-140" ADJUSTABLE OVERHEAD PIPE SUPPORT

1 SITE PLAN

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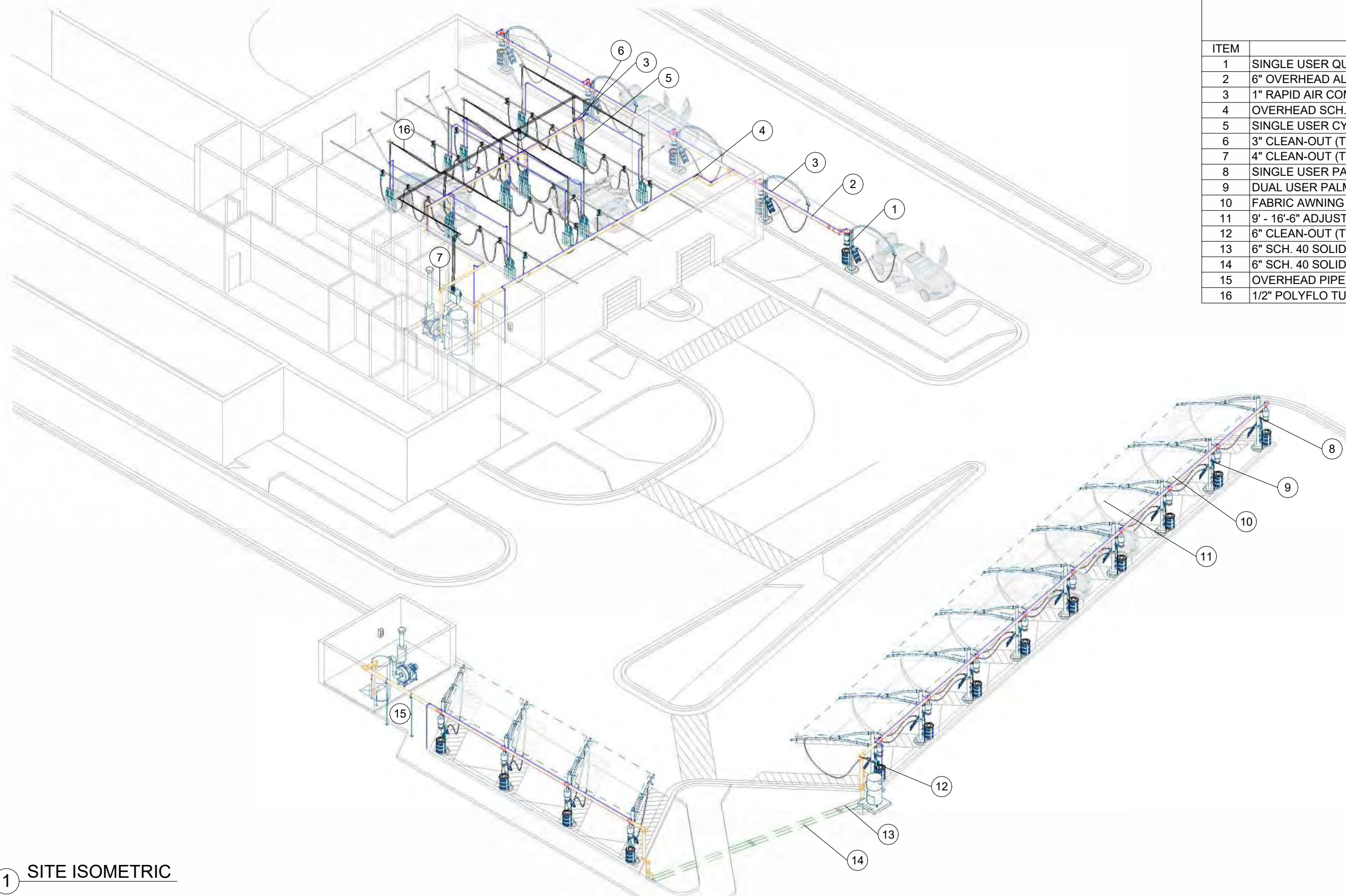
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WHIP CLEAN CAR WASH
 390 MUDDY BRANCH ROAD
 GAITHERSBURG, MARYLAND 20878

#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

VACUUM SITE PLAN		V111
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	SL	

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SITE ISOMETRIC	
ITEM	DESCRIPTION
1	SINGLE USER QUICK ARCH AT ENDS OF VACUUM SPACES
2	6" OVERHEAD ALUMINUM VACUUM TUBE
3	1" RAPID AIR COMPRESSED AIR LINE
4	OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
5	SINGLE USER CYCLONE SEPARATOR AT ENDS OF VACUUM SPACES
6	3" CLEAN-OUT (TYP.)
7	4" CLEAN-OUT (TYP.)
8	SINGLE USER PALM ARCH AT ENDS OF VACUUM SPACES
9	DUAL USER PALM ARCH BETWEEN VACUUM SPACES
10	FABRIC AWNING (BY OTHERS)
11	9' - 16'-6" ADJUSTABLE CROSSBAR
12	6" CLEAN-OUT (TYP.)
13	6" SCH. 40 SOLID CORE PVC BURIED PRIMARY VACUUM PIPE (BY OTHERS)
14	6" SCH. 40 SOLID CORE PVC BURIED BACK-UP VACUUM PIPE (BY OTHERS)
15	OVERHEAD PIPE SUPPORT
16	1/2" POLYFLO TUBE SUSPENDED FROM CEILING

1 SITE ISOMETRIC

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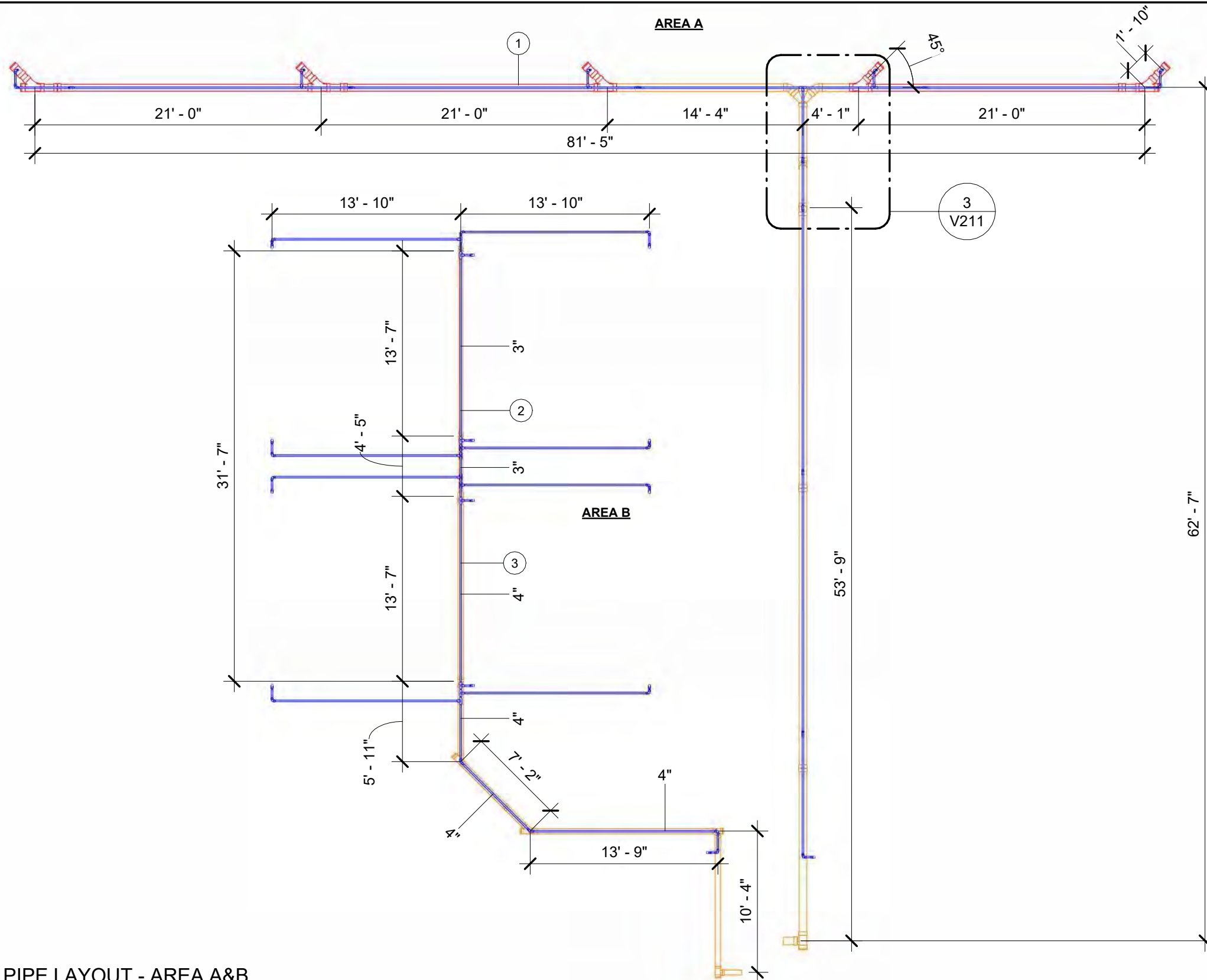
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VACUUM SITE ISOMETRIC	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	SL
V121	

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PIPE NOTES:

- a. FIELD VERIFY ALL DIMENSIONS
- b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT (PROVIDED BY OTHERS)
- c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION (BY OTHERS)
- d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- g. ALL FITTINGS TO BE 'DWV'

PIPE LAYOUT	
ITEM	DESCRIPTION
1	6" OVERHEAD ALUMINUM VACUUM TUBE
2	OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
3	1" RAPID AIR COMPRESSED AIR LINE

1 PIPE LAYOUT - AREA A&B

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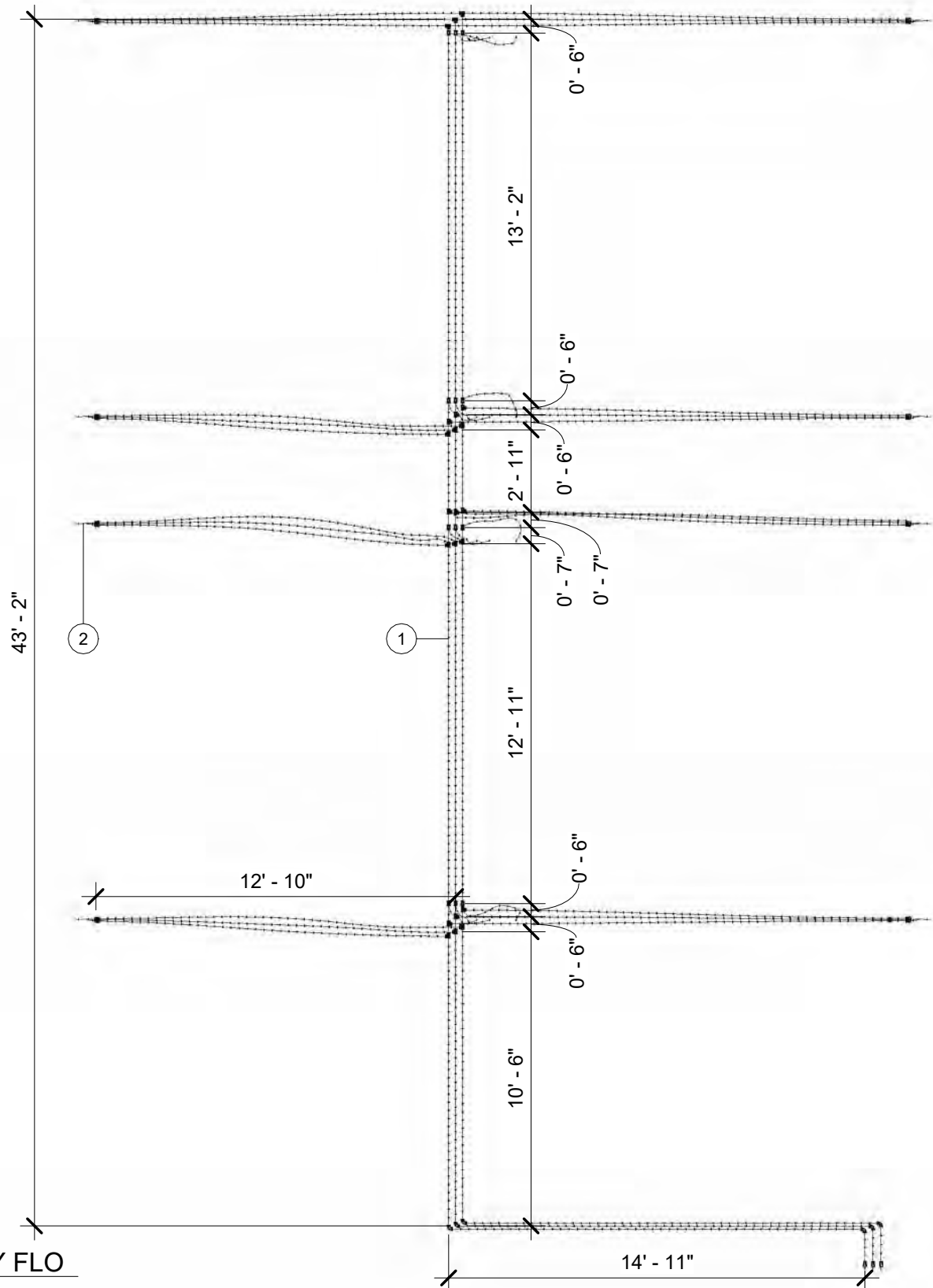
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1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PIPE LAYOUT AREAS A&B		V201
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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PIPE NOTES:

- a. FIELD VERIFY ALL DIMENSIONS
- b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT **(PROVIDED BY OTHERS)**
- c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION **(BY OTHERS)**
- d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- g. ALL FITTINGS TO BE 'DWV'

PIPE LAYOUT

ITEM	DESCRIPTION
1	1/2" POLYFLO TUBE SUSPENDED FROM CEILING
2	3/8" POLYFLO TUBE

1 PIPE LAYOUT - AREA B - POLY FLO

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PIPE LAYOUT - B POLY FLO		V202
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

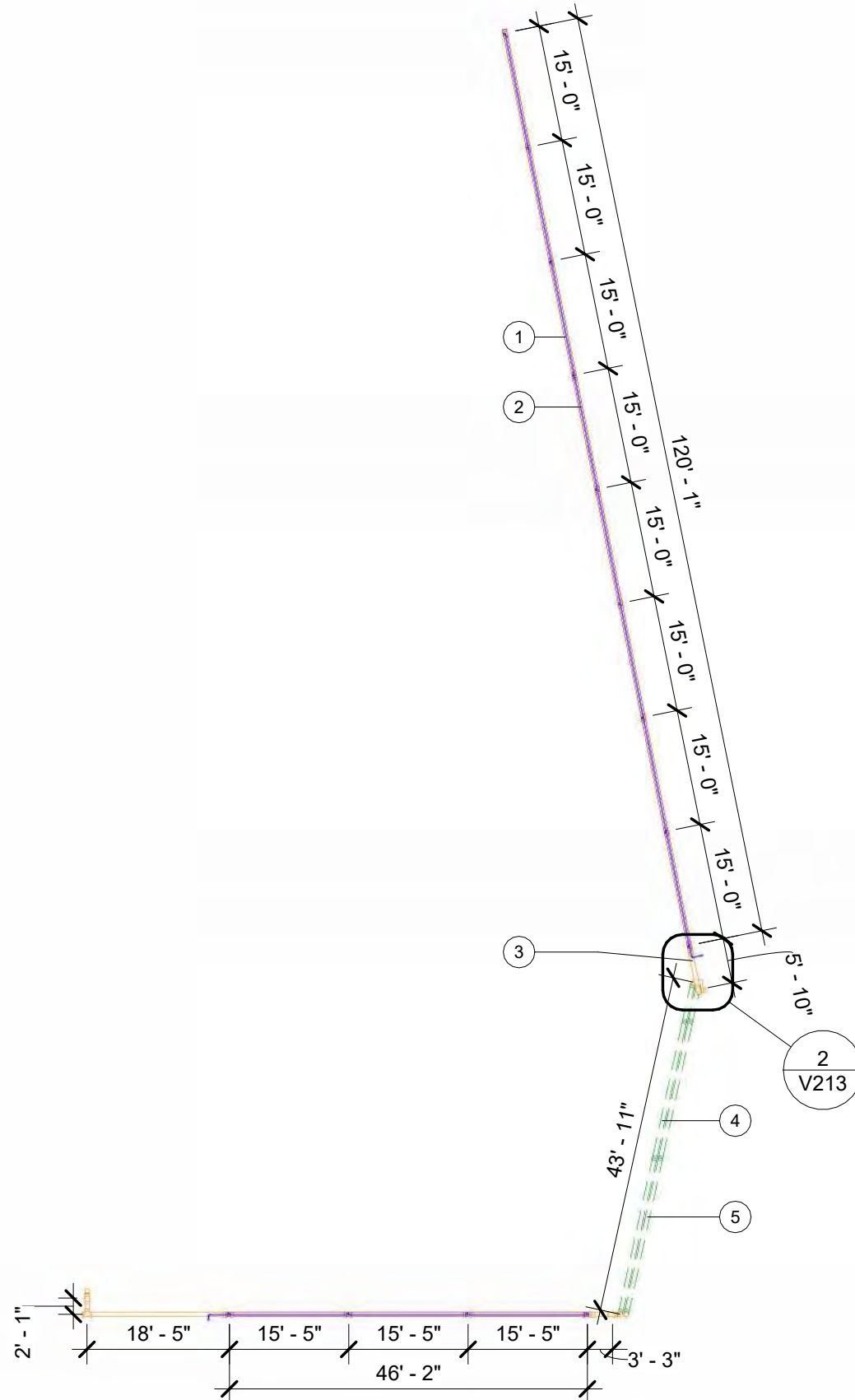
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PIPE NOTES:

- a. FIELD VERIFY ALL DIMENSIONS
- b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT (PROVIDED BY OTHERS)
- c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION (BY OTHERS)
- d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- g. ALL FITTINGS TO BE 'DWV'

PIPE LAYOUT

ITEM	DESCRIPTION
1	6" OVERHEAD ALUMINUM VACUUM TUBE
2	1" RAPID AIR COMPRESSED AIR LINE
3	6" OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
4	6" SCH. 40 SOLID CORE PVC BURIED PRIMARY VACUUM PIPE (BY OTHERS)
5	6" SCH. 40 SOLID CORE PVC BURIED BACK-UP VACUUM PIPE (BY OTHERS)



1 PIPE LAYOUT - AREA C

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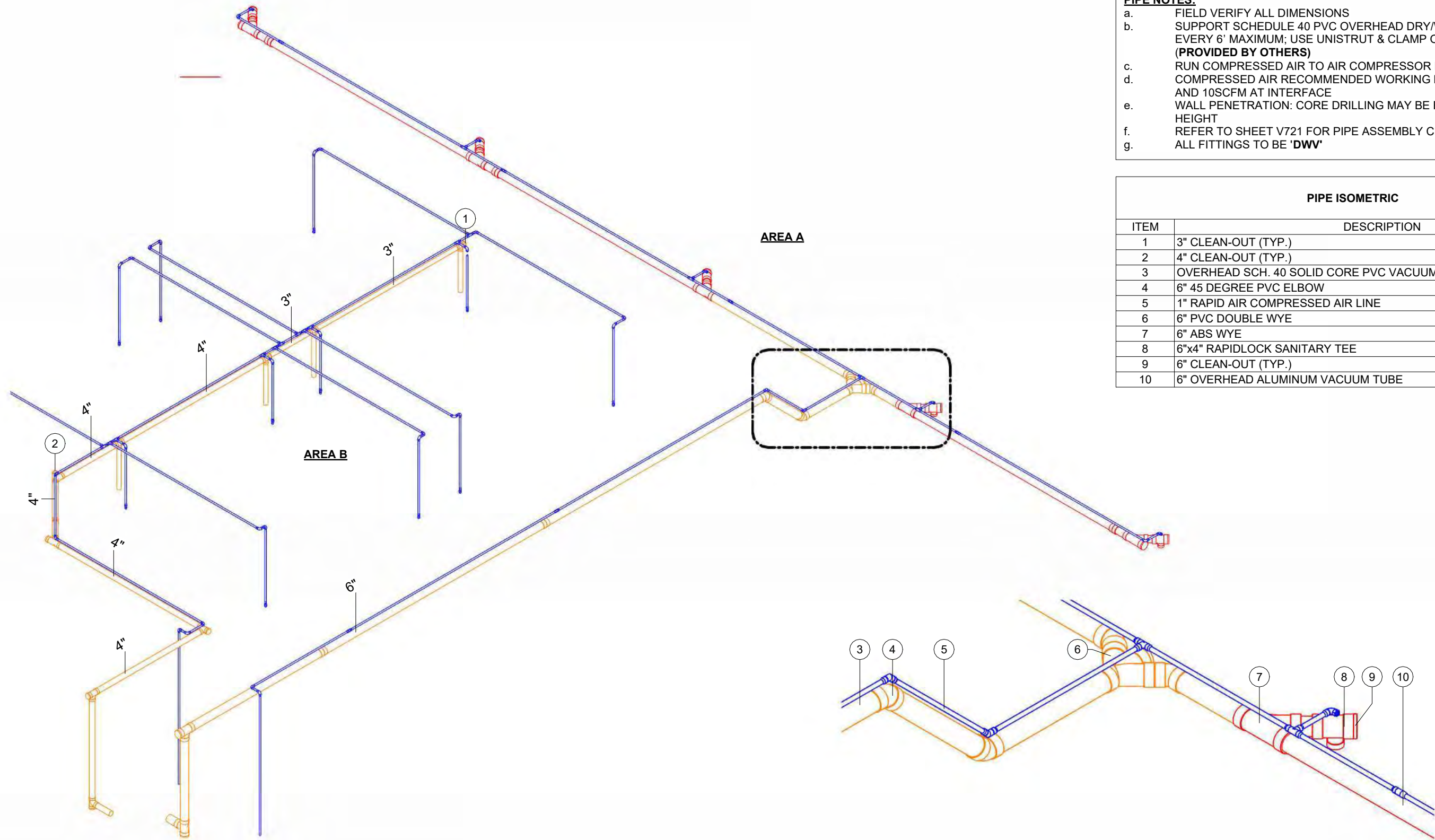
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PIPE LAYOUT - AREA C

Project Number	269928	V203
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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PIPE NOTES:

- a. FIELD VERIFY ALL DIMENSIONS
- b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT **(PROVIDED BY OTHERS)**
- c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION **(BY OTHERS)**
- d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- g. ALL FITTINGS TO BE 'DWV'

PIPE ISOMETRIC	
ITEM	DESCRIPTION
1	3" CLEAN-OUT (TYP.)
2	4" CLEAN-OUT (TYP.)
3	OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
4	6" 45 DEGREE PVC ELBOW
5	1" RAPID AIR COMPRESSED AIR LINE
6	6" PVC DOUBLE WYE
7	6" ABS WYE
8	6"x4" RAPIDLOCK SANITARY TEE
9	6" CLEAN-OUT (TYP.)
10	6" OVERHEAD ALUMINUM VACUUM TUBE

1 PIPE ISOMETRIC - AREA A&B

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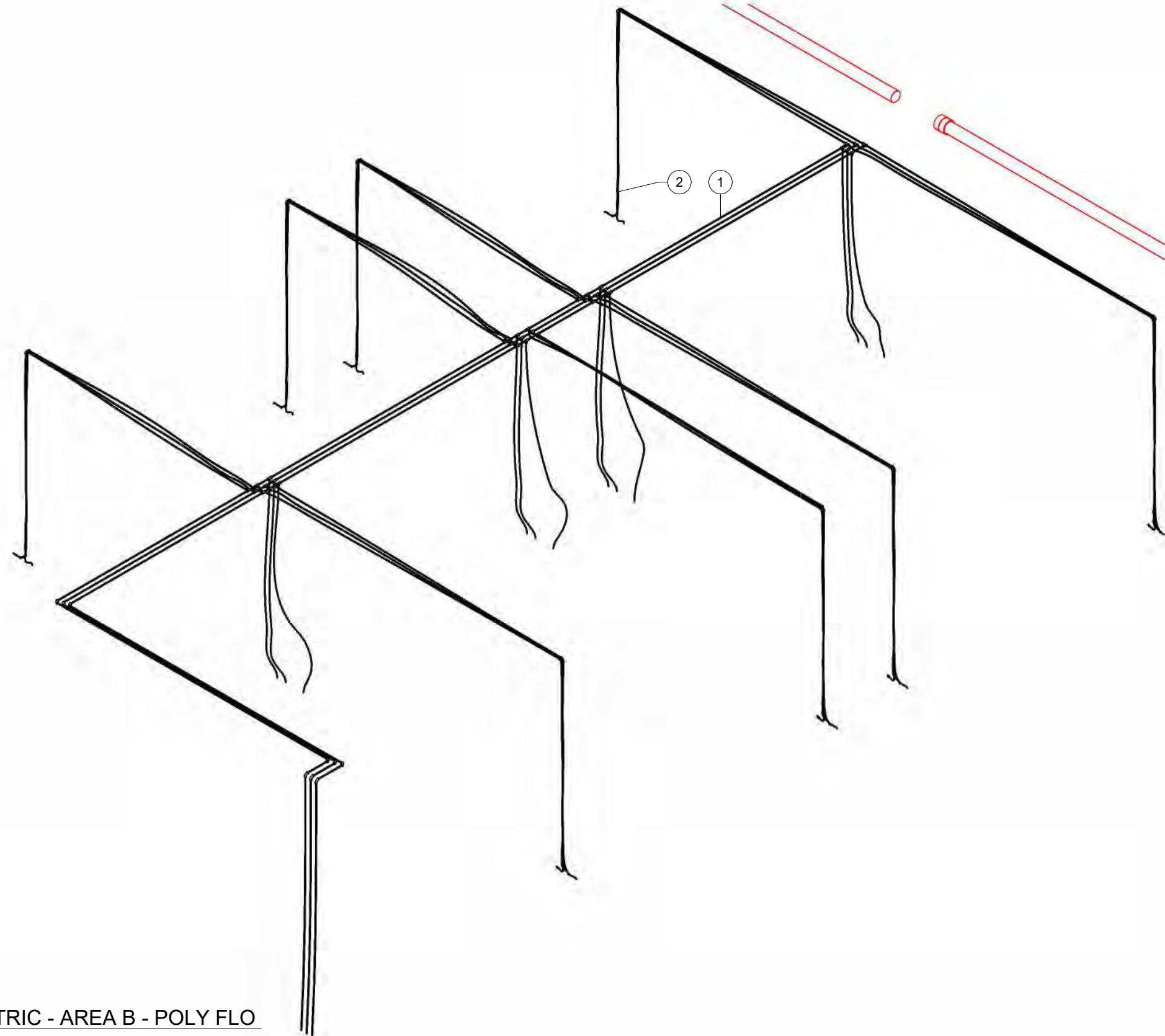
WHIP CLEAN CAR WASH
 390 MUDDY BRANCH ROAD
 GAITHERSBURG, MARYLAND 20878

#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PIPE ISOMETRIC AREAS A&B

Project Number	269928	V211
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

7/17/2024 3:52:28 PM



- PIPE NOTES:**
- a. FIELD VERIFY ALL DIMENSIONS
 - b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT **(PROVIDED BY OTHERS)**
 - c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION **(BY OTHERS)**
 - d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
 - e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
 - g. ALL FITTINGS TO BE 'DWV'

PIPE ISOMETRIC	
ITEM	DESCRIPTION
1	1/2" POLYFLO TUBE SUSPENDED FROM CEILING
2	3/8" POLYFLO TUBE

1 PIPE ISOMETRIC - AREA B - POLY FLO

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WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PIPE ISO. B POLYFLO

Project Number	269928	V212
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

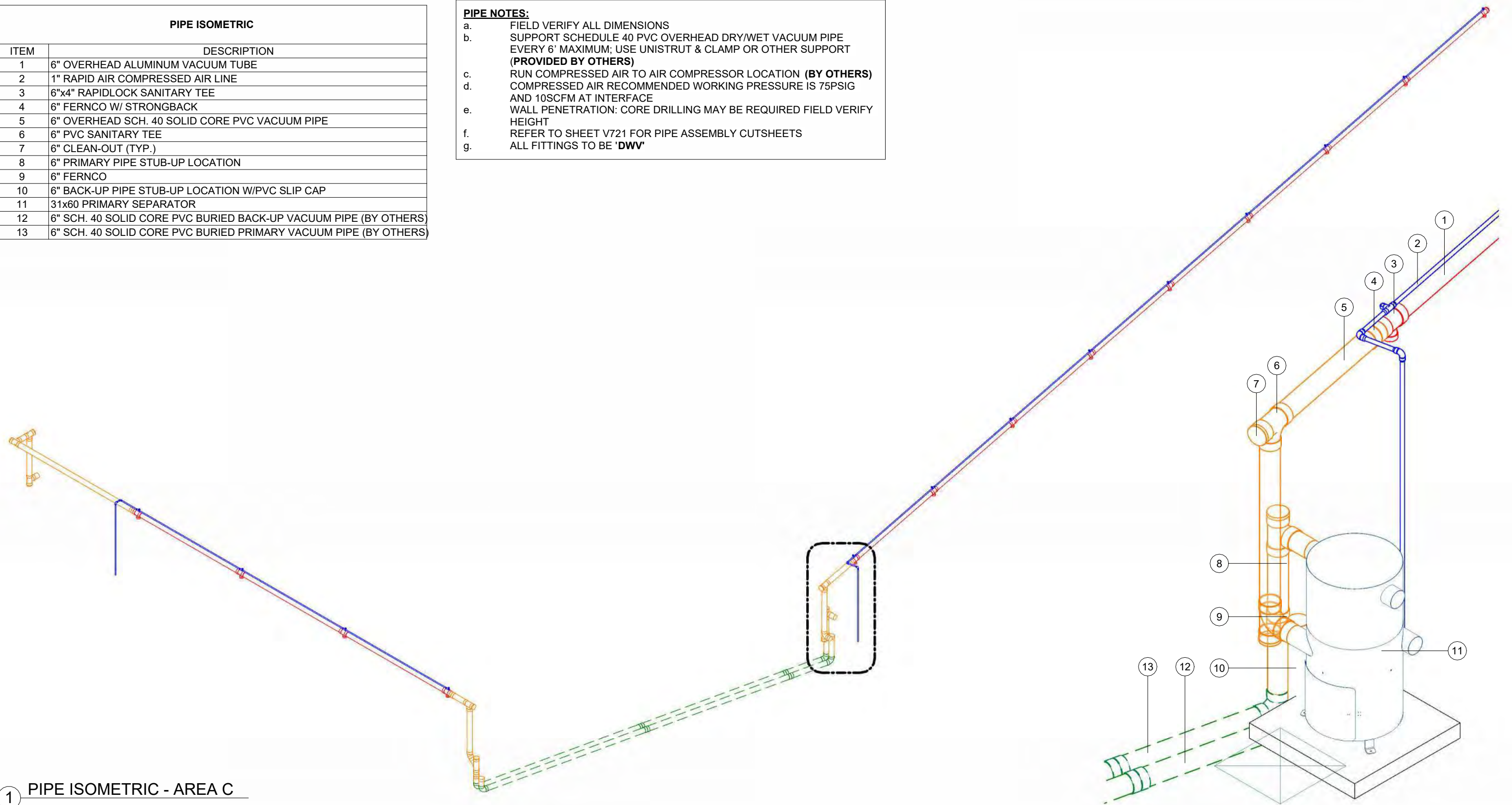
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PIPE ISOMETRIC

ITEM	DESCRIPTION
1	6" OVERHEAD ALUMINUM VACUUM TUBE
2	1" RAPID AIR COMPRESSED AIR LINE
3	6"x4" RAPIDLOCK SANITARY TEE
4	6" FERNCO W/ STRONGBACK
5	6" OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
6	6" PVC SANITARY TEE
7	6" CLEAN-OUT (TYP.)
8	6" PRIMARY PIPE STUB-UP LOCATION
9	6" FERNCO
10	6" BACK-UP PIPE STUB-UP LOCATION W/PVC SLIP CAP
11	31x60 PRIMARY SEPARATOR
12	6" SCH. 40 SOLID CORE PVC BURIED BACK-UP VACUUM PIPE (BY OTHERS)
13	6" SCH. 40 SOLID CORE PVC BURIED PRIMARY VACUUM PIPE (BY OTHERS)

PIPE NOTES:

- FIELD VERIFY ALL DIMENSIONS
- SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT **(PROVIDED BY OTHERS)**
- RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION **(BY OTHERS)**
- COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- ALL FITTINGS TO BE 'DWV'



1 PIPE ISOMETRIC - AREA C

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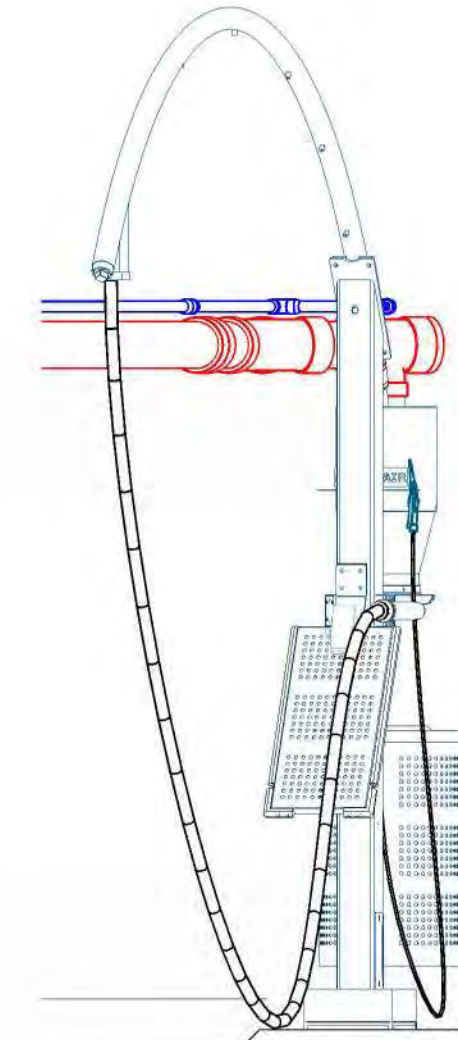
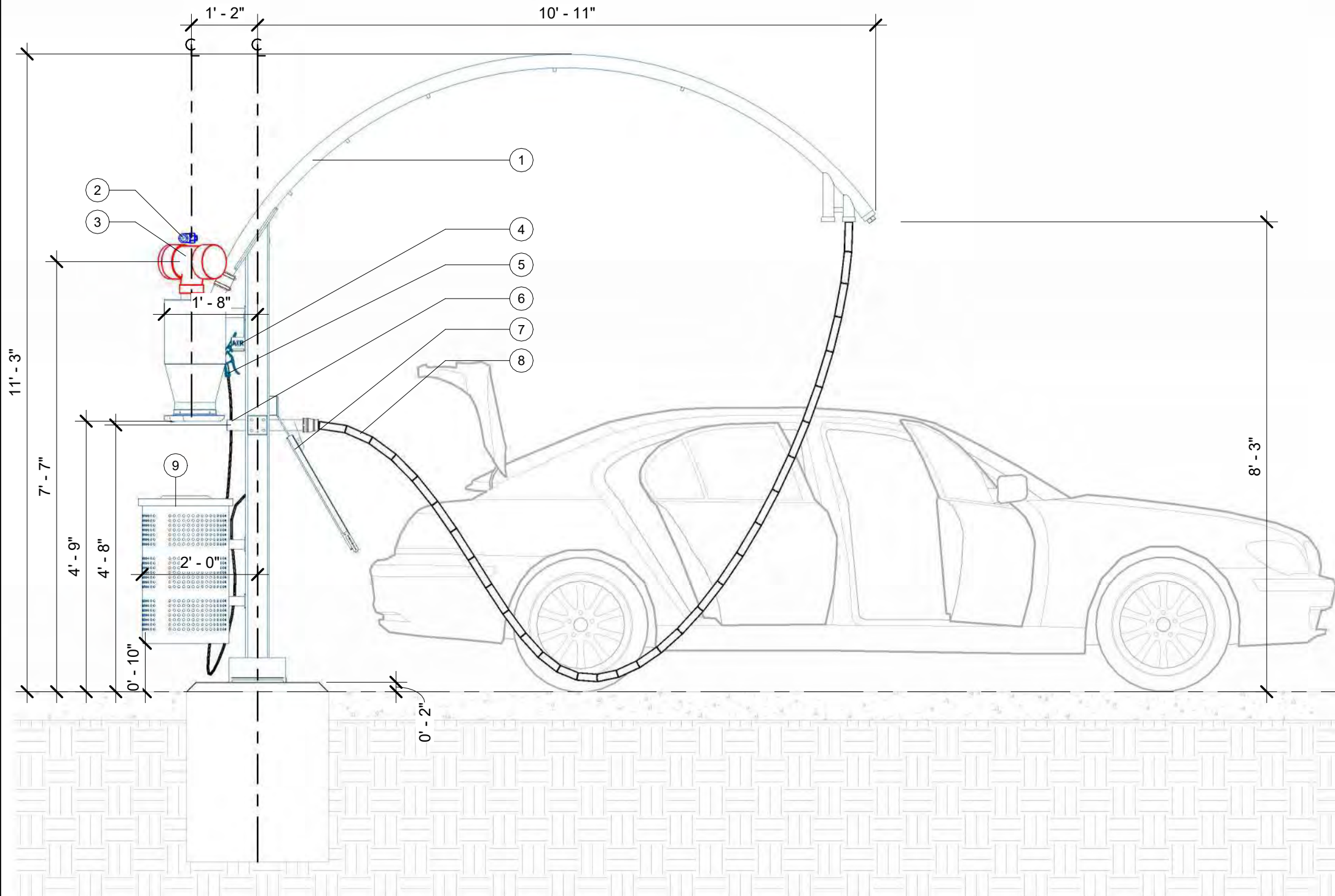
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PIPE ISOMETRIC - AREA C	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG
V213	

7/17/2024 3:52:31 PM

FIELD VERIFY ALL DIMENSIONS

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F.G.
0' - 0"

PARKING ELEVATION	
ITEM	DESCRIPTION
1	SINGLE USER QUICK ARCH
2	1" RAPID AIR COMPRESSED AIR LINE
3	6" OVERHEAD ALUMINUM VACUUM TUBE
4	AIR TOOL HANGER
5	AIR NOZZLE & HOSE
6	CREVICE VACUUM TOOL
7	13" MAT RACK W/ DOOR PROTECTION
8	1-1/2"x15' RAPIDLOCK HOSE
9	30 GALLON WASTE RECEPTACLE

1 PARKING ELEVATION - A

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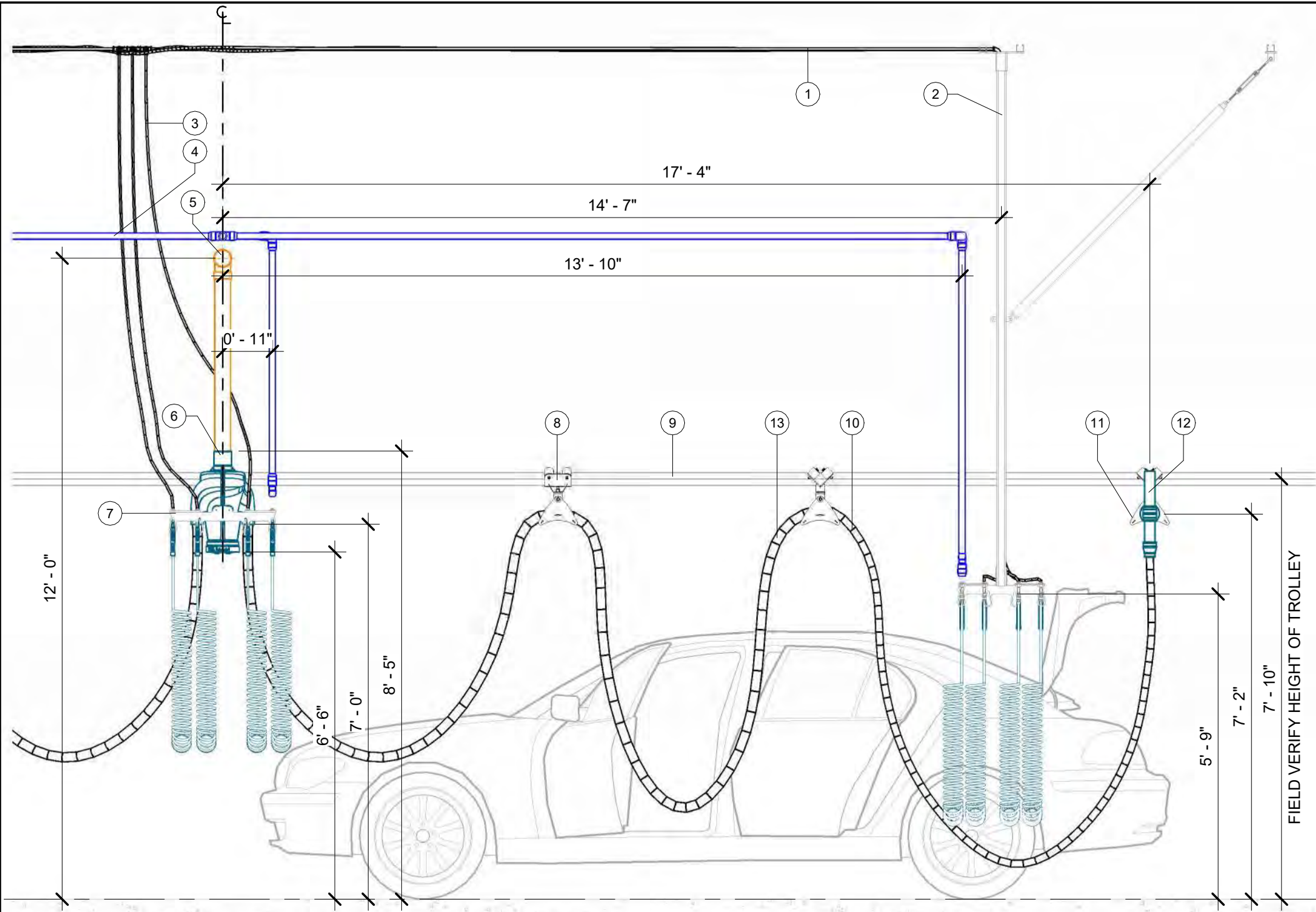
WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PARKING ELEVATION - A	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG
V301	

7/17/2024 3:52:32 PM

FIELD VERIFY ALL DIMENSIONS



ADA PARKING ELEVATION	
ITEM	DESCRIPTION
1	1/2" POLYFLO TUBE SUSPENDED FROM CEILING
2	3 CHEM 1 AIR MOUNTING BRACKET - CEILING MOUNT
3	3/8" POLYFLO TUBE
4	1" RAPID AIR COMPRESSED AIR LINE
5	OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
6	DUAL USER CYCLONE SEPARATOR
7	3 CHEM 1 AIR MOUNTING BRACKET - SEPARATOR MOUNT
8	HOSE TROLLEY
9	STAINLESS STEEL SQUARE TUBE RAIL SYSTEM
10	1-1/2"x15' RAPIDLOCK HOSE
11	TOOL HANGER TROLLEY
12	CREVICE VACUUM TOOL
13	2"x25' VACUUM HOSE

F.G.
0' - 0"

1 PARKING ELEVATION - B

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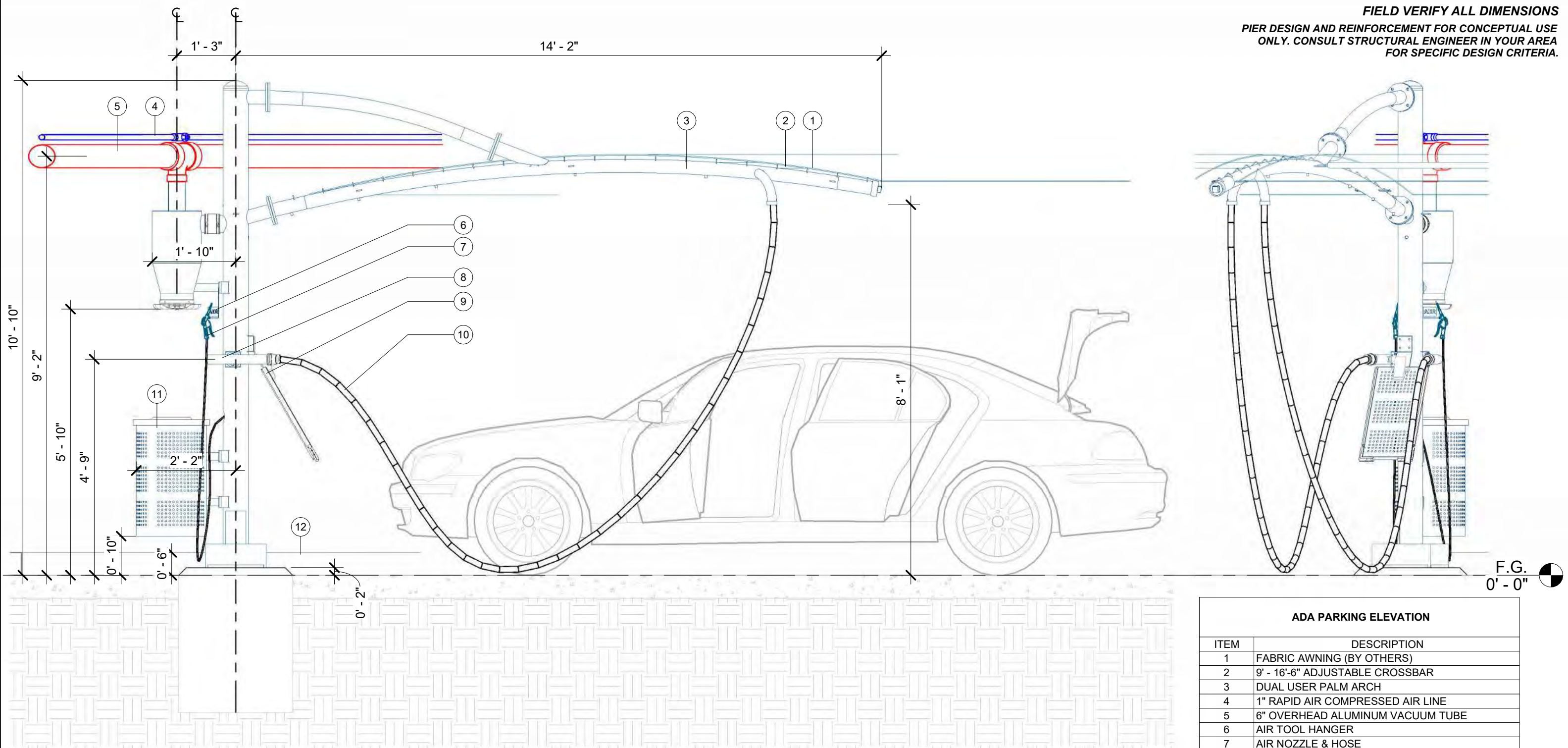
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PARKING ELEVATION - B		V302
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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FOR SPECIFIC DESIGN CRITERIA.**



F.G.
0' - 0"

ADA PARKING ELEVATION	
ITEM	DESCRIPTION
1	FABRIC AWNING (BY OTHERS)
2	9' - 16'-6" ADJUSTABLE CROSSBAR
3	DUAL USER PALM ARCH
4	1" RAPID AIR COMPRESSED AIR LINE
5	6" OVERHEAD ALUMINUM VACUUM TUBE
6	AIR TOOL HANGER
7	AIR NOZZLE & HOSE
8	CREVICE VACUUM TOOL
9	13" MAT RACK W/ DOOR PROTECTION
10	1-1/2"x15' RAPIDLOCK HOSE
11	30 GALLON WASTE RECEPTACLE
12	CURB

1 PARKING ELEVATION - C

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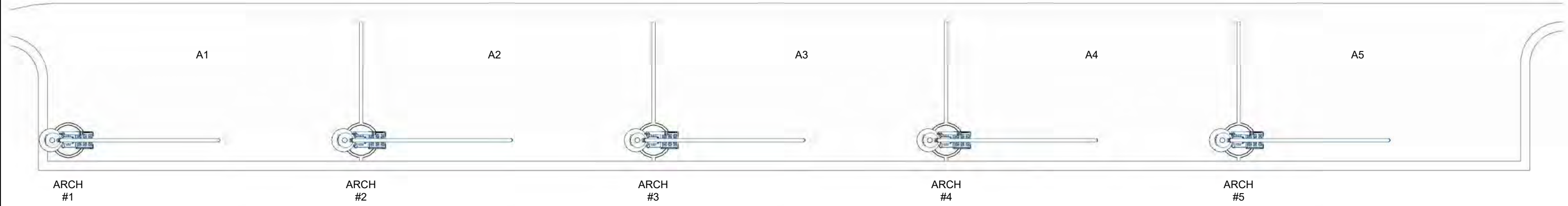
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PARKING ELEVATION - C		V303
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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1 ARCH NUMBERING PLAN - AREA A

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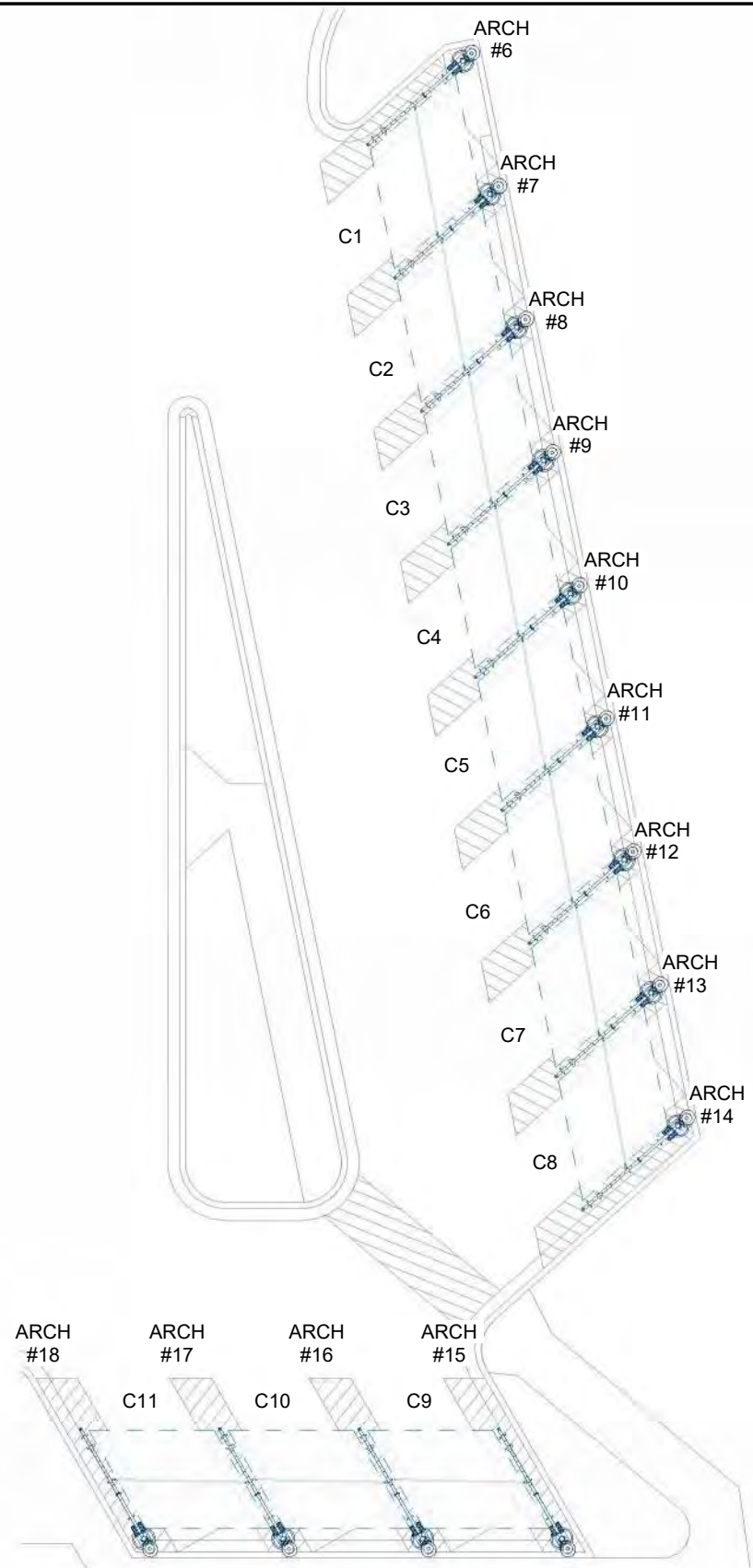
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

ARCH NUMBERING PLAN A		V311
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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1 ARCH NUMBERING PLAN - AREA C

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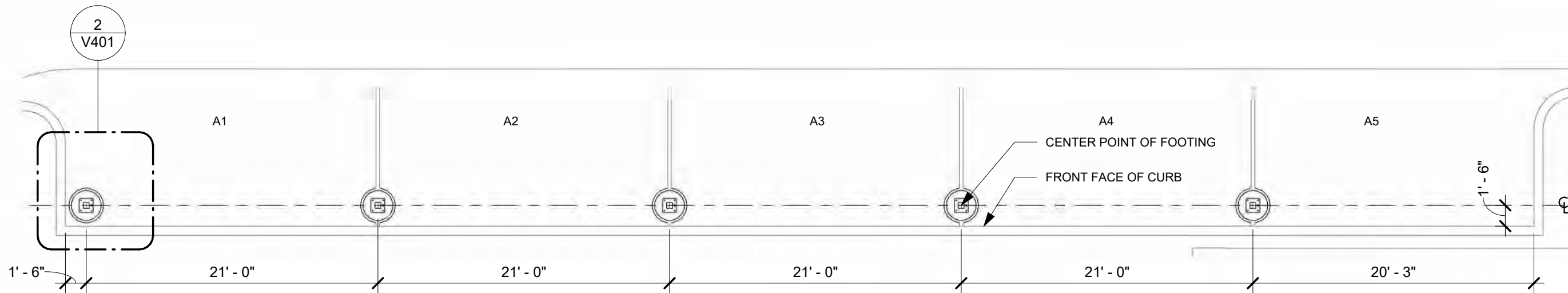
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

ARCH NUMBERING PLAN C	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG
V312	

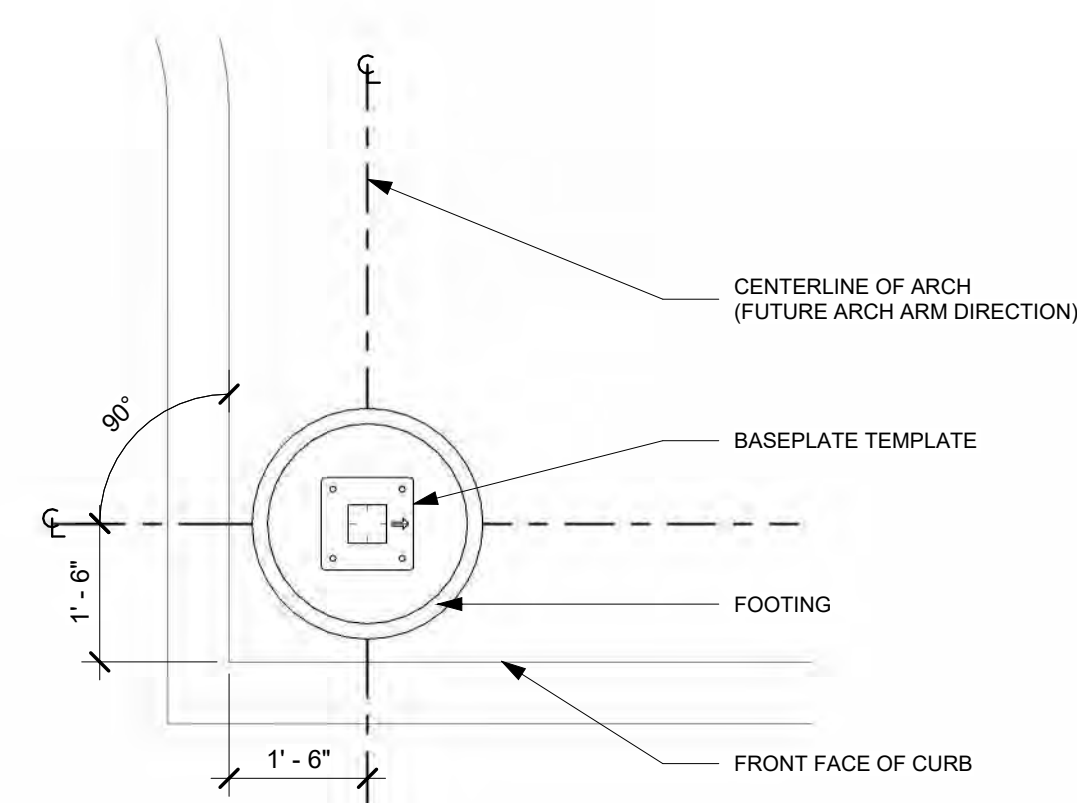
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1 FOOTING LOCATION PLAN - AREA A



2 BASEPLATE TEMPLATE ORIENTATION - AREA A

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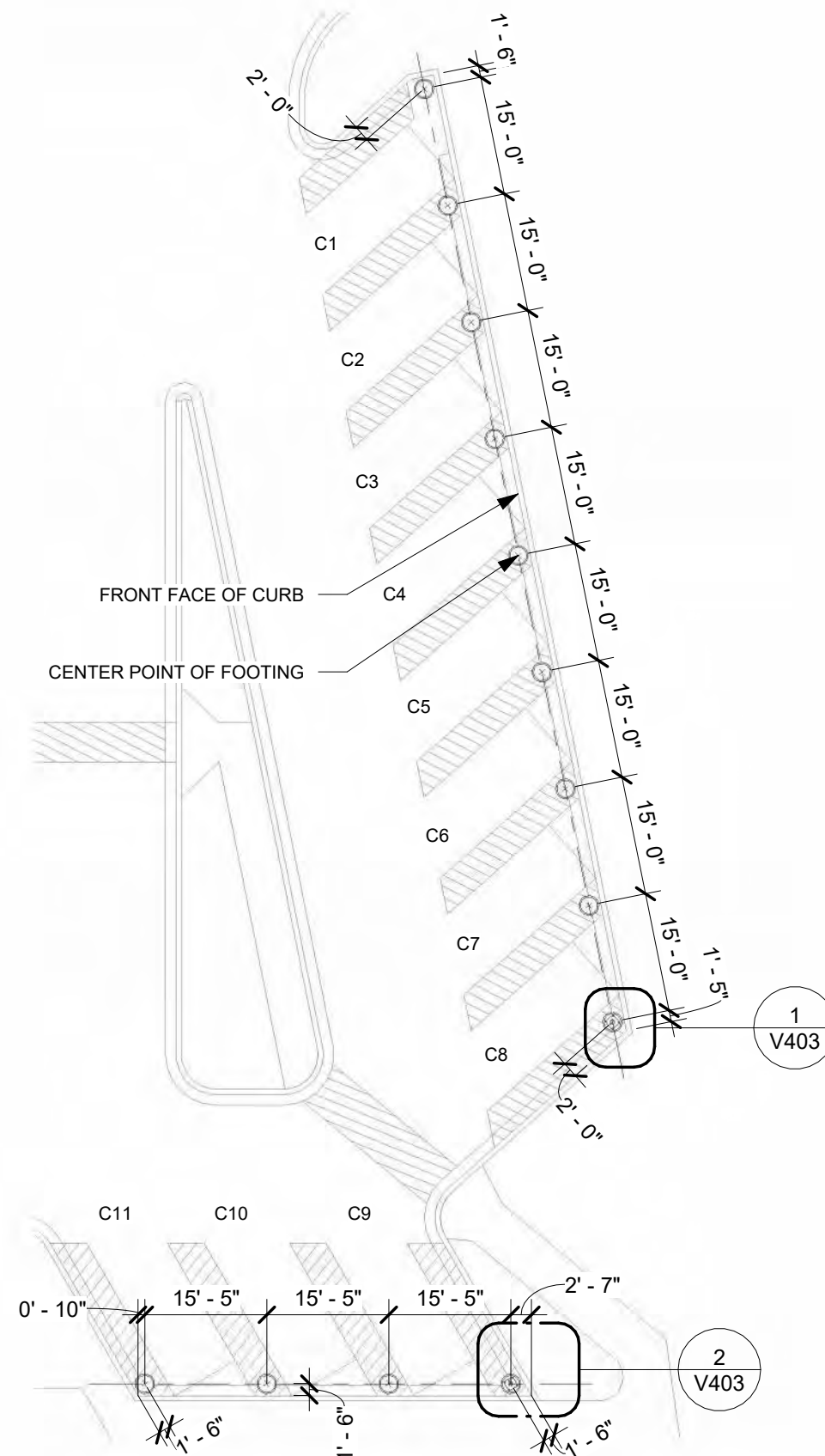
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

FOOTING LOCATION PLAN A	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG
V401	

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1 FOOTING LOCATION PLAN - AREA C

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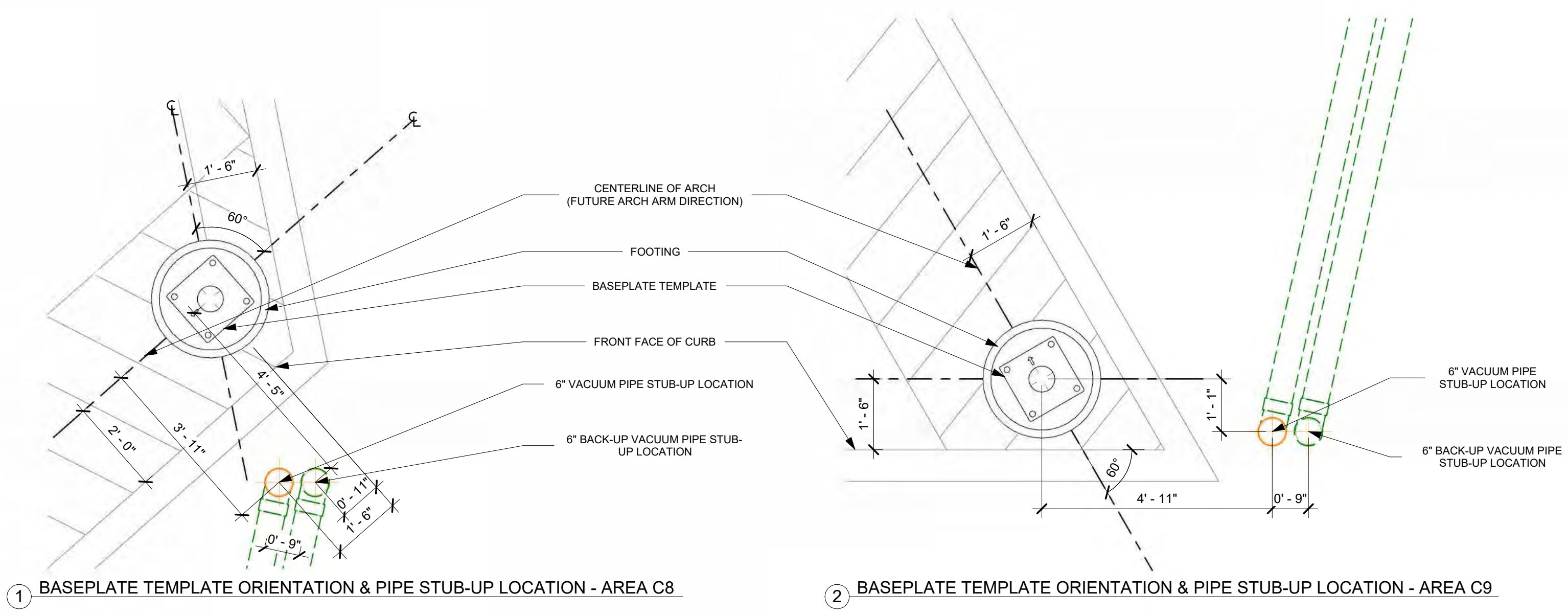
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

FOOTING LOCATION PLAN C		V402
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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1 BASEPLATE TEMPLATE ORIENTATION & PIPE STUB-UP LOCATION - AREA C8

2 BASEPLATE TEMPLATE ORIENTATION & PIPE STUB-UP LOCATION - AREA C9

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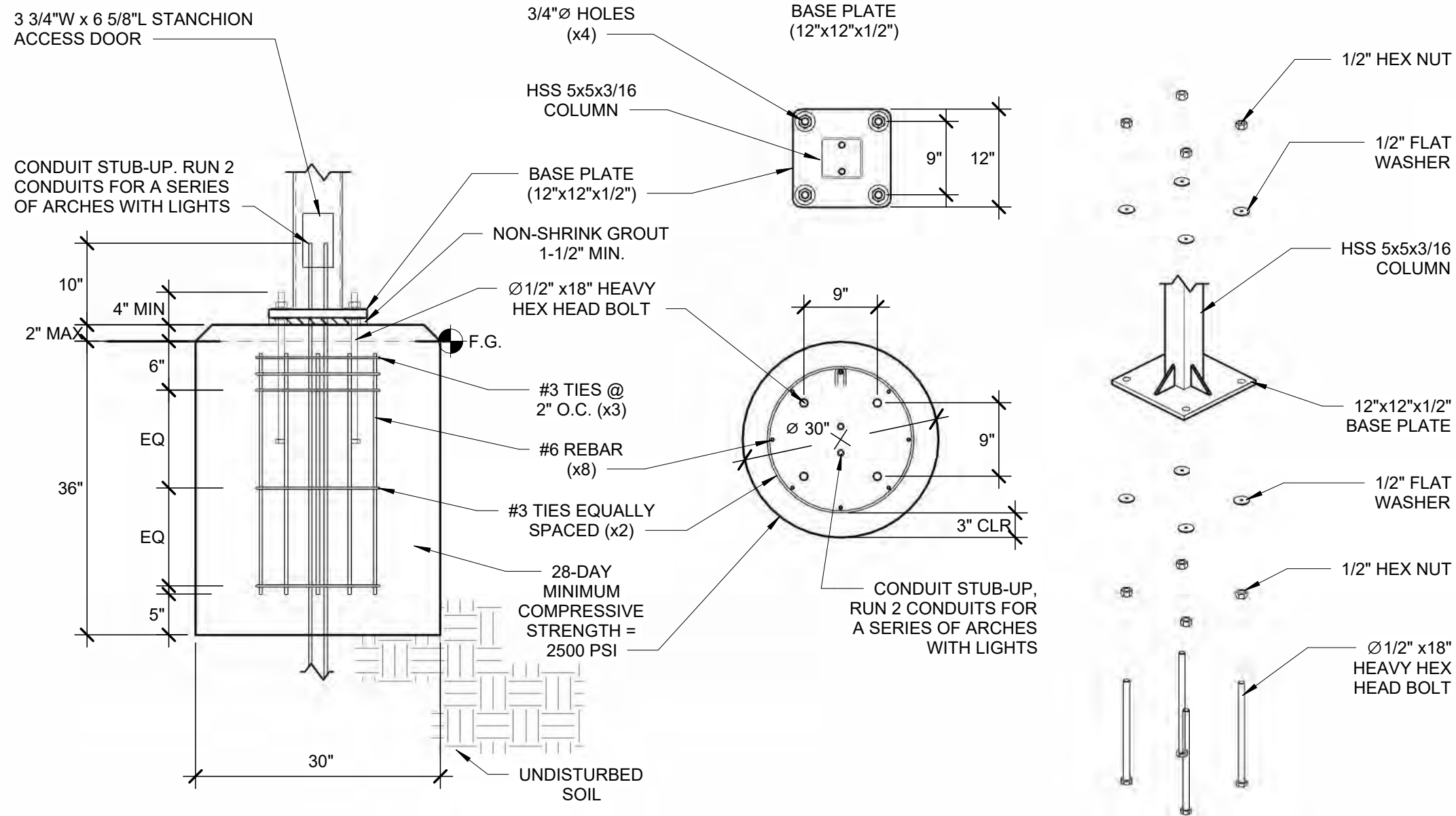
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

BASEPLATE TEMPLATE		V403
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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NOTE:
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1 PIER FOOTING - QUICK ARCH

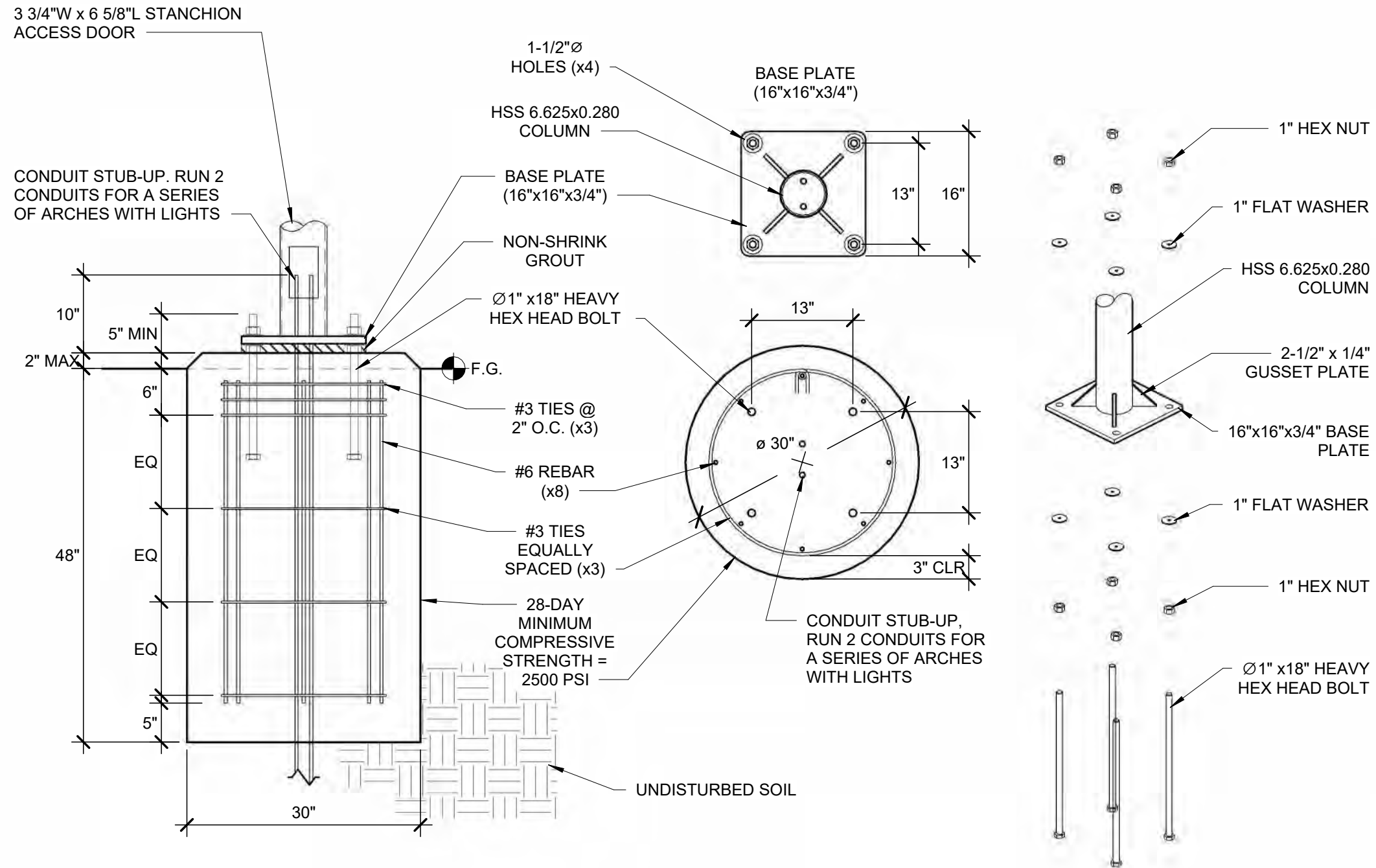
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

FOOTING DETAIL - QUICK		V411
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	



NOTE:
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1 PIER FOOTING - GENERIC PALM ARCH

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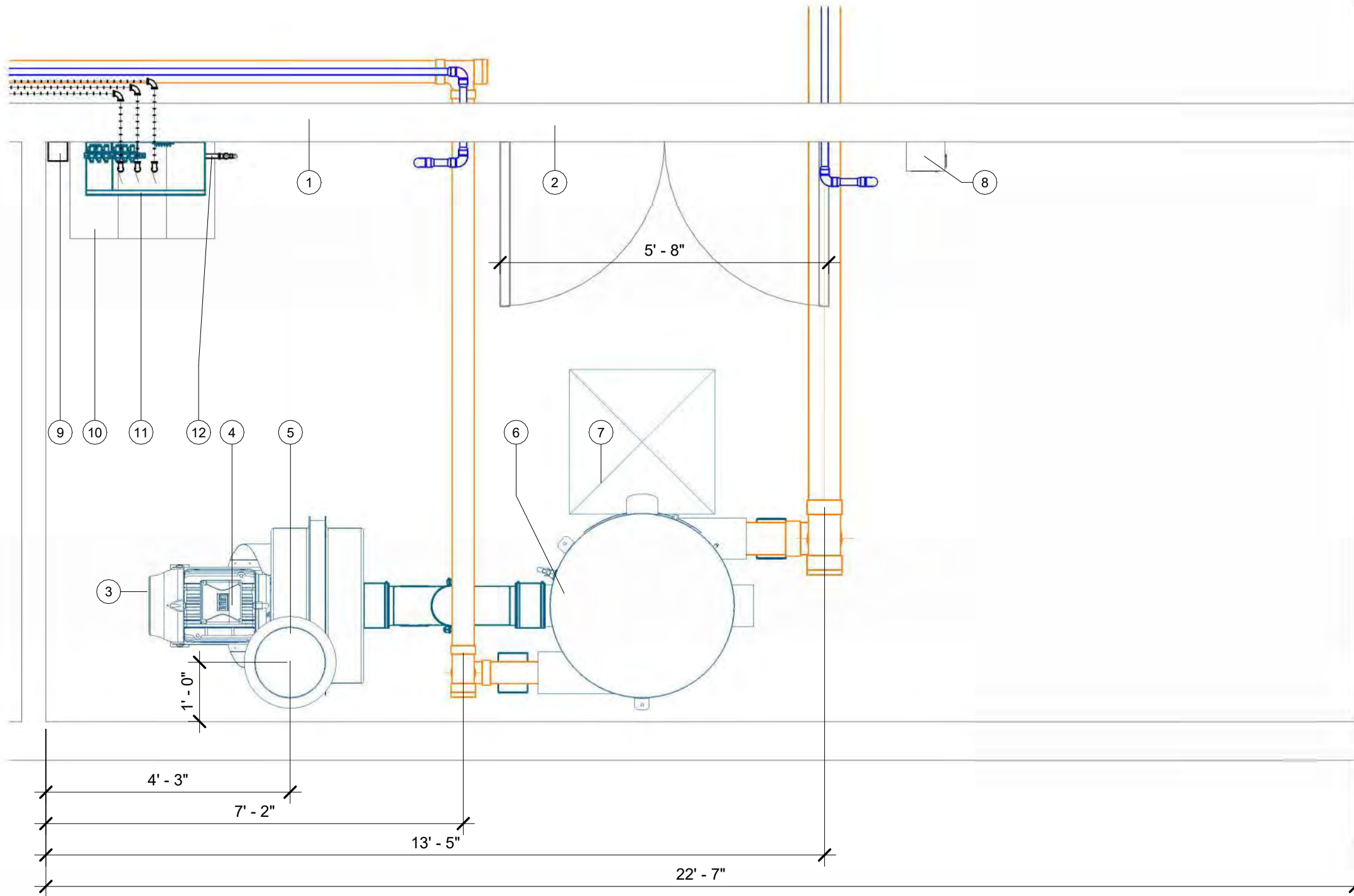
WHIP CLEAN CAR WASH

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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

FOOTING DETAIL - PALM		V412
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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- EQUIPMENT NOTES:**
- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
 - 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
 - WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
 - EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE FIELD VERIFY ALL DIMENSIONS
 - SEE POWER EQUIPMENT DETAILS ON V701
 - SEE VFD DETAILS ON V731 & V732

EQUIPMENT SITE PLAN	
ITEM	DESCRIPTION
1	WALL PENETRATION: CORE DRILLING MAY BE REQUIRED
2	VERIFY SEPARATOR WILL FIT THROUGH DOOR
3	MINIMUM 10" CLEARANCE FOR VENTILATION FAN AT FRONT OF TURBINE
4	50HP T4 DIRECT DRIVE TURBINE
5	8" T4 OUTDOOR EXHAUST MUFFLER
6	38x88 FILTER SEPARATOR
7	30"x30" MINIMUM SPACE REQUIRED TO REMOVE DEBRIS BUCKET
8	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
9	PROVIDE 15 AMP 110V ELECTRICAL OUTLET AT PUMP STATION (BY OTHERS)
10	CHEMICAL CONTAINERS 10" WIDE x20" LONG X30" TALL
11	FRAME MOUNTED CHEMICAL PUMPING STATION (FOR 3 SOLUTIONS)
12	PROVIDE 1/2" COLD WATER LINE (5 GALLONS PER MINUTE) FITTED WITH A 1/2" FULL PORT 1/4" TURN BALL VALVE AT END OF RUN (BY OTHERS)

1 EQUIPMENT PLAN - AREAS A&B

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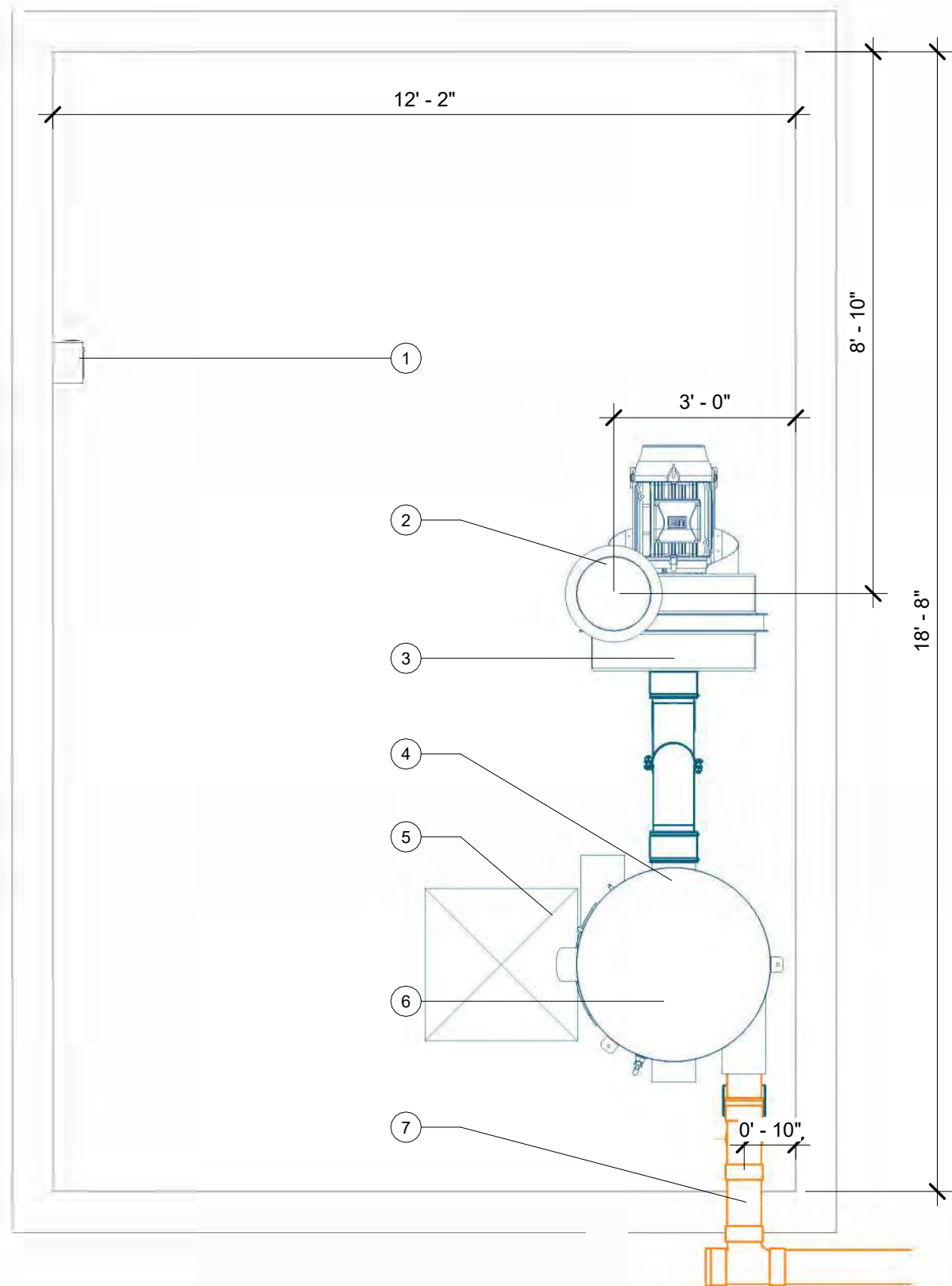
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WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIPMENT SITE PLAN - A		V601
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

7/17/2024 3:52:42 PM



- EQUIPMENT NOTES:**
- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
 - 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
 - WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
 - EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
 - FIELD VERIFY ALL DIMENSIONS
 - SEE POWER EQUIPMENT DETAILS ON V701
 - SEE VFD DETAILS ON V731 & V732

EQUIPMENT SITE PLAN	
ITEM	DESCRIPTION
1	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
2	8" T4 OUTDOOR EXHAUST MUFFLER
3	50HP T4 DIRECT DRIVE TURBINE
4	38x88 FILTER SEPARATOR
5	30"x30" MINIMUM SPACE REQUIRED TO REMOVE DEBRIS BUCKET
6	VERIFY SEPARATOR WILL FIT THROUGH DOOR
7	WALL PENETRATION: CORE DRILLING MAY BE REQUIRED

1 EQUIPMENT PLAN - AREA C

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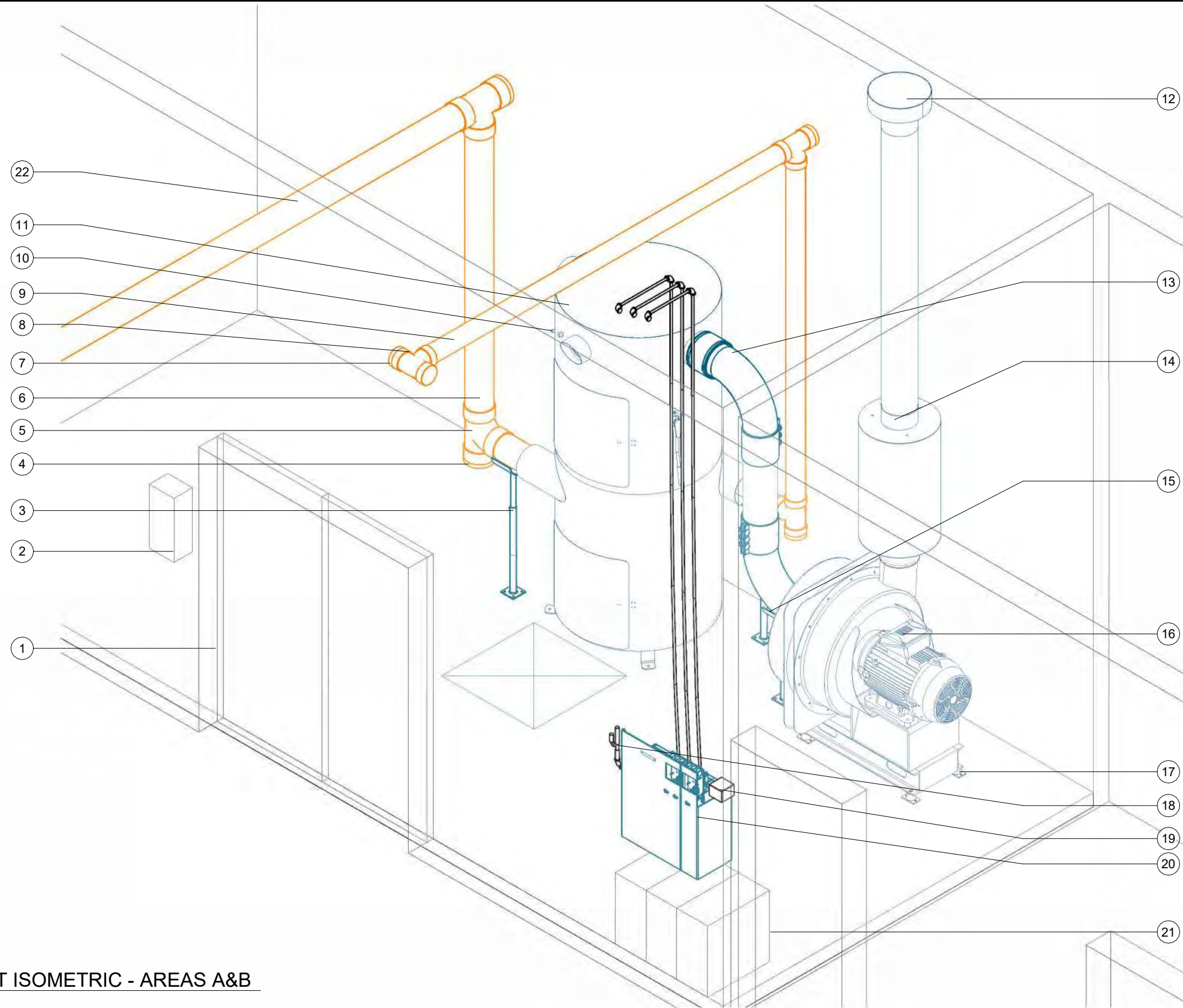
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WHIP CLEAN CAR WASH
 390 MUDDY BRANCH ROAD
 GAITHERSBURG, MARYLAND 20878

#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIPMENT SITE PLAN - C	
Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG
V602	

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EQUIPMENT NOTES:

- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
- 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
- WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
- EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE FIELD VERIFY ALL DIMENSIONS
- SEE POWER EQUIPMENT DETAILS ON V701
- SEE VFD DETAILS ON V731 & V732

EQUIPMENT SITE ISOMETRIC

ITEM	DESCRIPTION
1	VERIFY SEPARATOR WILL FIT THROUGH DOOR
2	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
3	SEPARATOR PIPE SUPPORT
4	6" CLEAN-OUT (TYP.)
5	6" PVC SANITARY TEE
6	6" OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
7	4" CLEAN-OUT (TYP.)
8	4" PVC SANITARY TEE
9	4" OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
10	TRANSDUCER CONNECTION LOCATION ON SEPARATOR
11	38x88 FILTER SEPARATOR
12	8" ROOF CAP
13	8" SEPARATOR/TURBINE HOOK-UP KIT (ALUMINUM)
14	8" T4 INDOOR EXHAUST MUFFLER; EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
15	TURBINE PIPE SUPPORT
16	50HP T4 DIRECT DRIVE TURBINE
17	TURBINE VIBRATION ISOLATOR
18	PROVIDE 1/2" COLD WATER LINE (5 GALLONS PER MINUTE) FITTED WITH A 1/2" FULL PORT 1/4" TURN BALL VALVE AT END OF RUN (BY OTHERS)
19	PROVIDE 15 AMP 110V ELECTRICAL OUTLET AT PUMP STATION (BY OTHERS)
20	FRAME MOUNTED CHEMICAL PUMPING STATION (FOR 3 SOLUTIONS)
21	CHEMICAL CONTAINERS 10" WIDE x20" LONG X30" TALL
22	WALL PENETRATION: CORE DRILLING MAY BE REQUIRED

1 EQUIPMENT ISOMETRIC - AREAS A&B

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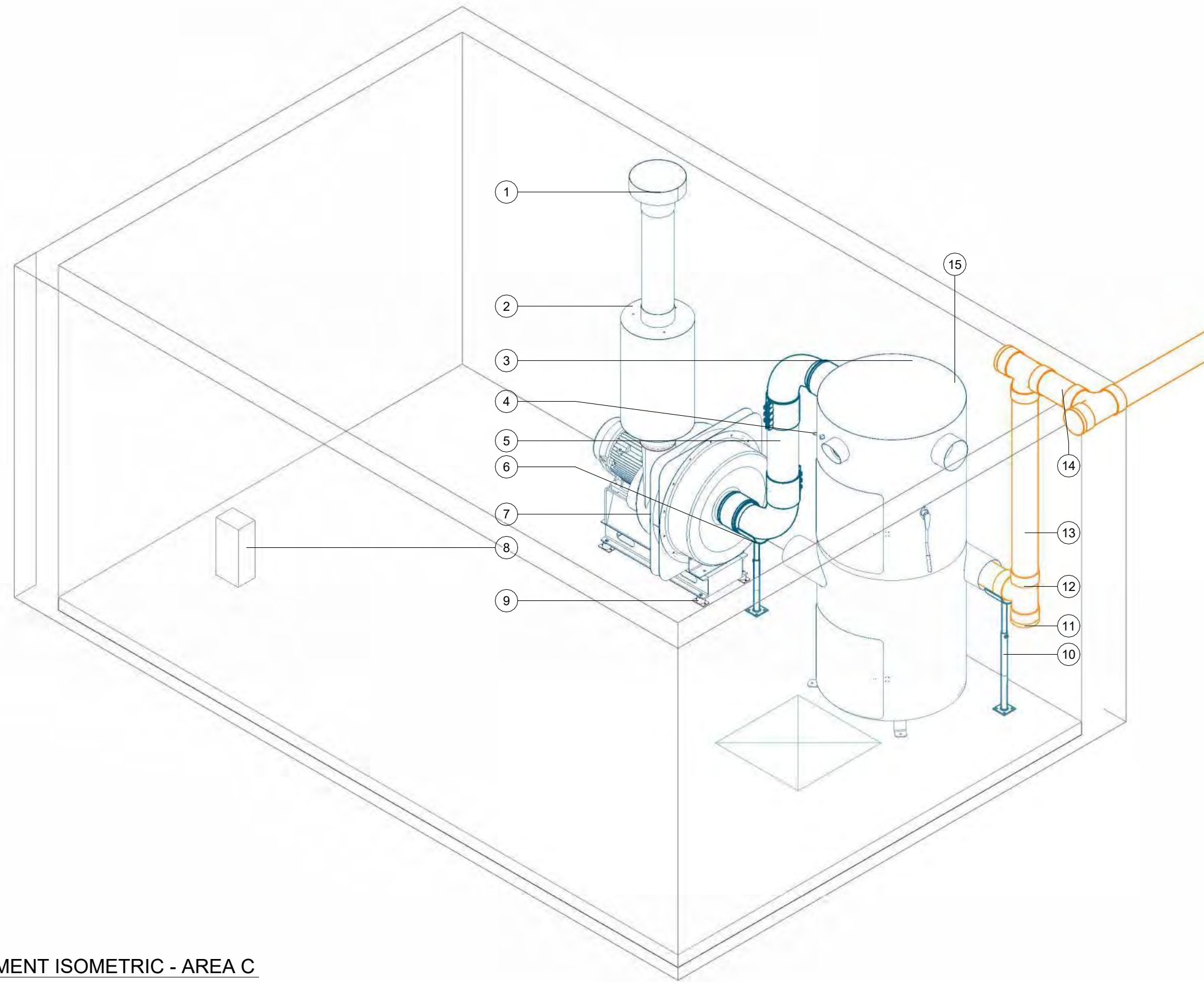
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIP. SITE ISOMETRIC - A		V611
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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- EQUIPMENT NOTES:**
- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
 - 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
 - WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
 - EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
 - FIELD VERIFY ALL DIMENSIONS
 - SEE POWER EQUIPMENT DETAILS ON V701
 - SEE VFD DETAILS ON V731 & V732

EQUIPMENT SITE ISOMETRIC	
ITEM	DESCRIPTION
1	8" ROOF CAP
2	8" T4 INDOOR EXHAUST MUFFLER; EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
3	38x88 FILTER SEPARATOR
4	TRANSDUCER CONNECTION LOCATION ON SEPARATOR
5	8" SEPARATOR/TURBINE HOOK-UP KIT (ALUMINUM)
6	TURBINE PIPE SUPPORT
7	50HP T4 DIRECT DRIVE TURBINE
8	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
9	TURBINE VIBRATION ISOLATOR
10	SEPARATOR PIPE SUPPORT
11	6" CLEAN-OUT (TYP.)
12	6" PVC SANITARY TEE
13	6" OVERHEAD SCH. 40 SOLID CORE PVC VACUUM PIPE
14	WALL PENETRATION: CORE DRILLING MAY BE REQUIRED
15	VERIFY SEPARATOR WILL FIT THROUGH DOOR



1 EQUIPMENT ISOMETRIC - AREA C

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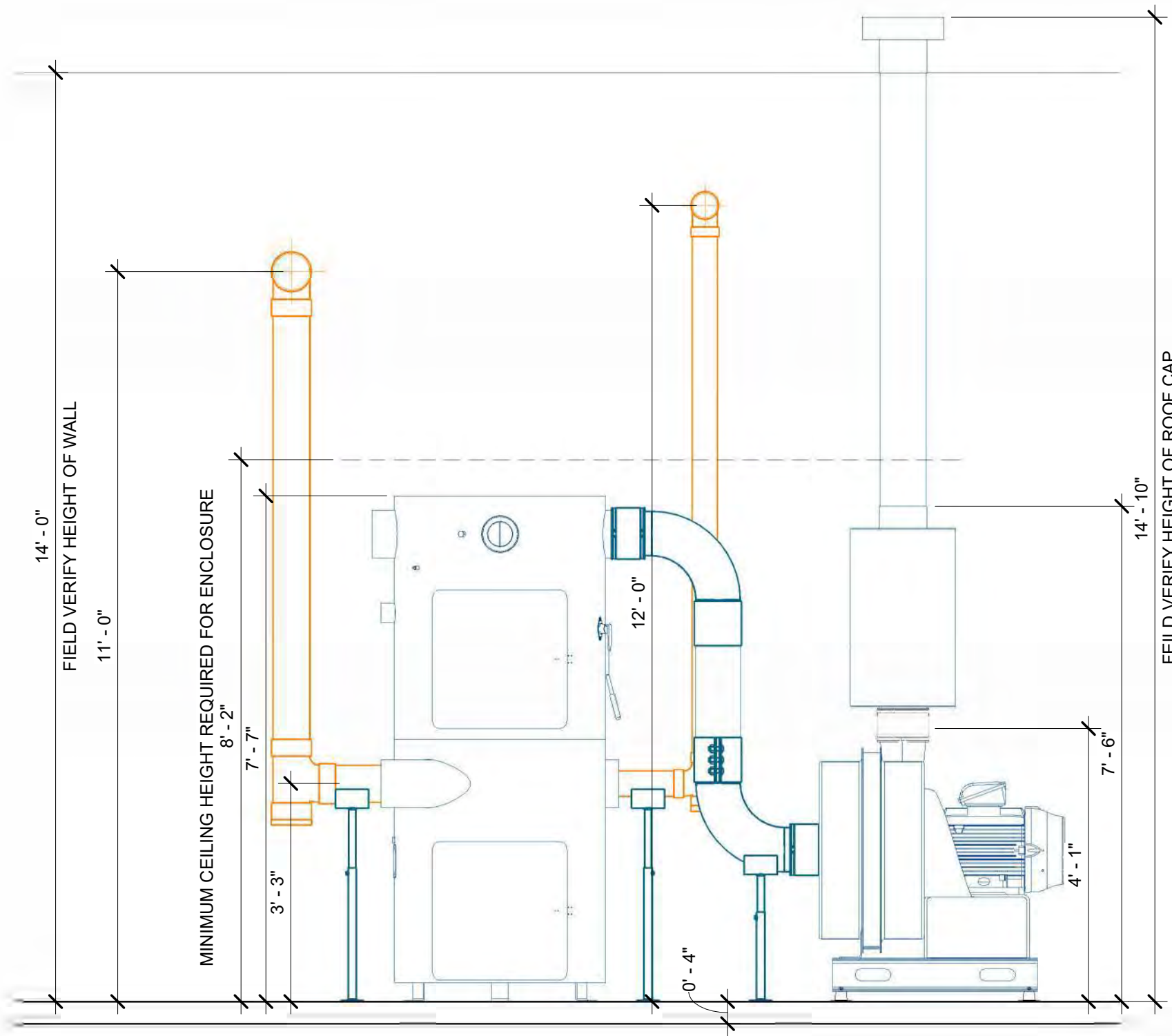
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WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIP. SITE ISOMETRIC - C		V612
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

7/17/2024 3:52:45 PM



- EQUIPMENT NOTES:**
- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
 - 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
 - WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
 - EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
 - FIELD VERIFY ALL DIMENSIONS
 - SEE POWER EQUIPMENT DETAILS ON V701
 - SEE VFD DETAILS ON V731 & V732

1 EQUIPMENT ELEVATION - AREAS A&B

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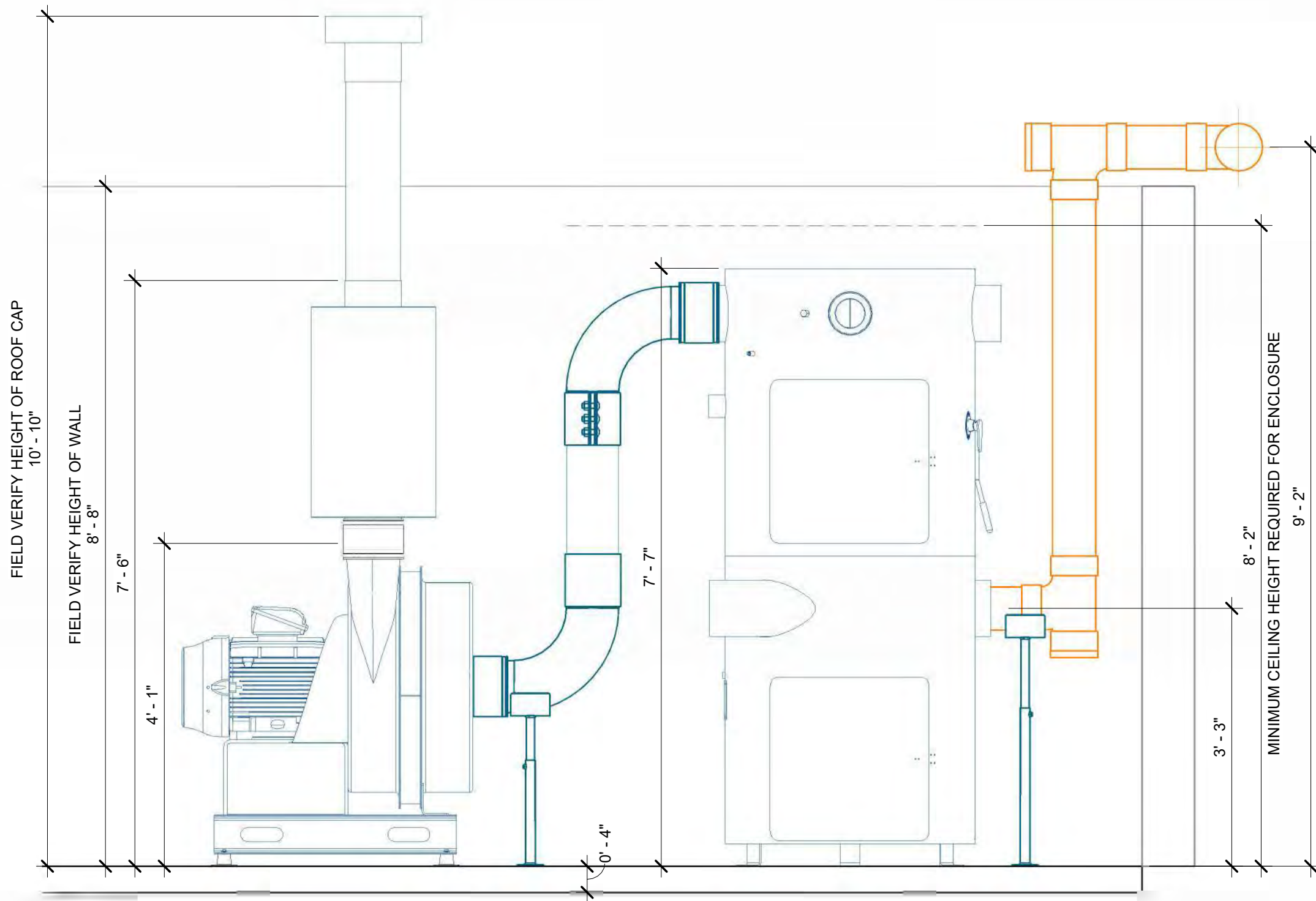
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WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIPMENT ELEVATION - A		V621
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

7/17/2024 3:52:46 PM



- EQUIPMENT NOTES:**
- 14'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (48" CLEAR OPENING WIDTH RECOMMENDED) - BOTH AREAS
 - 4'Lx4'Wx4"H MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT - PRIMARY SEPARATOR
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 - FIELD VERIFY ALL DIMENSIONS
 - SEE POWER EQUIPMENT DETAILS ON V701
 - SEE VFD DETAILS ON V731 & V732

1 EQUIPMENT ELEVATION - AREA C

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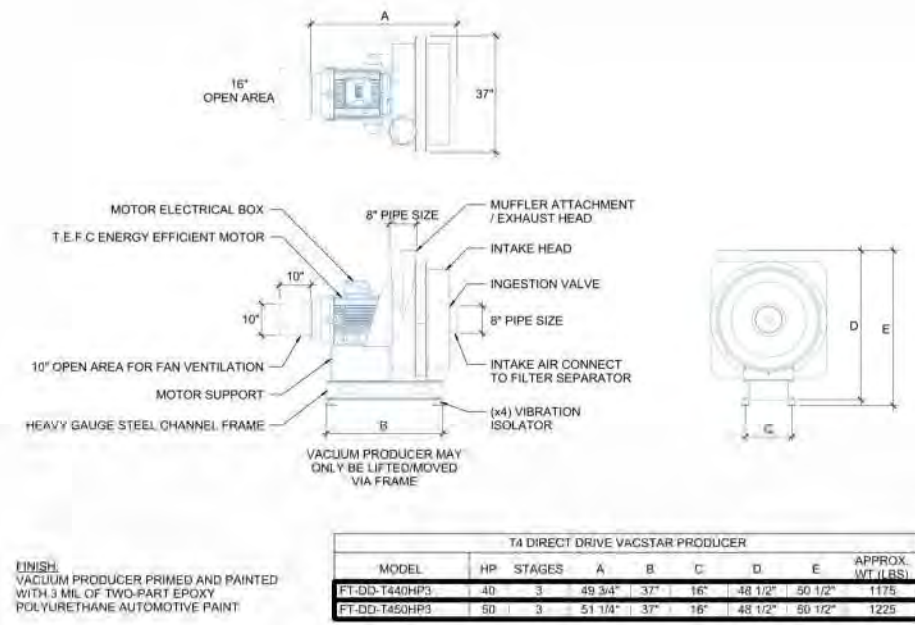
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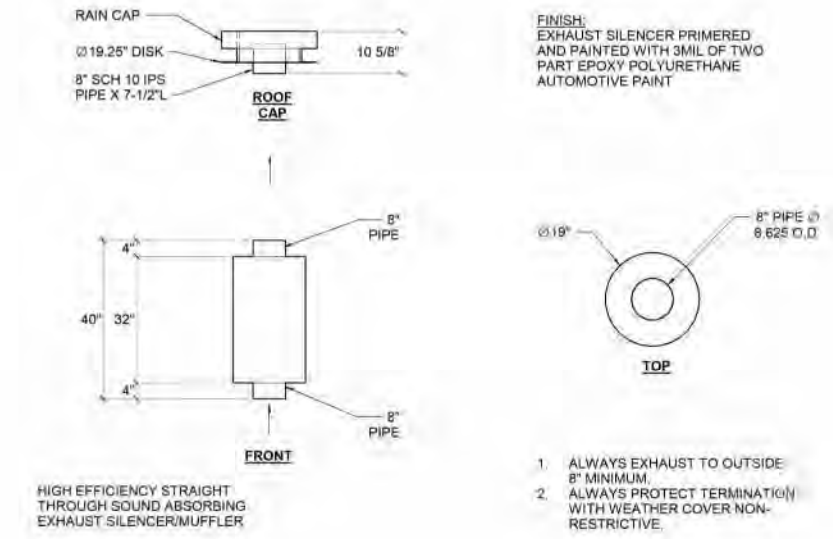
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIPMENT ELEVATION - C		V622
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

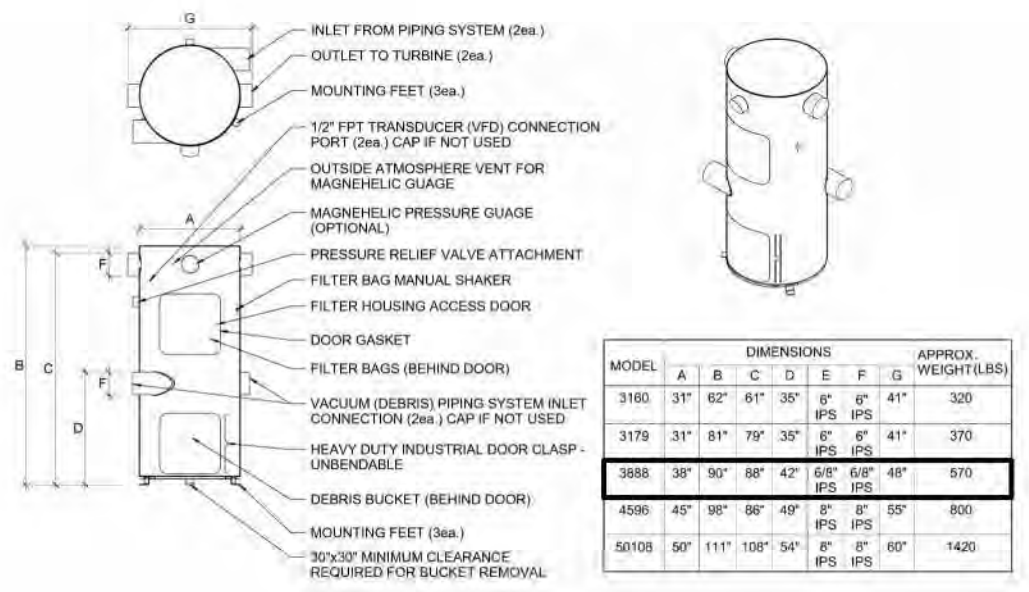
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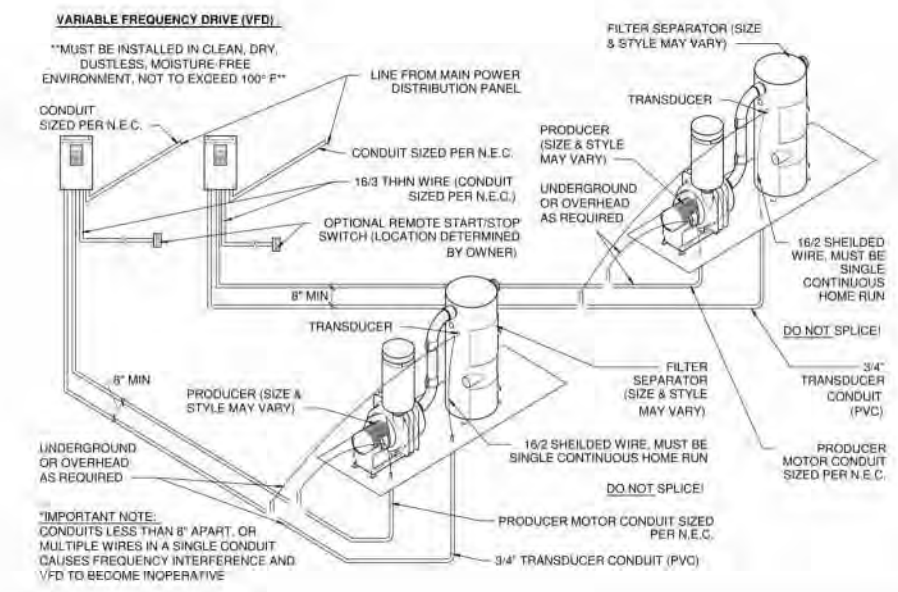
1 PRODUCER - T4 DD



2 EXHAUST SILENCER - T4 INDOOR



3 SEPARATOR - FILTER



4 CONDUIT - 2 SYSTEM VFD - NEMA 12

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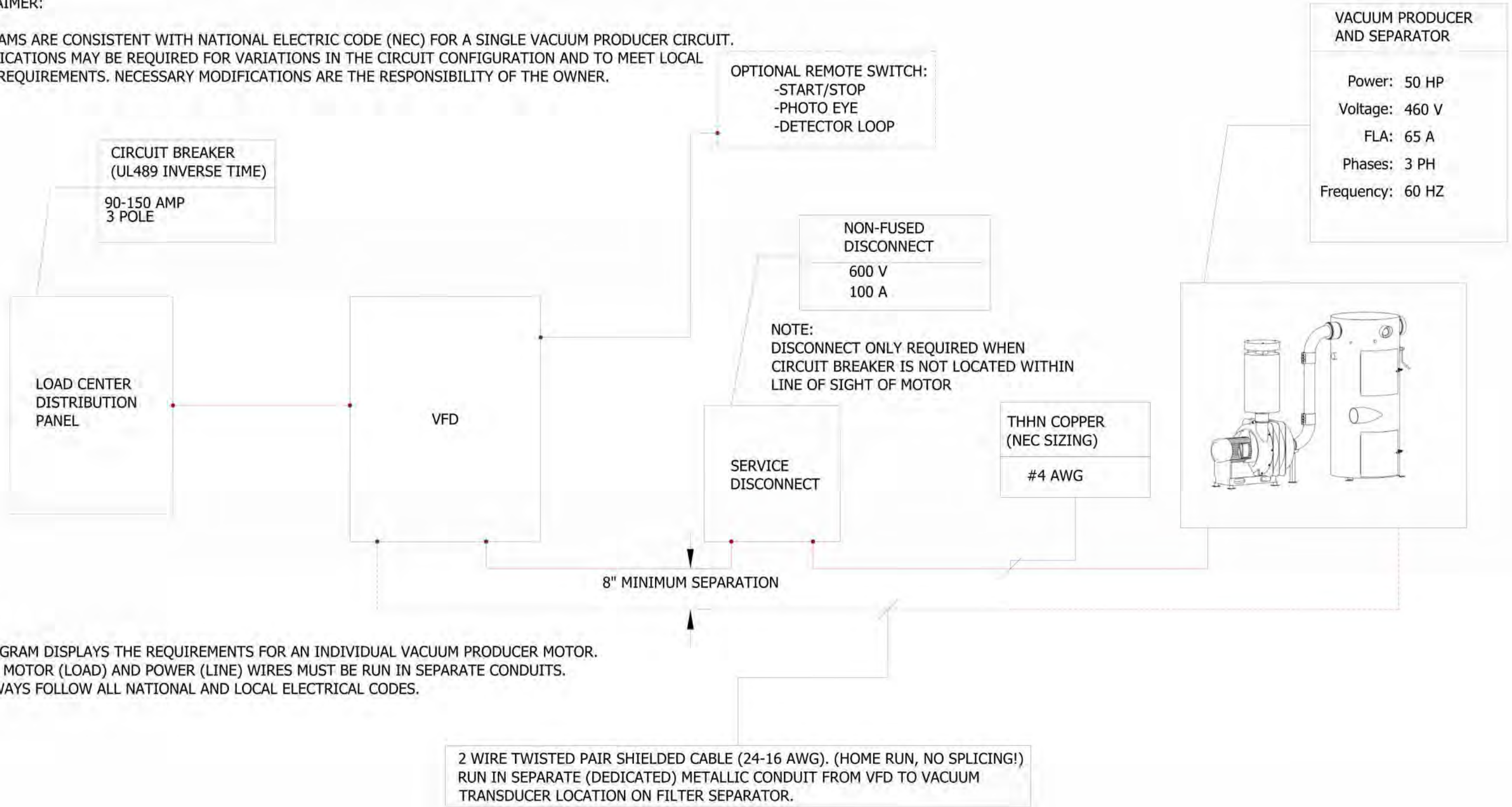
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

EQUIPMENT DETAILS		V701
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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DISCLAIMER:

DIAGRAMS ARE CONSISTENT WITH NATIONAL ELECTRIC CODE (NEC) FOR A SINGLE VACUUM PRODUCER CIRCUIT. MODIFICATIONS MAY BE REQUIRED FOR VARIATIONS IN THE CIRCUIT CONFIGURATION AND TO MEET LOCAL CODE REQUIREMENTS. NECESSARY MODIFICATIONS ARE THE RESPONSIBILITY OF THE OWNER.



1 ELECTRICAL DIAGRAM - VFD - 50HP 460V

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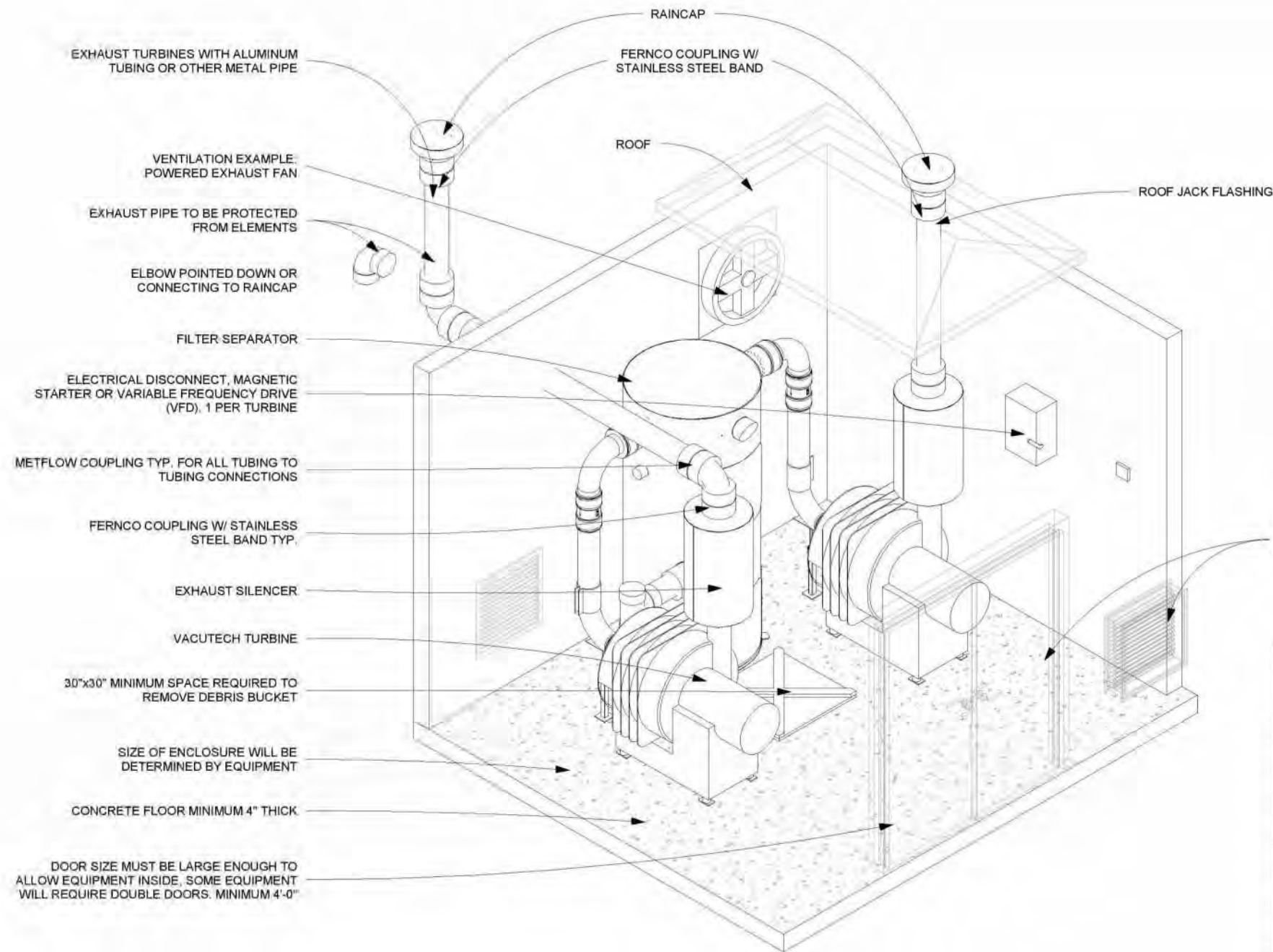
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

ELECTRICAL DIAGRAM		V702
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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EXHAUST TURBINES WITH ALUMINUM TUBING OR OTHER METAL PIPE
 VENTILATION EXAMPLE: POWERED EXHAUST FAN
 EXHAUST PIPE TO BE PROTECTED FROM ELEMENTS
 ELBOW POINTED DOWN OR CONNECTING TO RAINCAP
 FILTER SEPARATOR
 ELECTRICAL DISCONNECT, MAGNETIC STARTER OR VARIABLE FREQUENCY DRIVE (VFD), 1 PER TURBINE
 METFLOW COUPLING TYP. FOR ALL TUBING TO TUBING CONNECTIONS
 FERNCO COUPLING W/ STAINLESS STEEL BAND TYP.
 EXHAUST SILENCER
 VACUTECH TURBINE
 30"x30" MINIMUM SPACE REQUIRED TO REMOVE DEBRIS BUCKET
 SIZE OF ENCLOSURE WILL BE DETERMINED BY EQUIPMENT
 CONCRETE FLOOR MINIMUM 4" THICK
 DOOR SIZE MUST BE LARGE ENOUGH TO ALLOW EQUIPMENT INSIDE, SOME EQUIPMENT WILL REQUIRE DOUBLE DOORS. MINIMUM 4'-0"

VENTILATION EXAMPLE: LOUVERED ENCLOSURE DOOR, OR LOUVERS IN WALL

HEAT GENERATION TABLE

HP	Across the Line Starter		Variable Frequency Drive (VFD)	
	Heat Load (BTU/HR)	Required Airflow (CFM)	Heat Load (BTU/HR)	Required Airflow (CFM)
10	12722	915	2544	284
15	19084	1373	3817	426
20	25444	1830	5089	568
25	31805	2288	6361	710
30	38166	2745	7633	852
40	50889	3660	10178	1136
50	63611	4575	12722	1420
60	76333	5490	15267	1704
75	95416	6863	19083	2130
100	127222	9150	25444	2840

VACUUM EQUIPMENT INSTALLED IN AN ENCLOSURE WITH 4 WALLS AND A ROOF MUST BE ADEQUATELY VENTILATED OR ROOM CONDITIONED IN ORDER TO PROPERLY DISSIPATE THE HEAT GENERATED BY THE MECHANICAL AND ELECTRICAL EQUIPMENT. IMPROPER VENTILATION AND HEAT DISSIPATION CAN AND WILL RESULT IN DAMAGE TO THE MECHANICAL AND ELECTRICAL EQUIPMENT INCLUDING VFD'S, MOTOR STARTERS, ELECTRIC MOTORS AND VACUUM PRODUCERS. PLEASE REFERENCE THE HEAT GENERATION TABLE INCLUDED IN THIS DETAIL TO DETERMINE THE AMOUNT OF HEAT LOAD THAT THE TURBINE(S) AND STARTING EQUIPMENT WILL GENERATE AND THE CORRESPONDING REQUIRED AIR FLOW OF EXHAUST AND AIR INTAKE TO DISSIPATE THE HEAT GENERATED BY THE VACUTECH EQUIPMENT. IF ADDITIONAL EQUIPMENT IS INSTALLED IN THE EQUIPMENT ROOM (AIR COMPRESSORS, ELECTRICAL PANELS, TUNNEL CONTROLS, ETC.) PLEASE CONSULT YOUR HVAC DESIGN ENGINEER FOR PROPER TEMPERATURE CONTROL DESIGN OF YOUR EQUIPMENT ROOM. OPERATING TEMPERATURES ABOVE 104 °F (TYPICAL MAXIMUM ENVIRONMENTAL TEMPERATURE FOR ELECTRICAL EQUIPMENT) WILL SHORTEN THE LIFE OF THE VACUUM EQUIPMENT AND MAY INVALIDATE THE VACUTECH LLC WARRANTY.

THE VACUUM TURBINE MUST BE EXHAUSTED OUTSIDE WITH METALLIC PIPE NO SMALLER THAN THE DIAMETER OF THE EXHAUST OUTLET OF THE TURBINE. THE EXHAUST PIPE OPENING MUST BE PROTECTED FROM ELEMENTS. IF EXHAUST DISTANCE IS GREATER THAN 20 FEET USE ONE PIPE SIZE LARGER AFTER 10 FEET OF RUN (I.E. FOR A 20-FOOT RUN OF 8" EXHAUST, USE 8" FOR FIRST 10 FEET AND 10" FOR REMAINING 10 FEET OF THE OVERALL 20-FOOT RUN)

FOR EQUIPMENT ROOMS WITH MULTIPLE TURBINE SETUPS, ADD THE CFM REQUIREMENT PER TURBINE TO DETERMINE TOTAL CFM REQUIREMENT FOR THE EQUIPMENT ROOM. THIS ASSUMES EQUIPMENT ROOM DIMENSIONS 15' X 15' WITH 10' CEILINGS. THIS ASSUMES AN OUTSIDE AIR TEMPERATURE OF 90°F AND A MAXIMUM ROOM TEMPERATURE OF 104°F (NEMA CLASS F INSULATION RATING, MAXIMUM TEMPERATURE) AND DOES NOT ACCOUNT FOR RADIANT HEATING FROM THE ENVIRONMENT OR ANY OTHER EQUIPMENT INSTALLED IN EQUIPMENT ROOM. THESE VALUES ARE ESTIMATES ONLY AND DEPEND ON EQUIPMENT ROOM DIMENSIONS, GEOGRAPHIC LOCATION AND EQUIPMENT SETUP. TO CALCULATE YOUR SPECIFIC CONFIGURATION AND SITE CONDITIONS PLEASE CONSULT YOUR MECHANICAL HVAC DESIGNER AND ASHRAE STANDARDS.

1 ENCLOSURE - TYPICAL REQUIREMENTS

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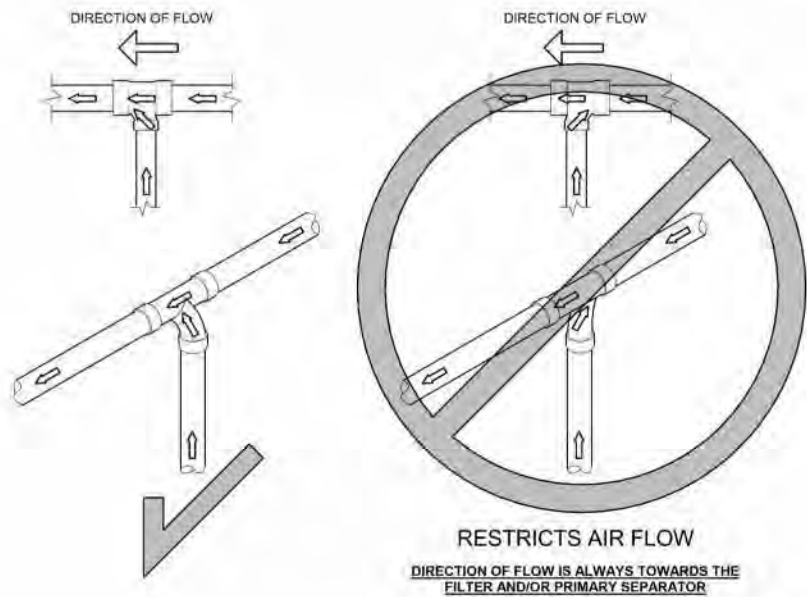
WHIP CLEAN CAR WASH
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#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

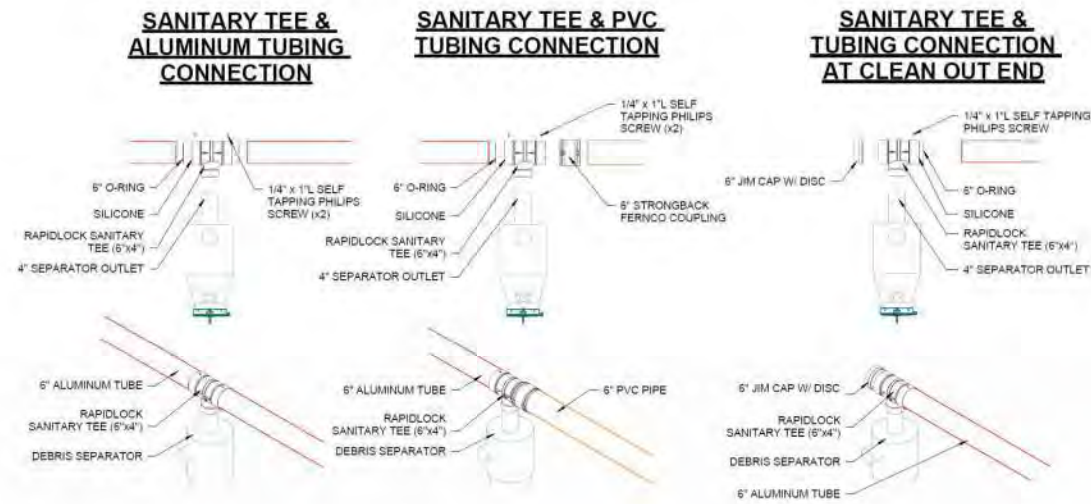
ENCLOSURE DETAIL

Project Number	269928	V711
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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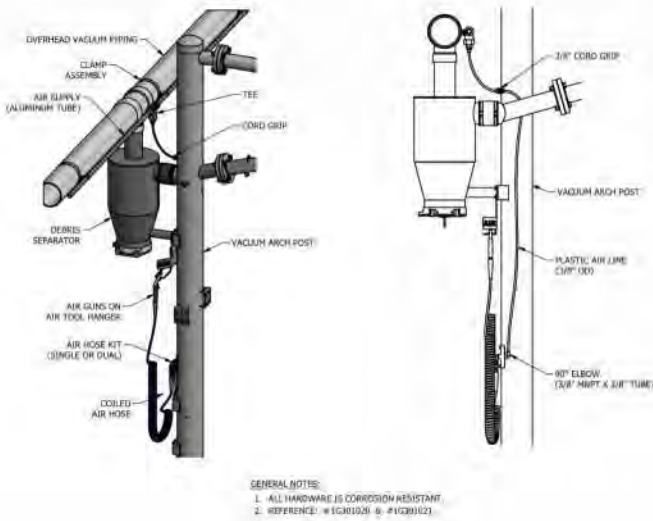


1 PIPE - PIPE FLOW

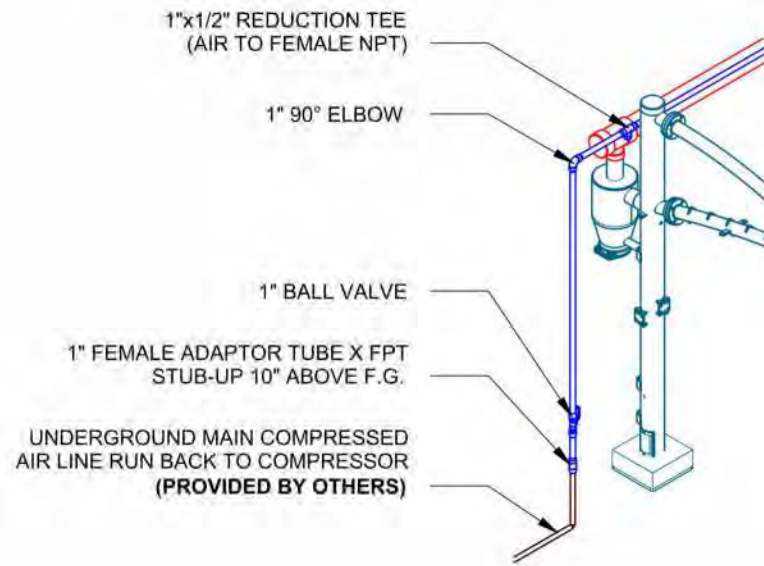


2 PIPE - 6x4 TEE KIT

- PIPE NOTES:**
- FIELD VERIFY ALL DIMENSIONS
 - SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT (PROVIDED BY OTHERS)
 - RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION (BY OTHERS)
 - COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
 - WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
 - REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
 - ALL FITTINGS TO BE 'DWV'



3 PIPE - RAPID AIR INSTALLATION



4 PIPE - RAPID AIR STUB-UP

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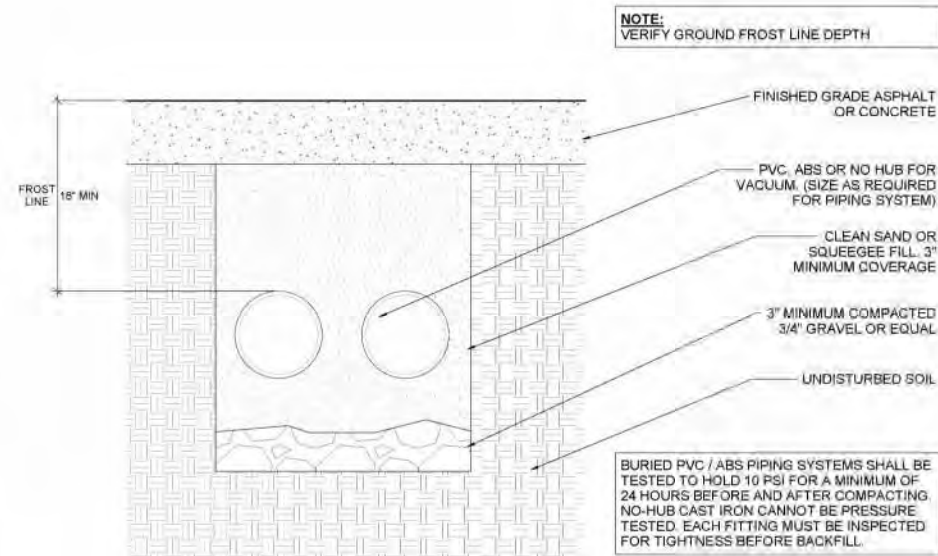
#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

PIPE DETAILS		V721
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

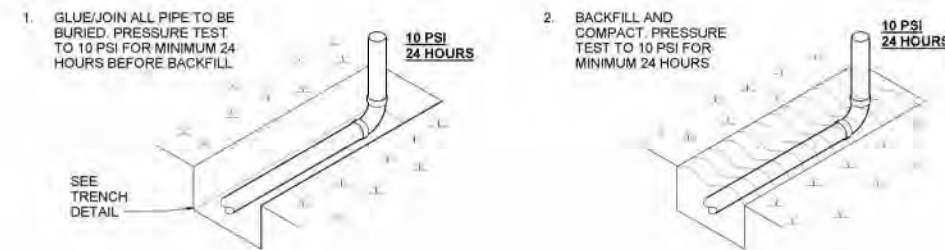
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PIPE NOTES:

- a. FIELD VERIFY ALL DIMENSIONS
- b. SUPPORT SCHEDULE 40 PVC OVERHEAD DRY/WET VACUUM PIPE EVERY 6' MAXIMUM; USE UNISTRUT & CLAMP OR OTHER SUPPORT **(PROVIDED BY OTHERS)**
- c. RUN COMPRESSED AIR TO AIR COMPRESSOR LOCATION **(BY OTHERS)**
- d. COMPRESSED AIR RECOMMENDED WORKING PRESSURE IS 75PSIG AND 10SCFM AT INTERFACE
- e. WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- f. REFER TO SHEET V721 FOR PIPE ASSEMBLY CUTSHEETS
- g. ALL FITTINGS TO BE 'DWV'



① TRENCH - DUAL LINE



② TRENCH - PRESSURE TEST

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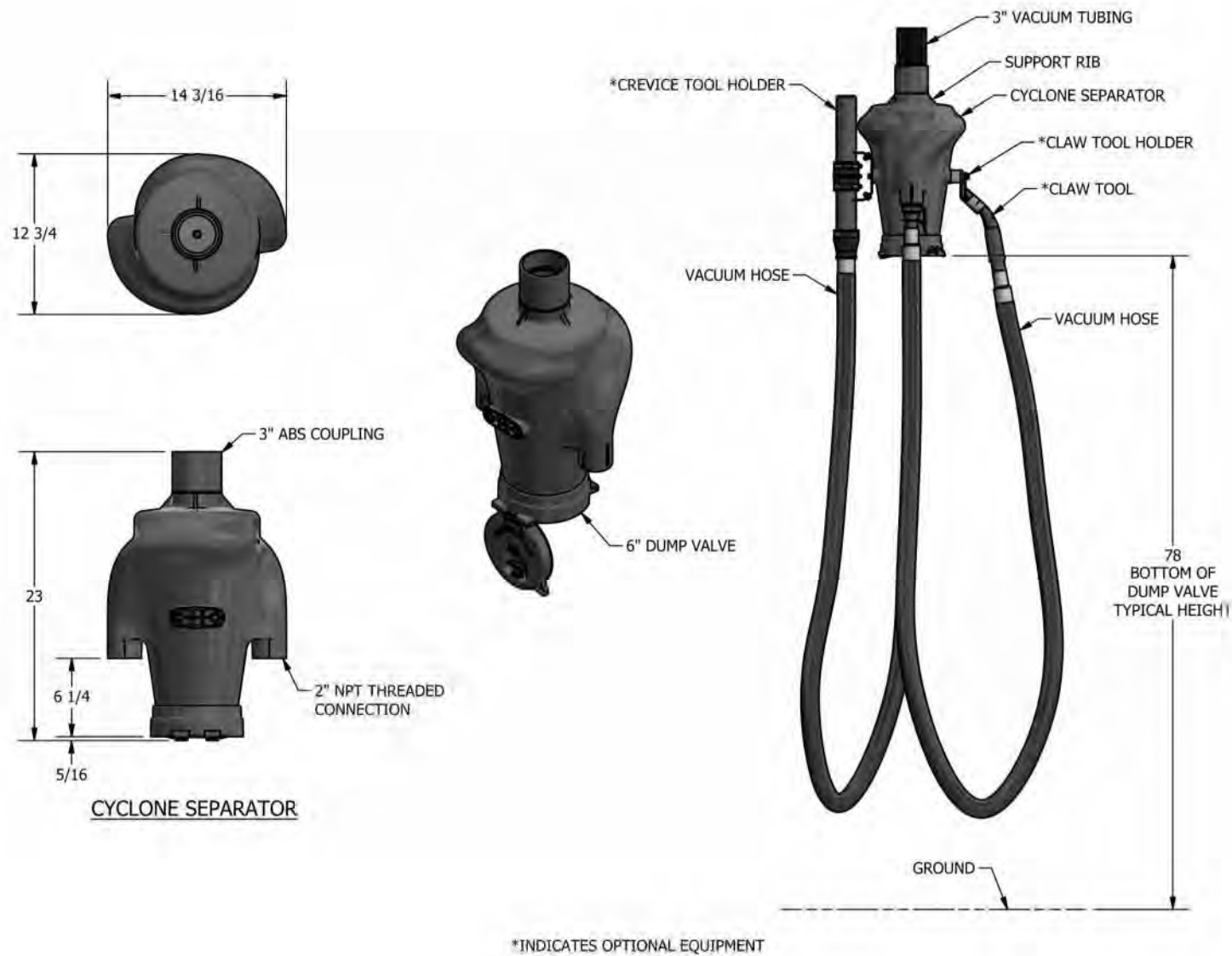
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AN **NCS** COMPANY
1350 HI-TECH DRIVE
SHERIDAN, WY 82801
PHONE: (307) 675-1982
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WHIP CLEAN CAR WASH
390 MUDDY BRANCH ROAD
GAITHERSBURG, MARYLAND 20878

#	Revision	By	Chk	Date
1	UPDATED SITE PLAN, PALM ARCHES IN AREA A HAVE NOW BEEN REPLACED WITH QUICK ARCHES	ML	TJ	7/1/24

TRENCH DETAILS		V722
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

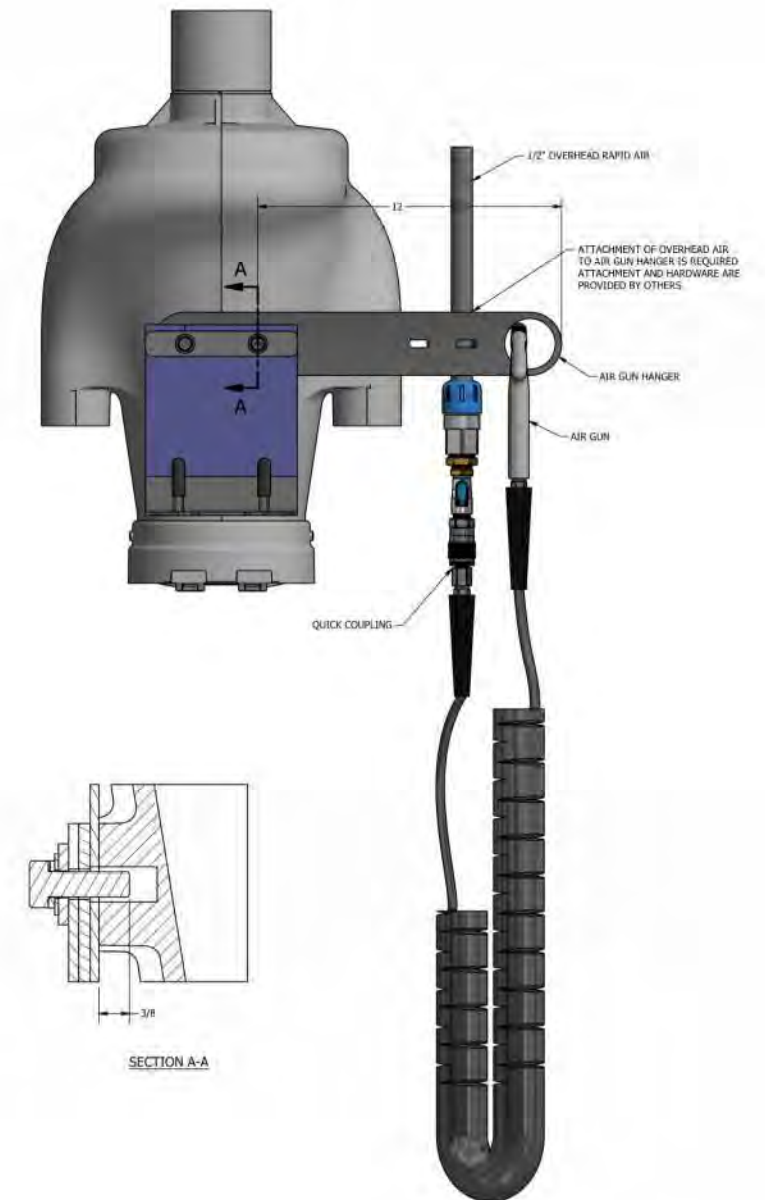
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INSTALLATION STEPS:

A: INSTALL & GLUE VERTICAL PIPE & CYCLONIC HOSE DROP DEBRIS SEPARATOR ONTO SANITARY TEE. NOTE: ABS/PVC GLUE MUST BE USED TO PROPERLY SECURE COMPONENTS

B) ATTACH TOOL HOLDERS & HOSES ONTO SEPARATOR WITH SUPPLIED HARDWARE.



① SEPARATOR - CYCLONE SEPARATOR

② SEPARATOR - CYCLONE SEPARATOR RAPID AIR

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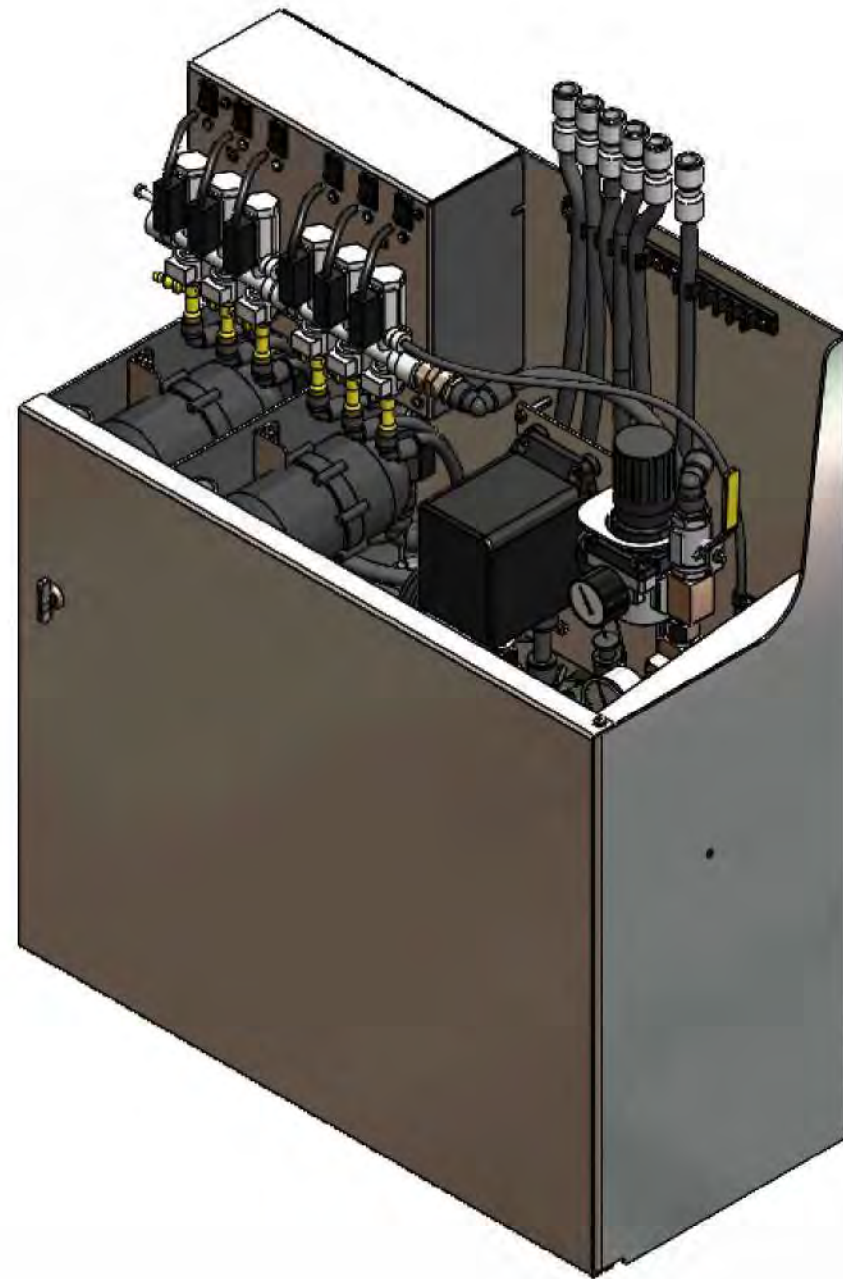
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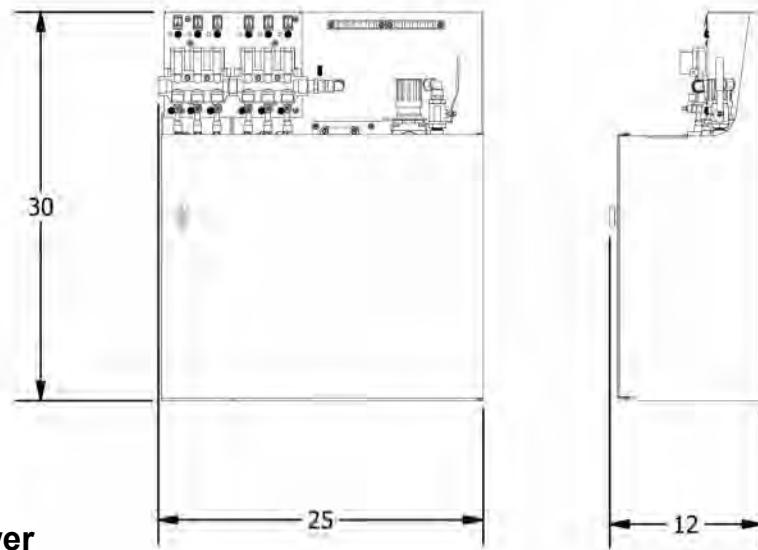
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CYCLONE DETAILS		V723
Project Number	269928	
Date	7/16/24	
Drawn By	ML	
Checked By	KG	

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COMPACT PUMP STATION



Requirements

A. Electrical Power

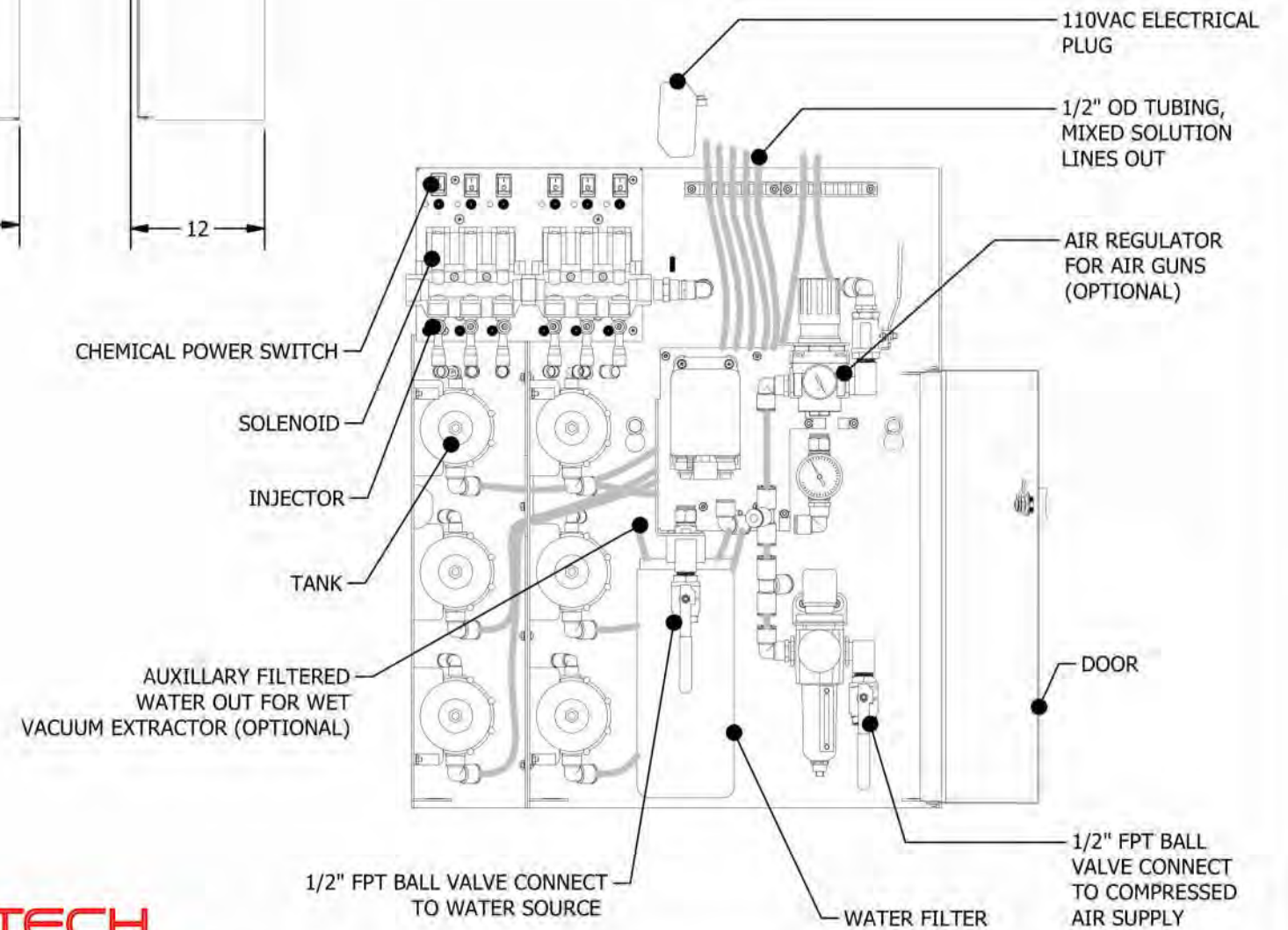
- I. 110VAC
- II. 15 amp circuit
- III. GFCI recommended

B. Compressed Air

- I. 20 CFM
- II. 90 PSI
- III. Clean (40-micron filtration)
- IV. Dry (dew point -40°F)
- V. No lubrication required
- VI. 1/2" FPT connection

C. Water

- I. 40 PSI
- II. 2 GPM
- III. 1/2" FPT connection



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PLEASE CONTACT VACUTECH FOR PRICING AND QUESTIONS

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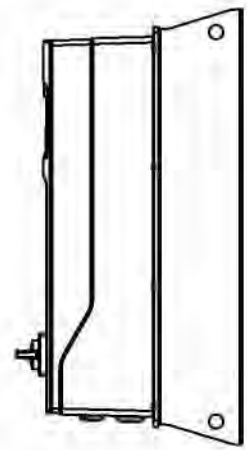
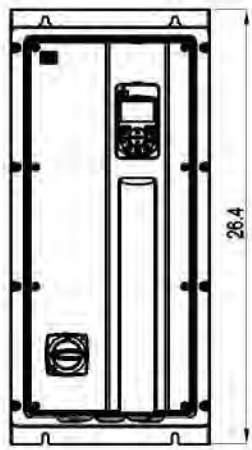
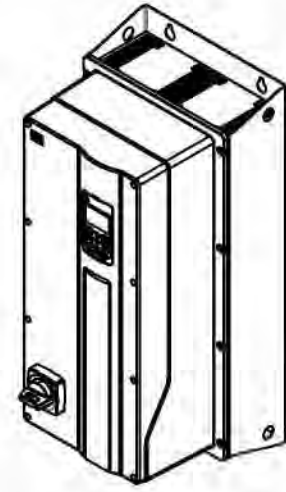
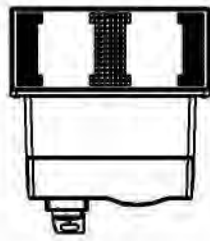
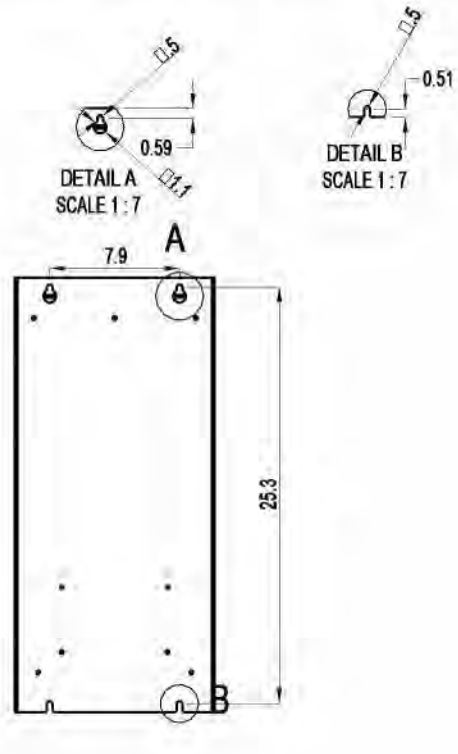
PUMP STATION DETAILS

Project Number	269928
Date	7/16/24
Drawn By	ML
Checked By	KG

V724

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Variable Frequency Drive (VFD) - 50 HP , 480V - NEMA 12					
Voltage	Power	Height	Width	Depth	Weight
480V	50 HP	26.4	12.1	13.7	66.2



WEG ELECTRIC NEMA 12 VARIABLE FREQUENCY DRIVE (VFD)

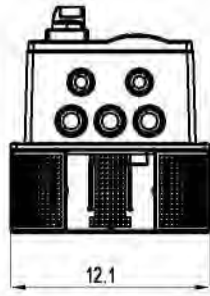
AVOID:

- DIRECT EXPOSURE TO SUNLIGHT, RAIN, HIGH HUMIDITY, OR SEA-AIR
- INFLAMMABLE OR CORROSIVE GASES OR LIQUIDS
- EXCESS VIBRATION
- DUST, METALLIC PARTICLES, AND OIL MIST

WARRANTY INFORMATION

VFD NOT TO BE OPERATED IN CONDITIONS OUTSIDE OF THOSE SPECIFIED IN 'OPERATING CONDITIONS'.

EACH VFD MUST BE WIRED FROM THE MAIN DISTRIBUTION PANEL IN SEPARATE CONDUIT (SIZED PER NEC) TO EACH VFD AND FROM EACH VFD TO PRODUCER MOTOR.



OPERATING CONDITIONS	
MIN. TEMPERATURE:	14 °F [-10 °C]
MAX. TEMPERATURE:	104 °F [40 °C]
HUMIDITY:	5% TO 95% NON-CONDENSING

VFD NOTES

'VFD' OR 'VARIABLE FREQUENCY DRIVE' IS AN OPTIONAL STARTER CONTROL.

- VFD MUST BE INSTALLED IN A CLEAN, DRY, DUST-FREE, OIL-FREE & MOISTURE-FREE CLIMATE CONTROLLED ENVIRONMENT NOT TO EXCEED 104 DEGREES FAHRENHEIT.
- EXTERIOR RAIN-TIGHT NEMA 12 VFD ENCLOSURES ARE AVAILABLE FOR ADDITIONAL EXPENSE.
- CONDUIT FOR TRANSDUCER MUST BE 8" AWAY FROM ALL OTHER WIRING/CONDUIT AND MUST BE A HOME RUN (NO SPLICING) THAT SHALL NOT EXCEED 100'.
- ALL CONDUIT RUNS FOR VACUUM SYSTEM VFD(s) & MOTOR(s) MUST BE IN A SEPARATE CONDUIT A MINIMUM OF 12" APART.
- WHEN USING PVC CONDUIT, HIGH VOLTAGE LINE & LOAD WIRE MUST BE SHIELDED.

CARWASH EQUIPMENT ROOM IS NOT RECOMMENDED FOR VFD INSTALLATION, AND WILL AFFECT PRODUCT WARRANTY.

VFD MUST BE INSTALLED IN A DRY, CLEAN, OIL FREE, DUST FREE, MOISTURE FREE, CLIMATE CONTROLLED ENVIRONMENT

① VFD - 1B001125 - NEMA 12 - 50 HP 460V

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VFD DETAILS		V731
Project Number	269928	
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Drawn By	ML	
Checked By	KG	

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