Limited Wind Hardening Study
Lealman Gymnasium

5175 45th St. N.
St. Petersburg, FL 33714

Submitted To:

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No. 77754
STATE OF FLORIDA
PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by James Vincent Barnes PE using a Digital Signature and Date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

James V Barnes

Digitally signed by James V Barnes
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Submitted By:

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Project Manager

Project No. STHAX26009

Re- Issue Date: July 16, 2026

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EXHIBITS

Executive Summary

This report describes a building selected by the Pinellas County Emergency Management for a limited structural assessment to review its vulnerabilities to high wind and flood damage for events up to and including maximum, code mandated design events. The design events are defined by the current edition of the Florida Building Code *8th Edition (*2023 Edition) (FBC).

The study also includes *Table 1. State of Florida Least-Risk Decision Making (LRDM) Hurricane Evacuation Shelter Prescriptive Summary Guidance* Table as outlined by ARC 4496 guidelines as provided by Pinellas County Emergency Management Response and Recovery Manager, Joe Borries, FPEM. A maximum design wind speed of **170 mph (V_{ULT})** was requested to be used for Pennoni's hardening analysis. The results of this summary are included int the attached Exhibit F.

The Subject building has first been evaluated in its existing condition to determine its estimated capacity to resist Saffir-Simpson Scale of Hurricane Intensity Storm (**Category 1 through 5**) and its rated FEMA flood zone according to the current FIRM (Flood Insurance Rate Maps) maps.

The current 2023 Florida Building Code, 8th Edition requires that a new similar structure at this address categorized as a Risk Category IV building as defined by Chapter 16 Table 1604.5 be designed for a minimum design wind speed of **157 mph V_{ULT}** (Ultimate Wind Speed). A Risk Category IV occupancy includes buildings and other structures designated as essential facilities, including but not limited to those designed as designated earthquake, hurricane or other emergency shelters. The current 2023 Florida Building Code also requires that structures located in an area with a probable wind speed of 140 mph (V_{ULT}) or greater to be protected from wind-borne debris.

According to the original drawings, the structure was designated for **102 mph** fastest mile using 1997 SBC. This would approximately equate to wind pressures for a 3 second gust wind speed of **151 mph** V_{ULT}, per current 2023 FBC.

It is our understanding that Pinellas County wants to upgrade the building to resist wind pressures from an ultimate wind speed of **170 mph (V_{ULT})**, equate to wind speeds of a high **Category 3** hurricane storm based on Saffir-Simpson Scale. We recommended that hardening as noted in **Table 6-1** be completed at a minimum to meet this rating. Furthermore, wind-borne debris protection is recommended be installed to resist large missile impact, such as shutters, impact resistant glazing, storm panels, wood panels, or screens. The exterior roofing and metal panel clad walls could not be verified based on our limited inspection. Therefore, we recommend that all metal paneling be replaced as part of hardening measures with new materials designed to meet Chapter 22 (High-Velocity Hurricane Zones) of this code sheath with a minimum 24-gage rib-deck-type material and clad with an approved wall finish.

Structural Upgrades Recommendations for Increased Wind Resistance

Based on a review of the existing structure, to harden the building to resist a higher intensity wind event, the following minimal structural retrofits would be required.

Table 1 – Summary of Findings for Gymnasium Building Excluding Canopy Walkway

	Recommendations for Hardening or Improvements	**Estimated Storm Resistance for Saffir-Simpson Wind Category Storm 1-5**
Original Design	• Original Design of 102 MPH Fastest Mile per 1997 SBC.	Cat. 2 based on designed wind pressures (However, this may not be achievable since impact resistant windows were not required by 1997 SBC.)
Full Recommended Upgrades for Vult = 170 mph	• Recommended structural upgrades in order of priority as listed in Table 6-1 and Exhibit H. • Estimated construction cost including MEP improvements is **$4,465,516**. • Recommend 5% cost increase for each 12-month period beyond 2028.	Maximum estimated resistance to Cat. 3 storm if all upgrades are completed.

Structural Upgrades Recommendations for Flood Resistance

Regarding the impacts of potential flooding, based on a review of the current and proposed FEMA flood maps this structure will remain in a **Zone X** and therefore has a low probability of flood hazard. Therefore, flood hardening is not recommended.

MEP Upgrades Recommendations for Building Hardening

A review of the Mechanical, Electrical and Plumbing systems was completed by Engineering Matrix. A copy of their report has been included in the attached **Exhibit I**. Engineering Matrix developed the following list of recommendations to provide an emergency, standby generator to support the following electrical loads for a 72-hour period:

a. Life safety systems (emergency lights, exit lights, fire alarm system).
b. Select interior lighting fixtures.
c. Select general purpose receptacles.
d. Air handler fans for general ventilation.
e. Restroom exhaust fans.
f. Air conditioning systems to keep the facility fully heated/cooled using its currently installed AC systems.

The generator scope of work would be the same as that outlined in paragraph 3 above but would require the fuel storage tank to be increased in size from 600 gallons to 1,800 gallons.

1 General Project Information

This report describes a building selected by the Pinellas County Emergency Management for a limited structural assessment to review its vulnerabilities to high wind and flood damage for events up to and including maximum, code mandated design events. The design events are defined by the current edition of the Florida Building Code *8th Edition (*2023 Edition) (FBC). The building will also be evaluated in its existing condition to determine its current estimated resistance to Saffir-Simpson Scale of Hurricane Intensity storms (Category 1 through 5).

The study also includes Table 1. State of Florida Least-Risk Decision Making (LRDM) Hurricane Evacuation Shelter Prescriptive Summary Guidance Table as outlined by ARC 4496 guidelines as provide by Pinellas County Emergency Management representative Joe Borries, FPEM.

For the subject facility, this report addresses vulnerabilities, potential damage and possible mitigation actions to the load bearing structure, the building envelope (including the roof and wall coverings, the windows and glazing and roof mounted equipment. Building control and life safety systems (including electrical, mechanical, plumbing, security, computer, etc.) are not within the scope of this report. The possible mitigation actions will then be formulated to recommend improvements for each site to increase the resistance to a high wind event and localized flooding that may be caused by a storm or a hurricane.

If the recommended improvements and strengthening are completed, an increased resistance to hurricane type storms will be possible.

1.1 Description of Subject Building

Based on our review of the existing plans, the subject building is located in Pinellas County and operated as a gymnasium for Lealman Exchange School. The structure was constructed in approximately 2001 based on Pinellas County Property Appraiser records. The facility is a single-story pre-engineered metal building built on shallow concrete foundations, masonry exterior walls, pre-engineered tapered steel frames, steel roof purlins and metal roof deck. The high gable end walls of the gym are constructed of metal wall panels connected to the main building steel frames. The aerial of the building is shown in **Figure 1** below.

Original building architectural and structural drawings by Wedding Stephenson & Ibarguen dated April 24, 2000, were provided for our review. The original shop drawings for Pre-Engineered Steel frames were not available for our review. The original drawings show #5 rebar at 48” o.c in exterior CMU walls.

Field measurements were obtained of readily accessible areas of metal wall and roof panels. The panels have 4” shallow ribs with approximately ~ 1 ft spacing. The panels are estimated to be 28 gauge.

Figure 1-1 – Aerial Photograph Subject Building

1.2 Site Attendance

A site visit was held on Monday, August 28, 2023. In attendance were J. Vincent Barnes III, PE, SI-Limited, and Chakradhar Gondi, PE representing Pennoni and several staff from Pinellas County. The purpose of the site visit was to conduct a limited review of the building structure for wind and flood damage resistance of the existing building to assist Pinellas County in determining during a hurricane type storm event. Representative site photos taken during our site visit including aerial images have been included in the attached **Exhibit A**.

Follow up site visits were conducted by Pennoni to obtain flood elevation certificate data and take additional measurements.

This limited structural assessment was based on a cursory review of the existing drawings and information obtained from visual observations made at the site. Most of the structural system of the building are concealed behind finish materials (walls, ceiling, etc.) and is not accessible (except for lay-in ceiling areas). It is assumed the building was built in accordance with the original drawings.

1.3 Documents Reviewed

- *Building Addition for Wellington School Architectural and Structural Drawings issued by Wedding Stephenson & Ibarguen dated April 24, 2000.*

2 Wind Speed Analysis

2.1 Wind Speed Based on Current Drawings

Based on a review of the construction drawings the building appears to have been designed under the 1997 Standard Building Code (SBC). ASCE 7-93 was in effect at the time of the 1997 SBC. This building code referenced that lateral and uplift designed wind pressures are based on the measurement of wind speed fastest mile at 33 ft. above the ground in Exposure C and associated with an annual probability of 0.02 of being equated or exceeded (50-year mean recurrence interval.)

Design values as listed in the plans include the following:

- 102 MPH (Fastest Mile), with use factor 1.0 for main building and 1.15 at activity room.
- Roof live load of 16 psf and 12 psf for areas greater than 600 sq. ft.
- Basic Wind Pressure = Cp * 27.3 PSF for 0-36 ft elevation.

2.2 Saffir-Simpson Hurricane Scale

The Saffir-Simpson Hurricane Scale uses a 1-minute sustained wind speed to distinguish between five categories of storms. A Category 2 hurricane has a 1-minute sustained wind speed range of 96 – 110 mph. In terms of the design wind speed used in the building code, a 110 mph 1-minute sustained wind speed is approximately equivalent to a 130 mph (V_{ASD}) 3-second peak gust design wind speed.

See the attached **Exhibit C** for a further detailed explanation of the wind speeds by the Saffir Simpson Team of the National Oceanic and Atmospheric Association (NOAA).

2.3 Current Code Mandated Wind Speed Requirements

The wind resistance requirements in the current 2023 Florida Building Code (8th edition) are much more stringent than the 1997 Standard Building Code which the original structures were designed to meet. The current building code wind pressures are based on an updated approach to wind analysis that utilizes the ultimate wind speed measured over a 3-second peak gust in mph (V_{ULT}). Current code design and uses ultimate wind velocity (V_{ULT}) with gusting winds speeds which are greater than the same measured wind speeds over a similar sustained (1) minute period. This is done because gusting winds are more typical.

The below **Table 2-1,** Table C26.5-2 from ASCE 7-16, show the relationship between V_{ULT} wind speeds and 1-minute sustained (Saffir/Simpson) wind speeds used to rate hurricanes.

The lower limit of the wind speed utilized in the table equates to a strong **Category 2** storm over water, based on the Saffir Simpson hurricane wind scale.

Table 2-1 Wind Speed Relationship from ASCE 7-10

Table C26.5-2 Approximate Relationship between Wind Speeds in ASCE 7 and Saffir-Simpson Hurricane Wind Scale

Saffir-Simpson Hurricane Category	Sustained Wind Speed over Water[a]		Gust Wind Speed over Water[b]		Gust Wind Speed Over Land[c]	
	mph	m/s	mph	m/s	mph	m/s
1	74–95	33–42	90–116	40–51	81–105	36–47
2	96–110	43–49	117–134	52–59	106–121	48–54
3	111–129	50–57	135–157	60–70	122–142	55–63
4	130–156	58–69	158–190	71–84	143–172	64–76
5	>157	>70	>191	>85	>173	>77

[a]1-min average wind speed at 33 ft (10 m) above open water.
[b]3-s gust wind speed at 33 ft (10 m) above open water.
[c]3-s gust wind speed at 33 ft (10 m) above open ground in Exposure Category C. This column has the same basis (averaging time, height, and exposure) as the basic wind speed from Figs. 26.5-1 and 26.5-2.

2.4 Nature of Wind Damage - General

An assessment of a building's vulnerabilities to wind damage considers both the structural frame and the building envelope. Structural frames can be damaged by wind, either by being lateral failure (pushed over) or by racking out of alignment, indicating a failure in lateral wind resistance (either shear walls or horizontal diaphragms such as the roof or floors). Wind may also cause uplift damage, indicating a lack of load path continuity from the roof to the foundations. Roof systems frequently fail if there are inadequate connections between the roof structure and the walls.

Building envelopes may be damaged if impacted by wind-borne missiles (debris) that puncture glazing (windows and doors), wall coverings, or roof coverings. Damage to, and leaks in the existing envelope allow wind-driven rain to enter, often causing a significant amount of non-structural damage. Holes in building envelopes also allow wind to get inside, causing additional wind pressure on roofs and walls.

Roof-mounted equipment can blow off in high winds, allowing rainwater intrusion into the building. Damage from wind-borne debris or vegetation next to the building can also occur to windows, doors, wall vents, louvers, roof edge flashing, or flashing around windows and doors. It is also possible that high winds enter the fan coiled roof top units and cause damage to the building interiors.

2.5 Equivalent Wind Pressures Based on Hurricane Category

The following **Table 3.5** has been prepared to compare the ASCE 7-10 ultimate (+) pressure and (-) suction forces an example building would need to be redesigned to resist for varying wind speeds from Hurricane Categories 1-5. This sample table of wind pressures has been provided to demonstrate the relationship between increasing wind speed and pressures. For instance, the design wind pressures for roofing when comparing wind speeds based off a category 2- 5 storm vary as much as 350%.

Table 2-2 Equivalent Wind Pressures Based on Various Wind Speeds

Hurricane Category	Sustained 1-minute wind speed (mph)	Equivalent 3-second Vult wind speed (mph)	C&C[1] (+/-) for 1 sf area at Zone 5 (psf)	Roof Cladding (+/-) for 1 sf area at Zone 3 (psf)	Joist (+/-) for 1 sf area at Zone 3 (psf)
1	74	105	+27.6 / -37.0	+ 15.9/ -44.0	+11.2/-32.3
2	96	137	+47.1 /-63.0	+ 27.1/ -75.0	+19.2/ -55.1
3	111	158	+62.5/ -83.7	+ 36.0/ -99.6	+24.4/ -73.1
4	130	186	+86.7/ -116.1	+50.0/ -138.2	+35.3/ -101.4
5	157	223	+124.7- 167.0	+71.9/ -198.7	+50.7/ -145.9

Notes:

1 Component and cladding wind pressure are calculated based on end zone.
2 Calculation of wind pressures are based on assumption of building designed as an enclosed building.
3 Calculated wind pressures are based on an exposure C.
4 The actual design pressures used to design a building of this type would vary based on additional criteria including end zones, overhangs and specific building area.

2.6 Current Wind-Borne Debris Requirements

The current 2023 Florida Building Code provisions require that structures located in an area with wind speeds of 140 mph (V_{ULT}) or greater be protected from wind-borne debris. A provision within the code requires that buildings of a height of 30 feet or less be designed to resist “large missile” impacts. A large missile is defined as a piece of lumber having nominal dimensions of 2 inches x 4 inches and weighing 9 pounds. Depending on the risk classification for the building, the missile impact would be designed for a test specimen impact resistance velocity of between 50 to 80 feet per second. The Code requires that all parts or systems of a building or structure envelope be designed to resist wind-borne debris impacts including outside windows, walls and doors.

Furthermore, the exterior roofing and metal panel clad walls could not be verified based on our limited inspection. Therefore, we recommend that all metal paneling be replaced as part of hardening measures with new materials designed to meet Chapter 22 (High-Velocity Hurricane Zones) of this code sheath with a minimum 24-gauge rib-deck-type material and clad with an approved wall finish.

If the County intends to house people during a hurricane, then it is strongly recommended that the structure would be upgraded to resist large missile impacts.

2.7 Exterior Glazing System

The large glazed areas including the front entry and large assembly areas are susceptible to failure from wind pressures and is likely insufficient to resist major storm forces.

Wind research has shown that when a door, window or other opening in an exterior wall is compromised, internal pressures increase within the building which add to the outside wind forces. An example of this effect has been included in the below **Figure 2-3**. Therefore, it is important to maintain the integrity of the outside envelope. To satisfy the current code requirement for a building located in a wind-borne debris area, the existing glazing systems would need to be replaced or protected with impact resistant covering such as shutters.

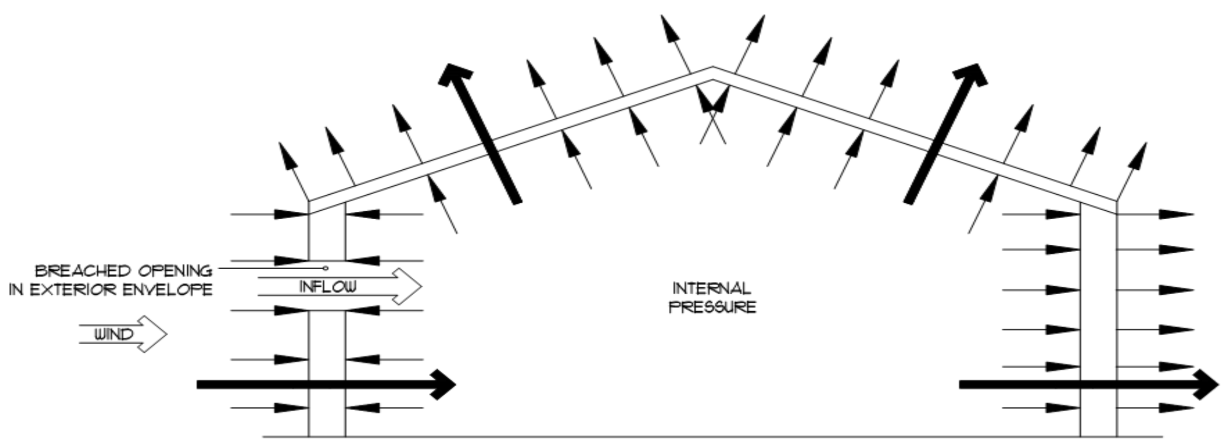


Figure 2-3 Example of the Effect of Forces Due to a Perimeter Breach

3 Potential Flood Vulnerabilities

3.1 FEMA Firm Maps

For regulatory purposes, flood hazard is delineated by Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA). The flood hazard area is defined as the area that has a 1% annual chance of flooding (100-year flood event) to a defined specific flood elevation, called the Base Flood Elevation (BFE). The flood hazard area is regulated in accordance with requirements adopted by the local jurisdiction. After the effective date of the current FIRM issued by FEMA, those requirements apply to the construction of new buildings and to existing buildings that undergo substantial improvement. Substantial improvement is defined as 50% of the market value of the building spent on improvements.

3.2 Nature of Flood Damage - General

An assessment of vulnerabilities to flood damage considers flood effect on the structural frame, the building envelope, enclosures below the flood level, and interior building finishes and contents. Structural damage includes damage to the load-bearing portions of a building. Flood loads act against all building elements that are below the water surface elevation and can include several components depending on the flood characteristics (depth, duration, wave action, debris impacts, and scour). Structural damage typically takes the form of collapsed or displaced load-bearing walls that are exposed to hydrostatic or hydrodynamic loads. Scour, while not a load, can lead to loss of structural support around and under foundations thus leading to possible building damage or even collapse.

When building envelopes and building interiors are exposed to floodwaters, nonstructural damage is caused by saturation of wall and floor materials, washing away of wall coverings and finishes, distortion of wood doors or corrosion of metal frames, and impacts from waves and debris. Coastal floodwaters are saline and may contain contaminants that contribute to deterioration of exposed metal and render other materials unusable.

Building utilities that are exposed to flooding, whether inside or outside of buildings, may be dislodged or rendered inoperable due to saturation. Those utilities that are not saturated may become corroded simply by being exposed to high moisture and/or salinity levels for some period of time. Throughout the building-specific reports contained herein, there is a presumption that gas and power lines to the buildings have been shut down prior to a hurricane making landfall.

3.3 Potential Flood Vulnerabilities

Based on a review of the current FEMA Flood map for the subject building, this facility is located in a Zone X and has a low chance of annual flooding; see the attached **Exhibit B** for a copy of the current FIRM maps. Furthermore, a flood elevation certificate was completed as part of this evaluation. The survey indicted the Building first floor elevation is 45.70 feet NAVD 1988.

Given this information, there is a low probability of major site flooding during an annual occurrence or during a high wind event from storm surge.

4 Potential Vulnerabilities

Potential vulnerabilities or issues that could develop during a major storm event were documented during our visual assessment.

It should also be noted that some of the items listed in this section below, including impact resistant glazing were not required when the building was originally designed/constructed.

4.1 Gymnasium

- Loose X bracing (wall) in the steel rigid frames, see **Photo 7-8.**
- Vegetation growth on roofing, see **Photo 9.** The roofing needs to be inspected by a registered roofing professional for leaks.
- Flashing damage at the ends of metal wall panels, see **Photo 10.**
- Water intrusion is reported from the louvers in end walls. Source of water intrusion is not known.
- Canopy with unknown wind rating attached to exterior walls. See **Photo 11.**
- Impact resistance of exterior doors and glazing in exterior walls is unknown.
- The site retaining/screen wall located along the rear of the building had cracking. The cracking appears to be due to expansion and contraction of the wall. The wall does not appear to have vertical masonry control joints as specified in the original construction documents. See **Photos 12 and 13**.
- Stucco cracking was noted between the windows. The wall was noted to be absent of control or expansion joints to mitigate the effects of thermal expansion and contraction of the building. The cracking is cosmetic in nature. See **Photos 14 and 15**.
- Previous repairs to gable end metal wall framing were reported to us during our previous inspection in 2017. The repairs were made after 2017 Hurricane Irma. See previous report from Pennoni dated November 17,2017.
- Pre-engineered steel frame sizes, and gauge/fastening pattern of the roof deck and the exterior wall metal sheathing could not be verified due to the limited nature of our inspection from ground level. To obtain this information an elevated lift would be required.

4.4 Conceptual Window Hardening

To provide enhanced resistance wind-borne debris, it is recommended that protection to all glazed building openings be provided. Examples of different type of window protection have been shown below in Figure 4-1.

Figure 4-1 – Conceptual Window Protection Recommended by FEMA Technical Fact Sheet No. 6.2

As part of the cost estimate for this work, three different costs were developed including manual installed systems using galvanized standard storm shutters and two alternative systems using both roll down and automated deployable system.

The alternate “automated” system could be comprised of a roll down shutter type system with a centralized control unit. This type of system would provide the end user with a shutter system that could be rapidly deployed with minimal effort. Annual maintenance for a system of this type should also be considered to retain functionality (the cost for annual maintenance or training has been included in the fee estimate). See the attached estimate by CCNA for additional information.

5 LRDM Matrix from ARC 4496

At the request of Joe Borries with the Pinellas County Emergency Management Service, a State of Florida Least-Risk Decision Making (LRDM): Hurricane Evacuation Shelter Prescriptive Summary Guidance Matrix was completed.

See the attached **Exhibit F** for additional information.

6 Results from Structural Survey

Findings

The subject buildings were built in approximately 2001, under the 1997 Standard Building Code, which did not require buildings to be designed for wind-borne debris resistance.

Hardening Recommendations

Based on the above evaluation using the current 2023 Florida Building Code as a guide and the results from the LRDM study, we have identified several building components that may suffer damage during a major storm. To resist the high winds of a major storm event, the following recommendations should be addressed accordingly.

6.1 Gymnasium

With these recommendations as listed in Table 6.1, the maximum estimated storm that could be resisted is a Saffir Simpson Category 3 storm. Conceptual retrofit to various structural framing members were shown in **Exhibit G**

Table 6-1 Hardening Recommendations for Lealman Gymnasium Excluding the Canopy

Required Harding / Improvements
1) The exterior glazing replaced with wind-borne debris resistance glazing or shutters installed. Current glazing is likely not rated for wind borne debris resistance.
2) Replace all doors to the gym that do not have glazing with components designed to meet current wind loads.
3) Strengthen roof purlins by adding new purlins to meet current wind load requirements (Vult = 170 mph).
4) Remove and replace all the metal roof decking and exterior metal wide rib sheathing to verify it is compliance with ***FBC section 1626.4*** is replaced to meet current wind load requirements (Vult = 170 mph).
5) Tighten all existing X bracing in steel frames and roof framing.
6) Strengthen steel frames by welding new plates to flanges of beams and columns, to meet current wind load requirements. Size and details to be determined
7) Enlarge existing column footings by +/-50%, to meet current wind load requirements.
8) Install additional steel and concrete filled cells in the jambs of wall openings along the exterior wall of the Gym.
9) Repair damaged flashing in exterior metal wall panels to prevent water intrusion.
10) Review of previous repairs to the gable end and verify if the metal wall framing meets current wind loads. Add gable end bracing extending from the bottom top of the CMU wall to the first tapered steel frame.
11) Repair of minor masonry and stucco cracking by repointing to mitigate water intrusion.

7 Cost Estimate for Structural Hardening

Based on the above lists of structural hardening recommendations for various category storms, a Rough Order of Magnitude (ROM) cost estimate has been prepared by the independent cost estimator Construction Consultants & Associates, Inc (CCNA). See the attached **Exhibit H.**

8 Limitations

Information for our investigation and assessment was obtained solely from visual observation made at specific areas of the building where concerns were reported, and a review of the building plans provided to us. There was limited visual access to structural building components, and we did not conduct a comprehensive inspection of the building.

Our review was conducted to identify building vulnerabilities for high wind and storm damage and to develop a matrix in compliance with ARC 4496 Guidelines for Hurricane Evacuation Shelter Selection and for no other purpose. The strength of a hurricane is unpredictable. It should be noted that based on our experience, although the design and construction of a structure appear to be in compliance with applicable building codes, there is not guaranteed results of how a building reacts during a hurricane type event. The engineering opinion provided herein are in accordance with generally accepted professional engineering practices. No other warranties or guarantees are implied or expressed.

The sign and seal on this project indicates professional engineering responsibility for the structural portion only. General architecture, life safety, accessibility, electrical, mechanical, etc. are the responsibility of others.

EXHIBIT A

REPRESENTATIVE SITE AND AERIAL PHOTOS

Relevant Photographs of Subject Building

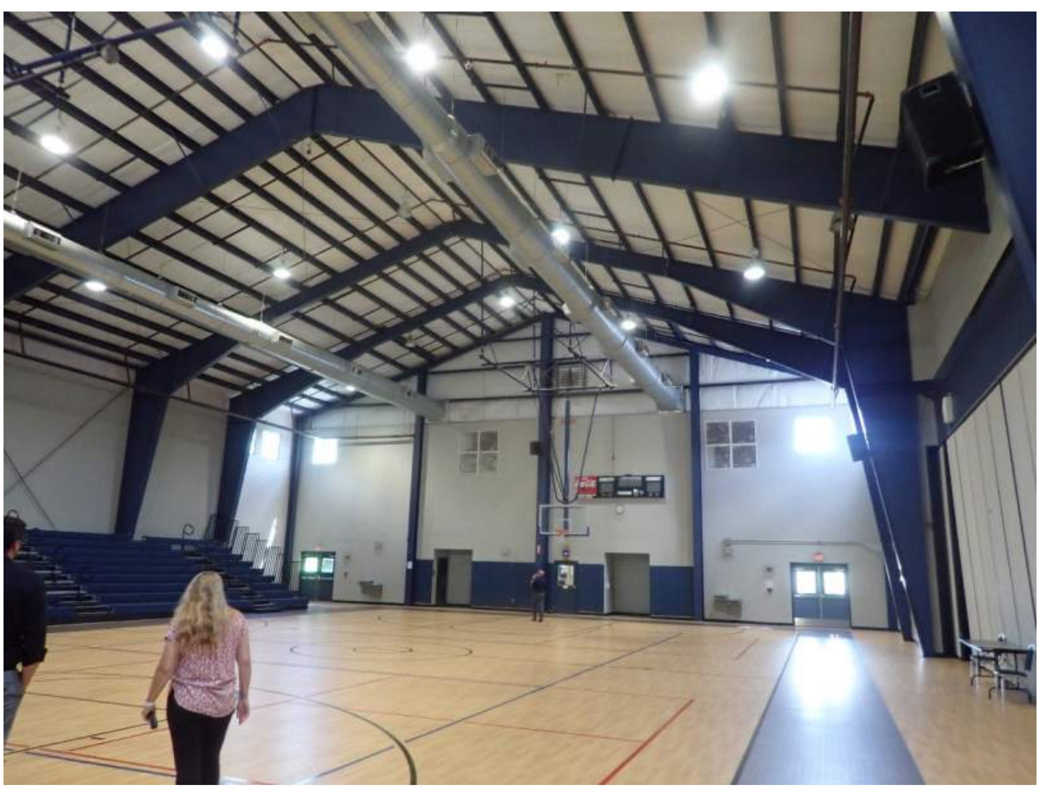
Photograph 1 – Overall Aerial Photo (Google 2023)

Photograph 2 –West Elevation

Photograph 3 – North West Elevation

Photograph 4 – Partial North Elevation (Left side)

Photograph 5 – Partial East Elevation (Right side)



Photograph 6 – Interior View of Gymnasium

Photograph 7 – Loose X bracing in Rigid Frames

Photograph 8 – Loose X Bracing between Rigid Frames

Photograph 9 – Vegetation Growth at Roof Edges

Photograph 10 – Damage and Separation at Metal Wall Flashing

Photograph 11 – Canopy Attached To Exterior Walls

Photograph 12 – Cracks In Site Wall At South East Corner

Photograph 13 –Cracks In Site Wall At South East Corner

Photograph 14 – Example of Stucco Cracks Near Windows In Exterior Walls of Gym

Photograph 15 – Example of Stucco Cracks Near Windows In Exterior Walls of Gym

EXHIBIT B

FEMA FLOOD MAPS

FEMA

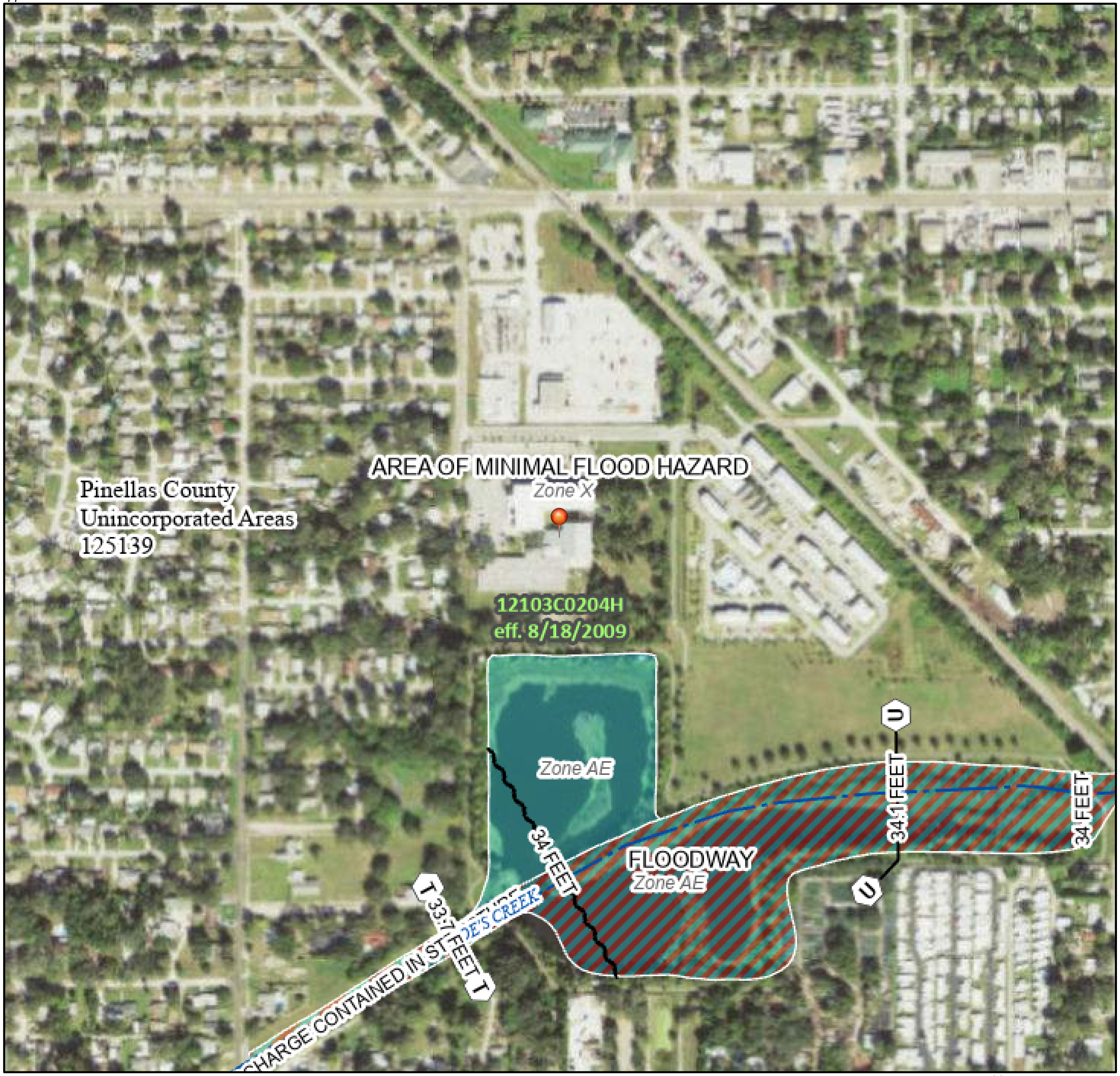

AREA OF MINIMAL FLOOD HAZARD
Zone X
Pinellas County
Unincorporated Areas
125139
12103C0204H
eff. 8/18/2009
Zone AE
34 FEET
34.1 FEET
34 FEET
FLOODWAY
Zone AE
33.7 FEET

EXHIBIT C

THE SAFFIR-SIMPSON WIND SCALE
BY THE SAFFIR-SIMPSON TEAM OF NOAA

The Saffir-Simpson Hurricane Wind Scale

The Saffir-Simpson Team (Timothy Schott, Chris Landsea, Gene Hafele, Jeffrey Lorens, Arthur Taylor, Harvey Thurm, Bill Ward, Mark Willis, and Walt Zaleski)

Updated 1 February 2012 to reflect minor changes to Category 3/4 and 4/5 boundaries

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time. The scale – originally developed by wind engineer Herb Saffir and meteorologist Bob Simpson – has been an excellent tool for alerting the public about the possible impacts of various intensity hurricanes[1]. The scale provides examples of the type of damage and impacts in the United States associated with winds of the indicated intensity. In general, damage rises by about a factor of four for every category increase[2]. The maximum sustained surface wind speed (peak 1-minute wind at the standard meteorological observation height of 10 m [33 ft] over unobstructed exposure) associated with the cyclone is the determining factor in the scale. (Note that sustained winds can be stronger in hilly or mountainous terrain – such as the over the Appalachians or over much of Puerto Rico - compared with that experienced over flat terrain[3].) The historical examples provided in each of the categories correspond with the observed or estimated maximum wind speeds from the hurricane experienced at the location indicated. These do not necessarily correspond with the peak intensity reached by the system during its lifetime. It is also important to note that peak 1-minute winds in hurricane are believed to diminish by one category within a short distance, perhaps a kilometer [~ half a mile] of the coastline[4]. For example, Hurricane Wilma made landfall in 2005 in southwest Florida as a Category 3 hurricane. Even though this hurricane only took four hours to traverse the peninsula, the winds experienced by most Miami-Dade, Broward, and Palm Beach County communities were Category 1 to Category 2 conditions. However, exceptions to this generalization are certainly possible.

The scale does not address the potential for other hurricane-related impacts, such as storm surge, rainfall-induced floods, and tornadoes. It should also be noted that these wind-caused damage general descriptions are to some degree dependent upon the local building codes in effect and how well and how long they have been enforced. For example, building codes enacted during the 2000s in Florida, North Carolina and South Carolina are likely to reduce the damage to newer structures from that described below. However, for a long time to come, the majority of the building stock in existence on the coast will not have been built to higher code. Hurricane wind damage is also very dependent upon other factors, such as duration of high winds, change of wind direction, and age of structures.

Earlier versions of this scale – known as the Saffir-Simpson Hurricane Scale – incorporated central pressure and storm surge as components of the categories. The central pressure was used during the 1970s and 1980s as a proxy for the winds as accurate wind speed intensity measurements from aircraft reconnaissance were not routinely available for hurricanes

[1] H. S. Saffir, 1973 in *The Military Engineer*; and R. H. Simpson, 1974 in *Weatherwise*
[2] R. A. Pielke, Jr. and colleagues, 2008 in *Natural Hazard Review*.
[3] C. A. Miller, and A. G. Davenport, 1998 in *Journal of Wind Engineering and Industrial Aerodynamics*.
[4] P. J. Vickery and colleagues, 2009 in *Journal of Applied Meteorology and Climatology*.

until 1990[5]. Storm surge was also quantified by category in the earliest published versions of the scale dating back to 1972[6]. However, hurricane size (extent of hurricane-force winds), local bathymetry (depth of near-shore waters), topography, the hurricane's forward speed and angle to the coast also affect the surge that is produced[7,8]. For example, the very large Hurricane Ike (with hurricane force winds extending as much as 125 mi from the center) in 2008 made landfall in Texas as a Category 2 hurricane and had peak storm surge values of about 20 ft. In contrast, tiny Hurricane Charley (with hurricane force winds extending at most 25 mi from the center) struck Florida in 2004 as a Category 4 hurricane and produced a peak storm surge of only about 7 ft. These storm surge values were substantially outside of the ranges suggested in the original scale. Thus to help reduce public confusion about the impacts associated with the various hurricane categories as well as to provide a more scientifically defensible scale, the storm surge ranges, flooding impact and central pressure statements are being removed from the scale and only peak winds are employed in this revised version – the Saffir-Simpson Hurricane **Wind** Scale. (The impact statements below were derived from recommendations graciously provided by experts [Bruce Harper, Forrest Masters, Mark Powell, Tim Marshall, Tim Reinhold, and Peter Vickery] in hurricane boundary layer winds and hurricane wind engineering fields[9,10].)

Category One Hurricane (Sustained winds 74-95 mph, 64-82 kt, or 119-153 km/h).
Very dangerous winds will produce some damage
People, livestock, and pets struck by flying or falling debris could be injured or killed. Older (mainly pre-1994 construction) mobile homes could be destroyed, especially if they are not anchored properly as they tend to shift or roll off their foundations. Newer mobile homes that are anchored properly can sustain damage involving the removal of shingle or metal roof coverings, and loss of vinyl siding, as well as damage to carports, sunrooms, or lanais. Some poorly constructed frame homes can experience major damage, involving loss of the roof covering and damage to gable ends as well as the removal of porch coverings and awnings. Unprotected windows may break if struck by flying debris. Masonry chimneys can be toppled. Well-constructed frame homes could have damage to roof shingles, vinyl siding, soffit panels, and gutters. Failure of aluminum, screened-in, swimming pool enclosures can occur. Some apartment building and shopping center roof coverings could be partially removed. Industrial buildings can lose roofing and siding especially from windward corners, rakes, and eaves. Failures to overhead doors and unprotected windows will be common. Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. There will be occasional damage to commercial signage, fences, and canopies. Large branches of trees will snap and shallow rooted trees can be toppled. Extensive damage to power lines and poles will likely result in power outages

5 R. C. Sheets, 1990 in *Weather and Forecasting*.
6 *National Hurricane Operations Plan*, 1972.
7 Jelesnianski, C. P., 1972 in *NOAA Technical Memorandum NWS 46*.
8 J. L. Irish, D. T. Resio, and J. J. Ratcliff, 2008 in *Journal of Physical Oceanography*.
9 F. Masters, P. Vickery, B. Harper, M. Powell, and T. Reinhold, 2009 in *Engineering Guidance Regarding Wind-Caused Damage Descriptors.*
10 T. Marshall, 2009 in *On the Performance of Buildings in Hurricanes – A Study for the Saffir-Simpson Scale Committee*.

that could last a few to several days. Hurricane Dolly (2008) is an example of a hurricane that brought Category 1 winds and impacts to South Padre Island, Texas.

Category Two Hurricane (Sustained winds 96-110 mph, 83-95 kt, or 154-177 km/h).
Extremely dangerous winds will cause extensive damage
There is a substantial risk of injury or death to people, livestock, and pets due to flying and falling debris. Older (mainly pre-1994 construction) mobile homes have a very high chance of being destroyed and the flying debris generated can shred nearby mobile homes. Newer mobile homes can also be destroyed. Poorly constructed frame homes have a high chance of having their roof structures removed especially if they are not anchored properly. Unprotected windows will have a high probability of being broken by flying debris. Well-constructed frame homes could sustain major roof and siding damage. Failure of aluminum, screened-in, swimming pool enclosures will be common. There will be a substantial percentage of roof and siding damage to apartment buildings and industrial buildings. Unreinforced masonry walls can collapse. Windows in high-rise buildings can be broken by flying debris. Falling and broken glass will pose a significant danger even after the storm. Commercial signage, fences, and canopies will be damaged and often destroyed. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks. Potable water could become scarce as filtration systems begin to fail. Hurricane Frances (2004) is an example of a hurricane that brought Category 2 winds and impacts to coastal portions of Port St. Lucie, Florida with Category 1 conditions experienced elsewhere in the city.

Category Three Hurricane (Sustained winds 111-129 mph, 96-112 kt, or 178-208 km/h).
Devastating damage will occur
There is a high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. Most newer mobile homes will sustain severe damage with potential for complete roof failure and wall collapse. Poorly constructed frame homes can be destroyed by the removal of the roof and exterior walls. Unprotected windows will be broken by flying debris. Well-built frame homes can experience major damage involving the removal of roof decking and gable ends. There will be a high percentage of roof covering and siding damage to apartment buildings and industrial buildings. Isolated structural damage to wood or steel framing can occur. Complete failure of older metal buildings is possible, and older unreinforced masonry buildings can collapse. Numerous windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Most commercial signage, fences, and canopies will be destroyed. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to a few weeks after the storm passes. Hurricane Ivan (2004) is an example of a hurricane that brought Category 3 winds and impacts to coastal portions of Gulf Shores, Alabama with Category 2 conditions experienced elsewhere in this city.

Category Four Hurricane (Sustained winds 130-156 mph, 113-136 kt, or 209-251 km/h).

Catastrophic damage will occur

There is a very high risk of injury or death to people, livestock, and pets due to flying and falling debris. Nearly all older (pre-1994) mobile homes will be destroyed. A high percentage of newer mobile homes also will be destroyed. Poorly constructed homes can sustain complete collapse of all walls as well as the loss of the roof structure. Well-built homes also can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Extensive damage to roof coverings, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will break most unprotected windows and penetrate some protected windows. There will be a high percentage of structural damage to the top floors of apartment buildings. Steel frames in older industrial buildings can collapse. There will be a high percentage of collapse to older unreinforced masonry buildings. Most windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months. Hurricane Charley (2004) is an example of a hurricane that brought Category 4 winds and impacts to coastal portions of Punta Gorda, Florida with Category 3 conditions experienced elsewhere in the city.

Category Five Hurricane (Sustained winds 157 mph or higher, 137 kt or higher, or 252 km/h or higher).

Catastrophic damage will occur

People, livestock, and pets are at very high risk of injury or death from flying or falling debris, even if indoors in mobile homes or framed homes. Almost complete destruction of all mobile homes will occur, regardless of age or construction. A high percentage of frame homes will be destroyed, with total roof failure and wall collapse. Extensive damage to roof covers, windows, and doors will occur. Large amounts of windborne debris will be lofted into the air. Windborne debris damage will occur to nearly all unprotected windows and many protected windows. Significant damage to wood roof commercial buildings will occur due to loss of roof sheathing. Complete collapse of many older metal buildings can occur. Most unreinforced masonry walls will fail which can lead to the collapse of the buildings. A high percentage of industrial buildings and low-rise apartment buildings will be destroyed. Nearly all windows will be blown out of high-rise buildings resulting in falling glass, which will pose a threat for days to weeks after the storm. Nearly all commercial signage, fences, and canopies will be destroyed. Nearly all trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months. Hurricane Andrew (1992) is an example of a hurricane that brought Category 5 winds and impacts to coastal portions of Cutler Ridge, Florida with Category 4 conditions experienced elsewhere in south Miami-Dade County.

EXHIBIT D

EQUIVALENT WIND VELOCITY SUMMARY TABLE

	Equivalent Design Wind Speeds (mph)[4]						
Wind Measurement Method	**Code (3)**	**ASCE**		**Saffir-Simpson Hurricane Intensity Scale**			
			Category 1	**Category 2**	**Category 3**	**Category 4**	**Category 5**
3-second Gust	**FBC 2020**	**ASCE 7-16**	103	134	155	181	220
3-second Gust	**FBC 2017 FBC 2014 FBC 2010**	**7-10**	103	134	155	182	217
3-second Gust	**FBC 2007 FBC 2004 FBC 2001**	**7-88 to 7-05**	82	109	131	157	191
Fastest Mile (1)	**SBC**	-	69	93	114	138	>172
1 – minute Sustained (Over open water)	**None (Saffir-Simpson scale)**	-	74	96	111	130	>157

Notes:

1. Based on the Florida Department of Emergency Management (2018 Emergency Shelter Plan Appendix G) Table G-1. Hurricane wind speeds in Table G-1 are based on exposure C.
2. 3-second gust wind speeds in this table are based on exposure C and are for speeds over land.
3. FBC- Florid Building Code
   SBC- Standard Building Code
4. Building code minimums must control design where higher than storm design wind speeds.

EXHIBIT E

ELEVATION CERTIFICATE

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB Control No. 1660-0008
Expiration Date: 06/30/2026

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

Policy Number: ______

Company NAIC Number: ______

A1. Building Owner's Name: Pinellas County

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N

City: St Petersburg State: FL ZIP Code: 33714

A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number: 03-31-16-00000-220-0101

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. 27° 49' 05.62" N Long. 82° 41' 33.65" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983 ☐ WGS 84

A6. Attach at least two and when possible four clear photographs (one for each side) of the building (see Form pages 7 and 8).

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s): ______ sq. ft.

b) Is there at least one permanent flood opening on two different sides of each enclosed area? ☐ Yes ☐ No ☒ N/A

c) Enter number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade:
Non-engineered flood openings: ______ Engineered flood openings: ______

d) Total net open area of non-engineered flood openings in A8.c: ______ sq. in.

e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): ______ sq. ft.

f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): ______ sq. ft.

A9. For a building with an attached garage:

a) Square footage of attached garage: ______ sq. ft.

b) Is there at least one permanent flood opening on two different sides of the attached garage? ☐ Yes ☐ No ☒ N/A

c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade:
Non-engineered flood openings: ______ Engineered flood openings: ______

d) Total net open area of non-engineered flood openings in A9.c: ______ sq. in.

e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): ______ sq. ft.

f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): ______ sq. ft.

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1.a. NFIP Community Name: Pinellas County Unincorporated B1.b. NFIP Community Identification Number: 125139

B2. County Name: Pinellas B3. State: FL B4. Map/Panel No.: 12103C0204 B5. Suffix: H

B6. FIRM Index Date: 08/24/2021 B7. FIRM Panel Effective/Revised Date: 08/18/2009

B8. Flood Zone(s): X B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): NA

B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9:
☐ FIS ☐ FIRM ☐ Community Determined ☒ Other: NA

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☒ Other/Source: NA

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ______ ☐ CBRS ☐ OPA

B13. Is the building located seaward of the Limit of Moderate Wave Action (LiMWA)? ☐ Yes ☒ No

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N	**FOR INSURANCE COMPANY USE**
City: St Petersburg State: FL ZIP Code: 33714	Policy Number: ______ Company NAIC Number: ______

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.
Benchmark Utilized: NGS "LEALMAN H" PID AG0660 Vertical Datum: NAVD 88

Indicate elevation datum used for the elevations in items a) through h) below.
☐ NGVD 1929 ☒ NAVD 1988 ☐ Other: ______

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used? ☐ Yes ☒ No
If Yes, describe the source of the conversion factor in the Section D Comments area.

		Check the measurement used:
a) Top of bottom floor (including basement, crawlspace, or enclosure floor):	45.70	☒ feet ☐ meters
b) Top of the next higher floor (see Instructions):		☐ feet ☐ meters
c) Bottom of the lowest horizontal structural member (see Instructions):		☐ feet ☐ meters
d) Attached garage (top of slab):		☐ feet ☐ meters
e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area):	45.70	☒ feet ☐ meters
f) Lowest Adjacent Grade (LAG) next to building: ☐ Natural ☒ Finished	44.60	☒ feet ☐ meters
g) Highest Adjacent Grade (HAG) next to building: ☐ Natural ☒ Finished	45.60	☒ feet ☐ meters
h) Finished LAG at lowest elevation of attached deck or stairs, including structural support:		☐ feet ☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by state law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

☐ Check here if attachments and describe in the Comments area.

Certifier's Name: Robert F. DuBois License Number: LS 5293

Title: Professional Surveyor

Company Name: Pennoni Associates Inc

Address: 401 Third Street SW

City: Winter Haven State: FL ZIP Code: 33880

Signature: ______ Date: 09/21/2023

Telephone: (863) 324-1112 Ext.: ______ Email: RDuBois@Pennoni.com

ROBERT F. DUBOIS CERTIFICATE NO. 5293 STATE OF FLORIDA REGISTERED LAND SURVEYOR

Place Seal Here

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):
Elevations based on NAVD 88. Survey disk in sidewalk NGS "LEALMAN H" PID AG0660.
The lowest elevation of M&E servicing the building is an HVAC pad located on NW corner of building.
The conversion from NAVD 1988 to National Geodetic Vertical Datum of 1929 (NGVD 29) is: NAVD 1988 + 1.024' = NGVD 1929.
MBAAC23005P

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N	**FOR INSURANCE COMPANY USE**
City: St Petersburg State: FL ZIP Code: 33714	Policy Number: ____ Company NAIC Number: ____

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

For Zones AO, AR/AO, and A (without BFE), complete Items E1–E5. For Items E1–E4, use natural grade, if available. If the Certificate is intended to support a Letter of Map Change request, complete Sections A, B, and C. Check the measurement used. In Puerto Rico only, enter meters.

Building measurements are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

E1. Provide measurements (C.2.a in applicable Building Diagram) for the following and check the appropriate boxes to show whether the measurement is above or below the natural HAG and the LAG.

a) Top of bottom floor (including basement, crawlspace, or enclosure) is: ________ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is: ________ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (C2.b in applicable Building Diagram) of the building is: ________ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is: ________ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is: ________ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge*

☐ Check here if attachments and describe in the Comments area.

Property Owner or Owner's Authorized Representative Name: ____________

Address: ____________

City: ____________ State: ______ ZIP Code: ______

Signature: ____________ Date: ______

Telephone: Ext.: ______ Email: ____________

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.:
5175 45th St N

City: St Petersburg State: FL ZIP Code: 33714

FOR INSURANCE COMPANY USE

Policy Number: ____________

Company NAIC Number: ____________

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Section A, B, C, E, G, or H of this Elevation Certificate. Complete the applicable item(s) and sign below when:

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by state law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2.a. ☐ A local official completed Section E for a building located in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when item E5 is completed for a building located in Zone AO.

G2.b. ☐ A local official completed Section H for insurance purposes.

G3. ☐ In the Comments area of Section G, the local official describes specific corrections to the information in Sections A, B, E and H.

G4. ☐ The following information (Items G5–G11) is provided for community floodplain management purposes.

G5. Permit Number: ____________ G6. Date Permit Issued: ____________

G7. Date Certificate of Compliance/Occupancy Issued: ____________

G8. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G9.a. Elevation of as-built lowest floor (including basement) of the building: ____________ ☐ feet ☐ meters Datum: ____________

G9.b. Elevation of bottom of as-built lowest horizontal structural member: ____________ ☐ feet ☐ meters Datum: ____________

G10.a. BFE (or depth in Zone AO) of flooding at the building site: ____________ ☐ feet ☐ meters Datum: ____________

G10.b. Community's minimum elevation (or depth in Zone AO) requirement for the lowest floor or lowest horizontal structural member: ____________ ☐ feet ☐ meters Datum: ____________

G11. Variance issued? ☐ Yes ☐ No If yes, attach documentation and describe in the Comments area.

The local official who provides information in Section G must sign here. *I have completed the information in Section G and certify that it is correct to the best of my knowledge. If applicable, I have also provided specific corrections in the Comments area of this section.*

Local Official's Name: ____________ Title: ____________

NFIP Community Name: ____________

Telephone: ____________ Ext.: ______ Email: ____________

Address: ____________

City: ____________ State: ______ ZIP Code: ______

Signature: ____________ Date: ____________

Comments (including type of equipment and location, per C2.e; description of any attachments; and corrections to specific information in Sections A, B, D, E, or H):

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N	**FOR INSURANCE COMPANY USE**
City: St Petersburg State: FL ZIP Code: 33714	Policy Number: ______ Company NAIC Number: ______

SECTION H – BUILDING'S FIRST FLOOR HEIGHT INFORMATION FOR ALL ZONES (SURVEY NOT REQUIRED) (FOR INSURANCE PURPOSES ONLY)

The property owner, owner's authorized representative, or local floodplain management official may complete Section H for all flood zones to determine the building's first floor height for insurance purposes. Sections A, B, and I must also be completed. Enter heights to the nearest tenth of a foot (nearest tenth of a meter in Puerto Rico). ***Reference the Foundation Type Diagrams (at the end of Section H Instructions) and the appropriate Building Diagrams (at the end of Section I Instructions) to complete this section.***

H1. Provide the height of the top of the floor (as indicated in Foundation Type Diagrams) above the Lowest Adjacent Grade (LAG):

a) **For Building Diagrams 1A, 1B, 3, and 5–9.** Top of bottom floor (include above-grade floors only for buildings with subgrade crawlspaces or enclosure floors) is: ______ ☐ feet ☐ meters ☐ above the LAG

b) **For Building Diagrams 2A, 2B, 4, and 6–9.** Top of next higher floor (i.e., the floor above basement, crawlspace, or enclosure floor) is: ______ ☐ feet ☐ meters ☐ above the LAG

H2. Is **all** Machinery and Equipment servicing the building (as listed in Item H2 instructions) elevated to or above the floor indicated by the H2 arrow (shown in the Foundation Type Diagrams at end of Section H instructions) for the appropriate Building Diagram?
☐ Yes ☐ No

SECTION I – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and H must sign here. *The statements in Sections A, B, and H are correct to the best of my knowledge.* **Note: If** the local floodplain management official completed Section H, they should indicate in Item G2.b and sign Section G.

☐ Check here if attachments are provided (including required photos) and describe each attachment in the Comments area.

Property Owner or Owner's Authorized Representative Name: ______

Address: ______

City: ______ State: ______ ZIP Code: ______

Signature: ______ Date: ______

Telephone: ______ Ext.: ______ Email: ______

Comments:

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N	FOR INSURANCE COMPANY USE
City: St Petersburg State: FL ZIP Code: 33714	Policy Number: ______ Company NAIC Number: ______

Instructions: Insert below at least two and when possible four photographs showing each side of the building (for example, may only be able to take front and back pictures of townhouses/rowhouses). Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." Photographs must show the foundation. When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

Photo One

Photo One Caption: 09/21/2023 Front View Facing Southeast. Clear Photo One

Photo Two

Photo Two Caption: 09/21/2023 Rear View Facing South. Clear Photo Two

ELEVATION CERTIFICATE
IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19
BUILDING PHOTOGRAPHS
Continuation Page

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 5175 45th St N	FOR INSURANCE COMPANY USE
City: St Petersburg State: FL ZIP Code: 33714	Policy Number: ____ Company NAIC Number: ____

Insert the third and fourth photographs below. Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

Photo Three

Photo Three Caption: 09/15/2023 Side View Facing West.

Clear Photo Three

Photo Four

Photo Four Caption: 09/15/2023 Side View Facing North.

Clear Photo Four

EXHIBIT F

LEAST-RISK DECISION MATRIX

Table 1. State of Florida Least-Risk Decision Making: Hurricane Evacuation Shelter Prescriptive Summary Guidance

Address: 34683 5175 45th St N, St. Petersburg, FL 33714

Criteria	Revised Rankings		
	Preferred	Less Preferred I Marginal	Further Investigation I Mitigation Required
1. Storm Surge Inundation	- The building is not subject to isolation due to 500-year flood event. - The Building first floor elevation is 45.70 Lowest elevation of equipment servicing building is 45.70		
2. Rainfall Flooding I Dam Safety	- Building is located outside of 500-year floodplain - Building is not subject to isolation due to 100-year flood event (1% annual chance of being equaled - The structure is located in a FEMA zone X based on Firm map 125139 panel 0204 Suffix H panel 204 of 327 The building is not subject to flooding or isolation due to dam or reservoir containment failure	-	-

Criteria	Preferred	Less Preferred I Marginal	Further Investigation I Mitigation Required
3. Hazmat and Nuclear Power Plant Considerations	- Building that does not store certain reportable types or quantities of hazardous materials - Building that is not located within a precautionary zone for facilities that manufacture, use or store hazardous materials Building is not located within the ten-mile emergency planning zone (EPZ) of a nuclear power plant	-	-
4. Lay-down Hazard Exposure		- Buildings exposed to very large/heavy trees or structures that could collapse or lay-down and cause minor impact damage, but not considered sufficient to cause significant envelope	

Criteria	Preferred	Less Preferred I Marginal	Further Investigation I Mitigation Required
5. Wind and Debris Exposure	- Buildings located more than one (1) mile from a hurricane coastline - Urban and suburban areas, Risk Factor Exposure C	- Onsite parking, field equipment or debris from the neighboring building may become wind borne debris during a high wind event.	- Significant sources of small and large debris within 150 feet - Falling debris sources are present within 150 feet of shelter building's perimeter from trees
6. Wind Design		- Wind Design criteria as listed on the original CDs per Standard Building Code 1997 - Fastest mile Wind speed of 102 MPH. - This equates to existing conditions of a Vult of 150 MPH or a Cat 2 storm.	- The building is comprised of pre-engineered tapered steel frames typical of a pre-engineered building. These type of buildings with gable ends are historically highly suspectable to damage from high wind events.
7. Construction Type I Definable Continuous Loadpath	- Pre-engineered Metal building with Steel portal/rigid frames on shallow foundations. - Exterior Gym walls are reinforced with # 5 Rebar at 48" on center into filled blocks	- Main roof is Gabled and framed with Pre-Engineered Steel frames and Zee purlins spaced at 5'-0" o.c.	- X bracing of steel rigid frames at some locations were found to be loose at some locations and warrant retrofit. - Miscellaneous Stucco cracking in exterior walls - Exterior walls are comprised of metal decking. Due to limited access the existing gauge of most of the structural sheathing could not be verified. - Address to elevated areas to verify member size was not possible without a lift.
8. Building Condition/ Wind Damage History	- Good Condition, no reported or observable structural deterioration	- History of wind damage: It was reported to us by onsite staff that a portion of the gable end wall had been impacted by the 2017 Hurricane Irma. A section of metal wall paneling may have been re-attached. - Minor interior leaks were reported in the gym area, source is currently unknown.	- The building is comprised of pre-engineered tapered steel frames typical of a pre-engineered building. These type of buildings with gable ends are highly suspectable to damage from high wind events due to loss of exterior metal wall or roof decking. -

Criteria	Preferred	Less Preferred I Marginal	Further Investigation I Mitigation Required
9. Building Condition/ Wind Damage History	- See item 8. No reported structural issues or defects		- The age of the roof is unknown and appears to be original (23 years old). It may be near the middle of its useful life (30 years) if that is the case.
10. Fenestrations / Window Protection			- Windows don't have designation and appear to be single pane in many locations. - Unprotected window and door assemblies, or "protective" assemblies that cannot be certified or documented to meet high wind missile testing protocols and not an adequate barrier to envelope breach effects. - Address to elevated areas was not possible without a man lift.

Criteria	Preferred	- Less Preferred I Marginal	Further Investigation I Mitigation Required
11. Roof Construction/ Roof Slope		- 8" deep Zee purlins spaced at 5'-0" o.c. - Gable roof slope 4:12. - Design wind loading Per 1994 Standard Building Code for fastest mile wind speed of 102 MPH. - This equates to a Vult of 150 MPH or a Cat 2 storm.	- Standing seam roof deck. Gauge measured onsite was ~28 gauge. Per FBC, *1626.4 Construction assemblies deemed to comply with Section 1626. Exterior frame walls and roofs constructed in accordance with Chapter 22 (High-Velocity Hurricane Zones) of this code sheathed with a minimum 24-gage rib-deck-type material and clad with an approved wall finish.* - Additional access to the site using an elevated lift is required to verify these conditions at all locations.
12. Roof Open Span		- Roof Purlins that span over the gym area have maximum span of ~24'-4" - Steel Tapered rigid frames span the width of building and align with the roof slope. Maximum spacing of ~24'-4". - Original shop drawings of pre engineered steel frames cannot be verified.	
13. Roof Drainage I Ponding	- Vegetation Growth was noted at roof edges near gutter locations. - No evidence of ponding that exceeds 2 inches in accumulation	-	
14. Interior Safe Space N/A No dedicated interior safe space			

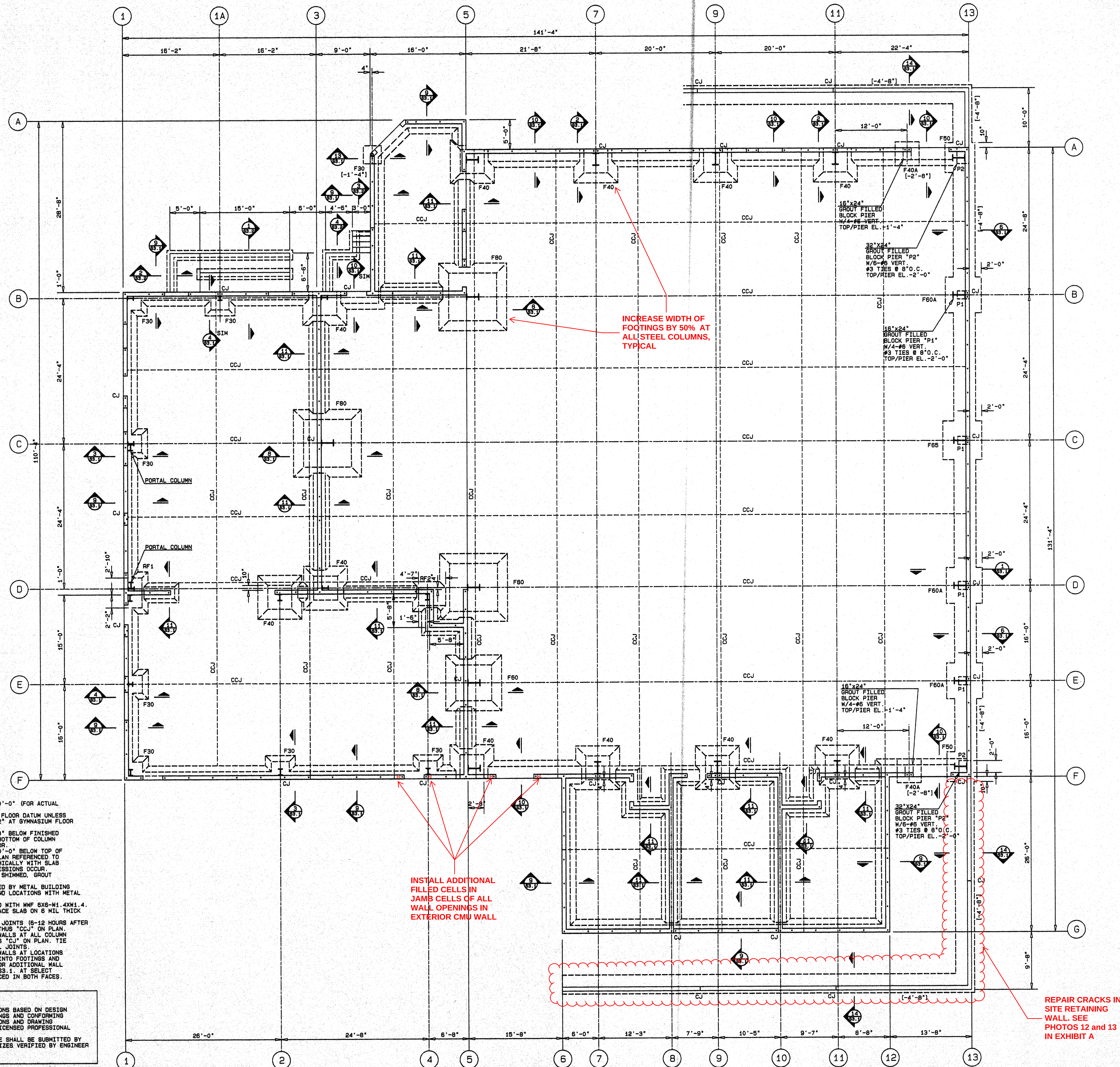
Criteria	Preferred	Less Preferred I Marginal	Further Investigation I Mitigation Required
15. Life Safety I Emergency Power		- The building was constructed circa 2001 and appears to comply with the local building and fire codes applicable at the time of construction. - See Engineering Matrix Report for additional information. - There are currently no provisions for a standby generator for Gymnasium. An emergency generator was installed in 2020 for Building A and does not include gymnasium).	

Notes: See Pennoni Associates Inc. report for additional Structural recommendations.

See Engineering Matrix Report for additional MEP information.

EXHIBIT G

CONCEPTUAL STRUCTURAL RETROFIT OF FRAMING (PRELIMINARY)



PLAN NOTES:

1. FINISHED FIRST FLOOR ELEVATION = DATUM EL.+0'-0" (FOR ACTUAL ELEVATION REFER TO SITE PLAN).
2. ELEVATION TOP OF SLAB -0'-0" BELOW FINISHED FLOOR DATUM UNLESS OTHERWISE NOTED ON PLAN. (SLAB IS DEPRESSED 2" AT GYMNASIUM FLOOR AREA.)
3. ELEVATION BOTTOM OF COLUMN BASE PLATES -0'-0" BELOW FINISHED FIRST FLOOR EXCEPT AT GYMNASUIM AREA WHERE BOTTOM OF COLUMN BASE PLATES TO BE -0'-2" BELOW FINISHED FLOOR.
4. ELEVATION TOP OF COLUMN AND WALL FOOTINGS -0'-0" BELOW TOP OF SLAB UNLESS OTHERWISE NOTED THUS [-] ON PLAN REFERENCED TO FINISHED FLOOR DATUM. POUR FOOTINGS MONOLITHICALLY WITH SLAB MAINTAINING THICKNESS BELOW SLAB WHERE DEPRESSIONS OCCUR.
5. WHERE COLUMN BASE PLATES ARE REQUIRED TO BE SHIMMED, GROUT SOLID WITH NON-SHRINK GROUT.
6. COLUMN SIZES, AND BASE PLATES TO BE FURNISHED BY METAL BUILDING MANUFACTURER. COORDINATE ANCHOR BOLT SIZE AND LOCATIONS WITH METAL BUILDING SHOP DRAWINGS.
7. ALL SLABS ON GRADE TO BE 4" THICK REINFORCED WITH WWF 6X6-W1.4XW1.4. CENTERED IN SLAB UNLESS OTHERWISE NOTED. PLACE SLAB ON 6 MIL THICK POLYETHELENE VAPOR BARRIER.
8. PROVIDE 1" DEEP SAW CUT CONTRACTION CONTROL JOINTS (6-12 HOURS AFTER POUR) AT SLAB ON GRADE LOCATIONS INDICATED THUS "CCJ" ON PLAN.
9. PROVIDE VERTICAL CONTROL JOINTS IN MASONRY WALLS AT ALL COLUMN CENTERLINES AND AT LOCATIONS DESIGNATED THUS "CJ" ON PLAN. TIE BEAM REINFORCING TO BE CONTINUOUS AT CONTROL JOINTS.
10. PROVIDE #5 VERTICAL REINFORCING IN MASONRY WALLS AT LOCATIONS INDICATED ON PLAN. DOWEL ALL VERTICAL BARS INTO FOOTINGS AND LAP 30" AT INTERMEDIATE SPLICE LOCATIONS. FOR ADDITIONAL WALL REINFORCING, REFER TO GENERAL NOTES ON DWG.S3.1. AT SELECT LOCATIONS SHOWN ON PLAN, REINFORCING IS PLACED IN BOTH FACES.

NOTE:
1. BUILDING MANUFACTURER TO SUBMIT COMPUTATIONS BASED ON DESIGN LOAD CRITERIA SET FORTH ON CONTRACT DRAWINGS AND CONFORMING WITH APPLICABLE BUILDING CODES. COMPUTATIONS AND DRAWING SUBMITTALS TO BE CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL ENGINEER.
2. FOUNDATION LOADS APPLIED BY SUPERSTRUCTURE SHALL BE SUBMITTED BY METAL BUILDING MANUFACTURER AND FOOTING SIZES VERIFIED BY ENGINEER OF RECORD BEFORE CONSTRUCTION HAS BEGUN.

Wedding, Stephenson & Ibargüen

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Professional Registration
AA 0002922

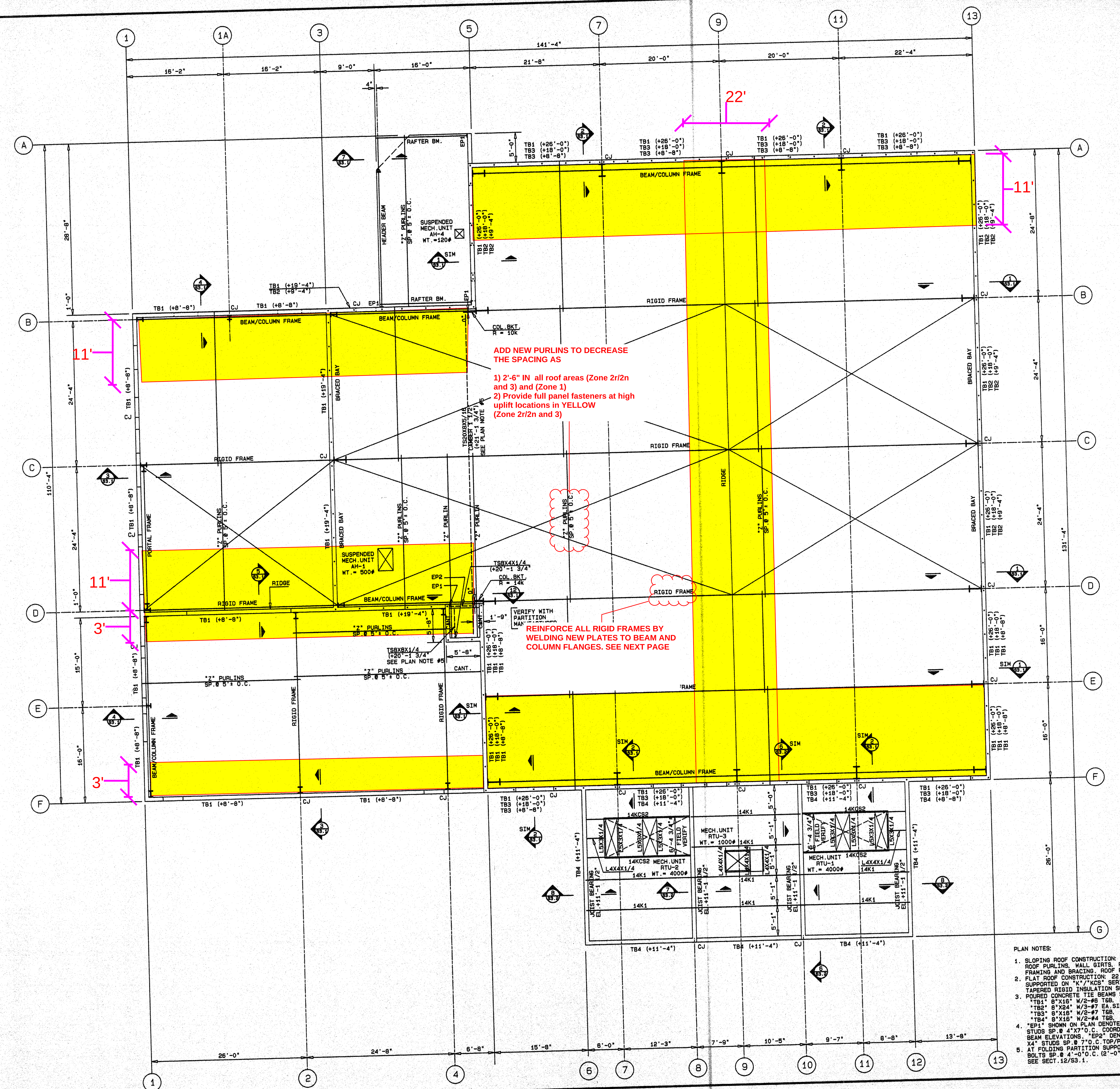
BUILDING ADDITION FOR
WELLINGTON SCHOOL
4450 51ST. AVE. N.
ST. PETERSBURG, FLORIDA

Issue Date	4/24/00
Revisions	
Project Number	W99122

NORTH

FOUNDATION PLAN
1/8"=1'-0"

SHEET NO.
S2.1



PLAN NOTES:

1. SLOPING ROOF CONSTRUCTION: PRE-ENGINEERED METAL BUILDING FRAME INCLUDING ROOF PURLINS, WALL GIRTS, ROOF PANELS, WALL PANELS, MISCELLANEOUS FRAMING AND BRACING. ROOF PITCH 4 ON 12.
2. FLAT ROOF CONSTRUCTION: 22 GAUGE, 1 1/2" FLUTED METAL DECK (GALV.) SUPPORTED ON "K"/"KCS" SERIES JOISTS SPACED AS SHOWN ON PLAN WITH TAPERED RIGID INSULATION SLOPED TO DRAINS AND MEMBRANE ROOFING.
3. POURED CONCRETE TIE BEAMS SHOWN ON PLAN TO BE REINFORCED AS FOLLOWS"
   "TB1" 8"X16" W/2-#6 T&B, #3 TIES @ 24"O.C.
   "TB2" 8"X24" W/3-#7 EA.SIDE FACE, #3 TIES @ 24"O.C. (SEE SECT.1/S3.1).
   "TB3" 8"X16" W/2-#7 T&B, #3 TIES @ 24"O.C.
   "TB4" 8"X16" W/2-#4 T&B, #3 TIES @ 24"O.C.
4. "EP1" SHOWN ON PLAN DENOTES EMBED PLATE 7"X10"X3/8" W/(4)-1/2"X4" STUDS SP.@ 4"X7"O.C. COORDINATE LOCATION OF PLATE WITH RESPECTIVE BEAM ELEVATIONS. "EP2" DENOTES EMBED PLATE 10"X10"X3/8" W/(4)-1/2" X4" STUDS SP.@ 7"O.C.TOP/PLATE "EP2" +20'-2 3/4".
5. AT FOLDING PARTITION SUPPORT BEAMS, PROVIDE (2)-1/2"DIA.x3" STUD BOLTS SP.@ 4'-0"O.C.(2'-0"O.C.@ STACKING POCKET). BOLT GAUGE = 3". SEE SECT.12/S3.1.

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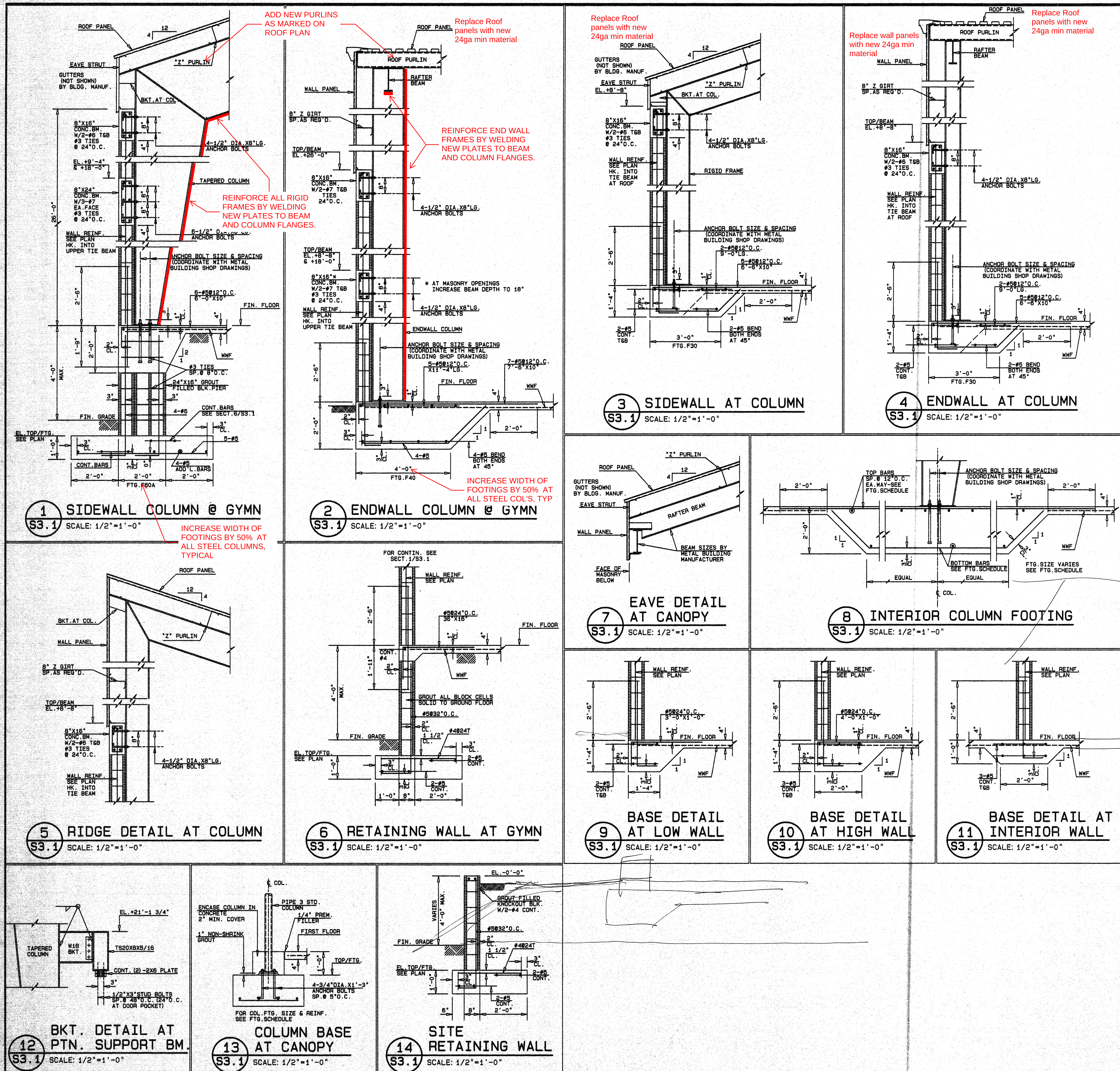
NORTH

ROOF FRAMING PLAN
1/8"=1'-0"

SHEET NO.
S2.2



GENERAL NOTES

SITE PREPARATION

1. STRIP AND GRUB ALL VEGETATION, DEBRIS, AND OTHER DELETERIOUS MATERIAL WITHIN THE STRUCTURE FOOTPRINT PLUS A MARGIN OF 5 FEET.
2. THE CLEARED SURFACE SHALL BE PROOF ROLLED USING APPROPRIATE COMPACTION EQUIPMENT FOR SITE AND SOIL CONDITIONS. SUFFICIENT PASSES SHALL BE MADE TO DEVELOP A MINIMUM DRY DENSITY OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557) TO A DEPTH OF 24 INCHES BELOW THE COMPACTED SURFACE.
3. AFTER COMPLETION OF PROOF ROLLING, APPROVED CLEAN FILL MATERIAL SHALL BE ADDED AS REQUIRED IN LEVEL LIFTS NOT EXCEEDING 12 INCHES IN UNCOMPACTED THICKNESS. EACH LIFT SHALL BE COMPACTED TO ACHIEVE AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557). FILLING AND COMPACTION SHALL CONTINUE UNTIL FINAL GRADE ELEVATIONS ARE ATTAINED.
4. EXCAVATE FOR COLUMN AND WALL FOOTINGS TO THE SPECIFIED ELEVATIONS AND VERIFY IN PLACE COMPACTION. COMPACT EXCAVATED SUBGRADE BEARING SURFACES AS REQUIRED TO ACHIEVE A MINIMUM DRY DENSITY OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557) TO A MINIMUM DEPTH OF 12 INCHES BELOW BOTTOM OF FOOTINGS.
5. ALL PREPARED AND COMPACTED AREAS SHALL BE OBSERVED AND TESTED BY A REPRESENTATIVE OF A CERTIFIED GEOTECHNICAL ENGINEER.

FOUNDATION NOTES

1. ALL FOOTINGS SHALL BEAR ON CONTROLLED COMPACTED SUBGRADE HAVING A MINIMUM BEARING CAPACITY OF 2500 POUNDS PER SQUARE FOOT.
2. MAXIMUM SLOPE BETWEEN BOTTOMS OF FOOTINGS SHALL BE ONE VERTICAL TO TWO HORIZONTAL.
3. CONSTRUCTION JOINTS IN WALLS OR GRADE BEAMS SHALL BE VERTICAL JOINTS LOCATED A MINIMUM DISTANCE OF 4'-0" FROM ANY WALL OPENING AND APPROXIMATELY MIDWAY BETWEEN COLUMNS OR SUPPORTS.
4. NO BACKFILLING AGAINST WALLS SHALL BE DONE UNTIL CONCRETE HAS ATTAINED FULL STRENGTH AND SUPPORTING FLOORS ARE IN PLACE OR WALLS HAVE BEEN ADEQUATELY BRACED.
5. SLABS ON GRADE SHALL BE PLACED ON CONTROLLED COMPACTED FILL DENSIFIED TO NOT LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D 1557.
6. PROVIDE CONTRACTION CONTROL JOINTS IN SLABS ON GRADE AT DESIGNATED LOCATIONS SHOWN ON PLAN.
7. FOR LOCATION OF FINISH DEPRESSIONS IN SLABS ON GRADE, IF APPLICABLE, REFER TO ARCHITECTURAL DRAWINGS.

CONCRETE NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO THE ACI BUILDING CODE (318-95).
2. ALL CONCRETE SHALL BE 3000 PSI CONTROLLED NORMAL WEIGHT CONCRETE.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
5. CONCRETE COVERING FOR REINFORCING STEEL SHALL BE A MINIMUM OF 3/4" FOR SLABS, 1 1/2" FOR BEAMS AND COLUMNS, 1 1/2" FOR FORMED SURFACES EXPOSED TO EARTH OR WEATHER, 3" FOR FOOTINGS AND BEAMS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
6. ALL REINFORCING BARS MARKED CONTINUOUS SHALL BE LAPPED 43 BAR DIAMETERS. LAP TOP BARS AT MIDSPAN AND BOTTOM BARS AT SUPPORTS UNLESS OTHERWISE NOTED. HOOK ALL TOP BARS AT DISCONTINUOUS ENDS.

MASONRY NOTES

1. ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 530-95/ ASCE 5-95/TMS 402-95 AND ACI 530.1-95/ASCE 6-95/TMS 602-95.
2. ALL CONCRETE MASONRY SHALL BE NORMAL WEIGHT UNITS CONFORMING TO ASTM C90. TYPE N-II WITH A MINIMUM MASONRY COMPRESSIVE STRENGTH, f'm = 1500 PSI AT 28 DAYS.
3. MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI AND SHALL CONFORM TO ASTM C270, TYPE S.
4. COARSE GROUT SHALL HAVE A 3/8" MAXIMUM SIZE AGGREGATE AND A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. SLUMP MEASURED IN ACCORDANCE WITH ASTM C143 SHALL RANGE BETWEEN 8" AND 11".
5. PROVIDE VERTICAL REINFORCING AS SHOWN ON DRAWINGS. DOWEL ALL VERTICAL BARS INTO FOOTINGS, LAP BARS 48 DIAMETERS AT SPLICE LOCATIONS, AND HOOK BARS INTO TIE BEAM.
6. FILL BLOCK WALLS SOLID WITH COARSE GROUT AT ALL REINFORCED CELLS AND AT DESIGNATED LOCATIONS SHOWN ON DRAWINGS. MORTAR ALL CROSS WEBS OF CELLS RECEIVING GROUT AND MAINTAIN 3" MINIMUM CLEAR CELL OPENINGS AND MINIMUM CLEAR AREA OF 10 SQ.IN.
7. FOR HIGH LIFT GROUTING, PROVIDE CLEANOUT OPENINGS AT BOTTOM OF ALL GROUT FILLED CELLS (ALTERNATE CELLS AT SOLID GROUTED WALLS).
8. HORIZONTAL JOINT REINFORCING SHALL BE STANDARD WEIGHT, LADDER TYPE REINFORCING CONSISTING OF #9 GAGE LONGITUDINAL AND TRANSVERSE RODS SPACED AT VERTICAL INTERVALS NOT EXCEEDING 16"O.C. CROSS RODS TO BE SPACED 16"O.C. LAP LONGITUDINAL RODS AT LEAST 8" AT SPLICE LOCATIONS.
9. PROVIDE PRECAST CONCRETE LINTEL BEAMS OVER ALL EXTERIOR AND INTERIOR MASONRY WALL OPENINGS UNLESS OTHERWISE NOTED. TOTAL LOAD DEFLECTION NOT TO EXCEED L/600 OR 0.3"
10. PROVIDE TEMPORARY BRACING OF MASONRY WALLS AS REQUIRED DURING CONSTRUCTION.

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED. STEEL PIPE COLUMNS SHALL CONFORM TO ASTM A53, TYPE S, GRADE B.
2. DETAILING, FABRICATION, AND ERECTION OF STEEL SHALL CONFORM TO THE MANUAL OF STEEL CONSTRUCTION (9TH ED.) (ALLOWABLE STRESS DESIGN).
3. ALL SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
4. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY, AWS D1.1 STRUCTURAL WELDING CODE-STEEL.
5. FIELD CONNECTIONS SHALL BE MADE WITH ASTM A325N HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED ON DRAWINGS.
6. BEAM CONNECTIONS SHALL BE ADEQUATE TO SUPPORT ONE HALF THE TOTAL UNIFORM LOAD CAPACITY FOR THE GIVEN SIZE AND SPAN OF BEAM. ALL BOLTS SHALL BE A MINIMUM OF 3/4" DIAMETER.
7. ALL STEEL SHALL RECEIVE A SHOP COAT OF PAINT EXCEPT CONTACT SURFACES OF SLIP CRITICAL HIGH STRENGTH BOLTS AND SURFACES TO BE WELDED.

LIVE LOADS

ROOF 16 PSF (12 PSF SUPPORTING > 600 SQ.FT.)

WIND LOADS (WIND VELOCITY = 102 MPH)

HEIGHT (FT)	BASIC WIND PRESSURE *
0-36	27.3 PSF

* APPLY PRESSURE COEFFICIENT "Cp" PER STANDARD BUILDING CODE.

FOOTING SCHEDULE

MARK	SIZE	DEPTH	BOTTOM BARS LONG	BOTTOM BARS SHORT	TOP BARS LONG	TOP BARS SHORT	REMARKS
F30A	3'-0" X 3'-0"	1'-4"	4-#5	4-#5			
F30	3'-0" X 3'-0"	1'-4"	4-#5	4-#5	4-#5	5-#5	
F40A	4'-0" X 4'-0"	1'-0"	4-#5	4-#5			
F40	4'-0" X 4'-0"	2'-0"	4-#5	4-#5	7-#5*	7-#5	* 5-#5 @ EXT.FTGS.
F50	5'-0" X 5'-0"	1'-0"	5-#5	5-#5			
F60A	6'-0" X 6'-0"	1'-0"	6-#5	5-#5			
F60	6'-0" X 6'-0"	2'-0"	6-#5	6-#5	9-#5	9-#5	
F65	6'-6" X 6'-6"	1'-0"	8-#5	8-#5			
F80	8'-0" X 8'-0"	2'-0"	8-#5	8-#5	11-#5	11-#5	
RF1	3'-0" X 5'-0"	1'-4"	4-#5	5-#5	4-#5	7-#5	
RF2	3'-0" X 4'-7"	1'-4"	4-#5	5-#5	4-#5	7-#5	

NOTE: AT RECESSED SLABS, MEASURE COLUMN FOOTING THICKNESS BELOW LOW POINT OF SLAB.

Wedding, Stephenson & Ibargüen

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BUILDING ADDITION FOR
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Issue Date 4/24/00
Revisions
Project Number W99122

SECTIONS, DETAILS & GENERAL NOTES

SHEET NO.
S3.1

EXHIBIT H

COST ESTIMATE BY CCNA

C C & A

CONSTRUCTION CONSULTANTS & ASSOCIATES, INC.

PROJECT : **Lealman Gym Hardening**
LOCATION : **Pinellas County, Fl.**
FILE NAME : **Lealman Gym Hardening**

DATE : 7/15/2026
PROJ # : 2026.117

DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL	REMARKS
Conceptual Design Construction Budget					
Required Hardening Improvements					
1. Replace exterior glazing w/ Impact Resistance Al/Gl Glazing					
Al/Gl Storefront/Windows	528	sf	205.0	108,240	
Al/Gl Storefront Doors - Dbl	1	pr	9,750.0	9,750	
2. Replace all exterior doors w/ Impact Resistance HM drs/frs/hdw					
HM Drs/Frs/Hdw dbl	4	pr	9,850.0	39,400	
HM Drs/Frs/Hdw sin	4	ea	4,750.0	19,000	
3. Strengthen roof purlin system					
Add roof purlins 2-6ft oc	5,807	lf	35.0	203,241	
4. Replace all metal roof decking					
FBC metal roof decks w/insulation	17,808	sf	25.0	445,194	
5. Modify & Tighten all existing x-bra					
Modify x-bracing	1	ls	100,000.0	100,000	
Tighten x-bracing nuts & bolts	1	ls	13,500.0	13,500	
6. Strengthen steel frames					
Weld plates to frame flanges	1,320	lf	175.0	231,000	
7. Enlarge existing frame footings by 50%					
Cut & Patch existing conc. SOG	930	sf	25.0	23,250	
Enlarge frame footings by 50%	50	cy	1,500.0	74,271	
Repair/Patch finish flooring	1,163	sf	20.0	23,250	
8 Add vertical steel reinforcing & concrete in cmu walls					
Vertical filled cells w/rebar	60	lf	200.0	12,000	
9. Replace damaged ext metal flashing					
Replace metal wall panel flashing	1	ls	20,000.0	20,000	
10. Inspect Gable end wall framing					
Inspect gable end wall framing	1	ls	13,500.0	13,500	
Add gable end bracing	1	ls	100,000.0	100,000	
11. Repair minor cmu wall cracking					
Cut out and seal wall cracks	408	sf	25.0	10,200	
12. Interior Finishes Repairs					
Int Gym repairs	8,798	sf	20.0	175,960	
Int Locker rm repairs	1,367	sf	45.0	61,504	
Int Lib/Offices/Stage/Lab/Lobby	6,758	sf	30.0	202,740	

C C & A
CONSTRUCTION CONSULTANTS & ASSOCIATES, INC.

PROJECT : **Lealman Gym Hardening**
LOCATION : **Pinellas County, Fl.**
FILE NAME : **Lealman Gym Hardening**

DATE : 7/15/2026
PROJ # : 2026.117

DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL	REMARKS
Conceptual Design Construction					
Required Hardening Improvements					
13. Interior Lighting Repairs					
Int Gym repairs	8,798	sf	7.5	65,985	
Int Locker rm repairs	1,367	sf	10.0	13,668	
Int Lib/Offices/Stage/Lab/Lobby	6,758	sf	10.0	67,580	
14. Emergency Generator					
200kW Diesel, 600gal subase tank	1		221,000.0	221,000	
ATS, panel modifications - w/above					
15. Optional Upgrades					
Generator related Electical modifica	1	ls	301,298.7	301,299	
Domestic Water backup sys	1	ls	272,727.3	272,727	
Sanitary Drainage backup sys	1	ls	71,428.6	71,429	
Subtotal				2,899,686	
General Conditions & Mark-ups				1,565,830	
Construction Probable Cost				$4,465,516	

Budget Clarifications

The above budgets include estimated 10% Escalation for construction starting mid 2028.
The above budgets do not include any deisgn fees and or owner soft costs.

Conceptual Design Construction					
New Construction					
Gymnasium	8,000	sf	500.0	4,000,000	
Lockers/Resrooms/Offices	4,000	sf	550.0	2,200,000	
Associated Sitework	1	ls		500,000	
Subtotal				6,700,000	
General Conditions & Mark-ups				3,618,000	
Construction Probable Cost				$10,318,000	

Budget Clarifications

The above budgets include estimated 10% Escalation for construction starting mid 2028.
The above budgets do not include any deisgn fees and or owner soft costs.
The above New Construction budget is based on a new site, and excludes demo of existing

EXHIBIT I

MECHANICAL, ELECTRICAL AND PLUMBING HARDENING ASSESSMENT REPORT BY ENGINEERING MATRIX

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

Pinellas County Government has interests in utilizing the Lealman Gymnasium building as a shelter site. The focus of this evaluation is to identify the building's Mechanical, Electrical, Plumbing, and Fire Protection (MEPF) systems ability to support the proposed shelter functions. The State of Florida Least-Risk Decision Making: Hurricane Evacuation Shelter Prescriptive Summary Guidance (LDRM) table is used as the base criteria for evaluation. Additionally, the Florida Building Code requirements for an Enhanced Hurricane Protection Area (EHPA) were also used as a guideline to supplement the LRDM tables. A separate evaluation report is provided by others to address the remaining structural items listed in the LRDM table.

A summary of recommended MEPF upgrades and associated budgetary estimate is noted below. This information is intended to assist the Owner in establishing overall budgetary figures to utilize the Community Center as a step-down shelter site.

Recommended MINIMUM Upgrades:

The following recommendations consider the **MINIMUM** systems necessary to support a shelter operation. These minimum hardening recommendations should be further evaluated with the County and authority having jurisdiction to ensure it meets the required needs.

1. Provide a whole-house 200 KW generator to support the shelter function for 24 hours:
   a. 600 Amp, service entrance rated Automatic Transfer Switch.
   b. 600 gallon diesel fuel tank.
   c. Associated conduit and wiring to tie in the new generator system, upstream of the building's main distribution panel.

2. Domestic water system back-up options

   a. Utilize bottled water.

3. Sanitary drainage system back-up options

   a. Rely upon the building's underground sanitary piping to provide temporary waste storage capacity in the event of a lift station outage. This offers limited capacity as compared to an underground storage tank. However, it is a no-cost solution.

<u>OPTIONAL Upgrades:</u>

The following systems are considered **OPTIONAL** to support a step-down shelter operation. These optional hardening suggestions should be further evaluated with the County and authority having jurisdiction to determine if they are required.

4. Provide a whole-house 200 kW generator to support the shelter function for 72 hours:

   a. 600 Amp, service entrance rated Automatic Transfer Switch.

   b. 1,800 gallon diesel fuel tank.

   c. Associated conduit and wiring to tie in the new generator system, upstream of the building's main distribution panel.

5. Domestic water system back-up options:

   a. Install a Chlorinated well system.

6. Sanitary drainage system back-up options:

   a. Install a 2,500 gallon underground storage vault to capture the building's sanitary waste in the event that the City wastewater system fails.

II. BACKGROUND

Pinellas County Government has interest in utilizing the Lealman Gym as a shelter. It is our understanding the County utilizes buildings similar to this as shelter sites for major storm events.

Primary shelter sites are intended to house large groups of people during a storm event. These primary sites would typically include features outlined in the Florida Building Code for Enhanced Hurricane Protection Areas (EHPAs).

Lealman Gym is being considered for a shelter facility. The County has requested Mason Blau and Associates, Inc. (MBA), Pennoni Associates, Inc. (Pennoni), and Engineering Matrix, Inc (Matrix) conduct an engineering assessment of the building to develop hardening recommendations. To evaluate the building's shelter potential, the County provided the State of Florida Least-Risk Decision Making: Hurricane Evacuation Shelter Prescriptive Summary Guidance table as the base criteria. Additionally, the Florida Building Code requirements for an Enhanced Hurricane Protection Area (EHPA) were also used as a guideline to supplement the LRDM tables.

The focus of this evaluation report will be limited to the building's mechanical, electrical, plumbing, and fire protection systems. And more specifically, life safety and emergency power systems as they relate to the Least-Risk Decision Making table (LRDM). A separate evaluation report is provided by others to address the remaining structural items listed in the LRDM table.

This report is based on a review of record drawings in addition to on-site observations that were completed during the month of September 2023.

III. EXISTING M/E/P/F SYSTEM DESCRIPTION

A. MECHANICAL

1. GYMNASIUM

The Gymnasium's play-court side of the building is serviced by three, packaged, DX, rooftop units (i.e., 1, 25-ton, 1, 30 ton, and 1, 5-ton unit). The rooftop units are nearing the end of their useful life. The office and meeting room side of the building is serviced by four, split system, DX air conditioning units. These units range in size from 3.5-tons to 15-tons. The condensing units are located on-grade adjacent to the building and the air handler units are in mechanical equipment rooms or above ceiling. The split system DX units are nearing the end of their useful life.

GYM ROOFTOP UNITS

Most of the supply and return ductwork installed is constructed of galvanized steel and is wrapped with a blanket style fiberglass insulation. Flexible ductwork is mostly limited to branch runouts to supply air diffusers. The airside distribution systems utilize fully ducted supply and return air systems. Some of the split DX systems utilize fiberboard supply and return ductwork. The Gym play-court area is serviced by uninsulated, single wall, spiral ductwork.

Exhaust and relief air is discharged from the building via ceiling or wall-mounted exhaust fans. The in-ceiling exhaust fans primarily discharge to the roof.

The ventilation air is delivered throughout the building from the associated zone's air handler unit. Outside air is typically ducted from a roof mounted outside air intake vent directly to the fan coil inlet where it mixes with return air. The rooftop AC units serving the Gym play-court areas have their outside air introduced directly into the unit.

Heating is provided by electric resistance heating coils located within each fan coil unit and rooftop AC unit.

Stand-alone programmable thermostats provide the means of temperature control for the split system DX units and the rooftop AC units.

B. ELECTRICAL

1. GYMNASIUM

A 120/208-volt, 3-phase, utility service feeds a 600 Amp rated main distribution panel located in a small electrical room off of the coach's office on the south side of the building. The service enters the building via underground service entrance conductors and terminates on an 800 Amp, I-line panelboard.

Downstream, branch circuit panelboards are located throughout the building. Typical loads consist of lighting, general-purpose receptacles, mechanical/plumbing equipment, etc. Panelboards are in fair condition.

The main distribution panel has a surge arrestor device installed. Downstream branch circuit panelboards did not appear to have any Surge Protection Devices (SPD) installed.

Service entrance conductors and feeders were run in conduit both above grade and below grade. Above ground conduit appeared to be metallic type.

According to record drawings, it is presumed the power distribution system consists of all copper conductors.

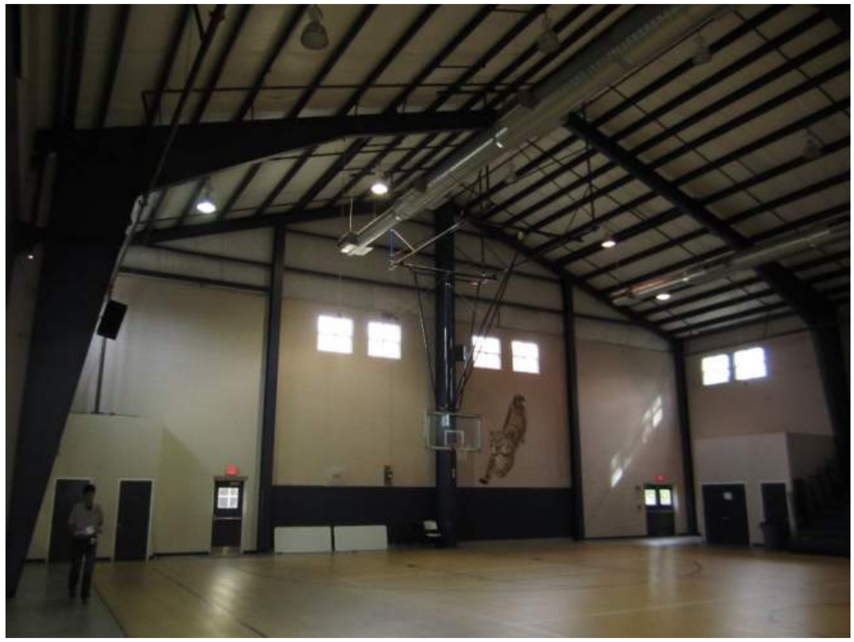
GYM POWER

Life safety devices are provided with battery back-up in the event normal utility power is lost.

General, interior lighting typically consists of recessed, fluorescent troffers and downlights. Emergency wall packs were provided for emergency egress lighting.

Lighting for the gym court consists of high bay, metal halide fixtures. Some of the fixtures are provided with quartz re-strike.

The building surrounds were illuminated by wall-mounted fixtures. These fixtures appeared to be fluorescent and/or incandescent type.



GYM LIGHTS

General interior lighting control, typically, consists of manual toggle switches within each enclosed space. There did not appear to be any automatic lighting control (i.e., occupancy sensors).

Decorative wall-mounted fixtures, outside classroom spaces, were controlled via local, manual toggle switches. An electronic time clock and photocell was provided for the remainder of exterior lighting control.

C. LOW VOLTAGE SYSTEMS

1. DATA-VOICE-VIDEO

All low voltage system's headed equipment, including voice/data/video, appears to be located in the building's main electrical room.

Horizontal cabling was observed to be Category 5 and extends from remote communication outlets back to the 1-story classroom building. Cabling remains unterminated at an existing, 2-post rack within the room.

2. FIRE ALARM

The existing fire alarm control panel (Notifier Model VEC-25/50) appears to be an addressable, voice evacuation system. The field devices consist of manual pull stations, speaker/strobes, spot-type smoke detectors, and heat detectors.

GYM FIRE ALARM

3. SECURITY

There were surveillance devices noted on the building exterior. They are cabled back to the 1-story classroom building's main electrical room.

D. PLUMBING

1. STORM PIPING

The sloped metal roofing system and the flat, built up, roofing system are equipped with a perimeter gutter and downspout system to provide the necessary roof drainage.

2. CONDENSATE DRAINAGE

Insulated PVC condensate drain piping has been provided for each split system DX unit. The discharge location was not able to be determined during this evaluation. The rooftop AC units serving the Gymnasium play-court area have condensate directed to the roof gutter system with un-insulated PVC drain piping installed on the roof.

3. SANITARY DRAINAGE

It appears that PVC sanitary drainage piping has been used for the underground piping system for this building.

4. DOMESTIC WATER

Copper potable water piping has been used for the above ground piping system for this building. The Gymnasium building has a 1-1/2” water main that enters the building on the west side of the building.

5. DOMESTIC HOT WATER

The Gymnasium building has two 50-gallon, electric storage style water heaters that provide hot water to the entire building.

GYM WATER HEATER

E. FIRE PROTECTION

The Gymnasium is provided with a wet pipe sprinkler system riser that provides complete protection for the entire building. The single fire sprinkler riser is in a room on the north end of the building.

GYM SPRINKLER RISER

IV. IDENTIFIED DEFICIENCIES

The building relies upon public utility services for electric, water and sanitary systems. Any service outages would affect building systems that may be necessary/desired while operating as a shelter. Some noted deficiencies include the following.

1. As the building does not have an emergency, standby generator, the State of Florida Least-Risk Decision Making table considers this facility Less Preferred/Marginal. Refer to the Recommendations section for hardening options.
2. The following systems rely upon utility power for operation. During a major storm event, electric utility outages may occur affecting system operation.
   a. Life Safety Systems (emergency lights, exit lights, fire alarm system).
   b. Normal lighting systems.
   c. General-purpose receptacles.
   d. Building network systems.
   e. Building ventilation systems.
3. Life safety systems rely upon battery back-up units which have limited runtimes and would not accommodate a shelter's needs. For example, emergency and exit lights typically have 90-minute runtimes to satisfy Code.
4. Domestic water and sanitary systems rely upon public utilities. During a major storm event, these utilities may incur outages. Restroom fixtures and drinking fountains may not be available for public use.

V. RECOMMENDATIONS

The following recommendations consider the systems necessary to support a shelter operation. These hardening recommendations should be further evaluated with the County and authority having jurisdiction to ensure it meets the required needs.

The Florida Building code requirement for providing shelter services is 24 hours. The below listed scope descriptions are based upon meeting this 24-hour minimum run time requirement.

1. Provide an emergency, standby generator to support the following electrical loads for a 24-hour period:
    a. Life safety systems (emergency lights, exit lights, fire alarm system).
    b. Interior lighting fixtures.
    c. General purpose receptacles.
    d. Air handler fans for general ventilation.
    e. Restroom exhaust fans.
    f. Air conditioning systems to keep the facility fully heated/cooled using its currently installed AC systems.
2. Selectively capturing and re-feeding existing loads is tedious and costly when those loads are fed from multiple panelboards. With existing buildings, it is often as effective to back-up the entire building on generator versus select loads.
3. To support the shelter function, Matrix recommends a whole-house generator as follows:
    a. 200 kW, diesel fired generator, including:
        (1) Impact-rated, weather-proof, sound attenuating enclosure rated for the shelter's wind speed criteria.
        (2) 600-gallon sub-base fuel tank, sized for 24-hour runtime at full load.
        (3) Generator remote annunciator panel.

b. 600 Amp service entrance rated Automatic Transfer Switch.

c. Associated conduit and wiring to tie in the new generator system, upstream of the building's main distribution panel.

4. The budget cost estimate assumes the generator would be located within 150 feet of the existing utility transformer on the South side of the building. If the generator is located further North near the main parking lot to accommodate refueling operations, the budget should be adjusted to capture increased costs associated with the longer conductor lengths.

5. Domestic water system back-up options.

a. Utilize bottled water. The potable water system in Pinellas County has proven to be extremely reliable, even during hurricane events. The use of bottled water for backup water source is the most practical and economical method.

6. Sanitary drainage system back-up options.

a. Rely upon the building's underground sanitary piping to provide temporary waste storage capacity in the event of a lift station outage. This offers limited capacity as compared to an underground storage tank. However, it is a no-cost solution.

The following systems are considered **OPTIONAL** to support an enhanced level of shelter operation. These optional hardening suggestions should be further evaluated with the County and authority having jurisdiction to determine if they are required.

1. Provide an emergency, standby generator to support the following electrical loads for a 72-hour period:

a. Life safety systems (emergency lights, exit lights, fire alarm system)

b. Select interior lighting fixtures.

c. Select general purpose receptacles.

d. Air handler fans for general ventilation

e. Restroom exhaust fans

f. Air conditioning systems to keep the facility fully heated/cooled using its currently installed AC systems.

The generator scope of work would be the same as that outline in paragraph 3 a above but would require the fuel storage tank to be increased in size from 600 gallons to 1,800 gallons.

Domestic water system back-up options

a. In lieu of bottled water service, install an on-site, potable water well system to back-up the public utility.

b. System to include the following:

(1) On-site potable water well with submersible pump.

(2) Pressure tank.

(3) Chlorinator.

(4) Filtration / Treatment System.

(5) Distribution piping.

(6) Power and controls.

2. Sanitary drainage system back-up options

a. Provide an underground storage vault capable of being used to store sanitary waste from the building in the event that the city wastewater drainage system becomes overloaded. The recommended storage capacity is 5 gallons of waste per person over a 24-hour period. Therefore, using a shelter occupancy of 500 people over a 24-hour period, the sanitary storage vault would be required to be sized at 2,500 gallons.