ADDENDUM NO. 4

to the

PROJECT DOCUMENTS AND SPECIFICATIONS

for

CONSTRUCT OKALOOSA COUNTY WATER AND SEWER FIELD OFFICES (ITB WS 02-21)

Prepared for:

OKALOOSA COUNTY

Prepared By:

320 Bayshore Drive, Suite A
Niceville, Florida 32578-2425

AVCON Project No. 2018.125.02

Addendum Date: November 24, 2020

Note: The bidder shall acknowledge receipt of this addendum on the Bid Form, Page BF-1 in the space provided.

ADDENDUM NO. 4
CONSTRUCT OCWS FIELD OFFICES
(ITB WS 02-21)

Date of Issue: November 24, 2020

Bid Submittal Deadline: Wednesday, December 9, 2020 @ 3:00 p.m. (local time) ***(UNCHANGED)***

Notice to all Plan Holders: Please insert this addendum (2 pages including cover, excluding attachments) into your copy of the Project Bid Documents.

The following changes to the Project Documents and Specifications are issued by the Engineer and shall have the same force and effect as though part of the original issue:

A. Changes to the Bid Documents and Specifications:

1. Bid Schedule — **REPLACE** Bid Schedule, Page BS-1 to BS-13 in its entirety with Bid Schedule, Page BS-1 to BS-13 attached as **Attachment A** (9 pages) hereto.

   This revised Bid Schedule specifies that the total Bid Amounts are due by the Bid Date. The bidder then has an additional 24 hours to submit the unit prices.

2. Geotechnical Engineering Report — **ADD** Geotechnical Engineering Report prepared by NOVA Engineering and Environmental dated July 18, 2019 in its entirety, attached as **Attachment B** (50 pages) hereto.

3. Technical Specifications — **ADD** Technical Specifications, in their entirety, attached as **Attachment C** (74 pages) hereto.

B. Changes to the Bid Drawings:

1. Bid Drawings — **REPLACE** or **ADD** the specific Bid Drawings in its entirety with the revised or new Bid Drawings attached as **Attachment D** (28 pages) hereto.

   Sheets EF2.00, EM1.02, and EM2.00 are new sheets.

C. Additional Information:

1. Pre-Bid Conference Minutes — Please find attached the Pre-Bid Conference minutes attached as **Attachment E** (4 pages) hereto.

2. Response to Questions — Please find attached the formal responses to plan-holder questions received prior to November 4, 2020 attached as **Attachment F** (4 pages) hereto. Additional responses to questions provided after November 4, 2020 will be provided in a future addendum.

END OF ADDENDUM NO. 4

BID SCHEDULE

BIDDER: _____ DATE: _____

PROJECT DESCRIPTION: CONSTRUCT OKALOOSA COUNTY WATER AND SEWER FIELD OFFICES

BID SCHEDULE

BASE BID – OCWS Field Office

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
1	101-1	Mobilization	LS	1		
2	102-1	Maintenance of Traffic	LS	1		
3	104-1	Prevention, Control, and Abatement of Erosion and Water Pollution	LS	1		
4	110-1	Complete Asphalt and Base Removal Within Existing Parking Lot	SY	160		
5	110-2	Miscellaneous Curbing/Sidewalk Demolition (selective)	LS	1		
6	110-3	Utility/Storm/Structure Demolition - Field Office	LS	1		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
7	120-1	Unclassified Excavation and Embankment- Field Office	LS	1		
8	160-1	12" Stabilized Subgrade- Field Office	SY	2,464		
9	285-1	6" Base Course	SY	2,259		
10	334-1	1" Bituminous Surface Course	TN	30		
11	334-2	2" Bituminous Surface Course	TN	230		
12	425-1	FDOT Type "5" Top; FDOT Type "J" Alt B Bottom	EA	1		
13	425-2	FDOT Type "C" DBI	EA	3		
14	425-3	FDOT Type "F" DBI	EA	2		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
15	425-4	FDOT Type "V" DBI	EA	2		
16	430-1	18" ADS, N-12	LF	383		
17	430-2	24"ADS, N-12	LF	33		
18	430-3	18" MES	EA	1		
19	520-1	Concrete Type "F" Curb- Field Office	LF	982		
20	520-2	Concrete Type "V" Curb – Field Office	EA	240		
21	520-3	Concrete Wheel Stop- Field Office	EA	8		
22	522-1	Concrete Sidewalk- Field Office	SY	88		
23	522-2	Concrete Bollards- Field Office	EA	17		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
24	522-3	8" PCC Drive Approach- Field Office	SY	240		
25	527-1	Detectable Warning Surfaces - Field Office	EA	1		
26	700-1	Vehicular Signage - Field Office	LS	1		
27	710-1	Vehicular Pavement Markings, (White)- Field Office	SF	305		
28	710-2	Vehicular Pavement Markings, (Blue)- Field Office	SF	40		
29	710-3	Vehicular Pavement Markings, (Yellow)- Field Office	SF	375		
30	711-1	Thermoplastic, Standard, White, Solid, 24"- Field Office	LF	35		
31	711-2	Thermoplastic, Standard, Yellow, Solid, 6"- Field Office	LF	116		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
32	711-3	Thermoplastic, Preformed, White, Arrow- Field Office	EA	6		
33	711-4	Handicap Parking Symbol – Field Office	EA	2		
34	981-1	Centipede Sod – Field Office	SY	2,840		
35	981-2	Landscaping – Field Office	LS	1		
36	AL-1-1	Special Provision No. 2- Utility Relocation/Replacement- Field Office	AL	1		
37	FB-1	Field Office Building, Complete	LS	1		
38	02730-1	Sanitary Sewer Infrastructure – Field Office	LS	1		
39	***AL-1***	***Exterior and Interior Building Signage Allowance – Field Office***	***AL***	***1***	***$5,000.00***	***$5,000.00***

For all work required to perform the work in accordance with the construction drawings, specifications, and other contract documents, including all costs related to the work, and any required permits, taxes, bonds and insurance, the undersigned submits a total BASE BID – OCWS Field Office Bid Amount of:

TOTAL BASE BID – OCWS FIELD OFFICE AMOUNT (in words):_____

_____Dollars and_____cents

($_____)
(amount in numbers)

Note: Total Base Bid – OCWS Field Office Bid Amount shall equal the total amount for Bid Item No. 1 through 39 for BASE BID – OCWS Field Office.

BASE BID - OCWS Maintenance Building

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
1	110-4	Utility/Storm/Structure Demolition – Maint. Bldg.	LS	1		
2	120-2	Unclassified Excavation and Embankment- Maint. Bldg.	LS	1		
3	160-2	12” Stabilized Subgrade- Maint. Bldg.	SY	4,735		
4	160-3	8” Graded Aggregate - Maint. Bldg.	SY	***3,992***		
5	520-4	Concrete Type “F” Curb- Maint. Bldg.	LF	170		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
6	520-5	Concrete Wheel Stop (Furnish Only)- Maint. Bldg.	EA	14		
7	522-4	Concrete Parking with Sidewalk- Maint. Bldg.	SY	198		
8	522-5	Concrete Bollards- Maint. Bldg.	EA	1		
9	522-6	8" PCC Drive Approach – Maint. Bldg.	SY	115		
10	527-2	Detectable Warning Surfaces- Maint. Bldg.	EA	1		
11	700-2	Vehicular Signage- Maint. Bldg.	LS	1		
12	710-4	Vehicular Pavement Markings, (White)- Maint. Bldg.	SF	20		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
13	710-5	Vehicular Pavement Markings, (Blue)- Maint. Bldg.	SF	50		
14	711-5	Thermoplastic, Standard, White, Solid, 24”- Maint. Bldg.	LF	17		
15	711-6	Thermoplastic, Standard, Yellow, Solid, 6”- Maint. Bldg.	LF	50		
16	711-7	Handicap Parking Symbol- Maint. Bldg.	EA	1		
17	981-3	Centipede Sod – Maint. Bldg.	SY	2,005		
18	981-4	Landscaping – Maint. Bldg.	LS	1		
19	AL-1-2	Special Provision No. 2- Utility Relocation- Maint. Bldg.	AL	1		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
20	MB-1	Maintenance Building, Complete	LS	1		
21	02730-3	Sanitary Sewer Infrastructure – Maint. Bldg.	LS	1		
22	***AL-2***	***Exterior and Interior Building Signage Allowance – Maintenance Bldg***	***AL***	***1***	***$5,000.00***	***$5,000.00***

For all work required to perform the work in accordance with the construction drawings, specifications, and other contract documents, including all costs related to the work, and any required permits, taxes, bonds and insurance, the undersigned submits a Total BASE BID – OCWS MAINTENANCE BUILDING Bid Amount of:

TOTAL BASE BID – OCWS MAINTENANCE BUILDING AMOUNT (in words):_____

_____Dollars and_____cents

($_____)
(amount in numbers)

Note: Total Base Bid – OCWS Maintenance Building Bid Amount shall equal the total amount for Bid Item No. 1 through 22 for BASE BID – OCWS Maintenance Building.

ADDITIVE ALTERNATE NO. 1 - OCWS FIELD OFFICE

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
1	550-1	Fencing – Field Office	LF	735		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
2	550-2	Vehicular Double Gate – Field Office	EA	3		

For all work required to perform the work in accordance with the construction drawings, specifications, and other contract documents, including all costs related to the work, and any required permits, taxes, bonds and insurance, the undersigned submits a Total ADDITIVE ALTERNATE NO. 1 – OCWS FIELD OFFICE Bid Amount of:

TOTAL ADDITIVE ALTERNATE NO. 1 – OCWS FIELD OFFICE AMOUNT (in words):_____

_____Dollars and_____cents

($_____)
(amount in numbers)

Note: Total Additive Alternate No. 1 - OCWS Field Office Bid Amount shall equal the total amount for Bid Item No. 1 through 2 for ADDITIVE ALTERNATE NO. 1 – OCWS FIELD OFFICE.

ADDITIVE ALTERNATE NO. 2 - OCWS MAINTENANCE BUILDING

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
1	110-5	Fence Demolition – Maintenance Building	LF	660		
2	***285-2***	***8" Gradded Aggregate – Maintenance Building***	***SY***	***-1,540***		
3	522-7	8" PCC Apron – Maintenance Building	SY	1,540		

Bid Item No.	Item No.	Item Description & Unit Price Bid In Words	Unit	Estimated Quantity	Unit Price	Total Amount/ Item
4	550-3	Fencing – Maintenance Building	LF	670		
5	550-4	Vehicular Double Gate – Maintenance Building	EA	2		

For all work required to perform the work in accordance with the construction drawings, specifications, and other contract documents, including all costs related to the work, and any required permits, taxes, bonds and insurance, the undersigned submits a Total ADDITIVE ALTERNATE NO. 2 – OCWS MAINTENANCE BUILDING Bid Amount of:

TOTAL ADDITIVE ALTERNATE NO. 2 – OCWS MAINTENANCE BUILDING AMOUNT (in words):_____

_____Dollars and_____cents

($_____)
(amount in numbers)

Note: Total Additive Alternate No. 2 - OCWS Maintenance Building Bid Amount shall equal the total amount for Bid Item No. 1 through 5 for ADDITIVE ALTERNATE NO. 2 – OCWS MAINTENANCE BUILDING.

BID SUMMARY (amount in numbers)

(A) **TOTAL BASE BID – OCWS FIELD OFFICE AMOUNT:** $_____

(B) **TOTAL BASE BID – OCWS MAINTENANCE BUILDING AMOUNT:** $_____

(C) **TOTAL ADDITIVE ALTERNATE NO. 1 – OCWS FIELD OFFICE AMOUNT:** $_____

(D) **TOTAL ADDITIVE ALTERNATE NO. 2 – OCWS MAINTENANCE BUILDING AMOUNT:** $_____

(E) **TOTAL BID AMOUNT (A + B + C + D):** $_____

*****On the Bid Date, the bidder shall submit total prices for Items A through E above. These numbers shall represent the final Base Bids, Additive Alternates, and Total Bid Amounts. Within 24 hours of the Bid Date, the bidder shall complete the entirety of the Bid Schedule, including unit prices and extended totals for each Bid Item, and submit the completed Bid Schedule to Okaloosa County Purchasing. Failure to submit the complete Bid Schedule within 24 hours shall render the bidder's proposal non-responsive.*****

Contractor acknowledges that the Basis of Award shall be the Total Bid Amount, or any combination of the Base Bid and Additive Alternates ultimately awarded by the County, price and other factors considered. The bid bond amount shall be in the amount of the Total Bid Amount.

The Bidder represents that it has examined the site of the Work and informed itself fully in regard to all conditions pertaining to the place where the work is to be done; that it has examined the plans and specifications for the work and other Contract Documents relative thereto and has read all of the Addenda furnished prior to the opening of the Bids, as acknowledged below; and that it has otherwise fully informed itself regarding the nature, extent, scope and details of the Work to be performed.

If provided with a Notice of Intent to Award the Contract by the Owner, the Bidder shall execute and deliver to the Owner all of the documents required by the Contract Documents, including but not limited to, the Addendum to the Agreement and the Performance and Payment Bonds in the form contained in the Contract Documents, furnish the required evidence of the specified insurance coverages, furnish all necessary permits, license, materials, equipment, machinery, maintenance, tools, apparatus, means of transportation and labor necessary to complete the Work.

Dated and signed at_____,_____, this_____day of_____, 20___.

_____
(Name of Bidder)

_____
(Authorized Signature)

_____
(Title)

_____
(Mailing Address)

_____
(City, State, Zip)

_____
(Federal ID No. or SS No.)

GEOTECHNICAL ENGINEERING REPORT

Okaloosa County Water and Sewer Storage Buildings

Fort Walton Beach, Okaloosa County, Florida

PREPARED FOR:

AVCON, Inc.
320 Bayshore Drive, Suite A
Niceville, Florida 32578

NOVA Project Number: 10116-2019115

July 18, 2019

NOVA
PROFESSIONAL | PRACTICAL | PROVEN

NOVA

July 18, 2019

Ms. Tonia Nation, P.E.
AVCON, Inc.
320 Bayshore Drive, Suite A
Niceville, Florida 32578

Subject: Geotechnical Engineering Report
OKALOOSA COUNTY WATER AND SEWER STORAGE BUILDINGS
Fort Walton Beach, Okaloosa County, Florida
NOVA Project Number 10116-2019115

Dear Ms. Nation:

NOVA Engineering and Environmental LLC (NOVA) has completed the authorized Geotechnical Engineering Report for the proposed improvements to the existing Okaloosa County Water and Sewer facility located in Fort Walton Beach, Okaloosa County, Florida. The work was performed in general accordance with NOVA Proposal Number 016-20185929r1, dated July 10, 2019. This report briefly discusses our understanding of the project at the time of the subsurface exploration, describes the geotechnical consulting services provided by NOVA, and presents our findings, conclusions, and recommendations.

We appreciate your selection of NOVA and the opportunity to be of service on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
NOVA Engineering and Environmental LLC

Jesse James, E.I.
Assistant Branch Manager
Florida Certificate No. 1100019359

William L. Lawrence, P.E.
Senior Regional Engineer
Florida Registration No. 60147

WILLIAM LEE LAWRENCE, JR. ★ LICENSE No. 60147 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER

Copies Submitted: via electronic mail service

TABLE OF CONTENTS

APPENDICES

1.0 SUMMARY

A brief summary of the pertinent findings, conclusions, and recommendations are presented below. This information should not be utilized in design or construction without reading the report in its entirety and paying particular attention to the recommendations presented in the text and Appendix.

1.1 GENERAL

The existing Okaloosa County Water and Sewer facility is located at 1804 Lewis Turner Boulevard in Fort Walton Beach, Okaloosa County, Florida. NOVA understands the project will consist of constructing two single-story buildings (a 7,260 ft^2 Field Office Building, and a 2,450 ft^2 Maintenance Building) and three (3) isolated stormwater retention basins to treat and dispose of stormwater runoff associated with the planned site improvements.

Our field exploration at the subject site included performing five (5) Standard Penetration Test (SPT) borings (designated B-1 through B-5) within the proposed Field Office Building footprint, two (2) SPT borings (designated B-6 and B-7) within the proposed Maintenance Building footprint, and six (6) auger borings (designated R-1 through R-6) within the proposed stormwater management system areas. Drilling, testing and sampling operations for the NOVA field exploration were performed in general accordance with ASTM designations and other industry standards.

Beneath approximately 6 to 12inches of topsoil or a gravel pavement section, the test borings generally encountered loose fine-grained sands to slightly silty sands (USCS classifications of SP and SP-SM, respectively) to depths varying between approximately 8 feet to 12 feet below existing grade (BEG) underlain by loose to medium dense fine-grained sands to silty sands (SP, SP-SM, SM) to the maximum depth explored of about 20 feet BEG.

1.2 SITE PREPARATION

We recommend stripping and grubbing the proposed structure footprints to remove all surficial vegetation and topsoil, trees and/or associated root systems, and any other deleterious non-soil materials that are found to be present. The soils exposed at the stripped grade elevation, as well as subsequent fill lifts and footing excavations, should be compacted using a large ride-on roller operating in the static mode to a minimum soil density of at least 98 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D-1557). We note that vibratory compaction operations with a large ride-on roller will not be possible for this site given the very close proximity of neighboring structures.

The SPT borings encountered loose soil conditions (N-values of concern varying between 4 and 7) in the upper 6 feet to 10 feet of the soil horizon that could potentially require improvement (depending on the desired design soil bearing pressure) to provide adequate support of the planned structures. This improvement can typically be accomplished by compacting the soils exposed at the stripped grade elevation using a heavy weight vibratory roller (i.e., a minimum 10-ton drum roller, static weight, with a minimum 5-foot drum diameter), but as noted above vibratory compaction operations are not recommended for this site given the close proximity of neighboring structures.

Therefore, to provide an increased soil bearing pressure from 1,500 pounds per square foot to 2,500 pounds per square foot (if desired), the subgrade soils present beneath and extending to a minimum distance of 3 feet outside the perimeter of the proposed building footprints should be undercut to a depth of at least 3 feet below current grade elevations, or 3 feet below the planned bottom-of-footing elevation(s) for the proposed structures (whichever is deeper). The soils exposed at that elevation should be compacted using a large drum roller (operating in the static mode) to a minimum soil density of at least 100 percent of the Modified Proctor maximum dry density, and the excavation should then be backfilled in maximum 12-inch (loose thickness) lifts also compacted to at least 100 percent. Subsequent footing excavations should be compacted to at least 98 percent.

A geotechnical engineer should carefully evaluate all subgrades prior to foundation and slab-on-grade construction to confirm compliance with this report; evaluate geotechnical sections of the plans and specifications for the overall project; and provide additional recommendations that may be required.

1.3 GROUNDWATER CONTROL

Groundwater was encountered in the test borings at depths varying between about 5 feet to 9 feet BEG at the time of our field exploration and is not anticipated to adversely impact the planned facility improvements.

1.4 FOUNDATIONS

After the recommended site/subgrade preparation and fill placement, we recommend that the proposed structures be supported on conventional shallow foundation systems bearing upon compacted native soils and/or compacted structural fill. As noted above, the building foundations may be designed for a maximum soil bearing pressure of **1,500 pounds per square foot (psf) with conventional site preparation practices (provided a larger ride-on roller operating in the static mode is used to compact the exposed subgrade soils and subsequent fill lifts as recommended herein), with an increase to 2,500 psf with employment of the undercutting and backfilling recommended above**.

1.5 STORMWATER MANAGEMENT SYSTEM

Based on the results of the test borings, the subsurface conditions encountered in the proposed stormwater management system areas are considered adaptable for the treatment and disposal of stormwater runoff via the desired conventional shallow retention basins.

2.0 INTRODUCTION

2.1 PROJECT INFORMATION

Our understanding of this project is based on discussions with the client, review of the provided drawings, a site reconnaissance performed during the boring layout, review of aerial photography of the site via internet-based GIS software, and our experience with similar geotechnical conditions in the near vicinity to this project site.

2.1.1 Proposed Structures

NOVA understands the project will include constructing two (2) single-story structures (a 7,260 ft^2 Field Office Building and a 2,450 ft^2 Maintenance Building). Infrastructure improvements will also include three (3) isolated shallow dry retention basins to treat and dispose of stormwater runoff associated with the planned construction.

2.1.2 Maximum Loads

We anticipate that the structures will be supported on shallow foundation systems. Structural loadings were not available from the design team at the time of the issuance of this report. We have therefore assumed that maximum bearing loads will be on the order of 50 kips per column for isolated interior columns and 3 kips per lineal foot for perimeter load-bearing walls.

2.1.3 Floor Elevations / Site Grading

Grading details were not available from the design team at the time of the issuance of this report; we have therefore assumed that finish site grades will not change greater than +/- 2 feet from existing grades within each proposed structure footprint. The proposed stormwater retention basins have been assumed to be on the order of 5 feet or less in depth, relative to current site grade elevations.

2.2 SCOPE OF WORK

AVCON, Inc., engaged NOVA to provide geotechnical engineering consulting services for the planned improvements to the Okaloosa County Water and Sewer (OCWS) facility located in Fort Walton Beach, Okaloosa County, Florida. This report briefly discusses our understanding of the project, describes our exploratory procedures, and presents our findings, conclusions, and recommendations.

The primary objective of this study was to perform a geotechnical exploration within the areas of the proposed construction and to assess these findings as they relate to geotechnical aspects of the planned site development. The authorized geotechnical engineering services included a site reconnaissance, a soil test boring and sampling program, laboratory testing, engineering evaluation of the field and laboratory data, and the preparation of this report.

The services were performed substantially as outlined in our proposal number 016-20185929r1, dated July 10, 2019, and in general accordance with industry standards. As authorized per the above referenced proposal, this completed geotechnical report includes:

- A description of the site, fieldwork, laboratory testing and general soil conditions encountered, including a Boring Location Plan and individual Test Boring Records.
- Site preparation considerations that include geotechnical discussions regarding site stripping and subgrade preparation, recommended cut or fill slopes, and engineered fill/backfill placement.
- Recommendations for controlling groundwater during construction and the need for permanent de-watering systems based on the expected post construction ground water levels.
- Foundation system recommendations for the proposed buildings, including an allowable bearing capacity, a recommended bearing depth, and installation considerations.
- Slab-on-grade construction considerations based on the geotechnical findings, including the need for a sub-slab vapor barrier or a capillary barrier.
- SMS design parameters per NWFWMD ERP requirements.
- Suitability of on-site soils for re-use as structural fill and backfill. Additionally, the criteria for suitable fill materials will be provided.
- Recommended quality control measures (i.e. sampling, testing, and inspection requirements) for site grading and foundation construction.

The assessment of site environmental conditions, including the presence of wetlands or detection of pollutants in the soil, rock or groundwater, laboratory testing of samples, or a site-specific seismic study was beyond the scope of this geotechnical study. If requested, NOVA can provide these services.

3.0 SITE DESCRIPTION

3.1 LOCATION AND LEGAL DESCRIPTION

The Subject Property is located at 1804 Lewis Turner Boulevard in Fort Walton Beach, Okaloosa County, Florida. A Site Location Map is included in Appendix A.

3.2 SUBJECT PROPERTY AND VICINITY GENERAL CHARACTERISTICS

The vicinity of the Subject Property is generally developed with residential land uses, and is bordered by the following:

DIRECTION	LAND USE DESCRIPTION/OBSERVATIONS
NORTH	Dove Road
EAST	Forest Heights Road
SOUTH	Lewis Turner Boulevard
WEST	Oddfellow Road

3.3 CURRENT USE OF THE PROPERTY

At the time of the field exploration, the subject property was in-use as a municipal facility with several single-story office and storage buildings as well as a multi-story office structure. The facility also included both asphalt and gravel parking areas and driveways, perimeter fencing, multiple equipment and material laydown areas, and greenspaces consisting of short grasses and isolated mature trees.

4.0 FIELD EXPLORATION

NOVA boring locations were established in the field using a handheld GPS unit and the provided site plan. The approximate locations are shown in Appendix B. Consequently, referenced boring locations and estimated elevations should be considered approximate. If increased accuracy is desired by the client, NOVA recommends that the boring locations and elevations be surveyed.

Our field exploration was conducted in July 2019, and included:

- Five (5) Standard Penetration Test (SPT) borings (designated B-1 through B-5), each drilled to a depth of about 20 feet below existing grade (BEG) within the proposed OCWS Field Office Building footprint.
- Two (2) Standard Penetration Test (SPT) borings (designated B-6 and B-7), each drilled to a depth of about 20 feet below existing grade (BEG) within the proposed Maintenance Building footprint.
- Six (6) continuously sampled auger borings (designated R-1 through R-6), each drilled to a depth of about 15 feet BEG within the proposed SMS areas (i.e. 2 borings per basin).

Soil Test Borings: The SPT borings completed by NOVA were performed using the guidelines of ASTM Designation D-1586, "Penetration Test and Split-Barrel Sampling of Soils". A mud rotary drilling process was used to advance the boring. At regular intervals, soil samples were obtained with a standard 1.4-inch I.D., 2.0-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". The penetration resistance, when properly interpreted, is an index to the soil strength and density.

The auger borings were performed using a 3-inch diameter helix-type auger with a bulk samples being acquired continuously for the full depth of the boring. Representative portions of the soil samples, obtained from the auger flights, were placed in sealed containers and transported to our laboratory for further evaluation and laboratory testing.

Test Boring Records in Appendix B show the standard penetration test (SPT) resistances, or “N-values” for the structural boring and present the soil conditions encountered in all of the borings. These records represent our interpretation of the subsurface conditions based on the field exploration data, visual examination of the recovered split-barrel samples, laboratory test data, and generally accepted geotechnical engineering practices. The stratification lines and depth designations represent approximate boundaries between various subsurface strata. Actual transitions between materials may be gradual. The groundwater levels reported on the Test Boring Records represent measurements made at the completion of each soil test boring. The soil test borings were subsequently backfilled with the soil cuttings for safety concerns.

5.0 LABORATORY TESTING

A laboratory testing program was conducted to characterize materials which exist at the site using the recovered split-barrel samples. Selected test data are presented in Appendix C of this report. The specific tests are briefly described on the following page. It should be noted that all soil samples will be properly disposed of in accordance with NOVA's General Terms and Conditions, unless you request otherwise.

5.1 SOIL CLASSIFICATION

Soil classification provides a general guide to the engineering properties of various soil types and enable the engineer to apply past experience to current problems. In our explorations, samples obtained during drilling operations are observed in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our Test Boring Records. The classification system discussed above is primarily qualitative; laboratory testing is generally performed for detailed soil classification. Using the test results, the soils were classified using the Unified Soil Classification System. This classification system and the in-place physical soil properties provide an index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in this report.

5.2 FALLING-HEAD LABORATORY PERMEABILITY TEST

A remolded falling head permeability test (ASTM D-5084) is a common laboratory test used to determine the hydraulic conductivity of fine-grained soils. The test involves the flow of water through a re-molded, fully saturated soil sample inside a rigid-wall permeameter connected to a standpipe of constant diameter. Before beginning the flow measurements, the soil sample is saturated, and the standpipe is filled with water to a given level. The test then starts by allowing the water to flow through the sample until the water in the standpipe reaches a lower limit. The time required for the water to flow from the upper to lower limit is recorded.

5.3 MOISTURE CONTENT AND PERCENT FINES

The moisture content is the ratio expressed as a percentage of the weight of water in a given mass of soil to the weight of the solid particles. The percent fines is defined as the percentage of the total dry soil mass which passes a #200 sieve. These tests were conducted in general accordance with ASTM D-2216 and ASTM D-1140, respectively.

6.0 SUBSURFACE CONDITIONS

6.1 GEOLOGY

The site is located in the Okaloosa County, Florida area and according to the United States Geological Survey (USGS), is situated within the greater Gulf Coastal Plain region. The site is generally covered with Alluvium sediments of the Pleistocene/Holocene periods underlain by the Citronelle formation of the Pliocene/Pleistocene periods. The alluvial sediments typically consist of siliciclastics that are fine to coarse quartz sand containing clay lenses and gravel in places. Sands consists primarily of very fine to very coarse poorly sorted quartz grains; gravel is composed of quartz, quartzite, and chert pebbles. In areas of the Valley and Ridge province gravels are generally composed of angular to sub-rounded chert, quartz, and quartzite pebbles. Coastal deposits in the Fort Walton Beach area include fine to medium quartz sand with shell fragments and accessory heavy minerals along Gulf beaches and fine to medium quartz sand, silt, clay, peat, mud and ooze in the Mississippi Sound, Little Lagoon, bays, lakes, streams, and estuaries. The Citronelle formation consists primarily of varicolored/mottled lenticular beds of poorly sorted sand, clayey sand, clay, and clayey gravel. Limonite pebbles and lenses of limonite cemented sand occur locally in weathered Miocene exposures.

Surficial soils in the region are primarily siliciclastic sediments deposited in response to the renewed uplift and erosion in the Appalachian highlands to the north and sea-level fluctuations. The extent and type of deposit is influenced by numerous factors, including mineral composition of the parent rock and meteorological events.

6.2 SOIL CONDITIONS

The following paragraph provides a generalized description of the subsurface profiles and soil conditions encountered in the borings conducted during this study. The Test Boring Records in the Appendix should be reviewed to provide detailed descriptions of the conditions encountered at each boring location. Conditions may vary at other locations and times.

Beneath approximately 6 to 12 inches of topsoil or a gravel pavement section, the test borings generally encountered loose fine-grained sands to slightly silty sands (USCS classifications of SP and SP-SM, respectively) to depths varying between approximately 8 feet to 12 feet below existing grade (BEG) underlain by loose to medium dense fine-grained sands to silty sands (SP, SP-SM, SM) to the maximum depth explored of about 20 feet BEG.

6.3 GROUNDWATER CONDITIONS

6.3.1 General

Groundwater in the Gulf Coastal Plain typically occurs as an unconfined aquifer condition. Recharge is provided by the infiltration of rainfall and surface water through the soil overburden. More permeable zones in the soil matrix can affect groundwater conditions. The groundwater table is expected to be a subdued replica of the original surface topography. Based on a review of topographic maps and our visual site observations, we anticipate the groundwater flow at the site to be towards the south.

Groundwater levels vary with changes in season and rainfall, construction activity, surface water runoff and other site-specific factors. Groundwater levels in the greater Fort Walton Beach area are typically lowest in the late fall to winter and highest in the early spring to mid-summer with annual groundwater fluctuations by seasonal rainfall; consequently, the water table may vary at times.

6.3.2 Soil Test Boring Groundwater Conditions

Groundwater was encountered in the test borings at depths varying between roughly 5 feet to 9 feet BEG at the time of the soil exploration, which occurred during a period of relatively normal seasonal rainfall and shortly following several significant rain events.

Based on comparisons of current annual monthly rainfall data to historical rainfall data extending back 50+ years in time, we estimate that the normal permanent seasonal high groundwater (SHGW) table for this site will occur within 1 foot above the measured depths to groundwater at each boring location, during the wet season.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on our understanding of the proposed construction, our site observations, our evaluation and interpretation of the field and laboratory data obtained during this exploration, our experience with similar subsurface conditions, and generally accepted geotechnical engineering principles and practices.

Subsurface conditions in unexplored locations or at other times may vary from those encountered at the specific boring locations. If such variations are noted during construction, or if project development plans are changed, we request the opportunity to review the changes and amend our recommendations, if necessary.

As previously noted, boring locations were established in the field using a handheld GPS unit and the provided site plan. If increased accuracy is desired by the client, we recommend that the boring locations and elevations be surveyed.

7.1 SITE PREPARATION

Prior to proceeding with construction (and following the demolition of the existing structure within the OCWS Field Office Building footprint), we recommend stripping and grubbing the proposed building footprints to remove all surficial vegetation and topsoil, trees and/or associated root systems, and any other deleterious non-soil materials that are found to be present. Clean topsoil may be stockpiled and subsequently re-used in landscaped areas. Debris-laden materials should be excavated, transported, and disposed of off-site in accordance with appropriate solid waste rules and regulations. Any existing utility locations should be reviewed to assess their impact on the proposed construction and relocated/grouted in-place as appropriate.

The soils exposed at the stripped grade elevation should be compacted using a large ride-on roller operating in the static mode to a minimum soil density of at least 98 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D-1557). We note that vibratory compaction operations with a large ride-on roller will not be possible for this site given the very close proximity of neighboring structures.

The SPT borings encountered loose soil conditions (N-values of concern varying between 4 and 7) in the upper 6 feet to 10 feet of the soil horizon that could potentially require improvement (depending on the desired design soil bearing pressure) to provide adequate support of the planned structures. This improvement can typically be accomplished by compacting the soils exposed at the stripped grade elevation using a heavy weight vibratory roller (i.e., a minimum 10-ton drum roller, static weight, with a minimum 5-foot drum diameter), but as noted above vibratory compaction operations are not recommended for this site given the close proximity of neighboring structures.

Therefore, to provide an increased soil bearing pressure from 1,500 pounds per square foot to 2,500 pounds per square foot (if desired), the subgrade soils present beneath and extending to a minimum distance of 3 feet outside the perimeter of each proposed building footprint should be undercut to a depth of at least 3 feet below current grade elevations, or 3 feet below the planned bottom-of-footing elevation for each proposed structure (whichever is deeper). The soils exposed at that elevation should be compacted using a large drum roller (operating in the static mode) to a minimum soil density of at least 100 percent of the Modified Proctor maximum dry density.

A geotechnical engineer should carefully evaluate all subgrades prior to foundation and slab-on-grade construction to confirm compliance with this report; evaluate geotechnical sections of the plans and specifications for the overall project; and provide additional recommendations that may be required.

7.1.1 Soil Suitability

The majority of the on-site near surface soils can be categorized as SP-SM, or fine-grained slightly silty sands based on the Unified Soil Classification System (USCS). This sandy soil type is considered suitable for re-use as structural fill within the proposed structure footprints. The underlying fine-grained silty sand (SM) stratum may also be suitable for re-use as structural fill material, but we note that this material is inherently moisture sensitive and should be within 2 percent of its optimum moisture content at the time of placement and compaction or it will need to be dried back to within this moisture tolerance prior to being used.

All materials to be used for backfill or compacted fill construction should be evaluated and, if necessary, tested by NOVA prior to placement to determine if they are suitable for their intended use. In general, based upon the boring results, the near surface sands such as those encountered in the borings can be used as structural fill as well as general subgrade fill and backfill, provided that the fill material is free of rubble, clay, rock, roots and organics. Any off-site materials used as fill should be approved by NOVA prior to acquisition.

Organic and/or debris-laden material is not suitable for re-use as structural fill. Topsoil, mulch, and similar organic materials can be wasted in architectural areas. Debris-laden materials should be excavated, transported, and disposed of off-site in accordance with appropriate solid waste rules and regulations.

7.1.2 Soil Compaction

Additional fill soils should be placed in thin, horizontal loose lifts (i.e., maximum 12-inch) and compacted via non-vibratory methods to a minimum soil density of at least 98 percent of the Modified Proctor maximum dry density (ASTM D-1557), or to 100% if the increased bearing pressure option is employed. The upper 12 inches of soil beneath the bottoms of all subsequent foundation footing excavations should be compacted to at least 98 percent.

In confined areas, such as utility trenches or behind retaining walls, portable compaction equipment and thinner fill lifts (3 to 4 inches) may be necessary. Fill materials used in structural areas should have a target maximum dry density of at least 95 pounds per cubic foot (pcf). If lighter weight fill materials are used, the NOVA geotechnical engineer should be consulted to assess the impact on design recommendations.

Soil moisture content should be maintained within 2 percent of the optimum moisture content. We recommend that the grading contractor have equipment on site during earthwork for both drying and wetting fill soils. Moisture control may be difficult during rainy weather.

Filling operations should be observed by a NOVA soils technician, who can confirm suitability of material used and uniformity and appropriateness of compaction efforts.

He/she can also document compliance with the specifications by performing field density tests using thin-walled tube, nuclear, or sand cone testing methods (ASTM D-2937, D-6938, or D-1556, respectively). One test per 400 cubic yards and every 2 feet of placed fill is recommended, with test locations well distributed throughout the fill mass. When filling in small areas, at least one test per day per area should be performed.

7.2 GROUNDWATER CONTROL

As was noted previously, groundwater was encountered in the test borings at depths varying between roughly 5 feet to 9 feet BEG at the time of our field exploration. Depending on the areas of the site under consideration, groundwater levels have differing implications for design and construction. The extent and nature of any dewatering required during construction will be dependent on the actual groundwater conditions prevalent at the time of construction and the effectiveness of construction drainage to prevent run-off into open excavations.

Based on our understanding of the proposed construction, groundwater is not anticipated to adversely impact the planned improvements to the existing facility. As previously noted, groundwater levels are subject to seasonal, climatic and other variations and may be different at other times and locations.

7.3 FOUNDATIONS

We anticipate that the structures will be supported on shallow foundation systems. Structural loadings were not available from the design team at the time of the issuance of this report, and we have therefore assumed that maximum bearing loads will be on the order of 50 kips per column for isolated interior columns and 3 kips per lineal foot for perimeter load-bearing walls.

7.3.1 Shallow Foundations

Design: After the recommended site/subgrade preparation and fill placement, we recommend that the proposed structures be supported on conventional shallow foundation systems bearing upon compacted native soils and/or compacted structural fill. As noted above, the building foundations may be designed for a maximum soil bearing pressure of **1,500 pounds per square foot (psf) with conventional site preparation practices (provided a larger ride-on roller operating in the static mode is used to compact the exposed subgrade soils and subsequent fill lifts as recommended herein), with an increase to 2,500 psf with employment of the undercutting and backfilling recommended above**.

We recommend minimum footing widths of 24 inches for ease of construction and to reduce the possibility of localized shear failures. Exterior and interior footing bottoms should be established at least 18 inches below finished surrounding exterior grades.

Settlement: Settlements for spread foundations bearing on compacted sandy native or fill materials were assessed using SPT values to estimate elastic modulus, based on published correlations and previous NOVA experience. We note that the settlements presented are based on the subsoil profile encountered in the SPT borings performed for this project. Conditions may be better or worse in other areas, however, we believe the estimated settlements are reasonably conservative.

Based on column loadings stated previously, the soil bearing capacity provided on the previous page, and the presumed foundation elevations as discussed above, we expect primary total settlement beneath individual foundations to be on the order of 1 inch.

The amount of differential settlement is difficult to predict because the subsurface and foundation loading conditions can vary considerably across the site. However, we anticipate differential settlement between adjacent foundations will be on the order of ½ inch or less. The final deflected shape of each structure will be dependent on actual foundation locations and loading.

Foundation support conditions are highly erratic and may vary dramatically in short horizontal distances. It is anticipated that the geotechnical engineer may recommend a different bearing capacity upon examination of the actual foundation subgrade at numerous locations. To reduce the differential settlement if lower consistency materials are encountered, a lower bearing capacity should be used, or the foundations should be extended to more competent materials.

We anticipate that timely communication between the geotechnical engineer and the structural engineer, as well as other design and construction team members, will be required.

Construction: Foundation excavations should be evaluated by the NOVA geotechnical engineer prior to reinforcing steel placement to observe foundation subgrade preparation and confirm bearing pressure capacity.

Foundation excavations should be level and free of debris, ponded water, mud, and loose, frozen, or water-softened soils. Concrete should be placed as soon as is practical after the foundation is excavated, and the subgrade evaluated. Foundation concrete should not be placed on frozen or saturated soil.

If a foundation excavation remains open overnight, or if rain or snow is imminent, a 3 to 4-inch thick "mud mat" of lean concrete should be placed in the bottom of the excavation to protect the bearing soils until reinforcing steel and concrete can be placed.

7.3.2 SLABS-ON-GRADE

General: The conditions exposed at subgrade levels will vary across the site and may include structural fill. The slabs-on-grade may be adequately supported on these subgrade conditions subject to the recommendations in this report. The slabs-on-grade should be jointed around columns and along walls to reduce cracking due to differential movement. Underdrain systems are not necessary beneath the slabs, provided that the slabs are established at least 2 feet above the normal permanent SHGW table. Impermeable vapor barriers are recommended beneath finished spaces to reduce dampness.

Once grading is completed, the subgrade is usually exposed to adverse construction activities and weather conditions during the period of sub-slab utility installations. The subgrade should be well-drained to prevent the accumulation of water. If the exposed subgrade becomes saturated or frozen, the geotechnical engineer should be consulted.

After utilities have been installed and backfilled, a final subgrade evaluation should be performed by the geotechnical engineer immediately prior to all slab-on-grade placements. If practical, proofrolling may be used to redensify the surface and to detect any soil that has become excessively wet or otherwise loosened.

7.4 STORMWATER MANAGEMENT SYSTEM

Based on the results of the SMS test borings, the subsurface conditions encountered in the proposed stormwater management system areas of the site appear to be adaptable for the treatment and disposal of stormwater runoff via the desired conventional shallow retention basins. We recommend that the following soil parameters presented below for design of the SMS at the subject project site.

Table 1 – Northwest Basin SMS Soil Design Parameters	
Corresponding Soil Boring Test Location	R-1, R-2
Approximate Elevation of Confining Layer, BEG	Below 15 feet
Measured Vertical Hydraulic Conductivity (Kv), feet per day	10 ft/day
Measured Horizontal Hydraulic Conductivity (Kh), feet per day	15 ft/day
Estimated Infiltration Rate, DRI	3 in/hour
Estimated Fillable Porosity of Soil, percentage	25%
Estimated Depth of Normal Permanent SHGW table, BEG	6 feet*

*Referenced to the R-2 Test Boring

Table 2 – Southwest Basin SMS Soil Design Parameters	
Corresponding Soil Boring Test Location	R-3, R-4
Approximate Elevation of Confining Layer, BEG	Below 15 feet
Measured Vertical Hydraulic Conductivity (Kv), feet per day	5 ft/day
Measured Horizontal Hydraulic Conductivity (Kh), feet per day	8 ft/day
Estimated Infiltration Rate, DRI	2 in/hour
Estimated Fillable Porosity of Soil, percentage	25%
Estimated Depth of Normal Permanent SHGW table, BEG	4 feet*

. *Referenced to the R-3 Test Boring

Table 31 – Southwest Basin SMS Soil Design Parameters	
Corresponding Soil Boring Test Location	R-5, R-6
Approximate Elevation of Confining Layer, BEG	Below 15 feet
Measured Vertical Hydraulic Conductivity (Kv), feet per day	5 ft/day
Measured Horizontal Hydraulic Conductivity (Kh), feet per day	8 ft/day
Estimated Infiltration Rate, DRI	2 in/hour
Estimated Fillable Porosity of Soil, percentage	25%
Estimated Depth of Normal Permanent SHGW table, BEG	7 feet*

. *Referenced to the R-5 Test Boring

The estimated normal permanent seasonal high groundwater levels provided in the tables above are based on our experience with projects in this locale; the soil strata encountered in the test borings; the groundwater levels measured at the site; and the published information by the "Web Soil Survey" National database, NRCS division of the United States Department of Agriculture (USDA).

The actual exfiltration rates from the basins may be influenced by basin geometry, natural soil variability, in-situ depositional characteristics and soil density, retention volume, and groundwater mounding effects.

Appropriate factors of safety should be incorporated into the design process. We note that NOVA performs remolded laboratory permeability testing using generally accepted practices of the local engineering community. These types of tests are the quickest and most economical for stormwater retention basin design. However, the user of this information is cautioned that the potential variability of results of these types of tests can be significant and the reproducibility of results can vary by factors of up to 100 percent.

Also, the permeability measured by such tests may not be representative of the total effective aquifer thickness. Factors of safety can compensate for part of the inherent test limitations, but the designer must exercise judgment regarding final selection and applicability of provided soil design input parameters. Should the modeling analysis indicate marginally acceptable compliance with Water Management District design criteria, it may be advisable to perform more extensive and representative in-situ permeability testing by collecting "undisturbed" horizontal and vertical soil samples and/or installing grouted piezometers or wells for slug testing. NOVA can perform these field tests if desired.

8.0 CONSTRUCTION OBSERVATIONS

8.1 SUBGRADE

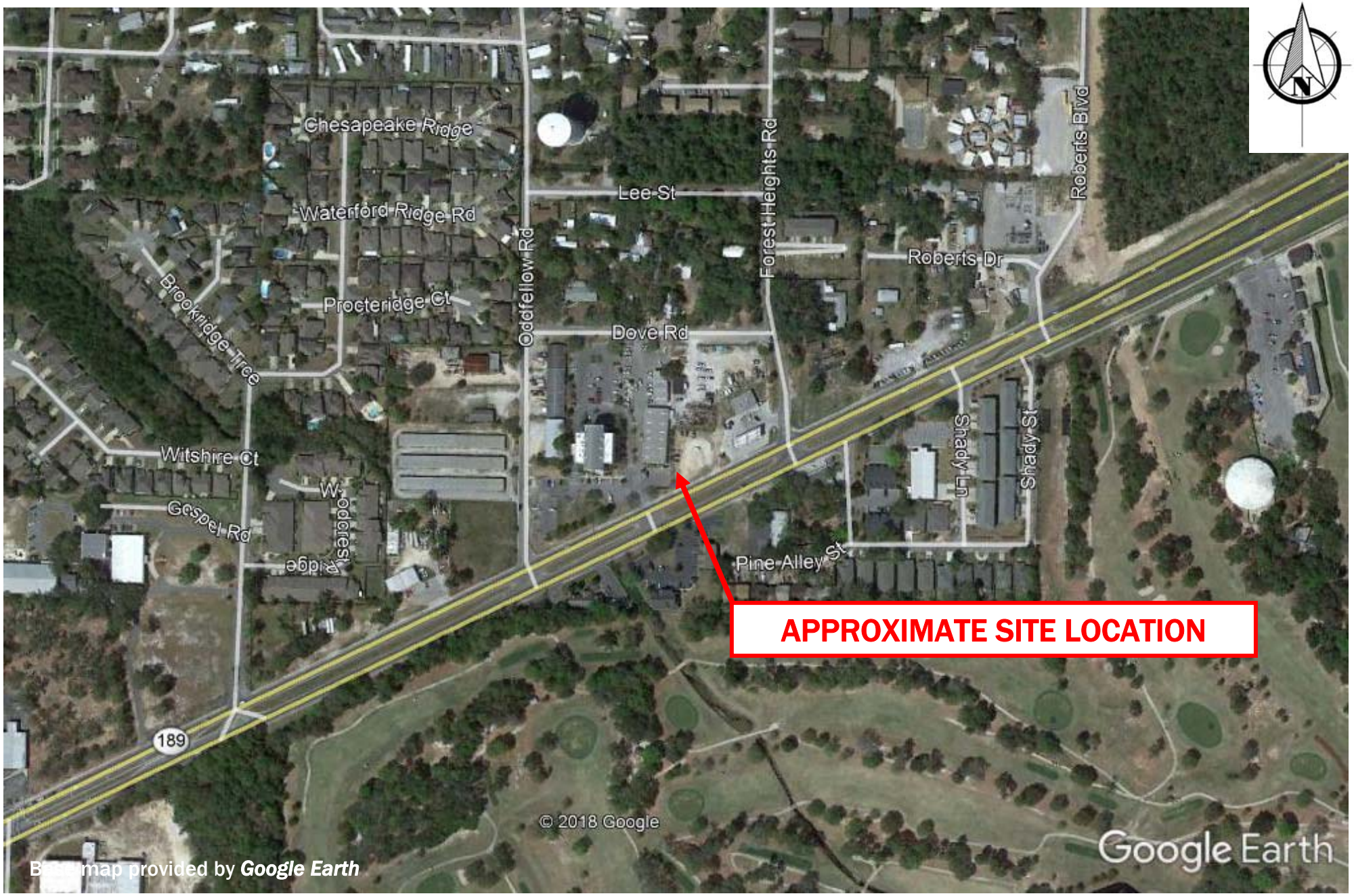
Once site grading is completed, the subgrade may be exposed to adverse construction activities and weather conditions. The subgrade should be well-drained to prevent the accumulation of water. If the exposed subgrade becomes saturated or frozen, the NOVA geotechnical engineer should be consulted.

A final subgrade evaluation should be performed by the NOVA geotechnical engineer immediately prior to pavements or slab-on-grade placement. If practical, proofrolling may be used to re-densify the surface and to detect any soil, which has become excessively wet or otherwise loosened.

8.2 SHALLOW FOUNDATIONS

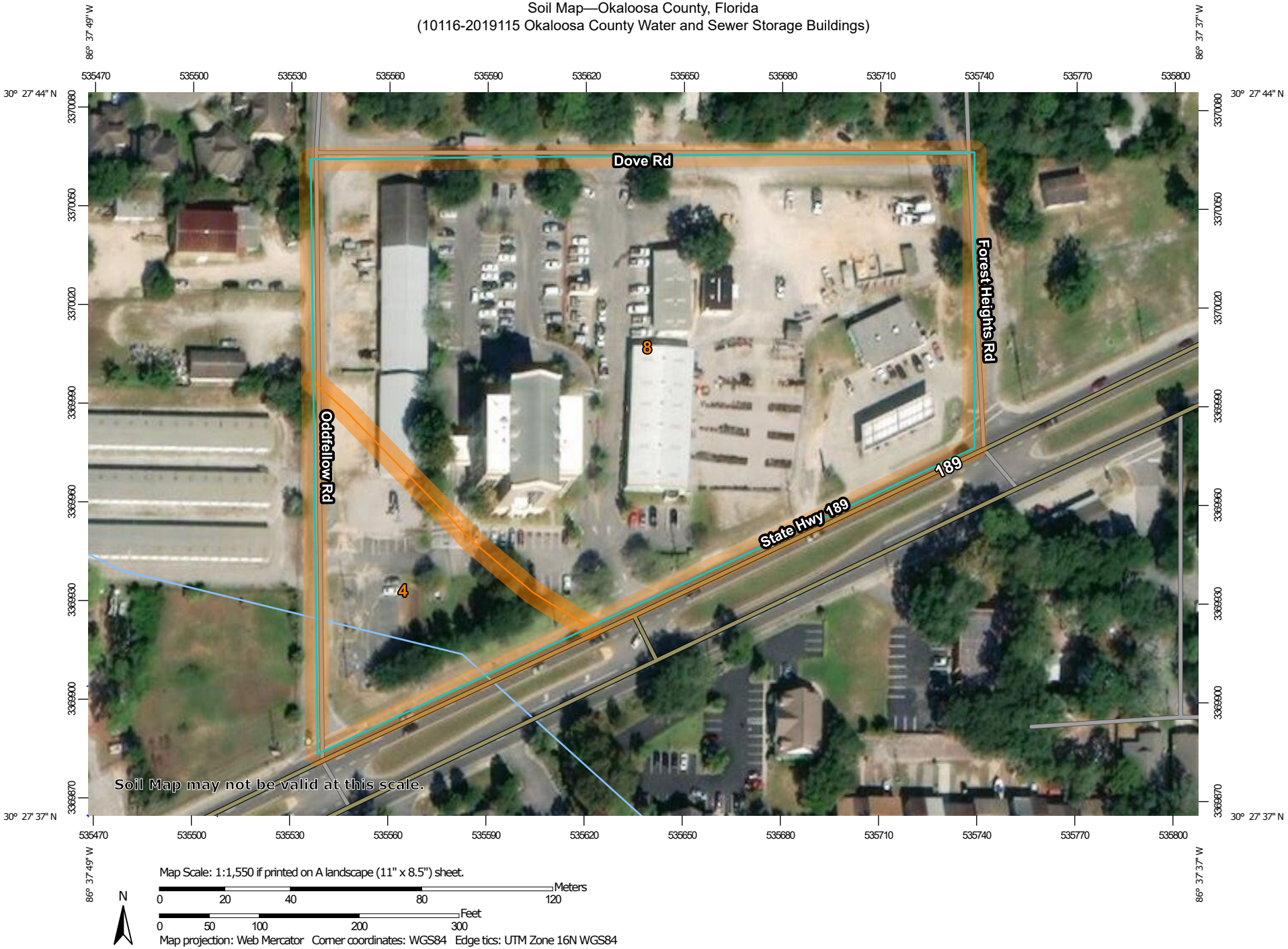
Foundation excavations should be level and free of debris, ponded water, mud, and loose, frozen or water-softened soils. All foundation excavations should be evaluated by the NOVA geotechnical engineer prior to reinforcing steel placement to observe foundation subgrade preparation and confirm bearing pressure capacity. Due to variable site subsurface and construction conditions, some adjustments in isolated foundation bearing pressures, depth of foundations or undercutting and replacement with controlled structural fill may be necessary.

APPENDIX A
Figures and Maps



Scale: Not To Scale **Date Drawn:** July 18, 2019 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA 140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683 ATTACHMENT B (50 PAGES)	**PROJECT LOCATION MAP** **Okaloosa County Water and Sewer Storage Buildings** Fort Walton Beach, Okaloosa County, Florida *NOVA Project Number 10116-2019115*

Soil Map—Okaloosa County, Florida
(10116-2019115 Okaloosa County Water and Sewer Storage Buildings)



Map Scale: 1:1,550 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Soil Map—Okaloosa County, Florida
(10116-2019115 Okaloosa County Water and Sewer Storage Buildings)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Okaloosa County, Florida
Survey Area Data: Version 17, Sep 5, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

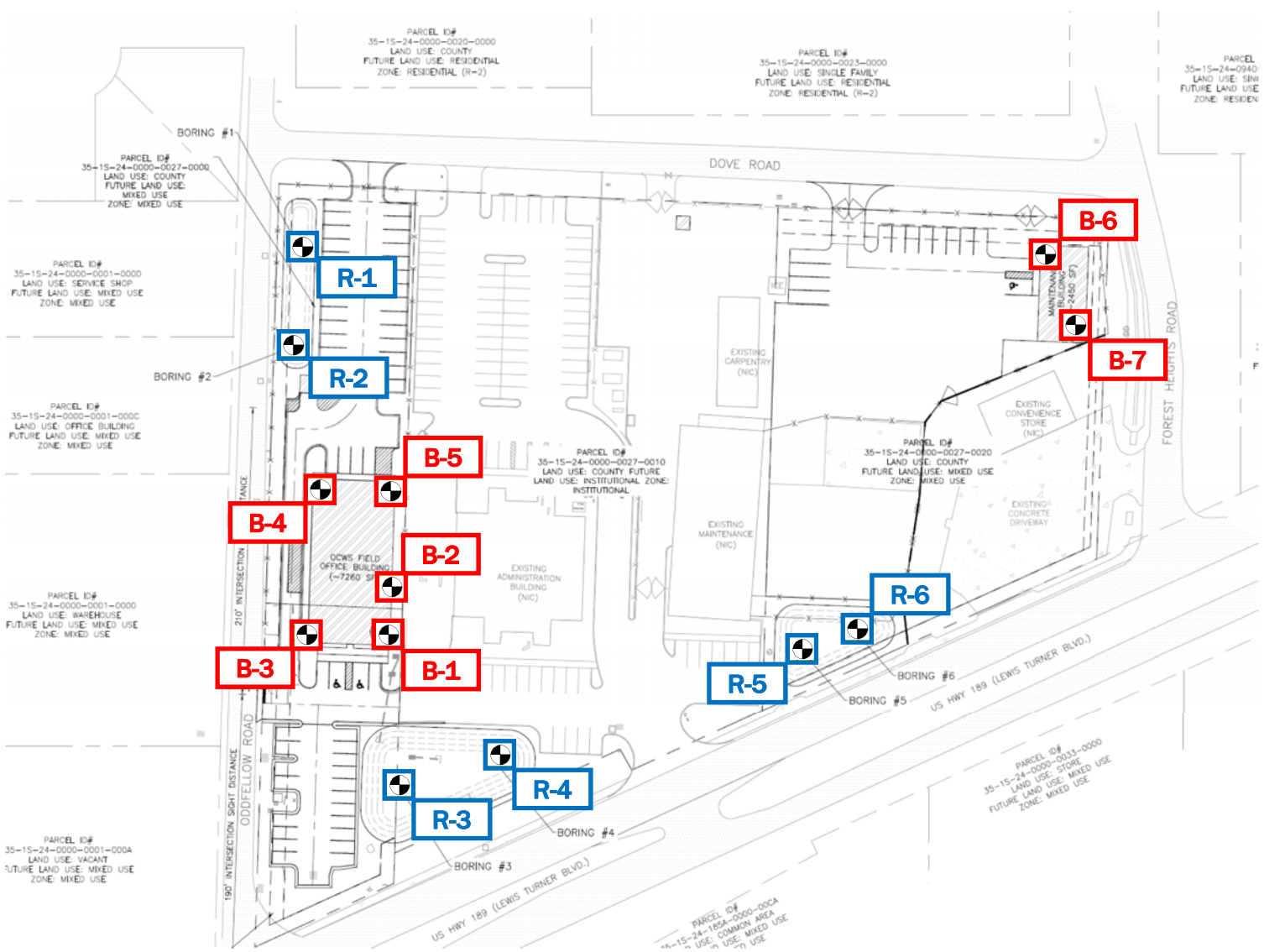
Date(s) aerial images were photographed: Dec 31, 2009—Nov 2, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Chipley and Hurricane soils, 0 to 5 percent slopes	1.1	16.4%
8	Foxworth sand, 0 to 5 percent slopes	5.7	83.6%
Totals for Area of Interest		**6.8**	**100.0%**

APPENDIX B
Subsurface Data



LEGEND

B-x – 20-foot Structural SPT Boring

R-x – 15-foot SMS Auger Boring

Scale: Not To Scale **Date Drawn:** July 17, 2019 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA ATTACHMENT B (50 PAGES)	140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683

BORING LOCATION PLAN

Okaloosa County Water and Sewer Storage Buildings

Fort Walton Beach, Okaloosa County, Florida

NOVA Project Number 10116-2019115

NOVA

KEY TO BORING LOGS

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Poorly graded sands and gravelly sands, little or no fines
		SANDS with 12% or more passing No. 200 sieve	SM**	Silty sands, sand-silt mixtures
			SC**	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts
			CH	Inorganic clays or clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

*Based on the material passing the 3-inch (75 mm) sieve
** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)
Very loose – Less than 4 Blow/Foot
Loose – 4 to 10 Blows/Foot
Medium Dense – 11 to 30 Blows/Foot
Dense – 31 to 50 Blows/Foot
Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Silts and Clays)
Very Soft – Less than 2 Blows/Foot
Soft – 2 to 4 Blows/Foot
Medium Stiff – 5 to 8 Blows/Foot
Stiff – 9 to 15 Blows/Foot
Very Stiff – 16 to 30 Blows/Foot
Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)
Soft – 100 Blows for more than 2 Inches
Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample
Trace – 5% or less
With Silt or With Clay – 6% to 11%
Silty or Clayey – 12% to 30%
Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample
Trace – Less than 3%
Few – 3% to 4%
Some – 5% to 8%
Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample
Trace – 5% or less
Few – 6% to 12%
Some – 13% to 30%
Many – 31% to 50%

NOVA

TEST BORING RECORD B-1

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Brown loose fine-grained SAND with gravel (SP)				7
		Light brown loose fine-grained SAND (SP)				
3						5
						4
6		Orange loose fine-grained SAND (SP)		▽		4
		Dark brown loose fine-grained slightly silty SAND (SP-SM)				8
9						
12		Dark brown medium dense fine-grained SAND (SP)				18
15						
18						15
		Boring Terminated at 20 ft.				
21						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

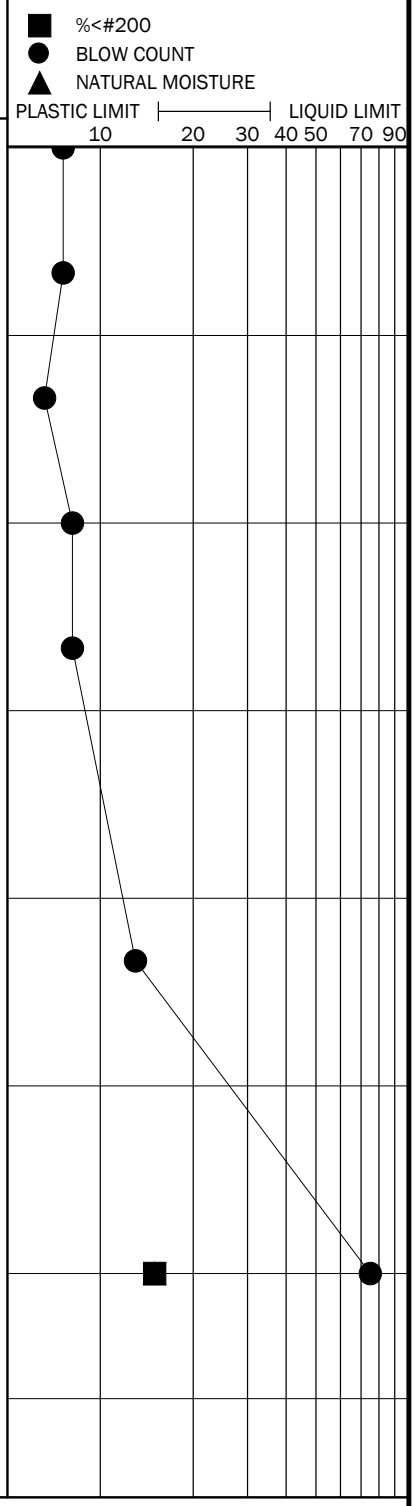
NOVA

TEST BORING RECORD B-2

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 6 ft. AFTER 24 HOURS: ▼ _____ CAVING> _____

Depth (feet)	Description	N-Value
0		
	Brown loose fine-grained SAND with gravel (SP)	6
	Light brown loose fine-grained SAND (SP)	6
3		
		4
6		7
	Gray loose fine-grained silty SAND (SM)	
	Dark brown loose fine-grained slightly silty SAND (SP-SM)	7
9		
12	Dark brown medium dense fine-grained SAND (SP)	13
15		
18	Dark brown very dense fine-grained silty SAND (SM, cemented)	75
	Boring Terminated at 20 ft.	
21		

Graphic: Groundwater ▽ at 6 ft.; Sample Type: split-spoon



This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD B-3

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Brown loose fine-grained SAND with gravel (SP)				9
		Light brown loose fine-grained slightly silty SAND (SP-SM)				5
3						
						5
6				▽		
						6
						8
9		Dark brown loose to medium dense fine-grained slightly silty SAND (SP-SM)				
12						
						20
15						
18						
						19
21		Boring Terminated at 20 ft.				

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD B-4

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 5.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Brown loose fine-grained SAND with gravel (SP)				7
		Light brown loose fine-grained slightly silty SAND (SP-SM)				4
3						
						4
6				▽		
		Grey loose fine-grained SAND (SP)				4
						6
9						
12		Dark brown medium dense fine-grained slightly silty SAND (SP-SM)				
						22
15						
18						
						20
21		Boring Terminated at 20 ft.				

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD B-5

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 6 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		TOPSOIL (Approx. 6-inches)				
		Light brown loose fine-grained slightly silty SAND (SP-SM)				4
						4
3						4
6		Grey loose fine-grained SAND (SP)		▽		5
						8
9						
12		Dark brown medium dense fine-grained slightly silty SAND (SP-SM)				
						14
15						
18						28
21		Boring Terminated at 20 ft.				

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

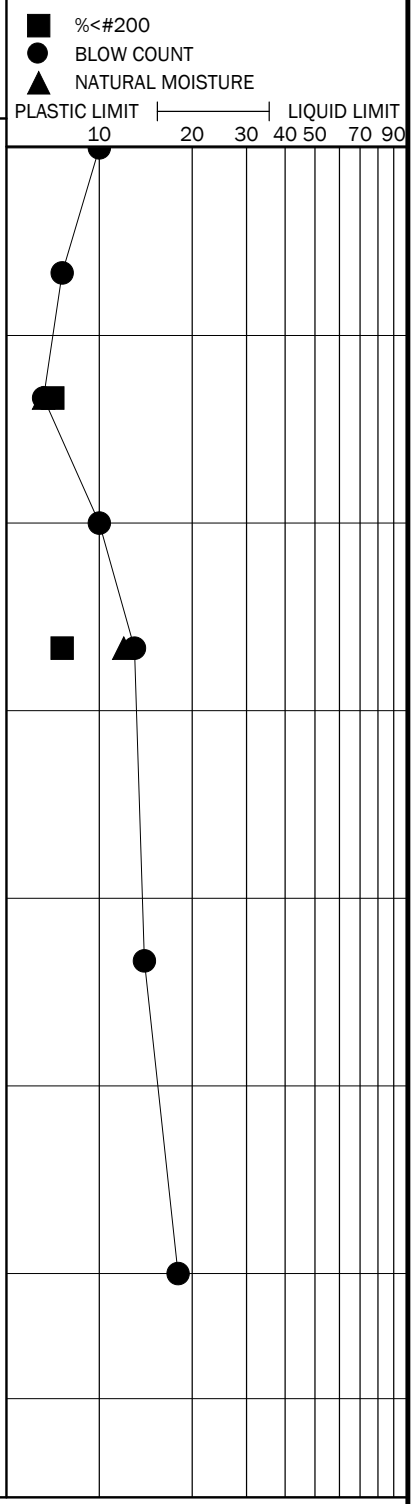
This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD B-6

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 9 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Brown loose fine-grained SAND with gravel (SP)				10
		Light brown loose to medium dense fine-grained SAND (SP)				6
3						4
6						10
9				▽		13
		Light grey medium dense fine-grained slightly silty SAND (SP-SM)				
12						
		Light brown medium dense fine-grained SAND (SP)				14
15						
		Brown medium dense fine-grained SAND (SP)				18
18						
21		Boring Terminated at 20 ft.				



This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD B-7

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: SPT Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 9 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Brown loose fine-grained SAND with gravel (SP)				9
		Light brown loose to medium dense fine-grained SAND (SP)				7
3						
						4
6						
						6
						12
9				▽		
		Light grey medium dense fine-grained slightly silty SAND (SP-SM)				
12		Light brown medium dense fine-grained SAND (SP)				
						13
15						
		Brown medium dense fine-grained SAND (SP)				
18						18
		Boring Terminated at 20 ft.				
21						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT ⊢ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-1

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 7.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Orange fine-grained silty SAND (SM)				
		Light brown fine-grained slightly silty SAND (SP-SM)		▽		
3						
6						
9		Brown fine-grained SAND (SP)				
12						
15						
		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-2

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 6.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Orange fine-grained silty SAND (SM)				
		Light brown fine-grained slightly silty SAND (SP-SM)				
3						
		Off-white fine-grained SAND (SP)		▽		
6						
		Brown fine-grained SAND (SP)				
9						
12						
15		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-3

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 3-inches)				
		Brown fine-grained slightly silty SAND (SP-SM)				
3		Light brown fine-grained slightly silty SAND (SP-SM)		▽		
6		Brown fine-grained SAND (SP)				
9						
12						
15		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-4

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 7 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		TOPSOIL (Approx. 6-inches)				
		Orange fine-grained slightly silty SAND (SP-SM)				
3		Light brown fine-grained slightly silty SAND (SP-SM)				
6						
		Dark brown fine-grained slightly silty SAND (SP-SM)		▽		
9						
12						
15						
		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-5

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 8 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Orange fine-grained slightly silty SAND (SP-SM)				
		Light brown fine-grained slightly silty SAND (SP-SM)				
3						
6						
9		Brown fine-grained SAND (SP)		▽		
12						
15		Dark brown fine-grained slightly silty SAND (SP-SM)				
		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-6

PROJECT: Okaloosa County Water and Sewer PROJECT NO.: 10116-2019115
CLIENT: AVCON, Inc.
PROJECT LOCATION: Fort Walton Beach, Okaloosa County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: S. Ryan LOGGED BY: J. James
DRILLING METHOD: Auger Boring DATE: July 15, 2019
DEPTH TO - WATER> INITIAL: ▽ 8.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Orange fine-grained slightly silty SAND (SP-SM)				
		Light brown fine-grained slightly silty SAND (SP-SM)				
3						
6						
9		Brown fine-grained SAND (SP)		▽		
12						
		Dark brown fine-grained slightly silty SAND (SP-SM)				
15						
		Boring Terminated at 15 ft.				
18						
21						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

APPENDIX C
Laboratory Data

SUMMARY OF CLASSIFICATION & INDEX TESTING

Okaloosa County Water and Sewer Storage Buildings
Fort Walton Beach, Okaloosa County, Florida
NOVA Project No. 10116-2019115

SUMMARY OF CLASSIFICATION AND INDEX TESTING						
Boring No.	Sample Depth (ft. BEG)	Natural Moisture (%)	Percent Fines (- #200)	Hydraulic Conductivity		USCS Soil Classification
				K_{vs} (ft/day)	Unit Weight of Sample (pcf)	
B-1	4-6	11	5	---	---	SP
B-1	13-15	22	2	---	---	SP
B-2	18-20	15	15	---	---	SM
B-3	2-4	4	7	---	---	SP-SM
B-3	8-10	19	6	---	---	SP-SM
B-4	6-8	20	3	---	---	SP
B-4	13-15	14	12	---	---	SP-SM
B-5	18-20	15	12	---	---	SP-SM
B-6	4-6	4	5	---	---	SP
B-6	8-10	12	6	---	---	SP-SM
B-7	18-20	18	3	---	---	SP
R-2	1-4	5	8	10	106	SP-SM
R-4	2-7	7	8	5	108	SP-SM

REMOLDED LABORATORY PERMEABILITY TEST DATA SHEET

PROJECT: OCWS Storage Buildings **NOVA PROJECT #:** 10116-2019115

DATE: 7/17/2019 **ASSIGNED BY:** JAJ **TESTED BY:** JAJ

Sample LOCATION / BORING NO.	R-1
Sample NUMBER / DEPTH	1-4

PERMEABILITY TESTING SUMMARY			
PERMEABILITY (K_V)	→	10	ft/day
Corresponding K_h	→	15	ft/day
DRY DENSITY	→	106	lbs/ft^3
MOISTURE CONTENT	→	5	%
-200 FINES CONTENT	→	8	%

FALLING HEAD PERMEABILITY (ASTM D 5084)

No. of LAYERS:	3	Wt. of MOLD (lbs):	4.53
BLOWS/LAYER:	15	Wt. of MOLD/SOIL (lbs):	8.24

HEIGHT (FT)	TRIAL #1 (SEC)	TRIAL #2 (SEC)	PERMEABILITY
7	0.0		3.60E-03
6	4.5		3.38E-03
5	10.1		3.16E-03
4	17.3		3.23E-03
3	26.3		3.77E-03
2	37.0		
1	54.0		
		3.4E-03	cm/sec

MOISTURE CONTENT (ASTM D 2216)

Pan NUMBER	HH
Wt. of WET SOIL & PAN (g)	292.0
Wt. of DRY SOIL & PAN (g)	285.6
Wt. of PAN (g)	148.9
Wt. of Water (g)	6.4
Wt. of Dry Soil (g)	136.7
MOISTURE CONTENT (%)	4.7

-200 SIEVE WASH (ASTM D 1140)

Pan NUMBER	HH
Wt. of DRY SOIL & PAN (g)	285.6
Wt. of WASH SOIL & PAN (g)	274.3
Wt. of PAN (g)	148.9
Wt. of Original Dry Sample (g)	136.7
Wt. of -200 Material (g)	11.3
Wt. of Washed Dry Sample (g)	125.4
-200 FINES CONTENT (%)	8.3

NUMBER OF INCHES MOLD WAS SHORT? 0.000 INCHES (ZERO INCHES IS DEFAULT)

PERMEABILITY CONSTANT USED WAS → 0.23 (Includes 3/8"ID tubing)

NOVA

REMOLDED LABORATORY PERMEABILITY TEST DATA SHEET

PROJECT: OCWS Storage Buildings **NOVA PROJECT #:** 10116-2019115

DATE: 7/17/2019 **ASSIGNED BY:** JAJ **TESTED BY:** JAJ

Sample LOCATION / BORING NO.	R-4
Sample NUMBER / DEPTH	2-7

PERMEABILITY TESTING SUMMARY			
PERMEABILITY (K_V)	→	5	ft/day
Corresponding K_h	→	8	ft/day
DRY DENSITY	→	108	lbs/ft^3
MOISTURE CONTENT	→	7	%
-200 FINES CONTENT	→	8	%

FALLING HEAD PERMEABILITY (ASTM D 5084)

No. of LAYERS:	3	Wt. of MOLD (lbs):	4.53
BLOWS/LAYER:	15	Wt. of MOLD/SOIL (lbs):	8.38

HEIGHT (FT)	TRIAL #1 (SEC)	TRIAL #2 (SEC)	PERMEABILITY
7	0.0		1.84E-03
6	6.8		1.91E-03
5	16.1		1.90E-03
4	28.2		1.98E-03
3	43.0		1.79E-03
2	64.3		
1	105.5		
		1.9E-03	cm/sec

MOISTURE CONTENT (ASTM D 2216)

Pan NUMBER	LL
Wt. of WET SOIL & PAN (g)	256.2
Wt. of DRY SOIL & PAN (g)	249.1
Wt. of PAN (g)	148.9
Wt. of Water (g)	7.1
Wt. of Dry Soil (g)	100.2
MOISTURE CONTENT (%)	7.1

-200 SIEVE WASH (ASTM D 1140)

Pan NUMBER	LL
Wt. of DRY SOIL & PAN (g)	249.1
Wt. of WASH SOIL & PAN (g)	241.2
Wt. of PAN (g)	148.9
Wt. of Original Dry Sample (g)	100.2
Wt. of -200 Material (g)	7.9
Wt. of Washed Dry Sample (g)	92.3
-200 FINES CONTENT (%)	7.9

NUMBER OF INCHES MOLD WAS SHORT? 0.000 INCHES (ZERO INCHES IS DEFAULT)

PERMEABILITY CONSTANT USED WAS → 0.23 (Includes 3/8"ID tubing)

NOVA

APPENDIX D
Qualifications of Recommendations

QUALIFICATIONS OF RECOMMENDATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study, and our previous experience. If additional information becomes available which might impact our geotechnical opinions, it will be necessary for NOVA to review the information, re-assess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings may differ from those encountered at specific boring locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process has altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, NOVA should be retained by the owner to observe all earthwork and foundation construction to confirm that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations. NOVA is not responsible or liable for the conclusions and recommendations presented in this report if NOVA does not perform these observations and testing services.

This report is intended for the sole use of **AVCON, Inc.** only. The scope of work performed during this study was developed for purposes specifically intended by of **AVCON, Inc.** only and may not satisfy other users' requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. NOVA is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Florida. This warranty is in lieu of all other statements or warranties, either expressed or implied.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

SECTION 04200

UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related work specified elsewhere includes:

1. Section 05500 - “Metal Fabrications”
2. Section 06100 - “Rough Carpentry”
3. Section 07900 - “Joint Sealers”
4. Section 09900 - “Painting”

1.2 SUMMARY:

A. The extent of each type of masonry work is indicated on the Drawings and Schedules.

1. All CMU shall extend up to bottom of structure, unless specifically indicated otherwise.

B. This Section includes the following:

1. Face Brick (fields and accents), in standard size units, and custom shapes, or custom units as indicated, selected by Architect after bidding, within allowance amount(s).

2. Concrete masonry units (CMU), where indicated on the Drawings.

3. Standard gray colored mortar at exposed interior and concealed exterior locations.

4. Mortar color and tooling at exposed exterior locations as indicated, selected by Architect after bidding, within allowance amount(s); Up to two (2) colors of mortar may be selected.

5. Anchors, ties, reinforcing, masonry accessories, and concealed flashings, and galvanized steel lintels.

a. Elastic through-wall flashing at all wall base flashing, at heads and sills of exterior wall openings, at flashing at perimeters of all exterior wall openings, and as otherwise indicated.

6. Water Repellents: Exterior wythe (exposed brick) only.

a. Field applied to all completed exterior masonry work.

1.3 SYSTEM PERFORMANCE REQUIREMENTS:

A. Provide concrete unit masonry that develops at least the following installed compressive strengths (f’m): f’m = 1,500 psi.

1.4 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Manufacturer's product data for each different masonry unit, accessory, water repellent (integral and surface-applied types), and other manufactured product indicated, including certifications that each item and type complies with specified requirements.

a. Include instructions for handling, storage, installation, and protection.

2. Shop drawings for reinforcing, if any, detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 "Details and Detailing of Concrete Reinforcing" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.

3. Samples for initial selection purposes of the following, and for verification after initial selections (4 sets minimum):

a. Field brick or blend, as indicated, within Allowance amount.

a. Precast Concrete Masonry Units: Full size units of each type, size, finish and color unit indicated.

c. Accent brick, as indicated, within Allowance amount.

d. Colored masonry mortar samples showing colors available, in price range of preselected mortar color or if not preselected, within allowance amount.

e. Exposed Masonry, showing full extent of colors and variations anticipated, for each standard and special shape unit selected, and as indicated on the Drawings.

1.5 QUALITY ASSURANCE:

A. Fire Performance Characteristics: Where indicated, provide materials and construction identical to those of assemblies whose fire resistance has been determined per ASTM E 119 by a testing and inspecting organization, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

B. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

C. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

D. Single-Source Responsibility for Water Repellents: Obtain each type of integral and applied water repellents from a single manufacturer for the entire project.

1. Verify full compatibility with any other coatings, fluid applied waterproofing, etc., prior to application of this and other products. Notify Architect in writing and in detail, of any incompatible products, prior to any application, and await Architect's written direction on how to proceed.

E Subcontractors: Subcontractors shall have been established in their own firms for at least 5 verifiable years and shall have successfully completed at least 5 verifiable projects of this size, scope, and complexity. Furnish names and telephone numbers of General Contractors for each project submitted for consideration of experience requirements.

1. Refer to Section 01015 - "Special Conditions" for additional information and minimum experience requirements.

F. Field-Constructed Mock-Ups for Each Different Brick, Precast Concrete Unit and Mortar Required: Prior to installation of unit masonry, erect sample wall panels to further verify selections made under sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution. Build mock-ups to comply with the following requirements, using materials indicated for final unit of Work:

1. Locate mock-ups on site in locations indicated or, if not indicated, as directed by Architect.

2. Build mock-ups for the following types of masonry in sizes of approximately 4 feet long by 4 feet high by full thickness, including face and backup wythes as well as accessories.

a. Each type of exposed unit masonry construction, utilizing mortar color and joint detail selected and/or specified, insulation, flashing, and weeps.

b. Incorporate integral and applied water repellents, the same as required for the completed work.

3. Notify Architect one week in advance of the dates and times when mock-ups will be erected.

4. Protect mock-ups from the elements with weather-resistant membrane.

5. Retain and maintain mock-ups during construction in undisturbed condition as standard for judging completed unit masonry construction.

a. When directed, demolish and remove mock-ups from Project site.

1.6 DELIVERY, STORAGE, AND HANDLING:

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.

C. Store cementitious materials and insulation off the ground, under cover, and in dry location.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

F. Store water repellents in strict accordance with manufacturer's written recommendations, off of ground, under cover, and otherwise as required to protect from damage, contamination, etc.

G. Refer to Section 01010 - "Summary of Work" and Section 01015 - "Special Conditions", for additional information and requirements regarding stored materials.

1.7 PROJECT CONDITIONS:

A. Protection of Masonry:

1. During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

2. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

3. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention:

1. Prevent grout, mortar, and soil from staining the face of masonry to be left exposed, painted, and/or to receive any other coatings. Remove immediately any grout, mortar, and soil that come in contact with such masonry.

2. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface, until landscaping or other improvements indicated adjacent to completed masonry work are in place.

3. Protect sills, ledges, and projections from mortar droppings.

4. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings, coatings, water repellents, and/or any other damage.

D. Clean Air Space:

1. Prevent grout and mortar from occurring in, bridging, forming ledges, and/or filling air space between masonry and back-up walls.

2. Remove excess grout and mortar flush with back side of masonry as work progresses, using trowel, board pulled up through air space, or other effective and acceptable method(s), pre-approved by Architect.

3. Provide cavity drainage material specified just above through-wall flashings and weeps.

E. Cold-Weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:

1. Do not lay masonry units that are wet or frozen.

2. Remove masonry damaged by freezing conditions.

F. Hot-Weather Construction: Comply with referenced unit masonry standard, or applicable Building Code requirements.

G. Thoroughly clean and rinse all masonry prior to application of water repellents, water-proofing, coatings, paint, etc. Comply with written recommendations of each manufacturer of products to be applied to masonry work.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL:

A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.2 BRICK:

A. Size: Unless otherwise indicated, provide bricks manufactured to the following actual dimensions:

1. Standard Modular Units: Color selections as indicated below; Provide special molded shapes where indicated, and for applications requiring brick of form, size and finish on exposed surfaces which cannot be produced from standard brick sizes by sawing (all saw cuts must be concealed in the finished masonry work).

B. For sills, caps and similar applications resulting in exposure to brick surfaces which otherwise would be concealed from view, provide uncored or unfrogged units with all exposed surfaces by sawing.

C. Facing Brick: ASTM C 216, Type FBS, SW: Brick texture and colors will be selected by Architect after bidding.

D. Application: Use brick above at all locations where brick is indicated on the Drawings.

2.3 CONCRETE MASONRY UNITS:

A. General:

1. Comply with requirements indicated below applicable to each form of concrete masonry unit required.

2. Provide special shapes where indicated and as follows:

a. For lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.

3. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.

4. Concrete Masonry Units:

a. Manufacturer's standard sixteen (16) inches long x eight (8) inches x eight (8) inches nominal dimension, unless indicated otherwise on Drawings.

b. Manufacturer's standard sixteen (16) inches long x eight (8) inches x four (4) inches nominal dimension, split-faced exterior, unless indicated otherwise on Drawings.

5. Concrete Building Brick: Standard Modular, 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.

6. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.

B. Hollow Load-Bearing Concrete Masonry Units - (CMU):

1. ASTM C 90, Grade N.

2. Unit Compressive Strength: Provide units with minimum average net area compressive strength of 1,900 psi.

3. Weight Classification: Lightweight, at above-grade locations.

4. Weight Classification: Normal weight, at below-grade locations, and where necessary to achieve required fire-ratings according to manufacturer's testing and/or by "calculated fire resistance" as may be allowed by applicable building code.

C. Concrete Building Brick:

1. ASTM C 55, Grade N.

2. Unit Compressive Strength: Provide units with minimum average net area compressive strength of 3,500 psi.

3. Weight Classification: Lightweight.

2.4 MORTAR AND GROUT MATERIALS:

A. Portland Cement for Grout: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce required mortar color.

B. Masonry Cement:

1. ASTM C 91.

2. For colored pigmented mortars use premixed colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected by Architect after bidding, within Allowance amount(s).

a. Mortar and Grout Color Selection(s): $14.00 per bag. Up to two (2) colors may be selected.

b. Refer to Division 1 Section "Allowances" for additional information and requirements.

C. Sand: ASTM C 144.

D. Hydrated Lime: ASTM C 207, Type S.

E. Aggregate for Mortar:

1. ASTM C 144, except for joints less than 1/4 inch use aggregate graded with 100 percent passing the No. 16 sieve.

2. White Mortar Aggregates: Natural white sand or ground white stone, only where necessary to achieve selected colors.

F. Aggregate for Grout: ASTM C 404.

G. Colored Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortars.

H. Water: Clean and potable.

2.5 REINFORCING STEEL:

A. General: Provide reinforcing steel complying with requirements of referenced unit masonry standard and this article.

B. Steel Reinforcing Bars: Billet steel complying with ASTM A 615, and Section 03310 - "Concrete".

2.6 JOINT REINFORCEMENT:

A. General: Provide joint reinforcement complying with requirements of referenced unit masonry standards and this article, formed from the following:

1. Galvanized carbon steel wire, coating class as required by referenced unit masonry standard for application indicated, complying with ASTM A 82, hot-dipped galvanized after fabrication to comply with ASTM A 153, class B-2 coating (1.5 ounces per square foot).

B. Description: For multi-wythe masonry, provide welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet in widths approximately 2 inches less than nominal width of walls and partitions, as required for full mortar embedment and mortar coverage of not less than 5/8 inch at exterior sides and not less than 1/2-inch elsewhere; with prefabricated corner and tee units, and complying with requirements indicated below, unless otherwise indicated:

1. Wire Diameter for Side Rods: 0.1483 inch (9 gauge).

2. Wire Diameter for Cross Rods: 0.1483 inch (9 gauge).

3. Type as follows:

a. Truss design with diagonal cross rods spaced not more than 16 inches o.c. and number of side rods as follows:

b. Number of Side Rods for Multi-wythe Masonry: One side rod for each face of masonry units more than 4 inches in nominal width plus one side rod for each wythe of masonry 4 inches or less in nominal width.

C. Manufacturers: Subject to compliance with requirements, provide joint reinforcement by one of the following:

1. Dayton Superior Corporation (formerly Southern Construction Products, Inc.)
2. Dur-O-Wal, Inc.; Div. of Dayton Superior Corporation
3. Heckman Building Products, Inc.
4. Hohmann & Barnard, Inc.
5. Masonry Reinforcing Corp. of America.
6. Southeastern Metals Manufacturing Co.

2.7 TIES AND ANCHORS, GENERAL:

A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standards and of this article.

B. Galvanized Carbon Steel Wire:

1. ASTM A 82, coating class as required by the Standard Building Code and referenced unit masonry standard for application indicated.

2. Wire Diameter: 0.1875 inch.

C. Galvanized Steel Sheet as follows: ASTM A 366 (commercial quality) cold-rolled carbon steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153, Class B2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), for sheet metal ties and anchors exposed to the weather and not completely embedded in mortar and grout.

D. Thickness of Steel Sheet Galvanized After Fabrication: Uncoated thickness of steel sheet hot-dip galvanized after fabrication:

1. 0.0598 inch (16 gage).

E. Steel Plates and Bars: ASTM A 36, hot-dip galvanized to comply with ASTM A 123 or ASTM A 153, Class B3, as applicable to size and form indicated.

F. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Dayton Superior Corporation (formerly Southern Construction Products, Inc.)
2. Dur-O-Wal, Inc.; Div. of Dayton Superior Corporation
3. Heckman Building Products, Inc.
4. Hohmann & Barnard, Inc.
5. Masonry Reinforcing Corp. of America.
6. Southeastern Metals Manufacturing Co.

2.8 RIGID ANCHORS AT LOCATIONS INDICATED OR REQUIRED:

A. Provide straps of form and length indicated, or required (if any), fabricated from metal strips 1-1/2-inches wide by 1/4-inch thick.

2.9 ADJUSTABLE MASONRY VENEER ANCHORS FOR CONNECTING MASONRY TO WOOD OR METAL STUDS AT SINGLE-WYTHE WALLS, AND WHERE THRU-WALL JOINT REINFORCING CANNOT BE USED:

A. General: Provide 2-piece galvanized assemblies where required (if any), allowing vertical or horizontal differential movement between wall and framework parallel to plane of wall, but resisting tension and compression forces perpendicular to it; for attachment over sheathing to metal studs or masonry back-up and with the following structural performance characteristics:

1. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in either tension or compression without deforming over, or developing play in excess of, 0.05-inch.

B. Screw-Attached (to studs) and Expansion Anchor Attached (to masonry back-up) Masonry Veneer Anchors:

1. Units consisting of wire tie section and metal anchor section complying with the following requirements:

a. Wire Tie Shape: Z-shaped pintle (single or double).

b. Wire Tie Length: As required to extend 2-1/2-inches into masonry wythe of veneer face.

2. Anchor Section: 16-gauge sheet metal plate (at single-leg or double-leg pintle), or similar wire eye-configuration (at double-leg pintle), with plate type pre-punched for screw hole(s) at top and outward legs bent to form leg to bridge insulation and abut studs, or masonry; of overall size as required for intended application.

C. Steel Drill Screws for Steel Studs or Masonry: ASTM C 954 except manufactured with hex washer head and neoprene washer, #10 diameter by length required to penetrate steel stud flange by not less than 3-exposed threads, and masonry but not less than 1-inch, and with corrosion protective coating; as recommended by manufacturer for the intended use.

D. Galvanize all components.

2.10 MISCELLANEOUS ANCHORS AT LOCATIONS INDICATED OR AS REQUIRED BY PROJECT CONDITIONS:

A. Unit Type Masonry Inserts in New Concrete: Cast iron or malleable iron inserts of type and size indicated.

B. Dovetail Slots for New Concrete: Furnish dovetail slots, with filler strips, of slot size indicated, or if not indicated, as required by project conditions, fabricated from 0.0336-inch (22-gage) galvanized sheet metal.

C. Anchor Bolts: Steel bolts complying with A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations, as indicated on the Drawings, or if not indicated, as required for the intended use:

1. Headed bolts.

2. Nonheaded bolts, straight.

3. Nonheaded bolts, bent in manner indicated.

2.11 POST-INSTALLED ANCHORS, WHERE INDICATED OR AS REQUIRED:

A. Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing laboratory.

1. Type: Expansion anchors.

2. Material: Zinc-plated carbon steel, hot-dipped galvanized after fabrication, or Zamac, or other non-corrosive or coated material in compliance with requirements and submitted for prior approval.

3. For post-installed anchors in grouted concrete masonry units: Capability to sustain, without failure, a load equal to 6-times loads imposed by masonry.

2.12 EMBEDDED FLASHING MATERIALS:

A. Vinyl Sheet Flashing (typical except below parapet caps and all other tops of walls exposed at the exterior of buildings and other locations on site):

1. Smooth surfaced flexible sheet flashings especially formulated from virgin polyvinyl chloride with plasticizers and other modifiers, to remain flexible and waterproof in concealed masonry applications, black in color and of thickness indicated below:

   a. Thickness: 30-mils.

2. Product/Manufacturer: "Nervastral 300" (smooth surface both sides, not textured, grained, etc.), or pre-approved equivalent submitted at least 10-days prior to original Bid Date and subsequently approved, including mastic, and where required companion surface conditioner product, and all other materials and components required.

3. Application: Use where flashing is fully concealed in masonry, including in part, wall flashing, below sills, at lintels, above grade weeps at base of exterior walls, etc.

4. Adhesive for Flashings: Type recommended by manufacturer of flashing material, for each use indicated.

B. Interlocking Metal Flashing (typical below parapet caps and all other tops of walls exposed at the exterior of buildings and other locations on site):

1. Low-profile concealed through-wall sheet metal flashing, fabricated with ribs at 3-inch intervals along length of material, to provide an integral bond with solid mortar bedding at each side.

2. Height: 3/8-inch.

3. Width: 1-inch less than wall thickness (set in-place 1/2-inch back from each exterior wall face).

4. Material: ASTM A 167, Type 302/304, 2d finish, fully annealed or dead soft temper stainless steel, 0.018-inch thickness.

5. Product/Manufacturer: Provide one of the following, or pre-approved equivalent product, properly submitted (refer to Section 01015 - "Special Conditions") at least 10-days prior to original bid dated and subsequently accepted by addendum or letter by Architect.

   a. "Dovetail Design Flashing"; Cheney Flashing Co.; 1-800-322-2873.

   b. "Three-Way Interlocking Flashing"; Keystone Flashing Co.; 1-800-526-8348.

   c. "Interlocking Mechanically-Keyed Flashing"; Mastercraft Metals, Inc.; 1-888-593-3572.

2.13 MISCELLANEOUS MASONRY ACCESSORIES:

A. Nonmetallic Expansion Joint Strips: Premolded filler strips complying with ASTM D 1056, Type 2 (closed cell), Class A (cellular rubber and rubber-like materials with specific resistance to petroleum base oils), Grade 1 (compression-deflection range of 2-5 psi), compressible up to 35 percent, of width and thickness indicated, formulated from the following material:

1. Flexible Cellular Neoprene.

B. Preformed Control Joint Gaskets:

1. Material as indicated below, designed to fit project conditions, and to maintain lateral stability in masonry wall; size and configuration as indicated, or if not indicated, T-shape (or other special shapes required by project conditions to fit inside masonry, and of depth through joint to allow proper sealant application with only one backer rod.

2. Styrene-Butadiene Rubber Compound: ASTM D 2000, Designation 2AA-805.

C. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Weep Holes, Provide the Following: Cotton sash cord; 3/8-inch outside diameter by length(s) as required to overlap cord 2-inches past adjacent weep hole at bottom of air space at interior wall cavity, extend through exterior wythe(s), and 4-inches on exterior side - until water repellent is applied and excess is trimmed flush with raked mortar joint at flashing.

1. Wet cord prior to embedding in mortar.

E. Cavity Drainage Material: 1-inch- (25-mm-)thick (or other thickness as required by clear wall cavities indicated on the Drawings or as otherwise required by project conditions), free-draining mesh; made from polyethylene strands and shaped to avoid being clogged by mortar droppings. Configuration shall be such that product cannot be dislodged after placement of masonry, and with either random or patterned protrusions or keystone shaped cut-outs so as to allow moisture evacuation to below any accumulated mortar droppings into cavities. Provide in rolls or sheets approximately 11-inches wide.

1. Product/Manufacturer: Provide one of the following, or pre-approved equivalent product, properly submitted (refer to Section 01015 - "Special Conditions") at least 10-days prior to original bid dated and subsequently accepted by addendum or letter by Architect.

a. Mortar Maze; Advanced Building Products, Inc.
b. CavClear Masonry Mat; CavClear.
c. Mortar Net; Mortar Net USA, Ltd.
d. Mortar Stop; Polytite Manufacturing Corp.

2.14 MASONRY CLEANERS:

A. Job-Mixed Detergent Solution: Solution of trisodium phosphate (1/2-cup dry measure) and laundry detergent (1/2-cup dry measure) dissolved in one gallon of water.

2.15 MORTAR AND GROUT MIXES:

A. General:

1. Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

2. Do not use calcium chloride in mortar or grout.

B. Mixing: Combine and thoroughly mix cementitious, water and aggregates in a mechanical batch mixer; comply with referenced ASTM standards for mixing time and water content.

C. Mortar for Unit Masonry:

1. Comply with ASTM C 270, Proportion Specification, for types of mortar required, unless indicated otherwise.

2. Use Type M mortar for masonry below grade and in contact with earth, and where indicated.

3. Use Type S mortar for reinforced masonry and where indicated.

4. Use Type S mortar for exterior, above-grade load-bearing and non-loadbearing walls and parapet walls; for interior load-bearing walls; for interior non-loadbearing partitions, and for other applications where another type is not indicated.

D. Mortar Colors:

1. Standard gray colored mortar at exposed interior and concealed locations.

2. Colored mortar at exposed exterior locations (and any brick at interior locations) shall be as selected by Architect after bidding, within Allowance amount(s).

E. Grout for Unit Masonry:

1. Comply with ASTM C 476 for grout for use in construction of reinforced and nonreinforced unit masonry. Use grout of consistency indicated or if not otherwise indicated, of consistency (fine or coarse) at time of placement which will completely fill all spaces intended to receive grout.

2. Use fine grout in grout spaces less than two inches (2") in horizontal direction, unless otherwise indicated.

3. Use coarse grout in grout spaces two inches (2") or more in least horizontal dimension, unless otherwise indicated.

2.16 WATER REPELLENT:

A. Exterior Water Repellent and Sealer: Provide from a manufacturer and by an applicator complying with experience requirements in "Special Conditions," and as follows:

1. Equivalent to "BSM-40 VOC" as manufactured by Chem-Trete Div.; Degussa Corporation; Mobile, Alabama, with UV sensitive/fugitive dye; One Coat, unless otherwise required to obtain complete coverage.

2. Submit for approval prior to application.

3. Application rate not to exceed product manufacturer's current written recommendations, but 100% coverage is required.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry, if any.

B. Examine rough-in and built-in construction to verify actual locations of other or related work, prior to installation.

C. Do not proceed until any unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL:

A. Comply with referenced unit masonry standards and other requirements indicated, applicable to each type of installation included in Project.

1. Install bought-out manufactured items (i.e.: flashing, special flashing, insulation, etc.), in accordance with manufacturer's current written directions and recommendations, related fire tests/certifications, and reviewed shop drawings.

B. Thickness: Build cavity and composite walls and other masonry construction to the full thickness indicated. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

C. Height: Build walls and other masonry construction to full height indicated, or if not indicated, at least up to bottom of structure or structure bearing height where occurs. Extend fire-rated walls, and all perimeter/surrounding walls as shown on drawings up to bottom of structure or roof deck, as required to seal-off top of walls.

D. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.

E. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.

F. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.

1. Use dry cutting saws to cut concrete masonry units.

G. Wetting Clay Brick: Wet brick made from clay or shale which have ASTM C 67 initial rates of absorption (suction) of much than 30 grams per 30 sq. in. per minute. Use wetting methods which ensure each clay masonry unit being nearly saturated but surface dry when laid.

H. Do not wet concrete masonry units.

I. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.

J. Fill all hollow masonry and air spaces below grade with concrete.

K. Provide solid substrate for all wall flashing.

L. Wet sash cord weeps prior to embedding in mortar, so it will not draw water out of mortar.

3.3 CONSTRUCTION TOLERANCES - REQUIRED FOR ACCEPTANCE:

A. Comply with construction tolerances of referenced unit masonry standards.

B. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises do not exceed 1/4-inches in 10-feet, or 3/8-inches in a story height not to exceed 20-feet, nor 1/2-inches in 40-feet

or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4-inch in any story or 20-feet maximum, or 1/2-inch in 40-feet or more. For vertical alignment of head joints do not exceed plus or minus 1/4-inches in 10-feet, 1/2-inch maximum.

C. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4-inch in any bay or 20-feet maximum, nor 1/2-inch in 40' or more. For top surface of bearing walls do not exceed 1/8-inches between adjacent floor elements in 10' or 1/16" within width of a single unit.

D. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed 1/2-inch in any bay or 20' maximum, nor 3/4" in 40' or more.

E. Variation in Cross Sectional Dimensions: Do not exceed bed joint thickness indicated by more than plus or minus 1/8". Do not exceed head joint thickness indicated by more than plus or minus 1/8".

3.4 LAYING MASONRY WALLS:

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.

B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less that nominal 4-inch horizontal face dimensions at corners or jambs.

1. Exterior Brick and Concrete Masonry Units: Running bond, unless specifically indicated otherwise on Drawings.

2. All interior CMU shall be running bond, unless specifically indicated otherwise on Drawings.

D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

E. Stopping and Resuming Work: In each course, rack back 1/2-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

F. Built-In Work:

1. As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

2. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

3. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.

4. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.5 MORTAR BEDDING AND JOINTING:

A. Lay hollow concrete masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells and cross webs.

2. Bed all webs in mortar in starting course on footings and in all courses of walls, piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.

3. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

B. Cut joints flush for masonry walls to be concealed or to be covered by base, crown moulding, and/or other materials, unless otherwise indicated.

C. Tool all joints in exposed work as follows:

1. Interior: Slightly concave, with a tool of at least 50% but no more than 100% larger than joint width.

2. Exterior: Slightly concave, with a tool of at least 50% but no more than 100% larger than joint width.

3. Cut flush with face of exposed masonry, and taking care not to spread mortar over onto face of masonry units.

D. Maintain joint widths of 3/8 inch, except for minor variations required to maintain bond alignment, or as otherwise required to align with or match adjacent work.

E. Collar Joints: After each coarse is laid, fill vertical longitudinal joint between wythes solidly with mortar, for the following work:

1. Exterior walls, except where clear air space above flashing is indicated.

2. Interior bearing walls.

3.6 STRUCTURAL BONDING OF MULTI-WYTHE MASONRY:

A. Use continuous horizontal joint reinforcement installed in horizontal mortar joints for bond tie between wythes, at 16 inches o.c. vertically (maximum) at running bond and 8 inches o.c. (maximum) at any stacked bond.

B. Corners:

1. Provide interlocking masonry unit bond in each course at corners, unless otherwise shown.

2. Provide continuity with horizontal joint reinforcement at corners using prefabricated “L” units, in addition to masonry bonding.

C. Intersecting and Abutting Walls:

1. Unless vertical expansion or control joints are shown or necessary at juncture, provide same type of bonding specified for structural bonding between wythes and space as follows:

2. Provide individual metal ties to columns and stud walls, at 16 inches o.c. vertically (maximum).

a. Provide additional anchors within 1'-0" of openings and at intervals around perimeter not exceeding 3'-0" o.c.

3. Provide continuity with horizontal joint reinforcement using prefabricated "T" units.

4. Provide continuous dovetail slots, with anchors at 16 inches o.c. maximum vertically and 16 inches o.c., at new concrete back-up walls, columns, etc.

3.7 MASONRY WALL CELL INSULATION:

A. Fill foamed-in-place insulation in cavities as indicated, to completely fill void spaces. Maintain inspection ports to show presence of insulation at extremities of each area. Close ports after complete coverage has been confirmed. Limit fall of insulation to one story in height, but not to exceed 8'-0".

1. Provide foamed-in-place insulation at the following locations:

a. In cells of all hollow CMU indicated in Paragraph 2.3 above, except cells which are required to be filled with concrete or grout.

3.8 CAVITIES/AIR SPACES:

A. Keep cavities/air spaces clean of mortar droppings and other materials during construction. Strike joints facing cavities/air spaces flush.

1. Where not possible and at wood and metal studs, tie exterior wythe to backup with individual metal ties spaced not more than 16 inches o.c. vertically and 16" o.c. horizontally. Stagger alternate courses.

B. Provide weepholes in exterior wythe of new cavity walls, located immediately above ledges and flashing, spaced 32 inches o.c. unless otherwise indicated.

C. Tie exterior wythe to backup and multi-wythe walls with continuous horizontal joint reinforcing at 16 inches o.c. vertically.

D. Install continuous rigid insulation as the work progresses, in compliance with manufacturer's current written recommendations, including in part, adhesives for securing to substrate, and joint fillers, sealers, or other treatments

1. Place small dabs of adhesive, spaced approximately 12 inches (300 mm) o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.

2. Fill cracks and open gaps in insulation with crack sealer and cover with tape after cured; both acceptable to sealer and insulation manufacturer.

3.9 HORIZONTAL JOINT REINFORCEMENT:

A. General: Provide continuous horizontal joint reinforcement as indicated and as required by Code, but not more than 16 inches o.c. vertically at running bond and 8 inches o.c. vertically at any stacked bond. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2-inch elsewhere. Lap reinforcing a minimum of 6 inches.

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

D. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcement placed in 2 horizontal joints approximately 8" apart, immediately above the lintel and immediately below the sill. Extend reinforcement a minimum of 2-0" beyond jambs of the opening except at control joints.

3.10 ANCHORING MASONRY WORK:

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.

2. Anchor masonry to structural members with flexible anchors which allow 4-way movement embedded in masonry joints and attached to structure.

3. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally.

B. Anchor single-wythe masonry veneer to studs with masonry veneer anchors to comply with the following requirements:

1. Fasten each anchor section through sheathing to studs with 2 metal fasteners of type indicated.

2. Embed tie section in masonry joints. Provide not less than 1-inch air space between back of masonry veneer wythe and face of sheathing.

3. Locate anchor section relative to course in which tie section is embedded to allow maximum vertical differential movement of tie up and down.

4. Space anchors as indicated but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally with not less than one anchor for each 2 sq. ft. of wall area. Install additional anchors within 1'-0" of openings and at intervals around perimeter not exceeding 3'-0" o.c.

3.11 CONTROL AND EXPANSION JOINTS:

A. General: Install control and expansion joints in unit masonry where existing in floor slabs, walls, and roof, and as otherwise indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

B. Form control joints in masonry as follows: Install preformed control joint gaskets designed to fit wall construction. Fill recesses with backer rod and flexible sealant, as specified in Section 07900 - "Joint Sealers." Use firestop materials at fire-rated walls, as specified in Section 07270 - "Firestopping."

C. Provide control joints at locations indicated or as approved by Architect, and not to exceed the following at continuous straight runs:

1. Exterior walls: 30'-0" o.c. maximum.

2. Interior walls: 40'-0" o.c. maximum.

3.12 LINTELS:

A. Install hot-dipped galvanized steel lintels where exterior steel lintels are indicated.

B. Provide masonry or precast lintels where shown and wherever openings of more than 1'-0" for brick size units are shown without structural steel or other supporting lintels. Temporarily support formed-in-place lintels, including steel lintels, for at least 7-days after masonry above has been completed; Supports shall be from cured concrete or masonry construction (at least 8-days old) or other surface accepted in writing by Architect, prior to installing supports.

1. For hollow concrete masonry unit walls, use specially formed bond beam units with reinforcement bars placed as indicated and filled with course grout.

C. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

1. Unless indicated otherwise, fill all jamb cells with concrete, from supporting structure below, up to bottom of lintel bearing, 8-inches wide by CMU wall thickness - minimum.

3.13 FLASHING/WEEP HOLES:

A. General: Install embedded concealed flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in exterior walls, and where indicated.

B. Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape, as recommended by flashing manufacturer before covering with mortar.

1. Where indicated or required by manufacturer, provide continuous seal at top edge, using their recommended materials.

C. Install flashings as follows:

1. At lintels and shelf angles, extend flashing a minimum of 4 inches into masonry at exterior end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4 inches on back-up wall (at stud walls), and seal top edge with product specified; except turned up a minimum of 8 inches at back-up masonry walls and extended through back-up wall to within 1/2-inch of its interior face.

2. At heads and sills, extend flashing as specified above unless otherwise indicated but turn up ends not less than 2 inches to form a pan.

3. Cut off flashing 1/2-inch from exterior face of wall and tool joint in accordance with flashing manufacturer's requirements.

4. Comply with manufacturer's current written instructions and recommendations.

D. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 7 Section "Joint Sealants" for application indicated.

E. Install weep holes, in the head joints in exterior wythes of the first course of masonry immediately above embedded flashings and as follows:

1. Form weep holes with product specified in Part 2 of this Section.

2. Space weep holes 32 inches o.c., except 24 inches o.c. at heads and sills of masonry openings, and centered on openings, unless specifically indicated otherwise on the Drawings.

3. Wet cotton sash cord prior to embedding in mortar.

F. Place cavity drainage material immediately above flashing in cavities.

3.14 INSTALLATION OF REINFORCED UNIT MASONRY:

A. General: Install reinforced unit masonry to comply with requirements of referenced unit masonry standards, and as indicated on the Drawings.

3.15 REPAIRING, POINTING, AND CLEANING:

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

1. Clean glass, unit masonry and other surfaces as work progresses. Remove mortar fins and smears immediately, using a clean, wet sponge or a scrub brush with stiff fiber bristles. Do not use harsh cleaners, acids, abrasives, steel wool, or wire brushes when removing mortar or cleaning glass, unit masonry or other surfaces.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Test cleaning methods on sample wall panel; leave 1/2- panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3. Protect adjacent nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

4. Saturate wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

5. Clean brick by means of bucket and brush hand-cleaning method described in BIA "Technical Note No. 20 Revised", to clean brick masonry made of clay or shale, except use detergent as the masonry cleaner.

6. Clean concrete masonry by means of cleaning method indicated in NCMA TEK 45 applicable to type of stain present on exposed surfaces.

a. Comply with masonry manufacturer's instructions.

3.16 WATER REPELLENTS:

A. Apply water repellents to all exterior masonry and architectural precast concrete after thorough cleaning and rinsing, prior to any backfill or any other concealment.

B. Install in strict accordance with manufacturer's current written instructions and recommendations.

3.17 PROTECTIONS:

A. Trim excess sash cord flush with cured mortar joint at exterior side of walls.

B. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF UNIT MASONRY

SECTION 09220

PORTLAND CEMENT PLASTER/STUCCO (EXTERIOR)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

B. Related work specified elsewhere includes:

1. Section 06100 - "Rough Carpentry" (felt barrier over all exterior wall sheathing)
2. Section 07260 - "Building Wrap" (over felt barrier and all exterior wall substrates)
3. Section 07600 - "Flashing and Sheet Metal"
4. Section 07900 - "Joint Sealers"
5. Section 09250 - "Gypsum Drywall" (gypsum sheathing)
6. Section 09900 - "Painting"

1.2 DESCRIPTION OF WORK:

A. Extent of portland cement plaster/stucco work is shown on the drawings and in schedules.

B. The types of portland cement plastering work required include:

1. New exterior portland cement plaster/stucco, factory mixed; 3/4-inch thickness, unless greater thickness is indicated on the Drawings.

2. Metal furring and lathing.

C. Special flush-mounted access doors with insert for field-applied plaster, where access doors occur in plaster.

D. PVC, with perforated weeps at exposed bottom edges.

E. Portland cement plaster/stucco is to be field painted, under the work of Division 9 Section "Painting".

1.3 QUALITY ASSURANCE:

A. Fire-Resistance Ratings: Where plaster systems with fire-resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.

B. Provide plaster for fire-resistance rated systems which has same aggregate as specified for similar non-rated work, unless specified aggregate has not been tested by accepted fire testing laboratories.

C. Single Source Responsibility: Obtain materials for portland cement plaster from a single source for each type of material required to ensure consistency in quality of performance and appearance.

D. Installer Qualifications: Refer to Division 1 Section "Special Conditions"; Minimum of 5 verifiable years in the installation of and including at least 10 verifiable projects within the past 5

years, of Portland cement plaster/stucco systems similar to the scope, extent and work of this project.

1.4 SUBMITTALS:

A. Product Data: Submit manufacturer's product specifications and installation instructions for each product, including data showing compliance with the requirements.

B. Material Certificates: Submit producer's certificate for each kind of plaster aggregate indicated evidencing that materials comply with requirements.

C. Installer qualification data.

1.5 DELIVER, STORAGE AND HANDLING:

A. Deliver cementitious materials in original packages, containers or bundles bearing brand name and identification of manufacturer.

B. Store materials inside, under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes.

C. Refer to Division 1 Sections "Summary of Work" and "Special Conditions," for additional information and requirements regarding stored materials.

1.6 PROJECT CONDITIONS:

A. Protect contiguous work from moisture deterioration and soiling which might result from plastering operations. Provide temporary coverings and whatever other provisions may be necessary to minimize harmful spattering of plaster on other work.

B. Cold Weather Requirements: Provide heat and protection (temporary or permanent) as required to protect each coat of plaster from freezing for a period of not less than 24 hours after application. Distribute heat uniformly to prevent concentration of heat on plaster near heat sources; provide deflection or protective screens.

1. Exterior Plaster Work: Do not apply plaster when ambient temperature is less than 32^{O}F (0^{O}C), and when 40^{O}F (4^{O}C) or less and falling.

2. Enclosures at Exterior Plaster Work: Maintain not less than 40^{O}F (4^{O}F) temperature in areas to be plastered for a period of not less than 48-hours prior to application, during application, and thereafter.

C. Warm Weather Requirements: Protect plaster against uneven and excessive evaporation and from strong flows of dry air, both natural and artificial. Apply and cure plaster as required by climatic and job conditions to prevent dry-out during cur period. Provide suitable coverings, moist curing, barriers to deflect sunlight and wind, or combinations of these, as required.

D. Ventilation Requirements: Provide natural or mechanical means of ventilation to properly dry spaces after portland cement plaster has been cured.

PART 2 - PRODUCTS

2.1 MANUFACTURER:

A. Subject to compliance with requirements, provide products of one of the following:

1. STO
2. Acrocrete
3. Approved substitution under division 013300.

2.2 LATH:

A. Rib Lath: Self-furring, felt-backed, galvanized metal rib lath with rib depth of not over 1/8" at soffits, and 3/8" at walls and other locations, and as follows:

1. Weight: 3.4 lbs. sq. yd.

2. Product/Manufacturer: "USG 4-Mesh Z-Riblath" as manufactured by United States Gypsum Co., or approved equivalent.

B. Lath Attachment Devices: Devices of material and type required by referenced standards and recommended by lath manufacturer for secure attachment of lath to framing members and of lath to lath.

2.3 PORTLAND CEMENT PLASTER MATERIALS:

A. Base Coat Cements: Type as indicated below:

1. Portland cement, ASTM C 150, type as follows:

a. Interior: Type I or III.
b. Exterior: Type II.

B. Factory-Prepared Finish Coat: Manufacturer's standard packaged blend of portland cement, ASTM C 150, Type I or III; hydrated lime, Type S, ASTM C 206 or ASTM C 207; aggregate, ASTM C 897; and compatible with base coat and finish texture indicated; in white color.

C. Lime: Special hydrated lime for finishing purposes, ASTM C 206, Type S, or special hydrated lime for masonry purposes, ASTM C 207, Type S.

D. Sand Aggregate for Base Coats: ASTM C 897.

E. Fiber for Base Coat: Alkaline-resistant glass fibers, 1/2 inch long, free of contaminates, manufactured for use in portland cement plaster.

F. Water for Mixing and Finishing Plaster: Drinkable, free of substances capable of affecting plaster set or of damaging plaster, lath or accessories.

2.4 MISCELLANEOUS MATERIALS:

A. Bonding Agent: ASTM C 932.

B. Acid Etch Solution: Muriatic acid (10% solution of commercial hydrochloric acid) mixed one part to not less than 6 nor more than 10 parts of water.

C. Line Wire: 18-gage soft annealed steel wire.

2.5 PLASTER ACCESSORIES:

A. General: Comply with material provisions of ANSI A42.3; coordinate depth of accessories with thicknesses and number of coats required.

B. PVC Reinforcement: PVC specially formed to reinforce external corners of portland cement plaster on exterior exposures while allowing full plaster encasement.

C. PVC Corner Beads: Small nose corner beads fabricated from PVC, with expanded flanges of expanded large mesh diamond lath to allow full encasement by plaster.

D. Casing Beads: Square-edged style, with expanded flanges and removable protective tape, of the following material:

1. Material: PVC.

E. Control Joints: Prefabricated, of material and type required or indicated, selected from below:

1. Material: PVC.

2. One-Piece Type: Folded pair of non-perforated screeds in M-shaped configuration, with expanded flanges.

3. Break lath and supporting/suspended channels behind building expansion and control joints only.

F. Foundation Sill (Weep) Screed: Manufacturer's standard profile designed for use at sill plate line to form plaster stop and prevent plaster from contacting damp earth; fabricated from PVC in sizes and depths indicated, or if not indicated, match thickness of stucco. Locate the foundation weep screed minimum 4 inches (10 cm) above earth grade, 2 inches (51 mm) above finished grade.

G. Reveal Screed: 1-inch wide "F" reveal molding with expanded flange at plaster face. Prefinished extruded aluminum equal to AMICO, FRY, Gordan or MM Systems.

1. Provide vented style at exterior soffits and ceilings, similar to Fry Reglet No. 1267 unless stated or otherwise indicated.

H. Sealants: As specified in Division 7 Section "Joint Sealers."

2.6 PORTLAND CEMENT PLASTER MIXES AND COMPOSITIONS:

A. General: Comply with ASTM C 926 for base and finish coat mixes as applicable to plaster bases, materials and other requirements indicated.

B. Base Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume per sum of cementitious materials for aggregates to comply with the following requirements for each method of application and plaster base indicated. Adjust mix proportions below within limits specified to attain workability.

1. Three-Coat Work Over Metal Lath: Base coats as indicated below:

a. Scratch Coat: 1-part portland cement, 3/4 to 1-1/2 parts lime, 2-1/2 to 4-parts aggregate.

b. Brown Coat: 1 part portland cement, 3/4 to 1-1/2 parts lime, 3 to 5 parts aggregate.

2. Three-Coat Work Over Concrete Unit Masonry (and lath): Base coats as indicated below:

a. Scratch Coat: 1 part portland cement, 0-3/4 parts lime, 2-1/2 to 4 parts sand.
b. Brown Coat: 1 part portland cement, 0-3/4 parts lime, 3 to 5 parts sand.

3. Fiber Content: Add fiber to mixes above to comply with fiber manufacturer's direction but not to exceed 2 lbs. per cu. ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability.

C. Factory-Prepared Finish Coats: Add water only; comply with referenced standards and finish coat manufacturer's written directions.

2.7 MIXING:

A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standards and with written recommendations of plaster manufacturer.

2.8 RECESSED FLUSH-MOUNTED ACCESS DOORS/PANELS (if any):

A. Provide manufacturer's standard galvanized (zinc coated) construction, with continuous stainless steel hinge at one side, and factory applied baked enamel primer.

B. Size: As indicated on the Drawings.

C. Product/Manufacturer: Equivalent to Model CP, as manufactured by J.L. Industries.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL:

A. Comply with manufacturer's current written instructions and referenced standards for installation of each product and component intended for use in the portland cement plaster/stucco system.

1. The Contractor and Installer shall verify compatibility of each product and component with other items included in the system.

2. Do not install products and components within the system which are not compatible with others, without proper isolation, protection, etc.

a. If proper isolation, protection, etc., appears unachievable, notify Architect and the product(s) manufacturer for resolution, prior to proceeding with the work.

B. Examine substrates and supports, with the General Contractor present, for compliance with requirements indicated, installation tolerances, and other conditions that effect proper installation of the portland cement plaster/stucco system.

1. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF LATHING AND FURRING - GENERAL:

A. Portland Cement Plaster Lathing and Furring Installation Standard: Comply with ANSI A42.3.

B. Isolation: Isolate perimeter of lathing and metal support system from structural abutments. Install slip or cushion type joints to absorb deflections but maintain lateral support.

1. Frame both sides of building control and expansion joints independently, and do not bridge building joints with furring and lathing or accessories.

3.3 METAL LATHING:

A. Install in accordance with lath manufacturer's current written instructions. Coordinate with and provide for installation of control joints, screeds, and other plastering accessories.

3.4 PREPARATIONS FOR PLASTERING:

A. Clean plaster bases, and substrates for direct application of portland cement plaster, removing loose material and substances which might impair the work.

B. Etch concrete and masonry surfaces indicated for direct portland cement plaster application. Scrub with acid etch solution on previously-wetted surface, and rinse thoroughly with clean water. Repeat the application if necessary to obtain adequate suction and mechanical bond of plaster (where bonding agent or additive is not used).

C. Apply bonding agent on concrete and masonry surfaces indicated for direct portland cement plaster application; comply with manufacturer's instructions for application.

D. Install temporary grounds and screeds as necessary to ensure accurate rodding of plaster to true surfaces; coordinate with scratch-coat work.

E. Flashings: Refer to Division 3 Section "Concrete" and Division 4 Section "Unit Masonry" for flexible flashing materials and installation as indicated under exterior portland cement plastering.

F. Surface Conditioning: Immediately before plastering, dampen the surfaces of concrete and masonry which are indicated for direct application of plaster, except where a bonding agent has been applied. Experiment with moisture application to determine degree of saturation which will result in optimum suction for plastering.

3.6 INSTALLATION OF PLASTERING ACCESSORIES:

A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated, unless otherwise indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and alignment during plastering.

B. Accessories for Portland Cement Plaster: Install accessories of type indicated at following locations:

1. External Corners: Install corner beads at external corners.

2. Casing Beads: Install at all terminations of plaster work, unless otherwise indicted.

3. Control Joints: Install control joints at locations indicated, or if not indicated, at locations complying with the following criteria and approved by Architect.

a. Where an expansion or control joint occurs in surface of construction directly behind plaster membrane.

b. Where, in plastered surfaces of ceilings and walls, distances between, and areas within, control joints exceeds, respectively, the following measurements:

(1) 10' in either direction and 100 square feet.

c. Where portland cement plaster panel sizes or dimensions change; extend joints full width or height of plaster membrane.

3.7 PLASTER APPLICATION:

A. Portland Cement Application Standard: Apply portland cement plaster materials, compositions, and mixes to comply with ASTM C 926.

B. Sequence plaster application with the installation and protection of other work, so that neither will be damaged by the installation of the other.

C. Do not use materials which are frozen, caked or lumpy or which are dirty or contaminated by foreign materials.

D. Do not use excessive water in the mixing and application of plaster materials.

E. Tolerances: Do not deviate more than 1/8" in 10'-0" from a true plane in finished plaster surfaces, as measured by a 10'-0" straightedge placed at any location on surface.

F. Plaster flush and metal frames and other built-in metal items or accessories which act as a plaster ground, unless otherwise indicated. Where interior plaster is not terminated at metal by casing beads, cut basecoat free from metal before plaster sets and groove finish coat at the junctures with metal.

G. Corners: make internal corners and angles square; finish external corners flush with corner beads on interior work, square and true with plaster faces on exterior work.

H. Number of Coats: Apply portland cement plaster, of composition indicated, to comply with the following requirements:

1. Use three-coat work over the following plaster bases:

a. Metal Lath.
b. Concrete masonry.
c. Concrete, cast-in-place or precast when surface condition complies with ASTM C 926 for plaster bonded direct to solid base.

I. Finish Coats: Apply finish coats to comply with the following requirements:

1. Float Finish: Apply finish coat to a minimum thickness of 1/8" to completely cover base coat, uniformly floated to a true even plane with a fine-textured finish, unless directed otherwise by Architect.

2. Moist cure plaster base and finish coats to comply with ASTM C 926, including recommendations for time between coats and curing in "Annex A2 Design Considerations."

3.8 CUTTING AND PATCHING:

A. Cut, patch, repair and point-up portland cement plaster as necessary to accommodate other work. Repair cracks and indented surfaces. Point-up finish plaster surfaces around items which are built

into or penetrate plaster surfaces. Repair or replace the work to eliminate blisters, buckles, check cracking, dry outs, efflorescence, excessive pinholes, and similar imperfections. Repair or replace the work as necessary to comply with required visual effects.

3.9 CLEANING AND PROTECTION:

A. Remove temporary covering and whatever other provisions were made to minimize spattering of plaster on other work. Promptly remove plaster from door frames, windows and other surfaces which are not be plastered. Repair surfaces which have been stained, marred or otherwise damaged during the plastering work. When plastering work is completed, remove unused materials, containers, and equipment and plaster debris.

B. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures plaster work being without damage or deterioration at time of substantial completion.

C. Refer to Division 9 Section “Painting” for required paint finish, not the work of this Section 09220.

END OF PORTLAND CEMENT PLASTER/STUCCO (EXTERIOR)

SECTION 09511

ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related work specified elsewhere includes:

1. Section 07900 - “Joint Sealers”
2. Division 15 - (Mechanical items, etc., mounted in ceilings).
3. Division 16 - (Electrical items, light fixtures, etc., mounted in ceilings).

1.2 SUMMARY:

A. This Section includes acoustical and non-acoustical panel ceilings installed with exposed grid suspension systems - where any new lay-in ceilings are indicated.

1. Type 1 (ACT-1): Angled tegular acoustical panel system in Standard Finish Grid (Acoustical panels), 2x4

1.3 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Product data for each type of product specified.
2. Samples for verification purposes of each type of exposed finish required, prepared on samples of size indicated below and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected.

a. 6-inch-square samples of each acoustical panel type, pattern, and color.
b. Set of 12-inch-long samples of exposed suspension system members, including grid, moldings, trim, etc., for each color and system type required.

1.4 QUALITY ASSURANCE:

A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to those indicated for Project, and which is acceptable to manufacturer of acoustical products herein, as indicated by written statement by their manufacturer(s).

1. Refer to Section 01015 - “Special Conditions”, for additional experience requirements and information.

B. Fire-Performance Characteristics: Provide acoustical ceilings that are identical to those tested for the following fire-performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.

    a. Flame Spread: 25 or less.
    b. Smoke Developed: 50 or less.

C. Acoustical Performance Characteristics: Provide acoustical ceiling systems which have been tested by UL or other acceptable independent testing organization, to certify compliance with STC and CAC minimum requirements indicated herein.

D. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, and wall and partition systems.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS:

A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.7 EXTRA MATERIAL:

A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.

1. Acoustical and Non-Acoustical Ceiling Units: Furnish quantity of full-size units equal to 2.0 percent of amount installed, in whole unused cartons.

PART 2 - PRODUCTS

2.1 ACOUSTICAL CEILING UNITS, GENERAL:

A. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated that comply with ASTM E 1264 classifications as designated by reference to types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.

1. Mounting Method for Measuring NRC: Type E-400 (plenum mounting in which face of test specimen is 15-3/4 inches [400 mm] away from the test surface) per ASTM E 795.

B. Colors and Patterns: Provide products to match appearance characteristics indicated under each product type, or if not indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for ceiling panels and exposed metal suspension systems of quality indicated herein.

2.2 ACOUSTICAL UNITS:

A. Type 1 (ACT-1): Manufacturer's standard lay-in non-directional random pattern, lightly fissured, heavily perforated panels, and as follows, unless indicated otherwise:

1. Manufacturer/Product: Armstrong #1733
2. Size: 24 inches x 48 inches x 5/8 inch.
3. Edge: Angled Tegular.
4. NRC Range: .55.
5. CAC Range: 35.
7. Color: White
8. Light Reflectance: No less than 0.85
9. Grid: Standard hot-dipped galvanized steel in white color to match ceiling tile; 15/16-inch exposed tee grid."

2.3 METAL SUSPENSION SYSTEMS, GENERAL:

A. Standard for Metal Suspension Systems: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated, unless otherwise required.

1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.

a. Product/Manufacturer: Galvanized, aluminum capped grid.

1) "Environmental ZXLA Grid System," as manufactured by USG Interiors or Donn.
2) "Prelude Plus" Environmental Tee System, as manufactured by Armstrong World Industries, Inc.
3) "Protectone" Series, as manufactured by CertainTeed.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched.

1. Gauge: Provide wire sized to that stress at 3 times hanger design load (ASTM C 635, Table 1, Direct-Hung), will be less than yield stress of wire, but provide not less than 0.106-inch diameter (12 gauge).

E. Hanger Rods - (as required): Mild steel, zinc coated, or protected with rust-inhibitive paint.

F. Angle Hangers - (as required): Angles with legs not less than 7/8 inch wide, formed with 0.0365-inch-thick galvanized steel sheet complying with ASTM A 446, Coating Designation G90, with bolted connections and 5/16-inch-diameter bolts.

G. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit type of edge detail and suspension system indicated.

H. Subject to compliance with requirements, provide suspension systems of one of the following:

1. Manufacturers of Steel Exposed Suspension Systems:

a. Same as ceiling panel unit manufacturer.
b. Armstrong World Industries, Inc.
c. CertainTeed.
d. Chicago Metallic Corporation.
e. Donn Corporation.

2. Manufacturers of Moldings and Trim:

a. Construction Specialties.
b. Fry Reglet Corporation.
c. Gordon, Inc.
d. MM Systems.
e. Technical Ceiling Systems, Inc.
f. Same as Suspension system manufacturer.

2.4 NON-FIRE-RESISTANCE-RATED DIRECT-HUNG SUSPENSION SYSTEMS:

A. Wide-Face Capped Double-Web Steel Suspension System: Main and cross-runners roll-formed from prepainted or electrolytic zinc-coated cold-rolled steel sheet, with prefinished 15/16-inch-wide metal caps on flanges; other characteristics as follows:

1. Structural Classification: Intermediate-Duty System.
2. End Condition of Cross-Runners: Override (stepped) or butt-edge type, as standard with manufacturer.
3. Cap Material and Finish:

a. Steel sheet, painted (typical).
b. Aluminum sheet with painted finish, (at "Environmental Grid Systems").

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors, or supports, whose installation is specified in other sections.

1. Furnish galvanized inserts and similar devices as required for wood structure (if required), to other trades for installation well in advance of time needed for coordination of other work.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

3.3 INSTALLATION:

A. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's current written instructions and CISCA "Ceiling Systems Handbook."

1. Standard for Installation of Ceiling Suspension Systems: Comply with ASTM C 636.

B. Arrange acoustical units and orient directionally patterned units, (if any) in a manner shown by reflected ceiling plans.

1. Install panels with pattern running in one direction, as indicated, or if not indicated, as requested from and directed by Architect.

C. Suspend ceiling hangers from building structural members and as follows, with system leveling tolerance of 1/8 inch in 12'-0":

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
4. Secure, angle, and rod hangers, (if any) to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices that are secure and appropriate for structure to which hangers are attached as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
5. Space hangers not more than 4'-0" o.c. along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.

    a. Provide additional hangers as necessary, so that one hanger occurs on each side of lay-in and surface-mounted light fixtures, and at other grid supported equipment, devices, etc.

6. Install "high humidity finish" systems at all areas indicated to receive lay-in vinyl-faced gypsum "non-acoustical" ceiling panels.

D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical units.

1. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.

3.4 CLEANING:

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.5 EXTRA MATERIALS:

A. Deliver extra materials stock as indicated above, to Owner.

END OF ACOUSTICAL PANEL CEILINGS

SECTION 09680

CARPET

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the contract including General and Supplementary conditions and Division 1 Specifications sections, apply to work of this section.

B. Rubber base to be provided under the work of this Section 09680 for use with carpet, where scheduled, shall be same as specified in Section 09650 – "Resilient Flooring."

1.2 DESCRIPTION OF WORK:

A. The extent of each type of carpeting is indicated on the drawings, finish schedule, and by specifications and is defined to include carpet, and accessories.

B. Each type of required carpet and carpet tile is specified on the Drawings.

C. The work of this Section shall include cleaning and preparation of substrates to comply with current written instructions and recommendations of carpet manufacturer and warranty requirements.

1.3 QUALITY ASSURANCE:

A. Installer: Firm with not less than five (5) verifiable years of carpeting experience, similar to work of this section.

1. All installation shall be performed by or under direct full time supervision of the Installer's foreman or superintendent.
2. Refer to Section 01015 – "Special Conditions" for additional information and minimum experience requirements.

B. Manufacturer: Firm (Carpet Mill) with not less than five (5) years of production experience with carpet similar to types specified in this section, and whose published product literature clearly indicates compliance of products with requirements of this section.

C. General Standard: "Carpet Specifier's Handbook" by the Carpet and Rug Institute; comply with recommendations which can be reasonably applied to types of carpeting work required.

D. Maintenance Materials: Deliver specified overrun and usable scraps of carpet to Owner's designated storage space, properly packaged (paper wrapped) and identified.

E. Flame/Smoke Resistance Standards: Carpet must comply with the following minimum test standards:

1. Floor Radiant Panel Test: ASTM E 648; Class I; FRPT Rating 0.45 watts/sq. cm. or greater.
2. Smoke Density Test: ASTM E 662; Smoke developed: 450 or less.

F. Flooring/Walkway Products: Products and installation, surfaces' co-efficient of friction (slip-resistance), etc., under the work of this Section shall be in compliance with the more stringent of applicable provisions of the following; And revisions and amendments thereto:

1. Americans With Disabilities Act of 1990 (ADA) "Accessibility Guidelines" (ADA-AG).

2. "2010 ADA Standards for Accessible Design", Published in the Federal Register September 15, 2010.
3. American National Standards Institute (ANSI), ANSI A 117.1, 2003.
4. "Uniform Federal Accessibility Standards" (UFAS);
5. International Building Code, either the latest edition or latest adopted edition of the locality as applicable at the project locale.
6. Where this requires any substitution of products specified herein, advise Architect in writing prior to Bid Date, for necessary approvals.

1.4 APPROVAL OF PRODUCT SUBSTITUTIONS:

A. Submit 18" x 18" samples and complete product data to Architect a minimum of ten (10) days prior to original bid date, and subsequently accepted in writing or by addendum. Samples being submitted shall meet all specifications for the products as indicated on the Drawings, including pattern, color, yarn type, construction, texture, appearance, etc., as judged solely by the Architect.

1. Refer to Section 01015 – "Special Conditions" for additional information and requirements regarding submittals and substitutions.
2. Carpet and/or carpet tile specified is available through numerous suppliers, and approval of substitutions is not anticipated.

1.5 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product Data: For each type of carpet material and installation accessory required. Submit written data on physical characteristics, durability, resistance to fading, and flame resistance characteristics.

C. Shop Drawings: Show layout and seaming diagrams. Indicate pile or pattern direction and locations and types of edge strips. Indicate columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet. Show installation details at special conditions.

D. Samples For Verification Purposes: Manufacturer's standard size, showing full range of color, texture, and pattern variations expected. Prepare samples from same material to be used for the Work. Submit the following:

1. 12-inch square samples of each type of carpet.
2. 12-inch long samples of each type of exposed edge stripping, rubber base, and each type accessory intended for use.

E. Sample Warranties for each product.

1.6 WARRANTY:

A. Provide special joint and severable project warranty, signed by the Contractor, Installer and Manufacturer (Carpet Mill), agreeing to repair or replace defective materials and workmanship of carpeting work during a 1 year warranty period following project Substantial Completion. Attach copies of product warranties.

1. Provide manufacturers standard commercial warranties on all carpet and/or carpet tile;. Lifetime warranties where available, or where not available at least manufacturer's standard 10-year commercial carpet, delamination, edge ravel and wear warranties.

B. Warranties under this Section 09680 are in addition to and shall run concurrently with any other warranties required by this project's Contract Documents, and shall not serve as any limitations of the rights of the Owner within the provisions of the Contract Documents or otherwise.

1.7 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to project site in original factory wrappings and containers, labeled with identification of manufacturer, brand name, and lot number.

B. Store materials in original undamaged packages and containers, inside well-ventilated area protected from weather, moisture, soilage, extreme temperatures, and humidity. Lay flat, blocked off ground. Maintain minimum temperature of 68 deg F (20 deg C) at least three days prior to and during installation in area where materials are stored.

C. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements for stored materials.

1.8 PROJECT CONDITIONS:

A. Substrate Moisture Conditions: No condensation within 48 hours on underside of 4-foot by 4-foot polyethylene sheet, fully taped at perimeter to substrate.

B. Substrate Conditions: pH of 9 or less when substrate wetted with potable water and pHydrion paper applied.

C. Number of tests as required by carpet manufacturer and for warranty, but no less than one of each test above per 1,000 square feet or fraction thereof of floor area to be carpeted, with at least one test per room.

D. Do not begin preparation or leveling of substrate or install carpet until substrate conditions comply with requirements indicated, and as otherwise required by carpet manufacturer and for warranty.

PART 2 - PRODUCTS

2.1 CARPET:

A. Manufacturer: Shaw Contract Group
Collection: Diffuse and Disperse
Color: to be determined

B. Provide all carpet with anti-soil, anti-microbial and anti-static treatments.

C. Maintenance Stock: Deliver 5% of each type and color of carpet tile, increased as necessary so as to provide stock in whole cartons of each tile, to Owner's designated storage area.

2.2 CARPET ACCESSORIES:

A. Carpet Edge Guard, Non-metallic: Extruded or molded heavy duty vinyl or rubber carpet edge guard of size and profile indicated. Colors selected by Architect from among standard colors available within the industry (any manufacturer).

1. Minimum 2-inch wide anchorage flange.

B. Installation Adhesive (releasable adhesive): As indicated on attached Drawings, or if not indicated, water-resistant type as recommended by carpet manufacturer, and which complies with flammability requirements for installed carpet. Adhesive shall be 100% non-toxic.

C. Seaming Cement: Special seaming sealer is to be used to seal each seam of the carpeting together to form properly aligned secure seams, and to prevent pile loss at seams. Seam sealer manufactured and/or recommended by the carpet manufacturer is to be used.

1. Provide special seaming tape as required per manufacturer's instructions.

D. Miscellaneous Materials: As recommended by manufacturer of carpet and other carpeting products; and selected by Installer to meet project circumstances and requirements.

E. Cementitious Topping: ARDEX K-15, and ARDEX P-51 Primer, or ARDEX Feather Edge System, as manufactured by Ardex, Inc.; Corapolis, PA. (Phone: 412-264-4240), or pre-approved equivalent.

2.3 EXTRA STOCK:

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

1. Carpet Tile Flooring: Furnish not less than 5% for each type, color, pattern and size installed, in whole unused boxes/cartons.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS:

A. Installer must examine substrates for moisture content and other conditions under which carpeting is to be installed, including the temperature of the area that the carpet is to be installed in, and notify Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

B. Sequence carpeting with other work so far as to minimize the possibility of damage and soiling of carpet during remainder of construction period.

C. Rope off areas where floor covering is being installed to restrict from pedestrian traffic and to prevent heavy items from being moved across or stored on areas where floor covering is being installed or has been installed. Clearly mark with signs (i.e.: police crime ribbon, "Keep Out," etc.).

D. If heavy machinery, equipment, or dollies loaded with materials are to be rolled across where floor covering is installed, 1/2-inch plywood must be used to form a road or path to roll or move items across floor covering, so as not to cause delamination or wrinkles in floor covering.

E. Install cementitious topping on cured primer, both in accordance with manufacturer's written recommendations, at the edges of other floor surfaces adjacent to carpet, at least 18 inches wide from "zero" feathered edge sloped up to adjacent flooring material to raise top of installed carpet 1/8-inch above other flooring surface.

3.2 INSTALLATION:

A. All Areas - Direct Glue Down Installation:

1. Installation is to be special direct glue down for all areas (or "peel-and-stick" if indicated for any carpet tile).

a. Comply with manufacturers' current written instructions and recommendations for seam locations and directions of carpet; maintain uniformity of direction and lay of pile.

b. Center seams under doors, with doors in closed position. Do not place seams in traffic direction at doorways.

c. Do not bridge building expansion joints with continuous carpet.

2. Extend carpet under open-bottomed obstructions and under removable flanges and furnishings, and into alcoves and closets of each space.

3. Provide cutouts where required and seal edges. Also, bind cut edges which are not concealed by protective edge guards or overlapping flanges.

4. Install carpet edge guard where edge of carpet is exposed. Securely anchor guards to substrate.

5. Fit sections of carpet into each space prior to application of adhesive. Trim edges and butt cuts with seaming cement, and use special seaming tape as recommended by carpet manufacturer and/or sewing seams, at all seams, so as to provide sufficient strength for stretching and continued stresses during life of carpet.

6. Apply adhesive uniformly to substrate in accordance with manufacturers' instructions. Butt carpet edges tightly together to form seams without gaps. Roll lightly to eliminate air pockets and ensure uniform bond. Remove adhesive promptly from face of carpet and any adjacent surfaces.

7. Restrict from traffic for at least twenty-four (24) hours after installation.

3.3 CLEANING AND PROTECTION:

A. Remove debris daily, after sorting pieces to be saved from scraps to be disposed of, and legally dispose of off site.

B. Remove any excess or exposed adhesive from carpet surface with manufacturer's recommended cleaning agent.

C. Remove soil and spots and replace carpet where cannot be removed.

D. Remove protruding face yarn, where no visible damage or pile loss will occur as a result, and replace carpet where visible damage or pile loss occurs.

E. Vacuum carpet using commercial machine with facebeater element.

3.4 PROTECTION:

A. Advise General Contractor of final protection and how to maintain conditions, in a manner acceptable to manufacturer and installer, to ensure carpet is not damaged or deteriorated at time of Substantial Completion.

B. Advise General Contractor not to allow any construction trades to apply any adhesive, tape or make markings on carpet.

3.5 CARPET TYPES:

A. Refer to the Drawings.

END OF CARPET

SECTION 09900

PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to this section.

1.2 SUMMARY:

A. This Section includes surface preparation, painting, and finishing of exposed interior items and surfaces, except where noted otherwise.

1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.

B. Paint exposed surfaces whether or not colors are designated in "schedules," except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

1. Painting includes field painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
2. Pipe identification tags end markers or bands, direction of flow arrows, voltage identification, etc., if any, are provided under Division 15 - "Mechanical", and Division 16 - "Electrical."

C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

1. Examples of prefinished items not to be painted include, in part, the following factory-finished components:

a. Metal and plastic laminate toilet enclosures and partitions.
b. Acoustic materials.
c. Plastic laminate casework.
d. Finished mechanical and electrical equipment.
e. Light fixtures.
f. Switchgear.
g. Distribution cabinets.
h. Signage, Plaques, Directories, and Bulletin Boards.
i. Storefront.
j. Finish Hardware.

2. Examples of concealed surfaces not to be painted include, in part, wall or ceiling surfaces in the following generally inaccessible areas:

a. Foundation spaces.
b. Furred areas.
c. Utility tunnels.
d. Pipe spaces or chases.

e. Duct shafts.

3. Examples of Finished metal surfaces not to be painted include, in part, the following:

a. Anodized aluminum.
b. Stainless steel.
c. Chromium plate.
d. Copper.
e. Bronze.
f. Brass.
g. Prefinished aluminum windows and trim.

4. Examples of operating parts not to be painted include, in part, moving parts of operating equipment such as the following:

a. Valve and damper operators.
b. Linkages.
c. Sensing devices.
d. Motor and fan shafts.

5. Labels: Do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections: The following sections contain requirements that relate to this section:

1. Divisions 5 Sections, for shop priming metal work.
2. Division 6 Sections, for shop priming woodwork.

1.3 SUBMITTALS:

A. Product Data: Manufacturer's most current technical information, label analysis, and application instructions for each material proposed for use.

1. List each material and cross-reference to scheduled paint types, and including each specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

B. Samples for initial color selection in the form of manufacturer's color charts from paint manufacturer intended for use.

C. Samples for verification purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate. Define each separate coat, including fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

1. Submit samples on the following substrates for the Architect's review of color and texture only: Stained or Natural Wood: Provide two 4- by 8-inch samples of natural and stained wood finish on actual wood surfaces.

1.4 QUALITY ASSURANCE:

A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by paint manufacturer, and use only within the recommended limits.

B. Coordination of Work: Review other sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect of any problems anticipated using the materials specified, prior to proceeding with work.

C. Material Quality: Provide the manufacturer's best quality grade paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary names used to designate colors or materials are not intended to imply that products named are required or to exclude approved equivalent products of other manufacturers.

D. Color Pigments: Pure, non-fading, applicable types to suite substrates and service indicated.

E. Lead content in pigments or other painting materials and components is not allowed.

F. Solvents and V.O.C. Compliance: At the time of this writing, sufficient product data and information is not available from paint manufacturers to specify new products to replace solvent based products specified. If new regulations are in effect restricting use of solvents and/or they are not available at the time painting is required for this project, submit and provide the equivalent water-borne products to those specified, at no additional cost to the Owner.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's name, stock number, and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.

B. Store materials not in use in tightly covered containers in a well- ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers, others present or passing through or inspecting work areas (painting or any other work), and the work areas themselves are protected from fire and health hazards resulting from handling, mixing, and application of materials.

1.6 JOB CONDITIONS:

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F, unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F, unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 85 percent, or at temperatures less than 5 deg F above the dew point, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer, during application, drying and curing periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. ICI Paints World Group (ICI); Div. of Glidden.
2. Devoe and Raynolds Co. (Devoe).
3. The Glidden Company (Glidden).
4. Benjamin Moore and Co. (Moore).
5. PPG Industries, Pittsburgh Paints (Pittsburgh).
6. Pratt and Lambert (P & L).
7. The Sherwin-Williams Company (S-W).
8. TNEMEC Company, Inc.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.

1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

3.2 PREPARATION:

A. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

1. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing of problems anticipated with using the specified finish-coat material with substrates primed by others.
2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

    a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
    b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

    a. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Fill cracks in wood or plywood floors with a latex filler and prime filled areas after sanding, except where otherwise recommended by paint manufacturer. Sand smooth when dried.
    b. Prime, stain, or seal unfinished wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
    c. When transparent finish is required, backprime with spar varnish.
    d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
    e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.

4. Ferrous Metals: Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.

    a. Treat bare, sandblasted, or pickled clean metal with a metal treatment wash coat before priming.
    b. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.

5. Galvanized Surfaces: Clean galvanized surfaces with non- petroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.

1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3. Use only thinners approved by the paint manufacturer, and only within recommended limits.

D. Tinting: Tint each primer and undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat(s), but provide sufficient differences in shade of undercoats to distinguish each separate coat.

1. Finish coats as scheduled, shall be same color for each coat required.

3.3 APPLICATION:

A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Use of spray equipment at the site is not allowed, except where specifically indicated.

1. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
2. Paint surface treatments and finishes are indicated on the Drawings and in Specifications.
3. Finish colors will be selected after Bidding, unless indicated otherwise.
4. Provide finish coats that are compatible with primers used.
5. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
6. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
7. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, connector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
8. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
9. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
10. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.

B. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.

C. Finish doors on tops, bottoms, and side edges same as faces.

1. Sand lightly between each succeeding enamel or varnish coat.

D. Primers:

1. Omit primer on metal surfaces that have been shop-primed and touch-up painted, only after verifying full compatibility of shop primers with materials specified for the next coat and finish coats.
2. Primer may be omitted at previously painted existing surfaces in good condition, except at interior concrete, plaster and drywall surfaces, after repairs to any existing damaged substrates and after spot priming of existing damaged paint finish, followed by cleaning and preparation recommended in writing by paint manufacturer.

E. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

F. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.

G. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.

1. Mechanical items to be painted include but are not limited to:

a. Piping, pipe hangers, and supports.
b. Tanks.
c. Ductwork.
d. Insulation.
e. Supports.
f. Accessory items.

2. Electrical items to be painted include but are not limited to:

a. Conduit and fittings.
b. Switchgear.

H. Block Fillers: Apply block fillers to new or previously unpainted concrete masonry block at a rate to ensure complete coverage with pores filled.

I. Prime Coats: Before application of finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

J. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.4 CLEANING:

A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION:

A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINT SCHEDULE:

A. General: Provide the following paint systems for the various substrates indicated.

P-1: IRON AND STEEL SURFACES:

1. ICI:

a. Primer: 4100, Alkyd Metal Primer.

b. Finish: 2516-XXXX, Exterior Alkyd Semi-Gloss Finish; 2 Coats.

P-2: GALVANIZED STEEL AND ALUMINUM SURFACES:

1. ICI:

a. Primer: 4160, Alkyd Multi-Purpose Primer.

b. Finish: 2516-XXXX, Exterior Alkyd Semi-Gloss Finish; 2 Coats.

P-3: CMU AND MASONRY SURFACES: IF REQUIRED.

1. ICI:

a. Primer: 4000, Acrylic Latex Block Filler; Brush and Roller application only.
b. Finish: 2516-XXXX, Exterior Alkyd Semi-Gloss Enamel; 2 Coats; Brush and Roller application only.
c. All block pores shall be completely filled.

3.7 INTERIOR PAINT SCHEDULE:

A. General: Provide the following paint systems for the various substrates, as indicated.

P-1: IRON AND STEEL SURFACES:

1. ICI:

a. Primer: 4100, Alkyd Metal Primer.
b. Finish: 1507-XXXX, Interior Alkyd Semi-Gloss Wall and Trim Enamel; 2 Coats.

c. Where "Exposed" is indicated on Finish Schedule for Ceilings, paint all exposed structure, walls, etc., above other ceiling levels flat black.

P-2: GALVANIZED STEEL AND ALUMINUM SURFACES:

1. ICI:

a. Primer: 4120, Metal and Galvanized Primer.
b. Finish: 1507-XXXX, Interior Alkyd Semi-Gloss Wall and Trim Enamel; 2 Coats.
c. Where "Exposed" is indicated on Finish Schedule for Ceilings, paint all exposed structure, walls, etc., above other ceiling levels flat black.

P-3: WOOD SURFACES TO RECEIVE NATURAL FINISH (AS NOTED-STAINED):

1. ICI:

a. First Coat: Alkyd Interior Paste Wood Filler, fully compatible with other finish system products below.
b. Second Coat: 1700, Interior Alkyd Stain; Wiped.
c. Third Coat (Sealer): 1908-0000, thinned with 1-pint of mineral spirits per gallon.
d. Fourth Coat: 1902-0000, Interior Polyurethane Satin Varnish.
e. Fifth Coat: 1902-0000, Interior Polyurethane Satin Varnish.

2. Natural finish (stained) shall be typical finish, unless indicated otherwise, for:

a. New woodwork (maple), unless specifically indicated otherwise.
b. Elsewhere as indicated on the Drawings.

P-4: DRYWALL SURFACES - (Dry Areas):

1. ICI/Devoe:

a. Primer: <This primer only, spray-applied>

1) Devoe 45XXX, Spra-Max-40, Interior High Build Latex Coating; Approximately 20-mil dry thickness; OR
2) ICI 1472-XXXX, High Build Latex Eggshell Interior Primer; Approximately 20-mil dry thickness.

Number of coats as required to conceal minor wall irregularities, imperfections, differing textures, joint taping and mudding, etc., prior to finish coats.

b. Finish: ICI 1512-XXXX, Interior Alkyd Eggshell Enamel; 2 Coats.
c. NOTE - Special Ceiling Finish: Flat finish.
d. Where "Exposed" is indicated on Finish Schedule for Ceilings, paint all exposed structure, walls, etc., above other ceiling levels flat black.

P-5: DRYWALL SURFACES - (Wet Areas: Toilet, Locker, Shower & Janitors Rooms, Kitchen Areas, any room with a plumbing fixture, and areas where food is stored, prepared, cooked and/or served):

1. ICI/Devoe:

a. Initial Primer: <This primer only, spray-applied>

1) Devoe 45XXX, Spra-Max-40, Interior High Build Latex Coating; Approximately 20-mil dry thickness; OR
2) ICI 1472-XXXX, High Build Latex Eggshell Interior Primer; Approximately 20-mil dry thickness.

Number of coats as required to conceal minor wall irregularities, imperfections, differing textures, joint taping and mudding, etc., prior to Second Primer and finish coats.

b. Second Primer: ICI 3210, Ultra-Hide Aquacrylic Gripper, Stain Killer Primer-Sealer; 1 Coat.
c. Finish: ICI 4406-XXXX, Waterborne Epoxy Semi-Gloss Coating; 2 Coats.
d. NOTE - Special Ceiling Finish: Flat finish.
e. Where "Exposed" is indicated on Finish Schedule for Ceilings, paint all exposed structure, walls, etc., above other ceiling levels flat black.

P-6: CONCRETE FLOOR SURFACE:

1. ICI:

a. Finish : CLARISHIELD 250, Solvent-based clear concrete sealer.
b. Where "(SC) Sealed Concrete" is indicated on Finish Schedule for Floors, prep floor surface and apply coating to concrete floors.

END OF PAINTING

SECTION 10800

TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related work specified elsewhere includes:

1. Section 06100 - "Rough Carpentry" (concealed P.T. 2 x 10 wood blocking at stud wall anchorages)
2. Section 09250 - "Gypsum Drywall"

1.2 SUMMARY:

A. The extent of toilet and other accessory items is indicated on the Drawings, in this Section 10800, and as follows:

See Schedule on Drawings.

1.3 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specifications Sections.

1. Product Data for each toilet accessory item specified, including details of construction relative to materials, dimensions, gauges, profiles, method of mounting, specified options, and finishes.
2. Setting Drawings: Where cutouts are required in other work, provide templates, substrate preparation instructions, and directions for preparing cutouts and for installation of anchorage devices.

1.4 QUALITY ASSURANCE:

A. Inserts and Anchorages: Furnish inserts and anchoring devices that must be set in concrete or built into masonry; coordinate delivery with other work to avoid delay.

B. Single-Source Responsibility: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise acceptable to Architect.

1.5 PROJECT CONDITIONS:

A. Coordination: Coordinate accessory locations, installation, and sequencing with other work to avoid interference and to assure proper installation, operation, adjustment, cleaning, and servicing of toilet accessory items.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide toilet accessories by one of the following and which are equivalent to the units specified:

1. Bobrick Washroom Equipment, Inc.

2.2 MATERIALS, GENERAL:

A. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 22-gauge (.034-inch) minimum thickness, unless otherwise indicated.

B. Brass: Leaded and unleaded, flat products, ASTM B 19; rods, shapes, forgings, and flat products with finished edges, ASTM B 16, Castings, ASTM B-30.

C. Sheet Steel: Cold-rolled, commercial quality ASTM A 366, 20-gauge (.040-inch) minimum, unless otherwise indicated. Surface preparation and metal pretreatment as required for applied finish.

D. Galvanized Steel Sheet: ASTM A 527, G60.

E. Chromium Plating: Nickel and chromium electro-deposited on base metal, ASTM B 456, Type SC 2.

F. Baked Enamel Finish: Factory-applied, gloss white, baked acrylic enamel coating.

G. Galvanized Steel Mounting Devices: ASTM A 153, hot-dip galvanized after fabrication.

H. Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

2.3 MOP HOLDER WITH SHELF:

A. Manufacturer/Model No:

1. Bobrick No. B-224 x 30-inches long.

B. Mounting Height: 60-inches A.F.F. to top of shelf.

C. Location: 1-each at Janitors Room (1-EACH BUILDING) over mop sink, on opposite wall from plumbing.

2.4 GRAB BAR:

A. Manufacturer/Model No:

1. Bobrick Series B-6806.99.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
4. Finish: Smooth, No.4, satin finish on ends and slip-resistant texture in grip area.
5. Outside Diameter: 1-1/2 inches.
6. Configuration and Length: As indicated on Drawings.

2.5 MIRROR UNITS:

A. Stainless Steel Framed Mirror Units: Fabricate frame with angle shapes of not less than 18-gauge, with square welded corners mitered and ground smooth. Provide with bright polished finish.

B. Locations: At each lavatory in each Toilet Room, and as otherwise indicated. Provide tilt mirror with fully enclosed back at one lavatory in each toilet room, for use by the disabled and handicapped.

C. Mountings: Concealed type, manufacturer's standard.

D. Manufacturer/Model No.: Model Size:

1. Bobrick Series: B-165 2430 24-inches x 30-inches high.

E. Mounting Height: 40-inches A.F.F. to bottom of mirror.

2.6 SANITARY NAPKIN DISPOSAL: (as indicated on drawing)

A. Stainless Steel Units: Fabricate frame with angle shapes, with square welded corners mitered and ground smooth. Provide with satin finish.

B. Locations: At each toilet stall in each Women's Toilet Room, and as otherwise indicated.

C. Mountings: Manufacturer's standard.

D. Manufacturer/Model No.:Model:

1. Bobrick Series: B254

E. Mounting Height: As indicated on drawings.

2.7 SEAT COVER DISPENSER: (as indicated on drawing)

A. Stainless Steel Units: Fabricate frame with angle shapes, with square welded corners mitered and ground smooth. Provide with satin finish.

B. Locations: At each toilet stall in each Men's and Women's Toilet Room, and as otherwise indicated.

C. Mountings: Manufacturer's standard.

D. Manufacturer/Model No.:Standard:

1. Bobrick Series: B221

E. Mounting Height: As indicated on drawings.

2.8 SOAP DISPENSER: (as indicated on drawing)

A. Stainless Steel Units: Fabricate frame with angle shapes, with square welded corners mitered and ground smooth. Provide with satin finish.

B. Locations: At each toilet stall in each Toilet Room, and as otherwise indicated.

C. Mountings: Manufacturer's standard.

D. Manufacturer/Model No.:Standard:

1. Bobrick Series: Contura Series - 818615

E. Mounting Height: As indicated on drawings.

2.9 TOILET TISSUE DISPENSER: (as indicated on drawing)

A. Stainless Steel Units: Fabricate frame with angle shapes, with square welded corners mitered and ground smooth. Provide with satin finish.

B. Locations: At each toilet stall in each Toilet Room, and as otherwise indicated.

C. Mountings: Manufacturer's standard.

D. Manufacturer/Model No.:Standard:

1. Bobrick Series: B6999

E. Mounting Height: As indicated on drawings.

2.10 FABRICATION:

A. General: Only a maximum 1-1/2-inch diameter, unobtrusive stamped logo of manufacturer, as approved by Architect, is permitted on exposed face of toilet or bath accessory units. On either interior surface not exposed to view or back surface, provide additional identification by means of either a printed, waterproof label or a stamped nameplate, indicating manufacturer's name and product model number.

B. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

C. Recessed Toilet Accessories, General: Except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full-length stainless steel piano hinge. Provide anchorage that is fully concealed when unit is closed.

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Install toilet accessory units in accordance with manufacturers' current written instructions, using fasteners appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and at heights indicated.

3.2 ADJUSTING AND CLEANING:

A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces in strict accordance with manufacturer's recommendations after removing temporary labels and protective coatings.

END OF TOILET AND BATH ACCESSORIES

SECTION 13120

PRE-ENGINEERED STRUCTURES

PART 1- GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to work specified in this Section.

B. Division 9 "Painting"

C. Division 3 "Structural Concrete"

Related work provided by the Pre-Engineered Structures:

D. Section 13121 "Pre-Engineered Architecturally Exposed Structural Steel Framing"

E. Section 13511 "Pre-Engineered Steel Stairs"

F. Section 13521 "Pre-Engineered Pipe Railings"

1.2 DESCRIPTION OF THE WORK

A. The extent of the Work shall include two buildings comprised of one single story office building and one single story office/storage building. The design shall meet the standards set by the latest edition of the Florida Building Code for pre-engineered metal structures, walls, floors, stairs, and roofs (components of cladding).

B. See structural Drawing for required loading and wind pressures required for design of structure and components of cladding, as well as second floor framing.

1.3 QUALITY ASSURANCE

A. Provide pre-engineered building components from a single-building manufacturer for BOTH buildings.

B. Metal building manufacturer shall be a member in good standing with "MBMA."

1.4 SUBMITTAL

A. As per Section 01340, provide fully engineered drawings and calculations signed and sealed by a P.E. registered in the State of Florida. The structural design shall include, but not limited to, all components including point load super imposed by the hoist, mechanical, and electrical equipment. Submit twelve (12) sets of signed and sealed drawings, and calculations of which six (6) shall be used for the Building Department for permits.

B. Product data consisting of metal building structural framing system, roofing and siding panels, and other metal building components.

C. Provide complete erection drawing prepared under the direction of a Florida Registered Professional Engineer. Include details showing fabrication and assembly of the metal building system. Show anchor bolt settings, reactions end-wall and roof framing. Include transverse cross-sections.

1. Erection drawings prepared to scale will show the relationship of building components.

2. Erection drawings show proposed openings coordinated for the size and location of component that is to be installed. Components include, but not limited to, louvers, doors, windows, storefront, balconies, canopies, stairs, changes in level, chases, ducts, fans, vents, and other building components shown on the drawings and other sections of the specifications.

D. Roofing and Siding Panels: Provide layouts of panels on walls and roofs, details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Include flashing details of roof to wall intersection. Include transverse cross-sections.

E. Provide details to drawn to scale of plan, section of opening conditions. Coordinate all required clearances for installation of all framing components and comply with rough opening requirements for components installed in the openings. Coordinate with drawings and other section of work shown and specified elsewhere in the specifications.

F. Where UL-Listed assemblies are required by drawings and other sections of the specifications. Comply with the structural requirements for compliance with the UL listing. Fire ratings and details are shown on the drawings.

G. Building Accessory Components: Provide details of metal building accessory components to clearly indicate methods of installation, including the following:

1. Personnel doors: Provide elevations and details of each type of door and requirements for finish hardware. Provide schedule of doors and frames using the same reference numbers for details and openings as those indicated on the drawings; include complete hardware schedule.

2. Aluminum louvers: Provide 1/4" scale elevations of louver units and not less than 3/4" scale details showing anchors, hardware, and flashing details.

3. Sheet metal accessories: Provide layouts at 1/4“ scale. Provide details of ventilators, louvers, gutters, downspouts, and other sheet metal accessories at not less than 1-1/2” scale showing profiles, methods of joining, and anchorages.

4. All building accessory components will have wind-rated assemblies that comply and are installed per Miami/Dade County Approval System or the Florida Building Code Approval System for wind loads and exposure listed on the drawings.

H. Samples for initial selection purposes in form of manufacturer's color charts or chips showing full range of colors, textures, and patterns available for metal roofing and siding panels with factory-applied finishes.

I. Samples for verification purposes of roofing and siding panels. Provide sample panels 12" long by actual panel width, in the profile, style, color, and texture indicated. Include clips, battens, fasteners, closures, and other panel accessories.

J. Installer certificates signed by metal building manufacturer written certification certifying that the installer complies with requirements included under the "Quality Assurance" Article.

K. Professional Engineer's certificate prepared and signed by a Professional Engineer, legally authorized to practice in the jurisdiction where project is located, verifying that the structural framing and covering panels meet indicated loading requirements and codes of authorities having jurisdiction.

1.5 DESIGN

A. Design Authorities:

1. Structural Steel: All structural steel sections and welded plate members shall be designed in accordance with the allowable stresses and design requirement sections of the latest edition of the "A.I.S.C. Manual of Steel Construction".

2. Cold-Formed: All cold-formed members, including exterior covering, shall be designed in accordance with the allowable stresses and design requirement sections of the latest edition of "The A.I.S.I. Cold-Formed Steel Design Manual".

1.6 DESIGN LOADS

A. Wind and Live Loads: Loads shall be applied in accordance to the more stringent of requirements set forth by the "Florida Building Code 2017" requirements latest edition. Wind design three- (3) second gust at 160 m.p.h. minimum.

B. Dead Loads: Dead loads shall be the weight of the structure, mechanical systems, electrical and lighting systems, suspended ceiling system, roof, insulation, partition walls and miscellaneous loads. Include dead load required by the Florida Building Code 2017 and as indicated in the plans.

C. Live loads: Live loads shall be applied for corridors, office area, balcony, and elevated walkway as indicated in the plans. Floor vibration due to live loading and mechanical equipment shall be minimized and limited as per the AISC Design Guideline 11 "Floor Vibrations due to Human Activity".

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer to erect the pre-engineered metal building who has specialized in the erection and installation of types of metal buildings systems similar to that required for this project and who is certified in writing by the metal building system manufacturer as qualified for erection of the manufacturer's products.

B. Manufacturer's Qualifications: Provide pre-engineered metal buildings manufactured by a firm experienced in manufacturing metal buildings systems that are similar to those indicated for this project and have a record of successful in-service performance.

C. Single-Source Responsibility: Obtain the metal building system components, including structural framing, wall and roof covering, and accessory components, from one source from a single manufacturer.

D. Design Criteria: The drawings indicate size, profiles, and dimensional requirements of the pre-engineered metal buildings and are based on the specific type and model indicated. Metal building systems having equal characteristics by other manufacturers may be considered provided that deviations in dimensions and profiles are minor and do not change the design concept or intended performance as judged by the Architect. The burden of proof of equality is on the proposer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver prefabricated components, sheets, panels, and other manufactured items so they will not be damaged or deformed. Package wall and roof panels for protection against transportation damage.

B. Handling: Exercise care in unloading, storing, and erecting wall and roof covering panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather-tight ventilated covering. Store metal wall and roof panels so that water accumulations will drain freely. Do not store panels in contact with other materials that might cause staining, denting or other surface damage.

1.9 WARRANTY

A. Roofing and Siding Panel Finish Warranty: Furnish the roofing and siding panel manufacturer's written warranty, covering failure of the factory-applied exterior finish on metal wall and roof panels within the warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents. Warranty period for factory-applied exterior finishes on wall and roof panels is twenty (20) years after the date of Substantial Completion.

1.10 EXTRA MATERIALS

A. Maintenance Stock: Furnish at least 5% excess over required amount of nuts, bolts, screws, washers, wall panels, trim, fascias, and other required fasteners. Pack in cartons labeled to identify the contents and store on the site where directed.

PART 2- PRODUCT

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering metal building systems that may be incorporated in the work include, but are not limited to, the following:

1. Butler Manufacturing Company
2. Ceco Buildings Division
3. Gulf States Manufacturers, Inc.
4. Mesco Metal Buildings Corp.
5. Star Buildings Division, H.H. Robertson Company
6. Varco-Pruden Buildings
7. NUCOR Building Systems

2.2 LOAD COMBINATIONS

A. The design load combinations for all buildings shall be the most stringent of the following specified by the "Florida Building Code 2017", latest edition. The Delegated Engineer shall design second floor framing as part of the entire shell design including the second floor balconies and elevated walkways. The most stringent load conditions in the building framing design shall be considered based on inclusion and exclusion of the second floor balconies and walkway (ADD ALTERNATE A scope of work).

2.3 ANCHOR BOLTS

A. Anchor bolts shall be sized to resist all shears and uplifts induced by the structure and shall not be less than the sizes and quantities shown by the structural plans. All anchor bolts shall be unpainted to bond to the concrete and shall be set in strict accordance with the structural drawings. See Structural for foundation and load criteria.

2.4 MATERIALS

A. Primary Framing Steel:

1. Steel for hot-rolled structural sections shall conform to the requirements of ASTM specification A-36.
2. Steel for all built-up sections shall meet as applicable the physical and chemical properties of ASTM A572-88C modified to 55,000 psi minimum yield and 70,000 psi minimum tensile strength, or ASTM A607-85, Grade 55, or ASTM A570-88, Grade 55.Steel for all end wall "C" sections shall meet the physical and chemical properties of

ASTM A570-88, Grade 55.

B. Secondary Framing Steel:

1. Steel used to form purlins, girts, eave struts, and "C" sections shall meet the physical and chemical properties of ASTM A570-88, Grade 55.

C. Roof Panel Material:

1. Roof for both buildings:

a. Standing seam.

b. 22-gauge, Grade 50B, aluminum-zinc, alloy-coated steel, coating designation, galvanized, factory-applied, baked-on paint with a total film thickness of 1 mil on exposed white as manufactured by Bethlehem, ASTM A792 sheet coating 55% aluminum, 43.4% zinc, 1.6% silicon nominal percentage by weight. Roof design based on Florida Building Code 2017 wind load requirement, but not less than 22-gauge material.

D. Fasteners:

1. Clips: 16-guage panel clips.

2. Cleats: Factory-caulked, mechanically seamed cleats formed from 24-gauge, Grade C, zinc-coated-steel sheets.

E. All roofing components, fasteners, and connections will have wind-rated assemblies that comply and are installed as per Miami/Dade County Approval System or the Florida Building Code Approval System.

2.5 SIDING PANELS

A. All materials and assemblies shall comply with the Florida Building Code wind pressures for cladding. Provide certified engineered lab test that shows compliance. See structural drawing for wind pressure and load required for compliance.

B. Face Sheets: Fabricate wall and roof panel face sheets to the profile or configuration indicated from 22-gauge, structural quality, Grade 50B, alloy-coated steel. Coating designation, galvanized with factory-applied, baked-on paint with a total film thickness of 1 mil on exposed side. Color to be selected by Architect, Bethlehem, ASTM A792, sheet coating 55% aluminum, 43.4% zinc, 1.6% silicone, nominal percentage by weight.

C. Fasteners: Self-tappings screws, bolts, nuts, self-locking rivets, self-locking bolts, end-welded studs, and other suitable fasteners designed to withstand design loads.

1. Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.

2. Use aluminum or stainless-steel fasteners for exterior application and galvanized or cadmium-plated fasteners for interior applications.

3. Locate and space fastenings in true vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.

4. Provide fasteners with heads matching color of roofing or siding sheets by means of plastic caps or factory applied coating.

D. Accessories: Provide the following sheet metal accessories factory-formed of the same material in the same finish as roof and wall panels:

1. Flashings

2. Closers

3. Fillers

4. Ridge covers

5. Fascias

6. Inside closure strip

7. Base angle

8. Miscellaneous accessories as required to complete a weatherproof installation.

E. Flexible Closure Strips: Closed-cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or premold to match configuration of roofing and siding sheets. Provide closure strips where indicated or necessary to ensure weather-tight construction.

F. Sealing Tape: Pressure-sensitive, 100% solid, gray polyisobutylene, compound-sealing tape with release paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2" wide and 1/8" thick.

G. Joint Sealant: One-part elastomeric polyurethane, polysulfide, or silicone rubber sealant as recommended by the building manufacturer.

H. Fluoropolymer Finish: Provide shop-applied fluoropolymer finish to galvanized-steel roofing and siding panels, and related trim and accessory elements.

1. Clean galvanized steel with an alkaline compound, then treat with a zinc phosphate conversion coating and seal with a chromic acid rinse.

2. Apply a two- (2) coat fluoropolymer coating system to pretreated steel. Coating shall consist of a specially-formulated inhibitive primer applied to a dry film thickness of 0.15 mil to 0.25 mil, and a fluorocarbon color coat containing not less than 70% polyvinylidene fluoride resin by weight applied to a dry film thickness of 0.80 mils to 1.3 mils. Color to be selected by the Architect.

I. All roofing and wall components, fasteners, and connections will have wind-rated assemblies

that comply and are installed as per Miami/Dade County Approval System or the Florida Building Code Approval System.

2.6 OTHER MATERIALS

A. Sealant Materials Provide:

1. Silicone Sealant: Single-component elastomeric silicone sealant complying with FS TT-S-001543, Class A, nonsag, and ASTM C920, Type S, Grade NS, Class 25, Uses G, A, and O. Provide low-modulus, nonacid curing type, except use acid type if channel surfaces are porous.

2. Polysulfide Sealant: 2-component elastomeric polysulfide sealant complying with FS TT-S-00227, Class A, Type2, and ASTM C920, Type M, Grade NS, Class 25, Uses G, A, and O, as applicable.

3. Acrylic Sealant: Single-component acrylic terpolymer or polypropenate solvent-based, thermo-plastic sealant complying with FS 55-2-00230, Class B, Type II, and ASTM C920, Type S, Grade NS, Class 12-1/2, Uses G, A, and O, as applicable.

4. Filler Rods: Compressible closed-cell or waterproof-jacketed rod stock of flexible and resilient synthetic rubber or plastic foam with 5-10 psi compression strength for 25% deflection.

B. Thermal Insulation at roof of office; glass fiber blanket insulation, complying with ASTM C991, of 0.5 lb per cu. ft. density, thickness as indicated, with UL flame spread classification of 25 or less, and 2" wide continuous vapor-tight edge tabs, and retainer clips, 26-gauge, formed galvanized-steel retainer clip painted to match vinyl ad noted on the drawings.

C. Thermal Insulation at roof of building; glass fiber blanket insulation, complying with ASTM C991, of 0.5 lb per cu. ft. density, thickness as indicated, with UL flame spread classification of 25 or less, and 2" wide continuous vapor-tight edge tabs as noted on drawings.

2.7 PAINT AND COATING MATERIALS

A. Comply with performance requirements of the federal specifications indicated. Unless specifically indicated otherwise, compliance with compositional requirements of federal specifications indicated is not required.

1. Shop Primer for Ferrous Metal: Fast-curing, lead-free, universal primer, selected by the manufacturer for resistance to normal atmospheric corrosion, compatibility with finish paint systems, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure. Comply with FS TT-P-636D.

2. Pre-painted galvalume panel each face.

   a. Roof Panels

   b. Wall Panels

2.8 ROD

A. All rod used as structural bracing shall have a minimum yield strength of 36,000 psi.

2.9 HIGH-STRENGTH BOLTS

A. All bolts used in primary structural connections shall be zinc-plated, high-strength (ASTM A325) bolts with a yellow dichromate dip.

2.10 HIGH-STRENGTH NUTS

A. ASTM 194 Grade 2H, ASTM 563 Grade C, C3, D, D4, D43

2.11 STANDARD BOLTS

A. All bolts used in secondary structural connections shall be standard zinc-plated machine bolts (ASTM A-307, Grade 2).

2.12 STANDARD NUTS

A. ASTM A563 Grade A or Grade 2

2.13 WIND BRACING

A. Wind bracing shall be as shown on the building manufacturer's erection drawings and shall be accomplished by diagonal, rod bracing, steel column, or other means necessary to satisfy roof and wall wind loads. All diagonal wind bracing shall include necessary hillside washers and adjustment nuts at each end. Do not use diagonal rod bracing at locations of doors, louvers, and openings.

2.14 NOT USED

2.15 BUILDING TRIM

A. General: Preformed 24-gauge galvalume steel with factory baked-on paint flashing shall be provided at corners, end wall rakes, eaves, and openings to assure a neat, weather-tight structure. All trim shall comply with wind loads in structural drawing for wind pressures for components of cladding. Provide approved engineered testing certificates that show compliance with Florida Building Code.

B. Eave Flashing: The junction of the roof panels and side wall panels shall be adequately flashed with preformed 24-gauge galvalume steel with factory baked-on paint. Eave flashing shall be as shown on Architectural drawings and as per manufacturer's recommendations.

C. Eave Gutter: Eave gutter shall be a suspended box section supported at 3'-0" on center maximum and formed to match the configuration shown on Architectural drawings. Eave gutters shall have a minimum cross-sectioned area as required by rainfall amounts set by the Florida Building Code. Pop rivets and sealant shall be used to secure and seal the gutter end laps.

D. Eave Gutter Downspouts: Downspouts shall be 28-gauge, galvalume, factory-painted, square sections sized per Florida Building Code Requirements. Spacing of the downspouts as shown on Architectural drawings. Eave gutter outlets shall be provided to connect the downspouts to the eave gutter. Field connected downspout elbows shall be provided to divert water away from the building.

E. Corner Flashing: The junction of side wall panels and end wall panels shall be adequately flashed to provide weather tightness and good appearance. The flashing shall be designed to complement the wall panel used and shall match the wall panel color.

F. Accessory Flashing: Accessories which penetrate the wall or roof panels shall be adequately flashed and sealed as necessary for weather tightness and neat appearance.

2.16 PERSONNEL DOORS

A. Materials: Fabricate personnel doors and frames from commercial quality, cold-rolled carbon steel sheet, or commercial quality hot-rolled, pickled, and oiled carbon steel sheet.

1. Zinc-coated Steel Sheets: Comply with ASTM A526; with G60 coating complying with ASTM A525, mill phosphatized.

B. Anchors and Accessories: Provide manufacturer's standard units for items built into exterior walls, use galvanized units complying with ASTM A153. Spacing and type per Miami-Dade NOA-tested assembly.

C. Doors: Provide doors of types and styles indicated. Comply with SDI-100 for material quality, metal gages, and construction details.

1. Provide sightproof lovers for interior doors with indicated, constructed of 24-gauge (0.0239-inch) steel V-shaped or Y-shaped blades, set into 20-gauge (0.0359-inch) steel frame.

2. Provide Miami-Dade NOA-tested assembly.

D. Frames: Provide frames of the types and sizes indicated. Comply with SDI-100 for material quality, metal gages, and construction details.

1. Provide standard hollow metal frames for doors, transoms, sidelights, borrowed lights, and other openings as indicated.

2. Provide Miami-Dade NOA-tested assembly.

E. Fabrication: Fabricate units to be rigid, neat in appearance, and free from defects, warp, or buckle. Provide continuous welds on exposed joints; grind, dress, and make welds smooth, flush, and invisible.

F. Hardware: See Door Hardware Section 08700.

G. Shop-paint exposed surfaces, including galvanized surfaces, using manufacturer's standard baked-on, rust-inhibitive primer.

H. Factory-painted doors and door frames with baked enamel paint.

2.17 SHOP FABRICATION

A. Scope: All fabricated members shall be sheared, formed, punched, welded, and painted in the plant of the manufacturer. All holes and clips required to facilitate the attachment of secondary framing shall be provided by the metal building manufacturer. See Architectural, Structural, Mechanical drawings for other items to be attached to the structure.

B. Welding: All shop welding shall be in accordance with the American Welding Society's Structural Welding Code (AWS D1.1) current edition, except for Sections 3.5 and 8.13. All welding shall be done by welders certified in accordance with AWS Code. Flanges and webs of "I" sections shall be joined by a continuous automatic submerged arc welding process or a semi-automatic GMAW process. The web shall be joined to the flanges by a minimum of 50% web penetration.

C. Structural Primer: All fabricated members other than galvalume, galvanized, pre-painted panel, and flashing material shall receive a factory-applied coat of rust-inhibiting green primer. The primer shall be formulated to equal or exceed the performance of Federal Specification TT-P-636D.

D. Identification: All fabricated or purchased items shall have an identifying mark that corresponds to the mark shown on the erection drawings. The mark shall be stamped, stenciled, or printed on or attached to the items.

2.18 CLOSURE AND SEALANTS

A. Closure Strips: The corrugations of the roof and wall panels shall be filled with preformed closed cell non-shrinking, laminated polyethylene closures along the eave, ridge, and rake for weather tightness.

B. Metal Closures: The corrugations and pan area of the standing seam roof panel shall be filled with formed-metal closures. The closures shall be formed from 20-gauge steel to the shape of the configuration. The closure exterior finish shall be AZ 55 Aluminum-zinc alloy coated.

C. Sealer: Standing Seam, side laps shall have factory-applied mastic, Sika SikaCaulk 501, or approved equal. Its composition shall be 91% solids by weight. Service temperature range shall be -60 degrees F to +250 degrees F. The material shall or surpass the requirements of Federal Specification TT-C-1796A, Type I, Class A.

D. Sealer: Standing Seam, ridges and eave closures shall be sealed with tape mastic, Sika SikaTape 65, or approved equal. The material shall be non-staining, non-corrosive, non-toxic, and non-volatile. Composition shall be 100% solid-ethylene propylene copolymer tape. Service Temperature shall be from -60 degrees F to + 212 degrees F. The material shall meet or surpass the requirements of Federal Specifications TT-C-1796a Type II, Class B.

E. Pipe Flashing: Manufactured one- (1) piece construction from EPDM membrane and shall have an aluminum base that can be field conformed to any panel configuration.

F. Louvers: See drawing and Section 10200 for requirements.

2.19 MISCELLANEOUS TRIM

A. Provide miscellaneous custom section, trim, flashing, and panels as required by the drawings to achieve final function and/or aesthetic effect.

PART-3 EXECUTION

3.1 INSTALLATION

A. The erection of the structural members and the installation of the standing seam roofing, insulation, wall panels and miscellaneous accessories shall be performed in accordance with the drawings, project manual, and in accordance to the manufacturers written and drawn instructions. The erection shall be performed by a manufacturer-approved erector. All erection practices shall conform to Section 6, Common Industry Practices found in the "Low Rise Building Systems Manual", MBMA latest edition. Do not make any field modifications to structural members without the written acceptance of the Architect/Engineer of Record.

B. Clean surfaces as per manufacturer's recommendations.

3.2 ERECTION

A. Framing: Erect framing true to line, level, plumb, rigid, and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use a non-shrinking grout to obtain uniform bearing and to maintain a level base line elevation. Moist cure grout for not less than seven (7) days after placement.

B. Purlins and Girts: Provide rake or gable purlins with tight-fitting closure channels and fascias. Locate and space wall girts to suit door and window arrangements and heights. Secure purlins and girts to structural framing and hold rigidly to a straight line by sag rods.

C. Bracing: Provide diagonal rod or angle bracing in roof and side walls as indicated.

1. Movement-resisting frames may be used in lieu of side wall rod bracing, to suit manufacturer's standards.

2. Where diaphragm strength of roof or wall covering is adequate to resist wind forces, rod or angle bracing will not be required.

D. Framed Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to building structural frame.

E. Coordinate erection of structure with Section 09900 " Painting".

3.3 ROOFING AND SIDING

A. General: Arrange and nest side lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full-rib corrugation. Apply panels and associated items for neat and weather-tight enclosure. Avoid "panel creep" or application not true to line. Protect

factory finishes from damage.

1. Field cutting of exterior panels by torch is not permitted.

2. Provide weather seal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene, or other closures to exclude weather.

B. Standing-Seam Roof Panel System: Fasten roof panels to purlins with concealed clip in accordance with the manufacturer's instructions.

1. Install clips at each support with self-drilling fasteners.

2. At end laps of panels, install tape caulk between panels.

3. Install factory-caulked cleats at standing-seam points. Machine-seam cleats to the panels to provide a weather-tight joint.

4. Provide for system thermal expansion.

C. Wall Sheets: Apply elastomeric sealant continuously between metal-base channel (sill angle) and concrete and elsewhere as necessary for waterproofing. Handle and apply sealant and backup in accordance with the sealant manufacturer's recommendations.

1. Align bottom of wall panels and fasten panels with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws. Fasten window and door frames with machine screws or bolts. When building height requires two (2) rows of panels at gable ends, align lap of gable panels over wall panels at eave height.

2. Install screw fasteners with power tools having controlled torque adjusted to compress neoprene washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.

3. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.

D. Sheet Metal Accessories: Install gutters, downspouts, ventilators, louvers, and other sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weather-tight mounting. Adjust operating mechanism for precise operation.

E. Hollow Metal Doors and Frames: Install doors and frames straight, plumb, and level. Securely anchor frames to building structure. Set units with 1/8" maximum clearance between door and frame at jambs and head and 3/4" maximum between door and floor. Adjust hardware for proper operation.

F. Thermal Insulation: Install insulation concurrently with installation of roof panels in accordance with manufacturer's directions. Install blankets straight and true in one-piece lengths with both sets of tabs sealed to provide a complete vapor barrier. Locate insulation on underside of roof sheets, extending across the top flange of purlin members and held taut and snug to roofing panels with retainer clips. Install retainer strips at each longitudinal joint, straight and taut, nesting with roof rib to hold insulation in place.

END OF PRE-ENGINEERED STRUCTURES

SECTION 16721 - FIRE ALARM / LIFE SAFETY SYSTEM

General: Install new intelligent type fire alarm system (provided with all wiring, equipment, etc.). Characteristics of the equipment and the circuits throughout the system shall be such that the system will operate satisfactorily in every respect. Install all components satisfactorily in every respect. Furnish and install all components indicated on drawings. Contractor shall be permitted and certified through the state of Florida Fire Marshal's Office. Include all fees for certifying and permitting.

Equipment Supplier: Must maintain an office within 125 miles of job site, must be authorized factory service representative for equipment supplied, and must directly supervise final connection and testing. Provide letter certifying fire alarm system for proper operation and installation.

Contractor Qualifications: Fire Alarm Contractor shall be licensed in the state of Florida. Provide letter demonstrating current license in the state of Florida.

Record of Completion Form: Provide a fire alarm Record of Completion form in accordance with NFPA 72 at the final inspection per IBC Section 907.7.2. The form shall be filled out by a National Institute for Certification in Engineering Technologies (NICET) certified technician.

A. REFERENCES

The equipment and installation shall comply with the current provisions of the following standards and codes:

1. National Fire Protection Association Standards:
   a. NFPA 70 National Electric Code®
   b. NFPA 72 National Fire Alarm Code®
   c. NFPA 90A Air Conditioning Systems
   d. NFPA 92A Smoke-Control Systems
   e. NFPA 92B Smoke Management Systems in Malls, Atria, and Large Areas
   f. NFPA 101 Life Safety Code®
   g. IBC International Building Code
2. Underwriters Laboratories Inc. Standards
   a. Underwriters Laboratories Inc. shall list the system and all components for use in fire protective signaling systems. The UL Label shall be considered as evidence of compliance with this requirement. The equipment shall be listed by UL under the following standards as applicable:
   b. UL 864/UOJZ Control Units for Fire Protective Signaling Systems.
   c. UL 268 Smoke Detectors for Fire Protective Signaling Systems.
   d. UL 268A Smoke Detectors for Duct Applications.
   e. UL 217 Smoke Detectors Single Station.

f. UL 521 Heat Detectors for Fire Protective Signaling Systems.
g. UL 228 Door Holders for Fire Protective Signaling Systems.
h. UL 464 Audible Signaling Appliances.
i. UL 38 Manually Activated Signaling Boxes.
j. UL 346 Waterflow Indicators for Fire Protective Signaling Systems.
k. UL 1971 Visual Signaling Appliances.
l. UL 1481 Power Supplies for Fire Protective Signaling Systems.

3. Any equipment not bearing a UL Label shall be removed and replaced with UL labeled equipment at the contractor's expense.

Americans with Disabilities Act (ADA)

In the case of any discrepancy between these specifications, the project drawings, and any applicable local codes, the installed Fire Alarm / Life Safety System shall comply with the most stringent requirement.

B. DEFINITIONS / ABBREVIATIONS

ADA: Americans with Disabilities Act.

AFF: Above Finished Floor.

AHJ: Authority Having Jurisdiction.

Approved: Unless otherwise stated, materials, equipment or submittals approved by the Authority or AHJ.

Circuit: Wire path from a group of devices or appliances to a control panel or transponder.

CPU: The central computer of a multiplex fire alarm or voice command control system.

FACP: Fire Alarm Control Panel.

HVAC: Heating Ventilating and Air Conditioning.

IDC: Initiating Device Circuit.

LED: Light Emitting Diode.

LCD: Liquid Crystal Display.

NFPA: National Fire Protection Association.

NAC: Notification Appliance Circuit.

SLC: Signaling Line Circuit.

Style 1: As defined by NFPA 72, Class B.

Style 4: As defined by NFPA 72, Class B.

Style 6: As defined by NFPA 72, Class A.

Style 7: As defined by NFPA 72, Class A.

Style B: As defined in NFPA 72, Class B.

Style D: As defined in NFPA 72, Class A.

Style Y: As defined in NFPA 72, Class B.

UL or ULI: Underwriters Laboratories, Inc.

UL Listed: Materials or equipment listed and included in the most recent edition of the UL Fire Protection Equipment Directory.

Zone: Combination of one or more circuits or devices in a defined building area, i.e. 3 circuits on a floor combined to form a single zone.

C. Equipment:

Control Panel: Addressable type panel equal to Silent Knight IntelliKnight model 5700.

Manual Station: Intelligent pullstation equal to Silent Knight SK-Pull-DA. Mount 3'-10" from floor to bottom to box.

End of Line Diodes, etc.: As required.

Horn and Flashing Light: Horn Strobe shall be equal to System Sensor P2R. Weatherproof Horn Strobe shall be equal to System Sensor P2R-K. Units shall be mounted flush in wall and 80" AFF.

Flashing Light: Strobe shall be equal to System Sensor SR. Units shall be mounted flush in wall and 80" AFF.

Heat Detectors: Addressable Thermal Heat detector equal to Silent Knight SK-Heat.

Smoke Detectors: Intelligent Photoelectric Smoke Sensor equal to Silent Knight SK-Photo.

Installation: Provide all outlet boxes, backboxes, junction boxes, wiring, connections, etc. to provide a complete system. All wiring and installation of equipment shall be in accordance of manufacturer's recommendations for the equipment supplied. Wiring shall not be less than No. 16 run in raceway. Label indications in control panel and annunciator as directed by the Architect. Install duct detectors in supply ducts as directed by HVAC Contractor. Route all conduits as approved by the Architect.

Standby power supply: shall automatically supply electrical energy to the system upon primary power supply failure. Standby power supply shall be an electrical battery with capacity to operate the system under maximum supervisory load for 24 hours and capable of operating the system for five (5) Minutes in the alarm mode at 100% load. Fire alarm system shall include a charging circuit to automatically maintain the electrical charge of the battery.

Submit riser diagram and battery calculations for all new devices of system for approval. Diagram shall show conduit, conductors, equipment, etc. required for system to be installed.

SECTION 31316

TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes soil treatment with termiticide.

B. Related Sections include the Division 6 Section "Rough Carpentry" for wood preservative treatment by pressure process.

1.3 PERFORMANCE REQUIREMENTS

Service Life of Soil Treatment: Soil treatment by use of a termiticide that is effective for not less than five years against infestation of subterranean termites.

1.4 SUBMITTALS

A. Product Data: For termiticide. Include the EPA-Registered Label for termiticide products.

B. Product Certificates: For termite control products, signed by product manufacturer.

C. Qualification Data: For Installer of termite control products.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Brand name and manufacturer of termiticide.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes, and rates of application used.
6. Areas of application.
7. Water source for application.

E. Warranty: Special warranty specified in this Section.

F. Meeting Records: Minutes of pre-installation conference.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located.

B. Regulatory Requirements: Formulate and apply termiticides according to the EPA Registered Label.

C. Source Limitations: Obtain termite control products through one source.

D. Pre installation Conference: Conduct conference at Project site to comply with requirements in

Division 1 Section "Project Management and Coordination" to schedule application of termiticide products.

1.6 PROJECT CONDITIONS

Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.

1.7 COORDINATION

Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

1.8 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty:

1. Manufacturer's standard form, signed by Applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.
2. Warranty Period: Five years from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

Continuing Service: Beginning at Substantial Completion, provide 12 months' continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity. Provide a standard continuing service agreement. State services, obligations, conditions, and terms for agreement period; and terms for future renewal options.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

1. Bayer Corporation; Premise 75.
2. Dow AgroSciences LLC; Dursban TC.
3. FMC Corporation, Agricultural Products Group; Talstar, Prevail FT, or Torpedo.

2.2 SOIL TREATMENT

Termiticide: Provide an EPA-registered tenniticide complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for

application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.

PART 3 - EXECUTION

3. I EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparation before beginning application of termite control treatment. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EP A-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment tenniticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, piers, and chimney bases; also along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.

3. Masonry: Treat voids.

4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION

GENERAL NOTES

1. CONTRACTOR SHALL PRESERVE AND PROTECT ALL PERMANENT REFERENCE MONUMENTS, PERMANENT CONTROL POINTS, PERMANENT BENCH MARKS AND PROPERTY CORNERS. IN THE EVENT THE MONUMENTS, POINTS OR MARKERS ARE DISTURBED THE CONTRACTOR SHALL EMPLOY A FLORIDA REGISTERED LAND SURVEYOR TO RESET OR REPLACE THEM.

2. CONTRACTOR SHALL PROTECT ALL EXISTING LANDSCAPING, SIDEWALKS, PAVEMENTS, CURBS, AND SOD NOT SPECIFIED FOR REMOVAL IN THESE PLANS. ANY DAMAGE TO THE EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR AT NO COST TO THE OWNER, UNLESS OTHERWISE SPECIFIED HEREIN.

3. UNLESS OTHERWISE SPECIFIED, ALL WORK SHALL BE PERFORMED CONSISTENT WITH THE FOLLOWING SPECIFICATIONS: OKALOOSA COUNTY AND FDOT.

4. THIS DESIGN HAS BEEN BASED UPON SURVEY INFORMATION PROVIDED BY:

   OKALOOSA COUNTY WATER & SEWER ENGINEERING DATE: JANUARY 28, 2019.

   GEOTECH BY: NOVA ENGINEERING AND ENVIRONMENTAL, LLC JULY 18, 2019.

   AVCON INC. MAKES NO ASSURANCES REGARDING THE ACCURACY OF SUCH SURVEY.

5. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE, INCLUDING ALL SURFACE AND SUB-SURFACE CONDITIONS, THE WORK REQUIRED AND ALL OTHER CONDITIONS THAT MAY EFFECT THE SUCCESSFUL COMPLETION OF THE JOB PRIOR TO COMMENCEMENT OF WORK.

6. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND PERMIT CONDITIONS BEARING ON THE CONDUCT OF THE WORK, AS DRAWN AND SPECIFIED. IF THE CONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT VARIANCE THEREWITH, HE SHALL PROMPTLY NOTIFY THE ENGINEER, IN WRITING, AND ANY NECESSARY CHANGES SHALL BE ADJUSTED, AS PROVIDED IN THE AGREEMENT FOR CHANGES IN THE WORK.

7. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER AND THE ENGINEER FOR THE ACTS AND OMISSIONS OF CONTRACTOR'S EMPLOYEES AND ALL HIS SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES AND OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTRACT WITH THE CONTRACTOR.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS WITH GOVERNMENTAL DEPARTMENTS, PUBLIC UTILITIES, PUBLIC CARRIERS, SERVICE COMPANIES, AND CORPORATIONS OWNING OR CONTROLLING ROADWAYS, RAILWAYS, WATER, SEWER, GAS, ELECTRICAL, TELEPHONE, AND TELEGRAPH FACILITIES SUCH AS PAVEMENTS, TRACKS, PIPING, WIRES, CABLES, CONDUITS, POLES, GUYS, OR OTHER SIMILAR FACILITIES, INCLUDING INCIDENTAL STRUCTURES CONNECTED THEREWITH THAT ARE ENCOUNTERED IN THE WORK IN ORDER THAT SUCH ITEMS MAY BE PROPERLY SUPPORTED, PROTECTED OR LOCATED.

9. UNLESS OTHERWISE SPECIFIED IN THE GENERAL CONDITIONS, ALL CONSTRUCTION IS TO BE GOVERNED BY THE PLANS, APPLICABLE PERMITS, AND SPECIFICATIONS HEREIN, AND ALL APPLICABLE FEDERAL, STATE AND LOCAL BUILDING AND SAFETY CODES, LAWS AND ORDINANCES.

10. PRIOR TO PERFORMING ANY WORK WITHIN ANY PUBLIC RIGHT-OF-WAY, CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRAFFIC CONTROL PLAN CONSISTENT WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

11. PRIOR TO PERFORMING ANY WORK WITHIN ANY UTILITY RIGHT-OF-WAY, CONTRACTOR SHALL OBTAIN AUTHORIZATION AND PERMIT FROM JURISDICTION RESPONSIBLE FOR SUCH RIGHT-OF-WAY.

12. IN THE EVENT THE CONTRACTOR DISCOVERS ANY ERRORS OR OMISSIONS IN THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER.

13. THE OWNER, OWNER'S AGENT AND INSPECTORS OF APPLICABLE GOVERNMENT JURISDICTIONS, SHALL AT ALL TIMES HAVE ACCESS TO THE WORK WHEREVER AND WHENEVER IT IS IN PREPARATION OR PROGRESS; AND THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR SUCH ACCESS AND FOR THE INSPECTION.

14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL REASONABLE AND PRUDENT PRECAUTIONS TO ENSURE THAT ALL COMPLETED WORK, MATERIALS AND EQUIPMENT STORED ON SITE ARE SAFE AND SECURED FROM UNAUTHORIZED ACCESS OR USE. SUCH PRECAUTIONS MAY INCLUDE INSTALLATION OF SIGNS, FENCES, OR POSTING OF SECURITY GUARDS.

15. CONTRACTOR SHALL, AT ALL TIMES, UTILIZE ALL NORMALLY ACCEPTED AND REASONABLY EXPECTED SAFETY PRACTICES AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND GUIDELINES PERTAINING TO SAFE UTILIZATION OF EQUIPMENT OR MATERIALS AS PUBLISHED BY MANUFACTURER.

16. PRIOR TO INITIATING ANY EXCAVATION (INCLUDING BUT NOT LIMITED TO TUNNELS, DITCHES, STORMWATER PONDS, CANALS) CONTRACTOR SHALL INSTALL FENCES AND TAKE ALL OTHER REASONABLE AND PRUDENT STEPS TO ENSURE THAT ACCESS TO EXCAVATION BY UNAUTHORIZED PERSONNEL IS PREVENTED.

17. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE ALL REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO:

    17.1. ALL EMPLOYEES ON THE WORK SITE AND ALL OTHER PERSONS WHO MAY BE AFFECTED THEREBY;

    17.2. ALL WORK AND ALL MATERIALS AND EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR OFF THE SITE, UNDER THE CARE, CUSTODY OR CONTROL OF THE CONTRACTOR OR ANY OF ITS SUBCONTRACTORS;

    17.3. ANY OTHER PROPERTY AT THE SITE OR ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAY, STRUCTURES AND UTILITIES NOT DESIGNATED FOR DEMOLITION IN THE COURSE OF CONSTRUCTION.

18. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS ON MAIN AIRPORT ENTRANCE ACCESS ROAD AT ALL TIMES.

19. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC, QUASI-PUBLIC OR OTHER AUTHORITY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR FOR THEIR PROTECTION AGAINST DAMAGE, INJURY OR LOSS, OR DESIGNED TO PROTECT THE ENVIRONMENT. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY EXISTING CONDITIONS AND PROGRESS OF THE WORK, ALL REASONABLE SAFEGUARDS FOR SAFETY AND PROTECTION, INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS, PROMULGATING SAFETY REGULATIONS AND NOTIFYING OWNERS AND USERS OF ADJACENT UTILITIES OF THE EXISTENCE OF HAZARDS AND OF THE SAFETY REGULATIONS.

20. ALL DAMAGE OR LOSS TO ANY PROPERTY REFERRED TO IN CLAUSES 19.2 AND 19.3 CAUSED IN WHOLE OR IN PART BY THE CONTRACTOR, A SUBCONTRACTOR, OR BY ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, SHALL BE REMEDIED BY THE CONTRACTOR, EXCEPT DAMAGE OR LOSS PROPERLY ATTRIBUTABLE SOLELY TO THE ACTS OR OMISSIONS OF THE OWNER, OR THE ENGINEER OR ANYONE EMPLOYED BY THEM, OR FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, AND NOT PROPERLY ATTRIBUTABLE IN WHOLE OR IN PART, TO THE FAULT OR NEGLIGENCE OF THE CONTRACTOR.

21. UNTIL FINAL ACCEPTANCE OF THE WORK BY OWNER, THE CONTRACTOR SHALL HAVE THE CHARGE AND CARE OF AND SHALL BEAR THE RISK OF INJURY OR DAMAGE, LOSS OR EXPENSE TO ANY PART THEREOF, OR TO ANY MATERIALS STORED ON SITE, BY THE ACTION OF THE ELEMENTS OR FROM ANY OTHER CAUSE WHETHER ARISING FROM THE EXECUTION OR NON-EXECUTION OF THE WORK. THE CONTRACTOR SHALL REBUILD, REPAIR, RESTORE AND MAKE GOOD ALL INJURIES OR DAMAGES TO ANY PORTION OF THE WORK OCCASIONED BY ANY OF THE ABOVE CAUSES BEFORE FINAL ACCEPTANCE AND SHALL BEAR THE EXPENSES THEREOF.

22. THOSE PARTS OF WORK IN PLACE WHICH ARE SUBJECT TO DAMAGE BECAUSE OF OPERATIONS BEING CARRIED ON ADJACENT THERETO SHALL BE COVERED, BOARDED UP OR SUBSTANTIALLY ENCLOSED WITH ADEQUATE PROTECTION BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

23. PERMANENT OPENINGS USED AS THOROUGHFARES FOR THE INTRODUCTION OF WORK AND MATERIALS TO THE STRUCTURE SHALL HAVE HEADS, JAMBS AND SILLS WELL BLOCKED AND BOARDED BY THE CONTRACTOR. OWNER RETAINS THE AUTHORITY, BUT ASSUMES NO DUTY, TO ESTABLISH STANDARDS OF PROTECTION, AND TO REVIEW THE EFFICIENCY OF PROTECTIVE MEASURES TAKEN BY THE CONTRACTOR.

24. ADEQUATE TRAFFIC CONTROL, BARRICADES AND FLAGMAN SERVICES SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR AT ALL POINTS WHERE CONVEYING EQUIPMENT ENGAGED ON THE WORK REGULARLY ENTERS ONTO OR CROSSES TRAFFIC-CARRYING ROADS.

25. THE CONTRACTOR SHALL COMPLY IN EVERY RESPECT WITH THE FEDERAL OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 AND ALL RULES AND REGULATIONS NOW OR HEREAFTER IN EFFECT UNDER SAID ACT, AND THE CONTRACTOR FURTHER AGREES TO COMPLY WITH ANY AND ALL APPLICABLE STATE LAWS AND REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH.

26. THE CONTRACTOR SHALL PROTECT AND KEEP OWNER (INCLUDING THEIR AGENTS AND EMPLOYEES) FREE AND HARMLESS FROM ANY AND ALL LIABILITY, PUBLIC OR PRIVATE, PENALTIES, CONTRACTUAL OR OTHERWISE, LOSSES, DAMAGES, COSTS, ATTORNEY'S FEES, EXPENSES, CAUSES OF ACTION, CLAIMS OR JUDGMENTS RESULTING FROM THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AS AMENDED OR ANY RULE OR REGULATION PROMULGATED THEREUNDER OR OF ANY STATE LAWS OR REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, AND CONTRACTOR SHALL INDEMNIFY OWNER FROM ANY SUCH CLAIMS, PENALTIES, SUITS OR ACTIONS, PUBLIC OR PRIVATE, ADMINISTRATIVE OR JUDICIAL, INCLUDING ATTORNEY'S FEES PAID OR INCURRED BY OR ON BEHALF OF OWNER, JOINTLY OR SEVERALLY, AND/OR THEIR AGENTS AND EMPLOYEES. THE CONTRACTOR FURTHER AGREES, IN THE EVENT OF A CLAIMED VIOLATION OF ANY FEDERAL OR STATE SAFETY AND HEALTH LAW OR REGULATION ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, OWNER MAY IMMEDIATELY TAKE WHATEVER ACTION IS DEEMED NECESSARY BY OWNER TO REMEDY THE CLAIMED VIOLATION. ANY AND ALL COSTS OR EXPENSES PAID OR INCURRED BY OWNER IN TAKING SUCH ACTION SHALL BE BORNE BY CONTRACTOR, AND CONTRACTOR AGREES TO PROTECT, HOLD HARMLESS AND INDEMNIFY OWNER AGAINST ANY AND ALL SUCH COSTS OR EXPENSES.

27. ALL WORK PERFORMED UNDER THE CONTRACT, AND ALL EQUIPMENT, APPLIANCES, TOOLS AND LIKE ITEMS USED IN THE WORK SHALL CONFORM TO APPLICABLE SAFETY CODES AND REGULATIONS OF ANY PUBLIC OR OTHER AUTHORITY HAVING JURISDICTION. IN THE EVENT OF CONFLICTING REQUIREMENTS, THE MORE STRINGENT INTERPRETATION OR REGULATION SHALL GOVERN.

28. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT AN EROSION CONTROL PLAN TO MINIMIZE EROSION AND ENSURE FUNCTIONING OF STORMWATER MANAGEMENT SYSTEM UPON COMPLETION OF CONSTRUCTION.

29. CONTRACTOR AND ITS SUBCONTRACTORS SHALL USE, HANDLE, TRANSPORT, AND DISPOSE OF ALL HAZARDOUS MATERIALS (AS DEFINED PARAGRAPH 38.) IN COMPLIANCE WITH ALL PRESENT FEDERAL, STATE AND LOCAL ENVIRONMENTAL, HEALTH OR SAFETY LAW, INCLUDING, BUT NOT LIMITED TO, ALL SUCH STATUTES, REGULATIONS, RULES, ORDINANCES, CODES, AND RULES OF COMMON LAW.

30. CONTRACTOR FURTHER AGREES THAT CONTRACTOR AND ITS SUBCONTRACTORS SHALL NOT CAUSE THE DISCHARGE, RELEASE OR DISPOSAL OF ANY HAZARDOUS MATERIAL CREATED BY ITS WORK ON OR ABOUT THE JOB SITE. IN THE EVENT OF ANY SPILL, RELEASE OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH SPILL ON PERSONS OR PROPERTY.

31. CONTRACTOR AND ITS SUBCONTRACTORS SHALL, UPON COMPLETION OF PERFORMANCE OF ALL DUTIES UNDER THIS CONTRACT, REMOVE ALL SUPPLIES, MATERIALS, AND WASTE CONTAINING AND HAZARDOUS MATERIAL FROM THE JOB SITE. CONTRACTOR SHALL BEAR FULL FINANCIAL RESPONSIBILITY, AS BETWEEN THE PARTIES OF THIS CONTRACT, FOR THE COMPLIANCE OF CONTRACTOR AND ITS SUBCONTRACTORS WITH THE PROVISIONS OF THIS PARAGRAPH.

32. CONTRACTOR AGREES TO INDEMNIFY, DEFEND, PROTECT AND HOLD THE OWNER HARMLESS FROM AND AGAINST ANY CLAIMS INCLUDING, WITHOUT LIMITATION, ACTUAL ATTORNEY'S FEES AND ANY COSTS OF INVESTIGATION, SOILS TESTING, GOVERNMENTAL APPROVALS, REMEDIATION AND CLEAN-UP ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE FAILURE OF CONTRACTOR OR ITS SUBCONTRACTORS, OR THEIR AGENTS, EMPLOYEES, OFFICERS, OR REPRESENTATIVES, TO COMPLY WITH THE TERMS OF THIS ARTICLE.

33. SHOULD CONTRACTOR OR ITS SUBCONTRACTORS DISCHARGE, RELEASE OR DISPOSE OF ANY HAZARDOUS MATERIAL ON OR ABOUT THE JOB SITE IN VIOLATION OF REGULATIONS, CONTRACTOR SHALL IMMEDIATELY SO INFORM OWNER IN WRITING.

34. IN THE EVENT OF ANY SPILL, RELEASE OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH SPILL ON PERSONS OR PROPERTY. IN THE EVENT CONTRACTOR OR ITS SUBCONTRACTORS ENCOUNTER ON THE PREMISES ANY PIPELINE, UNDERGROUND STORAGE TANK OR OTHER CONTAINER, OF ANY KIND, THAT MAY CONTAIN A HAZARDOUS MATERIAL, OR ENCOUNTER MATERIAL REASONABLY BELIEVED TO BE A HAZARDOUS MATERIAL, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO OWNER IN WRITING.

35. IF CONTRACTOR OR ITS SUBCONTRACTORS DO NOT COMPLY WITH FEDERAL AND STATE REQUIREMENTS, OWNER MAY, BUT IS NOT OBLIGATED TO, GIVE WRITTEN NOTICE OF VIOLATION TO CONTRACTOR. SHOULD CONTRACTOR OR ITS SUBCONTRACTORS FAIL TO COMPLY WITH THE REQUIREMENTS WITHIN TWENTY-FOUR (24) HOURS FROM THE TIME OWNER ISSUES SUCH WRITTEN NOTICE OF NONCOMPLIANCE OR WITHIN THE TIME OF AN ABATEMENT PERIOD SPECIFIED BY ANY GOVERNMENTAL AGENCY, WHICHEVER PERIOD IS SHORTER, CONTRACTOR SHALL BE IN MATERIAL DEFAULT OF THIS CONTRACT.

36. "HAZARDOUS MATERIAL" MEANS ANY SUBSTANCE: (A) THE PRESENCE OF WHICH REQUIRES INVESTIGATION OR REMEDIATION UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, ORDINANCE, RULE, CODE, ORDER, ACTION, POLICY OR COMMON LAW, OR (B) WHICH IS OR BECOMES DEFINED AS A "HAZARDOUS WASTE," "HAZARDOUS SUBSTANCE," POLLUTANT OR CONTAMINANT UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, RULE OR ORDINANCE OR AMENDMENTS THERETO INCLUDING, WITHOUT LIMITATION, THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (42 U.S.C. SECTIONS 9601 ET SEQ.) AND/OR THE RESOURCE CONSERVATION AND RECOVERY ACT (42 U.S.C. SECTIONS 6901 ET SEQ.), OR (C) WHICH IS TOXIC, EXPLOSIVE, CORROSIVE, FLAMMABLE, INFECTIOUS, RADIOACTIVE, CARCINOGENIC, MUTAGENIC, OR OTHERWISE HAZARDOUS AND IS REGULATED BY ANY GOVERNMENTAL AUTHORITY, AGENCY, DEPARTMENT, COMMISSION, BOARD, AGENCY OR INSTRUMENTALITY OF THE UNITED STATES, THE STATE IN WHICH THE PREMISES ARE LOCATED OR ANY POLITICAL SUBDIVISION THEREOF, OR (D) THE PRESENCE OF WHICH ON THE PREMISES CAUSES OR THREATENS TO CAUSE A NUISANCE UPON THE PREMISES OR TO ADJACENT PROPERTIES OR POSES OR THREATENS TO POSE A HAZARD TO THE HEALTH OR SAFETY OF PERSONS ON OR ABOUT THE PREMISES, OR (E) WHICH CONTAINS GASOLINE, DIESEL FUEL OR OTHER PETROLEUM HYDROCARBONS, OR (F) WHICH CONTAINS POLYCHLORINATED BIPHENYLS (PCBS), ASBESTOS, LEAD OR UREA FORMALDEHYDE FOAM INSULATION.

37. THE EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES AS TO SIZE, LOCATION, AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.

38. IF ANY TESTING, INSPECTION OR APPROVAL REVEAL DEFECTIVE WORK, CONTRACTOR SHALL NOT BE ALLOWED TO RECEIVE ANY ASSOCIATED COSTS AND THE OWNER SHALL BE ENTITLED TO DEDUCT FROM THE CONTRACT PRICE, BY ISSUING A CHANGE ORDER, OWNER'S COSTS ARISING OUT OF THE DEFECTIVE WORK, INCLUDING COSTS OF REPEATED PROCEDURES, COMPENSATION FOR ENGINEER'S AND DESIGN ENGINEER'S SERVICES AND OTHER RELATED COSTS.

GENERAL ORDER OF MAJOR EVENTS

1. OCWS TO DEMOLISH SOUTH ODD FELLOW WAREHOUSE BUILDING.
2. CONTRACTOR TO BUILD FIELD OFFICE BUILDING AND MAINTENANCE BUILDING; CONTRACTOR AND OCWS TO PERFORM SITE WORK ON SOUTH PORTION OF WEST PARCEL AND EAST PARCEL AND OBTAIN TEMPORARY CERTIFICATE OF OCCUPANCY.
3. OCWS EMPLOYEES MOVE INTO BOTH BUILDINGS.*
4. OCWS TO DEMOLISH NORTH ODD FELLOW WAREHOUSE BUILDING.*
5. CONTRACTOR AND OCWS TO COMPLETE SITE WORK ON WEST PARCEL.
6. OCWS TO BUILD A NEW NUCLEAR DENSITY BUILDING, THEN DEMOLISH THE OLD NUCLEAR DENISTY BUILDING.
7. OCWS TO DEMOLISH OR REMOVE OLD ENGINEERING TRAILER.
8. OCWS TO COMPLETE SITE WORK ON EAST PARCEL.
9. OBTAIN FINAL CERTIFICATE OF OCCUPANCY.

THE FOLLOWING WORK SHALL BE FURNISHED AND INSTALLED BY OCWS AND NO PRICING SHALL BE PROVIDED BY THE CONTRACTOR:

- DEMOLITION INCLUDING BUILDINGS, DRIVEWAY, AND GRAVEL.
- FIRE HYDRANT INSTALLATION INCLUDING TAP, ETC.
- WATER AND SEWER SERVICE INSTALLATION FROM THE MAIN TO WITHIN 5 FEET OF THE BUILDING.
- REROUTING THE EXISTING SERVICE FOR THE CONVENIENCE STORE.

⚠ * CONTRACTOR SHALL ALLOW A TOTAL OF 2 WEEKS FOR OKALOOSA COUNTY TO COMPLETE EVENTS 3 AND 4 ABOVE. ONE ADDITIONAL CALENDAR DAY SHALL BE AWARDED TO THE CONTRACTOR FOR EACH DAY BEYOND THE 2 WEEK SCHEDULE THE NORTH ODD FELLOW WAREHOUSE BUILDING SITE IS NOT AVAILABLE FOR THE CONTRACTOR TO BEGIN WORK.

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

TONIA D. NATION
FL LICENSE NO.: 64631
FBPR CERTIFICATE OF AUTHORIZATION NO. 5057

NO.	DATE	REVISION	BY
3	11/24/20	ADDENDUM NO. 3	JRC

GENERAL NOTES

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

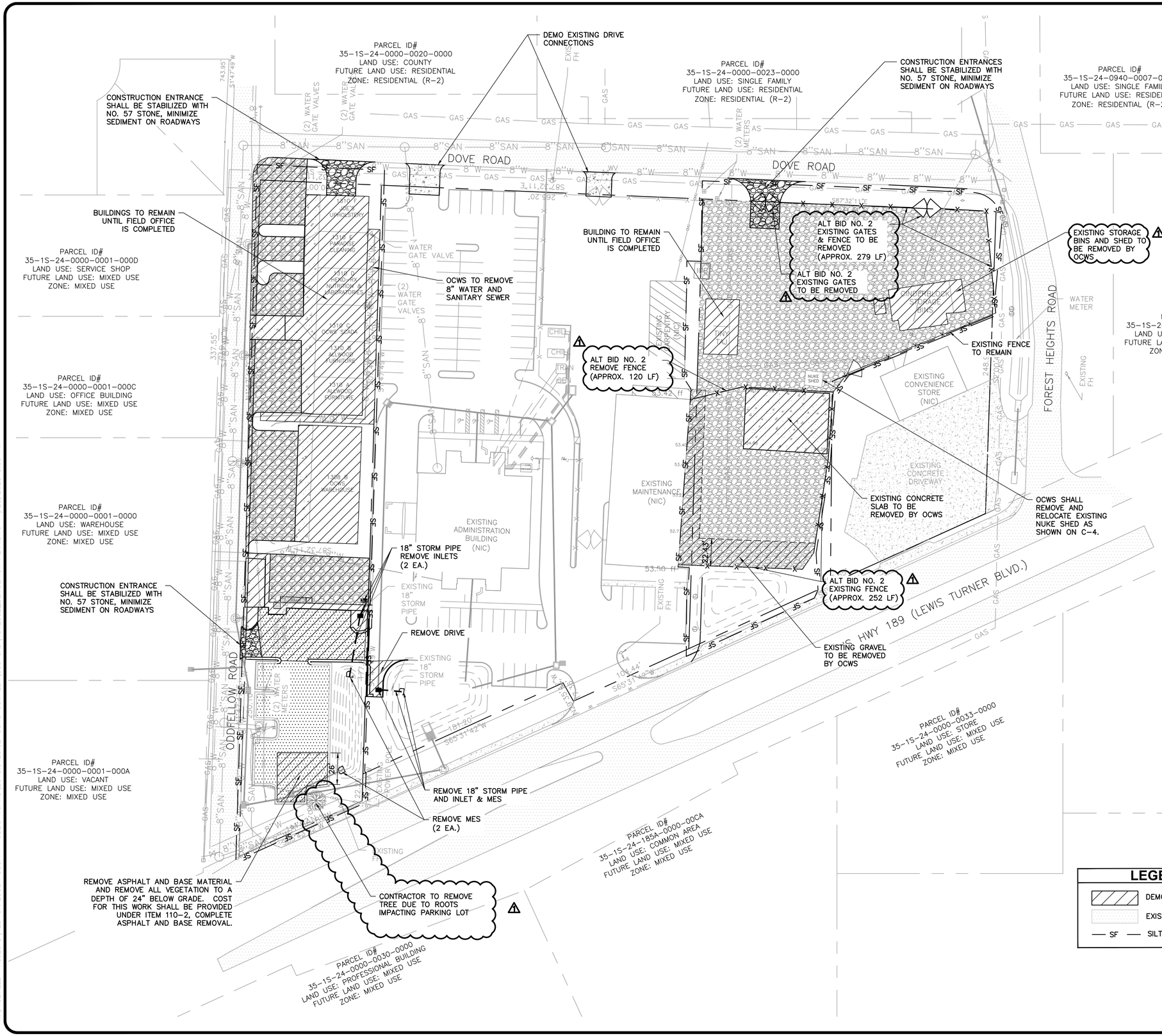
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JRC
DRAWN BY:	NDU
CHECKED BY:	TDN
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	SEPTEMBER 2020

SHEET NUMBER

G-4

ATTACHMENT D (28 PAGES)



NOTES:

1. CONTRACTOR SHALL INSTALL SILT FENCE PRIOR TO COMMENCING IN ANY CONSTRUCTION ACTIVITIES AND MAINTAIN SILT FENCE THROUGHOUT CONSTRUCTION AND UNTIL SITE STABILIZED.
2. CONTRACTOR SHALL NOTIFY THE ENGINEER IF EROSION CONTROL ISSUES DEVELOP ONSITE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL MEASURES ON SITE 24 HOURS A DAY THROUGHOUT CONSTRUCTION.
4. CONTRACTOR SHALL PROVIDE INLET PROTECTION THROUGHOUT CONSTRUCTION.
5. SEE GEOMETRY PLANS FOR LOCATION/LAYOUT OF ALL PROPOSED FEATURES.
6. SAW-CUT CLEAN EDGES AND MATCH EXISTING GRADE FOR ALL DEMOLITION TIE-IN LOCATIONS. APPLY TACK COAT ON ALL EDGES PER FDOT 300.
7. STRIPPINGS INTENDED FOR USE AS TOPSOIL PER FDOT 987.
8. SAW CUT MIN 2 FOOT BACK OR PER FLEX BUTT JOINT DETAIL, TYPICAL PAVEMENT SECTION AND DETAILS SHEET(S), WHICHEVER IS GREATER. BUTT JOINT REQUIRES TACK AND CLEAN SAW CUT FOR THE FULL LENGTH OF THE TIE-IN.
9. CONTRACTOR TO PROVIDE ADEQUATE BRACED SHORING OR SHEETPILING PER OSHA REQUIREMENTS DURING CONSTRUCTION.
10. SEE C-14 FOR SILT FENCE AND INLET PROTECTION DETAILS.
11. OKALOOSA COUNTY WATER AND SEWER SHALL PERFORM ALL BUILDING, DRIVEWAY, AND GRAVEL DEMOLITION . NO PRICING SHALL BE PROVIDED BY BIDDER FOR THESE DEMOLITION ITEMS.

AVCON, INC.
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AVCON

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

TONIA D. NATION
FL LICENSE NO.: 64631
FBPR CERTIFICATE OF AUTHORIZATION NO. 5057

NO.	DATE	REVISION	BY
3	11/24/20	ADDENDUM NO. 3	JRC

DEMOLITION, HAUL ROUTE & EROSION CONTROL PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

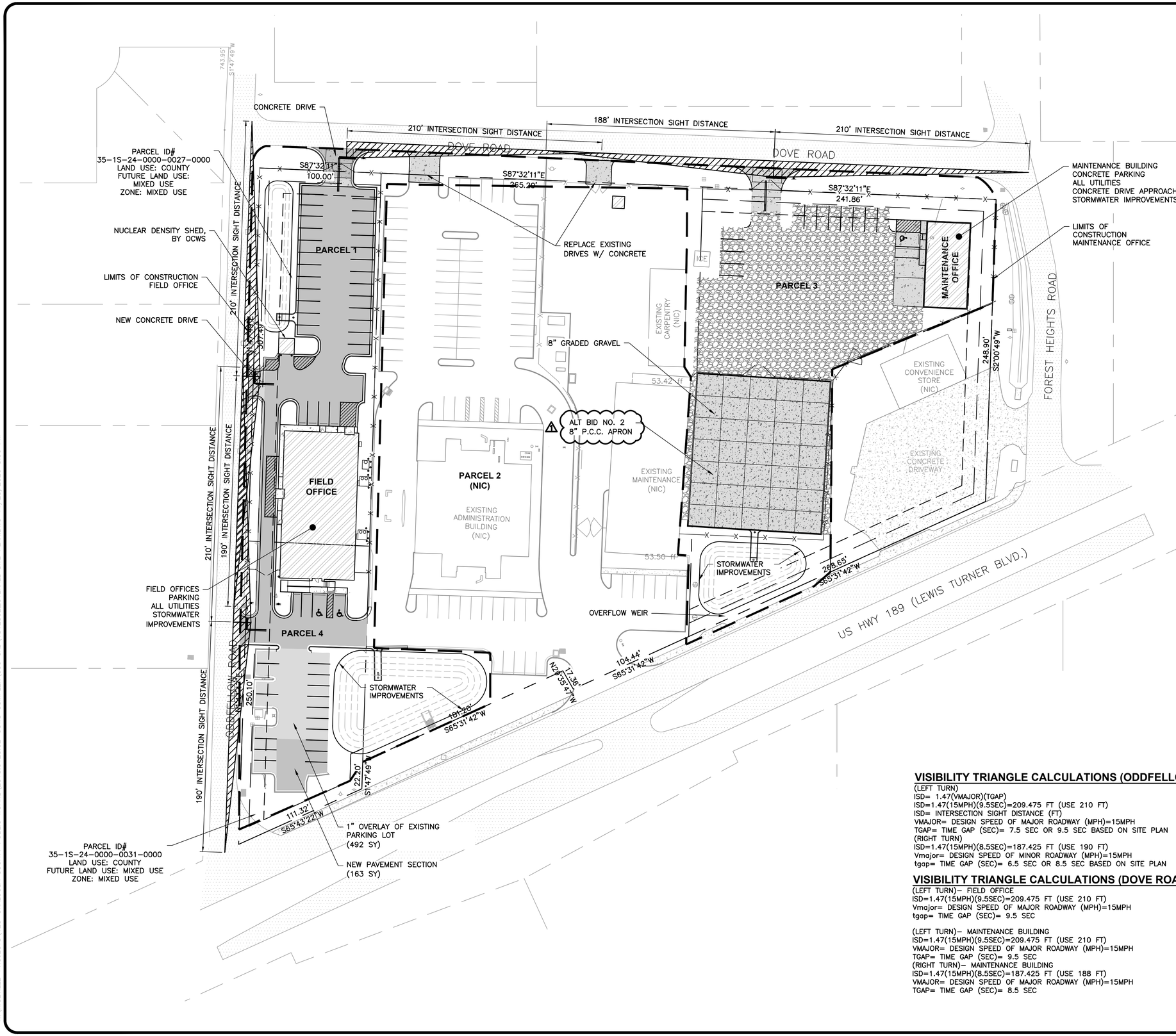
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JRC
DRAWN BY:	NDU
CHECKED BY:	TDN
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	SEPTEMBER 2020

SHEET NUMBER

C-2

ATTACHMENT D (28 PAGES)



SITE NOTES:

1. ALL WORK DETAILED IN CONSTRUCTION DRAWINGS SHALL CONFORM TO FDOT STD. PLANS AND SPECIFICATIONS, LATEST EDITION.
2. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS AT ALL TIMES ALONG ALL PUBLIC RIGHT-OF-WAYS.
3. ALL PAVEMENT MARKINGS SHALL CONFORM TO FDOT STD. PLANS 711-001.
4. ALL SIGNS AND PLACEMENTS OF SIGNS SHALL CONFORM TO FDOT STD. PLANS 700-101 AND MUTCD CHAPTER 2.
5. REFER TO STD. PLANS 102-600 FOR PLACEMENT OF TRAFFIC CONTROL DEVICES.
6. ALL DISTURBED AREAS SHALL BE SODDED WITHIN TWO WEEKS AFTER FINAL GRADING IS COMPLETED.
7. PAVEMENT SUBGRADE SHALL HAVE ALL UNSUITABLE MATERIALS REMOVED TO A DEPTH OF TWO FEET BELOW TOP OF SUBGRADE, AND 2.5 FEET BEYOND EDGE OF PAVEMENT OR BACK OF CURB. BACKFILL WITH SUITABLE MATERIAL.
8. THE SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH SECTION 160 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
9. THE BASE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS. ALLOWABLE BASE MATERIALS ARE INDICATED ON THE DRAWINGS.
10. ALL EXCAVATION AND EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 120 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
11. WHERE DAMAGED OR REQUIRED TO BE CUT BY THE CONTRACTOR'S OPERATIONS, SIDEWALKS AND DRIVEWAYS SHALL BE REPAIRED TO CONFORM TO THE EXISTING TYPE OF CONSTRUCTION IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
12. PROVIDE CONTRACTION JOINTS AT 10' O.C. AND EXPANSION JOINTS AT 50' O.C. ON ALL EXTERIOR SIDEWALKS AND CURBING.
13. ALL PERMANENT PAINT STRIPING WITHIN THE RIGHT-OF-WAY SHALL BE THERMO-PLASTIC REFLECTIVE PAINT, AND BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
14. THERMO-PLASTIC PAINT SHALL BE INCIDENTAL TO THE PARKING LOT PAVEMENT MARKING PAY ITEM. NO SEPARATE PAYMENT SHALL BE MADE FOR THERMO-PLASTIC MARKINGS.
15. PARKING LOT LIGHTING SHALL BE PROVIDED FOR THE SITE. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND PHOTOMETRICS FOR LIGHTING AS PROPOSED.

LEGEND

- BUFFER LINE
- SETBACK LINE
- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED FENCE LINE
- EXISTING CONCRETE LOT
- EXISTING ASPHALT PAVEMENT
- PROPOSED GRAVEL AREA
- PROPOSED BUILDING
- PROPOSED ASPHALT
- PROPOSED CONCRETE PAD
- PROPOSED OVERLAY

VISIBILITY TRIANGLE CALCULATIONS (ODDFELLOW RD)

(LEFT TURN)
ISD= 1.47(VMAJOR)(TGAP)
ISD=1.47(15MPH)(9.5SEC)=209.475 FT (USE 210 FT)
ISD= INTERSECTION SIGHT DISTANCE (FT)
VMAJOR= DESIGN SPEED OF MAJOR ROADWAY (MPH)=15MPH
TGAP= TIME GAP (SEC)= 7.5 SEC OR 9.5 SEC BASED ON SITE PLAN
(RIGHT TURN)
ISD=1.47(15MPH)(8.5SEC)=187.425 FT (USE 190 FT)
Vmajor= DESIGN SPEED OF MINOR ROADWAY (MPH)=15MPH
tgap= TIME GAP (SEC)= 6.5 SEC OR 8.5 SEC BASED ON SITE PLAN

VISIBILITY TRIANGLE CALCULATIONS (DOVE ROAD)

(LEFT TURN)- FIELD OFFICE
ISD=1.47(15MPH)(9.5SEC)=209.475 FT (USE 210 FT)
Vmajor= DESIGN SPEED OF MAJOR ROADWAY (MPH)=15MPH
tgap= TIME GAP (SEC)= 9.5 SEC

(LEFT TURN)- MAINTENANCE BUILDING
ISD=1.47(15MPH)(9.5SEC)=209.475 FT (USE 210 FT)
VMAJOR= DESIGN SPEED OF MAJOR ROADWAY (MPH)=15MPH
TGAP= TIME GAP (SEC)= 9.5 SEC
(RIGHT TURN)- MAINTENANCE BUILDING
ISD=1.47(15MPH)(8.5SEC)=187.425 FT (USE 188 FT)
VMAJOR= DESIGN SPEED OF MAJOR ROADWAY (MPH)=15MPH
TGAP= TIME GAP (SEC)= 8.5 SEC

North

0 20 40 80
GRAPHIC SCALE IN FEET

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

TONIA D. NATION
FL LICENSE NO.: 64631
FBPR CERTIFICATE OF AUTHORIZATION NO. 5057

NO.	DATE	REVISION	BY
A	11/24/20	ADDENDUM NO. 3	JRC

OVERALL SITE PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JRC
DRAWN BY:	NDU
CHECKED BY:	TDN
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	SEPTEMBER 2020

SHEET NUMBER

C-3

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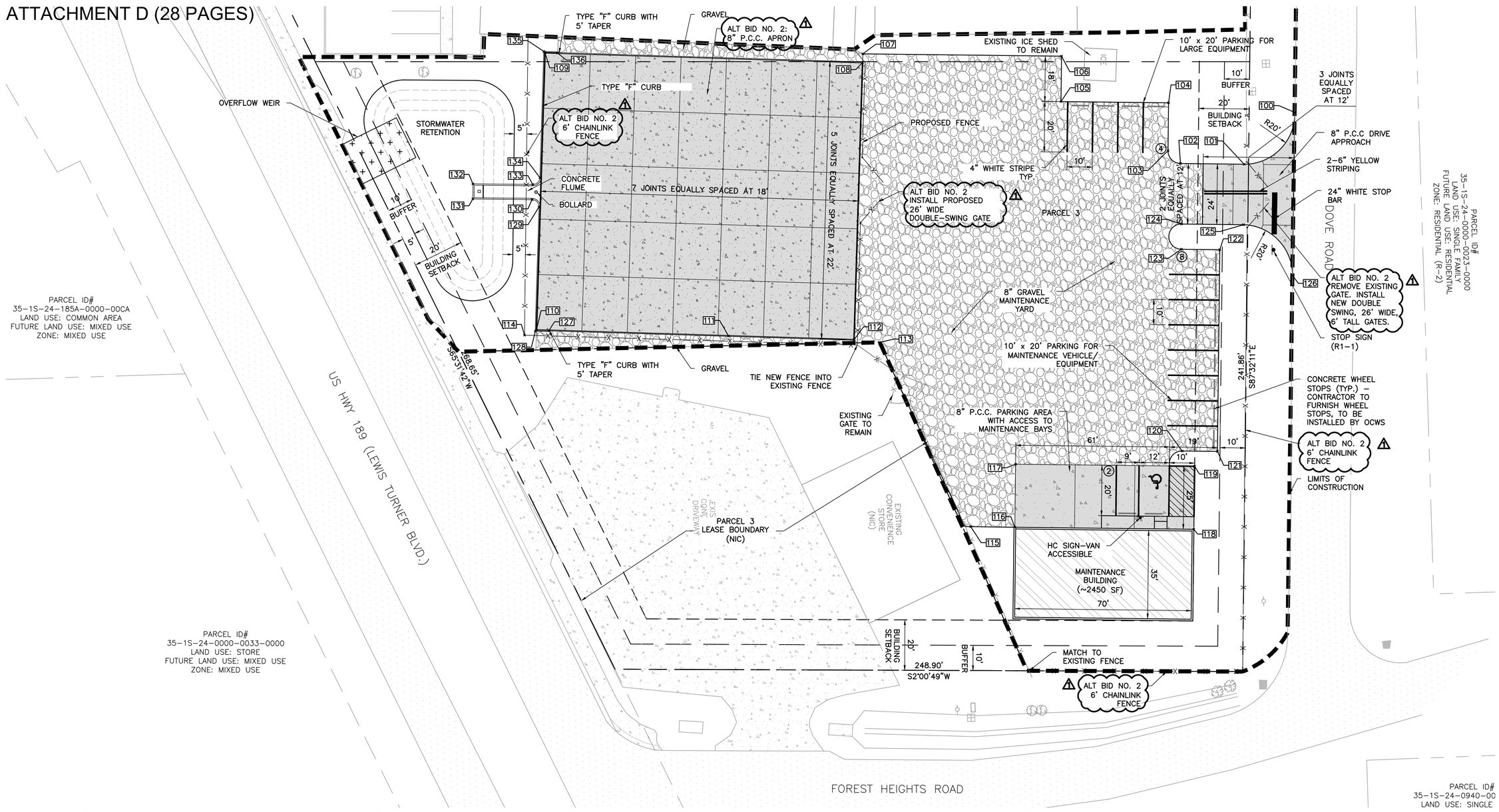
ATTACHMENT D (28 PAGES)



EAST PARCEL SITE DATA TABLE

PARCEL IDENTIFICATION NUMBER:	35-1S-24-0000-0027-0020	
CURRENT USE:	UTILITY SERVICES	
FUTURE LAND USE:	MU-MIXED USE	
ZONE:	MU-MIXED USE	
SURROUNDING ZONE:		
NORTH	R2- RESIDENTIAL	
SOUTH, EAST, & WEST	MU-MIXED USE	
TOTAL AREA:	74,739 SF	(1.72 ACRES)
OKALOOSA WATER AND SEWER AREA:	52,358 SF	(1.2 ACRES)
GAS STATION LEASE AREA:	22,381 SF	(.51 ACRES)
	REQUIRED	PROVIDED
BUILDING HEIGHT	75 FT	23' 2"
TOTAL BUILDING AREA:		2,790 SF
EXISTING BUILDING AREA:		3,669 SF
DEMO BUILDING AREA:		3,330 SF

PROPOSED BUILDING AREA:		2,450 SF
EXISTING ISC:	75%	91.2%
PROPOSED ISC:	75%	83.7%
FLOOR AREA RATIO (FAR):	0.75	0.053
	REQUIRED	PROVIDED
BUILDING SETBACKS		
NORTH (FRONT)	20 FT	20 FT
SOUTH (FRONT)	20 FT	70 FT
EAST (FRONT)	20 FT	20 FT
WEST (SIDE)	N/A	N/A
	REQUIRED	PROVIDED
LANDSCAPE BUFFERS		
NORTH (FRONT)	10 FT	10 FT
SOUTH (FRONT)	10 FT	10 FT
EAST (FRONT)	10 FT	10 FT
WEST (SIDE)	N/A	N/A

	REQUIRED	PROVIDED
PARKING REQUIREMENTS:		
GOVERNMENT OFFICE BUILDING: (1,148 SF) 1 SPACE/ 250 SF	5 SPACES	9 SPACES
OFFICE BUILDING (GARAGE): (1,302 SF) 1 SPACE/ 250 SF	0	0
HANDICAP SPACES REQUIRED	1 SPACES	1 SPACES
TOTAL PARKING SPACES:	5 SPACES	9 SPACES

LEGEND

- BUFFER LINE
- SETBACK LINE
- LIMITS OF CONSTRUCTION
- PROPERTY LINE
- PROPOSED FENCE LINE
- EXISTING CONCRETE LOT
- EXISTING ASPHALT PAVEMENT
- PROPOSED GRAVEL AREA
- PROPOSED BUILDING
- PROPOSED CONCRETE PAD

North

0 10 20 40

GRAPHIC SCALE IN FEET

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FL LICENSE NO.: 64631
FBPR CERTIFICATE OF AUTHORIZATION NO. 5057

NO.	DATE	REVISION	BY
A	11/24/20	ADDENDUM NO. 3	JRC

MAINTENANCE BUILDING SITE PLAN
RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JRC
DRAWN BY:	NDU
CHECKED BY:	TDN
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	SEPTEMBER 2020

SHEET NUMBER
C-5

ATTACHMENT D (28 PAGES)

GENERAL NOTES:

1. TO THE BEST OF OUR KNOWLEDGE, THE STRUCTURAL PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE FLORIDA BUILDING CODE, 2017, 6TH EDITION.
2. THE STRUCTURAL DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DOCUMENTS. USE THESE NOTES IN CONJUNCTION WITH THE SPECIFICATIONS. IF A CONFLICT EXISTS, THE MORE STRINGENT GOVERNS.
3. COMPLY WITH REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE FEDERAL STATE, AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.
4. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR BIDDING.
5. REVIEW ALL CONTRACT DOCUMENTS, DIMENSIONS AND SITE CONDITIONS AND COORDINATE WITH FIELD DIMENSIONS AND PROJECT SHOP DRAWINGS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES IN WRITING TO THE ARCHITECT/ENGINEER. DO NOT CHANGE SIZE OR DIMENSIONS OF STRUCTURAL MEMBERS WITHOUT WRITTEN INSTRUCTIONS FROM THE STRUCTURAL ENGINEER OF RECORD.
6. ANY DISCREPANCIES, OMISSIONS, OR VARIATIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS DISCOVERED DURING THE BIDDING PERIOD SHALL BE IMMEDIATELY COMMUNICATED IN WRITING TO THE ARCHITECT/ENGINEER.
7. PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. EACH CONTRACTOR SHALL PROTECT HIS WORK, ADJACENT PROPERTY AND THE PUBLIC. EACH CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.
9. DO NOT SCALE DRAWINGS; USE DIMENSIONS.
10. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS IN STRUCTURE NOT SHOWN ON STRUCTURAL DRAWINGS.
11. DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE ARCHITECT/ENGINEER.
12. REVISIONS ARE IDENTIFIED BY A REVISION NUMBER WITHIN A TRIANGLE. ALL REVISIONS ISSUED ON A SINGLE DATE WILL BE IDENTIFIED BY THE SAME REVISION NUMBER ISSUED CONSEQUENTLY.
13. CURRENT REVISIONS ARE ENCIRCLED BY AN IRREGULAR "CLOUD", AS WELL AS FLAGGED WITH THE CURRENT REVISION NUMBER. CLOUDS ARE REMOVED FROM PREVIOUSLY ISSUED REVISIONS.
14. DESIGN LOADS AND CRITERIA:

FLOOR LIVE LOAD	40 PSF
PARTITION LOAD	15 PSF
ROOF LIVE LOAD	20 PSF
FLOOR DEAD LOAD	SELF WEIGHT
WIND CRITERIA	ASCE 7-10
ULTIMATE WIND SPEED	160 MPH
RISK CATEGORY	IV
IMPORTANCE FACTOR	1.00
STRUCTURE TYPE	ENCLOSED

SHOP DRAWING SUBMITTALS:

1. THE FOLLOWING REQUIREMENTS IN NO WAY REDUCE OR LIMIT ANY ADDITIONAL REQUIREMENTS OF SPECIFICATIONS.
2. REVIEW OF SUBMITTALS BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AS PRESENTED BY THE CONTRACT DOCUMENTS. NO DETAILED CHECK OF QUANTITIES OR DIMENSIONS WILL BE MADE. ONLY THOSE SHOP DRAWINGS REQUIRED BY THE CONTRACT DOCUMENTS TO BE SUBMITTED WILL BE REVIEWED. ALL OTHERS WILL BE RETURNED WITHOUT COMMENT.
3. IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMIT A COPY OF THE SHOP DRAWING SUBMITTAL REGISTER TO THE STRUCTURAL ENGINEER, SHOWING DATES OF SUBMITTAL FOR EACH SPECIFIC STRUCTURAL SECTION OF THE WORK, CONSISTENT WITH THE FOLLOWING CRITERIA:
   A. ALLOW ADEQUATE TIME FOR TRANSIT AND PROCESSING BEFORE FABRICATION. THE STRUCTURAL ENGINEER WILL REVIEW AN AVERAGE SUBMITTAL WITHIN 10 WORKING DAYS OF RECEIPT BY THEM.
   B. SCHEDULE AND SUBMIT SHOP DRAWINGS FOR SPECIFIC COMPONENTS, SUCH AS COLUMNS FOOTINGS, ETC., IN THEIR ENTIRETY. SHOP DRAWINGS FOR SIMILAR FLOORS SHALL BE SUBMITTED IN THE SAME PACKAGE.
   C. SUBMIT SHOP DRAWINGS IN A TIMELY MANNER, CONSISTENT WITH THE ABOVE REQUIREMENTS.
4. ALL CHANGES AND ADDITIONS MADE ON RESUBMITTALS MUST BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RESUBMITTALS MUST BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT / ENGINEER REVIEW WILL BE LIMITED TO THE ITEMS CAUSING THE RESUBMITTAL.
5. DO NOT REPRODUCE THE CONTRACT DOCUMENTS FOR USE AS SHOP DRAWINGS.
6. SHOP DRAWINGS NOT MEETING THE ABOVE CRITERIA OR SUBMITTED AFTER FABRICATION WILL NOT BE REVIEWED AND WILL BE RETURNED WITHOUT COMMENT.
7. RESPONSIBILITIES OF DETAILERS AND FABRICATORS:
   A. GENERAL - SUBMIT SHOP DRAWINGS AND ANY OTHER SPECIAL INFORMATION NECESSARY FOR PROPER FABRICATION, ERECTION, AND PLACEMENT OF STRUCTURAL FABRICATIONS. INCLUDE PLANS, ELEVATIONS, AND SECTIONS. CLEARLY SHOW ANCHORAGES, CONNECTIONS, AND ACCESSORY ITEMS THE DETAILER MUST INTERPRET THE CONTRACT DOCUMENTS AND CLEARLY CONVEY THIS INTERPRETATION TO THE FIELD IN THE FORM OF PLACING OR ERECTION DRAWINGS.
   B. CONCRETE REINFORCING DETAILER - PROVIDE PLACING DRAWINGS FOR FABRICATION AND PLACING OF REINFORCING STEEL. THESE DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: BAR LISTS, SCHEDULES, BENDING DETAILS, PLACING DETAILS, PLACING PLANS, AND PLACING ELEVATIONS.
      - CLEARLY SHOW ELEVATIONS OF ALL FOUNDATION WALLS. INDICATE CONTROL JOINTS, EXPANSION JOINTS, LINTELS, CONCRETE BOND BEAMS, AND OPENINGS, DETAILS OF ALL REINFORCING WITH LOCATIONS OF SPLICES, AND HOOKS, PILASTERS.
      - CLEARLY SHOW GRADE BEAM ELEVATIONS AND SECTIONS. INDICATE BAR LENGTHS, HOOKS, STIRRUP SPACING, LAP SPLICES, OFFSETS, AND LOCATION OF BARS WITH RESPECT TO ALL SUPPORTS.
      - CLEARLY SHOW COLUMN ELEVATIONS AND SECTIONS. INDICATE DOWELS, OFFSETS, LAP SPLICES, AND TIES. PLAN SECTIONS OF ALL COLUMNS MUST CLEARLY BE SHOWN.
      - CLEARLY SHOW FOUNDATION REINFORCING. INDICATE BAR LENGTHS, LOCATION AND SPLICES OF CONTINUOUS BARS, AND BAR SUPPORTS.
      - CLEARLY SHOW LOCATIONS OF ALL DOWELS ON PLAN. INDICATE FOOTING STEP LOCATIONS AND PROVIDE DETAILS.
8. FOR ADDITIONAL CRITERIA APPLICABLE TO SHOP DRAWINGS REQUIRING ENGINEERING INPUT BY A SPECIALTY ENGINEER, SEE BELOW

SHOP DRAWINGS REQUIRING ENGINEERING INPUT BY SPECIALTLY ENGINEER:

1. SPECIALTY ENGINEER:
   A. DEFINITION - A FLORIDA REGISTERED PROFESSIONAL ENGINEER WHO SPECIALIZES IN AND WHO UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT.
   B. SHALL BE:
      1. AN EMPLOYEE OR OFFICER OF A FABRICATOR.
      2. AN EMPLOYEE OR OFFICER OF AN ENTITY SUPPLYING COMPONENTS TO A FABRICATOR.
      3. AN INDEPENDENT CONSULTANT RETAINED BY THE FABRICATOR OR HIS SUPPLIER.
2. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS WITH INPUT BY A SPECIALTY ENGINEER. PRE-ENGINEERED STEEL BUIDING AND ROOF COMPONENTS
3. THE SPECIALTY ENGINEER OR MANUFACTURER SHALL DESIGN, PROVIDE, AND INSTALL THEIR COMPONENTS AND THE COMPONENT CONNECTIONS TO THE PRIMARY STRUCTURE PER THE WIND CRITERIA STATED IN GENERAL NOTE 14 OR THE CURRENT GOVERNING BUILDING CODES, WHICHEVER IS MORE STRINGENT.
4. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
5. SHOP DRAWINGS AND CALCULATIONS MUST BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE SPECIALTY ENGINEER.
6. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE EMBOSSED OR PRINTED SEAL, DATE AND SIGNATURE OF THE SPECIALTY ENGINEER. COMPUTER PRINTOUTS ARE AN ACCEPTABLE SUBSTITUTE FOR MANUAL COMPUTATIONS PROVIDED THEY ARE ACCOMPANIED BY SUFFICIENT DESCRIPTIVE INFORMATION TO PERMIT THEIR PROPER E VALUATION. SUCH DESCRIPTIVE INFORMATION SHALL BEAR THE EMBOSSED SEAL AND SIGNATURE OF THE SPECIALTY ENGINEER AS AN INDICATION THAT HE HAS ACCEPTED RESPONSIBILITY FOR THE RESULTS. THE STRUCTURAL ENGINEER WILL RETAIN ONE SIGNED AND SEALED SET FOR RECORD.
7. CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A SPECIALTY ENGINEER.
8. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD OF SUBMITTALS IS LIMITED TO VERIFYING THE FOLLOWING:
   A. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHHED.
   B. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE SPECIALTY ENGINEER.
   C. THAT THE SPECIALTY ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE.)
   D. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE.)
9. A LIST SHALL BE PREPARED AND MAINTAINED BY THE CONTRACTOR FOR ALL SHOP DRAWINGS REQUIRING PARTICIPATION OF A SPECIALTY ENGINEER. THE LIST SHALL CONTAIN PROJECT NAME, NAME OF CONTRACTOR, NAME OF SUBCONTRACTOR, NAME OF SPECIALTY ENGINEER, DRAWING NUMBER, DRAWING TITLE AND THE LATEST REVISION NUMBER AND DATE. FOR PARTIAL SUBMITTALS, THE LIST SHALL CONTAIN ALL ANTICIPATED DRAWING NUMBERS AND TITLES REQUIRED TO COMPLETE THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE LATEST UPDATED LIST OF DRAWINGS WITH EACH SUBMITTAL.
10. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED AND WILL BE RETURNED TO C ONTRACTOR MARKED REVISE AND RESUBMIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS WHICH MAY RESULT.

REINFORCED CONCRETE:

1. USE STRUCTURAL CONCRETE AND CONCRETING PRACTICES CONFORMING TO ACI-316 AND 301 AND PROPORTION CONCRETE IN ACCORDANCE WITH ACI-318 CH. 4 AND MEETING A MIN. ULTIMATE COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

FOOTING	3000 PSI
GRADE BEAMS	3000 PSI

2. PROVIDE CURRENT (MAX. 1 YEAR OLD) STATISTICAL DATA FOR EACH CONCRETE IX DESIGN SUBMITTED.
3. WHERE CONCENTRATION OF REINFORCING STEEL HINDERS PROPER CONSOLIDATION OF CONCRETE USE CONCRETE CONTAINING A SUPERPLASTICIZING (N.R.W.R.) ADMIXTURE, ASTM C494 TYPE F. SLUMP AFTER ADDITION OF SUPERPLASTICIZER SHALL BE 7"+1".
4. IF CONCRETE IS PUMPED, SLUMP MAY BE INCREASED TO 6" AT THE TRUCK, PROVIDED THE SLUMP SPECIFIED IN NOTE 2 IS MAINTAINED AT THE DISCHARGE END. USE A MINIMUM 4-INCH PUMP, UNLESS PRE-APPROVED BY ARCHITECT. TAKE CONCRETE SAMPLES FOR SLUMP AT TRUCK AND AT DISCHARGE END. TAKE CONCRETE SAMPLES FOR CYLINDER TESTING AT DISCHARGE END.
5. USE ASTM A-615 GR. 60 FOR ALL REINFORCING STEEL, CONFORM TO ACI-301, ACI-315,ACI-318, AND CRSI "MANUAL OF STANDARD PRACTICE". ALL REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE WITH BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH THE ABOVE REQUIREMENTS. PROVIDE CLASS 'B' LAP SPLICE FOR CONTINUOUS BARS, U.O.N. LAP BOTTOM STEEL OVER SUPPORTS AND TOP STEEL AT MIDSPAN UNLESS OTHERWISE SPECIFIED. HOOK DISCONTINUOUS ENDS OF ALL TOP BARS AND ALL BARS IN WALLS U.O.N. USE 1" COVER OVER REINFORCING EXCEPT AS FOLLOWS:

	BOTTOM	TOP	SIDES
FOOTING/PILECAP	3"	2"	3"

5. USE PLAIN COLD-DRAWN ELECTRICALLY-WELDED STEEL WIRE FABRIC CONFORMING TO ASTM A 185. SUPPLY IN FLAT SHEETS ONLY. LAP SPLICES SHALL BE MEASURED BETWEEN THE OUTERMOST CROSS WIRES OF EACH FABRIC SHEET AND SHALL BE NOT LESS THAN TWICE THE SPACING OF THE CROSS WIRES PLUS 2".
6. SLEEVE ALL PIPES THROUGH SLABS INDIVIDUALLY, UNLESS APPROVED BY THE ENGINEER. WHERE PIPES OR DUCTS PENETRATE THE SLAB, A MAXIMUM OF TWO SLAB BARS MAY BE CUT PROVIDED THEY ARE #5 BARS OR SMALLER, PROVIDED SPLICED BARS ARE PLACED ALONGSIDE THE OPENING IN EACH DIRECTION WITH A 36 BAR DIAMETER SPLICE AT THE END OF EACH CUT BAR. SPLICE BARS SHALL HAVE THE EQUIVALENT CROSS-SECTIONAL AREA AS THE CUT BARS. FOR OPENINGS LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS SUBMIT SHOP DRAWINGS SHOWING SIZE AND LOCATION FOR THE ENGINEER'S REVIEW. PROVIDE (1) # 5x6'-0" EACH WAY DIAGONALLY AT CORNERS OF ALL OPENINGS LARGER THAN 12", UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL:

1. ALL STEEL WORK (INCLUDING FABRICATION AND ERECTION) SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 9TH EDITION AND PROJECT SPECIFICATIONS. USE THE FOLLOWING:
   A. ROLLED SHAPES, PLATES, AND BARS: ASTM A992 50 KSI
   B. COLD-FORMED STEEL TUBING: ASTM A500, GRADE B.
   C. HOT-FORMED STEEL TUBING: ASTM A501.
   D. STEEL PIPE: ASTM A3, TYPE E OR S, GRADE B.
2. USE STRUCTURAL STEEL THAT IS FULLY WELDABLE WITHIN GRADES AND FROM ANY GRADE TO ANY OTHER GRADE. WELD ALL SHOP CONNECTIONS, U.O.N.
3. ALL SHOP AND FIELD WELDING SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1, LATEST EDITION, PUBLISHED BY THE AMERICAN WELDING SOCIETY (AWS). USE ELECTRODES CONFORMING TO AWS D1.1, E70 SERIES, U.O.N. SHOW ALL SHOP WELDS ON THE FABRICATION DRAWINGS AND ALL FIELD WELDS ON THE ERECTION DRAWINGS.
4. ALL SHOP AND FIELD WELDERS, WELDING OPERATORS, AND TACKERS SHALL BE CERTIFIED ACCORDING TO AWS PROCEDURES FOR THE WELDING PROCESS AND WELDING POSITION USED. SUBMIT CERTIFICATES TO ARCHITECT/ENGINEER FOR THEIR RECORDS BEFORE BEGINNING WELDING.
5. ALL JOINT WELDING PROCEDURES TO BE USED SHALL BE PREPARED BY THE FABRICATOR OR CONTRACTOR AS WRITTEN PROCEDURE SPECIFICATIONS AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR THEIR RECORD. ALL JOINT WELDING PROCEDURES SHALL BE QUALIFIED PRIOR TO USE ACCORDING TO AWS PROCEDURES. SUBMIT PROPERLY DOCUMENTED EVIDENCE OF QUALIFICATION TESTS TO ARCHITECT/ENGINEER FOR THEIR RECORDS.
6. A325 BOLTS:
   A. A325 BOLTS SHALL CONFORM TO ASTM A 325 TYPE 1, HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL JOINTS. DO NOT USE TYPE 2 BOLTS.
   B. PROVIDE HARDENED WASHERS CONFORMING TO ASTM F 436. PLACE HARDENED WASHERS UNDER PART BEING TURNED.
   C. ALL BOLTS SHALL BE NEW AND DOMESTICALLY MANUFACTURED. DO NOT REUSE BOLTS. BOLTS AND NUTS SHALL BE WAX DIPPED BY THE BOLT SUPPLIER OR LUBRICATED WITH JOHNSON'S STICK WAX 140.
   D. BEARING-TYPE BOLTS (A-325N) SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITIONS. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH.
   E. SLIP CRITICAL TYPE BOLTS (A325SC) SHALL BE TIGHTENED TO THE MINIMUM FASTENER TENSION INDICATED IN SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A-325 OR ASTM A490 BOLTS, SECTION 5, TABLE 3. TENSION SHALL BE DETERMINED SOLELY BY USE OF DIRECT TENSION INDICATORS, COMPLYING WITH ASTM F959-85, OR "LOHR" TENSION CONTROL BOLTS. HARDENED WASHERS SHALL BE USED FOR FRICTION-TYPE BOLTS. PROVIDE ONLY DOMESTICALLY MANUFACTURED BOLTS AND D.T.I.'S FRICTION-TYPE BOLTED CONNECTIONS MAY BE INSTALLED.
7. CONNECTIONS NOT COMPLETELY DETAILED ON STRUCTURAL DRAWINGS SHALL BE DESIGNED AND DETAILED BY FABRICATOR'S SPECIALTY ENGINEER ACCORDING TO AISC SPECIFICATIONS AND THE SPECIFIED LOADS AND IN COMPLIANCE WITH APPLICABLE PARAGRAPHS OF THIS SECTION.
8. USE A-307 BOLTS FOR ERECTION BOLTS AND ANCHOR BOLTS OR WHEN SPECIFICALLY CALLED FOR ON THE DRAWINGS.
9. CUT, DRILL, OR PUNCH HOLES PERPENDICULAR TO METAL SURFACES. DO NOT FLAME CUT HOLES OR ENLARGE HOLES BY BURNING.
10. SPLICING OF STRUCTURAL STEEL MEMBERS IN THE FIELD OR IN THE SHOP IS PROHIBITED EXCEPT WHERE INCLUDED ON THE DRAWINGS.
11. ALL EXTERIOR STRUCTURAL PLATES ANGLES AND EXTERIOR BEAMS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A-153.
12. REFER TO ARCHITECTURAL PLANS FOR FIREPROOFING OF STRUCTURAL STEEL MEMBERS, REFER TO SPECIFICATIONS FOR PAINTING OF EXPOSED STRUCTURAL STEEL.
13. SUBMIT STRUCTURAL STEEL SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR REVIEW BEFORE FABRICATION OF STRUCTURAL STEEL.
14. PROVIDE TEMPORARY BRACING AS NECESSARY TO INSURE A STABLE STRUCTURE DURING CONSTRUCTION.
15. DO NOT REPRODUCE THE STRUCTURAL DRAWINGS FOR USE AS SHOP DRAWINGS.
16. NO CUTTING OF SECTIONS, FLANGES, WEBS, OR ANGLES SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

Wind Loads - MWFRS h≤60' (Low-rise Buildings) Enclosed/partially enclosed only

Kz = Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
GCpi = +/-0.18

Edge Strip (a) = 3.0 ft
End Zone (2a) = 6.0 ft
Zone 2 length = 15.0 ft

Ultimate Wind Surface Pressures (psf)

1	29.3	12.2		-12.8	-29.8
2	-24.1	-41.1		-24.1	-41.1
3	-10.5	-27.6		-9.0	-26.0
4	-7.2	-24.2		-12.8	-29.8
5				27.4	10.4
6				-5.2	-22.2
1E	40.0	23.0		-14.2	-31.2
2E	-42.1	-59.1		-42.1	-59.1
3E	-18.8	-35.8		-16.6	-33.6
4E	-14.8	-31.8		-14.2	-31.2
5E				37.4	20.3
6E				-11.8	-28.8

Horizontal MWFRS Simple Diaphragm Pressures (psf)

Transverse direction (normal to L)

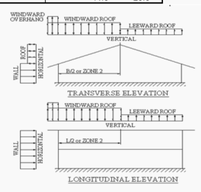
Interior Zone:	Wall	36.4 psf
	Roof	-13.6 psf **
End Zone:	Wall	54.8 psf
	Roof	-23.3 psf **

Longitudinal direction (parallel to L)

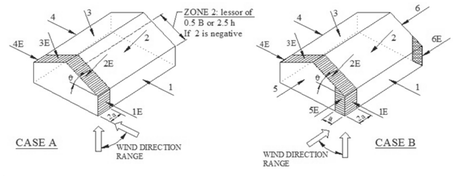
Interior Zone:	Wall	32.6 psf
End Zone:	Wall	49.2 psf

** NOTE: Total horiz force shall not be less than that determined by neglecting roof forces (except for MWFRS moment frames).

The code requires the MWFRS be designed for a min ultimate force of 16 psf multiplied by the wall area plus an 8 psf force applied to the vertical projection of the roof.



Location of MWFRS Wind Pressure Zones



NOTE: Torsional loads are 25% of zones 1 - 6. See code for loading diagram.

ASCE 7 -99 and ASCE 7-10 (& later)

Wind Loads - MWFRS h≤60' (Low-rise Buildings) Enclosed/partially enclosed only

Kz = Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
GCpi = +/-0.18

Edge Strip (a) = 3.0 ft
End Zone (2a) = 6.0 ft
Zone 2 length = 15.0 ft

Ultimate Wind Surface Pressures (psf)

1	29.3	12.2		-12.8	-29.8
2	-24.1	-41.1		-24.1	-41.1
3	-10.5	-27.6		-9.0	-26.0
4	-7.2	-24.2		-12.8	-29.8
5				27.4	10.4
6				-5.2	-22.2
1E	40.0	23.0		-14.2	-31.2
2E	-42.1	-59.1		-42.1	-59.1
3E	-18.8	-35.8		-16.6	-33.6
4E	-14.8	-31.8		-14.2	-31.2
5E				37.4	20.3
6E				-11.8	-28.8

Horizontal MWFRS Simple Diaphragm Pressures (psf)

Transverse direction (normal to L)

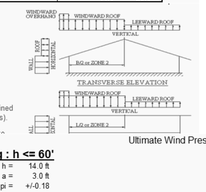
Interior Zone:	Wall	36.4 psf
	Roof	-13.6 psf **
End Zone:	Wall	54.8 psf
	Roof	-23.3 psf **

Longitudinal direction (parallel to L)

Interior Zone:	Wall	32.6 psf
End Zone:	Wall	49.2 psf

** NOTE: Total horiz force shall not be less than that determined by neglecting roof forces (except for MWFRS moment frames).

The code requires the MWFRS be designed for a min ultimate



Ultimate Wind Pressures

Wind Loads - Components & Cladding : h <= 60'

Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
Minimum parapet ht = 0.0 ft
Roof Angle (θ) = 9.5 deg
Type of roof = Gable

h = 14.0 ft
a = 3.0 ft
GCpi = +/-0.18

Roof

Area	GCp +/- GCpi			Surface Pressure (psf)			User input	
	10 sf	50 sf	100 sf	10 sf	50 sf	100 sf	75 sf	500 sf
Negative Zone 1	-1.08	-1.01	-0.98	-51.1	-47.8	-46.3	-46.9	-46.3
Negative Zone 2	-1.88	-1.53	-1.38	-88.9	-72.4	-65.3	-68.2	-65.3
Negative Zone 3	-2.78	-2.36	-2.18	-131.5	-111.6	-103.1	-106.6	-103.1
Positive All Zones	0.68	0.54	0.48	32.2	25.5	22.7	23.9	22.7
Overhang Zone 2	-2.20	-2.20	-2.20	-104.0	-104.0	-104.0	-104.0	-104.0
Overhang Zone 3	-3.70	-2.86	-2.50	-175.0	-135.3	-118.2	-125.3	-118.2

Overhang pressures in the table above assume an internal pressure coefficient (Gcpi) of 0.0
Overhang soffit pressure equals adjacent wall pressure reduced by internal pressure of 8.5 psf

Walls

Area	GCp +/- GCpi			Surface Pressure (psf)			User input	
	10 sf	100 sf	500 sf	10 sf	100 sf	500 sf	50 sf	200 sf
Negative Zone 4	-1.17	-1.01	-0.90	-55.3	-47.8	-42.6	-50.1	-45.5
Negative Zone 5	-1.44	-1.12	-0.90	-68.1	-53.1	-42.6	-57.6	-48.5
Positive Zone 4 & 5	1.08	0.92	0.81	51.1	43.6	38.3	45.8	41.3

Note: GCp reduced by 10% due to roof angle <= 10 deg.

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ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
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TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture llc
JDF ARCHITECTURE, LLC
201 HOLLYWOOD BLVD, NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY

GENERAL NOTES

RELEASE FOR BID

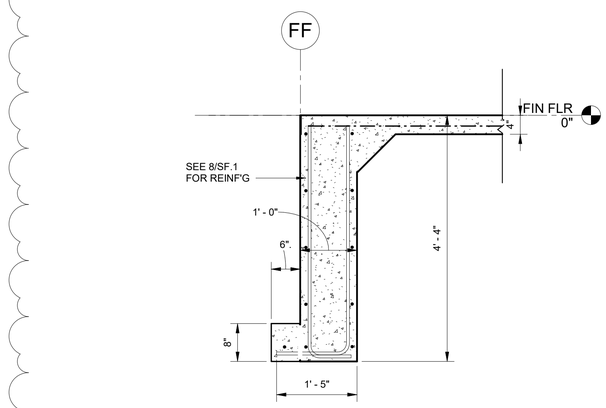
OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

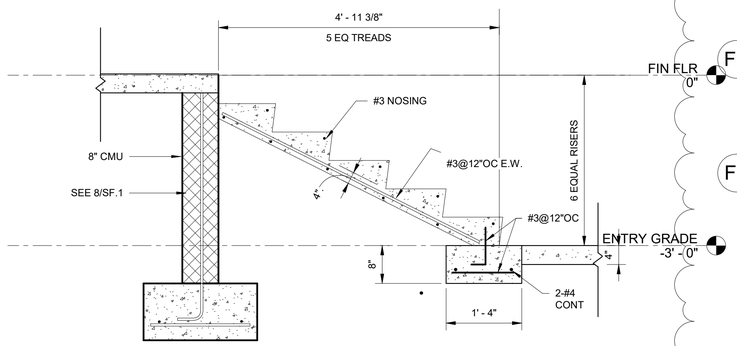
SHEET NUMBER

SF.0

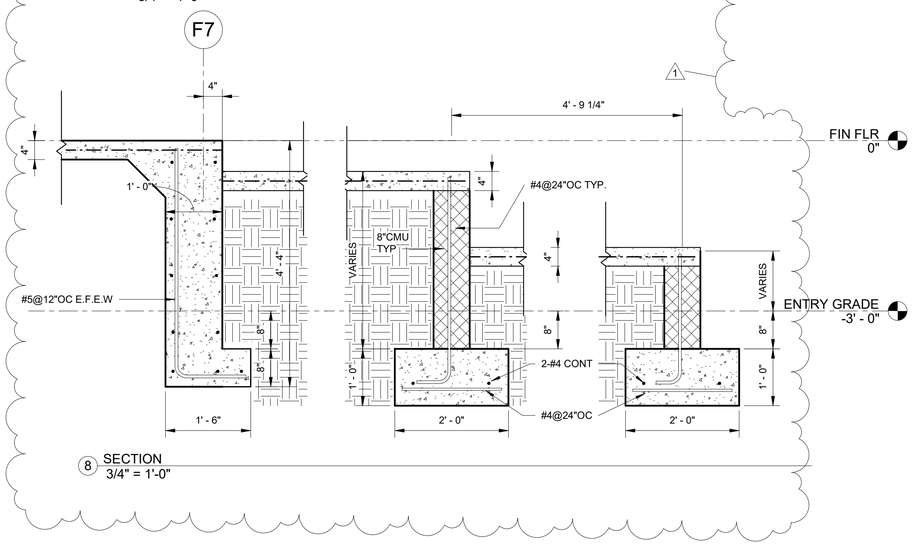
ATTACHMENT D (28 PAGES)



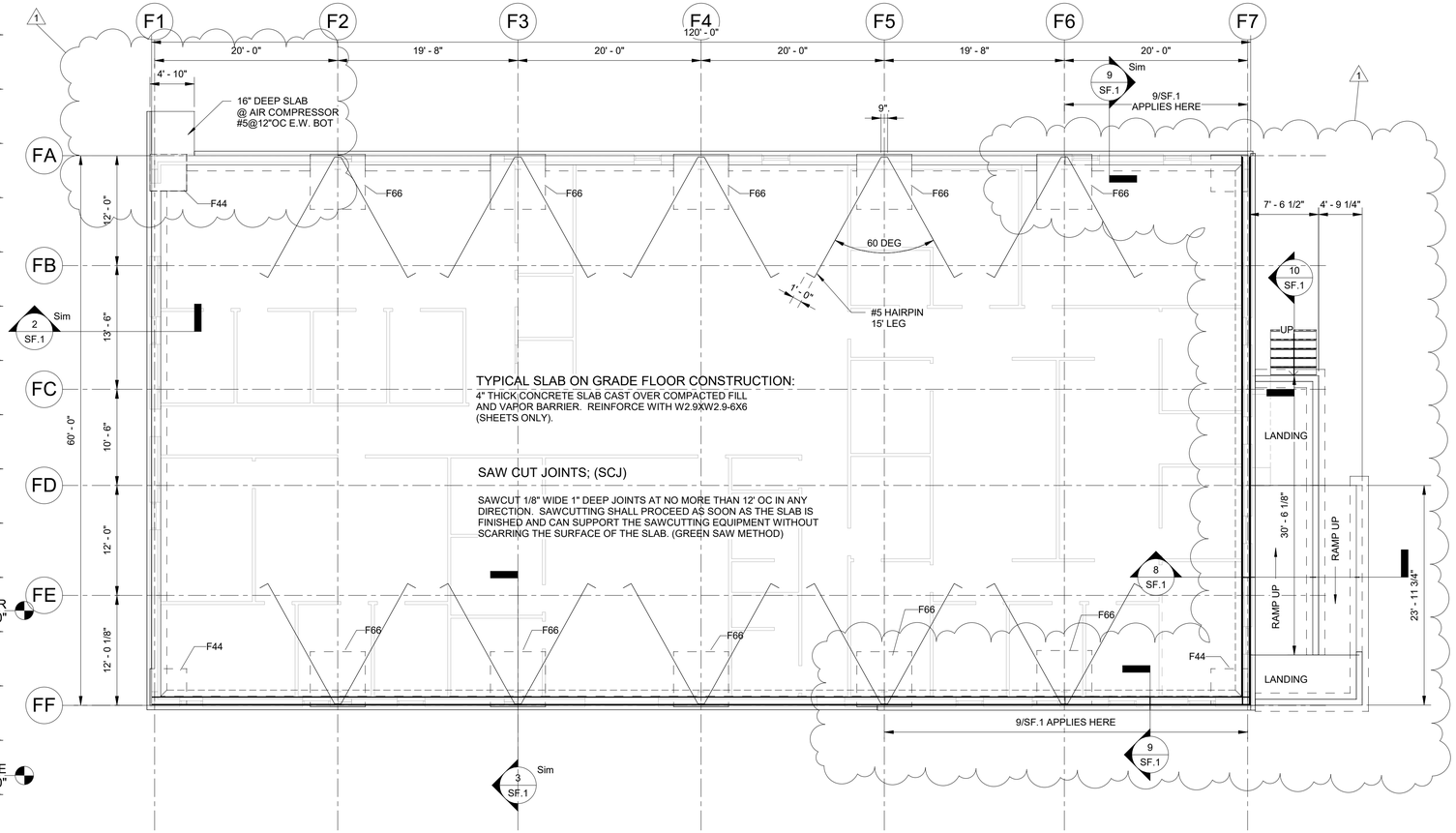
9 SECTION
3/4" = 1'-0"



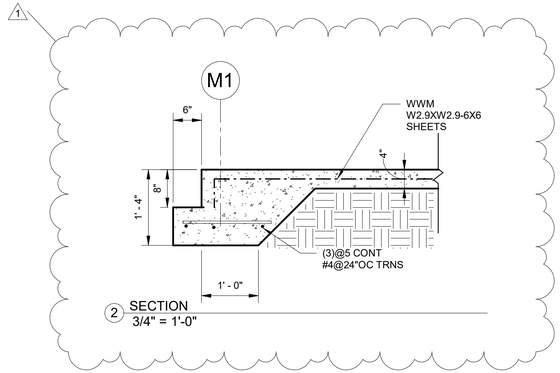
10 SECTION
3/4" = 1'-0"



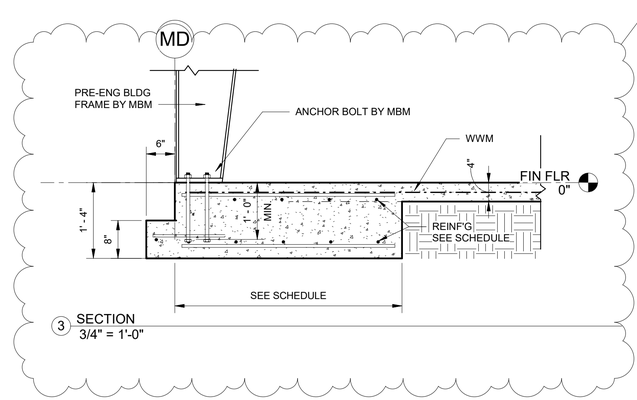
8 SECTION
3/4" = 1'-0"



1 FEILD OFFICE FOUNDATION PLAN
1/8" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

PRE-ENGINEERED STEEL BUILDING

1. CONTRACTOR SHALL SUPPLY THE FINAL REACTIONS TO THE ARCHITECT / ENGINEER FOR REVIEW AS SOON
AS THEY BECOME AVAILABLE.

2. THE SHOP DRAWINGS SHALL INDICATE THE DIAMETER AND NUMBER OF ANCHOR BOLTS PER COLUMN. SEE THE
CONTRACT DOCUMENTS FOR THE EMBEDMENT REQUIREMENTS.

FOOTING SCHEDULE:

FOOTING ID	SIZE	REINF'G	NOTES
GB-1	1'-4"X1-0" CONT.	SEE SECTION	RUN CONT BARS THRU FOOTING
F44	4'X4'X1'-4"	#5@10"OC E.W.T&B	
F66	6'X6'X1'-4"	#5@10"OC E.W.T&B	

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NICEVILLE, FL 32578-2425
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(850) 496-2166

NO.	DATE	REVISION	BY
1	11/4/20	ADDED BRICKLEDGE	

FOUNDATION PLAN SECTION & NOTES
RELEASE FOR BID

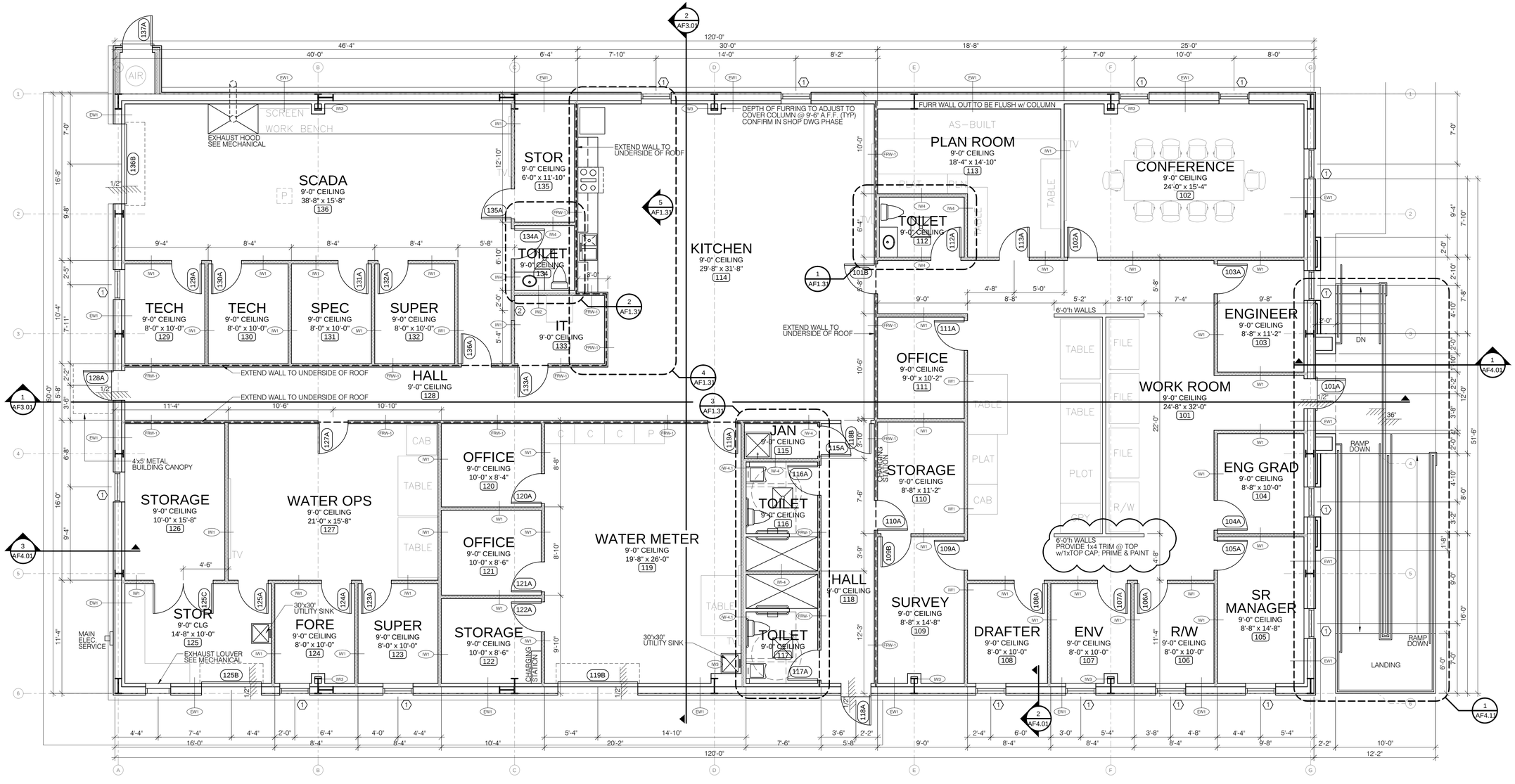
OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

SHEET NUMBER
SF.1

C:\SERS\ROGER\DROPBOX\2019\19-035 OC WS\WATER & SEWER.DWG 10/22/2018 1:59 PM

ATTACHMENT D (28 PAGES)



1 FIELD OFFICE BUILDING FLOOR PLAN

SCALE: 3/16" = 1'-0"

05 MAY 20

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FLOOR PLAN

RELEASE FOR BID

OCWS FIELD OFFICES
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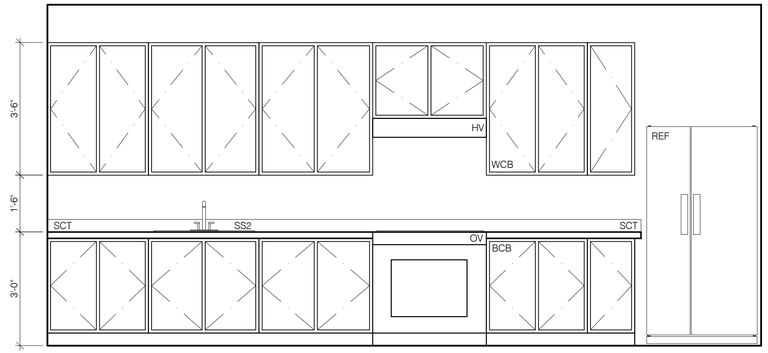
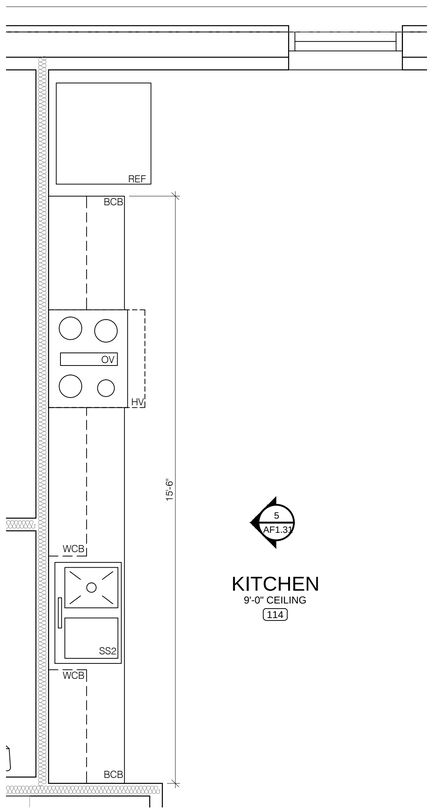
SHEET NUMBER
AF1.11

ATTACHMENT D (28 PAGES)



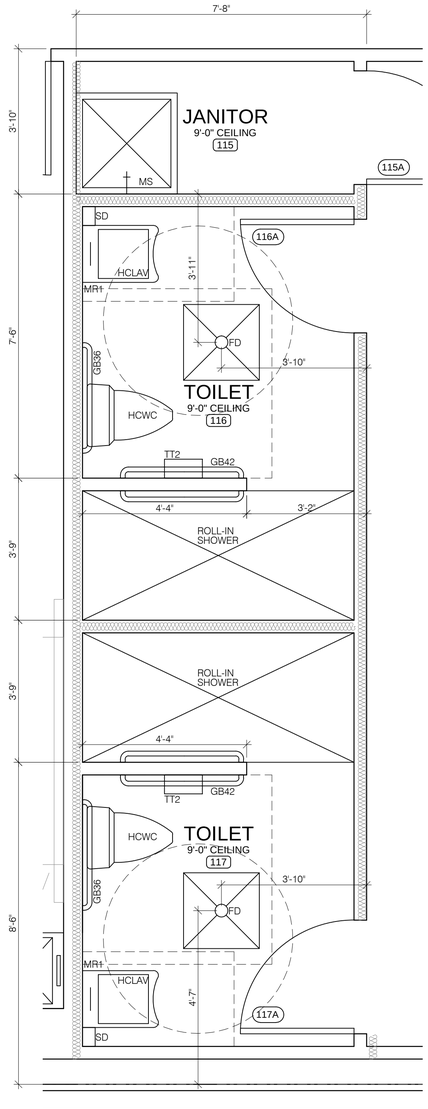
5 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"



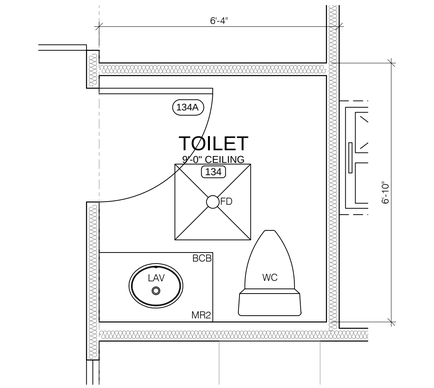
5
AF1.31

KITCHEN
9'-0" CEILING
114

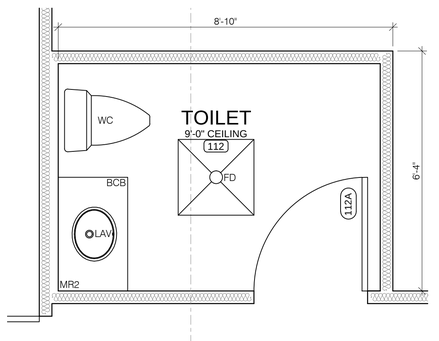
4 ENLARGED RESTROOM
SCALE: 1/2" = 1'-0"



3 ENLARGED RESTROOM
SCALE: 1/2" = 1'-0"



2 ENLARGED TOILET ROOM
SCALE: 1/2" = 1'-0"



1 ENLARGED TOILET ROOM
SCALE: 1/2" = 1'-0"

ACCESSORIES

BCB	BASE CABINETS
DF	DRINKING FOUNTAIN
FD	FLOOR DRAIN
GB36	36" ADA HORIZONTAL GRAB BAR
GB42	42" ADA HORIZONTAL GRAB BAR
HCDF	ADA DRINKING FOUNTAIN
HCLAV	ADA WALL MOUNTED SINK
HCWC	ADA WATER CLOSET; FLOOR MOUNTED
HV	HOOD VENT (REF MECHANICAL)
LAV	LAVATORY
MR1	FRAMED MIRROR (1'-6"wX3'h)
MR2	FRAMED MIRROR (3'-0"wX3'h)
MS	MOP SINK (30"X30")
OV	RANGE w/ OVEN (GE-Model #: JB655SKSS)
REF	REFRIGERATOR (GE-Model #: GIE22JSNRSS)
SCT	SOLID SURFACE COUNTER TOP
SD	SOAP DISPENSER
SWR	ROLL-IN SHOWER
SS2	STAINLESS STEEL SINK (2 BOWL)
TT2	DOUBLE TOILET TISSUE DISPENSER
VEND	VENDING MACHINE
WC	WATER CLOSET
WCB	WALL CABINETS

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NO.	DATE	REVISION	BY

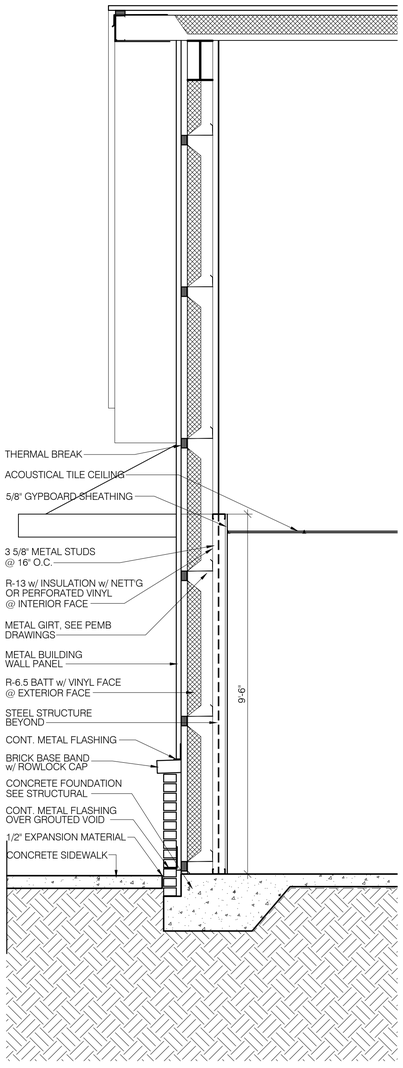
FLOOR PLAN

RELEASE FOR BID

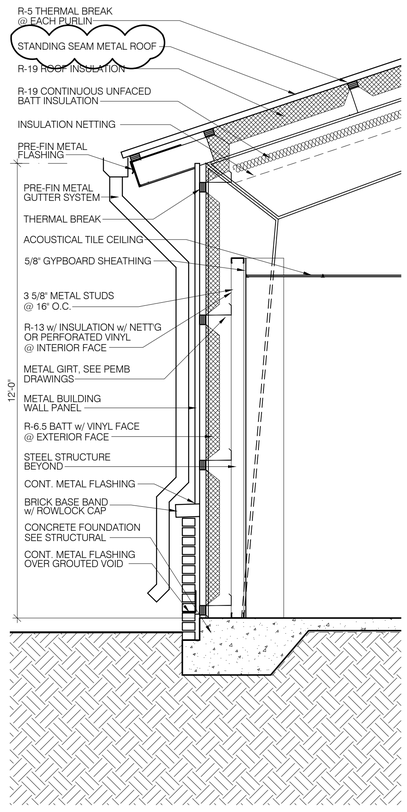
OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

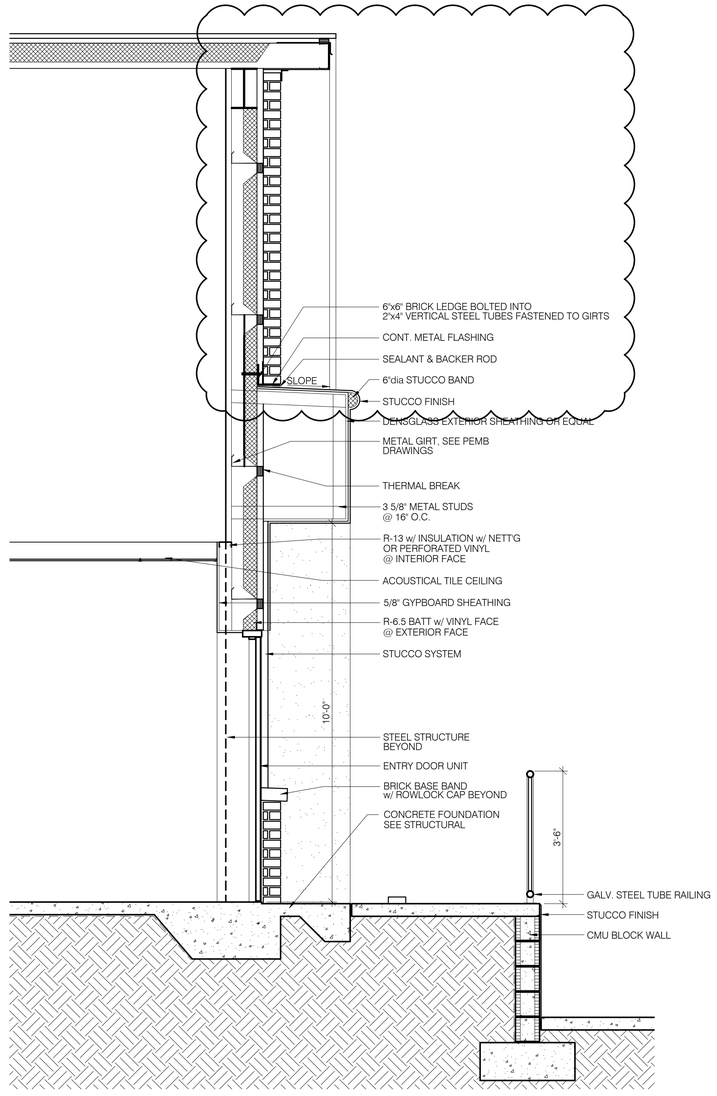
SHEET NUMBER
AF1.31



3 WALL SECTION
SCALE: 1/2" = 1'-0"



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



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

05 MAY 20

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NO.	DATE	REVISION	BY

BUILDING SECTIONS

RELEASE FOR BID

OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
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SHEET NUMBER
AF4.01

FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	WALL MAT'L	WALL FINISH	WALL BASE	CEILING FINISH	CEILING HT	REMARKS
101	WORK ROOM	SC	GYP	PNT	RB	ACT1	9'-0"	
102	CONFERENCE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
103	ENGINEER	CAR1	GYP	PNT	RB	ACT1	9'-0"	
104	ENGINEER GRAD	CAR1	GYP	PNT	RB	ACT1	9'-0"	
105	SENIOR MANAGER	CAR1	GYP	PNT	RB	ACT1	9'-0"	
106	RIGHT of WAY	CAR1	GYP	PNT	RB	ACT1	9'-0"	
107	ENVIRONMENTAL	CAR1	GYP	PNT	RB	ACT1	9'-0"	
108	DRAFTER	CAR1	GYP	PNT	RB	ACT1	9'-0"	
109	SURVEY	CAR1	GYP	PNT	RB	ACT1	9'-0"	
110	STORAGE	SC	GYP	PNT	RB	ACT1	9'-0"	
111	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
112	TOILET	SC	MRGB	PNT	RB	MRGB	9'-0"	
113	PLAN ROOM	CAR1	GYP	PNT	RB	GYP	9'-0"	
114	KITCHEN	SC	GYP	PNT	RB	ACT1	9'-0"	
115	JANITOR	SC	MRGB	PNT	RB	MRGB	9'-0"	FRP ON WALLS TO +6'-0" AFF
116	TOILET	SC	MRGB	PNT	RB	MRGB	9'-0"	WALL TILE TO 8'-0" AFF IN SHOWERS
117	TOILET	SC	MRGB	PNT	RB	MRGB	9'-0"	WALL TILE TO 8'-0" AFF IN SHOWERS
118	HALL	SC	GYP	PNT	RB	ACT1	9'-0"	
119	WATER METER	SC	GYP	PNT	RB	ACT1	9'-0"	
120	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
121	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
122	STORAGE	SC	GYP	PNT	RB	ACT1	9'-0"	
123	SUPERINTENDENT	CAR1	GYP	PNT	RB	ACT1	9'-0"	
124	FOREMAN	CAR1	GYP	PNT	RB	ACT1	9'-0"	
125	STORAGE	SC	GYP	PNT	RB	ACT1	9'-0"	
126	OPERATORS	SC	GYP	PNT	RB	ACT1	9'-0"	
127	WATER OPS	SC	GYP	PNT	RB	ACT1	9'-0"	
128	HALL	SC	GYP	PNT	RB	ACT1	9'-0"	
129	TECH	SC	GYP	PNT	RB	ACT1	9'-0"	
130	TECH	SC	GYP	PNT	RB	ACT1	9'-0"	
131	SPEC	SC	GYP	PNT	RB	ACT1	9'-0"	
132	SUPERINTENDENT	SC	GYP	PNT	RB	ACT1	9'-0"	
133	IT	SC	GYP	PNT	RB	ACT1	9'-0"	
134	TOILET	SC	MRGB	PNT	RB	MRGB	9'-0"	
135	STORAGE	SC	GYP	PNT	RB	ACT1	9'-0"	
136	SCADA	SC	GYP	PNT	RB	ACT1	9'-0"	

ABBREVIATIONS

GENERAL

- EXP - EXPOSED
- FD - FLOOR DRAIN
- MFR - MANUFACTURER

FLOORING

- CAR1 - COMMERCIAL GRADE 24"x24" CARPET TILE SHAW - DIFFUSE & DISPERSE
- EP - EPOXY FLOOR FINISH
- SC - SEALED CONCRETE
- TILE1 - COMMERCIAL GRADE PORCELAIN TILE
- VCT - VINYL COMPOSITE TILE; SEE DETAIL FOR PATTERN

BASE

- RB - 6" RUBBER BASE

WALLS

- CB - CEMENT BACKER BOARD BEHIND WALL TILE
- GYP - 5/8" TYPE 'X' GYPSUM BOARD
- MRGB - 5/8" MOISTURE RESISTANT GYPSUM BOARD
- PNT - INTERIOR LATEX PAINT
- TL2 - COMMERCIAL GRADE CERAMIC WALL TILE @ +6'-0" A.F.F.

CEILINGS

- ACT1 - LAY-IN ACOUSTICAL CEILING TILE 2'x4'-WHITE
- GYP - 5/8" TYPE 'X' GYPSUM BOARD

DOORS

- ALUM - ALUMINUM STORE FRONT SYSTEM
- HM - HOLLOW METAL FRAME
- MTL - INSULATED METAL DOOR
- WD - SOLID CORE WOOD DOOR

ACCESSORIES

AC	AIR COMPRESSOR
HCDF	ADA DRINKING FOUNTAIN
DF	DRINKING FOUNTAIN
FD	FLOOR DRAIN
FO	FLOOR OUTLET
FS	FLOOR SINK; SEE PLUMBING
GB36	36" ADA HORIZONTAL GRAB BAR
GB42	42" ADA HORIZONTAL GRAB BAR
HCLAV	ADA WALL MOUNTED SINK
HCWC	ADA WATER CLOSET; FLOOR MOUNTED
HWS	HANDWASH SINK
MR1	FRAMED MIRROR (1'-6"wX3'h)
MR2	FRAMED MIRROR (4'-6"wX3'h)
MS	MOP SINK w/ MOP RACK
MW	MICROWAVE
RD	ROOF DRAIN; COORDINATE w/ PLUMBING
REF	REFRIGERATOR
SS1	STAINLESS STEEL SINK (1 BOWL)
SS3	STAINLESS STEEL SINK (3 BOWL)

GENERAL NOTES

1. SEE REFLECTED CEILING PLAN AND DETAILS FOR EXACT CEILING HEIGHT LOCATIONS.
2. ANTI-FRACTURE MAT SHALL BE INSTALLED UNDER ALL FLOOR TILE SURFACES.
3. CONCRETE BACKER BOARD SHALL BE INSTALLED BEHIND ALL WALL TILE.
4. ALL EXPOSED CELIING STRUCTURE SHALL BE PAINTED FLAT BLACK.
5. ALL DIMENSIONS TAKEN AT FLOOR SLAB ELEVATION.
6. ALL EXTERIOR DOORS TO HAVE ½" STEP FROM FINISHED INTERIOR FLOOR SLAB TO EXTERIOR WALKWAY.

ATTACHMENT D (28 PAGES)

DOOR SCHEDULE

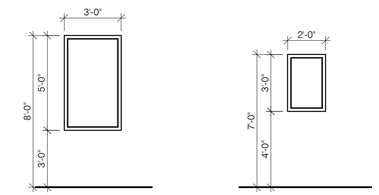
DOOR NO.	SIZE	TYPE	MAT'L	HDW	FRAME MAT'L	HEAD	JAMB	SILL	FIRE RATING	REMARKS
101A	3'-0" x 8'-0"	A	FG	HW-1	HM	4/AF6.11	5/AF6.11	6/AF6.11		
101B	3'-0" x 7'-0"	B	WD	HW-6	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
102A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
103A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
104A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
105A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
106A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
107A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
108A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
109A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
109B	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
110A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
111A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
112A	3'-0" x 7'-0"	B	WD	HW-3	HM	1/AF6.11	2/AF6.11	3/AF6.11		
113A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
115A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
116A	3'-0" x 7'-0"	B	WD	HW-3	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
117A	3'-0" x 7'-0"	B	WD	HW-3	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
118A	3'-0" x 8'-0"	A	FG	HW-1	HM	4/AF6.11	5/AF6.11	6/AF6.11		
118B	3'-0" x 7'-0"	B	WD	HW-6	HM	1/AF6.11	2/AF6.11	3/AF6.11		
119A	3'-0" x 7'-0"	B	WD	HW-6	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
119B	8'-0" x 8'-0"	C	MTL	MFR	MTL	MFR	MFR	MFR		MOTORIZED DOOR
120A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
121A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
122A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
123A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
124A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
125A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
125B	6'-0" x 8'-0"	C	MTL	MFR	MTL	MFR	MFR	MFR		MANUAL PULL CHAIN DOOR
125C	6'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
127A	3'-0" x 7'-0"	B	WD	HW-6	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
128A	3'-0" x 8'-0"	A	FG	HW-1	HM	4/AF6.11	5/AF6.11	6/AF6.11		
129A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
130A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
131A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
132A	3'-0" x 7'-0"	B	WD	HW-5	HM	1/AF6.11	2/AF6.11	3/AF6.11		
133A	3'-0" x 7'-0"	B	WD	HW-2	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
134A	3'-0" x 7'-0"	B	WD	HW-3	HM	1/AF6.11	2/AF6.11	3/AF6.11		
135A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AF6.11	2/AF6.11	3/AF6.11		
136A	3'-0" x 7'-0"	B	WD	HW-6	HM	1/AF6.11	2/AF6.11	3/AF6.11	20 MIN	
136B	8'-0" x 8'-0"	C	MTL	MFR	MTL	MFR	MFR	MFR		MOTORIZED DOOR
137A	3'-0" x 8'-0"	D	MTL	HW-7	HM	4/AF6.11	5/AF6.11	6/AF6.11		

HARDWARE SCHEDULE

- HW-1 ENTRY LOCKSET, DEAD-BOLT, 3 HINGES, LEVER HARDWARE, CLOSER, WEATHERSTRIPPING. WIRED FOR KEY FOB ACCESS CONTROL, STRIKE PLATE.
- HW-2 LEVER HARDWARE, CLOSER, WIRED FOR KEY FOB ACCESS CONTROL, STRIKE PLATE.
- HW-3 3 HINGES, FLOOR STOP, CLOSER, PRIVACY SET.
- HW-4 3 HINGES, FLOOR STOP, CLOSER, STORAGE SET.
- HW-5 3 HINGES, FLOOR STOP, OFFICE SET.
- HW-6 3 HINGES, PASSAGE SET, CLOSER.
- HW-7 STORAGE LOCKSET, 3 HINGES, LEVER HARDWARE, WEATHERSTRIPPING

WINDOW TYPES

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

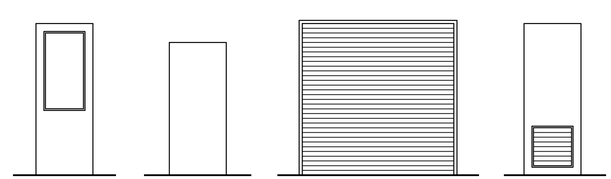


TYPE 1
EXTERIOR
ALUMINUM STOREFRONT
IMPACT RATED GLAZING
INSULATED; LOW-E

TYPE 2
INTERIOR
ALUMINUM STOREFRONT
TEMPERED GLAZING

DOOR TYPES

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



TYPE A
FIBERGLASS; PAINTED
IMPACT RATED GLAZING
INSULATED; LOW-E

TYPE B
SOLID CORE WOOD
PRIME & PAINT

TYPE C
PRE-FIN INSULATED METAL
ROLL-UP COILING DOOR
IMPACT RATED

TYPE D
HOLLOW METAL DOOR
w/ LOUVER
PRIME & PAINT

05 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture llc
JDF ARCHITECTURE, LLC
201 HOLLYWOOD BLVD, NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY

DOOR / WINDOW TYPES and SCHEDULES

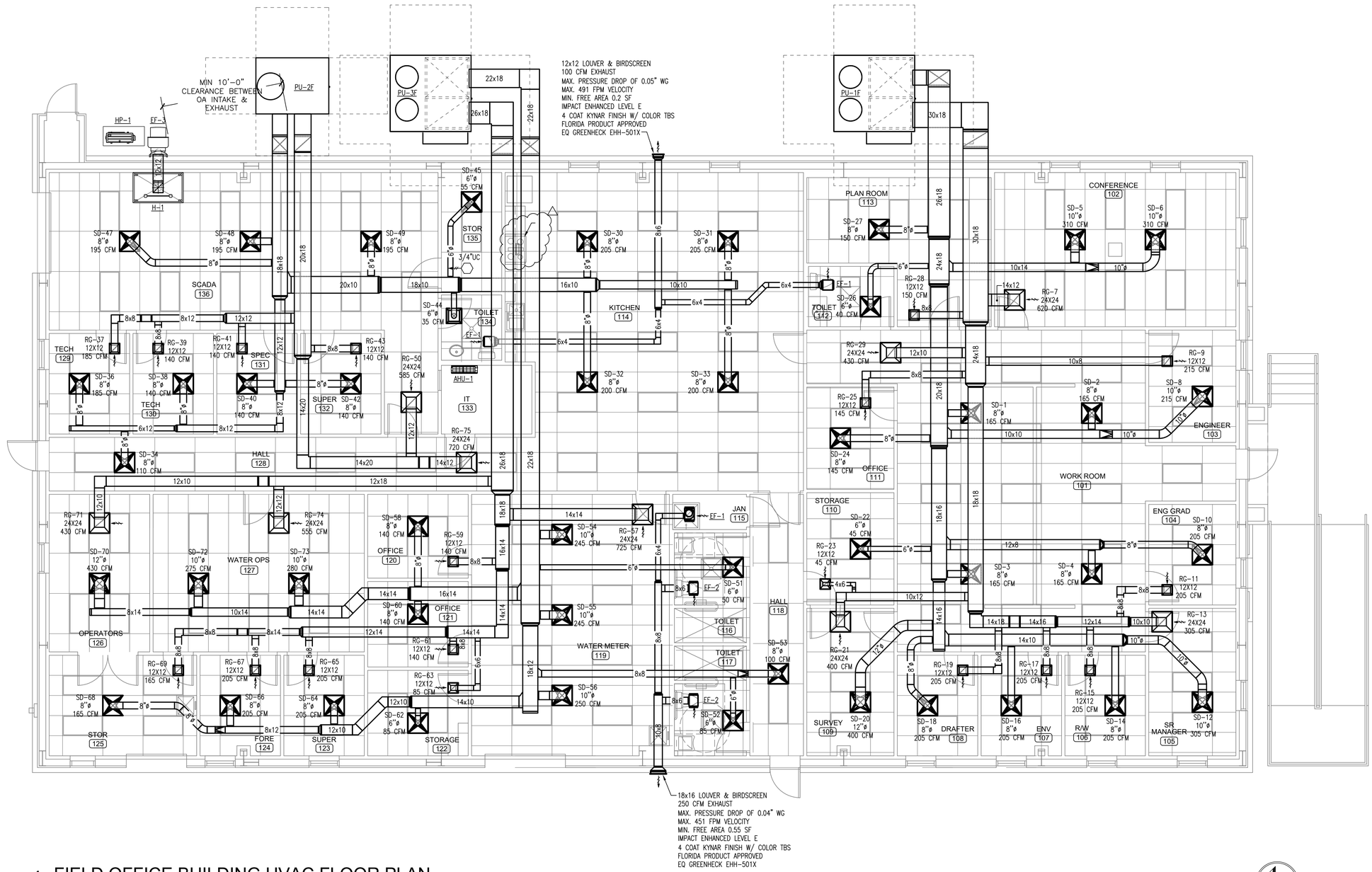
RELEASE FOR BID

OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

SHEET NUMBER
AF6.01

ATTACHMENT D (28 PAGES)



1 FIELD OFFICE BUILDING HVAC FLOOR PLAN

SCALE: 3/16" = 1'-0"

3' 18" 0 3' 6'

OCTOBER 2020

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf architecture INC
JDF ARCHITECTURE, LLC
204 LAKEWOOD DRIVE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
2	11/6/20	KITCHEN HOOD ADDED	JJ
1	10/9/20	COUNTY COMMENTS	JJ

FIELD OFFICE BUILDING HVAC FLOOR PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

JOHNSON PEADEN ENGINEERING INC.
329 Brooks Street SE, Fort Walton Beach, FL 32548, 850.244.6189V 850.244.0545F
827 Grace Avenue, Panama City, FL 32401, 850.215.4068V 850.215.4069F
Alabama #CD-2429-E Arkansas #1654 Florida #00009014
Georgia #PEF003983 Mississippi #E-00000862
Texas #F-16637 Missouri #2018035834

JPE Job Number: 1950

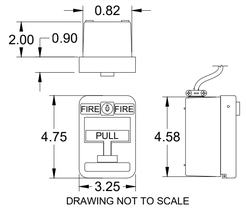
DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER 2020

SHEET NUMBER

MF1.11

ATTACHMENT D (28 PAGES)

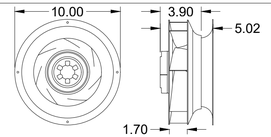
SURFACE MOUNT MANUAL PULL STATION DETAIL



DRAWING NOT TO SCALE

NOTES:
1) PROVIDED WITH 30FT PLUG AND PLAY CABLE COILED UP IN HOOD LABELED "PULL STATION"
2) FIELD TO MOUNT STATION AND CONNECT TO CABLE
3) TO COMPLY WITH ADA STANDARDS, STATION (IF MOUNTED ON AN UNOBSTRUCTED WALL) MUST BE A MAX OF 48" OFF OF THE FINISHED FLOOR

FAN DETAIL - ECM INTERNAL (FRONT RECIRCULATION)

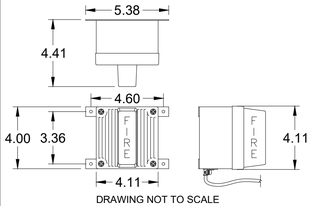


VOLT	FREQ	PHASE	INPUT POWER	WEIGHT	DUCT CONN
115	60	1	120 WATTS	4 LBS	NONE

DRAWING NOT TO SCALE

NOTES:
1) FAN MOUNTED AND WIRED INSIDE HOOD BY FACTORY
2) DISCHARGES THROUGH CHARCOAL FILTER ON FACE OF HOOD BACK INTO SPACE

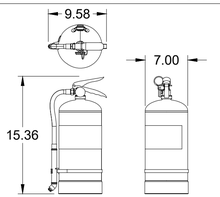
HORN STROBE DETAIL



DRAWING NOT TO SCALE

NOTES:
1) PROVIDED WITH 8FT PLUG AND PLAY CABLE ALREADY ATTACHED TO HORN STROBE. FIELD TO MOUNT HORN STROBE AND CONNECT PLUG TO GAS OR ELECTRIC SHUT OFF ASSEMBLY
2) FIELD TO FOLLOW NFPA AND LOCAL CODE REQUIREMENTS FOR HORN STROBE MOUNTING LOCATION

FIRE EXTINGUISHER DETAIL

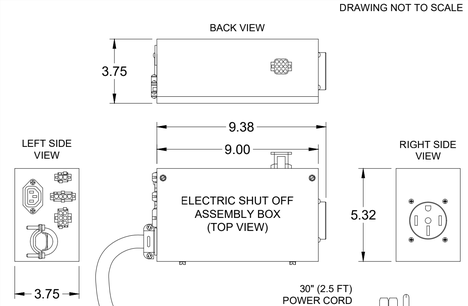


DRAWING NOT TO SCALE

NOTES:
1) AMEREX 6 LITER WET CHEMICAL, CLASS K FIRE EXTINGUISHER WITH HOSE AND NOZZLE GRIP
2) FIELD TO INSTALL PER NFPA AND LOCAL CODE REQUIREMENTS

APPLIANCE DISCONNECT DETAIL

DRAWING NOT TO SCALE

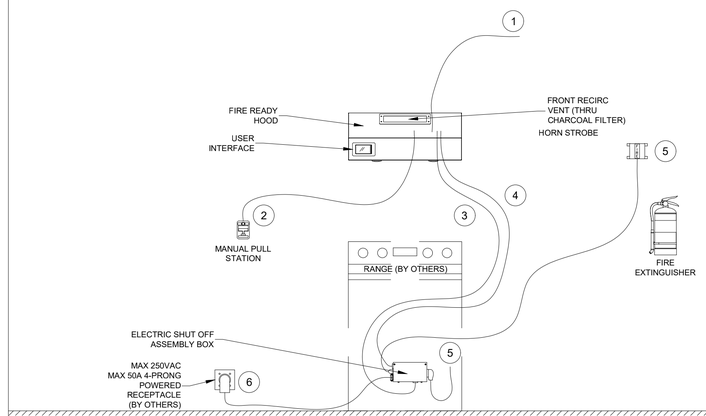


NOTES:
1) PROVIDED WITH TWO (2) 10FT PLUG AND PLAY CABLES COILED UP IN HOOD, FIELD TO CONNECT CABLES TO GAS SHUT OFF ASSEMBLY BOX
2) FIELD TO POSITION ELECTRIC SHUT OFF ASSEMBLY BEHIND THE RANGE
3) FIELD TO PLUG 2.5FT CORD WITH 14-50 PLUG INTO 250VAC RECEPTACLE BEHIND THE RANGE.
4) FIELD TO PLUG RANGE POWER CORD INTO 250VAC RECEPTACLE ON ELECTRIC SHUT OFF ASSEMBLY BOX.

FIELD DIAGRAM

WIRING DIAGRAM CODE: #####
DOC NUMBER: #### REV: ####

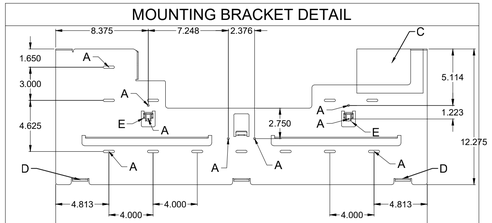
PROVIDED BY OTHERS



CONNECTION LEGEND

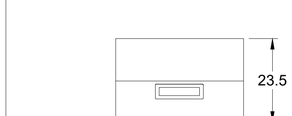
ID	ITEM	ITEM DETAILS
1	HOOD POWER	FIELD TO PROVIDE 115VAC POWER FROM 15A BREAKER TO TERMINAL BLOCKS H1 AND N1 INSIDE HOOD (GROUND TO GROUNDING TERMINAL).
2	MANUAL PULL STATION	30 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO HOOD. FIELD TO CONNECT TO MANUAL PULL STATION VIA QUICK CONNECTOR IN STATION J-BOX.
3	GAS/ELECTRIC DISCONNECT CABLE 1	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 9PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
4	GAS/ELECTRIC DISCONNECT CABLE 2	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 4PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
5	HORN STROBE	8 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO HORN STROBE. FIELD TO PLUG INTO RECEPTACLE ON GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
5	RANGE POWER CORD	PLUG RANGE POWER CORD (IF PROVIDED WITH RANGE) INTO 14-50R RECEPTACLE ON ELECTRIC SHUT OFF ASSEMBLY BOX.
6	SHUT OFF ASSEMBLY BOX POWER	PLUG 2.5 FT ELECTRIC SHUT OFF ASSEMBLY BOX POWER CORD INTO NEARBY 4-PRONG 14-50R 250VAC RECEPTACLE.

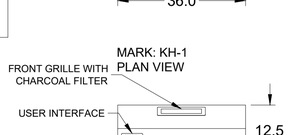
MOUNTING BRACKET DETAIL



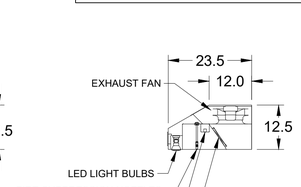
MOUNTING BRACKET KEY
A. CRITICAL MOUNTING POINTS (MUST BE SECURED TO STUDS OR DRY WALL HANGERS)
B. NA
C. LOCATION FOR FACTORY PROVIDED 4" H X 6" W X 3.5" D CONTROL J-BOX
D. HOOD SUPPORT TABS
E. HOOD LATCH CONNECTIONS

NOTES:
1) BEFORE MOUNTING, SITUATE MOUNTING BRACKET ON WALL, MAKING SURE CRITICAL MOUNTING POINTS ARE MET AND DISTANCE FROM BOTTOM OF BRACKET TO COOKING SURFACE IS BETWEEN 24 AND 30 INCHES.
2) CUT OUT SPACE IN WALL FOR FACTORY PROVIDED CONTROL J-BOX AND SECURE IN PLACE.
3) SECURE MOUNTING BRACKET TO WALL USING THE PROPER FIELD PROVIDED FASTENERS USING CRITICAL MOUNTING POINTS SHOWN ABOVE.

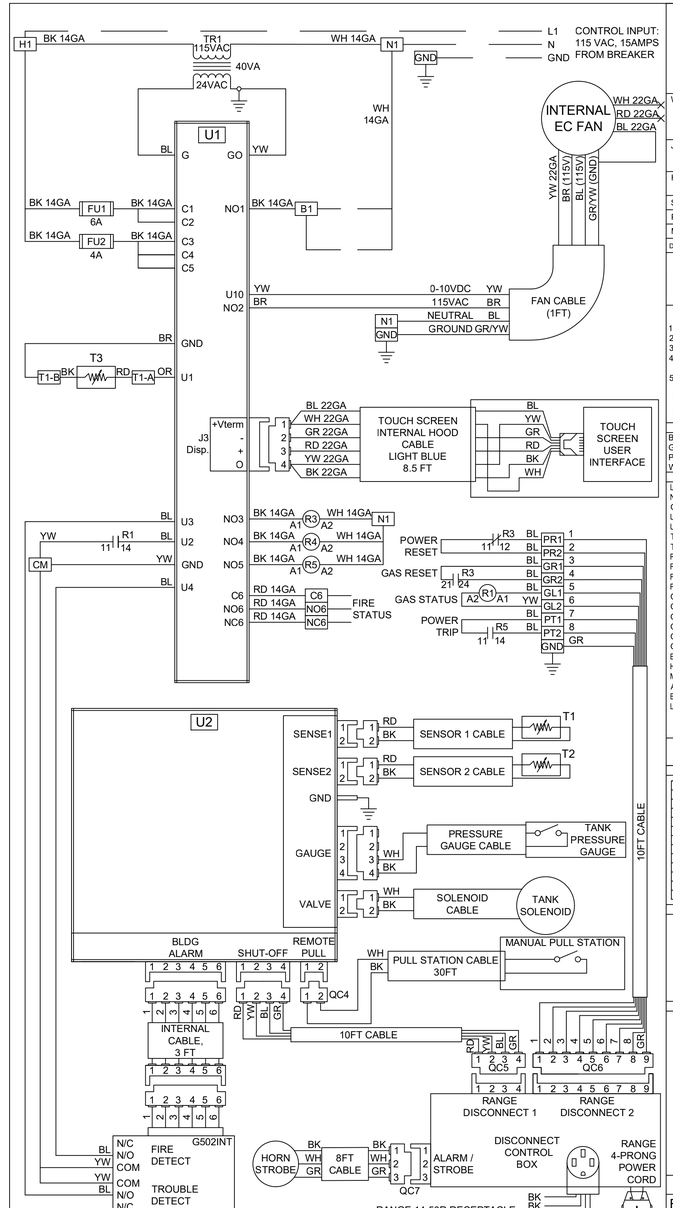




MARK: KH-1
ELEVATION VIEW



MARK: KH-1
SECTION VIEW



GREENHECK
BUILDING VALUE IN AIR.

WIRING DIAGRAM CODE: #####

Job Name: Thomasville Library

HOOD MODEL: GRRS-W-36-F-E-X

SERIAL NUMBER: 0

PANEL MARK: KH-1

MODEL: GRRS

DOC NUMBER: #### REV: ####

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

1. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED.
2. TORQUE: CONTROL TERMINAL & GROUND BLOCKS TO 8 LBS. IN.
3. TORQUE: POWER LUGS TO COMPONENT RATINGS LISTED.
4. FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.
5. ALL FACTORY WIRING 18GA UNLESS OTHERWISE NOTED.

FIELD WIRED
FACTORY SUPPLIED AND WIRED

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LTBL	LIGHT BLUE	OR	ORANGE
PK	PINK	PR	PURPLE	RD	RED
WH	WHITE	YW	YELLOW	GR	GREEN

LEGEND

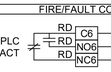
L	LINE VOLTAGE
N	NEUTRAL
GND	GROUND
U1	CAREL PROGRAMMABLE LOGIC CONTROLLER (PLC)
U2	GUARDIAN CONTROL BOARD
T1,T2	GUARDIAN TEMP SENSORS 1 AND 2
T3	PT1000 OHM TEMP SENSOR
R1	24VAC SPDT GAS STATUS RELAY
R3,R4,R5	115VAC DPDT RELAYS
FU1	LIGHT AND FAN PROTECTION FUSE
FU2	RELAY PROTECTION FUSE
QC1	EXTERNAL FAN FIELD QUICK CONNECTOR 1
QC2	EXTERNAL FAN FIELD QUICK CONNECTOR 2
QC3	USER INTERFACE FIELD QUICK CONNECTOR
QC4	MANUAL PULL STATION FIELD QUICK CONNECTOR
QC5,QC6	RANGE DISCONNECT FIELD QUICK CONNECTOR
QC7	HORN STROBE FIELD QUICK CONNECTOR
EC FAN	INLINE OR INTEGRAL EXHAUST FAN WITH EC MOTOR
HRN/STRB	HORN & STROBE
MTD	MOUNTED
ADA	AMERICANS WITH DISABILITIES ACT
BLDG	BUILDING
LIGHT	LED HOOD LIGHTS

LISTED 300A — EXTINGUISHING SYSTEM UNITS FOR RESIDENTIAL RANGE TOP COOKING SURFACES

SELECTIONS

☐ SIZE 30"	☒ MANUAL PULL STATION
☒ SIZE 36"	☒ HORN STROBE
☒ WALL MTD CONFIGURATION	☒ PW/AUTO RANGE DEACTIVATE
☐ ISLAND CONFIGURATION	☒ FIRE/FAULT CONTACTS
☐ SHIP LOOSE TOUCH SCREEN (ADA)	☒ SUPPLY FAN CONTACTS
☒ HOOD MTD TOUCH SCREEN	☒ NSF APPROVED SEALANT
☒ ELECTRIC RANGE DISCONNECT	☒ FINISHED TOP
☐ GAS RANGE DISCONNECT	☒ CEILING ENCLOSURES
☐ NFPA 101 COMPLIANT	☒ EC MOTOR
☒ INTERNAL FAN - FRONT RECIRC	☐ WALL CAP
☐ INTERNAL FAN - REAR DISCHARGE	☒ K-CLASS FIRE EXTINGUISHER
☐ EXTERNAL FAN - INLINE	☒ SDR
☐ EXTERNAL FAN - BY OTHERS	

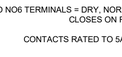
SUPPLY FAN CONTACTS



DRY, NORMALLY OPEN (N.O.) CONTACT - CLOSES WHEN SUPPLY FAN SHOULD RUN

CONTACTS RATED TO 8A RES. @ 250VAC

FIRE/FAULT CONTACTS



C6 AND NC6 TERMINALS = DRY, NORMALLY CLOSED (N.C.) CONTACT OPENS ON FAULT

C6 AND NO6 TERMINALS = DRY, NORMALLY OPEN (N.O.) CONTACT CLOSES ON FAULT

CONTACTS RATED TO 5A RES. @ 250VAC

PLC VERSION - FR V1.00

FOR ADDITIONAL INFORMATION CALL GREENHECK FAN CORP. AT 1-800-371-6858

AVCON, INC.
ENGINEERS & PLANNERS
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AVCON

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FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
2	11/6/20	KITCHEN HOOD ADDED	JJ
1	10/9/20	COUNTY COMMENTS	JJ

FIELD OFFICE
BUILDING HVAC
DETAILS

RELEASE FOR BID

CONSTRUCT OCWS
FIELD OFFICES

PREPARED FOR
OKALOOSA COUNTY
WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER 2020

SHEET NUMBER
MF2.13

JOHNSON PEADEN ENGINEERING INC.
329 Brooks Street SE, Fort Walton Beach, FL 32548, 850.244.6189V 850.244.0545F
827 Grace Avenue, Panama City, FL 32401, 850.215.4068V 850.215.4069F
Alabama #CD-2429-E Arkansas #1654 Florida #00009014
Georgia #PEF003983 Mississippi #E-00000862
Texas #F-16637 Missouri #2018035834

JPE Job Number: 1950

OCTOBER 2020

MANUFACTURERS CONSIDERED EQUAL MUST SUBMIT TO ENGINEER 10 DAYS PRIOR TO BID FOR APPROVAL

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER AND CATALOG No. (or approved equal)	LAMPS No.	LAMPS TYPE	MOUNTING	REMARKS
DL	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-O-W-OF-CS-N		19W LED ARRAY 2000 LUMEN/3500K	CEILING RECESSED	6" ROUND LED DOWNLIGHT, WIDE DISTRIBUTION, 120V
DLE	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-O-W-OF-CS-N-EM/10W		19W LED ARRAY 2000 LUMEN/3500K	CEILING RECESSED	6" ROUND LED DOWNLIGHT, WIDE DISTRIBUTION, EMERGENCY UNIT BATTERY PACK, 120V
LTA	H.E. WILLIAMS LT-24-L40-835-AF-DIM-UNV		32W LED ARRAY 4000 LUMEN/3500K	CEILING RECESSED	2' X 4' RECESSED LED TROFFER, 120V
LTAE	H.E. WILLIAMS LT-24-L40-835-AF-DIM-UNV-EM/10W		32W LED ARRAY 4000 LUMEN/3500K	CEILING RECESSED	2' X 4' RECESSED LED TROFFER, EMERGENCY UNIT BATTERY PACK, 120V
LTB	H.E. WILLIAMS LT-24-L52-835-AF-DIM-UNV		37W LED ARRAY 5200 LUMEN/3500K	CEILING RECESSED	2' X 4' RECESSED LED TROFFER, 120V
LTBE	H.E. WILLIAMS LT-24-L52-835-AF-DIM-UNV-EM/10W		37W LED ARRAY 5200 LUMEN/3500K	CEILING RECESSED	2' X 4' RECESSED LED TROFFER, EMERGENCY UNIT BATTERY PACK, 120V
LTC	H.E. WILLIAMS LT-22-L49-835-AF-DIM-UNV		36W LED ARRAY 4900 LUMEN/3500K	CEILING RECESSED	2' X 2' RECESSED LED TROFFER, 120V
SH	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-S-W-OF-CS-AD-WET/CC-N-F1		19W LED ARRAY 2000 LUMEN/3500K	CEILING RECESSED	6" ROUND LED SHOWER DOWNLIGHT, WIDE DISTRIBUTION, 120V
WB	H.E. WILLIAMS VWPH-L30/740-P3-SDGL-DIM-UNV		36W LED ARRAY 3000 LUMEN/4000K	WALL @ 10'-0" AFF	WALL MOUNTED AREA LIGHT WITH TYPE III DISTRIBUTION, FINISH SELECTED BY ARCHITECT, 120V
WBE	H.E. WILLIAMS VWPH-L30/740-P3-SDGL-DIM-UNV-EM/10WC		36W LED ARRAY 3000 LUMEN/4000K	WALL @ 8'-0" AFF	WALL MOUNTED AREA LIGHT WITH TYPE III DISTRIBUTION, FINISH SELECTED BY ARCHITECT, EMERGENCY UNIT BATTERY PACK, 120V
VP	H.E. WILLIAMS 96-2-L29-835-HIAFR-UNV		25W LED ARRAY 3028 LUMEN/3500K	CEILING SURFACE	1' X 2' SURFACE MOUNTED LED VAPOR PROOF, FULLY GASKETED INDUSTRIAL, UNIVERSAL VOLTAGE BALLAST
X	WILLIAMS EXIT-R-EM-WHT-SDT		LED	WALL ABOVE DOOR	LED EXIT LIGHT WITH THERMOPLASTIC HOUSING, EMERGENCY BATTERY BACKUP, PROVIDE DIRECTIONAL ARROWS AS INDICATED, 120V

1/2" LETTERS

PANEL LA
208Y/120 VOLTS
3 PHASE 4 WIRE
SERVED FROM PANEL MP
IN ELEC RM
10,000 AIC RATING

1/4" LETTERS

TYPICAL ELECTRICAL EQUIPMENT IDENTIFICATION DETAIL

NOT TO SCALE

ELECTRICAL EQUIPMENT IDENTIFICATION DETAIL NOTES:

1. MECHANICALLY AFFIX NAMEPLATE TO PANELBOARDS, CONTROL PANELS, MOTOR CONTROL CENTERS, DISCONNECTS, STARTERS OR SIMILAR DEVICES.
2. LETTERS SHALL BE WHITE ON BLACK BACKGROUND; SIZE OF LETTERS INDICATED ON DETAIL.
3. INFORMATION IN LABEL IS A GENERIC EXAMPLE – DESIGNATE EQUIPMENT IN A SIMILAR WAY USING RELEVANT INFORMATION (NAME OF PANEL, VOLTS, PHASE, LOCATION, AIC RATING ETC.) ACCORDING TO EACH INDIVIDUAL LOCATION OF EQUIPMENT.

WARNING

Arc Flash Hazard
Appropriate PPE Required

Do not operate controls or open covers without appropriate personal protection equipment.
Failure to comply may result in injury or death!

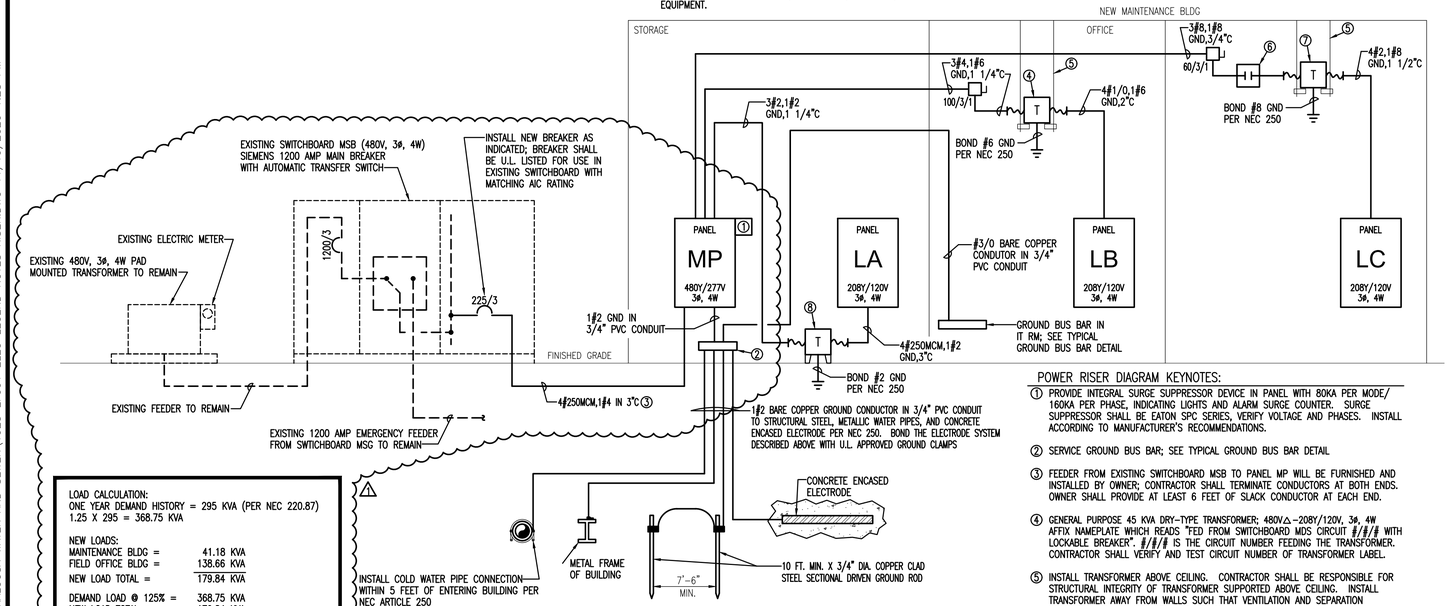
REFER TO NFPA 70E FOR MINIMUM PPE REQUIREMENTS

TYPICAL ARC FLASH HAZARD LABEL DETAIL

NOT TO SCALE

ARC FLASH LABEL DETAIL NOTES:

1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ALL PANEL AND SWITCHBOARDS IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E.
2. LABELING MAY BE COMPLETED BY EQUIPMENT MANUFACTURER, VENDOR, OR CONTRACTOR. THE CONTRACTOR SHALL VERIFY ALL PANELS AND SWITCHBOARDS ARE LABELED IN THE FIELD.
3. THE LABEL SHALL BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.



LOAD CALCULATION:
ONE YEAR DEMAND HISTORY = 295 KVA (PER NEC 220.87)
1.25 X 295 = 368.75 KVA

NEW LOADS:

MAINTENANCE BLDG =	41.18 KVA
FIELD OFFICE BLDG =	138.66 KVA
NEW LOAD TOTAL =	179.84 KVA
DEMAND LOAD @ 125% =	368.75 KVA
NEW LOAD TOTAL =	179.84 KVA
TOTAL	548.59 KVA

548.59 KVA/480V, 3ø = 660 AMPS
EXISTING 1200 AMP SERVICE IS SUFFICIENT

FIELD OFFICE POWER RISER DIAGRAM

NOT TO SCALE

POWER RISER DIAGRAM KEYNOTES:

① PROVIDE INTEGRAL SURGE SUPPRESSOR DEVICE IN PANEL WITH 80KA PER MODE/ 160KA PER PHASE, INDICATING LIGHTS AND ALARM SURGE COUNTER. SURGE SUPPRESSOR SHALL BE EATON SPC SERIES, VERIFY VOLTAGE AND PHASES. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

② SERVICE GROUND BUS BAR; SEE TYPICAL GROUND BUS BAR DETAIL

③ FEEDER FROM EXISTING SWITCHBOARD MSB TO PANEL MP WILL BE FURNISHED AND INSTALLED BY OWNER; CONTRACTOR SHALL TERMINATE CONDUCTORS AT BOTH ENDS. OWNER SHALL PROVIDE AT LEAST 6 FEET OF SLACK CONDUCTOR AT EACH END.

④ GENERAL PURPOSE 45 KVA DRY-TYPE TRANSFORMER; 480VΔ–208Y/120V, 3ø, 4W AFFIX NAMEPLATE WHICH READS "FED FROM SWITCHBOARD MDS CIRCUIT #/#/# WITH LOCKABLE BREAKER". #/#/# IS THE CIRCUIT NUMBER FEEDING THE TRANSFORMER. CONTRACTOR SHALL VERIFY AND TEST CIRCUIT NUMBER OF TRANSFORMER LABEL.

⑤ INSTALL TRANSFORMER ABOVE CEILING. CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL INTEGRITY OF TRANSFORMER SUPPORTED ABOVE CEILING. INSTALL TRANSFORMER AWAY FROM WALLS SUCH THAT VENTILATION AND SEPARATION REQUIREMENTS ARE MET PER NEC 450.13(B).

⑥ 60 AMP/3 POLE, 600V, CONTACTOR TO CONTROL PANEL LC; SEE RECEPTACLE CONTROL DIAGRAM

⑦ GENERAL PURPOSE 30 KVA DRY-TYPE TRANSFORMER; 480VΔ–208Y/120V, 3ø, 4W AFFIX NAMEPLATE WHICH READS "FED FROM SWITCHBOARD MDS CIRCUIT #/#/# WITH LOCKABLE BREAKER". #/#/# IS THE CIRCUIT NUMBER FEEDING THE TRANSFORMER. CONTRACTOR SHALL VERIFY AND TEST CIRCUIT NUMBER OF TRANSFORMER LABEL.

⑧ GENERAL PURPOSE 75 KVA DRY-TYPE TRANSFORMER; 480VΔ–208Y/120V, 3ø, 4W

ELECTRICAL LEGEND

CEILING OUTLETS

"A" RECESSED 2' X 2' LED FIXTURE MARK "A"
INDICATES FIXTURE WITH INTEGRAL EMERGENCY UNIT BATTERY PACK
RECESSED OR SURFACE MOUNTED LED FIXTURE
J JUNCTION BOX
CEILING RECESSED MOUNTED LIGHTING FIXTURE
CEILING SURFACE MOUNTED EMERGENCY EXIT LIGHT WITH REMOTE BATTERY
EF EXHAUST FAN

WALL OUTLETS

DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
QUADRAPLEX RECEPTACLE – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
G DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
G DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 6" ABOVE COUNTER
WP DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA GF-5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE; PROVIDE WEATHERPROOF BOX FOR RECEPTACLE
DUPLEX RECEPTACLE CONTROLLED BY TIMER/CONTACTOR – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE; MARK IN ACCORDANCE WITH 2014 NEC 406.3(E)
MULTIGANGED FLOOR BOX WITH POWER/JBOX; SIZED FOR NUMBER OF BOXES; SELECTION OF MATERIAL & COLOR BY ARCHITECT; CARLON E976 SERIES; SUPPLY ALL ACCESSORIES AS REQUIRED FOR A FINISHED INSTALLATION.
250V RECEPTACLE; 4 WIRE; MT 14" AFF TO C/L; NEMA 10-50R; HUBBELL SERIES 7962
JUNCTION BOX WITH BLANK SCREW COVER AND FLEXIBLE CONDUIT CONNECTION

BRANCH CIRCUITING

RUN CONCEALED UNDER FLOOR OR IN GRADE
RUN CONCEALED IN CEILING OR WALLS
LA-1 HOMERUN TO PANEL. ANY CIRCUIT WITHOUT FURTHER IDENTIFICATION INDICATES 2 #12, 1 #12 GROUND – 1/2" C; 3 #12, 1 #12 GROUND – 1/2" C; ~~4 #12, 1 #12 GROUND – 3/4" C~~; ETC. AS PER NEC. LETTERS AND NUMERALS INDICATE PANEL AND CIRCUIT NUMBER.
LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION
SURFACE MOUNTED CONDUIT; RUN PARALLEL OR PERPINDICULAR TO BUILDING LINES

MISCELLANEOUS

A.F.F. ABOVE FINISH FLOOR
WP WEATHERPROOF
U.N.O. UNLESS NOTED OTHERWISE

WALL SWITCHES (UNLESS OTHERWISE NOTED, MOUNT 48" A.F.F.)

S A.C. TYPE, SINGLE POLE, 20 AMP, 120/277 VOLT
S_R WALL MOUNTED OCCUPANCY SENSOR; INFRARED TYPE TECHNOLOGY; MOUNT 48" AFF TO C/L; EQUAL TO WATTSTOPPER PW-100
S_{RD} WALL MOUNTED OCCUPANCY SENSOR; DUAL TYPE (INFRARED AND ULTRASONIC) TECHNOLOGY; MOUNT 48" AFF TO C/L; EQUAL TO WATTSTOPPER DW-100
S_M MOTOR RATED TOGGLE SWITCH DISCONNECT

PANELS AND POWER

277/480 VOLT SURFACE MOUNTED PANELBOARD
120/240 VOLT SURFACE MOUNTED PANELBOARD
120/240 VOLT FLUSH MOUNTED PANELBOARD
NON-FUSIBLE DISCONNECT SWITCH; XX/YY/ZZ WHERE X INDICATES AMPERAGE, Y INDICATES # OF POLES, AND Z INDICATES NEMA RATING; SS INDICATES ENCLOSURE SHALL BE STAINLESS STEEL

TELEPHONE & TV SYSTEM

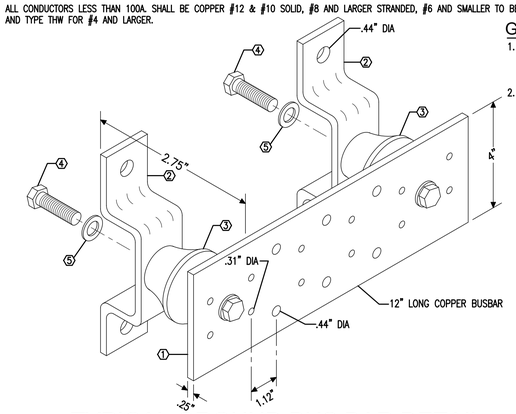
TELECOMMUNICATIONS OUTLET AT 18" AFF; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
C WALL MOUNTED TELECOMMUNICATIONS OUTLET MOUNTED 6" ABOVE COUNTER; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
SCADA TELECOMMUNICATIONS OUTLET AT 18" AFF; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
C SCADA TELECOMMUNICATIONS OUTLET MOUNTED 6" ABOVE COUNTER; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
TV TELEVISION CABLE WALL OUTLET WITH COAXIAL SCREW JACK AND COVERPLATE; MT 60" AFF TO C/L – INSTALL 3/4"C FROM OUTLET TO ABOVE ACCESSIBLE CEILING;
WALL OR CEILING MOUNTED CAMERA; PROVIDE RECESSED 4"x4"x2" WEATHERPROOF JUNCTION BOX WITH COVER; INSTALL 8" BELOW TOP OF WALL/EAVE OR RECESS IN CEILING; INSTALL 3/4"C WITH PULL STRING FROM CAMERA LOCATION TO USER CAMERA HEAD END EQUIPMENT IN IT RM 133 AND 1/2"C HOMERUN WITH 2#12,1#12 GND CIRCUIT LA-30
⚠1 CR JUNCTION BOX WITH CONDUIT FOR CARD READER; INSTALL 48" AFF TO C/L; INSTALL 3/4" CONDUIT WITH CAT5E CABLE FROM READER TO ACCESS CONTROL PANEL IN IT RM 133
CR CARD READER JUNCTION BOX FOR POWER; COORDINATE EXACT LOCATION IN FIELD

OCCUPANCY SENSORS AND RELAYS

360° CEILING MOUNTED OCCUPANCY SENSOR WITH DUAL TECHNOLOGY (INFRARED AND ULTRASONIC) WATTSTOPPER DT-300-1
P POWER PACK RELAY EQUAL TO WATTSTOPPER BZ50; INSTALL IN ACCESSIBLE LOCATION FOR MAINTENANCE PURPOSES
360° CEILING MOUNTED OCCUPANCY SENSOR WITH ULTRASONIC TECHNOLOGY ONLY; WATTSTOPPER WT-305-3-U; SENSOR IS DIRECTION ORIENTED, POINT LONG DIRECTION ALONG LENGTH OF CORRIDOR; PROVIDE WITH 20 AMP POWER PACK

ELECTRICAL GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT SIZE AND LOCATION OF EQUIPMENT WHICH IS FURNISHED BY OTHERS AND CONNECTED BY ELECTRICAL.
2. RECEPTACLES, SWITCHES AND COVERPLATES COLOR SHALL BE SELECTED BY THE ARCHITECT FROM STANDARD COLORS.
3. LOCATION OF LIGHTING FIXTURES, DISCONNECT SWITCHES, ETC. FOR MECHANICAL EQUIPMENT/ROOM SHALL BE COORDINATED WITH FINAL MECHANICAL EQUIPMENT LOCATION TO PROVIDE NATIONAL ELECTRIC CODE REQUIRED ACCESS SPACE.
4. FINAL CONNECTION TO ALL MOTORS SHALL BE WITH FLEXIBLE CONDUIT CONNECTION.
5. ALL EXIT AND EMERGENCY FIXTURES SHALL BE CONNECTED TO LIGHT CIRCUIT AHEAD OF LOCAL SWITCH.
6. ALL PANELBOARDS, BACKBOARDS, TERMINAL CABINETS, DISCONNECTS, ETC SHALL HAVE CUSTOM ENGRAVED MICARTA NAMEPLATE MECHANICALLY AFFIXED IDENTIFYING SYSTEM.
7. GENERAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING ANY WORK, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES. FAILURE TO DO SO INDICATES THAT THE CONTRACTOR ACCEPTS THE CONDITIONS AS THEY EXIST, AND SHALL PERFORM THE WORK REQUIRED AS SHOWN AND SPECIFIED.
8. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND REVIEW THE MECHANICAL AND SPECIAL EQUIPMENT SUBMITTALS PRIOR TO SUBMITTING THE ELECTRICAL SUBMITTALS. ANY ELECTRICAL EQUIPMENT, CONDUIT, AND WIRE SIZE CHANGES RESULTING FROM THIS REVIEW SHALL ALSO BE SUBMITTED FOR APPROVAL.
9. FURNISH ALL EQUIPMENT AND LABOR, PERFORM ALL LABOR WITH SUPERVISION, BEAR ALL EXPENSES, AS NECESSARY FOR THE SATISFACTORY COMPLETION OF ALL WORK READY FOR OPERATION.
10. COMPLY WITH ALL LOCAL CODE, LAWS, AND ORDINANCES APPLICABLE TO ELECTRICAL WORK, THE STATE BUILDING CODE AND THE NATIONAL ELECTRIC CODE. OBTAIN ALL PERMITS REQUIRED BY LOCAL ORDINANCES.
11. OBTAIN ARCHITECTS APPROVAL OF ALL LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANELBOARDS, ETC. PRIOR TO PURCHASING.
12. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY CONFLICTS/DISCREPANCIES BETWEEN DISCIPLINES BEFORE ORDERING EQUIPMENT/MATERIALS.
13. DECORATIVE COVER PLATES FOR RECEPTACLE OUTLETS, SWITCHES, ETC. SHALL BE STAINLESS STEEL; REFER TO ELECTRICAL SPECIFICATIONS
14. INSTALL OCCUPANCY SENSORS AND ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS. ALL CONDUCTORS (INCLUDING CONTROLS) ASSOCIATED WITH OCCUPANCY SENSORS AND POWER PACKS SHALL BE INSTALLED IN 1/2" CONDUIT MINIMUM.
15. ELECTRICAL CONTRACTOR SHALL PAINT AND LABEL ALL JUNCTION BOXES TO IDENTIFY PANEL AND CIRCUIT; SEE ELECTRICAL SPECIFICATIONS.
16. ALL CONDUCTORS INDICATED ON PLAN SHALL BE COPPER; EQUIVALENT ALUMINUM CONDUCTORS ARE ACCEPTABLE FOR 100 AMP AND ABOVE FEEDERS ⚠1
17. EQUIPMENT GROUNDING CONDUCTOR SHALL BE PULLED IN ALL BRANCH CIRCUIT WIRING. CONDUIT GROUND SHALL NOT BE ACCEPTABLE.
18. THE ELECTRICAL WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL NOT SO INSTALLED SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
19. ALL CONDUCTORS LESS THAN 100A. SHALL BE COPPER #12 & #10 SOLID, #8 AND LARGER STRANDED, #6 AND SMALLER TO BE TYPE THW, 600 VOLT INSULATION AND TYPE THW FOR #4 AND LARGER.



TYPICAL GROUND BUS BAR DETAIL

NOT TO SCALE

GROUND BAR GENERAL NOTES:

1. INSTALL GROUND BUS BAR ON COMMUNICATIONS BACKBOARD IN EACH COMMUNICATIONS ROOM. MOUNT BUS BAR AT 18" AFF. REFER TO FLOOR PLAN FOR EXACT LOCATION AT BACKBOARD.
2. INSTALL 1#3/0 COPPER CONDUCTOR IN 1" CONDUIT TO EACH GROUND BUS BAR FROM THE MAIN GROUND BUS BAR. INSTALL A #3/0 COPPER GROUND FROM THE MAIN BUS BAR TO THE ELECTRICAL SERVICE GROUND.

GROUND BAR MATERIALS:

① TIN PLATED HIGH CONDUCTIVE COPPER GROUND BAR
② WALL MOUNTING BRACKET
③ INSULATORS
④ 3/8" CAP SCREWS
⑤ 3/8" LOCKWASHERS

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No. 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
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TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture inc
JDF ARCHITECTURE, LLC
2014 N. OCEAN DRIVE, SUITE E
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

FIELD OFFICE
ELECTRICAL LEGEND, NOTES AND DETAILS

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER
EF0.01

277/480 VOLT 3ø 4W
225 AMP MAIN BREAKER

CIRCUIT BREAKER PANEL SCHEDULE
PANEL MP

SURFACE MOUNTED

CKT	LOAD DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD KVA		BREAKER AMP	BREAKER POLE	LOAD DESCRIPTION	CKT
1									2
3	PANEL LA VIA XFRMR	3	70	50.10	22.71	70	3	PANEL LB VIA XFRMR	4
5									6
7									8
9	PANEL LC VIA XFRMR	3	50	14.52	21.36	35①	3	PU-1F	10
11									12
13									14
15	PU-2F	3	25①	15.29	19.94	30①	3	PU-3F	16
17									18
19						20	1	SPARE	20
21	SPARE	3	60			20	1	SPARE	22
23						20	1	SPARE	24
25	SPACE	1	--			--	1	SPACE	26
27	SPACE	1	--			--	1	SPACE	28
29	SPACE	1	--			--	1	SPACE	30
31	SPACE	1	--			--	1	SPACE	32
33	SPACE	1	--			--	1	SPACE	34
35	SPACE	1	--			--	1	SPACE	36
37	SPACE	1	--			--	1	SPACE	38
39	SPACE	1	--			--	1	SPACE	40
41	SPACE	1	--			--	1	SPACE	42

TOTAL CONNECTED LOAD: 143.92 KVA
MINIMUM INTERRUPTING CAPACITY: 22,000 AMPS SYMMETRICAL

① HACR RATED BREAKER; VERIFY SIZE REQUIRED FOR EQUIPMENT FURNISHED

120/208 VOLT 3ø 4W
150 AMP MAIN BREAKER

CIRCUIT BREAKER PANEL SCHEDULE
PANEL LB

FLUSH MOUNTED

CKT	LOAD DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD KVA		BREAKER AMP	BREAKER POLE	LOAD DESCRIPTION	CKT
1	LTS-WORK RM,OFFICE,STRG,ENV	1	20	1.40	.72	20	1	REFRIGERATOR KITCHEN	2
3	LTS-PLAN,CONF,ENG,MANGR,R/W	1	20	1.25	.36	20	1	REC-KITCHEN COUNTERTOP	4
5	LTS-HALL,KITCHEN	1	20	1.20	.36	20	1	REC-KITCHEN COUNTERTOP	6
7	IWH-1	1	20	.50	1.26	20	1	REC-KITCHEN	8
9	CP-1	1	20	.50	1.0	20	1	REC-PLAN RM,TLT	10
11	RANGE	2	50	8.0	1.08	20	1	REC-OFFICE,STORAGE	12
13					.72	20	1	REC-SURVEY,DRAFTER	14
15	REC-CHARGING STATIONS	1	20	.50	.90	20	1	REC-ENV,R/W	16
17	REC-CHARGING STATIONS	1	20	.50	.90	20	1	REC-ENG GRAD,SR MANAGER	18
19	~~REC-CEILING WORK RM~~	1	20	.25	.90	20	1	REC-ENGINEER,WORK RM,EXTER	20
21	SPARE ⚠	1	20		1.0	20	1	FLOOR REC-CONF RM	22
23	SPARE	1	20		.66	20	1	REC-CONF RM	24
25	SPARE	1	20			20	1	SPARE	26
27	SPARE	1	20			20	1	SPARE	28
29	SPARE	1	20			20	1	SPARE	30
31	SPACE	1	--			--	1	SPACE	32
33	SPACE	1	--			--	1	SPACE	34
35	SPACE	1	--			--	1	SPACE	36
37	SPACE	1	--			--	1	SPACE	38
39	SPACE	1	--			--	1	SPACE	40
41	SPACE	1	--			--	1	SPACE	42

TOTAL CONNECTED LOAD: 22.71 KVA
MINIMUM INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL

120/208 VOLT 3ø 4W
250 AMP MAIN BREAKER

CIRCUIT BREAKER PANEL SCHEDULE
PANEL LA

SURFACE MOUNTED

CKT	LOAD DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD KVA		BREAKER AMP	BREAKER POLE	LOAD DESCRIPTION	CKT
1	LTS-STRG,OFFICES,MTR OPS,OPS	1	20	1.2	1.08	20	1	REC-STOR,FORE	2
3	LTS-SCADA,TECH,SPEC,SPR,STRG	1	20	1.35	1.08	20	1	REC-SUPER,STORAGE	4
5	LTS-WATER METER,TOILET,MECH	1	20	.95	.66	20	1	REC-WATER OPS,OPERATORS	6
7	LTS-EXTERIOR	1	20	.48	.72	20	1	REC-OPERATORS,EXTERIOR	8
9	REC-IT RM	1	20	1.0	1.0	20	1	REC-TABLE WATER OPS	10
11	REC-IT RM	1	20	1.0	1.08	20	1	REC-OFFICES,WATER METER	12
13	REC-IT RM	1	20	1.0	1.0	20	1	REC-CHARGING STATIONS STOR	14
15	REC-IT RM	1	20	1.0	.72	20	1	REC-WATER METER,TLT,HALL	16
17	~~REC-IT RM~~	1	20	1.0	.72	20	1	REC-TECH RMS	18
19	EF-3	1	20	.70	.90	20	1	REC-SPEC,SUPER	20
21	GARAGE DOOR OPENER	1	20	1.0	1.0	20	1	REC-CEILING PROJECTOR	22
23	GARAGE DOOR OPENER	1	20	1.0	1.02	20	1	REC-SCADA	24
25	REC-SCADA WORKBENCH	1	20	.54	.90	20	1	~~REC-TLT-STOR~~	26
27	REC-SCADA WORKBENCH	1	20	.54	.54	20	1	REC-WATER METER	28
29	~~REC-CEILING MTD METER,OPS~~	1	20	.54	.40	20	1	SECURITY CAMERAS ⚠	30
31	SPACE ⚠	1	--			--		SPACE	32
33	SPACE	1	--			--	1	SPACE	34
35	OWNER FURNISHED EQUIPMENT	2	50①	8.0	8.0	50①	2	OWNER FURNISHED EQUIPMENT	36
37									38
39	HP-1	2	15	2.16	5.82	60	2	AIR COMPRESSOR (5HP)	40
41									42

TOTAL CONNECTED LOAD: 50.10 KVA
MINIMUM INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL

① VERIFY BREAKER SIZE/POLES WITH OWNER FURNISED EQUIPMENT

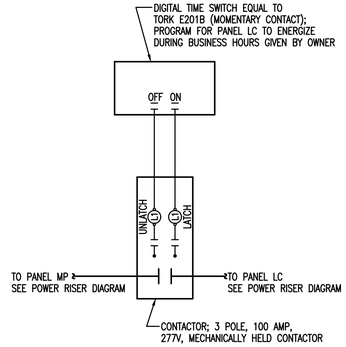
120/208 VOLT 3ø 4W
110 AMP MAIN BREAKER

CIRCUIT BREAKER PANEL SCHEDULE
PANEL LC

FLUSH MOUNTED

CKT	LOAD DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD KVA		BREAKER AMP	BREAKER POLE	LOAD DESCRIPTION	CKT
1	REC-WATER OPS	1	20	.36	.90	20	1	REC-SURVEY,OFFICE,WATER MTR	2
3	~~REC-WATER OPS,OPERATORS~~	1	20	.72	1.08	20	1	REC-DRAFTER,ENV,R/W	4
5	REC-FORE,SUPER,WATER OPS ⚠	1	20	.90	.90	20	1	REC-SR MANAGER,ENG GRAD	6
7	REC-OFFICES	1	20	.72	1.0	20	1	COPIER-WORK RM	8
9	PRINTER-WATER METER	1	20	1.0	1.0	20	1	PLOTTER-WORK RM	10
11	COPIER-WATER METER	1	20	1.0	.54	20	1	REC-TABLES WORK RM	12
13	COPIER-WATER METER	1	20	1.0	.72	20	1	REC-ENGINEER,CONF RM	14
15	COPIER-WATER METER	1	20	1.0	.90	20		~~REC-CONF RM PLAN RM~~	16
17	REC-KITCHEN	1	20	.54	.54	20	1	REC-WATER METER	18
19	SPARE	1	20			20	1	~~SPARE~~	20
21	SPARE	1	20			20	1	SPARE ⚠	22
23	SPARE	1	20			20	1	SPARE	24
25	SPACE	1	--			--	1	SPACE	26
27	SPACE	1	--			--	1	SPACE	28
29	SPACE	1	--			--	1	SPACE	30

TOTAL CONNECTED LOAD: 14.52 KVA
MINIMUM INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL



RECEPTACLE CONTROL DIAGRAM

NOT TO SCALE

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No. 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

JDF ARCHITECTURE, LLC
2010 A1A WEST, SUITE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
3	JUN 20	ADD EXHAUST HOOD	
2	11/19/2020	OWNER REVISION	
1			

PANEL SCHEDULES AND DETAILS

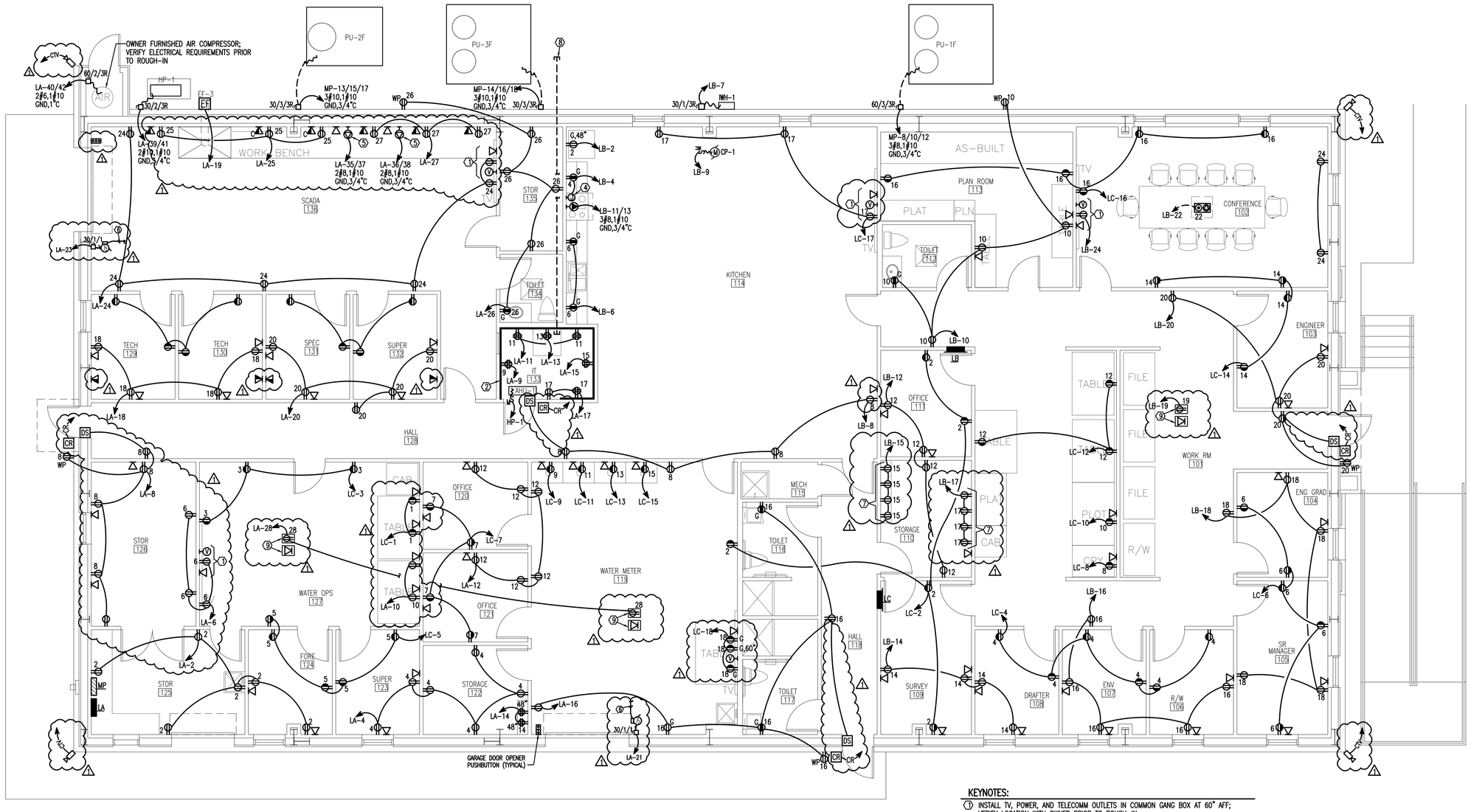
RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER
EF0.02

ATTACHMENT D (28 PAGES)



FIELD OFFICE BUILDING POWER & SIGNAL PLAN

SCALE: 3/16" = 1'-0"

KEYNOTES:

1. INSTALL TV, POWER, AND TELECOMM OUTLETS IN COMMON GANG BOX AT 60" AFF; VERIFY LOCATION WITH OWNER PRIOR TO ROUGH-IN
2. TELEPHONE BACKBOARD, WIDTH OF ROOM INDICATED X 4 FT. HIGH X 3/4" EXTERIOR PLYWOOD. PAINT TWO COATS FIRE RETARDANT PAINT. INSTALL ONE No. 3/0 COPPER GROUND CONDUCTOR IN 3/4" CONDUIT TO BUILDING GROUND, LEAVE 4 FT. SLACK CONDUCTOR AT BACKBOARD.
3. OUTLETS MOUNTED IN CEILING FOR PROJECTOR; PROVIDE HANGERS FOR SUPPORT
4. JUNCTION BOX FOR RANGE HOOD
5. 250V RECEPTACLE FOR OWNER FURNISHED EQUIPMENT; VERIFY ELECTRICAL REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN
6. INSTALL DOOR CONTROLLER CONDUCTORS IN CONDUIT TO DOOR CONTROLLER
7. RECEPTACLES FOR CHARGING STATIONS; VERIFY EXACT LOCATION WITH CASEWORK INSTALLER PRIOR TO ROUGH-IN
8. INSTALL TWO (2) 4" CONDUITS FOR FIBER FROM IT ROOM TO 5 FEET OUTSIDE OF BUILDING WALL; STUB-OUT, CAP AND MARK LOCATION
9. OUTLETS INSTALLED IN CEILING FOR WIFI DEVICE

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: qunn@yateseng.com
FL PE No. 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture
JDF ARCHITECTURE, LLC
20 HOLLY LAKE DRIVE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
1	3 JUN 20	ADD EXHAUST HOOD	RQY
	11/19/2020	OWNER REVISION	

FIELD OFFICE
POWER & SIGNAL PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

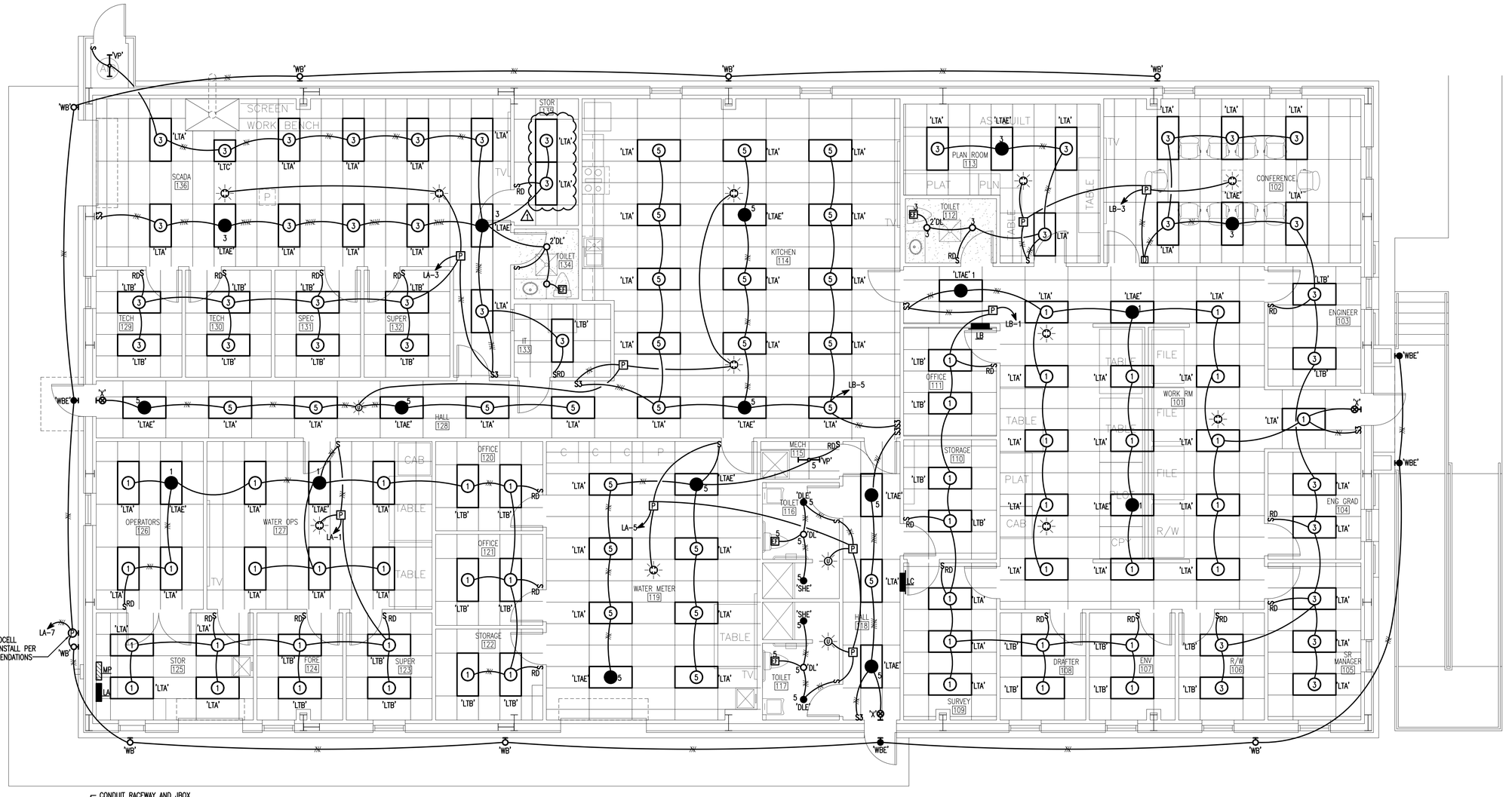
DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

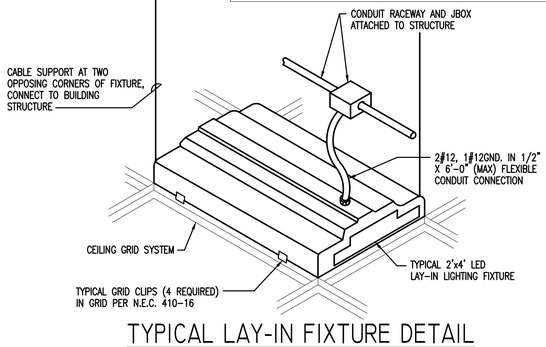
SHEET NUMBER

EF1.00

S:\2019 JOBS\23 OKALOOSA WATER AND SEWER\1923 EF100 PWR & SIGNAL PLAN FIELD OFFICE.DWG 11/23/2020 11:23 AM

ATTACHMENT D (28 PAGES)





TYPICAL LAY-IN FIXTURE DETAIL

NOT TO SCALE

FIELD OFFICE BUILDING LIGHTING PLAN

SCALE: 3/16" = 1'-0"

YATES ENGINEERING SOLUTIONS

7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242

Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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JDF ARCHITECTURE, LLC
201 MIRACLE STRIP BLVD SE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

FIELD OFFICE LIGHTING PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER

EF1.01

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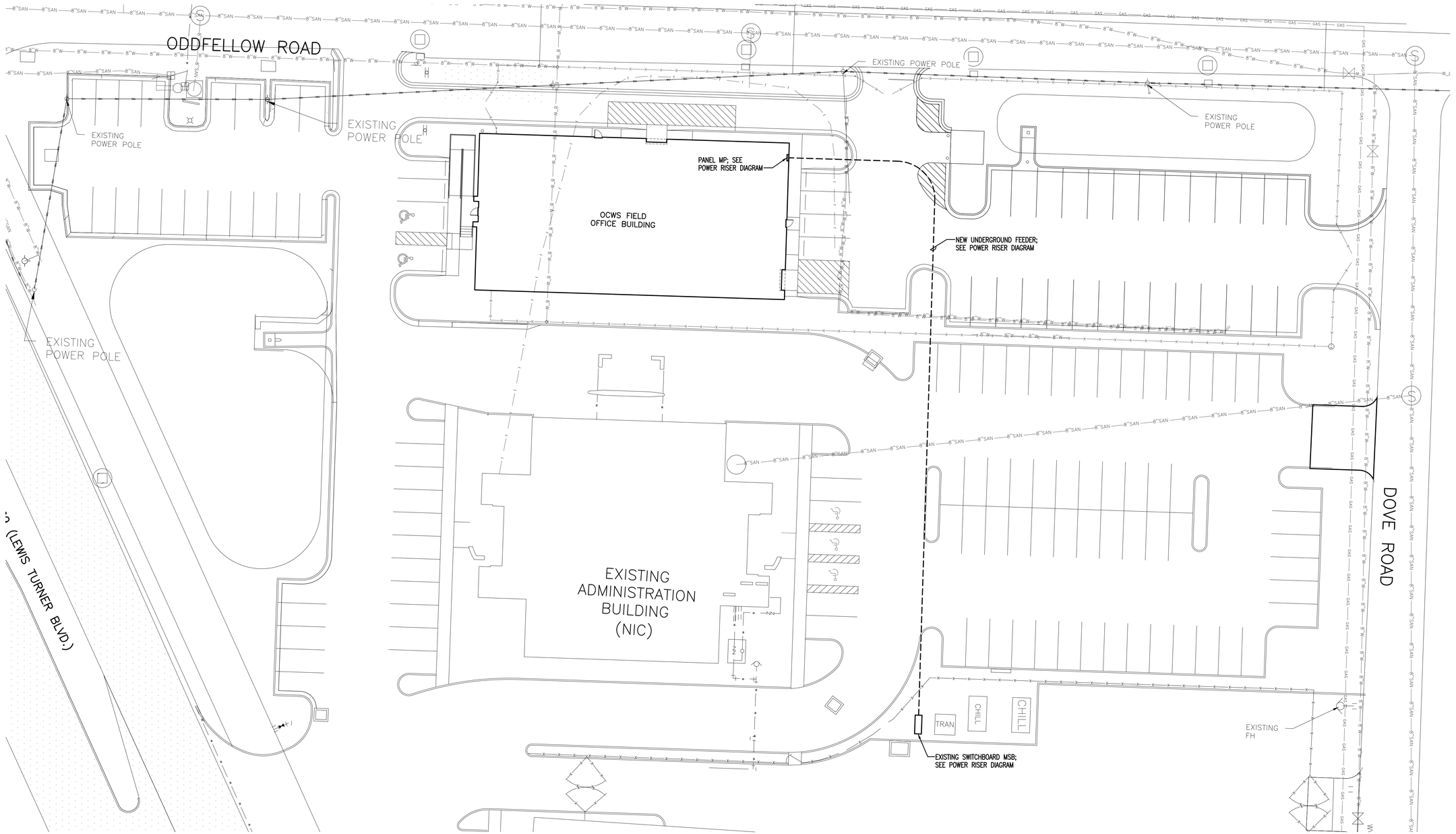
ATTACHMENT D (28 PAGES)



FIELD OFFICE ELECTRICAL SITE PLAN
SCALE: 1"=20'

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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JDF ARCHITECTURE, LLC
204 HOLLYWOOD BLVD SE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

FIELD OFFICE ELECTRICAL SITE PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

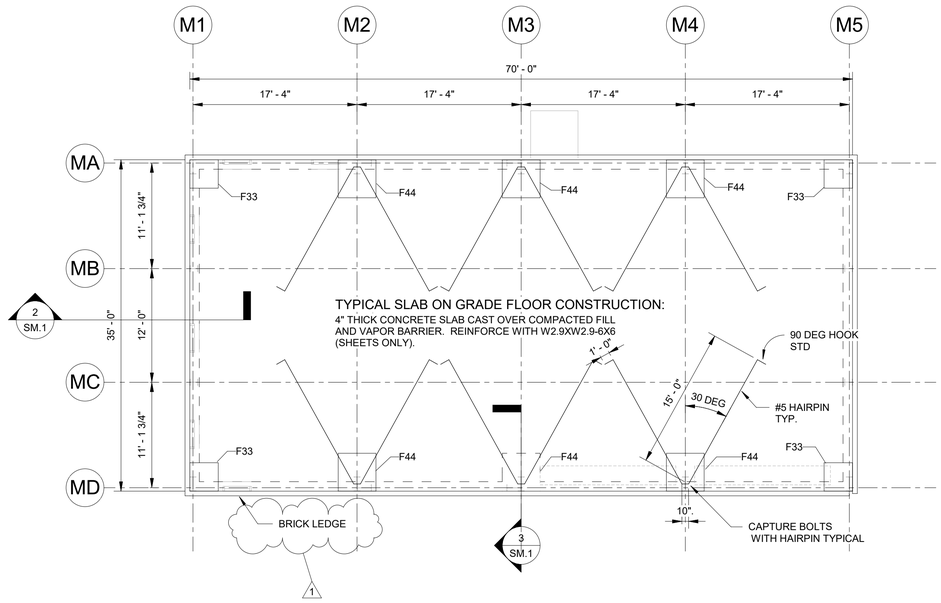
DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER
EF2.00

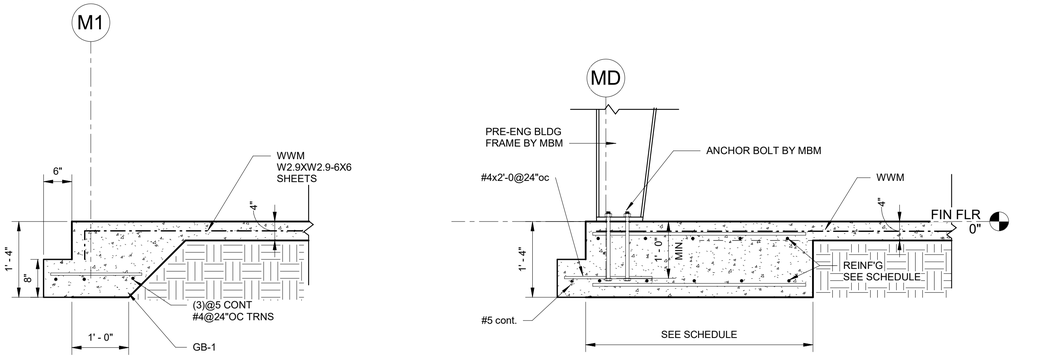
S:\2019 JOBS\23 OKALOOSA WATER AND SEWER\1923 EF200 ELEC SITE PLAN.DWG 11/19/2020 1:20 PM

SAW CUT JOINTS; (SCJ)

SAWCUT 1/8" WIDE 1" DEEP JOINTS AT NO MORE THAN 12' OC IN ANY DIRECTION. SAWCUTTING SHALL PROCEED AS SOON AS THE SLAB IS FINISHED AND CAN SUPPORT THE SAWCUTTING EQUIPMENT WITHOUT SCARRING THE SURFACE OF THE SLAB. (GREEN SAW METHOD)



1 FOUNDATION PLAN
1/8" = 1'-0"



2 SECTION
3/4" = 1'-0"

3 SECTION
3/4" = 1'-0"

PRE-ENGINEERED STEEL BUILDING

1. CONTRACTOR SHALL SUPPLY THE FINAL REACTIONS TO THE ARCHITECT / ENGINEER FOR REVIEW AS SOON AS THEY BECOME AVAILABLE.

2. THE SHOP DRAWINGS SHALL INDICATE THE DIAMETER AND NUMBER OF ANCHOR BOLTS PER COLUMN. SEE THE CONTRACT DOCUMENTS FOR THE EMBEDMENT REQUIREMENTS.

FOOTING SCHEDULE:

FOOTING ID	SIZE	REINF'G	NOTES
GB-1	1'-4"X1'-0" CONT.	SEE SECTION	RUN CONT BARS THRU FOOTING
F33	3'X3'X1'-4"	#5@10"OC E.W.T&B	
F44	4'X4'X1'-4"	#5@10"OC E.W.T&B	

GENERAL NOTES:

1. TO THE BEST OF OUR KNOWLEDGE, THE STRUCTURAL PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE FLORIDA BUILDING CODE, 2017 6TH EDITION.
2. THE STRUCTURAL DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DOCUMENTS. USE THESE NOTES IN CONJUNCTION WITH THE SPECIFICATIONS. IF A CONFLICT EXISTS, THE MORE STRINGENT GOVERNS.
3. COMPLY WITH REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE FEDERAL STATE, AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.
4. ALL REFERENCED STANDARDS REFER TO THE EDITION IN FORCE AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR BIDDING.
5. REVIEW ALL CONTRACT DOCUMENTS, DIMENSIONS AND SITE CONDITIONS AND COORDINATE WITH FIELD DIMENSIONS AND PROJECT SHOP DRAWINGS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES IN WRITING TO THE ARCHITECT/ENGINEER. DO NOT CHANGE SIZE OR DIMENSIONS OF STRUCTURAL MEMBERS WITHOUT WRITTEN INSTRUCTIONS FROM THE STRUCTURAL ENGINEER OF RECORD.
6. ANY DISCREPANCIES, OMISSIONS, OR VARIATIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS DISCOVERED DURING THE BIDDING PERIOD SHALL BE IMMEDIATELY COMMUNICATED IN WRITING TO THE ARCHITECT/ENGINEER.
7. PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. EACH CONTRACTOR SHALL PROTECT HIS WORK, ADJACENT PROPERTY AND THE PUBLIC. EACH CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLECT.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.
9. DO NOT SCALE DRAWINGS; USE DIMENSIONS.
10. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS IN STRUCTURE NOT SHOWN ON STRUCTURAL DRAWINGS.
11. DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE RESOLVED BY THE ARCHITECT/ENGINEER.
12. REVISIONS ARE IDENTIFIED BY A REVISION NUMBER WITHIN A TRIANGLE. ALL REVISIONS ISSUED ON A SINGLE DATE WILL BE IDENTIFIED BY THE SAME REVISION NUMBER ISSUED CONSEQUENTLY.
13. CURRENT REVISIONS ARE ENCIRCLED BY AN IRREGULAR "CLOUD", AS WELL AS FLAGGED WITH THE CURRENT REVISION NUMBER. CLOUDS ARE REMOVED FROM PREVIOUSLY ISSUED REVISIONS.
14. DESIGN LOADS AND CRITERIA:

FLOOR LIVE LOAD	40 PSF
PARTITION LOAD	15 PSF
ROOF LIVE LOAD	20 PSF
FLOOR DEAD LOAD	SELF WEIGHT
WIND CRITERIA	ASCE 7-10
ULTIMATE WIND SPEED	160 MPH
RISK CATEGORY	IV
IMPORTANCE FACTOR	1.00
STRUCTURE TYPE	ENCLOSED

SHOP DRAWING SUBMITTALS:

1. THE FOLLOWING REQUIREMENTS IN NO WAY REDUCE OR LIMIT ANY ADDITIONAL REQUIREMENTS OF SPECIFICATIONS.
2. REVIEW OF SUBMITTALS BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AS PRESENTED BY THE CONTRACT DOCUMENTS. NO DETAILED CHECK OF QUANTITIES OR DIMENSIONS WILL BE MADE. ONLY THOSE SHOP DRAWINGS REQUIRED BY THE CONTRACT DOCUMENTS TO BE SUBMITTED WILL BE REVIEWED. ALL OTHERS WILL BE RETURNED WITHOUT COMMENT.
3. IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMIT A COPY OF THE SHOP DRAWING SUBMITTAL REGISTER TO THE STRUCTURAL ENGINEER, SHOWING DATES OF SUBMITTAL FOR EACH SPECIFIC STRUCTURAL SECTION OF THE WORK, CONSISTENT WITH THE FOLLOWING CRITERIA:
   A. ALLOW ADEQUATE TIME FOR TRANSIT AND PROCESSING BEFORE FABRICATION. THE STRUCTURAL ENGINEER WILL REVIEW AN AVERAGE SUBMITTAL WITHIN 10 WORKING DAYS OF RECEIPT BY THEM.
   B. SCHEDULE AND SUBMIT SHOP DRAWINGS FOR SPECIFIC COMPONENTS, SUCH AS COLUMNS FOOTINGS, ETC., IN THEIR ENTIRETY. SHOP DRAWINGS FOR SIMILAR FLOORS SHALL BE SUBMITTED IN THE SAME PACKAGE.
   C. SUBMIT SHOP DRAWINGS IN A TIMELY MANNER, CONSISTENT WITH THE ABOVE REQUIREMENTS.
4. ALL CHANGES AND ADDITIONS MADE ON RESUBMITTALS MUST BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RESUBMITTALS MUST BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT / ENGINEER REVIEW WILL BE LIMITED TO THE ITEMS CAUSING THE RESUBMITTAL.
5. DO NOT REPRODUCE THE CONTRACT DOCUMENTS FOR USE AS SHOP DRAWINGS.
6. SHOP DRAWINGS NOT MEETING THE ABOVE CRITERIA OR SUBMITTED AFTER FABRICATION WILL NOT BE REVIEWED AND WILL BE RETURNED WITHOUT COMMENT.
7. RESPONSIBILITIES OF DETAILERS AND FABRICATORS:
   A. GENERAL - SUBMIT SHOP DRAWINGS AND ANY OTHER SPECIAL INFORMATION NECESSARY FOR PROPER FABRICATION, ERECTION, AND PLACEMENT OF STRUCTURAL FABRICATIONS. INCLUDE PLANS, ELEVATIONS, AND SECTIONS. CLEARLY SHOW ANCHORAGES, CONNECTIONS, AND ACCESSORY ITEMS.THE DETAILER MUST INTERPRET THE CONTRACT DOCUMENTS AND CLEARLY CONVEY THIS INTERPRETATION TO THE FIELD IN THE FORM OF PLACING OR ERECTION DRAWINGS.
   B. CONCRETE REINFORCING DETAILER - PROVIDE PLACING DRAWINGS FOR FABRICATION AND PLACING OF REINFORCING STEEL. THESE DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: BAR LISTS, SCHEDULES, BENDING DETAILS, PLACING DETAILS, PLACING PLANS, AND PLACING ELEVATIONS.
      - CLEARLY SHOW ELEVATIONS OF ALL FOUNDATION WALLS. INDICATE CONTROL JOINTS, EXPANSION JOINTS, LINTELS, CONCRETE BOND BEAMS, AND OPENINGS, DETAILS OF ALL REINFORCING WITH LOCATIONS OF SPLICES, AND HOOKS, PILASTERS.
      - CLEARLY SHOW GRADE BEAM ELEVATIONS AND SECTIONS. INDICATE BAR LENGTHS, HOOKS, STIRRUP SPACING, LAP SPLICES, OFFSETS, AND LOCATION OF BARS WITH RESPECT TO ALL SUPPORTS.
      - CLEARLY SHOW COLUMN ELEVATIONS AND SECTIONS. INDICATE DOWELS, OFFSETS, LAP SPLICES, AND TIES. PLAN SECTIONS OF ALL COLUMNS MUST CLEARLY BE SHOWN.
      - CLEARLY SHOW FOUNDATION REINFORCING. INDICATE BAR LENGTHS, LOCATION AND SPLICES OF CONTINUOUS BARS, AND BAR SUPPORTS.
      - CLEARLY SHOW LOCATIONS OF ALL DOWELS ON PLAN. INDICATE FOOTING STEP LOCATIONS AND PROVIDE DETAILS.
8. FOR ADDITIONAL CRITERIA APPLICABLE TO SHOP DRAWINGS REQUIRING ENGINEERING INPUT BY A SPECIALTY ENGINEER, SEE BELOW

SHOP DRAWINGS REQUIRING ENGINEERING INPUT BY SPECIALTLY ENGINEER:

1. SPECIALTY ENGINEER:
   A. DEFINITION - A FLORIDA REGISTERED PROFESSIONAL ENGINEER WHO SPECIALIZES IN AND WHO UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS INCLUDED IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT.
   B. SHALL BE:
      1. AN EMPLOYEE OR OFFICER OF A FABRICATOR.
      2. AN EMPLOYEE OR OFFICER OF AN ENTITY SUPPLYING COMPONENTS TO A FABRICATOR.
      3. AN INDEPENDENT CONSULTANT RETAINED BY THE FABRICATOR OR HIS SUPPLIER.
2. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS WITH INPUT BY A SPECIALTY ENGINEER. PRE-ENGINEERED STEEL BUIDING AND ROOF COMPONENTS
3. THE SPECIALTY ENGINEER OR MANUFACTURER SHALL DESIGN, PROVIDE, AND INSTALL THEIR COMPONENTS AND THE COMPONENT CONNECTIONS TO THE PRIMARY STRUCTURE PER THE WIND CRITERIA STATED IN GENERAL NOTE 14 OR THE CURRENT GOVERNING BUILDING CODES, WHICHEVER IS MORE STRINGENT.
4. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
5. SHOP DRAWINGS AND CALCULATIONS MUST BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE SPECIALTY ENGINEER.
6. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE EMBOSSED OR PRINTED SEAL, DATE AND SIGNATURE OF THE SPECIALTY ENGINEER. COMPUTER PRINTOUTS ARE AN ACCEPTABLE SUBSTITUTE FOR MANUAL COMPUTATIONS PROVIDED THEY ARE ACCOMPANIED BY SUFFICIENT DESCRIPTIVE INFORMATION TO PERMIT THEIR PROPER E VALUATION. SUCH DESCRIPTIVE INFORMATION SHALL BEAR THE EMBOSSED SEAL AND SIGNATURE OF THE SPECIALTY ENGINEER AS AN INDICATION THAT HE HAS ACCEPTED RESPONSIBILITY FOR THE RESULTS. THE STRUCTURAL ENGINEER WILL RETAIN ONE SIGNED AND SEALED SET FOR RECORD.
7. CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A SPECIALTY ENGINEER.
8. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD OF SUBMITTALS IS LIMITED TO VERIFYING THE FOLLOWING:
   A. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHHED.
   B. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE SPECIALTY ENGINEER.
   C. THAT THE SPECIALTY ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE.)
   D. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE.)
9. A LIST SHALL BE PREPARED AND MAINTAINED BY THE CONTRACTOR FOR ALL SHOP DRAWINGS REQUIRING PARTICIPATION OF A SPECIALTY ENGINEER. THE LIST SHALL CONTAIN PROJECT NAME, NAME OF CONTRACTOR, NAME OF SUBCONTRACTOR, NAME OF SPECIALTY ENGINEER, DRAWING NUMBER, DRAWING TITLE AND THE LATEST REVISION NUMBER AND DATE. FOR PARTIAL SUBMITTALS, THE LIST SHALL CONTAIN ALL ANTICIPATED DRAWING NUMBERS AND TITLES REQUIRED TO COMPLETE THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE LATEST UPDATED LIST OF DRAWINGS WITH EACH SUBMITTAL.
10. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED AND WILL BE RETURNED TO C ONTRACTOR MARKED REVISE AND RESUBMIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS WHICH MAY RESULT.

ATTACHMENT D (28 PAGES)

Wind Loads - MWFRS h≤60' (Low-rise Buildings) Enclosed/partially enclosed only

Kz = Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
GCpi = +/-0.18
Edge Strip (a) = 3.0 ft
End Zone (2a) = 6.0 ft
Zone 2 length = 15.0 ft

Ultimate Wind Surface Pressures (psf)

1	29.3	12.2		-12.8	-29.8
2	-24.1	-41.1		-24.1	-41.1
3	-10.5	-27.6		-9.0	-26.0
4	-7.2	-24.2		-12.8	-29.8
5				27.4	10.4
6				-5.2	-22.2
1E	40.0	23.0		-14.2	-31.2
2E	-42.1	-59.1		-42.1	-59.1
3E	-18.8	-35.8		-16.6	-33.6
4E	-14.8	-31.8		-14.2	-31.2
5E				37.4	20.3
6E				-11.8	-28.8

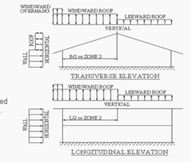
Horizontal MWFRS Simple Diaphragm Pressures (psf)

Transverse direction (normal to L)
Interior Zone: Wall 36.4 psf
Roof -13.6 psf **
End Zone: Wall 54.8 psf
Roof -23.3 psf **

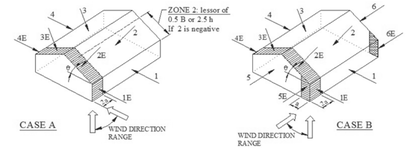
Longitudinal direction (parallel to L)
Interior Zone: Wall 32.6 psf
End Zone: Wall 49.2 psf

** NOTE: Total horiz force shall not be less than that determined by neglecting roof forces (except for MWFRS moment frames).

The code requires the MWFRS be designed for a min ultimate force of 16 psf multiplied by the wall area plus an 8 psf force applied to the vertical projection of the roof.



Location of MWFRS Wind Pressure Zones



NOTE: Torsional loads are 25% of zones 1 - 6. See code for loading diagram.

ASCE 7 -99 and ASCE 7-10 (& later)

Wind Loads - MWFRS h≤60' (Low-rise Buildings) Enclosed/partially enclosed only

Kz = Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
GCpi = +/-0.18
Edge Strip (a) = 3.0 ft
End Zone (2a) = 6.0 ft
Zone 2 length = 15.0 ft

Ultimate Wind Surface Pressures (psf)

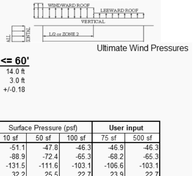
1	29.3	12.2		-12.8	-29.8
2	-24.1	-41.1		-24.1	-41.1
3	-10.5	-27.6		-9.0	-26.0
4	-7.2	-24.2		-12.8	-29.8
5				27.4	10.4
6				-5.2	-22.2
1E	40.0	23.0		-14.2	-31.2
2E	-42.1	-59.1		-42.1	-59.1
3E	-18.8	-35.8		-16.6	-33.6
4E	-14.8	-31.8		-14.2	-31.2
5E				37.4	20.3
6E				-11.8	-28.8

Horizontal MWFRS Simple Diaphragm Pressures (psf)

Transverse direction (normal to L)
Interior Zone: Wall 36.4 psf
Roof -13.6 psf **
End Zone: Wall 54.8 psf
Roof -23.3 psf **

Longitudinal direction (parallel to L)
Interior Zone: Wall 32.6 psf
End Zone: Wall 49.2 psf

** NOTE: Total horiz force shall not be less than that determined by neglecting roof forces (except for MWFRS moment frames).



Ultimate Wind Pressures

Wind Loads - Components & Cladding : h <= 60'

Kh (case 1) = 0.85
Base pressure (qh) = **47.3 psf**
Minimum parapet ht = 0.0 ft
Roof Angle (θ) = 9.5 deg
Type of roof = Gable
h = 14.0 ft
a = 3.0 ft
GCpi = +/-0.18

Roof

	GCp +/- GCpi			Surface Pressure (psf)			User input	
Area	10 sf	50 sf	100 sf	10 sf	50 sf	100 sf	75 sf	500 sf
Negative Zone 1	-1.08	-1.01	-0.98	-51.1	-47.8	-46.3	-46.9	-46.3
Negative Zone 2	-1.88	-1.53	-1.38	-88.9	-72.4	-65.3	-68.2	-65.3
Negative Zone 3	-2.78	-2.36	-2.18	-131.5	-111.6	-103.1	-106.6	-103.1
Positive All Zones	0.68	0.54	0.48	32.2	25.5	22.7	23.9	22.7
Overhang Zone 2	-2.20	-2.20	-2.20	-104.0	-104.0	-104.0	-104.0	-104.0
Overhang Zone 3	-3.70	-2.86	-2.50	-175.0	-135.3	-118.2	-125.3	-118.2

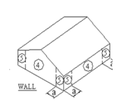
Overhang pressures in the table above assume an internal pressure coefficient (Gcp) of 0.0
Overhang soffit pressure equals adjacent wall pressure reduced by internal pressure of 8.5 psf

Walls

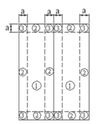
	GCp +/- GCpi			Surface Pressure (psf)			User input	
Area	10 sf	100 sf	500 sf	10 sf	100 sf	500 sf	50 sf	200 sf
Negative Zone 4	-1.17	-1.01	-0.90	-55.3	-47.8	-42.6	-50.1	-45.5
Negative Zone 5	-1.44	-1.12	-0.90	-68.1	-53.1	-42.6	-57.6	-48.5
Positive Zone 4 & 5	1.08	0.92	0.81	51.1	43.6	38.3	45.8	41.3

Note: GCp reduced by 10% due to roof angle <= 10 deg

Location of C&C Wind Pressure Zones



Walls h ≤ 60'
& alt design h<90°



ROOF DIAGRAM

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
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TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf architecture llc
JDF ARCHITECTURE, LLC.
2004 ALLEN ROAD, SUITE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
1	11/4/20	added brick ledge	

OCWS FEILD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

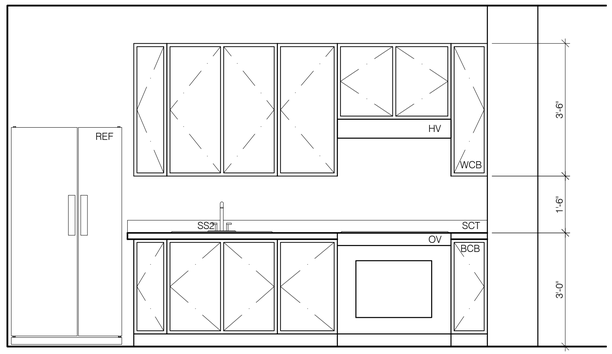
DESIGNED BY:	JDC
DRAWN BY:	VMB
CHECKED BY:	TDN
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY15, 2019

SHEET NUMBER
SM.1

ATTACHMENT D (28 PAGES)

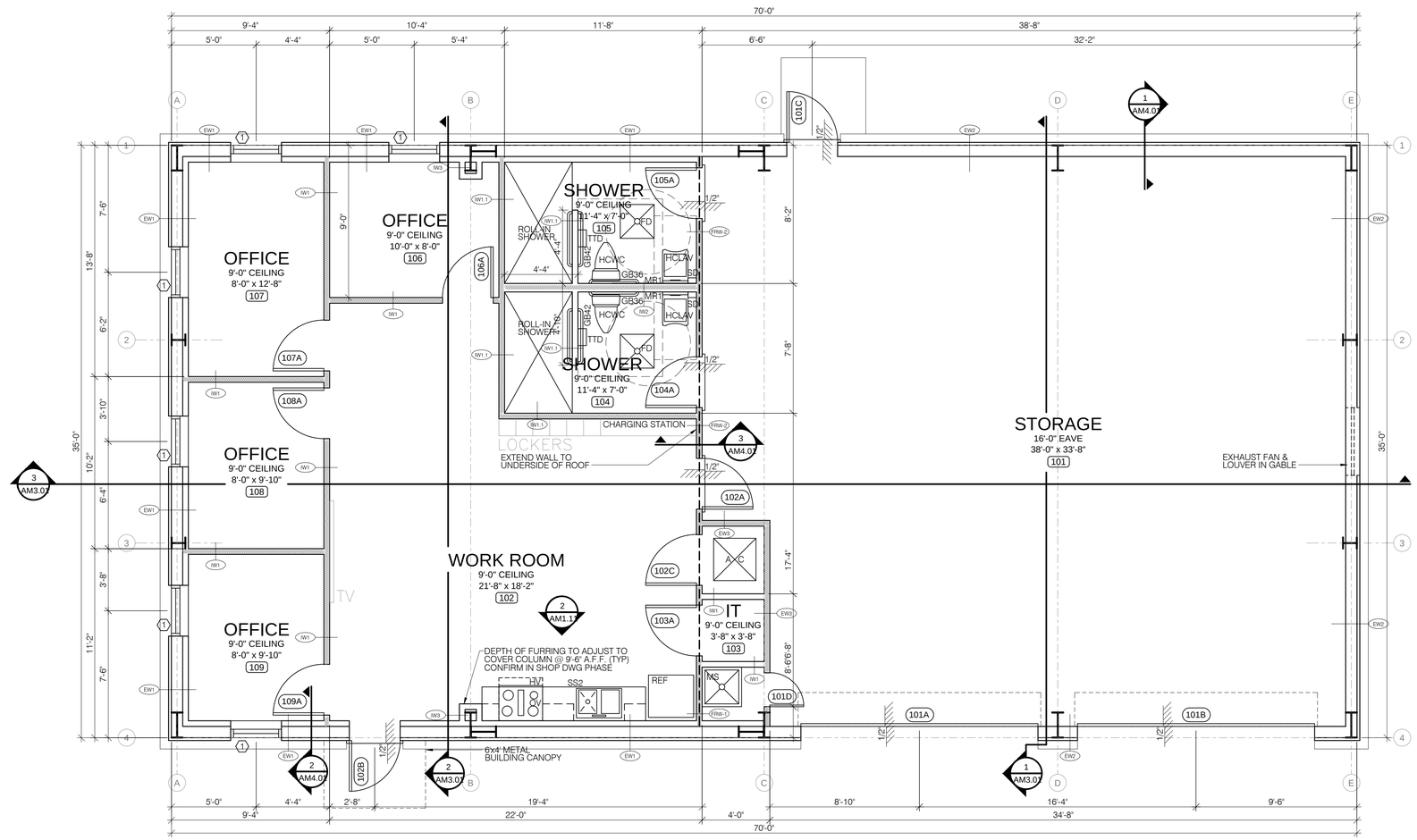
ACCESSORIES

BCB	BASE CABINETS
DF	DRINKING FOUNTAIN
FD	FLOOR DRAIN
GB36	36" ADA HORIZONTAL GRAB BAR
GB42	42" ADA HORIZONTAL GRAB BAR
HCDF	ADA DRINKING FOUNTAIN
HCLAV	ADA WALL MOUNTED SINK
HCWC	ADA WATER CLOSET; FLOOR MOUNTED
HV	HOOD VENT (REF MECHANICAL)
LAV	LAVATORY
MR1	FRAMED MIRROR (1'-6"wX3'h)
MR2	FRAMED MIRROR (3'-0"wX3'h)
MS	MOP SINK (24"X24")
OV	RANGE w/ OVEN (GE-Model #: JB655SKSS)
REF	REFRIGERATOR (GE-Model #: GIE22JSNRSS)
SCT	SOLID SURFACE COUNTER TOP
SD	SOAP DISPENSER
SWR	ROLL-IN SHOWER w/ TILE FLOOR & WALLS
SS2	STAINLESS STEEL SINK (2 BOWL)
TT2	DOUBLE TOILET TUSSUE DISPENSER
VEND	VENDING MACHINE
WC	WATER CLOSET
WCB	WALL CABINETS



2 INTERIOR ELEVATION

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



1 MAINTENANCE BUILDING FLOOR PLAN

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

REFERENCE AM6.01 FOR ACCESSORY SCHEDULE

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
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jdf architecture llc
JDF ARCHITECTURE, LLC
201 HOLLYWOOD BLVD, NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY

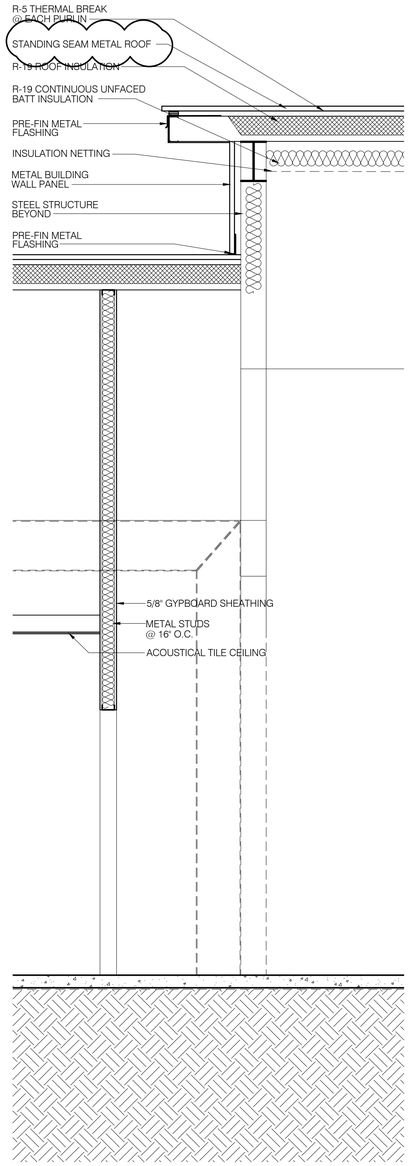
FLOOR PLAN

RELEASE FOR BID

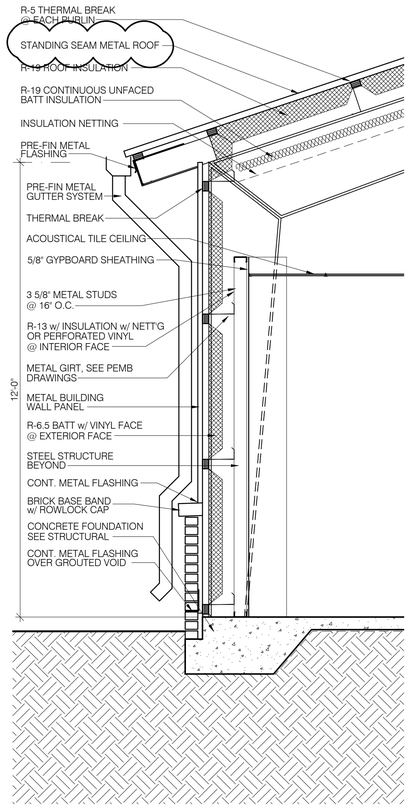
OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

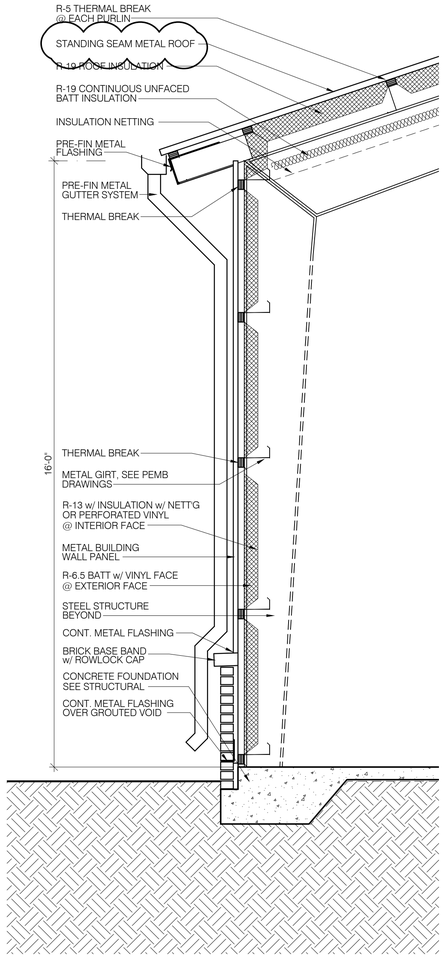
SHEET NUMBER
AM1.11



3 WALL SECTION
SCALE: 1/2" = 1'-0"



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



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

05 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
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CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
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jdf architecture llc
JDF ARCHITECTURE, LLC
201 HOLLYWOOD BLVD. NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY

BUILDING SECTIONS

RELEASE FOR BID

OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

SHEET NUMBER
AM4.01

FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	WALL MAT'L	WALL FINISH	WALL BASE	CEILING FINISH	CEILING HT	REMARKS
101	STORAGE	SC	EXP	-	-	EXP	-	
102	WORK ROOM	SC	GYP	PNT	RB	ACT1	9'-0"	
103	IT CLOSET	SC	GYP	PNT	RB	ACT1	9'-0"	
104	SHOWER	SC	GYP	PNT	RB	GYP	9'-0"	WALL TILE TO 8'-0" AFF IN SHOWER
105	SHOWER	SC	GYP	PNT	RB	GYP	9'-0"	WALL TILE TO 8'-0" AFF IN SHOWER
106	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
107	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
108	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	
109	OFFICE	CAR1	GYP	PNT	RB	ACT1	9'-0"	

ABBREVIATIONS

GENERAL

- EXP - EXPOSED
- FD - FLOOR DRAIN
- MFR - MANUFACTURER

FLOORING

- CAR1 - 24x24 CARPET SQUARES SHAW - DIFFUSE & DISPERSE
- EP - EPOXY FLOOR FINISH
- SC - SEALED CONCRETE
- TILE1 - COMMERCIAL GRADE PORCELAIN TILE
- VCT - VINYL COMPOSITE TILE; SEE DETAIL FOR PATTERN

BASE

- RB - 6" RUBBER BASE

WALLS

- CB - CEMENT BACKER BOARD BEHIND WALL TILE
- GYP - 5/8" TYPE 'X' GYPSUM BOARD
- MRGB - 5/8" MOISTURE RESISTANT GYPSUM BOARD
- PNT - INTERIOR LATEX PAINT
- TL2 - COMMERCIAL GRADE CERAMIC WALL TILE @ +6'-0" A.F.F.

CEILINGS

- ACT1 - LAY-IN ACOUSTICAL CEILING TILE 2'x4'-WHITE
- GYP - 5/8" TYPE 'X' GYPSUM BOARD

DOORS

- ALUM - ALUMINUM STORE FRONT SYSTEM
- HM - HOLLOW METAL FRAME
- MTL - INSULATED METAL DOOR
- WD - SOLID CORE WOOD DOOR

ACCESSORIES

AC	AIR COMPRESSOR
HCDF	ADA DRINKING FOUNTAIN
DF	DRINKING FOUNTAIN
FD	FLOOR DRAIN
FO	FLOOR OUTLET
FS	FLOOR SINK; SEE PLUMBING
GB36	36" ADA HORIZONTAL GRAB BAR
GB42	42" ADA HORIZONTAL GRAB BAR
HCLAV	ADA WALL MOUNTED SINK
HCWC	ADA WATER CLOSET; FLOOR MOUNTED
HWS	HANDWASH SINK
MR1	FRAMED MIRROR (1'-6"wX3'h)
MR2	FRAMED MIRROR (4'-6"wX3'h)
MS	MOP SINK w/ MOP RACK
MW	MICROWAVE
RD	ROOF DRAIN; COORDINATE w/ PLUMBING
REF	REFRIGERATOR
SS1	STAINLESS STEEL SINK (1 BOWL)
SS3	STAINLESS STEEL SINK (3 BOWL)

GENERAL NOTES

1. SEE REFLECTED CEILING PLAN AND DETAILS FOR EXACT CEILING HEIGHT LOCATIONS.
2. ANTI-FRACTURE MAT SHALL BE INSTALLED UNDER ALL FLOOR TILE SURFACES.
3. CONCRETE BACKER BOARD SHALL BE INSTALLED BEHIND ALL WALL TILE.
4. NOT USED.
5. ALL DIMENSIONS TAKEN AT FLOOR SLAB ELEVATION.
6. ALL EXTERIOR DOORS TO HAVE ½" STEP FROM FINISHED INTERIOR FLOOR SLAB TO EXTERIOR WALKWAY.

ATTACHMENT D (28 PAGES)

DOOR SCHEDULE

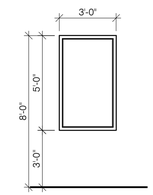
DOOR NO.	SIZE	TYPE	MAT'L	HDW	FRAME MAT'L	HEAD	JAMB	SILL	FIRE RATING	REMARKS
101A	14'-0" x 14'-0"	C	MTL	MFR	MTL	MFR	MFR	MFR		MANUAL PULL CHAIN DOOR
101B	14'-0" x 14'-0"	C	MTL	MFR	MTL	MFR	MFR	MFR		MANUAL PULL CHAIN DOOR
101C	3'-0" x 8'-0"	D	FG	HW-1	HM	4/AM.611	5/AM.611	6/AM.611		
101D	2'-0" x 8'-0"	D	FG	HW-3	HM	4/AM.611	5/AM.611	6/AM.611		
102A	3'-0" x 7'-0"	D	FG	HW-1	HM	4/AM.611	5/AM.611	6/AM.611	90 MIN	
102B	3'-0" x 7'-0"	A	FG	HW-5	HM	4/AM.611	5/AM.611	6/AM.611		
102C	3'-0" x 7'-0"	D	FG	HW-3	HM	1/AM.611	2/AM.611	3/AM.611	90 MIN	
103A	3'-0" x 7'-0"	D	FG	HW-6	HM	1/AM.611	2/AM.611	3/AM.611	90 MIN	
104A	3'-0" x 7'-0"	D	FG	HW-2	HM	4/AM.611	5/AM.611	6/AM.611	90 MIN	
105A	3'-0" x 7'-0"	D	FG	HW-2	HM	4/AM.611	5/AM.611	6/AM.611	90 MIN	
106A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AM.611	2/AM.611	3/AM.611		
107A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AM.611	2/AM.611	3/AM.611		
108A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AM.611	2/AM.611	3/AM.611		
109A	3'-0" x 7'-0"	B	WD	HW-4	HM	1/AM.611	2/AM.611	3/AM.611		

HARDWARE SCHEDULE

- HW-1 ENTRY LOCKSET, DEAD-BOLT, 3 HINGES, LEVER HARDWARE, CLOSER, WEATHERSTRIPPING.
- HW-2 3 HINGES, FLOOR STOP, PRIVACY SET.
- HW-3 3 HINGES, FLOOR STOP, STORAGE SET.
- HW-4 3 HINGES, FLOOR STOP, OFFICE SET.
- HW-5 ENTRY LOCKSET, DEAD-BOLT, 3 HINGES, LEVER HARDWARE, CLOSER, WEATHERSTRIPPING. WIRED FOR KEY FOB ACCESS CONTROL, STRIKE PLATE.
- HW-6 LEVER HARDWARE, CLOSER, WIRED FOR KEY FOB ACCESS CONTROL, STRIKE PLATE.

WINDOW TYPES

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

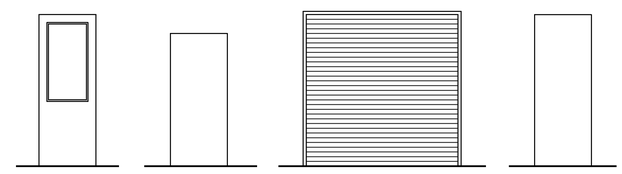


TYPE 1

EXTERIOR
ALUMINUM STOREFRONT
IMPACT RATED GLAZING
INSULATED; LOW-E

DOOR TYPES

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



TYPE A
FIBERGLASS; PAINTED
IMPACT RATED GLAZING

TYPE B
SOLID CORE WOOD
PRIME & PAINT

TYPE C
PRE-FIN INSULATED METAL
ROLL-UP COILING DOOR
IMPACT RATED

TYPE D
FIBERGLASS; PAINTED

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
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JDF ARCHITECTURE, LLC
201 HOLLYWOOD BLVD, NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY

DOOR / WINDOW TYPES and SCHEDULES

RELEASE FOR BID

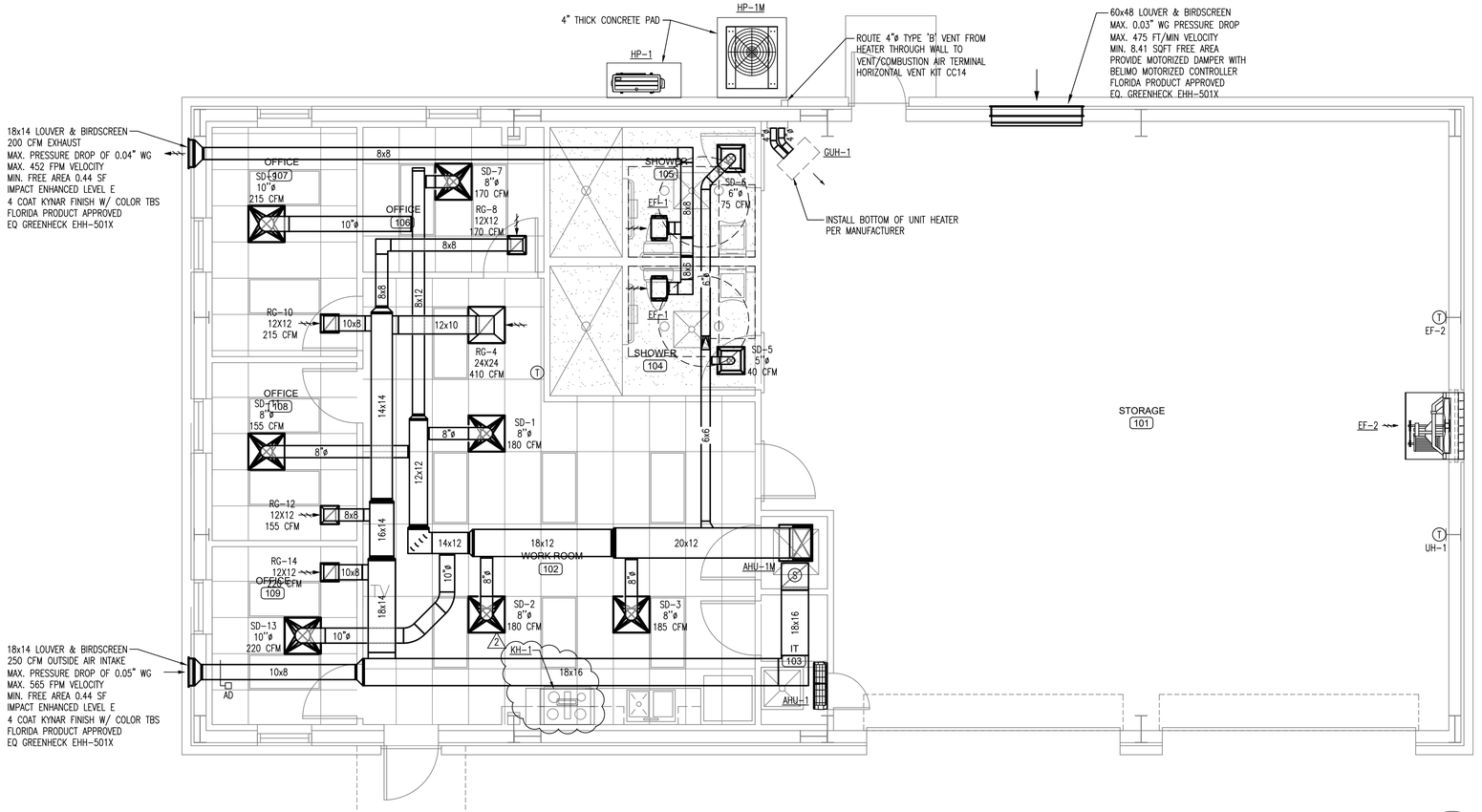
OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	MAY 15, 2020

SHEET NUMBER
AM6.01

C:\USERS\JDF ARCHITECTURE\DOCUMENTS\JDF ARCHITECTURE\1901B OCWS MAINTENANCE BUILDING\03 CONSTRUCTION DOCUMENTS\02 DRAWINGS\A6.01 M-SCHEDULES.DWG 11/23/2020 10:09 AM

ATTACHMENT D (28 PAGES)



1 MAINTENANCE BUILDING HVAC FLOOR PLAN

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

MECHANICAL LEGEND

MARK	DESCRIPTION
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT/HEAT PUMP
CD	SUPPLY DIFFUSER (TITUS TDCA-AAA)
RR	RETURN REGISTER (TITUS 25FL)
OA	OUTSIDE AIR
TG	TRANSFER GRILLE (TITUS 25FL)
WSR	WALL REGISTER (TITUS 300FS)
RTU	ROOFTOP UNIT
EX	EXISTING
	SUPPLY AIR
AD	AUTOMATIC DAMPER (24 VOLT)
	RETURN OR EXHAUST AIR
T	THERMOSTAT/SENSOR
S	SMOKE DETECTOR
WRR	WALL RETURN REGISTER (TITUS 350)
FD	FIRE DAMPER
	TURNING VANES IN DUCT
MD	MANUAL VOLUME DAMPER
	SUPPLY DIFFUSER (TITUS TDCA-AAA)
	SUPPLY OR OUTSIDE AIR DUCT IN SECTION
	EXISTING DUCTWORK
	SUPPLY AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	RETURN AIR DUCTWORK
	OUTSIDE AIR DUCTWORK
	RETURN REGISTER (TITUS 25FL)

GENERAL MECHANICAL NOTES

1. FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS TO PROVIDE A COMPLETE MECHANICAL SYSTEM. DUE TO THE SCHEMATIC NATURE OF THESE PLANS, THE CONTRACTOR SHALL FIELD-VERIFY LOCATIONS FOR EQUIPMENT DUCTWORK, AND ACCESSORIES. IN ADDITION, THIS WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS. THE CONTRACTOR SHALL ALSO REVIEW THE STRUCTURAL DRAWINGS BEFORE FABRICATING AND INSTALLING DUCTWORK OR EQUIPMENT.
2. ALL WORK SHALL BE PERFORMED BY SKILLED AND EXPERIENCED WORKMEN. WORK SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS, LICENSES, AND INSPECTIONS.
3. ALL MATERIALS SHALL BE NEW AND WITHOUT DEFECTS. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT. ALL WORK DONE BY THIS CONTRACTOR SHALL BE WARRANTED FOR ONE YEAR FROM THE TIME THE OWNER GIVES ACCEPTANCE OR GAINS BENEFICIAL USE, WHICHEVER IS FIRST. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
4. DUCT SIZES ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. DUCT SHALL BE OF LOW-PRESSURE (2.0" w.g.) CONSTRUCTION AS CLASSIFIED BY SMACNA UNLESS OTHERWISE NOTED. ALL DUCT SHALL HAVE MINIMUM 2" EXTERNAL WRAP (MINIMUM R-6.0). LINER MAY ONLY BE USED WHERE REQUIRED FOR SOUND ATTENUATION. DUCTBOARD SHALL NOT BE USED.
5. FLEXIBLE DUCT MAY BE INSTALLED ONLY WHERE SHOWN ON THE DRAWINGS. DUCT SHALL BE EXTERNALLY-INSULATED CORRUGATED METAL WITH A MAXIMUM LENGTH OF 6'-0". FOR TAKE-OFFS LONGER THAN 6'-0", THE REMAINDER OF THE DISTANCE SHALL BE EXTERNALLY-WRAPPED SINGLE-WALL ROUND DUCT WITH A SPIN-IN STYLE TAP AT THE MAIN DUCT.
6. HANGERS FOR EQUIPMENT AND PIPING SHALL BE SECURED TO THE BUILDING STRUCTURE. NO HANGERS SHALL BE ATTACHED TO THE FLOOR OR ROOF DECK MATERIAL, OR CONCRETE DECKS LESS THAN 4" THICK.
7. ALL RETURN AND EXHAUST GRILLES SHALL HAVE OPPOSED-BLADE DAMPERS. ALL SUPPLY-SIDE TAKE-OFFS SHALL HAVE A BALANCING DAMPER.
8. FIRE DAMPERS AND FIRE-STOPPING SHALL BE PROVIDED FOR ANY PENETRATIONS OF FIRE-RATED PARTITIONS. VERIFY LOCATIONS OF ALL FIRE-STOPPING ON THE ARCHITECTURAL DRAWINGS.
9. ALL GRILLES AND REGISTERS SHALL BE EQUAL TO TITUS WITH ALUMINUM CONSTRUCTION. SUPPLY GRILLES SHALL BE EQUAL TO MODEL TDC. SUPPLY REGISTERS SHALL BE EQUAL TO MODEL 301. RETURN, EXHAUST AND TRANSFER GRILLES SHALL BE EQUAL TO MODEL 355 WITH OPPOSED-BLADE DAMPERS. GRILLE FINISH SHALL BE APPROVED BY THE OWNER AND THE ARCHITECT.
10. EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE ABLE TO PROVIDE THE REQUIRED CAPACITIES IN THE MIDDLE OF IT'S PERFORMANCE RANGE. ALL COMPRESSORS SHALL HAVE A MINIMUM 5-YEAR WARRANTY UNLESS OTHERWISE NOTED. THE EQUIPMENT SHALL HAVE ALL THE NECESSARY CONTROLS AND ACCESSORIES TO ALLOW FOR FULL OPERATION. IF EQUIPMENT HAS COMPONENTS OF A VIBRATIVE NATURE, THE CONTRACTOR SHALL PROVIDE THE NECESSARY VIBRATION CONTROLS.
11. REFRIGERANT PIPING SHALL BE HARD-DRAWN TYPE K OR L COPPER WITH COPPER SOLDER FITTINGS. PIPING SHALL BE SOLDERED WITH SILVER SOLDER AND INSULATED WITH 1/2" THICK THERMAL TUBULAR JACKETING. SEAL INSULATION JOINTS WITH TAPE AND CEMENT OR PER MANUFACTURER'S INSTRUCTIONS. PRE-INSULATED AND PRE-CHARGED REFRIGERANT LINES MAY BE USED AS PROVIDED BY THE EQUIPMENT MANUFACTURER. WHERE INSULATION IS EXPOSED TO WEATHER PROTECT LINES WITH AN ALUMINUM COVER AND PAINT TO MATCH EXTERIOR FINISH.
12. CONDENSATE DRAINS SHALL BE FULL-SIZE (1" MINIMUM) COPPER OR SCHEDULE 40 PVC. DRAINS SHALL BE INSULATED IN THE SAME MANNER AS REFRIGERANT LINES. DISCHARGE AS SHOWN ON THE DRAWINGS.
13. CONTROLS SHALL BE EQUAL TO MANUFACTURER'S CONTROLS. OUTDOOR UNITS SHALL HAVE FACTORY-WIRED TIME DELAYS, PRESSURE SWITCHES, LOW-AMBIENT CONTROLS AND DEFROST CONTROLS. THERMOSTATS SHALL BE DIGITAL AND PROGRAMMABLE WITH BATTERY BACK-UP. SETPOINTS SHALL FOLLOW DESIGN CONDITIONS OR BE AS DIRECTED BY THE OWNER. MOUNT ALL THERMOSTATS AND TEMPERATURE SENSORS 60" A.F.F.
14. THE HVAC SYSTEM SHALL BE TESTED AND BALANCED ACCORDING TO AABC STANDARDS. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH A COPY OF THE TEST AND BALANCE REPORT AND THE OWNER WITH A LETTER STATING THAT THE SYSTEM(S) HAVE BEEN BALANCED TO WITHIN 10% OF DESIGN PARAMETERS.

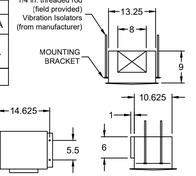
EQUIPMENT SCHEDULE

Ceiling Exhaust Fan — MARK: EF-1

Qty	Greenheck Model	Volume (CFM)	External SP Total SP (in wg)	FRPM	Operating Power (hp)	Weight (Lb.)	Motor Information: Size (hp)	V/C/P	Encl:	Motor RPM	Windings	FLA
1	SP-A110	100	0.25 0.238	950	0.01	20	NA	115/60/1	OP	950	1	NA

OPTIONS AND ACCESSORIES

UL/cUL 507 Listed - Electric Fan
Solid State Speed Control, 6 Amp, Shipped Loose
Aluminum Grille with White Enamel Finish, (PN: 504878)
Isolation Kit, (PN: VI KIT-SP/CSP), Shipped Loose
Aluminum Wheel Material
Energy Star Rated
Can Be Used to Comply with: ASHRAE 62.2, California Title 24, and Washington State Energy Code interlock with AHU-1M



HEAT PUMP SCHEDULE

UNIT NO.	TOTAL COOLING (MBH)	SENSIBLE COOLING (MBH)	LATENT COOLING (MBH)	MIN. SEER	OUTDOOR TEMP-COOLING	TOTAL HEATING (MBH)	MIN. HSPF	MIN. COP	OUTDOOR TEMP-HEATING	MCA	MOCP	VOLT/PHASE	REMARKS
HP-1M	48.48	33.93	14.55	16.0	95°FDB	22.80	9.00	4.00	28.0°FDB	28.9	30	208-230/1	1

REMARKS
1. UNIT SHALL BE EQUIPPED WITH DDC CONTROLS, VARIABLE SPEED COMPRESSOR OR INVERTER, ANTI-SHORT-CYCLE TIMER & LOW AMBIENT COOLING.

AIR HANDLER SCHEDULE

UNIT NO.	AIR CFM	APPROX. E.S.P."W.G.	FAN H.P.	COOLING ENT AIR TEMP	COOLING LVG TEMP	OUTSIDE AIR CFM	OUTDOOR TEMP-COOLING	ELEC HEAT (240V-1ø)	MCA	MOCP	VOLT/PHASE	REMARKS
AHU-1M	1420	1.0	0.5	77.9°FDB/66.1°FWB	55.6°FDB/54.6°FWB	250	95°FDB/80°FWB	10.0 kW	48.0	50	208/1	1

REMARKS
1. UNIT SHALL BE WIRED FOR SINGLE POINT CONNECTION.

UNIT HEATER SCHEDULE

MARK	MFR./ MODEL	AREA SERVED	CFM	TYPE	INPUT (MBH)	OUTPUT (MBH)	VOLT/ PHASE	MOCP	FAN MOTOR HP	FLA	GAS CONNECTION	VENT CONNECTION	COMBUSTION AIR INLET	WEIGHT	NOTES
GUH-1	REZNOR UDAS	STORAGE 101	456	NAT GAS	30	24.6	115/1	15	0.06	1.9	1/2"	4"	4"	96	1,2,3,4

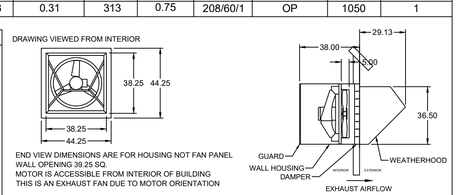
NOTES:
1. PROVIDE VIBRATION ISOLATION GROMMETS.
2. PROVIDE 4" CLASS "B" VENT
3. MAINTAIN MFR'S MINIMUM CLEARANCE.
4. PROVIDE LOW VOLTAGE THERMOSTAT AND CONTROL TRANSFORMER.

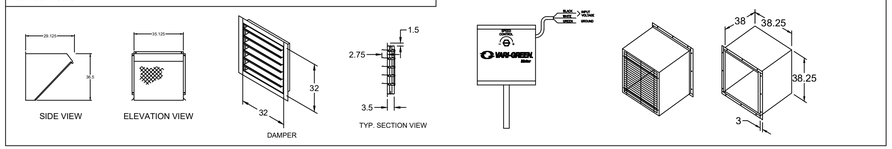
Sidewall Direct Drive Fan

MARK INFORMATION: QTY	MARK	MODEL	FAN INFORMATION: VOLUME (CFM)	TOTAL EXTERNAL SP (IN WG)	FAN RPM	OPERATING POWER (HP)	WEIGHT (LB.)	MOTOR INFORMATION: SIZE (HP)	V/C/P	ENCLOSURE	MOTOR RPM	WINDINGS
1	EF-2	AER-E30C-310-VG	4,000	0.245	988	0.31	313	0.75	208/60/1	OP	1050	1

EF-2 : SELECTED OPTIONS AND ACCESSORIES

UL/cUL 705 Listed - "Power Ventilators"
Airflow Direction: Exhaust
Damper Mounted, WD-320-PB-32X32, Gravity Operated, Coated
Short Wall Hsg, Flush Exterior, w/ OSHA Grd., Ctd with Baked Enamel, Desert Sand (033)
Motor Access: From Int. of Bldg.
Switch, NEMA-1, T.O., Toggle, Shipped with Unit
Closure Angles
Weatherhood, Aluminum 45 deg. with Bird Screen Ctd Baked Enamel, Desert Sand (033)
Coated with Baked Enamel, Desert Sand (033), Fan And Attached Acc
Remote Tstat





IT ROOM MINISPLIT AIR HANDLER SCHEDULE

Mark	Air Flow	EAT CLG	LAT CLG	EAT HTG	LAT HTG	Max Sound Pressure Level	Full Load Ampacity	Minimum Circuit Ampacity	Voltage/Phase
AHU-1	425	76.7°FDB/67.0°FWB	59.3°F	70.0°F	N/A	43	0.33 A	1 A	208 V / 1Ø
PROVIDE WIRELESS THERMOSTAT FOR INDOOR UNIT, INTEGRAL FILTER, PIPE CONDENSATE TO SPLASH BLOCK OUTSIDE									

IT ROOM CONDENSING UNIT SCHEDULE

Mark	Total Cooling Capacity	Sensible Cooling Capacity	Heating Capacity	SEER	IEER	Minimum Circuit Ampacity	Maximum Overcurrent Protection	Voltage/Phase
HP-1	11,786 Btu/h	8,416 Btu/h	13,491 Btu/h	15.2	10.1	13 A	15 A	208 V / 1ø
PROVIDE INVERTER DUTY COMPRESSOR & COIL GUARD. OUTDOOR UNIT SHALL POWER INDOOR UNIT.								

JOHNSON PEADEN ENGINEERING INC.
329 Brooks Street SE, Fort Walton Beach, FL 32548
827 Grace Avenue, Panama City, FL 32401
850.244.6189V 850.244.0545F
Alabama #CD-2429-E Arkansas #1654 Florida #00009014
Georgia #PEF003983 Mississippi #E-00000862
Texas #F-16637 Missouri #2018035834

JPE Job Number: 1950

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture inc
JDF ARCHITECTURE, LLC
204 EGLIN PARKWAY NE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	BY
1	11/6/20	JJ
	KITCHEN HOOD ADDED	
2	10/9/20	JJ
	COUNTY COMMENTS	
	REVISION	BY

MAINTENANCE BUILDING HVAC FLOOR PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES
PREPARED FOR
OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER 2020

SHEET NUMBER
MM1.11

OCTOBER 2020

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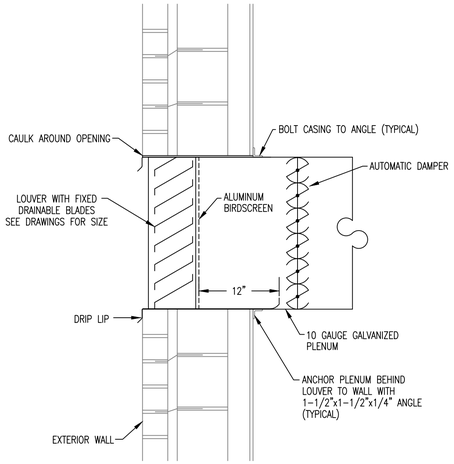
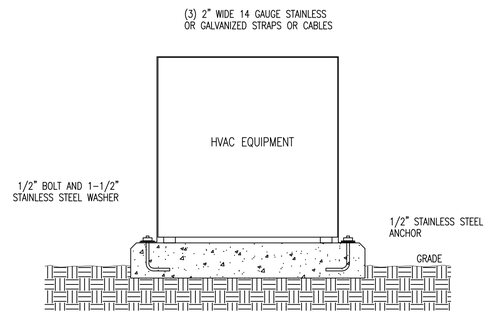
ATTACHMENT D (28 PAGES)



LOUVER THROUGH WALL W/ AD

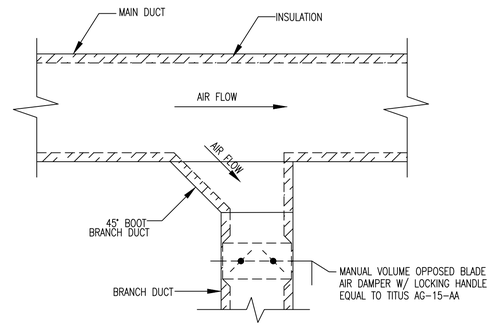
NOT TO SCALE

NOTES:
1. ALL PADS SHALL BE 6" THICK MINIMUM. EXTERIOR PADS SHALL HAVE AT LEAST 2" BELOW GRADE AND AT LEAST 4" ABOVE GRADE.
2. ANCHORS SHALL EXTEND INTO SLAB MINIMUM 3".
3. SECURE STRAPS AND CABLES TIGHT TO EQUIPMENT WITH MINIMUM 1/8" THICK RUBBERS STRIPS BETWEEN STRAPS/CABLES AND EQUIPMENT.



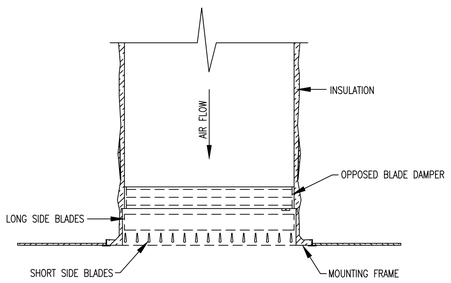
EXTERIOR CONCRETE EQUIPMENT PAD

NOT TO SCALE



BRANCH DUCT TAP FROM MAIN

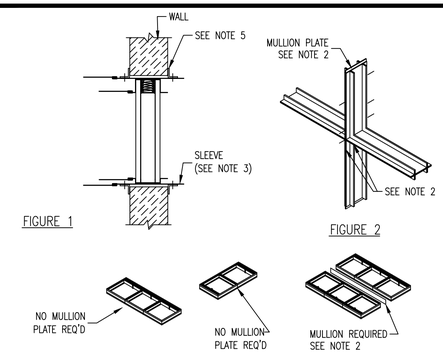
NOT TO SCALE



NOTES:
1. ALL REGISTERS SHALL BE DOUBLE DEFLECTION TYPE ALL ALUMINUM CONSTRUCTION.
2. BLADES SHALL BE NO FURTHER THAN 3/4" SPACING OR LESS THAN 1/2" SPACING.
3. CENTER REGISTER IN CEILING GRID.
4. IF DUCT IS INTERNALLY INSULATED, DIFFUSER SHALL BE WRAPPED WITH R-6 INSULATION AROUND ALL EXPOSED PARTS ABOVE CEILING.
5. REGISTER BASED UPON TITUS MODEL 300FS.

REGISTER DETAIL

NOT TO SCALE



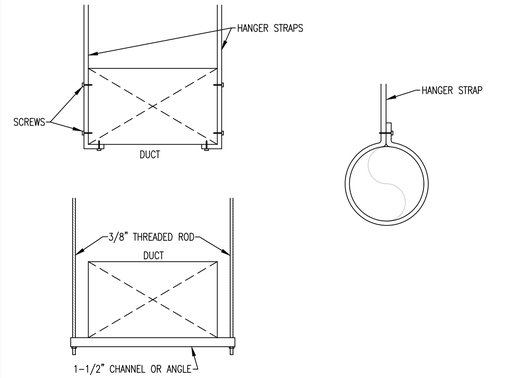
VERTICAL INSTALLATION

INSTALLATION DETAIL NOTES:

1. Opening in wall or floor shall be larger than damper/sleeve. See manufacturer's requirements.
2. For multiple sections and assembly refer to manufacturer's requirements to maintain UL rating and integrity.
3. Sleeves to dampers must be equal or thicker than duct connecting to the damper.
4. Follow "Air Flow" and "Mount with Arrow Up" labels for correct orientation for Dynamic dampers.
5. Do not weld of fasten angles together at corners of dampers. Use manufacturer's mounting angles and fasteners.
6. Duct/Sleeve connections must be made to allow the duct to break away from the dampers. See manufacturer's approved methods to seal duct to dampers.
7. The dampers must be installed so it is square and free from racking. All dampers require UL 555 and NFPA 90A approval at minimum.

FIRE DAMPER DETAIL

NOT TO SCALE



TYPICAL LOW-PRESSURE DUCT HANGERS

NOT TO SCALE

HOOD INFORMATION

QTY.	MARK	MODEL	CONFIGURATION	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	EXHAUST					VENTILATION INFORMATION		TOTAL WEIGHT (LBS.)
				LENGTH	WIDTH	HEIGHT		CFM	INLET SOUND		COLLAR		VENTILATION STYLE	FAN TYPE	
									SONES	DBA	DIA. (IN.)	S.P.			
2 1	KH-1	GRRS	WALL	36	TOP 12.0 BOT 23.5	FRT 6.00 BCK 12.5	300 SERIES SS WHERE EXPOSED	300	9.3	60.15			INTEGRAL FAN - FRONT RECIRCULATION	INTEGRAL	93

HOOD INFORMATION

QTY.	MARK	HOOD AND FAN POWER				DISCONNECTS FOR APPLIANCE					LIGHTING DETAILS		USER INTERFACE	
		VOLT	PHASE	BREAKER SIZE (AMPS)	OPERATING CURRENT (AMPS)	ELECTRIC				GAS	FIXTURE TYPE BULB / LAMP INFO	QTY	TYPE	LOCATION
						RECPT.	VOLT	PHASE	MAX AMPS	VALVE SIZE (IN.)				
1	KH-1	115	1	15	1.2	14-50R	208-250	1	50		115VAC 7WATT E26 LED 2200-2700K COLOR	2	FULL COLOR, LCD TOUCH SCREEN	HOOD MOUNTED

HOOD OPTIONS/ACCESSORIES

- LISTED TO UL SUBJECT 300A
- SELF-CONTAINED FIRE SUPPRESSION SYSTEM
- ELECTRONIC DETECTION
- FULLY PLUG AND PLAY DESIGN
- NSF APPROVED SEALANT
- AUTOMATIC RANGE DEACTIVATION AND PASSWORD PROTECTION
- MANUAL PULL STATION
- HORN STROBE
- K-CLASS PORTABLE FIRE EXTINGUISHER
- FINISHED TOP
- FIRE SYSTEM PERMIT, STARTUP AND PUFF TEST
- FIRE TEST KIT

JOHNSON PEADEN ENGINEERING INC.
329 Brooks Street SE, Fort Walton Beach, FL 32548, 850.244.6189V 850.244.0545F
827 Grace Avenue, Panama City, FL 32401, 850.215.4068V 850.215.4069F
Alabama #CD-2429-E Arkansas #1654 Florida #00009014
Georgia #PEF003983 Mississippi #E-00000862
Texas #F-16637 Missouri #2018035834

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AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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JDF ARCHITECTURE, LLC
204 LAGOON BLVD SUITE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	BY
2	11/6/20	JJ
1	10/9/20	JJ
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	KITCHEN HOOD ADDED	
	COUNTY COMMENTS	

MAINTENANCE BUILDING HVAC DETAILS

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
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MM2.11

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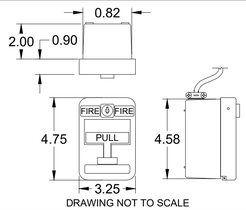
ATTACHMENT D (28 PAGES)

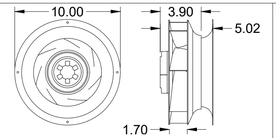
SURFACE MOUNT MANUAL PULL STATION DETAIL



DRAWING NOT TO SCALE

NOTES:
1) PROVIDED WITH 30FT PLUG AND PLAY CABLE COILED UP IN HOOD LABELED "PULL STATION"
2) FIELD TO MOUNT STATION AND CONNECT TO CABLE
3) TO COMPLY WITH ADA STANDARDS, STATION (IF MOUNTED ON AN UNOBSTRUCTED WALL) MUST BE A MAX OF 48" OFF OF THE FINISHED FLOOR

FAN DETAIL - ECM INTERNAL (FRONT RECIRCULATION)

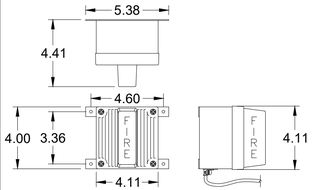


VOLT	FREQ	PHASE	INPUT POWER	WEIGHT	DUCT CONN
115	60	1	120 WATTS	4 LBS	NONE

DRAWING NOT TO SCALE

NOTES:
1) FAN MOUNTED AND WIRED INSIDE HOOD BY FACTORY
2) DISCHARGES THROUGH CHARCOAL FILTER ON FACE OF HOOD BACK INTO SPACE

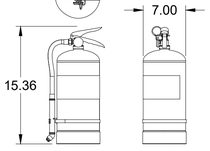
HORN STROBE DETAIL



DRAWING NOT TO SCALE

NOTES:
1) PROVIDED WITH 8FT PLUG AND PLAY CABLE ALREADY ATTACHED TO HORN STROBE. FIELD TO MOUNT HORN STROBE AND CONNECT PLUG TO GAS OR ELECTRIC SHUT OFF ASSEMBLY
2) FIELD TO FOLLOW NFPA AND LOCAL CODE REQUIREMENTS FOR HORN STROBE MOUNTING LOCATION

FIRE EXTINGUISHER DETAIL

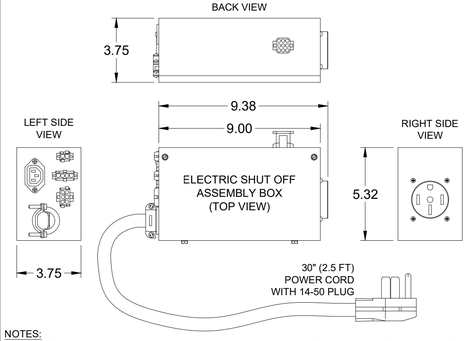


DRAWING NOT TO SCALE

NOTES:
1) AMEREX 6 LITER WET CHEMICAL, CLASS K FIRE EXTINGUISHER WITH HOSE AND NOZZLE GRIP
2) FIELD TO INSTALL PER NFPA AND LOCAL CODE REQUIREMENTS

APPLIANCE DISCONNECT DETAIL

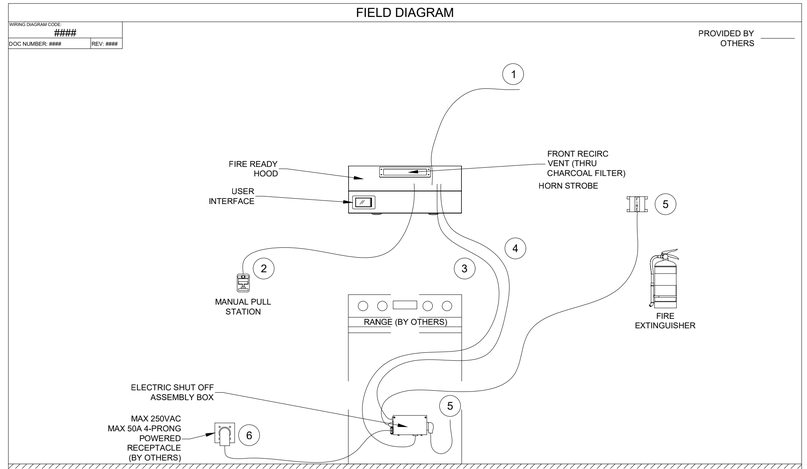
DRAWING NOT TO SCALE



NOTES:
1) PROVIDED WITH TWO (2) 10FT PLUG AND PLAY CABLES COILED UP IN HOOD, FIELD TO CONNECT CABLES TO GAS SHUT OFF ASSEMBLY BOX
2) FIELD TO POSITION ELECTRIC SHUT OFF ASSEMBLY BEHIND THE RANGE
3) FIELD TO PLUG 2.5FT CORD WITH 14-50 PLUG INTO 250VAC RECEPTACLE BEHIND THE RANGE.
4) FIELD TO PLUG RANGE POWER CORD INTO 250VAC RECEPTACLE ON ELECTRIC SHUT OFF ASSEMBLY BOX.

FIELD DIAGRAM

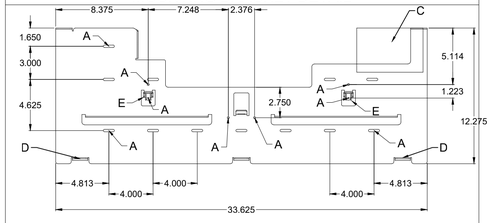
WIRING DIAGRAM CODE: ####
DOC NUMBER: #### REV: ####



CONNECTION LEGEND

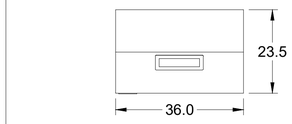
ID	ITEM	ITEM DETAILS
1	HOOD POWER	FIELD TO PROVIDE 115VAC POWER FROM 15A BREAKER TO TERMINAL BLOCKS H1 AND N1 INSIDE HOOD (GROUND TO GROUNDING TERMINAL).
2	MANUAL PULL STATION	30 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO HOOD. FIELD TO CONNECT TO MANUAL PULL STATION VIA QUICK CONNECTOR IN STATION J-BOX.
3	GAS/ELECTRIC DISCONNECT CABLE 1	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 9PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
4	GAS/ELECTRIC DISCONNECT CABLE 2	10 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO 4PIN CONNECTION AT HOOD. FIELD TO PLUG THIS INTO GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
5	HORN STROBE	8 FT PLUG AND PLAY CABLE COILED UP AND ATTACHED TO HORN STROBE. FIELD TO PLUG INTO RECEPTACLE ON GAS/ELECTRIC SHUT OFF ASSEMBLY BOX.
5	RANGE POWER CORD	PLUG RANGE POWER CORD (IF PROVIDED WITH RANGE) INTO 14-50R RECEPTACLE ON ELECTRIC SHUT OFF ASSEMBLY BOX.
6	SHUT OFF ASSEMBLY BOX POWER	PLUG 2.5 FT ELECTRIC SHUT OFF ASSEMBLY BOX POWER CORD INTO NEARBY 4-PRONG 14-50R 250VAC RECEPTACLE.

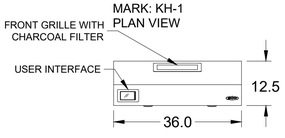
MOUNTING BRACKET DETAIL



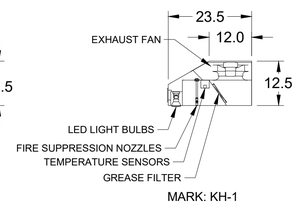
MOUNTING BRACKET KEY
A. CRITICAL MOUNTING POINTS (MUST BE SECURED TO STUDS OR DRY WALL HANGERS)
B. NA
C. LOCATION FOR FACTORY PROVIDED 4" H X 6" W X 3.5" D CONTROL J-BOX
D. HOOD SUPPORT TABS
E. HOOD LATCH CONNECTIONS

NOTES:
1) BEFORE MOUNTING, SITUATE MOUNTING BRACKET ON WALL, MAKING SURE CRITICAL MOUNTING POINTS ARE MET AND DISTANCE FROM BOTTOM OF BRACKET TO COOKING SURFACE IS BETWEEN 24 AND 30 INCHES.
2) CUT OUT SPACE IN WALL FOR FACTORY PROVIDED CONTROL J-BOX AND SECURE IN PLACE.
3) SECURE MOUNTING BRACKET TO WALL USING THE PROPER FIELD PROVIDED FASTENERS USING CRITICAL MOUNTING POINTS SHOWN ABOVE.

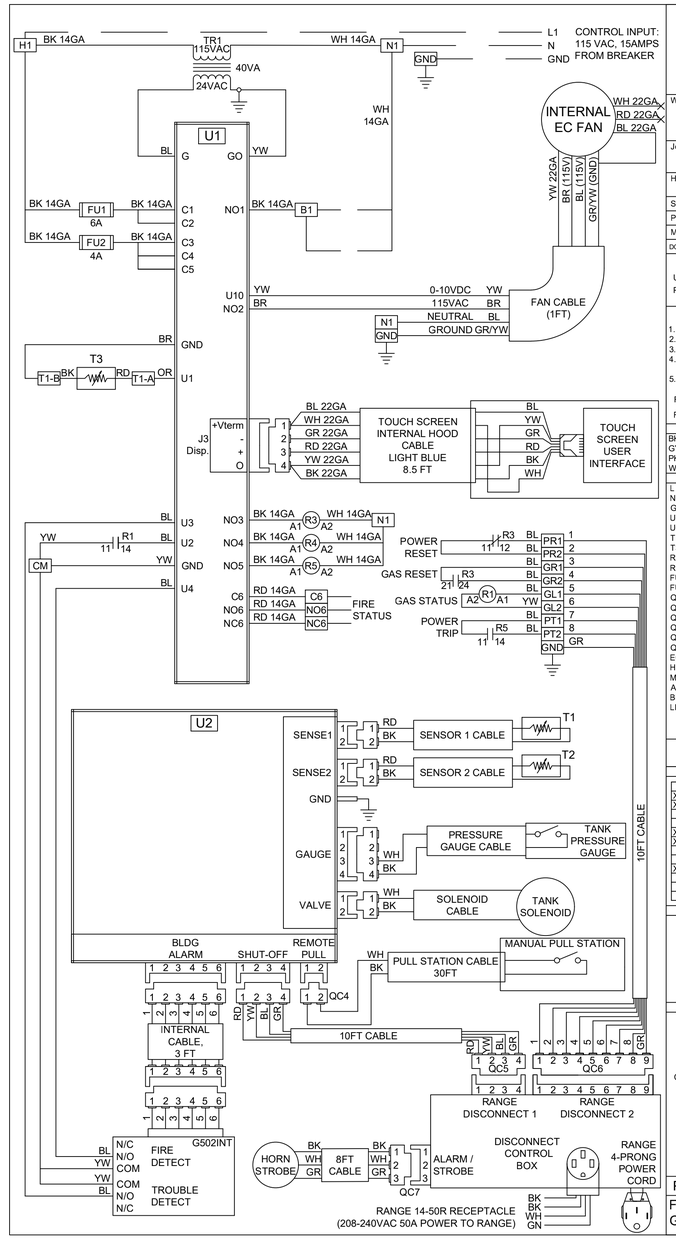




MARK: KH-1
ELEVATION VIEW



MARK: KH-1
SECTION VIEW



GREENHECK
BUILDING VALUE IN AIR.

WIRING DIAGRAM CODE: ####

Job Name: Thomasville Library

HOOD MODEL: GRRS-W-36-F-E-X

SERIAL NUMBER: 0

PANEL MARK: KH-1

MODEL: GRRS

DOC NUMBER: #### REV: ####

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

1. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED.
2. TORQUE: CONTROL TERMINAL & GROUND BLOCKS TO 8 LBS. IN.
3. TORQUE: POWER LUGS TO COMPONENT RATINGS LISTED.
4. FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.
5. ALL FACTORY WIRING 18GA UNLESS OTHERWISE NOTED.

FIELD WIRED
FACTORY SUPPLIED AND WIRED

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LTBL	LIGHT BLUE	OR	ORANGE
PK	PINK	PR	PURPLE	RD	RED
WH	WHITE	YW	YELLOW	GR	GREEN

LEGEND

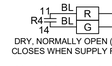
L	LINE VOLTAGE
N	NEUTRAL
GND	GROUND
U1	CAREL PROGRAMMABLE LOGIC CONTROLLER (PLC)
U2	GUARDIAN CONTROL BOARD
T1,T2	GUARDIAN TEMP SENSORS 1 AND 2
T3	PT1000 OHM TEMP SENSOR
R1	24VAC SPDT GAS STATUS RELAY
R3,R4,R5	115VAC DPDT RELAYS
FU1	LIGHT AND FAN PROTECTION FUSE
FU2	RELAY PROTECTION FUSE
QC1	EXTERNAL FAN FIELD QUICK CONNECTOR 1
QC2	EXTERNAL FAN FIELD QUICK CONNECTOR 2
QC3	USER INTERFACE FIELD QUICK CONNECTOR
QC4	MANUAL PULL STATION FIELD QUICK CONNECTOR
QC5,QC6	RANGE DISCONNECT FIELD QUICK CONNECTOR
QC7	HORN STROBE FIELD QUICK CONNECTOR
EC FAN	INLINE OR INTEGRAL EXHAUST FAN WITH EC MOTOR
HRN/STRB	HORN & STROBE
MTD	MOUNTED
ADA	AMERICANS WITH DISABILITIES ACT
BLDG	BUILDING
LIGHT	LED HOOD LIGHTS

LISTED 300A EXTINGUISHING SYSTEM UNITS FOR RESIDENTIAL RANGE TOP COOKING SURFACES

SELECTIONS

☐ SIZE 30"	☒ MANUAL PULL STATION
☐ SIZE 36"	☒ HORN STROBE
☒ WALL MTD CONFIGURATION	☒ PW/AUTO RANGE DEACTIVATE
☐ ISLAND CONFIGURATION	☒ FIRE/FAULT CONTACTS
☐ SHIP LOOSE TOUCH SCREEN (ADA)	☒ SUPPLY FAN CONTACTS
☒ HOOD MTD TOUCH SCREEN	☒ NSF APPROVED SEALANT
☒ ELECTRIC RANGE DISCONNECT	☒ FINISHED TOP
☐ GAS RANGE DISCONNECT	☒ CEILING ENCLOSURES
☐ NFPA 101 COMPLIANT	☒ EC MOTOR
☒ INTERNAL FAN - FRONT RECIRC	☐ WALL CAP
☐ INTERNAL FAN - REAR DISCHARGE	☒ K-CLASS FIRE EXTINGUISHER
☐ EXTERNAL FAN - INLINE	☐ SDR
☐ EXTERNAL FAN - BY OTHERS	

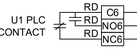
SUPPLY FAN CONTACTS



DRY, NORMALLY OPEN (N.O.) CONTACT - CLOSES WHEN SUPPLY FAN SHOULD RUN

CONTACTS RATED TO 8A RES. @ 250VAC

FIRE/FAULT CONTACTS



C6 AND NC6 TERMINALS = DRY, NORMALLY CLOSED (N.C.) CONTACT OPENS ON FAULT

C6 AND NO6 TERMINALS = DRY, NORMALLY OPEN (N.O.) CONTACT CLOSES ON FAULT

CONTACTS RATED TO 5A RES. @ 250VAC

PLC VERSION - FR V1.00

FOR ADDITIONAL INFORMATION CALL GREENHECK FAN CORP. AT 1-800-371-6858

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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JDF ARCHITECTURE, LLC
2000 MAIN STREET, SUITE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
2	11/6/20	KITCHEN HOOD ADDED	JJ
1	10/9/20	COUNTY COMMENTS	JJ

MAINTENANCE BUILDING HVAC DETAILS

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	JDF
DRAWN BY:	JDF
CHECKED BY:	JDF
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER 2020

SHEET NUMBER
MM2.12

JOHNSON PEADEN ENGINEERING INC.
329 Brooks Street SE, Fort Walton Beach, FL 32548, 850.244.6189V 850.244.0545F
827 Grace Avenue, Panama City, FL 32401, 850.215.4068V 850.215.4069F
Alabama #CD-2429-E Arkansas #1654 Florida #00009014
Georgia #PEF003983 Mississippi #E-00000862
Texas #F-16637 Missouri #2018035834

JPE Job Number: 1950

OCTOBER 2020

ATTACHMENT D (28 PAGES)

MANUFACTURERS CONSIDERED EQUAL MUST SUBMIT TO ENGINEER 10 DAYS PRIOR TO BID FOR APPROVAL

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER AND CATALOG No. (or approved equal)	LAMPS No.	LAMPS TYPE	MOUNTING	REMARKS
DL	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-O-W-OF-CS-N	19W LED ARRAY 2000 LUMEN/3500K		CEILING RECESSED	6" ROUND LED DOWNLIGHT, WIDE DISTRIBUTION, 120V
DLE	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-O-W-OF-CS-N-EM/10W	19W LED ARRAY 2000 LUMEN/3500K		CEILING RECESSED	6" ROUND LED DOWNLIGHT, WIDE DISTRIBUTION, EMERGENCY UNIT BATTERY PACK, 120V
LI	H.E. WILLIAMS EGL-4-L107-840-HIAFR-(OPTIOINS)-DIM-UNV	89W LED ARRAY 10000 LUMEN/4000K		CEILING SURFACE	4' LINEAR LED ENCLOSED AND GASKETED, INDUSTRIAL FIXTURE 120V
LIE	H.E. WILLIAMS EGL-4-L107-840-HIAFR-(OPTIOINS)-DIM-UNV-EM/10W	89W LED ARRAY 10000 LUMEN/4000K		CEILING SURFACE	4' LINEAR LED ENCLOSED AND GASKETED, INDUSTRIAL FIXTURE, EMERGENCY UNIT BATTERY PACK, 120V
LT	H.E. WILLIAMS LT-24-L52-835-AF-DIM-UNV	37W LED ARRAY 5200 LUMEN/3500K		CEILING RECESSED	2' X 4' RECESSED LED TROFFER, 120V
LTE	H.E. WILLIAMS LT-24-L52-835-AF-DIM-UNV-EM/10W	37W LED ARRAY 5200 LUMEN/3500K		CEILING RECESSED	2' X 4' RECESSED LED TROFFER, EMERGENCY UNIT BATTERY PACK, 120V
SHE	H.E. WILLIAMS 6DR-L20-835-DIM-UNV-S-W-OF-CS-AD-WET/CC-N-F1-EM/10W	19W LED ARRAY 2000 LUMEN/3500K		CEILING RECESSED	6" ROUND LED SHOWER DOWNLIGHT, WIDE DISTRIBUTION, 120V
WB	H.E. WILLIAMS VWPH-L30/740-T3-SDGL-DIM-UNV	36W LED ARRAY 3000 LUMEN/4000K		WALL @ 8'-0" AFF	WALL MOUNTED AREA LIGHT WITH TYPE III DISTRIBUTION, FINISH SELECTED BY ARCHITECT, 120V
WBE	H.E. WILLIAMS VWPH-L30/740-T3-SDGL-DIM-UNV-EM/10WC	36W LED ARRAY 3000 LUMEN/4000K		WALL @ 8'-0" AFF	WALL MOUNTED AREA LIGHT WITH TYPE III DISTRIBUTION, FINISH SELECTED BY ARCHITECT, EMERGENCY UNIT BATTERY PACK, 120V
X	WILLIAMS EXIT-R-EM-WHT-SDT	LED		WALL ABOVE DOOR	LED EXIT LIGHT WITH THERMOPLASTIC HOUSING, EMERGENCY BATTERY BACKUP, PROVIDE DIRECTIONAL ARROWS AS INDICATED, 120V

1/2" LETTERS

PANEL LA

208Y/120 VOLTS
3 PHASE 4 WIRE
SERVED FROM PANEL MP
IN ELEC RM
10,000 AIC RATING

1/4" LETTERS

TYPICAL ELECTRICAL EQUIPMENT IDENTIFICATION DETAIL

NOT TO SCALE

ELECTRICAL EQUIPMENT IDENTIFICATION DETAIL NOTES:

1. MECHANICALLY AFFIX NAMEPLATE TO PANELBOARDS, CONTROL PANELS, MOTOR CONTROL CENTERS, DISCONNECTS, STARTERS OR SIMILAR DEVICES.
2. LETTERS SHALL BE WHITE ON BLACK BACKGROUND; SIZE OF LETTERS INDICATED ON DETAIL.
3. INFORMATION IN LABEL IS A GENERIC EXAMPLE – DESIGNATE EQUIPMENT IN A SIMILAR WAY USING RELEVANT INFORMATION (NAME OF PANEL, VOLTS, PHASE, LOCATION, AIC RATING ETC.) ACCORDING TO EACH INDIVIDUAL LOCATION OF EQUIPMENT.

WARNING

Arc Flash Hazard
Appropriate PPE Required

Do not operate controls or open covers without appropriate personal protection equipment.
Failure to comply may result in injury or death!

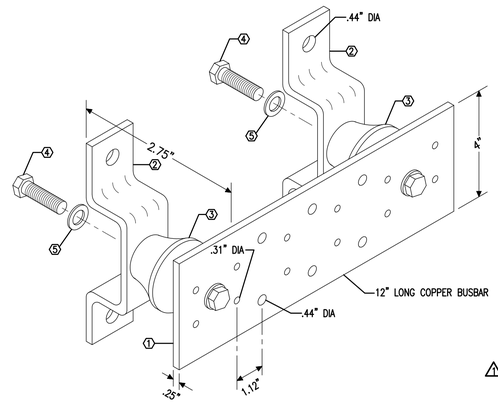
REFER TO NFPA 70E FOR MINIMUM PPE REQUIREMENTS

TYPICAL ARC FLASH HAZARD LABEL DETAIL

NOT TO SCALE

ARC FLASH LABEL DETAIL NOTES:

1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ALL PANEL AND SWITCHBOARDS IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E.
2. LABELING MAY BE COMPLETED BY EQUIPMENT MANUFACTURER, VENDOR, OR CONTRACTOR. THE CONTRACTOR SHALL VERIFY ALL PANELS AND SWITCHBOARDS ARE LABELED IN THE FIELD.
3. THE LABEL SHALL BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.



TYPICAL GROUND BUS BAR DETAIL

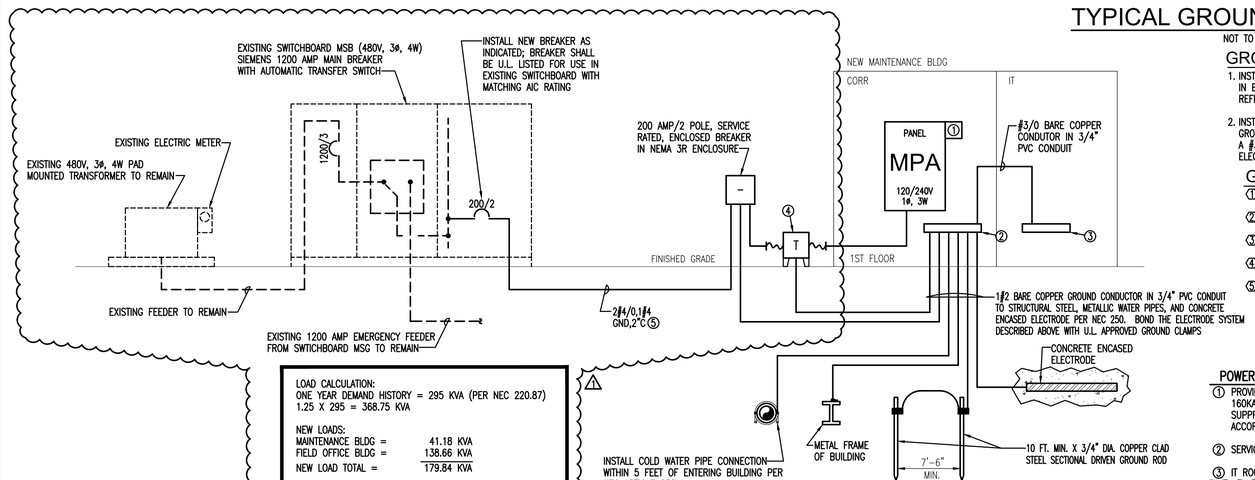
NOT TO SCALE

GROUND BAR GENERAL NOTES:

1. INSTALL GROUND BUS BAR ON COMMUNICATIONS BACKBOARD IN EACH COMMUNICATIONS ROOM. MOUNT BUS BAR AT 18" AFF. REFER TO FLOOR PLAN FOR EXACT LOCATION AT BACKBOARD.
2. INSTALL 1#3/0 COPPER CONDUCTOR IN 1" CONDUIT TO EACH GROUND BUS BAR FROM THE MAIN GROUND BUS BAR. INSTALL A #3/0 COPPER GROUND FROM THE MAIN BUS BAR TO THE ELECTRICAL SERVICE GROUND.

GROUND BAR MATERIALS:

① TIN PLATED HIGH CONDUCTIVE COPPER GROUND BAR
② WALL MOUNTING BRACKET
③ INSULATORS
④ 3/8" CAP SCREWS
⑤ 3/8" LOCKWASHERS



LOAD CALCULATION:
ONE YEAR DEMAND HISTORY = 295 KVA (PER NEC 220.87)
1.25 X 295 = 368.75 KVA

NEW LOADS:

MAINTENANCE BLDG =	41.18 KVA
FIELD OFFICE BLDG =	138.66 KVA
NEW LOAD TOTAL =	179.84 KVA
DEMAND LOAD @ 125% =	368.75 KVA
NEW LOAD TOTAL =	179.84 KVA
TOTAL	548.59 KVA

548.59 KVA/480V, 3ø = 660 AMPS

EXISTING 1200 AMP SERVICE IS SUFFICIENT

MAINTENANCE BUILDING POWER RISER DIAGRAM

NOT TO SCALE

POWER RISER DIAGRAM KEYNOTES:

① PROVIDE INTEGRAL SURGE SUPPRESSOR DEVICE IN PANEL WITH 80KA PER MODE/ 160KA PER PHASE, INDICATING LIGHTS AND ALARM SURGE COUNTER. SURGE SUPPRESSOR SHALL BE EATON SPC SERIES, VERIFY VOLTAGE AND PHASES. INSTALL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

② SERVICE GROUND BUS BAR; SEE TYPICAL GROUND BUS BAR DETAIL

③ IT ROOM GROUND BUS BAR; SEE TYPICAL GROUND BUS BAR DETAIL

④ GENERAL PURPOSE 75 KVA DRY-TYPE TRANSFORMER; 480V/1ø-240/120V, 1ø, 3W IN NEMA 3R ENCLOSURE WITH WEATHERSHIELDS

⑤ FEEDER FROM EXISTING SWITCHBOARD MSB TO PANEL MPA WILL BE FURNISHED AND INSTALLED BY OWNER; CONTRACTOR SHALL TERMINATE CONDUCTORS AT BOTH ENDS. OWNER SHALL PROVIDE AT LEAST 6 FEET OF SLACK CONDUCTOR AT EACH END.

ELECTRICAL LEGEND

CEILING OUTLETS

"A" RECESSED 2' X 2' LED FIXTURE MARK "A"
INDICATES FIXTURE WITH INTEGRAL EMERGENCY UNIT BATTERY PACK
RECESSED OR SURFACE MOUNTED LED FIXTURE
J JUNCTION BOX
CEILING RECESSED MOUNTED LIGHTING FIXTURE
CEILING SURFACE MOUNTED EMERGENCY EXIT LIGHT WITH REMOTE BATTERY
EF EXHAUST FAN

WALL OUTLETS

DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
QUADRAPLEX RECEPTACLE – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
G DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE
C DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 6" ABOVE COUNTER
WP DUPLEX RECEPTACLE – 20 AMP, 125 VOLT, GFI, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA GF-5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE; PROVIDE WEATHERPROOF BOX FOR RECEPTACLE
DUPLEX RECEPTACLE CONTROLLED BY TIMER/CONTACTOR – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDED TYPE, NEMA 5-20R. MOUNT 18" A.F.F. UNLESS NOTED OTHERWISE; MARK IN ACCORDANCE WITH 2014 NEC 406.3(E)
250V RECEPTACLE; 4 WIRE; MT 14" AFF TO C/L; NEMA 10-50R; HUBBELL SERIES 7962
JUNCTION BOX WITH BLANK SCREW COVER AND FLEXIBLE CONDUIT CONNECTION

WALL SWITCHES (UNLESS OTHERWISE NOTED, MOUNT 48" A.F.F.)

S A.C. TYPE, SINGLE POLE, 20 AMP, 120/277 VOLT
S_R WALL MOUNTED OCCUPANCY SENSOR; INFRARED TYPE TECHNOLOGY; MOUNT 48" AFF TO C/L; EQUAL TO WATTSTOPPER PW-100
S_{RD} WALL MOUNTED OCCUPANCY SENSOR; DUAL TYPE (INFRARED AND ULTRASONIC) TECHNOLOGY; MOUNT 48" AFF TO C/L; EQUAL TO WATTSTOPPER DW-100

MISCELLANEOUS

A.F.F. ABOVE FINISH FLOOR
WP WEATHERPROOF
U.N.O. UNLESS NOTED OTHERWISE

TELEPHONE & TV SYSTEM

TELECOMMUNICATIONS OUTLET AT 18" AFF; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
C WALL MOUNTED TELECOMMUNICATIONS OUTLET MOUNTED 6" ABOVE COUNTER; STUB 1"C WITH PULLSTRING TO ABOVE ACCESSIBLE CEILING
WALL OR CEILING MOUNTED CAMERA; PROVIDE RECESSED 4"X4"X2" WEATHERPROOF JUNCTION BOX WITH COVER; INSTALL 8" BELOW TOP OF WALL/EAVE OR RECESS IN CEILING; INSTALL 3/4"C WITH PULL STRING FROM CAMERA LOCATION TO USER CAMERA HEAD END EQUIPMENT IN IT RM 103 AND 1/2"C HOMERUN WITH 2#12,1#12 GND CIRCUIT MPA-13
CR JUNCTION BOX WITH CONDUIT FOR CARD READER; INSTALL 48" AFF TO C/L; INSTALL 3/4" CONDUIT WITH CAT5E CABLE FROM READER TO ACCESS CONTROL PANEL IN IT RM 103
DS DOOR STRIKE JUNCTION BOX FOR POWER; COORDINATE EXACT LOCATION IN FIELD

PANELS AND POWER

120/240 VOLT FLUSH MOUNTED PANELBOARD
NON-FUSIBLE DISCONNECT SWITCH; XX/YY/ZZ WHERE X INDICATES AMPERAGE, Y INDICATES # OF POLES, AND Z INDICATES NEMA RATING; SS INDICATES ENCLOSURE SHALL BE STAINLESS STEEL

BRANCH CIRCUITING

RUN CONCEALED UNDER FLOOR OR IN GRADE
RUN CONCEALED IN CEILING OR WALLS
LA-1 HOMERUN TO PANEL. ANY CIRCUIT WITHOUT FURTHER IDENTIFICATION INDICATES 2 #12, 1 #12 GROUND – 1/2" C; ~~3~~ #12, 1 #12 GROUND – 1/2" C; ~~4~~ #12, 1 #12 GROUND – 3/4" C; ETC. AS PER NEC. LETTERS AND NUMERALS INDICATE PANEL AND CIRCUIT NUMBER.
LIQUID-TIGHT FLEXIBLE CONDUIT CONNECTION
SURFACE MOUNTED CONDUIT; RUN PARALLEL OR PERPINDICULAR TO BUILDING LINES

OCCUPANCY SENSORS AND RELAYS

360° CEILING MOUNTED OCCUPANCY SENSOR WITH DUAL TECHNOLOGY (INFRARED AND ULTRASONIC) WATTSTOPPER DT-300-1
P POWER PACK RELAY EQUAL TO WATTSTOPPER BZ50; INSTALL IN ACCESSIBLE LOCATION FOR MAINTENANCE PURPOSES

ELECTRICAL GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT SIZE AND LOCATION OF EQUIPMENT WHICH IS FURNISHED BY OTHERS AND CONNECTED BY ELECTRICAL.
2. RECEPTACLES, SWITCHES AND COVERPLATES COLOR SHALL BE SELECTED BY THE ARCHITECT FROM STANDARD COLORS.
3. LOCATION OF LIGHTING FIXTURES, DISCONNECT SWITCHES, ETC. FOR MECHANICAL EQUIPMENT/ROOM SHALL BE COORDINATED WITH FINAL MECHANICAL EQUIPMENT LOCATION TO PROVIDE NATIONAL ELECTRIC CODE REQUIRED ACCESS SPACE.
4. FINAL CONNECTION TO ALL MOTORS SHALL BE WITH FLEXIBLE CONDUIT CONNECTION.
5. ALL EXIT AND EMERGENCY FIXTURES SHALL BE CONNECTED TO LIGHT CIRCUIT AHEAD OF LOCAL SWITCH.
6. ALL PANELBOARDS, BACKBOARDS, TERMINAL CABINETS, DISCONNECTS, ETC SHALL HAVE CUSTOM ENGRAVED MICARTA NAMEPLATE MECHANICALLY AFFIXED IDENTIFYING SYSTEM.
7. GENERAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING ANY WORK, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES. FAILURE TO DO SO INDICATES THAT THE CONTRACTOR ACCEPTS THE CONDITIONS AS THEY EXIST, AND SHALL PERFORM THE WORK REQUIRED AS SHOWN AND SPECIFIED.
8. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND REVIEW THE MECHANICAL AND SPECIAL EQUIPMENT SUBMITTALS PRIOR TO SUBMITTING THE ELECTRICAL SUBMITTALS. ANY ELECTRICAL EQUIPMENT, CONDUIT, AND WIRE SIZE CHANGES RESULTING FROM THIS REVIEW SHALL ALSO BE SUBMITTED FOR APPROVAL.
9. FURNISH ALL EQUIPMENT AND LABOR, PERFORM ALL LABOR WITH SUPERVISION, BEAR ALL EXPENSES, AS NECESSARY FOR THE SATISFACTORY COMPLETION OF ALL WORK READY FOR OPERATION.
10. COMPLY WITH ALL LOCAL CODE, LAWS, AND ORDINANCES APPLICABLE TO ELECTRICAL WORK, THE STATE BUILDING CODE AND THE NATIONAL ELECTRIC CODE. OBTAIN ALL PERMITS REQUIRED BY LOCAL ORDINANCES.
11. OBTAIN ARCHITECTS APPROVAL OF ALL LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANELBOARDS, ETC. PRIOR TO PURCHASING.
12. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY CONFLICTS/DISCREPANCIES BETWEEN DISCIPLINES BEFORE ORDERING EQUIPMENT/MATERIALS.
13. DECORATIVE COVER PLATES FOR RECEPTACLE OUTLETS, SWITCHES, ETC. SHALL BE STAINLESS STEEL; REFER TO ELECTRICAL SPECIFICATIONS
14. INSTALL OCCUPANCY SENSORS AND ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS. ALL CONDUCTORS (INCLUDING CONTROLS) ASSOCIATED WITH OCCUPANCY SENSORS AND POWER PACKS SHALL BE INSTALLED IN 1/2" CONDUIT MINIMUM.
15. ELECTRICAL CONTRACTOR SHALL PAINT AND LABEL ALL JUNCTION BOXES TO IDENTIFY PANEL AND CIRCUIT; SEE ELECTRICAL SPECIFICATIONS.
16. ALL CONDUCTORS INDICATED ON PLAN SHALL BE COPPER; EQUIVALENT ALUMINUM CONDUCTORS ARE ACCEPTABLE FOR 100 AMP AND ABOVE FEEDERS
17. EQUIPMENT GROUNDING CONDUCTOR SHALL BE PULLED IN ALL BRANCH CIRCUIT WIRING. CONDUIT GROUND SHALL NOT BE ACCEPTABLE.
18. THE ELECTRICAL WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL NOT SO INSTALLED SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
19. ALL CONDUCTORS LESS THAN 100A. SHALL BE COPPER #12 & #10 SOLID, #8 AND LARGER STRANDED, #6 AND SMALLER TO BE TYPE TW, 600 VOLT INSULATION AND TYPE THW FOR #4 AND LARGER.

120/240 VOLT 1ø 3W
300 AMP MAIN BREAKER

CIRCUIT BREAKER PANEL SCHEDULE PANEL MPA

SURFACE MOUNTED

CKT	LOAD DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD KVA		BREAKER AMP	BREAKER POLE	LOAD DESCRIPTION	CKT
1	LTS-STORAGE RM	1	20	.90	.54	20	1	REC-GARAGE	2
3	LTS-WORK RM,OFFICES,SHOWERS	1	20	1.35	.54	20	1	REC-GARAGE	4
5	LTS-WORK RM,OFFICES,SHOWERS	1	20	.40	.72	20	1	REC-GARAGE	6
7	IWH-1	1	20	.50	.18	20	1	REC-SHOWER	8
9	CIRC PUMP CP-1	1	20	.36	.18	20	1	REC-SHOWER	10
11	GUH-1	1	20	.20	.18	20	1	REC-CHARGING STATIONS	12
13	DOOR STRIKES	1	20	.10	.36	20	1	REC-IT RM	14
15	SECURITY CAMERAS	1	20	.10	.36	20	1	REC-IT RM	16
17	FIRE ALARM CONTROL PANEL	1	20	.10	.36	20	1	REC-IT RM	18
19	SPARE	1	20			20	1	SPARE	20
21	SPARE ⚠	1	20		.36	20	1	REFRIGERATOR-WORK RM	22
23	SPARE	1	20		.36	20	1	REC-WORM RM COUNTER TOP	24
25	SPACE	1	--		.36	20	1	REC-WORM RM COUNTER TOP	26
27	RANGE	2	50	8.0	.72	20	1	REC-OFFICES	28
29	↓	↓	↓		.72	20	1	REC-OFFICES	30
31	AHU-1M	2	50①	11.02	1.08	20	1	REC-OFFICES,WORK RM	32
33	↓	↓	↓		1.08	20	1	REC-OFFICES,WORK RM	34
35	HP-1	2	15①	2.50	1.66	15	2	EF-2	36
37	↓	↓	↓			↓	↓	↓	38
39	HP-1M	2	30①	5.55		100	2	SPARE ⚠	40
41	↓	↓	↓			↓	↓	↓	42

TOTAL CONNECTED LOAD: 40.98 KVA
MINIMUM INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL

① HACR RATED BREAKER; VERIFY SIZE REQUIRED FOR EQUIPMENT FURNISHED

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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JDF ARCHITECTURE, LLC
204 NORTH ATLANTIC BLVD
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

MAINTENANCE BLDG
ELECTRICAL LEGEND, NOTES AND DETAILS

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY: RQY
DRAWN BY: RQY
CHECKED BY: RQY
APPROVED BY: VCL
PROJECT NO: 18.0125.02
DATE: OCTOBER, 2020

SHEET NUMBER
EM0.01

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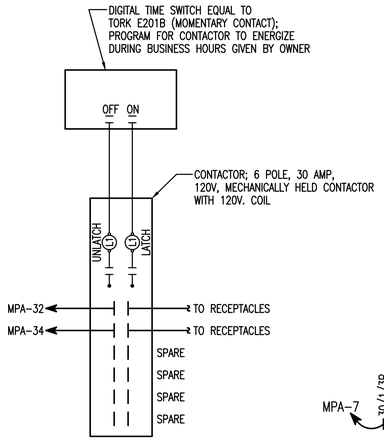
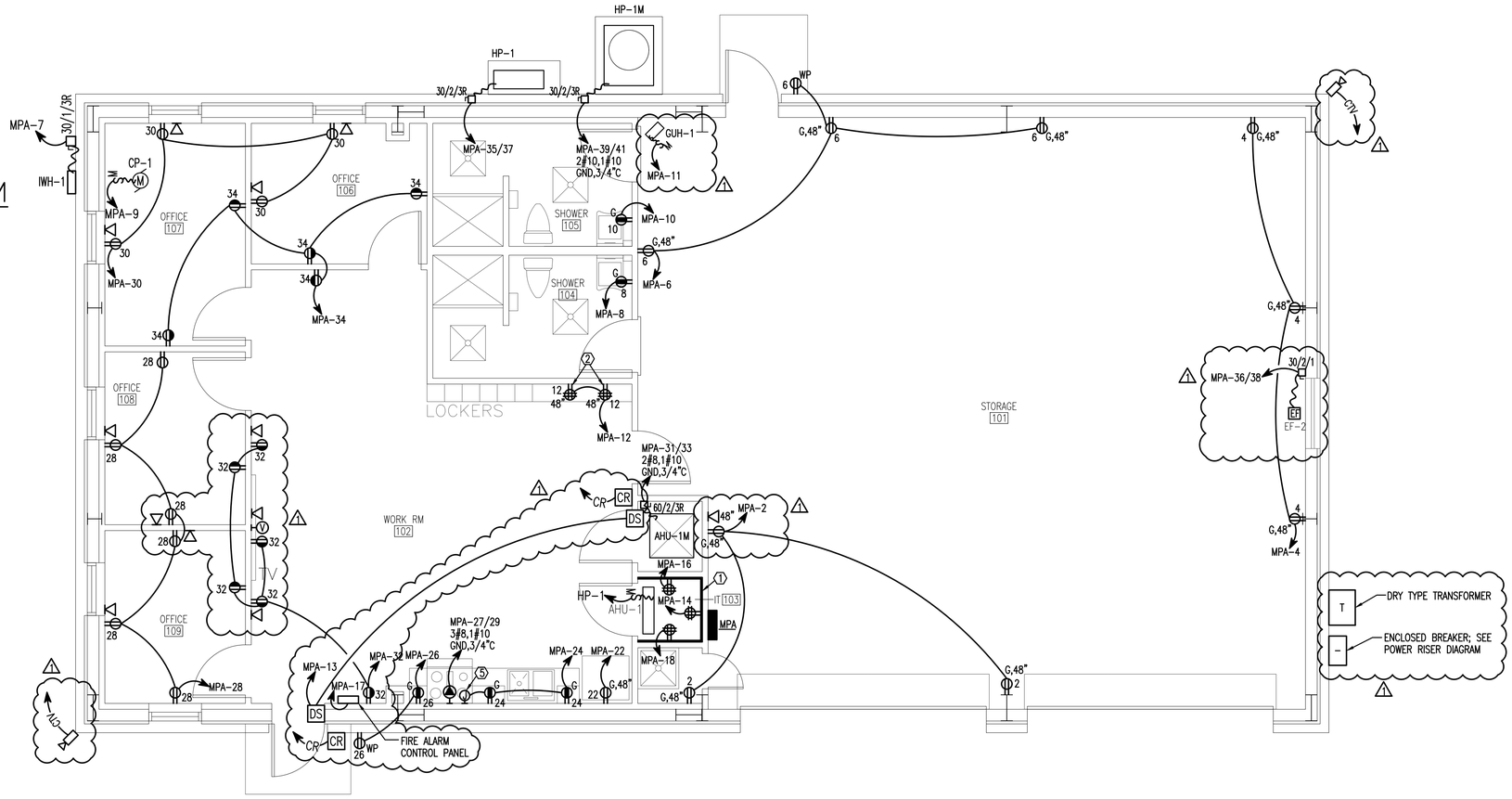


RECEPTACLE CONTROL DIAGRAM

NOT TO SCALE



MAINTENANCE BUILDING POWER & SIGNAL PLAN

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

KEYNOTES:

1. TELEPHONE BACKBOARD, WIDTH OF ROOM INDICATED X 4 FT. HIGH X 3/4" EXTERIOR PLYWOOD. PAINT TWO COATS FIRE RETARDANT PAINT. INSTALL ONE No. 3/0 COPPER GROUND CONDUCTOR IN 3/4" CONDUIT TO BUILDING GROUND, LEAVE 4 FT. SLACK CONDUCTOR AT BACKBOARD.
2. RECEPTACLES FOR CHARGING STATIONS; COORDINATE OUTLET LOCATION WITH CASEWORK INSTALLER PRIOR TO ROUGH-IN
3. ROUTE RECEPTACLES THROUGH CONTACTOR FOR CONTROLS; SEE RECEPTACLE CONTROL DIAGRAM
4. NOT USED
5. JUNCTION BOX FOR RANGE HOOD

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

JDF ARCHITECTURE, LLC
201 MIRACLE STRIP BLVD SE
FT WALTON BEACH, FLORIDA 32548
(850) 498-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

MAINTENANCE BLDG
POWER & SIGNAL PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

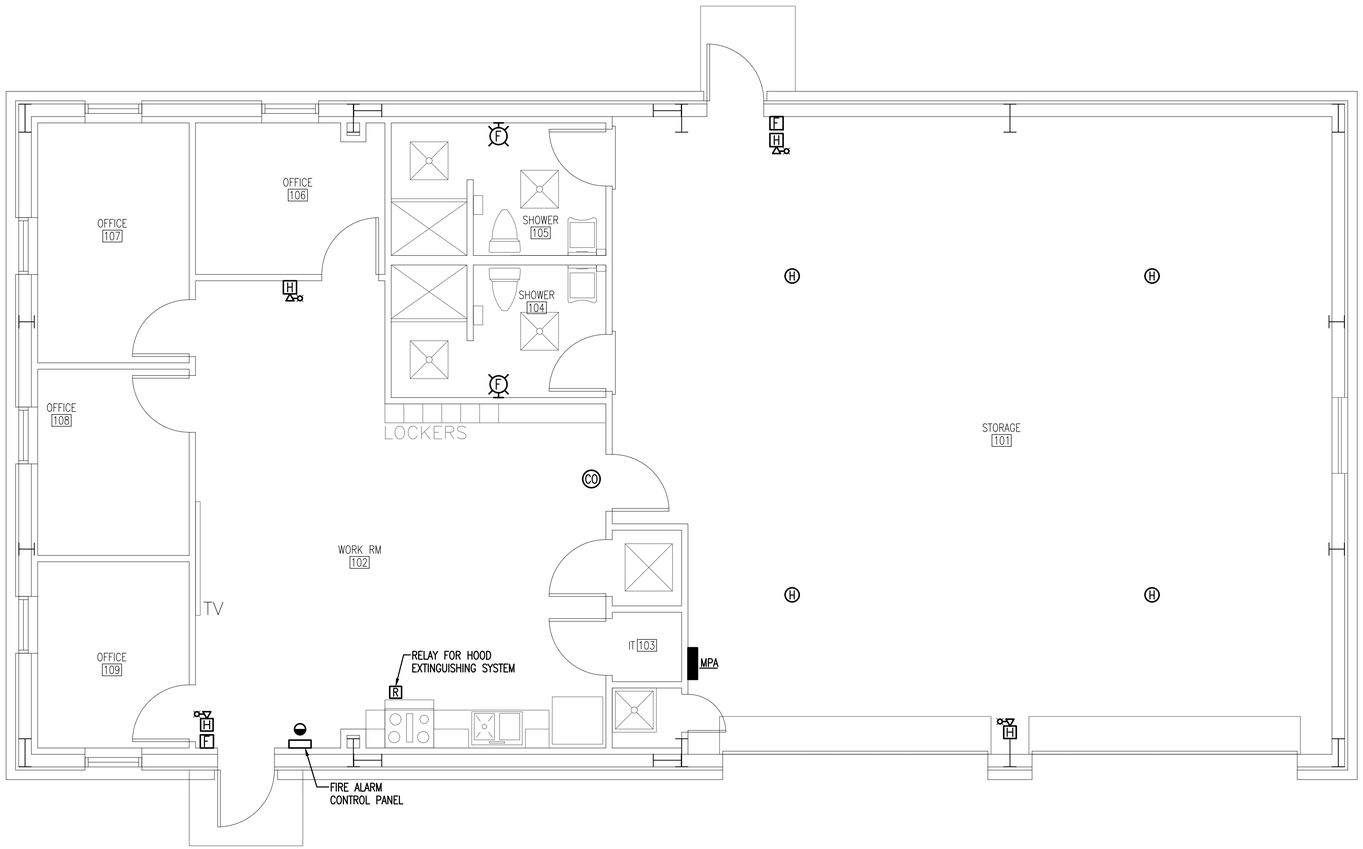
PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER
EM1.00

ATTACHMENT D (28 PAGES)

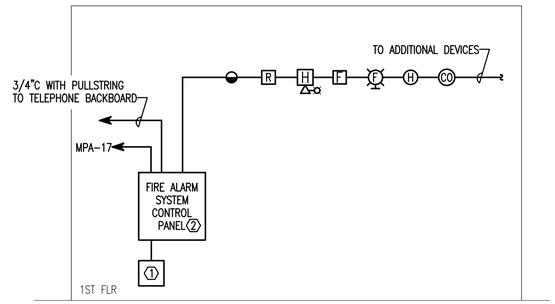


MAINTENANCE BUILDING FIRE ALARM SYSTEM PLAN

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

FIRE ALARM SYSTEM LEGEND

- (F) FIRE ALARM SYSTEM MANUAL PULL STATION; MT 48" AFF TO C/L
- WALL MOUNTED FIRE ALARM SYSTEM STROBE; MT. 80" AFF TO BOTTOM OF DEVICE; MINIMUM OF **75 CANDELLA**
- (H) **WALL MOUNTED FIRE ALARM SYSTEM HORN/STROBE; MOUNT 80" AFF TO BOTTOM OF DEVICE; MINIMUM OF 75 CANDELLA**
- FIRE ALARM SYSTEM AUTOMATIC SMOKE DETECTOR; CEILING MOUNTED
- (H) FIRE ALARM SYSTEM HEAT DETECTOR; CEILING MOUNTED
- (R) NORMALLY CLOSED RELAY IN H.V.A.C CONTROL CIRCUIT TO OPEN UPON ACTUATION OF BUILDING FIRE ALARM SYSTEM TO SHUT DOWN A/C UNIT. CONTACTS RATED 5 AMPS, 120 VOLTS.
- (CO) FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR; CEILING MOUNTED



FIRE ALARM SYSTEM RISER DIAGRAM

NOT TO SCALE

FIRE ALARM SYSTEM RISER DIAGRAM KEYNOTES:

1. SURGE SUPPRESSOR EQUAL TO DITEK TSS4
2. ADDRESSABLE TYPE FIRE ALARM CONTROL PANEL WITH DIGITAL DIALER; FURNISH WITH ALL RELAYS, CARDS, MODULES, NETWORK CARD, ACCESSORIES, ETC. REQUIRED

FIRE ALARM SYSTEM RISER DIAGRAM GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH NFPA 72 AND ALL STATE AND LOCAL REQUIREMENTS
2. CONTRACTOR SHALL PAY FOR ANY STATE AND LOCAL FEES AND PERMITS ASSOCIATED WITH MODIFICATION OF EXISTING SYSTEM.
3. FIRE ALARM SYSTEM COMPONENTS SHALL BE INSTALLED BY A FIRE ALARM CONTRACTOR LICENSED IN THE STATE OF FLORIDA.

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

15 MAY 20

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

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jdf+ architecture inc
JDF ARCHITECTURE, LLC
201 MIRACLE STRIP BLVD SE
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

MAINTENANCE BLDG
FIRE ALARM SYSTEM
PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

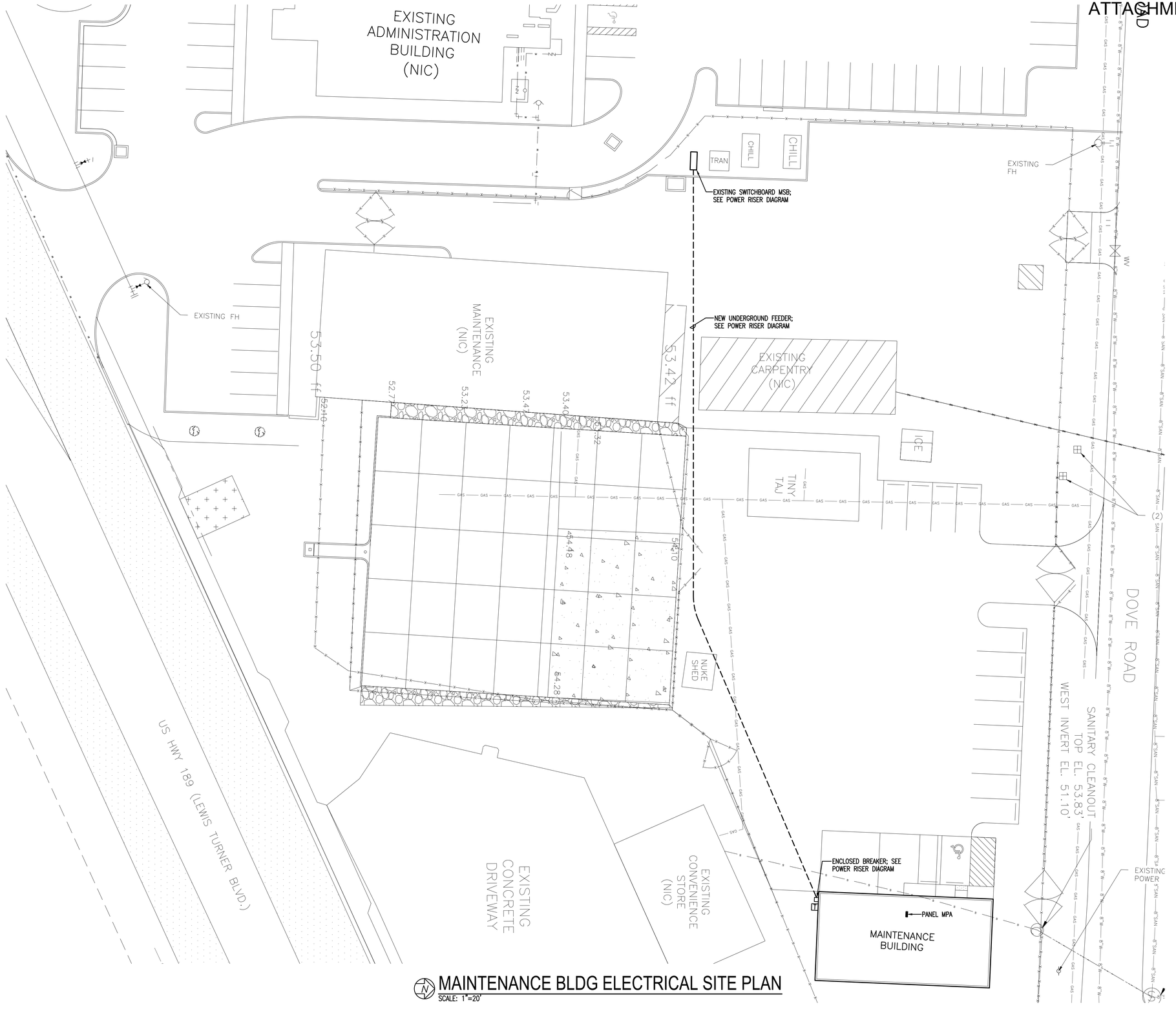
PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER
EM1.02

ATTACHMENT D (28 PAGES)



MAINTENANCE BLDG ELECTRICAL SITE PLAN

SCALE: 1"=20'

15 MAY 20

YATES ENGINEERING SOLUTIONS
7159 Blue Jack Dr.
Navarre, FL 32566
FBPE Authorization No. 30242
Phone: (850)512-9579
Email: quinn@yateseng.com
FL PE No: 60826

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A
NICEVILLE, FL. 32578-2425
OFFICE: (850) 678-0050
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

TRANSFORMING TODAY'S IDEAS INTO TOMORROW'S REALITY

jdf+ architecture llc
JDF ARCHITECTURE, LLC
20 HOLIDAY COURT, SUITE 5E
FT WALTON BEACH, FLORIDA 32548
(850) 496-2166

NO.	DATE	REVISION	BY
	11/19/2020	OWNER REVISION	

MAINTENANCE BLDG ELECTRICAL SITE PLAN

RELEASE FOR BID

CONSTRUCT OCWS FIELD OFFICES

PREPARED FOR

OKALOOSA COUNTY WATER & SEWER

DESIGNED BY:	RQY
DRAWN BY:	RQY
CHECKED BY:	RQY
APPROVED BY:	VCL
PROJECT NO:	18.0125.02
DATE:	OCTOBER, 2020

SHEET NUMBER

EM2.00

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Mandatory Pre-Bid Conference
Construct OCWS Field Offices

Date: **October 22, 2020**

To: **File – *2018.0125.02/301 Meetings – Bid Phase***

CC: **Meeting Attendees (noted on attached sign-in sheet)**

From: **Mr. Michael Brooker, AVCON**

Re: **Minutes from Mandatory Pre-Bid Conference on October 22, 2020**
Construct OCWS Field Offices

MEETING MINUTES

A Mandatory Pre-Bid Meeting for the Construct OCWS Field Offices project was held on October 22, 2020, at 10:00 am CT in the large conference room at the Okaloosa County Water and Sewer Building, Ft Walton Beach, Florida.

The following minutes represent a summary of the salient issues discussed. They are not intended to be a verbatim transcript of the meeting or a part of the contract documents. These minutes are for informational purposes only.

A copy of the meeting agenda is attached. The scope of work was discussed by Mr. John Collins, P.E., of AVCON.

This project consists of a west and east parcel. The OCWS Field Office is located on the west parcel and consists of an approx. 7,200 sf PEMB with associated parking lots, stormwater improvements, curb and sidewalks, landscaping, and fencing. The Maintenance Building is located on the east parcel and consists of an approx. 2,450 sf PEMB with concrete pavement, gravel yard, concrete apron, stormwater improvements, landscaping, and fencing.

The County will self-perform several scope items including demolition of the existing buildings and associated foundations and driveways on the west parcel, potable water improvements including fire hydrants, sanitary sewer services from the main to within 5 ft of the buildings, and other items depending on which alternates are awarded.

Please see the order of work presented on Sheet G-4.

The Bid Schedule is organized into two Base Bids and two Additive Alternates. The intent is for the County to award both Base Bids and possibly award one or both of the Additive Alternates based on the bid amounts. The basis of award shall be based on the total bid amount for the combination of Base Bid/Additive Alternates ultimately awarded by the County.

Anticipated addenda items include the following:

- Issuance of geotechnical report
- Add deductive pay item for 8” graded aggregate in Additive Alternate No. 3 to compensate for the concrete pavement added in Additive Alternate No. 3.
- Increase 8” graded aggregate quantity in the Maintenance Building Base Bid.

ATTACHMENT E (4 PAGES)

Addendum No. 1 was issued on October 21 and required all questions to be submitted to Ms. Jesica Darr with the Okaloosa County Purchasing Department.

Ms. Darr stated that bidders shall sign all Bid Documents in blue ink for legal purposes.

Bidders shall email Ms. Darr if they believe the contract time of 365 days to substantial completion and 395 days to final completion is not sufficient.

Ms. Darr stated bidders shall pay close attention to the insurance requirements specified in the bid documents to make sure they qualify for this project.

Contractors may register for two programs to help ease the bid and addendum process:

- System of Award Management
- Sunbiz.org

Contractors are responsible for keeping up with all addenda to ensure they bid on the most current set of plans and bid items.

Important Dates:

- **Tuesday November 3**, **2020**- All Contractor questions are due by 3:00 pm CT
- **Wednesday November 18, 2020**- Contractor's Bids are due by 3:00 pm CT

Questions:

- Question: Will there be any area designated for lay down yards for this project?

  Answer: The paved parking lot for the field office will be available for materials. There is also a gravel lot east of the existing north building for additional material storage.

- Question: Is the period required by Okaloosa County to demolish the existing warehouse north of the Field Office included into the contractor's 365-day schedule?

  Answer: Yes, Addendum No. 3 will clarify that the County will require two weeks to demolish the existing buildings and turn this area over to the contractor for construction of the north parking lot. If the demolition takes longer than two weeks, the contractor will be compensated one day for every day the operation goes over.

- Question: Is there a line item for each bid item?

  Answer: Yes, each line item has its own quantity and basis of payment.

- Question: Can the bid be submitted as a lump sum on the bid deadline (November 18th) and the itemized bid be submitted within 24 hours?

  Answer: Yes, this will be clarified in Addendum No. 3.

END OF MINUTES

CONSTRUCT OCWS FIELD OFFICES
Okaloosa County Water and Sewer

MANDATORY PRE-BID CONFERENCE
October 22, 2020 – 10:00 am CDT

AGENDA

I. INTRODUCTION OF PARTICIPANTS

A. Owner - Okaloosa County Water and Sewer
B. Engineer- AVCON, INC.
C. Architect - JDF Architecture, LLC

II. PURPOSE

To clarify and explain the construction scope, procedures, and safety measures associated with the bidding documents, and to answer questions.

III. SCOPE OF WORK

A. Description of Project

1. General overview
    a. Field Office
    b. Maintenance Building
2. Primary Construction elements
    a. Field Office
    b. Maintenance Building
    c. Demolition
    d. Grading and Drainage
    e. Utilities
    f. New parking lot
    g. Rehabilitation existing parking lot
    h. Sodding
    i. Landscaping
    j. Gravel yard
    k. PCC Pavement

B. County Performed Work

1. Demolition of buildings with associated foundations and driveways
2. Potable water improvements including fire hydrants
3. Sanitary sewer services from the main to within 5 ft of the buildings
4. Other potential items presented at alternates

C. Order of Work

D. Bid Schedule

1. Base Bid for Field Office
2. Base Bid for Maintenance Building
3. Additive Alternate No. 1 for Field Office
4. Additive Alternate No. 2 for Maintenance Building

IV. ADMINISTRATION

A. Project Schedule and Time

1. Last day for questions is Tuesday, November 3 by 3:30 pm central time
2. Bids due on Wednesday, November 18, 2020 until 3:00 pm central time
3. Contract Award
4. Duration and Time of Completion, 365 days to substantial, 395 to final
5. Liquidated Damages

B. Contract Documents

1. Unit Price Contract
2. Basis of Award

V. QUESTIONS AND ANSWERS

MANDATORY PRE-BID CONFERENCE SIGN-IN SHEET

October 22, 2020 at 10:00 a.m.

Construct OCWS Field Offices
Okaloosa County Water and Sewer

NAME	REPRESENTING	TELEPHONE	E-MAIL ADDRESS
Davin Smith	Green-Simmons	(850)-686-6060	davin@green-simmons.com
Jennifer Bixby	AE Newsome	850+72100	jennifer@aenewjr.com
DALE E. WHITAKER	LORD & SON	850-862-5158	dale@LORDANDSON.COM
BRIANNE GRACE	Whitesell-Green	850-686-2551	bgrace@whitesell-green.com
Cory Lewis	OCWS	850-826-3016	Clewis@myokaloosa.com
John Collins	AVCON INC.	850-678-0050	JCollins@AVCONINC.com
Michael Brooker	AVCON INC.	850-678-0050	mbrooker@avconinc.com
Jon Kanak	OCWS	850.826.0748	jkanak@myokaloosa.com
Alyssa White	Blackwater Construction	813-480-9722	alyssa@blackwaterCSIC.com
JASON FLOYD	JDF ARCHITECTURE	850 496 2166	j.floyd@jdfarchitecture.com

MANDATORY PRE-BID CONFERENCE SIGN-IN SHEET

October 22, 2020 at 10:00 a.m.

Construct OCWS Field Offices
Okaloosa County Water and Sewer

NAME	REPRESENTING	TELEPHONE	E-MAIL ADDRESS
Jeff Littrell	OCWS	850-651-7172	jlittrell@myokaloosa.com
Mark Wise	OCWS	685-0297	mwise@myokaloosa.com
Jeb Chesshir	OCWS	978-3813	jschesshir@myokaloosa.com
Joe Gaovie	GLC Contracting, Inc.	(850)243-5559	Joeg@glcbuilt.com + bgarriee aol.com
Jesica Darr	OC Purchasing Dept.	(850)689-5960	jdarr@myokaloosa.com

RESPONSES TO PLAN HOLDER QUESTIONS
CONSTRUCT OCWS FIELD OFFICES
Plan Holder questions received prior to November 4, 2020

(ITB WS 02-21)

1. In both buildings it is calling for sealed concrete for a majority of the floors. I do not see material or method in the specs under paint or flooring?

RESPONSE: A sealed concrete specification will be provided in Addendum No. 4.

2. I do not see any electrical specifications, are these coming?

RESPONSE: Electrical specifications were provided in the Bid Documents as Sections 16053 through 16511.

3. Is there a copy of a soils report for this project? If so, can it be provided to the bidding General Contractors?

RESPONSE: Yes, the Geotechnical Engineering Report dated July 18, 2019 will be provided in Addendum No. 3.

4. Provide construction budget for bonding purposes.

RESPONSE: Approximately $2.5 Million for all work.

5. Advise if the owner will pay for any and all permits, tax and impact fees.

RESPONSE: Okaloosa County will pay for the building permit and water and sewer impact fees. All other fees shall be paid by the contractor.

6. Advise if the owner will provide and pay for temporary power and water.

RESPONSE: The contractor shall coordinate with Gulf Power for temporary power and Okaloosa County Water and Sewer for temporary water. The contractor shall pay for all temporary power. The contractor shall contact Okaloosa County Water and Sewer Customer Service and put a refundable deposit down to rent a meter for water usage. They will not be charged for water, it is simply a way to track water consumption. At the end of the project the meter will need to be returned and they will be refunded the deposit.

7. Provide specifications for the pre-engineered metal building.

RESPONSE: A pre-engineered metal building specification will be provided in Addendum No. 4.

8. Provide specification for the exterior building letters and logo.

RESPONSE: A $5,000 allowance will be provided in each of the Base Bids for the Field Office and Maintenance Building for exterior and interior building signage. The specifications will be coordinated with the successful bidder following contract award.

9. Provide specifications for the veneer masonry.

RESPONSE: A masonry specification will be provided in Addendum No. 4.

10. Provide brick manufacturer and selection or provide brick allowance.

RESPONSE: A masonry specification will be provided in Addendum No. 4.

11. Provide electrical site plan.

RESPONSE: An electrical site plan will be provided in Addendum No. 4.

12. Reference section 09300 Tile: Provide manufacturer, style and color class on allowance for porcelain and ceramic materials.

RESPONSE: The Basis of Design shall be Daltile, Industrial Park, Charcoal Grey or Chestnut Brown, 12x12.

13. Provide specifications for exterior-rated fiberglass doors.

RESPONSE: The door shall meet local impact requirements.

14. Confirm all locksets are to be mortise-type or cylindrical.

RESPONSE: All locksets shall be cylindrical removable core sets.

15. Reference section 983: Water for grass which indicates the water "may be obtained from any approved source." Confirm no permanent irrigation is required.

RESPONSE: No permanent irrigation is required.

16. Confirm the watering responsibility becomes that of the owner upon acceptance.

RESPONSE: Correct.

17. Reference Kitchen 114 and Workroom 102: Provide specifications on the appliances – oven, hood vent and refrigerator or advise if provided by owner.

RESPONSE: Please see revised drawings provided in Addendum No. 4.

18. Provide requirement for PEMB roof, wall and soffit panels.

RESPONSE: A pre-engineered metal building specification will be provided in Addendum No. 4.

19. Confirm the standing seam roof is to be mechanically seamed.

RESPONSE: Roof shall be mechanically fastened.

20. Reference typical exterior wall sections: Confirm that both the roof and walls are to utilize thermal blocks.

RESPONSE: Thermal blocks are required per FBC Energy Efficiency requirements.

21. Sheet AM2.01 indicates standing seam metal roof while sheet AM4.01 indicates pre-fin 5V metal roof. Same applies for Sheet AF2.01 and AF4.01. Clarify.

RESPONSE: Please provide standing seam roof, mechanically fastened. Drawing notes will be updated in Addendum No. 4.

22. Confirm all water & sewer infrastructure work indicated on sheets C7 and C8 will be provided by the owner.

RESPONSE: On Sheet C-7, contractor shall install sanitary sewer pipe SAN-P-01 and the first Cleanout CO-01 in accordance with the notes. On Sheet C-7, contractor shall also install the water service from the building to 5 ft outside of the building so all other potable water work shown shall be installed by the County. The fire hydrant depicted on Sheet C-7 shall also be installed by the County.

On Sheet C-8, contractor shall install sanitary sewer pipe SAN-P-08 and the first Cleanout CO-06 in accordance with the notes. On Sheet C-8, contractor shall also install the water service from the building to 5 ft outside of the building so all other potable water work shown shall be installed by the County.

23. Confirm the Contractors responsibility with the sanitary sewer stops at the clean-out CO-01 and CO-06.

RESPONSE: Correct.

24. Confirm the Contractors responsibility for domestic water stops at 5'-0" beyond the building line.

RESPONSE: Correct.

25. Confirm the owner will be responsible for any and all costs related to Okaloosa Gas for meter, connectivity, permitting and fees.

RESPONSE: The County will pay for any fees required by Okaloosa Gas to provide service to both buildings.

26. Reference bid item 16 for 18" ADS N-12. Confirm estimated quantity.

RESPONSE: Quantity confirmed.

27. Reference sheets C3 and C5. With regard to the base bid, confirm that both areas denoted by the legend as 8" gravel and 8" concrete will be 8" gravel. For additive alternate No. 2 – OCWS Maintenance Bldg bid item No. 2, confirm this item will include the deletion of 8" gravel and the addition of 8" concrete.

RESPONSE: Correct, this will be revised in Addendum No. 4.

28. Provide requirements for termite treatment.

RESPONSE: A termite treatment specification will be provided in Addendum No. 4.

29. Reference standard additional contract clauses, specifically federal Fair Labor Standards Act. Confirm that this project does NOT include federal fair wage rates.

RESPONSE: This project does not include federal fair wage rate requirements.

30. Confirm bid item (38) 02730-1 and (21) 02730-3 have a $0.00 value.

RESPONSE: No, these items cover the work to extend the building sanitary sewer to, and including, the first cleanout.

31. Reference sheets SM.1, AM1.11, SF.1, and AF1.11: The structural plans do not indicate any portal frame building. The architectural plans indicate frames. Clarify.

RESPONSE: The frames are shown for location preference. Actual locations shall be designed by PEMB supplier.

32. Reference the finish schedules on sheet AF6.01 and AM6.01. Provide basis of design for product required for sealed concrete.

RESPONSE: A sealed concrete specification will be provided in Addendum No. 4.

33. Reference sheets AM1.21 and AM6.01: General note 4 required "all exposed structure shall be painted flat black." Clarify.

RESPONSE: Exposed structure in storage bay is NOT required to be painted.

34. Reference sheets AM4.01, AM6.11, AF4.01 and AF6.11 with regard to metal wall panels. Per the wall sections that metal wall panels extend to the floor. Per the sill details, the panels stop at 3'-0" AFF providing no covering over the vinyl insulation. Clarify.

RESPONSE: Metal panels are to stop at the brick. Provide densglas with water/air barrier behind brick.

35. Reference sheets SF.1, AF4.01, AM.1 and AM4.01: The structural plans do not reflect the building shelf indicated on the architectural sections. Clarify.

RESPONSE: Please see updated foundation details which will be provided in Addendum No. 4.

36. Reference sheets SF.1 and AF1.11. With regard to the Scada 136 area, the structural drawings do not include the Air 137 (?) area. This room will require both a foundation as well as an additional steel column, beam and purlins. The wall framing would best be served by metal stud framing and not PEMB components. Advise.

RESPONSE: The foundation will be provided in Addendum No. 4. The air compressor shall be framed independently from metal building system with metal studs and metal roof.

37. Reference sheets SF.1 and AF1.11 with regard to the South Elevation, provide an additional building section(s) for wall. Confirm that the PEMB wall panels go eave to floor. Brick veneer attached to girts with wall ties. Section 1 of AF4.01 does not reflect brick veneer. Clarify.

RESPONSE: Metal panels are to stop at the brick. Provide densglas with water/air barrier behind brick.

38. We request that the bid "break out" with unit prices/extensions be submitted within 24 hours of bid and that only the total bid amounts for each building/alternates be submitted at bid time.

RESPONSE: The County agrees with this approach and a modified Bid Schedule will be provided in Addendum No. 4.

39. Confirm that bid item 22 item 522-1 concrete sidewalk – field office includes the ramps, stairs and landings for the south entrance. Advise if the steel rails are to be included in bid item 37 Item no. FB-1 field office. Provide a cross section of 1 entry ramp floor plan on AF4.11 indicating wall construction and footings.

RESPONSE: All ramps, stairs, landings, hand rails, and guard rails depicted on Sheet AF4.11 shall be included in Pay Item 37, FB-1, Field Office Building, Complete. All other sidewalk shall be included in Pay Item 22, 522-1, Concrete Sidewalk-Field Office. The requested details will be provided in Addendum No. 4.

40. Reference section 09680 Carpet. Provide all required information for bidding such as style, weight, pile, etc. Plans only indicate 24" x 24" commercial grade.

RESPONSE: A carpet specification will be provided in Addendum No. 4.

41. On the Finish Hardware Schedule most of the hardware specified is YALE. Will there be any allowances to substitute other hardware providers for locks, exit devices, hinges, and closers by Hager, Falcon or others?

RESPONSE: Yes, shall be approved as an equal.

42. Sheet SF.1 shows standard metal building slab details. Sheet AF2.01 elevations show the building foundation sloping with a drop of almost 5 feet. Please provide structural details for the dropped foundations – Footing & Foundation Walls.

RESPONSE: Please see revised structural details provided in Addendum No. 4.

43. Sheet SF.1 does not show Brick Ledges, while Sheet AF4.01 shows brick ledges. Please verify if there should be any structural changes to the slab turndowns to accommodate the brick ledge.

RESPONSE: Please see revised structural details provided in Addendum No. 4.

45. With regard to the Sanitary Napkin Disposals - The specifications state to provide as indicated on the drawings or in each ladies room. None are shown on the drawings and the restrooms are not labeled as Men's and Women's. Advise if any are required and at which restrooms.

RESPONSE: None are required.

46. With regard to the Seat Covers – The specifications state to provide as indicated on the drawings. None are shown on the drawings. Advise if any are required and at what locations?

RESPONSE: None required.

47. Provide specifications for the soap dispensers and toilet tissue dispenser.

RESPONSE: Please see revised specification provided in Addendum No. 4.

48. The ATS (Automatic Transfer Switch) location is not shown anywhere on the electrical drawings.

RESPONSE: Please see revised electrical drawings provided in Addendum No. 4.

49. Are there any power requirements for the double swing gates that are a part of the Alternates? I do not see any electrical requirements shown on the drawings.

RESPONSE: No, all double-swing gates are manually operated.

50. The electrical drawings call for the electrical contractor to provide conduit and wire to the utility pole location. This pole location is not shown on the drawings.

RESPONSE: Please see revised electrical drawings provided in Addendum No. 4.

51. Will a specification section for the PEMB be issued? Cost for PEMBs can vary widely from one to another depending on the requirements.

RESPONSE: A pre-engineered metal building specification will be provided in Addendum No. 4.

52. The structural plans for the Field Office Building do not correspond to the architectural plans. Can the structural plans be revised?

RESPONSE: Please see the updated structural drawings issued with Addendum No. 4.

53. Will the owner consider allowing the contractor time after the bid opening to provide the full-on unit price schedule? Lump sum unit prices can be provided for the Bid Options and Alternatives, then more detail provided upon request.

RESPONSE: The County agrees with this approach and a modified Bid Schedule will be provided in Addendum No. 3.

54. Sheet AF1.31 – 4 Enlarged Restroom (Kitchen) –

a. Accessories Legend Item HV – Hood Vent (see Mechanical) – Not Shown on Mechanical – Please provide specs if it is required.
b. Items REF end OV – Please provide a specification for these residential appliances, if requited by the General Contractor.

RESPONSE: Please see revised architectural drawings issued with Addendum No. 4.

55. Sheet AF1.11 – at the north east corner of the building there appears to be a room for an air compressor. This room is not shown on the structural drawings.

c. What is the foundation for this room?
d. What are the walls constructed of?
e. Are the interior walls finished or is it exposed structure? This room is not shown on the finish schedule.

RESPONSE: The foundation will be provided in Addendum No. 4. The air compressor shall be framed independently from metal building system with metal studs and metal roof.

56. Sheet AF2.01 Elevation 3 South Building Elevation – does not match detail 1/AF4.01, which shows no brick above the stucco projection, while the elevation shows there being brick. Please clarify.

RESPONSE: Brick is required. Please see updated architectural drawings issued with Addendum No. 3.

57. Is a Knox Required on one or both buildings?

RESPONSE: Yes, both buildings.

58. Sheet AF6.01 – Please provide a specification for the Fiberglass Door Type "A".

RESPONSE: The door shall meet local impact requirements.

59. Section 07160 – Where is this waterproofing being used? Not found on Drawings.

RESPONSE: Please remove Section 7160 from the Bid Documents. This section is not used.

60. Section 07260 – Where is the Building Wrap being used? It looks from the drawings that the Vinyl backed Insulation for the Pre-Engineered Metal Building is being used for the Air Barrier. Please clarify.

RESPONSE: Metal panels are to stop at the brick. Provide densglas with water/air barrier behind brick.

61. Sheet AF2.01 – Elevation 3

a. Please provide a specification for the signage and Aluminum Letters
b. Please provide a Specification for Stucco

RESPONSE: A $5,000 allowance will be provided in each of the Base Bids for the Field Office and Maintenance Building for exterior and interior building signage. The specifications will be coordinated with the successful bidder following contract award.

A stucco specification will be issued with Addendum No. 4.

62. Will interior signage be required: toilets, offices, mechanical rooms, electrical rooms, etc.?

RESPONSE: A $5,000 allowance will be provided in each of the Base Bids for the Field Office and Maintenance Building for exterior and interior building signage. The specifications will be coordinated with the successful bidder following contract award.

63. Will the Pre-Engineered Building specification that is to be provided by addendum include the vinyl faced insulation? If not please provide.

RESPONSE: Please see the pre-engineered metal building specification issued with Addendum No. 4.

64. Please provide a Masonry Specification for the CMU foundation walls at the Ramps and for the Brick Veneer.

RESPONSE: Please see the masonry specification issued with Addendum No. 4.

65. Sheet AF1.11 Room 101 – Will there be a wall cap on top of the 6'-0" high walls in the center of this space? If so, please provide a detail.

RESPONSE: Please see revised architectural sheets issued with Addendum No. 4.

66. Spec section 09511, page 3, Part 2.2 calls for #1729 ceiling tile this is a square edge tile item 3 states that the edge should be Angled Tegular which is item #1733 - which is correct?

RESPONSE: Please see new acoustical ceiling specification issued with Addendum No. 4.

67. Sheet AM6.01 Finish Schedule – Flooring CAR1 is not shown in the Flooring Abbreviations. Please specify.

RESPONSE: Please see revised architectural sheets issued with Addendum No. 4.

68. Additional information needed for masonry:
    a. Brick selection or an allowance.
    b. Mortar type for brick and is it natural gray or colored
    c. CMU – lightweight or normal weight
    d. Mortar type for CMU
    e. Flashing type
    f. Brick anchor type
    g. Reinforcing wire type – suggest 9GA, hot-dipped, ladder type

RESPONSE: Please see masonry specification issued with Addendum No. 4.

69. Are FRP panels required for the walls in the Janitor closet in the Maintenance building?

RESPONSE: Yes, to 6'-0" AFF. MRGB and paint remaining surfaces. ACT ceiling.

70. The Mechanical, IT, and Janitors Closet are not shown on the finish schedule in the Maintenance Building. Please provide finishes.

RESPONSE: Mechanical and IT receive gypboard and paint, ACT ceilings.

71. Drawing EF1.00 shows (3) roll up doors on the office building. Would like to know if they are going to be manual or motor controlled. Nothing in panel schedules.

RESPONSE: Please see revised electrical sheets issued with Addendum No. 4.

72. There are no Fire Alarm drawings. This is for both buildings. Need to see what they want.

RESPONSE: Please see revised electrical sheets issued with Addendum No. 4.

73. In offices, they have Fixture LBTE on schedule but none on plans.

RESPONSE: Please see revised electrical sheets issued with Addendum No. 4.

74. Who is going to be responsible for the IT system?

RESPONSE: County is responsible for pulling all IT through contractor provided conduit. Please reference Bid Drawings.

75. Can you provide the chart stating the amount of liquidated damages by cost so I can order my Bid Bond? See Article 3, paragraph 3.3.

RESPONSE: See page BOC-6 for the liquidated damages amount.

End of Questions and Responses