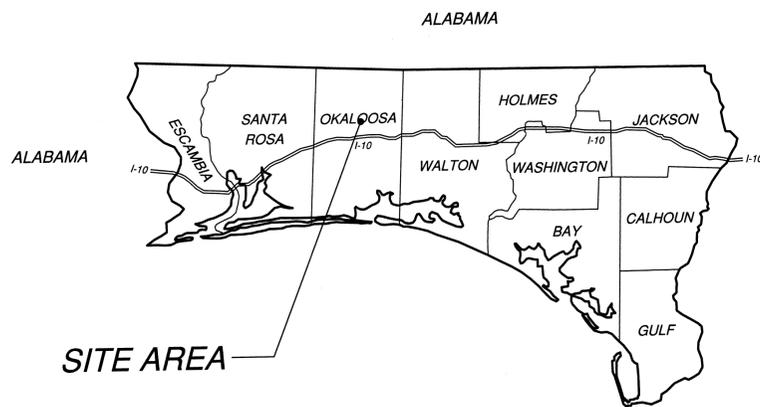


CONSTRUCTION PLANS FOR:

CITY OF CRESTVIEW FIRE TRAINING TOWER CRESTVIEW, FLORIDA

SECTION 18, TOWNSHIP 3 NORTH, RANGE 23 WEST

AREA MAP:



NORTHWEST FLORIDA

PREPARED BY:

Seaside Engineering And Surveying, LLC
6575 Highway 189 N
Baker, FL 32531
Phone: (850) 650-9563

PREPARED FOR:

City of Crestview
715 N. Ferdon Blvd.
Crestview, Florida 32536
Phone: (850) 682-6132

INDEX OF SHEETS:

- C1 SITE PLAN
- C2 GRADING & DRAINAGE PLAN
- C3 DETAILS
- C4 SPECIFICATIONS
- C5 SPECIFICATIONS
- C6 SPECIFICATIONS

CONTACT:

Timothy D. Bowden, P.E., P.S.M.
Tim.Bowden@seasllc.net

CONTACT:

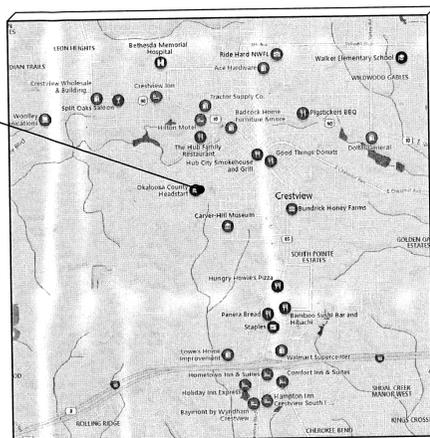
Marc Bonifay, P.E.
marcbonifay@cityofcrestview.org

DATE PREPARED:

March 10, 2022
REVISED: April 28, 2022
REVISED: June 17, 2022

LOCATION MAP:

SITE LOCATION



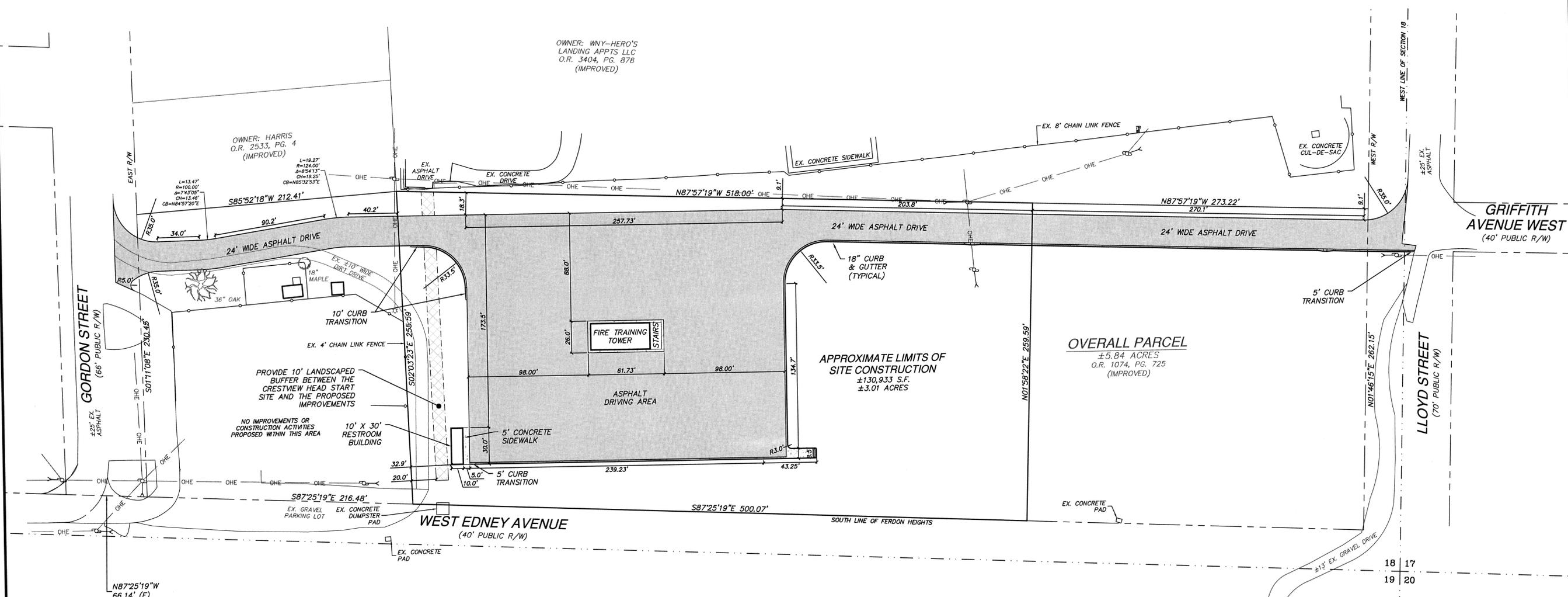
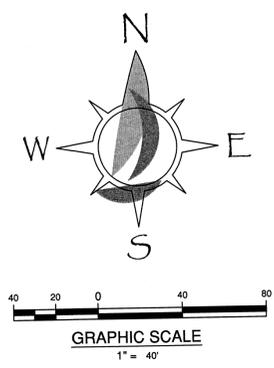
SEAS

Seaside Engineering And Surveying, LLC
6575 Highway 189 N
Baker, FL 32531
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Fax: (850) 398-6812
Certificate of Authorization No. EB-0009313

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Licensed Engineer:
6/22/22
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THE ORIGINAL RAISED
SEAL OF FLORIDA
SEAL OF FLORIDA
LICENSED ENGINEER
Timothy D. Bowden, P.E., P.S.M. No. 08275
Michael Cole, Engineer, P.E., No. 28887

FOR CONSTRUCTION
CITY OF CRESTVIEW
FIRE TRAINING TOWER
SEAS
PROJECT NO.
22-803



OWNER: WNY-HERO'S
LANDING APPTS LLC
O.R. 3404, PG. 878
(IMPROVED)

OWNER: HARRIS
O.R. 2533, PG. 4
(IMPROVED)

APPROXIMATE LIMITS OF
SITE CONSTRUCTION
±130,933 S.F.
±3.01 ACRES

OVERALL PARCEL
±5.84 ACRES
O.R. 1074, PG. 725
(IMPROVED)

SITE DATA SUMMARY

ZONING DISTRICT	COMMERCIAL LOW-INTENSITY (C-1)
FUTURE LAND USE CATEGORY	COMMERCIAL (C)
LIMITS OF CONSTRUCTION	130,933 S.F. (3.01 Ac.)
IMPERVIOUS SURFACE	60,393 S.F. (1.39 Ac.)
LANDSCAPE/OPEN AREA	70,540 S.F. (1.62 Ac.)
IMPERVIOUS SURFACE RATIO	0.47
GROSS FLOOR AREA	1,570 S.F.
FLOOR AREA RATIO	0.35
MAX. ALLOWABLE BLDG. HEIGHT	5.0'
BUILDING SETBACK REQUIREMENT	
FRONT	20'
REAR	10'
SIDE	10'

NOTES

- BEARINGS AND COORDINATES SHOWN HEREON ARE REFERENCED TO THE STATE PLAN COORDINATE SYSTEM (SPCS), FLORIDA NORTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
- UNDERGROUND ENCROACHMENTS, IF ANY, NOT LOCATED.
- ACCORDING TO THE NATIONAL FLOOD INSURANCE RATE MAP No. 12091C0165J (COMM. PANEL No. 12059Z 0165 J) DATED MARCH 9, 2021 THE PROPERTY IS IN ZONE X.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL DIMENSIONS AND DETAILS FOR PROPOSED BUILDINGS.
- BUILDING DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF BUILDING.
- PAVEMENT DIMENSIONS ARE MEASURED TO THE EDGE OF PAVEMENT.
- THERE MAY BE ADDITIONAL RESTRICTIONS NOT SHOWN ON THIS DRAWING THAT MAY BE FOUND IN THE PUBLIC RECORDS OF OKALOOSA COUNTY.

LEGEND

	ASPHALTIC CONCRETE PAVEMENT
	CONCRETE
	SITE LIMITS

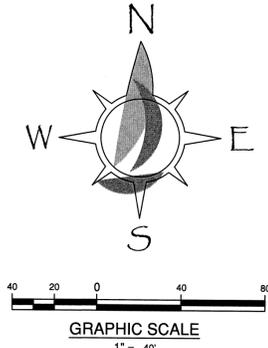
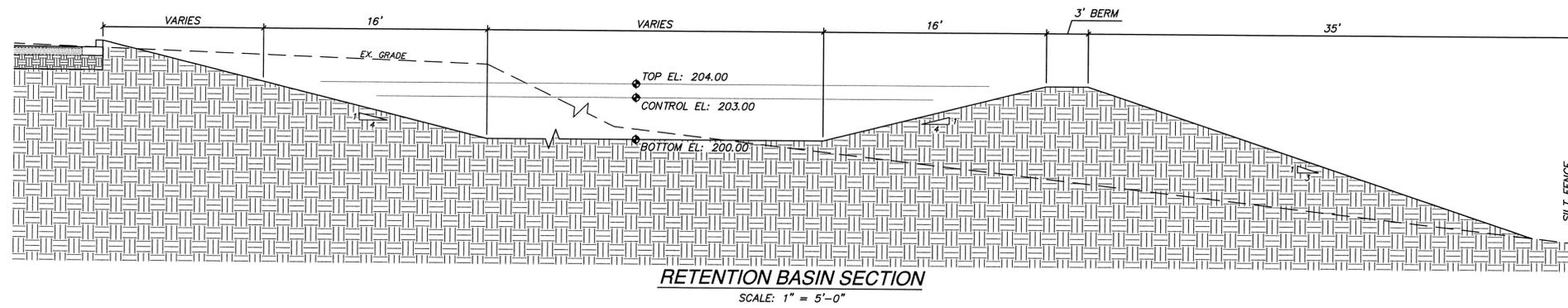


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FOR CONSTRUCTION

SEAS CITY OF CRESTVIEW FIRE TRAINING TOWER SITE PLAN	DRAWN: T.D.B. CHECKED: T.D.B. DATE: MARCH 10, 2022 PROJECT NO: 22-803 SCALE: 1"=40' F.B. NO.: N/A	LICENSED ENGINEER: T.D.B. NOT VALID FOR USE AND THE ORIGINAL RAISED SEAL OF FLORIDA LICENSED ENGINEER Timothy D. Bowers, P.E., No. 88278 Mutual Code Computer, P.E., No. 88807
	REVISIONS: 1. 4/28/22 T.D.B. 2. 6/17/2022 T.D.B.	DATE: 4/28/22 BY: T.D.B. DATE: 6/17/2022 BY: T.D.B.

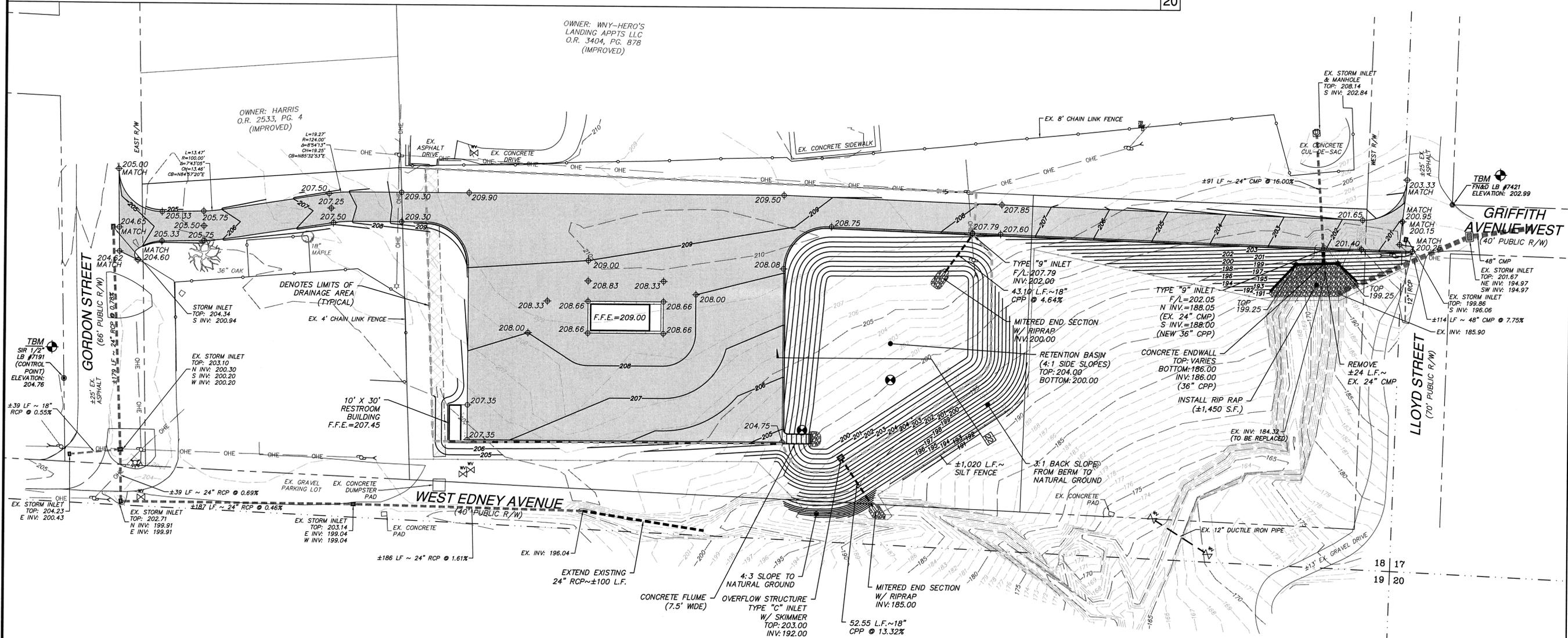
NOTE:
ALL BERMS AND SIDE SLOPES 3:1 OR STEEPER
SHALL BE SODED. RETENTION BASIN BOTTOM
MAY BE SEEDED OR SODED.



20

OWNER: WNY-HERO'S
LANDING APPTS LLC
O.R. 3404, PG. 878
(IMPROVED)

OWNER: HARRIS
O.R. 2533, PG. 4
(IMPROVED)



DATE:	4/29/22
BY:	T.D.B.
REVISIONS:	REVISIONS PER COMMENTS
	SHIFTED SITE PER COMMENTS
	6/17/2022
	T.D.B.
	T.D.B.

SEAS
Seaside Engineering And Surveying, LLC
6575 Highway 189 N
Baker, FL 32531
Ph: (850) 650-9663
Fax: (850) 398-6812

CITY OF CRESTVIEW
FIRE TRAINING TOWER
GRADING & DRAINAGE PLAN

LEGEND	
	EXISTING GRADE CONTOUR (AT 5' INTERVAL)
	EXISTING GRADE CONTOUR (AT 1' INTERVAL)
	FINISHED GRADE CONTOUR
	FINISHED GRADE SPOT ELEVATION
	SILT FENCE LOCATION
	SOIL BORING LOCATION
	SECTION LOCATION WITH SECTION NUMBER

- NOTES**
- TOPOGRAPHIC SURVEY BY SEASIDE ENGINEERING AND SURVEYING, LLC. PERFORMED JULY 2021. ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAD88.
 - BENCHMARKS: AS SHOWN
 - CONTOUR INTERVAL = ONE FOOT
 - PROPOSED CONTOURS AND SPOT ELEVATIONS REPRESENT FINISHED GRADE.
 - SPOT ELEVATIONS ALONG CURB REPRESENT FINISHED GRADE AT EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 - STORMWATER RUNOFF, SEDIMENT, AND EROSION SHALL BE CONTROLLED DURING ALL PHASES OF CONSTRUCTION.
 - MATCH EXISTING EDGE OF PAVEMENT GRADE WHEREVER NEW PAVEMENT EDGE MEETS THE EXISTING EDGE.
 - CONTRACTOR SHALL PROVIDE SOLID SODDING WITHIN THE RETENTION BASINS AND ALL OTHER CLEARED AND GRUBBED AREAS WITH SIDE SLOPES OF 3:1 OR STEEPER.

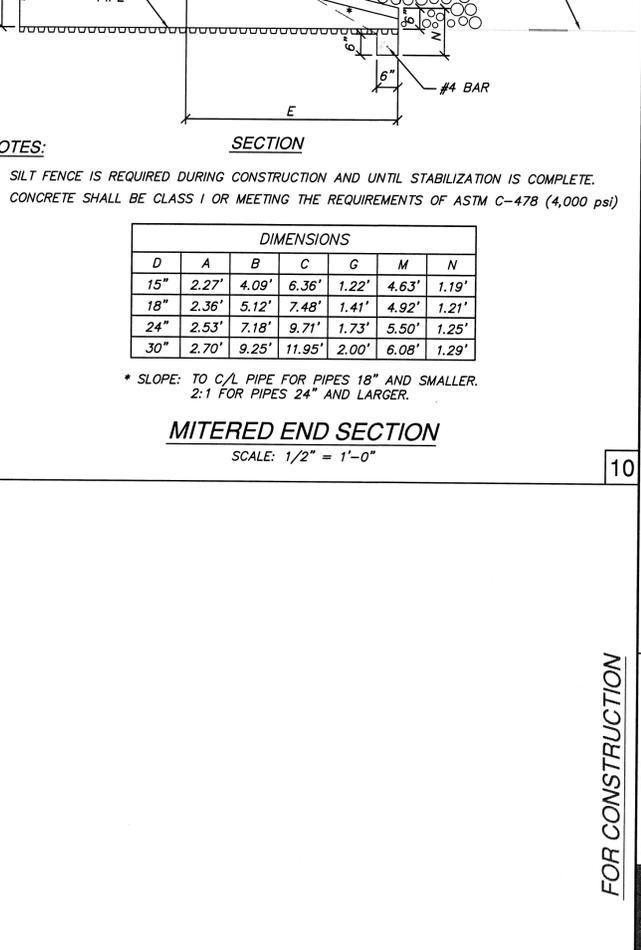
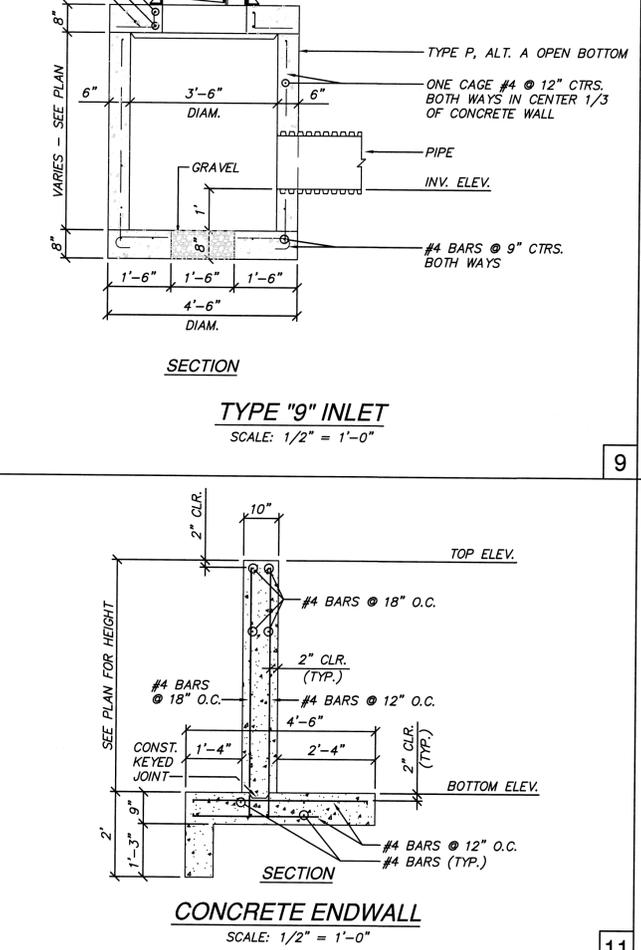
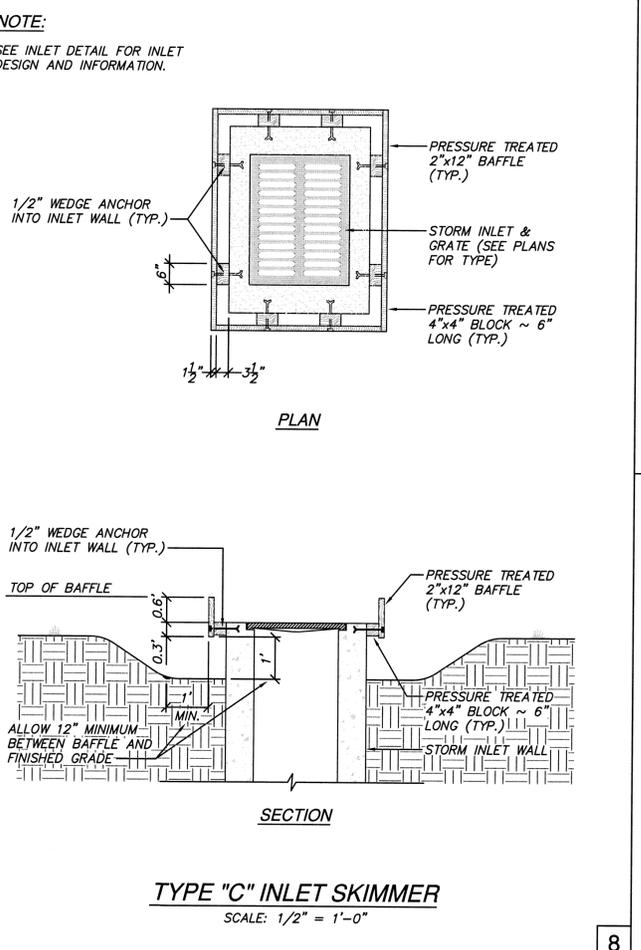
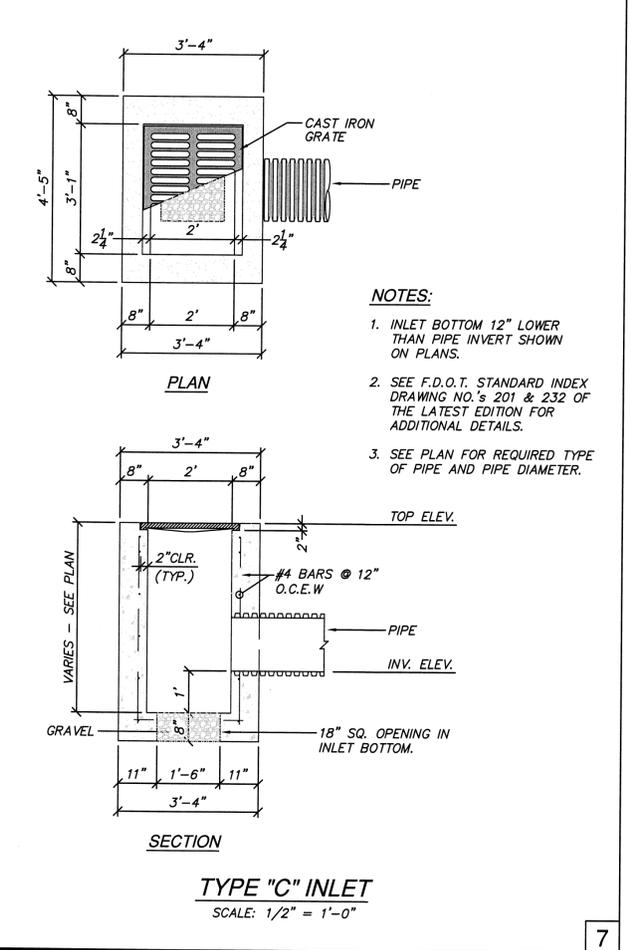
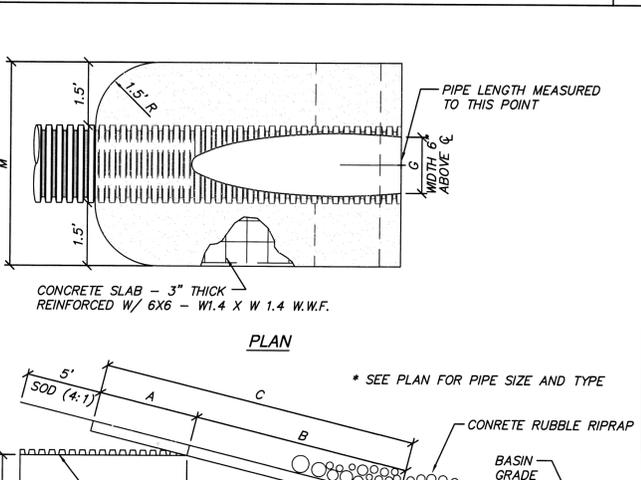
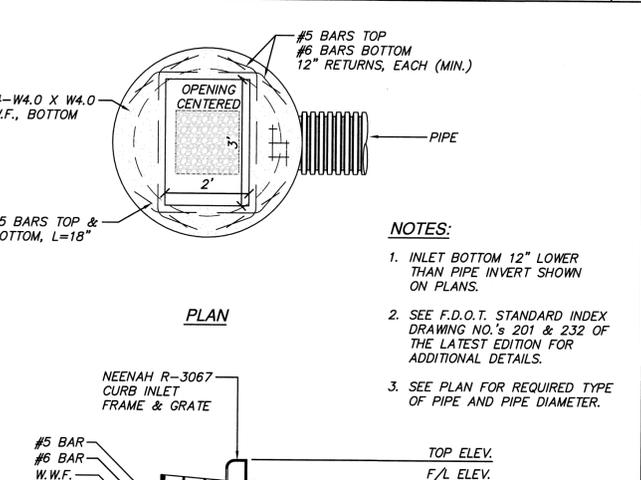
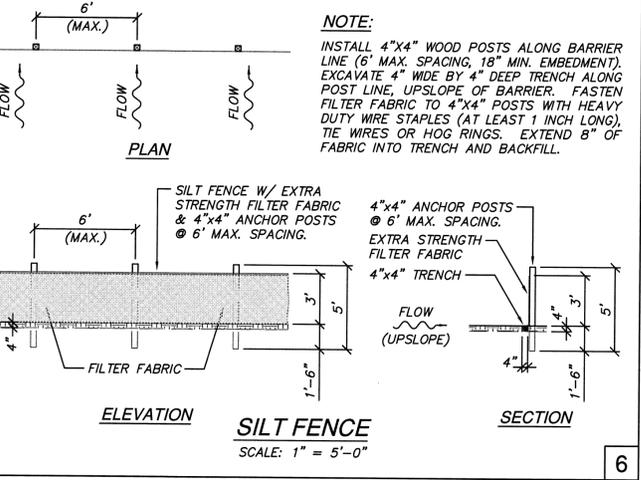
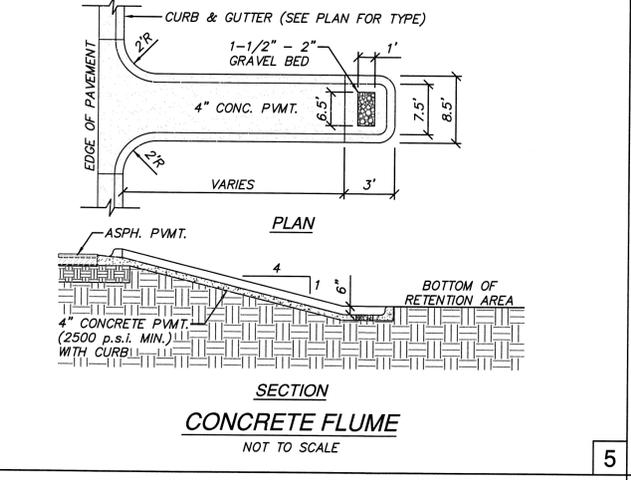
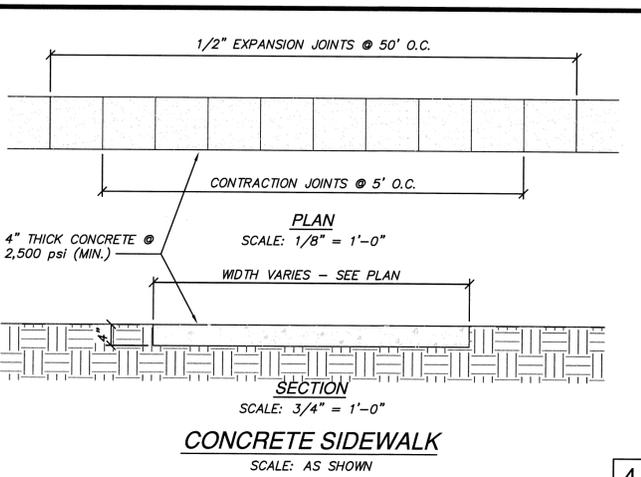
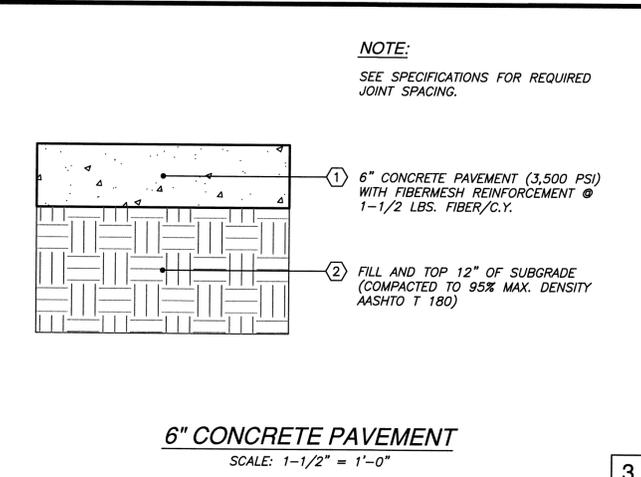
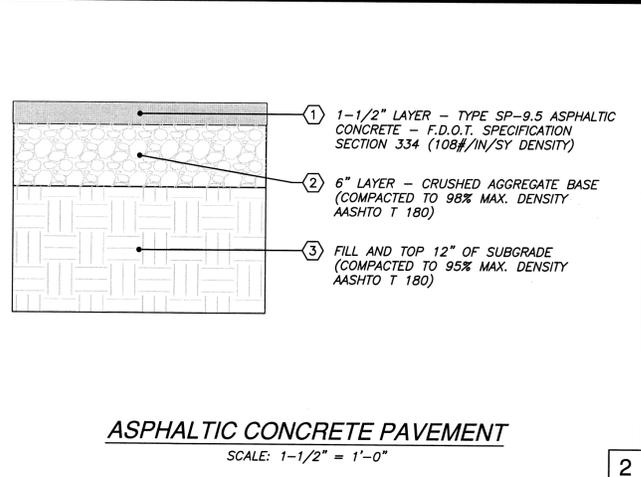
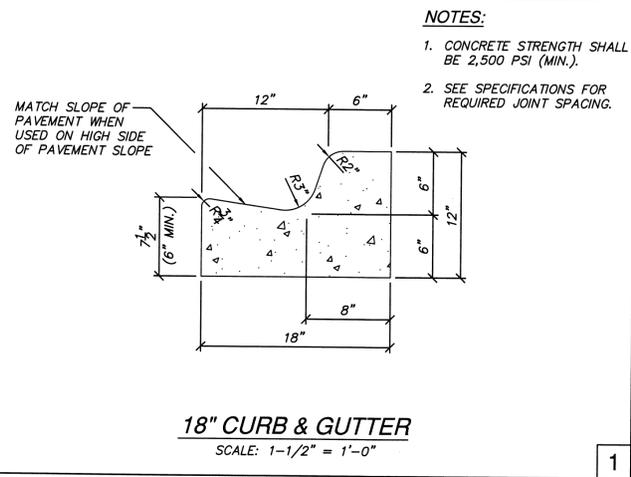


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DRAWN:	T.D.B.
CHECKED:	T.D.B.
DATE:	MARCH 10, 2022
PROJECT NO.:	22-803
SCALE:	1"=40'
F.B. NO.:	N/A
SHEET:	C2
OF:	6

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Fax: (850) 398-6812

**CITY OF CRESTVIEW
FIRE TRAINING TOWER**

FOR CONSTRUCTION

DRAMA: T.D.B.
CHECKED: T.D.B.
DATE: MARCH 10, 2022
SCALE: N/A
F.B. NO.: N/A

PROJECT NO. 22-803
SHEET C3 OF 6

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SECTION 1
CLEARING AND GRUBBING

1-1 Description

The work specified in this Section consists of clearing and grubbing within the project limits. Included in the work under this Section is the removal and disposal of existing pavement, as well as all protruding objects such as trees, stumps, roots, etc., necessary to prepare the area for the proposed construction; and removal and disposal of all product and debris which are not required to be salvaged or not required to complete the construction. Clearing and Grubbing shall conform to the requirements of Section 110 of the "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020 edition except as may herein be modified.

1-2 Work Included

Clearing and grubbing shall consist of the complete removal and disposal of all timber, brush, stumps, roots, rubbish, and debris and all other construction resting on or protruding through the surface of the existing ground and the surface of excavated areas, and all other structures and obstructions necessary to be removed and for which the removal thereof is not specified to be done under other items of the contract. Unless otherwise shown in the plans, clearing and grubbing shall be done in the following areas:

- 1. All areas where excavation is to be done including borrow pits, lateral ditches, right-of-way ditches, etc.
2. All areas where embankments will be constructed.
3. All areas where structures will be constructed.
4. Any other areas specifically called for on the plans to be cleared and grubbed.

1-3 Depths of Removal of Roots, Stumps, and Other Debris

In all areas where excavation is to be done and where the excavated material is to be used in the construction of embankments, or roadway base; also in all areas where roadway embankment will be constructed; roots, and other debris shall be removed to a depth of at least one foot below ground surface. The surface shall then be plowed to a depth of at least six inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the construction limits shall be removed and disposed of by the Contractor. Within all other areas where clearing and grubbing is to be done, roots and other debris projecting through or appearing on the surface of the original ground shall be removed to a depth of one foot below the surface; no plowing and harrowing will be required in these areas.

1-4 Disposal of Materials

Timber, stumps, brush, roots, and other objectionable material resulting from the clearing and grubbing shall be disposed of by the Contractor in locations and by methods approved by the local governing authority.

END OF SECTION

SECTION 2
EXCAVATION AND EMBANKMENT

2-1 Description

The work specified in this Section consists of the excavation and embankment required for the pavement and ditches; the excavation and backfilling of pipe and utility trenches, and includes the preparation of subgrades; the construction of embankments, and other utilization or satisfactory disposal of the materials excavated; and the compaction and dressing of excavated areas and embankments. All Excavation and Embankment shall conform to the requirements of Section 120 of the "2020 Standard Specifications For Road And Bridge Construction", latest edition, except as may herein be modified.

2-2 Excavation

2-2.1 Classification of Excavation

All excavation is classified as regular excavation. Regular excavation shall consist of the excavation and the utilization or satisfactory disposal of all materials necessary for the construction of the roadway and side ditches, and the installation of pipe and utility trenches.

2-2.2 Excavation for Pipework

All excavation shall be made along straight lines by open cut unless otherwise authorized by the Engineer or otherwise shown on the plans. Holes for pipe bells shall be hand-excavated to insure that the pipe rests upon the bottom of the trench for its entire length. If the bottom of the excavation is found to consist of rock, or any material that cannot be excavated to give a uniform bearing pressure, the material shall be removed to a depth at least six inches below established bottom grade and backfilled to grade with thoroughly compacted sand at the Contractor's expense. Any excavation carried below the depths indicated, without specific direction from the Engineer, shall be backfilled in the same manner. Trench width measured at one foot above the top of pipe for all pipe other than that approved for assembly prior to installation in the trench shall be:

- 1. The outside diameter of the pipe plus 16 inches for pipe up to and including 30 inches inside diameter.
2. The outside diameter of the pipe plus 24 inches for pipe greater than 30 inches inside diameter.
3. Where sheeting or shoring is used, the allowable width shall be measured between the inside face of the sheeting or shoring.

For all pressure line piping approved for complete assembly prior to installation in the trench, the minimum trench width shall be the outside diameter of the coupling or joint plus two inches.

Excavated material to be used for backfill shall be neatly deposited at the sides of the trenches where space is available. Where stockpiling of the excavated material is required, the Contractor shall obtain the sites to be used and maintain operations so as to provide for natural drainage and not present an unsightly appearance. Rock, shell, or other base materials for roads shall be carefully selected and kept separate. Grade and line stakes shall be protected. No excavated material shall be placed on private property other than the Owner's.

2-2.3 Dewatering for Pipework

Dewatering, if required, shall be continued during construction to keep the ground water below the level of the back-fill at all times until the backfill is completed. Water settling may be approved or required, and shall consist of continuing the well points in service and applying water as directed to the excavation during backfill.

2-2.4 Shoring

When necessary to protect workmen, banks, adjacent paving, structures and utilities, excavations shall be shored and braced by members of suitable size and arrangement. Shoring, bracing and sheeting shall be removed as excavations are backfilled in a manner to prevent injurious caving. Where directed by the Engineer, the sheeting shall be left in place in the backfill with proper bracing to provide lateral support.

2-3 Disposal of Unsuitable Materials

If not otherwise designated in the plans, unsuitable materials shall be disposed of by the Contractor in areas provided by him, to the satisfaction of the Engineer and the local governing authority.

2-4 Disposal of Excess Useable Materials

Excess useable materials shall be disposed of by the Contractor in areas provided by the Owner and to the satisfaction of the Owner. The determination whether material is classified as useable or unsuitable shall depend upon the judgement of the Engineer.

2-5 Materials for Embankment

All suitable material resulting from the excavation shall be used as much as practical during construction. Embankment shall not be constructed of material containing muck, stumps, roots, brush, vegetable matter, rubbish or other material that will not meet the compaction requirements. All material designated as undesirable shall be removed as provided above. Material placed over the areas of the project which are to be graded, sodded and mulched, or sodded shall be suitable for plant growth and free from appreciable quantities of hard clods, stiff clay, hardpan, gravel, brush, roots, refuse, or other deleterious materials and shall be of reasonably uniform quality.

2-6 Embankment Construction

Embankment shall be constructed true to lines, grades, and cross sections shown in the plans or as ordered by the Engineer within the tolerances specified herein.

2-7 Backfilling of Pipework

2-7.1 General

All fill and backfill shall be free from organic matter such as roots, stumps, trees, refuse, or other objectionable material. Except as specified otherwise, fill and backfill shall be placed in layers not more than 6 inches thick and each layer shall be compacted thoroughly and evenly. The moisture content of the fill material shall be such that proper compaction will be obtained. Backfill shall be not placed against concrete within seven days after it has been poured and only when directed by the Engineer.

2-7.2 Backfilling Trenches

The initial backfill shall be carefully deposited on both sides of the pipe at the same time and thoroughly compacted around the barrel of the pipe until enough backfill has been placed to provide a cover of one foot above the bell of the pipe. The remainder of the trench shall be backfilled in well compacted one-foot layers. Except for trenches excavated in roads and streets, the backfill shall be placed and compacted to the density specified in Article 2-8.4, with approved mechanical tampers in six inch layers to the top of the trench. Water settling may be used where approved and shall be used where directed by the Engineer. The top material shall be used last and the surface of the trench restored to its original elevation. Under no condition is construction debris to be included with the backfill. Excavated material consisting of muck, mud, clay or other unsuitable material may not be utilized in the backfill.

Where sheeting is withdrawn, all cavities remaining in or adjoining the trench shall be solidly filled and thoroughly compacted. Where sheeting is to remain in place, all cavities behind it shall be backfilled in the same manner as specified for trench backfill. No sheeting that has been driven below the pipe invert may be removed. Before backfilling is completed all sheeting to remain shall be cut off at a line three feet below finish grade.

2-8 Compaction Requirements

2-8.1 Compaction of Embankments

Each layer of the material used in the formation of the embankments shall be compacted to a density of at least 95 percent of the maximum density as determined by AASHTO T 180. Each layer shall be uniformly compacted, using equipment which will achieve the required density, and as compactive operations progress, each layer shall be shaped and manipulated as necessary to assure uniform density throughout the embankment.

2-8.2 Compaction of Subgrade

The on-site subgrade in both cuts and fills shall be compacted to a density of at least 95 percent of the maximum density as determined by AASHTO T 180. The subgrade for paving operations within F.D.O.T. right-of-way shall be compacted to a density of at least 100 percent of the maximum density as determined by FM 1-T, Method D and shall be stabilized to provide an LBR value of 40. Subgrade stabilization for operations within F.D.O.T. right-of-way shall conform to the requirements of Sections 120, 200, 204, 230, 234, 285 and 914 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition, for Type B stabilizing. It shall be the Contractor's responsibility to maintain the required density until the base or pavement, as applicable, is placed on the subgrade. A copy of the density test results shall be provided to the Engineer for approval prior to beginning base operations.

2-8.2.1 Compaction Test Requirements for Parking Areas

Compaction tests shall be provided by the Contractor, at his expense, at intervals of no more than one density test per horizontal layer per 500 square yards of subgrade or three (3) tests minimum to verify density.

2-8.2.2 Compaction Test Requirements for Roadways

Compaction tests shall be provided by the Contractor, at his expense, at intervals of no more than two hundred feet, staggered to the left, right, and on centerline to verify density.

2-8.3 Compaction of Grassed Areas

For the upper six-inch layer of areas to be grassed, no specific density will be required under this Section and compaction shall be only to the extent directed.

2-8.4 Compaction for Pipes, Culverts, Etc.

The backfill for trenches shall be compacted to a density of at least 95 percent of the maximum density as determined by AASHTO T 180 and in accordance with other sections of these specifications. Embankment over and around pipes and culverts shall be thoroughly compacted in a manner which will not place undue stress on the structures.

2-9 Final Dressing

As a final grading operation, the surface of the earth work shall be shaped to conform to the lines, grades, and cross sections shown in the plans, or as directed, within the tolerances specified below.

A tolerance of 0.1 foot above or below plan cross section will be allowed on the final earth work surface with the following exceptions:

- (1) The surface of shoulders and berms shall be shaped to within 0.1 foot of the plan cross section.
(2) Earth work shall be shaped to match adjacent pavement, curb, sidewalk, structures, etc.
(3) Ditch bottoms shall be shaped so that no water will be impounded. When dressing area adjacent to pavement, care shall be exercised to avoid possible damage to such pavements.

2-10 Inspection

The Contractor shall be responsible for notifying the local governing authority to arrange for inspections of the embankment and subgrade. The local governing authority shall be notified twenty-four (24) hours before the construction is ready for inspection.

END OF SECTION

SECTION 3
PAVEMENT BASE COURSE

3-1 Description

The work specified in this Section consists of the construction of a pavement base course. The base course shall be constructed on a prepared subgrade and in a single course. The base course shall be constructed in accordance with these specifications and in conformity with the material, lines, grades, notes and typical cross sections shown in the plans.

3-2 Sand-Clay Base Course

Sand-Clay material for use in the construction of Sand-Clay Base shall be a mixture of sand and clay, and shall be free of trash, foreign matter and other deleterious material. It shall not contain lumps or aggregate of such nature or in sufficient quantity to prevent the obtaining of a smooth surface, free from pits and pockets. It shall not contain particles of aggregate which will not pass a one-inch sieve. Sand-Clay Base Course shall conform to the requirements of Florida Department of Transportation Specifications Section 240 and Section 285 of the "2020 Florida Department of Transportation Standard Specifications for Road and Bridge Construction", latest edition, except as may herein be modified.

3-2.1 Composition and Gradation

The material passing the 10-mesh sieve shall meet the following requirements for composition, gradation, etc.:

Table with 2 columns: Percent (of material passing the 10-Mesh Sieve) and values for Clay material, Silt, and Combined Clay and silt.

3-2.2 Bearing Value and Plasticity

3-2.2.1 Bearing Value

The material shall have a Limerock Bearing Ratio Value of at least 75.

3-2.2.2 Plasticity

The material shall meet the following requirements for plasticity (based on tests made on the portion passing the No. 40 sieve): Liquid Limit - Not greater than 25; Plasticity Index - Not greater than 6.

3-2.3 Source of Material

The area where sand-clay base material is obtained shall be approved by the Engineer.

3-2.4 Equipment for Placing Sand-Clay Base

3-2.4.1 Graders

Blade graders shall be of the rubber-tired self-propelled type, of sufficient size and weight to accomplish the desired results.

3-2.4.2 Rollers

Pneumatic-tired rollers shall have a double row of wheels equipped with rubber tires so spaced that the tires on the front and rear rows together will cover the entire area over which the rollers travel.

3-2.5 Placing and Mixing Sand-Clay Base Materials

For one-course construction, the placing and mixing of the base course materials shall be done as provided hereinafter for either Case 1 or Case 2.

3-2.5.1 Case 1:

This covers the use of base course material consisting of natural sand-clay with which the mixture of additional sand or clay is not necessary. The material may be dumped directly on the subgrade but shall be uniformly distributed by approved methods. The loose thickness shall be as designated by the Engineer and shall be checked continuously by the Contractor to insure that the finished base will have the thickness and shape required by the typical section. The base course shall be thoroughly mixed for its full width and depth as shown in the plans. After the mixing is completed, the material shall be shaped to the required grade and cross section.

3-2.5.2 Case 2:

This covers the use of base course material consisting of a mixture of two materials, both of which are to be hauled in. The materials shall be spread in successive layers on the road and mixed in place. The Engineer will determine the order in which the two materials shall be spread, as well as the depth of layers of each material. The dumping and spreading of the material, the mixing of the two materials and the shaping of the base shall be done as specified for Case 1.

3-2.6 Compaction

The material shall have approximately the optimum moisture content and the proper loose consistency before being compacted. Wetting or drying will be required when the material does not have the proper moisture content to insure the required density. If the material is deficient in moisture, water shall be added and uniformly mixed-in by disking the base course to its full depth. If the material contains an excess of moisture, it shall be caused to dry before being compacted. Wetting or drying operations shall involve manipulation of the entire width and depth of the base as a unit. As soon as proper conditions of moisture are attained, the material shall be compacted to a density not less than 98 percent of the maximum density as determined by AASHTO T 180. In-place compaction tests to verify densities will be taken which represent an area no greater than 500 square yards in size. A minimum of three (3) tests shall be taken. A copy of the density tests shall be provided to the Engineer for approval prior to beginning paving operations.

3-3 Crushed Limestone Base Course

The work specified in this Section consists of the construction of a base course composed of crushed limestone. The on-site base shall be constructed on a prepared subgrade and in a single course, and shall be constructed in accordance with these specifications and in conformity with the lines, grades, thickness, and cross-section shown in the plans. Limestone base for operations within F.D.O.T. right-of-way shall conform to the requirements of Sections 230 and 911 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition.

3-3.1 Gradation Requirements

Gradation requirements specified herein shall apply to the completed base course. The aggregates shall have a maximum size of 1-inch and be graded continuously well within the limits specified in Table 1. Sieves shall conform to ASTM E11.

Table titled 'GRADATION OF AGGREGATES' showing sieve designations and percentages for 1-inch, 1/2-inch, No. 4, No. 10, No. 20, and No. 40 sieves.

NOTE: Particles having diameters less than 0.02 mm shall not be in excess of 3 percent by weight of the total sample tested.

3-3.2 Liquid Limit and Plasticity Index

The liquid limit shall not exceed 35 and the material shall be non-plastic.

3-3.3 Limerock Bearing Ratio

Limerock material shall have an average LBR value of not less than 100.

3-3.4 Stockpiling Materials

Limestone shall be stockpiled on the cleared and leveled areas designated by the Engineer. The material shall be placed in such a manner so as to prevent segregation and allow for drainage of water.

3-3.5 Mixing of Materials

The coarse and fine aggregates shall be mixed in a stationary plant, or in a traveling plant or bucket loader on an approved paved working area, and delivered as one mixture containing the fine and coarse aggregate. The supplier shall make adjustments in mixing procedure or in equipment as may be directed to minimize segregation or degradation, and to ensure a satisfactory base course meeting all requirements of this specification.

3-3.6 Equipment

The material shall be spread by mechanical rock spreaders, equipped with a device which strikes off the rock uniformly to the laying thickness and capable of producing an even distribution of the rock.

3-3.7 Spreading, Shaping, and Compacting

3-3.7.1 General

The material shall be spread uniformly with equipment as specified above. All segregated areas of fine or coarse material shall be removed and replaced with properly graded rock. After the spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compaction.

3-3.7.2 Moisture Content

When the material does not have the proper moisture content to insure the required density, wetting or drying will be required. When water is added, it shall be uniformly mixed-in by disking to the full depth of the course which is to be compacted. Wetting or drying operations shall involve manipulation, as a unit, of the entire width and depth of the course which is to be compacted.

3-3.7.3 Density Requirements

The material shall be compacted to a density of not less than 98 percent of maximum density as determined AASHTO T 180 as soon as proper conditions of moisture are obtained.

3-3.7.4 Density Tests

In-place compaction tests shall be provided by the Contractor, at his expense, to verify densities. Such compaction tests shall represent an area no greater than 500 square yards in size, or a minimum of three (3) tests over the site. A copy of the density tests shall be provided to the Engineer for approval prior to beginning paving operations.

During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density tests on the finished base.

3-4 Testing Surface

The finished surface of the base course shall be checked with a 15-foot straightedge. All irregularities greater than 1/4 inch shall be corrected by scarifying and removing or adding base material as required, after which the entire area shall be recompact as specified herein before.

3-5 Thickness Requirements

The thickness of the base shall be measured at various points representing an area no greater than 500 square yards, or at a minimum of three (3) points over the site, through holes not less than three inches in diameter. Where the compacted base is deficient by more than 1/2 inch from the required thickness, the Contractor shall correct such areas by scarifying, adding material, and recompacting. The base shall be scarified and material added for a distance of 100 feet in each direction from the edge of the deficient area. The affected area shall then be brought to the required state of compaction and to the required thickness and cross section. A copy of the base thickness testings results shall be provided to the Engineer for approval prior to beginning paving operations. 3-6 Maintenance

The Contractor shall be responsible for assuring that the true crown and grade are maintained, with no rutting or other distortion, and that the base meets all other requirements of these specifications at the time of paving.

END OF SECTION

SECTION 4
ASPHALTIC CONCRETE PAVEMENT

4-1 Description

The work specified in this Section consists of constructing asphaltic concrete pavement to a uniform grade and cross-section. The work shall be in accordance with these specifications and in conformity with the lines, grades, notes, and typical sections shown in the plans.

4-2 Materials

4-2.1 General

The asphaltic concrete pavement type shall be as specified in the asphaltic concrete pavement section as shown in plan details.

4-2.2 Asphaltic Concrete Wearing Surface/Structural Course

Type SP-9.5 and SP-12.5 Superpave Asphalt Concrete conforming to the requirements of Section 334 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020.

4-2.3 Prime Coat

The prime coat shall be cut-back Asphalt Grade RC-70 or RC-250 conforming to the requirements of Section 300 and Article 916-3 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition.

4-2.4 Tack Coat

The tack coat shall be RA-500 conforming to the requirements of Article 916-2 or undiluted Emulsified Asphalt Grades RS-1 or RS-2 conforming to the requirements of Article 916-4 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020.

4-3 General Construction Requirements

The general construction requirements are as specified in Section 330, including the Provisions for Quality Control Plans and Quality Control Systems as specified in Article 6-8 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition. Superpave Asphalt Concrete pavement construction shall conform to Section 334 of the referenced specifications.

Professional Engineer seal for SEAS, License No. EB-0009313, State of Florida.

SEAS logo and contact information: Seaside Engineering And Surveying, LLC, 6575 Highway 189 N, Baker, FL 32531.

FOR CONSTRUCTION stamp and project information: CITY OF CRESTVIEW FIRE TRAINING TOWER SPECIFICATIONS, SHEET C4 OF 6.

4-3.1 Asphalt Concrete Wearing Surface/Structural Course

The asphalt concrete pavement shall be placed to a compacted depth as specified in typical pavement section spread at a rate of 110 lbs./sq. yd.-in. The application shall be placed in a single lift. Prior to laying the mixture, the surface of the base course shall be cleaned of all loose and deleterious material and a prime coat, if specified, shall be applied.

4-3.2 Prime Coat

Where specified, a prime coat shall be applied at a rate of 0.10 gal./sq. yd. between the base and asphalt concrete wearing surface/structural course.

4-3.3 Tack Coat

Where specified, a tackcoat shall be applied at a rate of 0.02 gal./sq. yd. between successive lifts of structural course.

4-4 Testing

4-4.1 Test Requirements for Parking Areas

The thickness of pavement and pavement density shall be determined by the length of cores, at two inches in diameter, taken to represent an area no greater than 500 square yards in size or three (3) tests minimum. Asphaltic Concrete Wearing Surface deficient in thickness and/or density shall be corrected to the satisfaction of the Engineer. A copy of the asphalt thickness testing results shall be provided to the Engineer.

END OF SECTION

SECTION 5 CONCRETE PAVEMENT, SIDEWALK, AND CURB

5-1 Description

The work specified in this Section consists of the construction of concrete pavement, sidewalks, and curbs in accordance with these specifications, and in conformity with the lines, grades, dimensions, and notes shown in the plans. Concrete pavement, sidewalks, and curbs shall conform to the requirements of Sections 345 and 350 of the "2019 Florida Department of Transportation Standard Specifications for Road and Bridge Construction", latest edition, except as may herein be modified.

5-2 Materials

5-2.1 Concrete

The material shall be obtained from an approved plant having an approved design mix. All concrete shall have a minimum strength in 28 days as specified shown in plan details.

5-2.2 Reinforcement

The concrete for concrete pavement areas shall be treated with synthetic reinforcing fibers as manufactured by Fibermesh Company, and in accordance with ASTM standard specification for fiber-reinforced concrete and Shotcrete, C 1116. The dosage rate shall be one and one-half (1-1/2) pounds of fibers per cubic yards of concrete. Conventional wire mesh reinforcement is also acceptable, where specified.

5-3 Forms

Forms for this work shall be made of either wood or metal and shall have a depth equal to the plan dimensions for the depth of concrete being deposited against them. They shall be straight, free from warp or bends, and of sufficient strength, when staked, to resist the pressure of the concrete without deviation from line and grade. Forms shall be cleaned each time they are used and shall be oiled or saturated with water prior to placing the concrete.

5-4 Foundation

Excavation shall be made to the required depth and the foundation material upon which the concrete is to be set shall be compacted as specified below, true to grade and cross section, and shall be moist at the time that the concrete is placed. The foundation over which concrete is placed shall be crushed aggregate base compacted to 98% of the maximum density as determined by AASHTO T 180 or compacted subgrade as specified in Article 2-8 of these specifications in accordance with the plan details.

5-5 Joints

5-5.1 Expansion Joints

Expansion joints shall be 1/2 inch, formed with a pre-formed joint filler. Expansion joints shall be provided at all points-of-tangency for curbs and shall be located at maximum intervals of 50 feet between other expansion joints or at ends of run. In addition, expansion joints shall be provided at the interface between concrete curbs and concrete pavement or other concrete objects.

5-5.2 Contraction Joints

5-5.2.1 Concrete Pavement Types:

Contraction joints may be of the open type or may be sawed. Contraction joints shall be spaced at maximum intervals of fifteen feet.

Open-Type Joints: Open-type contraction joints shall be formed by staking a metal bulkhead in place and depositing the concrete on both sides. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the concrete has been finished over the joint, the slot shall be edged with a tool having a 1/4 inch radius. Sawed Joints: If the Contractor elects to saw the contraction joints, a slot approximately 1/8 inch wide and not less than 2 inches deep shall be cut with a concrete saw after the concrete has set, and within the following periods of time:

Joints at not more than 30-foot intervals: 12 hours after finishing.

Remaining joints: Within 96 hours after finishing.

5-5.2.2 Concrete Sidewalk Types:

Contraction joints may be of the open type or may be sawed. Contraction joints shall be spaced at intervals of five feet.

Open-Type Joints: Open-type contraction joints shall be formed by staking a metal bulkhead in place and depositing the concrete on both sides. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After finishing the sidewalk over the joint, the slot shall be edged with a tool having a 1/2 inch radius. Sawed Joints: If the Contractor elects to saw the contraction joints, a slot approximately 3/16 inch wide and not less than 1-1/2 inches deep shall be cut with a concrete saw after the concrete has set, and within the following periods of time:

Joints at not more than 30-foot intervals: 12 hours after finishing.

Remaining joints: Within 96 hours after finishing.

5-5.2.3 Concrete Curb

Except for machine placed items, at the option of the Contractor, joints may be formed by the use of dummy joints (either formed or sawed) or by the use of sheet metal templates. If sheet metal templates are used they shall be of the dimensions, and shall be set to the lines, shown in the plans. The templates shall be held firmly during the placing of the concrete and shall be left in place until the concrete has

set sufficiently to hold its shape but shall be removed while the forms are still in place.

For machine placed items, unless an alternate method is approved by the Engineer, contraction joints shall be sawed. The joints shall be sawed as soon as the concrete has hardened to the degree that excessive raveling will not occur and before uncontrolled shrinkage cracking begins.

Contraction joints shall be spaced at intervals of fifteen feet except where a lesser interval is required for closure, but no section shall be less than four feet in length.

Where curb is adjacent to concrete pavement, the curb joints shall be made to align with the pavement joints.

5-6 Placing

The concrete shall be placed in the forms and tamped and spaded to prevent honeycomb and until the top of the structure can be floated smooth and the edges rounded to the required radius.

5-7 Finishing

5-7.1 Concrete Pavement and Sidewalk

5-7.1.1 Screeding: The concrete shall be struck-off by means of a wood or metal screed, used perpendicular to the forms, in order to obtain the required grade and remove surplus water and laitance.

5-7.1.2 Surface Requirements: Unless otherwise indicated on the plans, the concrete shall be given a broom finish. The surface variations shall not be more than 1/4 inch under a ten foot transverse section. The edge of the pavement shall be carefully finished with an edging tool having a radius of 1/2 inch.

5-7.2 Curbs

5-7.2.1 Repair of Minor Defects

The forms shall be removed within 24 hours after the concrete has been placed, and minor defects then filled with mortar composed of one part portland cement and two parts fine aggregate. Plastering will not be permitted on the face of the curb, and any rejected curb shall be removed and replaced without additional compensation.

5-7.2.2 Final Finish

All exposed surfaces shall be given a finish while the concrete is still green. In general, only a brush finish will be required. For any surface areas, however, which are too rough or where other surface defects make additional finishing necessary, the Engineer may require that the curb be rubbed to a smooth surface with a soft brick or wood block, with water used liberally. Also, if further necessary to provide a suitable surface, the Engineer may require additional rubbing, using a thin grout or mortar.

5-8 Curing

The concrete used for curbs shall be cured for 72 hours by a method approved by the Engineer.

END OF SECTION

SECTION 6 STORM DRAINAGE SYSTEM

4-1 Description

The work specified in this Section consists of constructing asphaltic concrete pavement to a uniform grade and cross-section. The work shall be in accordance with these specifications and in conformity with the lines, grades, notes, and typical sections shown in the plans.

4-2 Materials

4-2.1 General

The asphaltic concrete pavement type shall be as specified in the asphaltic concrete pavement section as shown in plan details.

4-2.2 Asphaltic Concrete Wearing Surface/Structural Course

Type SP-9.5 and SP-12.5 Superpave Asphalt Concrete conforming to the requirements of Section 334 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020.

4-2.3 Prime Coat

The prime coat shall be cut-back Asphalt Grade RC-70 or RC-250 conforming to the requirements of Section 300 and Article 916-3 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition.

4-2.4 Tack Coat

The tack coat shall be RA-500 conforming to the requirements of Article 916-2 or undiluted Emulsified Asphalt Grades RS-1 or RS-2 conforming to the requirements of Article 916-4 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020.

4-3 General Construction Requirements

The general construction requirements are as specified in Sections 100, 101, 102, 104, and 105, including the Provisions for Quality Control Plans and Quality Control Systems as specified in Article 6-8 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition. Superpave Asphalt Concrete pavement construction shall conform to Section 334 of the referenced specifications.

6-1 Description

The work specified in this Section consists of the construction of inlets and the furnishing and installation of drainage pipe. All work shall be constructed in conformity with these specifications and the sizes and dimensions shown in the plans.

6-2 Materials 6-2.1 Concrete Inlets

All inlet construction covered under this Section shall be of concrete that will have a minimum compressive strength of 3,000 psi in 28 days.

6-2.1.1 Reinforcement

Reinforcing steel shall comply with ASTM A 1015, Grade 40. Reinforcement placement shall conform to ACI 315 and with the plans.

Welded Wire Fabric shall comply with ASTM A 185.

6-2.1.2 Gratings

Gratings and frames fabricated from structural steel shall be galvanized in accordance with the requirements of ASTM A 123 or shall be painted with two coats of prime, followed by one coat of material meeting the requirements of Federal Specification TT-E-489, Class A Black. All paint may be applied in the shop by dipping, provided that each coat is thoroughly dry before the succeeding coat is applied. These requirements do not apply when A-588 steel is used.

6-2.1.2 Gratings

Gratings and frames fabricated from structural steel shall be galvanized in accordance with the requirements of ASTM A 123 or shall be painted with two coats of prime, followed by one coat of material meeting the requirements of Federal Specification TT-E-489, Class A Black. All paint may be applied in the shop by dipping, provided that each coat is thoroughly dry before the succeeding coat is applied. These requirements do not apply when A-588 steel is used. 6-2.2 Polyvinyl Chloride Inlets

Polyvinyl Chloride Inlets shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the specified configuration. The inlets shall be manufactured by Nyloplast or equal approved by the Engineer. The pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection. The joint tightness shall conform to ASTM D3212. The pipe stock used to manufacture the body and pipe stubs of the inlets shall conform to the mechanical property requirements for fabricated fittings as described by ASTM D3034 and ASTM F1336.

Gratings, frames, and hoods for all PVC inlet structures shall be ductile iron conforming to ASTM A536 grade 70-50-05 and shall be painted with two coats of prime, followed by one coat of material meeting the requirements of Federal Specification TT-E-489, Class A Black. All paint may be applied in the shop by dipping, provided that each coat is thoroughly dry before the succeeding coat is applied. The grates, frames, and hoods shall be made specifically for each inlet so as to provide a round bottom flange that closely matches the diameter of the inlet body. The grates, frames, and hoods shall be capable of supporting H-25 wheel loading for heavy-duty traffic. The hood section shall have a solid back and be adjustable by use of three (3) locking hex head bolts.

6-2.3 Pipe

6-2.3.1 Reinforced Concrete Pipe

Reinforced Concrete Pipe shall be round reinforced concrete complying with ASTM C 76, Class III, with round rubber gasket complying with ASTM C 361. 6-2.3.2 Polyvinyl Chloride (PVC) Pipe

Polyvinyl Chloride Pipe shall comply with the requirements of Section 948 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition, except as may herein be modified. Non-perforated Polyvinyl Chloride Pipe shall conform to the requirements of ASTM D 3034, SDR 35, or ASTM F 949. Perforated Polyvinyl Chloride Pipe shall conform to the requirements of ASTM F 758 or ASTM F 949.

6-2.3.3 Corrugated Polyethylene Pipe

Corrugated Polyethylene pipe shall conform to the requirements of Section 948 of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction", January 2020 edition and AASHTO M 294, except as may herein be modified. Corrugated polyethylene pipe shall be N-12 as manufactured by Advance Drainage Systems (ADS) or approved equal. Where so designated on the plans, corrugated polyethylene pipe shall be provided with perforations and a sock filter.

6-3 Forms

Forms shall be of wood or metal, so designed and constructed that they may be removed without injury to the concrete. They shall be built true to line and grade and braced in a substantial and unyielding manner, and shall be approved by the Engineer before being filled with concrete.

6-4 Precast Inlets

The Contractor may substitute precast inlets in lieu of cast-in-place units unless otherwise shown on the plans. When precast units are substituted the construction of such units may be in accordance with ASTM C 478. The design and fabrication of precast units shall be in accordance with the drawings.

6-5 Construction Methods for Inlets

6-5.1 Excavation

Excavation shall conform with the requirements specified in Section 2 of these specifications.

6-5.2 Placing and Curing Concrete

The concrete shall be placed in the forms to the depth shown in the plans and thoroughly vibrated. After the concrete has hardened sufficiently it shall be covered with suitable material and kept moist for a period of three days.

6-5.3 Setting Manhole Castings

After the concrete has been cured as specified above, the frame of the casting shall be set in a full mortar bed composed of one part portland cement to two parts of fine aggregate.

6-5.4 Placing Pipe

Inlet and outlet pipes shall be of the same size and kind as the connecting pipe shown in the plans. They shall extend through the walls for a distance beyond the outside surface sufficient for the intended connections, and the concrete shall be constructed around them neatly so as to prevent leakage along their outer surface. The inlet and outlet pipes shall be flush with the inside of the wall.

6-5.5 Backfilling

Backfilling shall conform with the requirements specified in Section 2 of these specifications.

6-6 Laying Pipe

6-6.1 General

All pipe shall be carefully laid, true to the lines and grades given. Any pipe that is not in true alignment or which shows any settlement after laying shall be taken up and re-laid without additional compensation.

6-6.2 Concrete Pipe

Concrete pipe shall be laid with hubs up and tongue fully entered into the hub. When pipe with quadrant reinforcement, or circular pipe with elliptical reinforcement is used, the pipe shall be installed in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe shall not be more than five degrees from the vertical plane through the longitudinal axis of the pipe.

6-6.3 Corrugated Polyethylene Pipe

Corrugated polyethylene pipe shall be installed in accordance with the manufacturer's installation instructions.

6-6.4 Trench Excavation

The excavation of the trench for pipe culverts and storm sewers shall be as specified in Section 2 of these specifications.

6-6.5 Foundation

Where the foundation material is of inadequate supporting value a suitable foundation shall be provided, as directed by the Engineer, by the removal of unsuitable material and replacing with suitable material. Pipe shall not be laid on blocks or timbers, or on other unyielding material, except where the use of such devices is called for in the plans.

6-6.6 Sealing Joints

For all concrete pipe other than side drain pipe, the pipe joints shall be sealed by the use of round rubber gaskets. The gasket and the surface of the pipe joint, including the gasket recess, shall be clean and free from grit, dirt and other foreign matter, at the time the joints are made. In order to facilitate closure of the joint, application of an approved vegetable soap lubricant immediately prior to closing of the joint will be permitted.

6-6.7 Backfilling

The backfilling around the pipe shall be as specified in Section 2 of these specifications.

6-6.8 Inspections

Prior to backfilling any proposed exfiltration pipe system, the Contractor shall notify the Engineer and local governing authority for inspection. Provide 48 hours of advanced notice.

6-7 End Treatment

The end treatment required at each cross drain, side drain, or storm sewer pipe end shall be as shown in the plans.

END OF SECTION

SECTION 7 PAVEMENT STRIPES AND MARKINGS

7-1 Description

The work specified in this Section consists of applying of parking stripes, pavement stripes, and markings. All work shall be completed in conformity with the plans and specifications, and where so referenced, to the "Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020 edition, and to the Florida Department of Transportation Roadway and Traffic Design Standard Index Drawings. All pavement striping and pavement markings within F.D.O.T. right-of-way shall be thermoplastic.

7-2 Materials

7-2.1 Paint

Paint for parking stripes shall conform to Section 971 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020, Code T-1 (white). Blue pavement markings shall be tinted to match shade 15180 of Federal Standards 595a. 7-2.2 Thermoplastic

Thermoplastic material for traffic stripes and markings within F.D.O.T. right-of-way shall conform to Article 971-5 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020.

7-2.3 Raised Retro-Reflective Pavement Markers and Bituminous Adhesive

Raised Retro-Reflective Pavement Markers and Bituminous Adhesive to be placed within F.D.O.T. right-of-way shall conform to Section 970 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020.

7-3 Application and Installation

7-3.1 Paint

The surface which is to be painted shall be cleaned, by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied. Any vegetation or loose material shall be removed from the pavement before striping is begun.

The paint shall be thoroughly mixed before it is poured into the painting machine. The painting machine shall be of a type and design which will readily obtain uniformity with regard to paint stripe thickness and alignment. The contractor shall set tack points and string lines as required to establish proper spacing and alignment.

All materials and work including thickness shall comply with the applicable requirements of Section 710 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020. The minimum rate of application shall be one gallon per 320 linear feet for 4 inches solid stripes.

7-3.2 Thermoplastic Stripes and Markings

The application and installation of thermoplastic traffic stripes and markings within F.D.O.T. right-of-way shall comply to Section 711 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020.

7-3.3 Raised Retro-Reflective Pavement Markers and Bituminous Adhesive

The placement of raised retro-reflective pavement markers and adhesive within F.D.O.T. right-of-way shall comply to Section 706 of the referenced "The Florida Department of Transportation Standard Specifications For Road and Bridge Construction", January 2020.

7-4 Protection of Parking Stripes, Pavement Stripes and Markings

The contractor shall be responsible for protecting new parking stripes, pavement stripes and markings from vehicular traffic. Any defective stripes or markings or portion of the stripes or markings damaged by passing traffic or from any other cause shall be corrected at the contractor's expense.

END OF SECTION

SECTION 8 GRASSING

8-1 Description

The work specified in the Section consists of the establishing of a stand of grass, within the limits shown on the plans by sodding or seeding, mulching, fertilizing, watering, grading and maintaining the grassed areas until the completion of the project and final acceptance.

The Contractor shall install permanent vegetated ground cover over all open areas within the limits of construction and adjacent road rights-of-way where existing vegetation has been disturbed by construction operations. All stormwater retention and detention basins and swales shall be solid sodded unless otherwise noted on plans. All slopes which are 3 horizontal to 1 vertical or greater shall be solid sodded unless otherwise noted on plans.

8-2 Materials

8-2.1 Seed

Unless otherwise directed, permanent type grass seed shall be a mixture of 20 parts Bermuda seed and 80 parts Pensacola Bahia seed. Quick-growing type grass seed shall be a species which will provide an early ground cover during the particular season when planting is done and will not later compete with permanent grass. The separate types of seed used shall be thoroughly dry-mixed immediately before sowing. Seed which has become wet shall not be used.

The Bermuda seed shall be an equal mixture of hulled and unhulled seed. The Pensacola Bahia seed shall be scarified seed, having a minimum active germination of 40 percent and a total germination of 85 percent. All seed shall meet the requirements of the State Department of Agriculture and Consumer Services and all applicable State Laws.

FOR CONSTRUCTION SEAS CITY OF CRESTVIEW FIRE TRAINING TOWER SPECIFICATIONS PROJECT NO. 22-803 DRAWN: T.D.B. CHECKED: T.D.B. DATE: MARCH 10, 2022 SCALE: N/A F.B. NO.: N/A SHEET C5 OF 6

Licensed Engineer: NOT TO BE USED FOR THE ORIGINAL RAISED SEAL OF FLORIDA LICENSED ENGINEER

REVISIONS: BY: DATE: REASONS: SEAS Seaside Engineering And Surveying, LLC Certificate of Authorization No. EB-0009313

SEAS Seaside Engineering And Surveying, LLC Ph: (850) 959-9693 Fax: (850) 999-6812 6575 Highway 289 N Baker, FL 32531

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8-2.2 Sod

Unless otherwise directed by the Owner, sod shall be of centipede grass. It shall be taken up in commercial-size rectangles, except where 12 inch strip sod is called for. It shall be well matted with roots, dense, uniform, weed-free, be certified to be free of disease and insects, nematodes, and have good sod strength. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted. When stacked, it shall not be allowed to heat up above 100 degrees F.

8-2.3 Fertilizer

The fertilizer for seeding and sodding shall be 12-8-8 commercial fertilizer complying with the State fertilizer laws.

8-2.4 Dolomitic Limestone

Dolomitic Limestone shall be an approved product, designated for agricultural use.

8-2.5 Mulch

The mulch material used for seeding shall be dry straw or hay, consisting of oat, rye, or wheat straw, or of pangola, peanut, coastal Bermuda or Bahia grass hay.

8-2.6 Water

Water used in the grassing and planting operations may be obtained from any approved spring, pond, lake, stream, or municipal water system. The water shall be free of salt, of excess and harmful chemicals, acids, alkalies, or any substances harmful to plant growth or obnoxious to traffic.

8-3 Grassing Limits

The Contractor shall take all precautions necessary to limit the area disturbed by construction. Existing grassed areas disturbed by construction outside the limits shown on the plans, shall be re-grassed by seeding to match existing conditions, at the Contractor's expense.

8-4 Application of Fertilizer and Lime

In areas to be seeded or sodded, fertilizer and/or lime shall be applied at a rate of 500 pounds per acre. Fertilizer and/or lime shall be spread uniformly and mixed to a depth of approximately four (4) inches.

8-5 Seeding

The ground over which the seed is to be sown shall be prepared by disk-harrowing and thoroughly pulverizing the soil to a suitable depth. The prepared soil shall be loose and reasonably smooth. It shall be reasonably free of large clods, roots, and other material which will interfere with the work or subsequent mowing and maintenance operations. While the soil is loose and moist, the seed shall be scattered uniformly over the grassing area. Unless shown otherwise in the plans, the rate of spread for the permanent type seed mixture shall be 100 pounds per acre.

When so directed by the plans or the Engineer, seed of an approved quick-growing species of grass, such as rye, shall be spread in conjunction with the permanent seed mixture at the rate of 30 pounds per acre. 8-6 Mulching

Approximately two inches, loose thickness, of the mulch material shall be applied uniformly over the seeded area and the mulch material cut into the soil to produce a loosed mulched thickness of three or four inches.

8-7 Rolling

Immediately after the completion of the seeding, the entire area grassed and mulched shall be rolled with approved equipment. At least two trips over the entire area will be required.

8-8 Sodding

Whenever a suitable area has been graded and is ready for sodding, the Contractor shall proceed at once with sodding of the available areas. Sodding shall be incorporated into the project at the earliest practical time in the life of the contract. Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results. The sod shall be placed on the prepared surface, with edges in close contact, and shall be firmly and smoothly embedded by light tamping with appropriate tools.

Where sodding is used in drainage ditches, the setting of the pieces shall be staggered, such as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall be tamped so as to produce a feather edge effect.

On areas where the sod may slide, due to the height and slope, the Engineer may direct that the sod be pegged, with pegs driven through the side blocks into firm earth, at suitable intervals. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed from the work.

8-9 Watering

The seeded areas shall be watered so as to provide optimum growth conditions for the establishment of the grass. The seeded areas shall be kept in a moist condition for the duration of the contract period (and in no case less than two weeks). The moistened condition shall extend at least to the full depth of the rooting zone. Water shall not be applied, however, when there is danger of a freezing condition.

8-10 Maintenance

The Contractor shall maintain seeded areas in a satisfactory condition until final acceptance is made. Such maintenance shall include watering, and filling, leveling and repairing any washed or eroded areas.

END OF SECTION

NOTE:
FOR ADDITIONAL SPECIFICATIONS AND REQUIREMENTS, PLEASE REFER TO THE CITY OF CRESTVIEW CONSTRUCTION STANDARDS MANUAL, WHICH IS AVAILABLE FOR INSPECTION IN THE PUBLIC SERVICES OFFICES OF THE CITY.

FOR CONSTRUCTION

SEAS

DRAWN: T.D.B.

CHECKED: T.D.B.

DATE: MARCH 10, 2022

SCALE: N/A

F.B. NO.: N/A

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PROJECT NO. 22-803

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OF 6

CITY OF CRESTVIEW
FIRE TRAINING TOWER

SPECIFICATIONS

SEAS
Seaside Engineering And Surveying, LLC
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Baker, FL 32531
Ph: (850) 650-9563
Fax: (850) 398-6812

Seaside Engineering And Surveying, LLC
Certificate of Authorization No. EB-0008373

SEAS

Licensed Engineer:
6/22/22
NOT VALID WITHOUT THE SIGNATURE AND SEAL OF THE BOARD OF PROFESSIONAL ENGINEERS OF THE STATE OF FLORIDA
L. S. BAKER
Professional Engineer No. 68275
Mechanical Code Category: P.E., P.L., No. 38987

DATE:

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