



MEMORANDUM

Date: 12/8/2021
To: Whom it May Concern
From: Wilson & Girgenti, LLC
RE: Boca Royale Golf and Country Club
1601 Englewood Rd. Englewood, FL 34223

Please see attached report outlining our findings during our site visit on November 9th 2021. It provides detailed explanations of the existing conditions of the electrical, mechanical, plumbing and fire protection systems for the 18,000 square foot golf and country club located at 1601 Englewood Rd, Englewood FL 4223.

Thank you,

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Mechanical

1.1 Scope of Work:

On November 9th we visited the 18,000 square foot golf and country club located at 1601 Englewood Rd, Englewood FL 4223, to investigate the existing Mechanical system.

This Concept Study is to provide a detailed outline of the mechanical systems including recommendations for replacement of the mechanical equipment.

1.2 Existing Mechanical Systems:

1.2.1 General Mechanical Description

The building is comprised of approximately (20) split systems. (9) of these split systems are located at the center of the gable ceiling on an elevated platform. The remaining split systems are located throughout the building with (3) of the units serving the kitchen area. The kitchen contains a 12' Ansul hood system tied to (2) exhaust fans, along with (1) dishwasher exhaust fan. Each hood fan is expected to exhaust approximately 1200 CFM and the dishwasher fan is expected to exhaust approximately 600 CFM. The kitchen also contains (1) makeup air fan which is expected to supply 90% of the total exhaust air. The (18) of the condensing units are housed at a condenser farm located on grade at the south corner of the building. The other (2) condensers are located at the proshop rooms. The smaller kitchen, on the east side of the building, has an abandoned exhaust system comprised of (2) exhaust fans.

1.2.2 Evaluation of Existing Mechanical Systems

Below explains a summary of the findings during the site visit. A more detailed explanation per unit can be found below on Table 1 with locations shown on Image 1.

Many areas throughout the building experienced rust & mold due to moisture around the plenum space and lack of ductwork insulation. Two major components that may have led to this include leaks from the roof and outside air/attic entering from vents on the elevated portion of the roof. The exhaust system from the women's restroom is not properly sealed. Similarly, many of the air handlers serving the space don't have outside air connections and are venting to the plenum. Based on the site visit and preliminary calculations, we believe the building is negatively pressurized which means additional humid air is being brought into the building through any door/window openings. This is a direct result of an incorrect kitchen air balance where we are exhausting way more than we are bringing in through the makeup air fan and air handlers.

A handful of the units are using R22 refrigerant. This is no longer manufactured nor code compliant. These units will need to either be completely flushed and replaced with R410A refrigerant at minimum or replace the units entirely. Depending on unit functionality can lead to one option over the other.

All diffusers will need to be deep cleaned/sanitized and painted or replaced. Kitchen diffusers shall be replaced for perforated diffusers, many kitchen diffuser have rust/mold built up.

Most of the condensing units have either lost or cracked their insulation on the suction line



of the refrigerant piping. Large, insulated suction lines should be cold to the touch and sweating but this was not apparent on site. At least (6) of the systems have the refrigerant line sets running over 150 ft which can cause discharge issues. Many of the condensing units are not meeting proper ventilation requirements by either being too close to each other or too close to the barrier walls.

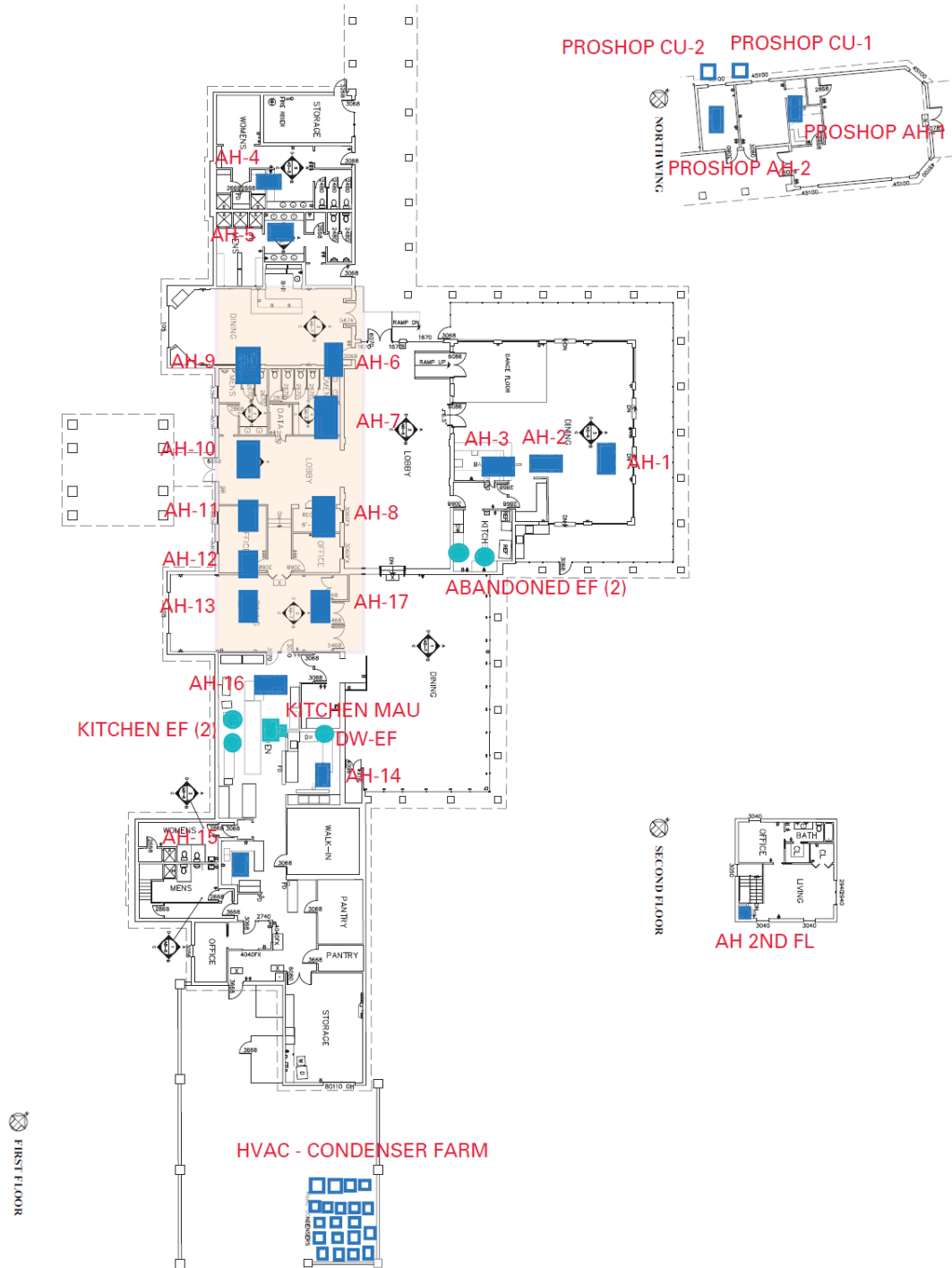


Image 1 – HVAC Unit Locations

<u>WAREHOUSE ROOFTOP UNITS</u>	<u>MFR</u>	<u>MODEL #</u>	<u>TONS</u>	<u>YEAR</u>	<u>REMARKS</u>
Proshop AH/CU 1	TRANE	XE1000 (TTR042D1)	3.5	2000	R22 REFRIGERANT, WE HAD NO ACCESS TO AIR HANDLER, CONDENSING UNIT LOCATED NORTH. UNIT OVER 20 YEARS OLD
Proshop AH/CU 2	TRANE	XB1000 (TTBD18C100A2)	1.5	2000	R22 REFRIGERANT, WE HAD NO ACCESS TO AIR HANDLER, CONDENSING UNIT LOCATED NORTH. UNIT OVER 20 YEARS OLD
CU/AH #1	CU: AMERICAN STANDARD / AH: TRANE	CU: 2TTR3060A1000AA / AH: 4TE3F65B1000BA	5	CU: 2007 / AH: 2011	R410A REFRIGERANT, OUTSIDE AIR OPEN ENDED RECONNECT TO RETURN DUCTWORK, SOME FLEX DUCT WORK IS REUSABLE, REMOVE ABANDONED DUCTWORK
DINING CU/AH #2	AMERISTAR	CU: M4AC4060C1000AA / AH: M4H3060B1000AA	5	2017	R410A REFRIGERANT, AIR HANDLER CABINET IS MOLDY, OUTSIDE AIR CONNECTION OPEN, RETURN DUCTWORK IS NOT REUSABLE (MAIN DUCTWORK IS UNINSULATED), REMOVE ABANDONED DUCTWORK
DINING CU/AH #3	YORK	CU: YCE60B21SA / AH: AE60CBD22G	5	-	R410A REFRIGERANT, MOISTURE SEEN ON UNINSULATED DUCTWORK CAUSING RUST/MOLD
WOMENS RR CU/AH #4	GOODMAN	CU : GSX130301BC / AH: ARUF30B14AC	2.5	-	R410A REFRIGERANT, OUTSIDE AIR / EXHAUST NOT SEALED PROPERLY, MODLY RETURN DUCTOWRK, DRAIN PAN VERY RUSTY



MENS RR CU/AH #5	GOODMAN	CU: G8X130421BC / AH: ARUF42C14AD	3.5	2014	R410A REFRIGERANT, FLEX SUPPLY IN GOOD CONDITION, REMOVE ABANDONED DUCTWORK. MAIN DUCTWORK IN GOOD CONDITION
CU/AH #6	TRANE	CU: 4TTB3048D1000B / AH: TAM4A0C48S41SBA	4	2012	R410A REFRIGERANT
CU/AH #7	AMERISTAR	CU: M4AC4060C1000AA / AH: M4AH30660B1000A A	5	2017	R410A REFRIGERANT, OLD INSULATION
CU/AH #8	TRANE	CU: 2TTR3060A / AH: TWE065E13FB2	5	2006	R22 REFRIGERANT, OPEN OUTSIDE AIR CONNECTION
CU/AH #9	RHEEM	CU: RA1436AJINA / AH: RH1P3617STANIA	3	2016	R410A REFRIGERANT, DUCTWORK NEEDS TO BE REPLACED
CU/AH #10	CU: YORK / AH: JOHNSON CONTROLS	CU: YCE36B22SA / AH: AP36BX21C	3	-	R410A REFRIGERANT, SHORT HARD DUCTWORK WITH FLEX SPIDER DUCTWORK. REPLACE MAIN TRUNKLINE
CU/AH #11	AMERISTAR	CU: M4AC4036C1000AA / AH: M4AH036A1000AA	3	2017	R410A REFRIGERANT, MOLDY UNINSULATED SUPPLY AND RETURN TO BE REAPLCED

CU/AH #12	AMERISTAR	CU: M4AC4060C1000AA / AH: M4AH3060B1000AA	5	CU: 2017 / AH: 2016	R410A REFRIGERANT, MOLDY FLEX DUCTWORK TO BE REPLACED
CU/AH #13	TRANE	CU: TTR060D1100A0 / AH: TWE060C15FD0	5	2001	R22 REFRIGERANT, CONDESATE LINE IS NOT CONNECTED, SPIDER FLEX DUCTWORK, MOLDY DUCTWORK SUPPLY AND RETURN MAINS
CU/AH #14	YORK	CU: YCE48B21SA / AH: AP48CBC21C	4	-	R410A REFRIGERANT DUCTWORK IN GOOD CONDITION
SE KITCHEN & RR CU/AH #15	TRANE (AMERICAN STANDARD)	CU1: 2TTA3060A3000AA / CU2: 2TTR / AH:TWE120B100EL	CU: (2) 5 / AH: 10	2006	R22 REFRIGERANT, DUCTWORK IN GOOD SHAPE, RUSTY DIFFUSERS
MAIN KITCHEN CU/AH #16	TRANE	CU: (2) 2TTA3060A3000A / AH: TWE120B100EL	CU: (2) 5 / AH: 10	2006	R22 REFRIGERANT, RUSTY DIFFUSERS, CONDENSING UNIT HAS EXPOSED REFRIGERANT PIPING, CORED UNDERGROUND TOO CLOSE TO DISCONNECT
CU/AH #17	TRANE	CU: 2TTR1048A1000AA / AH: TEC3F48B100AA	4	2009	R22 REFRIGERANT, MOLDY CABINET, SUPPLY AND RETURN DUCTWORK TO BE REPLACED.
CU/AH 2ND FLOOR	JOHNSON CONTROLS	CU: YCE30B22SA / AH: AP30BBB21C	2.5	-	LIMITED TO NO ACCES TO THE UNIT

Table 1 – Warehouse Conditioning Rooftop Units

1.3 Recommendations:

Below is a list of recommendations in order of importance and some timeline guidance:

1.3.1 Immediate

- Test & Balance kitchen hood to ensure the exhaust fans aren't making the building overly negative.
- Fix all water leaks from roof and seal vents in elevated roof area. This is to prevent additional moisture from entering the plenum space other than any issues from the units.
- Perform Test & Balance on the units to ensure that each unit is functioning as intended.
- Provide outside air connections to each air handler with a motorized damper for control and manual balancing dampers.
- Verify that air conditioning controls and exhaust controls are operating effectively.
- Replace refrigerant for units using R22 refrigerant. Our suggestion is replacement of these units:

**Proshop AH/CU #1,
Proshop AH/CU #2,
AH/CU #8
AH/CU #13
AH/CU #15
AH/CU #16
AH/CU #17**

- Replace main trunk line and return ductwork covered in mold.

1.3.2 Less Than 5 Years

- Repair insulation for suction lines and recharge refrigerant lines from condensing units.
- Replace all remaining duct work and diffusers.
- Replace units over 20 years of age per AHSRAE equipment expectancy chart.
- Replace electric heater over 15 years of age per AHSRAE equipment expectancy chart.

1.3.3 More than 5 Years

- Replace older units as they begin to not perform as intended. Relocate. condensing unit that are running over 200 ft. **(CU #4, CU#5).**

1.4 Cost Estimates:

Cost estimates are based on square footage as well as equipment cost. It is recommended for a mechanical contractor to provide actual costs based on labor hours as well. Please note, the prices shown are approximate to today's market but are subject to change.

1.4.1 Immediate

- Full Test & Balance for all split system and kitchen equipment – Approximate \$14,200
- Provide and connect outside air ductwork with dampers – Approximately \$3,500 per unit.
- Replace of small chucks main supply and return ductwork. – Approximately \$3,800 per unit
- Replace all existing diffusers and flex connections – Approximately \$45,000 total
- Replace all units using R22 refrigerant – (Approximately \$29,800 equipment only)



Proshop AH/CU #1,
Proshop AH/CU #2,
AH/CU #8
AH/CU #13
AH/CU #15
AH/CU #16
AH/CU #17

1.4.2 Less than 5 years

- Replace all Units – Approximately \$83,000 equipment only with 4,000 for programable T-stats. (**Remaining units**)

To summarize, this report was written to address concerns about the building's humidity problems and provide a more detailed description of the existing air conditioning system. Based on information collected, a bullet point list of recommendations is shown in section 1.3 with some cost analysis of these recommendations is shown in section 1.4. It is recommended to perform a test and balance of the entire building, with the units performing at full capacity, prior to purchasing or replacing any equipment.

Plumbing

1.1 Scope of Work:

On November 9th of 2021 we visited the 18,000 square foot golf and country club located at 1601 Englewood Rd, Englewood FL 4223, to investigate the existing Plumbing system.

This Concept Study is to provide a detailed outline of the Fire Protection systems including recommendations for replacement of the Plumbing equipment.

1.2 Existing Plumbing Systems:

1.2.1 General System Description

The west side of the building currently has a 2" cold water supply and 4" sanitary line. The east side of the building currently has a 1-1/2" cold water supply and 4" sanitary line. Since plumbing piping is underground, these numbers are based on what was visible on site. If the plumbing system is to be altered, these numbers should be verified.

1.2.2 There is also a grease trap for the kitchen located outside by the existing HVAC condensers. The grease trap should be pumped, cleaned and inspected for structural integrity. The age of the unit is unknown.

1.2.3 Existing water supply piping is non-galvanized. The exterior exposed water entrances that were visible were of copper pipe. We were not able to find the water meter of the building.

1.2.4 There are gas water heaters serving different areas around the building. The west side of the building is supplied by a Rheem model PROG40S-38N 40 gallon natural gas water heater rated at 38,000 BTU and was manufactured in March of 2018. This model indicates a 6 year water heater and should have another 3-4 years of service. The east side of the building is supplied by a Lochinvar AWN 286PM gas water heater rated at 286,000 BTU with an adjacent Lochinvar RJS080M 80 gallon storage tank. We were unable to determine the age of these two devices. If other water heaters are in the building, we were unable to find them at the time of the site visit.

1.2.5 The existing bathrooms are equipped with manual, wall hung, flush valve toilets and urinals. All sinks are also manual. The plumbing fixtures appear to be in good working condition, but they also look outdated and rust has started on the escutcheons where the supply pipe comes out of the wall on the lavatories.

1.2.6 All bathroom vents are 3" and terminate at roof. The existing vent piping is PVC.

1.2.7 Evaluation of Existing Plumbing Systems

All plumbing systems and fixtures appear to be in good working condition, but they also look outdated and rusted on some connections.



1.3 Additional Comments/Scope:

All fixtures are manual if touch-free is desired then plumbing fixtures will need to be replaced. Our general recommendation is to evaluate and or replace water heaters at time of construction.

The building is serviced by two gas meters. One service is located on the southeast side of the building with 1-1/2" pipe going in the building. The piping from this meter rises on the exterior of the building before stubbing into the attic area. There is the beginning of rust on the threaded fittings. It is recommended that this piping and fittings be cleaned with a wire brush and painted to prevent future rusting. There is a 1" gas line servicing the water heater on the west side of the building and 3/4" gas pipe on the northeast side of the building that is not in use.

Electrical

1.1 Scope of Work:

On November 16th we visited the Boca Royale Clubhouse facility located at 1601 Englewood RD, Englewood FL., to investigate the existing electrical system.

This Concept Study is to provide a detailed outline of the electrical systems including recommendations for replacement of the electrical equipment.

1.2 Existing Electrical Systems:

1.2.1 General Electrical System Description

The main service to the main building is 208/120v, 3-phase, 4-wire fed from a pad mounted utility transformer. . There is a CT meter and Main Distribution Panel (MDP) on the exterior of the building. This panel feeds another MDP inside the building. These two MDPs provide power for various panels throughout the space and the mechanical courtyard.

There is an additional service at 208/120v, 3-phphase, 4-wire, 400A service for the golf cart charging area fed from pole mounted utility transformers. This service appears to be in good condition and no additional work is required.

In addition to the services mentioned above the fitness center has its own 208/120v, 3-phase, 4-wire service. All components appear in proper working conditions and no additional work is required.

1.2.2 Evaluation of Existing Electrical Systems

The existing electrical system to the main building is in critical condition and reaching the end of its usable life due to the elements and improper routine maintenance. The existing electrical service should be replaced from the utility transformer all the way down stream to remote panel boards. Prior to bid a certified electrician shall walk the space to gain knowledge of existing conditions, including but not limited to opening panels, measuring wire size sand all pertinent information to provide a complete, fully functional, code compliant new electrical service.

Coordination with the local utility company will be required to change out the existing pad mounted utility transformer that is showing signs of rust and decay.

1.2.3 Lightning Protection

There is no lightning system. While not required by code, it is good practice to have one to protect the structure and all outdoor equipment.

1.2.4 Generator

There are currently no generators on site.

1.2.5 Fire Alarm

The building has a full fire alarm system with pull stations, annunciators, flow and tamper etc... The system has reached the end of its usable life and should be upgraded brought up the code standards. It will require a 2-hour rated room and dedicated circuits to the room. It will be decided by the local fire marshall. A test of communication should be provided to determine proper coverage for the police/fire department in the event of an emergency. A BDA system might be required depending on test results and local AHJ.

1.2.6 Existing Drawings

There where NO existing drawings on site.

1.2.7 Lighting

Emergency/Exit lights are provided via battery back-up. All fixtures were fluorescent fixtures and should be replaced during renovations with LEDs. For future renovations, a photometric study should be conducted to meet/exceed current IESNA and NEC standards.

During renovations, an automatic lighting control system will be required.

1.2.8 Expected cost.

In order to provide a new electrical service and bring the building up to current code standards, the expected cost is between \$30 and \$40 a square foot depending on what the electrician finds.

Fire Protection

1.1 Scope of Work:

On November 9th we visited the 18,000 square foot golf and country club located at 1601 Englewood Rd, Englewood FL 4223, to investigate the existing Fire Protection system.

This Concept Study is to provide a detailed outline of the Fire Protection systems including recommendations for replacement of the Fire Protection equipment.

1.2 Existing Fire Protection Systems:

1.2.1 General Fire Protection Description

The main building is protected by a wet automatic fire sprinkler system, with a hydraulic plaque stating that the system installed was hydraulically calculated as an ordinary hazard group I with a density of 0.15 gpm over a maximum area of 1500 sq. ft. This results in a system demand of 159.21 gpm at 52.946 psi at the base of the riser, with a combined hose stream allowance of 250 gpm.

The Pro shop appears to be fed off this same system, as a riser or control valve could not be located in or around the pro shop.

This would entail that the pro shop, which would be classified as a mercantile space, is calculated as a Ordinary Hazard Group I, as oppose to code requirements of Ordinary Hazard Group II for mercantile.

1.2.2 Evaluation of Existing Fire Protection Systems Throughout Main Building

1.2.2.1 Sprinkler heads in the spare head cabinet do not match all the heads installed in the existing system; there are horizontal sidewalls installed throughout the building but no spare heads that match.

Corrective Action: Per NFPA 13 2016 6.2.9, a supply of sprinkler heads must be maintained on the premises, and shall correspond to the types and temperature ratings of the sprinklers on the property.

1.2.2.2 East corner dining room closet has no fire sprinkler protection installed.

Corrective Action: Per NFPA 13 2016 Chapter 8, install a sprinkler head into the existing closet.

1.2.2.3 Doorways leading from the East corner dining room to the South West dining room have no fire protection installed.

Corrective action: Per NFPA 13 2016 Chapter 8, install sprinkler heads into doorways.

1.2.2.4 South West dining room closet has no fire sprinkler protection installed.

Corrective Action: Per NFPA 13 2016 Chapter 8, install sprinkler head into the existing closet.

1.2.2.5 Small North East Kitchen, a sprinkler head is obstructed by the hood for

the dish washing machine.

Corrective Action: Per NFPA 13 2016 Chapter 8, relocate existing sprinkler head to protect both sides of the exhaust hood, or add an additional sprinkler head to protect the opposite side of the exhaust hood.

1.2.2.6 The fire sprinkler riser control valve is currently red-tagged due to painted pendent sprinkler heads, according to the inspection report completed by CSS.

Corrective Action: Per NFPA 13 2016 6.2.6.2, replace painted sprinkler heads as noted by the inspection report completed by CSS.

1.2.2.7 Most concealed head escutcheons are in poor condition and require replacement or adjustment.

Corrective Action: Per NFPA 13 2016 6.2.7, adjust or replace corroded or missing escutcheons and cover plates throughout.

1.2.2.8 Pantry in South West kitchen has 2 heads of different response times (1 standard, 1 quick) which is not permitted by code.

Corrective Action: Per NFPA 13 2016 8.3.3.6, replace the standard response sprinkler head with an equivalent quick response sprinkler head.

1.2.3 Evaluation of Existing Fire Protection Systems Throughout Pro Shop

1.2.3.1 System appears to tie into the existing system in the main building, despite the main system only being calculated for Ordinary Hazard Group I, and the pro shop classified as Ordinary Hazard Group II. This space requires a new hydraulic calculation to be performed.

Corrective Action: Per NFPA 13 2016 Chapter 23, provide hydraulic calculations that reflect the ordinary hazard group II classification for the mercantile space.

1.2.3.2 Offices located adjacent to the Pro Shop are missing substantial portions of the acoustical ceiling tile, rendering the pendent sprinkler heads inoperable.

Corrective Action: Per NFPA 13 2016 Chapter 8, replace ceiling tiles in the existing acoustical tile ceiling or provide coverage with upright fire sprinkler heads.

1.2.3.3 Adjacent to the pro shop is a large covered Garage/Gulf Cart Maintenance overhang that is constructed with exposed wooden members that is entirely unprotected.

Corrective Action: Per NFPA 13 2016 Chapter 8, install a hydraulically calculated fire sprinkler system to protect the exposed combustible-construction space, with a hazard classification of Ordinary Hazard Group II.

1.2.4 Evaluation of the Existing Fire Protection Systems Throughout Fitness Center

1.2.4.1 There is no existing fire protection system in the Fitness Center.