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Ethylene Oxide
Ambient Impact Assessment

Final Report

ConMed Corporation - Lithia Springs, GA

October 09, 2020

Quality information

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	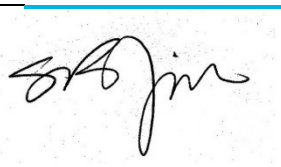		
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1. Introduction

ConMed Corporation (ConMed) produces medical devices and equipment at various manufacturing locations around the United States which are distributed to end users around the world from its Lithia Springs distribution center. The distribution center is located at 1250 Terminus Drive, Lithia Springs, GA 30122. Some of the medical devices and products stored at the distribution center are sterilized off-site by third-parties with ethylene oxide (EtO). EtO itself is not used or stored at the distribution center, but the EtO-sterilized products and their packaging contain residual quantities of the compound that may be released to the atmosphere from the distribution center while products are awaiting shipment. On May 27, 2020, the Georgia Environmental Protection Division (GA EPD) requested information from ConMed regarding EtO emissions from the facility. ConMed responded to GA EPD with information about its operations including conservative emissions calculations that indicate the potential for 614 pounds per year of fugitive EtO, which is under the 2-ton individual Hazardous Air Pollutant limit requiring permitting. Notwithstanding, in a letter dated August 10, 2020, GA EPD invoked Section 391-3-1-.02(2)(a)(3) of the Georgia Air Rules for Air Quality Control to request a detailed Air Toxics Ambient Impact Assessment for the Lithia Springs distribution center. The letter asked that the impact assessment be submitted by October 9, 2020. In response to GA EPD's request, this document details the methodology and results of the Air Toxics Ambient Impact Assessment.

2. Source Description

2.1 Site Location and Description

ConMed's Lithia Springs distribution center is located in northeastern Douglas County, GA in a suburban area that is approximately 12 miles east of Atlanta, GA. The facility is located in an industrial park with residential housing located approximately ¼ mile to the northwest and ¼ mile to the south-southeast. There are approximately 6 square miles of undeveloped forest land covering the area to the south-southwest. The region around the distribution center is shown in **Figure 2-1**.

2.2 Ethylene Oxide Emission Sources

Off-gassing of EtO from product packaging stored in the ConMed distribution center results in EtO emissions to the atmosphere principally from two areas of the facility, referred to as the Receiving Area and the Shipping Area. In addition, a truck trailer air flushing station has been installed within the parking lot of the warehouse that is also an intermittent source of EtO emissions. The subsections below detail these three areas of the facility and describe the methods used to estimate the short-term and annual rates of EtO emissions from each area, as well as the other source characterization parameters that are utilized as inputs to the dispersion model. Conservative estimates of fugitive EtO emissions from the entire distribution center facility equal 456.6 pounds per year, but these areas of the facility are described separately, in part, to account for potential operational changes that could further reduce EtO emissions. **Table 2-1** lists the source parameters for each area that serve as inputs to the model.

2.2.1 Truck Trailer Flushing Station

Truck trailers containing products that have been sterilized with EtO are flushed with air when they arrive at the facility at a truck trailer flushing station. The station is situated in the facility parking lot approximately 165 feet away from the receiving bay Doors 28 – 34 (as shown in **Figure 2-2**) and consists of air supply and exhaust fans installed within a three-sided enclosure. Each trailer to be flushed is backed up to the enclosure and the trailer doors are opened. The flushing operation currently consists of continuously supplying outside air at approximately 2,000 cfm near the ceiling of the trailer while simultaneously withdrawing air at up to 5,000 cfm from near the floor of each trailer. Air and residual EtO withdrawn from each truck trailer are discharged to the atmosphere from the exhaust fan via a vertical stack on the station. Each trailer is flushed for approximately 15 minutes prior to having its contents off-loaded to the Receiving Area of the facility. Only trucks containing EtO-sterilized products are flushed which is typically two trucks per workday, but not on weekends.

EtO emissions from the trailer flushing operation used for modeling were based on residual EtO concentrations measurements carried out between April 2019 and July 2020 within trailers during product unloading activities. The average measured concentration (approximately 2 ppm by volume) was used in conjunction with the internal volume of a standard delivery trailer to develop an estimate of the residual quantity of EtO present in each trailer containing EtO-sterilized products (0.0007 lb/trailer). While a large part of the trailer is expected to be occupied by the pallets of EtO-sterilized products, for conservatism, the entire internal volume of a trailer was used to estimate the residual quantity, and all of the residual quantity of EtO was assumed to be flushed from the trailer during the 15-minute flushing period. Annual emissions from the truck flushing operation were estimated based on data supplied by ConMed that approximately two trailers per day containing EtO-sterilized products are delivered to the facility and flushed. Total annual emissions associated with the truck flushing operation are estimated at less than one pound per year.

For modeling purposes, the truck flushing station was characterized as a vertical point source exhausting at ambient temperature from a 17.7-foot stack with a diameter of 11.3 inches. Dimensions for the new air flushing station enclosure and stack were based on design drawings provided by ConMed (ConMed 2020a). Modeling for the 1-hour averaging period conservatively assumed that emissions could occur for the full hour instead of just 15-minutes. However, the EMISFACT keyword was used in AERMOD to allow for emissions to only occur when at least one employee was onsite (as detailed below in Section 2.2.3). Modeling for the 24-hour averaging period used the maximum lb/min emission rate for the full day. In accordance with GA EPD guidance (GA EPD 2017), a scalar was then applied to the results to account for the number of minutes per day that emissions occur as detailed in Section 4.

Modeling for the annual averaging period used emissions based on the number of hours per year (130) that truck flushing operations occur.

2.2.2 Receiving Area

After having been flushed, truck trailers delivering EtO-sterilized products are backed up to the Receiving Area bays (facility Doors 28 to 34), where the products are unloaded and quarantined in the northern section of the warehouse while they await clearance to be released into other sections of the facility for storage and subsequent shipping. The quarantine is to allow time for receipt of test results required by FDA to assure sterility of the products and is not based on emissions from the products. A fan vent, located on the warehouse outside wall above Doors 33 and 34, exhausts air from the receiving/quarantine area at 30,000 cubic feet per minute (cfm) 8,760 hours per year.

EtO emissions used in the modeling for the Receiving Area were estimated using the results of area concentration measurements taken in this area of the facility and conservatively assuming that the average measured concentration of EtO in the breathing zone of the Receiving Area is representative of the average EtO concentration discharged to the atmosphere via the fan vent.

The fan vent was characterized for modeling purposes as a horizontal point source (POINTHOR) in the dispersion model, exhausting at ambient temperature with an equivalent stack diameter of 4.5 ft (based on a 16 ft^2 square vent). Because the vent exhausts downward, a stack exit velocity of 0.001 m/sec was assigned to reduce vertical momentum assumptions in the model.

2.2.3 Shipping Area

Once released from quarantine, EtO-sterilized products are moved from the receiving/quarantine area and placed at storage locations throughout the remainder of the warehouse as they await shipping to end users. Products are loaded onto truck trailers via loading bays (facility Doors 1 to 27) located in the southern section of the facility. The ventilation system serving this area of the facility does not discharge directly to atmosphere. Rather, makeup air from outside of the warehouse is conditioned and supplied to this portion of the facility via thirteen packaged rooftop-mounted heating, ventilation and air conditioning (HVAC) systems. The fresh air makeup rate to this portion of the facility is typically approximately 8,800 cfm. Air and EtO emissions from the stored products from this portion of the facility is discharged to the atmosphere through open bay doors in the shipping area. During working hours, some of these doors are open in order to load trucks, but most are typically closed. At night and on weekends, the Shipping Area doors remain closed. Based on information provided by ConMed regarding the expected employee work schedule during October 2020 (representative of typical operations), shipping activities occur at the warehouse from 7 AM to 8 PM, Monday through Friday. The EMISFACT keyword was used in AERMOD to allow for emissions during these hours only.

For the purposes of modeling, it was assumed that EtO emissions from the Shipping Area occur as fugitives via Doors 1 to 27 which represents all bay doors except those in the receiving/quarantine area. EtO emissions used in the modeling for the Shipping Area were estimated using the results of EtO concentration measurements carried out in that area; as with the Receiving Area it was conservatively assumed that the breathing zone concentration in the Shipping Area is representative of the average EtO concentration in the air discharged from the Shipping Area. The exhaust rate for this area was assumed to be equal to the makeup air rate (i.e., 8,800 cfm).

The fugitive emissions were characterized as a series of eight adjacent, identical volume sources that were sized based the approximate width of the loading dock area (50 feet). The emission release heights were set to 8 feet, based on half the 10-foot door height (5 feet) and accounting for the height of the door above ground (3 feet). The initial lateral (sigma-y) and vertical (sigma-z) dimensions were defined in accordance with the AERMOD user's guide (USEPA 2019). Based on AECOM's sensitivity analyses, the selection of the number of volume sources or their location were not found to impact the modeled impact results.

Table 2-1: Modeled Source Emissions and Stack Parameters

						English				Metric				
Model ID	Description	TYPE	UTM Coords (Zone 18 NAD83, m) X	UTM Coords (Zone 18 NAD83, m) Y	Base Elev (m)	Stack Height (ft)	Flowrate (ACFM)	Stack Diameter (ft)	Stack Height (m)	Exit Temp (K)	Exit Velocity (m/sec)	Stack Diameter (m)	Ethylene Oxide Emissions (g/sec)
RECVNG	Receiving Area	POINTHOR	720313.72	3739184.84	273	27	30,000	4.51(2)	8.23	Ambient	0.001(1)	1.376	6.47E-03
TRAILER	Trailer Flushing	POINT	720271.78	3739150.37	273	17.66	5,000	0.9	5.38	Ambient	36.60	0.287	3.49E-04 / 5.16E-06(3)

Notes:

(1) Exit velocity set to 0.001 m/sec to represent downward discharge of vent.

(2) Equivalent diameter based on 16 ft^2 square vent.

(3) 1-hr and 24-hr emission rate (maximum lb/min) / annual emission rate (based on 130 hours of flushing per year).

Model ID	Description	TYPE	X	Y	Base Elev (m)	Release Height(4) (ft)	Release Height (m)	Length of Side (m)	Building Height (m)	Sigma-Y (m)	Sigma-Z (m)	Ethylene Oxide Emissions (g/sec)
SHIP1	Shipping Area	VOLUME	720319.12	3739149.00	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP2	Shipping Area	VOLUME	720326.71	3739133.77	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP3	Shipping Area	VOLUME	720334.09	3739118.50	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP4	Shipping Area	VOLUME	720341.47	3739103.31	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP5	Shipping Area	VOLUME	720348.71	3739087.93	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP6	Shipping Area	VOLUME	720356.11	3739072.63	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP7	Shipping Area	VOLUME	720363.08	3739057.33	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05
SHIP8	Shipping Area	VOLUME	720370.25	3739042.17	273	8	2.44	15.240	11.89	3.544	5.529	2.92E-05

Notes:

(4) Based on half the 10 ft bay door height (5 ft) plus the height of the door above grade (3 ft).

Figure 2-1: Facility Location

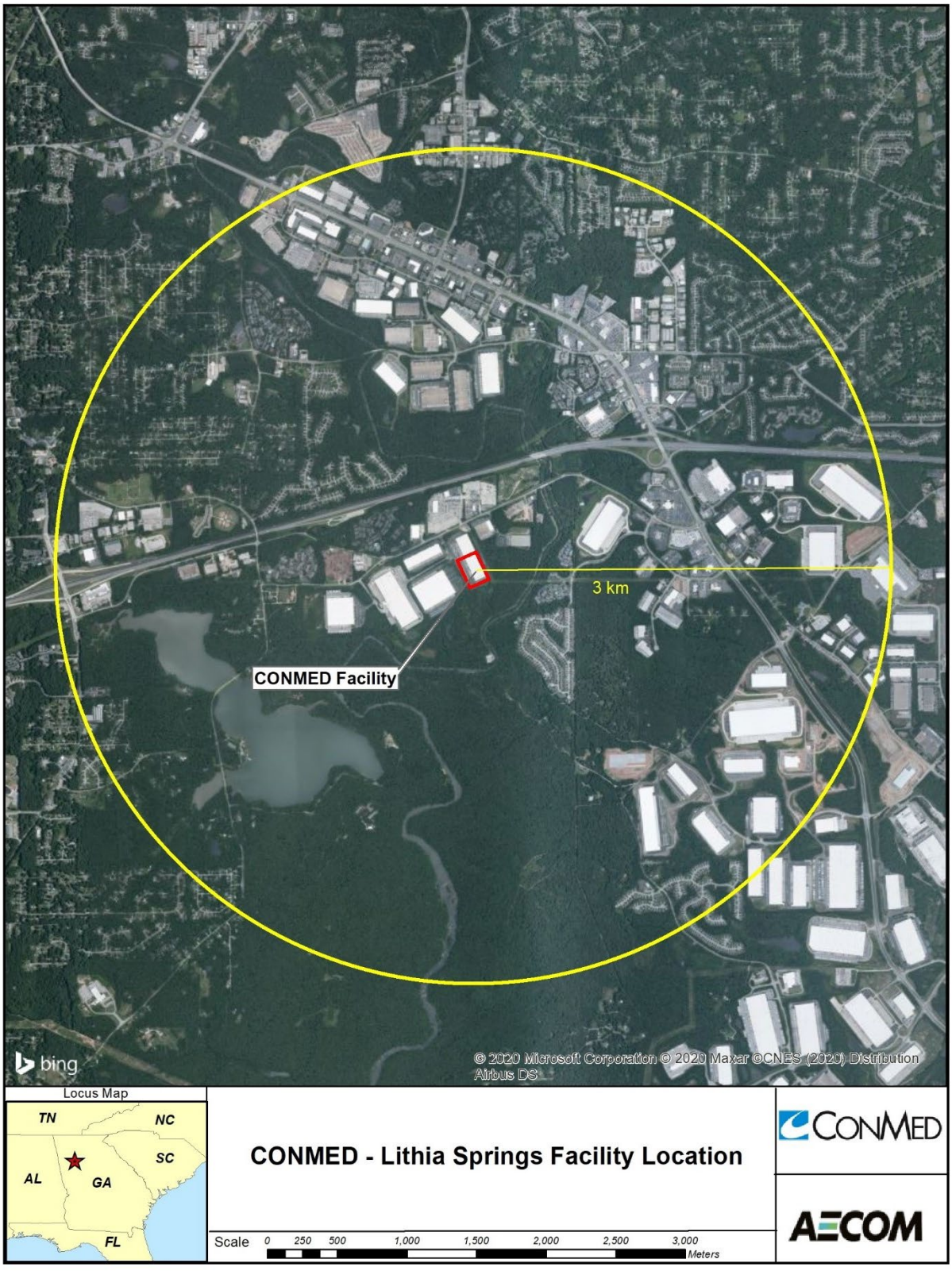


Figure 2-2: Site Layout

3. Dispersion Modeling Methodology

In accordance with the current *Georgia Guideline for Ambient Impact Assessment for Air Toxic Pollutants* (GA EPD 2017) and the United States Environmental Protection Agency's (USEPA) *Guideline on Air Quality Models* (USEPA 2017), dispersion modeling was conducted to determine the maximum ground level concentration (MGLC) of EtO for comparison to the GA EPD Acceptable Ambient Concentrations (AACs). The subsections below provide details regarding model inputs and methodology.

Regulatory applications of air quality models are generally designed to provide a margin of safety (overprediction) for the concentration estimates provided. One factor leading to this result is that the United States Environmental Protection Agency (EPA) designs the models to overpredict at least slightly in order to have a margin of safety. For AERMOD, the recommended dispersion model for short-range applications, the evaluation results posted on the EPA web site at www.epa.gov/scram generally document this result. Another important aspect of modeling that leads to conservatively high impacts is that peak emission rates are assumed to occur continuously, so that even an unbiased model would overpredict results with these assumptions. In combination, these two factors generally lead to overestimates of modeled impacts.

3.1 Model Selection and Input Options

Selection of the appropriate dispersion model for use in the dispersion modeling analysis is based on the available meteorological input data, the physical characteristics of the emission units that are to be simulated, the land use designation in the vicinity of the source under consideration, and the complexity of the nearby terrain.

The current version of the USEPA-approved American Meteorological Society/USEPA Regulatory Model (AERMOD) modeling system was used to conduct the ambient impact assessment. AERMOD is the USEPA-recommended model for use in modeling multi-source emissions including point, area, and volume sources, and accounts for plume downwash and stack tip downwash (USEPA 2017). AERMOD also has the ability to simulate impacts at both simple (below stack height) and complex terrain (heights above the height of the stack) receptors. Model input options were set to their regulatory default values (USEPA 2017).

The AERMOD model and pre-processors that were used in this impact assessment are:

- AERMAP version 18081;
- AERMOD version 19191; and
- BPIP-PRIME version 04274

3.2 Dispersion Environment

The application of AERMOD requires characterization of the local (within 3 kilometers (km)) dispersion environment as either urban or rural, based on a USEPA-recommended procedure (USEPA 2017), that characterizes an area by prevalent land use. This land use approach classifies an area according to 12 land use types. In this scheme, areas of industrial, commercial, and compact residential land use are designated urban. According to USEPA modeling guidelines, if more than 50% of an area within a 3-km radius of the project site is classified as rural, then a rural model application is required. Conversely, if more than 50% of the area is urban, an urban dispersion adjustment can be used. Visual inspection of the land-use within the 3-km area surrounding the ConMed facility (see **Figure 2-1**) indicates at least 50% of the vicinity is rural. Therefore, the urban source option ("URBANOPT") in AERMOD was not used.

3.3 Good Engineering Practice (GEP) Stack Height Analysis

USEPA modeling guidelines require the evaluation of the potential for physical structures to affect the dispersion of emissions from stack emission points. The exhaust from stacks that are located within specified distances of buildings, and whose physical heights are below specified levels, may be subject to "aerodynamic building downwash" under certain meteorological conditions.

The analysis used to evaluate the potential for building downwash is referred to as a physical GEP stack height analysis. Stacks with heights below physical GEP are potentially subject to building downwash. In the absence of influencing structures, a "default" GEP stack height is credited up to 65 m (213 feet) per the *Guideline for Determination of Good Engineering Practice Stack Height* (USEPA 1985). Any portion of a stack above the maximum of the physical or default GEP height cannot be used in the dispersion modeling analysis for purposes of comparison to ambient air quality criteria.

A GEP stack height analysis was performed for all emission stacks included in the modeling. Per the guidelines, the physical GEP height ("H_{GEP}") is determined from the dimensions of all buildings that are within the region of influence using the following equation:

$$H_{GEP} = H + 1.5L$$

where:

H = height of the structure within 5L of the stack which maximizes H_{GEP}, and

L = lesser dimension (height or projected width) of the structure.

For a squat structure (*i.e.,* height less than projected width), the formula reduces to:

$$H_{GEP} = 2.5H$$

Wind direction-specific building dimensions for input to AERMOD for all stacks were developed with the PRIME version of USEPA's Building Profile Input Program (BPIP-PRIME Version 04274). Lateral dimensions of the main warehouse input to BPIP-PRIME were based on readily available aerial imagery of the site. The height of the warehouse was based on Google Earth™ elevation data. As noted previously, the dimensions for the new trailer flushing operation shed were based on design drawings provided by ConMed. Dimensions typical of a truck trailer were used for the trailer that would be parked next to the air wash shed during flushing. **Figure 2-2** depicts the structures that were input to BPIP-PRIME and their proximity to modeled emission sources.

3.4 Meteorological Data

If at least one year of hourly on-site meteorological data is not available, the application of a refined dispersion model requires five years of hourly meteorological data representative of the project site. As prescribed by GA EPD for dispersion modeling applications in Douglas County (GA EPD 2020), the modeling analysis was conducted using 5-years of surface meteorological data (2014-2018) from Hartsfield-Jackson Atlanta International Airport, GA and concurrent upper air data from Peachtree City-Falcon Field, GA. The data (which included the ADJ_U* option) were obtained from the GA EPD website.

Hartsfield-Jackson Atlanta International Airport is located approximately 13 miles southwest of the ConMed Lithia Springs distribution center. GA EPD modeling guidelines require a demonstration to show that the meteorological data from the selected airport is representative of the area surrounding the modeled site. GA EPD guidelines, consistent with US EPA's AERMOD Implementation Guide (AIG) (USEPA 2019), specifies that the determination of representativeness of meteorological data should include a comparison of surface characteristics; specifically, the surface roughness, albedo, and the Bowen ratio between the monitoring site and the project site. Therefore, a comparison of the surface characteristics of the Hartsfield-Jackson Atlanta International Airport and the ConMed distribution facility was conducted using AERSURFACE, USEPA's land use analysis tool (USEPA 2013). Surface characteristics for Hartsfield-Jackson Atlanta International Airport were obtained from an AERSURFACE output file provided on GA EPD's meteorological data website. To be consistent with GA EPD's meteorological data processing, version 13016 of the AERSURFACE processor was used to determine surface characteristics around the ConMed distribution center.

Version 13016 of AERSURFACE uses digital land cover data from the USGS National Land Cover Data 1992 archives (NLCD92) coupled with user inputs of seasonal surface characteristics and annual surface moisture categories (wet, dry or average) to calculate surface characteristics. Acknowledging that the NLCD92 is more than 25 years old, recent aerial photographs were used to compare the land use surrounding the airport and the facility, and to the NLCD92 data. While there has been some additional development southeast of the facility, the analysis

revealed that NLCD92 is adequately representative for this analysis. No significant changes in land use are seen in the vicinity of the airport. AERSURFACE was run with the same options that GA EPD used for the airport; namely the following:

- Twelve sectors
- Average surface moisture
- Default monthly seasonal categories:
    - Late Autumn/Winter with no Snow – December, January, February
    - Transitional Spring – March, April, May
    - Midsummer –June, July, August
    - Autumn – September, October, November

Table 3-1 and **Table 3-2** compare the surface characteristics, as determined with AERSURFACE, on a seasonal basis averaged over the twelve sectors. Albedo values are quite similar, differing by only 6% on average. While Bowen Ratios differ by 14% to 39%, AERMOD results have not shown to be very sensitive to Bowen Ratio. As such, less weight should be given to comparing those values. Of the three surface characteristics, concentrations modeled by AERMOD are most affected by surface roughness values. The tables indicate some substantial differences between the surface roughness surrounding each site. The average surface roughness is much larger around the ConMed facility as compared to Hartsfield-Jackson airport. This is evident upon inspection of aerial photographs, which indicate a prevalence of undeveloped forest land around the ConMed facility, which translates to a higher surface roughness than the residential/commercial/industrial areas surrounding airport.

While a comparison of surface characteristics reveals some differences in land use between the two sites, the Hartsfield-Jackson airport meteorological data set can be considered conservative for use in modeling of the ConMed facility site. The lower surface roughness used in the processing of the airport meteorological data would be expected to produce higher modeled concentrations in AERMOD than if a higher surface roughness (causing more turbulence and dispersion) were used. Therefore, use of the meteorological data for Hartsfield-Jackson Atlanta International Airport processed by GA EPD is appropriate for use in modeling of the ConMed facility and was selected for the Ambient Impact Assessment.

Table 3-1: Seasonal Average Land Use Characteristics (Winter/Spring)

Season	Sector	Hartsfield-Jackson International Airport			ConMed Facility			Airport - Facility			(Airport - Facility)/ Airport		
		Albedo	Bowen Ratio	Surface Roughness	Albedo	Bowen Ratio	Surface Roughness	Δ Albedo	Δ Bowen Ratio	Δ Surface Roughness	% Albedo	% Bowen Ratio	% Surface Roughness
Winter	1	0.17	1.08	0.039	0.16	0.93	0.421	0.01	0.15	-0.382	5.9%	13.9%	-979.5%
Winter	2	0.17	1.08	0.032	0.16	0.93	0.296	0.01	0.15	-0.264	5.9%	13.9%	-825.0%
Winter	3	0.17	1.08	0.017	0.16	0.93	0.491	0.01	0.15	-0.474	5.9%	13.9%	-2788.2%
Winter	4	0.17	1.08	0.057	0.16	0.93	0.495	0.01	0.15	-0.438	5.9%	13.9%	-768.4%
Winter	5	0.17	1.08	0.213	0.16	0.93	0.509	0.01	0.15	-0.296	5.9%	13.9%	-139.0%
Winter	6	0.17	1.08	0.255	0.16	0.93	0.253	0.01	0.15	0.002	5.9%	13.9%	0.8%
Winter	7	0.17	1.08	0.230	0.16	0.93	0.448	0.01	0.15	-0.218	5.9%	13.9%	-94.8%
Winter	8	0.17	1.08	0.346	0.16	0.93	0.298	0.01	0.15	0.048	5.9%	13.9%	13.9%
Winter	9	0.17	1.08	0.117	0.16	0.93	0.397	0.01	0.15	-0.28	5.9%	13.9%	-239.3%
Winter	10	0.17	1.08	0.021	0.16	0.93	0.347	0.01	0.15	-0.326	5.9%	13.9%	-1552.4%
Winter	11	0.17	1.08	0.029	0.16	0.93	0.191	0.01	0.15	-0.162	5.9%	13.9%	-558.6%
Winter	12	0.17	1.08	0.039	0.16	0.93	0.180	0.01	0.15	-0.141	5.9%	13.9%	-361.5%
Winter	**Average**	**0.17**	**1.08**	**0.116**	**0.16**	**0.93**	**0.361**	**0.01**	**0.15**	**-0.244**	**6%**	**14%**	**-691%**
Spring	1	0.16	0.9	0.044	0.15	0.72	0.549	0.01	0.18	-0.505	6.3%	20.0%	-1147.7%
Spring	2	0.16	0.9	0.038	0.15	0.72	0.354	0.01	0.18	-0.316	6.3%	20.0%	-831.6%
Spring	3	0.16	0.9	0.022	0.15	0.72	0.674	0.01	0.18	-0.652	6.3%	20.0%	-2963.6%
Spring	4	0.16	0.9	0.067	0.15	0.72	0.724	0.01	0.18	-0.657	6.3%	20.0%	-980.6%
Spring	5	0.16	0.9	0.251	0.15	0.72	0.752	0.01	0.18	-0.501	6.3%	20.0%	-199.6%
Spring	6	0.16	0.9	0.314	0.15	0.72	0.360	0.01	0.18	-0.046	6.3%	20.0%	-14.6%
Spring	7	0.16	0.9	0.301	0.15	0.72	0.617	0.01	0.18	-0.316	6.3%	20.0%	-105.0%
Spring	8	0.16	0.9	0.410	0.15	0.72	0.381	0.01	0.18	0.029	6.3%	20.0%	7.1%
Spring	9	0.16	0.9	0.138	0.15	0.72	0.530	0.01	0.18	-0.392	6.3%	20.0%	-284.1%
Spring	10	0.16	0.9	0.027	0.15	0.72	0.463	0.01	0.18	-0.436	6.3%	20.0%	-1614.8%
Spring	11	0.16	0.9	0.035	0.15	0.72	0.260	0.01	0.18	-0.225	6.3%	20.0%	-642.9%
Spring	12	0.16	0.9	0.044	0.15	0.72	0.233	0.01	0.18	-0.189	6.3%	20.0%	-429.5%
Spring	**Average**	**0.16**	**0.90**	**0.141**	**0.15**	**0.72**	**0.491**	**0.01**	**0.18**	**-0.351**	**6%**	**20%**	**-767%**

Table 3-2: Seasonal Average Land Use Characteristics (Summer/Fall)

Season	Sector	Hartsfield-Jackson International Airport			ConMed Facility			Airport - Facility			(Airport - Facility)/ Airport		
		Albedo	Bowen Ratio	Surface Roughness	Albedo	Bowen Ratio	Surface Roughness	Δ Albedo	Δ Bowen Ratio	Δ Surface Roughness	% Albedo	% Bowen Ratio	% Surface Roughness
Summer	1	0.16	0.7	0.048	0.15	0.43	0.666	0.01	0.27	-0.618	6.3%	38.6%	-1287.5%
Summer	2	0.16	0.7	0.042	0.15	0.43	0.394	0.01	0.27	-0.352	6.3%	38.6%	-838.1%
Summer	3	0.16	0.7	0.028	0.15	0.43	0.835	0.01	0.27	-0.807	6.3%	38.6%	-2882.1%
Summer	4	0.16	0.7	0.074	0.15	0.43	0.941	0.01	0.27	-0.867	6.3%	38.6%	-1171.6%
Summer	5	0.16	0.7	0.266	0.15	0.43	0.995	0.01	0.27	-0.729	6.3%	38.6%	-274.1%
Summer	6	0.16	0.7	0.329	0.15	0.43	0.555	0.01	0.27	-0.226	6.3%	38.6%	-68.7%
Summer	7	0.16	0.7	0.328	0.15	0.43	0.822	0.01	0.27	-0.494	6.3%	38.6%	-150.6%
Summer	8	0.16	0.7	0.424	0.15	0.43	0.599	0.01	0.27	-0.175	6.3%	38.6%	-41.3%
Summer	9	0.16	0.7	0.149	0.15	0.43	0.834	0.01	0.27	-0.685	6.3%	38.6%	-459.7%
Summer	10	0.16	0.7	0.033	0.15	0.43	0.725	0.01	0.27	-0.692	6.3%	38.6%	-2097.0%
Summer	11	0.16	0.7	0.040	0.15	0.43	0.437	0.01	0.27	-0.397	6.3%	38.6%	-992.5%
Summer	12	0.16	0.7	0.048	0.15	0.43	0.335	0.01	0.27	-0.287	6.3%	38.6%	-597.9%
Summer	**Average**	**0.16**	**0.70**	**0.151**	**0.15**	**0.43**	**0.678**	**0.01**	**0.27**	**-0.527**	**6%**	**39%**	**-905%**
Fall	1	0.16	1.08	0.044	0.15	0.93	0.664	0.01	0.15	-0.62	6.3%	13.9%	-1409.1%
Fall	2	0.16	1.08	0.038	0.15	0.93	0.394	0.01	0.15	-0.356	6.3%	13.9%	-936.8%
Fall	3	0.16	1.08	0.022	0.15	0.93	0.835	0.01	0.15	-0.813	6.3%	13.9%	-3695.5%
Fall	4	0.16	1.08	0.068	0.15	0.93	0.941	0.01	0.15	-0.873	6.3%	13.9%	-1283.8%
Fall	5	0.16	1.08	0.257	0.15	0.93	0.995	0.01	0.15	-0.738	6.3%	13.9%	-287.2%
Fall	6	0.16	1.08	0.324	0.15	0.93	0.555	0.01	0.15	-0.231	6.3%	13.9%	-71.3%
Fall	7	0.16	1.08	0.315	0.15	0.93	0.822	0.01	0.15	-0.507	6.3%	13.9%	-161.0%
Fall	8	0.16	1.08	0.424	0.15	0.93	0.599	0.01	0.15	-0.175	6.3%	13.9%	-41.3%
Fall	9	0.16	1.08	0.139	0.15	0.93	0.834	0.01	0.15	-0.695	6.3%	13.9%	-500.0%
Fall	10	0.16	1.08	0.027	0.15	0.93	0.724	0.01	0.15	-0.697	6.3%	13.9%	-2581.5%
Fall	11	0.16	1.08	0.035	0.15	0.93	0.435	0.01	0.15	-0.4	6.3%	13.9%	-1142.9%
Fall	12	0.16	1.08	0.044	0.15	0.93	0.335	0.01	0.15	-0.291	6.3%	13.9%	-661.4%
Fall	**Average**	**0.16**	**1.08**	**0.145**	**0.15**	**0.93**	**0.678**	**0.01**	**0.15**	**-0.533**	**6%**	**14%**	**-1064%**

3.5 Receptor Grid

In accordance with GA EPD modeling guidelines, a Cartesian receptor grid extending 5 km from the facility was developed for use in AERMOD to assess maximum ground-level EtO concentrations.

The Cartesian receptor grid consisted of the following receptor spacing:

- 50-m increments along the ambient air boundary and beyond out to 1 km;
- 100-m increments beyond 1 km out to 2 km;
- 200-m increments beyond 2 km out to 5 km;

The ambient air boundary followed either a fence around the facility (where one existed) or along the property outside the facility where the general public does not have ready access. This receptor grid was sufficient to resolve the MGLC for EtO associated with the facility to at least 100-m spacing. Terrain elevations were developed using 10-meter resolution National Elevation Dataset (NED) data from USGS and USEPA's AERMAP (version 18081) terrain processor (USEPA 2018). All modeling was performed using the UTM coordinate system, Zone 16, NAD 83. **Figure 3-1** and **Figure 3-2** show the near field and far field receptors, respectively.

Figure 3-1: Near Field Receptor Locations

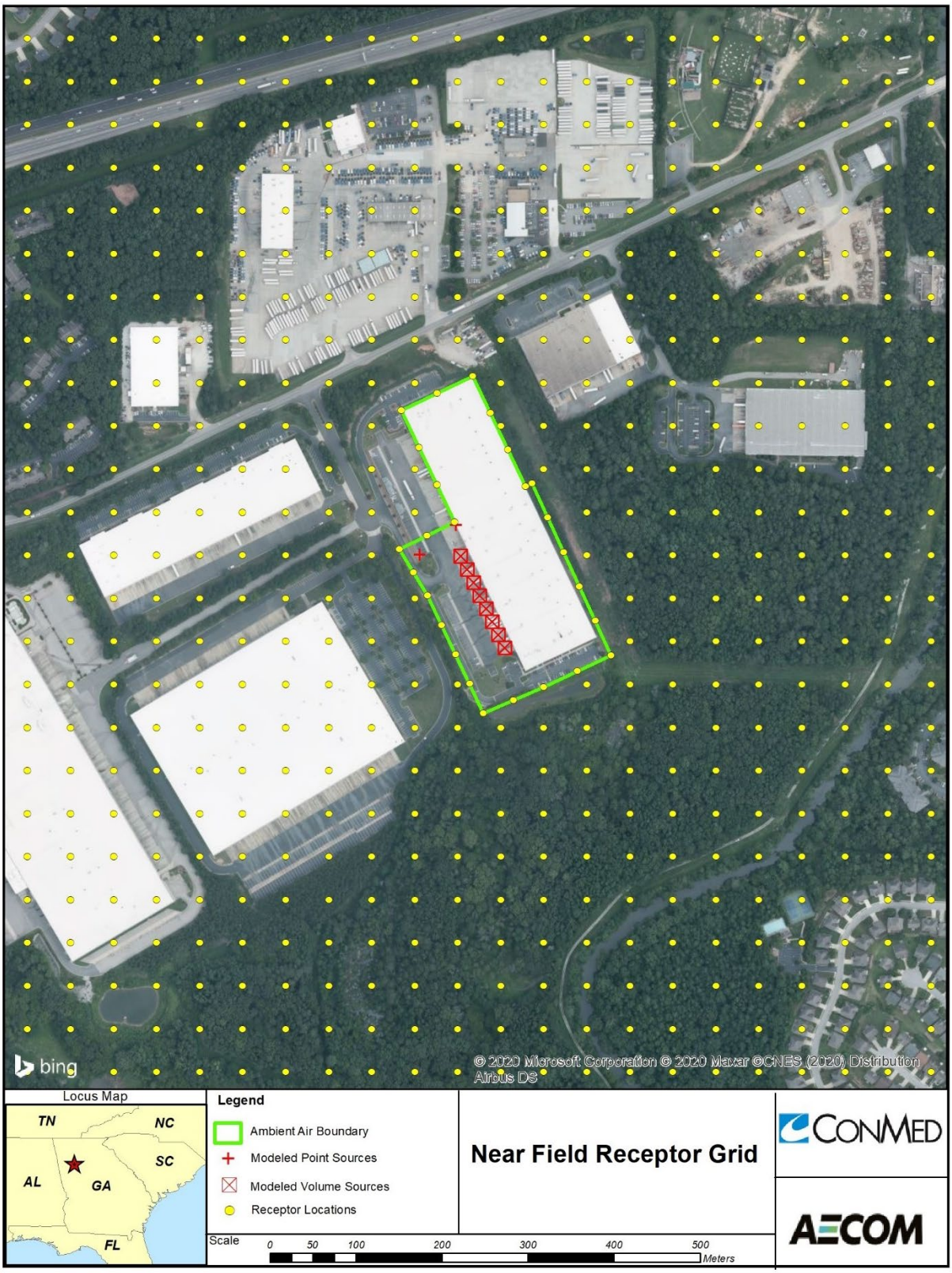
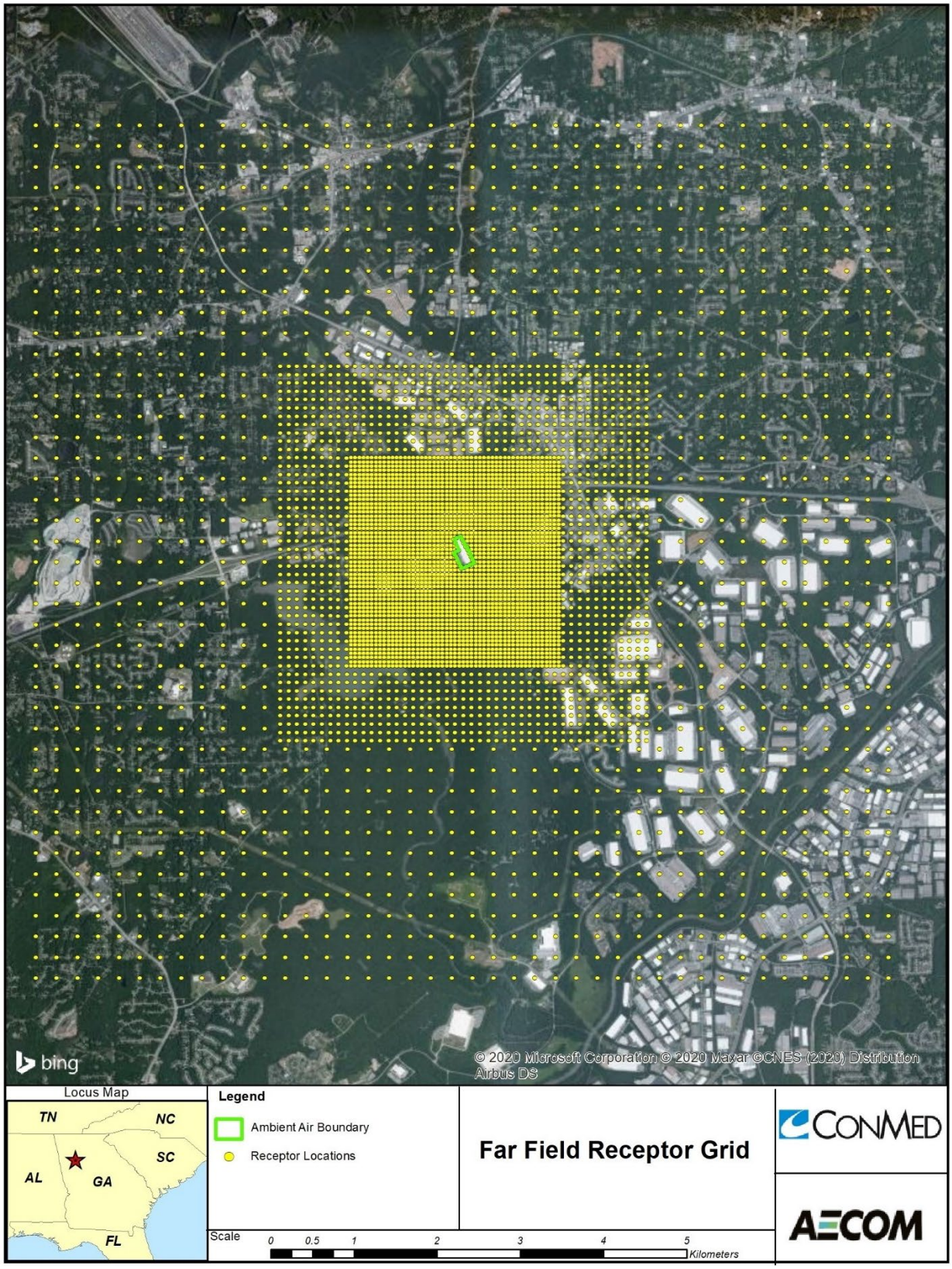


Figure 3-2: Far Field Receptor Locations



4. Dispersion Modeling Results

Dispersion modeling was conducted to determine the MGLC of EtO for the 1-hour, 24-hour, and annual averaging periods for comparison to the GA EPD AACs. **Table 4-1** shows the cumulative MGLC, which includes all three EtO emission source locations associated with the distribution center. While the 15-minute MGLC is well below its AAC, MGLCs for the 24-hour and annual averaging period exceed their respective AACs. In accordance with GA EPD guidelines, a site-specific analysis was also conducted where the annual concentration at the worst-case residential area was compared to the annual AAC. As shown in **Table 4-1**, the site-specific analysis also indicates the potential for a concentration above the AAC at the worst-case residential receptor. In addition to the cumulative concentrations, **Table 4-1** also provides the modeled concentrations for the individual sources to understand source contributions. Emissions from the receiving area have the potential to contribute the most to the cumulative impacts. While emissions from the shipping area also result in modeled concentrations above the annual AAC, the site-specific analysis shows annual concentrations only slightly above the AAC and the 15-minute and 24-hour concentrations are below their respective AACs and much smaller than concentrations produced by the receiving area.

Emissions from the trailer flushing station also result in notably smaller modeled concentrations than the receiving area and are below all AACs. These emissions do not significantly contribute to the cumulative modeled concentrations.

Figure 4-1, **Figure 4-2**, and **Figure 4-3** present concentration contours for the 15-minute, 24-hour, and annual model results which provide information on the potential magnitude of concentrations in the vicinity of the ConMed distribution center. The MGLC for all three averaging periods occurs along the fence in the parking lot that serves as a delineation between ConMed and the neighboring company. The potential worst-case concentration at a residence (site-specific annual analysis) occurs at the houses to the southeast of the facility.

All model input and output files are provided electronically and via USB thumb drive as an attachment to this document.

ConMed is in the process of scheduling discussions with GA EPD regarding future mitigation of the impacts.

Table 4-1: Maximum Modeled EtO Concentrations

Averaging Period	Cumulative Concentration for All Sources (µg/m³)	AAC (µg/m³)	Receiving Area Alone (µg/m³)	Shipping Area Alone (µg/m³)	Trailer Flushing Alone (µg/m³)
15-minute(1) MGLC	54.1	900	54.1	1.1	1.3(2)
1-hour MGLC	39.5	-	39.5	0.8	0.9(2)
24-hour MGLC	4.70(3)	1.43	4.69	0.08	0.01(3)
Annual MGLC	0.90	0.00033	0.90	0.0063	0.00025
Annual @ Resident (site-specific)	0.024	0.00033	0.023	0.00034	0.000020

Notes:
(1) 15-minute average based on 1-hour average x 1.37.
(2) Assumes emissions occur for an entire hour instead of just 15 minutes per hour. Accounting for such a lower emission rate would result in much lower impacts due to trailer flushing than what is shown.
(3) 24-hour result for trailer flushing alone includes a scaling factor as recommended by GA EPD (see below). The scaling factor was not applied to the cumulative concentration that includes all 3 emissions sources since it is only appropriate to scale the results attributable to trailer flushing. Note that the contribution from trailer flushing to the cumulative result is particularly small so any scaling of that contribution would not be visible in the amount of significant digits shown.

24-hour scaling factor (GA EPD 2017):
$Cc\ (y)^{0.8}\ (2.97E\text{-}03)$
Where:
Cc = modeled 24-hr concentration and
y = minutes of emissions per 24 hours.

Figure 4-1: 15-Minute EtO Contours

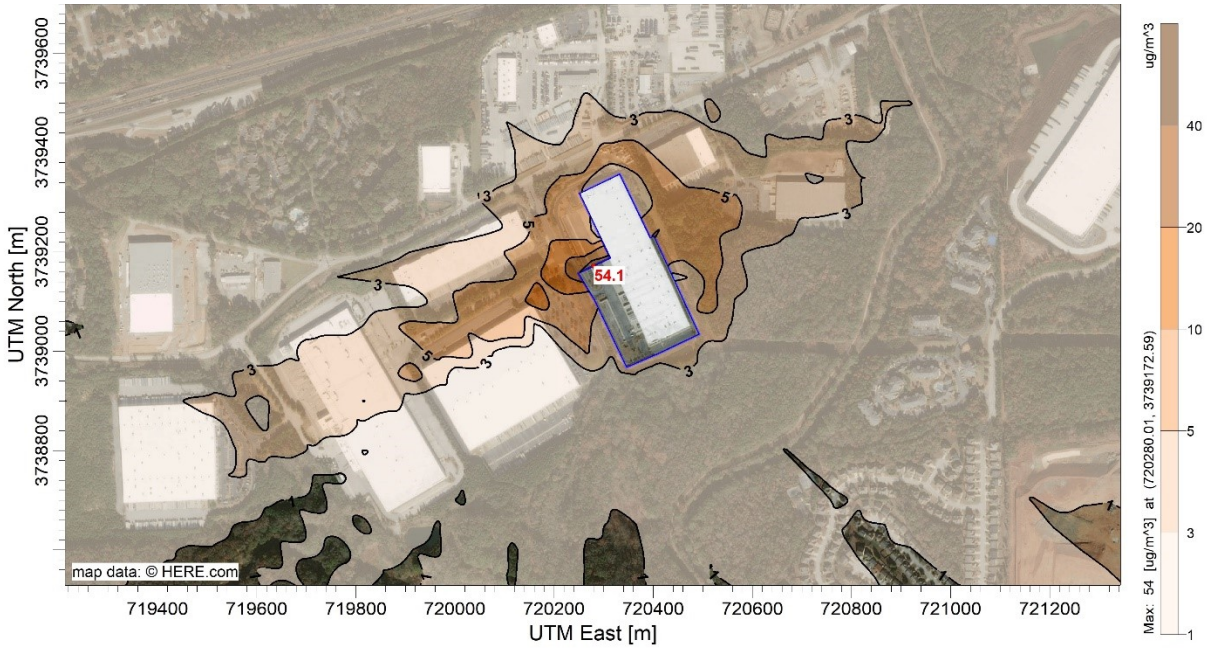


Figure 4-2: 24-Hour EtO Contours

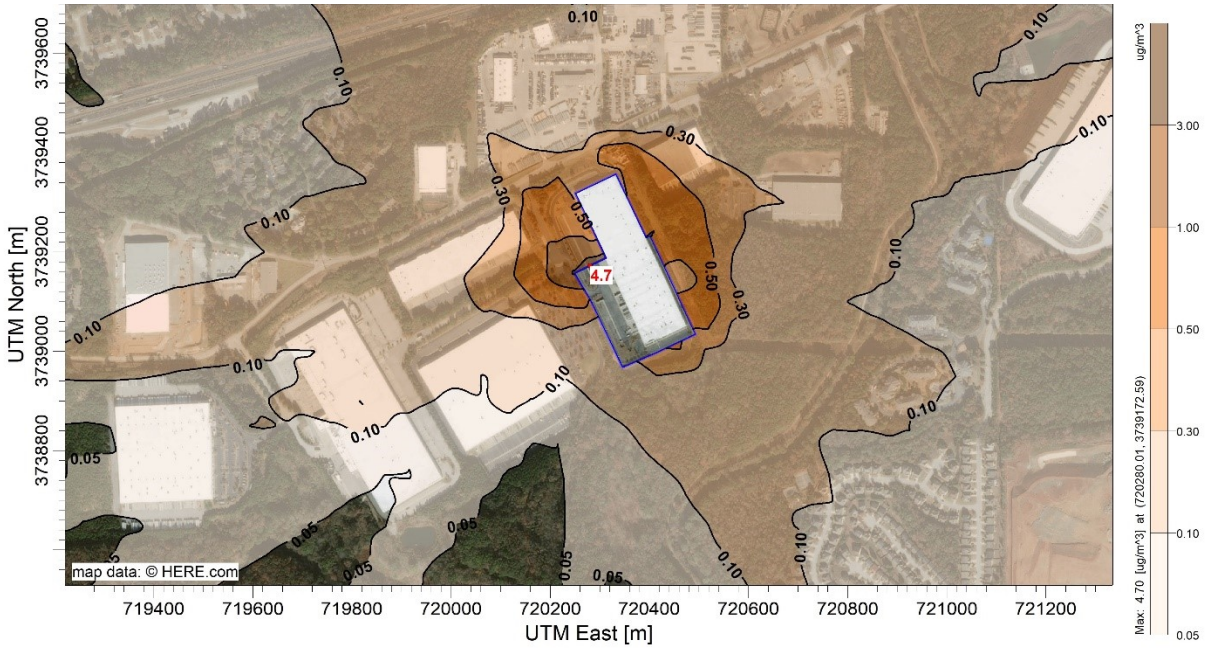
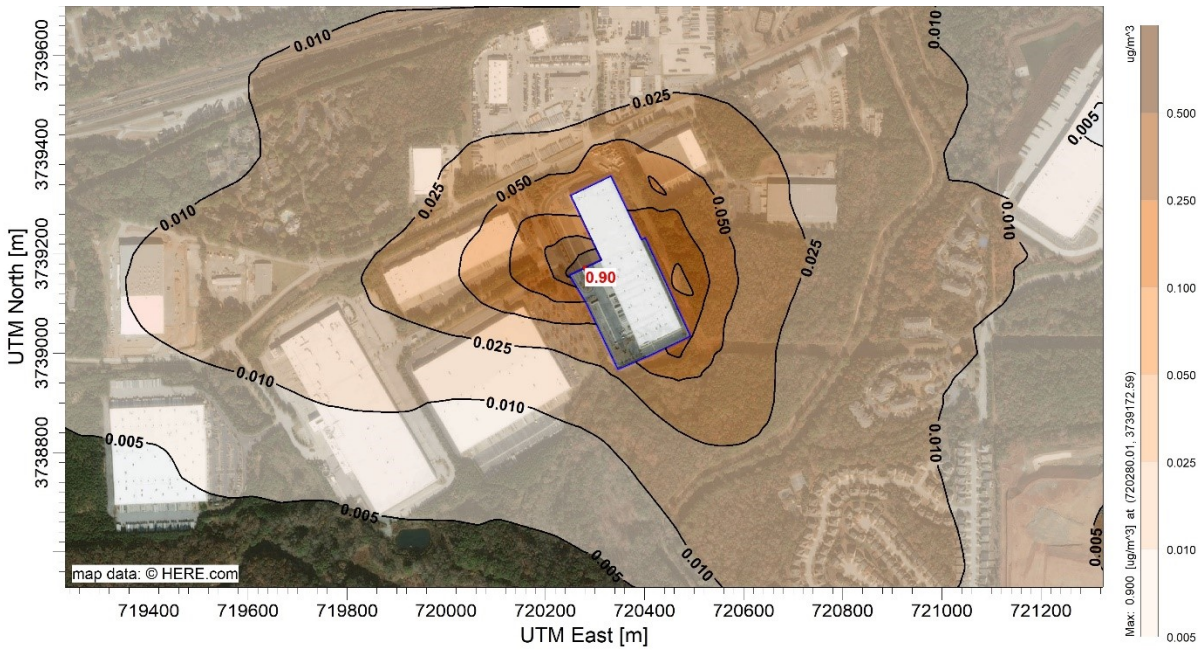


Figure 4-3: Annual EtO Contours



5. References

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Appendix A Calculations for Emissions and Dispersion Modeling Parameters

ConMed Lithia Springs
Ethylene Oxide Concentration Data and Preliminary Emission Estimates
October 6, 2020

Area Ethulene Oxide Sampling Results
Data from letter report dated February 13, 2020: Phillip Fincher, EI Group to Todd Logsdon, Fisher & Phillips, LLP

a. Product Receiving Area

Date	Location	ppm
4/25/2019	Quarantine	0.33
4/25/2019	Label Station	0.1
5/10/2019	Label Desk	0.2
5/10/2019	Quarantine	0.2
6/21/2019	5B3602	0.32
6/21/2019	Label Desk	0.35
7/17/2019	Label Desk	0.1
7/17/2019	Quarantine	0.1
9/25/2019	Dock Desk	<4
9/25/2019	Quarantine	0.1
9/25/2019	Label Desk	0.2
10/31/2019	Label Desk	<0.1
10/31/2019	Quarantine	<0.1
11/21/2019	Label Desk	<0.1
11/21/2019	Quarantine	0.75
	Average	0.25

b. Product Shipping/Storage Area

Date	Location	ppm
4/25/2019	Ship 4K-L	<0.1
4/25/2019	Ship 4A	<0.1
5/10/2019	4L3103	<0.1
5/10/2019	4A2201	<0.1
5/10/2019	Shipping C	<0.1
6/21/2019	4A2201	<0.2
7/17/2019	4A2201	<0.1
9/25/2019	Rack	<0.1
9/25/2019	Rack	<0.1
10/31/2019	Rack	<0.1
10/31/2019	Rack	<0.1
11/21/2019	Rack	0.1
11/21/2019	Rack	0.1
Average of detects		0.1 ppm

Overall average 0.06 ppm
(1/2 the detection limit for non-detect measurements)

Truck Trailer Ethylene Oxide Sampling Results
Data from EI Group

Date	Location	ppm	Media	Method	Duration
4/25/2019		<4	M3M-3551	MET8590	15 min
4/26/2019		<4	M3M-3551	MET8590	15 min
6/21/2019		<4	M3M-3551	MET8590	15 min
7/17/2019		<3	M3M-3551	MET8590	23 min
8/7/2019		<0.5	226-178	MET15401	0.757 L
8/7/2019		<4	M3M-3551	MET8590	15 min
9/25/2019		<4	M3M-3551	MET8590	15 min
9/25/2019		<3	M3M-3551	MET8590	22 min
10/31/2019		<4	M3M-3551	MET8590	16 min
10/31/2019		<3	M3M-3551	MET8590	23 min
12/31/2019		<4	M3M-3551	MET8590	15 min
12/31/2019		<4	M3M-3551	MET8590	15 min
1/12/2020	Front of Truck	<4	M3M-3551	MET8590	15 min
1/12/2020	Back of Truck	<4	M3M-3551	MET8590	15 min
2/20/2020		<4	M3M-3551	MET8590	15 min
3/24/2020		<4	M3M-3551	MET8590	15 min
3/24/2020		<4	M3M-3551	MET8590	15 min
4/28/2020		<4	M3M-3551	MET8590	15 min
4/28/2020		<4	M3M-3551	MET8590	15 min
4/28/2020		<4	M3M-3551	MET8590	15 min
4/28/2020		<4	M3M-3551	MET8590	15 min
5/28/2020		<4	M3M-3551	MET8590	15 min
7/15/2020		<4	M3M-3551	MET8590	15 min

Average truck concentration 1.9 ppm (1/2 the detection limit for non-detect measurements)

ConMed Lithia Springs
Ethylene Oxide Concentration Data and Preliminary Emission Estimates
October 6, 2020

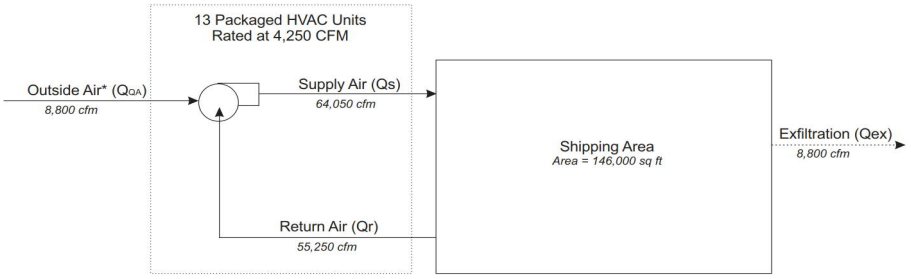
Receiving Area Ventilation Equipment
Data from EI Group

Equipment No.	Rated capacity each (CFM)	Number each	Total capacity (CFM)	Service Type	
Unknown	30,000	1	30,000	Exhaust fan (installed in 2019)	
HEAT-22	10,215	1	10,215	Supplemental Heat	
RTU-19	1,200	1	1,200	Packaged HVAC supply	
RTU-20	1,200	1	1,200	Packaged HVAC supply	
RTU-21	1,200	1	1,200	Packaged HVAC supply	
Global belt fan	13,200	3	39,600	Air movement	low speed
Shop-Vac fan	13,500	3	40,500	Air movement	low speed
Ventmatic fan	9,500	1	9,500	Air movement	low speed
Global belt fan	17,600	3	52,800	Air movement	high speed
Shop-Vac fan	16,500	3	49,500	Air movement	high speed
Ventmatic fan	13,300	1	13,300	Air movement	high speed
REX-1	30,000	1	30,000	Smoke Evacuation	

Air Exhaust Capacity	30,000	cfm
	1,800,000	cfh

Shipping/Storage Area Ventilation Equipment
Data from EI Group

Equipment No.	Rated capacity each (CFM)	Number each	Total capacity (CFM)	Service Type
Heat-12	6,625	1	6,625	Supplemental Heat
RTU-6	4,250	1	4,250	Packaged HVAC supply
RTU-7	4,250	1	4,250	Packaged HVAC supply
RTU-8	4,250	1	4,250	Packaged HVAC supply
RTU-9	4,250	1	4,250	Packaged HVAC supply
RTU-10	4,250	1	4,250	Packaged HVAC supply
RTU-11	4,250	1	4,250	Packaged HVAC supply
RTU-13	4,250	1	4,250	Packaged HVAC supply
RTU-14	4,250	1	4,250	Packaged HVAC supply
RTU-15	4,250	1	4,250	Packaged HVAC supply
RTU-16	4,250	1	4,250	Packaged HVAC supply
RTU-17	4,250	1	4,250	Packaged HVAC supply
RTU-18	4,250	1	4,250	Packaged HVAC supply
RTU-23	4,250	1	4,250	Packaged HVAC supply
REX-2	30,000	1	30,000	Smoke Evacuation Fan
REX-3	30,000	1	30,000	Smoke Evacuation Fan
REX-4	30,000	1	30,000	Smoke Evacuation Fan
REX-5	30,000	1	30,000	Smoke Evacuation Fan
REX-6	30,000	1	30,000	Smoke Evacuation Fan
REX-7	30,000	1	30,000	Smoke Evacuation Fan
REX-8	30,000	1	30,000	Smoke Evacuation Fan
REX-9	30,000	1	30,000	Smoke Evacuation Fan



Notes:
* Outside air estimated based upon current code minimums for warehouse storage of 0.06 cfm outside air per square foot of space.

ConMed Lithia Springs
Ethylene Oxide Concentration Data and Preliminary Emission Estimates
October 6, 2020

Total Air Supply Capacity	61,875	cfm
	3,712,500	cfh
Floor Area of Shipping/Storage Area:	146,156	ft2
Makeup Air Rate	8,800	cfm (source: EI Group)
	528,000	cfh
	0.06	cfm/ft2 of floor space

Truck Trailer Flushing Equipment
Data from EI Group

Equipment No.	Rated capacity each (CFM)	Number each	Total capacity (CFM)
FJC-315-BI	5,000	1	5,000

Total exhaust capacity 5,000 cfm

ConMed Lithia Springs
Ethylene Oxide Concentration Data and Preliminary Emission Estimates
October 6, 2020

Estimated Ethylene Oxide Emission Rates

Molecular weight of EtO	44	lb/lb mol

a. Receiving/Quarantine Area:

EtO concentration:	0.25	ppm
Exhaust rate:	30,000	cfm (capacity of system installed in 2019)
Operating schedule:	continuous	
	8,760	hours/yr
Emission rate	0.051	lb/hr
	0.0065	g/sec
	449.9	lb/year

b. Shipping/Storage Area:

EtO concentration:	0.03	ppm (half of the average concentration obtained using 1/2 the detection limit for non-detects)
Estimated exhaust rate:	8,800	cfm (equal to makeup air rate)
Operating schedule:	discontinuous - emissions potentially occur 13 hours per day/5 days per week	
	3,380	hours/yr
Emission rate	0.002	lb/hr
	0.0002	g/sec
	6.3	lb/year

c. Trailer Flushing System:

Trailer internal volume:	3264	ft3 (48 feet long x 8 feet wide x 8.5 feet high)
EtO concentration:	1.86	ppm
Exhaust rate:	5,000	cfm
Operating schedule:	discontinuous - only operates during daylight hours on weekdays	
	15	minutes per trailer
	2	trailers/day
	5	days/week
	52	weeks/yr
	130	hours/yr
Emission rate	0.0007	lb/trailer
	0.000046	lb/min
	0.0003	g/sec
	0.4	lb/year

Appendix B Other Supporting Data

APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

Name of Project: L.S. SYSTEM UPGRADES - PHASE I - AIR WASH - CONMED

Address: 1250 TERMINUS DRIVE, BUILDING 100 LITHIA SPINGS, GA 30122

Proposed Use: BUSINESS/ASSEMBLY AREA

Owner/Contact Person: ERNESTO BARNAT Phone 727.214.7972

Owned By: ☐ City/County ■ Private ☐ State

Code Enforcement Jurisdiction: ☐ City ■ County DOUGLAS

LEAD DESIGN PROFESSIONAL: BASINGER DESIGN CO., PC

DESIGNER	NAME	LICENSE #	TELEPHONE #	
Architectural				
Civil				
Electrical	JAMES R. BASINGER, PE	PE042136	704.796.1445	james@bcdesignco.com
Fire Alarm				
Plumbing				
Mechanical	JAMES R. BASINGER, PE	PE042136	704.796.1445	james@bcdesignco.com
Sprinkler-Standpipe				
Structural	JAMES R. BASINGER, PE	PE042136	704.796.1445	james@bcdesignco.com
Retaining Walls >5' High				
Other (GENERAL UPFIT)				

2018 EDITION OF GA CODE FOR: ■ New Construction ☐ Addition ☐ Upfit

EXISTING: ☐ Reconstruction ☐ Alteration ☐ Repair

CONSTRUCTED U **ORIGINAL USE** _____ **RENOVATED**_____ **CURRENT USE** U

BUILDING DATA

Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A ☐ I-B ■ II-B ☐ III-B ☐ V-B
Mixed construction ■ No ☐ Yes Types _____

Sprinklers: ■ No ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ■ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ■ No ☐ Yes

Building Height: ± 15'-0" Feet 1 Number of Stories ☐ Unlimited per _____

Mezzanine: ■ No ☐ Yes

High Rise? ■ No ☐ Yes Central Reference Sheet # (if provided) _____

Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
7th Floor	-		
6th Floor	-		
5th Floor	-		
4th Floor	-		
3rd Floor	-		
2nd Floor	-		
1st Floor		183 SF	
Basement	-		
Total		183 SF	

ALLOWABLE AREA

Primary Occupancy: ☐Assembly ☐A-1 ☐A-2 ☐A-3 ☐A-4 ☐A-5
☐Business ☐Educational ☐Factory-Industrial ☐F-1 ☐F-2
Hazardous ☐H-1 ☐H-2 ☐H-3 ☐H-4 ☐H-5
Institutional ☐I-1 ☐I-2 ☐I-3 ☐I-4
I-3 Use Condition ☐1 ☐2 ☐3 ☐4 ☐5
☐Mercantile Residential ☐R-1 ☐R-2 ☐R-3 ☐R-4
☐Storage ☐S-1 ☐S-2 ☐High-Piled
■Utility and Miscellaneous ☐ Parking Garage ☐Open ☐Enclosed ☐Repair Garage

Secondary Occupancy: _____

Special Uses: ☐402 ☐403 ☐404 ☐405 ☐406 ☐407 ☐408 ☐409 ☐410 ☐411 ☐412 ☐413 ☐414 ☐415 ☐416 ☐417 ☐418 ☐419 ☐420 ☐421

Special Provisions: ☐508.2 ☐508.3 ☐508.4 ☐508.5 ☐508.6 ☐508.7 ☐508.8

Mixed Occupancy: ■No ☐Yes Separation: ____ Hr. Exception: _____

☐Incidental Use Separation
This separation is not exempt as a Non Separated Use (see exceptions).

☐ Non -Separated Use 508.3
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (302.3. 2) - See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall n ot exceed 1.

$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$

$\frac{(A)\ 3,200}{9,500} + \frac{(B)\ 1,600}{23,000} + \frac{(S)\ 4,800}{17,500} = \frac{0.68}{} \leq 1$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503[5] AREA	(C) AREA FOR OPEN SPACE INCREASE[1]	(D) AREA FOR SPRINKLER INCREASE[2]	(E) ALLOWABLE AREA OR UNLIMITED[3]	(F) MAXIMUM BUILDING AREA[4]
1	UTILILTY	183	8,500		N/A	8,500	8,500

[1] Open space area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____(F)
b. Total building perimeter = _____(P)
c. Ratio (F/P) = _____(F/P)
d. W = Minimum width of public way = _____(W)
e. Percent of frontage increase I = 100 [F/P-0.25]x W/30 = _____(%)

[2] The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building I = 200 percent
b. Single story building I = 300 percent

[3] Unlimited area applicable under conditions of Sections Group B, F, M, S, A-4 (507.1, 507.2, 507.3, 507.5); Group A motion picture (507.8); Malls (402.6); and H-2 aircraft paint hangars (507.6).

[4] Maximum Building Area = total number of stories in the building x E, but not greater than 3 x E.

[5] The maximum area of parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with 412.1.2.

ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type IIB		Type IIB	602
Building Height in Feet	Feet 55	Feet = H + 20' = N/A	± 15'-0"	TABLE 503
Building Height in Stories	Stories 2	Stories + 1 = N/A	Stories 1	TABLE 503

FIRE PROTECTION REQUIREMENTS

Life Safety Plan Sheet #, if Provided N/A

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET#	DESIGN# FOR RATED ASSEMBLY	DESIGN# FOR RATED PENETRATION	DESIGN# FOR RATED JOINTS
Structural frame, including columns, girders, trusses							
Bearing walls	<30'-0"	0	N/A	N/A	N/A		
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing walls and partitions							
Exterior							
North							
East							
West							
South							
Interior							
Floor construction Including supporting beams and joists							
Roof construction Including supporting beams and joists							
Shafts- Exit							
Shafts- Elevator							
Corridor Separation							
Occupancy Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Tenant Separation	-V-	-V-	-V-	-V-	-V-		

* Indicate section number permitting reduction

DESIGN LOADS: SEE STRUCTURAL PLANS

Importance Factors: Wind (I_W) 1.0; Snow (I_S) 1.0; Seismic (I_E) 1.0

Live Loads: Roof 20 psf; Mezzanine N/A psf; Floor 100 psf

Snow Load: 10 psf

Wind Load: Basic Wind Speed 106 mph (ASCE-7-05); Exposure Category B; Wind Base Shears (for MWFRS)

SEISMIC DESIGN CATEGORY A N/A
Compliance with Section 1616.4 only? ☐ Yes ☐ No

SEISMIC DESIGN CATEGORY B, C, & D
Provide the following Seismic Design Parameters:
Seismic Use Group II
Spectral Response Acceleration S_{MS} 0.308 %g S_{M1} 0.209 %g
Site Classification D
Basic structural system (check one)
_____ Bearing Wall _____ Dual w/Special Moment Frame
X Building Frame _____ Dual w/Intermediate R/C or Special Steel
_____ Moment Frame _____ Inverted Pendulum
Seismic base shear V_X = 0.8 V_Y = 0.8
Analysis Procedure X Simplified _____ Equivalent Lateral Force _____ Modal

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) N/A psf
Presumptive Bearing capacity 1500 psf
Pile size, type, and capacity N/A

PLUMBING FIXTURE REQUIREMENTS

OCCUPANCY	WATERCLOSETS MALE	WATERCLOSETS FEMALE	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	SHOWERS/ TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
** EXISTING BATHROOMS IN EXISTING BUILDING WITHIN 500'-0"**							-	-

ACCESSIBLE PARKING - EXISTING GRAVEL PARKING LOT

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# ACCESSIBLE SPACES PROVIDED REGULAR WITH[5] ACCESS AISLE	# ACCESSIBLE SPACES PROVIDED VAN SPACES WITH[6] ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
			--		

** EXISTING PARKING IS NOT AFFECTED BY PLACEMENT OF AIR WASH**

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	☐ No	■ Yes
Exit Signs:	■ No	☐ Yes
Fire Alarm:	■ No	☐ Yes
Smoke Detection Systems:	■ No	☐ Yes
Panic Hardware:	■ No	☐ Yes

EXIT REQUIREMENTS

NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM [2] NUMBER OF EXITS REQUIRED	MINIMUM [2] NUMBER OF EXITS SHOWN ON PLANS	TRAVEL DISTANCE ALLOWABLE TRAVEL DISTANCE (TABLE 1015.1)	TRAVEL DISTANCE ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	ARRANGEMENT MEANS OF EGRESS[1] (SECTION 1004.1) REQUIRED DISTANCE BETWEEN EXIT DOORS	ARRANGEMENT MEANS OF EGRESS[1] (SECTION 1004.1) ACTUAL DISTANCE SHOWN ON PLANS
UTILILTY	1	1	100'	20'	N/A	N/A

[1] Corridor dead ends (Section 1004.3.2.3)
[2] Single exits (Table 1018.2)
[3] Common Path of Travel (Section 1004.2.5)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(a) AREA[1] sq. ft.	(b) AREA[1] PER OCCUPANT (TABLE 1003.2.2.2)	CALCULATED OCCUPANT LOAD	(c) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1) STAIR	(c) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1) LEVEL	EXIT WIDTH (in)[2,3,4,5,6] REQUIRED WIDTH (SECTION1005.1) (a÷b) x c STAIR	EXIT WIDTH (in)[2,3,4,5,6] REQUIRED WIDTH (SECTION1005.1) (a÷b) x c LEVEL	EXIT WIDTH (in)[2,3,4,5,6] ACTUAL WIDTH SHOWN ON PLANS STAIR	EXIT WIDTH (in)[2,3,4,5,6] ACTUAL WIDTH SHOWN ON PLANS LEVEL
UTILILTY	144	500	1	0.3	0.15	0.3	0.15	48"	+48"

[1] See Table 1003.2.2.2 to determine whether net or gross area is applicable. See definition "Area, Gross" and "Area, Net" (Section 1002)
[2] Minimum stairway width (Section 1005.1); min. corridor width (Section 1016.2); min. door width (Section 1018.1)
[3] Minimum width of exit passageway (Section 1020.2)
[4] See Section 1004.5 for converging exits.
[5] The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1)
[6] Assembly occupancies (Section 1024)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each designer shall furnish the required portions of the project information for the plan data sheet. If energy cost budget method, state the annual energy cost budget vs. allowable annual energy cost budget.

THERMAL ENVELOPE

Method of Compliance:
■ Prescriptive ☐ Performance ☐ Energy Cost Budget

Roof/ceiling Assembly (each assembly)
Description of assembly:
-
-
-
U-Value of total assembly -
R-Value of insulation -
Skylights in each assembly -
U-Value of skylight -
total sq. ft. of skylights in ea. assembly -

Exterior Walls (each assembly)
Description of assembly:
-
-
-
-
U-Value of total assembly -
R-Value of insulation -
Openings (windows or doors with glazing)
U-Value of assembly -
shading coefficient -
projection factor -
low e required, if applicable -
Door R-Values -

Walls adjacent to unconditioned space (each assembly) N/A
Description of assembly:
-
-
-
U-Value of total assembly -
R-Value of insulation -
Openings (windows or doors with glazing)
U-Value of assembly -
low e required, if applicable -
Door R-Values -

Walls Below Grade (each assembly) N/A
Description of assembly:
-
-
-
U-Value of total assembly -
R-Value of insulation -

Floors over unconditioned space (each assembly) N/A
Description of assembly:
-
-
-
U-Value of total assembly -
R-Value of insulation -

Floors slab on grade N/A
Description of assembly:
-
-
-
U-Value of total assembly -
R-Value of insulation -
Horizontal/vertical requirement -
Slab heated -

N/A UNHEATED, OPEN STRUCTURE

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

MECHANICAL SUMMARY

Method of Compliance: ■ Prescriptive ☐ Energy Cost Budget

Thermal Zone -
winter dry bulb -
summer dry bulb -
Interior design conditions
winter dry bulb -
summer dry bulb -
relative humidity -
Building heating load -
Building cooling load -
Mechanical Spacing Conditioning System
unitary description of unit
-
-
-
heating efficiency
cooling efficiency
heat output of unit -
cooling output of unit -
boiler -
total boiler output -
(If oversized, state reason.)
-
-
chiller -
total chiller output -
(If oversized, state reason.)
-
-
List equipment efficiencies
Equipment Schedules with motors (mechanical systems) N/A
motor horsepower -
number of phases -
minimum efficiency -
motor type -
# of poles -

N/A UNHEATED, OPEN STRUCTURE

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE: ■ PRESCRIPTIVE ☐PERFORMANCE ☐ENERGY COST BUDGET

LIGHTING SCHEDULE
LAMP TYPE REQUIRED IN FIXTURE: N/A - SEE SCHEDULE
NUMBER OF LAMPS IN FIXTURE: N/A - SEE SCHEDULE
BALLAST TYPE USED IN THE FIXTURE: N/A - SEE SCHEDULE
NUMBER OF BALLASTS IN FIXTURE: N/A - SEE SCHEDULE
TOTAL WATTAGE PER FIXTURE: N/A - SEE SCHEDULE
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED: -
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED: N/A

EQUIPMENT SCHEDULES WITH MOTORS
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A
NUMBER OF POLES: N/A

*REDUCED LIGHTING CAPACITY.

L.S. SYSTEM UPGRADES
PHASE I - AIR-WASH

CONMED
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

SHEET SCHEDULE

SCOPE OF WORK
PHASE I PLANS SHOWN WITHIN THIS PACKAGE IS FOR THE ERECTION OF A TRACTOR TRAILER AIR WASH STATION. THIS AIR-WASH STATION WILL ALLOW TRUCKS CARRYING CARGO WHERE EtO IS PRESENT - SENDING A WASH OF AIR INTO THE TRACTOR TRAILER, AND EXHAUSTING THE SPACE. THE AIR-WASH WILL RUN FOR APPROXIMATELY 10-15 MINUTES, PRIOR TO BEING RECEIVED AT THE EXISTING WAREHOUSE RECEIVING.

THE EI GROUP, INC.
210 GATEWAY CENTRE BLVD.
SUITE 200
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919.657.7500
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SEAL
BASINGER DESIGN CO.
JAMES R. BASINGER, PE
545 PLEASANT VILLAGE LN.
CHINA GROVE, N.C. 28023
704.796.1445 (mobile)

GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.16.2020

PROJECT INFO:
PHASE I - AIR WASH
L.S. SYSTEM UPGRADES
CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

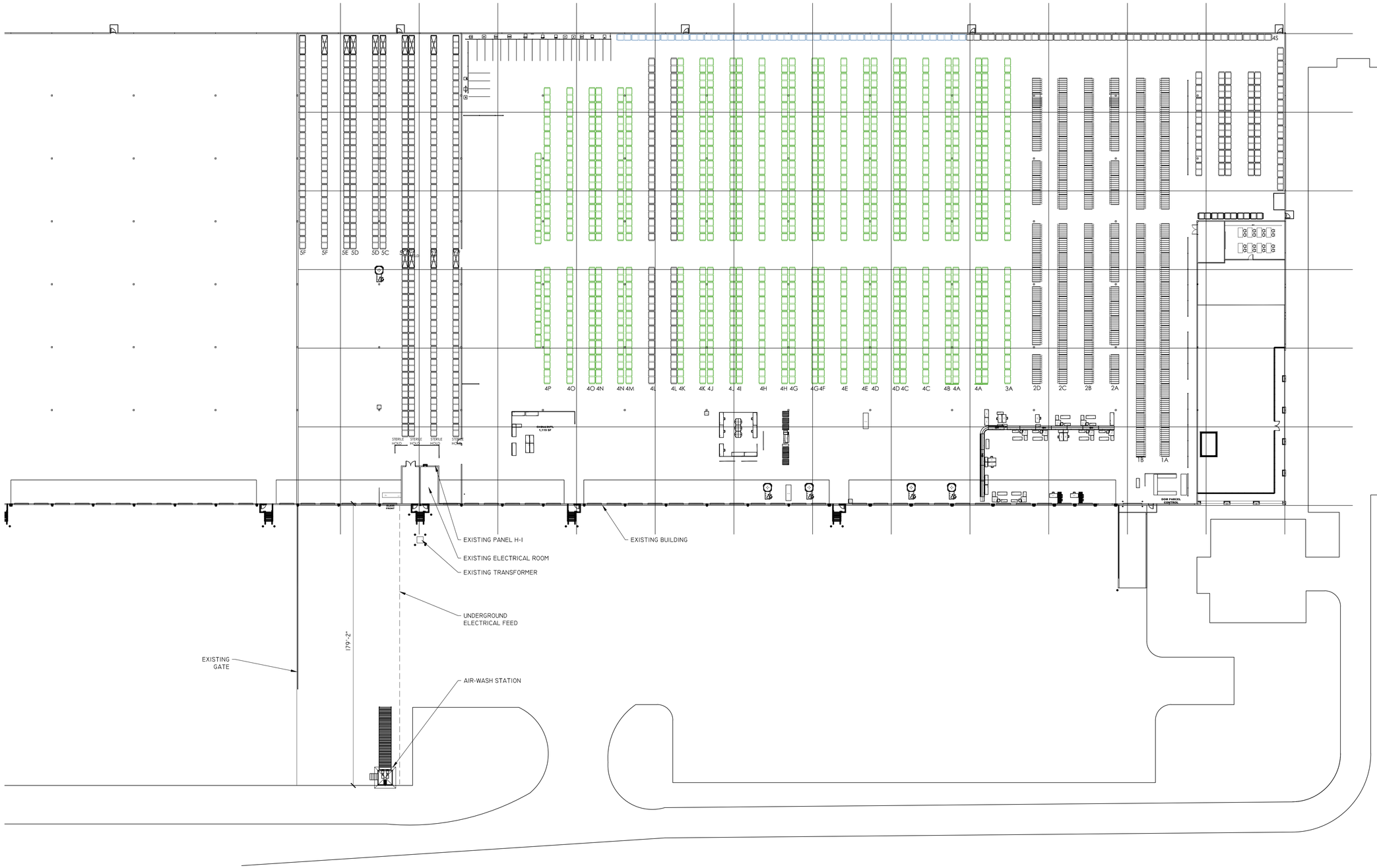
CONTRACTOR INFO:

REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO. 19076
SCALE (U.N.O.) -
DATE 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE:
COVER SHEET
APPENDIX "B"

SHEET NO.:
G-1



1 SITE PLAN
SCALE: 1/32" = 1'-0"

THE EI GROUP, INC.
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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:

PHASE I - AIR WASH
L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

REV	DESCRIPTION	DATE
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2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO.: 19076
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE:
PARTIAL SITE PLAN

SHEET NO.:
G-2

PAINTING SPECIFICATIONS

1.1 DESCRIPTION

A. SECTION SPECIFIES FIELD PAINTING.

B. SECTION SPECIFIES PRIME COATS WHICH MAY BE APPLIED IN SHOP UNDER OTHER SECTIONS.

C. PAINTING INCLUDES SHELLACS, STAINS, VARNISHES, COATINGS SPECIFIED, AND STRIPING OR MARKERS AND IDENTITY MARKINGS.

1.2 DELIVERY AND STORAGE

A. DELIVER MATERIALS TO SITE IN MANUFACTURER'S SEALED CONTAINER MARKED TO SHOW FOLLOWING:

1. NAME OF MANUFACTURER.
2. PRODUCT TYPE.
3. BATCH NUMBER.
4. INSTRUCTIONS FOR USE.
5. SAFETY PRECAUTIONS.

B. IN ADDITION TO MANUFACTURER'S LABEL, PROVIDE A LABEL LEGIBLY PRINTED AS FOLLOWING:

1. FEDERAL SPECIFICATION NUMBER, WHERE APPLICABLE, AND NAME OF MATERIAL.
2. SURFACE UPON WHICH MATERIAL IS TO BE APPLIED.
3. IF PAINT OR OTHER COATING, STATE COAT TYPES: PRIME, BODY OR FINISH.

C. MAINTAIN SPACE FOR STORAGE, AND HANDLING OF PAINTING MATERIALS AND EQUIPMENT IN A NEAT AND ORDERLY CONDITION TO PREVENT SPONTANEOUS COMBUSTION FROM OCCURRING OR IGNITING ADJACENT ITEMS.

D. STORE MATERIALS AT SITE AT LEAST 24 HOURS BEFORE USING, AT A TEMPERATURE BETWEEN 18 AND 30 DEGREES C (65 AND 85 DEGREES F).

PART 2 - PRODUCTS

2.1 MATERIALS

A. EXTERIOR ALKYD ENAMEL (EO): MPI 9.

B. EXTERIOR LATEX, SEMI-GLOSS (AE): MPI 11.

C. FAST DRYING METAL PRIMER: MPI 95.

2.2 PAINT PROPERTIES

A. USE READY-MIXED (INCLUDING COLORS), EXCEPT TWO COMPONENT EPOXIES, POLYURETHANES, POLYESTERS, PAINTS HAVING METALLIC POWDERS PACKAGED SEPARATELY AND PAINTS REQUIRING SPECIFIED ADDITIVES.

B. WHERE NO REQUIREMENTS ARE GIVEN IN THE REFERENCED SPECIFICATIONS FOR PRIMERS, USE PRIMERS WITH PIGMENT AND VEHICLE, COMPATIBLE WITH SUBSTRATE AND FINISH COATS SPECIFIED.

PART 3 - EXECUTION

3.1 JOB CONDITIONS

A. SAFETY: OBSERVE REQUIRED SAFETY REGULATIONS AND MANUFACTURER'S WARNING AND INSTRUCTIONS FOR STORAGE, HANDLING AND APPLICATION OF PAINTING MATERIALS.

1. TAKE NECESSARY PRECAUTIONS TO PROTECT PERSONNEL AND PROPERTY FROM HAZARDS DUE TO FALLS, INJURIES, TOXIC FUMES, FIRE, EXPLOSION, OR OTHER HARM.
2. DEPOSIT SOILED CLEANING RAGS AND WASTE MATERIALS IN METAL CONTAINERS APPROVED FOR THAT PURPOSE. DISPOSE OF SUCH ITEMS OFF THE SITE AT END OF EACH DAYS WORK.

B. ATMOSPHERIC AND SURFACE CONDITIONS:

1. DO NOT APPLY COATING WHEN AIR OR SUBSTRATE CONDITIONS ARE:
   a. LESS THAN 3 DEGREES C (5 DEGREES F) ABOVE DEW POINT.
   b. BELOW 10 DEGREES C (50 DEGREES F) OR OVER 35 DEGREES C (95 DEGREES F), UNLESS SPECIFICALLY PRE-APPROVED BY THE CONTRACTING OFFICER AND THE PRODUCT MANUFACTURER, UNDER NO CIRCUMSTANCES SHALL APPLICATION CONDITIONS EXCEED MANUFACTURER RECOMMENDATIONS.
2. MAINTAIN INTERIOR TEMPERATURES UNTIL PAINT DRIES HARD.
3. DO NO EXTERIOR PAINTING WHEN IT IS WINDY AND DUSTY.
4. DO NOT PAINT IN DIRECT SUNLIGHT OR ON SURFACES THAT THE SUN WILL SOON WARM.
5. APPLY ONLY ON CLEAN, DRY AND FROST FREE SURFACES EXCEPT AS FOLLOWS:
   a. APPLY WATER THINNED ACRYLIC AND CEMENTITIOUS PAINTS TO DAMP (NOT WET) SURFACES WHERE ALLOWED BY MANUFACTURER'S PRINTED INSTRUCTIONS.
   b. DAMPENED WITH A FINE MIST OF WATER ON HOT DRY DAYS CONCRETE AND MASONRY SURFACES TO WHICH WATER THINNED ACRYLIC AND CEMENTITIOUS PAINTS ARE APPLIED TO PREVENT EXCESSIVE SUCTION AND TO COOL SURFACE.

3.2 SURFACE PREPARATION

A. METHOD OF SURFACE PREPARATION IS OPTIONAL, PROVIDED RESULTS OF FINISH PAINTING PRODUCE SOLID EVEN COLOR AND TEXTURE SPECIFIED WITH NO OVERLAYS.

B. GENERAL:

1. REMOVE PREFINISHED ITEMS NOT TO BE PAINTED SUCH AS LIGHTING FIXTURES, ESCUTCHEON PLATES, HARDWARE, TRIM, AND SIMILAR ITEMS FOR REINSTALLATION AFTER PAINT IS DRIED.
2. REMOVE ITEMS FOR REINSTALLATION AND COMPLETE PAINTING OF SUCH ITEMS AND ADJACENT AREAS WHEN ITEM OR ADJACENT SURFACE IS NOT ACCESSIBLE OR FINISH IS DIFFERENT.
3. SEE OTHER SECTIONS OF SPECIFICATIONS FOR SPECIFIED SURFACE CONDITIONS AND PRIME COAT.
4. CLEAN SURFACES FOR PAINTING WITH MATERIALS AND METHODS COMPATIBLE WITH SUBSTRATE AND SPECIFIED FINISH. REMOVE ANY RESIDUE REMAINING FROM CLEANING AGENTS USED. DO NOT USE SOLVENTS, ACID, OR STEAM ON CONCRETE AND MASONRY.

C. FERROUS METALS:

1. REMOVE OIL, GREASE, SOIL, DRAWING AND CUTTING COMPOUNDS, FLUX AND OTHER DETRIMENTAL FOREIGN MATTER IN ACCORDANCE WITH SSPC-SP 1 (SOLVENT CLEANING).
2. REMOVE LOOSE MILL SCALE, RUST, AND PAINT, BY HAND OR POWER TOOL CLEANING, AS DEFINED IN SSPC-SP 2 (HAND TOOL CLEANING) AND SSPC-SP 3 (POWER TOOL CLEANING). EXCEPTION: WHERE HIGH TEMPERATURE ALUMINUM PAINT IS USED, PREPARE SURFACE IN ACCORDANCE WITH PAINT MANUFACTURER'S INSTRUCTIONS.
3. SPOT PRIME ABRADED AND DAMAGED AREAS IN SHOP PRIME COAT WHICH EXPOSE BARE METAL WITH SAME TYPE OF PAINT USED FOR PRIME COAT, FEATHER EDGE OF SPOT PRIME TO PRODUCE SMOOTH FINISH COAT.
4. SPOT PRIME ABRADED AND DAMAGED AREAS WHICH EXPOSE BARE METAL OF FACTORY FINISHED ITEMS WITH PAINT AS RECOMMENDED BY MANUFACTURER OF ITEM.

3.3 PAINT PREPARATION

A. THOROUGHLY MIX PAINTING MATERIALS TO ENSURE UNIFORMITY OF COLOR, COMPLETE DISPERSION OF PIGMENT AND UNIFORM COMPOSITION.

B. DO NOT THIN UNLESS NECESSARY FOR APPLICATION AND WHEN FINISH PAINT IS USED FOR BODY AND PRIME COATS. USE MATERIALS AND QUANTITIES FOR THINNING AS SPECIFIED IN MANUFACTURER'S PRINTED INSTRUCTIONS.

C. REMOVE PAINT SKINS, THEN STRAIN PAINT THROUGH COMMERCIAL PAINT STRAINER TO REMOVE LUMPS AND OTHER PARTICLES.

D. MIX TWO COMPONENT AND TWO PART PAINT AND THOSE REQUIRING ADDITIVES IN SUCH A MANNER AS TO UNIFORMLY BLEND AS SPECIFIED IN MANUFACTURER'S PRINTED INSTRUCTIONS UNLESS SPECIFIED OTHERWISE.

E. FOR TINTING REQUIRED TO PRODUCE EXACT SHADES SPECIFIED, USE COLOR PIGMENT RECOMMENDED BY THE PAINT MANUFACTURER.

3.4 APPLICATION

A. START OF SURFACE PREPARATION OR PAINTING WILL BE CONSTRUED AS ACCEPTANCE OF THE SURFACE AS SATISFACTORY FOR THE APPLICATION OF MATERIALS.

B. UNLESS OTHERWISE SPECIFIED, APPLY PAINT IN THREE COATS; PRIME, BODY, AND FINISH. WHEN TWO COATS APPLIED TO PRIME COAT ARE THE SAME, FIRST COAT APPLIED OVER PRIMER IS BODY COAT AND SECOND COAT IS FINISH COAT.

C. APPLY EACH COAT EVENLY AND COVER SUBSTRATE COMPLETELY.

D. ALLOW NOT LESS THAN 48 HOURS BETWEEN APPLICATION OF SUCCEEDING COATS, EXCEPT AS ALLOWED BY MANUFACTURER'S PRINTED INSTRUCTIONS, AND APPROVED BY PROJECT ENGINEER.

E. FINISH SURFACES TO SHOW SOLID EVEN COLOR, FREE FROM RUNS, LUMPS, BRUSHMARKS, LAPS, HOLIDAYS, OR OTHER DEFECTS.

F. APPLY BY BRUSH, ROLLER OR SPRAY, EXCEPT AS OTHERWISE SPECIFIED.

3.5 PRIME PAINTING

A. AFTER SURFACE PREPARATION PRIME SURFACES BEFORE APPLICATION OF BODY AND FINISH COATS, EXCEPT AS OTHERWISE SPECIFIED.

B. SPOT PRIME AND APPLY BODY COAT TO DAMAGED AND ABRADED PAINTED SURFACES BEFORE APPLYING SUCCEEDING COATS.

C. ADDITIONAL FIELD APPLIED PRIME COATS OVER SHOP OR FACTORY APPLIED PRIME COATS ARE NOT REQUIRED EXCEPT FOR EXTERIOR EXPOSED STEEL APPLY AN ADDITIONAL PRIME COAT.

D. PRIME REBATES FOR STOP AND FACE GLAZING OF WOOD, AND FOR FACE GLAZING OF STEEL.

F. METALS EXCEPT BOILERS STACKS:

1. STEEL AND IRON: MPI 79 (MARINE ALKYD METAL PRIMER). 2. ZINC-COATED STEEL AND IRON: MPI 134 (WATERBORNE GALVANIZED PRIMER) OR MPI 135 (NON-CEMENTITIOUS GALVANIZED PRIMER) .
6. MACHINERY NOT FACTORY FINISHED: MPI 9 (EXTERIOR ALKYD ENAMEL (EO)).
8. METAL OVER 94 DEGREES C. (200 DEGREES F), BOILERS, STACKS.: MPI 22 (HIGH HEAT RESISTANT COATING (HR)).

3.6 EXTERIOR FINISHES

A. MACHINERY WITHOUT FACTORY FINISH EXCEPT FOR PRIMER: ONE COAT MPI 9 (EXTERIOR ALKYD ENAMEL (EO)). AS REQUIRED

3.9 PAINT COLOR

A. COLOR AND GLOSS OF FINISH COATS SHALL BE SELECTED BY OWNER.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE HIGH STRENGTH DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, EXCEPT REINFORCING THAT IS TO BE WELDED SHALL CONFORM TO ASTM A706.
2. WELDED WIRE MESH SHALL CONFORM TO ASTM A185 AND SHALL BE LAPPED ONE FULL MESH ATEND SPLICES AND BE WIRED TOGETHER.
3. REINFORCING STEEL DETAILING, FABRICATION AND PLACING SHALL CONFORM TO THE FOLLOWING:
   -C.R.S.I. "MANUAL OF STANDARD PRACTICE", LATEST EDITION
   -A.C.I. 318-02 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
   -ACI 315-99, "DETAILS AND DETAILING OF CONCRETE REINFORCING".
4. BARS SPLICED BY NONCONTACT LAP SPLICES SHALL NOT BE SPACED TRANSVERSELY FARTHER APART THAN ONE-FIFTH THE REQUIRED LAP SPLICE LENGTH, NOR 6".
5. REINFORCEMENT PROTECTION SHALL BE:
   CONCRETE POURED AGAINST EARTH----------3"
   CONCRETE POURED IN FORMS EXPOSED TO WEATHER OR EARTH-----2"
   COLUMNS AND BEAMS (TIE BARS)----------1 1/2"
   SLABS AND WALLS NOT EXPOSED TO WEATHER----------3/4"
4. REINFORCING BARS SHALL NOT BE WELDED UNLESS OTHERWISE NOTED ON THE STRUCTURAL DRAWINGS.

CONCRETE

A. GENERAL SPECIFICATIONS

1. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS', (A.C.I. 301-99) AND 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE', (A.C.I. 318-02).
2. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE 'SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS, (ACI 117-90)
3. ALL CONCRETE SHALL BE READY-MIXED MEETING THE REQUIREMENTS OF ASTM C-94, "SPECIFICATION FOR READY-MIXED CONCRETE".
4. NO WATER SHALL BE ADDED TO THE CONCRETE AT THE JOBSITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE CONCRETE SUPPLIER TO ENSURE A PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOBSITE.
5. FORMWORK SHALL BE DESIGNED AND CONSTRUCTED/INSTALLED IN ACCORDANCE WITH ACI 347, "GUIDE TO FORMWORK FOR CONCRETE"
6. ELEVATED FLOOR SLABS ARE TO HAVE A CONSTANT FLOOR THICKNESS AS SHOWN ON THE DESIGN DRAWINGS. FLOOR THICKNESS IS NOT TO BE ADJUSTED IN THE FIELD TO PROVIDE LEVEL SLAB.
12. ELEVATED SLABS ARE TO BE REINFORCED WITH WELDED WIRE FABRIC.
13. ELEVATED SLABS ARE NOT TO HAVE SAWED CONTROL JOINTS.

B. MIX DESIGN SPECIFICATIONS

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) AT 28 DAYS AS FOLLOWS:

COLUMN AND WALL FOOTINGS	f'c = 4000 PSI
EXTERIOR SLAB ON GRADE	f'c = 5000 PSI

2. CONCRETE IS TO BE NORMAL WEIGHT AND MADE WITH TYPE 1 PORTLAND CEMENT CONFORMING TO ASTM C150 SPECIFICATION, "STANDARD SPECIFICATION FOR PORTLAND CEMENT".
3. CLASS F FLYASH IS TO BE LIMITED TO A MAXIMUM OF 20% OF TOTAL CEMENTITIOUS MATERIAL WEIGHT.
4. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED IN ANY MIX DESIGN.
5. A MID RANGE WATER REDUCING ADMIXTURE IN CONFORMANCE WITH ASTM C494 TYPE 'A' IS TO BE USED TO REDUCE WATER REQUIREMENTS. DOSAGE AMOUNT IS NOT TO EXCEED 6 OZ. PER 100 POUNDS OF CEMENTITIOUS MATERIAL.
5. WATER/CEMENT RATIOS SHALL NOT EXCEED 0.5 FOR f'c=4000+ PSI CONCRETE
6. MAXIMUM SLUMP SHALL BE 5".
7. CONCRETE AGGREGATE GRADATION SHALL BE IN ACCORDANCE WITH ASTM C33. "SPECIFICATION FOR CONCRETE AGGREGATE".

A. COARSE AGGREGATE
COARSE AGGREGATE GRADATION SHALL HAVE A MINIMUM SIZE #57 STONE MIX PER ASTM C33. FOR 6" SLABS OR GREATER, LARGER COURSE AGGREGATE MIXS UP TO #467 ARE ACCEPTABLE TO MINIMIZE SHRINKAGE CRACKING.

B. FINE AGGREGATE
FINE AGGREGATE SHALL CONSIST OF NATURAL SAND OR A COMBINATION THEREOF, WITH A FINENESS MODULUS BETWEEN 2.3 AND 3.1.
FINE AGGREGATE CONTENT IS TO BE BETWEEN 35% AND 45% BY WEIGHT OR VOLUME OF THE TOTAL AGGREGATE CONTENT.

ALL EXTERIOR CONCRETE IS TO HAVE 5 PERCENT AIR ENTRAINMENT IN ACCORDANCE WITH ASTM C260.

FOUNDATION

1. ALL FOUNDATION AND SLAB ON GRADE EXCAVATIONS ARE TO FOLLOW RECOMMENDATIONS STATED IN THE REPORT OF GEOTECHNICAL EXPLORATION TO BE PROVIDED BY OWNER.
2. ALL EXISTING TOPSOIL, VEGETATION, DISTURBED SOILS AND SURFACE SOILS CONTAINING ORGANIC MATTER OR OTHER DELETERIOUS MATERIALS SHOULD BE STRIPPED FROM WITHIN THE PROPOSED BUILDING AND PAVED AREAS.
3. CONTRACTOR SHALL REMOVE AND REPLACE UNNACCEPTABLE SOILS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND/OR AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
4. FOUNDATIONS AND SLABS ARE TO BE PLACED ON FIRM UNDISTURBED NATURAL SOIL OR PROPERLY COMPACTED FILL MATERIAL. FILL MATERIAL SHALL BE COMPACTED IN THIN LIFTS TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698). IN ADDITION, AT LEAST THE UPPER 18 INCHES OF SUBGRADE FILL BENEATH PAVEMENTS AND FLOOR SLABS SHOULD BE COMPACTED TO 100 PERCENT OF THE SAME SPECIFICATION.
5. FOOTINGS SHOULD BE POURED AS SOON AS POSSIBLE AFTER EXCAVATION. THE FOUNDATION BEARING AREA SHOULD BE LEVEL AND BE FREE OF LOOSE SOIL, PONDED WATER, AND DEBRIS. FOUNDATION CONCRETE SHOULD NOT BE PLACED ON SOILS THAT HAVE BEEN DISTURBED BY SEEPAGE. IF BEARING SOILS ARE SOFTENED BY SURFACE WATER INTRUSION OR EXPOSURE, THE SOFTENED SOILS MUST BE REMOVED FROM THE FOUNDATION EXCAVATION BOTTOM IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE.
6. WHERE FOOTING EXCAVATIONS MUST REMAIN OPEN FOR AN EXTENDED PERIOD OR IF RAINFALL BECOMES IMMINENT WHILE BEARING SOILS ARE EXPOSED, A 2" TO 4" THICK MUD MAT OF UNREINFORCED LEAN (F'c=2000psi) CONCRETE SHALL BE PLACED ON THE BEARING SOILS BEFORE PLACEMENT OF THE FOOTING REINFORCING.
7. REINFORCING IN ALL CONTINUOUS STRIP FOOTINGS SHALL HAVE CORNER BARS OR DOWELS PROVIDED AT ALL CORNERS AND INTERSECTIONS.

GENERAL MATERIAL SPECIFICATIONS:

1. MATERIALS
   1.1. STRUCTURAL STEEL ANGLES AND CHANNELS SHALL CONFORM TO ASTM A36.
   1.2. STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM AIOII GRADE 50
   1.3. HOLLOW STRUCTURAL SHAPES (HSS) SHALL CONFORM TO ASTM A500 GRADE B
   1.4. WELDING ELECTRODES FOR STEEL SHALL BE E70
   1.5. BOLTS FOR STRUCTURAL STEEL CONNECTIONS SHALL BE ¾" DIAMETER ASTM A325 TYPE N, SNUG TIGHT, U.N.O. INSTALLED IN 13/16"Ø HOLES.
   1.6. BOLTS FOR HANDRAILS AND METAL PANEL CONNECTIONS SHALL BE ⅜"Ø ASTM A307 BOLTS INSTALLED IN 7/16" Ø HOLES
2. WELDING
   2.1. ALL WELDING SHALL CONFORM TO AWSD 1.1
   2.2. ALL WELDERS SHALL BE CERTIFIED FOR WELD TYPE BEING PERFORMED.
   2.3. SHOP WELDING OF CONTAINER COMPONENTS AND STRUCTURAL STEEL SHALL BE GAS SHIELD ARC WELDS (GMAW) OR (FCAW-G)
   2.4. PROVIDE ⅛" MINIMUM CONTINUOUS FILLET WELD FOR ALL CONTAINER METAL WALL PANELS TO PERIMETER SUPPORTS.
   2.5. PROVIDE ⅜" MINIMUM CONTINOUS FILLET WEL ON ALL SIDES FOR CONTAINER BEAMS AND POSTS TO CONTAINER CORNERS. (⅛" ELSEWHERE)
3. STRUCTURAL DRAWINGS TO BE USED IN CONJUNCTURE WITH MANUFACTURER SHOP DRAWINGS. SHOP DRAWINGS SHALL BE FORWARDED FOR REVIEW BY ENGINEER OF RECORD.
4. COORDINATE WITH MECHANICAL/ELECTRICAL PLANS FOR ALL ITEMS TO BE SUPPLIED BY OTHERS, (FANS, ETC.,)
5. COORDINATE WITH ALL TRADES, MECHANICAL, PLUMBING, AND ELECTRICAL. CHASES, ACCESS HOLES, AND ROUTES HAVE BEEN PROVIDED FOR USE IN COORDINATING.

GENERAL NOTES

1. THE GENERAL NOTES ARE NOT A SUBSTITUTE OR A REPLACEMENT FOR THE PROJECT SPECIFICATIONS. THESE NOTES ARE INTENDED AS A GUIDE TO THE DESIGN AND/OR CONSTRUCTION REQUIREMENTS ESTABLISHED FOR THIS PROJECT. NO CONTRACTOR SHOULD ATTEMPT TO DESIGN, BID OR CONSTRUCT ANY PORTION OF THE WORK HEREIN WITHOUT CONSULTING THE PROJECT SPECIFICATIONS. IF ANY CONFLICTS OCCUR BETWEEN THE NOTES, PROJECT SPECIFICATIONS AND DETAILS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
2. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCE AND SAFETY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED TEMPORARY BRACING AND SHORING DURING CONSTRUCTION TO MAINTAIN THE STABILITY OF THE STRUCTURE. CONSTRUCTION LOADS SHALL NOT EXCEED THE CAPACITY OF THE INSTALLED STRUCTURE AT ANY TIME.
3. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONTRACT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THESE DRAWINGS. DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO PROCEEDING WITH FABRICATION OR CONSTRUCTION.
5. ALL THINGS WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS OR AMBIGUITIES IN THE DESIGN DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO FABRICATION OR CONSTRUCTION.
6. DETAILS/SECTIONS SHOWN ON DRAWINGS ARE TYPICAL AND MAY APPLY TO LOCATIONS OTHER THAN WHERE SPECIFICALLY MARKED ON THE PLANS. IF SECTIONS OR DETAILS DO NOT REPRESENT ALL REQUIRED CONDITIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED FOR CLARIFICATION BY THE GENERAL CONTRACTOR OR FABRICATOR.
7. IF EXISTING CONDITIONS MAKE IT NECESSARY TO REVISE STRUCTURAL DETAILS, NOTIFY ENGINEER OF RECORD BEFORE PROCEEDING WITH ANY CHANGES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONTRACT DRAWINGS AND LATEST ADDENDA AND SUBMITTING THESE DOCUMENTS TO SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBER AND ERECTION IN THE FIELD.
9. ALL WORK SHALL BE DONE IN ACCORDANCE WITH OSHA AND OWNER'S REGULATIONS.

GENERAL DESIGN CRITERIA

1. **Codes**
   Building Code: 2015 International Building Code (For State Modular Program)
   Design Loads: ASCE 7-10 Minimum Design Loads for Building and Other Structures

2. Floor Live Load 100 psf
   Roof Live Load 20 psf
   Roof Snow Load
   Pg 5 psf
   Is 1.0
   Ce 1.0
   Ct 1.1
   Pf 10 psf

3. **Seismic Load**

Risk Category	2
Importance Factor	1.0
Ss	0.192 g
S1	0.087 g
Site Class	D
Sds	0.205 g
Sd1	0.139 g
Seismic Design Category	C
Steel System not detailed for Seismic	
Seismic Base Shear	0.8 k

4. **Wind Load**

Wind Speed	106 MPH ASCE7-16
Exposure	B
Importance Factor	1.0
GCpi	+/- 0.15 Open Structure
Wind Forces	
Traverse Base Shear	2.3 k
Longitudinal Base Shear	2.4 k

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER

3.18.2020

PROJECT INFO.

PHASE I - AIR WASH
L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO.

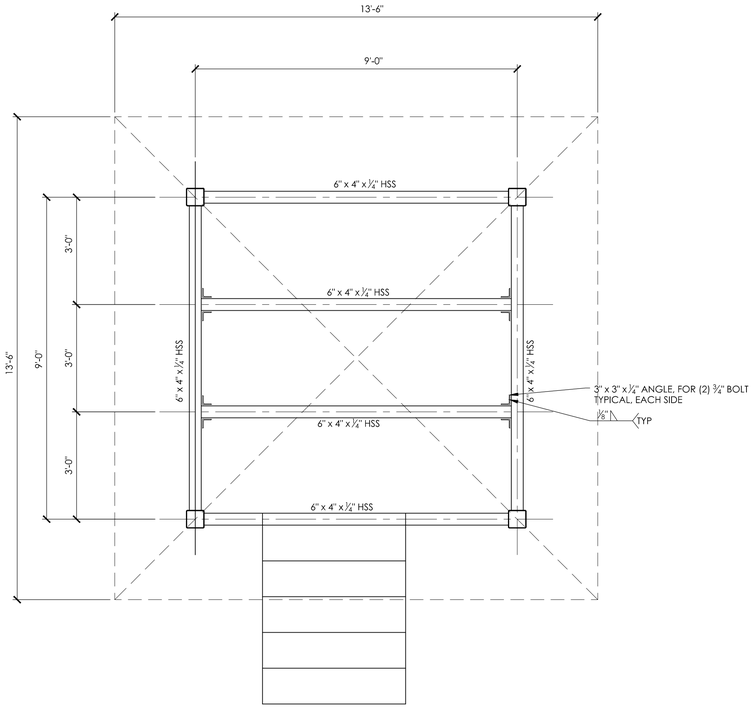
REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO. 19076
SCALE (U.N.O.) -
DATE 03.02.2020
DRAWN BY: JRB

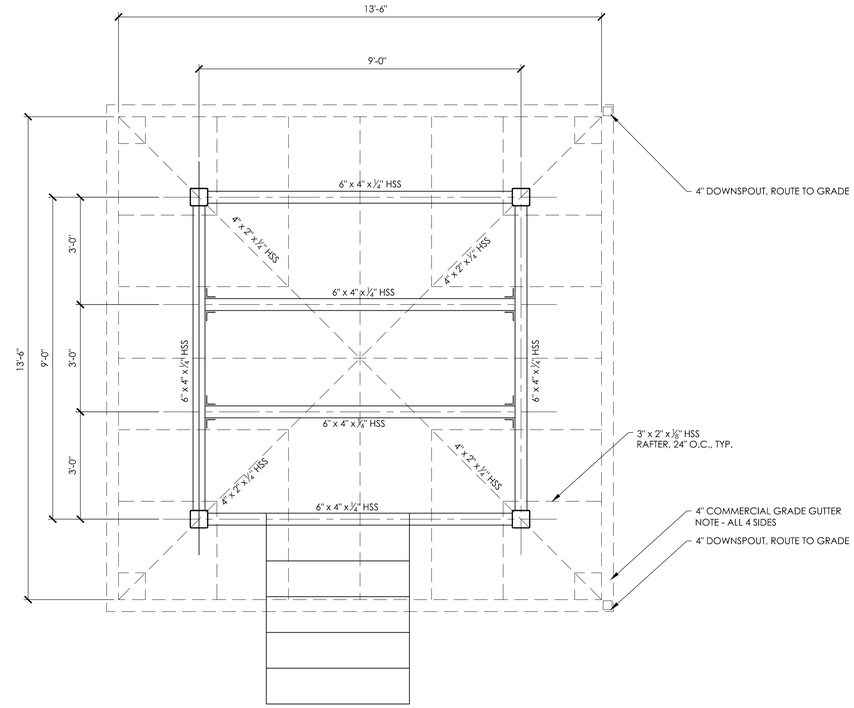
PLAN NORTH

SHEET TITLE: STRUCTURAL COVER PAGE

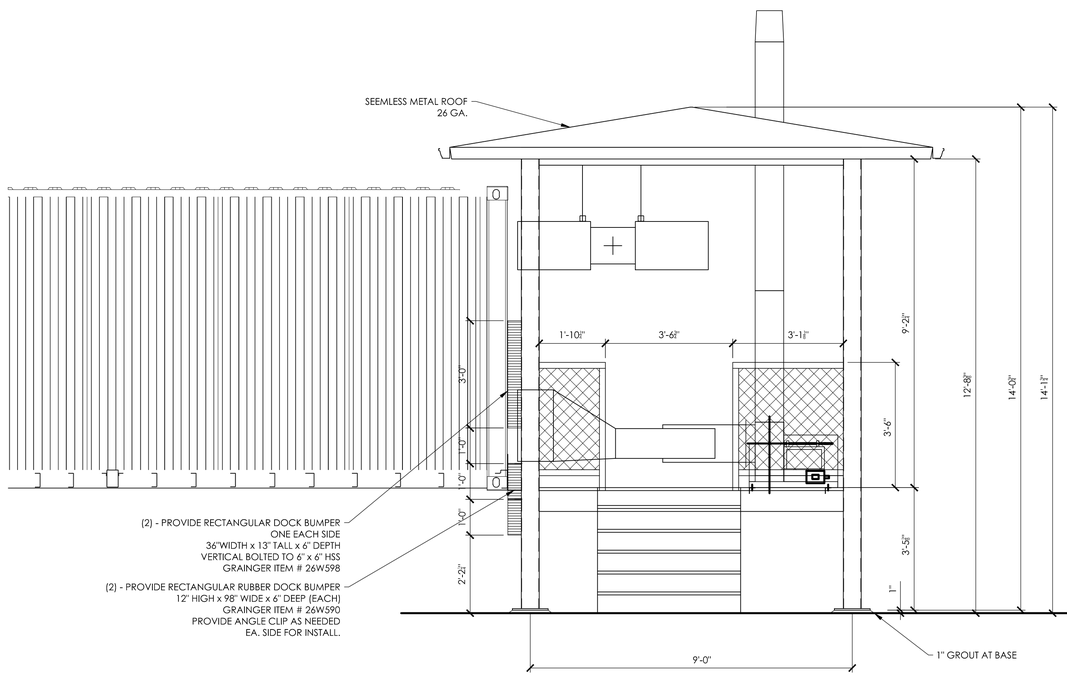
SHEET NO.: **S-1**



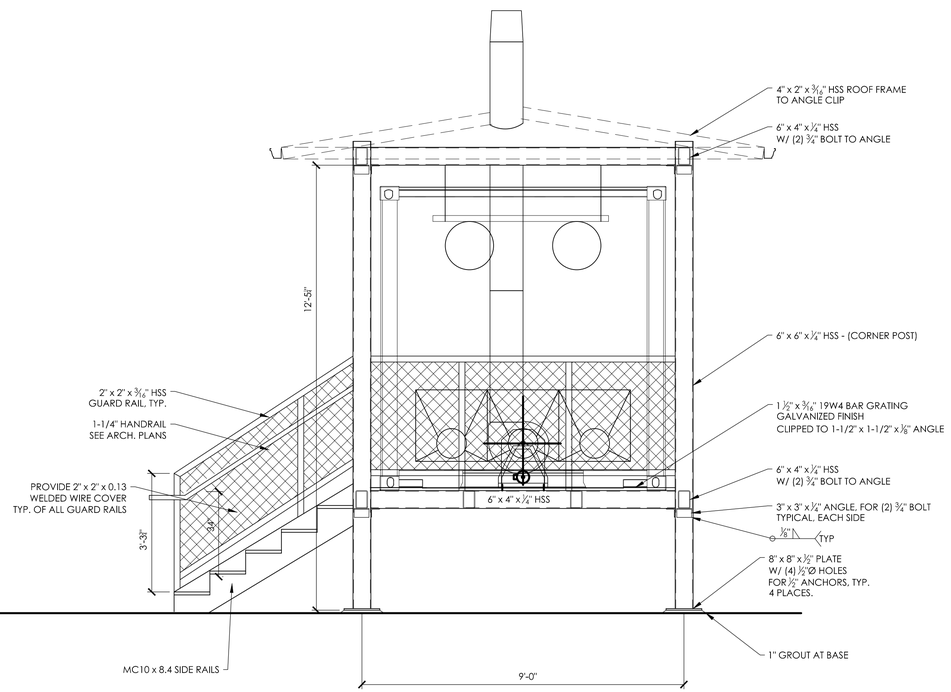
1 DECK LEVEL
SCALE: ½" = 1'-0"



2 ROOF LEVEL FRAMING
SCALE: ½" = 1'-0"



1 FRONT VIEW
SCALE: ½" = 1'-0"



2 SIDE VIEW
SCALE: ½" = 1'-0"

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:

PHASE I - AIR WASH
L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

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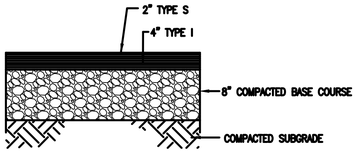
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: AIR WASH FRAME

SHEET NO.: **S-2**



PAVEMENT SECTION – REPAIR SECTION

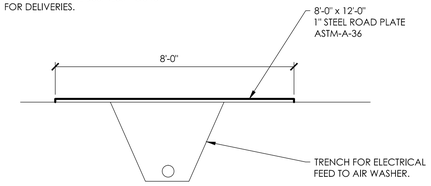
2" TYPE S

PAVEMENT	SECTION
S*	1.5"
I*	1.5"
ABC**	8"

3 PAVEMENT REPAIR SECTION VIEW

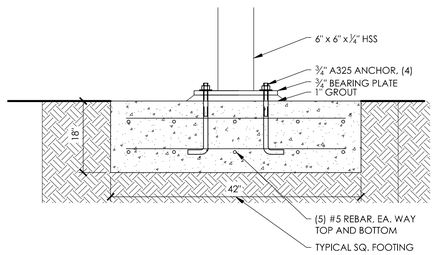
SCALE: NTS

*TO BE USED WHEN TRENCH IS OPEN DURING NORMAL BUSINESS HOURS FOR DELIVERIES.



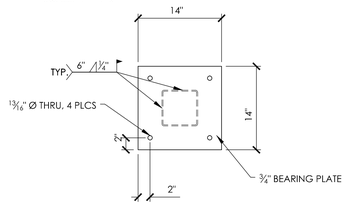
4 TEMP. STEEL ROAD PLATE VIEW

SCALE: 1/32" = 1'-0"



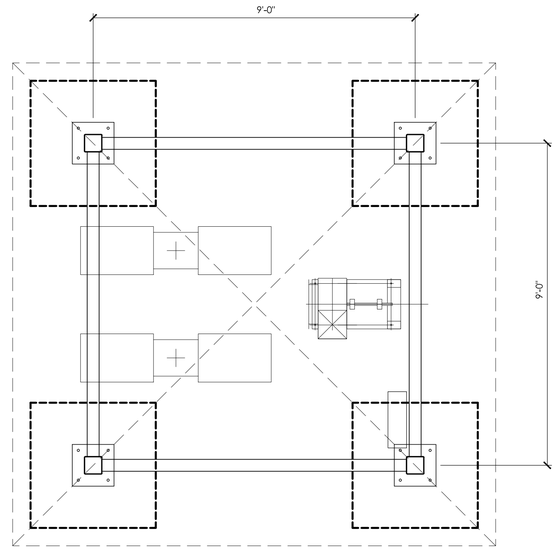
1 FOUNDATION DETAIL

SCALE: 1" = 1'-0"



2 FOUNDATION PLATE DETAIL

SCALE: 1" = 1'-0"



1 FOUNDATION PLAN

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

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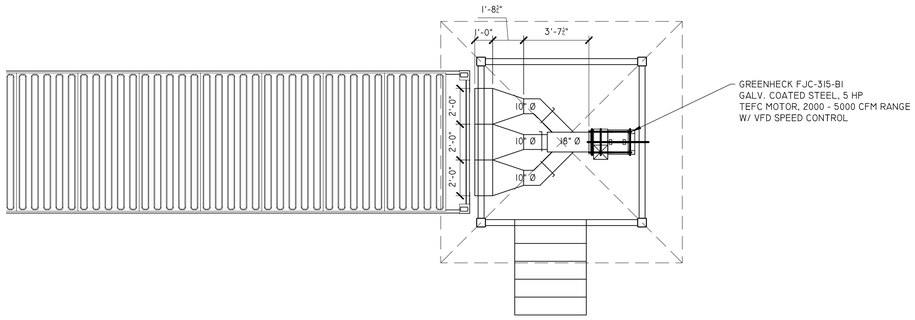
DRAWN BY: JRB

PLAN NORTH

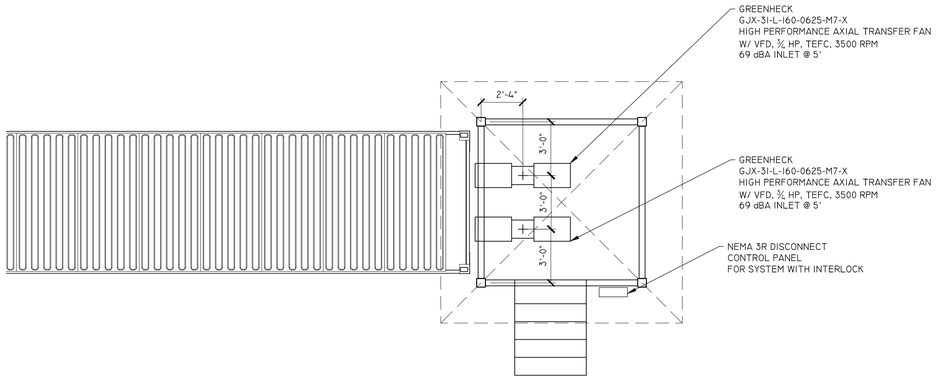
SHEET TITLE:
FOUNDATION PLAN
& SITE REPAIR

SHEET NO.:
S-3



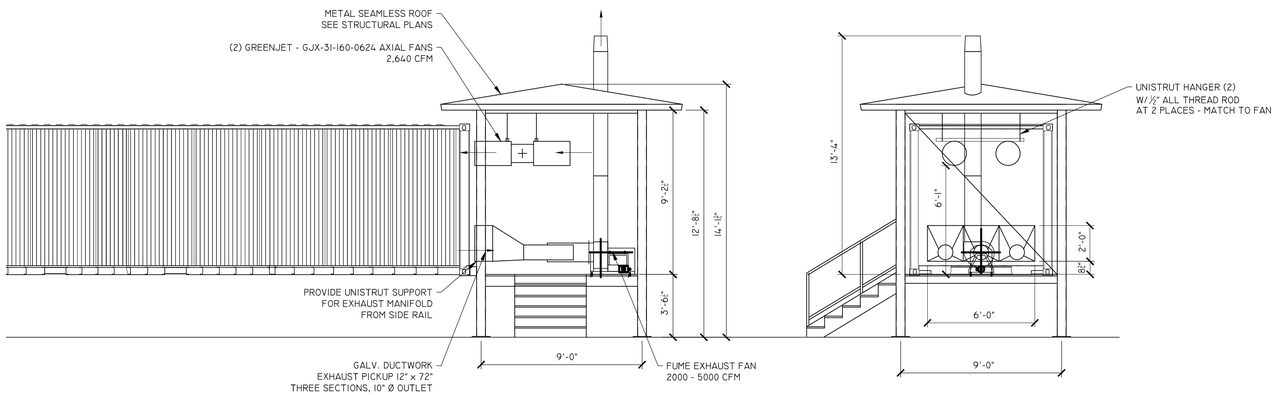
3 MECHANICAL PLAN - TOP VIEW - EXHAUST FAN & DUCTWORK

SCALE: ¼" = 1'-0"



2 MECHANICAL PLAN - TOP VIEW - SUPPLY FAN

SCALE: ¼" = 1'-0"



1 MECHANICAL PLAN - FRONT & SIDE ELEVATION

SCALE: ¼" = 1'-0"

SEQUENCE OF OPERATION

1. UNIT IS NORMALLY STARTED AND STOPPED BY THE OPERATOR AT THE DIGITAL CONTROL PANEL. H-O-A- SWITHCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED FOR MAINTENANCE OF THE SYSTEM ONLY.
2. PUSH BUTTON START SHALL ENGAGE THE SYSTEM.
3. SOFT STARTER FOR SUPPLY FANS SHALL RAMP UP 80% FAN SPEED, AS SET BY VFD.VFD TO BE SUPPLIED FROM GREENHECK, TO BE DIRECT MOUNTED AND WIRED. 4-20mA OUTPUT TO BE ROUTED TO THE DIGITAL CONTROL PANEL IN ½" GALVINIZED CONDUIT.
4. SOFT STARTER FOR EXHAUST FAN SHALL RAMP UP TO 5% HIGHER THAN SUPPLY FAN SPEED AS SET BY VFD. VFD TO BE SUPPLIED FROM GREENHECK, TO BE DIRECT MOUNTED AND WIRED. 4-20mA OUTPUT TO BE ROUTED TO THE DIGITAL CONTROL PANEL IN ½" GALVINIZED CONDUIT.
5. OPERATOR CAN INCREASE OR DECREASE SUPPLY FAN SPEED AS REQUIRED, EXHAUST FAN SHALL FOLLOW.
6. MUSHROOM STYLE E-STOP SHALL BE LOCATED AT THE DIGITAL CONTROL PANEL, AND ADJACENT TO THE EXHAUST FAN MANIFOLD PICKUP.
7. DIGITAL TIMER SHALL BE INCLUDED IN THE SYSTEM WHICH INCLUDES A RANGE OF 0-60 MINUTES. DEFAULT SETTING SHALL BY 15 MINUTES. USER INTERFACE SHALL ALLOW SETTING OF TIMER.

HVAC LEGEND

10/10	ACCESS DOOR, VERTICAL WITH SIZE
	FLEXIBLE DUCT CONNECTION DOUBLE LINE
	FLEXIBLE DUCT, STRAIGHT
	FLEXIBLE DUCT, 90 DEGREES
	STANDARD BRANCH, SUPPLY OR RETURN,
	CONICAL TAKE-OFF
	ELBOW, SMOOTH RADIUS (IR), WITHOUT TURNING VANES
	ELBOW, SMOOTH RADIUS (IR), WITH TURNING VANES
	ELBOW, MITERED, 90 DEGREES
	TURNING VANES FOR MITERED ELBOWS
	MANUAL VOLUME DAMPER
	SUPPLY ELBOW UP
	RETURN/EXHAUST ELBOW UP
	SUPPLY ELBOW DOWN
	RETURN/EXHAUST ELBOW DOWN
20x12	DUCT SIZE, FIRST NUMBER IS SIDE SHOWN
T #	THERMOSTAT. NUMBER INDICATES VAV BOX NUMBER
20/10	DUCT SECTION, POSITIVE PRESSURE (FIRST FIGURE IS TOP)
20/10	DUCT SECTION, NEGATIVE PRESSURE (FIRST FIGURE IS TOP)
10/10	ACCESS DOOR, HORIZONTAL WITH SIZE
	DEMOLITION LINEWORK
	EXISTING LINEWORK
	NEW LINEWORK
	RETURN AIR FLOW
	SUPPLY AIR FLOW
	DIRECTION OF FLOW
FD	FIRE DAMPER
VD	VOLUME DAMPER
	MANUAL SPLITTER
SD	SMOKE DAMPER
	EXHAUST GRILL OR REGISTER
	SUPPLY GRILL OR REGISTER, CEILING
	RETURN GRILL OR REGISTER, CEILING
A / CFM	SUPPLY DIFFUSER, EXHAUST OR RETURN REGISTER. LETTER INDICATES TYPE, NUMBER INDICATES CFM

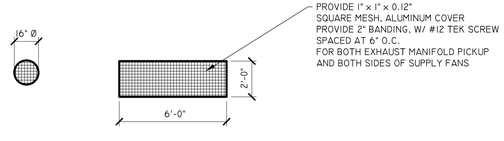
GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO CONVEY EXACT DIMENSIONS, SIZES, AND/OR LOCATIONS OF ALL NEW OR EXISTING ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL, OR ELECTRICAL EQUIPMENT OR FEATURES, EITHER SHOWN OR INFERRED. THE INFORMATION CONTAINED IN THESE DRAWINGS SHALL BE USED AS PART OF AN ENTIRE, INTACT SET OF CONTRACT DOCUMENTS, INCLUDING ANY SEPARATE WRITTEN SPECIFICATIONS. THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AT THE JOBSITE. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER TRADES TO MINIMIZE CONFLICT AND INTERFERENCE THROUGHOUT THE PROJECT.
2. INSTALL MANUAL VOLUME DAMPER ON ALL AT ALL RA & EXH CONNECTIONS TO FLEXIBLE DUCT.
3. ALL DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN SUSPENDED CEILING OR MOUNTED IN THE FLOOR AS SHOWN.
4. FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
5. ALL DUCTS TO BE WELL INSULATED, PRIOR TO INSTALLATION OF CEILING (IF REQUIRED).
6. CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.
7. ALL PIPING, DUCTS, VENTS, ETC. EXTENDING THRU EXTERIOR WALLS AND ROOFS SHALL BE FLASHED AND COUNTER-FLASHED.
8. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, AIR VOLUME CONTROLLERS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.
9. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED.
10. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. INSULATION IS ON OUTSIDE OF DUCT.
11. COORDINATE ORIENTATION OF SUPPLY AND RETURN DUCT BEFORE FABRICATION.

HVAC SYSTEM COMPLETION - DOCUMENTATION

503.2.9 - HVAC SYSTEM COMPLETION.
1. ALL HVAC SYSTEMS SHALL BE BALANCED BY THE CONTRACTOR. TEST AND BALANCE SHOULD INCLUDE:
   - AIR SYSTEM BALANCING
   - OPERATING AND MAINTENANCE MANUAL
   - EQUIPMENT INSTALLATION VERIFICATION
   - CONTROLS VERIFICATION.

2. SYSTEM SHALL BE VERIFIED BY ENGINEER OF RECORD, AND A SYSTEM INSTALLATION STATEMENT SHALL BE SIGNED AND SEALED BY ENGINEERING OF RECORD AT THE CONCLUSION OF CONSTRUCTION AND WITH THE ITEMS FROM #1 COMPLETED.



4 MECHANICAL DETAIL - SCREEN COVER

SCALE: ¼" = 1'-0"

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:

PHASE I - AIR WASH
L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

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4	REVISED FAN MODEL	20 MAR 2020

PROJECT NO.: 19076
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: MECHANICAL PLAN DEMO

SHEET NO.: **M-1**

SINGLE WIDTH CENTRIFUGAL FUME EXHAUST WITH INTEGRAL STACK, MODEL FJC-300

1.4 QUALITY ASSURANCE
A. PERFORMANCE RATINGS: CONFORM TO ANSI/AMCA STANDARDS 210 AND 300. FANS MUST BE TESTED IN ACCORDANCE WITH AMCA PUBLICATIONS 211 AND 311 IN AN AMCA ACCREDITED LABORATORY AND CERTIFIED FOR AIR PERFORMANCE (SIZES 6-10) OR AIR AND SOUND PERFORMANCE (SIZE 15). FANS SHALL BE LICENSED TO BEAR THE AMCA RATINGS SEAL FOR AIR PERFORMANCE (AMCA 210) AND SOUND PERFORMANCE (AMCA 300) - SIZE 15.
B. CLASSIFICATION FOR SPARK RESISTANT CONSTRUCTION SHALL CONFORM TO ANSI/AMCA STANDARD 99.
C. COMPLY WITH THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS FOR MOTOR AND ELECTRICAL ACCESSORIES.

1.5 SUBMITTALS
A. PROVIDE DIMENSIONAL DRAWINGS AND PRODUCT DATA ON EACH FUME EXHAUST CENTRIFUGAL FAN.
B. PROVIDE FAN CURVES FOR EACH FAN AT THE SPECIFIED OPERATION POINT, WITH THE FLOW, STATIC PRESSURE AND HORSEPOWER CLEARLY PLOTTED.
C. PROVIDE OUTLET VELOCITY OF CENTRIFUGAL FANS AND FAN'S INLET SOUND POWER READINGS FOR THE EIGHT OCTAVE BANDS.
D. STRICTLY ADHERE TO QUALITY ASSURANCE REQUIREMENTS AS STATED IN SECTION 1.4 OF THIS SPECIFICATION.
E. PROVIDE MANUFACTURER'S CERTIFICATION THAT EXHAUST FAN IS LICENSED TO BEAR THE AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA) CERTIFIED RATING SEAL FOR AIR PERFORMANCE OR AIR AND SOUND PERFORMANCE.
F. PROVIDE MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL (IOM), INCLUDING INSTRUCTIONS ON SAFETY INFORMATION, RECEIVING, HANDLING, AND STORAGE, INSTALLATION, PULLEY ADJUSTMENT, ELECTRICAL WIRING DIAGRAMS, OPERATION, MAINTENANCE, PARTS LIST, TROUBLESHOOTING GUIDE, AND WARRANTY.

1.6 DELIVERY, STORAGE, AND HANDLING
A. DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY INDICATING MANUFACTURER, MATERIAL, PRODUCTS INCLUDED, AND LOCATION OF INSTALLATION.
B. STORE MATERIALS IN A DRY AREA INDOOR, PROTECTED FROM DAMAGE, AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOR LONG TERM STORAGE, FOLLOW MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL.
C. HANDLE AND LIFT FANS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROTECT MATERIALS AND FINISHES DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE. FOLLOW ALL SAFETY WARNINGS POSTED BY THE MANUFACTURER.

1.7 WARRANTY
A. SUBMIT, FOR OWNER'S ACCEPTANCE, MANUFACTURER'S STANDARD WARRANTY DOCUMENT EXECUTED BY AUTHORIZED COMPANY OFFICIAL. MANUFACTURER'S WARRANTY IS IN ADDITION TO, AND NOT A LIMITATION OF, OTHER RIGHTS OWNER MAY HAVE UNDER CONTRACT DOCUMENTS.
1. THE WARRANTY OF THIS EQUIPMENT IS TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE PURCHASE DATE. ANY UNITS OR PARTS WHICH PROVE DEFECTIVE DURING THE WARRANTY PERIOD WILL BE REPLACED AT THE MANUFACTURERS' OPTION WHEN RETURNED TO THE MANUFACTURER, TRANSPORTATION PREPAID.
2. MOTOR WARRANTY IS WARRANTED BY THE MOTOR MANUFACTURER FOR A PERIOD OF ONE YEAR. SHOULD MOTORS FURNISHED PROVE DEFECTIVE DURING THIS PERIOD, THEY SHOULD BE RETURNED TO THE NEAREST AUTHORIZED MOTOR SERVICE STATION.

2. PRODUCTS
2.1 GENERAL
A. BASE FAN PERFORMANCE AT STANDARD CONDITIONS (DENSITY 0.075 LB/FT3).
B. FANS SELECTED SHALL BE CAPABLE OF ACCOMMODATING STATIC PRESSURE AND FLOW VARIATIONS OF +/-15% OF SCHEDULED VALUES.
C. EACH FAN SHALL BE BELT IN AMCA ARRANGEMENT 10 ACCORDING TO DRAWINGS.
D. FANS ARE TO BE EQUIPPED WITH LIFTING LUGS.
E. AFTER FABRICATION, ALL CARBON STEEL COMPONENTS SHALL BE CLEANED AND CHEMICALLY TREATED BY A PHOSPHATIZING PROCESS TO INSURE PROPER REMOVAL OF GREASE, OIL, SCALE, ETC. FAN SHALL THEN BE COATED WITH A MINIMUM OF 2-4 MILS OF PERMATECTOR (POLYESTER URETHANE), ELECTROSTATICALLY APPLIED AND BAKED. FINISH COLOR SHALL BE RAL-7023, CONCRETE GREY. COATING MUST EXCEED 1,000-HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD. HOUSING AND BEARING SUPPORT SHALL BE CONSTRUCTED OF GALVANIZED MATERIAL AND BOLTED FRAMEWORK.
F. WHEN PROPERLY ANCHORED TO THE ROOF STRUCTURE, THE STANDARD FAN / STACK ASSEMBLY SHALL WITHSTAND WIND LOADS OF UP THE EQUIVALENT LOAD OF 115 MPH (185 KM/HR) WINDSPEED, WITHOUT THE NEED FOR GUY WIRES OR ADDITIONAL STRUCTURAL SUPPORT.

2.2 FAN HOUSING AND INTEGRAL STACK
A. FAN HOUSING IS TO BE AERODYNAMICALLY DESIGNED WITH HIGH-EFFICIENCY INLET, ENGINEERED TO REDUCE INCOMING AIR TURBULENCE.
B. FAN SHALL BE OF AIRTIGHT PERMALOCKTM CONSTRUCTION WITH THE SCROLL PANEL MATERIAL FORMED AND EMBEDDED INTO THE SIDE PANELS. ALL INTERIOR AND EXTERIOR SURFACE STEEL SHALL BE COATED WITH A MINIMUM OF 2-4 MILS OF PERMATECTOR (POLYESTER URETHANE), ELECTROSTATICALLY APPLIED AND BAKED. FINISH COLOR SHALL BE RAL-7023, CONCRETE GREY. NO UNCOATED METAL FAN PARTS WILL BE ALLOWED. ALL HOUSING SURFACES SHALL BE FINISHED WITH GALVANIZED MATERIALS.
C. HOUSING AND BEARING SUPPORT SHALL BE CONSTRUCTED OF WELDED STRUCTURAL STEEL MEMBERS TO PREVENT VIBRATION AND RIGIDLY SUPPORT THE SHAFT AND BEARINGS.
D. HOUSING SHALL INCLUDE DISCHARGE STACK OF SAME MATERIAL AS FAN HOUSING TO INCREASE THE OVERALL DISCHARGE HEIGHT OF THE UNIT. MINIMUM OVERALL UNIT HEIGHT WITH STACK TO BE 10 FEET FROM THE ROOF DECK.
E. STACK MATERIAL TO BE A MINIMUM OF 18 GAUGE. STACK TO MATCH OUTLET DIMENSIONS OF THE FAN AND SHALL NOT ADD ADDITIONAL STATIC PRESSURE DROP TO THE EXHAUST FAN. STACK DISCHARGE SHALL HAVE TAPERED DESIGN INCREASING EXIT VELOCITY AND NOT ADDING ADDITIONAL STATIC PRESSURE DROP TO THE EXHAUST FAN
F. NO DISCHARGE RAIN CAPS OR FLAPPER CAPS ARE PERMITTED AS TO INTERFERE WITH EXHAUST AIRFLOW.
G. DRAIN PORT SHALL BE LOCATED AT LOWEST PART OF SCROLL HOUSING TO PREVENT MOISTURE BUILD-UP IN THE INTERIOR OF FAN.
H. AN OSHA COMPLIANT WEATHERHOOD SHALL BE INCLUDED TO COMPLETELY COVER THE MOTOR PULLEY AND BELT(S).
I. FAN SHALL BE PROVIDED WITH INTEGRAL INLET BOX AND CURB CAP CONSTRUCTED OF SAME MATERIAL, WITH ACCESS PANEL FOR INSPECTION OF FAN WHEEL AND DUCT. IT WILL BE COATED WITH A MINIMUM OF 2-4 MILS OF PERMATECTOR (POLYESTER URETHANE), ELECTROSTATICALLY APPLIED AND BAKED. FINISH COLOR SHALL BE RAL-7023, CONCRETE GREY. INLET BOX SHALL NOT INCREASE STATIC PRESSURE RESISTANCE TO THE EXHAUST FAN.
J. UNITS WITH INTEGRAL INLET BOX SHALL BE PROVIDED WITH GRAVITY, BACK DRAFT DAMPER TO PREVENT AIRFLOW BACK INTO THE BUILDING WHEN EXHAUST FAN IS NOT IN OPERATION. DAMPER SIZED TO MATCH INLET AREA OF INLET BOX AND MOUNTED IN THE ROOF CURB. BACK DRAFT DAMPER SHALL BE CONSTRUCTED WITH ALUMINUM FRAME, EXTRUDED ALUMINUM BLADES AND VINYL SEALS ON CLOSING EDGE. DAMPER SHALL BE EQUIVALENT TO GREENHECK MODEL EM-10.

2.3 FAN WHEEL
A. THE FAN WHEEL SHALL BE OF THE NON-OVERLOADING SINGLE WIDTH BACKWARD INCLINED CENTRIFUGAL TYPE. WHEELS SHALL BE STATICALLY AND DYNAMICALLY BALANCED TO BALANCE GRADE G6.3 PER ANSI S2.19.
B. FAN WHEEL SHALL BE MANUFACTURED OF SINGLE THICKNESS BLADES SECURELY RIVETED OR WELDED TO A HEAVY GAUGE BACK PLATE AND WHEEL CONE.
C. THE WHEEL AND FAN INLET SHALL BE CAREFULLY MATCHED AND SHALL HAVE PRECISE RUNNING TOLERANCES FOR MAXIMUM PERFORMANCE AND OPERATING EFFICIENCY.

2.4 FAN MOTORS AND DRIVE
A. MOTORS SHALL MEET OR EXCEED EISA (ENERGY INDEPENDENCE AND SECURITY ACT) EFFICIENCIES. MOTORS TO BE NEMA T-FRAME, 1800 OR 3600 RPM, TOTALLY ENCLOSED FAN COOLED (TEFC) WITH A 1.15 SERVICE FACTOR.
B. DRIVE BELTS AND SHEAVES SHALL BE SIZED FOR 150% OF THE FAN OPERATING BRAKE HORSEPOWER, AND SHALL BE READILY AND EASILY ACCESSIBLE FOR SERVICE, IF REQUIRED.
C. FAN SHAFT TO BE TURNED AND POLISHED STEEL THAT IS SIZED SO THE FIRST CRITICAL SPEED IS AT LEAST 25% OVER THE MAXIMUM OPERATING SPEED FOR EACH PRESSURE CLASS.
D. FAN SHAFT BEARINGS SHALL BE AIR HANDLING QUALITY, BEARINGS SHALL BE HEAVY-DUTY GREASE LUBRICATED, SELF-ALIGNING OR ROLLER PILLOW BLOCK TYPE.
E. AIR HANDLING QUALITY BEARINGS TO BE DESIGNED WITH LOW SWIVEL TORQUE TO ALLOW THE OUTER RACE OF THE BEARING TO PIVOT OR SWIVEL WITHIN THE CAST PILLOW BLOCK. BEARINGS SHALL BE 100% TESTED FOR NOISE AND VIBRATION BY THE MANUFACTURER. BEARINGS SHALL BE 100% TESTED TO INSURE THE INNER RACE DIAMETER IS WITHIN TOLERANCE TO PREVENT VIBRATION.
F. BEARINGS SHALL BE SELECTED FOR A BASIC RATING FATIGUE LIFE (L-10) OF 80,000 HOURS AT MAXIMUM OPERATING SPEED FOR EACH PRESSURE CLASS (AVERAGE LIFE OR (L-50) OF 400,000 HOURS).
G. BEARINGS SHALL HAVE ZERK FITTINGS TO ALLOW FOR LUBRICATION.

3. EXECUTION
3.1 EXAMINATION
A. EXAMINE AREAS TO RECEIVE FANS. NOTIFY THE ENGINEER OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT UTILIZATION AND MAINTENANCE OF FANS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.2 INSTALLATION
A. INSTALL FANS SYSTEMS AS INDICATED ON THE CONTRACT DRAWINGS.
B. INSTALL FANS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL.

4. ACCEPTABLE MANUFACTURERS
A. GREENHECK FAN CORPORATION, PO BOX 410, SCHOFIELD WI 54476-0410, WWW.GREENHECK.COM MODEL FJC-300, SINGLE WIDTH CENTRIFUGAL FUME EXHAUST WITH INTEGRAL STACK - OR APPROVED ALTERNATES

AXIAL JET FAN, MODEL GJX

1.4 QUALITY ASSURANCE
A. PERFORMANCE RATINGS: CONFORM TO ANSI/AMCA STANDARDS 210 AND 300. FAN MUST BE TESTED IN ACCORDANCE WITH AMCA PUBLICATIONS 211 AND 311 IN AN AMCA ACCREDITED LABORATORY. FAN SHALL BE LICENSED TO BEAR THE AMCA RATINGS SEAL FOR AIR PERFORMANCE (AMCA 210).
B. CLASSIFICATION FOR SPARK RESISTANT CONSTRUCTION SHALL CONFORM TO ANSI/AMCA STANDARD 99.
C. FAN SHALL BE UL/CUL LISTED FOR EMERGENCY HEAT AND SMOKE REMOVAL.

1.5 SUBMITTALS
A. PROVIDE DIMENSIONAL DRAWINGS AND PRODUCT DATA ON EACH AXIAL JET FAN.
B. PROVIDE FAN CURVES FOR EACH FAN AT THE SPECIFIED OPERATION POINT, WITH THE FLOW, STATIC PRESSURE AND HORSEPOWER CLEARLY PLOTTED.
C. PROVIDE OUTLET VELOCITY OF AXIAL FANS AND INLET SOUND POWER READINGS FOR THE EIGHT OCTAVE BANDS.
D. STRICTLY ADHERE TO QUALITY ASSURANCE REQUIREMENTS AS STATED IN SECTION 1.4 OF THIS SPECIFICATION.

1.6 DELIVERY, STORAGE, AND HANDLING
A. DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY INDICATING MANUFACTURER, MATERIAL, PRODUCTS INCLUDED, AND LOCATION OF INSTALLATION.
B. STORE MATERIALS IN A DRY AREA INDOOR, PROTECTED FROM DAMAGE, AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOR LONG TERM STORAGE, FOLLOW MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL.
C. HANDLE AND LIFT FANS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROTECT MATERIALS AND FINISHES DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE. FOLLOW ALL SAFETY WARNINGS POSTED BY THE MANUFACTURER.

1.7 WARRANTY
A. SUBMIT, FOR OWNER'S ACCEPTANCE, MANUFACTURER'S STANDARD WARRANTY DOCUMENT EXECUTED BY AUTHORIZED COMPANY OFFICIAL. MANUFACTURER'S WARRANTY IS IN ADDITION TO, AND NOT A LIMITATION OF, OTHER RIGHTS OWNER MAY HAVE UNDER CONTRACT DOCUMENTS.
1. THE WARRANTY OF THIS EQUIPMENT IS TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS FROM THE PURCHASE DATE. ANY UNITS OR PARTS WHICH PROVE DEFECTIVE DURING THE WARRANTY PERIOD WILL BE REPLACED AT THE MANUFACTURERS' OPTION WHEN RETURNED TO THE MANUFACTURER, TRANSPORTATION PREPAID.
2. MOTOR WARRANTY IS WARRANTED BY THE MOTOR MANUFACTURER FOR A PERIOD OF ONE YEAR. SHOULD MOTORS FURNISHED PROVE DEFECTIVE DURING THIS PERIOD, THEY SHOULD BE RETURNED TO THE NEAREST AUTHORIZED MOTOR SERVICE STATION.

2. EQUIPMENT
2.1 GENERAL
A. BASE FAN PERFORMANCE AT STANDARD CONDITIONS (DENSITY 0.075 LB. /FT3).
B. EACH FAN SHALL BE DIRECT DRIVEN IN AMCA ARRANGEMENT 4 WITH PROPELLER SECURED TO THE MOTOR SHAFT.

2.2 FAN HOUSING AND OUTLET
A. FAN HOUSING TO BE AERODYNAMICALLY DESIGNED WITH INTEGRAL PUNCHED FLANGES FOR SIZES UP THROUGH SIZE 36 (16 INCH DIAMETER).
B. FAN HOUSING SHALL BE CONSTRUCTED OF ROLLED STEEL WITH A CONTINUOUS SEAM WELD.
C. HOUSING TO BE COATED WITH A MINIMUM OF 3 MILS OF PERMATECTOR, AN ELECTROSTATICALLY APPLIED AND BAKED POLYESTER URETHANE. FINISH COLOR SHALL BE GRAY. COATING MUST EXCEED 1,000-HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD.
D. MOTOR SUPPORT FRAMEWORK TO BE CONSTRUCTED OF STRUCTURAL STEEL THAT IS SUITABLE TO HANDLE THE WEIGHTS OF THE MOTOR AND PROPELLER. MOTOR SUPPORTS WITHIN THE FAN HOUSING TO BE WELDED TO THE FAN CASING. BOLTED CONSTRUCTION IS NOT ACCEPTABLE. ALL SUPPORT FRAMEWORK TO BE COATED WITH A MINIMUM OF 3 MILS OF PERMATECTOR, AN ELECTROSTATICALLY APPLIED AND BAKED POLYESTER URETHANE. FINISH COLOR SHALL BE RAL 7023, CONCRETE GREY. COATING MUST EXCEED 1,000-HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD.

2.3 FAN IMPELLER
A. A TAPER LOCK BUSHING SHALL BE USED TO MOUNT THE PROPELLER TO THE MOTOR SHAFT.
B. FAN PROPELLER SHALL USE CAST ALUMINUM AIRFOIL BLADES. BLADES TO BE ADJUSTABLE WITHIN A CAST ALUMINUM HUB TO ALLOW FOR PERFORMANCE CHANGES. THE PROPELLER SHALL BE BOTH STATICALLY AND DYNAMICALLY BALANCED.
C. THE PROPELLER AND FAN INLET SHALL BE CAREFULLY MATCHED AND SHALL HAVE PRECISE RUNNING TOLERANCES FOR MAXIMUM PERFORMANCE AND OPERATING EFFICIENCY.

2.4 FAN MOTORS AND DRIVE.
A. MOTORS SHALL BE 3600 RPM 60 HZ, TOTALLY ENCLOSED FAN COOLED (TEFC) WITH A 1.15 SERVICE FACTOR WHEN OPERATED WITH ACROSS THE LINE POWER OR 1.0 SERVICE FACTOR WHEN USED WITH A VFD.
B. MOTORS MUST BE STANDARD NEMA T-FRAME DESIGNS THAT ARE READILY AVAILABLE FROM MOTOR VENDORS. SUPPLIERS USING C-FACE OR PAD MOUNT MOTORS MUST INCLUDE PROVISIONS TO PROVIDE REPLACEMENT MOTORS IN CASE OF A MOTOR FAILURE DUE TO LONG MOTOR LEAD TIMES.
C. MOTOR SHALL BE PROVIDED WITH SHAFT GROUNDING DEVICE TO MITIGATE STAY VOLTAGE PEAKS ORIGINATING FROM USE WITH A VFD.

2.5 SOUND ATTENUATOR
A. ALL SILENCERS SHALL BE OF 2 INCH DOUBLE WALLED CONSTRUCTION. OUTER WRAP SHALL BE CONSTRUCTED OF ROLLED STEEL. INNER WRAP TO BE A PERFORATED STEEL.
B. HOUSING TO BE COATED WITH A MINIMUM OF 3 MILS OF PERMATECTOR, AN ELECTROSTATICALLY APPLIED AND BAKED POLYESTER URETHANE. FINISH COLOR SHALL BE GRAY. COATING MUST EXCEED 1,000-HOUR SALT SPRAY UNDER ASTM B117 TEST METHOD.
C. ATTENUATOR LENGTH SHALL BE A MINIMUM OF TWO TIMES THE DIAMETER OF THE FAN HOUSING.
D. INLET AND OUTLET GUARDS SHALL BE PROVIDED AS STANDARD. GUARDS ARE CONSTRUCTED OF A GALVANIZED MATERIAL AND MECHANICALLY FASTENED TO INLET AND OUTLET BELLS OF THE SILENCERS. GUARDS SHALL COMPLY WITH OSHA REQUIREMENTS ON PERSONAL GUARDING.

3. EXECUTION
3.1 EXAMINATION
A. EXAMINE AREAS TO RECEIVE FANS. NOTIFY THE ENGINEER OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT UTILIZATION AND MAINTENANCE OF FANS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3.2 INSTALLATION
A. INSTALL FANS SYSTEMS AS INDICATED ON THE CONTRACT DRAWINGS.
B. INSTALL FANS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL.

4. ACCEPTABLE MANUFACTURERS
A. GREENHECK FAN CORPORATION, PO BOX 410, SCHOFIELD WI 54476-0410, WWW.GREENHECK.COM MODEL GJX, AXIAL JET FANS.

GENERAL REQUIREMENTS

"PROVIDE" MEANS FURNISH & INSTALL. THE MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AS REQUIRED.

ALL EQUIPMENT, FIXTURES, ACCESSORIES, AND RELATED ITEMS SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR UNLESS NOTED BY OTHERS AND INSTALLED FOR A COMPLETE SYSTEM.

GENERAL REQUIREMENTS AS LISTED IN THE SUBCONTRACT PURCHASE ORDER AGREEMENT SHALL BE INCLUDED AS PART OF THESE SPECIFICATIONS.

SUBCONTRACTOR AGREES TO DO WHATEVER NECESSARY, AT ITS OWN COST AND EXPENSE, TO COMPLY WITH ALL LAWS, ORDINANCES, REGULATIONS, RULES, AND ORDERS OF THE CITY, COUNTY, STATE, AND OR FEDERAL GOVERNMENT AND ANY OR ALL DEPARTMENTS. THIS INCLUDES , BUT IS NOT LIMITED TO, OSHA, AND ANY STATE COUNTERPART THEREOF.

DIFFERENCES AND/OR CONFLICTS BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS, AND SHOP DRAWINGS, SHALL BE CALLED TO THE ENGINEER'S ATTENTION. IF DIFFERENCES AND OR CONFLICTS ARE NOT NOTED TO ENGINEER PRIOR TO CONTRACT SIGNING, ENGINEER SHALL DETERMINE GOVERNING CONDITION AND SUBCONTRACTOR SHALL PERFORM WORK AT NO ADDITIONAL COST.

MANUFACTURER AND MODELS USED TO ESTABLISH QUALITY. SUBSTITUTIONS OF EQUAL QUALITY MY BE SUBMITTED TO ENGINEER OF RECORD. SHOP DRAWINGS OR SUBMITTALS SHALL BE SUBMITTED IN TO THE ENGINEER OF RECORD. ALLOW 3 WORKING DAYS FOR REVIEW.

CONTRACTOR SHALL PROVIDE RECORD DRAWINGS INDICATING LOCATIONS OF ALL CHANGES IN EQUIPMENT, DUCTING, OR FIXTURE ARRANGEMENTS. REDLINES SHALL BE UPDATED DAILY OR AS CHANGES OCCUR. AT THE COMPLETION OF PROJECT, REDLINES SHALL BE TURNED OVER TO OWNER.

CONTRACTOR'S MATERIAL STORAGE

MATERIAL STORED AT THE SITE SHALL BE ADEQUATELY PROTECTED FROM THE WEATHER.

EQUIPMENT SUPPORT

ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT DEPEND UPON CEILING OR WALL SURFACES FOR THEIR SUPPORT. THEY SHALL BE INCAPABLE OF BEING ROTATED OR DISPLACED. THE SUPPORT ATTACHMENT SHALL ADEQUATELY SUPPORT THE WEIGHT OF THE FIXTURE, DEVICE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT.

SUPPORT FROM THE TOP CHORD OF ROOF JOISTS, GIRDERS, AND BEAMS.

TOUCH UP AND COMPLETION

GC SHALL CLEAN ALL FINISHED SURFACES OF EQUIPMENT AND FIXTURES, AND TOUCH UP ALL SCRATCHES AND NICKS IN FINISHED PAINT IN OCCUPIED AREAS.

SYSTEM TEST AND BALANCING

AN INDEPENDENT CERTIFIED BALANCING CONTRACTOR SHALL PERFORM A CERTIFIED TOTAL SYSTEM BALANCE OF THE AIR SYSTEMS IN ACCORDANCE WITH THE LATEST EDITION OF THE NEBB/AABC NATIONAL STANDARDS. THE TOTAL SYSTEM BALANCE SHALL NOT BEGIN UNTIL SYSTEMS ARE COMPLETE. UPON COMPLETION OF THE WORK, SUBMIT FOUR COPIES OF THE COMPLETE TEST AND BALANCE REPORT. PERMANENTLY MARK THE SETTING OF ALL VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES IN A MANNER TO ALLOW THE SETTING TO BE RESTORED. IF A BALANCING DEVICE IS PROVIDED WITH A MEMORY STOP, IT SHALL BE SET AND LOCKED. THE HVAC/MC IS RESPONSIBLE FOR START UP AND OPERATION OF SYSTEMS DURING TOTAL SYSTEM BALANCE.

BALANCING SHALL INCLUDE:
1. AIR SYSTEMS: FINAL FILTERS CLEAN AND IN-PLACE. DUCT SYSTEMS CLEAN OF DEBRIS. FIRE AND VOLUME DAMPERS INPLACE AND OPEN. COILS FINS CLEANED AND COMBED. ACCESS DOORS CLOSED AND DUCT END-CAPS IN PLACE. ALL OUTLETS INSTALLED AND CONNECTED. DUCTS PROPERLY SEALED. CEILINGS AND PLENUMS MUST BE IN PLACE. ALL AIR SYSTEMS SHALL BE BALANCED WITHIN ± 10% OF REQUIRED DESIGN AIRFLOW.

ELECTRICAL WIRING.

THE EC SHALL PROVIDE ALL POWER WIRING, INCLUDING CONDUIT, WIRE AND CONNECTIONS. ALL STARTS, FUSES, AND DISCONNECTS BY OTHERS EXCEPT WHERE SPECIFIED AS PART OF PACKAGED EQUIPMENT. STARTS THAT COME WITH EQUIPMENT SHALL BE AUTOMATIC AND HAVE THERMAL OVERLOAD AND HAVE APPROPRIATE COVERS AND INTERLOCKS. ALL MOTORS LESS THAN ½ HORSEPOWER ARE TO BE 115-60-1 WITH INTEGRAL DISCONNECT LOCATED BEHIND PANEL.

CONTROL WIRING:

CONTROL WIRING SHALL BE PROVIDED BY THE CONTROL CONTRACTOR. REFER TO PME SHEETS FOR LOCATIONS AND DEVICES TO BE MOUNTED BY THE HVAC CONTRACTOR. CONDUIT PATHWAYS TO BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

ALL CONTROL SYSTEMS SHALL BE DDC. SYSTEM COMPONENTS SHALL BE COMPATIBLE WITH HONEYWELL/TRIDIUM BAS

ALL TERMINAL REHEAT BOXES SHALL BE CONNECTED TO THE BAS.

BASIC MATERIALS AND METHODS:

DUCTWORK:

ALL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH SP, WITH THE FOLLOWING METAL THICKNESS

ROUND DUCT - SNAP LOCK -

UP TO 12" DIA. #26 GAUGE MIN.

13" TO 18" DIA. #24 GAUGE MIN.

19" TO 24" DIA. #22 GAUGE MIN.

SPIRAL LOCK SEAM ROUND DUCTS MAY BE ONE GAUGE LIGHTER THAN SHOWN.

ALL ROUND DUCT ELBOWS SHALL BE 1-1/2 RADIUS NON-ADJUSTABLE. BRANCH DUCTS TO DIFFUSERS OR GRILLES 10" DIAMETER OR SMALLER MAY BE A MINIMUM OF 1 RADIUS, 4 GORE, ADJUSTABLE WITH ALL JOINTS SEALED.

RECTANGULAR DUCTS AND PLENUMS -

MAXIMUM SIDE UP TO 12" #26 GAUGE MIN.

MAXIMUM SIDE 13" TO 30" #24 GAUGE MIN.

MAXIMUM SIDE 31" TO 50" #22 GAUGE MIN.

MAXIMUM SIDE 51" TO 84" #20 GAUGE MIN.

MAXIMUM SIDE 85"+ #18 GAUGE MIN.

ALL ELBOWS SHALL BE 1-1/2 RADIUS EXCEPT, WHERE OTHERWISE SHOWN OR WHERE 1-1/2 RADIUS WILL NOT FIT, SQUARE ELBOWS WITH TURNING VANES MAY BE USE.

FOR GREATER THAN 24" USE REINFORCEMENT AS LISTED IN LATEST SMACNA LOW PRESSURE SHEET METAL CONSTRUCTION GUIDE, SECURELY HUNG, BRACED AND STIFFENED TO PREVENT BREATHING, RATTLING, VIBRATION OR SAGGING. DUCT SIZES 19" WIDE AND LARGER THAT HAVE MORE THAN 10 SQUARE FEET OF UNBRACED PANEL SHALL BE CROSS BROKEN OR BEADED.

SUPPORT ALL DUCTS IN ACCORDANCE WITH SMACNA EXCEPT, WIRE HANGERS SHALL NOT BE PREMITTED, DUCTS 36" OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD, AND SHALL BE IN ACCORDANCE WITH DETAILS AND DRAINGS SUPPORTING OF HVAC DUCTS FROM METAL ROOD DECK IS NOT APPROVED, SUPPORT FROM TOP CORD OF ROOF JOIST, GIRDERS, OR BEAMS. ONLY.

FOR ALL DUCTWORK SERVING SYSTEMS HAVING FANS RATED FOR LESS THAN 2" STATIC PRESSURE, ALL TRANSVERSE JOINTS, INCLUDING DUCTMATE, TDC, OR OTHER APPROVED JOINTS, FITTING CONNECTIONS, AND SQUARE OR RECTANGULAR TO ROUND CONNECTIONS IN DUCTWORK SHALL BE SEALED USING ADHESIVE TYPE SLIPS AND HARD IRON GRIP BRUSH ON DUCT SEALER. PRESSURE SENSITIVE TAPES ARE NOTE ALLOWED.

SHEET METAL EXPOSED TO EITHER SHALL BE G-90 OR BETTER GALVANIZED STEEL, PAINTED WITH ARMCO ZINC-GRIP OR APPROVED EQUAL.

ALL DRIP PANS BELOW ROOF OUTLETS, INLETS, OR EXHAUSTS SHALL BE SOLDERED.

CONNECT EQUIPMENT AND INSTALL MOTOR OPERATED DAMPERS.

BRANCH TAKEOFFS NO TO EXCEED 45 DEGREES. PROVIDE A VOLUME DAMPER IN EACH AND EVERY BRANCH OF SUPPLY TO DIFFUSERS, GRILLS, AND WHERE INDICATED ON THE DRAWINGS.

DUCT ACCESS PANELS:

KEES, VENTLOCK, DUCTMATE OR OTHER APPROVED, AIR TIGHT HINGED ACCESS DOORS WITH FELT OR TUBLAR NEOPRENE GASKET AND CAM LATCHES (NOT SCREWS). PROVIDE INSULATED DOORS AT INSULATED DUCTS. PROVIDE ACCESS PANELS AT ALL FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, MOTOR OPERATED DAMPERS, POWER ROOF EXHAUST, BACKDRAFT DAMPERS, AND COILS FOR MAINTENANCE, CLEANING, RESETTING OR EXAMINATION.

GRILLES AND DIFFUSERS:

FURNISHED BY MC PER SCHEDULES FOR TYPES AND SIZES.

VOLUME DAMPERS:

MANUAL VOLUME DAMPERS FABRICATED PER SMACNA STANARDS WITH LOCKING QUADRANT. PROVIDE MULTI-BLADE DAMPERS FOR ALL DUCTS 12 INCHES DEEP AND LARGER.

BALANCING DAMPERS SHALL BE THE WIDTH OF THE BRANCH TAKEOFF. PROVIDE CEILING ACCESS FOR OPERATING DAMPERS. LEAVE ALL DAMPERS OPEN. VOLUME DAMPERS WHERE SHOWN.

FOR ROUND DUCTS, HART & COOLEY #607 AND 608 - OR EQUIVALENT, WITH 2 BEARING POINTS AND HANDLE AND WING NUT ASSEMBLY..

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.16.2020

PROJECT INFO:
PHASE I - AIR WASH
L.S. SYSTEM UPGRADES
CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO.: 19076
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: SPECIFICATIONS

SHEET NO.: M-2

ELECTRICAL GENERAL NOTES:

1. ALL ELECTRICAL DEVICES, FIXTURES, EQUIPMENT AND FEEDERS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES, ALL APPLICABLE LOCAL AND STATE CODES, THE AMERICAN DISABILITIES ACT AND WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. ALL NEW DEVICE COVER PLATES SHALL BEAR IDENTIFICATION LABEL OF CIRCUIT NUMBER.

2. PROVIDE ADDITIONAL SUPPORT FOR DEVICES, FIXTURES, EQUIPMENT AND FEEDERS WHERE THE BUILDING CONSTRUCTION IS NOT SUITABLE FOR DIRECT MOUNTING.

3. FIRESTOP AROUND ALL PENETRATIONS THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, UL LISTING REQUIREMENTS AND THE APPLICABLE BUILDING CODES. REFER TO THE DRAWINGS AND EXISTING CONDITIONS AND PROVIDE PENETRATION ASSEMBLIES SUITABLE FOR THE PARTICULAR CONSTRUCTION. ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE APPROVED FIRESTOPPING.

4. NOT USED.

5. ALL PANELS SHALL HAVE TYPED, COMPLETED DIRECTORIES INDICATING EQUIPMENT SERVED AND ROOM NAME, OR SPARE, OR SPACE. HANDWRITTEN DIRECTORIES ARE NOT ACCEPTABLE. IF DIRECTORY IS WRITTEN ON PANEL COVER, ELECTRICAL CONTRACTOR SHALL AT HIS OWN EXPENSE REPLACE WITH A NEW COVER.

6. ALL FEEDERS AND CIRCUITRY SHALL BE TORQUED PER THE PANEL, BREAKER, AND/OR PARTICULAR EQUIPMENT MANUFACTURER'S SPECIFICATIONS.

7. CIRCUITRY TO SWITCHES, RECEPTACLES, AND ALL OTHER DEVICES SHALL BE TERMINATED TO DEVICE'S SCREW TERMINALS.

8. ALL POWER CIRCUITRY WIRING SHALL INCLUDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR SIZED PER THE NEC. WHERE PHASE CONDUCTORS ARE INCREASED IN SIZE DUE TO VOLTAGE DROP, HIGH AMBIENT TEMPERATURES, OR OTHER REASONS THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE INCREASED PROPORTIONATELY PER THE NEC.

9. MOUNTING HEIGHTS INDICATED ARE TO CENTER OF DEVICE, OUTLET, FIXTURE, OR EQUIPMENT UNLESS NOTED OTHERWISE.

10. RECEPTACLES, TELECOMMUNICATION OUTLETS, AND OTHER DEVICES INDICATED MOUNTED 42" AFF OR 8" ABOVE COUNTER SHALL BE COORDINATED WITH PARTICULAR ADJACENT FIXTURES, EQUIPMENT, COUNTERS, AND CASEWORK FOR EXACT HEIGHTS AND LOCATIONS.

11. RECEPTACLES AND TELECOMMUNICATION OUTLETS SHOWN ADJACENT ON DRAWINGS SHALL BE MOUNTED 10" APART ON CENTER HORIZONTALLY.

12. COORDINATE ALL DEVICES AND OUTLETS ABOVE, BELOW, AND ABOUT CASEWORK CLOSELY WITH CASEWORK CONTRACTOR IN ORDER TO LOCATE AT THE PROPER LOCATION.

13. ALL FIXTURES, DEVICES, BOXES/ENCLOSURES, EQUIPMENT AND ALL OTHER ELECTRICAL COMPONENTS SHALL BE LISTED AND LABELED BY UNDERWRITER'S LABORATORIES (U.L.) OR ANOTHER THIRD PARTY LISTING AGENCY APPROVED BY THE NORTH CAROLINA BUILDING CODE. U.L. CLASSIFIED WITH A BACKWARDS UR IS NOT SUITABLE. ALL ASSEMBLIES CONSISTING OF MORE THAN ONE COMPONENT IN AN ENCLOSURE SHALL BE LISTED AND LABELED AS AN ASSEMBLY.

SYMBOLS - LIGHTING

CLG.	WALL	DESCRIPTION
INDICATES CIRCUIT — X INDICATES FIXTURE TYPE — X ○ ○ INDICATES SWITCH LEG — X		FLUORESCENT LIGHT FIXTURE - RECESSED MOUNTED, SEE FIXTURE SCHEDULE
		HATCH THROUGH FIXTURE SYMBOL INDICATES THAT FIXTURE IS CONNECTED TO EMERGENCY UPS SYSTEM WITH BATTERY BACKUP.
○		HID/FLUORESCENT LIGHT FIXTURE - RECESSED/WALL MOUNTED
		RECESSED INCANDESCENT/FLUORESCENT WALL WASHER
	○	FLUORESCENT STRIP FIXTURE
		EXIT LIGHT FIXTURE, CEILING/WALL MOUNTED. PROVIDE ARROWS AS INDICATED BLACKEND AREAS REPRESENTS FACE.

NOTE: SYMBOLS WITH SUBSCRIPT "EX" DENOTES EXISTING.

SYMBOLS - RECEPTACLES

NOTE: ALL RECEPTACLES TO BE HOSPITAL GRADE

WALL	DESCRIPTION
	ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" (610 MM) CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" (1100 MM) AFF OR AS INDICATED.
	FLOOR OUTLET.
	SINGLE RECEPTACLE - 20A, MTD 18" (460 MM) AFF UNLESS OTHERWISE NOTED.
GFI	DUPLEX RECEPTACLE - 20A, MTD. 18" (460 MM) AFF UNLESS OTHERWISE NOTED. SUBSCRIPT "GFI" INDICATES GROUND FAULT TYPE: "N" INDICATES NOT HOSPITAL GRADE: "ST" INDICATES (15A) SAFETY TYPE: AND "I" INDICATES ISOLATED GROUND (IF USED).
	QUAD RECEPTACLE - 20A, MTD. 18" (460 MM) AFF UNLESS OTHERWISE NOTED. SUBSCRIPT "GFI" INDICATES GROUND FAULT TYPE: "N" INDICATES NOT HOSPITAL GRADE: "ST" INDICATES SAFETY TYPE: AND "I" INDICATES ISOLATED GROUND (IF USED).
	DUPLEX RECEPTACLE SWITCHED 18" (460 MM) AFF UNLESS OTHERWISE NOTED.
	3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE/DATA & RECEPTACLE.
	DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT - 20A, MTD 18" (460 MM) AFF UNLESS OTHERWISE NOTED WITH 1/4" (6.5 MM) "EMERGENCY" ENGRAVED LETTERS FILLED WITH RED ENAMEL. SUBSCRIPT "P" INDICATES RECEPTACLE WITH INTERNAL NEON LIGHT.
	QUAD RECEPTACLE ON EMERGENCY CIRCUIT - 20A, MTD 18" (460 MM) AFF UNLESS OTHERWISE NOTED WITH 1/4" (6.5 MM) "EMERGENCY" ENGRAVED LETTERS FILLED WITH RED ENAMEL. SUBSCRIPT "P" INDICATES RECEPTACLE WITH INTERNAL NEON LIGHT.
	CEILING MOUNTED DUPLEX RECEPTACLE FOR POWER TO CEILING MOUNTED TV.
S	COMBINATION SWITCH AND DUPLEX RECEPTACLE (4'-6" (1400MM) AFF UNLESS OTHERWISE NOTED)

SYMBOLS - TELEPHONE SYSTEM

WALL	DESCRIPTION
	TELEPHONE/DATA OUTLET, MTD. 18" (460 MM) A.F.F. UNLESS OTHERWISE NOTED.
○	TELEPHONE/DATA OUTLET, MTD. 6" (460 MM) ABOVE CASEWORK
W	TELEPHONE OUTLET (WALL TYPE), MTD 54" (1400 MM) A.F.F. UNLESS OTHERWISE NOTED.
	COMBINATION TELEPHONE/DATA OUTLET MTD. 18" (460 MM) A.F.F. UNLESS OTHERWISE NOTED. PROVIDE (4) CAT6u CONNECTION (1) TELE [BLUE CABLE], (3) DATA [WHITE CABLE] TELEPHONE JACK SHALL BE RJ11 AND DATA JACKS SHALL BE RJ45

SYMBOLS - FIRE ALARM SYSTEM

CLG.	WALL	DESCRIPTION
	F	FIRE ALARM STATION (MANUAL) MOUNTED 48" (1220 MM) AFF TO CENTERLINE OF STATION.
	DH	ELECTROMAGNETIC TYPE DOOR HOLDER OUTLET.
	ST	STROBE 80" AFF TO BOTTOM OF BOX
	SH	STROBE HORN 80" AFF TO BOTTOM OF BOX
	(S)	SMOKE DETECTOR
	(H)	HEAT DETECTOR
	FACP	FIRE ALARM CONTROL PANEL
	ANN	ANNUNCIATOR

SYMBOLS - POWER

CLG.	WALL	DESCRIPTION
	J	JUNCTION BOX, MTD 1'-6" (450 MM) A.F.F. UNLESS NOTED OTHERWISE
J L		LIFT CONTROL BOX. COORDINATE REQUIREMENTS WITH VENDOR.
	PB	PULL BOX
		LIGHTING OR LIGHTING/POWER PANELBOARD
		DISTRIBUTION OR POWER PANELBOARD
		CONTROLLER, MAGNETIC
	SIZE 2/3R	COMBINATION CONTROLLER AND DISCONNECT SWITCH, NEMA SIZE RATING/ENCLOSURE (NEMA 1 IF NOT SHOWN)
		FUSED OR UNFUSED DISCONNECT SWITCH.
		ENCLOSED THERMAL MAGNETIC CIRCUIT BREAKER

SYMBOLS - SWITCHES

WALL	DESCRIPTION
	NOTE; MOUNTING HEIGHT FOR THE FOLLOWING SWITCHES SHALL BE
	HEIGHT SHALL BE 4'-6" (1400 MM) AFF.
S	SINGLE POLE SWITCH WITH SUFFIX A.B.C. ETC. INDICATES CONTROL OF FIXTURE(S) WITH SAME DESIGNATION(S).
S_2	DOUBLE POLE SWITCH
S_3	THREE-WAY SWITCH.
S_4	FOUR-WAY SWITCH.
S_d	DIMMER SWITCH - WITH SILICON CONTROLLED RECTIFIER.
S_{OC}	20A, LINE VOLTAGE DUAL TECH. OCCUPANCY SENSOR & SWITCH 48" (1100 MM) AFF:

SYMBOLS - CIRCUITING

DESCRIPTION	
	BRANCH CIRCUIT
	FLEXIBLE CONDUIT - 1/2" (15 MM), W/3 #12 WIRES
No. OF CKTS. IN CONDUIT PHASE CONDUCTORS NEUTRAL GROUND	HOME RUN TO PANEL - ARROWHEADS INDICATE CIRCUITS. WIRE INDICATED ARE GREEN GROUND, NEUTRAL AND THREE HOT LEGS (A DIFFERENT PHASE FOR EACH CIRCUIT) MAXIMUM THREE CIRCUITS PER CONDUIT.
	RISER UP.
	RISER DOWN.
E	EMERGENCY BRANCH CIRCUIT CONCEALED IN CEILING OR WALL.

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:

PHASE I - AIR WASH L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO.: 19076
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE:
ELECTRICAL NOTES, LEGENDS, DETAILS

SHEET NO.:
E-1

GENERAL

FIELD COORDINATION OF DRAWINGS: UON REQUEST BY THE BUILDER, SUBCONTRACTORS INVOLVED IN MECHANICAL HVAC, PLUMBING, SPRINKLER, ELECTRICAL, GAS PIPING, TELECOMMUNICATIONS, ETC. WILL PROVIDE FIELD COORDINATION DRAWINGS IN BUILDING AREAS WHERE IN THE OPINION OF THE BUILDER HEAVY CONGESTION AND/OR CONFLICTS ARE LIKELY TO OCCUR (IE., MECHANICAL ROOMS, SERVICE CHASES, VERTICAL SHAFTS, INTERSTITIAL AREAS).

THE BUILDER WILL COORDINATE THE PREPARATION OF THE SE DRAWINGS USING BASE BUILDING ERECTION AND/OR SHOP DRAWINGS. THE BUILDER SHALL DICTATE THE SEQUENCE OF DESIGN/ENGINEERING INFORMATION UNTIL A SATISFACTORY COMPOSITE DRAWING IS COMPLETED B EACH TRADE AND SUBCONTRACTOR ADEQUATELY RESOLVING THE CONFLICT OR CONGESTION. EACH SUBCONTRACTOR SHALL PROVIDE TIMELY DESIGN, DRAFTING AND ENGINEERING REQUIRED FOR COORDINATION DRAWINGS FOR NO ADDITIONAL COST TO THE BUILDER OR OTHER SUBCONTRACTOR. COORDINATION DRAWINGS PROVIDED BY SUBCONTRACTORS SHALL SHOW SIZES, ELEVATIONS AND SECTIONS IN SUFFICIENT DETAIL AND SCALE TO COORDINATE ALL WORK.

THE ELECTRICAL SYSTEM HAS BEEN DESIGNED IN COMPLIANCE WITH THE LOCALLY ENFORCED EDITION OF THE NATIONAL ELECTRIC CODE (NEC). MATERIAL, EQUIPMENT AND WORK SHALL CONFORM TO THE APPROPRIATE STANDARDS OF THE NATIONAL ELECTRIC CODE (NEC), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AND UNDERWRITERS LABORATORIES (UL), LATEST EDITIONS, AND APPLICABLE FEDERAL. STATE, AND LOCAL BUILDING CODES.

TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH QUALITY. SUBSTITUTIONS SHALL BE PERMITTED ONLY WHEN APPROVED BY THE BUILDER PRIOR TO INSTALLATION. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL EQUIPMENT SUBSTITUTIONS PROVIDED BY THE ELECTRICAL CONTRACTOR.

THE EC SHALL PROVIDE RECORD DRAWINGS THAT INDICATE ALL DEVIATIONS FROM, AND ADDITIONS TO, THE ELECTRICAL PLANS TO THE BUILDER PRIOR TO FINAL PAYMENT.

THE ELECTRICAL CONTRACTOR (EC) SHALL NOTIFY THE BUILDER OF ALL DISCREPANCIES AND CONFLICTS BETWEEN THE BUILDER'S PLANS AND SPECIFICATIONS, EQUIPMENT SHOP DRAWINGS , AND LOCAL CODE OR UTILITY REQUIREMENTS PRIOR TO SUBCONTRACT SIGNING. CONFLICTS DISCOVERED AFTER SUBCONTRACT SIGNING SHALL BE CORRELATED, PER THE BUILDER'S DIRECTION, BY THE EC AT NO ADDITIONAL COST TO THE BUILDER.

16050 BASIC MATERIALS AND METHODS

SUPPORTS

ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO, OR SUPPORTED FROM, THE BUILDING STRUCTURAL MEMBERS, OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK AND/OR PIPING OR THEIR SUPPORTS, OR TO METAL ROOF DECK EXCEPT AS FOLLOWS. FOR METAL ROOF DECK INSTALLATIONS, 1" EMT CONDUIT MAXIMUM AND 4 $\frac{11}{16}$" JUNCTION BOX MAXIMUM MAY BE SUPPORTED B DECKING. HANGERS AND SUPPORTS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE.

ALL WIRING DEVICE BOXES SHALL BE SUPPORTED WITH CADDY #H23, H4, OR HS3 (MODEL AS APPROPRIATE) QUICK-MOUNT BOX SUPPORTS.

RACEWAYS

WIREWAYS, WALL DUCT, & FLOOR TRENCH DUCT

WIREWAYS, WALL DUCT, AND FLOOR TRENCH DUCT SHALL BE PROVIDED BY THE EC, SIZED AND LOCATED AS HSOWN ON THE ELECTRICAL DRAWINGS OR ON SHOP/INSTALLATION DRAWINGS FOR OWNDER FURNISHED EQUIPMENT.

THE EC SHALL FURNINSH A COMPLETE SUBMITTAL FOR BUILDER'S APPROVAL FOR ALL WIREWAY, WALL DUCT, AND FLOOR TRENCH DUCT PRIOR TO INSTALLATION. WIREWAYS, WALL DUCT, AND FLOOR TRENCH DUCT SHALL BE MANUFACTURED BY SQUARE D OR AS APPROVED BY THE BUILDER'S ELECTRICAL ENGINEER.

CONDUITS

ALL CONDUIT, FITTINGS, COUPLINGS, & SUPPORTS SHALL BE PROVIDED BY THE EC. CONDUIT SHALL BE RIGID (HEAVY WALL) GALVANIZED STEEL UNLESS NOTED OTHERWISE ON PLANS OR PERMITTED ELSEWHERE IN THESE SPECIFICATIONS, MANUFACTURED BY ALLIED, LTV OR WHEATLAND TUBE.

CONDUIT FITTINGS AND COUPLINGS SHALL BE MANUFACTURED BY APPLETON, RACO, OR O.Z.. COUPLINGS AND CONNECTORS SHALL BE THREADED, SET-SCREW OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE COUPLINGS AND CONNECTORS ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION AND OUTLET BOXES SHALL HAVE INSULATED THROATS TO PREVENT CONDUCTOR INSULATION SCORING. DIE-CAST FITTINGS ARE NOT PERMITTED. PROVIDE OZ EXPANSION DEFLECTION FITTINGS AT ALL BUILDING EXPANSION JOINTS.

CONDUIT MINIMUM SIZE SHALL BE ¾". CONDUIT SIZES SPECIFIED ON THE DRAWINGS ARE MINIMUMS BASED ON COPPER CONDUCTORS WITH TYPE THHN INSULATION. EC SHALL INCREASE CONDUIT SIZES AS REQUIRED FOR BENDS OR CONDUCTOR SUBSTITUTIONS. IN FINISHED AREAS, CONDUIT SHALL BE CONCEALED WITHIN WALLS, CEILINGS AND FLOORS.

CONDUIT SHALL BE INSTALLED PARALLEL TO, OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTION OF VERTICAL PLANES AND CEILINGS. EXPOSED CONDUITS TO BE OFFSET AT BOXES.

OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE-RESISTANT WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING.

THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATION AND DATA SYSTEMS WIRING.

INTERMEDIATE (IMC) METAL CONDUIT MAY BE USED IN CONCRETE SLABS AT OR BELOW GRADE POURED CONCRETE WALLS, AND IN EXTERIOR AND UNDERGROUND AREAS.

ELECTRICAL METAL TUBING (EMT OR THIN WALL CONDUIT) MAY BE USED INDOORS IN DRY, ABOVE-GRADE LOCATIONS.

FLEXIBLE METAL CONDUIT SHALL BE USED IN DRY LOCATIONS FOR CONNECTIONS TO RECESSED LIGHT FIXTURES AND FOR FINAL CONNECTIONS TO ALL HVAC, VIRATING, OR MOVING EQUIPMENT. FLEXIBLE METAL CONDUIT LENGTHS SHALL BE LONG ENOUGH TO ALLOW TEMPORARY RELOCATION OF LIGHT FIXTURE AND SHALL ALLOW FOR THE REMOVAL OF THE LIGHT FIXTURE WITHOUT BREAKING CONNECTIONS TO OTHER LIGHT FIXTURES.

LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR FINAL CONNECTIONS TO ALL HVAC, VIBRATING, OR MOVING EQUIPMENT IN ALL WET OR CORROSIVE LOCATIONS. SEALTITE OR EQUAL WITH APPROVED LIQUIDTIGHT FITTINGS SHALL BE USED.

RIGID METAL CONDUIT WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS SHALL BE USED IN ALL FIRE PUMP ROOMS.

ALL OUTLET AND JUNCTION BOXES SHALLINCLUDE A COVER PLATE, PROVIDED BY THE EC. OUTLET BOXES IN RATED FIRE OR SMOKE WALLS SHALL BE INSTALLED SO THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY STUD SPACE AND DO NOT EXCEED 16 SQUARE INCHES. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE COMPLETELY FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL.

FLUSH MOUNTED BOXES IN ADJACENT ROOMS SHALL NOT BE INSTALLED BACK TO BACK OR INSTALLED IN THE SAME STUD SPACE. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4"X4" OCTAGONAL OR SQUARE BOXES. OUTLET BOXES IN SUSPENDED CEILINGS SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AND INSTALLED FLUSH WITH THE FINISHED CEILING.

SWITHC AND RECETACLE BOXES FOR ONE OR TWO DEVICES SHALL BE 4" SQUARE WITH THE APPROPRIATE BOX COVER (PLASTER RING). BOXES FOR MORE THAN TWO DEVICES SHALL BE SOLID GANG BOXES WITH SOLID GANG BOX COVER, SINGLE DEVICE GANGABLE BOXES ARE NOT PERMITTED. WIRING DEVICE BOX COVERS (PLASTER RIGS) SHALL EXTEND TO BE FLUSH WITH THE FINISHED WALL SO THAT THE WIRING DEVICE MOUNTING YOKE WILL BE EVEN WITH THE FINISHED WALL. THE EC SHALL PROVIDE PARTITIONS OR DIVIDERS BETWEEN 120V AND 277V DEVICES INSTALLED IN A COMMON BOX.

WIRE AND CABLES

ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE EC. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE, PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS NOTED OTHERWISE.

INSULATION

ALL WIRING SHALL HAVE INSULATION RATED 600 VAC AND FOR TEMPERATURE RATING OF AT LEAST 75 DEGREES CENTIGRADE, TYPE THW, THWN, THHN, OR XHHW. WIRING USED IN AREAS OF HIGH TEMPERATURES OR IN CONTINUOUS FLUORESCENT FIXTURE CHANNELS SHALL HAVE TYPE THHN OR XHHW INSULATION. ALL WIRING INSTALL BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION.

CONDUCTOR MATERIAL

COPPER

CONDUCTORS SHALL BE COPPER (CU), #10 AWG AND SMALLER MAY BE EITHER SOLID OR STRANDED. #8 AWG AND LARGER SHALL BE STRANDED.

FINAL CONNECTIONS TO ALL MOTORS AND/OR EQUIPMENT SUBJECT TO VIBRATIONS OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER COPPER CONDUCTORS.

CONDUCTOR/WIRE SIZING

GENERAL

SPECIFIED WIRE (AND CONDUIT) SIZES ARE WITH TYPE THHN INSULATED COPPER CONDUTORS WITH AMPACITITES PER TYPE THW INSULATED COPPER (75 DEGREES CENTIGRADE CONDUCTOR TEMPERATURE RATING) AT 30 DEGREES CENTIGRADE (86 DEGREES FARENHEIT) AMBIENT TEMPERATURE, PER NEC ARTICLE 310 AND NEC CHAPTER 9. DEVIATIONS AND SUBSTITUTIONS SHALL COMPLY WITH NEC ARTICLE 310 & NEC CHAPTER 9.

FEEDER & BRANCH CIRCUIT WIRING

THE MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG.

CONDUCTORS SHALL BE SIZED TO LIMIT THE TOTAL VOLTAGE DROP TO A MAXIMUM OF 5% AT THE FARTHEST POWER OUTLET, INCLUDING A MAXIMUM VOLTAGE DROP OF 3% IN EITHER THE BRANCH CIRCUIT CONDUCTORS OR THE FEEDERS BETWEEN THE SERVICE ENTRANCE AND THE BRANCH CIRCUIT PANELBOARD.

COLOR CODED INSULATION

FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE PROVIDED WITH THE FOLLOWING COLOR CODED INSULATION (OR COLOR TAPE AT ALL JUNCTION/PULL BOXES AND TERMINATION POINTS) FOR SYSTEM VOLTAGE AND PHASE IDENTIFICATION:
GROUNDING CONDUCTORS:
GREEN (ONLY)
120/208-240V SYSTEMS
BLACK, RED, BLUE, & WHITE (GROUNDED NEUTRAL)

277/480V SYSTEMS
BROWN (PHASE A), ORANGE (PHASE B), YELLOW (PHASE C), WHITE WITH COLORED STRIPE (NOT GREEN) FOR GROUNDED NEUTRAL)

ISOLATED POWER SYSTEMS
BROWN (PHASE A), ORANGE (PHASE B), YELLOW (PHASE C, 3-PHASE ONLY)

CONTROL CIRCUIT WIRING

CONTROL CIRCUIT WIRING SHALL BE COLOR CODED, #18 AWG COPPER (16 AWG COPPER FOR RUNS LONGER THAN 100 FEET) UNLESS NOTED OTHERWISE.

CONTROL WIRING SHALL BE INSTALLED IN CONDUIT. MULTI-CONDUCTOR CABLE, SPECIFICALLY APPROVED FOR USE WITHOUT CONDUIT IN ENVIRONMENTAL AIR PLENUMS PER NEC ARTICLE 300-22 AND APPROVED BY LOCAL CODES, MAY BE USED IN PLENUM AREAS.

COMMUNICATIONS & DATA SYSTEMS WIRING

TELEPHONE, COMMUNICATIONS, INTERCOM, COMPUTER, CRT, AND TELEWRITER WIRING SHALL BE INSTALLED IN CONDUIT OR SHALL BE MULTI-CNDUCTOR CABLE SPECIFICALLY APPROVED FOR USE WITHOUT CONDUIT IN ENVIRONMENTAL AIR PLENUMS PER NEC ARTICLE 300-22 AND APPROVED BY LOCAL CODES.

FIRE ALARM SYSTEM WIRING

FIRE ALARM SYSTEM WIRING SHALL COMPLY WITH NEC ARTICLE 760 AND STATE AND LOCAL CODES.

FIRE ALARM SUSTEM WIRING SHALL BE INSTALLED IN CONDUIT.

WIRING DEVICES (SWITCHES, RECEPTACLES, ETC.)

ALL WIRING DEVICES AND ALL COVER PLATES SHALL BE PROVIDED BY THE EC. ALL WIRING DEVICES SHALL MEET FEDERAL SPECIFICATIONS, W-W-596 (RECEPTACLES), W-W-896 (SWITCHES). ALL DEVICES SHALL BE BY THE SAME MANUFACTURER UNLESS NOTED OTHERWISE. NO CIRCUIT CONDUCTORS SHALL PASS THROUGH RECEPTACLES TO FEED DEVICES DOWN STREAM. (ALL RECEPTACLES SHALL BE PIC-TAILED EXCEPT END OF LINE DEVICES). DEVICES BY ARROW-HART, HUBBELL, BRYANT, PASS & SEYMOUR, OR LEVITON SHALL BE USED. DEVICE SUBMITTALS SHALL BE FORWARDED TO BUILDER'S ELECTRICAL ENGINEER FOR WRITTEN APPROVAL. ALL FLUSH COVER PATES (UNLESS SPECIFIED OTHERWISE) SHALL BE STANDARD GRADE, SMOOTH PLASTIC, BY THE SAME SUPPLIER AS THE WIRING DEVICES. LEXAN TYPE COVER PLATES ARE NOT ALLOWED.

WIRING DEVICES SHALL BE IVORY WITH IVORY COVER PLATES, FLUSH MOUNTED ON FINISHED WALLS UNLESS NOTED OTHER WISE.

WALL SWITCHES

WALL SWITHCHES SHALL BE RATED 120/277 VAC, 20 AMP, SILENT TYPE.

RECEPTACLES

120 VAC STANDARD DUPLEX RECEPTACLES SHALL BE RATED 20 AMPS, 2-POLE, 3-WIRE, GROUNDING TYPE NEMA #5-20R CONFIGURATION.

250 VAC STANDARD DUPLEX RECEPTACLES SHALL BE RATED 20 AMPS, 2-POLE, 3-WIRE, GROUNDING TYPE NEMA #6-20R CONFIGURATION.

125/250 VAC, 30 AMP RECEPTACLES SHALL BE 3-POLE, 4 WIRE, GROUNDING TYPE, NEMA #14-30R CONFIGURATION.

125/250 VAC, 50 AMP RECEPTACLES SHALL BE 3-POLE, 4 WIRE, GROUNDING TYPE, NEMA #14-50R CONFIGURATION.

WEATHERPROOF RECEPTACLES SHALL BE GROUND FAULT CIRCUIT INTERRUPTER, 120 VAC, 20 AMP DUPLEX RECEPTACLES WITH WATERPROOF COVERS. GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES SHALL MEET UL943 CLASS A (GFCI) AND UL498 (RECEPTACLE).

CHILD PROOF/SAFETY RECEPTACLES SHALL BE DUPLEX RECEPTACLES WITH INTEGRAL SLIDING AND/OR DISCONNECTING SHUTTERS IN THE PHASE AND GROUNDED NEUTRAL SLOTS, PREVENTING ANY OBJECT OTHER THAN AN ELECTRICAL PLUG TO BE INSERTED INTO AND ENERGIZED BY THE RECEPTACLE.

HOSPITAL GRADE RECEPTACLES SHALL BE IDENTIFIED BY A GREEN DOT PRINTED ON THE EXPOSED FACE OF THE RECEPTACLE.

ISOLATED OR INSULATED GROUND RECEPTACLE SHALL HAVE THE GROUNDING CONDUCTOR TERMINAL ELECTRICALLY INSULATED FROM THE RECEPTACLE FRAME AND MOUNTING YOKE. ISOLATED GROUND RECETACLES SHALL BE IDENTIFIED BY AN ORANGE TRIANGLE PRINTED ON THE EXPOSED FACE OF THE RECEPTACLE.

SEPARATE CIRCUIT RECEPTACLE

A RECEPTACLE SERVED BY BRANCH CIRCUIT CONDUCTOR(S) WHICH SERVE NO OTHER POWER OUTLETS. THE SEPARATE CIRCUIT RECEPTACLE MAY SHARE THE GROUNDED CIRCUIT CONDUCTOR (NEUTRAL) AND/OR THE GROUNDING EQUIPMENT CONDUCTOR WITH OTHER BRANCH CIRCUITS.

DEDICATED CIRCUIT RECEPTACLE

A RECEPTACLE SERVED BY BRANCH CIRCUIT CONDUCTOR(S) AND GROUNDED CIRCUIT CONDUCTOR (NEUTRAL) WHICH SERVE NO OTHER POWER OUTLETS. THE DEDICATED CIRCUIT RECEPTACLE MAY SHARE ONLY THE GROUNDING EQUIPMENT CONDUCTOR WITH THE OTHER BRANCH CIRCUITS.

LIGHT FIXTURES & LAMPS

LIGHT FIXTURES SHALL BE FURNISHED BY THE BUILDER, EXCEPT AS NOTED OTHERWISE, INSTALLED BY THE EC. EACH LIGHT FIXTURE SHALL BE CONNECTED WITH A FLEXIBLE METAL CONDUIT FROM A JUNCTION BOX.

RECESSED FLUORESCENT FIXTURES FURNISHED BY THE BUILDER ARE FURNISHED WITH 6 FOOT LONG, 3-WIRE (PHASE, NEUTRAL, & GROUND) PRE-WIRED FLEXIBLE METAL CONDUIT WHIPS, EC SHALL PROVIDE ALL ADDITIONAL WIRES TO THE WHIP WHERE REQUIRED FOR BI-LIVEL SWITCHING, ETC. ALL FLUORESCENT BALLASTS SHALL BE ENERGY SAVING, HIGH POWER FACTOR TYPE.

ALL RECESSED 2'X4', 1'X4', AND 2'X2' FLUORESCENT TROFFER LIGHT FIXTURES SHALL BE FURNISHED PRELAMPED. ALL SURFACE MOUNTED FLUORESCENT FIXTURE LAMPS SHALL BE PROVIDED BY THE EC. ALL PL AND HIGH OUTPUT FLUORESCENT LAMPS, AND OTHERS AS NOTED ON THE ELECTRICAL DRAWINGS SHALL BE PROVIDED BY THE EC.

FLUORESCENT LAMPS SHALL BE 3500 DEGREE KELVIN COLOR TEMPERATURE, T-8, ENERGY SAVING, RAPID START TYPE UNLESS NOED OTHERWISE. LINEAR 4' FLUORESCENT LAMPS SHALL BE TCLP(TOXICITY CHARACTERISTIC LEACHING PROCEDURE) COMPLIANT (GE ECOLUX, PHILIPS ALTO, OR APPROVED EQUAL).

INCANDESCENT LAMPS SHALL BE PROVIDED BY THE EC. INCANDESCENT LAMPS SHALL BE 130 VAC RATED, EXTENDED LIFE TYPE.

COMMUNICATIONS

ALL COMMUNICATION OUTLETS SHALL BE PROVIDED BY THE EC AS SPECIFIED BELOW.

EACH COMMUNICATION OUTLET IN RECEPTION ROOMS SHALL BE A 4" SQUARE BY 2-1/8" DEEP BOX WITH 1" KNOCK-OUTS, A SINGLE GANG PLASTER RING, AND AN IVORY BLANK COVERPATE, WITH A 1" CONDUIT STUBBED FROM THE OUTLET BOX TO THE CEILING SPACE.

HVAC & TEMPERATURE CONTROL SYSTEMS

THE EC SHALL PROVIDE ALL LINE VOLTAGE WIRING (120V, 208-240V, 277V, 460-480V, OR AS INDICATED "BY EC"), INCLUDING CONDUIT, CONDUCTORS, BOXES, FUSETRON SWITCH/PLUG-FUSE SOCKETS AND TYPE T FUSES, AND CONNECTIONS FOR ALL HVAC EQUIPMENT AS SHOWN ON THE ELECTRICAL ("E" SHEETS) AND MECHANICAL-ELECTRICAL("ME" SHEETS) DRAWINGS. THE EC SHALL PROVIDE A SPARATE BID FOR ALL CONTROL WIRING INDICATED "BY CC", INCLUDING CONDUIT, CONDUIT, CONDUCTORS, BOXES, AND CONNECTIONS FOR ALL HVAC EQUIPMENT AS SHOWN ON THE ELECTRICAL ("E" SHEETS) AND MECHANICAL-ELECTRICAL ("ME" SHEETS) DRAWINGS.

STARTERS AND CONTRACTORS SHALL BE FURNISHED WITH BUILDER FURNISHED HVAC EQUIPMENT EXCEPT AS NOTED ON PLANS AS "FURNISHED BY SWITCHGEAR SUPPLIER".

DISCONNECTS & SAFETY SWITCHES

ALL DISCONNECT AND SAFETY SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE EC

ALL DISCONNECTS AND SAFETY SWITCHES SHALL BE THE HEAVY DUTY TYPE WITH QUICK-BREAK, QUICK-MAKE MECHANISMS, FULL COVER INTERLOCKS, EXTERNAL INDICATOR HANDLE FOR MANUAL OPERATION AND RATED AMPACITY, NUMBER OF POLES, VOLTAGE, AND NEMA ENCLSURE TYPE AS SHOWN ON THE PLANS.

FUSABLE SAFETY SWITCHES SHALL INCLUDE PROVISIONS FOR CARTRIDGE TYPE FUSES AND FURNISHED WITH CLASS R REJECTIONS FUSE CLIPS. CLASS R FUSE CLIPS SHALL BE INSTALLED BY THE EC. FUSES SHALL BE PROVIDED BY THE EC

ALL BUSSMAN FUESTRON SWITCH/PLUG-FUSE SOCKETS AND BUSSMANN TYPES T & S FUSES SHALL BE PROVIDED BY THE EC

ENCLOSURES SHALL BE NEMA-3R FOR ALL OUTDOOR AND FIRE PUMP ROOM INSTALLATIONS.

ENCLOSURES SHALL BE NEMA-1 FOR ALL INDOOR INSTALLATIONS EXCEPT AS OTHERWISE NOTED. LUGS SHALL BE UL LISTED FOR USE WITH BOTH COPPER AND ALUMINUM CONDUCTORS.

DISCONNECT AND SAFETY SWITCHES SHALL BE MANUFACTURED BY SQUARE D EXCEPT AS NOTED OTHERWISE.

ISOLATED OR INSULATED GROUND RECEPTACLE SHALL HAVE THE GROUNDING CONDUCTOR TERMINAL ELECTRICALLY INSULATED FROM THE RECEPTACLE FRAME AND MOUNTING YOKE. ISOLATED GROUND RECETACLES SHALL BE IDENTIFIED BY AN ORANGE TRIANGLE PRINTED ON THE EXPOSED FACE OF THE RECEPTACLE.

EACH COMMUNICATION OUTLET IN ALL ROOMS EXCEPT RECEPTION ROOMS SHALL BE A 4" SQUARE BY 1-1/2" DEEP BOX WITH 3/4 KNOCK-OUTS, A SINGLE GANG PLASTER RING, AND AN IVORY BLANK COVER PLATE, WITH A 3/4 CONDUIT STUBBED FROM THE OUTLET BOX TO THE CEILING PLENUM SPACE. PUSH-ON NON-METALLIC INSULATING BUSHINGS SHALL BE PROVIDED ON ALL CONDUITS STUBBED ABOVE THE CEILING.

OVERCURRENT PROTECTION DEVICES

FUSES SHALL BE FURNISHED AND INSTALLED BY THE EC

FUSES SHALL BE MANUFACTURED BY BUSSMANN, OR APPROVED EQUAL BY ENGINEER OF RECORD.

FUSES SHALL BE CLASS RK5 (0 THROUGH 600 AMPS), CLASS L (600 THROUGH 6000 AMPS), OR AS SPECIFIED WITH VOLTAGE AND AMPACITY RATINGS AS SHOWN ON THE ELECTRICAL DRAWINGS.

CIRCUIT BREAKERS SHALL BE FURNISHED BY THE SWITCHGEAR SUPPLIER, EXCEPT AS NOTED, INSTALLED BY THE EC

CIRCUIT BREAKERS SHALL BE MOLDED -CASE, THERMAL MAGNETIC TYPE WITH QUICK-MAKE, QUICK-BREAK MECHANISMS, COMMON TRIP ON MULTIPLE POLE BREAKERS, LUGS UL LISTED FOR USE WITH BOTH COPPER AND ALUMINUM CONDUCTORS AND RATED FOR THE VOLTAGE, AMPACITY, NUMBER OF POLES, AND INTERRUPTING CAPACITY AS SHOWN ON THE ELECTRICAL DRAWINGS.

CIRCUIT BREAKERS SHALL BE MANUFACTURED BY SQUARE D, OR APPROVED EQUAL BY ENGINEER OF RECORD.

CIRCUIT BREAKERS FOR PANELBOARDS SHALL BE PLUG-IN TYPE, MANUFACTURED BY THE PANELBOARD MANUFACTURER.

16400 SERVICE & DISTRIBUTION

GENERAL

ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, BUSWAY, ETC. (SWITCHGEAR), SHALL BE FURNISHED BY THE SWITCHGEAR SUPPLIER, UNLESS NOTED OTHERWISE, INSTALLED BY THE EC. SWITCHGEAR SHALL BE INSTALLED IN THE LOCATIONS AND CONFIGURATIONS AS SHOWN ON THE ELECTRICAL PLANS UNLESS APPROVED OTHERWISE BY THE BUILDER'S ELECTRICAL ENGINEER.

SERVICE AND DISTRIBUTION EQUIPMENT SHALL HAVE VOLTAGE, AMPACITY, SHORT CIRCUIT WITHSTAND, AND SHORT CIRCUIT INTERRUPTING CAPACITIES AS SPECIFIED ON THE ELECTRICAL DRAWINGS.

THE EC SHALL PROVIDE EMPTY SPARE CONDUITS FOR EACH FLUSH MOUNTED PANELBOARD, STUBBED FROM THE PANELBOARD TO THE SUSPENDED CEILING PLENUM AS FOLLOWS:
LIGHTING AND BRANCH CIRCUIT APPLIANCE PANELBOARD: ONE @ 1" CONDUIT FOR EACH SIX POLES OF UNUSED BREAKER SPACE OR
SIX SPARE BREAKER POLES, WITH A MINIMUM OF ONE @ 1" CONDUIT;

POWER DISTRIBUTION PANELBOARD: ONE @2" CONDUIT FOR EACH THREE POLES OF UNUSED BREAKER SPACE, AND ONE CONDUIT FOR EACH SPARE THREE POLE BREAKER, SIZED FOR FEEDERS WITH AMPACITY OF EACH SQUARE THREE POLE BREAKER, WITH A MINIMUM OF ONE @2".

THE EC SHALL PROVIDE TYPED DIRECTORIES FOR ALL DISTRIBUTION EQUIPMENT, SWITCHBOARDS, PANELBOARDS, AND MOTOR CONTROL CENTERS, INDICATING TYPES AND LOCATIONS OF LOADS SERVED.

SWITCHGEAR SHALL BE MANUFACTURED BY SQUARE D, OR AS APPROVED BY BUILDER'S ELECTRICAL ENGINEER.

METERING

THE EC SHALL VERIFY UTILITY METERING REQUIREMENTS WITH THE UTILITY, AND COORDINATE WITH THE BUILDER'S PROJECT MANAGER AND THE UTILITY. CT CABINETS, METER BASES, AND METERS SHALL BE FURNISHED AND INSTALLED PER THE UTILITY SPECIFICATIONS.

GROUNDING

RECEPTACLE & EQUIPMENT GROUNDING

RECEPTACLES AND EQUIPMENT IN PATIENT NON-TREATMENT AREAS (WAITING ROOMS, BUSINESS OFFICES, DOCTORS OFFICES, CORRIDORS, ETC.) SHALL BE GROUNDED. RECEPTACLES SHALL HAVE EITHER AN INTEGRAL POSITIVELY GROUNDING CONTACT OR A SEPARATE GROUNDING JUMPER BETWEEN THE DEVICE AND METALLIC BOX.

RECEPTACLES AND EQUIPMENT IN PATIENT MEDICAL AND DENTAL TREATMENT, DIAGNOSTIC AREAS, NURSE STATIONS, LABORATORIES, COMPUTER ROOMS AND WHERE SPECIFICALLY SHOWN ON PLANS SHALL BE GROUNDED AS FOLLOWS: RECEPTACLES AND NON-CURRENT CARRYING CONDUCTIVE SURFACES OF FIXED ELECTRICAL EQUIPMENT OPERATING AT MORE THAN 100 VOLTS TO GROUND SHALL BE GROUNDED WITH A GREEN INSULATED #12 AWG (MINIMUM) COPPER EQUIPMENT GROUNDING CONDUCTOR RUN FROM THE DEVICE OR EQUIPMENT TO THE BRANCH CIRCUIT PANELBOARD FEEDING THAT DEVICE (PER NEC ARTICLE 517-13).

NON-METALLIC (PVC) AND FLEXIBLE CONDUITS

THE EC SHALL PROVIDE A GREEN INSULATED COPPER GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250-95, OR AS SHOWN ON ELECTRICAL PLANS, IN ALL FLEXIBLE MATERIAL CONDUIT AND IN ALL NON-METALLIC CONDUIT.

GROUND FAULT PROTECTION SYSTEM

A GROUND FAULT PROTECTION SYSTEM SHALL BE PROVIDED WITH THE SERVICE ENTRANCE AND DISTRIBUTION EQUIPMENT AS SHOWN ON THE ELECTRICAL PLANS. THE GFI SYSTEM SHALL CONSIST OF A CURRENT SENSOR, RELAYING DEVICE AND TEST/MONITOR PANEL, OR BE AN INTEGRAL PART OF AN ELECTRONIC CIRCUIT BREAKER WITH INTEGRAL GROUND FAULT TESTING.

COMPONENTS SHALL BE DESIGNED TO OPERATE IN CONJUNCTION WITH EACH OTHER AND THE SYSTEM SHALL BE UL LISTED. INSTALLATION OF THE GFI EQUIPMENT SHALL BE BY THE EC, IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. CURRENT SETTINGS AND TIME DELAYS SHALL BE SET BY THE EC AS SHOWN IN THE ELECTRICAL DRAWINGS.

THE GROUND FAULT PROTECTION SYSTEM SHALL BE PERFORMANCE TESTED BY THE EC IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND WITH THE NEC. A WRITTEN RECORD OF THIS TEST SHALL BE MADE AND SHALL BE AVAILABLE TO THE LOCAL AUTHORITIES AND TO THE BUILDER.

1600 ELECTRICAL SPECIFICATIONS

TEST INSTRUMENTS SHALL OPERATE AT A FREQUENCY OTHER THAN 60 HERTZ; CONTAIN STRAY CURRENT AND DC FILTERS; CONTAIN FAULT CURRENT PROTECTION AND HAVE SENSITIVITY TO OPERATE AT LOW SIGNAL STRENGTH. PRIOR TEST: DEENERGIZE ALL POWER SOURCES; DISCONNECT THE ELECTRODE CONDUCTOR FROM THE GROUND ROD; WEAR HIGH VOLTAGE RUBBER SAFETY GLOVES AND DO NOT HANDLE TEST INSTRUMENT IF AT ALL POSSIBLE. THIS TEST TO BE PERFORMED BY QUALIFIED PERSONS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE EQUIPMENT AND THE HAZARDS INVOLVED. MEASURE EACH GROUND ROD RESISTANCE UPON INSTALLATION AND RECORD ALL TEST MEASUREMENTS.

BATTERY BACK-UP EXIT AND EGRESS LIGHTS

THE EC SHALL TEST ALL BATTER BACK-UP EXIT AND EGRESS LIGHT FIXTURES AS FOLLOWS:
1. CONNECT ALL BATTERY BACK-UP LIGHTS TO POWER AND ALLOW BATTERIES TO CHARGE FOR AT LEAST 12 HOURS.
2. MEASURE THE VOLTAGE OF EACH BATTERY
3. DISCONNECT POWER FROM THE BATTERY BACK-UP LIGHTS BY OPENING THE BRANCH CIRCUIT BREAKER OR DISCONNECT
4. MAKE SURE ALL BATTERY BACK-UP LIGHTS OPERATE OFF OF THEIR BATTERIES FOR AT
LEAST 90 MINUTES (1-1/2 HOURS).
5. AFTER 90 MINUTES OF BATTERY OPERATION, MEASURE THE VOLTAGE OF EACH BATTERY
6. REPLACE ANY BATTERY OR FIXTURE WHICH DOES NOT MEASURE 87.5% OF THE ORIGINAL VOLTAGE AT THE END OF 90 MINUTES.

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:
PHASE I - AIR WASH
L.S. SYSTEM UPGRADES
CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

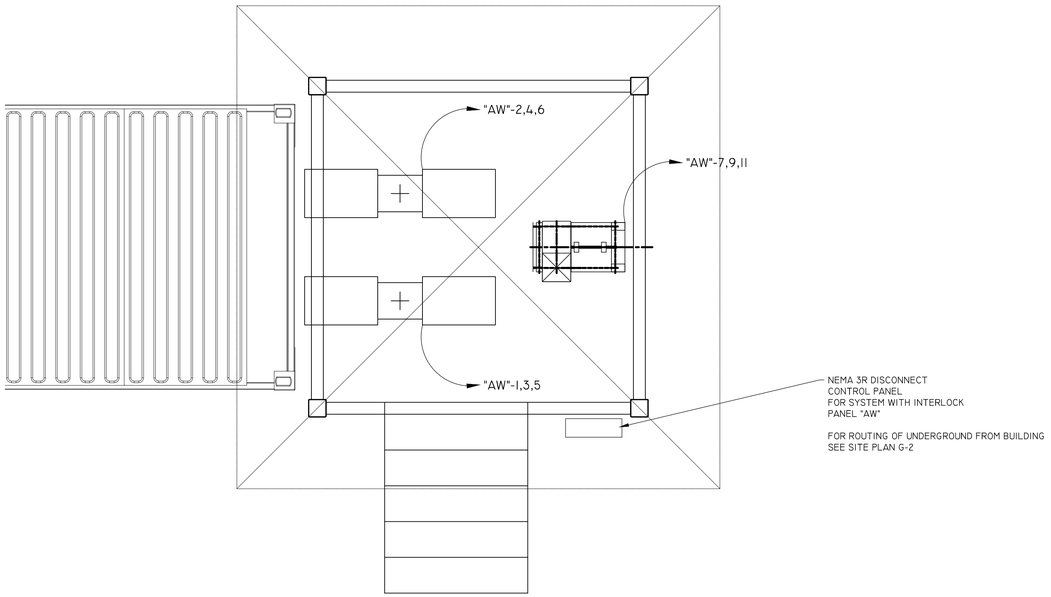
CONTRACTOR INFO:

REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO.: 19076
SCALE (U.N.O.): -
DATE: 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: ELECTRICAL SPECIFICATIONS

SHEET NO.: E-2



1 ELECTRICAL POWER PLAN
SCALE: ¼" = 1'-0"

PANELBOARD 'AW' (NEW)
SUPPLY VOLTAGE: 480/277V, 1-PH, 3W
BUS AMPACITY: 30 AMPERES
NEUTRAL BUS AMPACITY: 30 AMPERES
MAIN DEVICE: 30A MCB
A.I.C. RATING: 10000
BRANCH: NORMAL
TYPE: DISTRIBUTION
MOUNTING: SURFACE
ENCLOSURE: NEMA 3R

CKT. NO.	LOAD DESCRIPTION / LOCATION	LOAD (KVA) PH. A	PH. B	NOTES	WIRE GND	SIZE	#	DEVICE P	AMP	DEVICE AMP	P	#	WIRE SIZE	GND	NOTES	LOAD (KVA) PH. A	PH. B	LOAD DESCRIPTION / LOCATION	CKT. NO.
1	TRANSFER AIR FAN	0.5	0.5		12	12	3	3	20	20	3	3	12	12		0.5		TRANSFER AIR FAN	2
	TRANSFER AIR FAN		0.5														0.5	TRANSFER AIR FAN	
	TRANSFER AIR FAN	0.5														0.5		TRANSFER AIR FAN	
7	EXHAUST FAN		0.9		12	12	3	3	20	20	1	1	12	12			0.1	LIGHTS	8
	EXHAUST FAN	0.9																SPACE ONLY	10
	EXHAUST FAN		0.9															SPACE ONLY	12
13	SPACE ONLY																	SPACE ONLY	14
15	SPACE ONLY																	SPACE ONLY	16
17	SPACE ONLY																	SPACE ONLY	18
19	SPACE ONLY																	SPACE ONLY	20
21	SPACE ONLY																	SPACE ONLY	22
23	SPACE ONLY																	SPACE ONLY	24
25	SPACE ONLY																	SPACE ONLY	26
27	SPACE ONLY																	SPACE ONLY	28
29	SPACE ONLY																	SPACE ONLY	30
31	SPACE ONLY																	SPACE ONLY	32
33	SPACE ONLY																	SPACE ONLY	34
35	SPACE ONLY																	SPACE ONLY	36
37	SPACE ONLY																	SPACE ONLY	38
39	SPACE ONLY																	SPACE ONLY	40

NOTES:
1. WITH EQUIPMENT GROUND BUS.
0
0
0
0
0

CONNECTED PHASE TOTALS
A = 2.9 KVA
B = 2.9 KVA

HIGHEST CONNECTED PHASE(S)
PHASE A,B: 10 AMPERES
TOTAL CONNECTED LOAD
12 AMPERES

CONNECTED LOAD SUMMARY

0.0 KVA	LIGHTING (INTERIOR AND EXTERIOR)
1.6 KVA	RECEPTACLES (GENERAL PURPOSE)
0.0 KVA	RECEPTACLES (EQUIPMENT)
4.2 KVA	HVAC (HEATING, A/C, AHU'S & EXH. FANS)
0.0 KVA	OTHER (ELEV., WATER HTR., KIT. EQUIP.)
0.0 KVA	MISCELLANEOUS
5.8 KVA	TOTAL CONNECTED LOAD

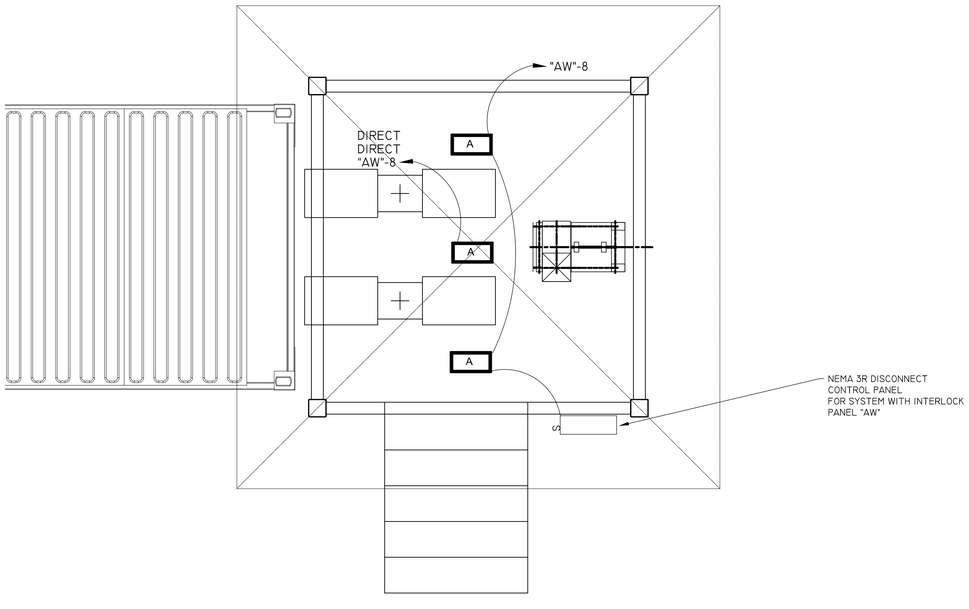
BDC#: 19076 - CONMED AIR WASH
SCHEDULED BY: JRB

PANELBOARD 'AW'
NEC FEEDER DEMAND CALCULATION

LOAD DESCRIPTION	PANELBOARD 'AW' CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
LIGHTING (INTERIOR) :	0.00 KVA	(@ 125%)	0.00 KVA
LIGHTING (EXTERIOR) :	0.00 KVA	(@ 125%)	0.00 KVA
RECEPTACLES (GENERAL PURPOSE):	1.60 KVA	(1ST 10 KVA + 50% OF REST)	1.60 KVA
RECEPTACLES (EQUIPMENT):	0.00 KVA	(@ 100%)	0.00 KVA
A/C UNITS AND HEAT PUMPS	0.00 KVA	(@ 100%)	0.00 KVA
ELECTRIC HEATING:	0.00 KVA	(@ 125%)	0.00 KVA
MOTORS (AHU'S AND FANS):	4.20 KVA	(@ 100%)	4.20 KVA
ELEVATORS:	0.00 KVA	(WITH NEC DEMAND)	0.00 KVA
ELECTRIC WATER HEATING:	0.00 KVA	(@ 100%)	0.00 KVA
KITCHEN EQUIPMENT:	0.00 KVA	(WITH NEC DEMAND)	0.00 KVA
MISCELLANEOUS:	0.00 KVA	(@ 100%)	0.00 KVA
PLUS 25% OF LARGEST MOTOR:			0.96 KVA
MINUS NON-COINCIDENT HEATING/COOLING:			0.00 KVA
FUTURE ALLOWANCE	0.00 KVA		0.00 KVA
TOTAL CONNECTED LOAD:	**5.80 KVA**	TOTAL NEC DEMAND LOAD:	**6.76 KVA**

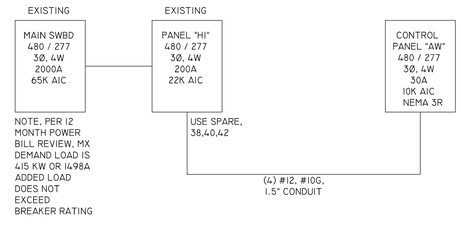
HIGHEST PHASE(S) (CONNECTED)
PHASE A,B = 2.9 KVA
PHASE A,B = 10 AMPERES AT 277 VOLTS

PROJECT NO: 19076
PROJECT NAME: CONMED AIR WASH
SCHEDULED BY: JRB



1 ELECTRICAL LIGHTING PLAN
SCALE: ¼" = 1'-0"

PARTIAL RISER DIAGRAM



LIGHTING SCHEDULE

SYMBOL	MOUNT	SIZE	VOLT	DESCRIPTION	LAMPS
A	LAY IN.	-	120	LITHONIA DSXPG 10C 700 30K TSM 277 PENDANT MOUNTED LED EXTERIOR DUTY LIGHT	26 W LED

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CONTRACTOR INFO:

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1	OWNER REVIEW	02 MAR 2020
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3	REVISED WITH OWNER	18 MAR 2020

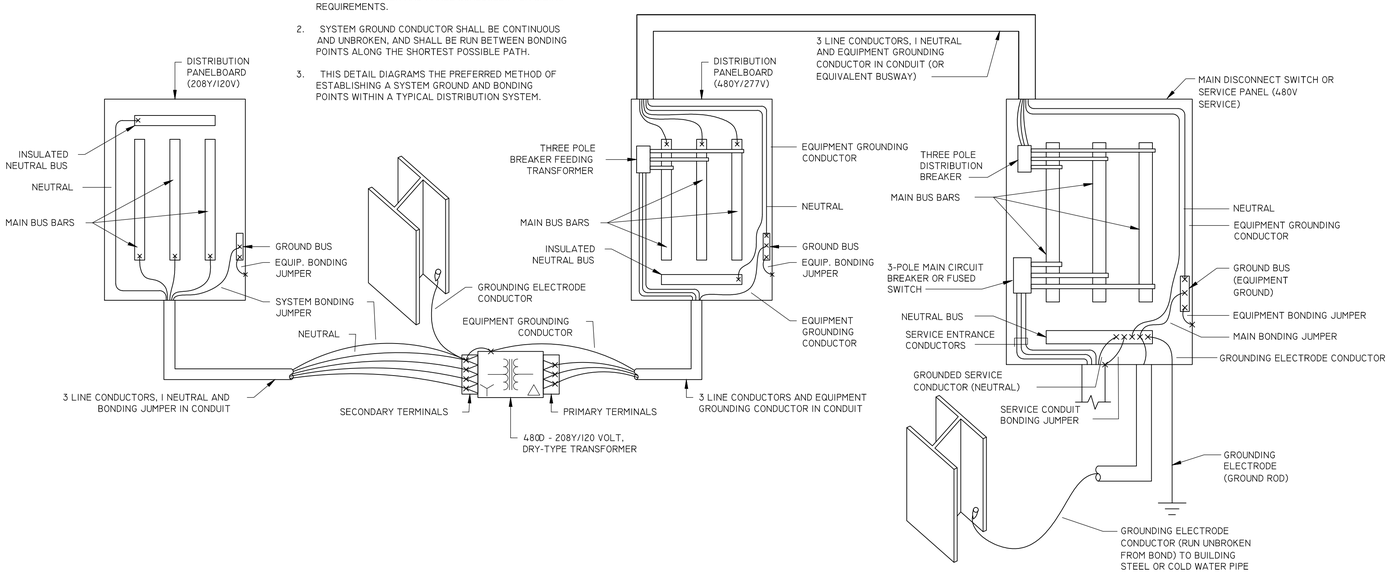
PROJECT NO. 19076
SCALE (U.N.O.) -
DATE 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: ELECTRICAL PLAN

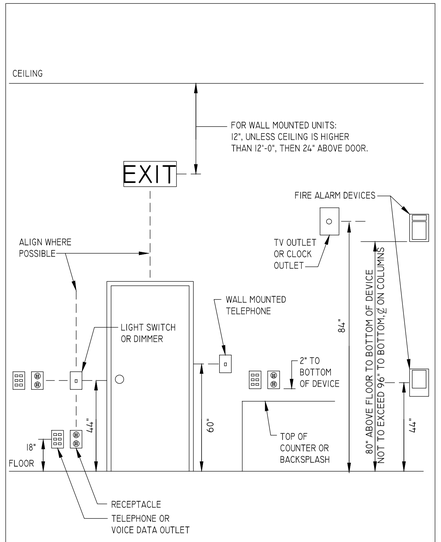
SHEET NO.: **E-3**

NOTES

1. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE SIZED PER NEC, TABLE 250-122 AND 250-66. SEE ELECTRICAL RISER AND PANEL SCHEDULES FOR SIZING REQUIREMENTS.
2. SYSTEM GROUND CONDUCTOR SHALL BE CONTINUOUS AND UNBROKEN, AND SHALL BE RUN BETWEEN BONDING POINTS ALONG THE SHORTEST POSSIBLE PATH.
3. THIS DETAIL DIAGRAMS THE PREFERRED METHOD OF ESTABLISHING A SYSTEM GROUND AND BONDING POINTS WITHIN A TYPICAL DISTRIBUTION SYSTEM.



TYPICAL SYSTEM GROUNDING AND BONDING DETAIL — NOT TO SCALE — 1



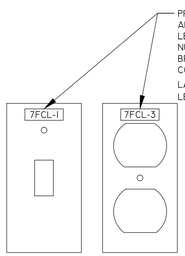
GENERAL DETAIL NOTES:

A. PARTICULAR ATTENTION SHALL BE GIVEN TO THE ALIGNMENT OF DEVICES. WHEREVER DEVICES, ON THIS SHEET OR OTHER SHEETS, ARE SHOWN AT GIVEN LOCATION WITH DIFFERENT MOUNTING HEIGHTS THEY SHALL BE ALIGNED VERTICALLY. IF THEY ARE SHOWN AT THE SAME MOUNTING HEIGHT THEY SHALL BE ALIGNED HORIZONTALLY. REFER TO THE ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.

B. ALL DIMENSIONS ARE TO THE CENTER LINE OF DEVICE UNLESS INDICATED OTHERWISE.

C. MOUNTING HEIGHTS SHOWN HERE ARE TYPICAL. PRIOR TO ROUGH-IN, COORDINATE WITH ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS. IF A CONFLICT OCCURS, REQUEST CLARIFICATION FROM ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.

MOUNTING HEIGHTS OF DEVICES — NOT TO SCALE — 2

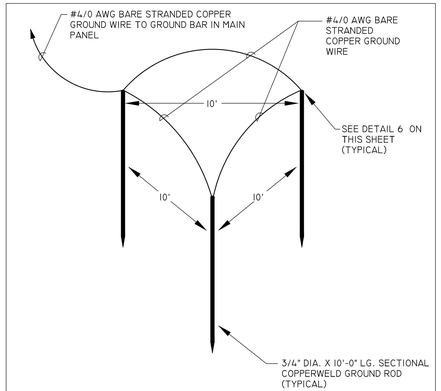


PROVIDE ALL COLORED DEVICES WITH A SELF-ADHESIVE METALLIC LABEL WITH BLACK LETTERING INDICATING PANEL AND CIRCUIT NUMBER SERVING THE DEVICE. FOR NORMAL BRANCH CIRCUITS THE LABEL SHALL BE SILVER COLORED. FOR ALL OTHER BRANCH CIRCUITS THE LABELS SHALL BE RED COLORED. 1/4" MINIMUM LETTERING HEIGHT.

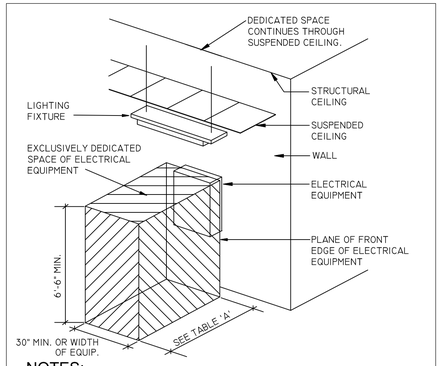
GENERAL DETAIL NOTES:

A. COORDINATE LABELING WITH OWNER PRIOR TO INSTALLATION.

DEVICE LABELING DETAIL — NOT TO SCALE — 3



GROUNDING ELECTRODE DETAIL — NOT TO SCALE — 4



NOTES:

THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.
SEE N.E.C. FOR VOLTAGES GREATER THAN THOSE LISTED.
SEE N.E.C. FOR EXCEPTIONS TO TABLE 'A'.

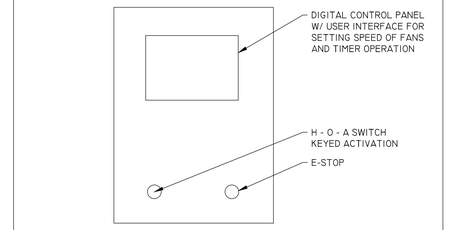
NEC 110.26 (A) (1) - WORKING CLEARANCES			
VOLTAGE TO GROUND NOMINAL	MINIMUM CLEAR DISTANCE (FEET) CONDITION: 1	2	3
0 - 150	3	3	3
151 - 600	3	3.5	4

NEC 110.34 (A) - WORKING CLEARANCES			
VOLTAGE TO GROUND NOMINAL	MINIMUM CLEAR DISTANCE (FEET) CONDITION: 1	2	3
601 - 2500	3	4	5
2501 - 9000	4	5	6
9001 - 25,000	5	6	9
25,001 - 75 kV	6	8	10
ABOVE 75kV	8	10	12

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

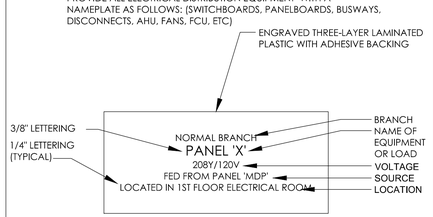
TYPICAL HORIZONTAL CLEARANCE — NOT TO SCALE — 7



*NOTE - SHOP DRAWINGS TO BE ISSUED FOR REVIEW BY ENGINEER OF RECORD FOR CONTROL PANEL

TYPICAL CONTROL PANEL — NOT TO SCALE — 9

PROVIDE ALL ELECTRICAL DISTRIBUTION EQUIPMENT WITH A NAMEPLATE AS FOLLOWS: (SWITCHBOARDS, PANELBOARDS, BUSWAYS, DISCONNECTS, AHU, FANS, FCU, ETC)



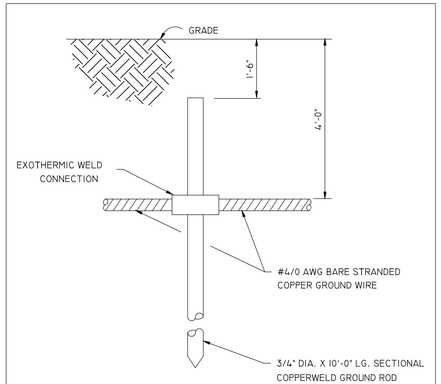
NORMAL: WHITE LETTERS ON BLACK BACKGROUND

GENERAL DETAIL NOTES:

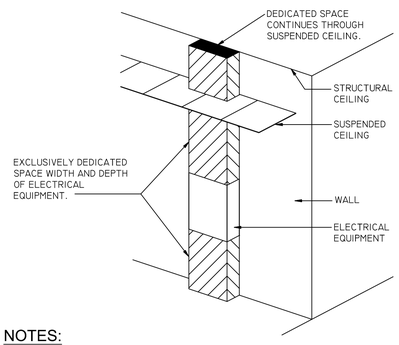
A. PROVIDE SAMPLE FOR APPROVAL BY ENGINEERS/OWNER.

B. COORDINATE NAMING CONVENTION AND DESCRIPTIONS WITH OWNER.

NAMEPLATE DETAIL — NOT TO SCALE — 5



GROUNDING ELECTRODE DETAIL — NOT TO SCALE — 6



NOTES:

1. THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE ELECTRICAL EQUIPMENT FOR CABLES, RACEWAYS, ETC. TO AND FROM THE ELECTRICAL EQUIPMENT. THE DEDICATED SPACE EXTENDS ABOVE THE EQUIPMENT 6 FEET OR TO STRUCTURAL CEILING WHICHEVER IS LOWER.
2. THIS APPLIES TO SURFACE OR RECESSED ELECTRICAL EQUIPMENT.
3. FOR EXCEPTIONS SEE N.E.C.

TYPICAL VERTICAL CLEARANCE — NOT TO SCALE — 8

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GEORGIA REGISTERED No. PE042136 PROFESSIONAL ENGINEER JAMES R. BASINGER
3.18.2020

PROJECT INFO:

PHASE I - AIR WASH L.S. SYSTEM UPGRADES

CONMED - LITHIA SPRINGS
1250 TERMINUS DRIVE, BUILDING 100
LITHIA SPRINGS, GA 30122

CONTRACTOR INFO:

REV	DESCRIPTION	DATE
1	OWNER REVIEW	02 MAR 2020
2	FOR CONSTRUCTION	10 MAR 2020
3	REVISED WITH OWNER	18 MAR 2020

PROJECT NO. 19076
SCALE (U.N.O.) -
DATE 03.02.2020
DRAWN BY: JRB
PLAN NORTH

SHEET TITLE: ELECTRICAL DETAILS

SHEET NO.: E-4

Appendix C Dispersion Modeling Archive