

LITTLE GASPARILLA ISLAND FIRE & RESCUE
SITE FEASIBILITY STUDY
9360 LITTLE GASPARILLA ISLAND
LITTLE GASPARILLA ISLAND, FLORIDA 33946

Prepared for:
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November 2012

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SITE FEASIBILITY STUDY
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LITTLE GASPARILLA ISLAND, FLORIDA 33946**

SITE INTRODUCTION:

DMK Associates, Incorporated (DMK) understands that the Little Gasparilla Island Fire & Rescue (LGIFR) desires to build a new fire station on the 9360 Little Gasparilla Island Road site. As part of their due diligence prior to purchasing the parcel LGIFR needs to assess the development feasibility including permitting requirements and constraints as well as cost associated with permitting and construction. This report is intended to assist the LGIFR with this effort as defined in the tasks below.

SCOPE OF SERVICES:

This report will provide engineering and environmental assessment for determining the feasibility of developing the above referenced site for the purpose of building a fire station. The work effort includes site visits, meetings and/or correspondence with permitting agencies. The findings are compiled in this report which will include the following:

- Preliminary Environmental Site Assessment including identification of threatened and endangered species, wetlands and other habitat.
- Environmental and site permitting (permitting not included) required including constraints and risks associated with development.
- Conceptual Site Layout with possible building area, septic area, wetland, setbacks, proposed retention area and approximate site elevations assuming a floor elevation of 5 feet, NGVD.
- Investigation of a haul route and potential temporary barge location on adjacent property to the east.
- Estimation of site soils and fill requirements for development.
- Estimation of range of construction costs (Client is to assist with unit costs).
- List permitting and (Federal, State and County) agencies required.
- Pros, cons and other potential constraints associated with developing a fire station in a Velocity Flood Zone.

PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT:

A Southern Hammocks Environmental, Inc. biologist conducted a site assessment on October 17, 2012 to review the parcel and the haul road/barge access adjacent to the property for any wetlands or other environmentally sensitive areas. Biologists also reviewed parcel information and conducted database search for protected species including the Florida scrub jay, gopher tortoise, bald eagles and other wetland-dependent species. In addition, research of the database for potential hydric soils, Southwest Florida Water Management District (SWFWMD) habitat data, historic aeriels and National Wetland Inventory datasets were conducted.

SITE ASSESSMENT:

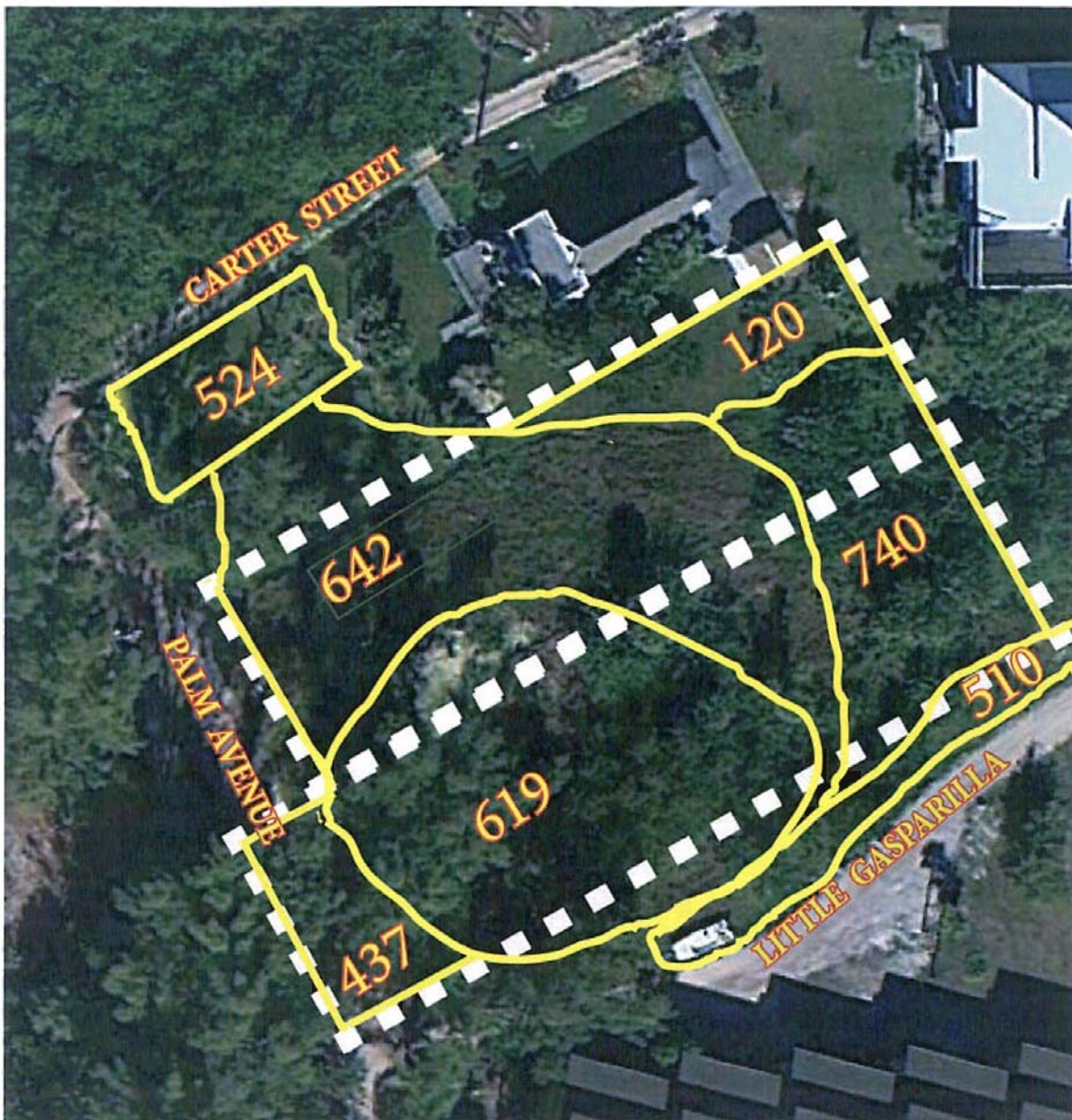
LAND COVER DESCRIPTIONS

Field observations and aerial photographs were used to develop a map of the existing land cover types on the site totaling approximately 0.58 acres that the subject parcel will take. The majority of the parcel appears to be considered wetlands. A Florida Land Use, Cover and Forms Classification System (FLUCCS) Map is provided as **Figure 1**. The FLUCCS types are summarized in **Table 1** and described below.

Table 1. Summary of Land Covers for the Little Gasparilla Island Parcel

FLUCCS CODE	HABITAT TYPE	APPROXIMATE ACREAGE
WETLANDS		
510	Ditch	0.001
619	Exotic Wetland Hardwood	0.19
642	Saltwater Marsh	0.19
UPLANDS		
120	Medium-density Residential	0.04
437	Australian Pine	0.06
740	Disturbed Lands	0.10
TOTAL =		0.58

Figure 1. FLUCCS/Wetland Map



120 Medium-density Residential
437 Australian Pine
510 Ditch
524 Pond
619 Exotic Wetland Hardwood
642 Saltwater Marsh
740 Disturbed Lands

Wetlands

Wetland habitat impacted with exotic vegetation, predominates much of the site. A ditch running approximately east provides a connection from the wetland to Placida Harbor; therefore this wetland is considered a saltwater marsh with the influx of saltwater during high tides.

Ditch (FLUCCS 510)

A ditch runs offsite and continues along the proposed haul road approximately east connecting Placida Harbor to the wetland located within the parcel. Vegetation with this habitat consists of saltgrass (*Distichlis spicata*), flatsedge (*Cyperus* sp.), sea purslane (*Sesuvium portulacastrum*), soft rush (*Juncus effusus*), Baldwin's spikerush (*Eleocharis baldwinii*), and nuisance and exotic species of Brazilian pepper (*Schinus terebinthifolius*) and creeping oxeye (*Sphagneticola trilobata*).

Exotic Wetland Hardwood (FLUCCS 619)

This habitat is located along the southern portion of the subject property. The vegetation is dominated by nuisance and exotic vegetation of cattail and Brazilian pepper. other species included cabbage palm (*Sabal palmetto*), seagrape (*Coccoloba uvifera*), with a few white (*Laguncularia racemosa*) and black mangroves (*Avicennia germinans*). At the time of the site visit, the water depth in this portion of the wetland was approximately 6-12 inches.

Saltwater Marsh (FLUCCS 642)

This land cover dominates the subject property and is dominated by saltgrass, saltmarsh cordgrass (*Spartina alterniflora*), bushy bluestem (*Andropogon glomeratus*), flatsedge, starrush whitetop (*Rhynchospora colorata*), fogfruit (*Phyla nodiflora*), and nuisance and exotic species of barnyard grass (*Echinochloa crus-galli*).

Uplands

Medium-density Residential (FLUCCS 120)

This habitat is located in the northeastern corner of the parcel. The vegetation was routinely mowed and consists creeping oxeye, bahia grass (*Paspalum notatum*), starrush whitetop, and spikerush.

Australian Pine (FLUCCS 437)

This habitat is located in the southwest corner of the subject property. The vegetation is dominated Australian pine (*Casuarina equisetifolia*), Brazilian pepper, with a few cabbage palms.

Disturbed Lands (FLUCCS 740)

This habitat is located along the eastern portion of the subject property and the haul road. The vegetation is dominated by Brazilian pepper and cabbage palm.

SOILS

Based on the Natural Resource Conservation Service (NRCS) soils map for Charlotte County, the site and surrounding areas were identified as Canaveral fine sand (Soil Map Unit No. 2). Although mapped as an upland soil type, small inclusions are not picked up on the NRCS database. The majority of the soil located within the wetland is considered muck. Approximately 1-foot of muck was located within the center of the wetland, with a few inches of muck toward the edge of the wetland on the property.

WILDLIFE

Biologists conducted database search for protected species including the Florida scrub jay, bald eagles, and other wetland-dependent species. Based on the database search and the site review, the parcel does not contain Florida scrub jays or bald eagle nest within 1 mile of the site. At the time of the site visit, no gopher tortoise burrows or signs of gopher tortoise utilization were observed within the parcel or within 25 feet of the parcel. Therefore, no permitting is to be expected for these protected species.

Although not observed during the preliminary site review, wetland-dependent wading birds are expected to use the site because the parcel contains wetland and the proximity to the Harbor. Impacts to wetland-dependent species are mitigated through the State and federal permitting process. Wildlife utilization of the site is expected to be limited primarily to occasional foraging by wading birds, song birds, small- to medium-sized mammals (i.e., raccoons) and raptors. Closer to the time of construction, surveys for osprey nests in close proximity of the site would need to be conducted.

WETLAND DETERMINATION

The landward extent (i.e., the boundary) of wetlands as defined in subsection 62-340.200(19), F.A.C., shall be determined by applying reasonable scientific judgment to evaluate the dominance of plant species, soils, and other hydrologic evidence of regular and periodic inundation and saturation as set forth below. In applying reasonable scientific judgment, all reliable information shall be evaluated in determining whether the area is a wetland as defined in subsection 62-340.200(19), F.A.C. The exact extents of the wetland boundaries will need to be flagged by a biologist and the flags will need to be surveyed by a licensed surveyor. The agencies will also conduct an official jurisdictional determination to verify the onsite wetlands. This wetland line, topographic elevations, and wetland seasonal high water elevations will be placed on all design and construction plans through the permitting process.

Because the onsite wetland is connected to the Harbor via the surface swales, the U.S. Army Corps of Engineers (ACOE) will determine the wetland to fall under their jurisdiction and require a permit for the dredging or filling of this area. The ACOE will also require a site visit during the permitting process and they will make their determination of the wetland boundaries and quality, which may be different from SWFWMD determination. The State and federal process are separate but run concurrently.

PROPOSED WETLAND IMPACTS

Background

Dredging and filling in the surface waters of Florida has been regulated since the early 1970's. This program was established under Chapter 403, F.S., to protect our surface waters from degradation caused by the loss of wetlands and from pollution caused by construction activities.

Alteration of wetlands and other surface waters may have a detrimental impact on the environment. That impact could extend beyond the limits of the work site, affecting other public or private property. Polluted waters can be conveyed off-site through connecting waterbodies. The elimination or degradation of wetlands will cause a reduction of beneficial functions provided by the wetlands.

Wetlands provide a number of important and beneficial functions. During periods of heavy rainfall, wetlands serve as flood storage areas, where water can spread out without damage to developed uplands. As the water passes through the wetlands, pollutants are filtered out. Wetlands also stabilize shorelines, thereby preventing the harmful effects of erosion. Wetlands produce the basic food material used by many fish and other aquatic life. Some wetlands also serve as nursery grounds for fish and rookery areas for

birds. Many wildlife species, some of which are threatened or endangered, need to live in wetlands for all or part of their life.

Filling wetlands can increase on-site and off-site flooding. Dredging and filling can also degrade the quality of water during and after construction, and can reduce the populations of fish and wildlife. In fact, it has been estimated that as much as 80% of our recreationally and commercially important fish species are dependent upon wetlands for at least some portion of their life cycle.

Onsite Wetland Impacts

It appears that the majority of the site will be considered a wetland and because of the required use, filling of the entire wetland may be necessary. Based on the site visit, the wetland appears to be 0.38 acre in size.

The degree of impact to wetland and other surface water functions caused by a proposed project, whether the impact to the wetland function can be mitigated and the practicability of design modifications for the site, which could eliminate or reduce impacts to these functions, are all factors in determining whether an application will be approved by the State. Design modifications to reduce or eliminate adverse impacts must be explored. Any adverse impacts remaining after practicable design modifications have been implemented may be offset by mitigation as described below. An applicant may propose mitigation, or the State may suggest mitigation, to offset the adverse impacts which would cause the system to fail to meet the conditions for issuance. To receive approvals, a system cannot cause a net adverse impact on wetland functions and other surface water functions which is not offset by mitigation.

ENVIRONMENTAL RESOURCE PERMITTING

Any dredging or filling in, on or over wetlands or other surface waters of the state which is authorized by a general or individual permit issued under Chapter 40D-40, F.A.C., shall require an environmental resource permit prior to the dredging or filling. A “Joint Application for: Environmental Resource Permit/Authorization to use Sovereign Submerged Lands/Federal Dredge and Fill Permit” will be required to start the State and federal permitting process.

Because of the size of the impact for the improvements to the size, a General permit from SWFWMD and an Individual permit from the ACOE would be required. Part of the improvements to the haul road and barge landing area may qualify for a Nationwide Permit 33 through the ACOE if agreed these impacts are temporary. Otherwise the Individual permit would capture that work.

PERMIT TYPES

For the State process, activities which do not qualify for an exemption or a noticed general permit may qualify for a Standard General Permit, if those activities meet all the criteria listed below. Applicants must file a permit application for any project which meets the criteria for a Standard General Permit.

- System must not be capable of impounding a volume of water more than 120 acre-feet,
- Construction or alteration involving less than one acre of wetlands,
- Project size is less than 100 acres,
- The number of boat slips is less than ten.

During the federal process, the ACOE will coordinate with other federal groups including U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, through the Public Notice process. During this process, the ACOE will solicit comments on the potential effects of the project on threatened or endangered species or their habitat.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. All factors which may be relevant to the proposal will be considered including cumulative impacts, among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Due to the proposed land use and surrounding area, the agencies will determine that this project is clearly in the public interest.

For the federal process, an Individual permit would be required due to the amount of wetland impacts to the site. Some of the improvements to the haul road would fall under a Nationwide (NWP) 33 for Temporary Construction, Access and Dewatering. To be considered a temporary activity a restoration plan is required.

TIMEFRAMES

For the State process, within 30 days after receipt of an application, the State will notify the applicant if the application is deemed incomplete and request the additional information required to make the application complete. However, most recently, the State has been directed to notify the applicant within 15 days. The applicant then has up to 90 days to respond to staff requests for additional or clarifying information. If the application is still incomplete after additional information is provided, the District shall so notify the applicant, who shall have an additional 30 days (or less) to render the application complete or be denied for lack of completeness. The District may, within 30 days after receiving information from the applicant, request only clarifications of the information or request answers to new questions raised or directly related to the information previously furnished.

The ACOE has a similar process, however, their timelines are slightly longer and they do not have as a stringent mandate to follow them. The ACOE can take a year or more to issue a permit. Their process is briefly described below:

- (1) The public notice will be issued within 15 days of receipt of all information required to be submitted by the applicant.
- (2) The comment period on the public notice should be for a reasonable period of time within which interested parties may express their views concerning the permit. The comment period should not be more than 30 days nor less than 15 days from the date of the notice.
- (3) District engineers will decide on all applications not later than 60 days after receipt of a complete application.
- (4) Once the district engineer has sufficient information to make his public interest determination, he should decide the permit application even though other agencies which may have regulatory jurisdiction have not yet granted their authorizations, except where such authorizations are, by federal law, a prerequisite to making a decision on the DA permit application.
- (5) The applicant will be given a reasonable time, not to exceed 30 days, to respond to requests of the district engineer. The district engineer may make such requests by certified letter and clearly inform the applicant that if he does not respond with the requested information or a justification why additional time is necessary, then his application will be considered withdrawn or a final decision will be made, whichever is appropriate. If additional time is requested, the district engineer will either grant the time, make a final decision, or consider the application as withdrawn.

MITIGATION

The ecological benefits of mitigation are to compensate for the functional loss resulting from the permitted wetland impact. Compensatory mitigation activities may include, but are not limited to, onsite mitigation, offsite mitigation, offsite regional mitigation, and the purchase of mitigation credits from permitted mitigation banks.

Once it has been determined that the project is clearly in the public interest and all attempts have been made to avoid and minimize wetland impacts, mitigation is required to offset these impacts. Mitigation must be provided within the same drainage basin to avoid cumulative impacts. In addition, mitigation must be on a type-for-type basis; in that, for herbaceous saltwater wetland impacts, mitigation must also be for herbaceous saltwater credits. Mitigation banks are currently the most cost-efficient and straight-forward process.

In addition, in July 2008, a federal guidance known as the Compensatory Mitigation Rule was issued by the ACOE. Among other objectives, this new rule established a hierarchy among mitigation options which established equivalent standards for all types of mitigation. The goal of the new rule was to reduce risk and uncertainty in mitigation and established a preference hierarchy when offsetting unavoidable wetland impacts. This new preference establishes wetland mitigation banks as the most preferred option with in-lieu fees as the second option and permittee-responsible mitigation as the third option. The preference of on-site mitigation is replaced with the new hierarchy. Therefore, Little Pine Island Mitigation Bank (LPIMB) is the mitigation bank within the subject parcel service area (based on water shed/drainage basin) which sells herbaceous saltwater credits.

UMAM ASSESSMENT

Each wetland is scored based on the quality and function of the wetland and determines the amount of mitigation that is needed to offset the proposed impacts. The Uniform Mitigation Assessment Method (UMAM) rule (Chapter 62-345, F.A.C.) went into effect on February 2004. UMAM is now the sole means for state agencies (DEP, Water Management Districts, local governments and other governmental entities) to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters and to determine mitigation bank credits awarded and debited. The UMAM score is on a scale of 0 to 1 (1 being highest quality). The ACOE also adopted the use of UMAM method however, the ACOE using a slightly different time lag table rather than the state's time lag table.

The cost for herbaceous, saltwater mitigation credits from LPIMB is \$72,000 per credit. Assuming that the impacts to the onsite wetland is approximately 0.38 acre in size and a UMAM score of 0.67, the cost of mitigation would be approximately \$18,330.

There were a few mangroves that may be impacted onsite and along the haul road. The agencies may require this area be broken out as forested, saltwater and apply the higher mitigation credit (\$110,000 per credit) and a slightly higher UMAM score to this area, which will increase the cost. The potential costs for 0.06 acre of impacts to the mangrove area, with a UMAM score of 0.8, would be an additional cost of \$5,280. UMAM scores must be agreed upon by the agencies, therefore there is a potential for these scores to be modified.

SCHEDULE

- Attend up-front meetings with SWFWMD and ACOE, if possible.
- Conduct site work, wetland delineations, seasonal high water elevations, additional wildlife surveys,
- Conduct alternatives analysis and avoidance and minimization,
- Submit ERP application,
- Attend onsite meetings with agencies,
- Respond to agencies request for additional information.

CONCEPTUAL SITE LAYOUT

DMK investigated several site layout options. The options were focused on utilizing the .58 site in such a way as to maximize fire equipment access which minimizing wetland impacts and site development costs. The favored conceptual site layout is shown on Engineering Sheets 1, 2 and 3 at the end of this report. The selection of a wet detention pond for stormwater treatment will greatly reduce the need to import fill material and at approximately \$60 per cubic yard, the imported fill's substantial costs.

ESTIMATED FILL REQUIREMENTS

The quantity of structural fill required to develop the site is contingent on several final design decisions. Most notably, the size and location of retaining walls, the increase in existing ground elevations to direct stormwater runoff and the volume of the wet detention pond that will be the source of much of the structural fill. To be clear, the wet detention pond can be increased or decreased in size to match the structural fill requirements.

Structural Fill Requirements: 1,000 to 1,800 cubic yards

Fill Available from Detention Pond: 800 to 1,200 cubic yards

ESTIMATED SITE IMPROVEMENT COST

DMK worked with the LGIF&R Board Chairman to estimate the costs of fill and other construction materials delivered to the existing barge landing. The estimated site development cost are:

Mitigation Bank for Wetland Impacts:	\$ 24,000
Wet Detention Pond Dewatering:	\$ 15,000
Excavation of Wet Detention Pond (Compact Fill):	\$ 30,000
Shell – 80 CYD at \$70/CYD:	\$ 5,600
Remove Muck/Debris - 80 CYD at \$60/CYD:	\$ 4,800
Barge Landing Improvements/Miscellaneous:	<u>\$ 15,000</u>
TOTAL	\$ 94,400

V ZONE VS. A ZONE CONSTRUCTION

New construction in coastal flood hazard areas (V Zones and A Zones) must meet minimum National Flood Insurance Program (NFIP) requirements as well as County Building Code restrictions. NFIP construction requirements are more stringent in V Zones than in A Zones due to increased flood, wave, airborne debris and erosion hazards.

What follows is an outline of the pros and cons of building the fire station in a V Zone vs. the proposed A Zone.

- 1) In a V Zone, the space below the lowest floor must be free of obstructions that can cause floodwaters to be deflected. Breakaway walls, lattice or screening must be used. The A Zone does not have this requirement.
- 2) Solid foundations are prohibited in a V Zone but allowed in an A Zone.
- 3) The bottom of the first floor lowest structural member must be at or above the Base Flood Elevation (BFE) but may be below the BFE in an A Zone.
- 4) Structural fill is prohibited in a V Zone unless an engineer proves through a lengthy and expensive Storm Surge Study that soil scour would not be an issue. Structural fill is allowed in an A Zone.
- 5) Insurance premiums tend to be substantially higher in a V Zone than in an A Zone. That is why property owners frequently authorize surveys and engineering studies to pursue a Letter of Map Revision (LOMR). This would officially revise their property zoning in the current Flood Insurance Rate Map (FIRM).

In summary, constructing the fire station in the proposed A Zone is far more cost effective than a V Zone and the proposed site is both centrally located and adjacent to two multifamily condominium developments.

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**9360 LITTLE GASPARILLA ISLAND.,
LITTLE GASPARILLA ISLAND, FL. 33946**

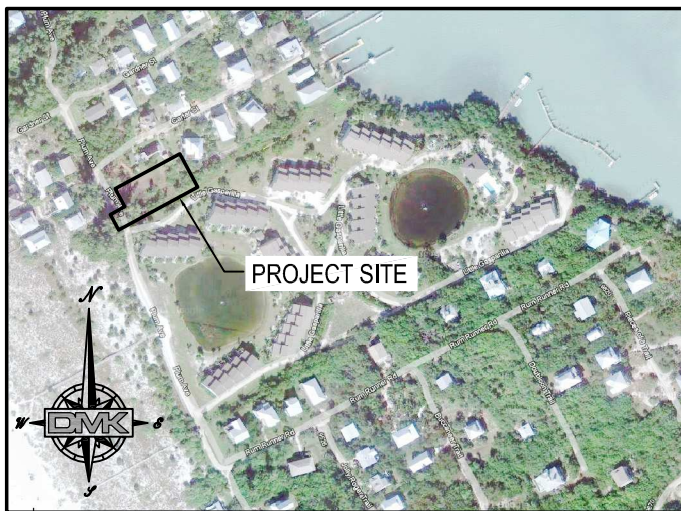
PREPARED FOR:

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ENGINEER:

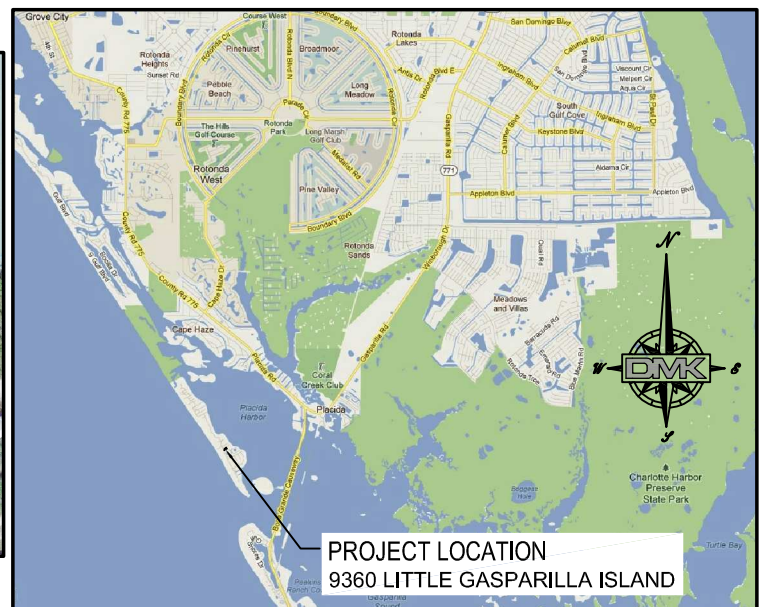


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AERIAL PHOTO MAP

N.T.S.



SITE LOCATION MAP

N.T.S.
T.42S., R.20E., SEC. 22
PARCEL ID: 422022181008

INDEX OF DRAWINGS:

- 1 COVER SHEET
- 2 PROPOSED IMPROVEMENT PLAN SHEET
- 3 PROJECT SECTION SHEET

NOTE:

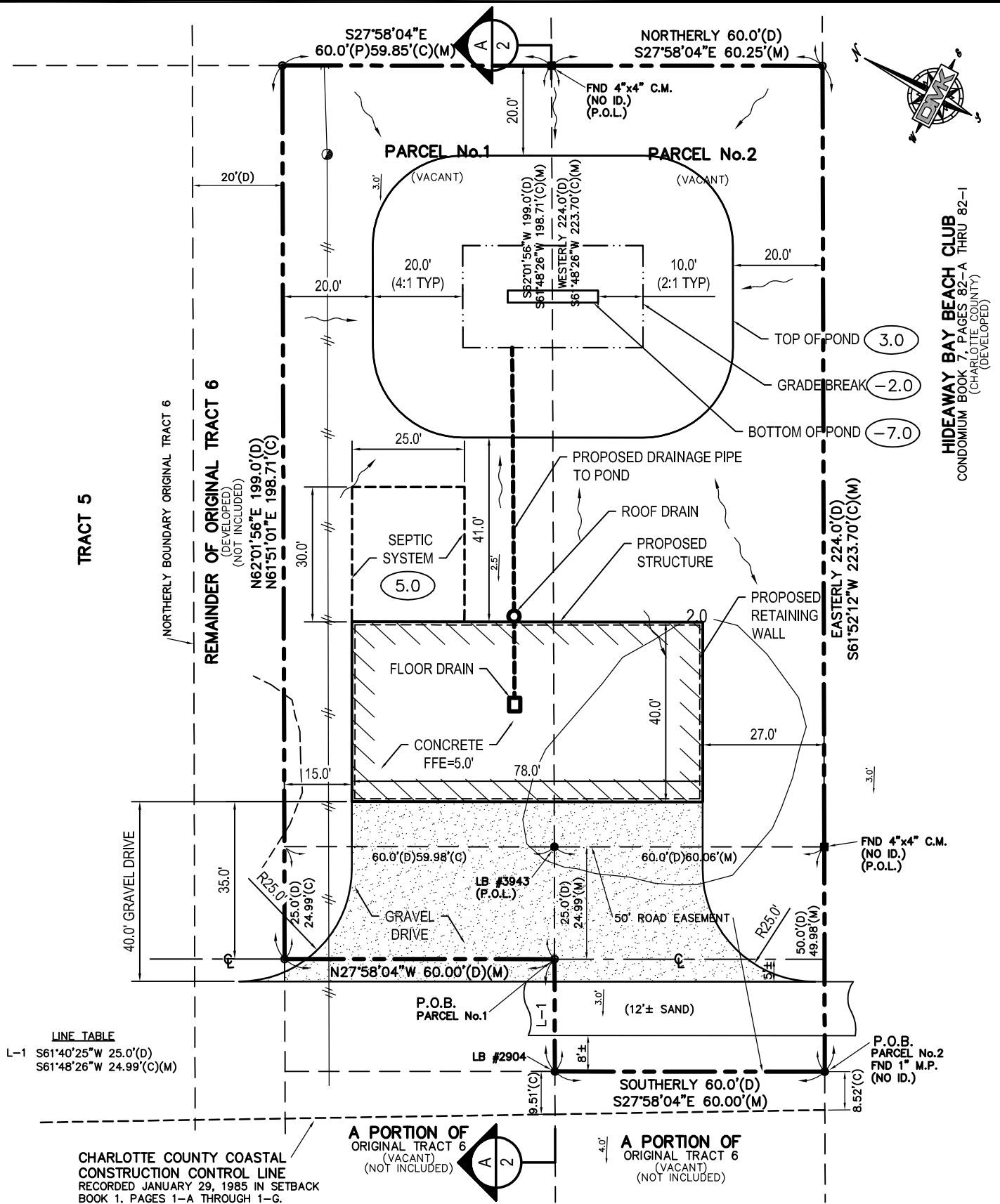
THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE
TO REPRODUCTION.



SHEET

1

LITTLE GASPARILLA ISLAND FIRE & RESCUE



Drawn By: RMS

Date: 10-2

SCALE: 1"=3'



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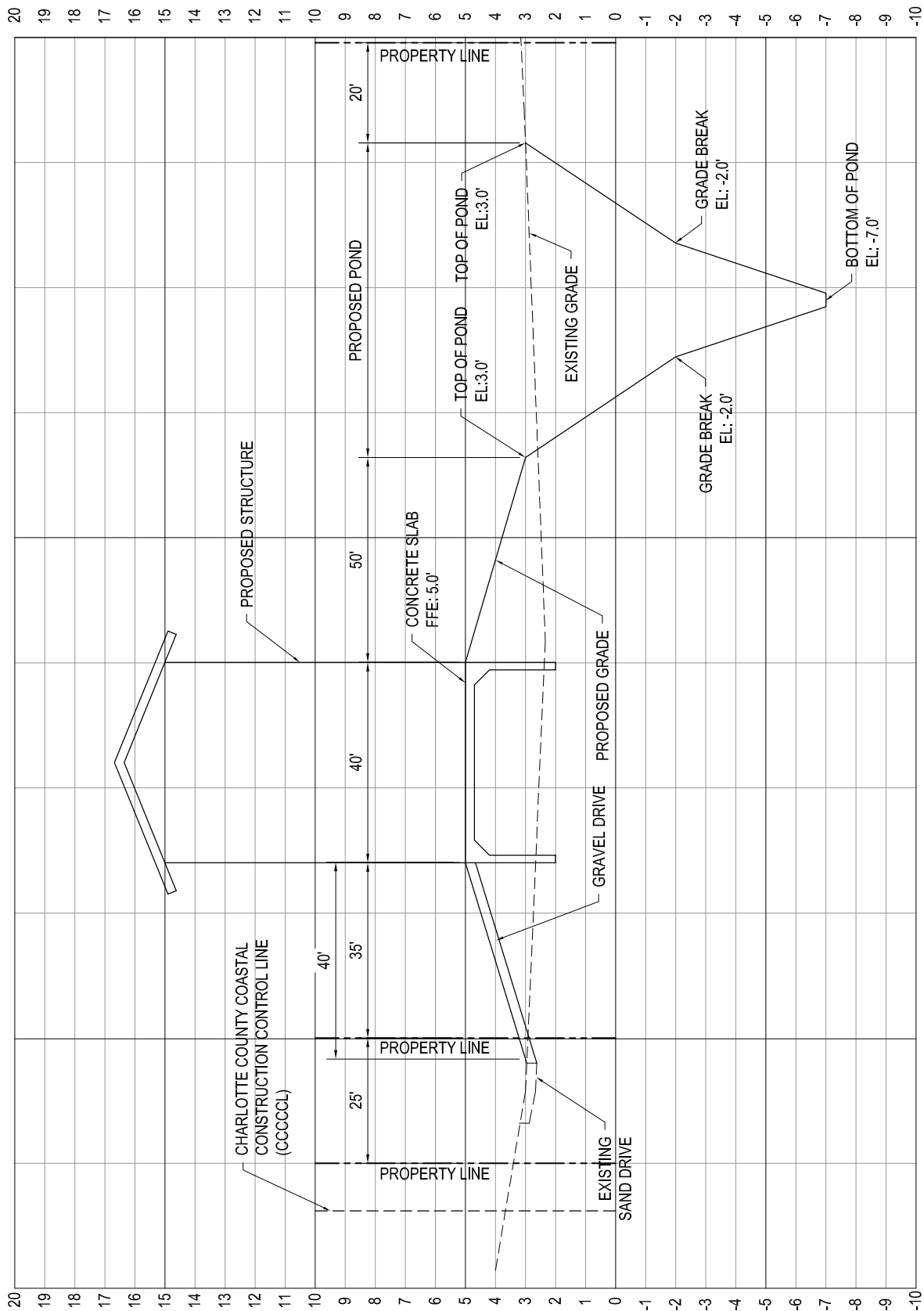
SITE FEASIBILITY STUDY

PROPOSED IMPROVEMENT PLAN SHEET

SHEET

2

LITTLE GASPARILLA ISLAND FIRE & RESCUE



SECTION A-A
SEE SHEET 2 FOR CUT LOCATION

1"=30' (H)
 1"=3' (V)

Design By: JSJ
 Drawn By: RMS
 Checked By: JSJ
 Date: 10-25-2012
 Proj. No.: 12-0204
 SCALE: 1"=30'



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SITE FEASIBILITY STUDY

**PROJECT SECTION
 SHEET**

SHEET

3