City of Ormond Beach, Florida
Adopted
Capital Improvements Program
FY 2015-16 through FY 2019-20

CITY OF ORMOND BEACH

FLORIDA

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CITY OF ORMOND BEACH

August 18, 2015

Honorable Mayor Kelley, City Commissioners and the Citizens of Ormond Beach

Enclosed is the Five-Year Capital Improvements Program (CIP) for the period FY 2015-16 through FY 2019-20 as required by Section 2-294 of the City Code of Ordinances. The Five-Year Capital Improvement Program totals $58,515,553 with $13,242,261 for FY 2015-16.

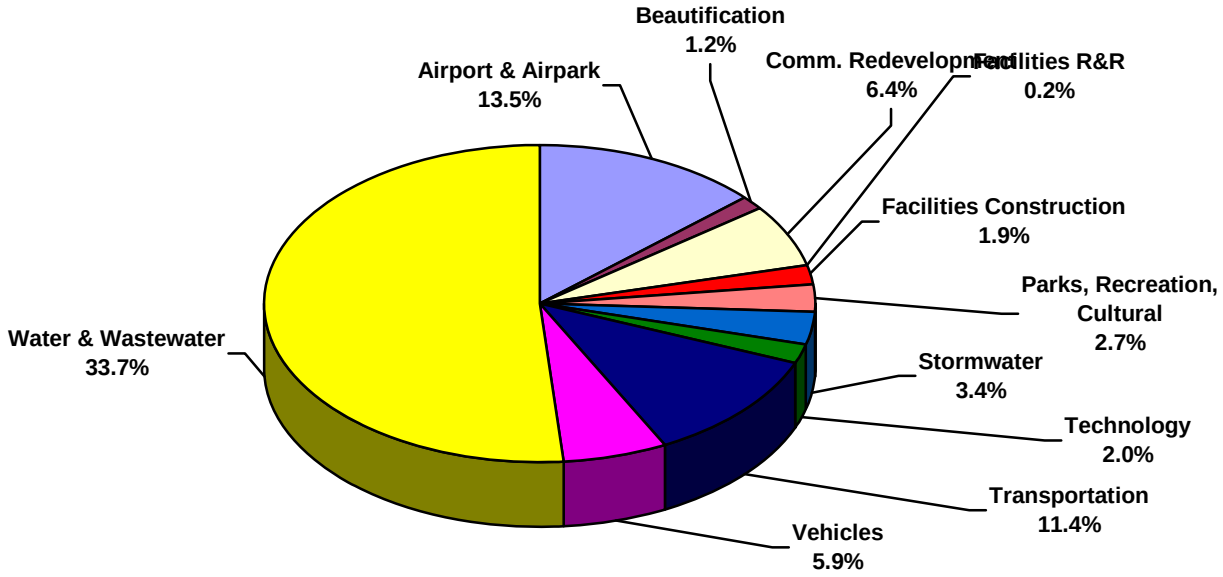
Projects included in the CIP reflect one or more of the following factors with maintenance or upgrade of existing facilities being the highest priority:

- Involves necessary or planned maintenance, renovation or construction of an existing facility, equipment or infrastructure.
- Reflects a prior multi-year commitment previously approved by the City Commission.
- Enhances the use or appearance of an existing facility or City-maintained public area.
- Included in a previous Master Plan or conceptual plan previously considered and endorsed or reviewed by the City Commission.

Overview

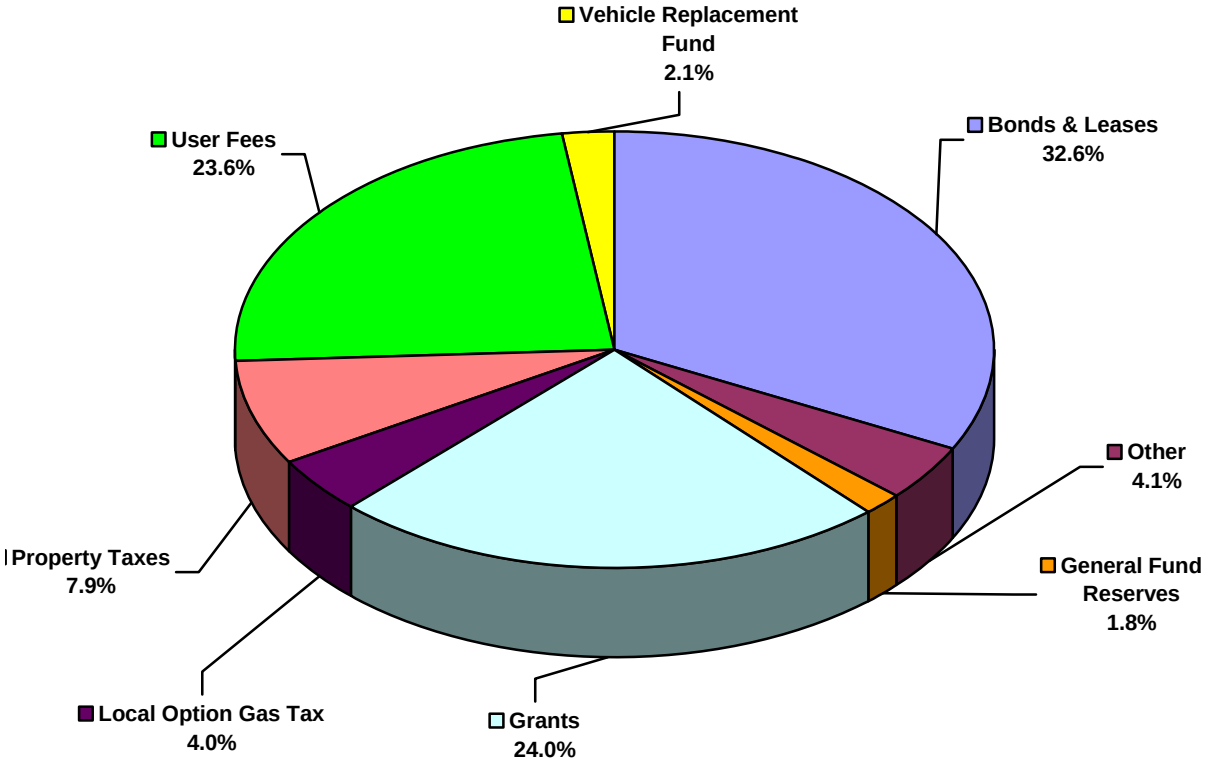
The City's Five-Year Capital Improvements Program represents a substantial effort to identify and schedule capital investments for a multi-year period complete with a project description and justification, as well as recommended financing for each project. The CIP reflects projects that have been identified as being essential to the organization.

Expenditure Categories
5 year plan



Category	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	Total
Airport & Airpark	4,428,352	1,073,000	2,230,000	150,000	-	7,881,352
Beautification	650,000	80,000	-	-	-	730,000
Community Redevelopment	770,000	1,356,100	375,000	1,218,000	-	3,719,100
Facility Renewal & Replacement	35,000	-	30,000	25,000	-	90,000
Facility Construction & Renovation	426,000	185,000	428,000	90,000	-	1,129,000
Parks, Recreation, Cultural	71,000	930,000	-	550,000	-	1,551,000
Stormwater	814,205	441,600	250,000	250,000	250,000	2,005,805
Technology	56,300	970,934	100,000	-	15,000	1,142,234
Transportation	809,104	1,374,388	3,245,194	635,000	610,000	6,673,686
Vehicles	822,500	559,176	785,400	439,400	867,200	3,473,676
Water & Wastewater	4,359,800	10,030,400	6,010,000	4,095,000	5,624,500	30,119,700
Total	**13,242,261**	**17,000,598**	**13,453,594**	**7,452,400**	**7,366,700**	**58,515,553**

Funding Sources
5 year plan



Category	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	Total
Grants/Donations	5,132,576	3,372,799	4,381,274	1,131,750	-	14,018,399
Property Taxes	506,710	1,785,165	1,059,420	1,083,250	175,000	4,609,545
General Fund Reserves	405,470	120,200	517,500	3,000	-	1,046,170
Bond Proceeds	2,783,800	6,426,000	2,590,000	3,055,000	4,194,500	19,049,300
User Charges	3,067,705	3,064,000	4,241,000	1,381,000	2,071,000	13,824,705
Local Option Gas Tax	550,000	450,000	450,000	450,000	450,000	2,350,000
Vehicle Replacement Fund	196,000	248,500	134,400	268,400	396,200	1,243,500
Other	600,000	1,533,934	80,000	80,000	80,000	2,373,934
Total	**13,242,261**	**17,000,598**	**13,453,594**	**7,452,400**	**7,366,700**	**58,515,553**

FY 2015-16 CIP Projects

Airport Improvement

The Airport Pavement Marking project ($89,182), Airport Access Roads ($64,000), and Taxiway G Construction/ PAP ($4,275,170) are schedule for FY 2015-16 and will be funded with an FAA grant of $3,847,653 and a FDOT grant of $447,729.

Beautification

A1A Landscaping ($650,000) funded with a $550,000 grant from the FDOT is scheduled for FY 2015-16.

Downtown Improvements

Downtown improvements are funded through property tax revenue which is expendable only within the downtown area. Projects for FY 2015-16 in this category include Cassen Park Public Dock Design ($70,000), Stormwater Improvements ($600,000), Sidewalk Renovations ($50,000) and an annual allocation for Upgrades and Improvements ($50,000).

Facility Renewal and Replacement

The Facility Renewal and Replacement fund was established in FY 2005-06 in response to the ongoing need for dedicated funding for maintenance of all City facilities and parks. For FY 2015-16, replacement of the playground at Central Park I ($35,000) is planned. ***Projects below the CIP threshold of $25,000 will be included as part of the annual operating budget.***

Facility Construction and Renovation

The FY 2015-16 Capital Improvement Plan includes Nova Landfill monitoring ($190,000), CDBG Projects ($110,000), an additional phase of the HVAC Chiller at City Hall ($58,000), and Fire Station 93 Roof Replacement ($68,000).

Parks, Recreation and Cultural Facility Improvements

Projects for next year include Traffic Calming at the Ormond Beach Sports Complex ($31,000) and West Ormond Community Center Study ($40,000). Nova Community Park Tennis Court Lighting Upgrade ($150,000) and Lighting Baseball Field 3 at the Ormond Beach Sports Complex ($230,000) have been moved to FY 2016-17 and the City will reapply for the FRDAP funding as it was not approved for FY 2015-16.

Stormwater Drainage Improvements

FY 2015-16 projects include the continuation of the Corrugated Metal Pipe Rehabilitation project ($250,000), Laurel Creek Pump Station Improvements ($437,000), Laurel Creek Stream Gauge Stations ($68,805), Wilmette Avenue Pump Station ($23,400) and Hickory Village Outfall Ditch Easement ($35,000).

Technology

For FY 2015-16, Communication Infrastructure Expansion is planned ($56,300).

Transportation

Transportation projects include Forest Hill Trail ($57,404), Railroad Crossings ($50,000), Road Resurfacing Program ($550,000), Street Light Maintenance ($40,000), US 1 North Sidewalk Design ($61,700) and A1A Mast Arm Installation design ($50,000).

Vehicle Replacement

The plan includes the replacement of 14 General Fund vehicles in FY 2015-16 ($410,500), one Street Sweeper ($228,000), and four Water/Wastewater vehicles ($184,000) including a backhoe.

Water and Wastewater System Improvements

Highlights of the projects proposed for FY 2015-16 include Wastewater Sludge Thickener Upgrade ($325,000), Watermain Replacement Design ($237,000), Water Plant Lime Silo Dust Collector Replacement ($290,000) the third phase of a City-wide Meter Replacement ($555,000), Process and Instrumentation Control Improvements ($550,000), and Lift Station Rehabilitation ($600,000).

Additional Projects Reviewed

Due to funding restrictions, several projects were considered but are not being recommended for inclusion in the five years Capital Improvement Program as follows:

Granada Bridge Uplighting: As requested by the City Commission at the CIP workshop, this project was moved to the unfunded section for later consideration.

MacDonald House Improvements: Repairs or demolition of building.

Andy Romano Beach Park: Installation of two additional pavilions, pavers and furnishings to the south end of the park. This is a future projects and will be revisited when future demand is known.

Cassen Park Improvements: Replace existing restrooms and pave entrance and roads.

Doug Thomas Way Extension: Extend two-way paved roads from Harmony to Hull behind fields 9-12.

Environmental Learning Center: Provide an encounter area/outdoor classroom.

Nova Community Park Access Road: Convert one-way road to two-way road.

Nova Community Park Master Plan: Projects as outlined in the recent master plan. **Phase I of this project was recommended for funding and includes construction of a dog park, parking for 130 vehicles and the installation of 12 fitness centers.** Phase I is planned for FY 2017-18.

Ormond Beach Sports Complex Parking: Paved parking at softball Quad, Wendelstedt fields, and Kiwanis/soccer fields.

Ormond Beach Sports Complex Lighting: Replace lighting on Soccer Fields 4, 5 and 6.

Public Art Project: Provide public art at various City facilities.

Tennis Center Building: Construction of a new facility to serve the tennis center.

Three Chimneys: Construction of parking area. A detailed project scope has not been developed at this time. Given this site is not owned by the City, this project is not likely to be funded in future CIP cycles. Staff will, however, continue to monitor this project for potential funding through grant sources.

West Ormond Neighborhood Park: Provide a park with athletic fields, open spaces and playgrounds.

Hunters Ridge Shadows Crossing: This project was requested by the HOA to address flooding issues due to improper grading of the lots.

Lisa Lake Dredging: If pursued, staff is recommending this project be funded through a special assessment requiring 51% approval by the impacted property owners.

May 2009 Flood Study Phase II: This project was contingent upon grant funding that has yet to materialize.

Fiber Optics Network Expansion: This project will be phased in as funding permits.

Board Recommendations

The Leisure Services Advisory Board recommended adopting the CIP as presented at their May 13th meeting with a request to provide $50,000 in funding for a West Ormond Community Center planning, design and environmental study. The board's recommendations are attached.

The Quality of Life Board met on May 14th and endorsed the funded projects as presented. The board's recommendations are provided are attached.

The Aviation Advisory Board reviewed the CIP and accepted it as presented.

The Public Works Advisory Board reviewed the CIP and accepted it as presented.

Ormond Main Street reviewed the CIP and recommended the addition of dockage at Cassen Park and Public Art throughout the downtown area.

Respectfully submitted,

Joyce A. Shanahan
City Manager

CITY OF ORMOND BEACH
FLORIDA

TO: City Commission

FROM: Quality of Life Adivsory Board

DATE: May 21, 2015

SUBJECT: Outcome Summary

Quality of Life Advisory Board Meeting on May 14, 2015

The following details the actions taken by the Quality of Life Advisory BOArd at their May 14, 2015 meeting regarding recommdnatin on the Capital improvement Program:

Ms. Berner amended her motion, seconded by Ms. Blanford that the Quality of Life Advisory Board endorses the funded projects as presented by staff for FY 2015-16. The motion passed unanimously.

Mr. Nave amended his motion, seconded by Ms. Blanford that the Quality of Life Advisory Board has reviewed and received and approve the CIP as presented for all five years with the exception of the FY 2016-17 project to renovate field #7 girls' softball field and ask that it be reviewed along with the parking lot for that field for efficiency of use for the land area due to available space at another field and that this field would only be used for a small minority of people. The motion passed unanimously.

Ms. Berner moved seconded by Ms. Blanford that the Quality of Life Advisory Board recommends to the City Commission to keep the list of unfunded project as a priority for future funding. The motion passed unanimously.

cc: Joyce Shanahan
Ted MacLeod

MEMORANDUM

TO: Kelly McGuire, Finance Director

FROM: Robert Carolin, Leisure Services Director RC

DATE: May 14, 2015

SUBJECT: Recommendations on Capital Improvement Program

The Leisure Services Advisory Board recommended adopting the 2015/2016 Capital Improvement Plan as presented with the following additions:

- $50,000 for a Planning, Design, and Environmental study to be completed for the possibility of a West Ormond Community Center

The Leisure Services Advisory Board recommended that the City Commission move the items below from the Unfunded section into the Funded section of the CIP Five-Year Plan for the years 2016-2020 provided funding is available:

- The dollars that were allocated for the 2016/2017 dog park at the Nova Community Center Landfill (Project 301213) be allocated in 2015/2016 for the capital dollars needed to fund the YMCA dog park
- Andy Romano Beachfront Park - $125,000
- The restroom improvement portion of the Cassen Park Improvements - $160,000
- Doug Thomas Way Extension (Project 301211) - $670,000
- Environmental Learning Center (Project 301164) - $105,000
- OBSC Future Improvements – Kiwanis/Soccer field parking (Priority 1) - $470,000 and Wendelstedt parking - $300,000 (Priority 2)
- Ormond Beach Sports Complex Lighting - Soccer Fields 4, 5 and 6 - $495,000
- Three Chimneys dedicated parking - $110,000

Please let me know if you have any questions or need further information. Thank you!

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Airport Business Park						
Expenditures						
Airport Business Park Expansion	0	428,000	0	0	0	428,000
Business Park Drive Phase II	0	195,000	2,055,000	0	0	2,250,000
Airport Business Park	0	623,000	2,055,000	0	0	2,678,000
Airport Business Park						
Revenues						
FDOT Grant	0	0	1,644,000	0	0	1,644,000
General Fund Reserves	0	0	411,000	0	0	411,000
Land Sales	0	195,000	0	0	0	195,000
Private Developer	0	428,000	0	0	0	428,000
Airport Business Park	0	623,000	2,055,000	0	0	2,678,000
Airport Improvements						
Expenditures						
Airport Pavement Marking	89,182	0	0	0	0	89,182
Taxiway G Construction and PAPI	4,275,170	0	0	0	0	4,275,170
Wildlife Hazard Assessment	0	110,000	0	0	0	110,000
Airport Access Roads	64,000	340,000	0	0	0	404,000
Replace AWOS	0		175,000	0	0	
Rehabilitate, Mark and Light Taxiway "E"	0	0	0	150,000	0	150,000
Airport Improvements	4,428,352	450,000	175,000	150,000	0	5,203,352
Airport Improvements						
Revenues						
FAA	3,847,653	99,000	157,500	135,000	0	4,239,153
FDOT Grant	447,729	280,800	14,000	12,000	0	754,529
General Fund Reserves	132,970	70,200	3,500	3,000	0	209,670
Airport Improvements	4,428,352	450,000	175,000	150,000	0	5,203,352

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Beautification						
Expenditures						
A1A Landscape Beautification	650,000	0	0	0	0	650,000
Bridge Sideslope Landscape Improvements	0	80,000	0	0	0	80,000
Beautification	650,000	80,000	0	0	0	730,000
Beautification						
Revenues						
FDOT Grant	550,000	0	0	0	0	550,000
Property Taxes-General CIP	100,000	80,000	0	0	0	180,000
Beautification	650,000	80,000	0	0	0	730,000
Community Redevelopment						
Expenditures						
Downtown: Cassen Park Public Dock	70,000	657,100	0	0	0	727,100
Downtown: Rockefeller Garden Stage Shade Co	0	49,000	0	0	0	49,000
Downtown: Ocean District Streetlight Replaceme	0	300,000	0	0	0	300,000
Downtown: Stormwater Improvements	600,000	0	0	0	0	600,000
Downtown: Sidewalk Renovations	50,000	300,000	300,000	0	0	650,000
Downtown: Upgrades and Improvements	50,000	50,000	25,000	25,000	0	150,000
Downtown: Thompson Creek, Phase II	0	0	0	1,193,000	0	1,193,000
Downtown: Land Acquisitions/Redevelopment	0	0	50,000	0	0	50,000
Community Redevelopment	770,000	1,356,100	375,000	1,218,000	0	3,719,100
Community Redevelopment						
Revenues						
Big Tier 1 Grant (pending approval)	70,000	200,000	0	0	0	270,000
Capital Project Reserves	600,000	0	0	0	0	600,000
FIND Grant (pending approval)	0	293,550	0	0	0	293,550
Property Taxes - TIF	0	212,550	0	0	0	212,550
Property Taxes-TIF	100,000	650,000	375,000	323,250	0	1,448,250
TPO	0	0	0	894,750	0	894,750
Community Redevelopment	770,000	1,356,100	375,000	1,218,000	0	3,719,100

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Facilities Renewal and Replacement						
Expenditures						
Central Park I	35,000	0	0	0	0	35,000
South Ormond Neighborhood Center	0	0	30,000	0	0	30,000
Ames Park	0	0	0	25,000	0	25,000
Facilities Renewal and Replacement	35,000	0	30,000	25,000	0	90,000
Facilities Renewal and Replacement						
Revenues						
Property Taxes-R&R	35,000	0	30,000	25,000	0	90,000
Facilities Renewal and Replacement	35,000	0	30,000	25,000	0	90,000
Facility Construction and Renovation						
Expenditures						
Nova Landfill	190,000	0	0	0	0	190,000
CDBG Projects	110,000	100,000	100,000	90,000	0	400,000
HVAC - Chiller Replacement	58,000	0	103,000	0	0	161,000
Ames House Seawall Repairs	0	35,000	0	0	0	35,000
Fire Station 93 Roof Replacement	68,000	0	0	0	0	68,000
Riviera Park Seawall Repairs	0	50,000	0	0	0	50,000
Police Department Roof	0	0	225,000	0	0	225,000
Facility Construction and Renovation	426,000	185,000	428,000	90,000	0	1,129,000
Facility Construction and Renovation						
Revenues						
CDBG Grant	110,000	100,000	100,000	90,000	0	400,000
General Fund Reserves	0	50,000	0	0	0	50,000
Property Taxes-General CIP	126,000	35,000	328,000	0	0	489,000
Solid Waste Charges	190,000	0	0	0	0	190,000
Facility Construction and Renovation	426,000	185,000	428,000	90,000	0	1,129,000

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Recreation and Cultural Facility Improvements						
Expenditures						
Ormond Beach Sports Complex Traffic Calming	31,000	0	0	0	0	31,000
Nova Community Park Renovations	0	150,000	0	0	0	150,000
OBSC Improvements	0	780,000	0	0	0	780,000
Nova Community Park Master Plan Phase I	0	0	0	550,000	0	550,000
West Ormond Community Center	40,000	0	0	0	0	40,000
Recreation and Cultural Facility Improvement	71,000	930,000	0	550,000	0	1,551,000
Recreation and Cultural Facility Improvements						
Revenues						
ECHO (pending approval)	0	275,000	0	0	0	275,000
FRDAP (pending approval)	0	227,500	0	0	0	227,500
Impact Fees	40,000	0	0	0	0	40,000
Property Taxes-General CIP	31,000	427,500	0	550,000	0	1,008,500
Recreation and Cultural Facility Improvements	71,000	930,000	0	550,000	0	1,551,000
Stormwater Improvements						
Expenditures						
Laurel Creek Stormwater Pump Station Improve	437,000	0	0	0	0	437,000
Laurel Creek Stream Gauge Stations	68,805	0	0	0	0	68,805
Wilmette Avenue Pump Station	23,400	171,600	0	0	0	195,000
Hickory Village Outfall Ditch Easement	35,000	20,000	0	0	0	55,000
Corrugated Metal Pipe Rehabilitation	250,000	250,000	250,000	250,000	250,000	1,250,000
Stormwater Improvements	814,205	441,600	250,000	250,000	250,000	2,005,805
Stormwater Improvements						
Revenues						
Stormwater Charges	790,805	270,000	250,000	250,000	250,000	1,810,805
Water & Sewer Charges	23,400	171,600	0	0	0	195,000
Stormwater Improvements	814,205	441,600	250,000	250,000	250,000	2,005,805

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Technology						
Expenditures						
Communication Infrastructure Nova	20,800	0	0	0	0	20,800
Communication Infrastructure Remote Utilities	35,500	0	0	0	0	35,500
P25 Compliant Radios	0	830,934	0	0	0	830,934
Backup Server Upgrade	0	0	100,000	0	0	100,000
Communication Infrastructure Fire Station 92	0	84,000	0	0	0	84,000
Communication Infrastructure Pump Stations	0	56,000	0	0	0	56,000
Communication Infrastructure Fleet	0	0	0	0	15,000	15,000
Technology	56,300	970,934	100,000	0	15,000	1,142,234
Technology						
Revenues						
Equipment Financing	0	830,934	0	0	0	830,934
Property Taxes-General CIP	20,800	42,000	100,000	0	15,000	177,800
Water and Wastewater Charges	35,500	98,000	0	0	0	133,500
Technology	56,300	970,934	100,000	0	15,000	1,142,234

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Transportation						
Expenditures						
Forest Hill Trail	57,404	589,288	0	0	0	646,692
Railroad Crossing	50,000	50,000	50,000	50,000	50,000	250,000
Road Resurfacing	550,000	450,000	450,000	450,000	450,000	2,350,000
Street Light Maintenance	40,000	30,000	0	65,000	65,000	200,000
Traffic Signal Maintenance	0	70,000	65,000	70,000	45,000	250,000
US 1 North Sidewalk	61,700	185,100	1,234,000	0	0	1,480,800
A1A Mast Arm Installation	50,000	0	500,205	0	0	550,205
Tomoka State Park Sidewalk	0	0	945,989	0	0	945,989
Transportation	809,104	1,374,388	3,245,194	635,000	610,000	6,673,686

Transportation						
Revenues						
FDOT JPA	51,664	530,359	0	0	0	582,023
Local Option Gas Tax	550,000	450,000	450,000	450,000	450,000	2,350,000
Property Taxes-Transportation	151,910	227,439	329,420	185,000	160,000	1,053,769
TPO	0	0	1,355,174	0	0	1,355,174
TPO Grant (pending)	55,530	166,590	1,110,600	0	0	1,332,720
Transportation	809,104	1,374,388	3,245,194	635,000	610,000	6,673,686

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Vehicle and Equipment Replacement						
Expenditures						
Advanced Life Support Cardiac Monitors	0	110,676	0	0	0	110,676
Vehicle Replacement-General	410,500	248,500	134,400	268,400	396,200	1,458,000
Vehicle Replacement-Fire E94	0	80,000	80,000	80,000	80,000	320,000
Vehicle Replacement-Solid Waste	228,000	0	0	0	0	228,000
Vehicle Replacement-Stormwater	0	24,000	314,000	0	345,000	683,000
Vehicle Replacement-Water & Wastewater	184,000	96,000	257,000	91,000	46,000	674,000
Vehicle and Equipment Replacement	822,500	559,176	785,400	439,400	867,200	3,473,676

Vehicle and Equipment Replacement						
Revenues						
General Fund Lease	0	80,000	80,000	80,000	80,000	320,000
General Fund Reserve	214,500	0	0	0	0	214,500
Property Taxes-General CIP	0	110,676	0	0	0	110,676
Solid Waste Charges	114,000	0	0	0	0	114,000
Stormwater Charges	114,000	24,000	314,000	0	345,000	797,000
Vehicle Replacement Fund	196,000	248,500	134,400	268,400	396,200	1,243,500
Water & Sewer Charges	184,000	96,000	257,000	91,000	46,000	674,000
Vehicle and Equipment Replacement	822,500	559,176	785,400	439,400	867,200	3,473,676

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water and Wastewater Improvements						
Expenditures						
Wastewater Sludge Thickener Upgrades	325,000	0	0	0	0	325,000
Water Plant Lime Silo Dust Collector Replaceme	290,000	0	0	0	0	290,000
Hydrant Replacement	161,000	161,000	0	0	0	322,000
City-wide Meter Replacement	555,000	515,000	530,000	490,000	500,000	2,590,000
General Facility and System Upgrades	200,000	200,000	200,000	200,000	200,000	1,000,000
Water Storage Tank Repairs	200,000	100,000	100,000	100,000	0	500,000
Lift Station Rehabilitation	600,000	400,000	400,000	600,000	400,000	2,400,000
Meter Installation	90,000	90,000	90,000	90,000	90,000	450,000
Pretreatment Effluent Pump (PEP) Replacement	100,000	100,000	100,000	100,000	100,000	500,000
Sanitary Sewer Inflow Infiltration	250,000	250,000	250,000	250,000	250,000	1,250,000
Water Main Replacement	237,000	1,575,000	180,000	1,200,000	0	3,192,000
Outfall Pipe Replacement	90,000	600,000	0	0	0	690,000
MLS Comminutor	21,600	144,000	0	0	0	165,600
Rima Ridge Auxiliary Power Generator	200,000	0	0	0	0	200,000
South Peninsula Reclaimed Water Main Expansi	270,000	3,338,400	0	0	0	3,608,400
N. Peninsula Water System Improvements	70,200	562,000	0	0	0	632,200
Process and Instrumentation Control Improveme	550,000	300,000	200,000	0	0	1,050,000
Sludge Dewatering Improvements	0	195,000	1,560,000	0	0	1,755,000
WTP Solids Handling Facility Upgrades	150,000	1,200,000	0	0	0	1,350,000
Secondary Raw Water Main	0	300,000	2,400,000	0	0	2,700,000
Breakaway Trails Reclaimed Water Storage and	0	0	0	240,000	2,460,000	2,700,000
Deer Creek Reclaimed Water Connection	0	0	0	135,000	0	135,000
Distribution System-North Peninsula	0	0	0	90,000	922,500	1,012,500
Force Main Improvements	0	0	0	60,000	540,000	600,000
Laboratory Upgrades	0	0	0	540,000	0	540,000
VFD retrofit for Wells 39-41	0	0	0	0	162,000	162,000

Projects by Category

	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water and Wastewater Improvements	4,359,800	10,030,400	6,010,000	4,095,000	5,624,500	30,119,700
Water and Wastewater Improvements						
Revenues						
Bond Proceeds	2,783,800	6,426,000	2,590,000	3,055,000	4,194,500	19,049,300
SJRWMD Grant	0	1,200,000	0	0	0	1,200,000
Wastewater Impact Fees	270,000	938,400	0	60,000	540,000	1,808,400
Water & Sewer Charges	1,306,000	1,166,000	1,020,000	980,000	890,000	5,362,000
Water Impact Fees	0	300,000	2,400,000	0	0	2,700,000
Water and Wastewater Improvements	4,359,800	10,030,400	6,010,000	4,095,000	5,624,500	30,119,700
Grand Total	**13,242,261**	**17,000,598**	**13,453,594**	**7,452,400**	**7,366,700**	**58,515,553**

CAPITAL IMPROVEMENT PROGRAM SUMMARY

			Project Costs								Funding Sources										
Project Title	Zone	Project #	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FIVE YEAR TOTAL	FUTURE PROJECTS	OPERATING COSTS	Grants/Donations	Property Taxes	Airport Funds	General Fund Reserves	Bonds	User Charges	Gas Tax	Vehicle Repl. Fund	Other	FIVE YEAR TOTAL	To Be Determined
Airport Business Park Expansion	1	110014	-	428,000	-	-	-	428,000		-	-	-	-	-	-	-	-	-	428,000	428,000	
Business Park Drive Ph II	1	110012	-	195,000	2,055,000	-	-	2,250,000		-	1,644,000	-	-	411,000	-	-	-	-	195,000	2,250,000	
Airport Pavement Marking	1	108072	89,182	-	-	-	-	89,182		-	71,346	-	-	17,836	-	-	-	-	-	89,182	
Taxiway G Extension/PAPI	1	108062	4,275,170	-	-	-	-	4,275,170		-	4,188,836	-	-	86,334	-	-	-	-	-	4,275,170	
Wildfire Hazard Assessment	1	108067	-	110,000	-	-	-	110,000		-	107,800	-	-	2,200	-	-	-	-	-	110,000	
Airport Access Roads	1	108066	64,000	340,000	-	-	-	404,000		-	307,200	-	-	96,800	-	-	-	-	-	404,000	
Replace AWOS	1	108068	-	-	175,000	-	-	175,000		-	171,500	-	-	3,500	-	-	-	-	-	175,000	
Rehab, Mark, & Light Taxiway E	1	108069	-	-	-	150,000	-	150,000		-	147,000	-	-	3,000	-	-	-	-	-	150,000	
AIRPORT IMPROVEMENTS TOTAL			**4,428,352**	**1,073,000**	**2,230,000**	**150,000**	**-**	**7,881,352**	**-**	**-**	**6,637,682**	**-**	**-**	**620,670**	**-**	**-**	**-**	**-**	**623,000**	**7,881,352**	
A1A Landscape Beautification	2	116063	650,000	-	-	-	-	650,000		2,000	550,000	100,000	-	-	-	-	-	-	-	650,000	
Bridge SideSlope Landscaping	3	301196	-	80,000	-	-	-	80,000		2,000	-	80,000	-	-	-	-	-	-	-	80,000	
BEAUTIFICATION TOTAL			**650,000**	**80,000**	**-**	**-**	**-**	**730,000**	**-**	**4,000**	**550,000**	**180,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**730,000**	
Downtown: Cassen Park Public Dock	1,2	104051	70,000	657,100	-	-	-	727,100		-	-	233,550	-	-	-	-	-	-	493,550	727,100	
Rockefeller Garden Stage Shade	1,2	104052	-	49,000	-	-	-	49,000		-	-	49,000	-	-	-	-	-	-	-	49,000	
Downtown: Ocean District Streetlight	1,2	104049	-	300,000	-	-	-	300,000		-	-	300,000	-	-	-	-	-	-	-	300,000	
Downtown: Stormwater Improvements	2	104044	600,000	-	-	-	-	600,000		-	-	-	-	-	-	-	-	-	600,000	600,000	
Downtown: Sidewalk	2	10400	50,000	300,000	300,000	-	-	650,000		-	-	650,000	-	-	-	-	-	-	-	650,000	
Downtown: Upgrades & Improvements	1,2	104041	50,000	50,000	25,000	25,000	-	150,000		-	-	150,000	-	-	-	-	-	-	-	150,000	
Downtown: Thompson Creek	2	104046	-	-	-	1,193,000	-	1,193,000		-	894,750	298,250	-	-	-	-	-	-	-	1,193,000	
Downtown: Land Acquisitions/Redevelopment	2	104048	-	-	50,000	-	-	50,000		-	-	50,000	-	-	-	-	-	-	-	50,000	
COMMUNITY REDEVELOPMENT TOTAL			**770,000**	**1,356,100**	**375,000**	**1,218,000**	**-**	**3,719,100**		**-**	**894,750**	**1,730,800**	**-**	**-**	**-**	**-**	**-**	**-**	**1,093,550**	**3,719,100**	
Central Park I	4	117020	35,000	-	-	-	-	35,000		-	-	35,000	-	-	-	-	-	-	-	35,000	
South Ormond Neighborhood Ctr.	2	117037	-	-	30,000	-	-	30,000		-	-	30,000	-	-	-	-	-	-	-	30,000	
Ames Park	2	117016	-	-	-	25,000	-	25,000		-	-	25,000	-	-	-	-	-	-	-	25,000	
FACILITIES RENEWAL & REPLACEMENT TOTAL			**35,000**	**-**	**30,000**	**25,000**	**-**	**90,000**		**-**	**-**	**90,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**90,000**	
Nova Landfill	3	460010	190,000	-	-	-	-	190,000		-	-	-	-	-	-	190,000	-	-		190,000	
CDBG Projects	2,4	CDBG16	110,000	100,000	100,000	90,000	-	400,000		-	400,000	-	-	-	-	-	-	-		400,000	
HVAC-Chiller Replacement	2	301186	58,000	-	103,000	-	-	161,000		-	-	-	-	161,000	-	-	-	-		161,000	
Ames House Seawall Repairs	2	301170	-	35,000	-	-	-	35,000		-	-	35,000	-	-	-	-	-	-		35,000	
Fire Station 93 Roof Replacement	2	301172	68,000	-	-	-	-	68,000		-	-	68,000	-	-	-	-	-	-		68,000	
Riviera Park Seawall Repairs	2	301171	-	50,000	-	-	-	50,000		-	-	-	-	50,000	-	-	-	-		50,000	
Police Department Roof Replacement	2	301173	-	-	225,000	-	-	225,000		-	-	225,000	-	-	-	-	-	-		225,000	
FACILITY CONSTRUCTION & RENOVATION TOTAL			**426,000**	**185,000**	**428,000**	**90,000**	**-**	**1,129,000**		**-**	**400,000**	**328,000**	**-**	**211,000**	**-**	**190,000**	**-**	**-**	**-**	**1,129,000**	
OBSC Traffic Calming	1	301210	31,000	-	-	-	-	31,000		-	-	31,000	-	-	-	-	-	-	-	31,000	

CAPITAL IMPROVEMENT PROGRAM SUMMARY

			Project Costs								Funding Sources										
Project Title	Zone	Project #	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FIVE YEAR TOTAL	FUTURE PROJECTS	OPERATING COSTS	Grants/Donations	Property Taxes	Airport Funds	General Fund Reserves	Bonds	User Charges	Gas Tax	Vehicle Repl. Fund	Other	FIVE YEAR TOTAL	To Be Determined
Nova Community Park Renovations	3	116064	-	150,000	-	-	-	150,000		500	112,500	37,500	-	-	-	-	-	-	-	150,000	
OBSC Improvements	1	116065	-	780,000	-	-	-	780,000		1,000	390,000	390,000	-	-	-	-	-	-	-	780,000	
West Ormond Community Center Study		310017	40,000	-	-	-	-	40,000			-	-	-	-		40,000	-	-	-	40,000	
Nova Community Park Phase I	3		-	-	-	550,000	-	550,000		-	-	550,000	-	-	-	-	-	-	-	550,000	
PARKS, RECREATION, AND CULTURAL TOTAL			**71,000**	**930,000**	**-**	**550,000**	**-**	**1,551,000**		**1,500**	**502,500**	**1,008,500**	**-**	**-**	**-**	**40,000**	**-**	**-**	**-**	**1,551,000**	
Laurel Creek Pump Station	4	107149	437,000	-	-	-	-	437,000		-	-	-	-	-	-	437,000	-	-	-	437,000	
Laurel Creek Stream Gauge Station	2,4	107150	68,805	-	-	-	-	68,805		-	-	-	-	-	-	68,805	-	-	-	68,805	
Wilmette Ave. Pump Station	2	107151	23,400	171,600	-	-	-	195,000		-	-	-	-	-	-	195,000	-	-	-	195,000	
Hickory Village Outfall Ditch Easement	4	107148	35,000	20,000	-	-	-	55,000		-	-	-	-	-	-	55,000	-	-	-	55,000	
Corrugated Metal Pipe Rehabilitation	1,2	107147	250,000	250,000	250,000	250,000	250,000	1,250,000		-	-	-	-	-	-	1,250,000	-	-	-	1,250,000	
STORWATER TOTAL			**814,205**	**441,600**	**250,000**	**250,000**	**250,000**	**2,005,805**		**-**	**-**	**-**	**-**	**-**	**-**	**2,005,805**	**-**	**-**	**-**	**2,005,805**	
Communication Infrastructure Nova	3	301217	20,800	-	-	-	-	20,800		-	-	20,800	-	-	-	-	-	-	-	20,800	
Communication Infrastructure Remote Utilities	All	409198	35,500	-	-	-	-	35,500		-	-	-	-	-	-	35,500	-	-	-	35,500	
Communication Infrastructure FS92	4	301218	-	84,000	-	-	-	84,000		-	-	42,000	-	-	-	42,000	-	-	-	84,000	
Communication Infrastructure Pump Stations	2,4	409197	-	56,000	-	-	-	56,000		-	-	-	-	-	-	56,000	-	-	-	56,000	
Communication Infrastructure Fleet	All	301219	-	-	-	-	15,000	15,000		-	-	15,000	-	-	-	-	-	-	-	15,000	
P25 Compliant Radios	All	301215	-	830,934	-	-	-	830,934		-	-	-	-	-	-	-	-	-	830,934	830,934	
Backup Server Upgrade	All	301216	-	-	100,000	-	-	100,000		-	-	100,000	-	-	-	-	-	-	-	100,000	
TECHNOLOGY TOTAL			**56,300**	**970,934**	**100,000**	**-**	**15,000**	**1,142,234**		**-**	**-**	**177,800**	**-**	**-**	**-**	**133,500**	**-**	**-**	**830,934**	**1,142,234**	
Forest Hill Trail	4	308101	57,404	589,288	-	-	-	646,692		-	582,023	64,669	-	-	-	-	-	-	-	646,692	
Railroad Crossing	All	308112	50,000	50,000	50,000	50,000	50,000	250,000		-	-	250,000	-	-	-	-	-	-	-	250,000	
Road Resurfacing	All	308113	550,000	450,000	450,000	450,000	450,000	2,350,000		-	-	-	-	-	-	-	2,350,000	-	-	2,350,000	
Street Light Maintenance	2,3,4	308114	40,000	30,000	-	65,000	65,000	200,000		-	-	200,000	-	-	-	-	-	-	-	200,000	
Traffic Signal Maintenance	All	308115	-	70,000	65,000	70,000	45,000	250,000		-	-	250,000	-	-	-	-	-	-	-	250,000	
US 1 North Sidewalk	1,2,3	308118	61,700	185,100	1,234,000	-	-	1,480,800			1,332,720	148,080	-	-	-	-	-	-	-	1,480,800	
A1A Mast Arm Installation	2	308107	50,000	-	500,205	-	-	550,205			495,184	55,021	-	-	-	-	-	-	-	550,205	
Tomoka State Park Sidewalk	1	308117	-	-	945,989	-	-	945,989			859,990	85,999	-	-	-	-	-	-	-	945,989	
TRANSPORTATION TOTAL			**809,104**	**1,374,388**	**3,245,194**	**635,000**	**610,000**	**6,673,686**		**-**	**3,269,917**	**1,053,769**	**-**	**-**	**-**	**-**	**2,350,000**	**-**	**-**	**6,673,686**	
Adv. Life Support Cardiac Monitors	NA	301214	-	110,676	-	-	-	110,676		-	-	110,676	-	-	-	-	-	-	-	110,676	
Vehicle Replacement-General	NA	30216M	410,500	248,500	134,400	268,400	396,200	1,458,000		-	-	-	-	214,500	-	-	-	1,243,500	-	1,458,000	
Vehicle Replacement-Fire E94	NA	30217M	-	80,000	80,000	80,000	80,000	320,000		-	-	-	-	-	-	-	-	-	320,000	320,000	
Vehicle Replacement-Solid Waste	NA	46016M	228,000	-	-	-	-	228,000		-	-	-	-	-	-	228,000	-	-	-	228,000	
Vehicle Replacement-Stormwater	NA	30216M	-	24,000	314,000	-	345,000	683,000		-	-	-	-	-	-	683,000	-	-	-	683,000	
Vehicle Replacement-Water & Wastewater	NA	40816M	184,000	96,000	257,000	91,000	46,000	674,000		-	-	-	-	-	-	674,000	-	-	-	674,000	

CAPITAL IMPROVEMENT PROGRAM SUMMARY

			Project Costs								Funding Sources										
Project Title	Zone	Project #	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FIVE YEAR TOTAL	FUTURE PROJECTS	OPERATING COSTS	Grants/Donations	Property Taxes	Airport Funds	General Fund Reserves	Bonds	User Charges	Gas Tax	Vehicle Repl. Fund	Other	FIVE YEAR TOTAL	To Be Determined
VEHICLE AND EQUIPMENT REPLACEMENT TOTAL			**822,500**	**559,176**	**785,400**	**439,400**	**867,200**	**3,473,676**		**-**	**-**	**110,676**	**-**	**214,500**	**-**	**1,585,000**	**-**	**1,243,500**	**320,000**	**3,473,676**	
Wastewater Sludge Thickener Upgrades	2	409172	325,000	-	-	-	-	325,000		-	-	-	-	-	325,000	-	-	-		325,000	
Water Plant Lime Silo Dust Collector	2	409183	290,000	-	-	-	-	290,000		-	-	-	-	-	290,000	-	-	-		290,000	
Hydrant Replacement	All	409181	161,000	161,000	-	-	-	322,000		-	-	-	-	-	-	322,000	-	-		322,000	
City-wide Meter Replacement	All	409169	555,000	515,000	530,000	490,000	500,000	2,590,000		-	-	-	-	-	-	2,590,000	-	-		2,590,000	
General Facility and System Upgrades	2	409187	200,000	200,000	200,000	200,000	200,000	1,000,000		-	-	-	-	-	-	1,000,000	-	-	-	1,000,000	
Water Storage Tank Repairs	All	409180	200,000	100,000	100,000	100,000	-	500,000		-	-	-	-	-	-	500,000	-	-		500,000	
Lift Station Rehabilitation	All	409175	600,000	400,000	400,000	600,000	400,000	2,400,000		-	-	-	-	-	2,400,000	-	-	-	-	2,400,000	
Meter Installation	All	409178	90,000	90,000	90,000	90,000	90,000	450,000		-	-	-	-	-	-	450,000	-	-		450,000	
Pretreatment Effluent Pump (PEP) Replacement	3	409177	100,000	100,000	100,000	100,000	100,000	500,000		-	-	-	-	-	-	500,000	-	-	-	500,000	
Sanitary Sewer Inflow Infiltration	All	409179	250,000	250,000	250,000	250,000	250,000	1,250,000		-	-	-	-	-	1,250,000	-	-	-	-	1,250,000	
Water Main Replacement	All	407173	237,000	1,575,000	180,000	1,200,000	-	3,192,000		-	-	-	-	-	3,192,000	-	-	-	-	3,192,000	
Outfall Pipe Replacement	All	409192	90,000	600,000	-	-	-	690,000		-	-	-	-	-	690,000	-	-	-	-	690,000	
MLS Comminutor	2	409190	21,600	144,000	-	-	-	165,600		-	-	-	-	-	165,600	-	-	-	-	165,600	
Rima Ridge Generator	3	409194	200,000	-	-	-	-	200,000		-	-	-	-	-	200,000	-	-	-	-	200,000	
S. Pen Reclaimed Water Main	2	435040	270,000	3,338,400	-	-	-	3,608,400			1,200,000				1,200,000	1,208,400	-	-	-	3,608,400	
N. Pen Water System Improvements	1	409191	70,200	562,000	-	-	-	632,200			-	-	-	-	632,200	-	-		-	632,200	
Process & Instrumentation Control	2	409193	550,000	300,000	200,000	-	-	1,050,000			-	-	-	-	1,050,000	-	-	-	-	1,050,000	
Sludge Dewatering	2	409195	-	195,000	1,560,000	-	-	1,755,000			-	-	-	-	1,755,000	-	-	-	-	1,755,000	
WTP Solids Handling Facility Upgrade	2	409197	150,000	1,200,000	-	-	-	1,350,000			-	-	-	-	1,350,000	-	-	-	-	1,350,000	
Secondary Raw Water	3	434027	-	300,000	2,400,000	-	-	2,700,000			-	-	-	-	-	2,700,000	-	-	-	2,700,000	
Breakaway Trails Reclaimed	3	409188	-	-	-	240,000	2,460,000	2,700,000			-	-	-	-	2,700,000	-	-	-	-	2,700,000	
Deer Creek Reclaimed Water	3	409171	-	-	-	135,000	-	135,000			-	-	-	-	135,000	-	-	-	-	135,000	
Distribution System-North Peninsula	County	409155	-	-	-	90,000	922,500	1,012,500		1,000	-	-	-	-	1,012,500	-	-	-	-	1,012,500	
Force Main Improvements	3,4	435039	-	-	-	60,000	540,000	600,000		1,000	-	-	-	-	-	600,000	-	-	-	600,000	
Laboratory Upgrades	2	409189	-	-	-	540,000	-	540,000		1,000	-	-	-	-	540,000	-	-	-	-	540,000	
VFD Retrofit for Wells 39-41	3	409196	-	-	-	-	162,000	162,000		1,000	-	-	-	-	162,000	-	-	-	-	162,000	
WATER/WASTEWATER TOTAL			**4,359,800**	**10,030,400**	**6,010,000**	**4,095,000**	**5,624,500**	**30,119,700**		**4,000**	**1,200,000**	**-**	**-**	**-**	**19,049,300**	**9,870,400**	**-**	**-**	**-**	**30,119,700**	
GRAND TOTAL			**13,242,261**	**17,000,598**	**13,453,594**	**7,452,400**	**7,366,700**	**58,515,553**		**9,500**	**13,454,849**	**4,679,545**	**-**	**1,046,170**	**19,049,300**	**13,824,705**	**2,350,000**	**1,243,500**	**2,867,484**	**58,515,553**	

AIRPORT/AIRPARK/BUSINESS PARK IMPROVEMENTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Airport Business Park Expansion

PROJECT#

110014

CATEGORY

Airport Business Park

FUND

110-Economic Development Fund

PROJECT LOCATION

ABP

MANAGEMENT

Economic Development

PROJECT SCOPE

This project involves the determination by the FAA that the former Nursery property, of approximately 15.8 acres, which is part of Airport property and located adjacent to the Airport Business Park, should be considered surplus to the development of the Airport.

JUSTIFICATION

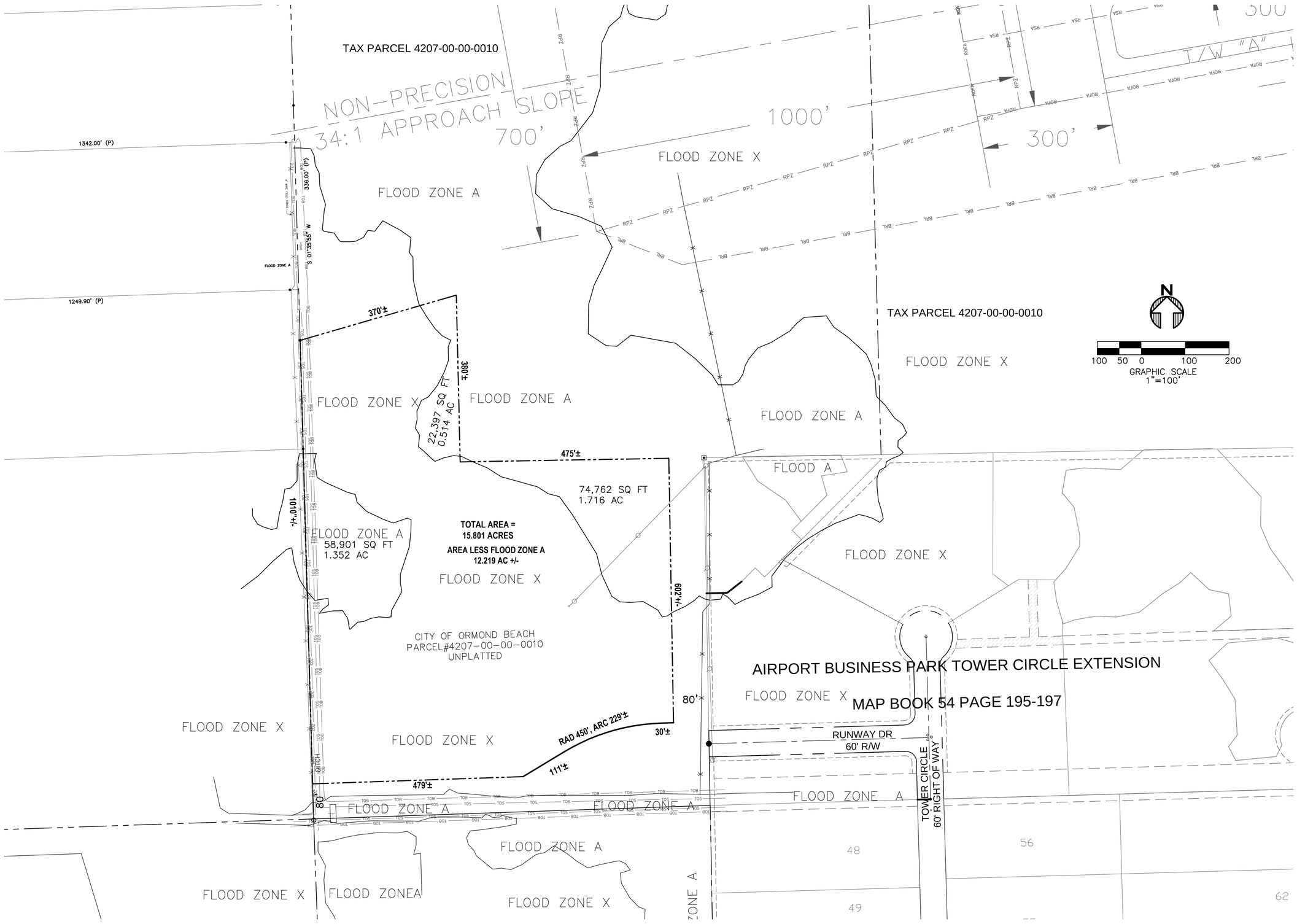
The Nursery property is shown on the current Airport Layout Plan as undeveloped and without access to any planned taxiways or runways. Staff proposes to analyze the property to determine if it should be considered surplus and incorporated into the Airport Business Park for future industrial development. The Airport Business Park is built out and additional land is needed to provide building sites for industrial companies with high wage jobs. A survey of the property was completed in 2014 to determine the northerly boundary (see survey). An appraisal was also completed in 2014 which estimated the value to be $428,000. The Aviation Advisory Board requested that staff integrate the analysis of this property as part of the Airport Master Plan Update process. The City's Airport Master Plan consultant - Hoyle, Tanner & Associates - will prepare an independent analysis of the property. If declared surplus by the FAA, the market value of the property will be paid to the Airport Fund following purchase of the property for development by a private business entity.

PROJECT COST METHODOLOGY

Project costs have been provided Economic Development staff

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Land Purchase	0	428,000	0	0	0	428,000
Total	0	428,000	0	0	0	428,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Private Developer	0	428,000	0	0	0	428,000
Total	0	428,000	0	0	0	428,000



SHEET 1 OF 1

UPHAM
CIVIL ENGINEERING•SURVEYING•LANDSCAPE ARCHITECTURE
265 Kenilworth Avenue • Ormond Beach • Florida 32174
Voice: 386.672.9515 • Fax: 386.673.6554 • uphaminc.com
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SKETCH EXHIBIT

THIS MAP IS NEITHER FULL NOR COMPLETE WITHOUT THE REPORT

TYPE OF SURVEY: BOUNDARY

MAP SUBJECT: NURSERY PARCEL

ADDRESS: PART OF 770 AIRPORT RD ORMOND BEACH, FL

PROJECT No:	140514
FIELD WORK BY:	WSH
DATE:	08/06/2014
OFFICE WORK BY:	WSH
DATE:	10/13/2014
FIELD BOOK - PAGE:	55-49
SCALE:	1" = 100'

DRAWING FILE:

28A-144E

CAPITAL PROJECT DETAIL

PROJECT TITLE

Business Park Drive Phase II

PROJECT#

110012

CATEGORY

Airport Business Park

FUND

110-Economic Development Fund

PROJECT LOCATION

Airport Business Park

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a secondary access road from Pineland Trail to the City's Airport Business Park. The road will be designed to a collector standard roadway.

JUSTIFICATION

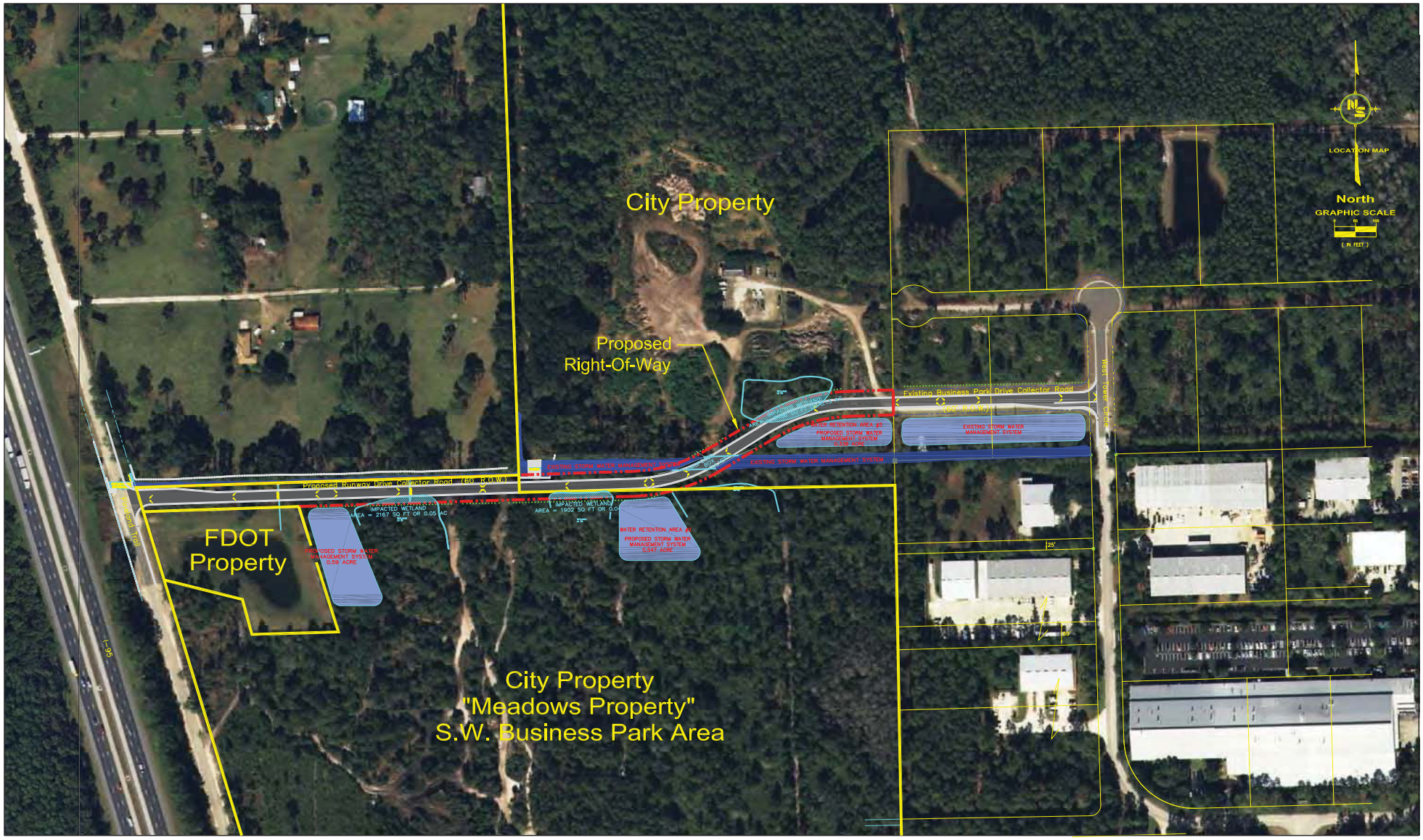
The Ormond Beach Airport Business Park is home to 32 businesses that consist of approximately 870,000 square feet of industrial space and 1,400 employees. Plans are underway by some of the existing businesses and by the City to increase the amount of industrial space and industrial lots over the next few years. All of the traffic generated by the business uses impacts the one entranceway that intersects Airport Road. In addition, this proposed roadway will serve as access to the Southwest Quadrant of the Airport, which will eventually connect to Signal Avenue. Completion of this project is contingent upon obtaining the necessary proceeds, primarily from FDOT and the Florida Office of Economic Opportunity (OEO), for projects related to job creation on city-owned industrial land.

PROJECT COST METHODOLOGY

Consultant provided Engineer's cost estimate updated to current cost and scope of work.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design	0	195,000	0	0	0	195,000
Construction	0	0	1,890,000	0	0	1,890,000
CEI	0	0	165,000	0	0	165,000
Total	0	195,000	2,055,000	0	0	2,250,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Land Sales	0	195,000	0	0	0	195,000
FDOT Grant	0	0	1,644,000	0	0	1,644,000
General Fund Reserves	0	0	411,000	0	0	411,000
Total	0	195,000	2,055,000	0	0	2,250,000



Business Park Drive / Runway Drive Collector Road
Proposed Alignment
Ormond Beach, Florida

NEEL-SCHAFFER
SOLUTIONS YOU CAN BUILD UPON
1705 19th Place, Suite G-3 Vero Beach,
Florida 32960 PH: (772) 770-4707
FAX: (772) 770-4640 CA00008556

Business Park Drive Extension

Updated Cost Estimate (March 2012)

NOTE: Original cost estimate was for extension on 2450 LF of roadway. 450 LF of that road was constructed in 2009; therefore, some items in the estimate have been prorated accordingly.

Cost Code	No.	Description	Quantity	Unit	Unit Price	Amount
	1	Mobilization, Demobilization, Bonds, Permits, Gen. Req. (5% Max.)	1	L.S.	$100,000.00	$100,000.00
	2	Survey and Construction Layout (2%)	1	L.S.	$40,000.00	$40,000.00
	3	Certified As-Built Survey (1.5%)	1	L.S.	$30,000.00	$30,000.00
	4	Maintenance of Traffic (1.5%)	1	L.S.	$30,000.00	$30,000.00
	5	Videotape Existing Conditions	1	L.S.	$2,000.00	$2,000.00
	6	Testing (Geotechnical, Water and Sewer) (1.5%)	1	L.S.	$30,000.00	$30,000.00
	7	Indemnification	1	L.S.	$1,000.00	$1,000.00
		SUBTOTAL				**$233,000.00**
Cost Code	**No.**	**Description**	**Quantity**	**Unit**	**Unit Price**	**Amount**
2221	**I.**	**EARTHWORK**				
	1	Clearing, grubbing, stripping and demucking (including the retention ponds area)	1	L.S.	$25,000.00	$25,000.00
	2	1' deep preliminary excavation to remove all inferior soil and appropriate disposal of such soil per FDEP standards (excluding ponds area)	4,428	C.Y.	$15.00	$66,420.00
	3	50% preliminary excavation of retention ponds area to remove all inferior soil and appropriate disposal of such soil per FDEP standards	3,280	C.Y.	$15.00	$49,200.00
	4	Excavation Volume of functional soil, per the proposed grading plan design	3,280	C.Y.	$15.00	$49,200.00
	5	Import fill volume(incl: Berms, Pads, Roads, etc.)	3,178	C.Y.	$25.00	$79,450.00
	6	Install and maintain staked Silt Fencing	4,100	L.F.	$5.00	$20,500.00
	7	Install and maintain Floating Turbidity Barrier	82	L.F.	$45.00	$3,690.00
	8	Prepare and Implement SWPPP for NPDES	1	L.S.	$5,000.00	$5,000.00
		SUBTOTAL I. EARTHWORK				**$298,460.00**
2222	**II.**	**SOIL STABILIZATION**				
	1	SOD lake banks (Bahia)	2,050	S.Y.	$5.00	$10,250.00
	2	Sod around lake in maintenance easement	2,050	S.Y.	$5.00	$10,250.00
	3	SOD Strip along back of curb to Right of Way (Bahia)	6,724	S.Y.	$5.00	$33,620.00
		SUBTOTAL II. SOIL STABILIZATION				**$54,120.00**
2223	**III.**	**PAVING**				
	1	2 1/2" FDOT Type S3 Asphaltic Concrete (Two Lifts)	738	TONS	$100.00	$73,800.00
	2	8" Compacted Limerock Base or Crushed Concrete Base	984	S.Y.	$12.00	$11,808.00
	3	12" Type "B" Stabilized Subgrade	984	S.Y.	$10.00	$9,840.00
	4	Type "F" Curb	3,980	L.F.	$20.00	$79,600.00
		5300 FDOT Series Retaining Wall (Length =235L.F., Height =6Ft.)				
	5	Concrete	28	C.Y.	$1,000.00	$28,000.00
	6	Steel	0.60	TONS	$1,700.00	$1,020.00
	7	Guardrail (Including Miscellaneous Asphalt under Guardrail)	2,000	L.F.	$125.00	$250,000.00
	8	Standard Flared End Treatments	4	EACH	$2,000.00	$8,000.00
		SUBTOTAL III. PAVING				**$462,068.00**
2224	**IV.**	**DRAINAGE**				
	1	Furnish and Install 18" RCP	1,230	L.F.	$65.00	$79,950.00
	2	Furnish and Install 48" RCP	400	L.F.	$200.00	$80,000.00
	3	Furnish and Install FDOT Type "P" Drainage Manhole With Ring and Cover	3	EACH	$3,000.00	$9,000.00
	4	Furnish and Install FDOT Type "D" Modified Outfall Structure	3	EACH	$7,500.00	$22,500.00
	5	Furnish and Install FDOT Type "P-5" Curb Inlet	4	EACH	$3,500.00	$14,000.00
	6	Furnish and Install FDOT Type "P-6" Curb Inlet	8	EACH	$4,000.00	$32,000.00
	7	Furnish and Install FDOT Mitered End Section	4	EACH	$1,500.00	$6,000.00
	8	Furnish and Install FDOT Standard Endwall	3	EACH	$2,000.00	$6,000.00
	9	Furnish and Install FDOT Index 250 Headwall	140	L.F.	$500.00	$70,000.00
	10	Furnish and Install FDOT Type 6' x 4' Box Culvert (including connection to existing box culvert)	200	L.F.	$500.00	$100,000.00
		Trench safety is included in the unit prices.				
		SUBTOTAL IV. DRAINAGE				**$419,450.00**
2225	**V.**	**WATER DISTRIBUTION**				
	1	Furnish and Install 8" PVC SDR 21 Water Main	750	L.F.	$32.00	$24,000.00
	2	8" x 8" Wet Tap	1	EACH	$1,500.00	$1,500.00
	3	Furnish and Install 8" Gate Valve and Valve Box	2	EACH	$3,000.00	$6,000.00
	4	Fire Hydrant Assembly	2	EACH	$3,000.00	$6,000.00
		SUBTOTAL V. WATER DISTRIBUTION				**$37,500.00**
2226	**VII.**	**SANITARY SEWER**				
	1	Furnish and Install 8" PVC SDR 26 Sanitary Line	750	L.F.	$40.00	$30,000.00
	2	Sanitary Manhole with Ring and Cover	3	EACH	$3,500.00	$10,500.00
		Trench safety is included in the unit prices.				
		SUBTOTAL VI. SANITARY SEWER				**$40,500.00**
2228	**IX.**	**STRIPING AND SIGNAGE**				
	1	Stop/Street Sign	2	EACH	$200.00	$400.00
	2	24" White Stop Bar	2	EACH	$400.00	$800.00
	3	6" Double Yellow	2,000	L.F.	$10.00	$20,000.00
	4	Temporary Striping	2,000	L.F.	$3.00	$6,000.00
		SUBTOTAL VIII. STRIPING AND SIGNAGE				**$27,200.00**
		TOTAL:				**$1,572,298.00**
		20% CONTINGENCY:				**$314,459.60**
		Total Probable Construction Cost=				**$1,886,757.60**
		ENGINEERING:				
		Design (60%, 90%, 100%)				**$175,000.00**
		Permitting				**$20,000.00**
		Construction Administration				**$105,000.00**
		Part-time Inspection (3 days per week)				**$60,000.00**
		ENGINEERING TOTAL:				**$360,000.00**
		Total Probable PROJECT Cost=				**$2,246,757.60**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Airport Pavement Marking

PROJECT#

108072

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Airport Manager

PROJECT SCOPE

This project will re-mark all runway markings, remove and replace the threshold markings on Runway 8-26, and re-mark the center and edge lines of Taxiways Bravo, Delta, Echo, and Foxtrot. This project will be conducted in accordance with the current Statewide Airport Runway Painting Contract.

JUSTIFICATION

The airport's runway markings were downgraded to "fair" condition following the airport licensing inspection in February of 2015. This project is intended to address this deficiency prior to the next licensing inspection.

PROJECT COST METHODOLOGY

The project cost is based upon an estimate from Hi-Lite Markings, Inc., the Statewide Airport Runway Painting Contractor.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
	89,182	0	0	0	0	89,182
Total	89,182	0	0	0	0	89,182

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FDOT Grant	71,346	0	0	0	0	71,346
General Fund Reserves	17,836	0	0	0	0	17,836
Total	89,182	0	0	0	0	89,182

District 5 Counties – Flagler, Marion, Volusia, Seminole, Lake, Sumter, Orange, Brevard and Osceola.

Item Number	Item Description		Price	Quantity	Total
P-101-5-1	Rubber Removal	$ 0.100	sq.ft		$ -
P-101-5-2	Surface Preparation, Cleaning of existing markings				
P-101-5-2-1	Surface Preparation – (0-5,000 sq.ft)	$ 0.150	sq.ft		$ -
P-101-5-2-2	Surface Preparation – (5,001-20,000 sq.ft)	$ 0.100	sq.ft		$ -
P-101-5-2-3	Surface Preparation – (>20,000 sq.ft)	$ 0.005	sq.ft	62,051.00	$ 310.26
P-101-5-3	Paint Removal (Grinding)	$ 0.940	sq.ft		$ -
P-101-5-4	Paint Removal (Waterblasting)	$ 1.740	sq.ft	13,800.00	$ 24,012.00
P-101-5-5	Paint Removal (Combination of methods)	$ 1.740	sq.ft		$ -
P-620-1-0	Runway/Taxiway Painting				
P-620-1-1-1	Runway/Taxiway Painting – White (0-5,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-1-2	Runway/Taxiway Painting – White (5,001-20,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-1-3	Runway/Taxiway Painting – White (>20,000 sq.ft)	$ 0.150	sq.ft	74,091.00	$ 11,113.65
P-620-1-2-1	Runway/Taxiway Painting – Yellow (0-5,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-2-2	Runway/Taxiway Painting – Yellow (5,001-20,000 sq.ft)	$ 0.150	sq.ft	13,140.00	$ 1,971.00
P-620-1-2-3	Runway/Taxiway Painting – Yellow (>20,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-3-1	Runway/Taxiway Painting – Black (0-5,000 sq.ft)	$ 0.200	sq.ft		$ -
P-620-1-3-2	Runway/Taxiway Painting – Black (5,001-20,000 sq.ft)	$ 0.250	sq.ft	14,667.00	$ 3,666.75
P-620-1-3-3	Runway/Taxiway Painting – Black (>20,000 sq.ft)	$ 0.200	sq.ft		$ -
P-620-1-4-1	Runway/Taxiway Painting – Red (0-5,000 sq.ft)	$ 0.030	sq.ft		$ -
P-620-1-4-2	Runway/Taxiway Painting – Red (5,001-20,000 sq.ft)	$ 0.030	sq.ft		$ -
P-620-1-4-3	Runway/Taxiway Painting – Red (>20,000 sq.ft)	$ 0.030	sq.ft		$ -
P-620-1-5-1	Runway/Taxiway Painting – Green (0-5,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-5-2	Runway/Taxiway Painting – Green (5,001-20,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-5-3	Runway/Taxiway Painting – Green (>20,000 sq.ft)	$ 0.150	sq.ft		$ -
P-620-1-6	Runway/Taxiway Painting – Temporary, Primer Coat	$ 0.150	sq.ft		$ -
P-620-2-0	Reflective Media				
P-620-2-1	Reflective Media – (Type I)	$ 0.250	sq.ft	84,591.00	$ 21,147.75
P-620-2-2	Reflective Media – (Type III)	$ 0.490	sq.ft		$ -
P-620-3-0	Paint Enhancements				
P-620-3-1-1	Paint Enhancements – Biocide Additive	$ 0.100	sq.ft	74,091.00	$ 7,409.10
P-620-3-1-2	Paint Enhancements – Rust Discoloration Formulation	$ 0.100	sq.ft		$ -
P-620-4-0	Surface Painted Signs				
P-620-4-1	Surface Painted Signs (Waterborne)	$ 2.890	sq.ft		$ -
P-620-4-2	Surface Painted Signs (Preformed Thermoplastic)	$ 18.890	sq.ft		$ -
P-620-5-0	Miscellaneous				
P-620-5-1	Set up Cost (Cost shall include all mobilization costs, cost of salaries, overhead, fringe benefits, operating margin, expenses and travel expenses)	$ 0.110	sq.ft	177,749.00	$ 19,552.39
P-620-5-2	Night Time Work Required due to Airport Schedule ONLY	$ 0.150	sq.ft		$ -
		$ 29.995			$ 89,182.90

CAPITAL PROJECT DETAIL

PROJECT TITLE

Taxiway G Construction and PAPI

PROJECT#

108062

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Airport Manager

PROJECT SCOPE

This project consists of designing and constructing a GA Design Group II Taxiway “G” parallel to the full length of Runway 17/35, including run-up areas. This project also involves the installation of Precision Approach Path Indicators (PAPIs) for all 4 runways. Also includes Runway End Identifier Lights (REILs) for Runway 17, Medium Intensity Taxiway Lights (MITLs) and lighted airfield guidance signs on Taxiway C, electrical vault upgrades and vault building expansion, and installation of a stand-by generator for the vault building.

JUSTIFICATION

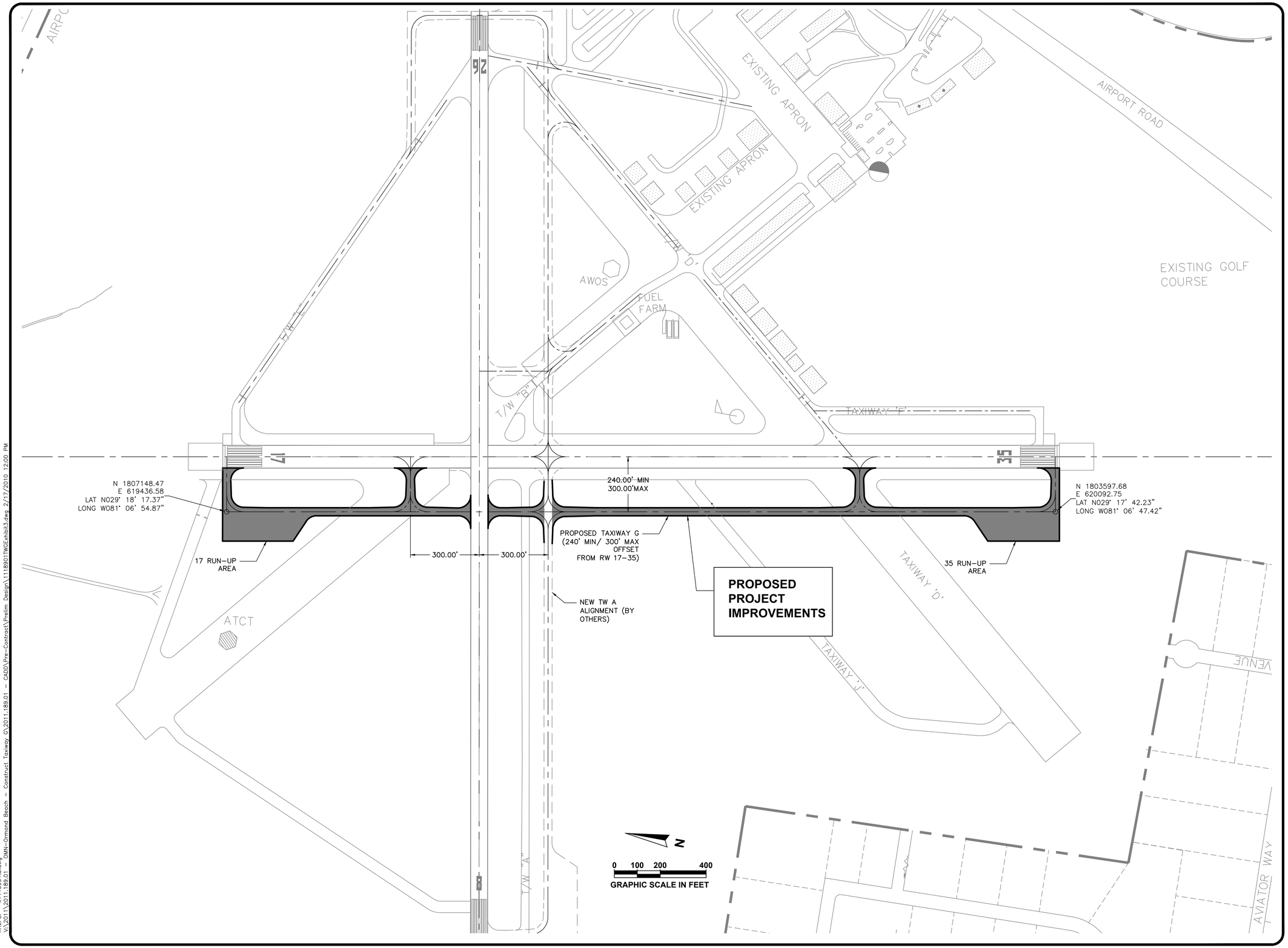
The construction of Taxiway ""G"" will allow aircraft to access the ends of the runways without having to back taxi onto an active runway. The new taxiway is also critical to the airside viability of the southwest quadrant for aviation-use development. The existing 2 box PAPIs cannot be seen by aircraft turning to final from extended patterns. The PAPIs are old and in constant need of repairs when functional. Replacement will enhance safety for aircraft using the airport as well as neighboring communities. The recent restoration of Taxiway C will require new taxiway edge lights and lighted airfield guidance signs to provide taxiing information for pilots. In order to accommodate the new electrical upgrades, vault equipment will require upsizing to meet the new electrical load requirements. Additionally, spatial requirements may dictate the need for additional vault room to house the new equipment.

PROJECT COST METHODOLOGY

Project costs are based upon bids received and represent the actual construction costs for this project.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	4,275,170	0	0	0	0	4,275,170
Total	4,275,170	0	0	0	0	4,275,170

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FAA	3,847,653	0	0	0	0	3,847,653
FDOT Grant	341,183	0	0	0	0	341,183
General Fund Reserves	86,334	0	0	0	0	86,334
Total	4,275,170	0	0	0	0	4,275,170



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CITY OF ORMOND BEACH FLORIDA

AVCON

AVCON, INC.
ENGINEERS & PLANNERS
5555 E. MICHIGAN ST., SUITE 200 - ORLANDO, FL 32822-2779
OFFICE: (407) 599-1122 - FAX: (407) 599-1133
CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
www.avconinc.com

PROFESSIONAL SEAL

CONSTRUCT, MARK, AND LIGHT TAXIWAY G

ORMOND BEACH MUNICIPAL AIRPORT ORMOND BEACH, FLORIDA

PROPOSED FEDERAL PROJECT IMPROVEMENTS

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SCALE: GRAPHIC

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	RDH
DRAWN BY:	RDH
CHECKED BY:	ABD
APPROVED BY:	SS
DATE:	JANUARY 2012

FDOT FM NO.	404937-1
CITY P.O. NO.	
AVCON PROJECT NO.	2011.189.01
CADD FILENAME	1118901TWGEXHIBIT3

DRAWING

EX 1.3

SHEET NO. 1 OF 1

Ormond Beach Municipal Airport (OMN)
Design and Bidding Phase Services
Construct, Mark, & Light Taxiway G
Precision Approach Path Indicator (PAPI) System Runways 17, 35, 8, and 26
REIL Units Runway 17
Renovate, Expand or New Electrical Vault Building
MITL System and Signs on Taxiway C
Manhours, Overhead, Profit, and Expenses Analysis

Updated 4/30/2013

	AVCON TASK												
Salary Costs	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**			**Line Totals**
Title	***Preliminary Design***	***Final Design***	***Bidding***	***Design Land Survey***	***Design Geotechnical Testing***	***Storm-Water Permit Application***	***FAA Grant Application***	***Project & Cost Administration***	***Federal DBE Goal & Methodology Update / SBE Plan***	***Wetland and T&E Species Permitting***	***Total Hours***	***Billing Rate Per Hour***	***Extended Costs ($)***
Principal	1	24	1	0	0	1	0	1	0	0	28	$150.00	$4,200
Project Manager / Architect	40	260	16	0	0	20	2	119	0	0	457	$130.00	$59,410
Project Engineer (Civil,Structural,HVAC, Fire, Electrica	80	448	24	0	0	60	8	0	0	0	620	$80.00	$49,600
CADD Tech / Designer (All Disciplines)	120	820	0	0	0	16	0	0	0	0	956	$60.00	$57,360
Project Planner I	30	8	0	0	0	0	0	0	0	0	38	$60.00	$2,280
Administrative/Clerical Support	60	340	80	0	0	4	8	0	0	0	492	$50.00	$24,600
Total Hours per Phase	331	1,900	121	0	0	101	18	120	0	0	2,591		
SubTotal Labor	**$23,750.00**	**$139,920.00**	**$8,150.00**	**$0.00**	**$0.00**	**$8,710.00**	**$1,300.00**	**$15,620.00**	**$0.00**	**$0.00**			**$197,450**
Printing	$613	$2,283				$2,330							$5,225
Mileage, Tolls	$80	$334	$167			$167							$748
SubConsultants				$26,500	$7,760				$8,700	$12,000			$54,960
Other, Misc.,Postage,Photos, Fees	$50	$50	$327			$1,190							$1,617
SubTotal Printing, Travel, Subconsultants and Expenses	**$740.00**	**$2,670.00**	**$490.00**	**$26,500.00**	**$7,760.00**	**$3,690.00**	**$0.00**	**$0.00**	**$8,700.00**	**$12,000.00**			**$62,550**
SubTotal Fees	**$24,490.00**	**$142,590.00**	**$8,640.00**	**$26,500.00**	**$7,760.00**	**$12,400.00**	**$1,300.00**	**$15,620.00**	**$8,700.00**	**$12,000.00**			
Total													**$260,000**

* - includes survey of wetland flagging
Estimated Construction Cost Range $ 2,750,000.00

Prepared by AVCON, INC. **30-Apr-13**
Note: Extended values are rounded to nearest 10 dollars

1118901024.xls

ORMOND BEACH MUNICIPAL AIRPORT
PRELIMINARY ESTIMATES OF BUDGETARY COSTS

OMN - Ormond Beach - Construct Taxiway G / Electrical/Miscellaneous Rehab Projects Design-2011.189.01-FDOT FM#404937-1-FAA AIP#3-12-0059-016-2013

Updated 5/14/2013

Cost Group	Element Index	Project Element Description	Design/Bid Engineering	Construction	Const Engineering	Line Total A	Line Total B	Line Total C
A	1	Parallel Taxiway G and Run-up Areas	$ 200,000.00			$ 200,000.00		
	2	Runway 17-35 & 8-26 PAPI-4, REILs 17, New/Rehab Vault, Standby Generator, TW C Lighting/Signage	$ 60,000.00			$ 60,000.00		
		Subtotal Design/Bid Eng	$ 260,000.00			**$ 260,000.00**		
B	1	Parallel Taxiway G and Run-up Areas		$ 2,190,630.75	$ 131,438.00		$ 2,322,068.75	
	2	Runway 17-35 & 8-26 PAPI-4, REILs 17, New/Rehab Vault, Standby Generator, TW C Lighting/Signage		$ 592,767.50	$ 35,566.00		$ 628,333.50	
		Subtotal Const + Const Eng		$ 2,783,398.25	$ 167,004.00		**$ 2,950,402.25**	
C	1	Parallel Taxiway G and Run-up Areas	$ 200,000.00	$ 2,190,630.75	$ 131,438.00			$ 2,522,068.75
	2	Runway 17-35 & 8-26 PAPI-4, REILs 17, New/Rehab Vault, Standby Generator, TW C Lighting/Signage	$ 60,000.00	$ 592,767.50	$ 35,566.00			$ 688,333.50
		Total Project	$ 260,000.00	$ 2,783,398.25	$ 167,004.00			**$ 3,210,402.25**

	Design	Construction	Total
Total Project	**$ 260,000.00**	**$ 2,950,402.25**	**$ 3,210,402.25**

1118901063.xlsx

Ormond Beach Municipal Airport (OMN)
Design and Bidding Phase Services
Construct, Mark, & Light Taxiway G
Precision Approach Path Indicator (PAPI) System Runways 17, 35, 8, and 26
REIL Units Runway 17
Renovate, Expand or New Electrical Vault Building
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Manhours, Overhead, Profit, and Expenses Analysis

Updated 4/30/2013

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Prepared by AVCON, INC. **30-Apr-13**
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		Subtotal Const + Const Eng		$ 2,783,398.25	$ 167,004.00		**$ 2,950,402.25**	
C	1	Parallel Taxiway G and Run-up Areas	$ 200,000.00	$ 2,190,630.75	$ 131,438.00			$ 2,522,068.75
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		Total Project	$ 260,000.00	$ 2,783,398.25	$ 167,004.00			**$ 3,210,402.25**

	Design	Construction	Total
Total Project	**$ 260,000.00**	**$ 2,950,402.25**	**$ 3,210,402.25**

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CAPITAL PROJECT DETAIL

PROJECT TITLE

Wildlife Hazard Assessment

PROJECT#

108067

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Airport Manager

PROJECT SCOPE

The FAA issued a certification alert to airport operators on June 11, 2009, reminding them of their obligation under regulations to conduct Wildlife Hazard Assessments if they experience a triggering event such as wildlife being ingested into an aircraft engine. The FAA later initiated rulemaking to make assessments mandatory whether or not an airport has had a triggering event.

JUSTIFICATION

The FAA now requires that General Aviation airports that have over 100 based jets or over 75,000 annual operations must accomplish a wildlife hazard assessment by fiscal year 2015. The FAA will support this project by making Airport Improvement Program (AIP) grants available to conduct the assessment. The assessment will help airport personnel understand the nature of wildlife in the vicinity, and can lead to the preparation of a Wildlife Hazard Management Plan to implement measures to mitigate the risk of wildlife strikes.

PROJECT COST METHODOLOGY

Cost estimate provided by Hoyle, Tanner & Associates.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Assessment	0	110,000	0	0	0	110,000
Total	0	110,000	0	0	0	110,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FAA		99,000	0	0	0	
FDOT Grant		8,800	0	0	0	
General Fund Reserves		2,200	0	0	0	
Total		110,000	0	0	0	

CAPITAL PROJECT DETAIL

PROJECT TITLE

Airport Access Roads

PROJECT#

108066

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Engineering

PROJECT SCOPE

This project consists of design, engineering and construction work required to extend Tower Circle East and Signal Avenue from the Airport Business Park into the southwest quadrant of the airport.

JUSTIFICATION

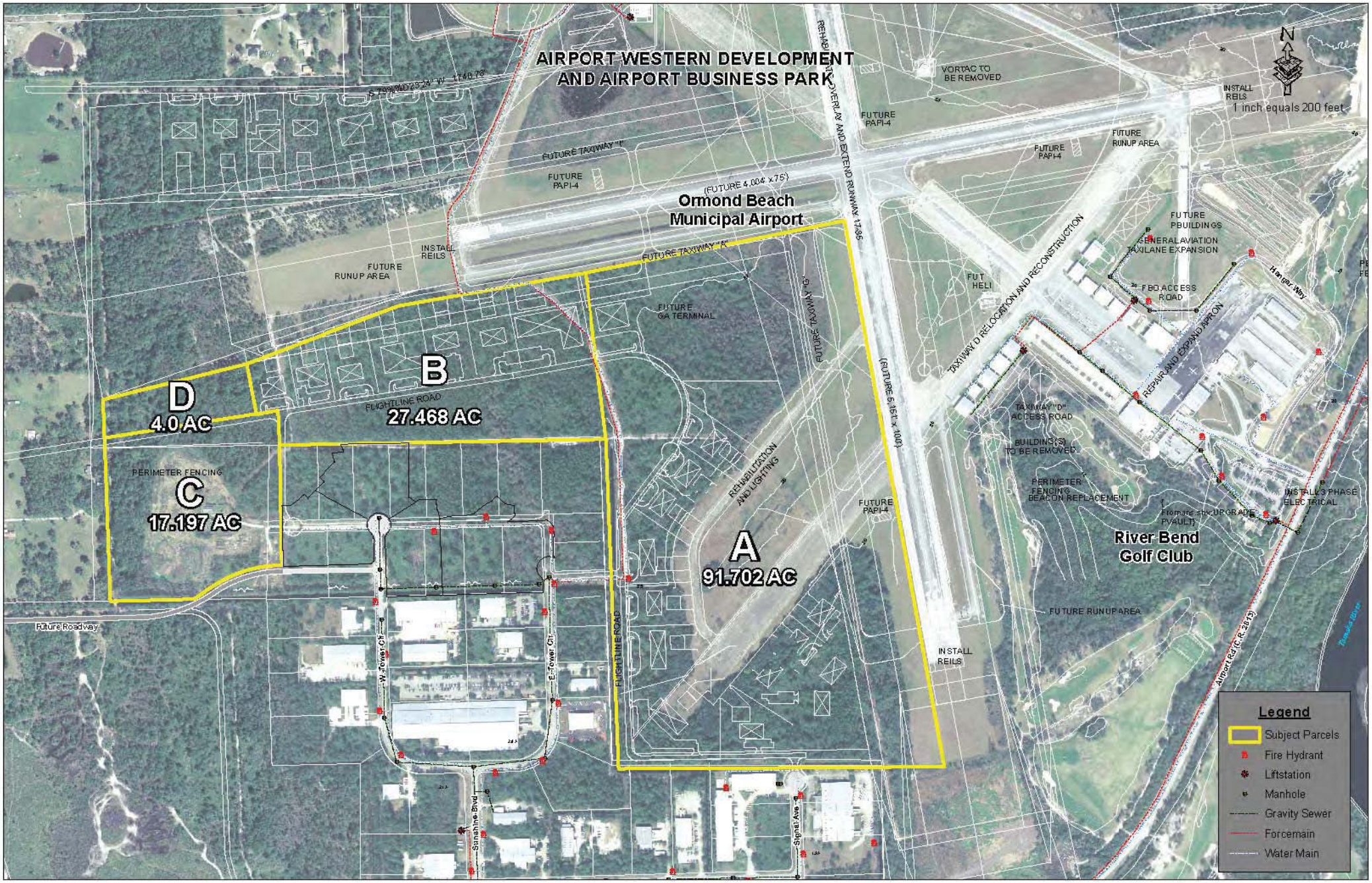
The southwest quadrant of the airport is currently inaccessible by ground vehicles via existing ingress and egress routes at the airport or the Airport Business Park. Successful development of the southwest quadrant will require such access, and will benefit both the airport and the business park by affording co-location of airside and non-airside business parcels. This project will also extend utilities from the business park into the southwest quadrant. Acquisition by the airport of approximately 0.6 acres of business park property will be required in order to accommodate these access roads.

PROJECT COST METHODOLOGY

The City Engineering Department has provided initial cost estimates for this project.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design & Engineering	44,000	0	0	0	0	44,000
Permitting, Relocation	20,000	0	0	0	0	20,000
Construction	0	295,000	0	0	0	295,000
Land Acquisition	0	30,000	0	0	0	30,000
CEI	0	15,000	0	0	0	15,000
Total	64,000	340,000	0	0	0	404,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FDOT Grant	35,200	272,000	0	0	0	307,200
General Fund Reserves	28,800	68,000	0	0	0	96,800
Total	64,000	340,000	0	0	0	404,000


AIRPORT WESTERN DEVELOPMENT
AND AIRPORT BUSINESS PARK
Ormond Beach
Municipal Airport
(FUTURE 4,004' x 75')
FUTURE TAXIWAY "B"
FUTURE TAXIWAY "A"
FUTURE TAXIWAY "C"
FUTURE PAPI-4
INSTALL REILS
FUTURE RUNUP AREA
FUTURE GA TERMINAL
REHABILITATION AND LIGHTING
FLIGHTLINE ROAD
REHAB, OVERLAY AND EXTEND RUNWAY 17-35
(FUTURE 5,165' x 100')
VORTAC TO BE REMOVED
TAXIWAY D RELOCATION AND RECONSTRUCTION
FUTURE HELI
FUTURE PBUILDINGS
GENERAL AVIATION TAXILANE EXPANSION
FBO ACCESS ROAD
Hangar Way
REPAIR AND EXPAND APRON
TAXIWAY "D" ACCESS ROAD
BUILDING(S) TO BE REMOVED
PERIMETER FENCING BEACON REPLACEMENT
INSTALL 3 PHASE ELECTRICAL
Fiomare sw UPGRADE (VAULT)
River Bend
Golf Club
FUTURE RUNUP AREA
INSTALL REILS
Airport Rd (C.R. 2013)
Tomoka River
N
1 inch equals 200 feet
A
91.702 AC
B
27.468 AC
C
17.197 AC
D
4.0 AC
PERIMETER FENCING
Future Roadway
W. Tower Cir.
E. Tower Cir.
Sunshine Blvd
Signal Ave.
Legend
Subject Parcels
Fire Hydrant
Liftstation
Manhole
Gravity Sewer
Forcemain
Water Main

Airport Access Roads
Extension of East Tower Circle and
Signal Avenue Drive to the perimeter of the Southwest Airport Quad
(Section A)
Cost Estimate

Note: No design plans have been developed at the time of this estimate. Development of these extensions will likely require stormwater management facilities and wetlands delineation (including gopher tortoise relocation). A similar project for the extension of Tower Circle construction was awarded in 2006 for $683,421. This estimate is based on a proportion of that project cost and adjusted to out year value per Construction Cost Index.

Construction Cost Index

Year	Points	Ave. Increase	17.0%
2011	9070	Ave. Increase/ year	2.8%
2006	7751	Projected to 2013	22.7%

2006 Tower Circle Extension Project Cost: $ 683,421.00

Adjusted to 2013 $ 838,486.12 Estimated Construction Cost

Approximate Scope Ratio (Proposed vs. 0.35 Constructed)

Est. Construction	**$293,470.14**
Permitting	$ 10,000.00
Gopher Tortoise Relocation	$ 10,000.00
Engineering Design and Permitting (15%)	$ 44,020.52
Construction Engineering Inspection (5%)	$ 14,673.51
TOTAL ESTIMATE=	**$ 372,164.17**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Replace AWOS

PROJECT#

108068

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Airport Manager

PROJECT SCOPE

Install a new automated airport weather station at a point in the northeast quadrant of the airport, in closer proximity to the ATC tower. New system to provide 24/7 automated aviation weather information.

JUSTIFICATION

The AWOS is currently located to the east of the intersection of Taxiways Bravo and Delta, in an area of high rotary-wing activity. The current location creates a hazard to rotary-wing operations. The AWOS system as it exists does not provide 24/7 weather information, as it is not coordinated with ATC tower systems. AWOS services are thus disabled during those hours when the ATC tower is in operation. AWOS systems are among the oldest automated weather stations. They generally report at 20-minute intervals and do not report special observations for rapidly changing weather conditions.

PROJECT COST METHODOLOGY

Cost estimate provided by Hoyle, Tanner & Associates.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Replace AWOS	0		175,000	0	0	
Total	0		175,000	0	0	

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FAA	0	0	157,500	0	0	157,500
General Fund Reserves	0	0	3,500	0	0	3,500
FDOT Grant	0		14,000	0	0	
Total	0	0	175,000	0	0	175,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Rehabilitate, Mark and Light Taxiway "E"

PROJECT#

108069

CATEGORY

Airport Improvements

FUND

108-Airport

PROJECT LOCATION

Airport

MANAGEMENT

Airport Manager

PROJECT SCOPE

This project will involve milling and overlaying the surface of Taxiway "E" with new asphalt, and will also afford new edge lighting and signage for the taxiway.

JUSTIFICATION

The FDOT Statewide Airfield Pavement Management Program Report has established a Pavement Condition Index (PCI) of 43 for Taxiway Echo. This PCI value equates to a condition rating of “poor” and indicates that action is required to improve the taxiway surface.

PROJECT COST METHODOLOGY

Project cost estimates have been provided by Hoyle, Tanner & Associates.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design	0	0	0	150,000	0	150,000
Total	0	0	0	150,000	0	150,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FAA	0	0	0	135,000	0	135,000
FDOT Grant	0	0	0	12,000	0	12,000
General Fund Reserves	0	0	0	3,000	0	3,000
Total	0	0	0	150,000	0	150,000

BEAUTIFICATION

CAPITAL PROJECT DETAIL

PROJECT TITLE

A1A Landscape Beautification

PROJECT#

116063

CATEGORY

Beautification

FUND

116-Grant Fund

PROJECT LOCATION

Granada to Harvard Drive

MANAGEMENT

Engineering

PROJECT SCOPE

Install Landscape and Irrigation within the raised medians and behind the existing sidewalk in accordance with FDOT requirements and "Bold Design Standards".

JUSTIFICATION

One of the City Commission Goals of FY 13/14, was to improve the existing landscaping along A1A. Staff submitted a grant application to the FDOT to fund the landscaping portion of the project utilizing their beautification JPA program. The FDOT approved our grant request in the amount of $550K for 7/1/2014. However, the issuance of the draft JPA agreement was delayed approximately 1 year for a complete FDOT internal rewrite and legal review of future JPA's. During this time, staff requested additional medians be constructed to provide better access management and safer pedestrian crossing. The FDOT denied our request due to constrained ROW widths and the inability for vehicles to make u-turns.

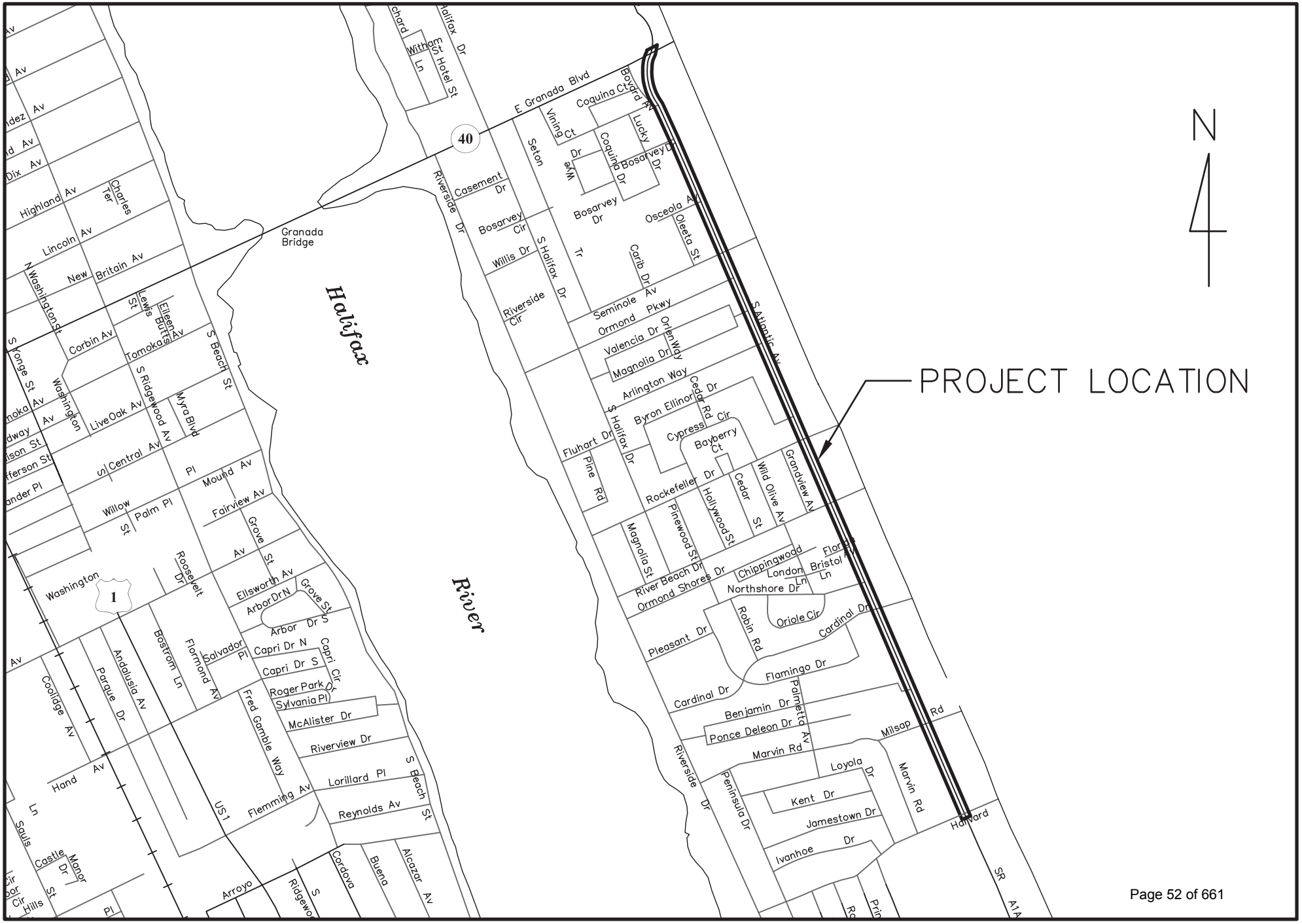
PROJECT COST METHODOLOGY

The Conceptual plan submitted to the FDOT for the JPA grant review was based upon current plans to landscape the Downtown corridor. Cost estimated were based on the Downtown Median Landscape bid.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Landscaping	550,000	0	0	0	0	550,000
Irrigation	100,000	0	0	0	0	100,000
Total	650,000	0	0	0	0	650,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FDOT Grant	550,000	0	0	0	0	550,000
Property Taxes-General CIP	100,000	0	0	0	0	100,000
Total	650,000	0	0	0	0	650,000

A1A LANDSCAPE BEAUTIFICATION



NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER
JOHN NOBLE, P.E. CITY ENGINEER

A1A MEDIAN LANDSCAPING

OVERALL MAP

DATE: 8/15/13	PROJECT NO.: N/A
SCALE: 1"=100'	FILE NAME: A1A_MEDIANS.dw
DRAWN BY: MC	SHEET: 1 of 3

City of Ormond Beach
BID OPENING TABULATION
Downtown Medians & Streetscape Landscaping
Bid No. 2013-08

Bid Opening Date: June 27, 2013
Time: 2:00 P.M.

Company Submitting Bid	Company Address	Bid Bond	Total Bid
RJ LANDSCAPE INC	1766 TAYLOR ROAD PORT ORANGE 32128	✓	$259,335.00

Opened By: (Signature)
Purchasing Coordinator
(Title)

Tabulated By: (Signature)
LANDSCAPE ARCHITECT
(Title)

13-06-27P02:00 RCVD

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

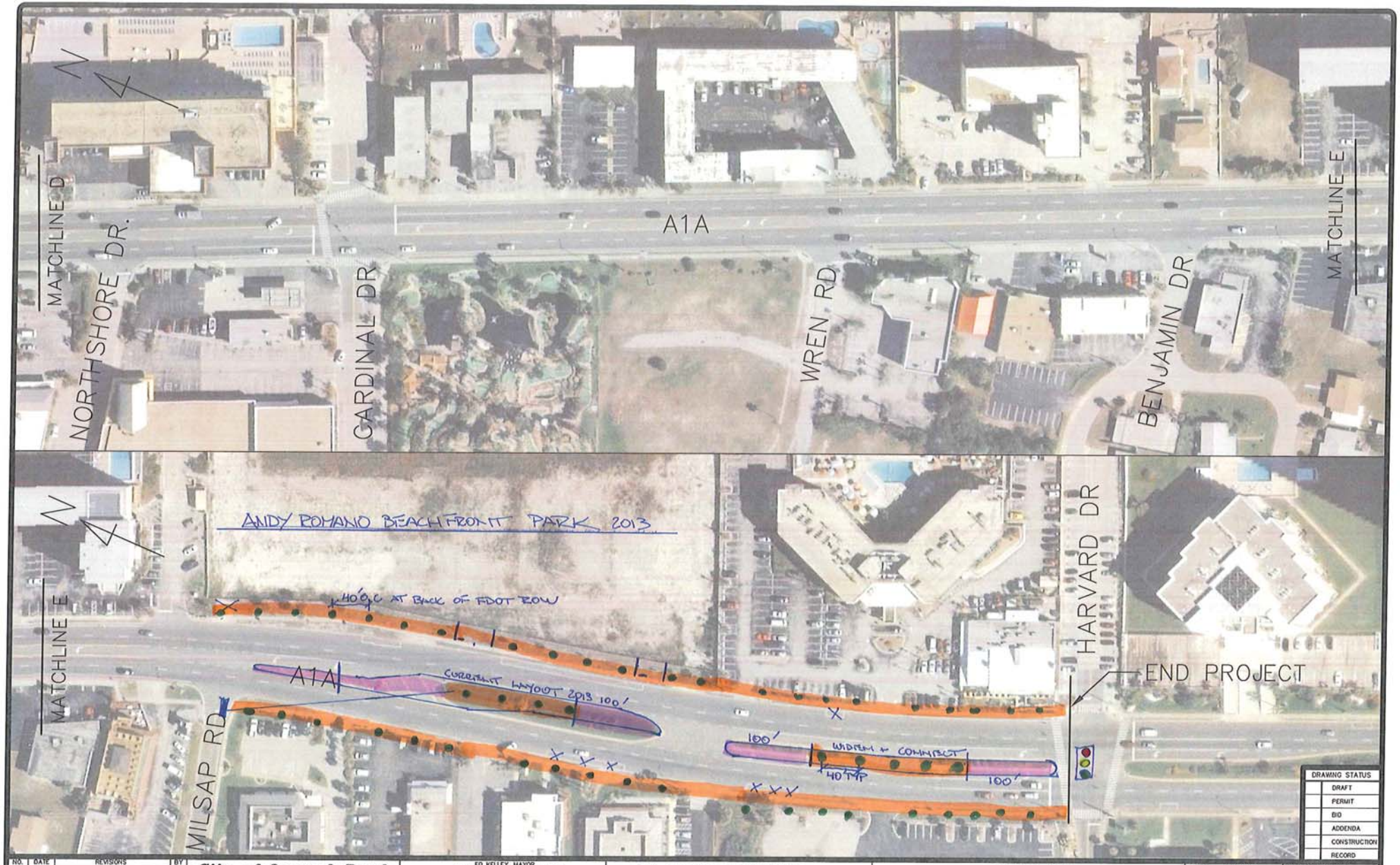
City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER
JOHN NOBLE, P.E., CITY ENGINEER

A1A MEDIAN LANDSCAPING

OVERALL MAP

DATE: 8/15/13	PROJECT NO.: N/A
SCALE: 1"=100'	FILE NAME: A1A_MEDIANS.dw
DRAWN BY: NC	SHEET: 2 of 3



NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER
JOHN NOBLE, P.E. CITY ENGINEER

A1A MEDIAN LANDSCAPING

OVERALL MAP

DATE: 8/15/13	PROJECT NO.: N/A
SCALE: 1"=100'	FILE NAME: A1A_MEDIANS.d
DRAWN BY: MC	SHEET: 3 of 3

CAPITAL PROJECT DETAIL

PROJECT TITLE

Bridge Sideslope Landscape Improvements

PROJECT#

301196

CATEGORY

Beautification

FUND

301-General Improvement Fund

PROJECT LOCATION

Granada and I-95

MANAGEMENT

Engineering

PROJECT SCOPE

Irrigate, Re-sod or Hydro Seed with Bahia and install Asiatic Jasmine

JUSTIFICATION

One of the City Commission goals generated from the 2014 workshop, is to improve the appearance of the (4) grass sideslopes that is brown and thin during the Winter months.

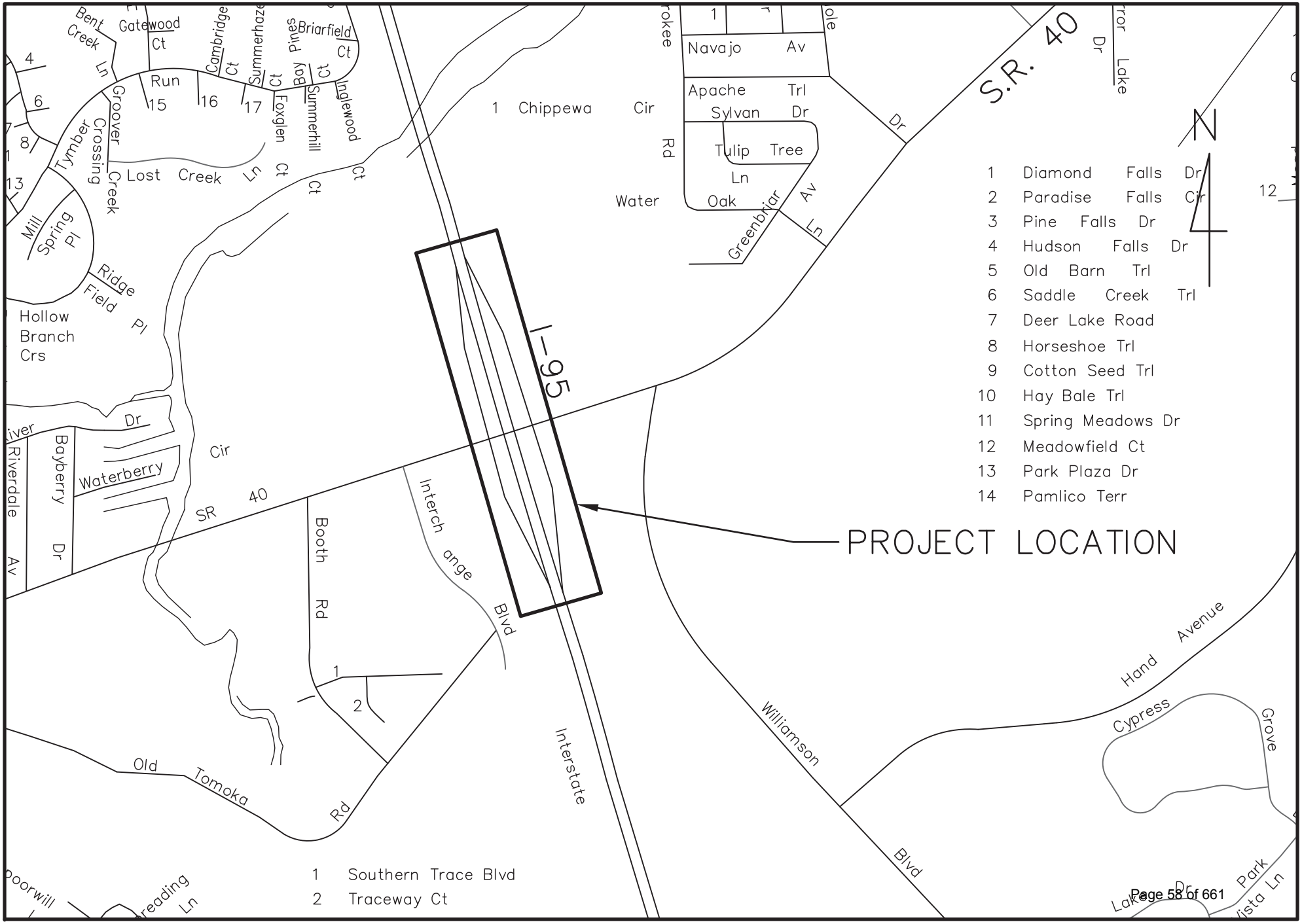
PROJECT COST METHODOLOGY

Actual proposal from Austin Outdoor.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Landscape all (4) Slopes	0	80,000	0	0	0	80,000
Irrigation	0	0	0	0	0	0
Total	0	80,000	0	0	0	80,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	80,000	0	0	0	80,000
Total	0	80,000	0	0	0	80,000

GRANADA & I95 SIDE SLOPE IMPROVEMENTS



AUSTIN OUTDOOR
a yellowstone landscape company

PROPOSAL

Date: February 17, 2014

Proposal Submitted To: **Steve Stershic**
Facility Maintenance Supervisor
City of Ormond Beach

Project: I-95 On and Off ramps and SR40
Ormond Beach

We hereby submit proposal for: Install 12 new irrigation zones to water the bahia turf along the I-95/SR40 interchange. We will be upgrading the timers to handle the 12 new zones we are adding.

Scope of Work:

Hunter I-Core Controller	2	each	@	$988.35	$1,976.70
Irrigation zone with MP Rotator and PROS-06-PR40 Spray	12	each	@	$1,061.56	$12,738.72
Fittings	1	lump sum	@	$337.50	$337.50
Miscellaneous	1	lump sum	@	$281.25	$281.25
Labor	120	hr	@	$30.00	$3,600.00
				Proposal Total	**$18,934.17**

Note: The new zones will cover 248,961 S.F. of turf in the inner area of the interchange.

Payment due 30 days after receipt of pay application.

All material is guaranteed to be as specified. All work to be completed in a workman-like manner according to standard practices. Any alteration or deviation from the above specifications involving extra cost will be executed only upon written orders, and will become an extra charge over and above the estimates. Any verbal authorizations given by the customer will be treated the same as a written order even if authorization is not written. Austin Outdoor, LLC workers are fully covered by workman's compensation insurance. The attached Terms and Conditions of Sale are part of this proposal.

Authorized Signature
Paul LaMontaine, District Manager

Authorized Signature
Michael Araujo, Irrigation Superintendent

_____ Casual Sale _____ Change Order

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted.
You are authorized to proceed with the work specified. Payment will be made as outlined above.

Date of Acceptance: _____ Signature: _____

Creating premier properties. *Building lasting relationships.*

www.austinoutdoor.com

Headquarters 3235 North State St., Bunnell, FL 32110
Phone 386.437.6211

Florida | Georgia | Carolinas | Bahamas

St Georges Rd
9
95
40
© 2013 Google
Google earth
Imagery Date: 1/19/2012 29°15'34.55" N 81°07'01.99" W elev 23 ft eye alt 1621 ft

9
40
© 2013 Google
Google earth
Imagery Date: 1/19/2012 29°15'18.07" N 81°06'54.74" W elev 39 ft eye alt 1256 ft

COMMUNITY DEVELOPMENT

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Cassen Park Public Dock

PROJECT#

104051

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Cassen Park

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a public dock adjacent to the fishing pier at Cassen Park.

JUSTIFICATION

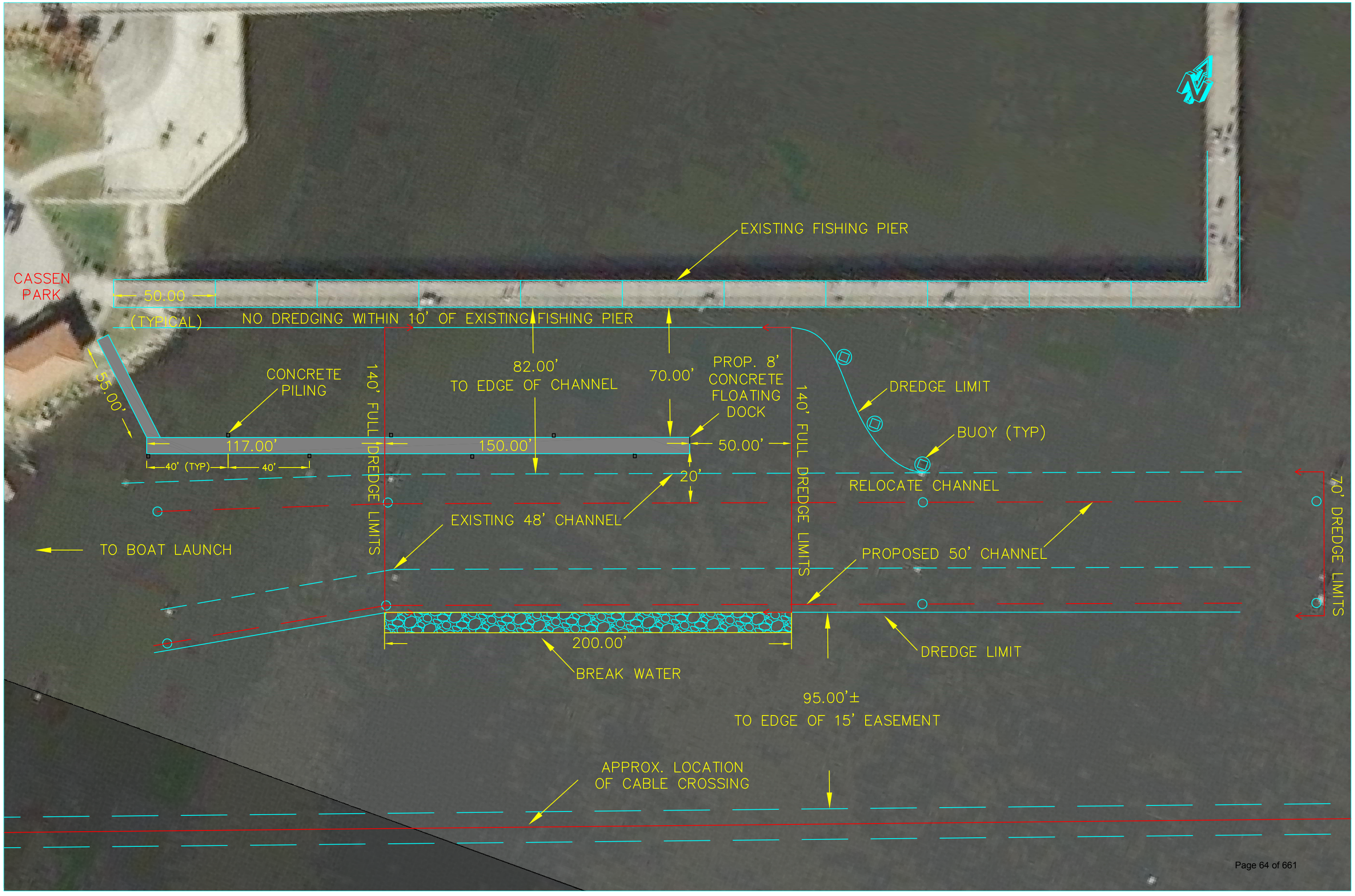
Currently there are no public docks in the downtown area that would enable large boats to dock. Mainstreet has requested the City consider constructing a docking area adjacent to the south edge of the existing fishing pier. Boats that dock there would then be able to visit the downtown area restaurants and stores and visit the historical sites as well.

PROJECT COST METHODOLOGY

Costs were developed from contractor estimates from conceptual design plans.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design	70,000	0	0	0	0	70,000
Construction	0	657,100	0	0	0	657,100
Total	70,000	657,100	0	0	0	727,100

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Big Tier 1 Grant (pending approval)	70,000	200,000	0	0	0	270,000
FIND Grant (pending approval)	0	293,550	0	0	0	293,550
Property Taxes - TIF	0	163,550	0	0	0	163,550
Total	70,000	657,100	0	0	0	727,100


EXISTING FISHING PIER
CASSEN PARK
50.00
(TYPICAL)
NO DREDGING WITHIN 10' OF EXISTING FISHING PIER
55.00'
CONCRETE PILING
140' FULL DREDGE LIMITS
82.00'
TO EDGE OF CHANNEL
70.00'
PROP. 8' CONCRETE FLOATING DOCK
140' FULL DREDGE LIMITS
DREDGE LIMIT
BUOY (TYP)
117.00'
150.00'
50.00'
40' (TYP)
40'
20'
RELOCATE CHANNEL
70' DREDGE LIMITS
EXISTING 48' CHANNEL
TO BOAT LAUNCH
PROPOSED 50' CHANNEL
200.00'
DREDGE LIMIT
BREAK WATER
95.00'±
TO EDGE OF 15' EASEMENT
APPROX. LOCATION OF CABLE CROSSING

ORMOND BEACH, CASSEN PARK BOAT DOCK
PROBABLE PROJECT COST

Concept- Construct an 8 ft wide, approximately 320 ft long, floating concrete dock, 70 feet south from the existing pier, shift existing channel to the south by 16 feet and widen existing channel from 40 feet to 50 feet. Maintain 10 ft buffer from existing pier as no dredge zone. Dredge area is approximately 140 ft wide x 350 ft long. Useable dock length is 150 ft. Dredging begins approximately 150 ft out from landfall. **This concept allows boats to dock on either side of the proposed dock.** Concrete pilings can be installed alternating sides of the dock every 40 feet. Construct 200 ft break water.

DREDGING-

Item No.	Description	Qty	Unit	Unit Price	Item Price
1	Payment and Performance Bond	1	LS	$ 5,000.00	$ 5,000.00
2	Mobilization & Demobilization	1	LS	$15,000.00	$ 15,000.00
3	As-Built & Survey	1	LS	$ 5,000.00	$ 5,000.00
4	Environmental Compliance	1	LS	$ 2,000.00	$ 2,000.00
5	Dredging (**Dredge to 6ft below low tide)	4,100	CY	$ 38.00	$ 155,800.00
6	Dredged material disposal	4,100	CY	$ 3.00	$ 12,300.00
				Sub-Total (1-6)	$ 195,100.00

DOCK CONSTRUCTION-

Item No.	Description	Qty	Unit	Unit Price	Item Price
7	8ft wide floating concrete dock	2,560	SF	$ 100.00	$ 256,000.00
8	Gangway	1	EA	$ 4,000.00	$ 4,000.00
9	Concrete Piling	8	EA	$ 3,500.00	$ 28,000.00
10	Channel Marker Poles	8	EA	$ 500.00	$ 4,000.00
				Sub-Total (7-10)	$ 292,000.00
11	Construct Break Water	200	LF	$ 500.00	$ 100,000.00
12	Engineering & Permitting				$ 70,000.00

a	PROJECT TOTAL	$ 657,100.00	
b	Tier 1 BIG Grant	$ 200,000.00	
c	Sub-Total	$ 457,100.00	(a-b)
d	CONSTRUCTION COST	$ 587,100.00	
e	50% FIND COST SHARE	$ 293,550.00	
	CITY TOTAL COST	$ 163,550.00	(c-e)

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Ocean District Streetlight Replacement

PROJECT#

104049

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

John Anderson to A1A

MANAGEMENT

Engineering

PROJECT SCOPE

Remove and replace the existing FPL poles and cobra head streetlights with decorative poles and fixtures.

JUSTIFICATION

New decorative streetlight poles and fixtures were installed on the Westside of the Granada bridge as part of the undergrounding of the utility power lines. This project will remove and replace the existing High Pressure Sodium cobra head fixtures (orange color light) with decorative Metal Halide fixtures (white color light) and decorative concrete poles for consistency and improved lighting in the downtown.

PROJECT COST METHODOLOGY

Actual bid to underground utilities and install lighting (Carter Electric Bid # 2013-13).

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	0	275,000	0	0	0	275,000
Design and Permit	0	25,000	0	0	0	25,000
Total	0	300,000	0	0	0	300,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-TIF	0	300,000	0	0	0	300,000
Total	0	300,000	0	0	0	300,000

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
PART A -								
1	Mobilization *I* Demobilization	1	1	LS	40,814.00		$ 40,814.00	$ 40,814.00
2	Preconstruction Video	1	1	LS	1,592.00		$ 1,592.00	$ 1,592.00
3	Maintenance of Traffic	1	1	LS	18,960.00		$ 18,960.00	$ 18,960.00
4	Utility Coordination	1	1	LS	43,258.00		$ 43,258.00	$ 43,258.00
General Subtotal Item Nos. 1 - 4							**$ 104,624.00**	**$ 104,624.00**
PART B - Florida Power & Light Conduit/Structures								
5	Install PVC Conduit Supplied by							
	a. 6-inch PVC Conduit	6,066	5,690	LF	22.25		$ 134,968.50	$ 126,602.50
	b. 2-inch PVC Conduit	39,504	29,810	LF	7.89		$ 311,686.56	$ 235,201.31
6	Install Concrete Pad	44	44	EA	274		$ 12,056.00	$ 12,056.00
Florida Power & Light Conduit/Structures Subtotal Item No. 5 - 6							**$ 458,711.06**	**$ 373,859.81**
PART C - AT&T Conduit/Structures								
7	Furnish & Install PVC Conduit							
	a. 4-inch PVC Conduit	2,400	2,400	LF	21.61		$ 51,864.00	$ 51,864.00
	b. 2-inch PVC Conduit	340	340	LF	17.64		$ 5,997.60	$ 5,997.60
8	Furnish & Install Handholds	5	0	EA	611		$ 3,055.00	$ -
AT&T Conduit/Structure Subtotal Item 7 - 8							**$ 60,916.60**	**$ 57,861.60**
PART D - Street Lighting Demolition								$ -
9	Remove Concrete Sidewalk	190	190	SY	103.36		$ 19,638.40	$ 19,638.40
10	Kemove 4 single conductors 1-rom	1400	1400	LF	7.14		$ 9,996.00	$ 9,996.00
11	Remove FPL Pole in Sidewalk	30	30	EA	352.42		$ 10,572.60	$ 10,572.60
Street Lighting Demolition Subtotal Item Nos. 9 - 11							**$ 40,207.00**	**$ 40,207.00**

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
12	Directional Bore Setup & Take Down	7	7	EA	424.00		$ 2,968.00	$ 2,968.00
13	Directional Bore 1" Sch 80 HDPE	800	800	LF	9.16		$ 7,328.00	$ 7,328.00
14	Excavate Trench and Backfill	1,000	1,000	LF	16.45		$ 16,450.00	$ 16,450.00
15	install 1-inch Sch 40 PVC Conduit	1,000	1,000	LF	16.26		$ 16,260.00	$ 16,260.00
16	Install Handhold	71	71	EA	301.85		$ 21,431.35	$ 21,431.35
17	Install Type "A" Luminaries & Pole	29	29	EA	6,349.00		$ 184,121.00	$ 184,121.00
18	Install Type "D" Palm Up-Light	54	54	LF	1,186.00	1,109.65	$ 64,044.00	$ 59,921.20
19	Install 6 #10 & 1#10 G Conductors	1,250	1,250	LF	4.40		$ 5,500.00	$ 5,500.00
20	Install 4 #10 & 1# 10 G Conductors	100	100	FL	3.14		$ 314.00	$ 314.00
21	Install 2 #10 & 1#10 G Conductors	3,400	3,400	LF	1.89		$ 6,426.00	$ 6,426.00
22	Install 2 #6 & 1#10 G conductors	500	500	FL	4.38		$ 2,190.00	$ 2,190.00
23	Install 3-Way Taps & Fuses In Handhold	71	71	EA	163.78		$ 11,628.38	$ 11,628.38
24	Install 3-Way Taps & Fuses In	27	27	EA	244.35		$ 6,597.45	$ 6,597.45
25	Install 1-Pole Circuit Breaker in Panel	10	10	EA	28.00		$ 280.00	$ 280.00
26	Remove & Replace concrete Sidewalk	190	190	SY	279.35		$ 53,076.50	$ 53,076.50
Street Lighting Installation Subtotal Items Nos. 12 - 26							**$ 398,614.68**	**$ 394,491.88**
PART F - FPL Service Conversion								
27	E101 - 301 New Britain Ave.	1	1	LS	4,827.00		$ 4,827.00	$ 4,827.00
28	E102 - 43 New Britain Ave.	1	1	LS	4,360.00		$ 4,360.00	$ 4,360.00
29	E103 - 49 New Britain Ave.	1	1	LS	2,905.00		$ 2,905.00	$ 2,905.00
30	E104 - 63 New Britain Ave.	1	1	LS	2,814.00		$ 2,814.00	$ 2,814.00
31	E105 - 73 New Britain Ave.	1	1	LS	4,899.00		$ 4,899.00	$ 4,899.00
32	E106 - 83 New Britain Ave.	1	1	LS	5,081.00		$ 5,081.00	$ 5,081.00
33	E107 - 33 N Ridgewood Ave.	1	1	LS	5,286.00		$ 5,286.00	$ 5,286.00

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
34	E108 - 39 N Ridgewood Ave.	1	1	LS	3,052.00		$ 3,052.00	$ 3,052.00
35	E109 - 44 N Ridgewood Ave.	1	1	LS	5,257.00		$ 5,257.00	$ 5,257.00
36	El O - 36 N Ridgewood Ave.	1	1	LS	2,036.00		$ 2,036.00	$ 2,036.00
37	Ell- New Britain Ave. Trailer Park	1	1	LS	47,078.00		$ 47,078.00	$ 47,078.00
38	E112 - 3 N. Yonge St.	1	1	LS	4,896.00		$ 4,896.00	$ 4,896.00
39	E113 - 177 W Granada Blvd. Street	1	1	LS	3,220.00		$ 3,220.00	$ 3,220.00
40	E114 - 156 New Britain Ave.	1	1	LS	2,317.00		$ 2,317.00	$ 2,317.00
41	E115 - 146 New Britain Ave.	1	1	LS	3,542.00		$ 3,542.00	$ 3,542.00
42	E116 - 100 New Britain Ave.	1	1	LS	5,962.00		$ 5,962.00	$ 5,962.00
43	E117 - 15 N Ridgewood Ave.	1	1	LS	9,582.00		$ 9,582.00	$ 9,582.00
44	E1118 - 56, 58 & 60 New Britain Ave.	1	1	LS	2,775.00		$ 2,775.00	$ 2,775.00
45	E119 - 9 W. Granada Blvd	1	1	LS	5,014.00		$ 5,014.00	$ 5,014.00
46	E120 - 15 W. Granada Blvd.	1	1	LS	5,168.00		$ 5,168.00	$ 5,168.00
47	E121 - 21 W. Granada Blvd.	1	1	LS	9,342.00		$ 9,342.00	$ 9,342.00
48	E122 - 51 W. Granada Blvd.	1	1	LS	4,877.00		$ 4,877.00	$ 4,877.00
49	E123 - 57 W. Granada Blvd.	1	1	LS	6,079.00		$ 6,079.00	$ 6,079.00
50	E124 - 63 W. Granada Blvd.	1	1	LS	3,896.00		$ 3,896.00	$ 3,896.00
51	E125 - 71 W. Granada Blvd.	1	1	LS	9,451.00		$ 9,451.00	$ 9,451.00
52	E126 - 73 W. Granada Blvd.	1	1	LS	8,597.00		$ 8,597.00	$ 8,597.00
53	E127 - 99 W. Granada Blvd.	1	1	LS	3,800.00		$ 3,800.00	$ 3,800.00
54	E128 - 111 W. Granada Blvd.	1	1	LS	20,642.00		$ 20,642.00	$ 20,642.00
55	E129 - 123 W. Granada Blvd.	1	1	LS	10,126.00		$ 10,126.00	$ 10,126.00
56	E130 -139/141 W. Granada Blvd.	1	1	LS	9,814.00		$ 9,814.00	$ 9,814.00
57	E131 - 145/147 W. Granada Blvd.	1	1	LS	5,368.00		$ 5,368.00	$ 5,368.00
58	E132 - 159 W. Granada Blvd.	1	1	LS	3,026.00		$ 3,026.00	$ 3,026.00
59	E133 - 165 W. Granada Blvd.	1	1	LS	2,482.00		$ 2,482.00	$ 2,482.00
60	E134 - 164 W. Granada Blvd.	1	1	LS	2,332.00		$ 2,332.00	$ 2,332.00
61	E135 - 136 W. Granada Blvd. (West end)	1	1	LS	13,080.00		$ 13,080.00	$ 13,080.00
62	E136 - 136 W. Granada Blvd. {East	1	1	LS	14,950.00		$ 14,950.00	$ 14,950.00

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
63	E137 - 124-128 W. Granada Blvd.	1	1	LS	9,817.00		$ 9,817.00	$ 9,817.00
64	E138 - 100 W. Granada Blvd.	1	1	LS	7,372.00		$ 7,372.00	$ 7,372.00
65	E139 - S Ridgewood Ave. Street Light Pedestal	1	1	LS	10,310.00		$ 10,310.00	$ 10,310.00
66	E140 - Corbin Ave. School Portables	1	1	LS	2,759.00		$ 2,759.00	$ 2,759.00
67	E141 - 50-58 W Granada Blvd.	1	1	LS	7,825.00		$ 7,825.00	$ 7,825.00
68	E142 - 48 W. Granada Blvd.	1	1	LS	5,958.00		$ 5,958.00	$ 5,958.00
69	E142 - 30 W. Granada Blvd.	1	1	LS	3,111.00		$ 3,111.00	$ 3,111.00
70	E144 - 28 W. Granada Blvd.	1	1	LS	3,057.00		$ 3,057.00	$ 3,057.00
71	E145 - 26 W. Granada Blvd.	1	1	LS	3,078.00		$ 3,078.00	$ 3,078.00
FPL Service Conversions Subtotal Item Nos. 27 - 71							**$ 311,220.00**	**$ 311,220.00**
PART G - Granada Off Street Lighting Demolition								
72	Remove 3-Way Taps in Handhold	12	12	EA	88.11		$ 1,057.32	$ 1,057.32
Granada Off Street Lighting Demolition Subtotal Item No. 72							**$ 1,057.32**	**$ 1,057.32**
PART H - Granada Off Street Lighting Installation								
73	Directional Bore Setup & Take Down	8	8	EA	425.00		$ 3,400.00	$ 3,400.00
74	Directional Bore 1" Sch 80 HDPE Conduit	560	560	LF	9.16		$ 5,129.60	$ 5,129.60
75	Excavate Trench and Backfill	2,200	2,200	LF	16.45		$ 36,190.00	$ 36,190.00
76	Install 1-lnch Sch 40 PVC Conduit	2,200	2,200	LF	16.26		$ 35,772.00	$ 35,772.00
77	Install handhold	27	27	EA	233.46		$ 6,303.42	$ 6,303.42
78	Install Type "A" Luminaire & Pole	5	5	EA	6,410.00		$ 32,050.00	$ 32,050.00
79	Install Type "B" Luminaries & Pole	16	16	EA	3,895.00		$ 62,320.00	$ 62,320.00
80	Install Type "D" Palm Up-Light	12	12	EA	1,186.00	1,162.28	$ 14,232.00	$ 13,947.36
81	Install 2 # 10 & #10 G Conductors	2,200	2,200	LF	1.89		$ 4,158.00	$ 4,158.00

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
82	Install 3-Way Taps 7 fuses In Handhold	81	81	LS	$54.59		$ 4,421.79	$ 4,421.79
83	Install 4-Way Taps 7 Fuses In Handhold	12	12	LS	$62.59		$ 751.08	$ 751.08
84	Install 1-Pole Circuit Breaker in Panel	1	1	LS	$28.00		$ 28.00	$ 28.00
Granada Off Street Lighting Installation Subtotal Items No. 73 - 84							**$ 204,755.89**	**$ 204,471.25**
TOTAL BID (Items No. 1thru 84)							**$ 1,580,106.55**	**$ 1,487,792.86**

Field Directives

Field Directive	Description of Work						Budgeted Amount	Amount Approved
FD 1	Install 2 handholes						$ -	$ 1,696.75
FD 2	Bore 2" FPL Conduit						$ -	$ -
FD 3	Install FPL Provided Handhole						$ -	$ 1,690.89
FD 4	Change from 1-6" conduit to 3-2"						$ -	$ -
FD 5	Install FPL Provided Handhole						$ -	$ -
FD 6	Rework connection at Emmanuel Church (Ridgewood/Corbin)						$ -	$ 4,702.64
FD 7	Relcoaiton of Transformer at City Hall to east side of Beach Street.						$ -	$ 3,976.81
FD 8	Install handhole at Texaco (3 South Yonge)						$ -	$ 847.08
FD 9	Install FPL Handhole at southside park						$ -	$ 709.50
FD 10	Additional Clearing/Site Preparation						$ -	$ 7,117.99
FD 11	Install Handhole at 43 New Britain						$ -	$ 845.50
FD 12	Additional conduit out of switch cabinet 97						$ -	$ -
TOTAL 1-12							$ -	$ 21,587.16

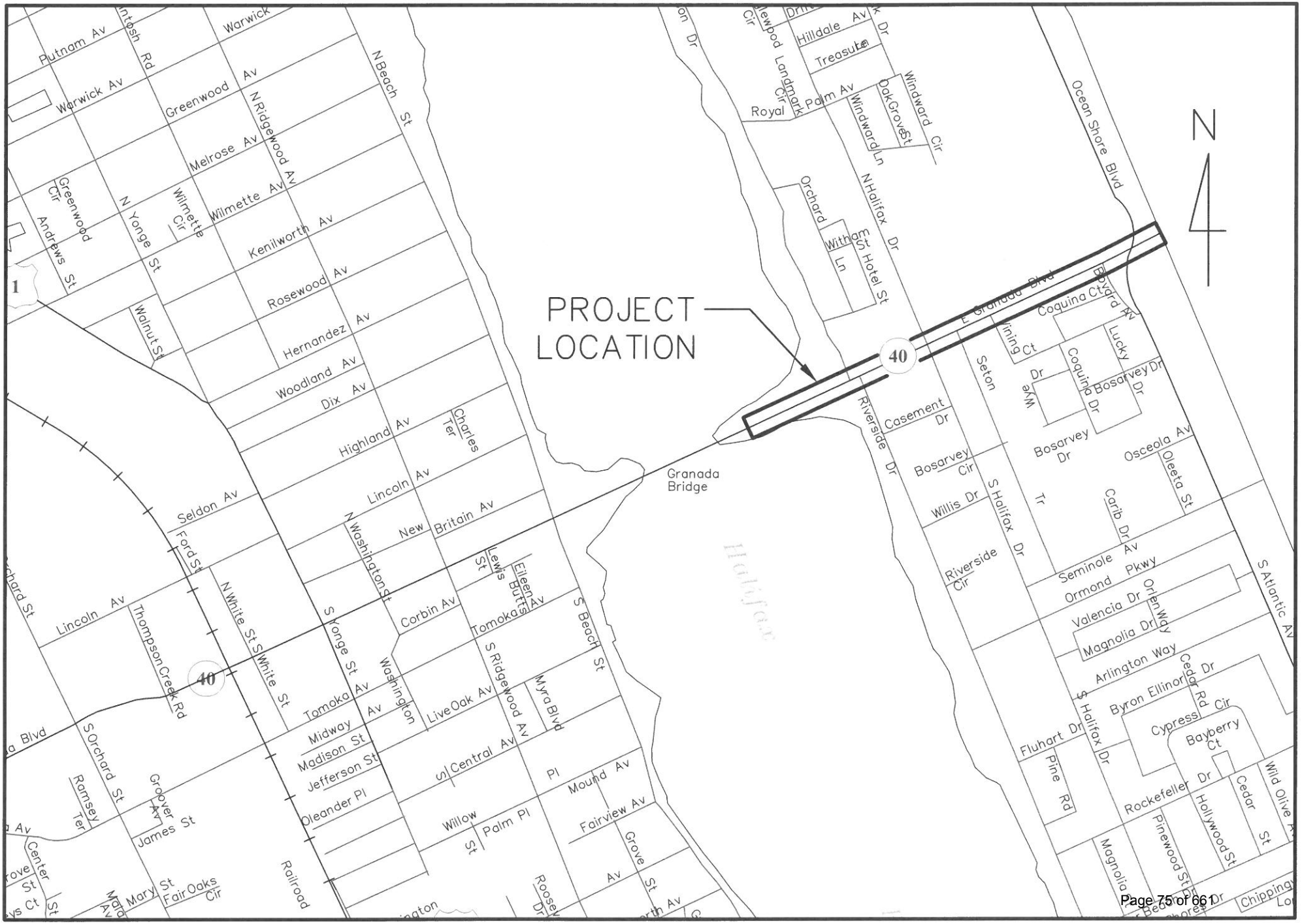
Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
FD 13	Temporary Generator for Shoemaker						$ -	$ 1,425.25
Total 1-13							**$ -**	**$ 23,012.41**
FD 14	Reduce Quantity of Conduit						$ -	$ -
FD 15	Delete Roof Repair - 44 N. Ridgewood						$ -	$ (500.00)
FD 16	156 New Britain - Correction to Wire Specificaitons (Delete #2/0, add #3/0)						$ -	$ 1,832.39
FD 22	Changes to 9 W Granada -Partington						$ -	$ 3,274.04
FD 17	99 W Granada - Correction to Wire Specificaitons (Delete #2/0, add #3/0)						$ -	$ 281.28
FD 18	111 W. Granada - Relocation of FPL Transformer 120' North of Original Location (Add 920 LF - #350 MCM THHN)						$ -	$ 9,085.33
	123 W. Granada - Frappes						$ -	$ -
FD 19	Delete Wire Requirement @ 100 W Granada - Old Gas Station						$ -	$ (862.95)
FD 20	136 W Granada -Dunn's Attic						$ -	$ 5,477.05
FD 21	All other locations - Correction to Wire Specificaitons (Delete #2/0, add #3/0)						$ -	$ 3,062.49
Total 14-22							$ -	**$ 21,649.63**
FD 23	Granda Street Lighting Wiring Additions. Add 1209 LF of 7-#10; Add 1000'-4-#8&10						$ -	$ 9,204.17
FD 24	Off Granada Snow flake lighting						$ -	$ 4,402.45
FD 25	Add 700' of 2" conduit for AT&T to complete their service conversions						$ -	$ 12,348.00

Item No.	Description	Estimated Quantity	Actual Quantity	Unit	Unit Price		Total Estimated Amount	Total Actual Amount
FD 26	Addition SQYDS Concrete						$ -	$ -
FD 27	Furnish and Install 32 Bollards						$ -	$ 10,485.32
Totals 23 - 27								**$ 36,439.94**
FD 28	Additional Concrete Work (Banner Arms and pole removal.						$ -	$ 2,000.00
Total 28							**$ -**	**$ 2,000.00**
Total 1 - 28							**$ -**	**$ 83,101.98**

Total BID PLUS Field Directive **$ 1,580,106.55** **$ 1,570,894.84**

46 E Granada Blvd
40
E Granada Blvd
7 ft
© 2015 Google
© 2015 Google
29°17'22.74" N 81°02'44.22" W elev 28 ft

DOWNTOWN OCEAN DISTRICT LIGHTING



CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Stormwater Improvements

PROJECT#

104044

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Downtown CRA

MANAGEMENT

Engineering

PROJECT SCOPE

Implement recommendations of study for stormwater improvements

JUSTIFICATION

The 2007 adopted Downtown Master Plan (pages 15, 27, 31, 32) stated a need to evaluate storm water needs and implement a program of off-line retention where practical to support intensive redevelopment of existing sites. With the assistance of consultant, a Stormwater Master Plan for the Downtown CRA was developed. A conceptual permit for work in the CRA was granted by the St. Johns River Water Management Project. Recent activity in redevelopment of the CRA indicates that the area that may receive the most and earliest impact from a construction project would be the River District, north of Granada and lying between North Beach Street and Ridgewood Avenue. Two projects are currently proposed and in the process of being designed for this area. The first proposed project calls for an exfiltration system to be constructed on a proposed park site that can serve a portion of the aforementioned subbasin, specifically those lots north of New Britain (between North Beach Street and North Ridgewood Avenue). The Second project involves the construction of an exfiltration system within the New Britain Right of way which provides treatment for the redevelopment of New Britain, as well as properties south of New Britain, and if capacity is created, properties west of North Ridgewood. Costs do not include the acquisition of property and/or easements however it is anticipated that providing credit in the form of stormwater capacity from the regional stormwater facility will offset a large portion of obtaining land rights.

PROJECT COST METHODOLOGY

Historic Cost Data (Andy Romano Park / FDOT Average Costs).

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	600,000	0	0	0	0	600,000
Total	600,000	0	0	0	0	600,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Capital Project Reserves	600,000	0	0	0	0	600,000
Total	600,000	0	0	0	0	600,000

Downtown Stormwater Improvements - Phase 1 Project Area

Overall Project Boundary

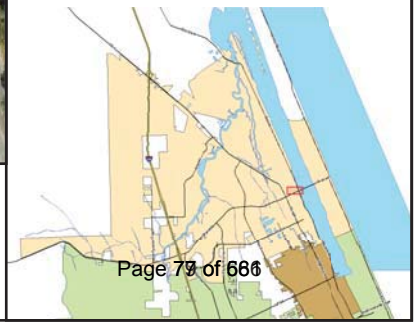
Basin 1
95% Impervious

Basin 2
85% Impervious

64 Lincoln
Stormwater Park

New Britain
Exfiltration
System

200 ft



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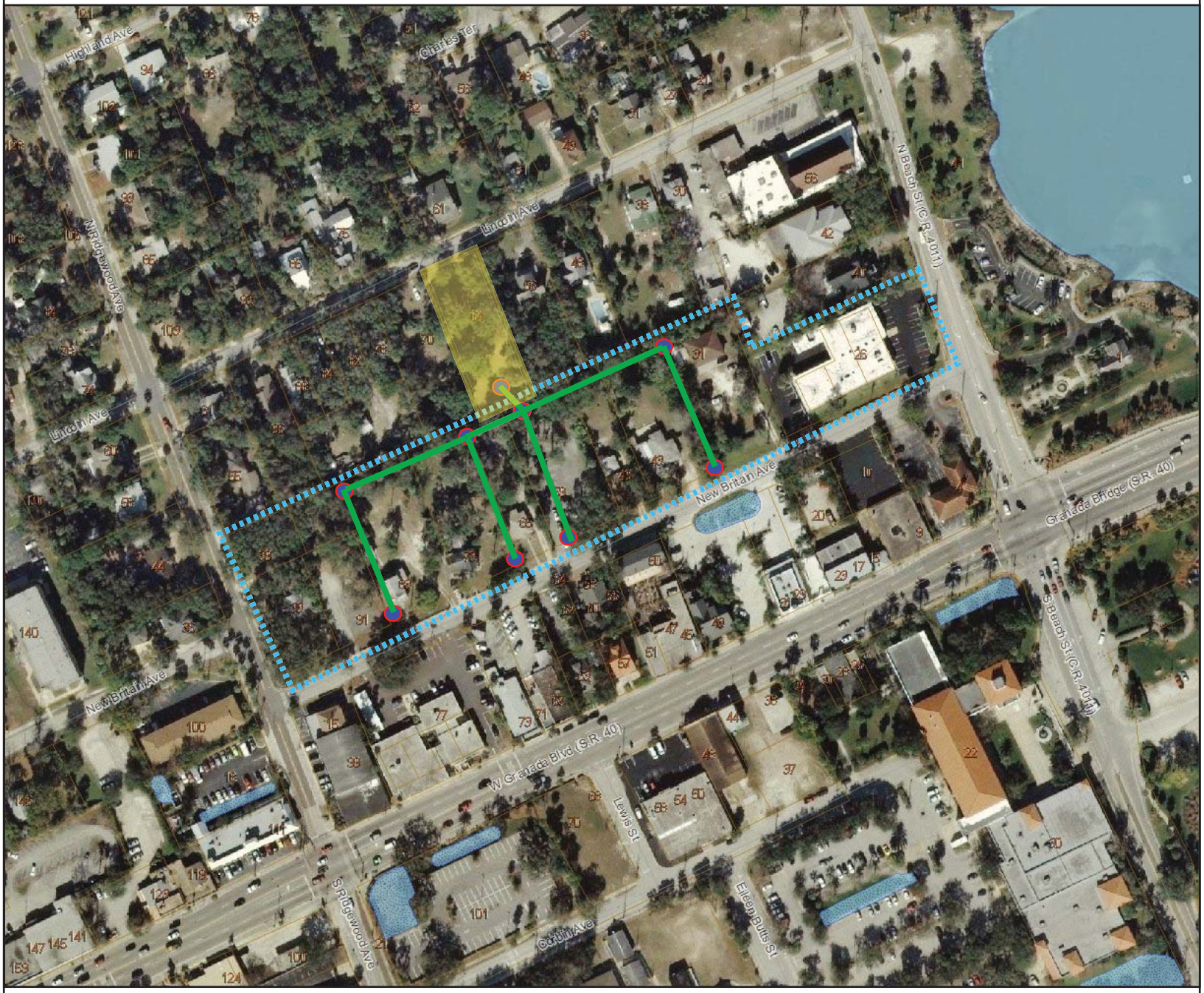
Phase 1 Stormwater Improvements Conceptual Plan - 64 Lincoln Stormwater Park



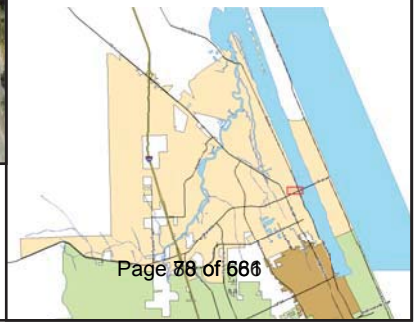
Project 1 Basin Area

64 Lincoln (Exfiltration)

Stormwater Pipe

Stormwater Inlet

200 ft



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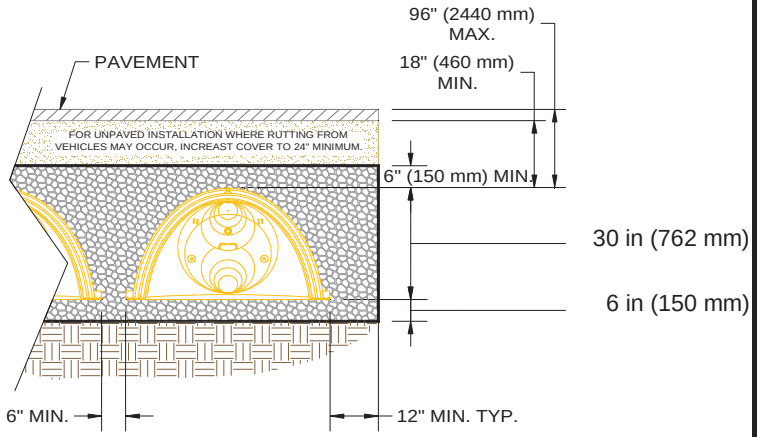
StormTech
Detention • Retention • Recharge
Subsurface Stormwater Management™

Units: **Imperial**

Project: Project 1: 64 Lincoln Stormwater Park
By: SPF
Point of Contact
Date: 4/3/2014

System Requirements

Required Storage Volume	**24,300**	CF
Select Stormtech Chamber System	SC-740	
Stone Porosity (Industry Standard = 40%)	**40%**	
Stone Foundation Depth	6	Inches
Storage Volume Per Chamber	74.90	CF
Avg Cover over Chambers (18 in min. & 96 in max.)	18	Inches
Number of Chambers Required	325	Each
Required Bed Size	11,486	SF
Tons of Stone Required	1,311	Tons
Volume of Excavation	1,914	CY
Area of Filter Fabric	3,154	SY
# of End Caps Required	**26**	Each
Length of ISOLATOR ROW	**178**	FT
ISOLATOR FABRIC	**99**	SY



Is the limiting dimension for the bed the width or length? **width**

Controlled by Width (Rows)

Width	**63.25**	FT
# of Chambers Long	25	EA
# of Rows	13	EA
Actual Length	181.60	FT
Actual Width	63.25	FT

Controlled by Length

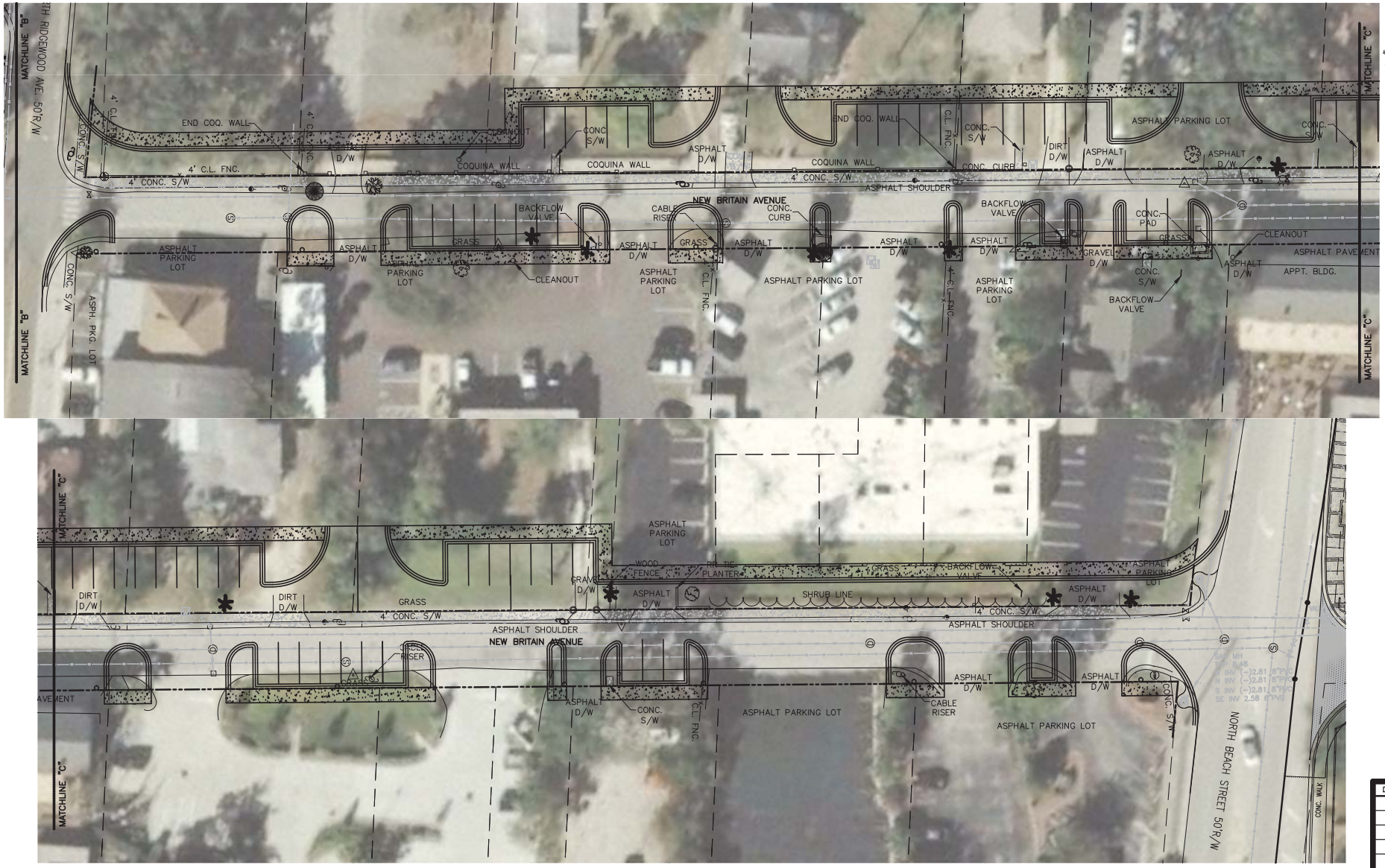
Length	**185**	FT
# of Chambers Long	-	EA
# of Rows	-	EA
Actual Length	-	FT
Actual Width	-	FT

Material Estimate

To use this sheet: Please enter data into the blue and green cells. If switching between Imperial and Metric units please check the correct units and data is input in the green cells.

Please call StormTech @ 888-892-2694 for conceptual cost estimates.

Project 2 - New Britain Exfiltration System Conceptual Roadway Plan View



DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER
JOHN NOBLE, P.E. CITY ENGINEER

NEW BRITAIN ROADWAY / PARKING IMPROVEMENTS

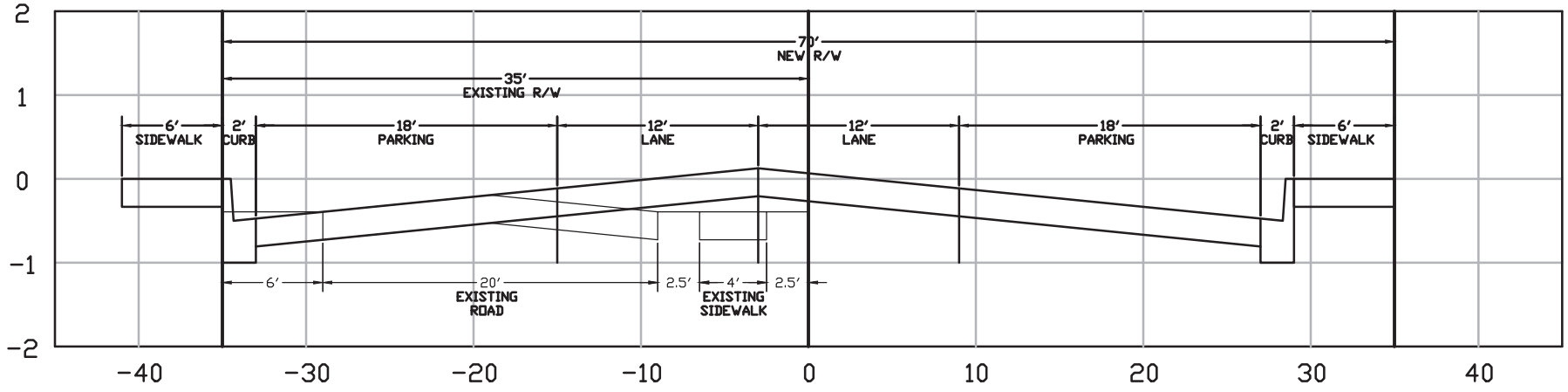
CONCEPT PLAN

DATE: 3/26/14	PROJECT NO.: N/A
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 1 of 1

Project 2 - New Britain Exfiltration System Conceptual Roadway Section View

TYPICAL SECTION

SCALE: H=1"=10' V=1"=2'



NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E., CITY ENGINEER

NEW BRITAIN ROADWAY
/ PARKING IMPROVEMENTS

TYPICAL SECTION

DATE:	4/3/14	PROJECT NO.:	
SCALE:	1" = 10'	FILE NAME:	
DRAWN BY:	MC	SHEET	1 of 1

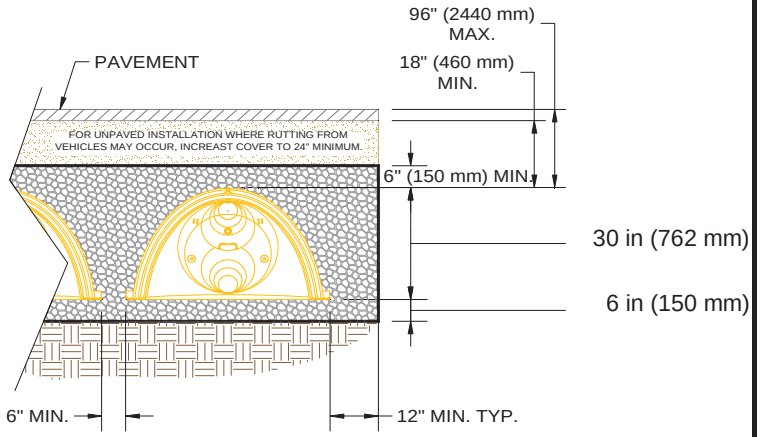
StormTech
Detention • Retention • Recharge
Subsurface Stormwater Management™

Units: **Imperial**

Project: Project 2: New Britain Exfiltation
By: SPF
Point of Contact
Date: 4/3/2014

System Requirements

Required Storage Volume	**38,150**	CF
Select Stormtech Chamber System	SC-740	
Stone Porosity (Industry Standard = 40%)	**40%**	
Stone Foundation Depth	6	Inches
Storage Volume Per Chamber	74.90	CF
Avg Cover over Chambers (18 in min. & 96 in max.)	18	Inches
Number of Chambers Required	510	Each
Required Bed Size	18,264	SF
Tons of Stone Required	2,101	Tons
Volume of Excavation	3,044	CY
Area of Filter Fabric	5,239	SY
# of End Caps Required	**12**	Each
Length of ISOLATOR ROW	**605.2**	FT
ISOLATOR FABRIC	**336**	SY



Is the limiting dimension for the bed the width or length? **width**

Controlled by Width (Rows)			Controlled by Length		
Width	**32**	FT	Length	**600**	FT
# of Chambers Long	85	EA	# of Chambers Long	-	EA
# of Rows	6	EA	# of Rows	-	EA
Actual Length	608.80	FT	Actual Length	-	FT
Actual Width	30.00	FT	Actual Width	-	FT

Material Estimate

To use this sheet: Please enter data into the blue and green cells. If switching between Imperial and Metric units please check the correct units and data is input in the green cells.

Please call StormTech @ 888-892-2694 for conceptual cost estimates.

www.stormtech.com | 20 Beaver Road | Suite 104 | Wethersfield | Connecticut | 06109 | 888.892.2694 | fax 866.328.8401

City of Ormond Beach, Florida

April 12, 2013

Downtown Draiange - River Basin 'A'

Estimated Construction Cost

Item Num	Item Description	QTY	Unit	Unit Cost	Item Cost	Year
Stormwater Project #1: 64 Lincoln Stormwater Park						
1	Stormwater management system					
	with StormTech Chambers	325	Cham	$ 520.00	$ 169,000.00	
2	Clear and Grub	1	LS	$ 8,000.00	$ 8,000.00	
3	Silt Fence (Tyoe III)	625	LF	$ 0.90	$ 562.50	
4	Tree Protection	1	LS	$ 1,000.00	$ 1,000.00	
5	Sod	1200	SY	$ 3.50	$ 4,200.00	
13	Grading	1414	CY	$ 12.00	$ 16,968.89	
14	Sidewalk / Patios	1200	SY	$ 30.00	$ 36,000.00	
16	Draiange Structure (Type 'C')	6	EA	$ 2,200.00	$ 13,200.00	
	Draianage Structures (Type 'E'	3	EA	$ 4,800.00	$ 14,400.00	
17	18" RCP	760	LF	$ 45.00	$ 34,200.00	
18	24" RCP	492	LF	$ 70.00	$ 34,440.00	
19	36" RCP	60	LF	$ 100.00	$ 6,000.00	
	Landscape/Hardscape	1	LS	$ 33,797.14	$ 33,797.14	
18	Mobilization/As-built/Video	1	LS	$ 17,000.00	$ 17,000.00	
	TOTAL - PHASE 1 Construction				**$ 388,768.53**	
	ENGINEERING & PERMITTING (10%)=				$ 38,876.85	
	Geotechnical Services (2.5%)=				$ 9,719.21	
	Sub-Total=				$ 437,364.59	
	PROBABLE COST TOTAL=					

Unit Price based upon price estiamte by Zev Cohen and Associates for the Andy Romano Beach Front Park and a similar "StormTech" System.

Estimate = $320,000.00 for a system containing 617 Chambers.

Price Based upon an installed cost (with associated support structures) of

Additional Prices Base upon FDOT Current Unit Average Prices

Stormwater Project #2: New Britain Exfiltration System							
1	Stormwater management system						
	with StormTech Chambers	510	Cham	$	520.00	$	265,200.00
2	Pavement Removal	2567	SY	$	6.50	$	16,685.50
3	Remove Existing Curb & Gutter	1150	LF	$	2.00	$	2,300.00
4	Remove Existing Sidewalk	633	SY	$	7.50	$	4,747.50
5	Stabilized Subgrade	6111	SY	$	4.00	$	24,444.00
6	Road Base (8")	5556	SY	$	12.00	$	66,672.00
7	Install Curb & Gutter	1100	LF	$	15.00	$	16,500.00
8	Asphalt	345	TON	$	95.00	$	32,775.00
9	Driveway	556	SY	$	40.00	$	22,240.00
10	Thermoplastic Striping	1500	LF	$	2.25	$	3,375.00
11	Manhole Adjustment	12	EA	$	180.00	$	2,160.00
12	Valve Adjustment	4	EA	$	65.00	$	260.00
13	Grading	1	LS	$	12,000.00	$	12,000.00
14	Sidewalk	1222	SY	$	30.00	$	36,660.00
15	Relocate / Add Firehydrant	3	EA	$	1,500.00	$	4,500.00
16	Draiange Structures	4	EA	$	1,200.00	$	4,800.00
17	Adjust Utilities	1	LS	$	25,000.00	$	25,000.00
18	Mobilization/As-built/Video	1	LS	$	30,000.00	$	30,000.00
	TOTAL - PHASE 1 Construction					**$**	**570,319.00**
	ENGINEERING & PERMITTING (10%)=					$	57,031.90
	Geotechnical Services (2.5%)=					$	14,257.98
	Sub-Total=					$	641,608.88
	PROBABLE COST TOTAL=						

Budget

FY 2013-14	DESIGN PROJECT 1 & 2	$ 119,885.94
FY 2014-15	CONSTRUCT PROJECT 1	$ 388,768.53
FY 2015-16	CONSTRUCT PROJECT 2	$ 570,319.00

Unit Price based upon price estiamte by Zev Cohen and Associates for the Andy Romano Beach Front Park and a similar "StormTech" System.
Estimate = $320,000.00 for a system containing 617 Chambers.
Price Based upon an installed cost (with associated support structures) of $ 520.00

Additional Prices Base upon FDOT Current Unit Average Prices

Project: Andy Romano Oceanfront Park zc10188

StormTech
Detention • Retention • Water Quality
A division of ADS

Chamber Model -	SC-740	
Units -	Imperial	Click Here for Metric
Number of chambers -	617	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	9.50	ft
Amount of Stone Above Chambers -	6	in
Amount of Stone Below Chambers -	6	in
Area of system -	20857	sf Min. Area - 20857 sf min. area

☑ Include Perimeter Stone In Calculations

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
42	0.00	0.00	695.23	695.23	46210.80	13.00
41	0.00	0.00	695.23	695.23	45515.57	12.92
40	0.00	0.00	695.23	695.23	44820.34	12.83
39	0.00	0.00	695.23	695.23	44125.10	12.75
38	0.00	0.00	695.23	695.23	43429.87	12.67
37	0.00	0.00	695.23	695.23	42734.64	12.58
36	0.05	33.93	681.66	715.59	42039.40	12.50
35	0.16	100.52	655.02	755.55	41323.81	12.42
34	0.28	173.96	625.65	799.61	40568.26	12.33
33	0.60	372.65	546.18	918.82	39768.65	12.25
32	0.80	494.66	497.37	992.03	38849.83	12.17
31	0.95	586.56	460.61	1047.17	37857.81	12.08
30	1.07	662.98	430.04	1093.02	36810.63	12.00
29	1.18	728.36	403.89	1132.25	35717.62	11.92
28	1.27	780.91	382.87	1163.78	34585.37	11.83
27	1.36	836.04	360.82	1196.86	33421.58	11.75
26	1.45	897.18	336.36	1233.54	32224.73	11.67
25	1.52	940.76	318.93	1259.69	30991.19	11.58
24	1.58	976.30	304.72	1281.01	29731.50	11.50
23	1.64	1013.29	289.92	1303.21	28450.49	11.42
22	1.70	1048.60	275.79	1324.39	27147.28	11.33
21	1.75	1081.56	262.61	1344.17	25822.89	11.25
20	1.80	1112.34	250.30	1362.63	24478.72	11.17
19	1.85	1144.53	237.42	1381.95	23116.09	11.08
18	1.89	1168.04	228.02	1396.06	21734.13	11.00
17	1.93	1193.28	217.92	1411.20	20338.08	10.92
16	1.97	1218.57	207.80	1426.38	18926.88	10.83
15	2.01	1240.12	199.18	1439.31	17500.50	10.75
14	2.04	1261.76	190.53	1452.29	16061.19	10.67
13	2.07	1280.25	183.13	1463.38	14608.90	10.58
12	2.10	1298.73	175.74	1474.47	13145.52	10.50
11	2.13	1315.32	169.11	1484.42	11671.05	10.42
10	2.15	1328.93	163.66	1492.59	10186.62	10.33
9	2.18	1343.25	157.93	1501.18	8694.03	10.25
8	2.20	1356.39	152.68	1509.06	7192.85	10.17
7	2.21	1361.92	150.47	1512.39	5683.79	10.08
6	0.00	0.00	695.23	695.23	4171.40	10.00
5	0.00	0.00	695.23	695.23	3476.17	9.92
4	0.00	0.00	695.23	695.23	2780.93	9.83
3	0.00	0.00	695.23	695.23	2085.70	9.75
2	0.00	0.00	695.23	695.23	1390.47	9.67
1	0.00	0.00	695.23	695.23	695.23	9.58

ZEV COHEN
& ASSOCIATES, INC.
Main Office: Ormond Beach
St. Augustine • Amelia Island • Edgewater

300 Interchange Blvd
Ormond Beach, FL 32174
386-677-2482 • Fax: 386-677-2505
Website: www.ZevCohen.com

Ormond Beach's Andy Romano Beachfron Park

Preliminary Opinion of Construction Costs-Based on 90% Construction Doc's
04/15/13

Restroom & Concession Building				
Restoom/Concession Building				**$300,000.00**

Site Work *(Site Area - 4.07 Acres)*	**QTY.**	**UNITS**	**EST. PRICE**	**TOTAL**
A-1-A Modifications, MOT	1	LS	$60,000.00	$60,000.00
Site Demo	1	LS	$10,000.00	$10,000.00
Site Drainage (Exfiltration, Retention, Drain inlets)	1	LS	$320,000.00	$320,000.00
Seawall Repair (Conc. Plug, Cosmetics repair)	1	LS	$30,000.00	$30,000.00
Asphalt Pavement	67,500	SF	$2.50	$168,750.00
6" Concrete Curbing	4,000	LF	$8.00	$32,000.00
HC Ramps/Trunc. Domes	25	EA	$500.00	$12,500.00
Concrete Paver Boardwalk & Walkways	25,000	SF	$4.00	$100,000.00
Sidewalks	600	LF	$20.00	$12,000.00
Colored Concrete Play Zone (Splash Park)	2,500	SF	$8.00	$20,000.00
Saf-Dek Playground Surfacing (Playground)	2,500	SF	$10.00	$25,000.00
Potable Service & Fire Hydrant	1	LS	$25,000.00	$25,000.00
Sewage Collection System	1	LS	$15,000.00	$15,000.00
Silt/ Sand Fencing, Security Fencing, Site Prep.	1	LS	$15,000.00	$15,000.00
Striping and Directional Signage	1	LS	$20,000.00	$20,000.00
Site Lighting (Minor Parking, Power Packs)	1	LS	$75,000.00	$75,000.00
			Sub-Total	**$940,250.00**

Buildings and Amenities	**QTY.**	**UNITS**	**EST. PRICE**	**TOTAL**
Entry Signs	2	EA.	$10,000.00	$20,000.00
Free-Standing Concrete Wall (21" ht.)	500	LF	$65.00	$32,500.00
Beach Access Stairs	3	EA.	$5,000.00	$15,000.00
Beach Access Ramp	1	EA.	$15,000.00	$15,000.00
Interactive Water Feature	1	EA.	$150,000.00	$150,000.00
Playground	1	EA.	$30,000.00	$30,000.00
Playground Shade Structure	1	EA.	$35,000.00	$35,000.00
Twilite Shade Structure	4	EA.	$14,000.00	$56,000.00
Family Pavilion (20'x28')	4	EA.	$25,000.00	$100,000.00
Viewing Pavilion Pavilion (15'x15')	1	EA.	$35,000.00	$35,000.00
Picnic Tables (Pre-cast Concrete)	46	EA.	$1,300.00	$59,800.00
Benches (Pre-cast Concrete)	12	EA.	$1,100.00	$13,200.00
BBQ Grills	10	EA.	$500.00	$5,000.00
Bike Rack	4	EA.	$750.00	$3,000.00
Seawall Railing (Wood frame with wire)	325	LF	$100.00	$32,500.00
Dumpster and Storage Building	1	EA.	$15,000.00	$15,000.00
Trash Receptacle (Pre-Cast Concrete)	25	EA.	$350.00	$8,750.00
Shower/Rinse Station	6	EA.	$2,500.00	$15,000.00
Security Bollards	11	EA.	$500.00	$5,500.00
Informative/Educational Dune Restoration Signage	5	EA.	$500.00	$2,500.00
			Sub-Total	**$648,750.00**

Landscaping, Dune Restoration and Irrigation	**QTY.**	**UNITS**	**EST. PRICE**	**TOTAL**
Landscape Material (palms, shrubs, groundcover)	36,000	SF	$3.00	$108,000.00
Beach Dune Restoration	1	LS	$25,000.00	$25,000.00
Irrigation	1	LS	$35,000.00	$35,000.00
			Sub-Total	**$168,000.00**

	Sub-Total	**$2,057,000.00**
12% Contractor Profit		$246,840.00
5% Contingency		$102,850.00
Construction Administration/Permitting Fees		$175,000.00
	TOTAL	**$2,581,690.00**

Additive Alternates	**QTY.**	**UNITS**	**EST. PRICE**	**TOTAL**
Architectural Gateway - Type A (Central Vehicular)	2	EA.	$25,000.00	$50,000.00
Concrete Paver Center Driveway (asphalt upgrade)	7,500	SF	$1.50	$11,250.00
Concrete Pavement (asphalt upgrade)	67,500	SF	$1.00	$67,500.00
Group Pavilion (20'x44')	1	EA.	$35,000.00	$35,000.00
Group Pavilion (20'x28')	1	EA.	$25,000.00	$25,000.00
Viewing Pavilion Pavilion (15'x15')	1	EA.	$35,000.00	$35,000.00
Concrete Pavers (for 20'x44' pavilion)	880	SF	$4.00	$3,520.00
Concrete Pavers (for 20'x28' pavilion)	560	SF	$4.00	$2,240.00
Picnic Table (for 20'x44' pavilion)	8	EA.	$1,300.00	$10,400.00
Picnic Table (for 20'x44' pavilion)	6	EA.	$1,300.00	$7,800.00
Coquina Column-Wraps (for pavilion posts)	38	LS	$600.00	$22,800.00
Medjool Date Palms	6	EA.	$5,500.00	$33,000.00
			Total	**$303,510.00**

	GRAND TOTAL	**$2,885,200.00**
Project Construction Budget		$2,662,400.00
Budget versus Estimate		**($222,800.00)**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Sidewalk Renovations

PROJECT#

104050

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Downtown CRA

MANAGEMENT

Engineering

PROJECT SCOPE

Remove, replace and upgrade the concrete sidewalks with paver banding in the River District, Phase I - US1 to Beach Street - Design and Permit.

JUSTIFICATION

The existing concrete sidewalks and decorative paver banding was installed in 1991 and needs to be upgraded to match recent improvements as requested by the Downtown Mainstreet Committee.

PROJECT COST METHODOLOGY

TDB during the conceptual design phase.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and Permit - Phase I	50,000	0	0	0	0	50,000
Construction - Phase I	0	300,000	0	0	0	300,000
Construction - Phase II	0	0	300,000	0	0	300,000
	0	0	0	0	0	0
Total	50,000	300,000	300,000	0	0	650,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-TIF	50,000	300,000	300,000	0	0	650,000
Total	50,000	300,000	300,000	0	0	650,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Upgrades and Improvements

PROJECT#

104041

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Downtown CRA District

MANAGEMENT

Engineering

PROJECT SCOPE

This category provides the necessary enhancements of existing or proposed improvements within the redevelopment area. This would include, but not be limited to, mast arm and decorative light pole upgrades, decorative light pole and fixture purchase, installation and upgrade of, wood decking and handrails, landscape, irrigation and other public improvements. Landscaping locations include: FY 2015-16 West Bridge Slopes, FY 2016-17 East Bridge Slopes, FY 2017-18 Rockefeller Gardens and The Casements, FY 2018-19 Fortunato Park and Bailey Riverbridge. Sidewalk Paver Upgrades would occur from Orchard to Beach Street.

JUSTIFICATION

The 2007 adopted Downtown Master Plan (pages 26 and 30) identified the need to retain, replace and/ or upgrade the public infrastructure and hardscape improvements that have been invested in the Downtown. This project provides funding to make improvements to the existing infrastructure with the CRA District.

PROJECT COST METHODOLOGY

Projects allocations and estimates are based on actual bids or quotations from past projects of similar scope of work.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Landscape Upgrades	25,000	25,000	25,000	25,000	0	100,000
Sidewalk Paver Upgrades and Lighting	25,000	25,000	0	0	0	50,000
Landscape upgrades in Downtown	0	0	0	0	0	0
Beachside - Decorative light pole replacement	0	0	0	0	0	0
Irrigation Improvements for FDOT JPA Project	0	0	0	0	0	0
Total	50,000	50,000	25,000	25,000	0	150,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-TIF	50,000	50,000	25,000	25,000	0	150,000
Total	50,000	50,000	25,000	25,000	0	150,000

Downtown Overlay District

Kenilworth Ave
Kenilworth Ave
N. US 1 Hwy
Walnut St
N. Yonge St
McIntosh Rd
N. Ridgewood Ave
Kenilworth Ave
Rosewood Ave
Hernandez Ave
Hernandez Ave
Woodland Ave
Dix Ave
Highland Ave
Selden Ave
Charles Ter
N. Beach St (C.R. 4011)
Driftwood Ave
Hilldale Ave
Treasure Ln
Royal Palm Ave
Windward Ln
Oak Grove St
Windward Cir
Oak Dr
Landmark Cir
N. Halifax Dr (C.R. 2803)
John Anderson Dr
Hotel St
Witham St
Orchard Ln
Ocean Shore Blvd (S.R. A1A)
ATLANTIC OCEAN
Ford St
N. Yonge St (US 1 Hwy)
Lincoln Ave
Lincoln Ave
Lincoln Ave
N. Orchard St
Thompson Creek Rd
N. Perrott St
New Britain Ave
New Britian Ave
W. Granada Blvd (S.R. 40)
Granada Bridge (S.R. 40)
E. Granada Blvd (S.R. 40)
E. Granada Blvd (S.R. 40)
Granada Approach
Lewis St
Corbin Ave
S. Orchard St
S. Perrott St
Eileen Butts St
Coquina Ct
Bovard Ave
Vining Ct
Casement Dr
Tomoka Ave
Tomoka Ave
Tomoka Ave
Groover Ave
Midway Ave
Laws Ln
Wye Dr
Coquina Dr
Lucky Dr
Florence St
Bosarvey Cir
Bosarvey Dr
S. Ridgewood Ave
Live Oak Ave
Jefferson St
Myra Blvd
Willis Dr
Seton Trl
S. Atlantic Ave (S.R. A1A)
Fair Oaks Cir
FEC R.R.
Oleander Pl
Central Ave
S. Washington St
Central Ave
Osceola Ave
Willow Pl
Riverside Cir
Carib Dr
Oleeta St
HALIFAX RIVER
Palm Pl
Mound Ave
Railroad St
Washington Pl
S. Halifax Dr
Seminole Ave
Seminole Approach
Ormond Pkwy
Fairview Ave
Roosevelt Dr
Grove St
Valencia Dr
Riverside Dr
Division Ave
S. Beach St (C.R. 4011)
Magnolia Dr
S. Yonge St (US 1 Hwy)
Bostrom Ln
Arlington Way
Pine St
Ellsworth Ave
Fluhart Dr

Legend

- Downtown Overlay District
- CBD TIF District

N

0 250 500 1,000 1,500 Feet

City of Ormond Beach G.I.S. Department
Prepared By: Steve Johnson 7/3/07

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Rockefeller Garden Stage Shade Cover

PROJECT#

104051

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Cassen Park

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a fabric shade cover at the main stage area at Rockefeller Gardens.

JUSTIFICATION

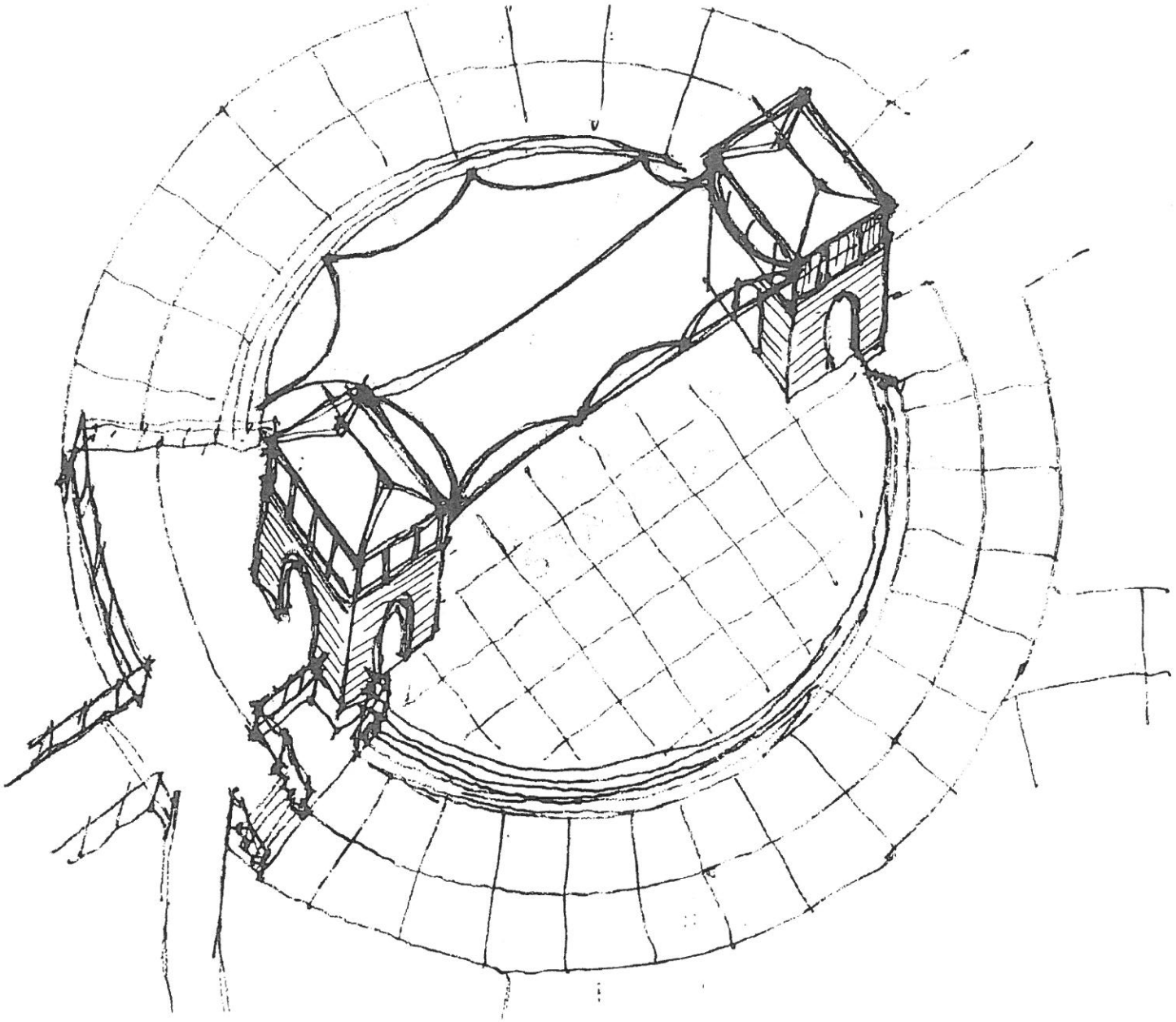
The stage area at Rockefeller gardens hosts numerous events throughout the year and protection from the sun would provide relief to those on the stage especially during the hot summer months.

PROJECT COST METHODOLOGY

2009 cost estimated adjusted by annual Construction Cost Index.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	0	41,000	0	0	0	41,000
Design	0	8,000	0	0	0	8,000
Total	0	49,000	0	0	0	49,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes - TIF	0	49,000	0	0	0	49,000
Total	0	49,000	0	0	0	49,000



Aerial View of Proposed Fabric Bandshell at Rockefeller Gardens Stage

Not To Scale

Kenneth Smith Architects Inc.

September 25, 2009

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Thompson Creek, Phase II

PROJECT#

104046

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Thompson Creek

MANAGEMENT

Planning & Engineering

PROJECT SCOPE

Sidewalk/ trail improvements along the western portion of the Thompson Creek.

JUSTIFICATION

The City completed streetscape improvements to Thompson Creek. This project is part of a larger planned trail from Division Avenue to Wilmette Avenue. Project is contingent upon MPO funding and construction of connecting trail.

PROJECT COST METHODOLOGY

This project is partly funded from TIF for the portion of the trail that runs from Wilmette Avenue to Division Avenue and remainder is funded from Metropolitan Planning Organization (MPO). The proposed trail is 6,550 linear feet. The portion of the trail in the Downtown CRA is from Lincoln Avenue to Tomoka Avenue. Costs estimates were obtained from similar trail projects including SR 40 sidewalk project (Phase 1 and 3) and the Tomoka State Park Trail.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	0	0	0	1,193,000	0	1,193,000
Total	0	0	0	1,193,000	0	1,193,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
TPO	0	0	0	894,750	0	894,750
Property Taxes-TIF	0	0	0	298,250	0	298,250
Total	0	0	0	1,193,000	0	1,193,000

SECOND FIVE YEAR IMPLEMENTATION PROGRAM

PROJECT TITLE	CITIZEN ISSUE	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
Granada Streetscape Improvements	SPA, TC	2				
Place Overhead Utilities Underground	SPA	3				
Targeted land Purchase	EBD	$400,000	$400,000	$400,000	$400,000	$400,000
Park Improvements	SPA,ROS,AC	2				
Relocate Portions of Tennis Center	EBD, ROS	TBD				
Thompson Creek Improvements	SPA, ROS	4				
Art-In-Public Places	AC	$10,000	$10,000	$10,000	$10,000	$10,000
Property Improvement Program Grants	EBD	$400,000	$400,000	$400,000	$400,000	$400,000
Side Street Improvement Construction	TC	$100,000	$100,000			
Area-wide Storm Water Improvements	EBD, TC	2				

1. The column on citizen issues links the capital project activity to the citizen issues and themes generated by the visioning process. EBD is economic and business development, TC is transportation and circulation, SPA is sense of place and appearance, ROS is recreation and open space, and AC is arts and culture.
2. The timing and cost for streetscape, park and drainage improvements will be based on studies done during the initial five year work program.
3. Current cost estimates for placing overhead utilities underground is approximately $1,500 per linear foot including underground construction, restoration and private service conversion. Project can be done independently or in combination with streetscape improvement projects.

Table-1: Cost Estimates

Volusia County, Tomoka Trail
From Inglesa Avenue to Tomoka Park Entrance
Estimate of Approximate Cost (Dated 03-09-07)

ITEM NO.	ITEM DESCRIPTION	UNIT	BASE QTY.	BASE UNIT COST	TOTAL COST
104-14	PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1	16,000.00	16,000.00
110-1-1	CLEARING AND GRUBBING	AC	2.47	14,000.00	34,602.43
120-1	REGULAR EXCAVATION	CY	4,761	8.25	39,279.17
160-4	STABILIZATION, TYPE "B" (12") (MIN LBR 40)	SY	9,522	4.50	42,850.00
285-704	BASE, OPTIONAL GROUP 4	SY	7,287	11.00	80,154.56
285-706	BASE, OPTIONAL GROUP 6	SY	243	13.00	3,159.00
334-1-23	SUPERPAVE ASPHALTIC CONCRETE (TRAFFIC C) (1 ¼")	TN	446	115.00	51,341.91
515-1-2	PIPE HANDRAIL- GUIDERAIL	LF	36	105.00	3,780.00
522-1	CONCRETE SIDEWALK (4" THICK)	SY	150	45.00	6,735.00
575-1-3	SODDING (ARGENTIA BAHIA)	SY	4,712	3.00	14,137.00
700-40-1	SIGN, SINGLE POST (LESS THAN 12 SF)	AS	20	325.00	6,500.00
710-6	DIRECTIONAL ARROW, (PAINTED)	EA	12	90.00	1,080.00
710-7	PAVEMENT MESSAGES (PAINTED)	EA	4	70.00	280.00
710-25-241	SOLID TRAFFIC STRIPE (WHITE) (24")	LF	28	5.00	140.00
710-26-41	SOLID TRAFFIC STRIPE (YELLOW) (4")	LF	300	0.50	150.00
711-3	PAVEMENT MESSAGES (THERMOPLASTIC)	EA	1	250.00	250.00
711-4	DIRECTIONAL ARROW, (THERMOPLASTIC)	EA	5	300.00	1,500.00
711-35-121	SOLID TRAFFIC STRIPE (THERMOPLASTIC) (12" WHITE)	LF	252	8.00	2,016.00
711-35-241	SOLID TRAFFIC STRIPE (THERMOPLASTIC) (24" WHITE)	LF	36	10.00	360.00
711-36-61	SOLID TRAFFIC STRIPE (THERMOPLASTIC) (6" YELLOW)	LF	200	2.25	450.00
721-74-1	WASTE RECEPTACLE	EA	3	500.00	1,500.00
721-75-1	BENCH	EA	3	2,600.00	7,800.00
N/A	KIOSK (WOODEN)	EA	2	4,000.00	8,000.00
	SUBTOTALS				**$322,065.07**
101-1	MOBILIZATION	LS	1	10%	32,206.51
102-1	MAINTENANCE OF TRAFFIC	LS	1	10%	32,206.51
N/A	ENGINEERING & DESIGN	LS	1	10%	32,206.51
N/A	SURVEY	LS	1	50,000.00	50,000.00
N/A	CONTINGENCY	LS	1	20%	64,413.01
	SUBTOTALS				**$211,032.53**
	GRAND TOTAL				**$533,097.60**

SR 40 Multiuse Trail Phase 3 Old Tomoka Road to Airport Road Extension

FDOT Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
101-1	Mobilization	1	LS	$ 15,000.00	$ 15,000.00
102-1	Maintenance of Traffic	1	LS	$ 7,500.00	$ 7,500.00
110-4	Removal of existing concrete pavement	145	SY	$ 12.63	$ 1,831.35
104-10-2	Synthetic Bales	24	EA	$ 7.00	$ 168.00
104-13-1	Silt Fence (Type III)	5,086	LF	$ 1.50	$ 7,629.00
110-1-1	Clear and Grub	1	AC	$ 8,000.00	$ 8,000.00
120-1	Regular Excavation	1,278	CY	$ 6.00	$ 7,668.00
120-6	Embankment	3,263	CY	$ 8.00	$ 26,104.00
425-1541	INLETS, DT BOT, TYPE D, <10'	2	EA	$ 2,336.01	$ 4,672.02
430-174-102	Pipe Culv. Round 36", SD	436.00	LF	$ 50.00	$ 21,800.00
430-984-138	Mitered End Section Round 36", SD	4	EA	$ 1,200.00	$ 4,800.00
515-1-2	Pipe Rail (Aluminum)	156	LF	$ 35.00	$ 5,460.00
522-1	8-ft. Wide Concrete Sidewalk, 4"	4,204	SY	$ 32.00	$ 134,528.00
522-2	8-ft. Wide Concrete Sidewalk, 6"	72	SY	$ 35.00	$ 2,520.00
538-1	Guardrail reset	10	LF	$ 6.50	$ 65.00
570-1-2	Performance Turf	15,210	SY	$ 3.33	$ 50,649.30
700-40-1	Sign (F&I) Single Post (12'-0")	1	AS	$ 1,000.00	$ 1,000.00
711-17	Thermoplastic, Remove	120	SF	$ 2.50	$ 300.00
711-11125	Stop Bar - 24" Thermo White	60	LF	$ 5.00	$ 300.00
711-11221	Traffic Stripe (Thermo) (Yellow) 6"	80	LF	$ 1.00	$ 80.00
2-OB	8 ft wide - 125 LF pedestrian bridge (F&I)	1	LS	$ 210,000.00	$ 210,000.00
1-OB	8-ft. Wood Boardwalk (F&I)	2,208	SF	$ 35.00	$ 77,280.00
				TOTAL BASE BID	**$ 587,354.67**

FDOT Pay Item Number	Pay Item Description	Unit Quantity	Unit Type	Unit Cost	Total Labor Cost
101-1	Mobilization	1.00	LS	$ 5,000.00	$ 5,000.00
102-1	Maintenance of Traffic	1.00	LS	$ 5,000.00	$ 5,000.00
					$ -
104-10-2	Synthetic Bales	24.00	EA	$ 12.77	$ 306.48
104-13-1	Silt Fence (Type III)	4875.00	LF	$ 1.12	$ 5,460.00
110-1-1	Clear and Grub	1.46	AC	$ 8,975.00	$ 13,103.50
120-1	Regular Excavation	1278.00	CY	$ 6.26	$ 8,000.28
120-6	Embankment	3063	CY	$ 10.21	$ 31,273.23
					$ -
					$ -
					$ -
	8 ft Boardwalk	1536.00	SF	$ 35.00	$ 53,760.00
522-1	8 Feet Concrete Sidewalk, 4”	4163.00	SY	$ 42.78	$ 178,093.14
575-1-1	Sodding (Bahia)	15610.00	SY	$ 2.32	$ 36,215.20
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
711-11123	Traffic Stripe Solid (Thermo) (White) 12"	320.00	LF	$ 2.26	$ 723.20
711-11-125	Stop Bar 24" Thermo White	80.00	LF	$ 3.93	$ 314.40
					$ -
700-40-1	Sign (F&I)(Single Post)(12'-0")	2.00	AS	$ 278.31	$ 556.62
					$ -
					$ -
HULL ROAD TURN LANE City of Ormond Beach, FL (Hull Rd and N. US1)			Subtotal		**$ 337,806.05**
			Design/Survey Costs		
			CEI Cost		
			Contingency		**$ 33,780.61**
			Total Project Cost		**$ 371,586.66**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Land Acquisitions/Redevelopment

PROJECT#

104048

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Downtown CRA

MANAGEMENT

Planning

PROJECT SCOPE

Acquisition of land for public improvements such as parking, stormwater, utilities.

JUSTIFICATION

The 2007 adopted Downtown Master Plan (Pages 13, 23, 31, 32) identified the need for parking and stormwater improvements. These funds will be utilized for public parking, stormwater or to assist in the redevelopment of blighted parcels.

PROJECT COST METHODOLOGY

NA

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Land Acquisition & Redevelopment	0	0	50,000	0	0	50,000
Total	0	0	50,000	0	0	50,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-TIF	0	0	50,000	0	0	50,000
Total	0	0	50,000	0	0	50,000

PHYSICAL ENVIRONMENT RECOMMENDATIONS

	District Applicability			Implementation Responsibility		
	Beach	River	Creek	City/CRA	MainStreet	Chamber
Encourage infill housing at medium and high density (12-32 units per acre) either as stand alone projects or incorporated into mixed use projects.	X	X	X	X		
Establish a land assembly program that gives the City the ability to purchase strategically located parcels that can then be used to encourage desired development projects.	X	X	X	X		
Acquire land and construct a surface parking lot along New Britain Avenue between North Beach Street and North Ridgewood Avenue.		X		P	S	S
Identify opportunities to provide additional parking either on-street or off-street	X	X	X	P	S	S
Design and install public wayfinding signage that identifies parking locations, public facilities and other key sites.	X	X	X	P	S	S
Re-evaluate the Granada Boulevard streetscape design to improve the pedestrian environment; increase the number of on-street parking spaces; and provide modified landscaping for shade and form. Prepare a comprehensive plan and proposal for review with FDOT.	X	X	X	P	S	S
Design and install a regional gateway feature for the US 1 and Granada Boulevard intersection to create a sense of arrival in the downtown.		X	X	P	S	S

P = Primary Role
S = Secondary Role

INITIAL FIVE YEAR IMPLEMENTATION PROGRAM

PROJECT TITLE	CITIZEN ISSUE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
New Britain Surface Parking Lot	EBD, TC	$500,000	$500,000	$500,000		
Public Way Finding Signage Plan	TC	$100,000				
Public Way Finding Signage Installation	TC		3			
Granada Blvd. Streetscape Modification Plan	SPA, TC	2				
Regional Gateway Design	SPA	$50,000				
Regional Gateway Implementation	SPA		3			
Targeted Land Purchase	EBD		$400,000	$400,000	$400,000	$400,000
Park Design (Incl. Restaurant & Boating Options)	EBD,SPA, ROS,AC			$60,000		
Thompson Creek Improvement Plan	SPA, ROS	$50,000				
Art-In-Public Places	AC	$10,000	$10,000	$10,000	$10,000	$10,000
Property Improvement Program Grants	EBD,SPA	$400,000	$400,000	$400,000	$400,000	$400,000
Side Street Improvement Study	TC		$100,000	$100,000		
Side Street Improvement Construction	TC				$100,000	$100,000
Storm Water Improvement Study	EBD, TC				TBD	
Casements/Rockefeller Gardens Improvements	ROS	$865,000				

1. The column on citizen issues links the capital project activity to the citizen issues and themes generated by the visioning process. EBD is economic and business development, TC is transportation and circulation, SPA is sense of place and appearance, ROS is recreation and open space, and AC is arts and culture.
2. The regional gateway design needs to be coordinated with FDOT plans for U.S. 1 and SR 40 intersection.
3. Timing and cost of proposed signage and gateway improvements will be determined following the study referenced in note 2.

SECOND FIVE YEAR IMPLEMENTATION PROGRAM

PROJECT TITLE	CITIZEN ISSUE	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
Granada Streetscape Improvements	SPA, TC	2				
Place Overhead Utilities Underground	SPA	3				
Targeted land Purchase	EBD	$400,000	$400,000	$400,000	$400,000	$400,000
Park Improvements	SPA,ROS,AC	2				
Relocate Portions of Tennis Center	EBD, ROS	TBD				
Thompson Creek Improvements	SPA, ROS	4				
Art-In-Public Places	AC	$10,000	$10,000	$10,000	$10,000	$10,000
Property Improvement Program Grants	EBD	$400,000	$400,000	$400,000	$400,000	$400,000
Side Street Improvement Construction	TC	$100,000	$100,000			
Area-wide Storm Water Improvements	EBD, TC	2				

1. The column on citizen issues links the capital project activity to the citizen issues and themes generated by the visioning process. EBD is economic and business development, TC is transportation and circulation, SPA is sense of place and appearance, ROS is recreation and open space, and AC is arts and culture.
2. The timing and cost for streetscape, park and drainage improvements will be based on studies done during the initial five year work program.
3. Current cost estimates for placing overhead utilities underground is approximately $1,500 per linear foot including underground construction, restoration and private service conversion. Project can be done independently or in combination with streetscape improvement projects.

District Redevelopment Concepts (con't)

River District

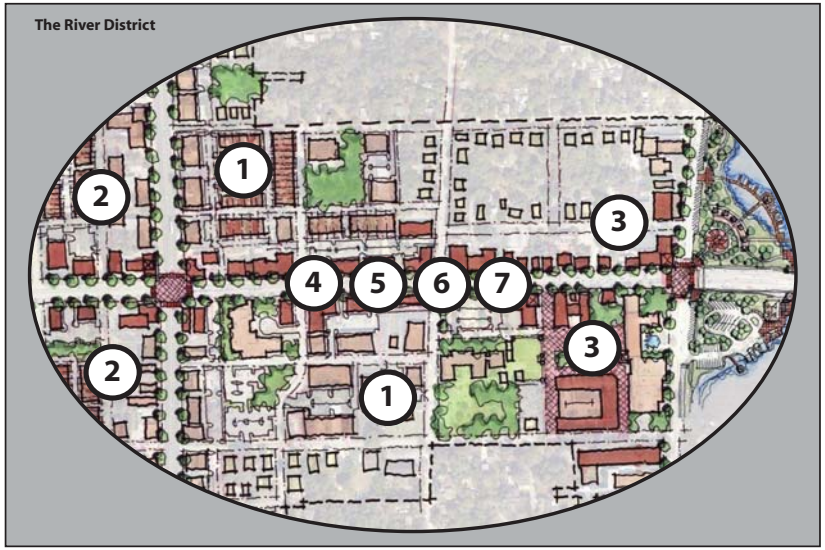
The River District already has a collection of traditional downtown structures that needs to be supported by similar design characteristics as new buildings are added and exiting buildings renovated. An immediate need is to improve parking on the north side of Granada Boulevard, especially east of Ridgewood Avenue. This can be done first by lengthening the parking time allowed to on-street parking and secondly by acquiring land and developing surface parking along New Britain Avenue. Once the parking lot at Ormond Elementary School is complete, a comprehensive parking study needs to be done for the entire sub-district including the potential for structured parking behind City Hall. The parking program needs to be supported by a clear way-finding signage system that identifies parking areas and key downtown destinations.

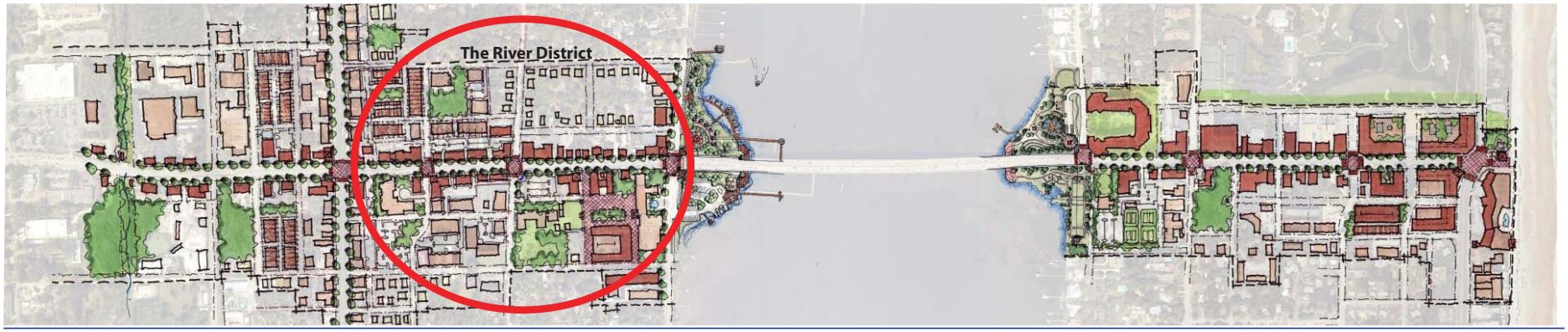
Under-utilized and redeveloping properties north and south of Granada Boulevard should be developed with housing at medium and high densities as defined by the City's comprehensive plan. Redevelopment of parcels along Granada should include housing as part of a mixed use program. When future needs dictate more space is required for police operations, consideration should be given to relocating the police station and converting the site to mixed use private development. The City/CRA should consider purchasing key parcels that can be offered to private development to stimulate redevelopment projects.

On-street parking on Granada Boulevard needs to be maintained as an element of a traffic calming program that supports an improved pedestrian and shopping environment. Pedestrian elements along the street need to be improved and trees added that will provide shade and define the urban form. The proposed street design needs to be coordinated with FDOT. Regulations that will encourage outdoor dining and outdoor display of merchandise where space allows need to be considered. Side streets throughout the district need to be upgraded to include sidewalks, street trees and other urban design elements.

Land development regulations need to be modified to require new and redeveloping sites to move building mass to the street and include desired design elements. Because of the predominance of older structures in the building inventory, the continuation of the property improvement grant program is particularly important in this area, but the program should stress compliance with the overall design objectives and address all visible sides of a building. Projects with desired land uses and densities should be approved at staff level if they comply with well defined standards. Consideration needs to be given to expanding the downtown overlay district to include most of the CRA to encourage more intensive housing and mixed use development.

1. Identify and acquire key parcels that can will stimulate desired private sector projects.
2. Encourage infill housing at medium and high densities.
3. Address parking needs including surface parking on New Britain and other key locations; maximize on-street parking; reorganize parking and access to City Hall lot including assessment of parking garage.
4. Develop and implement a revised streetscape plan for Granada Blvd. including improved pedestrian service and trees that add shade and define form.
5. Add public wayfinding signage.
6. Continue façade improvement program.
7. Adopt design rules that place buildings close to street and require design elements that are consistent with historical building design.





FACILITY CONSTRUCTION AND RENOVATION

CAPITAL PROJECT DETAIL

PROJECT TITLE

CDBG Projects

PROJECT#

CDBG16

CATEGORY

Facility Construction and Renovation

FUND

116-Grant Fund

PROJECT LOCATION

CDBG District

MANAGEMENT

Engineering

PROJECT SCOPE

Remove and replace existing fixtures (175 W MH) on Washington Street with new LED technology (60 W). Installation of (2) ADA canoe/ kayak docks with launch.

JUSTIFICATION

With the recent interconnection of the five lakes at Central Park and the proposed establishment of a canoe/ kayak rental agreement, the construction of 2 canoe launch faculties (at Central Park Lake 1 off Hammock Lane and Central Park Lake 4 between Hand Ave and Division Ave) is recommended. The existing lake edges are steep and not conducive to canoe/ kayak launching. Safety concerns would be addressed with the addition of these floating dock systems that are specifically designed to meet ADA requirements for canoe/ kayak launching. (2) floating docks and launch ramps will be installed in FY 14/15 (ELC off Division and Lake 1 at Flemming). Add shell parking with one ADA concrete stall, sidewalk and picknic table to Melrose Park. Complete renovation to existing irrigation system at Hospital gardens Park.

PROJECT COST METHODOLOGY

Based on actual proposal/ bids to purchase and install LED fixtures. ADA ramps based on actual proposals from supplier and installer.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
ADA Canoe / Kayak Dock	60,000	0	0	0	0	60,000
Melrose Park	25,000	0	0	0	0	25,000
Hospital Garden Renovation	25,000	0	0	0	0	25,000
Division Avenue Decorative Lighting	0	100,000	0	0	0	100,000
Street Tree Planting	0	0	100,000	0	0	100,000
Ridgewood Avenue Replacement	0	0	0	50,000	0	50,000
Washington Street Replacement	0	0	0	40,000	0	40,000
Total	110,000	100,000	100,000	90,000	0	400,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

CDBG Projects

PROJECT#

CDBG16

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
CDBG Grant	110,000	100,000	100,000	90,000	0	400,000
Total	110,000	100,000	100,000	90,000	0	400,000

AccuDock
1790 SW 13th CT
Pompano Beach, FL 33069

Estimate

Date	Estimate #
3/10/2015	5455

Bill To

Mark Dowst & Associates Inc.
Cara Culliver
22 South Beach St
Ormond Beach, FL 32174
386-871-5293

Ship To

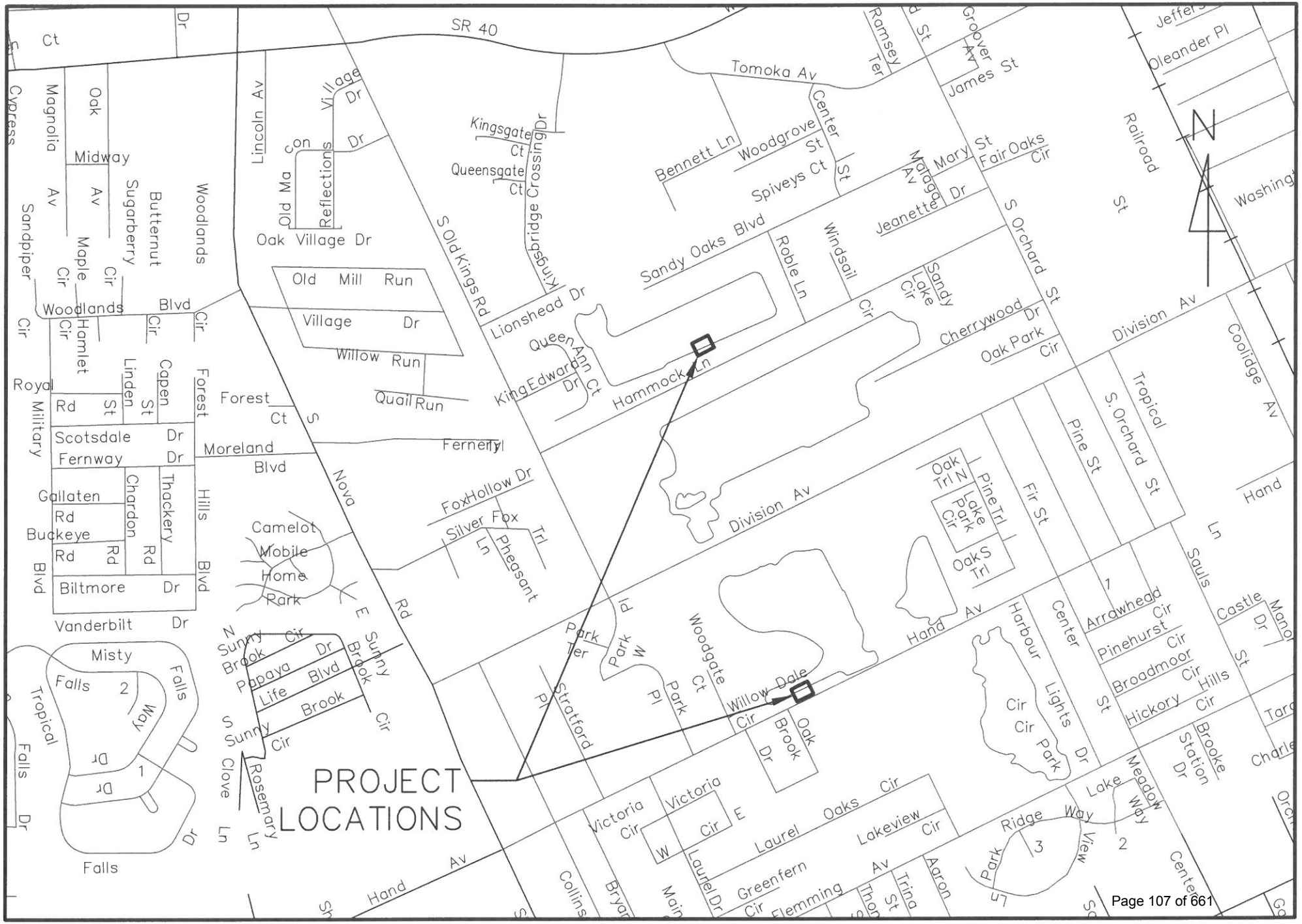
Delivery and Installation by
Broward Dock & Seawall

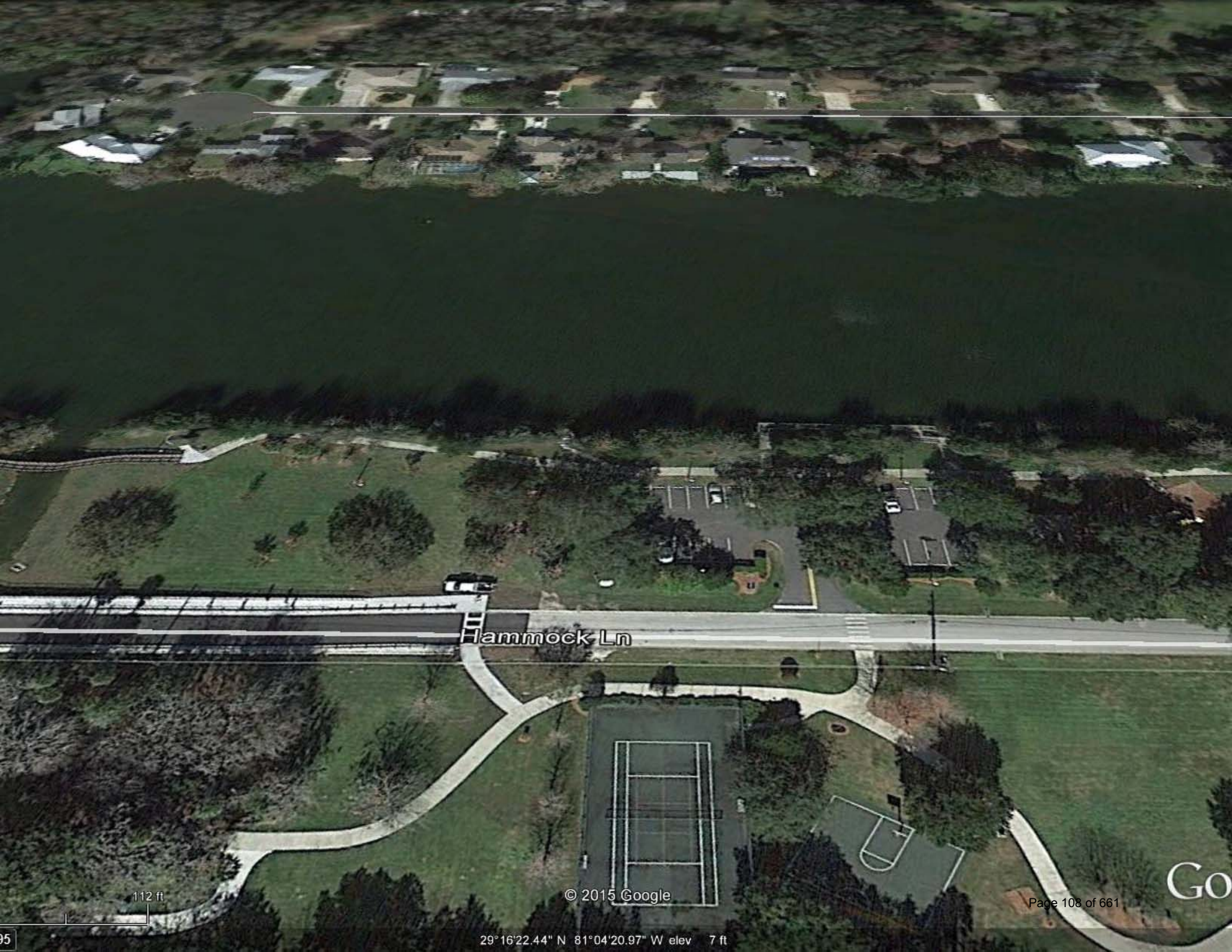
Description	Qty	Cost	Total
Estimate for 12' x 18' Kayak Slip Dock with Transfer Package			
4' x 8' x 8" Framed Float	1	849.00	849.00T
5' x 8' x 8" Framed Float	1	979.00	979.00T
5' x 6' x 8" Framed Float	4	829.00	3,316.00T
S-Style Connector w/ Frame add-on	6	32.00	192.00T
TC-Style Connector 5	1	60.00	60.00T
TC-Style Connector 3	1	60.00	60.00T
H-Style Connector	1	60.00	60.00T
3' Underwater Connector	1	199.00	199.00T
3' x 8' Safe Launch Platform w/ accessory kit	1	929.00	929.00T
Accudock ADA Transfer Platform with overhead grab rail, and specifically designed angled overhead assist bar	1	2,500.00	2,500.00T
Side Railing - Kayak Accessory	1	179.00	179.00T
ADA Transfer Platform Package #1 - 12' x 18' Dock with 3' x 8' Slip			9,323.00
2-1/2" Edge/ Roll Off Guard - 60' linear	60	22.00	1,320.00T
8" Cleat with stainless steel hardware for framed float	4	16.00	64.00T
Double Sided - 4 Tier Paddleboard Rack	1	1,598.00	1,598.00T
Anchor Chain Bracket	4	65.00	260.00T

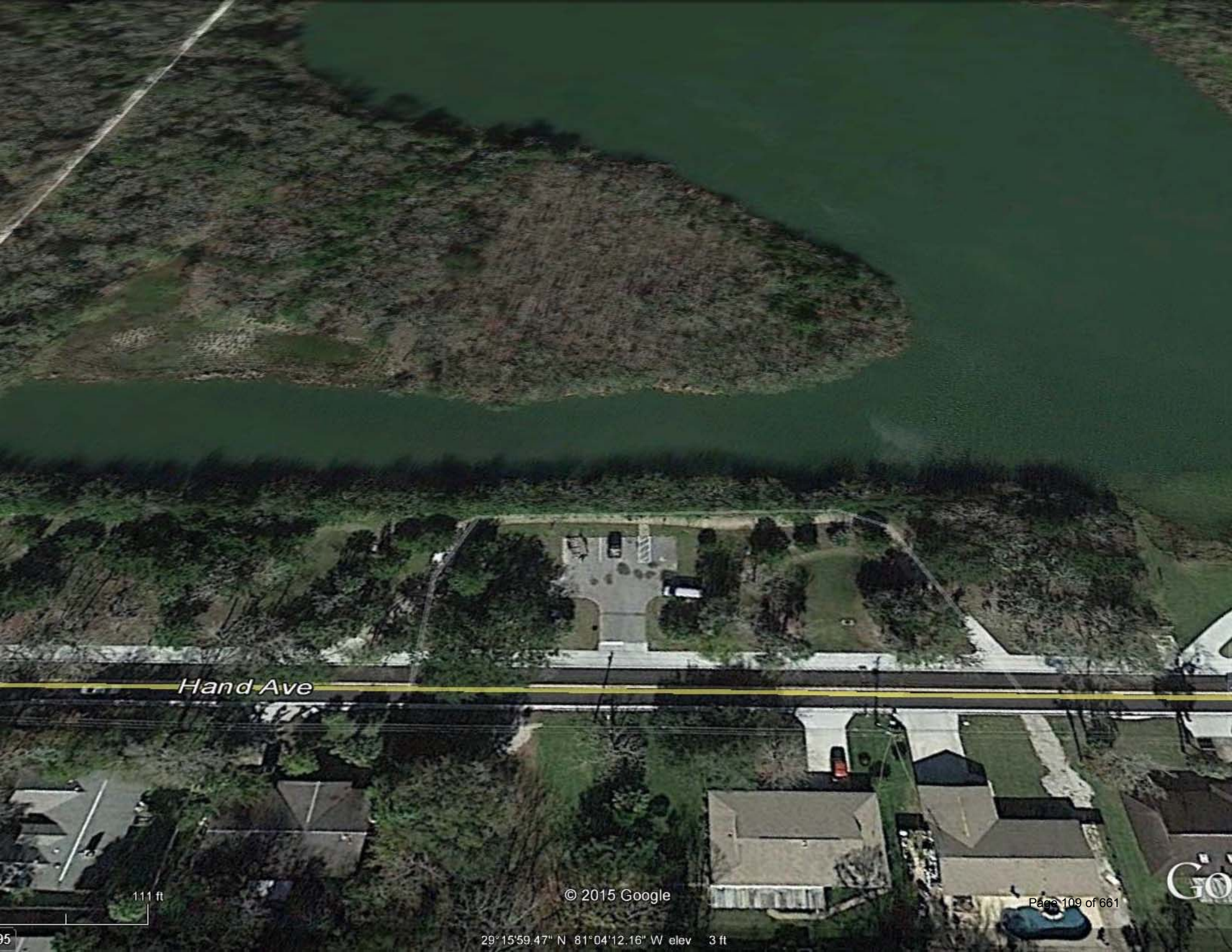
Phone #	Fax #	E-mail	Web Site	Subtotal
(954) 785-7557	(954) 784-9144	sales@accudock.com	www.accudock.com	Sales Tax...
Pricing Valid for 30 Days				Total

Customer Signature _____...

CENTRAL PARK ADA CANOE/KAYAK LAUNCH




Hammock Ln
© 2015 Google
112 ft
29°16'22.44" N 81°04'20.97" W elev 7 ft


Hand Ave
111 ft
© 2015 Google
29°15'59.47" N 81°04'12.16" W elev 3 ft

AccuDock
1790 SW 13th CT
Pompano Beach, FL 33069

Estimate

Date	Estimate #
3/10/2015	5455

Bill To

Mark Dowst & Associates Inc.
Cara Culliver
22 South Beach St
Ormond Beach, FL 32174
386-871-5293

Ship To

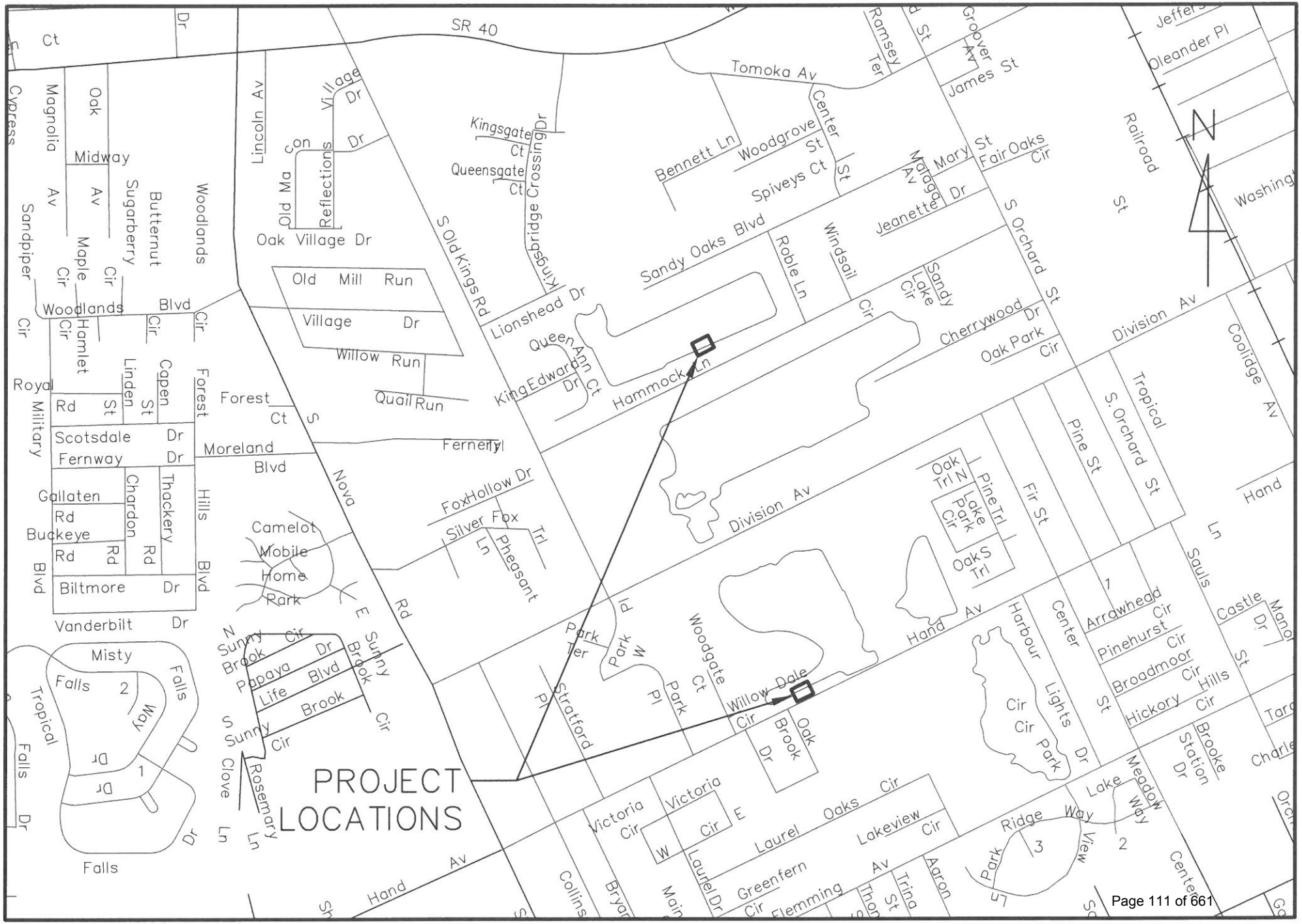
Delivery and Installation by
Broward Dock & Seawall

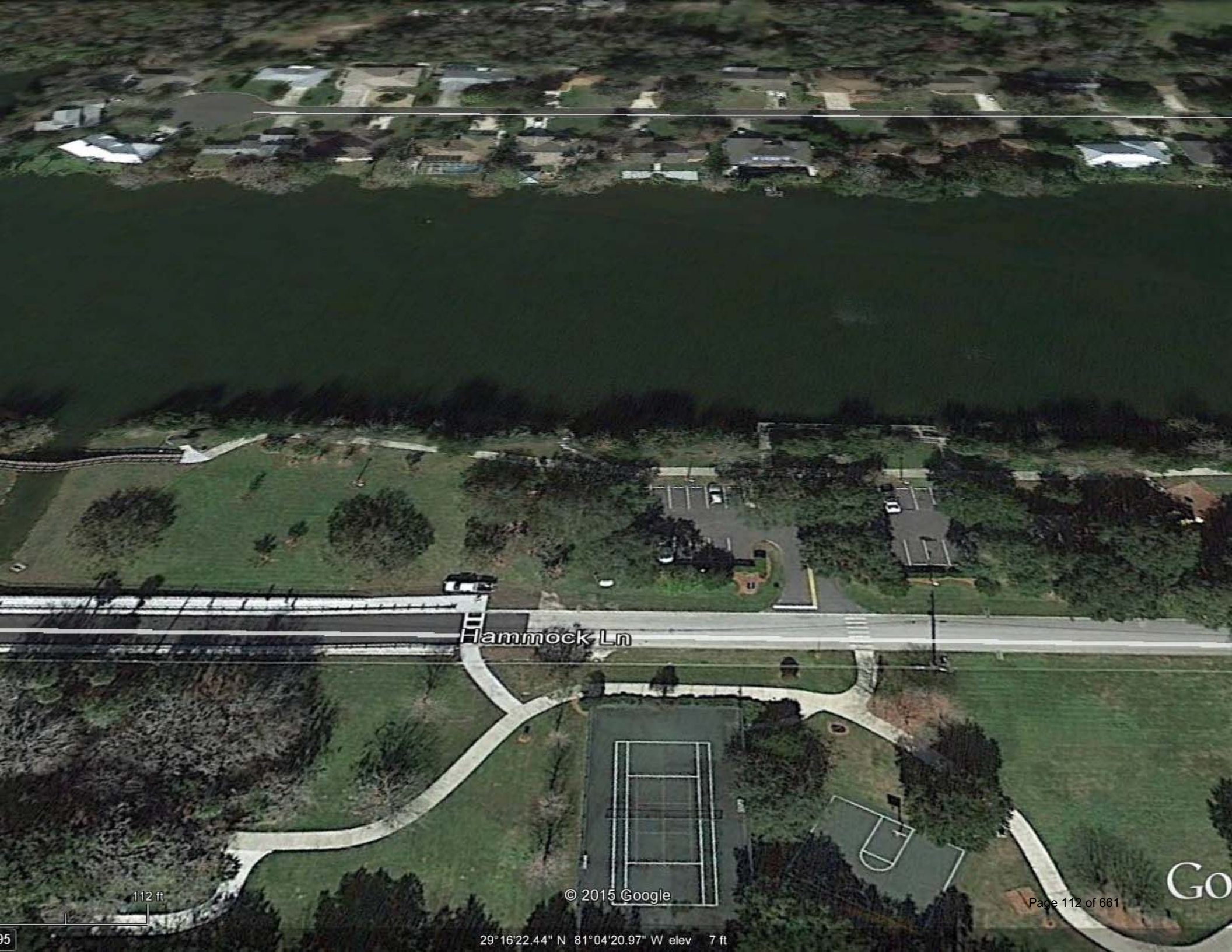
Description	Qty	Cost	Total
4' x 20' ADA Aluminum Gangway with aluminum non skid decking, side railings, intermediates handrails, and kickplates with 38" inside clearance	1	4,320.00	4,320.00T
4' Landside Hinge Plate	1	359.00	359.00T
4' Dock Side Connection/Hinge Plate	1	359.00	359.00T
Compensation float with mounted hinge assembly	1	999.00	999.00T
Order Subtotal prior to shipping			18,602.00
10% Discount		-10.00%	-1,860.20
Florida State Sales County Surtax		25.00	25.00
Estimate on delivery and installation @ $4000 - does not include any concrete work			

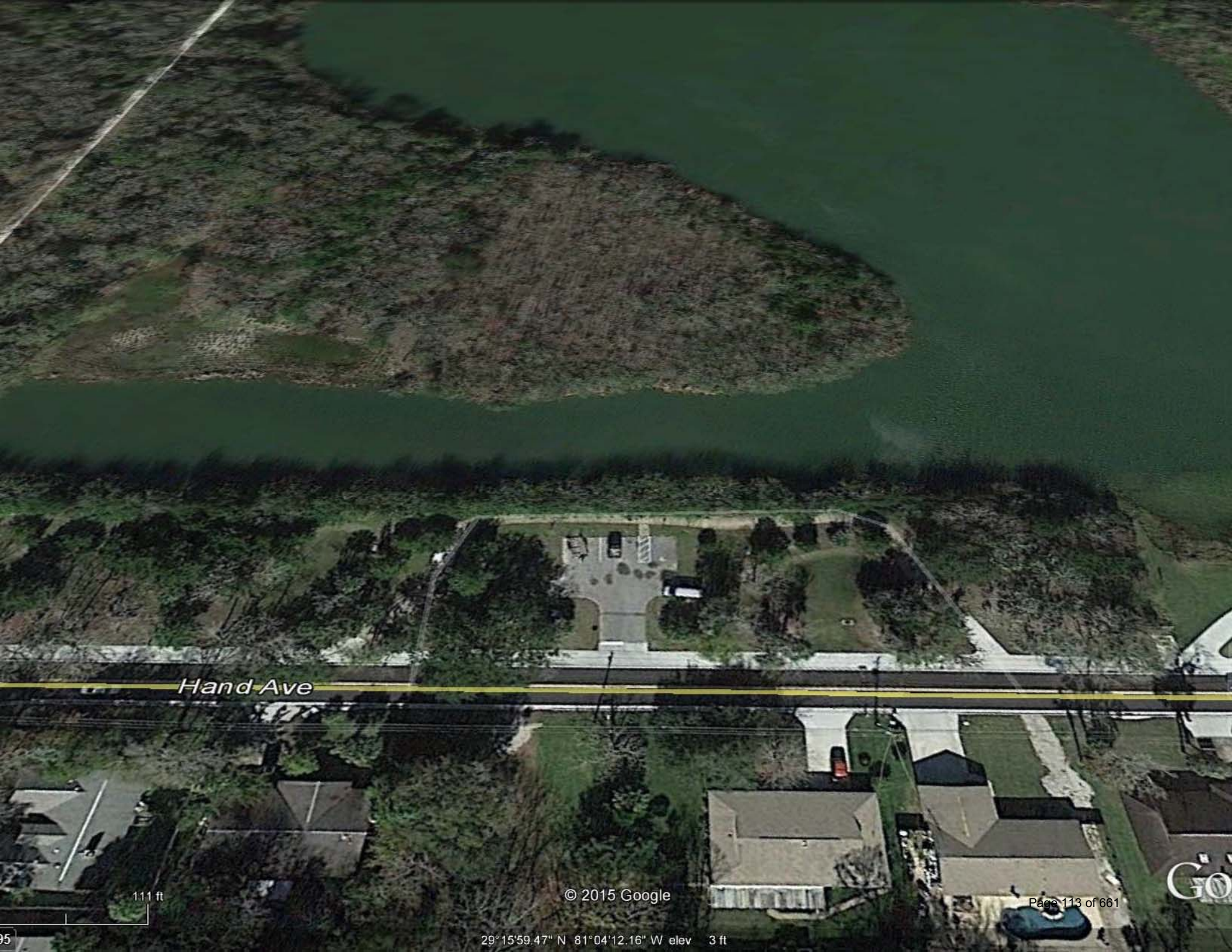
Phone #	Fax #	E-mail	Web Site		
				Subtotal	$16,766.80
(954) 785-7557	(954) 784-9144	sales@accudock.com	www.accudock.com	**Sales Tax...**	$1,004.51
Pricing Valid for 30 Days				**Total**	$17,771.31

Customer Signature _____...

CENTRAL PARK ADA CANOE/KAYAK LAUNCH




Hammock Ln
112 ft
© 2015 Google
29°16'22.44" N 81°04'20.97" W elev 7 ft


Hand Ave
111 ft
© 2015 Google
29°15'59.47" N 81°04'12.16" W elev 3 ft

CITY OF ORMOND BEACH

INVITATION TO BID

DECORATIVE LIGHTING PURCHASE – CDBG & CRA DISTRICTS

Bid No. 2012-17

The BIDDER will deliver the commodities, as described herein, for the following price(s):

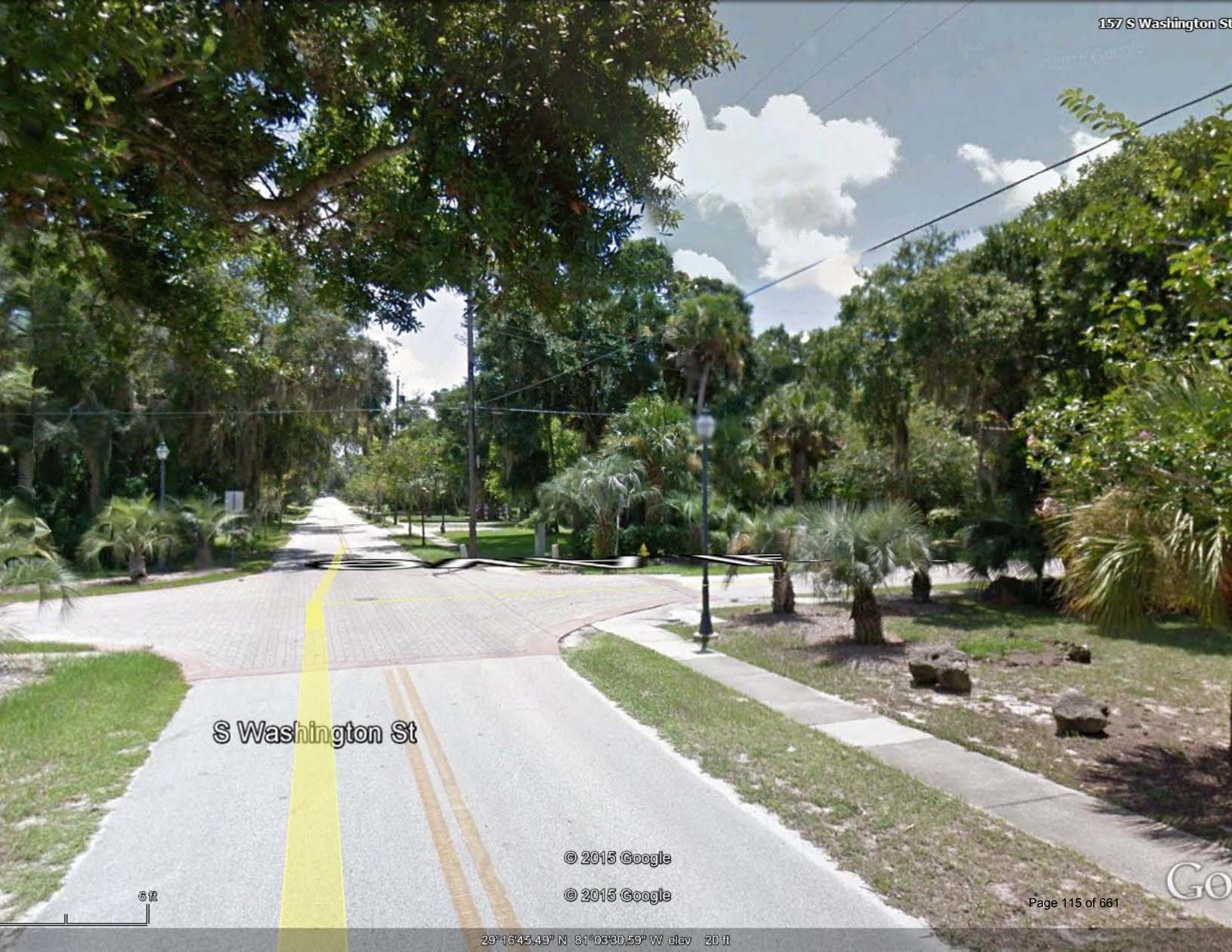
BID SCHEDULE

Item No:	Description:	Quantity:	Unit:	Unit Price:	Total Price:
1.	Balmoral Light Fixture (LED) Manufactured by King Luminaire Order # K611(MOD)- T_ BAAR-III-75 (SSL)-5000-120:277-Verdi-Anodized 5 Year – 50,000 hrs warranty 5 Year – Finish warranty	46 (CDBG)	EA	$ 1261.00	$ 58,006.00
2.	Balmoral Light Fixture (LED) Manufactured by King Luminaire Order # K611(MOD)- T_ BAAR-III-75 (SSL)-5000-120:277-Verdi-Anodized 5 Year – 50,000 hrs warranty 5 Year – Finish warranty	90 (TIF)	EA	$ 1261.00	$ 113,490.00
TOTAL					$ 171,496.00 (Figures)

one hundred seventy one thousand, four hundred ninety six dollars.
(Words)

Delivery shall take place no later than 70 calendar days after receipt of order.

"The City of Ormond Beach uses funds for projects including federal dollars provided by the U.S. Department of Housing and Urban Development (HUD) through the Community Development Block Grant (CDBG). These projects include real estate acquisition, reconstruction, rehabilitation, and demolition. When engaged in such projects, the City requires the use of qualified personnel. The requirements included in the CDBG Supplemental Conditions attached to this bid may apply to the services procured through this solicitation."


157 S Washington St
S Washington St
© 2015 Google
© 2015 Google
6 ft
29°16'45.49" N 81°03'30.59" W elev 20 ft

CITY OF ORMOND BEACH

INVITATION TO BID

DECORATIVE LIGHTING PURCHASE – CDBG & CRA DISTRICTS

Bid No. 2012-17

The BIDDER will deliver the commodities, as described herein, for the following price(s):

BID SCHEDULE

Item No:	Description:	Quantity:	Unit:	Unit Price:	Total Price:
1.	Balmoral Light Fixture (LED) Manufactured by King Luminaire Order # K611(MOD)- T_ BAAR-III-75 (SSL)-5000-120:277-Verdi-Anodized 5 Year – 50,000 hrs warranty 5 Year – Finish warranty	46 (CDBG)	EA	$ 1261.00	$ 58,006.00
2.	Balmoral Light Fixture (LED) Manufactured by King Luminaire Order # K611(MOD)- T_ BAAR-III-75 (SSL)-5000-120:277-Verdi-Anodized 5 Year – 50,000 hrs warranty 5 Year – Finish warranty	90 (TIF)	EA	$ 1261.00	$ 113,490.00
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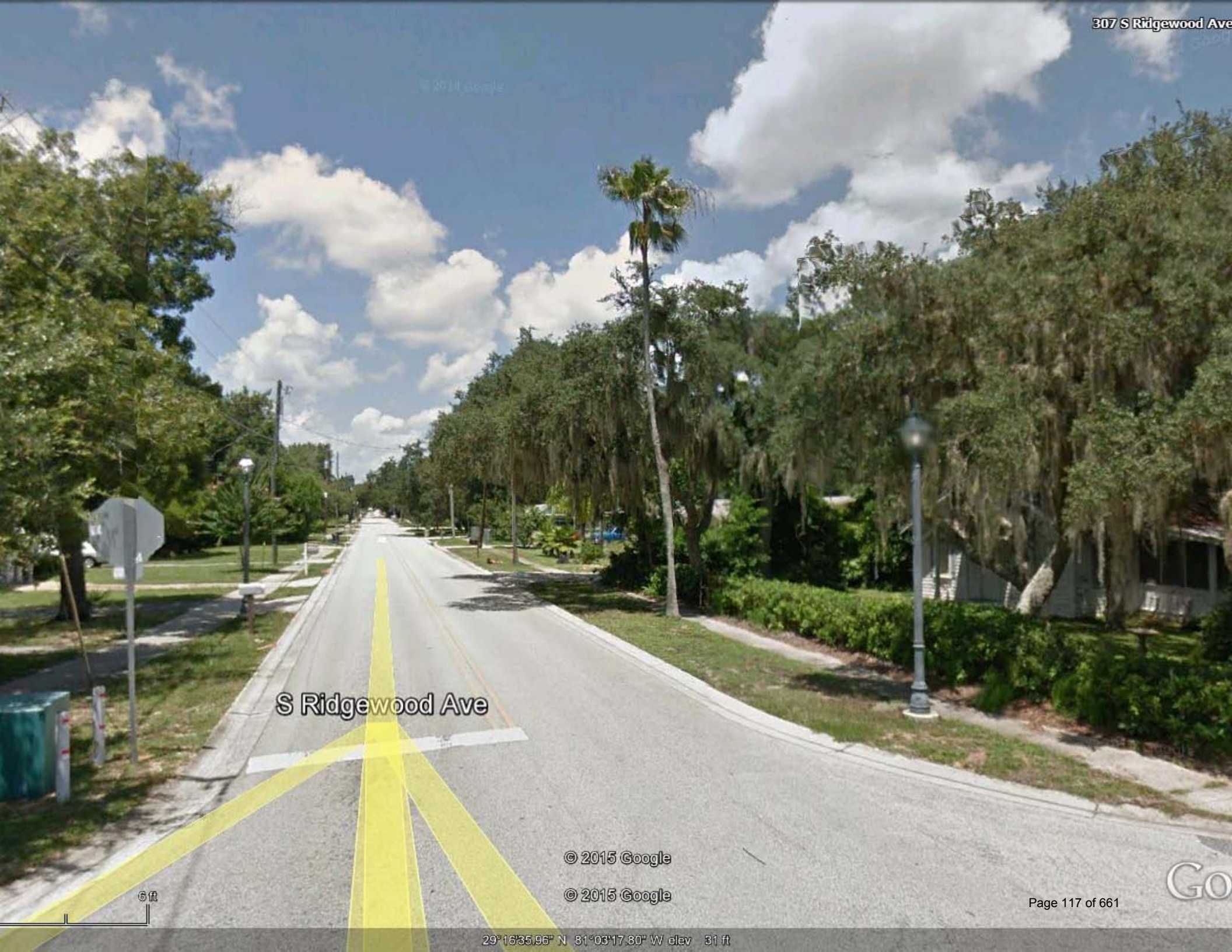
307 S Ridgewood Ave
S Ridgewood Ave
© 2015 Google
© 2015 Google
6 ft
29°16'35.96" N 81°03'17.80" W elev 31 ft

BIG VALUE GARDEN CENTER

768 NORTH NOVA ROAD
DAYTONA BEACH, FL 32114-1742

(386)252-2534 FAX # (386)252-3611 bvgc1@aol.com

Florida Certified Landscape Contractor

PROPOSAL # 6882

LANDSCAPING DESIGN AND INSTALLATION-LICENSED IRRIGATION CONTRACTOR
COMPLETE NURSERY AND GARDEN CENTER SINCE 1959

FLORIDA CERTIFIED LANDSCAPE CONTRACTOR

CITY OF ORMOND BEACH ATTN: Paul MacDonald P.O. BOX 277 ORMOND BEACH, FL. 32175		6/30/2014	
		Project/Job	
		CARDINAL BEACH APPROACH	
		ARCHITECT	
OFFICE	FAX	DATE OF PLANS	
386-676-3296	386-676-3304	REVISION DATE	

QTY	SIZE	DESCRIPTION	Total
2	7 GAL,30"	EUROPEAN FAN PALM -	
2	30 GAL, 6'-7'	OLEANDER STD. CALYPSO	
2	8' C.T.	PHOENIX SYLVESTRIS	
4		SABAL PALM -	
60	1 GAL	BULBINE - ORANGE	
60	3 GAL	DWARF OLEANDER	
50	3 GAL	SPARTINA PATENS - MARSH HAY CORDGRASS	
73	3 GAL	INDIA HAWTHORNE -	
130	1 GAL	SOCIETY GARLIC -	
30	YDS	PINE BARK	
		LANDSCAPE SUB TOTAL	6,539.00
		IRRIGATION:AS DESIGNED	3,035.00

Thank you for your business - we appreciate it very much. **Total** $9,574.00

All charges due upon completion of work unless otherwise stated. A 1 1/2% late fee will be added to past due accounts monthly. Late payment voids any and all guarantees, warranty void from damage caused by flooding,fire, freezing temperatures, winds over 50 miles per hour,lightning, vandalism, or negligence on the part of the owner. In the event collection is necessary, the purchaser agrees to pay all of the costs of collection including attorney's fees.

Authorized Signature:_____

Note: This proposal may be withdrawn by us if not accepted within__30____days

ACCEPTANCE OF PROPOSAL. The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outline above.
Date of Acceptance _____

Signature _____ Signature _____

Tomoka Construction Services, Inc.

City of Ormond Beach

ATTN: Paul MacDonald

Job: Cardinal Dr. Pavers

Plans: City of Ormond Beach Engineering Sheets HA-1 & HA-2 Dated 6/10/14 No revisions

October 21,2014

Proposal

Scope of Work: Saw Cut Exisiting Asphalt As Needed. Excavate For Proposed Imrpovements. Pour 4' Thick 3000 PSI Concrete Base and Two EA Header Curbs. Install Pavers As Per Specs.

Total Lump Sum: $ 16,521.00

Not Included: Permits, Landscaping, Irrigation, Asphalt Parking, Striping, and Signage.

Please Note Pricing Can Only Be Honored For Sixty (60) Days From Proposal Date

KKM

Kim K. Babcock, Vice President

Accepted By/ Date

P.O. Box 11017 ▲ Daytona Beach, Florida 32120-1017 ▲ Tel: 386.274.3120 ▲ Fax: 386.274.3170

183 N Old Kings Rd
© 2015 Google
© 2015 Google
7 ft
29°16'54.95" N 81°04'59.13" W elev 35 ft

CITY OF ORMOND BEACH

INVITATION TO BID

DECORATIVE LIGHTING PURCHASE – CDBG & CRA DISTRICTS

Bid No. 2012-17

The BIDDER will deliver the commodities, as described herein, for the following price(s):

BID SCHEDULE

Item No:	Description:	Quantity:	Unit:	Unit Price:	Total Price:
1.	Balmoral Light Fixture (LED) Manufactured by King Luminaire Order # K611(MOD)- T_ BAAR-III-75 (SSL)-5000-120:277-Verdi-Anodized 5 Year – 50,000 hrs warranty 5 Year – Finish warranty	46 (CDBG)	EA	$ 1261.00	$ 58,006.00
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TOTAL					$ 171,496.00 (Figures)

one hundred seventy one thousand, four hundred ninety six dollars.
(Words)

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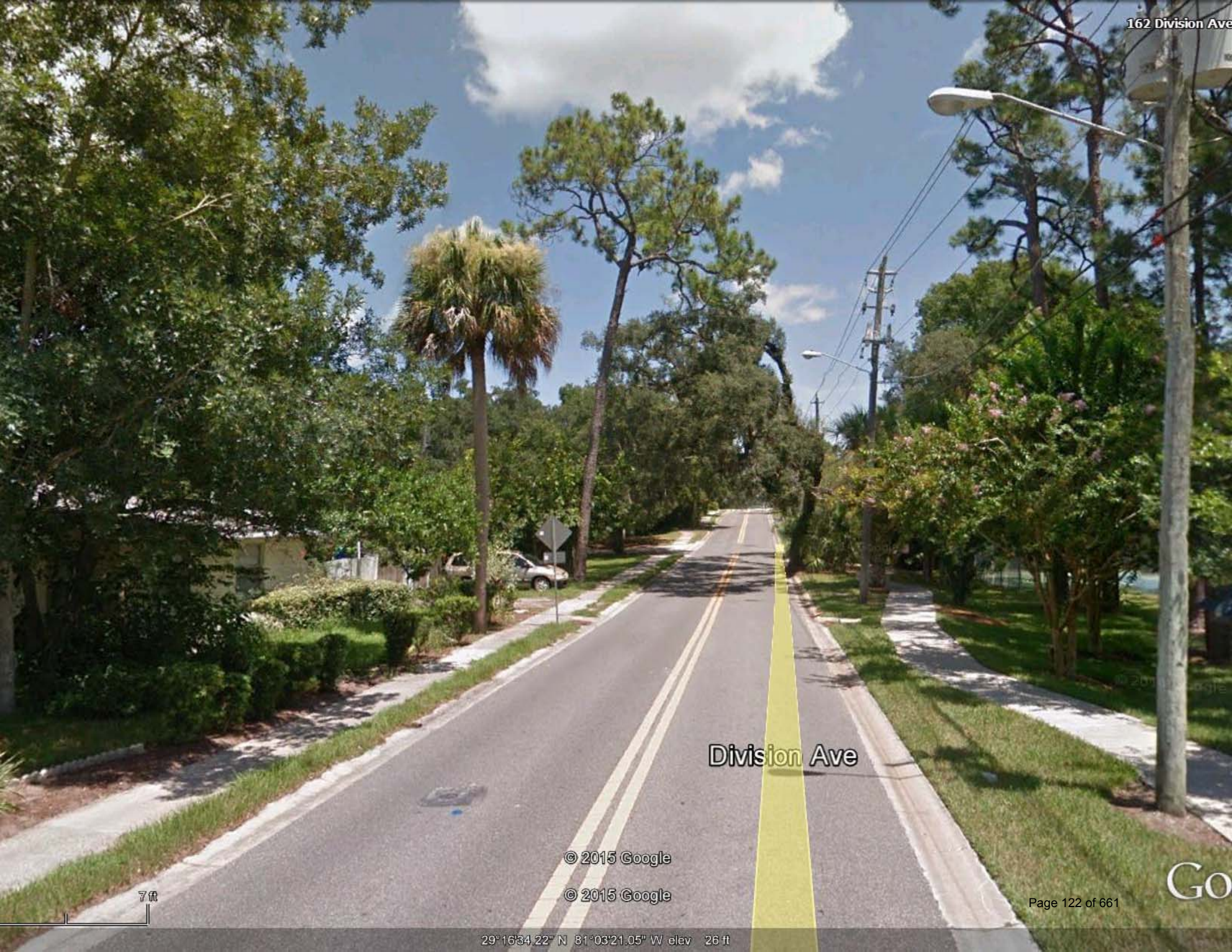

162 Division Ave
Division Ave
© 2015 Google
© 2015 Google
7 ft
29°16'34.22" N 81°03'21.05" W elev 26 ft

City of Ormond Beach
BID OPENING TABULATION
Street Tree Planting – Wilmette Avenue/Circle and Andrews Street, Bid No. 2014-14

Bid Opening Date: April 17, 2014

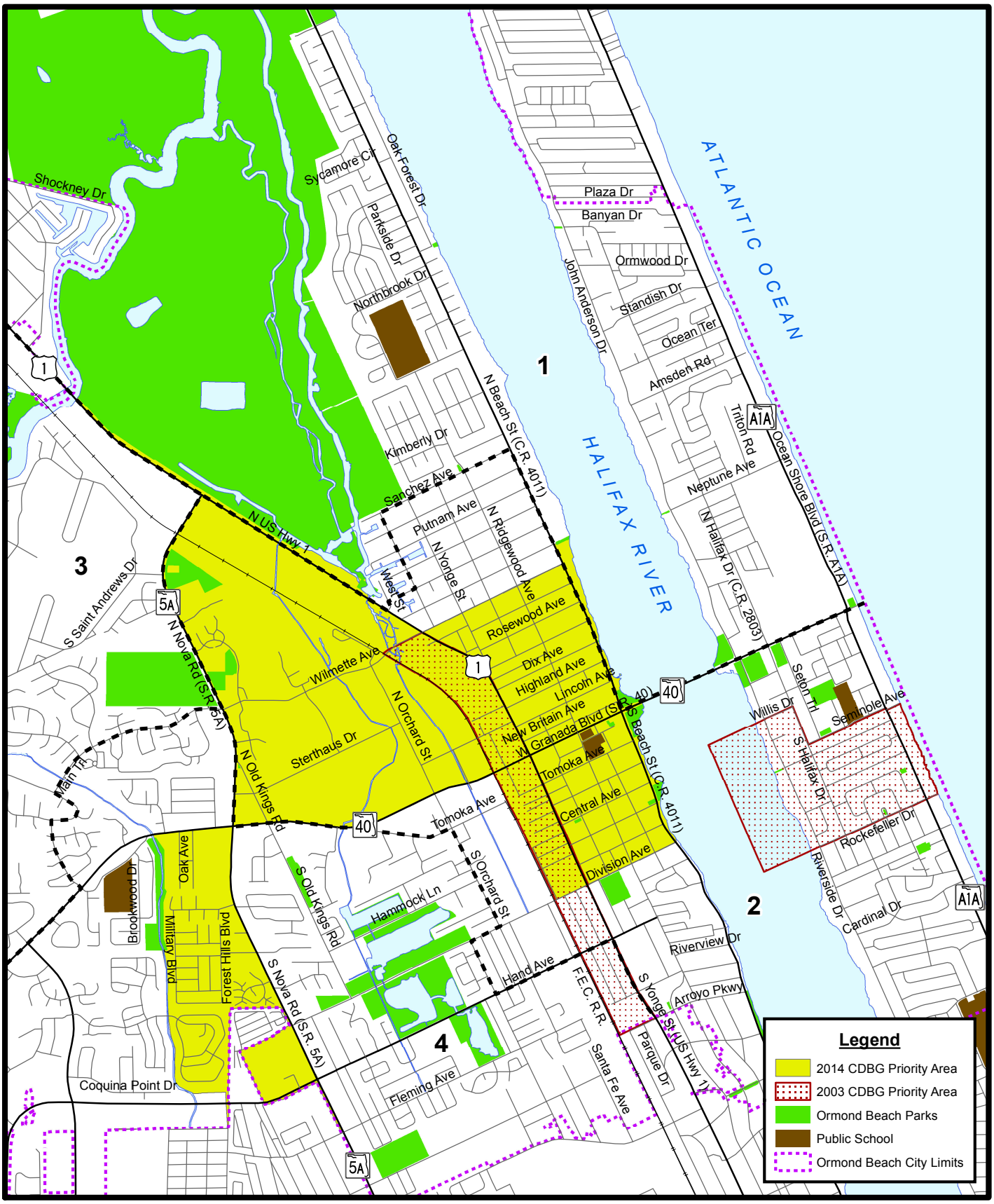
Time: **2:00 P.M.**

Company Submitting Bid And Address	Bid Bond	Adden. No. 1	Total Bid
Big Value Garden Center 768 N. Nova Rd Daytona Bch FL 32114	✓	X	$ 57,794.95
Austin outdoor 3235 N. State St. / P.O. Box 849 Bunnell, FL 32110	✓	✓	$ 68,905.72
RJ Landscape 17616 Taylor Rd Port Orange FL 32128	✓	✓	$ 56,925.00
Green Construction Technologies 2130 NE 15 Terrace Wilton Manors, FL 33305	✓	✓	$ 81,988.00

Opened By: _____ (Signature)
Purchasing Coordinator (Title)

Tabulated By: _____ (Signature) Colby Cilento
Office Assistant (Title)

2014-04-17P02:00 RCVD



CDBG PRIORITY AREA MAP

Prepared By: The City of Ormond Beach
G.I.S. Department - November 11, 2014

N
W E
S

CAPITAL PROJECT DETAIL

PROJECT TITLE

Nova Landfill

PROJECT#

460010

CATEGORY

Facility Construction and Renovation

FUND

460-Solid Waste

PROJECT LOCATION

440 Nova Rd

MANAGEMENT

Engineering

PROJECT SCOPE

Install supplemental gas ventilation system

JUSTIFICATION

The landfill closure permit issued by FDEP, requires monitoring and sampling of landfill gas, which is a byproduct typical of landfill deposits. Additional gas monitoring and sampling of the landfill was directed by the FDEP, which indicated the need to construct a passive gas venting system to supplement the existing gas ventilation system.

PROJECT COST METHODOLOGY

Consultant Cost Estimate.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and Construct	190,000	0	0	0	0	190,000
Total	190,000	0	0	0	0	190,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Solid Waste Charges	190,000	0	0	0	0	190,000
Total	190,000	0	0	0	0	190,000

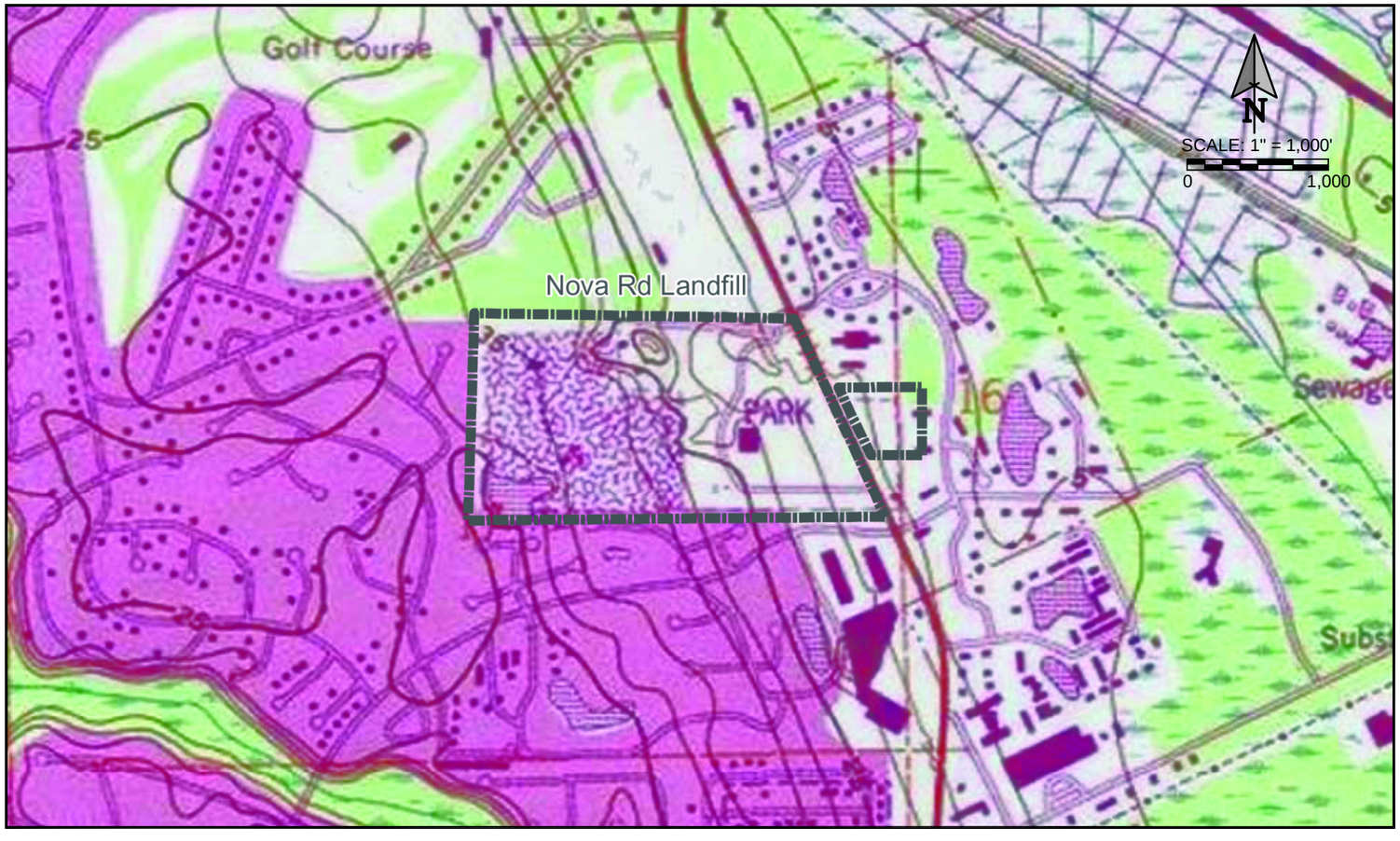
Estimated Cost of Nova Road Landfill Passive Gas Venting System (4-7-2015)

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Drilling Contractor Mob/Demob.	1	LS	$ 600	$ 600
2	Drill soil borings and sampling	115	Ft	$ 12	$ 1,380
3	Install vent riser and seal	60	Ft	$ 35	$ 2,100
4	Install vent screen and filter pack	80	Ft	$ 40	$ 3,200
5	Cement pads at surface	6	Ea	$ 100	$ 600
6	Horizontal gas conveyance trench-complete	700	Ft	$ 150	$ 105,000
7	Turbine ventiators	10	Ea	$ 80	$ 800
8	Repair HDPE liner/heat weld	820	Ft	$ 25	$ 20,500
9	Disposal of excavated fill at Tomoka Landfill	195	ton	$ 34	$ 6,630
10	Dump truck round trip travel to Tomoka LF	572	mile	$ 2	$ 1,144
Contractors Total Cost					**$ 141,954**
Engineering and Field Observation - 15% of Construction Cost					$ 21,293
Contingency 15%					$ 24,487
Total Estimated Cost					**$ 187,734**

CONSTRUCTION PLANS FOR:

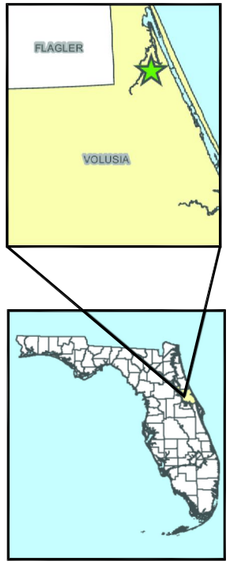
CITY OF ORMOND BEACH
NOVA ROAD CLASS III LANDFILL
PASSIVE GAS VENTING SYSTEM PROJECT

NOVEMBER 2014 - CONSTRUCTION DRAWINGS



DRAWING INDEX:

1. TITLE PAGE - VICINITY MAP
2. LANDFILL SITE MAP AND GENERAL NOTES
3. PASSIVE GAS VENTING SYSTEM DETAILS



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

CITY OF ORMOND BEACH
NOVA ROAD CLASS III LANDFILL

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 E. Hillcrest Street, Orlando, FL, 32803
PH: (407) 896-8608 FAX: (407)896-1822
ENGINEERING BUSINESS No. 6899

PASSIVE GAS VENTING SYSTEM

TITLE PAGE - VICINITY MAP

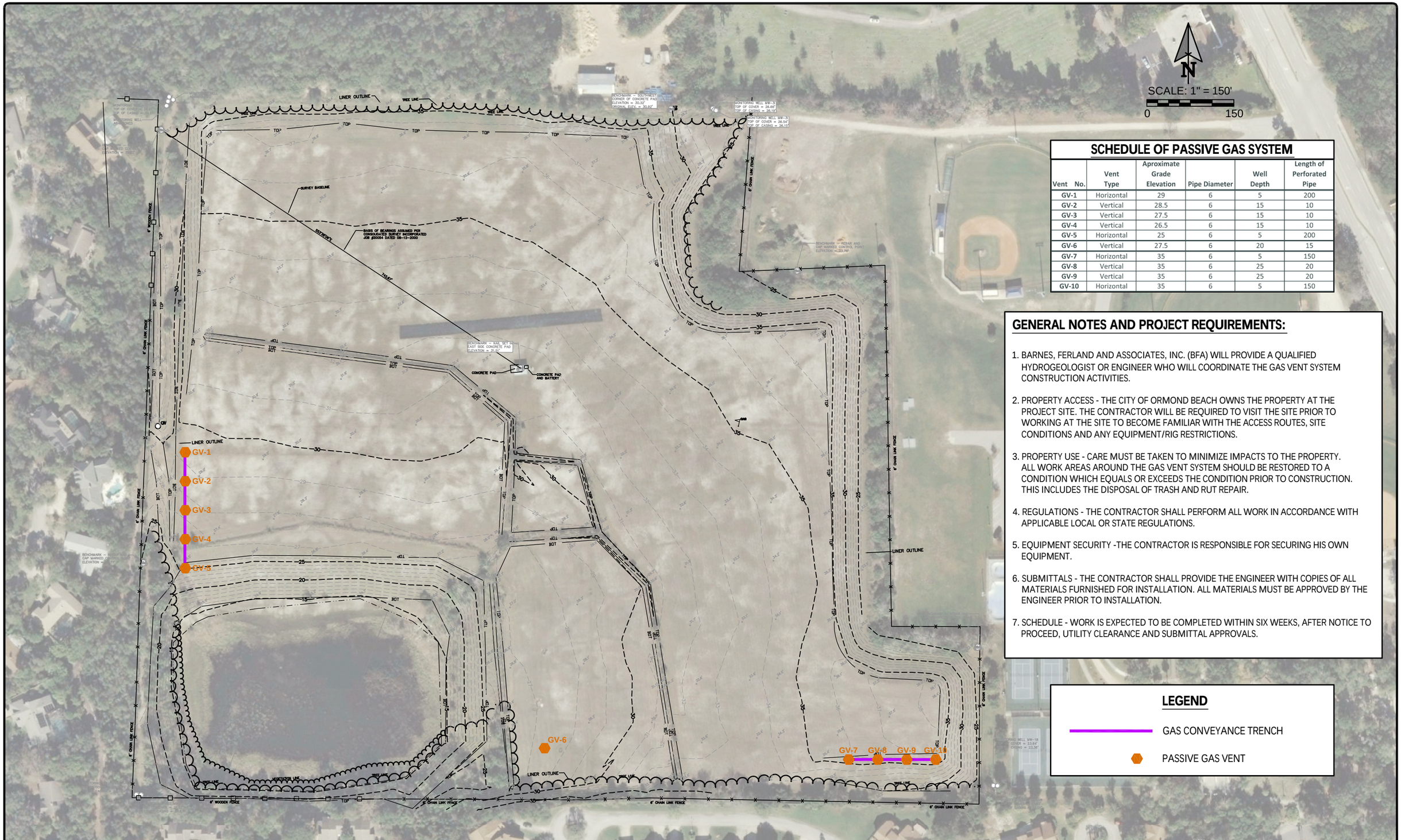
DESIGN ENGINEER
CLAUDIA P. MANRIQUEZ-MUNOZ, P.E.
FLORIDA REGISTRATION No. 69903

PROJECT No.:	2010–13.18
PROJECT DATE:	11/21/14
DESIGNED BY:	CM
DRAWN BY:	DS
CHECKED BY:	CM
DRAWING FILE:	SEE MARGIN

DRAWING No. 1

SHEET 1 OF 3

CONSTRUCTION DRAWINGS



SCHEDULE OF PASSIVE GAS SYSTEM

Vent No.	Vent Type	Aproximate Grade Elevation	Pipe Diameter	Well Depth	Length of Perforated Pipe
GV-1	Horizontal	29	6	5	200
GV-2	Vertical	28.5	6	15	10
GV-3	Vertical	27.5	6	15	10
GV-4	Vertical	26.5	6	15	10
GV-5	Horizontal	25	6	5	200
GV-6	Vertical	27.5	6	20	15
GV-7	Horizontal	35	6	5	150
GV-8	Vertical	35	6	25	20
GV-9	Vertical	35	6	25	20
GV-10	Horizontal	35	6	5	150

GENERAL NOTES AND PROJECT REQUIREMENTS:

1. BARNES, FERLAND AND ASSOCIATES, INC. (BFA) WILL PROVIDE A QUALIFIED HYDROGEOLOGIST OR ENGINEER WHO WILL COORDINATE THE GAS VENT SYSTEM CONSTRUCTION ACTIVITIES.
2. PROPERTY ACCESS - THE CITY OF ORMOND BEACH OWNS THE PROPERTY AT THE PROJECT SITE. THE CONTRACTOR WILL BE REQUIRED TO VISIT THE SITE PRIOR TO WORKING AT THE SITE TO BECOME FAMILIAR WITH THE ACCESS ROUTES, SITE CONDITIONS AND ANY EQUIPMENT/RIG RESTRICTIONS.
3. PROPERTY USE - CARE MUST BE TAKEN TO MINIMIZE IMPACTS TO THE PROPERTY. ALL WORK AREAS AROUND THE GAS VENT SYSTEM SHOULD BE RESTORED TO A CONDITION WHICH EQUALS OR EXCEEDS THE CONDITION PRIOR TO CONSTRUCTION. THIS INCLUDES THE DISPOSAL OF TRASH AND RUT REPAIR.
4. REGULATIONS - THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE LOCAL OR STATE REGULATIONS.
5. EQUIPMENT SECURITY -THE CONTRACTOR IS RESPONSIBLE FOR SECURING HIS OWN EQUIPMENT.
6. SUBMITTALS - THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COPIES OF ALL MATERIALS FURNISHED FOR INSTALLATION. ALL MATERIALS MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
7. SCHEDULE - WORK IS EXPECTED TO BE COMPLETED WITHIN SIX WEEKS, AFTER NOTICE TO PROCEED, UTILITY CLEARANCE AND SUBMITTAL APPROVALS.

LEGEND

GAS CONVEYANCE TRENCH

PASSIVE GAS VENT

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

CITY OF ORMOND BEACH
NOVA ROAD CLASS III LANDFILL

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 E. Hillcrest Street, Orlando, FL, 32803
PH: (407) 896-8608 FAX: (407) 896-1822
ENGINEERING BUSINESS No. 6899

PASSIVE GAS VENTING SYSTEM

LANDFILL SITE MAP AND GENERAL NOTES

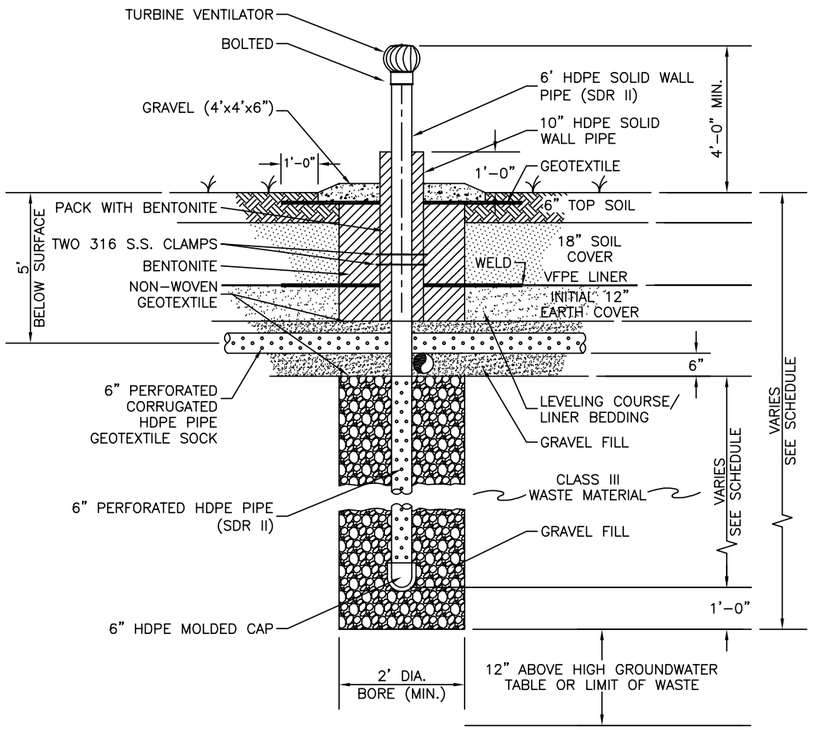
DESIGN ENGINEER
CLAUDIA P. MARRIQUEZ-MUNOZ, P.E.
FLORIDA REGISTRATION No. 69903

PROJECT No.:	2010–13.18
PROJECT DATE:	11/21/14
DESIGNED BY:	CM
DRAWN BY:	DS
CHECKED BY:	CM
DRAWING FILE:	SEE MARGIN

DRAWING No. 2
SHEET 2 OF 3

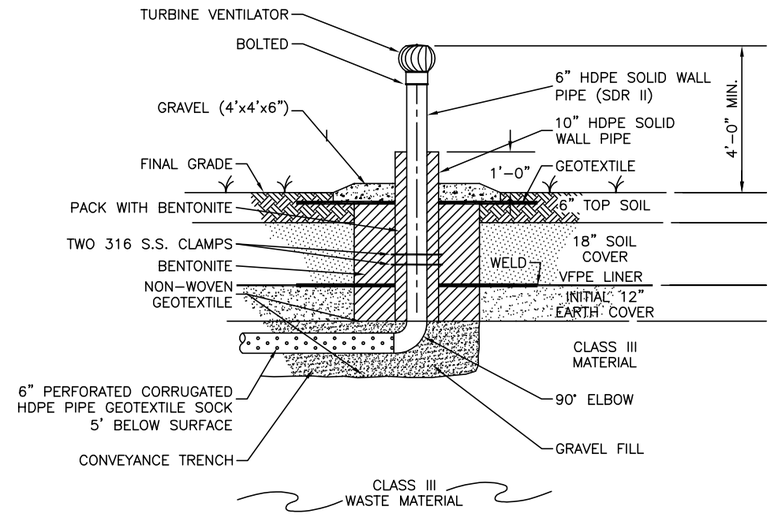
CONSTRUCTION DRAWINGS

Wednesday, November 19, 2014 2:33:14 PM C:\Documents And Settings\David\My Documents\Coastal Graphics\Active Files\BFA\Ormond Landfill\from Jerry\111914\ormond Landfill.dwg



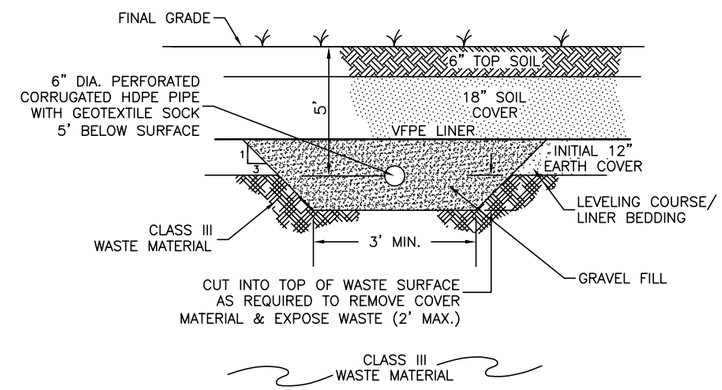
VERTICAL GAS VENT DETAIL

N.T.S.



HORIZONTAL GAS VENT DETAIL

N.T.S.



TYPICAL SECTION - GAS CONVEYANCE TRENCH

N.T.S.

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D231, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO COARSE AGGREGATE BACKFILL WITHIN FILTER FABRIC ENVELOPE.
3. FILTER FABRIC SHALL BE MIRAFI 140N NONWOVEN GEOTEXTILE.
4. PIPE SHALL BE 6" DIAMETER PVC OR HDPE PERFORATED PIPE IN ACCORDANCE WITH AASHTO CLASS II - M294.
5. GRAVEL SHALL BE AASHTO NO. 57 STONE.
6. COST FOR INSTALLATION OF GAS VENTING SYSTEM SHALL INCLUDE THE COST OF PIPE, PIPE FITTINGS, PIPE END CAPS, AND, COARSE AGGREGATE AND FILTER FABRIC IN PLACE, TRENCH EXCAVATION, BACKFILL AND COMPACTION.
7. ALL CLASS III WASTE MATERIAL SHALL BE TRANSPORTED OFF SITE TO A CLASS I LANDFILL FOR PROPER DISPOSAL.
8. WHERE THE LANDFILL VFPE LINER IS PENETRATED BY A VERTICAL GAS VENT OR HORIZONTAL GAS CONVEYANCE TRENCH, THE CONTRACTOR MUST WELD THE LINER WATER TIGHT.
9. TO PROVIDE POSITIVE VENTILATION, A TURBINE VENT (CATALOGUE CUT SHEET ATTACHED) SHALL BE ANCHORED AT THE TOP OF THE 10 VENT LOCATIONS.
10. THE ACTUAL POSITION OF THE TRENCH AND DEPTH OF VERTICAL VENTS VARY SLIGHTLY AND WILL BE DETERMINED IN THE FIELD BY A PROFESSIONAL GEOLOGISTS OR ENGINEER

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

CITY OF ORMOND BEACH
NOVA ROAD CLASS III LANDFILL

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 E. Hillcrest Street, Orlando, FL, 32803
PH: (407) 896-8608 FAX: (407) 896-1822
ENGINEERING BUSINESS No. 6899

PASSIVE GAS VENTING SYSTEM

PASSIVE GAS VENTING SYSTEM PLANS, SECTION AND DETAILS

DESIGN ENGINEER
CLAUDIA P. MANFIQUEZ-MUNOZ, P.E.
FLORIDA REGISTRATION No. 69903

PROJECT No.:	2010-13.18
PROJECT DATE:	11/21/14
DESIGNED BY:	CM
DRAWN BY:	DS
CHECKED BY:	CM
DRAWING FILE:	SEE MARGIN

DRAWING No. 3

SHEET 3 OF 3

CONSTRUCTION DRAWINGS

CAPITAL PROJECT DETAIL

PROJECT TITLE

HVAC - Chiller Replacement

PROJECT#

301186

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

City Hall

MANAGEMENT

Engineering

PROJECT SCOPE

Replace the existing chiller unit and associated AHU's and pumps over a 5 year period

JUSTIFICATION

Staff had an assessment study done on the City Hall Chiller system and the report has recommended that replacement of the chiller and associated components be scheduled over the next 5 years. The existing chiller unit is 22 years old. The chiller condensing coils have significant rust and are clogged beyond cleaning without possible damage to the coils, The unit has exceeded its life expectancy of 15 years and should be replaced. The pumps and other associated appurtenances although not in as bad of shape as the chiller unit are old and should be scheduled to be replaced with upgraded more efficient equipment.

PROJECT COST METHODOLOGY

Costs were obtained from the Ormond Beach City Hall HVAC Assessment Report completed in January 2013.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Replace Pumps and controls	58,000	0	0	0	0	58,000
Replace AHU's	0	0	103,000	0	0	103,000
Total	58,000	0	103,000	0	0	161,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	58,000	0	103,000	0	0	161,000
Total	58,000	0	103,000	0	0	161,000

Ormond Beach City Hall
HVAC Assessment Report

FOR

THE CITY OF ORMOND BEACH

22 SOUTH BEACH STREET

ORMOND BEACH, FL 32174

PERFORMED BY:

ENGINEERING
FOR ARCHITECTURE

AND

architecture|studio, inc.
great design shapes the future
www.rispolisosa.com (352) 620-0944 f: (352) 620-0996

FINAL DRAFT: MARCH 18, 2013

ORMOND BEACH CITY HALL - HVAC ASSESSMENT REORT

TABLE OF CONTENTS

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1.2 Systems to be Assessed

1.3 General Building Description

1.4 Commissioning Findings
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      1. Air Handling Units
      2. Chiller
      3. Pumps
      4. Building Management System

1.5 Recommendations

Appendix A, Pictures

Appendix B, Phasing, Schedule and Costs

1.0 EXECUTIVE SUMMARY:

The Ormond Beach City Hall is a two story, approximately 30,000 square foot building built in 1990. The majority of the City Hall's HVAC equipment was installed in 1990 making the equipment approximately 22 years old.

The City Hall is cooled by a (1) 100 ton air cooled dual compressor chiller with (2) pumps providing chilled water to (3) air handling units (AHU's). There are (3) split system air conditioning systems that serve the main entrance area. The building has (4) exhaust fans.

The existing (3) AHU's are in fair condition. With continued good maintenance, the existing AHU's have an expected 5-10 year of life expectancy. Replacing the AHU's as part of an overall project would save construction costs and City costs associated with multiple construction projects.

The existing condensing units for the split systems have been replaced with new ones over the last 3-10 years. The systems use R-22 which has been discontinued. The split systems should be replaced with new modern refrigerant systems when each of the outdoor condensing units requires replacement in the future as part of a repair and replacement budget.

The building is served by one 100 ton dual compressor air cooled chiller. The chiller is 22 years old and has noticeable deterioration. The chiller has been repaired multiple times and will likely require repair of more components in the next 1-3 years. It is estimated that refurbishing the chiller would cost 70-80% of cost to replace with a new one. It is recommended that the chiller be scheduled to be replaced within the next year to avoid costs for temporary cooling or repair of a chiller beyond its life expectancy. Losing the chiller will leave the building without cooling.

The chiller has 70 tons of connected cooling capacity. The 100 ton chiller is oversized for the current building's existing HVAC systems as it was sized for a future second floor expansion. A new chiller can be sized for 75 tons, saving the City the cost of the additional 25 tons of cooling. At an estimated installed cost of around $1000/ton, the reduced chiller size would save the City an estimated $25,000, in addition to the energy savings that a new chiller would provide.

The pumps are old but appear to be in good operating condition. The frames are deteriorating and will eventually require replacement. There is full redundancy in the pumps (one full back-up). If one pump goes bad, a new pump can be purchased and replaced without completely losing the cooling system. The pumps can be replaced at the time of the next failure or be combined with the chiller replacement to minimize additional costs associated with multiple projects.

The controls appear to be operating as scheduled with the chiller, pumps and AHU's starting on an occupied schedule. The control system components are obsolete. Replacing the controls with modern direct digital controls (DDC) will be cost effective in the long run and this should be considered within the next 5 years or if any of the system components start to fail.

See appendix B for anticipated one year and five year plans with associated costs.

1.1 HVAC ASSESSMENT PROCESS:

The HVAC assessment is a systematic process that includes; documenting the existing HVAC equipment conditions, interviewing facility personnel associated with system operations, reviewing the maintenance procedures, identifying equipments life expectancy and replacement versus keeping existing through maintenance and repair. Energy conservation measures will be identified when comparing replacement of existing with new.

1.2 SYSTEMS TO BE ASSESSED:

A. The following systems were reviewed as part of the assessment process:

List of Systems Assessed	
System	**Components**
Air Distribution System	(3) Chilled Water AHU's, (3) Dx Split Systems
	(4) Exhaust Fans
Central Plant	(2) Building CHW Pumps, (1)Air cooled chiller

1.3 GENERAL BUILDING DESCRIPTION:

The Ormond Beach City Hall is a two story, approximately 30,000 square foot building built in 1990. The building houses various city government support services. The majority of the City Hall's HVAC equipment was installed in 1990 making the equipment approximately 22 years old. The building's HVAC systems are controlled to a run during an occupied schedule and shut off during an unoccupied schedule as follows:

Mon.; Occupied from 4:00 am - 8:30 pm
Tues.-Fri; Occupied from 7:00 am – 8:30 pm
Sat-Sun; Occupied from 11:00 am-1:00 pm

1.4 COMMISSIONING FINDINGS:

A. HVAC General Notes:

The City Hall is cooled by a (1) 100 ton air cooled dual compressor chiller with (2) pumps providing chilled water to (3) air handling units (AHU's). There are (3) split system air conditioning systems that serve the main entrance area. The building has (4) exhaust fans.

Air handling unit's AHU-1 & AHU-2 serve the first floor and have a combined (29) zones with individual thermostat control. Each zone has variable air volume (VAV) damper boxes with electric heaters. The variable damper reduces the airflow to control the zone temperature. The heater is activated if the zone temperatures drop 3°F below the thermostat setpoint while

the VAV damper is at the minimum airflow position. AHU-3 serves the second floor and has 23 VAV zones with similar controls.

The (3) split systems serve the main entrance area with the existing indoor unit's age estimated at 22 years. The existing condensing units for the split systems have been replaced with new ones over the last 3-10 years.

The 100 ton chiller is oversized for the current building's existing HVAC systems. The original design called for a future expansion of the second floor. The chilled water system has future valves for an additional future AHU that was never installed. The connected building load associated with the (3) AHU's is approximately 70 tons. Any recommendations on replacing the existing chiller should also consider reducing the chiller size from 100 tons to 75 tons for both a cost and energy savings. Any future additions can be provided with a future chiller.

The HVAC systems are controlled by the original 1990 control system. The controls use pneumatic valves with electronic transducers to convert pneumatic signals to electric for computer monitoring. The HVAC systems are being monitored off site by a dial up modem connection to the main controller.

1. Air Handling Unit Assessment Notes:

   The air handling units with regular maintenance can have a life expectancy of 30 years. The existing (3) AHU's are in good condition with clean coils, minimal rust and little vibration or noise observed from the moving components (see appendix A, pictures 1 and 2) With continued good maintenance, the existing AHU's likely have an expected additional 5-10 year life expectancy. Replacing the air handling units as part of the chiller replacement project would save construction costs and City costs associated with multiple construction projects.

   The (3) split system indoor air conditioning systems are of a similar age as the (3) AHU's. These systems use an outdated refrigerant (R-22). These systems should be replaced with new modern refrigerant systems when each of the outdoor condensing units requires replacement in the future (estimated between 5-10 years). The indoor unit's should be replaced at the same time as the outdoor units. The refrigerant lines should be replaced as well.

2. Chiller Assessment Notes:

   The building is served by one 100 ton dual compressor air cooled chiller. The chiller is 22 years old. The frame has exceeded its life expectancy with noticeable rust on the frame and the condenser fans (Appendix A, pictures 3 and 4). The chiller condenser coils have noticeable rust and are clogged beyond cleaning without possible damage to coils (Appendix A, picture 5). The controls are obsolete with the control parts very hard to obtain (see Appendix A, picture 6). The chiller has had several modifications over the years. A condenser coil replacement was installed in 2002 (10 years old). One compressor was replaced in 1999 (13 years old) and one compressor was replaced in 2009 (3 years old). The chiller controls are the original 22 year old control board that is integral to the chiller. The

chiller frame has noticeable rust and the coils appear to be dirty with noticeable corrosion (see appendix A picture). Coil replacements for exterior chillers located near a salt water environment typically are typically required every 11-13 years. With the coil at 10 years old, they will require replacement within the next 1-3 years. The chiller controls appears to run one compressor in lead all the time while the second compressor runs only when the building load requires additional cooling beyond the first stage. This explains the need to replace the lead compressor after the first 9 years with the second compressor lasting 19 years. The older 1999 lead compressor is still running the majority of the time with the newer 2009 compressor used for the higher demand, hotter weather days. The 1999 compressor will likely require replacement in 1-3 years (similar to coils).

It is recommended that the chiller be replaced in the next 1-2 years. It is not recommended to replace coils, one compressor and maintain the control system for the existing chiller. It is estimated that re-furbishing the existing chiller would cost 70-80% of the cost of a new chiller.

If the exiting chiller requires immediate replacement due to a failure; without a design, approved contractor and permits, temporary cooling would be required while a new chiller is obtained and installed. Lead times for obtaining a new chiller is estimated at 6-10 weeks. Temporary cooling can cost an estimated $10,000-$15,000 per month. This further compels the City to proceed with plans to replace the existing chiller within the next year.

Providing a reduced size higher efficiency chiller would reduce replacement cost and provide additional energy savings. Properly sized new chillers are much more efficient than 20+ year old chillers.

3. Pump Assessment:
   There are two chilled water pumps that are located in the first floor mechanical room. The pumps are original existing frames (22 years old) and the frames have noticeable deterioration (see Appendix A, picture 7). The pumps were provided with new motors in 2002 (10 years old). Each pump is sized for full flow of the chiller with one pump as a 100% redundant back-up. The pumps are controlled in a lead, lag sequence allowing for equal run time. Typically, well maintained pumps have a life expectancy of 20-25 years leaving the life expectancy for the existing pumps at approximately 3 years. The pumps should be considered for replacement in the next 1-3 years.

4. Building Management System Assessment:
   The controls are a combination of pneumatic VAV actuators, pneumatically controlled chilled water valves, pneumatic outside air dampers and electronic transducers (utilized to convert control signals from pneumatic to electronic) and electronic controllers with off-site computer monitoring of the control schedules and setpoints. The systems appear to be operating as scheduled with the chiller, pumps and AHU's starting according to an occupied schedule (see HVAC General Notes) and shutting off during unoccupied time periods. The controls are old (22 years) and replacement part costs are at a premium.

The chiller controls are internal to the chiller and the chiller only receives a start and stop signal from the main controller. Replacement of the chiller will include replacement of chiller controls and reconnection of the existing start/stop control signal.

Replacing the controls with modern direct digital controls (DDC) will be cost effective in the long run and this should be considered within the next 1-3 years. Proper control of equipment is the leading energy savings opportunities for building operations.

1.5 RECOMMENDATIONS:

It is recommended that the chiller be scheduled to be replaced within the next year to avoid costs for temporary cooling or repair of a chiller beyond its life expectancy. The pumps should be considered for replacement in the next 1-3 years. It is recommended that the pumps be replaced with the chillers. Replacing the pumps as part of one construction project will save in contractor mobilization costs and City costs associated with multiple projects.

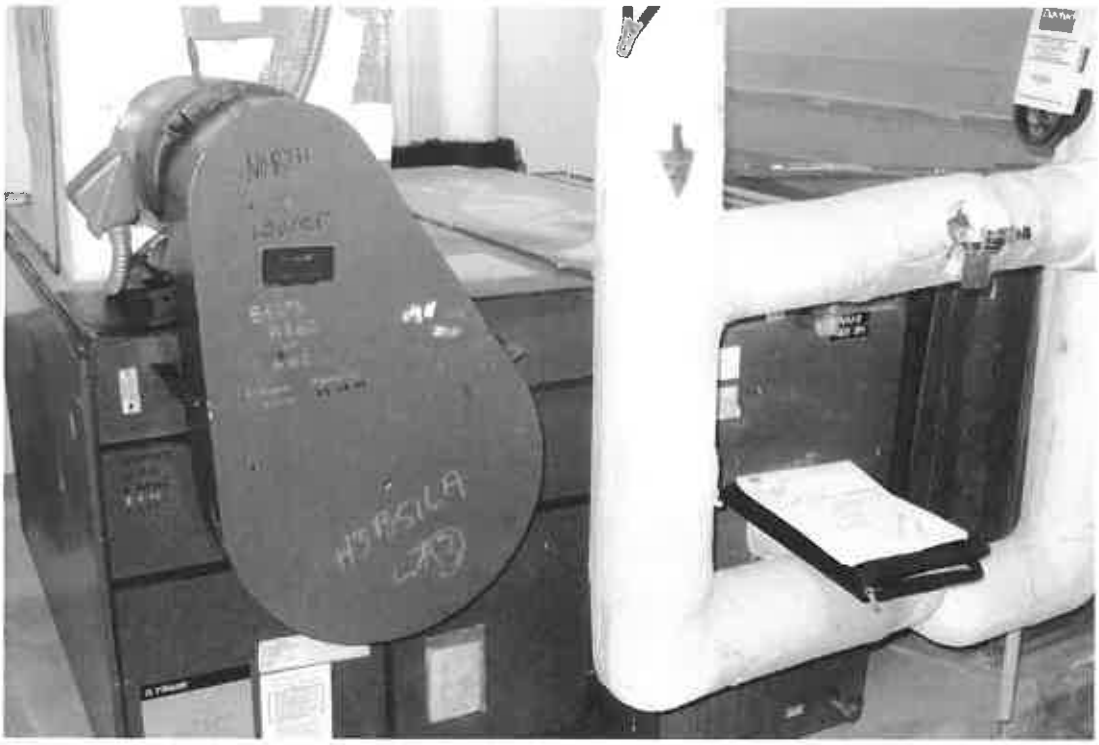
Replacing the controls with modern direct digital controls (DDC) will be cost effective in the long run and this should be considered within the next 5 years or if any of the system components start to fail.

Replacing the air handling units as part of the chiller replacement project would save construction costs and City costs associated with multiple construction projects.

See Appendix B for itemized replacement costs utilizing 2 plans; a one year plan with three options for replacing some or options presented, and a 5 year plan to replace each system independently over a five year period. Replacing all equipment on a one year plan (1 year – option 3) would provide an approximate $33,500 savings due to escalating equipment and labor costs over the 5 years.

Appendix A, Picture 1 – AHU-3

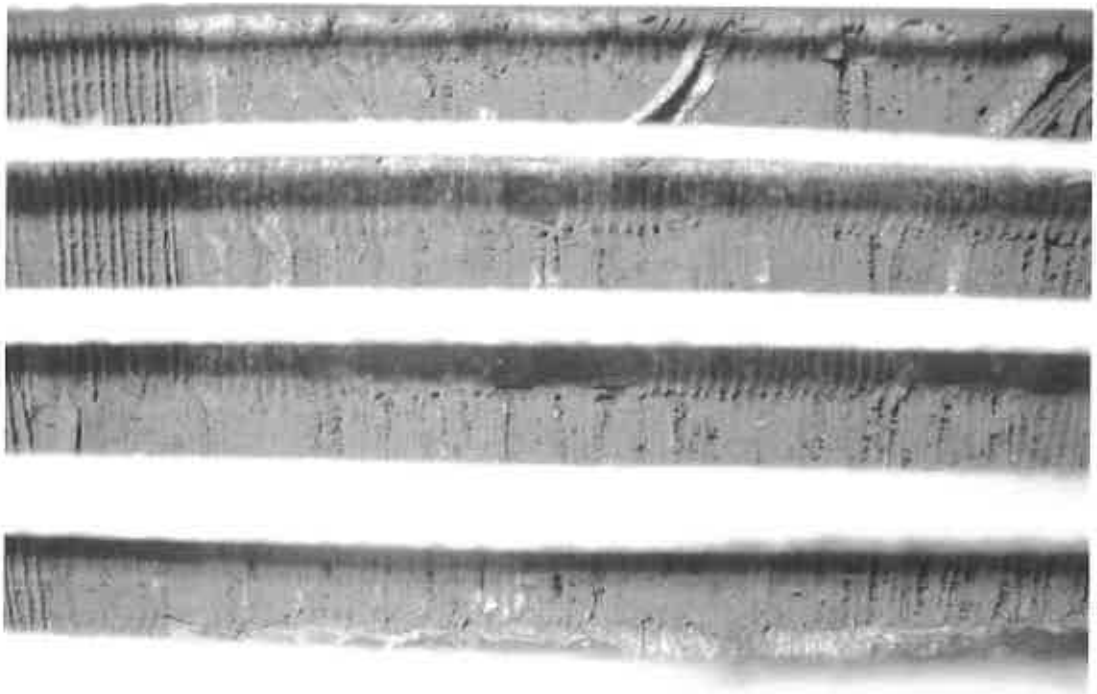
Appendix A, Picture 2 – AHU-1



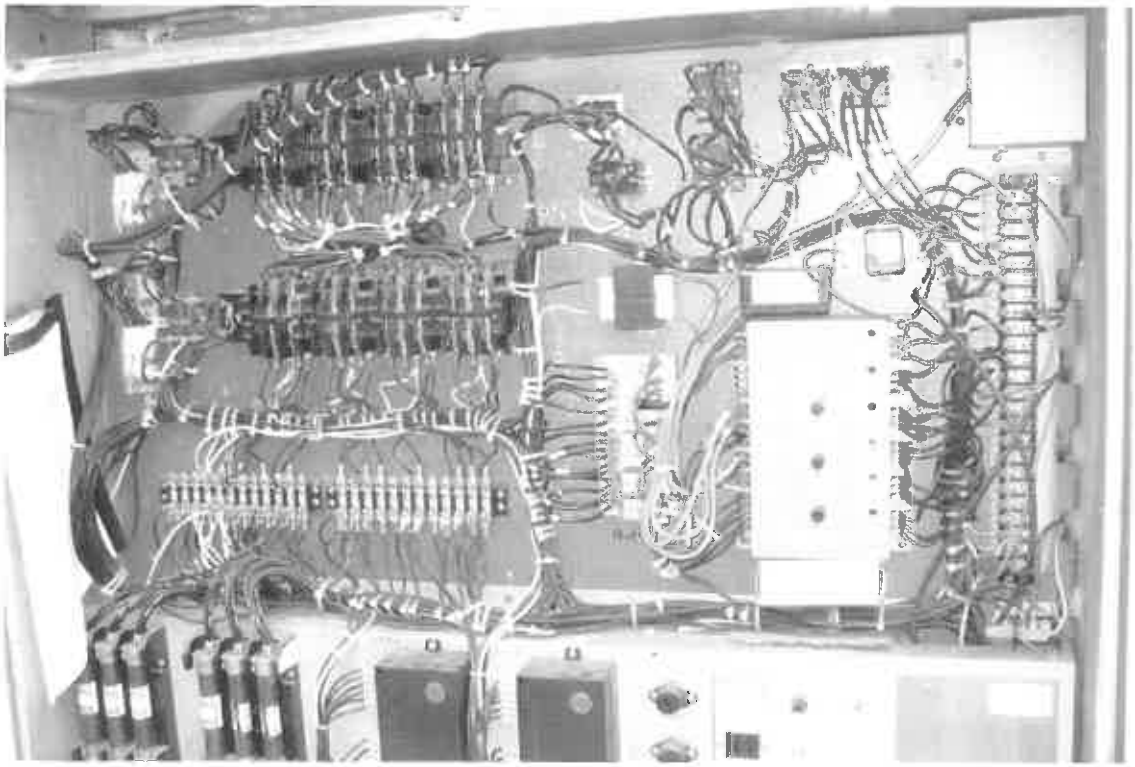
Appendix A, Picture 3 – Chiller

Appendix A, Picture 4 – Chiller

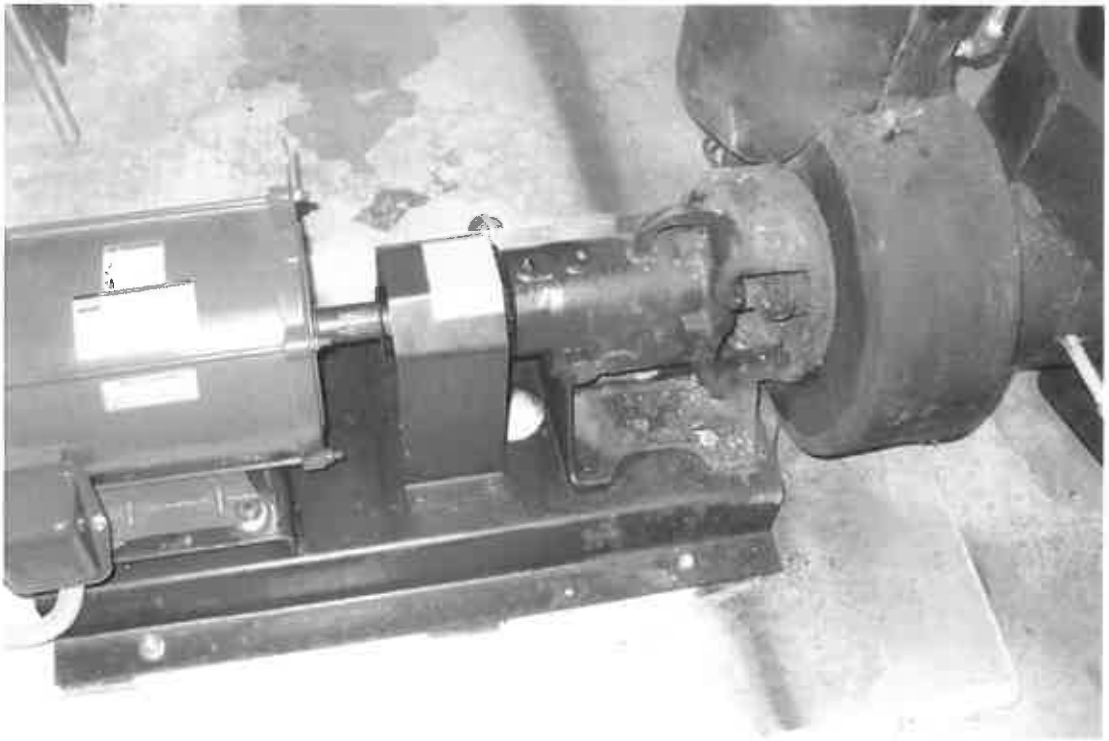
Appendix A, Picture 5 – Chiller Coil



Appendix A, Picture 6 – Chiller Control Panel



Appendix A, Picture 7 – Chiller Pump



Appendix B

PHASING, SCHEDULE & COSTS FOR ONE YEAR PLAN		
MONTH/YEAR	PHASE	COST
	OPTION 1: REPLACE CHILLER	**$115,000**
4/13	DESIGN	
5/13	BID	
6/13	CONSTRUCTION START	
9/13	CONSTRUCTION COMPLETE	
4/13-10/13	ENGINEER DESIGN AND C/A/ COSTS	**$10,000**
TOTAL COST - OPTION 1		**$125,000**
	OPTION 2: REPLACE CHILLER, PUMPS & CONTROLS	**$155,000**
4/13	DESIGN	
5/13	BID	
6/13	CONSTRUCTION START	
9/13	CONSTRUCTION COMPLETE	
4/13-10/13	ENGINEER DESIGN AND C/A/ COSTS	**$13,000**
TOTAL COST - OPTION 2		**$168,000**
	OPTION 3: REPLACE CHILLER, PUMPS, CONTROLS & AHU'S	**$235,000**
4/13	DESIGN	
5/13	BID	
6/13	CONSTRUCTION START	
10/13	CONSTRUCTION COMPLETE	
4/13-10/13	ENGINEER DESIGN AND C/A/ COSTS	**$19,000**
TOTAL COST - OPTION 3		**$253,000**

Appendix B

PHASING, SCHEDULE & COSTS FOR FIVE YEAR PLAN		
MONTH/YEAR	PHASE	COST
	YEAR 1: REPLACE CHILLER	**$115,000**
4/13	DESIGN	
5/13	BID	
6/13	CONSTRUCTION START	
9/13	CONSTRUCTION COMPLETE	
4/13-10/13	ENGINEER DESIGN AND C/A/ COSTS	**$10,000**
TOTAL COST - YEAR 1		**$125,000**
	YEAR 3: REPLACE PUMPS & CONTROLS	**$44,000**
4/15	DESIGN	
5/15	BID	
6/15	CONSTRUCTION START	
9/15	CONSTRUCTION COMPLETE	
4/15-10/15	ENGINEER DESIGN AND C/A/ COSTS	**$14,500**
TOTAL COST - YEAR 3		**$58,500**
	YEAR 5: REPLACE AHU'S	**$95,000**
4/17	DESIGN	
5/17	BID	
6/17	CONSTRUCTION START	
10/17	CONSTRUCTION COMPLETE	
4/17-10/17	ENGINEER DESIGN AND C/A/ COSTS	**$8,000**
TOTAL COST - YEAR 5		**$103,000**
TOTAL - ALL 3 PROJECTS OVER 5 YEARS		**$286,500**

Different section of coil frame rusted through

fins falling off coils so dirty, can not be cleaned

Undercarriage of Chiller rusted from age

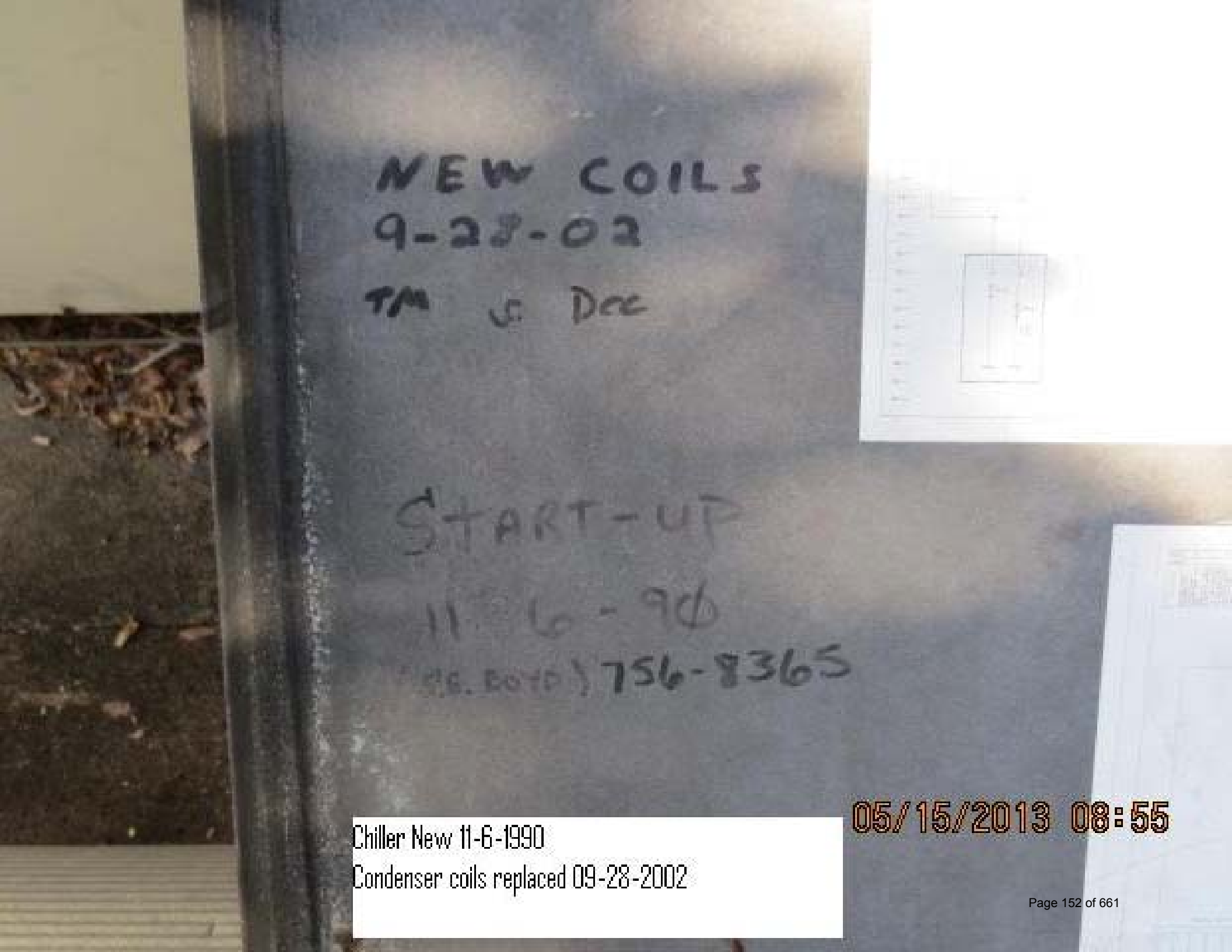
Vertical 'lines' are the fins
Horizontal lines are the coils
You should not be able to see the coils this exposed

Other sections of the coil framework rusted through
The 'new' copper to the left of the text box is part of the TXV replaced

This is a set of brackets on the chiller barrell. Purpose of these are unknown to me, but they are rusted so bad, they almost do not exist

even the electrical conduit is rudting away
05/15/2013 09:08

02/25/2009



Chiller New 11-6-1990
Condenser coils replaced 09-28-2002

Compressor #1 new in 2009 now leaking oil at gaskets and seals due to high pressures on system (bad coils)

Top shot of same compressor, black substance is oil

fins of coils corroded and falling off

Frame of unit holding coils in place rusted holes.
Alowing air to pass through condenser fans without
passing through coils. Air has to pass through coils for
the system to cool properly
05/15/2013 09:00

CAPITAL PROJECT DETAIL

PROJECT TITLE

Ames House Seawall Repairs

PROJECT#

301170

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

Ames House

MANAGEMENT

Engineering

PROJECT SCOPE

Seawall repairs to include grout filling to eliminate areas where undermining has occurred.

JUSTIFICATION

Recent work on the seawall has addressed years of undermining due to wave action that has allowed erosion to occur behind the seawall. This erosion can result in the weakening of the wall support and subsequent failure of the wall. When erosion occurs behind the seawall a safety hazard to residents using the park results. The completion of the Phase One repairs addressed major concerns to the seawall and remedied the undermining that the seawall was experiencing. Staff has met recently with the contractor who performed the previous work and inspected changes that occurred over the past 18 months. The wall was found to be in good condition, however, it is anticipated that one major crack and two minor cracks could develop into potential safety concerns in the future. Staff will continue to monitor and inspect the seawall on an annual basis.

PROJECT COST METHODOLOGY

Historic Cost Data.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Repair seawall	0	35,000	0	0	0	35,000
Total	0	35,000	0	0	0	35,000

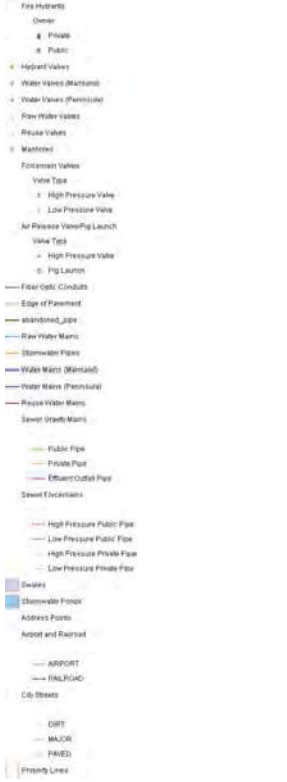
REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	35,000	0	0	0	35,000
Total	0	35,000	0	0	0	35,000

Seawall Repair at Ames Parks

Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
1	Mobilization	1	LS	$ 2,500.00	$ 2,500.00
2	Seal Repair - Polyutherane Grout Injection (crack injection) Estimated 5 Major and 18 Minor locations	60	GAL	$ 63.45	$ 3,807.00
3	Soil Stabilization - Water activated rigid polyurethane soil stabilization resin Injection Estimated 19 locations. Void Fill Repair with 4 injection pipes per locations 5 feet in depth	180	GAL	$ 91.20	$ 16,416.00
4	Soil Stabilization - grout injection piping. Estimated 19 locations. Void Fill Repair with 4 injection pipes per locations 5 feet in depth	210	LF	$ 2.00	$ 420.00
5	Epoxy Prime Gel Fast bond tube (Estimated 5 Structural Repair Locations)	4	EA	$ 100.00	$ 400.00
6	Structural Repair/Seal - Major Crack Repairs needing reinforced bars Greater than 1/4" wide (includes labor, injection,ports, oakum and rebar typical 5' wall	4	EA	$ 550.00	$ 2,200.00
7	Minor Crack repair not needing reinforced bars less than 1/4" wide (includes labor, injection,ports, oakum and rebar typical 5' wall	8	EA	$ 300.00	$ 2,400.00
8	Restoration	1	LS	$ 3,000.00	$ 3,000.00
			TOTAL BASE BID		**$ 31,143.00**

The estimated quantity figures the development of 1 major crack and two minor cracks per year for the Riviera Park seawall.

Ames Seawall Repairs



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03/11/2012

03/11/2012

CAPITAL PROJECT DETAIL

PROJECT TITLE

Fire Station 93 Roof Replacement

PROJECT#

301172

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

Fire Station 93

MANAGEMENT

Engineering

PROJECT SCOPE

Remove and replace existing membrane roof system.

JUSTIFICATION

In 2011, a sealer was applied on the original roof to extend the life and defer replacement. The vendor provided a written 5-year warranty against water intrusion and leaks. Therefore, the roof will require full replacement in FY 15/16, as it will likely be deteriorated to the point that the only viable option is replacement. Removal and replacement of existing membrane roof system at that time will prevent further damage and will avoid having to replace the entire roof decking at a later date.

PROJECT COST METHODOLOGY

Contractor quote.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Remove & replace membrane roof system	68,000	0	0	0	0	68,000
Total	68,000	0	0	0	0	68,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	68,000	0	0	0	0	68,000
Total	68,000	0	0	0	0	68,000

A.A.T Roofing LLC

5629 S. Ridgewood Avenue
Port Orange, FL 32127

Estimate # 802

Warranty:
5 Year Labor Warranty 20 year Manufacturers Labor & Materials Warranty

Name / Address
City of Ormond Beach 22 S Beach St Ormond Beach, FL 32174 Telephone: (386) 676-3580

Job Address:
Fire Station #93-Wilmette Ave

Website	License No.	Office	Facsimile	Date
www.aatroofing.com	CCC1326484	386-767-1886	386-761-4311	5/7/2015

Description

RHINOBOND TPO ROOF SYSTEM:

Cover existing roof system with one layer 1.5" ISO secured with 7" HD fasteners through JM Rhinobond plates.

Cover existing walls and parapets using one (1) layer 1/4" Invincaboard secured with 1-1/4" drive pins through 3" plates.

At eleven (11) locations cut out wall to open drains. Fabricate and install new leaderheads complete with 4" x 5" downspouts.

At remaining eight (8) locations fabricate and install stainless steel clad metal inserts.

Sump ISO at all drain locations.

Install 60 mil TPO over entire roof area, fully adhered on parapets and walls, bonded to Rhino plates in field.

Fabricate and install new .032 aluminum edge metal around entire perimeter using existing metal as cleat.

Prime all metal using TPO primer, install 6" TPO covertape at all edge metal.

Install new TPO pipe boots, T-patches, and pre-manufactured in/out corners.

Re-flash existing vent curbs, fabricate and install six (6) new gooseneck vents.

All seams to be hot air welded a minimum 1-1/2".

Install cut edge sealant on all cut edges.

TOTAL JOB COST: $ 55,598.00
Payment terms to be determined in an AIA contract.

This proposal may be withdrawn by us if not accepted within 7 days.
Prices may change without notice and there after due to petroleum based product market instability.

ACCEPTANCE OF PROPOSAL - The above prices, specifications and conditions are satisfactory and are hereby accepted. I hereby authorize A.A.T. Roofing, LLC to do the work as specified.

Total $55,598.00

Signature _____

All credit card charges are subject to 3.5% processing fee. Fee is charged by the payment processor A.A.T. Roofing does not retain any portion of the fee.

Example USA entry: 1234 MyStreet, MyCity, MyState Zipcode

300 wilmette avenue, ormond beach, FL 32174 Go!

Fizber Street View allows visitors to view and navigate street level imagery. It's almost like walking down the actual street!

↓ **Tick marks** zoom in and out.

Map-Satellite-Hybrid selects view.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Riviera Park Seawall Repairs

PROJECT#

301171

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

Riviera Park

MANAGEMENT

Engineering

PROJECT SCOPE

Seawall repairs to include grout filling to eliminate areas where undermining has occurred.

JUSTIFICATION

Recent work on the seawall has addressed years of undermining due to wave action that has allowed erosion to occur behind the seawall. This erosion can result in the weakening of the wall support and subsequent failure of the wall. When erosion occurs behind the seawall a safety hazard to residents using the park. The completion of the Phase One repairs addressed major concerns to the seawall and remedied the undermining that the seawall was experiencing. Staff has met recently with the contractor who performed the previous work and inspected changes that occurred over the past 18 months. The wall was found to be in good condition, however, it is anticipated that cracks could develop that will need to be addressed in future years. Staff will continue to monitor and inspect the seawall on an annual basis.

PROJECT COST METHODOLOGY

Historic Cost Data.

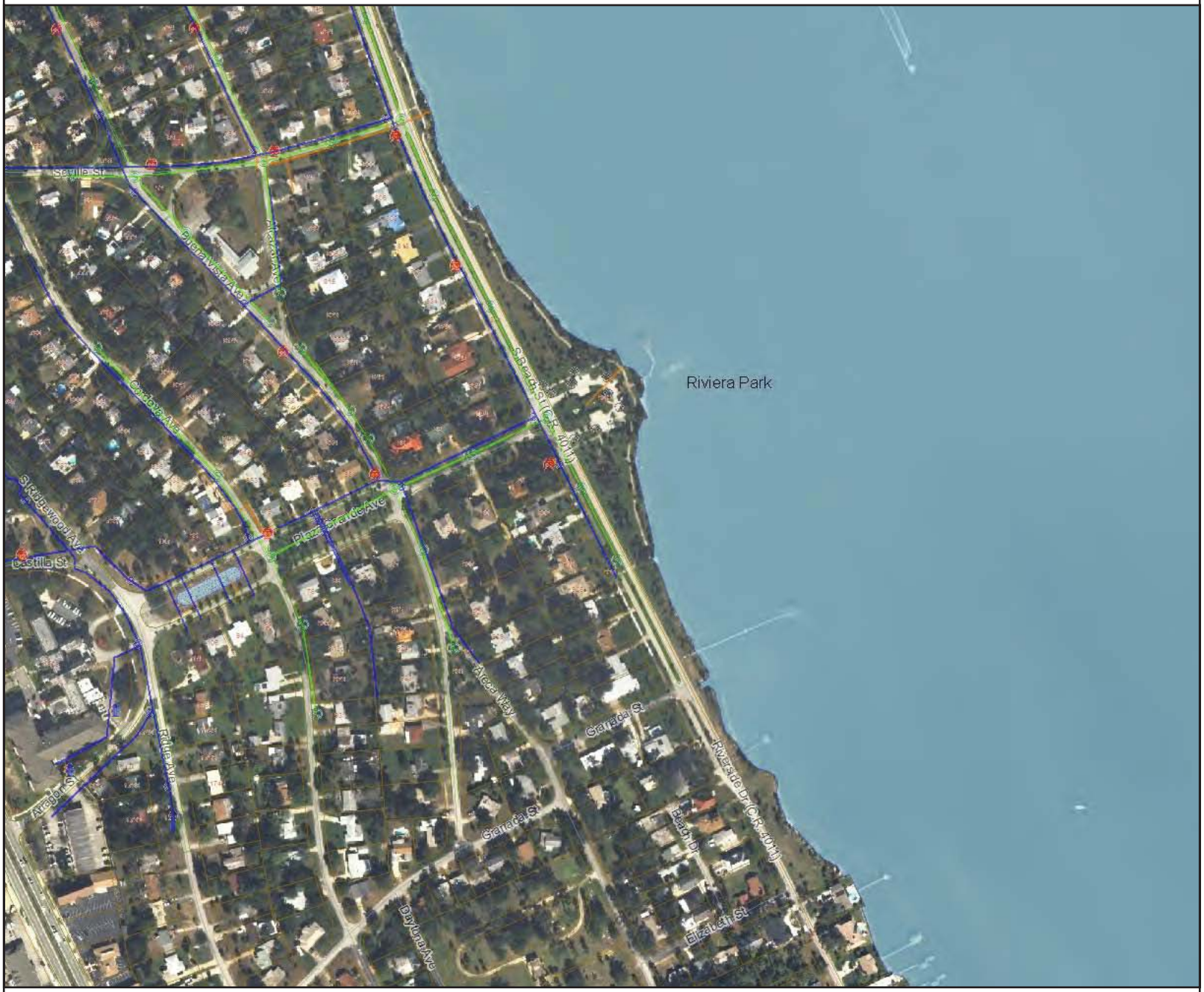
EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Repair seawall	0	50,000	0	0	0	50,000
Total	0	50,000	0	0	0	50,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
General Fund Reserves	0	50,000	0	0	0	50,000
Total	0	50,000	0	0	0	50,000

Seawall Repair at Riviera Park

Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
1	Mobilization	1	LS	$ 2,500.00	$ 2,500.00
2	Seal Repair - Polyutherane Grout Injection (crack injection) Estimated 5 Major and 18 Minor locations	100	GAL	$ 63.45	$ 6,345.00
3	Soil Stabilization - Water activated rigid polyurethane soil stabilization resin Injection Estimated 19 locations. Void Fill Repair with 4 injection pipes per locations 5 feet in depth	300	GAL	$ 91.20	$ 27,360.00
4	Soil Stabilization - grout injection piping. Estimated 19 locations. Void Fill Repair with 4 injection pipes per locations 5 feet in depth	350	LF	$ 2.00	$ 700.00
5	Epoxy Prime Gel Fast bond tube (Estimated 5 Structural Repair Locations)	4	EA	$ 100.00	$ 400.00
6	Structural Repair/Seal - Major Crack Repairs needing reinforced bars Greater than 1/4" wide (includes labor, injection,ports, oakum and rebar typical 5' wall	4	EA	$ 550.00	$ 2,200.00
7	Minor Crack repair not needing reinforced bars less than 1/4" wide (includes labor, injection,ports, oakum and rebar typical 5' wall	16	EA	$ 300.00	$ 4,800.00
8	Restoration	1	LS	$ 3,000.00	$ 3,000.00
			TOTAL BASE BID		**$ 47,305.00**

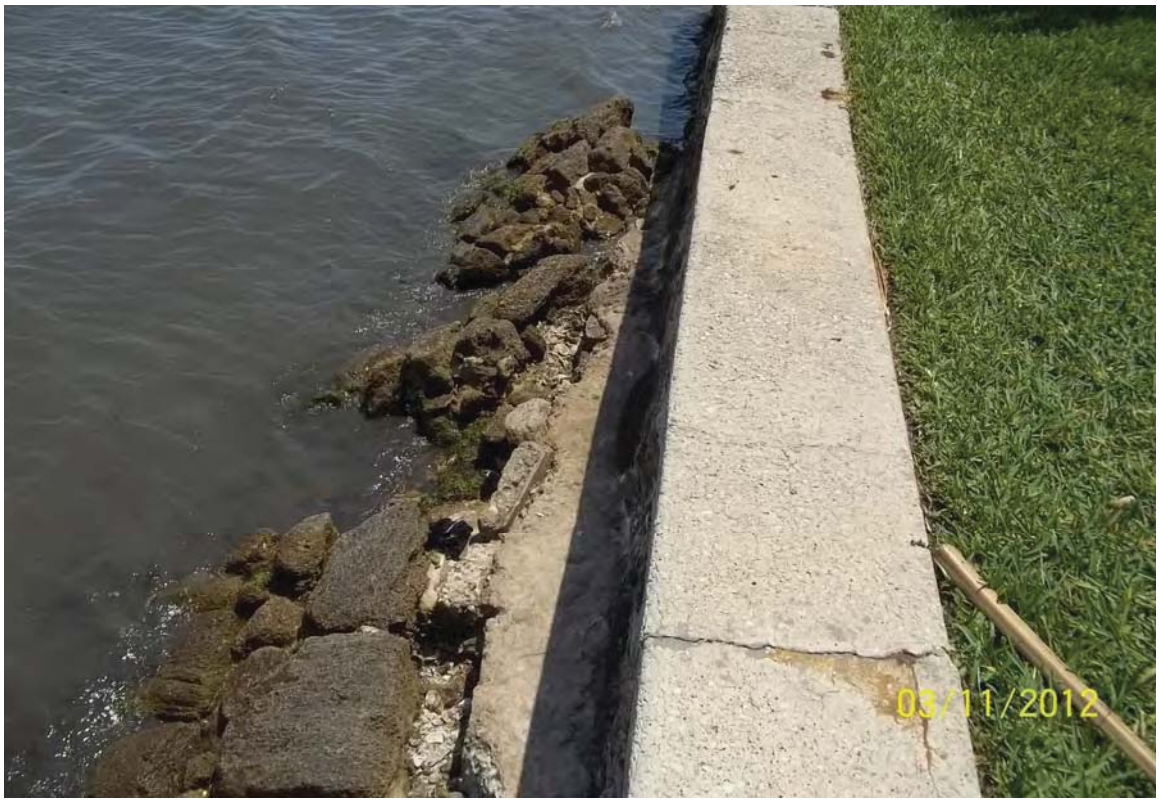
Riviera Park



Emergency Generators
Fiber Optic Structures
Electrical Structures
Out of Service Hydrants
Fire Hydrants
Owner
Private
Public
Hydrant Valves
Water Valves (Mainland)
Water Valves (Peninsula)
Raw Water Valves
Reuse Valves
Manholes
Forcemain Valves
Valve Type
High Pressure Valve
Low Pressure Valve
Air Release Valve/Pig Launch
Valve Type
High Pressure Valve
Pig Launch
Fiber Optic Conduits
Edge of Pavement
abandoned_pipe
Raw Water Mains
Stormwater Pipes
Water Mains (Mainland)
Water Mains (Peninsula)
Reuse Water Mains
Sewer Gravity Mains
Public Pipe
Private Pipe
Effluent Outfall Pipe
Sewer Forcemains
High Pressure Public Pipe
Low Pressure Public Pipe
High Pressure Private Pipe
Low Pressure Private Pipe
Swales
Stormwater Ponds
Address Points
Airport and Railroad
AIRPORT
RAILROAD
City Streets
DIRT
MAJOR
PAVED
Water Features
Property Lines

400 ft

GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such damages.


03/11/2012

03/11/2012

CAPITAL PROJECT DETAIL

PROJECT TITLE

Police Department Roof

PROJECT#

301173

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

Granada Boulevard

MANAGEMENT

Engineering/Leisure Services

PROJECT SCOPE

Remove and replace roof on entire facility.

JUSTIFICATION

The roof has had continuous leaks for several years. As part of the fy 11/12 Facility Renewal & Replacement budget, the entire roof had roofcoat applied on it to prevent the leaks. The vendor who performed the roofcoat application gave a 5-year warranty against leaks. After this 5 year period, roof will have met useful life and will need to be removed and replaced.

PROJECT COST METHODOLOGY

Verbal estimate received 3/26/12 - Price is in line with similar work completed in Oct. 2011 (PAC roof).

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Remove & replace roof on entire facility	0	0	225,000	0	0	225,000
Total	0	0	225,000	0	0	225,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	0	225,000	0	0	225,000
Total	0	0	225,000	0	0	225,000

Example USA entry: 1234 MyStreet, MyCity, MyState Zipcode

170 w. granada blvd., ormond beach, FL 32174 Go!

Fizber Street View allows visitors to view and navigate street level imagery. It's almost like walking down the actual street!

↓ **Tick marks** zoom in and out.

Map-Satellite-Hybrid selects view.

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FACILITIES RENEWAL AND REPLACEMENT

CAPITAL PROJECT DETAIL

PROJECT TITLE

Central Park I

PROJECT#

117020

CATEGORY

Facilities Renewal and Replacement

FUND

117-Facilities Renewal and Replacement

PROJECT LOCATION

Central Park I

MANAGEMENT

Leisure Services

PROJECT SCOPE

Removal and replacement of existing playground equipment.

JUSTIFICATION

Central Park I is one of the most highly used community parks in Ormond Beach. The existing playground equipment has been inspected and is on a replacement schedule to be removed and replaced in fiscal year 2014/15. The actual replacement playground equipment will be determined at that time, as a design/build based on the budget available.

PROJECT COST METHODOLOGY

Design/build based on budget available.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Replace Playground Equipment	35,000	0	0	0	0	35,000
Total	35,000	0	0	0	0	35,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-R&R	35,000	0	0	0	0	35,000
Total	35,000	0	0	0	0	35,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

South Ormond Neighborhood Center

PROJECT#

117037

CATEGORY

Facilities Renewal and Replacement

FUND

117-Facilities Renewal and Replacement

PROJECT LOCATION

Gymnasium - 176 Division Avenue

MANAGEMENT

Engineering/Leisure Services

PROJECT SCOPE

Replace HVAC system in gymnasium.

JUSTIFICATION

System is in excess of 20 years old. Unit has met its life expectancy. Compressor has been replaced twice and accumulator has also been replaced.

PROJECT COST METHODOLOGY

Similar City projects.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Replace Gymnasium	0	0	30,000	0	0	30,000
Total	0	0	30,000	0	0	30,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-R&R	0	0	30,000	0	0	30,000
Total	0	0	30,000	0	0	30,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Ames Park

PROJECT#

117016

CATEGORY

Facilities Renewal and Replacement

FUND

117-Facilities Renewal and Replacement

PROJECT LOCATION

Ames House

MANAGEMENT

Engineering/Leisure Services

PROJECT SCOPE

Replace roofing shingles.

JUSTIFICATION

Existing roof is 14 years old and will meet life expectancy.

PROJECT COST METHODOLOGY

Similar City projects.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Replace Roofing Shingles	0	0	0	25,000	0	25,000
Total	0	0	0	25,000	0	25,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-R&R	0	0	0	25,000	0	25,000
Total	0	0	0	25,000	0	25,000

RECREATION AND CULTURAL IMPROVEMENTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Ormond Beach Sports Complex Traffic Calming

PROJECT#

301210

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Ormond Beach Sports Complex Perimeter Road

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of speed tables to control speed on perimeter road at the Ormond Beach Sports Complex

JUSTIFICATION

The recently completed paving of the perimeter road at the Ormond Beach sports complex has experienced an increase in traffic and correspondingly an increase in high speed traffic on this internal circulation roadway. This project proposes the installation of eight speed tables spaced at appropriate intervals to calm traffic and reduce speeds at the sports complex. This project is a recommendation of the Leisure Service Advisory Board.

PROJECT COST METHODOLOGY

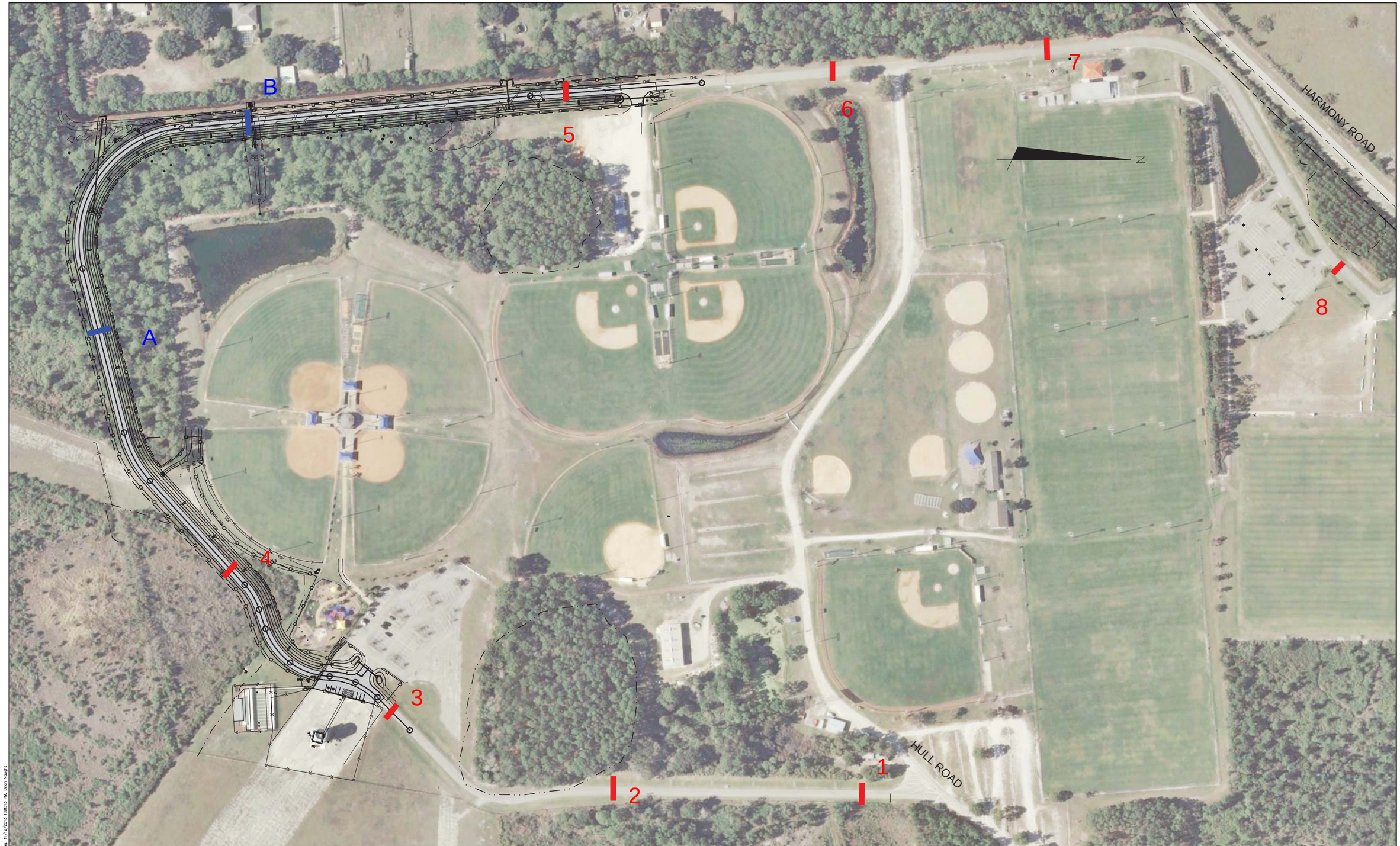
EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construct speed tables	31,000	0	0	0	0	31,000
Total	31,000	0	0	0	0	31,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	31,000	0	0	0	0	31,000
Total	31,000	0	0	0	0	31,000

Ormond Beach Sports Complex Traffic Calming

Item #	Item	Qty	Price per Uni	Total Cost
TC-1	Speed Table*	10	$ 2,500.00	$ 25,000.00
TC-2	Signage	10	$ 250.00	$ 2,500.00
TC-3	Mobilization	1	$ 3,000.00	$ 3,000.00
TOTAL				$ 30,500.00

*Locations shown on Plan and Numbered 1 - 8, plus Location 'A' and 'B'



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	

SEAL

TRAVIS N. TERPSTRA, P.E.
No. 71412

SEAL

McKIM&CREED
1901 Mason Avenue, Suite 102
Daytona Beach, Florida 32117
Phone: (386)274-2828, Fax: (386)274-1393
AA0002667 EB0006691
www.mckimcreed.com

CITY OF ORMOND BEACH

SPORTS COMPLEX
PERIMETER ROAD IMPROVEMENTS

Proposed Speed Table Locations

DATE:	NOVEMBER 2013
MCE PROJ. #	1026-0114
DRAWN	DMP
DESIGNED	TNT
CHECKED	CAW
PROJ. MGR.	TNT

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

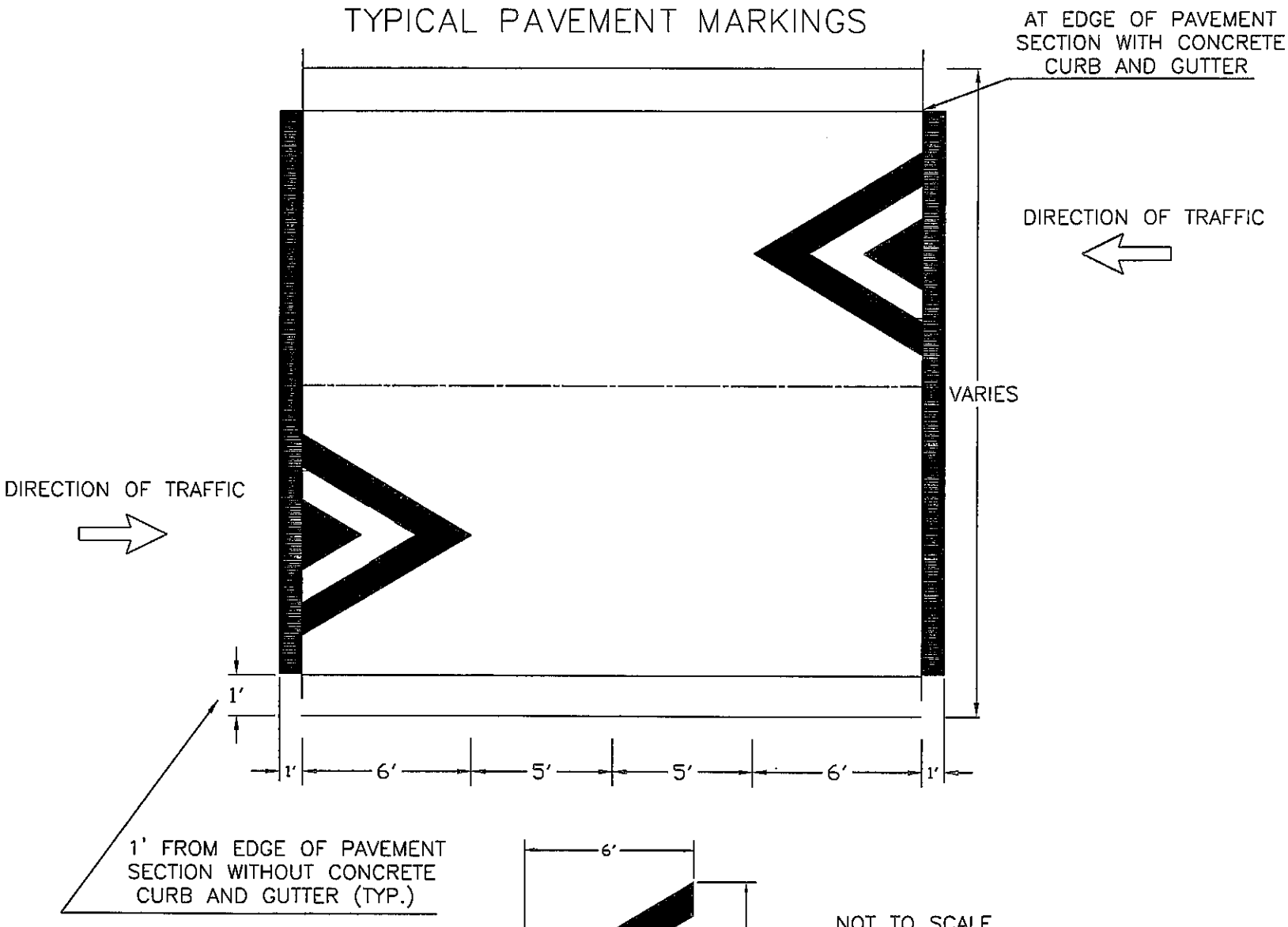
M&C FILE NUMBER
GN003-10260114

DRAWING NUMBER
G-3

STATUS:
REVISION

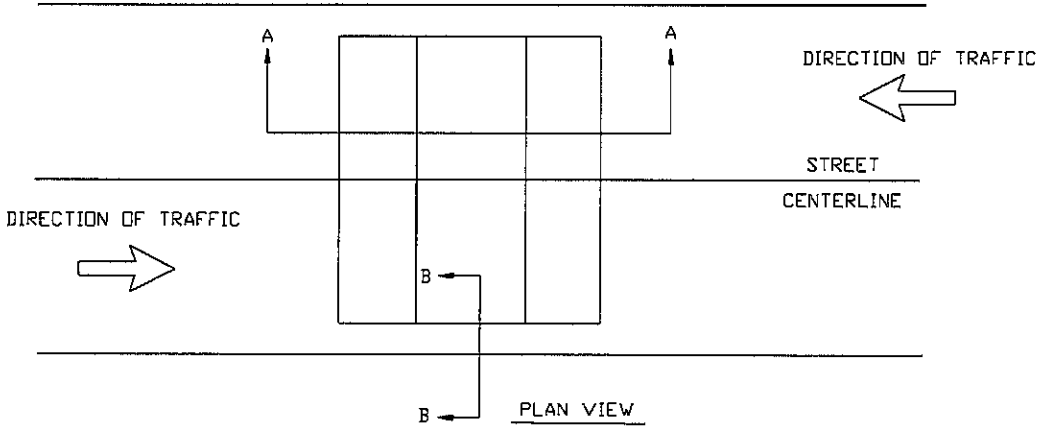
S:\1026\0114\BG-Drawings\GN003-10260114.dwg, 11/12/2013 1:01:13 PM, Brian Naught

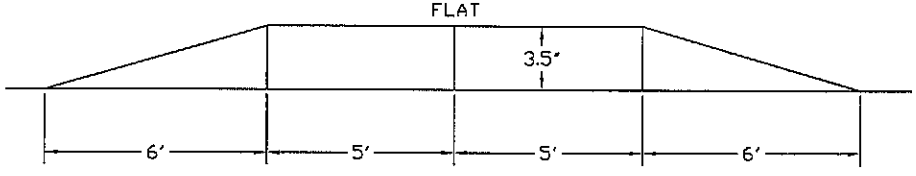
TYPICAL PAVEMENT MARKINGS



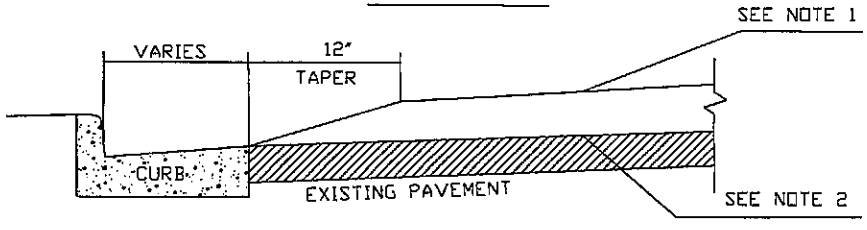
NOT TO SCALE

TITLE:	REVISIONS		DET.NO.
STANDARD SPEED TABLE PAVEMENT MARKING DETAIL			TC-1

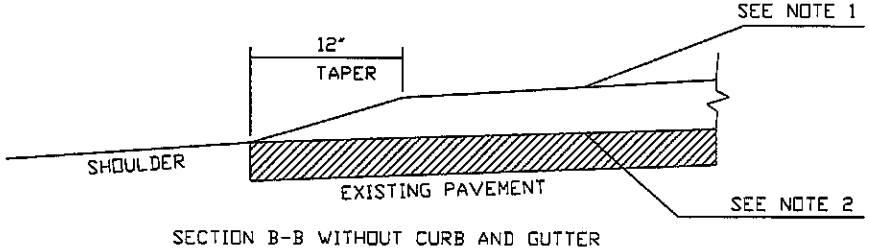




SECTION A-A



SECTION B-B WITH CURB AND GUTTER



SECTION B-B WITHOUT CURB AND GUTTER

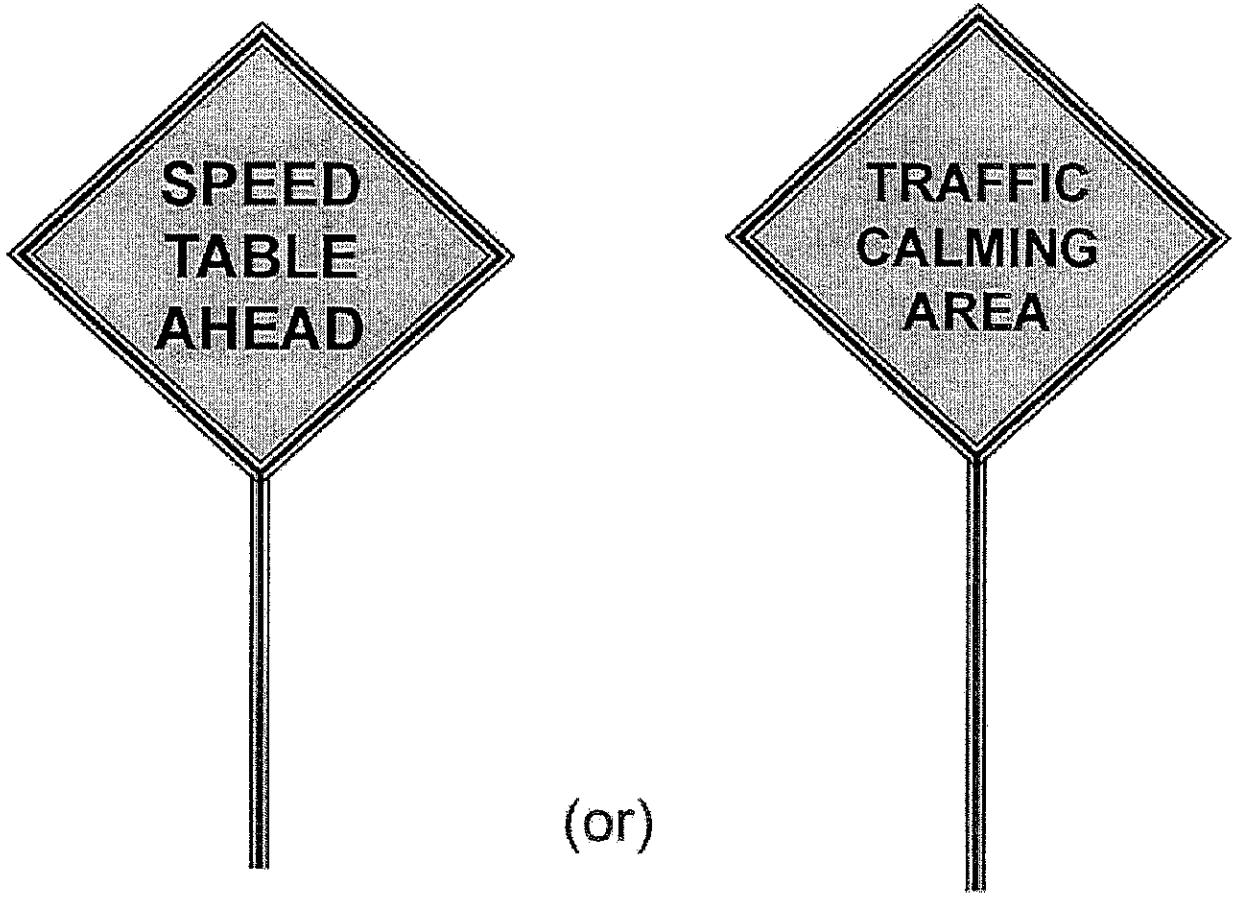
NOTES:

1. USE TYPE I-2 OR SF 9.5A ASPHALTIC CONCRETE PER NCDOT STD. SPECIFICATIONS (SECT.610 & 645).

2. TACK COAT PER NCDOT STD. SPECIFICATIONS (SECT. 605).

NOT TO SCALE

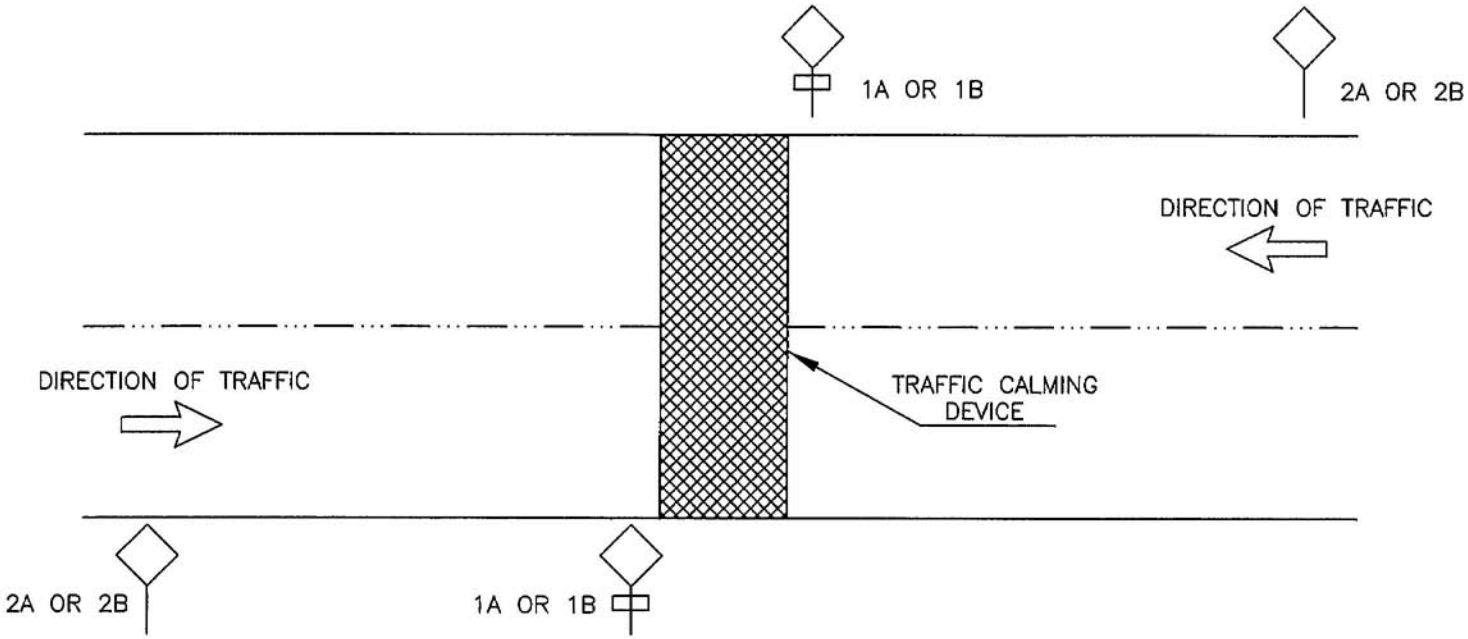
TITLE:	REVISIONS		DET.NO.
SPEED TABLE CONSTRUCTION DETAILS	6/09	ER	TC-4



ADVANCED WARNING SIGNS

NOTES:
1. ALL SIGNS MUST BE MOUNTED AT A HEIGHT OF 6' FROM THE BOTTOM OF THE SIGN UNLESS OTHERWISE APPROVED.
2. ALL SIGNS MUST BE A SIZE OF 24" X 24" UNLESS OTHERWISE APPROVED.

TITLE:	REVISIONS		DET.NO.
ADVANCED TRAFFIC CALMING WARNING SIGN DETAIL	ER	6/09	TC-5



NOTES:

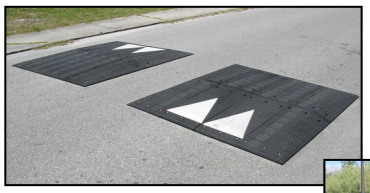
1. PLEASE SEE "TRAFFIC CALMING SIGNS" DETAIL FOR MORE INFORMATION.

NOT TO SCALE

TITLE:	REVISIONS		DET.NO.
LOCATION OF TRAFFIC CALMING SIGNS			TC-6A

SPEED CUSHIONS

6’ WIDE
3” HIGH



SPECIFICATIONS

Dimensions of the modules:

Width: 18” (+/- 1/16”)
Length: 42” (+/- 1/8”)
Thickness: 3” (+/- 1/8”)

Dimensions of the Speed Humps, Speed Cushions or Speed Tables: (widths and lengths are adjustable)

Width: from 6’ and up by 1.5’ increments
Length: from 7’ and up by 3.5’ increments
Height: 3”

Standard dimensions of the Speed Humps, Speed Cushions or Speed Tables:

Width: according to a street width
Length: 7’, 10.5’, 14’
Height: 3”

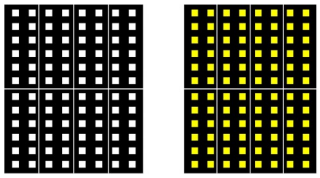
Entrance and exit gradient: 1:15

Side gradient: 1:3

Physical properties:

Material: 100% recycled synthetic and natural rubber composite
Tensile strength: minimum 500 psi
Shore hardness: minimum 70A
Specific gravity: 1.1
Markings: rubber modules are available in all black, black with yellow or white reflective square markings, or with white reflective arrow chevrons.

WHITE OR YELLOW SQUARES

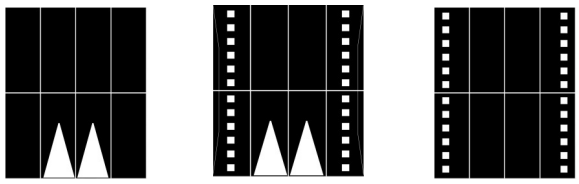


6’W x 7’L
6’W x 10.5’L
6’W x 14’L

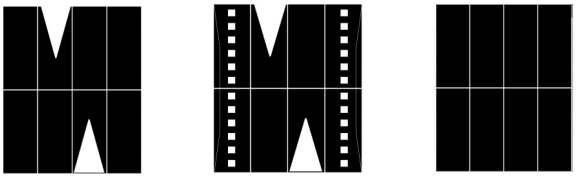
ARROW CHEVRONS - WHITE ONLY

6’W x 7’L - 6’W x 10.5’L - 6’W x 14’L

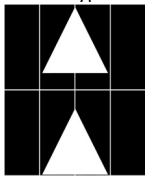
Basic Patterns



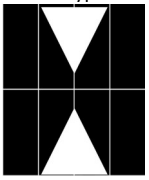
Same as above shown with Arrow Rotation



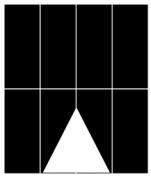
V3—Type B



V3—Type A



V3—Type C



Traffic Logix Corp. 3 Harriet Lane Spring Valley, NY 10977 1.866.915.6449 info@trafficlogix.com

CAPITAL PROJECT DETAIL

PROJECT TITLE

Nova Community Park Renovations

PROJECT#

116064

CATEGORY

Recreation and Cultural Facility Improvements

FUND

116-Grant Fund

PROJECT LOCATION

Nova Community Park

MANAGEMENT

Engineering

PROJECT SCOPE

Upgrades to the tennis court lighting.

JUSTIFICATION

Upgrading the existing tennis court lighting will improve night play on the existing 6 hard courts at Nova Community Park.

PROJECT COST METHODOLOGY

Estimated cost based on similar lighting projects.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Upgrade Tennis Court Lighting	0	150,000	0	0	0	150,000
Total	0	150,000	0	0	0	150,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FRDAP (pending approval)	0	112,500	0	0	0	112,500
Property Taxes-General CIP	0	37,500	0	0	0	37,500
Total	0	150,000	0	0	0	150,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

OBSC Improvements

PROJECT#

116065

CATEGORY

Recreation and Cultural Facility Improvements

FUND

116-Grant Fund

PROJECT LOCATION

Ormond Beach Sports Complex

MANAGEMENT

Engineering

PROJECT SCOPE

Construct a girls softball field and lighting of Field 3. Projects are dependent upon receipt of FRDAP funding.

JUSTIFICATION

Baseball field #3 is the only remaining unlit Wendelstedt premiere playing field. Lighting this field would be invaluable to nighttime play, especially by the fall competitive baseball league. The Field #7 project includes softball field, lighting, bleachers and concession/restrooms and will be beneficial to all girls' softball programming, including recreational league, high school league, competitive league and girls softball tournaments. The current softball quad is not suitable for girls' championship softball tournaments as it is designed more for men's recreational softball.

PROJECT COST METHODOLOGY

Projected costs per Engineering Dept. & are based upon similar City projects. Lighting costs per MUSCO lighting estimates

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Field 7 Girls' Softball	0	550,000	0	0	0	550,000
Lighting-Baseball Field 3	0	230,000	0	0	0	230,000
Total	0	780,000	0	0	0	780,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	390,000	0	0	0	390,000
ECHO (pending approval)	0	275,000	0	0	0	275,000
FRDAP (pending approval)	0	115,000	0	0	0	115,000
Total	0	780,000	0	0	0	780,000

25-Year Life-Cycle Cost

Ormond Beach Sports Complex BB/SO
Ormond Beach, FL

Prepared for: Mr. Shawn Finley, City of Ormond Beach

04/11/13

	Typical Floodlighting Equipment	Musco Green	Your Savings
Hours	12,500	12,500	
Average kW	123.1	71.9	
Energy	**$138,510**	**$80,937**	**$57,573**
Group Relamp	$39,583	$0	$39,583
Lamp Maintenance	$3,750	$0	$3,750
Controls - Energy	$6,926	$0	$6,926
25-Year Life-Cycle Cost	**$188,769**	**$80,937**	**$107,832**

Assumptions

Field Name	Annual Operating Hours	Energy Cost per kWh	Typical Floodlighting Equipment		Musco Green		Controls Energy Savings
			Fixtures	Avg kW	Fixtures	Avg kW	
Baseball Field 3	500	$0.09	76	123.1	46	71.9	5.0%

NOTE:
Life-cycle costs are based upon the assumptions given by the customer above. Any variation in this data will change the life-cycle cost proportionately. Group Relamp calculates using a per lamp replacement cost of $125, including parts, equipment, and labor. Useful lamp life of typical floodlighting equipment is 3000 hours. Musco guarantees the average Green Generation Lighting system kW and 5000 hours useful life of the lamp.

© 2005, 2009 Musco Lighting SD-7156-5 - Patent Pending
163389 PV1 Mandy Hafner

We Make It Happen.

Budget Estimate

Ormond Beach Sports Complex
Ormond Beach, FL
Date: April 12, 2013
To: Shawn Finley

Equipment Description

Light-Structure Green™ System delivered to your site in Five Easy Pieces™

- Pre-cast concrete bases
- Galvanized steel poles
- UL Listed remote electrical component enclosure
- Pole length wire harness
- Factory-aimed and assembled luminaires

Also Includes:

- Energy savings of more than 50% over a standard lighting system
- 50% less spill and glare light than Musco's prior industry leading technology
- Musco Constant 25™ warranty and maintenance program that eliminates 100% of your maintenance costs for 25 years, including labor and materials
- Guaranteed constant light levels for 25 years
- 2 Group re-lamps at the end of the lamps' rated life, 5000 hours
- Control Link® Control & Monitoring System for flexible control and solid management of your lighting system.
- Lighting Contactors sized for sited voltage and phase.

Baseball Field (325'/400'/325') - 50 fc infield, 30 fc outfield – 6 pole design - $215,000 - $230,000

2 Soccer Fields (2 @ 370'x230') - 50 fc – 6 pole design - $410,000 – $435,000
2 Soccer Fields (2 @ 370'x230') - 30 fc – 6 pole design - $315,000 – $330,000

Estimates are for turnkey installations to include equipment and installation. Does not include electrical engineering if needed.

Payment Terms:

Musco will attempt to coordinate shipment so that delivery corresponds with the customer's payment schedule. It will be the responsibility of the wholesaler to ensure that Musco is aware of this delivery timeframe. We will expect payment within the terms described above unless there is a written statement from Musco's corporate headquarters stating the acceptance of different terms. Financing solutions provided by Musco Finance are available to minimize any funding challenges you have, subject to credit approval.

- **Delivery to the job site from the time of order, submittal approval, and confirmation of order details including voltage and phase, pole locations is approximately 30-45 days. Due to the built-in custom light control per luminaire, pole locations need to be confirmed prior to production. Changes to pole locations after the product is sent to production could result in additional charges.**

Notes

Estimate is based on:

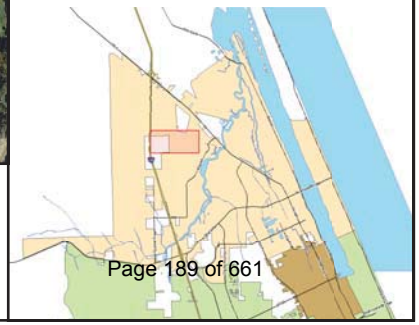
- System will be manufactured to existing voltage and phasing at site
- Confirmation of pole locations prior to production
- Included structural engineering to FBC 2010, 130mph
- Assumes primary electrical feed is within reasonable distance from MDP location to be installed.

Thank you for considering Musco for your sports-lighting needs. Please contact me with any questions.

Danny Sheldon
Sales Representative
Musco Sports Lighting, LLC
Phone: 352/665-0578
E-mail: Danny.Sheldon@musco.com
Fax: 800/374-6402

ORMOND BEACH SPORTS COMPLEX - BASEBALL FIELD 3

GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such damages.



CAPITAL PROJECT DETAIL

PROJECT TITLE

Nova Community Park Master Plan Phase I

PROJECT#

301213

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Nova Community Park

MANAGEMENT

Engineering

PROJECT SCOPE

Phase I includes the construction of a dog park, parking for (130) vehicles, and (12) fitness stations. This project remains on schedule for funding in FY 2018-19. The YMCA has approached the City about partnering on a dog park which may change the scope of this project.

JUSTIFICATION

The Nova Community Park Master Plan was created by HHI Design and approved as a long range conceptual plan by the City Commission. Phase I will include a dog park, landscaping, 130 parking spaces, and a circuit training cluster of fitness stations. Currently the City has an agreement with Holly Hill and Volusia County to allow the residents of Ormond Beach to utilize the dog park in Holly Hill; however, during the master plan community meetings, a dog park was one of the most discussed and most desired facilities. Parking is the #1 need at the Nova Community complex.

PROJECT COST METHODOLOGY

Preliminary cost estimate prepared by HHI Design

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Phase I Engineering & Construction	0	0	0	550,000	0	550,000
Total	0	0	0	550,000	0	550,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	0	0	550,000	0	550,000
Total	0	0	0	550,000	0	550,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

West Ormond Community Center

PROJECT#

310017

CATEGORY

Recreation and Cultural Facility Improvements

FUND

310-Impact Fees

PROJECT LOCATION

West Ormond

MANAGEMENT

Engineering

PROJECT SCOPE

Feasibility Study and Conceptual plan for a West Ormond Community Center.

JUSTIFICATION

West Ormond has been the predominate location for growth over the last 10 years. The Recreation Master Plan clearly identifies the need for a West Ormond Community Center and park. A feasibility study needs to be done to determine what the residents' needs and wants will be. The need for a Community Center to serve the residents that reside in west Ormond has been on the LSAB's priority list for the last several years. This will prevent families who live in west Ormond from having to drive long distances to use Nova Community Center. It will help alleviate traffic, parking and crowding which we are currently facing at the Nova Community Center. This is the first phase to determine a design, location, and projected cost. The next phase would be determining a funding source and the viability for a funded project in a future CIP.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Preliminary Design Study	40,000	0	0	0	0	40,000
Total	40,000	0	0	0	0	40,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Impact Fees	40,000	0	0	0	0	40,000
Total	40,000	0	0	0	0	40,000

City of Ormond Beach
ESTIMATE of PROBABLE COST

PROJECT TITLE: **Nova Recreation Park Perimeter Multi Purpose Trail, Phase 1**

PROJECT DESCRIPTION: This proposed project consists of constructing a 10 ft wide concrete path/trail around the Nova Park area which connects to Nova Road to the north and south extents of the park and towards the west along the eastern fenced in area of the landfill closure, for a toal length of approximately 3,100 ft.

DATE: 3/28/2012

CONSTRUCTION:

Item #	Item Description	Qty	Unit	Unit Price	Item Cost
1	Mobilization (5% Mazimum of total)	1	LS	$ 7,900.00	$ 7,900.00
2	Construction Survey Layout and As-Builts	1	LS	$ 5,000.00	$ 5,000.00
3	Landscaping along path (assumed budget)	1	LS	$ 10,000.00	$ 10,000.00
4	Denude & dispose upper vegitation and top soil along path	4830	SY	$ 1.50	$ 7,245.00
5	Soil grading and compacting	4830	SY	$ 5.00	$ 24,150.00
6	Concrete Sidewalk (10' wide, 4-inch thickness)	3450	SY	$ 25.00	$ 86,250.00
7	Crosswalk path thermoplastic striping	3	EA	$ 1,200.00	$ 3,600.00
8	Pathway Rest areas w/ concrete pad and bench	4	EA	$ 4,000.00	$ 16,000.00
9	Sidewalk transitions with ADA ped detection mats	4	EA	$ 1,500.00	$ 6,000.00
	UNITS: LS-Lump Sum, EA-Each, LF-Linear Feet, SY-Square Yards, SF-Square Feet, CY-Cubic Yard, TN-Tons, GAL-US Gallons, LBS-pounds		(Items 1-9)	**Construction=**	**$ 166,145.00**
10				**Engineering (15%)=**	**$ 25,000.00**
11				**Site Topo Survey=**	**$ 3,000.00**
12				**Permitting Fees=**	**$ 5,000.00**
			(Items 10-12)		**$ 33,000.00**
				PROJECT TOTAL ESTIMATE=	**$ 199,145.00**

ASSUMPTIONS/NOTES:
It is assumed that the proposed trail will be designed to ADA standards and will, therfore require a significant amount of site grading along the sidewalk path since the elevation changes accross the site vary in some areas well beyond the maximum tolerances of maximum longitudinal slopes. This will increase the unit price of developing the sidewalk versus other typical sidewalk installations in other areas around the City where the general lay of the land is more or less flat. No stormwater facilities are anticipated for this project.

hhi DESIGN planning landscape architecture environmental graphics

Better Living by Design!

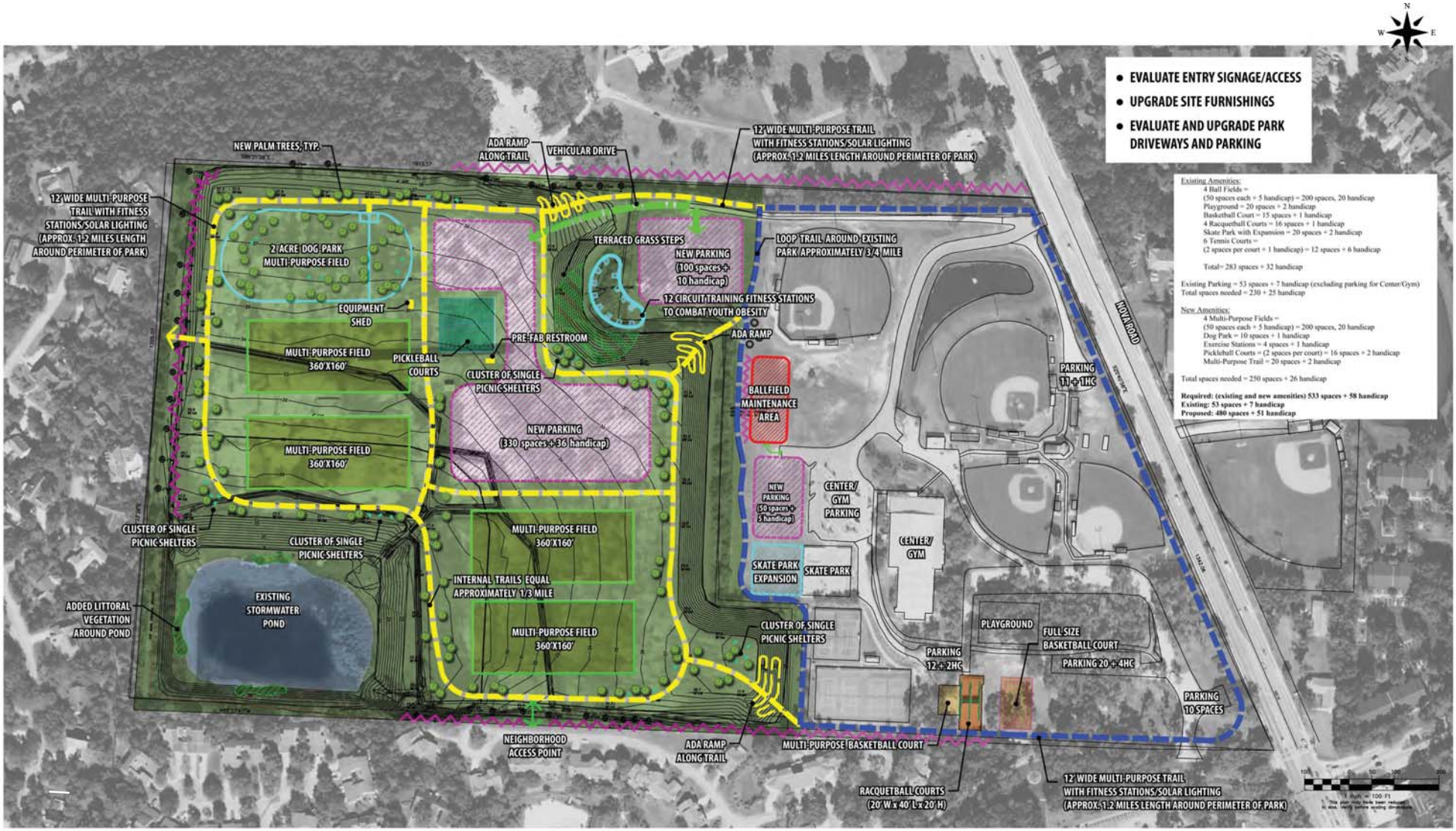
Name of Project — **Nova Community Park - Ormond Beach, FL**
New Amenities at Abandoned Landfill site

Preliminary Conceptual Long Range Plan

Project #
Date 10/12/2012
Prepared By CJ/GC

ITEM	QTY	Units	Unit Cost	Subtotal Cost	Notes		Notes
Future Park Amenities						**Phase I**	**Future Years**
1. Hardscape							
12 ft wide Multi-Purpose Trail	7,640	SY	$25.00	$191,000.00	4" Concrete		$191,000.00
ADA ramps	18,500	SF	$20.00	$370,000.00			$370,000.00
New Parking	17,000	SY	$50.00	$850,000.00		$225,000.00	$625,000.00
New Driveways	1,000	SY	$40.00	$40,000.00		$40,000.00	$0.00
Ballfield Maintenance Area	1	LS	$25,000.00	$25,000.00			$25,000.00
			Subtotal	**$1,476,000.00**			
2. Site Furnishings							
Exercise Stations along Trail	8	EA	$3,000.00	$24,000.00	Includes Concrete Pads		$24,000.00
Circuit Training Cluster of Fitness Stations (12 stations)	1	LS	$36,000.00	$36,000.00		$36,000.00	$0.00
			Subtotal	**$60,000.00**			
3. Landscape							
Palm Trees and Small Trees	300	EA	$450.00	$135,000.00	Includes Irrigation	$45,000.00	$90,000.00
Vegetated Buffer	34,000	SF	$8.00	$272,000.00			$272,000.00
Terraced Grass Steps	3,000	LF	$10.00	$30,000.00			$30,000.00
Littoral Plants around Pond	6,000	SF	$4.00	$24,000.00			$24,000.00
			Subtotal	**$461,000.00**			
4. Sports							
Multi-purpose fields	5	EA	$120,000.00	$600,000.00			$600,000.00
Pickleball Courts	8	EA	$30,000.00	$240,000.00			$240,000.00
Top Soil (20,000 CY)	20,000	CY	$11.00	$220,000.00	Delivered and Spread		$220,000.00
			Subtotal	**$840,000.00**			
5. Architectural Elements							
Pre-Fab Restroom and Utility Extension	1	LS	$85,000.00	$85,000.00	Includes Utility Extension		$85,000.00
Equipment Shed	1	LS	$10,000.00	$10,000.00			$10,000.00
Single Picnic Pavilions	27	EA	$6,000.00	$162,000.00			$162,000.00
			Subtotal	**$257,000.00**			
6. Dog Park							
Dog Park	1	LS	$50,000.00	$50,000.00	Includes Agility Equipment	$50,000.00	$0.00
			Subtotal	**$50,000.00**			
			Grand Subtotal:	**$3,144,000.00**		$396,000.00	$2,748,000.00
			20% Contingency:	**$628,800.00**		$79,200.00	$549,600.00
			Engineering	**$150,000.00**		$59,400.00	$90,600.00
			Grand Total:	**$3,922,800.00**		$534,600.00	$3,388,200.00

Notes
1.) All estimates based on HHI Design's Preliminary Conceptual Long Range Plan
2.) Estimate does not include site grading or stormwater.



TranSystems

Conceptual Long Range Master Plan

hhi DESIGN

ISSUE DATE: January 30, 2013

Nova Community Park

Ormond Beach, FL

STORMWATER IMPROVEMENTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Corrugated Metal Pipe Rehabilitation

PROJECT#

107147

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Stormwater Service Areas

MANAGEMENT

Engineering

PROJECT SCOPE

Rehabilitation of existing corrugated metal storm piping throughout the City that has been identified as failing due to corrosion and age.

JUSTIFICATION

Much of the City's older stormwater piping, which was installed in excess of 20 years ago, was constructed with corrugated metal piping. This piping has surpassed its design life expectancy and in many areas of the City has significantly corroded, especially along the river outfalls. Rainfall runoff from previous hurricanes resulted in increased flows and debris being conveyed through these pipes which also significantly contributed to the pipe's deterioration. In order to reduce impacts to roads and the public, this project intends to rehabilitate the storm pipes utilizing no-dig slip lining technology where applicable. In cases where the corrosion is extensive, slip lining may not be feasible and the piping will need to be replaced utilizing standard open-cut construction. The majority of these pipe sections are along the Halifax River outfall pipes on both the mainland and the peninsula.

PROJECT COST METHODOLOGY

Estimate has been based on unit pricing for cured in place PVC lining as obtained from Miller Pipe Lining and other recent quotations for lining projects.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FY 2015-16 Construction	250,000	0	0	0	0	250,000
FY 2016-17 Construction	0	250,000	0	0	0	250,000
FY 2017-18 Construction	0	0	250,000	0	0	250,000
FY 2018-19 Construction	0	0	0	250,000	0	250,000
FY 2019-20 Construction	0	0	0	0	250,000	250,000
FY 2014-15 Construction	0	0	0	0	0	0
Total	250,000	250,000	250,000	250,000	250,000	1,250,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Stormwater Charges	250,000	250,000	250,000	250,000	250,000	1,250,000
Total	250,000	250,000	250,000	250,000	250,000	1,250,000

FY 15-16

LOCATION	Size (in)	Length (ft)	Replaced With	Unit Price	Probable Construction Cost
Dix Ave outfall	15	60	PVC liner	$ 42.00	$ 2,520.00
Cypress Circle	24	170	PVC liner	$ 100.00	$ 17,000.00
Reynolds Ave	12	250	PVC liner	$ 36.00	$ 9,000.00
Rio Ave (Oak Forest to N. Beach St.)	30	265	PVC liner	$ 135.00	$ 35,775.00
1415 Oak Forest Dr Outfall	24	149	PVC liner	$ 100.00	$ 14,900.00
1539 Oak Forest Dr Outfall	30	159	PVC liner	$ 135.00	$ 21,465.00
Ormond Parkway	15	150	PVC liner	$ 42.00	$ 6,300.00
Ormond Parkway	15	35	PVC liner	$ 42.00	$ 1,470.00
Ormond Parkway	18	280	PVC liner	$ 70.00	$ 19,600.00
Ormond Parkway	12	35	PVC liner	$ 36.00	$ 1,260.00
Ormond Parkway	24	105	PVC liner	$ 100.00	$ 10,500.00
Ormond Parkway	18	60	PVC liner	$ 70.00	$ 4,200.00
Ormond Parkway	30	60	PVC liner	$ 135.00	$ 8,100.00
Ormond Parkway	18	30	PVC liner	$ 70.00	$ 2,100.00
Ormond Parkway	48	220	PVC liner	$ 250.00	$ 55,000.00
John Anderson Dr @ Plaza Dr	12	65	PVC liner	$ 36.00	$ 2,340.00
John Anderson Dr @ Plaza Dr	18	60	PVC liner	$ 70.00	$ 4,200.00
John Anderson Dr Ted Porter Park outfall	36	125	PVC liner	$ 160.00	$ 20,000.00
	TOTAL=	2,278			
				TOTAL=	**$ 235,730.00**

NOTE: List subject to change based upon revised urgency.
NOTE: Unit Pricing similar to 2014 costs.

FY 16-17

LOCATION	Size (in)	Length (ft)	Replaced With	Unit Price	Probable Construction Cost
Ormond Parkway	48	390	PVC liner	$ 250.00	$ 97,500.00
Ormond Parkway	48	365	PVC liner	$ 250.00	$ 91,250.00
Ormond Parkway	36	30	PVC liner	$ 160.00	$ 4,800.00
Ormond Parkway	36	205	PVC liner	$ 160.00	$ 32,800.00
	TOTAL=	990			
				TOTAL=	**$ 226,350.00**

FY 17-18

LOCATION	Size (in)	Length (ft)	Replaced With	Unit Price	Probable Construction Cost
Ormond Parkway	38x48	380	PVC liner	$ 240.00	$ 91,200.00
Ormond Parkway	24	20	PVC liner	$ 100.00	$ 2,000.00
Ormond Parkway	24	15	PVC liner	$ 100.00	$ 1,500.00
Ormond Parkway	18	15	PVC liner	$ 70.00	$ 1,050.00
Ormond Parkway	18	20	PVC liner	$ 70.00	$ 1,400.00
Ormond Parkway (outfall)	38x48	340	PVC liner	$ 240.00	$ 81,600.00
Oak Forest Drive North	18	350	PVC liner	$ 70.00	$ 24,500.00
Oak Forest Drive North	24	75	PVC liner	$ 100.00	$ 7,500.00
Oak Forest Drive North Outfall (1537)	30	165	PVC Liner	$ 135.00	$ 22,275.00
	TOTAL=	1,380			
				TOTAL=	**$ 233,025.00**

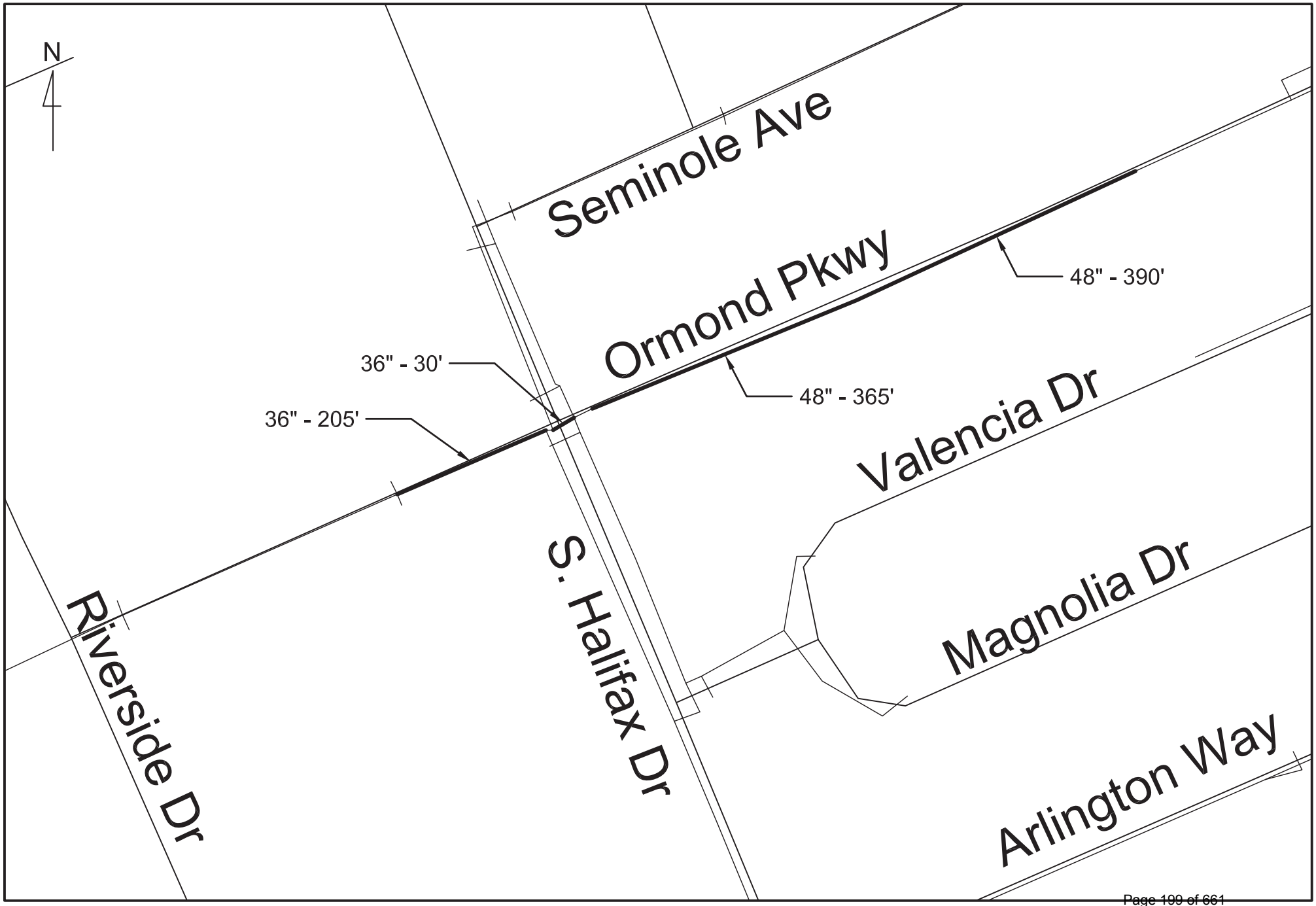
FY 18-19

LOCATION	Size (in)	Length (ft)	Replaced With	Unit Price	Probable Construction Cost
Avenue La Vista, N. Beach St Crossing (+)	30	185	PVC liner	$ 135.00	$ 24,975.00
Santa Lucia Ave., N. Beach to Oak Forest Dr	30	368	PVC liner	$ 135.00	$ 49,680.00
Wimbledon Ct	12	98	PVC liner	$ 36.00	$ 3,528.00
Sanchez Ave Outfall/ N. Beach St	24	520	PVC liner	$ 100.00	$ 52,000.00
Ormond Shores Dr Outfall	36	340	PVC liner	$ 160.00	$ 54,400.00
Ormond Shores Dr at Riverside Dr	30	80	PVC liner	$ 135.00	$ 10,800.00
Riverside Drive Outfall (886)	36	330	PVC liner	$ 160.00	$ 52,800.00
	TOTAL=	1,921			
				TOTAL=	**$ 248,183.00**

FY 19-20

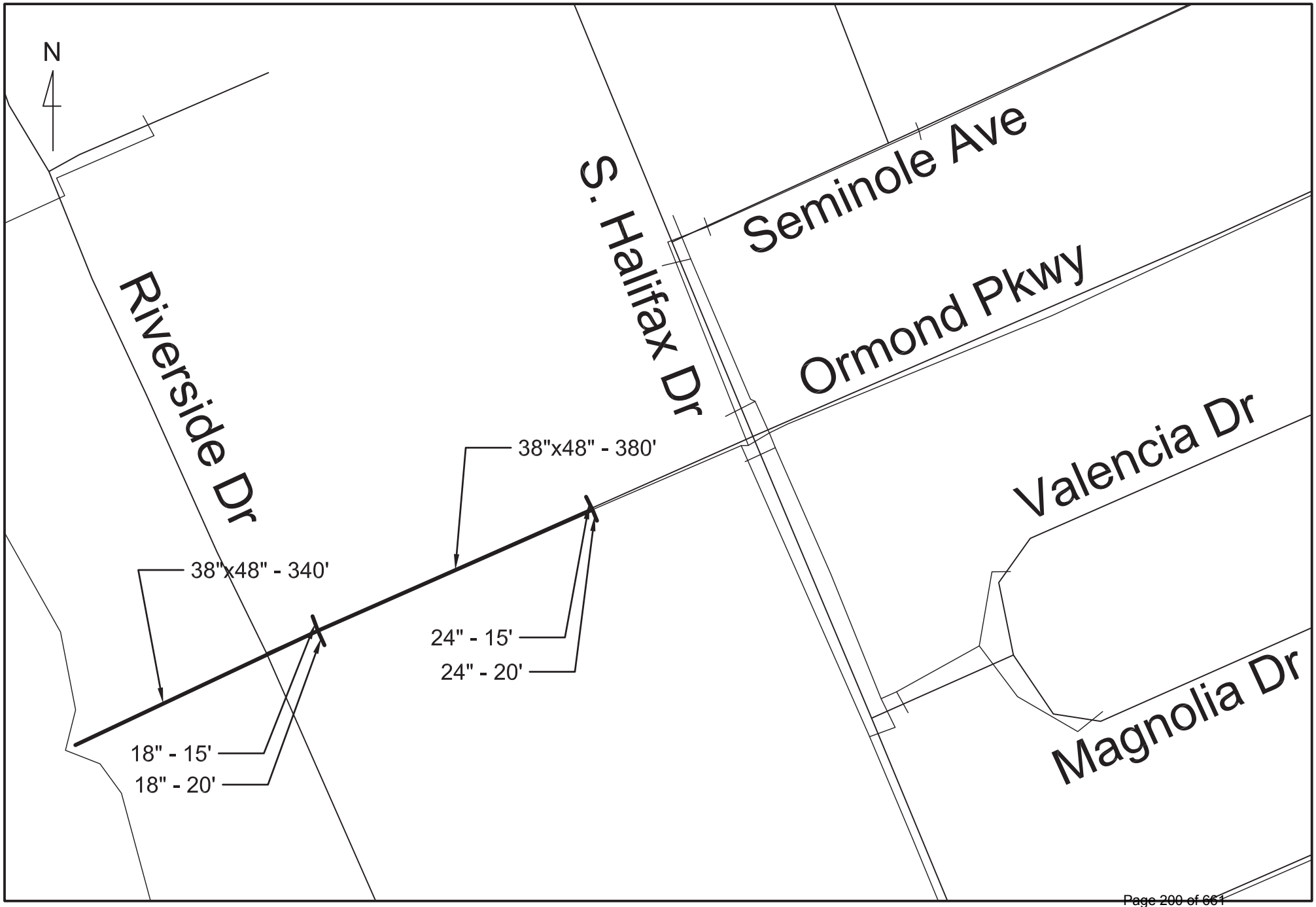
LOCATION	Size (in)	Length (ft)	Replaced With	Unit Price	Probable Construction Cost
Riverside Drive Outfall (776)	30	315	PVC liner	$ 135.00	$ 42,525.00
Riverside-Loyola Dr	30	310	PVC liner	$ 135.00	$ 41,850.00
Riverside Drive Outfall (676)	24	300	PVC liner	$ 100.00	$ 30,000.00
Riverside Drive Outfall (602)	12	420	PVC liner	$ 36.00	$ 15,120.00
Riverside Dr-Pleasant Dr	12	80	PVC liner	$ 36.00	$ 2,880.00
*** Other TBD	TOTAL=	1,425			
				TOTAL=	**$ 132,375.00**

STORM WATER PIPE REHABILITATION: FY 15-16



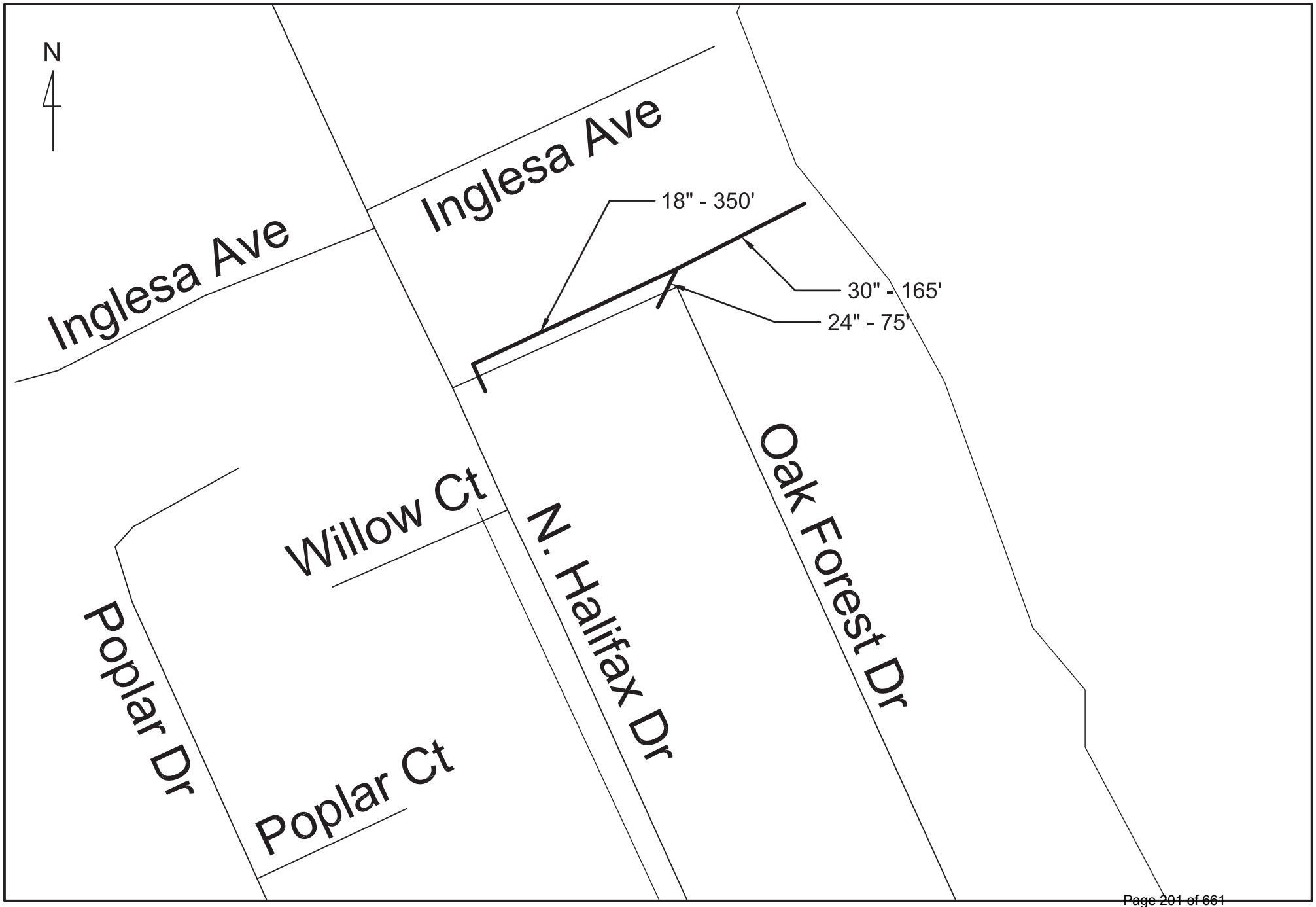
SHEET 1 OF 1

STORM WATER PIPE REHABILITATION: FY 16-17



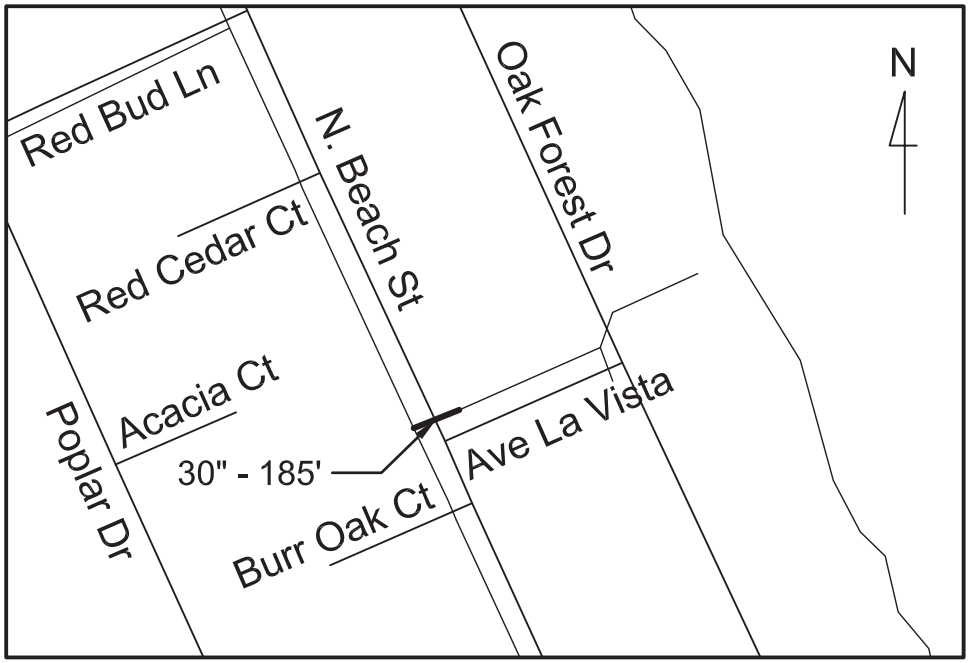
SHEET 1 OF 2

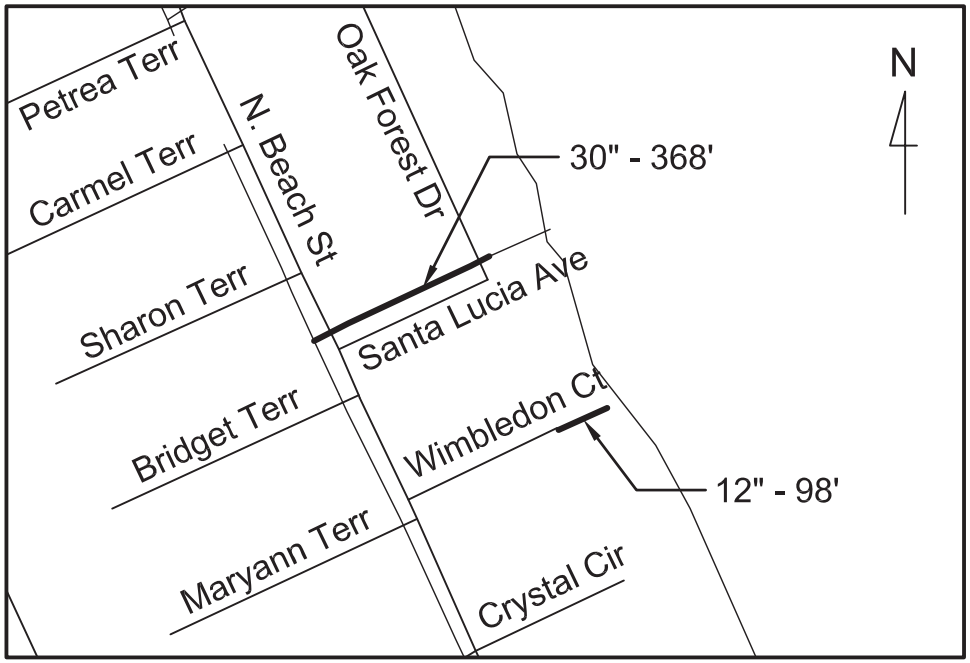
STORM WATER PIPE REHABILITATION: FY 16-17

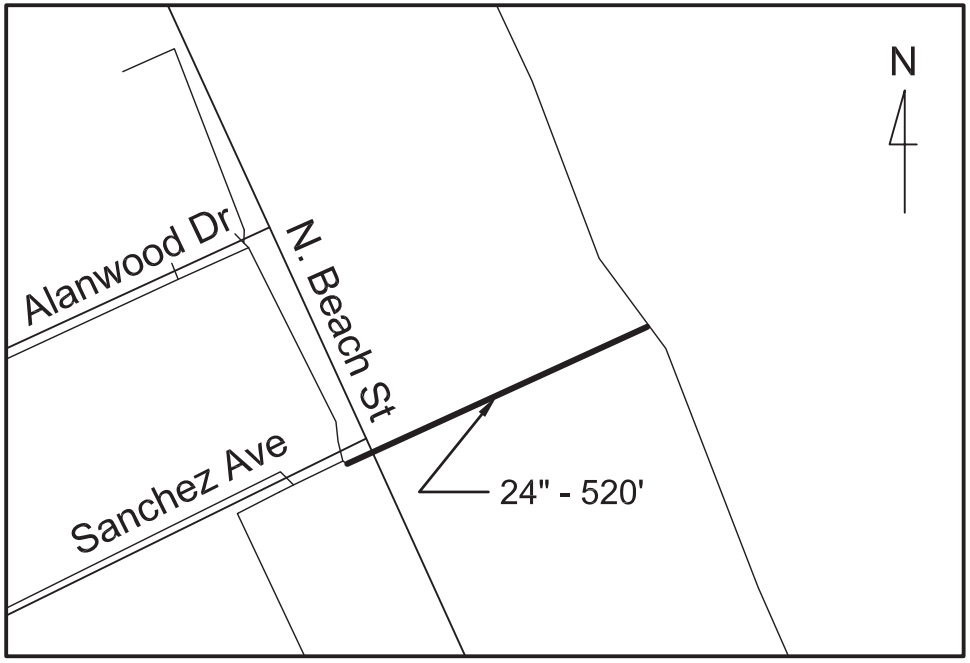


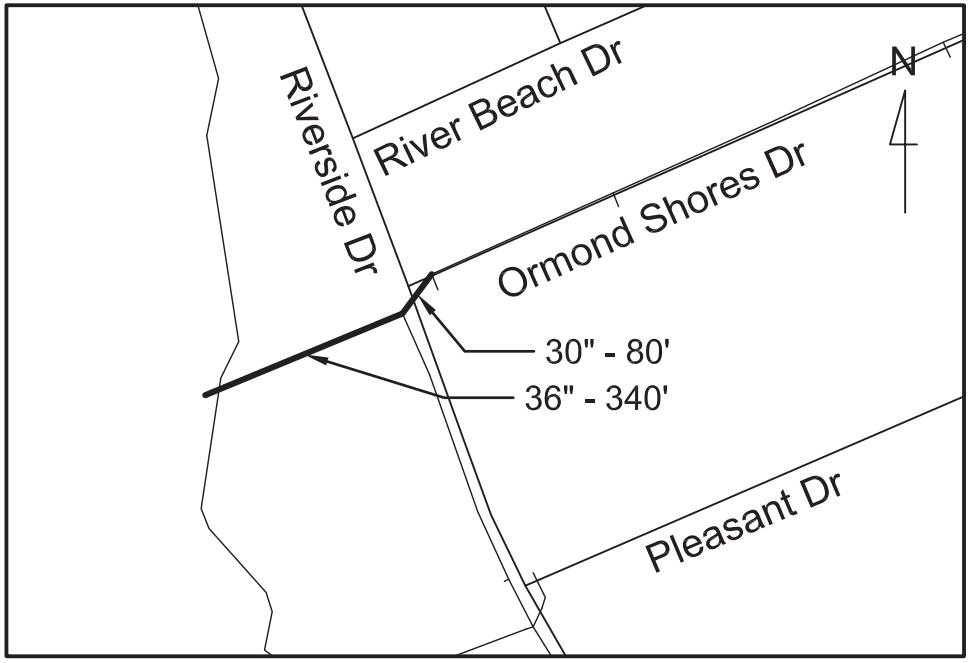
SHEET 2 OF 2

STORM WATER PIPE REHABILITATION: FY 17-18



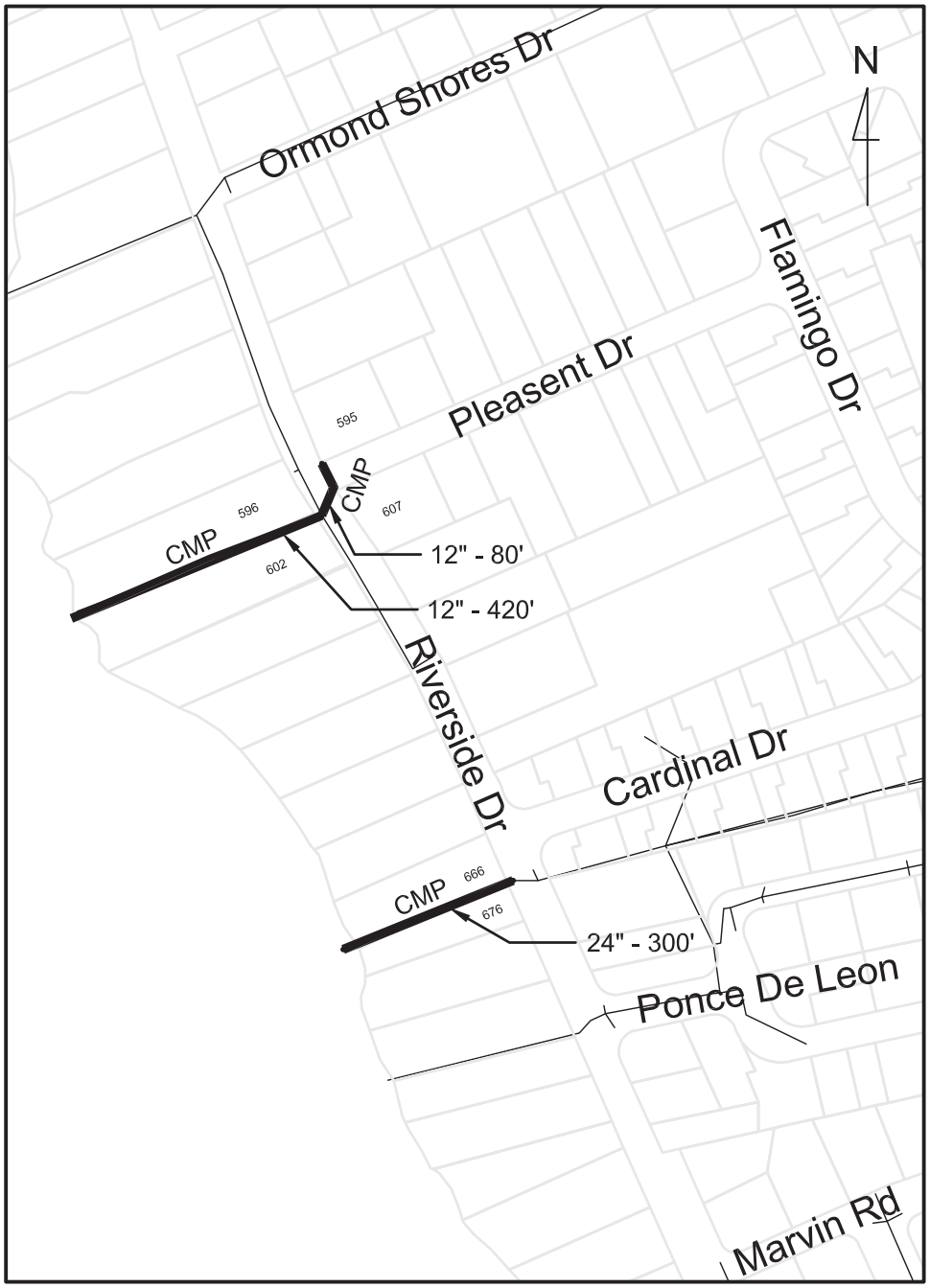


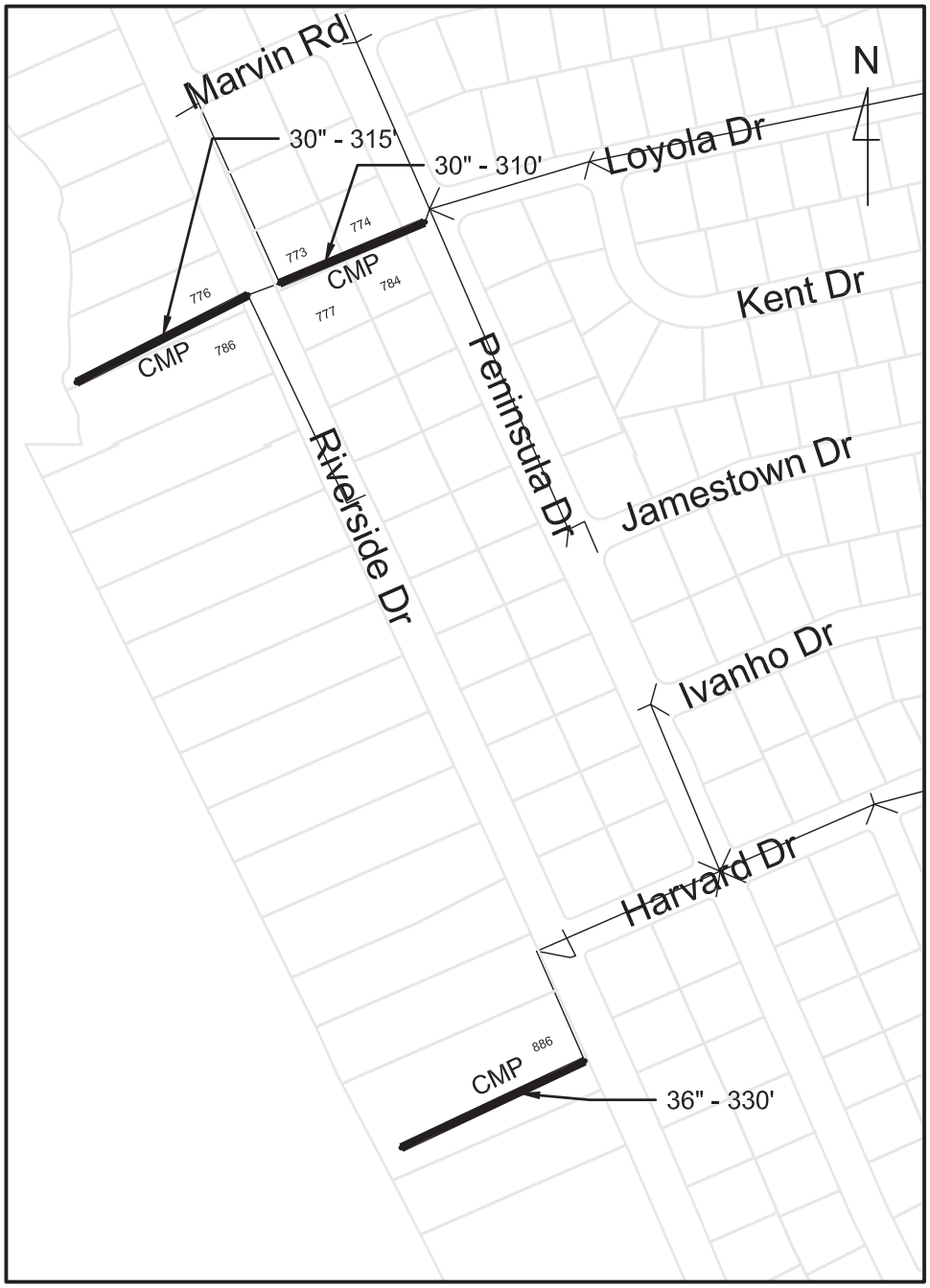




SHEET 1 OF 1

STORM WATER PIPE REHABILITATION: FY 18-19





SHEET 1 OF 1

CAPITAL PROJECT DETAIL

PROJECT TITLE

Hickory Village Outfall Ditch Easement

PROJECT#

107148

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Hickory Village

MANAGEMENT

Engineering

PROJECT SCOPE

Phase 1 includes the purchase a drainage maintenance easement along the ditch serving Hickory Village Stormwater pond outfall from the pond to the pipe at Center Street. Phase 2 would include the purchase of property on the south side of the outfall ditch and construction of a pond for additional storage capacity.

JUSTIFICATION

Hickory Villages pond is undersized and frequently backs up resulting in flooding and the closure of Fleming Avenue in addition to flooding of the residences within Hickory Village and along Fleming Street. An engineering study was conducted and recommendations include cleaning the outfall ditch which has become overgrown and silted thus obstructing flow from the pond and resulting in the subsequent flooding. The outfall ditch is located on private property with no drainage easement to allow the City to maintain the ditch. The owners have objected to allowing City staff access for maintenance but have indicated a willingness to sell a drainage easement to the City.

PROJECT COST METHODOLOGY

Costs for the easement based on Volusia County's property appraisers website property costs.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Phase 1 - Purchase easements for outfall Ditc	35,000	0	0	0	0	35,000
Phase 2 - Purchase property for adtl storage	0	20,000	0	0	0	20,000
Total	35,000	20,000	0	0	0	55,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Stormwater Charges	35,000	20,000	0	0	0	55,000
Total	35,000	20,000	0	0	0	55,000

KANEY & OLIVARI, P.L.
ATTORNEYS AT LAW

55 Seton Trail · Ormond Beach, FL 32176
Ph (386) 675-0691 · Fax (386) 672-7003
www.KaneyOlivari.com

Jonathan D. Kaney Jr.
Jonathan D. Kaney III
Michael P. Olivari

April 7, 2015

Ann-Margret Emery, Esq.
City of Ormond Beach
P.O. Box 277
Ormond Beach, FL 32175

Re: 600 & 604 S. Center Street, Ormond Beach, FL 32174
Our Client: Robert Parks, Sr.

Dear Ann-Margret:

I spoke to my client regarding the City's proposed five (5) year temporary drainage easement alongside and including his lots at 600 & 604 S. Center Street, Ormond Beach.

My client is not interested in giving away any property rights, nor is he interested in revisiting this matter yet again in five more years. In addition to costing him time and money every time it comes up, it is also a matter of great frustration for him.

Having said that, my client remains willing to sell the City a permanent drainage maintenance easement for each lot. Although the City did not counter his prior offer, he has authorized me to reduce his offer from $10,000 per lot to $9,000 per lot, for a total of $18,000. He advises that he will not again bid against himself.

As with before, the offer is contingent upon the following: (1) the City will not widen the ditch on my client's side; (2) the City will not disturb the trees on my client's side; (3) the City will not place any dredge on my client's side; (4) the City will use survey (depth/width) markers when dredging; and (5) maintenance by the City limited to the hours from 7:30 am through 4:30 pm.

Sincerely,

Jonathan D. Kaney III
Direct (386) 675-0691
Email: jake@kaneyolivari.com

JDK:lcs
cc: Robert Parks, Sr.

RECEIVED
APR - 9 201
CITY OF ORMOND BEACH
CITY ATTORNEY'S OFFICE

{595, 003, JAKEK, JAKEK, 00020877.1 }

PARKS DITCH
PROPERTY APPRAISER SUMMARY
PROPOSED DRAINAGE EASEMENT VALUE

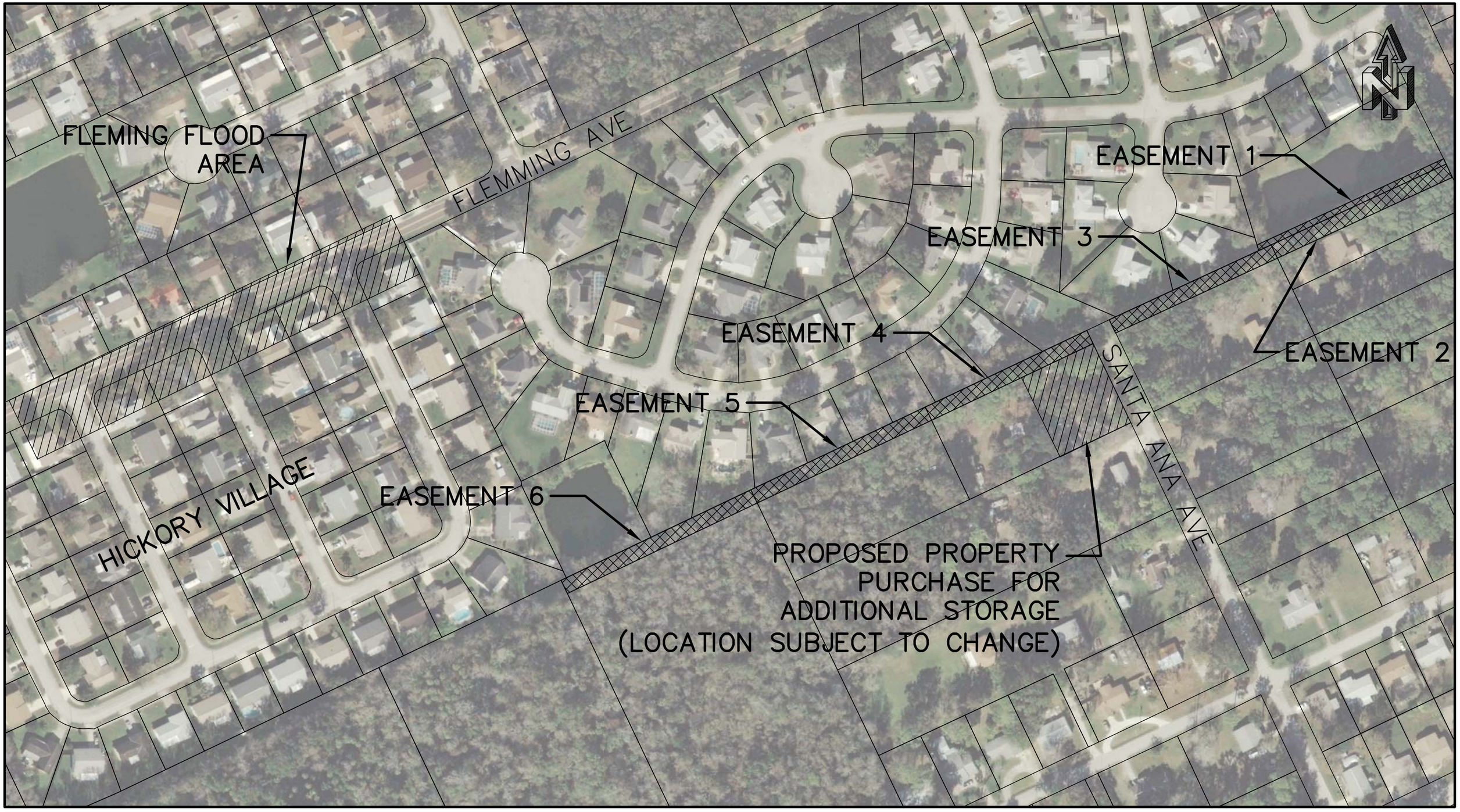
2014

Based on TOTAL Value

PROPOSED EASEMENT	EASEMENT AREA (SF)	LOT AREA (SF)	PROPERTY ADDRESS	OWNER	STRUCTURE	LAND VALUE	TOTAL VALUE	RATE $/SF	Multiplier	EASEMENT VALUE
1	3524	N/A			NO	N/A	N/A		0.1	
2	8250	26730	600 S Center St	Robert Parks	YES	$ 18,669.00	$ 136,628.00	$ 5.11	0.1	$ 13,662.80
3	7625	49715	604 S Center St	Robert Parks	YES	$ 28,500.00	$ 104,399.00	$ 2.10	0.1	$ 10,439.90
4	7625	50020	612 Santa Ana Ave	James Ostrowski	NO	$ 28,500.00	$ 32,236.00	$ 0.64	0.1	$ 3,223.60
5	8250	54450	(none) Arroyo Pkwy	James Ostrowski	NO	$ 4,688.00	$ 4,688.00	$ 0.09	0.1	$ 468.80
6	8250	228254	845 Arroyo Pkwy	Richard Beazley	NO	$ 52,500.00	$ 52,500.00	$ 0.23	0.1	$ 5,250.00

PROPERTY PURCHASE FOR FUTURE RETENSION POND
Corner of 612 Santa Ana Ave
Area 0.5 Acres
Cost $ 14,036.39

HICKORY VILLAGE OUTFALL DITCH EASEMENTS



DATE: 5/11/15

SHEET 1 OF 1

ZEV COHEN
& ASSOCIATES, INC.
Main Office: Ormond Beach
St. Augustine • Amelia Island • Edgewater

300 Interchange Blvd
Ormond Beach, FL 32174
386-677-2482 • Fax: 386-677-2505
Website: www.ZevCohen.com

Hickory Village Stormwater Pond

ZC-14178

Project Description:

The Hickory Village residential neighborhood is located off of Fleming Ave. consisting of three streets (Aaron Cir., Thomas St., Trina St.) within the City of Ormond Beach. The regional area between Nova Rd. and US-1 is located in the Laurel Creek and Thompson Creek drainage basins. These areas, including Hickory Village have been experiencing flooding conditions during past and recent rainfall events. Zev Cohen & Associates, Inc. (ZCA) has been contracted by the City of Ormond Beach to investigate and analyze the existing stormwater pond and provide recommendations toward improving the flood conditions as well as the performance of the stormwater pond.

Findings and Assumptions:

The outfall for Hickory Village is an existing ditch located on the south border of the neighborhood. The City commentated a specific purpose topo survey of the adjacent ditch system and its connection to the stormwater pond. Upon review of the survey, we noted that the existing ditch is used as point of discharge for the Hickory Village stormwater pond and does not have unobstructed downstream outfall towards the Center St. culverts. The ditch has been filled in by natural vegetation, fallen trees, and bottom siltation over the years and is in need of re-grading/cleaning in order to perform at full capacity.

To better understand the operating conditions of the pond, ZCA has reviewed the original design plans and has prepared stormwater calculations to model the conditions. Based on our findings, the stormwater pond was apparently designed to hold 0.5" of stormwater runoff over the entire basin area (old SJRWMD and/or FDEP criteria). The top of bank elevation of the stormwater pond was not clear on the design plans. However, in reviewing the survey provided by the City, we have assumed the top of bank elevation to be at el. 5.0'. Based on our stormwater analysis, the pond is not sufficiently sized to provide treatment for pollution abatement volume based on current criteria and is not large enough to handle storm events without adversely affecting the neighborhood.

More specifically, ZCA has modeled the existing stormwater pond for mean annual-24hr, 25yr-24hr and 100yr-24hr storm events by utilizing the original design criteria for the outfall structure. We have also modeled the stormwater pond based on existing conditions as shown in the survey document. These two conditions are different because the overflow structure for the stormwater pond has been removed and the pond has been directly interconnected with the ditch system at approximately elevation 1.0'. We have used several tailwater conditions in order

to understand the effects of storm events during various conditions (steady at SHWE of 3.5', rising from 3.5' to 5.0', and steady at 6.0').

The stormwater model results for the original design conditions show the high water elevations exceeding the top of bank elevation by a couple of feet, thus creating flooding within the neighborhood.

ZCA also modeled the stormwater pond to include a potential drainage control structure with an internal backflow prevention device in order to provide positive flow to the ditch and disallow backflow of water from the ditch to the pond. Due to the size of the pond versus the drainage area, the high water elevations exceeded the top of bank elevation of the pond thus creating a negative affect within the neighborhood.

The stormwater pond performs best with the current conditions in terms of maintaining low water stages during storm events. This is due to the existing low connection to the southern ditch with a 20ft wide natural weir at el. 1.0'. The downside of this connection is the fact that the stormwater pond is affected by the rising elevations within the ditch and the pond provides no retention or treatment functions.

Furthermore, we have looked at the Hickory Village neighborhood and its' overall drainage basin as a whole. We have found that the outfall ditch, the adjacent neighborhoods, the adjacent drainage features and the historic flooding in the vicinity are all linked hydraulically in extreme conditions. Thus, minor adjustments or improvements to the localized pond will not assist with regional flooding or improve the Hickory Village conditions. However, for smaller events, localized improvements may provide a benefit.

Recommendations:

Below are our recommendations going forward toward improving the drainage conditions at the Hickory Village Subdivision;

- Clean up & re-grade the southern ditch to the Center St. culverts in order to maximize the capacity of the ditch and provide unimpeded outfall.
- Investigate the feasibility of interconnecting the Hickory Village stormwater pond with the Laurel Oaks pond located across Fleming Ave.
    - Connect the inlet structures on Fleming Ave. with an internal backflow preventer to avoid stormwater from northern areas backing up to the Hickory Village Pond
    - Further stormwater analysis & modeling will be necessary to determine the feasibility of this interconnect.
    - SJRWMD permit will be required for interconnecting the ponds.
- Create additional stormwater storage on City owned land near Hickory Village pond and hydraulically connect the stormwater pond in order to lower the stages

HICKORY VILLAGE STORMWATER POND

ZC 14178

STORMWATER CALCULATIONS

City of Ormond Beach

April 1, 2015

MDD/HK

ZEV COHEN
& ASSOCIATES, INC.

M. DWIGHT DURANT, P.E.
Haluk "Luke" Kilic

300 Interchange Blvd, Ormond Beach, FL 32174
386.677.2482 • Fax 386.677.2505
Engineering • Planning • Landscape Architecture

ZEV COHEN
& ASSOCIATES, INC.

300 Interchange Blvd , Ormond Beach FL 32174
386.677.2482 ● Fax 386.677.2505
Engineering ● Planning ● Landscape Architecture

Project: HICKORY VILLAGE STORMWATER POND
Project #: ZC 14178
Date: April 1, 2015
By: MDD/HK

Description:
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2. CURRENT CONDITIONS-NODAL DIAGRAM
3. BASIN DATA
4. P.A.V. CALCULATIONS
5. STAGE STORAGE

E. ICPR ROUTING (MEAN ANNUAL & 25YR-24HR STORM EVENTS)
1. INPUT REPORT
2. NODE MIN/MAX REPORT

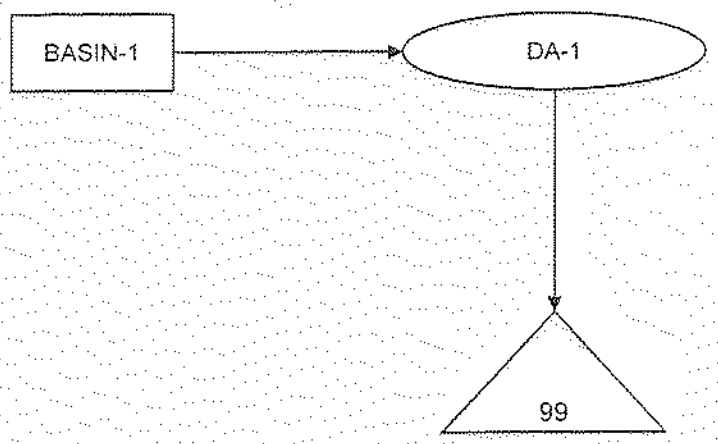
ZEV COHEN
& ASSOCIATES, INC.

300 Interchange Blvd , Ormond Beach FL 32174
386.677.2482 ● Fax 386.677.2505
Engineering ● Planning ● Landscape Architecture

Project: HICKORY VILLAGE STORMWATER POND
Project #: ZC 14178
Date: February 3, 2015
By: MDD/HK

Description:

Current Conditions Nodal Diagram



ZEV COHEN
& ASSOCIATES, INC.

Project: HICKORY VILLAGE STORMWATER POND
Project #: ZC 14178
Date: April 1, 2015
By: MDD/HK

300 Interchange Blvd , Ormond Beach FL 32174
386.677.2482 ● Fax 386.677.2505
Engineering ● Planning ● Landscape Architecture

Description:
Post-Development Basin Data
Basin-1

1. Area Calculation

Impervious Area (Roadway, Sidewalks, Buildings, etc.)= 365,468 sf = 8.390 ac

Pervious Area= 297,428 sf = 6.828 ac

Total Impervious Area = 365,468 sf = 8.390 ac

Total Area = 662,896 sf = 15.218 ac

2. Composite CN

Cover (Soil Group)	CN	Area (sf)	Area (ac)	CN*Area (ac)
Impervious Area (Roadway, Sidewalks, Buildings, etc.)=	98	365,468 sf	8.390 ac	822.219
Pervious Area=	49	297,428 sf	6.828 ac	334.572
Total		**662,896 sf**	**15.218 ac**	**1156.791**

CN = CN*Area / Total Area

CN (including DCIA) = 76.0

3. Runoff Coefficient and Time of Concentration

Assume a time of concentration of: 10 min

C = 0.496
Time of Conc. = 10 min

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386.677.2482 ● Fax 386.677.2505
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Project: HICKORY VILLAGE STORMWATER POND
Project #: ZC 13088
Date: April 1, 2015
By: HLK

Description:
Pollution Abatement Volume Calculations
Basin 1

Criteria: Wet Detention
On-Line
Class III

PAV = 1 inch over total area or 2.5 inches over impervious area, whichever is greater

Option 1: 1" Runoff from entire site

Total area * 1" * (1'/12") = 1.268 ac-ft

Since Option 2 > Option 1, Option 2 governs

Option 2: 2.5 inches over impervious area

Total Impervious area * 2.5 inches = 1.748 ac-ft

Discharge to OFW Waters?: NO

Since discharge is not to OFW waters, no extra treatment required

Extra volume due to OFW considerations = 0.000 ac-ft

PAV = 1.748 ac-ft

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386.677.2482 ● Fax 386.677.2505
Engineering ● Planning ● Landscape Architecture

Project: HICKORY VILLAGE STORMWATER POND
Project #: ZC 14178
Date: April 1, 2015
By: MDD/HK

Description:
Stage Storage Calculations
DA-1

Elevation	Area (sf)	Area (ac)	Volume (cf)	Volume (ac-ft)
3.5	24,263	0.557	0	0
4.0	25,494	0.585	12,439	0.286
5.0	28,033	0.644	39,203	0.900

MINIMUM WEIR ELEVATION

1. Pollution Abatement Volume (Minimum Treatment Volume)

= 1.748 ac-ft = 76,139 cuft

implies a minimmum weir elevation of: #DIV/0!

2. Set weir at elevation: 4.00 ft

3. Volume at weir elevation:

= .286 ac-ft = 12,458 cuft

ICPR Routing

CURRENT CONDITIONS

Mean Annual-24hr, 25 Year-24hr, 100 Year-2hr Storm Events

ZEV COHEN
& ASSOCIATES, INC.

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Engineers • Planners • Landscape Architecture

==== Basins ====

Name: Basin 1 | Node: DA-1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256
Rainfall File: Scsiii
Rainfall Amount(in): 0.000
Area(ac): 15.218
Curve Number: 76.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 24.00
Time of Conc(min): 10.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

==== Nodes ====

Name: 99 | Base Flow(cfs): 0.00 | Init Stage(ft): 6.000
Group: BASE | Warn Stage(ft): 6.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	6.00
12.00	6.00
24.00	6.00
48.00	6.00

Name: DA-1 | Base Flow(cfs): 0.00 | Init Stage(ft): 3.500
Group: BASE | Warn Stage(ft): 5.000
Type: Stage/Area

Stage(ft)	Area(ac)
3.50	0.5570
4.00	0.5850
5.00	0.6440

==== Drop Structures ====

Name: | From Node: | Length(ft): 0.00
Group: BASE | To Node: | Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	0.00	0.00
Rise(in):	0.00	0.00
Invert(ft):	0.000	0.000
Manning's N:	0.000000	0.000000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```
==========================================================================================
==== Weirs ===============================================================================
==========================================================================================

        Name: DA-1>99                 From Node: 99
       Group: BASE                      To Node: DA-1
        Flow: Both                        Count: 1
        Type: Vertical: Mavis        Geometry: Rectangular

                     Span(in): 180.00
                     Rise(in): 48.00
                   Invert(ft): 1.000
       Control Elevation(ft): 1.000
                                                    TABLE
             Bottom Clip(in): 0.000
                Top Clip(in): 0.000
        Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600


==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

        Name: 100YR
    Filename: Q:\13088\ICPR\100YR.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 13.00

Time(hrs)        Print Inc(min)
---------------- ----------------
36.000           15.00

------------------------------------------------------------------------------------------
        Name: 25 Year
    Filename: Q:\13088\ICPR\25 Year.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 9.50

Time(hrs)        Print Inc(min)
---------------- ----------------
36.000           15.00

------------------------------------------------------------------------------------------
        Name: Mean Annual
    Filename: Q:\13088\ICPR\Mean Annual.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 5.00

Time(hrs)        Print Inc(min)
---------------- ----------------
36.000           15.00

==========================================================================================
==== Routing Simulations =================================================================
==========================================================================================

        Name: 100YR                 Hydrology Sim: 100YR
```

Filename: Q:\13088\ICPR\100YR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: 25 Year Hydrology Sim: 25 Year
Filename: Q:\13088\ICPR\25 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: Mean Annual Hydrology Sim: Mean Annual
Filename: Q:\13088\ICPR\Mean Annual.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: PAV Recovery Hydrology Sim:
Filename: Q:\13088\ICPR\PAV Recovery.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Existing Conditions)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	100YR	12.27	3.818	5.000	0.0050	25039	12.00	4.647	0.00	0.000
99	BASE	25 Year	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	25 Year	12.26	3.688	5.000	0.0050	24722	11.99	2.406	0.00	0.000
99	BASE	Mean Annual	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	Mean Annual	12.27	3.563	5.000	0.0021	24417	12.00	0.622	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater at 3.5')

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Existing Conditions)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	12.00	5.000	5.000	0.0021	0	0.00	0.000	23.34	3.520
DA-1	BASE	100YR	12.00	5.210	5.000	0.0050	28593	11.87	6.787	0.00	0.000
99	BASE	25 Year	12.00	5.000	5.000	0.0021	0	0.00	0.000	19.29	3.529
DA-1	BASE	25 Year	12.00	5.137	5.000	-0.0050	28404	16.73	5.621	0.00	0.000
99	BASE	Mean Annual	12.00	5.000	5.000	0.0021	0	0.00	0.000	16.48	3.408
DA-1	BASE	Mean Annual	12.00	5.045	5.000	0.0050	28169	13.74	6.246	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater at 3.5' to 5.0')

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Existing Conditions)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	456.505
DA-1	BASE	100YR	12.26	6.127	5.000	0.0094	30948	0.00	456.505	0.00	0.000
99	BASE	25 Year	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	456.505
DA-1	BASE	25 Year	12.25	6.058	5.000	0.0094	30772	0.00	456.505	0.00	0.000
99	BASE	Mean Annual	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	456.505
DA-1	BASE	Mean Annual	12.25	6.009	5.000	0.0094	30647	0.00	456.505	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater steady at 6.0')

ICPR Routing

DESIGN CRITERIA

Mean Annual-24hr, 25 Year-24hr, 100 Year-2hr Storm Events

ZEV COHEN
& ASSOCIATES, INC.

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==== Basins ====

Name: Basin 1 | Node: DA-1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: Scsiii | Storm Duration(hrs): 24.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 15.218 | Time Shift(hrs): 0.00
Curve Number: 76.00 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==== Nodes ====

Name: 99 | Base Flow(cfs): 0.00 | Init Stage(ft): 3.500
Group: BASE | Warn Stage(ft): 3.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	3.50
12.00	3.50
24.00	3.50
48.00	3.50

Name: DA-1 | Base Flow(cfs): 0.00 | Init Stage(ft): 3.500
Group: BASE | Warn Stage(ft): 5.000
Type: Stage/Area

Stage(ft)	Area(ac)
3.50	0.5570
4.00	0.5850
5.00	0.6440

==== Drop Structures ====

Name: | From Node: | Length(ft): 0.00
Group: BASE | To Node: | Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	0.00	0.00
Rise(in):	0.00	0.00
Invert(ft):	0.000	0.000
Manning's N:	0.000000	0.000000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```
==========================================================================================
==== Weirs ===============================================================================
==========================================================================================

        Name: DA-1>99                 From Node: 99
       Group: BASE                     To Node: DA-1
        Flow: Both                        Count: 1
        Type: Vertical: Mavis        Geometry: Rectangular

                     Span(in): 72.00
                     Rise(in): 12.00
                   Invert(ft): 4.000
       Control Elevation(ft): 4.000
                                                   TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600


------------------------------------------------------------------------------------------
        Name: DA-1>99OR               From Node: 99
       Group: BASE                     To Node: DA-1
        Flow: Both                        Count: 1
        Type: Vertical: Mavis        Geometry: Circular

                     Span(in): 8.00
                     Rise(in): 8.00
                   Invert(ft): 3.000
       Control Elevation(ft): 3.000
                                                   TABLE
              Bottom Clip(in): 0.000
                 Top Clip(in): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600


==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

        Name: 100YR
    Filename: Q:\13088\ICPR\100YR.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 13.00

Time(hrs)        Print Inc(min)
---------------- ---------------
36.000           15.00

------------------------------------------------------------------------------------------
        Name: 25 Year
    Filename: Q:\13088\ICPR\25 Year.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 9.50

Time(hrs)        Print Inc(min)
---------------- ---------------
36.000           15.00
```

```
--------------------------------------------------------------------------------
        Name: Mean Annual
    Filename: Q:\13088\ICPR\Mean Annual.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 5.00

Time(hrs)       Print Inc(min)
--------------- ---------------
36.000          15.00

================================================================================
==== Routing Simulations ======================================================
================================================================================

        Name: 100YR                 Hydrology Sim: 100YR
    Filename: Q:\13088\ICPR\100YR.I32

     Execute: Yes          Restart: No            Patch: No
 Alternative: No

      Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500
  Time Step Optimizer: 0.000
      Start Time(hrs): 0.000                      End Time(hrs): 36.00
   Min Calc Time(sec): 0.5000                Max Calc Time(sec): 60.0000
     Boundary Stages:                            Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
36.000          15.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------
        Name: 25 Year               Hydrology Sim: 25 Year
    Filename: Q:\13088\ICPR\25 Year.I32

     Execute: Yes          Restart: No            Patch: No
 Alternative: No

      Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500
  Time Step Optimizer: 0.000
      Start Time(hrs): 0.000                      End Time(hrs): 36.00
   Min Calc Time(sec): 0.5000                Max Calc Time(sec): 60.0000
     Boundary Stages:                            Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
36.000          15.000

Group           Run
--------------- -----
BASE            Yes


--------------------------------------------------------------------------------
        Name: Mean Annual           Hydrology Sim: Mean Annual
    Filename: Q:\13088\ICPR\Mean Annual.I32

     Execute: Yes          Restart: No            Patch: No
 Alternative: No
```

Max Delta Z(ft): 1.00
Time Step Optimizer: 0.000
Start Time(hrs): 0.000
Min Calc Time(sec): 0.5000
Boundary Stages:

Delta Z Factor: 0.00500
End Time(hrs): 36.00
Max Calc Time(sec): 60.0000
Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: PAV Recovery Hydrology Sim:
Filename: Q:\13088\ICPR\PAV Recovery.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00
Time Step Optimizer: 10.000
Start Time(hrs): 0.000
Min Calc Time(sec): 0.5000
Boundary Stages:

Delta Z Factor: 0.00500
End Time(hrs): 36.00
Max Calc Time(sec): 60.0000
Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Design Criteria)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	100YR	12.55	7.740	5.000	0.0050	35094	12.25	56.045	0.00	0.000
99	BASE	25 Year	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	25 Year	12.49	6.383	5.000	-0.0050	31607	12.25	33.389	0.00	0.000
99	BASE	Mean Annual	0.00	3.500	3.500	0.0000	0	0.00	0.000	0.00	0.000
DA-1	BASE	Mean Annual	12.47	4.882	5.000	0.0050	27750	12.13	16.090	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater at SHWE - 3.5')

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Design Criteria)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	12.00	5.000	5.000	0.0021	0	0.00	0.000	5.45	1.819
DA-1	BASE	100YR	12.56	8.181	5.000	0.0050	36228	12.25	57.164	0.00	0.000
99	BASE	25 Year	12.00	5.000	5.000	0.0021	0	0.00	0.000	5.58	1.910
DA-1	BASE	25 Year	12.49	6.877	5.000	0.0050	32877	12.25	34.069	0.00	0.000
99	BASE	Mean Annual	12.00	5.000	5.000	0.0021	0	0.00	0.000	5.58	1.910
DA-1	BASE	Mean Annual	12.41	5.468	5.000	-0.0050	29257	12.25	9.136	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater at from 3.5' - 5.0')

Hickory Village Stormwater Pond
ZC 04178
Stormwater Calculations (Design Criteria)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	38.017
DA-1	BASE	100YR	12.57	9.062	5.000	0.0050	38493	12.25	58.181	0.00	0.000
99	BASE	25 Year	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	38.017
DA-1	BASE	25 Year	12.50	7.803	5.000	0.0050	35256	0.00	38.017	0.00	0.000
99	BASE	Mean Annual	0.00	6.000	6.000	0.0000	0	0.00	0.000	0.00	38.017
DA-1	BASE	Mean Annual	12.42	6.448	5.000	0.0050	31774	0.00	38.017	0.00	0.000

Zev Cohen & Associates, Inc.
Nodes Min Max Report (tailwater steady at 6.0'')

ICPR Routing

POTENTIAL DRAINAGE CONTROL STRUCTURE

Mean Annual-24hr, 25 Year-24hr, 100 Year-2hr Storm Events

ZEV COHEN
& ASSOCIATES, INC.

300 Interchange Blvd Ormond Beach, FL 32174
386.677.2482 • Fax 386.677.2505
Engineers • Planners • Landscape Architecture

Hickory Village Stomwater Pond
ZC 14078
Stormwater Calculations (Potential Drainage Control Structure)
03.31.15

==== Basins ====

Name: Basin 1 | Node: DA-1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 | Peaking Factor: 256.0
Rainfall File: Scsiii | Storm Duration(hrs): 24.00
Rainfall Amount(in): 0.000 | Time of Conc(min): 10.00
Area(ac): 15.218 | Time Shift(hrs): 0.00
Curve Number: 76.00 | Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==== Nodes ====

Name: 99 | Base Flow(cfs): 0.00 | Init Stage(ft): 3.500
Group: BASE | Warn Stage(ft): 3.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	3.50
12.00	3.50
24.00	3.50
48.00	3.50

Name: DA-1 | Base Flow(cfs): 0.00 | Init Stage(ft): 3.500
Group: BASE | Warn Stage(ft): 5.000
Type: Stage/Area

Stage(ft)	Area(ac)
3.50	0.5570
4.00	0.5850
5.00	0.6440

==== Cross Sections ====

Name: | Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N

==== Drop Structures ====

Name: DA-1>99 | From Node: DA-1 | Length(ft): 15.00
Group: BASE | To Node: 99 | Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	45.00	45.00
Rise(in):	29.00	29.00

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Positive
Entrance Loss Coef: 0.000

Invert(ft):	0.000	-0.200	Exit Loss Coef:	1.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in):	0.000	0.000	Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 4 for Drop Structure DA-1>99 ***

TABLE

Count:	2	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	72.00	Invert(ft):	4.000
Rise(in):	12.00	Control Elev(ft):	4.000

*** Weir 2 of 4 for Drop Structure DA-1>99 ***

TABLE

Count:	2	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	48.00	Invert(ft):	4.000
Rise(in):	12.00	Control Elev(ft):	4.000

*** Weir 3 of 4 for Drop Structure DA-1>99 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	72.00	Invert(ft):	5.000
Rise(in):	48.00	Control Elev(ft):	5.000

*** Weir 4 of 4 for Drop Structure DA-1>99 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	8.00	Invert(ft):	3.000
Rise(in):	8.00	Control Elev(ft):	3.000

==========
==== Weirs ==========
==========

Name:		From Node:	
Group:	BASE	To Node:	
Flow:	Both	Count:	1
Type:	Horizontal	Geometry:	Circular
Span(in):	0.00		
Rise(in):	0.00		
Invert(ft):	0.000		
Control Elevation(ft):	0.000		

TABLE

Bottom Clip(in):	0.000
Top Clip(in):	0.000

Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

==== Hydrology Simulations ====

Name: 100YR
Filename: Q:\13088\ICPR\100YR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.00

Time(hrs)	Print Inc(min)
36.000	15.00

Name: 25 Year
Filename: Q:\13088\ICPR\25 Year.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 9.50

Time(hrs)	Print Inc(min)
36.000	15.00

Name: Mean Annual
Filename: Q:\13088\ICPR\Mean Annual.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 5.00

Time(hrs)	Print Inc(min)
36.000	15.00

==== Routing Simulations ====

Name: 100YR Hydrology Sim: 100YR
Filename: Q:\13088\ICPR\100YR.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group Run

BASE	Yes

Name: 25 Year Hydrology Sim: 25 Year
Filename: Q:\13088\ICPR\25 Year.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: Mean Annual Hydrology Sim: Mean Annual
Filename: Q:\13088\ICPR\Mean Annual.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Name: PAV Recovery Hydrology Sim:
Filename: Q:\13088\ICPR\PAV Recovery.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 36.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
36.000	15.000

Group	Run
BASE	Yes

Hickory Village Stormwater Pond
ZC 14078
Stormwater Calculations (Potential Drainage Control Structure)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	3.500	3.500	0.0000	0	12.42	73.696	0.00	0.000
DA-1	BASE	100YR	12.42	6.069	5.000	0.0050	30799	12.25	104.378	12.42	73.696
99	BASE	25 Year	0.00	3.500	3.500	0.0000	0	12.34	60.090	0.00	0.000
DA-1	BASE	25 Year	12.34	5.137	5.000	0.0050	28406	12.25	70.653	12.34	60.090
99	BASE	Mean Annual	0.00	3.500	3.500	0.0000	0	12.35	23.844	0.00	0.000
DA-1	BASE	Mean Annual	12.35	4.496	5.000	0.0049	26757	12.25	28.104	12.35	23.844

Zev Cohen & Associates, Inc.
Nodes Min/Max Report (Tailwater steady at 3.5')

Hickory Village Stomwater Pond
ZC 14078
Stormwater Calculations (Potential Drainage Control Structure)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	12.00	5.000	5.000	0.0021	0	12.43	73.033	0.00	0.000
DA-1	BASE	100YR	12.43	7.029	5.000	0.0050	33266	12.25	104.352	12.43	73.033
99	BASE	25 Year	12.00	5.000	5.000	0.0021	0	12.39	54.002	0.00	0.000
DA-1	BASE	25 Year	12.39	6.119	5.000	0.0050	30928	12.25	70.734	12.39	54.002
99	BASE	Mean Annual	12.00	5.000	5.000	0.0021	0	12.42	20.537	0.00	0.000
DA-1	BASE	Mean Annual	12.42	5.181	5.000	0.0050	28519	12.25	28.119	12.42	20.537

Zev Cohen & Associates, Inc.
Nodes Min/Max Report (Tailwater from 3.5' to 5.0')

Hickory Village Stormwater Pond
ZC 14078
Stormwater Calculations (Potential Drainage Control Structure)
03.31.15

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
99	BASE	100YR	0.00	6.000	6.000	0.0000	0	12.43	71.750	0.00	0.000
DA-1	BASE	100YR	12.43	7.958	5.000	0.0050	35655	12.25	104.357	12.43	71.750
99	BASE	25 Year	0.00	6.000	6.000	0.0000	0	12.41	52.249	0.00	0.000
DA-1	BASE	25 Year	12.41	7.038	5.000	-0.0050	33291	12.25	70.712	12.41	52.249
99	BASE	Mean Annual	0.00	6.000	6.000	0.0000	0	12.76	10.323	0.00	0.000
DA-1	BASE	Mean Annual	12.76	6.044	5.000	0.0050	30735	12.25	28.119	12.76	10.323

Zev Cohen & Associates, Inc.
Nodes Min/Max Report (Tailwater steady at 6.0')

CAPITAL PROJECT DETAIL

PROJECT TITLE

Laurel Creek Stormwater Pump Station Improvements

PROJECT#

107149

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Laurel Creek Pump Station

MANAGEMENT

Engineering

PROJECT SCOPE

Construct Improvements at the pump station to include Variable Frequency Drives (VFD's) for both pumps, new control panel with level sensing and level control, Remote Telemetry Unit (RTU) upgrades to allow remote monitoring and control, and permanent emergency power generator, fuel tank, enclosure and ATS

JUSTIFICATION

The station is designed to provide additional flow capacity within Laurel Creek. The station can be used to 'pre-pump' the upstream Central Park Lakes (recently interconnected) prior to a storm event and reduce flood stages and flooding duration after a storm event. It is not designed to handle the hydraulic peak flow during major storm events. The capacity of the station is limited by the hydraulic gradient and cross sectional area of Laurel Creek.

The existing pump starters are fixed speed 'soft start' drives which do not have variable speed capability. In 'Auto mode, the float switches control operation of the pumps based upon wetwell level. Depending upon the amount of debris on the intake screens and the level of the upstream ponds, the pumps can 'outpump' the intake under certain conditions. The City desires to have certain upgrades which will improve the operational efficiency and reliability of the station.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	360,000	0	0	0	0	360,000
Engineering, CA, Inspection	45,000	0	0	0	0	45,000
Fiber Optics	32,000	0	0	0	0	32,000
Total	437,000	0	0	0	0	437,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Stormwater Charges	437,000	0	0	0	0	437,000
Total	437,000	0	0	0	0	437,000

City of Ormond Beach

Laurel Creek Stormwater Pump Station Additions & Improvements

Prepared by:
QUENTIN L. HAMPTON ASSOCIATES, INC.
-Consulting Engineers-
April 14, 2015

TECHNICAL MEMORANDUM
LAUREL CREEK STORMWATER PUMP STATION ADDITIONS AND IMPROVEMENTS

SCOPE

The City of Ormond Beach has contracted with Quentin L. Hampton Associates, Inc. (QLH) to provide the following engineering services: mechanical, electrical and instrumentation/control elements associated with installation of an emergency power generator, automatic transfer switch, telemetry equipment, and level sensor for remote monitoring and control of an existing stormwater pump station.

The initial phase of the project consists of an evaluation of the station and its current operation and restrictions. The summary of findings will be submitted as a technical memorandum which will include a series of recommendations. The recommendations will define the required design improvements to improve pump station operational efficiency and improve reliability. Cost estimates and preliminary designs for requisite upgrades will be included.

PROJECT DESCRIPTION

The existing Laurel Creek Stormwater Pump Station is sited south of SR40 and east of Nova Rd. in Ormond Beach, FL, see attached Figure #1, 'Vicinity Map. The existing station includes the following components:

- Intake piping and intake screens
- Circular manhole/baffle box upstream of wetwell
- Rectangular wetwell/pump station
- (2) 7,000 gpm axial flow submersible pumps
- (2) 24" discharge pipes and headwalls
- Weir structure with (2) 36" diameter Tideflex check valves
- 'Temporary' portable generator with no automatic transfer switch (ATS)

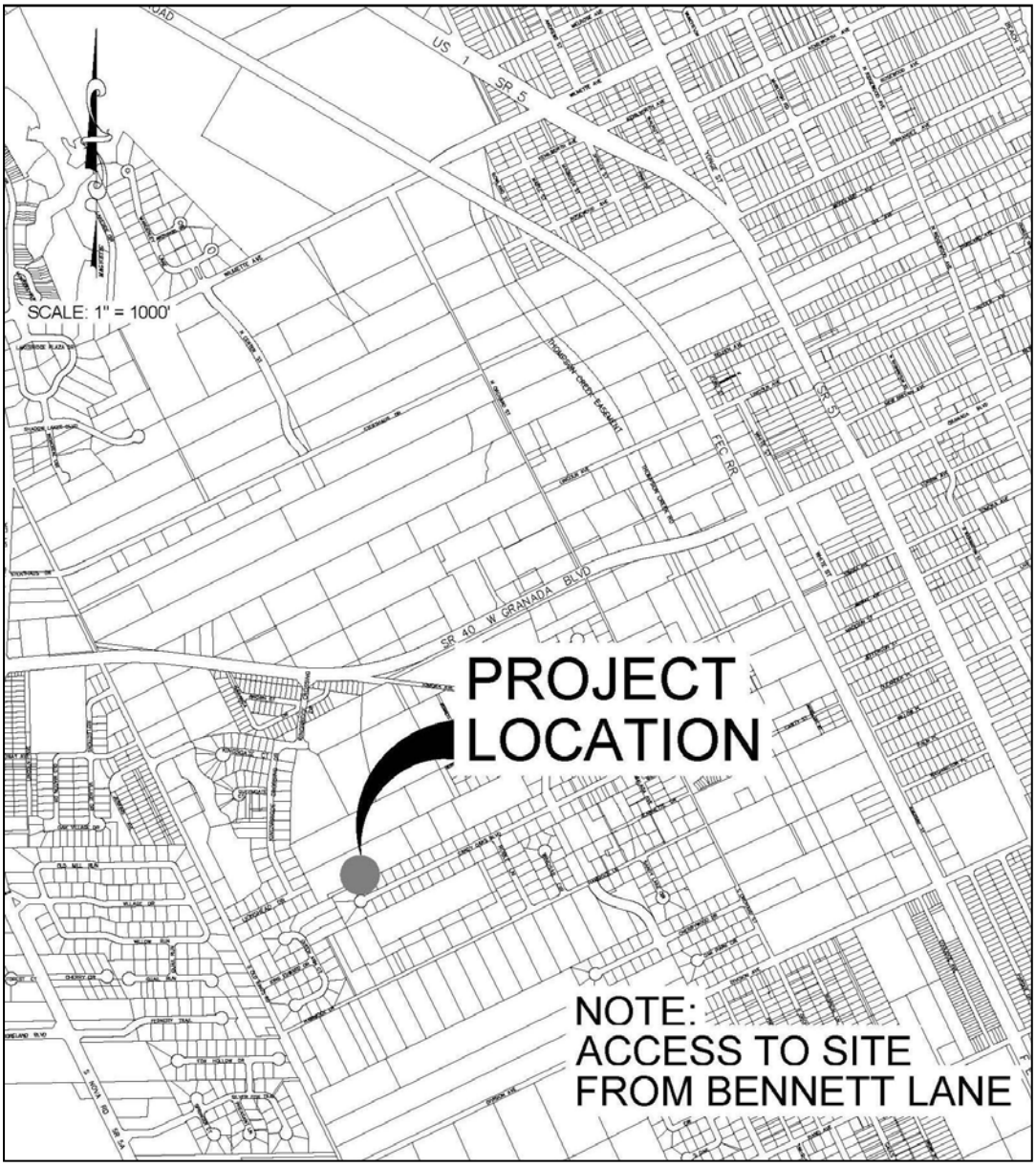
The station is designed to provide additional flow capacity within Laurel Creek. The station can be used to 'pre-pump' the upstream ponds prior to a storm event and reduce flood stages and flooding duration after a storm event. It is not designed to handle the hydraulic peak flow during major storm events. The capacity of the station is limited by the hydraulic gradient and cross sectional area of Laurel Creek.

The existing pump starters are fixed speed 'soft start' drives which do not have variable speed capability. In 'Auto' mode, the float switches control operation of the pumps based upon wetwell level. Depending upon the amount of debris on the intake screens and the level of the upstream ponds, the pumps can 'outpump' the intake under certain conditions.

The City desires to have certain upgrades which will improve the operational efficiency and reliability of the station. The desired improvements include:

- Variable Frequency Drives (VFD's) for both pumps
- New control panel with level sensing and level control
- Remote Telemetry Unit (RTU) upgrades to allow remote monitoring and control
- Permanent emergency power generator, fuel tank, enclosure and ATS

FIGURE #1
VICINITY MAP



CONCEPTUAL DESIGN

The proposed design consists primarily of electrical upgrades as depicted in Figure #2, 'Proposed Pump Station Improvements' and Figure #3, 'Single Line Diagram and Notes'.

FIGURE #2
PROPOSED PUMP STATION IMPROVEMENTS

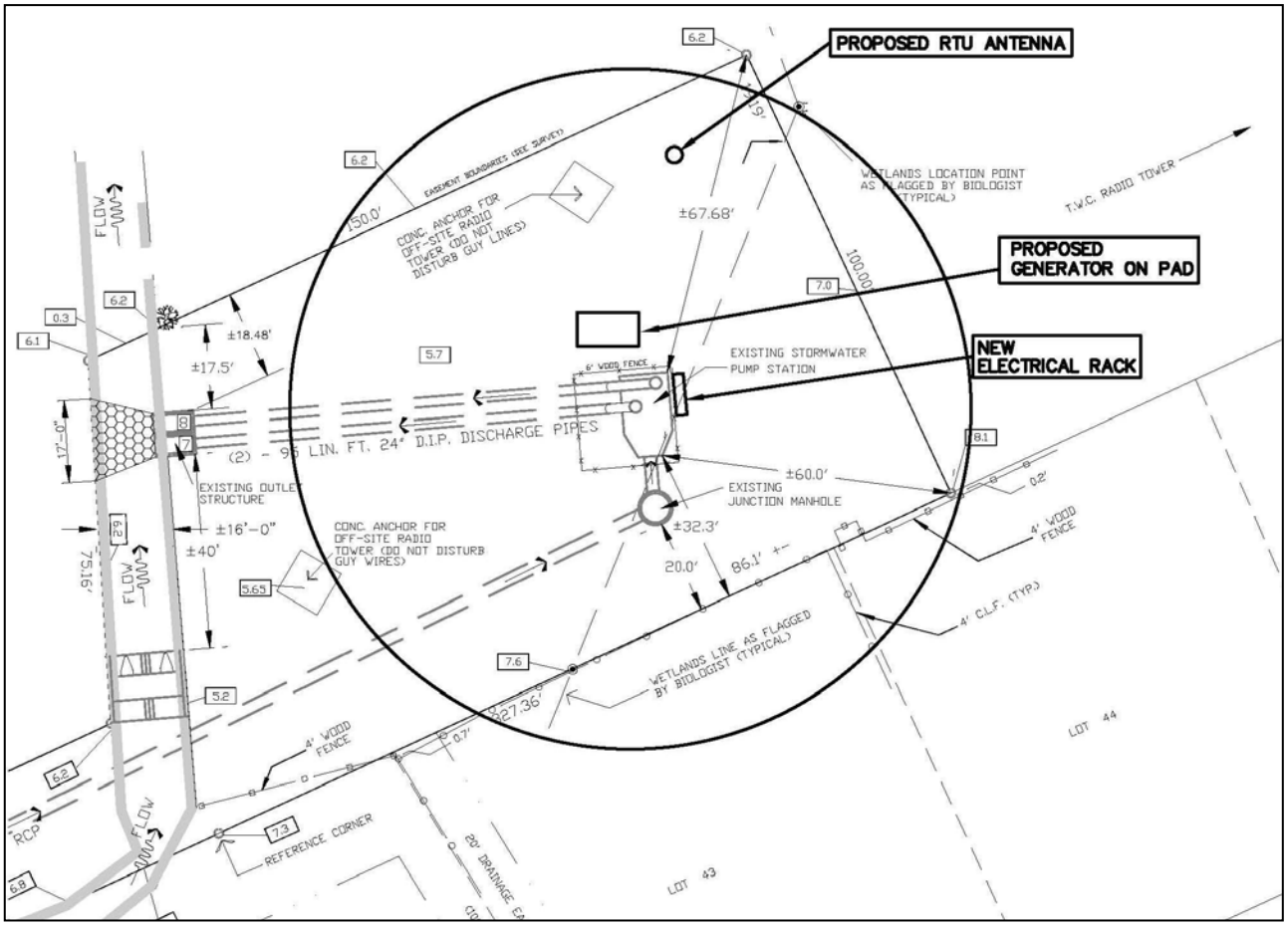
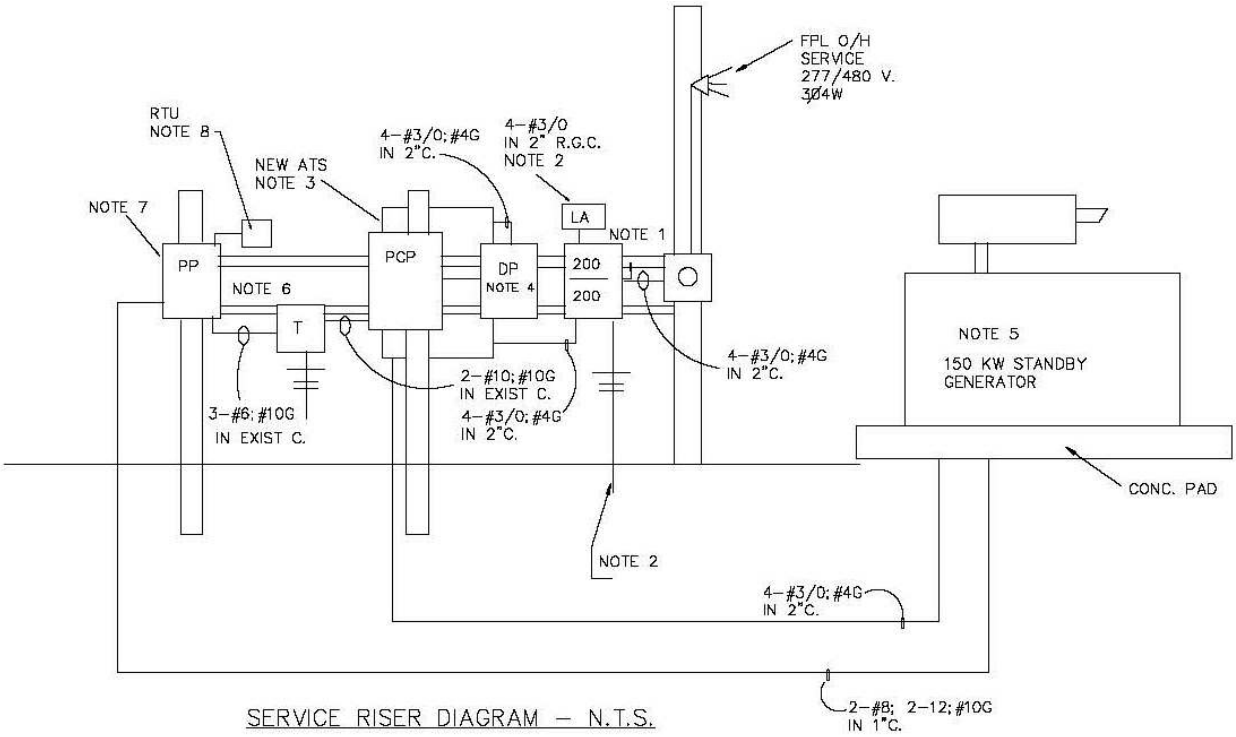


FIGURE #3
SINGLE LINE DIAGRAM AND NOTES



SERVICE RISER DIAGRAM – N.T.S.

NOTES

1. EXISTING 200 AMP 3 POLE SOLID NEUTRAL 277/480 VOLT DISCONNECT.
   FUSES. LABEL AS SERVICE MAIN DISCONNECT AND FEED EQUIPMENT SHOWN.
2. EXISTING LIGHTNING ARRESTOR AND SERVICE GROUND.
3. PROVIDE NEW 200 AMP 3 POLE SOLID NEUTRAL WEATHERPROOF AUTOMATIC TRANSFER SWITCH, 22,000 AIC AT 480 VOLTS.
   INTERRUPT EXISTING SECONDARY FEED BETWEEN NOTE 1 AND NOTE 4 EQUIPMENT, FEED NORMAL POWER AND LOAD SIDE WIRING AS SHOWN.
   FEED GENERATOR POWER INTO SWITCH AS SHOWN.
   MOUNT SWITCH ON BACK OF EXISTING RACK IF SPACE ALLOWS, OTHERWISE EXTEND RACK AND DUPLICATE VERTICAL AND HORIZONTAL MEMBERS TO ALLOW MOUNTING SPACE FOR ATS. ALL WIRING TO BE EXTENDED PER SINGLE LINE DIAGRAM.
   PROVIDE WIRING TO GENERATOR FOR START AND BATTERY CHARGER.
   REFER TO SPECIFICATIONS FOR ADDITIONAL SWITCH FEATURES AND INSTALLATION REQUIREMENTS.
4. REFEED EXISTING 480 VOLT DISTRIBUTION PANEL AS SHOWN.
5. FURNISH AND INSTALL NEW 150 KW 277/480 VOLT STANDBY/CONTINUOUS DUTY RATED DIESEL GENERATOR. GENERATOR TO INCLUDE 400 GALLON DUAL WALL BASE MOUNT FUEL TANK, WEATHERPROOF HOUSING, AND SELF CONTAINED CRITICAL SILENCER.
   FUEL TANK TO INCLUDE LEAK DETECTORS, LOW FUEL ALARM.
   GENERATOR TO INCLUDE BATTERIES AND ALL COOLANTS, CONNECTIONS, ETC. REQUIRED FOR SELF CONTAINED OPERATION.
   PROVIDE NEW WIRING FROM PANEL PP FOR BLOCK HEAT AND HOUSING ACCESSORIES AS SHOWN.
   PROVIDE CONCRETE PAD AND CHAIN LINK PERIMETER FENCING PER DETAILS.
   COORDINATE DOWN TIME AND EQUIPMENT CHANGEOVER WITH OWNERS REP.
   THIS SITE TO INCLUDE A SOUND ATTENUATED ENCLOSURE TO 66 db AT 10 FT. ENCLOSURE TO BE ALUMINUM, WEATHERPROOF, NON WALK IN.
   AUTOMATIC TRANSFER SWITCH TO BE RATED 22,000 A/C AT 480 VOLTS
   WIRE LOW FUEL ALARM, LEAK DETECTOR, PRE–ALARM AND ALARM TO BE WIRED TO RTU.
6. REPLACE EXISTING 5 KVA SINGLE PHASE 480–120/240 VOLT DRY TYPE TRANSFORMER WITH NEW 10 KVA DRY TYPE ENCAPSULATED INDOOR/OUTDOOR TRANSFORMER. REFEED PRIMARY AND SECONDARY WIRING AS SHOWN. GROUND SECONDARY TO EXISTING GROUND.
7. MODIFY EXISTING PANEL PP PER SCHEDULE. ADD NEW BRANCH CIRCUITS AS SHOWN.
8. PROVIDE 120 VOLT CIRCUIT TO NEW RADIO TELEMETRY UNIT (RTU) AS SHOWN. PROVIDE 2" PVC SLEEVE TO RTU ANTENNA LOCATION. PROVIDE SIGNALS FROM PCP TO INCLUDE STATUS TROUBLE AND ALARM 6 – TOTAL. RUN 12 – #14TFFN IN 1" C. TO PCP.
9. PROVIDE RTU ANTENNA AND CONTROLLER WITH ENCLOSURE. RTU SUPPLIER IS
   RTU SHALL MONITOR THE FOLLOWING:
   A) PUMP STATUS ON ALL PUMPS
   B) PHASE MONITOR
   C) MASTER CONTROL RELAYS
   D) PUMP SPEED
   E) WETWELL LEVEL
10. SHAKESPEARS FIBERGLASS POLE MOD. # B520 or B524 or APPROVED EQUAL.

ENGINEER'S OPINION OF PROBABLE COST

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	150 KW Generator and ATS	1	LS	$100,000	$100,000
2	Variable Frequency Drives	2	EA	$40,000	$80,000
3	Instrumentation and Controls	1	LS	$40,000	$40,000
4	Radio Telemetry Upgrades	1	LS	$25,000	$25,000
5	Electrical Upgrades	1	LS	$25,000	$25,000
6	General Conditions	1	LS	$30,000	$30,000
	Total Estimated Construction				*$300,000*
	Contingency @ 20%				$60,000
	Eng., C.A., & Inspection @ 15%				$45,000
	TOTAL ESTIMATED PROJECT COST				**$405,000**

Ormond Beach - Well Fiber Connect - *Connecting to Laurel Creek Pump Station from S Old Kings Road*

Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	1200	Ft	$0.25	$300.00
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	1200	Ft	$0.75	$900.00
3	Furnish & Install Muletape	1200	Ft	$0.25	$300.00
4	Furnish & Install #12 Tracer wire	1200	ft	$0.35	$420.00
5	Furnish & Install 24 count fiber	1200	Ft	$1.44	$1,728.00
6	Furnish & Install 48 count fiber	1200	Ft	$1.64	$1,968.00
7	Trench 2" 36" - Hand dig	0	Ft	$5.50	$0.00
8	Furnish & Directional Bore 2"	1200	Ft	$12.00	$14,400.00
9	Core Bore	3	Ea	$100.00	$300.00
10	Furnish Warning Tape	2	Roll	$50.00	$100.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	1	Ea	$600.00	$600.00
12	Ground Wire 6 Awg (500' reel)	2	reel	$220.00	$440.00
13	Mid sheath Fiber Entry	3	Ea	$350.00	$1,050.00
14	Install new splice case & prep cable	3	Ea	$250.00	$750.00
15	Prep cable in panel	3	Ea	$150.00	$450.00
16	Splice 97-288 Fibers	192	Ea	$15.00	$2,880.00
17	Splice trays	4	Ea	$55.00	$220.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	3	Ea	$235.00	$705.00
21	install wall mount panel	3	Ea	$75.00	$225.00
22	pigtails	96	Ea	$21.00	$2,016.00
23	Bulkheads	8	Ea	$80.00	$640.00
24	Furnish & Install 2" riser with LB	3	Ea	$175.00	$525.00

$31,644.32

CAPITAL PROJECT DETAIL

PROJECT TITLE

Laurel Creek Stream Gauge Stations

PROJECT#

107150

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Laurel Creek (Multiple Locations)

MANAGEMENT

Engineering

PROJECT SCOPE

Addition of stream monitoring location gauges at four strategic locations along Laurel Creek to monitoring levels and flow from Central Park Lakes.

JUSTIFICATION

The recent FEMA Flood improvements have assisted City Public Works staff to make preparations and address the effects of storm events on the Central Park Lake System and Laurel Creek. The Wilmette Avenue Culvert modifications installed, as a condition of the St. Johns River Water Management District permit, a flow meter / level detector that allows staff to make decisions regarding the closing of culvert gates and operation of pumps. This project proposes installation of additional level detectors and flow meters at four crossing locations of Laurel Creek; Hammock Lane, Hand Avenue, Division Avenue, and Wilmette Avenue. Installation of these devices will provide additional information to Public Works to ensure responsive measures to the changes in the lakes and creek during times of significant rainfall events.

PROJECT COST METHODOLOGY

Quote from Mace USA for Flow / Level Detectors

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and construction	68,805	0	0	0	0	68,805
Total	68,805	0	0	0	0	68,805

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Stormwater Charges	68,805	0	0	0	0	68,805
Total	68,805	0	0	0	0	68,805

Laurel Creek - Stream Gauge Monitoring Stations

Location 1: Hammock Lane

Description of Monitoring : Two Culverts (1 depth/flow + 1 Flow only)

850-366	MACE FloSeries3 FloPro XCi (s/n #)	1	$ 2,142.00	$ 2,142.00
850-328	MACE FloSeries3 - Doppler Velocity Module (s/n #)	2	$ 575.00	$ 1,150.00
850-330	MACE FloSeries 3 - FloSi Module (s/n #)	1	$ 546.00	$ 546.00
850-051	Sensor - Strap - 4m/s 10mCable - DB9 (s/n #)	1	$ 1,944.00	$ 1,944.00
850-455	Sensor - 4m Depth (Replaceable) - 10m Cable -	1	$ 2,952.00	$ 2,952.00
850-360	MACE FloSeries3 - WebComm Card - 3G (no SIM) (s/n	1	$ 1,050.00	$ 1,050.00
850-344	Mounting Plate (Sensor) - Poly with Mounting	2	$ 92.00	$ 184.00
814-017	MACE Solar Panel (for FloSeries 3) 12Volt/5Watt	1	$ 284.00	$ 284.00
850-302	MACE Device & Solar Panel Mounting Kit	1	$ 97.00	$ 97.00
850-363	MACE FloSeries 3 - USB External Comms Lead Subtotal	1	$ 152.00	$ 152.00
999-998	Labor	1	$ 2,507.70	$ 2,507.70
999-999	Profit and Overhead	1	$ 2,601.74	$ 2,601.74
TOTAL				**$ 15,610.44**

Location 2: Hand Avenue

Description of Monitoring : Two Culverts (1 depth/flow + 1 Flow only)

850-366	MACE FloSeries3 FloPro XCi (s/n #)	1	$ 2,142.00	$ 2,142.00
850-328	MACE FloSeries3 - Doppler Velocity Module (s/n #)	2	$ 575.00	$ 1,150.00
850-330	MACE FloSeries 3 - FloSi Module (s/n #)	1	$ 546.00	$ 546.00
850-051	Sensor - Strap - 4m/s 10mCable - DB9 (s/n #)	1	$ 1,944.00	$ 1,944.00
850-455	Sensor - 4m Depth (Replaceable) - 10m Cable -	1	$ 2,952.00	$ 2,952.00
850-360	MACE FloSeries3 - WebComm Card - 3G (no SIM) (s/n	1	$ 1,050.00	$ 1,050.00
850-344	Mounting Plate (Sensor) - Poly with Mounting	2	$ 92.00	$ 184.00
814-017	MACE Solar Panel (for FloSeries 3) 12Volt/5Watt	1	$ 284.00	$ 284.00
850-302	MACE Device & Solar Panel Mounting Kit	1	$ 97.00	$ 97.00
850-363	MACE FloSeries 3 - USB External Comms Lead Subtotal	1	$ 152.00	$ 152.00
999-998	Labor	1	$ 2,507.70	$ 2,507.70
999-999	Profit and Overhead	1	$ 2,601.74	$ 2,601.74
TOTAL				**$ 15,610.44**

Location 3: Division Avenue

Description of Monitoring : Three Culverts (1 depth/flow + 2 Flow only)

850-366	MACE FloSeries3 FloPro XCi (s/n #)					1	$ 2,142.00	$ 2,142.00
850-328	MACE FloSeries3 - Doppler Velocity Module (s/n #)					3	$ 575.00	$ 1,725.00
850-330	MACE FloSeries 3 - FloSi Module (s/n #)					1	$ 546.00	$ 546.00
850-051	Sensor - Strap - 4m/s 10mCable - DB9 (s/n #)					2	$ 1,944.00	$ 3,888.00
850-455	Sensor - 4m Depth (Replaceable) - 10m Cable -					1	$ 2,952.00	$ 2,952.00
850-360	MACE FloSeries3 - WebComm Card - 3G (no SIM) (s/n					1	$ 1,050.00	$ 1,050.00
850-344	Mounting Plate (Sensor) - Poly with Mounting					2	$ 92.00	$ 184.00
814-017	MACE Solar Panel (for FloSeries 3) 12Volt/5Watt					1	$ 284.00	$ 284.00
850-302	MACE Device & Solar Panel Mounting Kit					1	$ 97.00	$ 97.00
850-363	MACE FloSeries 3 - USB External Comms Lead Subtotal					1	$ 152.00	$ 152.00
999-998	Labor					1	$ 3,263.40	$ 3,263.40
999-999	Profit and Overhead					1	$ 3,256.68	$ 3,256.68
TOTAL								**$ 19,540.08**

Location 4: Wilmette Avenue

Description of Monitoring : Three Culverts (3 Flow only)

850-366	MACE FloSeries3 FloPro XCi (s/n #)					0	$ 2,142.00	$ -
850-328	MACE FloSeries3 - Doppler Velocity Module (s/n #)					3	$ 575.00	$ 1,725.00
850-330	MACE FloSeries 3 - FloSi Module (s/n #)					0	$ 546.00	$ -
850-051	Sensor - Strap - 4m/s 10mCable - DB9 (s/n #)					3	$ 1,944.00	$ 5,832.00
850-455	Sensor - 4m Depth (Replaceable) - 10m Cable -					0	$ 2,952.00	$ -
850-360	MACE FloSeries3 - WebComm Card - 3G (no SIM) (s/n					0	$ 1,050.00	$ -
850-344	Mounting Plate (Sensor) - Poly with Mounting					0	$ 92.00	$ -
814-017	MACE Solar Panel (for FloSeries 3) 12Volt/5Watt					0	$ 284.00	$ -
850-302	MACE Device & Solar Panel Mounting Kit					0	$ 97.00	$ -
850-363	MACE FloSeries 3 - USB External Comms Lead Subtotal					0	$ 152.00	$ -
999-998	Labor					1	$ 2,267.10	$ 2,267.10
999-999	Profit and Overhead					1	$ 1,964.82	$ 1,964.82
TOTAL								**$ 11,788.92**

TOTAL ALL PHASES								**$ 62,549.88**
Engineering								$ 6,254.99
TOTAL								**$ 68,804.87**

www.maceusa.com

Quote

Date	Quote #
10/13/2014	5059

MACE USA LLC
PO BOX 7144
OVERLAND PARK, KS
66207
USA

Name / Address	Ship To
City of Ormond Beach Shawn P Finley, P.E. 22 South Beach Street Ormond Beach, Florida 32174	City of Ormond Beach Shawn P Finley, P.E. 22 South Beach Street Ormond Beach, FL 32174

Project

Item	Description	Qty	Each	Total
850-366	MACE FloSeries3 FloPro XCi (s/n #)	1	2,142.00	2,142.00T
850-328	MACE FloSeries3 - Doppler Velocity Module (s/n #)	2	575.00	1,150.00T
850-330	MACE FloSeries 3 - FloSi Module (s/n #)	1	546.00	546.00T
850-051	Sensor - Strap - 4m/s 10mCable - DB9 (s/n #)	1	1,944.00	1,944.00T
850-455	Area/Velocity Sensor - 4m Depth (Replaceable) - 10m Cable - AgriFlo/FloPro XCi	1	2,952.00	2,952.00T
850-360	MACE FloSeries3 - WebComm Card - 3G (no SIM) (s/n #)	1	1,050.00	1,050.00T
850-344	Mounting Plate (Sensor) - Poly with Mounting Accessories - 15 3/4" long	2	92.00	184.00T
814-017	MACE Solar Panel (for FloSeries 3) 12Volt/5Watt	1	284.00	284.00T
850-302	MACE Device & Solar Panel Mounting Kit	1	97.00	97.00T
850-363	MACE FloSeries 3 - USB External Comms Lead	1	152.00	152.00T
	Subtotal			10,501.00
	Out-of-state sale, exempt from sales tax		0.00%	0.00

Field start up assistance of Mace equipment - $150 per hour on site (minimum consecutive 4 hours or $600). Time on site after initial 4 hours is $150 per hour. Time during travel is separate and will be added to final invoice at $75/hour. Travel expenses are separate from all other charges and final real charges will be added to Mace invoicing, including unanticipated charges not listed in this estimate. Field work by Mace tech staff is independent of any equipment factory warranty claims or status of equipment installation at arrival.

Total $10,501.00

This estimate does not include any applicable taxes or shipping & handling

Phone #	Fax #	E-mail	Web Site
888-440-4215	888-440-6999	kathy.peterson@maceusa.com	www.maceusa.com

BP SX 5
BP SX 10

5-Watt & 10-Watt
Multicrystalline Photovoltaic Modules

The smallest of BP Solar's SX™ module series, BP SX 5 and BP SX 10 photovoltaic modules operate DC loads with small to moderate energy requirements. With 36 multicrystalline cells in series, they charge 12V batteries efficiently in virtually any climate. Typical commercial applications of these modules, which generate nominal maximum power of 4.5 watts and 10 watts respectively, include remote telemetry, instrumentation systems, security sensors, and signals.

SX 5M and SX 10M

The versatile Multimount™ frame of the SX 5M and SX 10M provides great flexibility in mounting approach. Oriented parallel to the edge and back of the module, its dual channels accept the heads of 8mm or 5/16" hex bolts, allowing the module to be mounted from the side or back. Bolts may be located anywhere along the channels, a configuration which prevents them from turning during tightening and allows installation with just one wrench.

Multimount™ Frame
(shown with end caps removed)

Output of the SX 5M and SX 10M is via a 4.6m (15 foot) PVC-jacketed 1mm² (AWG 18-2) cable which terminates in a low-profile junction box on the module back. Epoxy-potted in the box, module electrical connections are sealed against corrosion and effectively strain-relieved. The modules are intended for single-module applications with DC system voltage not exceeding 30 volts, and may be ordered in either 6V or 12V nominal voltage.

Universal Frame

SX 10U

The SX 10U includes a heavy-duty Universal frame and a high-capacity junction box which accepts cable or conduit and provides field-selectable dual voltage output. Optionally, this junction box can be fitted with:

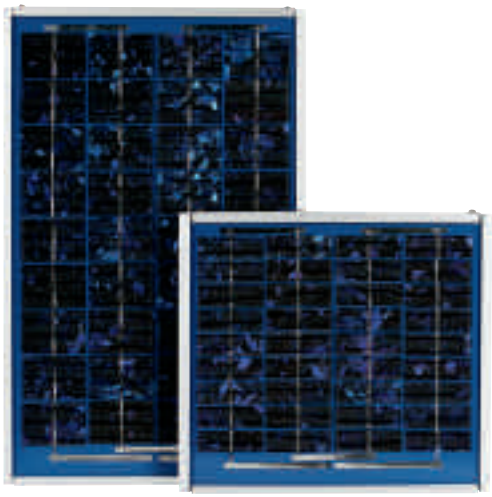
- blocking and bypass diodes;
- an oversize terminal block which accepts conductors up to 25mm² (AWG #4); standard terminals accept up to 6mm² (AWG #10);
- a Solarstate™ charge regulator.

The SX 10U junction box may be field-wired to provide 12V or 6V nominal output. Six-volt modules are intended to support 6V loads, and are not recommended as series elements in higher voltage arrays. The SX 10U meets NEC requirements for use in systems up to 600 VDC, and is approved by Factory Mutual Research for application in NEC Class 1, Division 2, Groups C & D hazardous locations.

Limited Warranties

- Power output for 10 years;
- Freedom from defects in materials and workmanship for 1 year.

See our website or your local representative for full terms of these warranties.



SX 10M and 5M

Quality and Safety

All SX 5 and 10 modules are manufactured in ISO 9001-certified factories and are:

- listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating);
- certified by TÜV Rheinland as Class II equipment.
- compliant with the requirements of IEC 61215 and including:
  - repetitive cycling between -40°C and 85°C at 85% relative humidity;
  - simulated impact of 25mm (one-inch) hail at terminal velocity;
  - a "damp heat" test, consisting of 1000 hours of exposure to 85°C and 85% relative humidity;
  - a "hot-spot" test, which determines a module's ability to tolerate localized shadowing (which can cause reverse-biased operation and localized heating); static loading, front and back, of 2400 pascals (50 psf); front loading (e.g. snow, U only) of 5400 pascals (113 psf).

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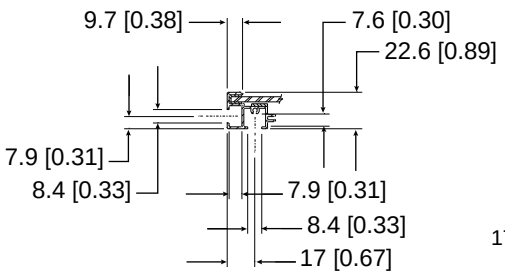
Mechanical Characteristics

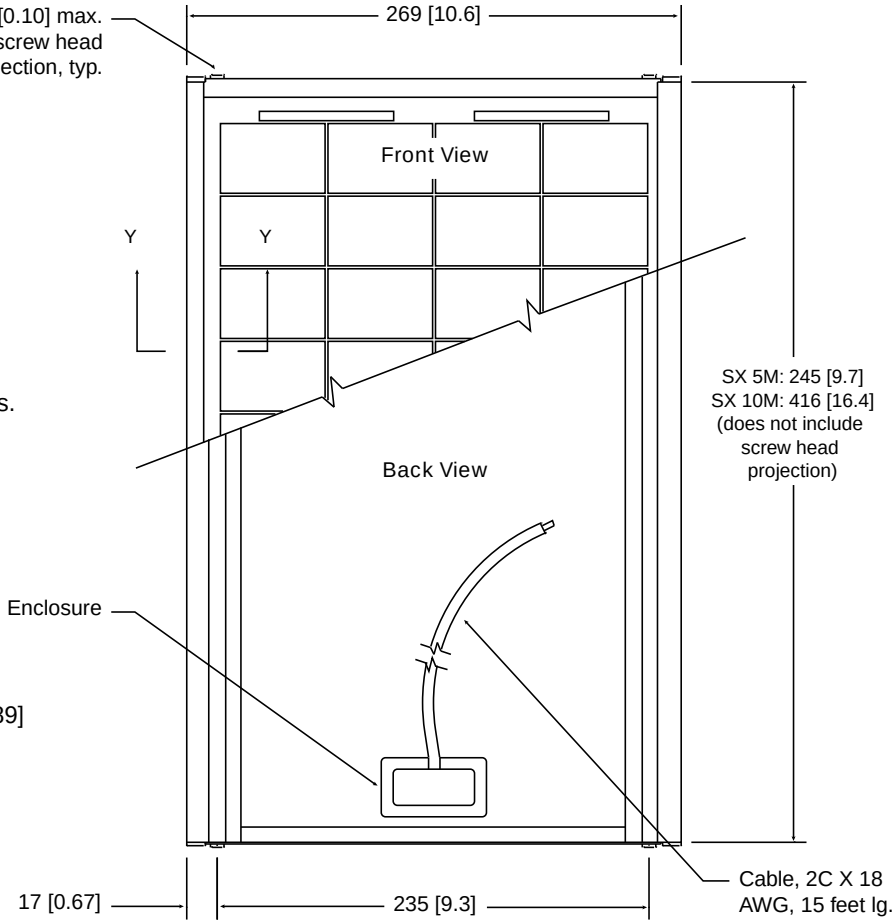
Weight

SX 10M	1.5 kg (3.3 pounds)
SX 10U	1.9 kg (4.2 pounds)
SX 5M	0.8 kg (1.7 pounds)

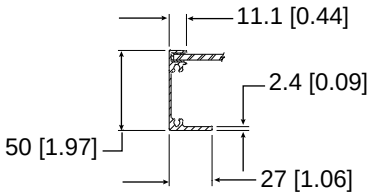
Dimensions
Unbracketed dimensions are in millimeters.
Bracketed dimensions are in inches.
Overall tolerances ±3mm (1/8")



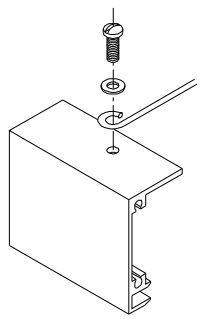
Section Y-Y



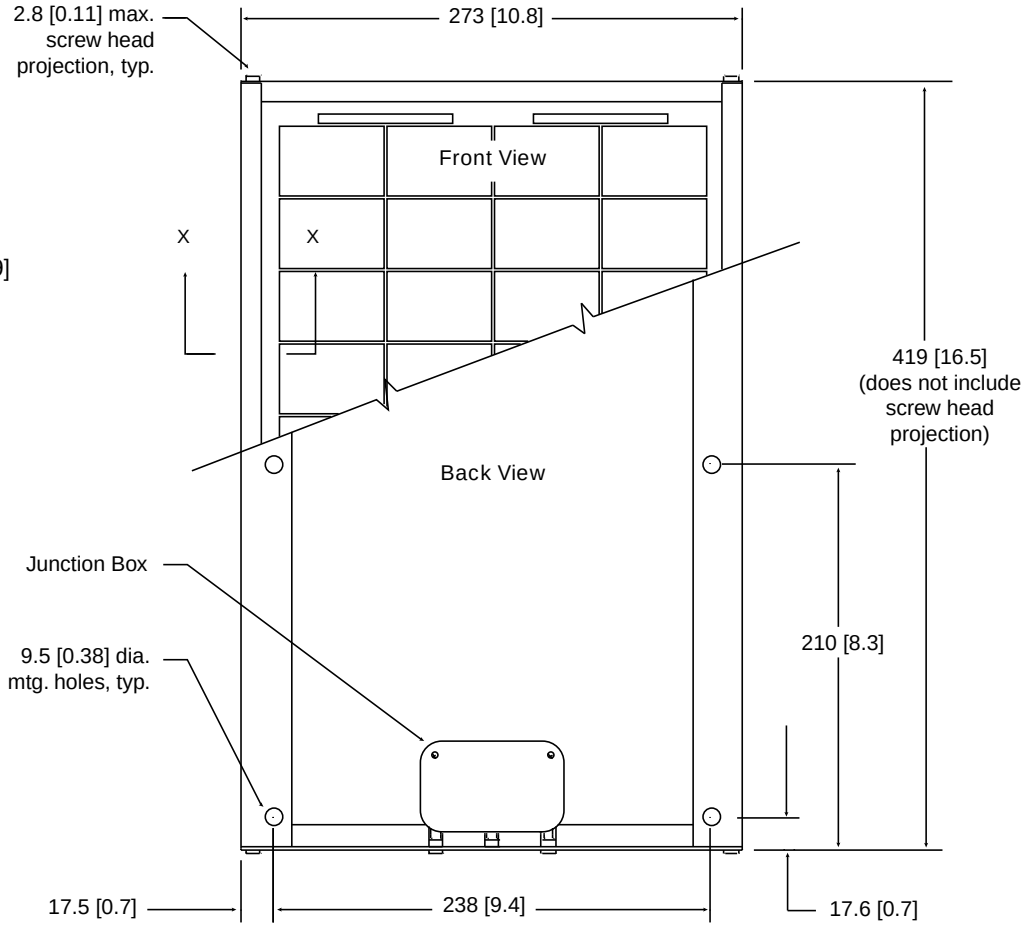
SX 5M, SX 10M



Section X-X



Grounding Detail



SX 10U

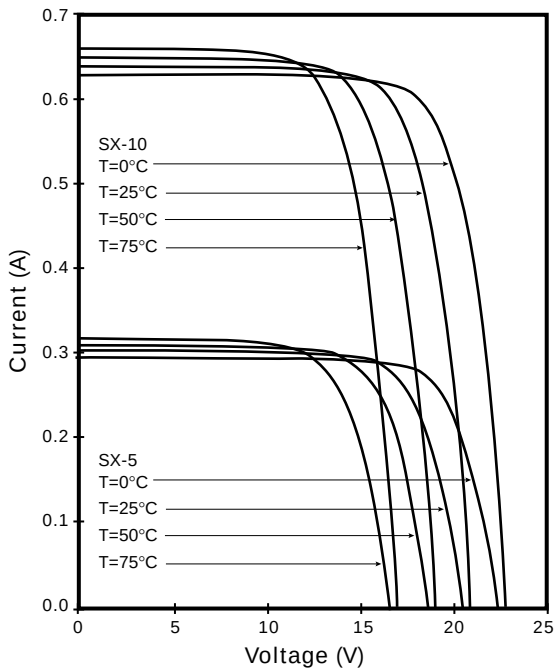
Electrical Characteristics[1]

	SX 10	SX 5
Maximum Power (P_{max})[2]	10W	4.5W
Voltage at P_{max} (V_{mp})	16.8V	16.5V
Current at P_{max} (I_{mp})	0.59A	0.27A
Warranted minimum P_{max}	9W	4W
Short-circuit current (I_{sc})	0.65A	0.3A
Open-circuit voltage (V_{oc})	21.0V	20.5V
Temperature coefficient of I_{sc}	(0.065±0.015)%/°C	
Temperature coefficient of V_{oc}	-(80±10)mV/°C	
Temperature coefficient of power	-(0.5±0.05)%/°C	
NOCT[3]	47±2ºC	

Notes

1. These data represent the performance of typical modules in 12V configuration as measured at their output, and do not include the effect of such additional equipment as diodes. The data are based on measurements made in accordance with ASTM E1036 corrected to SRC (Standard Reporting Conditions, also known as STC or Standard Test Conditions), which are:
   - illumination of 1 kW/m²(1 sun) at spectral distribution of AM 1.5 (ASTM E892 global spectral irradiance);
   - cell temperature of 25°C.
2. During the stabilization process which occurs during the first few months of deployment, module power may decrease approximately 3% from typical P_{max}.
3. The cells in an illuminated module operate hotter than the ambient temperature. NOCT (Nominal Operating Cell Temperature) is an indicator of this temperature differential, and is the cell temperature under Standard Operating Conditions: ambient temperature of 20°C, solar irradiation of 0.8 kW/m², and wind speed of 1m/s.

SX 5 and 10 I-V Curves



MACE DOPPLER AREA/VELOCITY SENSOR

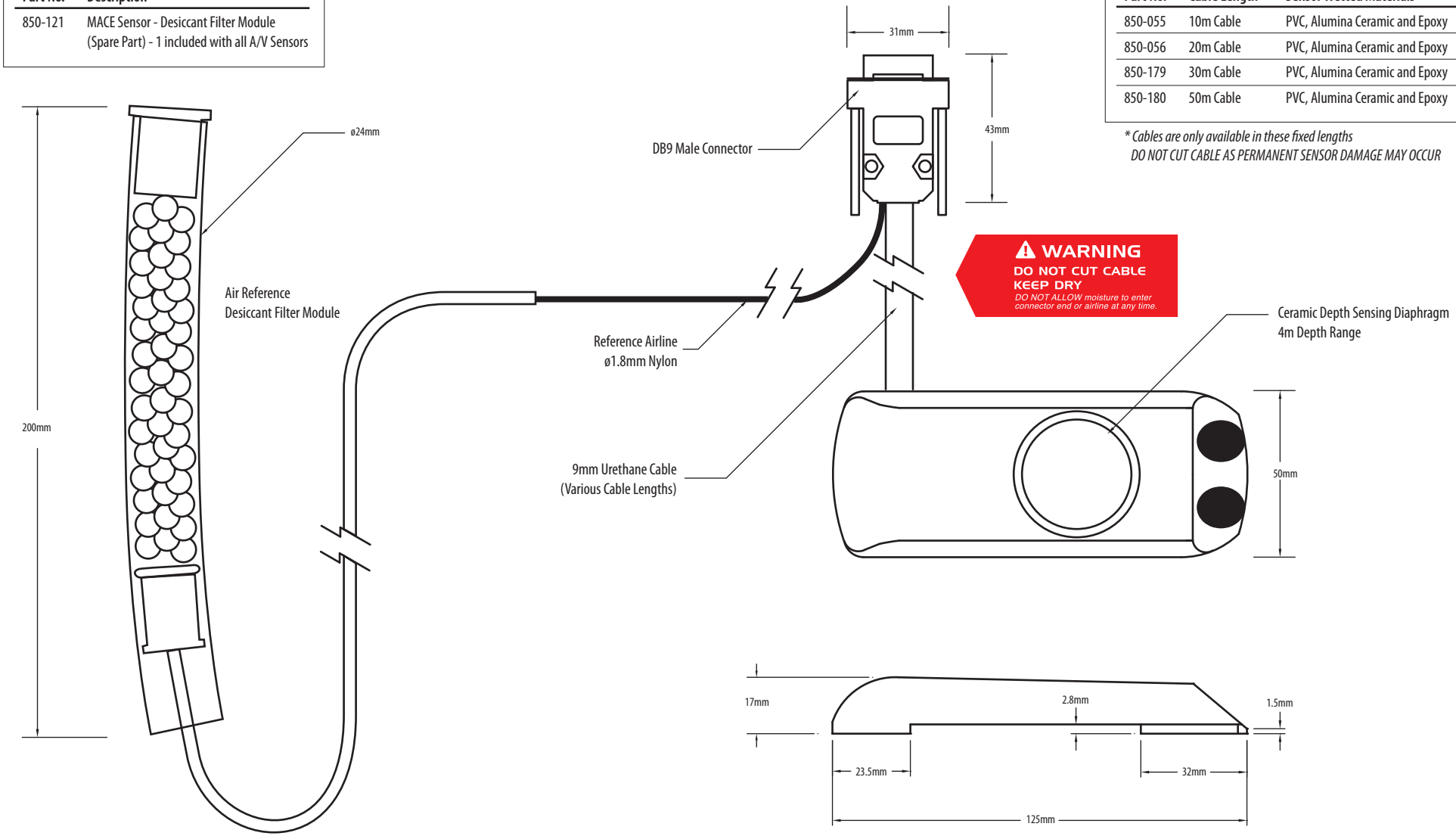
ZX SnapStrap mounted, combined velocity and depth sensor for use in partially full pipes or open channels

PART No. 825-337 Rev. 1.1

Part No.	Description
850-121	MACE Sensor - Desiccant Filter Module (Spare Part) - 1 included with all A/V Sensors

Part No.	Cable Length*	Sensor Wetted Materials
850-055	10m Cable	PVC, Alumina Ceramic and Epoxy
850-056	20m Cable	PVC, Alumina Ceramic and Epoxy
850-179	30m Cable	PVC, Alumina Ceramic and Epoxy
850-180	50m Cable	PVC, Alumina Ceramic and Epoxy

** Cables are only available in these fixed lengths*
DO NOT CUT CABLE AS PERMANENT SENSOR DAMAGE MAY OCCUR



Measuring & Control Equipment (MACE) Pty Ltd
P.O. Box 911, Pennant Hills, NSW 1715, Australia
Ph: +61 (0)2 9658 1234 Fax: +61 (0)2 9651 7989
Email: sales@macemeters.com www.macemeters.com

Mace USA LLC
PO Box 7144, Overland Park, KS 66207, United States of America
Ph: 888 440 4215 Fax: 888 440 6999
Email: sales@maceusa.com www.maceusa.com

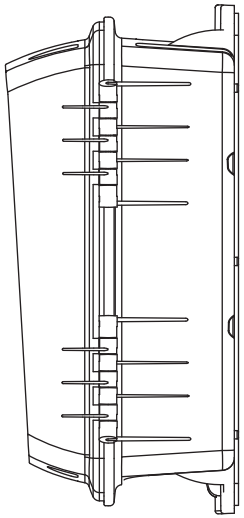
mace Water Monitoring Solutions

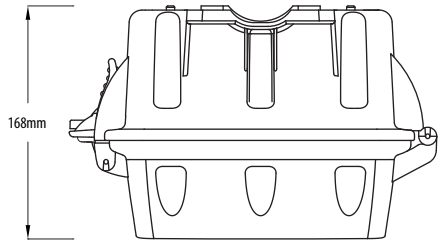
MACE FLOPRO XCI DEVICE

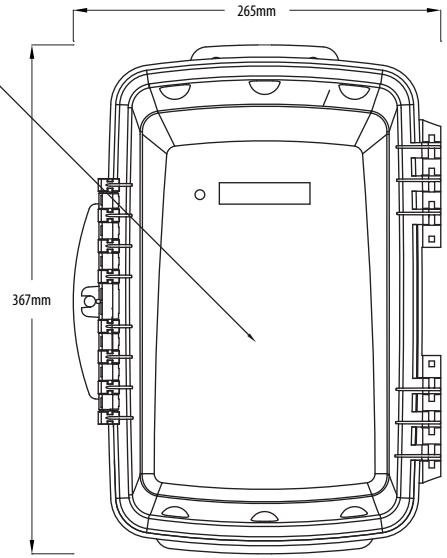
UV Stabilised Polycarbonate Enclosure Housing the Remote Transmitter

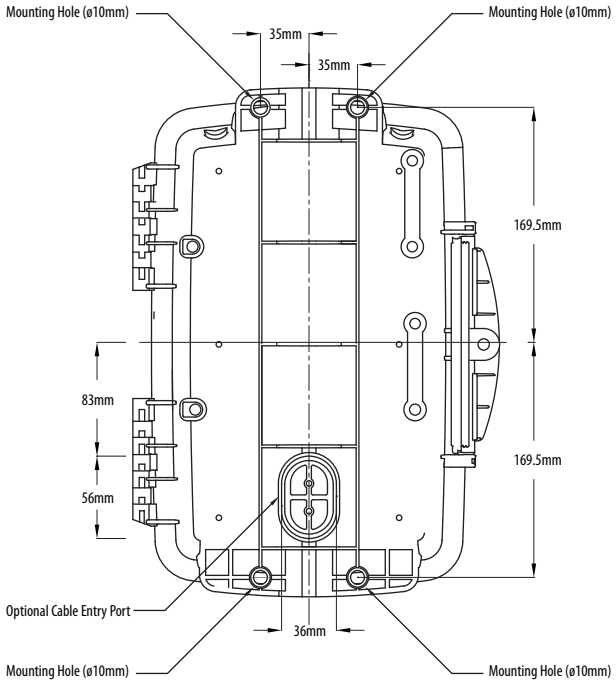
PART No. 825-333 Rev. 1.0

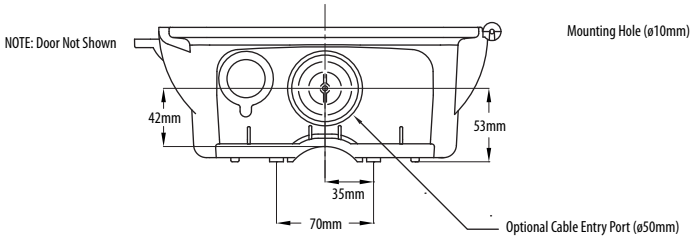
UV Stabilised Decal With Membrane Switches











Part No.	Desciption
850-366	MACE FloSeries3 - FloPro XCi

Measuring & Control Equipment (MACE) Pty Ltd
P.O. Box 911, Pennant Hills, NSW 1715, Australia
Ph: +61 (0)2 9658 1234 Fax: +61 (0)2 9651 7989
Email: sales@macemeters.com www.macemeters.com

Mace USA LLC
PO Box 7144, Overland Park, KS 66207, United States of America
Ph: 888 440 4215 Fax: 888 440 6999
Email: sales@maceusa.com www.maceusa.com

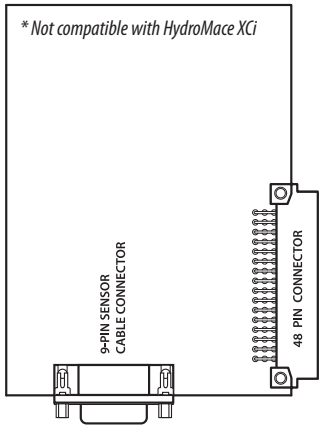
mace
Water Monitoring Solutions

MACE FLOSERIES3 CARDS

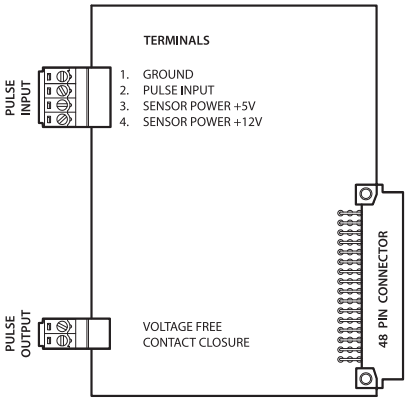
FloSeries3 Cards for use in the MACE FloPro, AgriFlo and HydroMace XCi (Multiple Card Interface) devices*

PART No. 825-344 Rev. 1.0

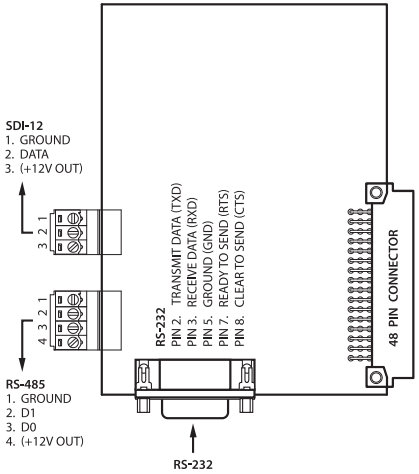
DOPPLER CARD Part No. 850-328



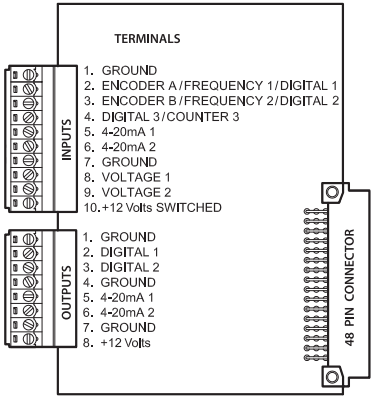
PULSE I/O CARD Part No. 850-353



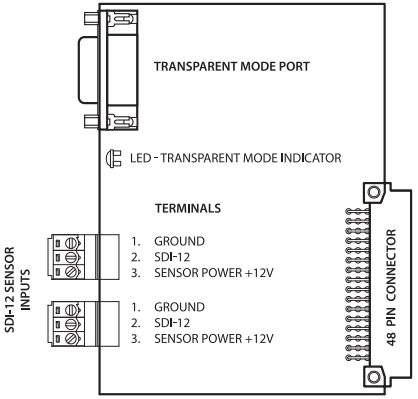
FLOSI CARD Part No. 850-330



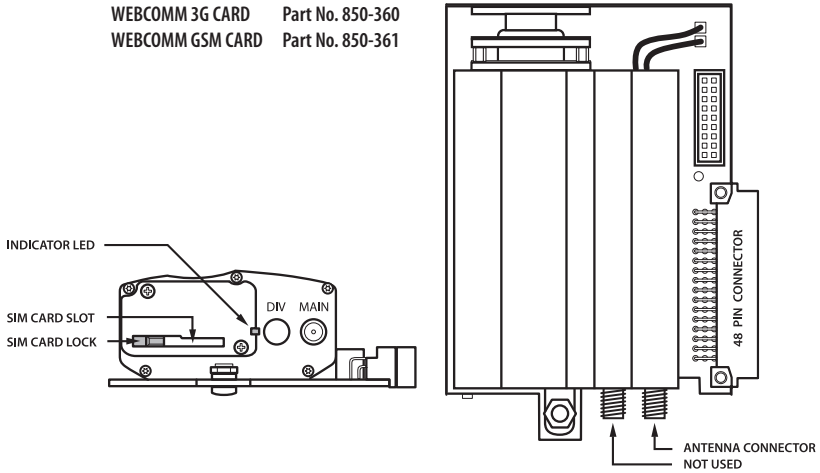
I/O CARD Part No. 850-329



SDI-12 MASTER CARD Part No. 850-368



WEBCOMM 3G CARD Part No. 850-360
WEBCOMM GSM CARD Part No. 850-361



Measuring & Control Equipment (MACE) Pty Ltd
P.O. Box 911, Pennant Hills, NSW 1715, Australia
Ph: +61 (0)2 9658 1234 Fax: +61 (0)2 9651 7989
Email: sales@macemeters.com www.macemeters.com

Mace USA LLC
PO Box 7144, Overland Park, KS 66207, United States of America
Ph: 888 440 4215 Fax: 888 440 6999
Email: sales@maceusa.com www.maceusa.com

mace Water Monitoring Solutions

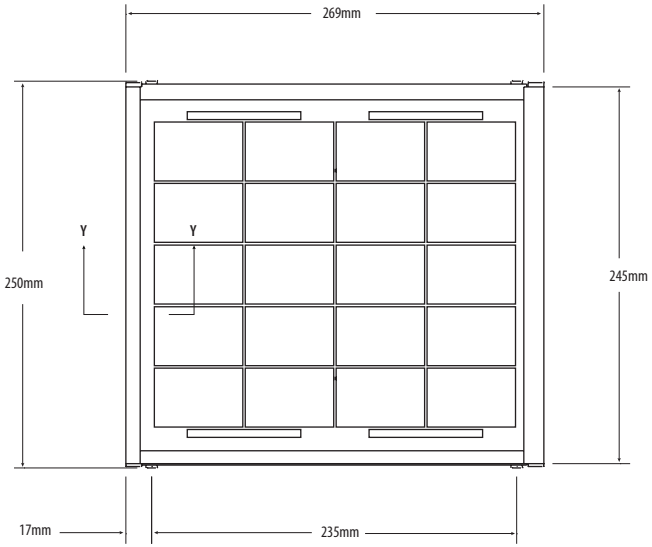
SOLAR PANEL AND MOUNTING KIT

MACE FloSeries3 solar panel (12V - 5W) with mounting kit (for solar panel and XCi device)

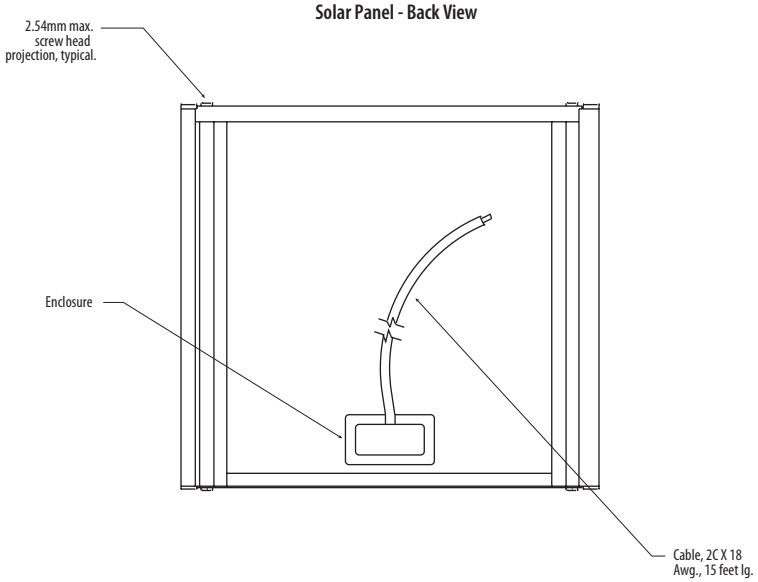
PART No. 825-342 Rev. 1.1

Part No.	Description
814-017	MACE FloSeries3 - Solar Panel (12V/5W)

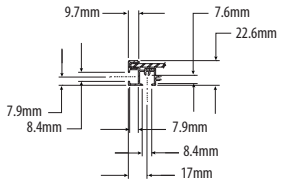
Solar Panel - Front View



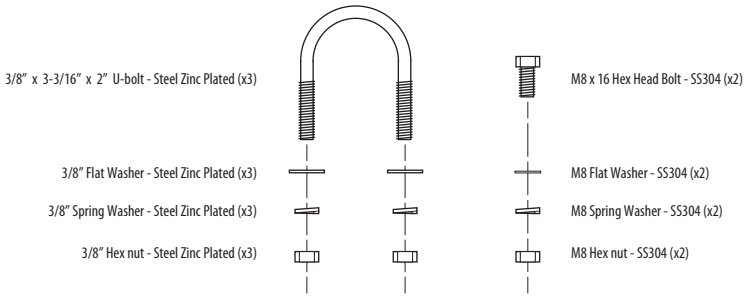
Solar Panel - Back View



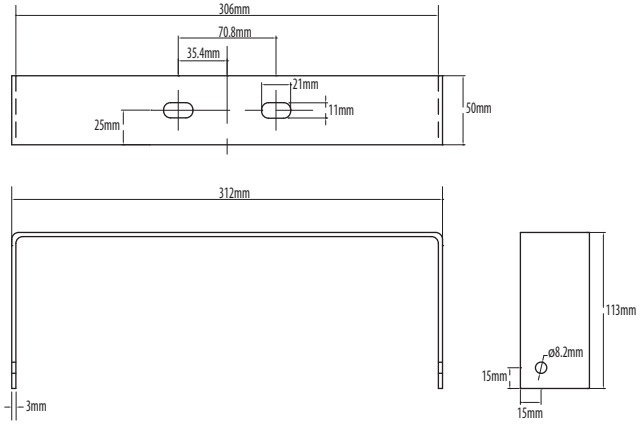
Solar Panel - Section Y-Y



Mounting Kit - Fittings



Mounting Kit - Solar Panel Bracket (Aluminium)



Part No.	Description
850-302	MACE FloSeries3 - Mounting Kit - Device & Solar Panel (5W)

Measuring & Control Equipment (MACE) Pty Ltd
P.O. Box 911, Pennant Hills, NSW 1715, Australia
Ph: +61 (0)2 9658 1234 Fax: +61 (0)2 9651 7989
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Mace USA LLC
PO Box 7144, Overland Park, KS 66207, United States of America
Ph: 888 440 4215 Fax: 888 440 6999
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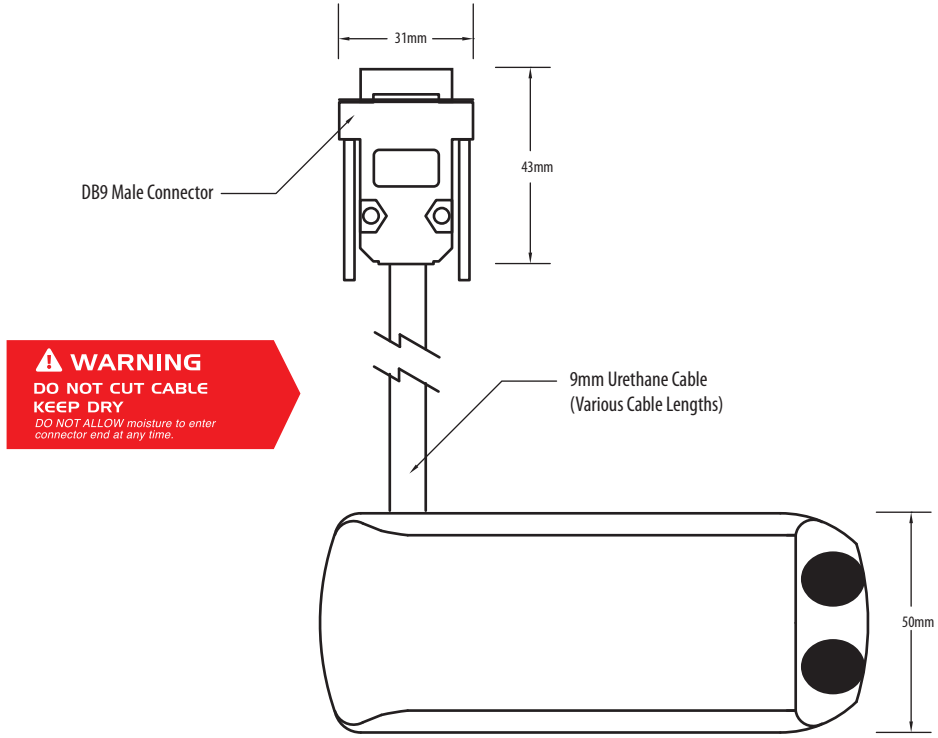
mace Water Monitoring Solutions

MACE DOPPLER VELOCITY SENSOR

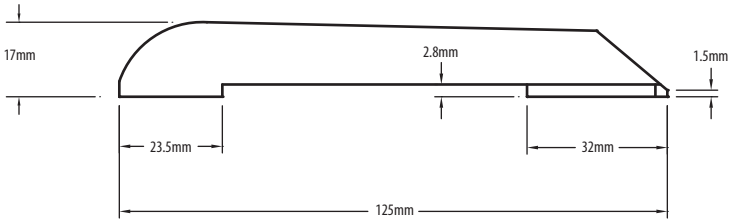
ZX SnapStrap mounted, velocity sensor for use in full pipes or open channels (when used in conjunction with a depth sensor)

PART No. 825-338 Rev. 1.1



Part No.	Cable Length*	Sensor Wetted Materials
850-051	10m Cable	PVC and Epoxy
850-052	20m Cable	PVC and Epoxy
850-153	30m Cable	PVC and Epoxy
850-154	50m Cable	PVC and Epoxy

** Cables are only available in these fixed lengths*
DO NOT CUT CABLE AS PERMANENT SENSOR DAMAGE MAY OCCUR



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mace Water Monitoring Solutions

Laurel Creek Stream Gauge Locations

2,780 ft

GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such

Powered by VANTAGEPOINTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Wilmette Avenue Pump Station

PROJECT#

107151

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Laurel Creek at Wilmette Avenue

MANAGEMENT

Engineering

PROJECT SCOPE

Installation of two permanent pumps at Laurel Creek to provide pumping capability in preparation for storm events.

JUSTIFICATION

The Phase II FEMA Stormwater Improvements installed sluice gates at the four Laurel Creek culvert crossings of Wilmette Avenue along with intake and discharge piping and structures for the use of temporary rental pumps. This project will install permanent pumps that can be used in lieu of the high cost rental pumps which do not require lead time to order, deliver, and setup diverting staff time and resources otherwise utilized in the event of an impending storm.

PROJECT COST METHODOLOGY

Price Quotation from Xylem Technologies / Historic Bid Data

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and construction	23,400	171,600	0	0	0	195,000
Total	23,400	171,600	0	0	0	195,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	23,400	171,600	0	0	0	195,000
Total	23,400	171,600	0	0	0	195,000

WILMETTE AVENUE PUMP STATION IMPROVEMENTS

			Qty	Unit Cost	
Site Preparation and Mlscallaneous					
101	Mobilization/Demobilization	LS	1		$ 14,180.16
102	Survev and Lavout	LS	1	$ 2,500.00	$ 2,500.00
103	Erosion and Sedimentation Control	LS	1	$ 3,000.00	$ 5,000.00
104	Sod and Surface Restoration	LS	1	$ 2,500.00	$ 2,500.00
105	Maintenance of Traffice / Temo. Traffic Controf)	LS	1	$ 3,500.00	$ 3,500.00
106	Submit Certified "As·Built" Drawings	LS	1	$ 2,500.00	$ 2,500.00
108	Site Grading	LS	1	$ 5,000.00	$ 5,000.00
Drainage Improvements					
201	Connect to Exlsting Inlet	EA	2	$ 3,894.81	$ 7,789.61
202	18 " RCP	LF	36	$ 82.00	$ 2,952.00
203	Furnish and Install FLYGT pup station with wetwell	EA	2	$ 45,000.00	$ 90,000.00
204	Install 12" PVC Discharge Line	LF	80	$ 155.00	$ 12,400.00
205	12" Gate Valve	EA	2	$ 2,830.00	$ 5,660.00
206	Connect to Existing 12" Discharge Line	EA	2	$ 1,000.00	$ 2,000.00
	TOTAL				**$ 155,981.77**
Engineering					
	Design (15%)				$ 23,397.27
	Construction Administration (10%)				$ 15,598.18
	Total Engineering				**$ 38,995.44**
	Total Costs				**$ 194,977.22**

Design	FY 2015/16	$	23,400.00
Construction	FY 2016 / 17	$	171,600.00

Finley, Shawn

From: Rachal, Scott - Xylem [Scott.Rachal@Xyleminc.com]
Sent: Thursday, February 19, 2015 7:28 AM
To: Finley, Shawn
Subject: RE: Wilmette Stormwater Station
Attachments: Xylem GP 1-21-13 Model (1).pdf

Shawn,

This is our generic detail. We have it in CAD as well. I may be able to get a generic simplex detail if needed.

Thanks,

Scott Rachal
Sales Engineer
2152 Sprint Blvd
Apopka, FL 32703
O: +1 407-880-2900 M: +1 407-304-9610
scott.rachal@xyleminc.com

From: Finley, Shawn [mailto:Shawn.Finley@ormondbeach.org]
Sent: Wednesday, February 18, 2015 9:35 AM
To: Rachal, Scott - Xylem
Subject: RE: Wilmette Stormwater Station

Perfect. Thanks.

Shawn P. Finley, P.E.
Civil Engineer
Engineering Division
City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174
386.615.7049 (Office)
386.872.2755 (Mobile)

From: Rachal, Scott - Xylem [mailto:Scott.Rachal@Xyleminc.com]
Sent: Wednesday, February 18, 2015 9:35 AM
To: Finley, Shawn
Subject: Re: Wilmette Stormwater Station

Shawn,

I will provide you a generic sheet this evening. However, an actual basin size needs to be determined for a true detail.

Thanks,

Scott Rachal

Sent from my iPhone

On Feb 18, 2015, at 9:01 AM, "Finley, Shawn" <Shawn.Finley@ormondbeach.org> wrote:

Scott –

Do you have, or can you point me in the direction of a cut sheet for the fiberglass basin.

Shawn

Shawn P. Finley, P.E.
Civil Engineer
Engineering Division
City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174
386.615.7049 (Office)
386.872.2755 (Mobile)

From: Rachal, Scott - Xylem [mailto:Scott.Rachal@Xyleminc.com]
Sent: Tuesday, February 17, 2015 1:08 PM
To: Finley, Shawn
Subject: RE: Wilmette Stormwater Station

Shawn,

Please see the attached for my selection. I came up with a 12" NP 3202, 45HP and about 20TDH, assuming 90' of HDPE pipe with 3 bends.

One pump and fiberglass basin would run about $45,000.00.

Thanks,

Scott Rachal
Sales Engineer
2152 Sprint Blvd
Apopka, FL 32703
O: +1 407-880-2900 M: +1 407-304-9610
scott.rachal@xyleminc.com

From: Finley, Shawn [mailto:Shawn.Finley@ormondbeach.org]
Sent: Tuesday, October 28, 2014 10:12 AM
To: Rachal, Scott - Xylem
Subject: RE: Wilmette Stormwater Station

No problem, we would rather figure out what this will require at this point, rather than after we have it budgeted…

Thanks again for meeting us out there yesterday, look forward to what you can share.

Shawn

Shawn P. Finley, P.E.

Civil Engineer
Engineering Division
City of Ormond Beach
22 South Beach Street
Ormond Beach, Florida 32174
386.615.7049 (Office)
386.872.2755 (Mobile)

From: Rachal, Scott - Xylem [mailto:Scott.Rachal@Xyleminc.com]
Sent: Tuesday, October 28, 2014 9:57 AM
To: Finley, Shawn
Subject: Wilmette Stormwater Station

Shawn,

I apologize but I don't know where my head was yesterday. When we were originally talking about dual lift stations pumping 5000GPM, I was thinking 4, 7.5HP pumps running to handle this. Then I realized that both sides were to pump 5000GPM for a combined 10,000GPM. If we were to do a duplex pump station each side, the pumps would then need to be capable of 2500GPM each and depending on the TDH, would likely require 15HP pumps. Our final solution was a simplex station and each pump would need to do 5000GPM. I do not know why I had a brain freeze and did not realize that this will obviously need much larger pumps than 15HP.

I apologize for this complete oversight.

Thanks,

Scott Rachal
Sales Engineer
2152 Sprint Blvd
Apopka, FL 32703
O: +1 407-880-2900 M: +1 407-304-9610
scott.rachal@xyleminc.com
<image001.jpg> <image002.jpg> <image003.jpg> <image004.jpg>
<image005.jpg>

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Notice:
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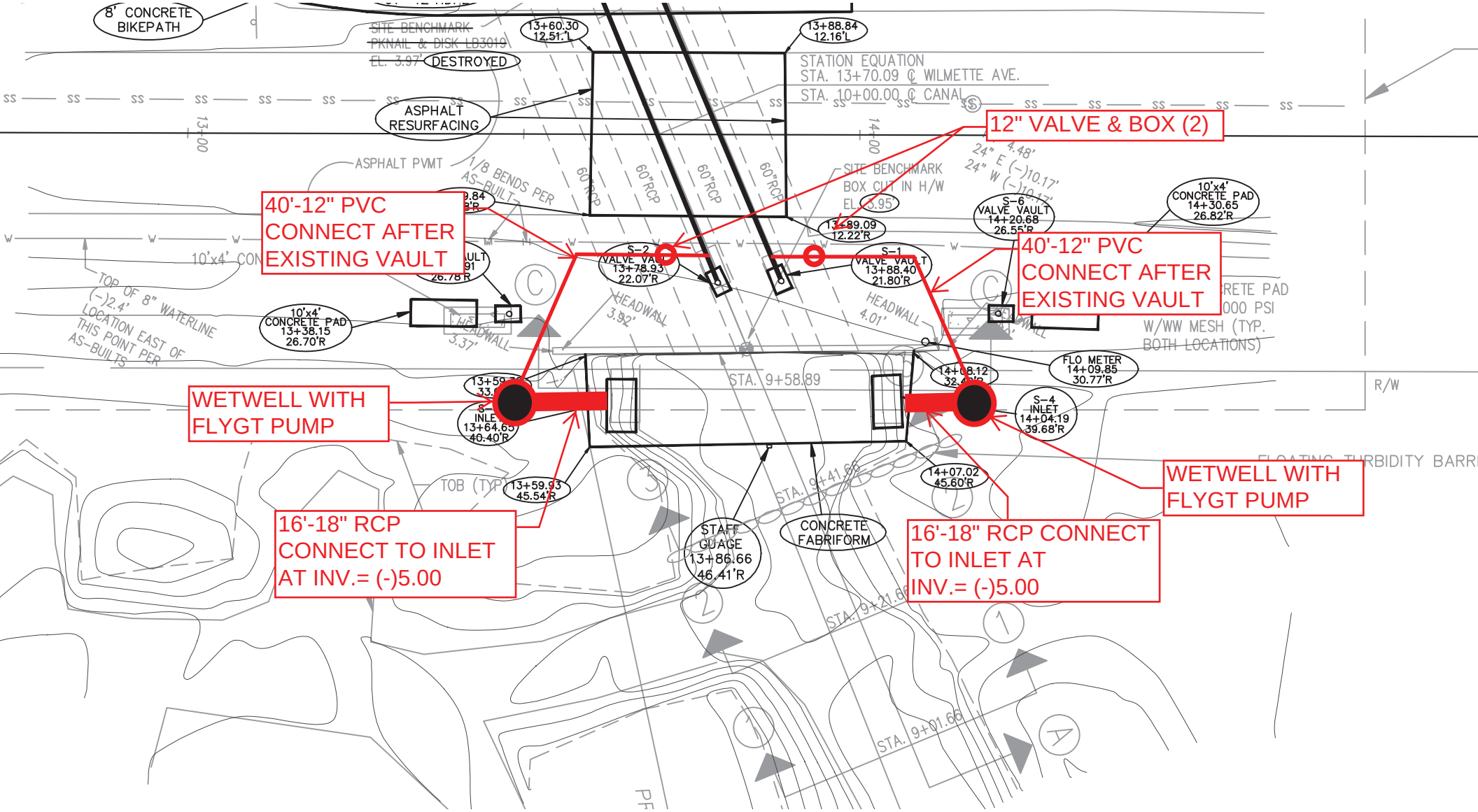
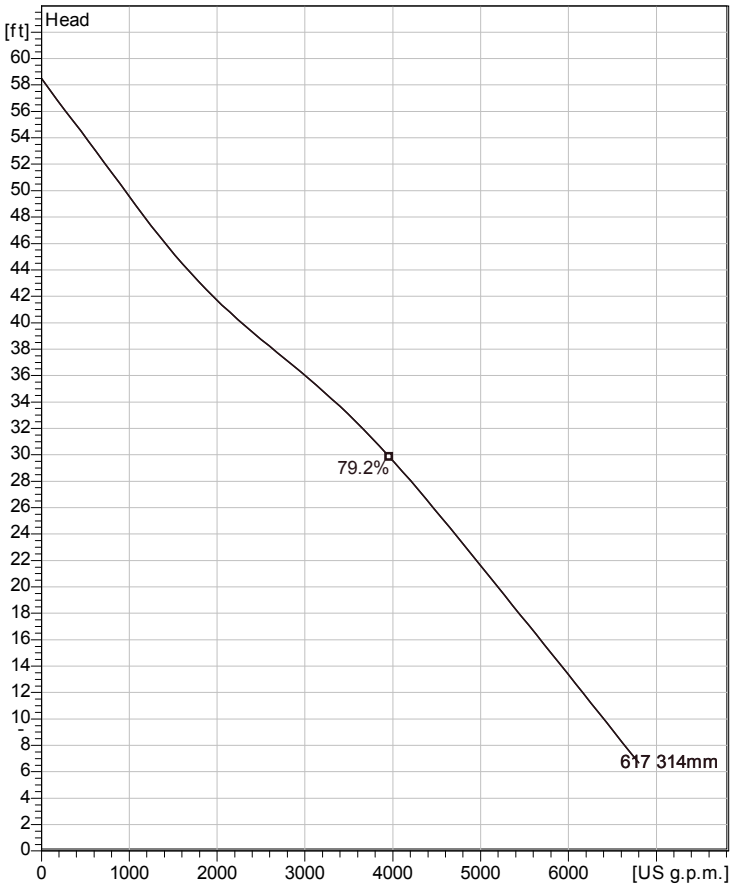
Wilmette Pump Station Modification



April, 2015
City of Ormond Beach Engineering Division

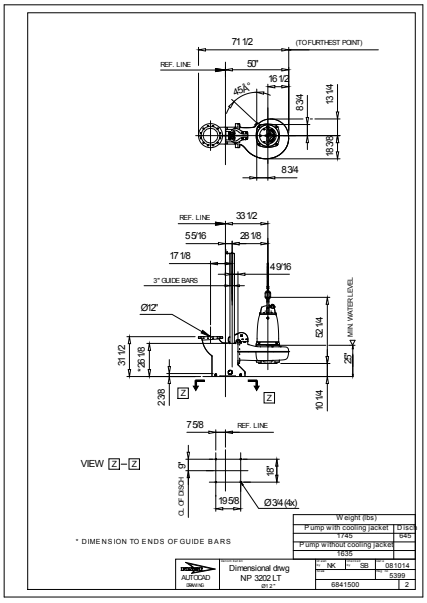
NP 3202 LT 3~ 617

Technical specification



Water, pure *Curve according to: ISO 9906 grade 2 annex 1 or 2*

Installation: P - Semi permanent, Wet



Note: Picture might not correspond to the current configuration.

General

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

Impeller

Impeller material	Grey cast iron
Discharge Flange Diameter	11 13/16 inch
Suction Flange Diameter	300 mm
Impeller diameter	314 mm
Number of blades	2

Motor

Motor #	N3202.180 30-23-6AA-W 45hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	6
Phases	3~
Rated power	45 hp
Rated current	55 A
Starting current	330 A
Rated speed	1170 rpm
Power factor	
1/1 Load	0.85
3/4 Load	0.82
1/2 Load	0.73
Efficiency	
1/1 Load	89.5 %
3/4 Load	90.0 %
1/2 Load	89.5 %

Configuration

Project	Project ID	Created by	Created on	Last update
			2015-02-10	

NP 3202 LT 3~ 617

Performance curve

Pump

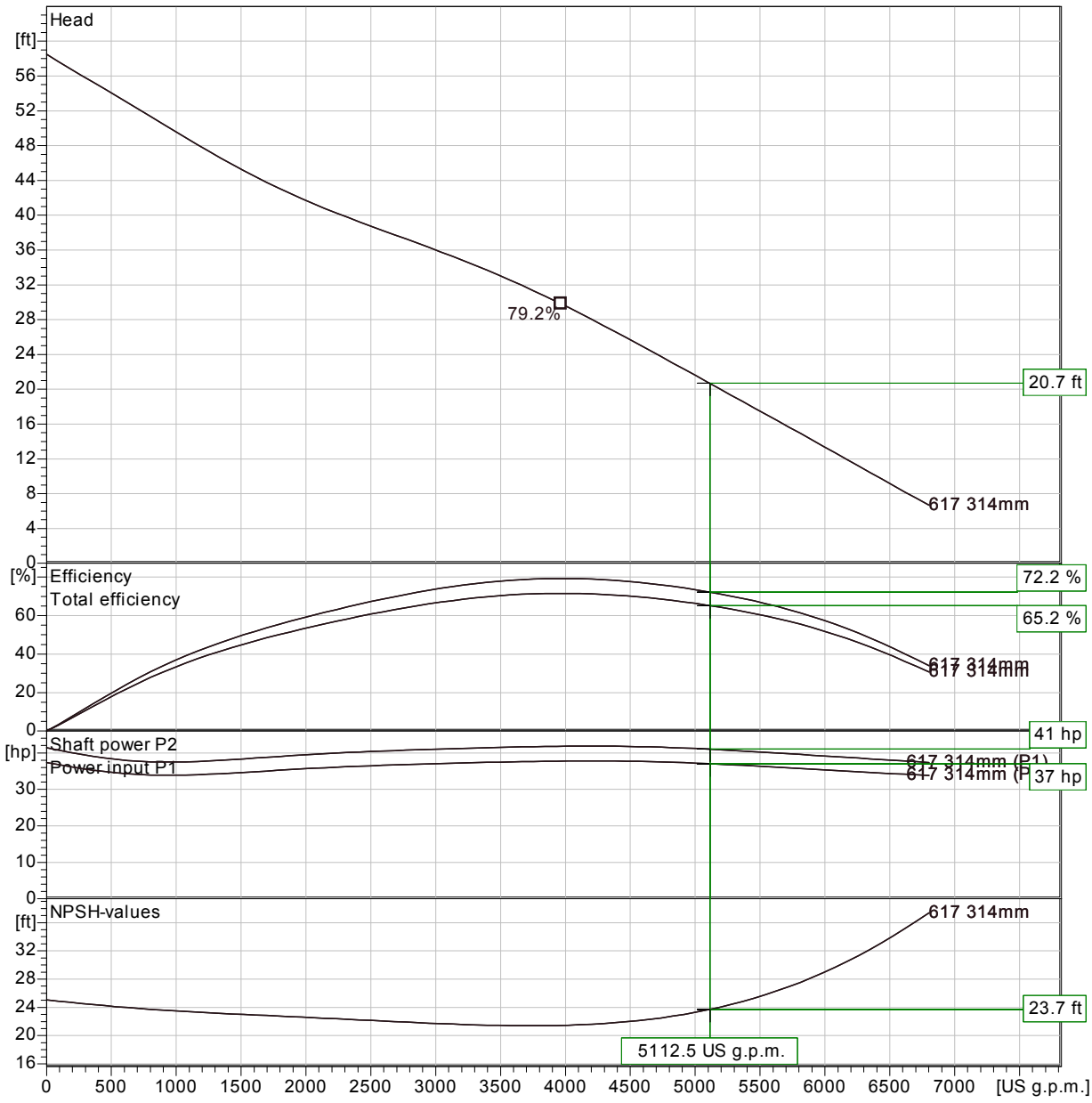
Discharge Flange Diameter	11 13/16 inch
Suction Flange Diameter	300 mm
Impeller diameter	12 3/8"
Number of blades	2

Motor

Motor #	N3202.180 30-23-6AA-W 45hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	6
Phases	3~
Rated power	45 hp
Rated current	55 A
Starting current	330 A
Rated speed	1170 rpm

Power factor	
1/1 Load	0.85
3/4 Load	0.82
1/2 Load	0.73

Efficiency	
1/1 Load	89.5 %
3/4 Load	90.0 %
1/2 Load	89.5 %



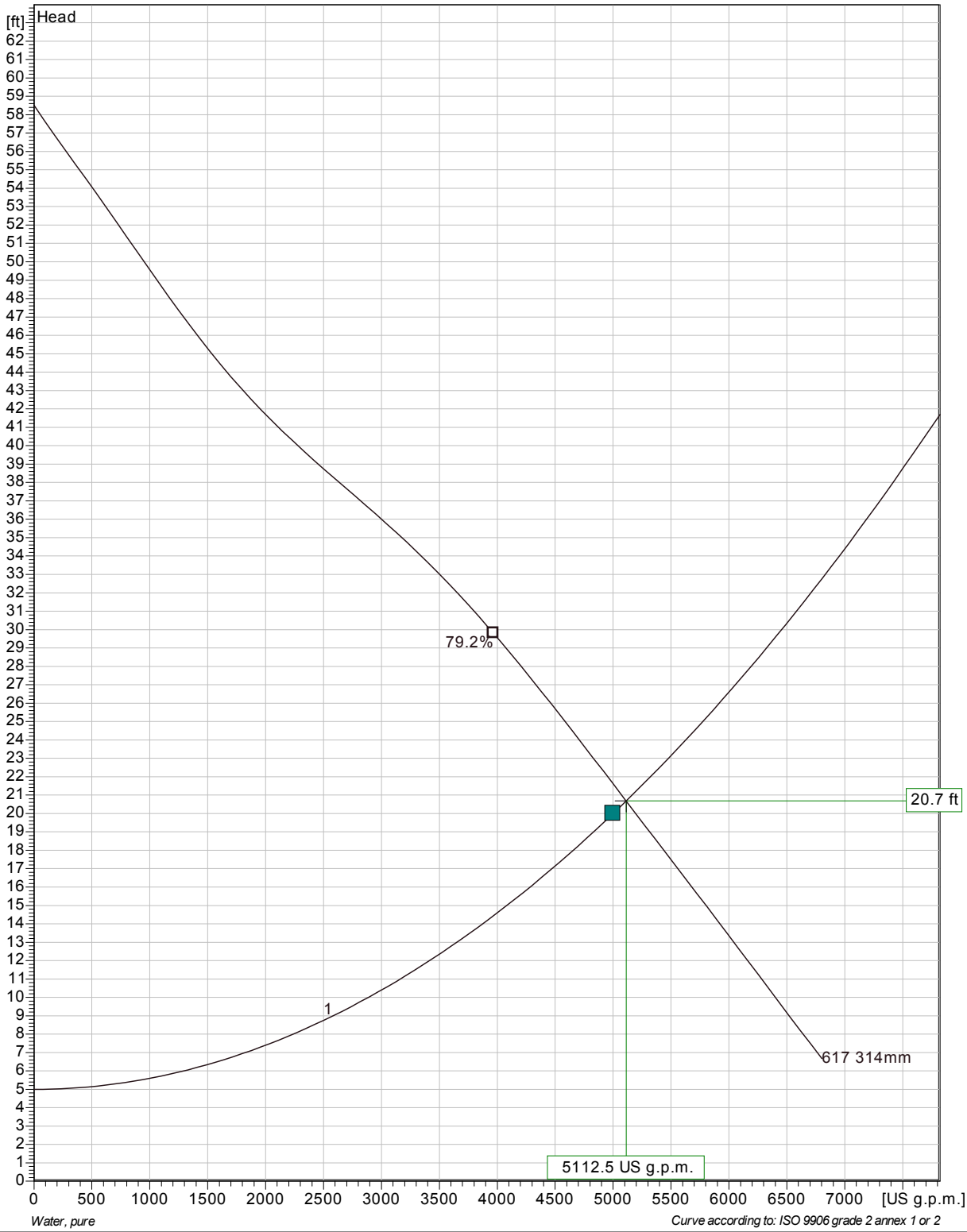
Water, pure

Curve according to: ISO 9906 grade 2 annex 1 or 2

Project	Project ID	Created by	Created on	Last update
			2015-02-10	

NP 3202 LT 3~ 617

Duty Analysis

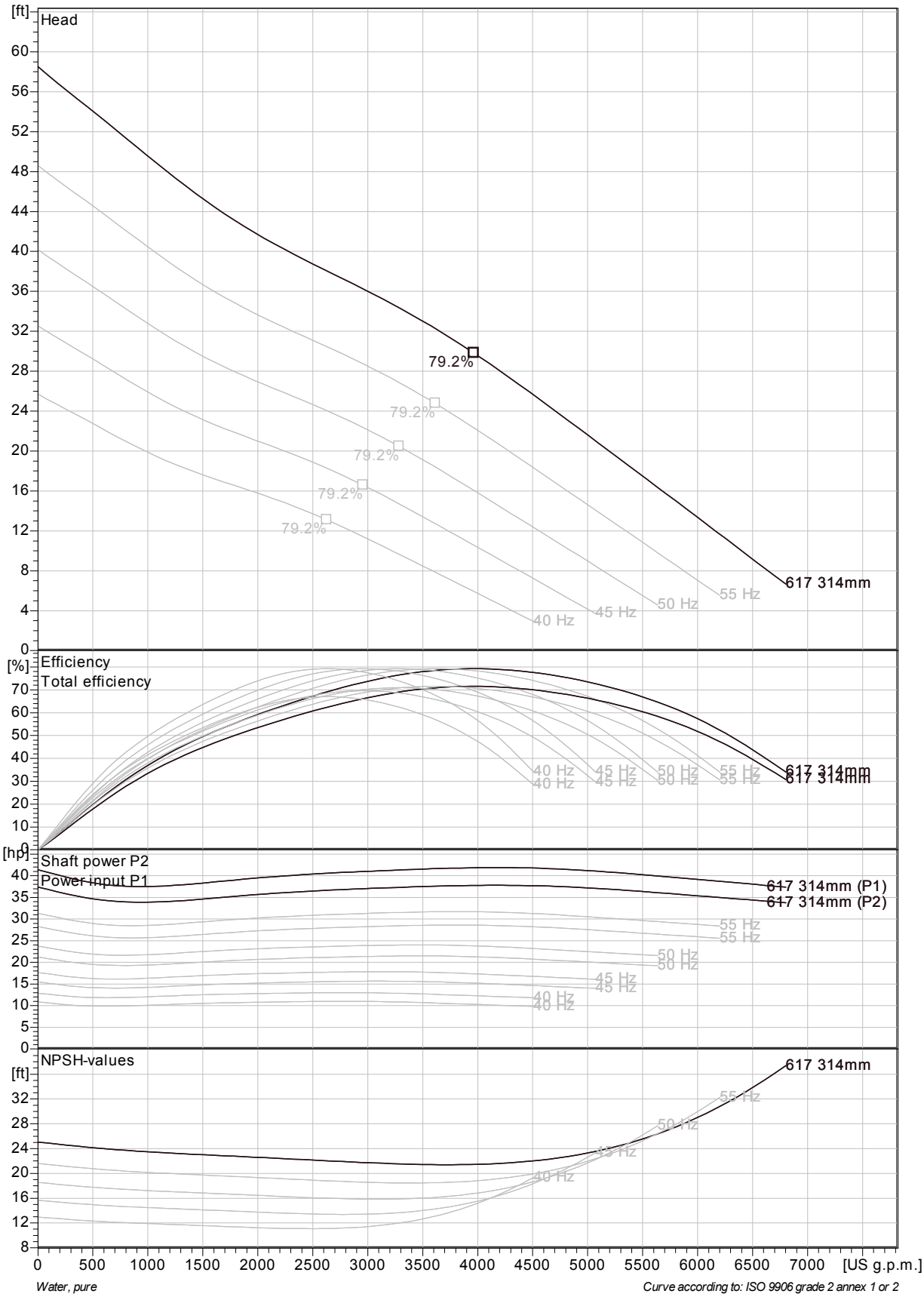


Pumps running /System	Individual pump Flow	Head	Shaft power	Total Flow	Head	Shaft power	Pump eff.	Specific energy	NPSHre
1	5110 US g.p.m.	20.7 ft	37 hp	5110 US g.p.m.	20.7 ft	37 hp	72.2 %	99.7 kWh/US MG	23.7 ft

Project	Project ID	Created by	Created on	Last update
			2015-02-10	

NP 3202 LT 3~ 617

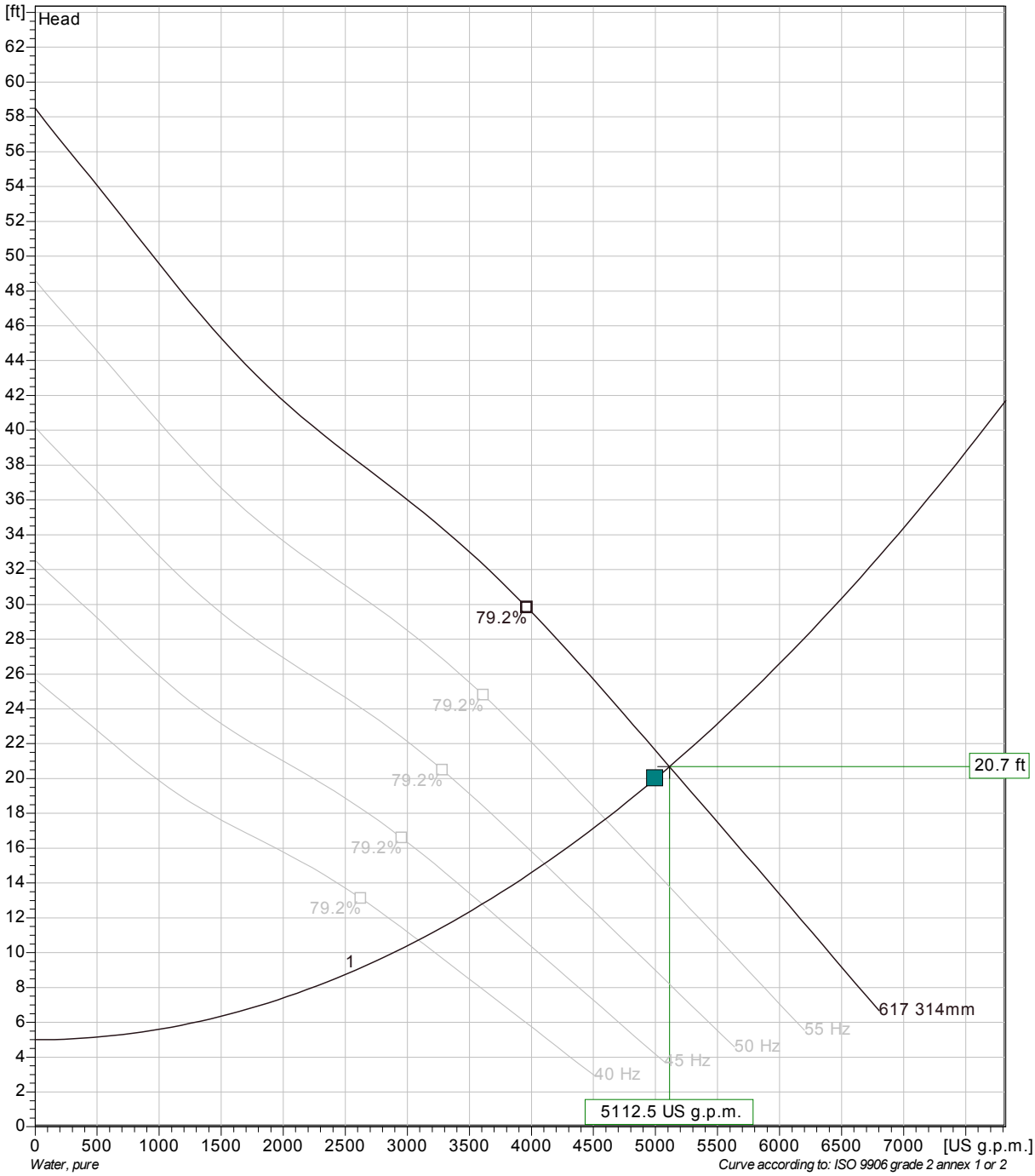
VFD Curve



Project	Project ID	Created by	Created on	Last update
			2015-02-10	

NP 3202 LT 3~ 617

VFD Analysis

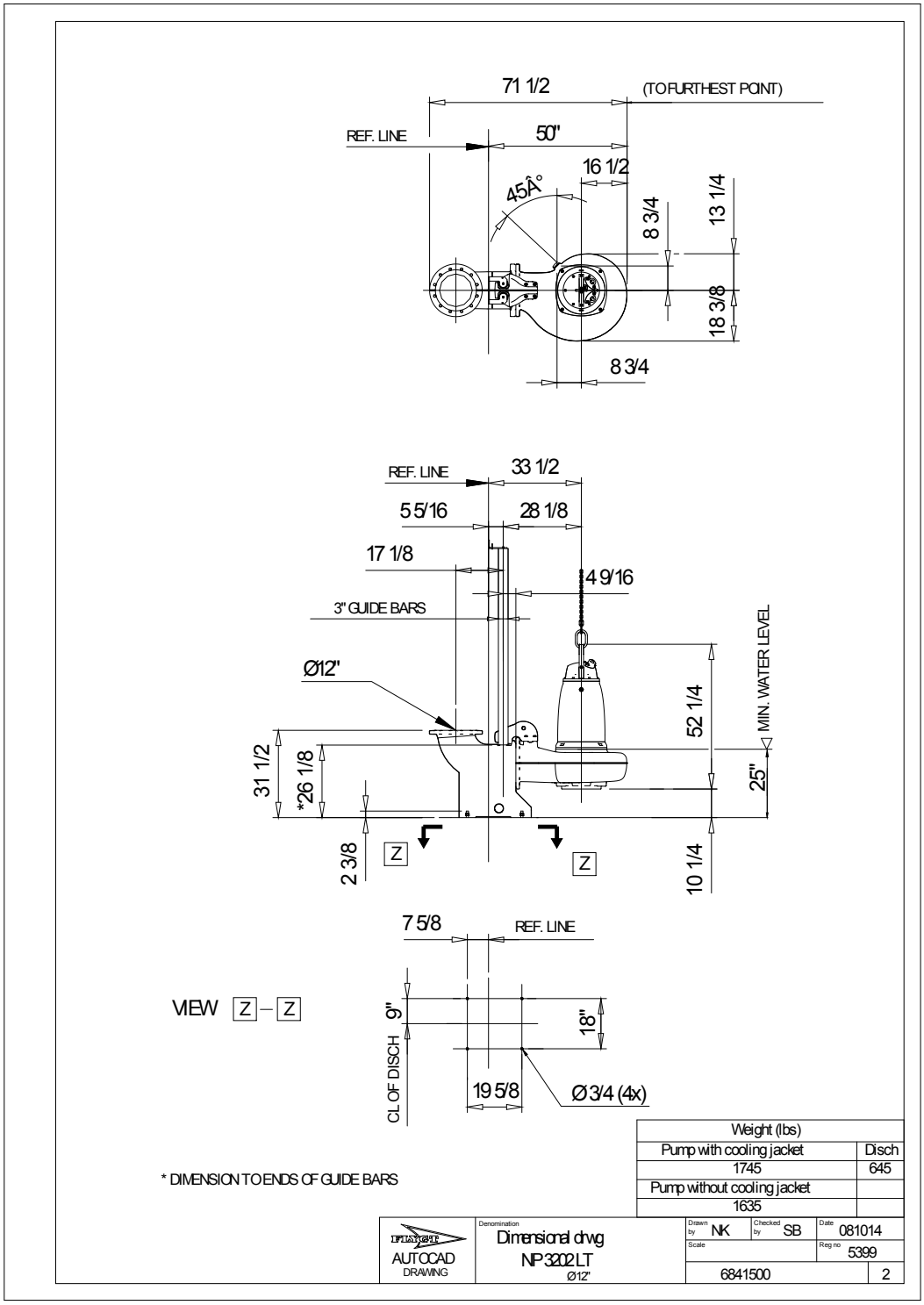


Pumps running /System	Individual pump Frequency	Flow	Head	Shaft power	Total Flow	Head	Shaft power	Hyd eff.	Specific energy	NPSHre
1	60 Hz	5110 US g.p.m.	20.7 ft	37 hp	5110 US g.p.m.	20.7 ft	37 hp	72.2 %	99.7 kWh/US MG	23.7 ft
1	55 Hz	4600 US g.p.m.	17.7 ft	28.1 hp	4600 US g.p.m.	17.7 ft	28.1 hp	73 %	84.3 kWh/US MG	20.2 ft
1	50 Hz	4100 US g.p.m.	15.1 ft	21.2 hp	4100 US g.p.m.	15.1 ft	21.2 hp	73.9 %	71.8 kWh/US MG	17.1 ft
1	45 Hz	3600 US g.p.m.	12.8 ft	15.5 hp	3600 US g.p.m.	12.8 ft	15.5 hp	75.1 %	61 kWh/US MG	14.2 ft
1	40 Hz	3090 US g.p.m.	10.7 ft	10.9 hp	3090 US g.p.m.	10.7 ft	10.9 hp	76.5 %	52.1 kWh/US MG	11.6 ft

Project	Project ID	Created by	Created on	Last update
			2015-02-10	

NP 3202 LT 3~ 617

Dimensional drawing



Project	Project ID	Created by	Created on	Last update
			2015-02-10	

XYLEM, INC (H-20 GP)

w/ BATTERY BACK-UP FOR AUDIO AND VISUAL ALARMS

SCOPE: Supply one complete H-20 LP Pre-Fab Lift Station, per design.

Pumps shall be capable of pumping domestic & commercial sewage.

Complete system shall be supplied by:

XYLEM, INC

NO SUBSTITUTIONS - NO ALTERNATES

The H-20 Load Rated Fiberglass Wetwell Must Be Manufactured By L.F. Manufacturing, Giddings, Texas, Which Includes A Written 20 Yr. Warranty

Certification of the wetwell H-20 load rating must be supplied with submittals. H-20 certification must be signed and sealed by an engineer registered in the State of Florida.

After the H-20 load rated wetwell has been installed, the ASTM Certification Number and Serial Tracking Number must be visible.

PUMPS: The submersible pumps shall be manufactured by Flygt Corporation. "The pumps shall be installed in the H-20 GP FRP wetwell utilizing a dual slide rail system. The pumps shall be capable of handling solids, fibrous materials, heavy sludge, and other matter typically found in wastewater. Major pump components shall be grey cast iron, ASTM A-48, Class 35B. The pump motor shall be NEMA B design and housed in an air-filled watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation by use of the trickle impregnation method. The motor shall be heat-shrink fit into the stator housing. The use of bolts, pins, or other fastening devices is not acceptable. The cable entry seal shall consist of a cylindrical elastomer grommet flanked by washers. Epoxies, silicones, or other sealing systems are not acceptable. Thermal switches set to open at 125 degrees C shall be embedded in the stator end coils to monitor the temperature of each phase winding. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

The pump shall be provided with a dual mechanical seal. Both upper and lower seal assemblies shall consist of a stationary tungsten-carbide ring and a rotating tungsten-carbide ring. Other seal materials are not considered acceptable."

DUPLEX CONTROL PANEL:

Control panel shall be assembled and built by a TUV (UL508A CERTIFIED) manufacturing facility.

The Enclosure shall be NEMA 4X, minimum 30" high x 30" wide x 10" deep Fiberglass with padlockable draw latches.

The enclosure shall have external mounting feet to allow for wall mounting. All hardware shall be stainless steel.

The following components shall be mounted through the enclosure:
1- ea. Red Alarm Beacon (Light)
1- ea. Alarm Horn
1- ea. Generator Receptacle w/ weatherproof cover
1- ea. Alarm Silence Pushbutton

The backpanel shall be fabricated from .125, 5052-H32 marine alloy aluminum. All components shall be mounted by machined stainless steel screws.

The following components shall be mounted to backpanel:
2- ea. Motor Contactors
1- ea. Volt Monitor (Single Phase) Phase Monitor (Three Phase)
1- ea. Control Transformer (480 Volt Only)
1- ea. Silence Relay
1- ea. Duplex Alternator
1- ea. Model BOAC5AH Battery Back-Up w/ Smart Charger (Per DEP)
20- ea. Terminals For Field Connections
6- ea. Terminals For Motor Connections (Single Phase Only)
3- ea. Grounding Lugs

The innerdoor shall be fabricated from .080, 5052-H32 marine alloy aluminum. The innerdoor shall have a continuous aluminum piano hinge.

The following components shall be mounted through the innerdoor:
1- ea. Main Circuit Breaker
1- ea. Emergency Circuit Breaker
1- ea. Mechanical Interlock For Emergency And Main Breakers
2- ea. Short Circuit Protectors
1- ea. Control Circuit Breaker
1- ea. Hand-Off-Auto Selector Switches
2- ea. Pump Run Pilot Lights
1- ea. Power On Pilot Light
2- ea. Elapse Time Meters (Non-Resetable)
1- ea. GFI Duplex Convenience Outlet

COMPONENT SPECIFICATIONS:
All circuit breakers shall be molded thermal magnetic.
The mechanical interlock shall prevent the normal and emergency main breakers being energized at the same time.
An emergency generator receptacle shall be supplied in accordance with DEP standards. The generator receptacle shall be adequately sized to meet the equipment operating conditions.

NEUTRAL TO BE SUPPLIED FOR BOTH 230V 3PHASE OR 230V SINGLE PHASE POWER

All motor short circuit protection devices must provide for undervoltage release and class 10 overload protection on all three phases. Visable trip indication, test, and reset capability must be provided without opening inner door.
Open frame, across the line, contactors shall be rated per IEC standards and properly sized per the motor requirements.
Contactors shall provide for safe touch power and control terminals.
Lightning Arrestor shall meet or exceed the requirements of ANSI/IEEE Std. C62.21-1984 section 8.6.1. and 8.7.3 shall be supplied by electrician and mounted on the bottom side of the switch disconnect ahead of the pump control panel.
A voltage monitor shall be supplied for single phase service.
A phase monitor shall be supplied for (3) phase service.
A green pilot light shall be supplied for each motor. The pilot light shall illuminate each time the motor is called to run.
Each pump shall have an Elapse Time Meter to record the accumulated run time. The ETM shall be 2" diameter, non-resettable, six digit, totally encapsulated unit.
A Red pilot light shall be supplied for control power. The pilot light shall illuminate when the control power is available inside the control panel.
Relays shall be ice-cube plug in type. Relay contacts shall be rated 10 amp minimum, DPDT.
Twenty (20) terminals shall be supplied for field connections.
The terminals shall be rated 25 amps minimum.
Each motors over-temperature contact shall be connected to the terminal strip and shall open a contact to de-energize the appropriate motor upon a high temperature within the motor.
A 15 Amp GFI duplex receptacle shall be supplied and mounted on the innerdoor.
Ground lugs shall be supplied and appropriately sized for each motor and for service entrance.

Nameplates for the innerdoor and back panel shall be of a graphic design, specifically depicting the intent for each device.

MISCELLANEOUS: All wiring on the backpanel shall be containted within the wiring duct. All wiring between the innerdoor and the backpanel shall be contained with in a plastic spiral wrap.
Each wire shall have a wire number at each end to correspond to the as built drawing for field troubleshooting.
The control panel shall be assembled by a TUV (UL508A Certified) manufacturing facility.

PUMP DATA		ELEVATIONS	
PRIMARY PUMP CAPACITY	GPM	TOP OF WETWELL	
PRIMARY TDH	'TDH	INLET INVERT	
PUMP MANUFACTURER	FLYGT	HIGH LEVEL ALARM (HLA)	
PUMP MODEL #		2nd PUMP ON (LAG)	
R.P.M.		1st PUMP ON (LEAD)	
HORSEPOWER		PUMPS OFF (OFF)	
ELECTRICAL/ VOLTS / PHASE		BOTTOM OF WETWELL	
PUMP DISCHARGE SIZE		WETWELL DIAMETER	48"
IMPELLER CODE			

FASTNERS & APPURTANCES: All fasternes, lifting cables, float cable bracket, hinges, and appurtances shall be made of AISI 304SS.
A 304SS slide/latch assembly shall be provided tor holding the doors open on the wetwell and valve box.
Slide rails shall be made of SCH.40 AISI 304SS pipe.
Pump lifting cables shall be made of AISI 304 SS.

H-20 LOAD RATED WETWELL WITH LIFTING LUGS:
The fiberglass wetwell must be H-20 load rated with integral lifting lugs, fiberglass slope in bottom of wetwell and valve box.
Certification of the H-20 load rating must be supplied at the time of submittals to Engineer.
The wetwell shall be manufactured of fiberglass reinforced polyester (FRP) of depth and diameter as shown on the lift station elevation detail. The wall thickness shall be adequate for the depth of the wetwell to maintain the H-20 LOAD RATING.

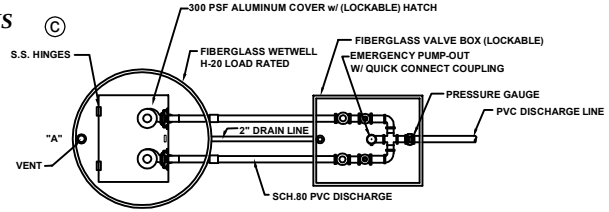
EXECUTION:
Installation shall be in strict accordance with the manufacturer's recommendations in the locations shown on the drawing.

INSPECTION & TESTING: A factory representative shall be provide for a one (1) time start-up and shall have complete knowledge of the proper operation and maintenance of complete system.
Megger the motors. The pump motors shall be megged out prior to the start-up to ensure that the insulation of the pump motor/cable is intact.
The pump controls and pumps shall be checked for mechanical reliability and proper operation.

*** ELECTRICIAN NOTES:**

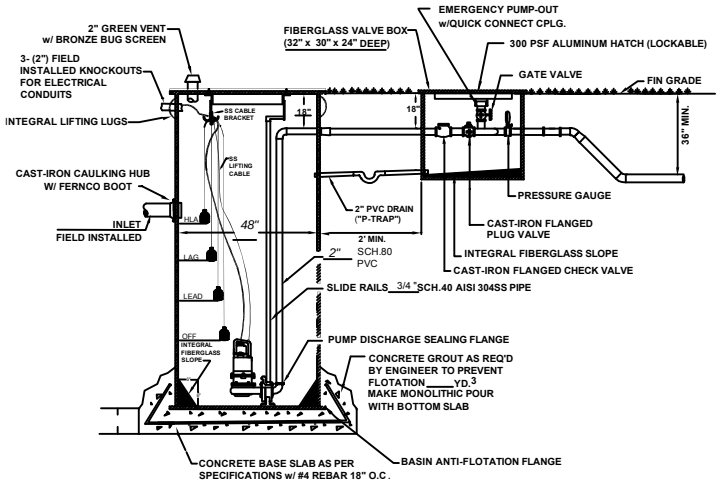
1. DRAWING NOT TO SCALE
* 2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES
* 3. ELECTRICIAN SHALL SEAL OFF CONDUIT RUNS
* 4. ELECTRICIAN TO MOUNT LIGHTNING ARRESTOR AT SWITCH DISCONNECT
* 5. CONTRACTOR SHALL VERIFY POWER SOURCE PRIOR TO ORDERING EQUIPMENT
* 6. NEUTRAL TO BE SUPPLIED FOR 23OV-3 PHASE OR 230V-SINGLE PHASE POWER.

ITT FLYGT, LLC / H-20 LP 01-21-13

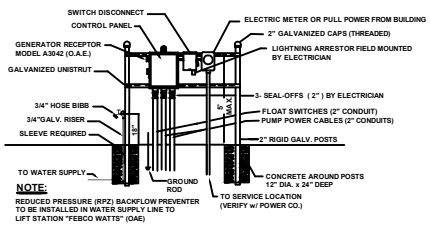


NOTE: PUMP CONTROL PANEL SHALL BE LOCATED 3 FEET MINIMUM FROM WETWELL PERIMETER AT POINT "A"

LIFT STATION PLAN



LIFT STATION SECTION



NOTE:
REDUCED PRESSURE (RPZ) BACKFLOW PREVENTER TO BE INSTALLED IN WATER SUPPLY LINE TO LIFT STATION "FEBCO WATTS" (OAE)

ELECTRICAL RISER

REVISIONS	BY

XYLEM, INC
Orlando.....407-880-2900
West Palm.....561-848-1200
Ft. Myers.....239-693-5228
Jacksonville.....239-825-8384
Miami.....305-621-0375

JOB NAME

DRAWN	
CHECKED	
DATE	
SCALE	
JOB NO.	

TECHNOLOGY IMPROVEMENTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Communication Infrastructure Nova

PROJECT#

301217

CATEGORY

Technology

FUND

301-General Improvement Fund

PROJECT LOCATION

Nova Recreation

MANAGEMENT

Engineering

PROJECT SCOPE

Communication infrastructure improvements to Nova Recreation.

JUSTIFICATION

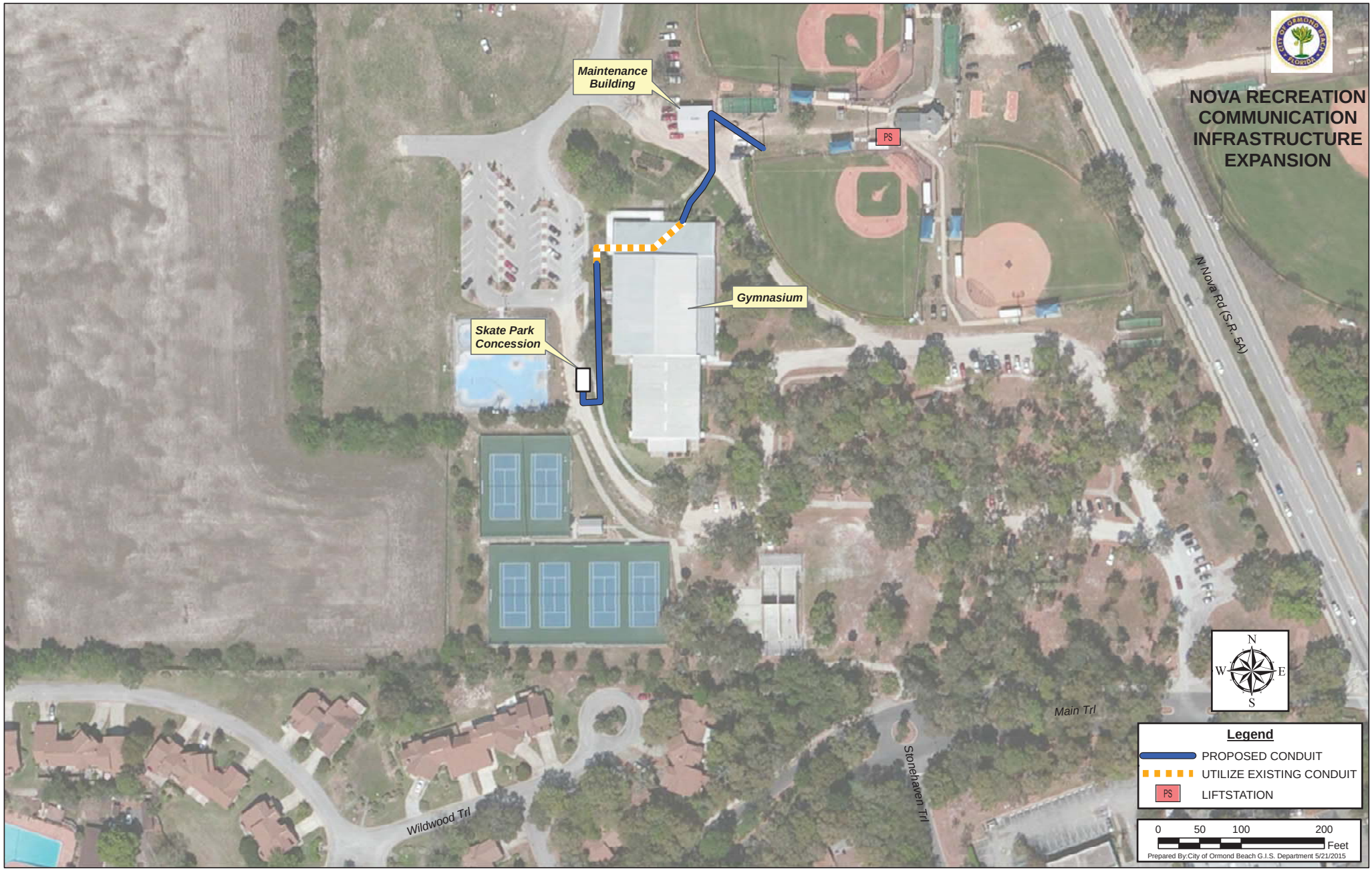
Recent improvements to facilities at the Nova Recreation park have increased usage and demand of resources. This project will provide more reliable resources to operate efficiently and allow for remote control monitoring of the onsite DVR security camera system.

PROJECT COST METHODOLOGY

Cost estimated from current continuing contract the City has with Danella

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Point to Point Wireless Connection	11,800	0	0	0	0	11,800
Fiber Optic Upgrade	9,000	0	0	0	0	9,000
Total	20,800	0	0	0	0	20,800

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	20,800	0	0	0	0	20,800
Total	20,800	0	0	0	0	20,800


NOVA RECREATION
COMMUNICATION
INFRASTRUCTURE
EXPANSION
Maintenance Building
PS
Gymnasium
Skate Park Concession
N Nova Rd (S.R. 5A)
Main Trl
Stonehaven Trl
Wildwood Trl
N
W
E
S
Legend
PROPOSED CONDUIT
UTILIZE EXISTING CONDUIT
PS
LIFTSTATION
0
50
100
200
Feet
Prepared By:City of Ormond Beach G.I.S. Department 5/21/2015

2015/2016 Communication Infrastructure Expansion

Point to Point Wireless Interconnections					
Project 215/2016-9					
Connection of water tower to Nova Rec.					
Item	Description	Unit Cost	Unit	Qty	Total
1	Wireless Radio Link	$ 7,000.00	EA	1	$ 7,000.00
2	Network Switch	$ 1,000.00	EA	1	$ 1,000.00
3	Labor and Installation	$ 1,000.00	LS	1	$ 1,000.00
					$ 9,000.00

Ormond Beach - Fiber Connect - Phase 3 - *Nova Recreation Fliber Optic Additions*

Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	520	Ft	$0.25	$130.00
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	520	Ft	$0.75	$390.00
3	Furnish & Install Muletape	520	Ft	$0.25	$130.00
4	Furnish & Install #12 Tracer wire	600	ft	$0.35	$210.00
5	Furnish & Install 24 count fiber	600	Ft	$1.44	$864.00
6	Furnish & Install 48 count fiber	600	Ft	$1.64	$984.00
7	Trench 2" 36" - Hand dig	400	Ft	$5.50	$2,200.00
8	Furnish & Directional Bore 2"	0	Ft	$12.00	$0.00
9	Core Bore	1	Ea	$100.00	$100.00
10	Furnish Warning Tape	1	Roll	$50.00	$50.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	4	Ea	$600.00	$2,400.00
12	Ground Wire 6 Awg (500' reel)	1	reel	$220.00	$220.00
13	Mid sheath Fiber Entry	0	Ea	$350.00	$0.00
14	Install new splice case & prep cable	3	Ea	$250.00	$750.00
15	Prep cable in panel	3	Ea	$150.00	$450.00
16	Splice 97-288 Fibers	24	Ea	$15.00	$360.00
17	Splice trays	2	Ea	$55.00	$110.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	2	Ea	$235.00	$470.00
21	install wall mount panel	2	Ea	$75.00	$150.00
22	pigtails	24	Ea	$21.00	$504.00
23	Bulkheads	2	Ea	$80.00	$160.00
24	Furnish & Install 2" riser with LB	2	Ea	$175.00	$350.00

$11,709.32

CAPITAL PROJECT DETAIL

PROJECT TITLE

Communication Infrastructure Remote Utilities

PROJECT#

409198

CATEGORY

Technology

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

Citywide

MANAGEMENT

Engineering

PROJECT SCOPE

Upgrades are currently being implemented to the utilities SCADA system. This project involves the installation of point to point wireless connection.

JUSTIFICATION

This upgrade needs to be implemented in conjunction with the utilities SCADA system upgrades to grow the system from its current status as a radio based system to a high speed wide area network.

PROJECT COST METHODOLOGY

Cost estimated from current continuing contract the City has with Danella

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Point to Point	35,500	0	0	0	0	35,500
Total	35,500	0	0	0	0	35,500

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water and Wastewater Charges	35,500	0	0	0	0	35,500
Total	35,500	0	0	0	0	35,500

2015/2016 Communication Infrastructure Expansion

Point to Point Wireless Interconnections					
Project 215/2016-8					
Connection of on-site facilities at the 3 water towers to SCADA data network					
(Water Plant, Leeway Trail, and Breakaway Trail)					
Item	Description	Unit Cost	Unit	Qty	Total
1	Wireless Radio Link	$ 7,000.00	EA	3	$ 21,000.00
2	Network Switch	$ 1,000.00	EA	3	$ 3,000.00
3	Labor and Installation	$ 2,500.00	LS	1	$ 2,500.00
					$ 26,500.00

2015/2016 Communication Infrastructure Expansion

Point to Point Wireless Interconnections					
Project 215/2016-8					
Connection of water tower to Andy Romano Beachfront Park					
(Water Plant, Leeway Trail, and Breakaway Trail)					
Item	Description	Unit Cost	Unit	Qty	Total
1	Wireless Radio Link	$ 7,000.00	EA	1	$ 7,000.00
2	Network Switch	$ 1,000.00	EA	1	$ 1,000.00
3	Labor and Installation	$ 1,000.00	LS	1	$ 1,000.00
					$ 9,000.00

CAPITAL PROJECT DETAIL

PROJECT TITLE

Communication Infrastructure Fire Station 92

PROJECT#

301218

CATEGORY

Technology

FUND

301-General Improvement Fund

PROJECT LOCATION

Fire Station 92

MANAGEMENT

Engineering

PROJECT SCOPE

Expansion of existing city fiber optic network connecting Fire Station 92 to previously constructed network facilities.

JUSTIFICATION

The creation of a fiber optic network between City facilities provides increased reliability, increased data rates and immunity from both weather and power related events. This project builds upon previous expansion down Division Avenue to the Taw water wells and Environmental Learning Center by extending conduit. As Fire Station 92 has been designated as the backup EOC, this extension will provide greater reliability during emergencies.

PROJECT COST METHODOLOGY

Cost estimated from current continuing contract the City has with Danella

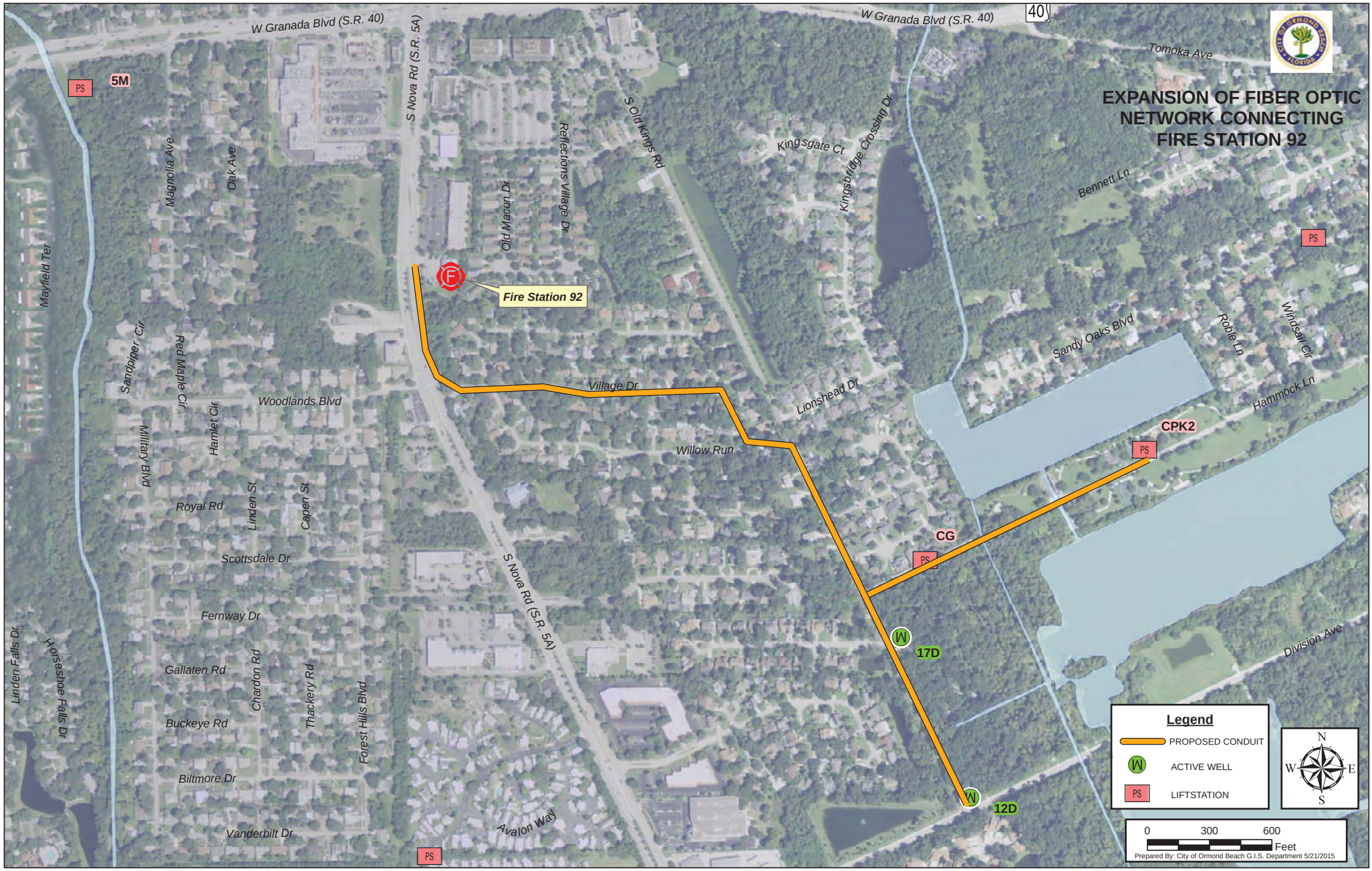
EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Fiber Optics	0	84,000	0	0	0	84,000
Total	0	84,000	0	0	0	84,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water and Wastewater Charges	0	42,000	0	0	0	42,000
Property Taxes-General CIP	0	42,000	0	0	0	42,000
Total	0	84,000	0	0	0	84,000

Ormond Beach - Well Fiber Connect - *From Phase 2 on S Old Kings Road Fire Station 92*

Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	5050	Ft	$0.25	$1,262.50
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	5050	Ft	$0.75	$3,787.50
3	Furnish & Install Muletape	5050	Ft	$0.25	$1,262.50
4	Furnish & Install #12 Tracer wire	5500	ft	$0.35	$1,925.00
5	Furnish & Install 24 count fiber	5500	Ft	$1.44	$7,920.00
6	Furnish & Install 48 count fiber	5500	Ft	$1.64	$9,020.00
7	Trench 2" 36" - Hand dig	0	Ft	$5.50	$0.00
8	Furnish & Directional Bore 2"	3571	Ft	$12.00	$42,852.00
9	Core Bore	3	Ea	$100.00	$300.00
10	Furnish Warning Tape	2	Roll	$50.00	$100.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	7	Ea	$600.00	$4,200.00
12	Ground Wire 6 Awg (500' reel)	2	reel	$220.00	$440.00
13	Mid sheath Fiber Entry	3	Ea	$350.00	$1,050.00
14	Install new splice case & prep cable	3	Ea	$250.00	$750.00
15	Prep cable in panel	3	Ea	$150.00	$450.00
16	Splice 97-288 Fibers	192	Ea	$15.00	$2,880.00
17	Splice trays	4	Ea	$55.00	$220.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	3	Ea	$235.00	$705.00
21	install wall mount panel	3	Ea	$75.00	$225.00
22	pigtails	96	Ea	$21.00	$2,016.00
23	Bulkheads	8	Ea	$80.00	$640.00
24	Furnish & Install 2" riser with LB	3	Ea	$175.00	$525.00

$83,257.82


EXPANSION OF FIBER OPTIC NETWORK CONNECTING FIRE STATION 92
W Granada Blvd (S.R. 40)
S Nova Rd (S.R. 5A)
Tomoka Ave
Bennett Ln
Kingsgate Ct
Kingsbridge Crossing Dr
S Old Kings Rd
Reflections Village Dr
Old Macon Dr
Magnolia Ave
Oak Ave
Mayfield Ter
Sandpiper Cir
Red Maple Cir
Hamlet Cir
Military Blvd
Woodlands Blvd
Village Dr
Willow Run
Lionshead Dr
Sandy Oaks Blvd
Roble Ln
Windsail Cir
Hammock Ln
Division Ave
Royal Rd
Linden St
Capen St
Scottsdale Dr
Fernway Dr
Gallaten Rd
Chardon Rd
Thackery Rd
Forest Hills Blvd
Buckeye Rd
Biltmore Dr
Vanderbilt Dr
Avalon Way
Linden Falls Dr
Horseshoe Falls Dr
Fire Station 92
5M
CPK2
CG
17D
12D
PS
Legend
PROPOSED CONDUIT
ACTIVE WELL
LIFTSTATION
N
W
E
S
0
300
600
Feet
Prepared By: City of Ormond Beach G.I.S. Department 5/21/2015

CAPITAL PROJECT DETAIL

PROJECT TITLE

Communication Infrastructure Pump Stations

PROJECT#

409197

CATEGORY

Technology

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

Pump Stations 5M and 2M

MANAGEMENT

Engineering

PROJECT SCOPE

Expansion of existing city fiber optic network and related communication technology to additional city wide facilities.

JUSTIFICATION

Efficient control of utilities facilities including remote pumping stations relies upon the hardware, software and network connections linking the facilities to the point of control. The City has invested and continues to invest funds in the SCADA system to monitor the many facets that comprise the wastewater collection system. Expanding the City's fiber optic network will continue to make the direct connection of additional pumping stations to the system possible.

PROJECT COST METHODOLOGY

Cost estimated from current continuing contract the City has with Danella

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Fiber Optics	0	56,000	0	0	0	56,000
Total	0	56,000	0	0	0	56,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water and Wastewater Charges	0	56,000	0	0	0	56,000
Total	0	56,000	0	0	0	56,000

Ormond Beach - Fiber Connect - Phase 3 - *From Fire Station 92 to PS 5M*

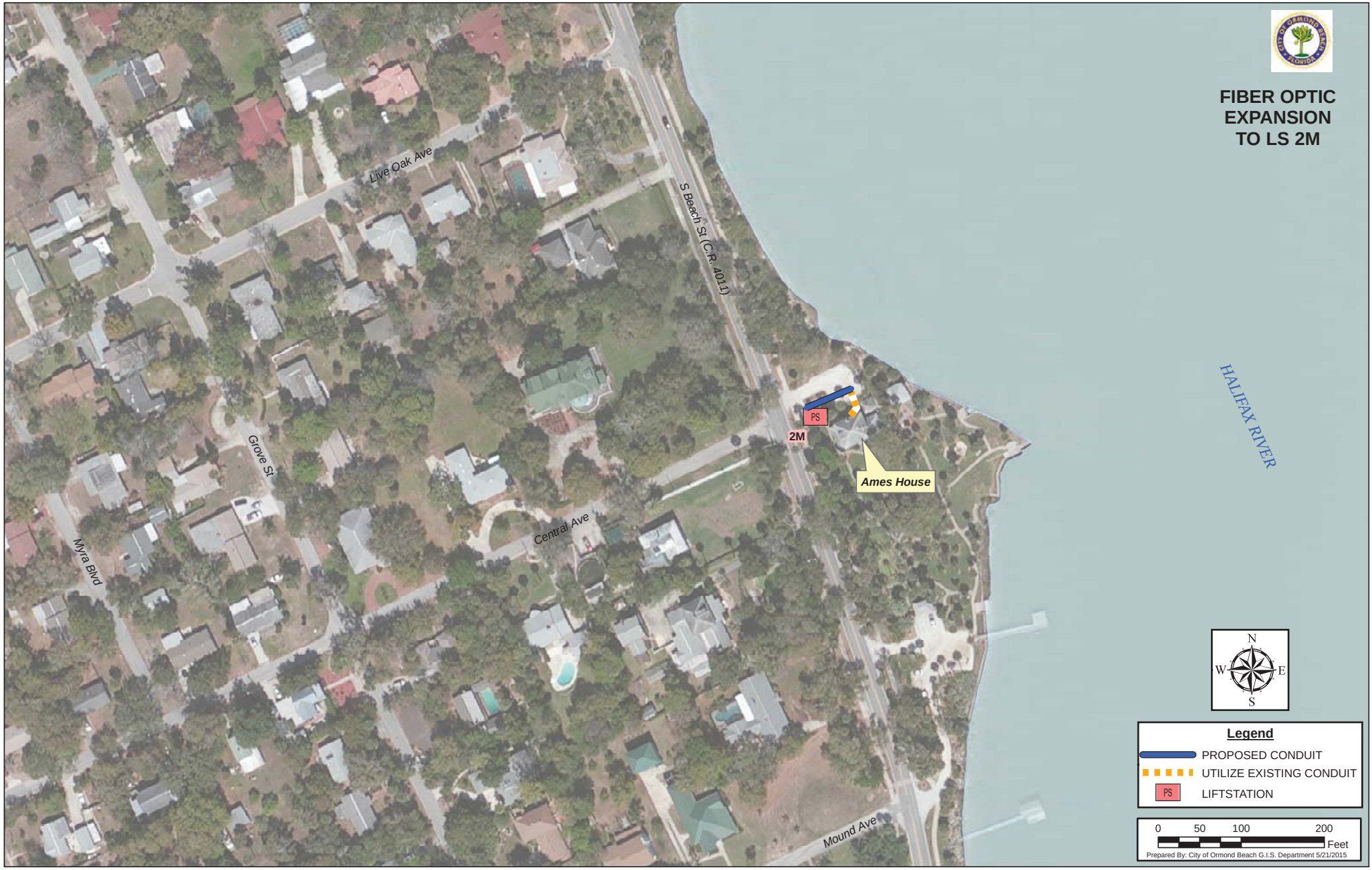
Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	2500	Ft	$0.25	$625.00
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	2500	Ft	$0.75	$1,875.00
3	Furnish & Install Muletape	2500	Ft	$0.25	$625.00
4	Furnish & Install #12 Tracer wire	2750	ft	$0.35	$962.50
5	Furnish & Install 24 count fiber	2750	Ft	$1.44	$3,960.00
6	Furnish & Install 48 count fiber	2750	Ft	$1.64	$4,510.00
7	Trench 2" 36" - Hand dig	1150	Ft	$5.50	$6,325.00
8	Furnish & Directional Bore 2"	1350	Ft	$12.00	$16,200.00
9	Core Bore	3	Ea	$100.00	$300.00
10	Furnish Warning Tape	2	Roll	$50.00	$100.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	4	Ea	$600.00	$2,400.00
12	Ground Wire 6 Awg (500' reel)	2	reel	$220.00	$440.00
13	Mid sheath Fiber Entry	3	Ea	$350.00	$1,050.00
14	Install new splice case & prep cable	3	Ea	$250.00	$750.00
15	Prep cable in panel	3	Ea	$150.00	$450.00
16	Splice 97-288 Fibers	192	Ea	$15.00	$2,880.00
17	Splice trays	4	Ea	$55.00	$220.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	3	Ea	$235.00	$705.00
21	install wall mount panel	3	Ea	$75.00	$225.00
22	pigtails	96	Ea	$21.00	$2,016.00
23	Bulkheads	8	Ea	$80.00	$640.00
24	Furnish & Install 2" riser with LB	3	Ea	$175.00	$525.00

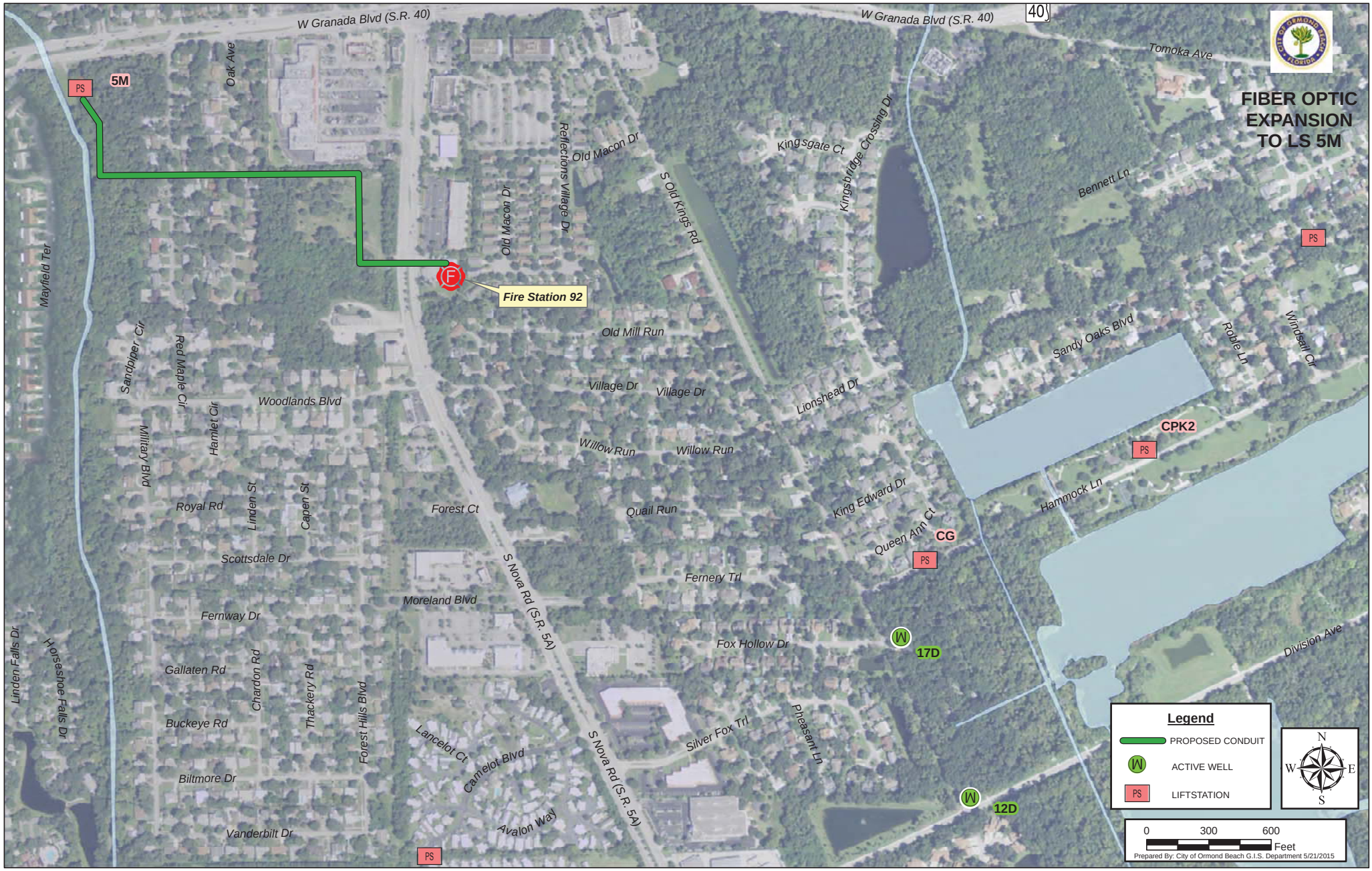
$48,510.82

Ormond Beach - Fiber Connect - Phase 3 - *From Ames House to PS 2M*

Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	100	Ft	$0.25	$25.00
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	100	Ft	$0.75	$75.00
3	Furnish & Install Muletape	100	Ft	$0.25	$25.00
4	Furnish & Install #12 Tracer wire	125	ft	$0.35	$43.75
5	Furnish & Install 24 count fiber	125	Ft	$1.44	$180.00
6	Furnish & Install 48 count fiber	125	Ft	$1.64	$205.00
7	Trench 2" 36" - Hand dig	100	Ft	$5.50	$550.00
8	Furnish & Directional Bore 2"	0	Ft	$12.00	$0.00
9	Core Bore	2	Ea	$100.00	$200.00
10	Furnish Warning Tape	1	Roll	$50.00	$50.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	2	Ea	$600.00	$1,200.00
12	Ground Wire 6 Awg (500' reel)	1	reel	$220.00	$220.00
13	Mid sheath Fiber Entry	1	Ea	$350.00	$350.00
14	Install new splice case & prep cable	2	Ea	$250.00	$500.00
15	Prep cable in panel	2	Ea	$150.00	$300.00
16	Splice 97-288 Fibers	24	Ea	$15.00	$360.00
17	Splice trays	2	Ea	$55.00	$110.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	2	Ea	$235.00	$470.00
21	install wall mount panel	2	Ea	$75.00	$150.00
22	pigtails	24	Ea	$21.00	$504.00
23	Bulkheads	2	Ea	$80.00	$160.00
24	Furnish & Install 2" riser with LB	2	Ea	$175.00	$350.00

$6,755.07


FIBER OPTIC
EXPANSION
TO LS 2M
Live Oak Ave
S Beach St (C.R. 4011)
Grove St
Myra Blvd
Central Ave
Mound Ave
PS
2M
Ames House
HALIFAX RIVER
N
W
E
S
Legend
PROPOSED CONDUIT
UTILIZE EXISTING CONDUIT
PS
LIFTSTATION
0
50
100
200
Feet
Prepared By: City of Ormond Beach G.I.S. Department 5/21/2015


FIBER OPTIC EXPANSION TO LS 5M
W Granada Blvd (S.R. 40)
W Granada Blvd (S.R. 40)
40
Tomoka Ave
5M
PS
Oak Ave
Mayfield Ter
Fire Station 92
Old Macon Dr
Reflections Village Dr
Old Macon Dr
S Old Kings Rd
Kingsgate Ct
Kingsbridge Crossing Dr
Bennett Ln
PS
Old Mill Run
Sandy Oaks Blvd
Roble Ln
Windsail Cir
Sandpiper Cir
Red Maple Cir
Hamlet Cir
Woodlands Blvd
Village Dr
Village Dr
Lionshead Dr
CPK2
PS
Military Blvd
Willow Run
Willow Run
Royal Rd
Linden St
Capen St
Forest Ct
Quail Run
King Edward Dr
Hammock Ln
Queen Ann Ct
CG
PS
Scottsdale Dr
S Nova Rd (S.R. 5A)
Fernery Trl
Moreland Blvd
Fernway Dr
Fox Hollow Dr
17D
Division Ave
Linden Falls Dr
Horseshoe Falls Dr
Gallaten Rd
Chardon Rd
Thackery Rd
Forest Hills Blvd
Buckeye Rd
Lancelot Ct
Camelot Blvd
S Nova Rd (S.R. 5A)
Silver Fox Trl
Pheasant Ln
Biltmore Dr
12D
Avalon Way
Vanderbilt Dr
PS
Legend
PROPOSED CONDUIT
ACTIVE WELL
LIFTSTATION
N
W
E
S
0
300
600
Feet
Prepared By: City of Ormond Beach G.I.S. Department 5/21/2015

CAPITAL PROJECT DETAIL

PROJECT TITLE

P25 Compliant Radios

PROJECT#

301215

CATEGORY

Technology

FUND

301-General Improvement Fund

PROJECT LOCATION

Various

MANAGEMENT

Police

PROJECT SCOPE

Purchase 232 radios: M7300 radios (106), XG-75 radios (120), XG-25P radios (6).

JUSTIFICATION

The FCC initially mandated that all public safety and first responders upgrade their radio systems to become P25 compliant by December 2012. Due to budget constraints of local governments, the deadline has been extended to December 2018. P25 was mandated by the FCC to decrease radio bandwidth voice channels from 15 kHz to 12.5 kHz thereby increasing the availability of public channels for all municipal government and public safety systems to use.

PROJECT COST METHODOLOGY

Quotes from current vendor.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
M7300	0	451,430	0	0	0	451,430
XG-75 Radios	0	366,650	0	0	0	366,650
XG-25P Radios	0	12,854	0	0	0	12,854
Total	0	830,934	0	0	0	830,934

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Equipment Financing	0	830,934	0	0	0	830,934
Total	0	830,934	0	0	0	830,934

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500807

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Site	Ormond Beach, City of - Public Works Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100PW	XG25P Scan Portable Radios	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG25P Portable Radio Package For Public Works - Pricing per Harris MBP-15923 and is valid through December 31, 2018.				
DPXGPB78B - Portable,XG-25P,764-870MHz,Scan The below zero dollar features and accessories are included with the package purchase.	6	Each	2,142.40	12,854.40
DPPL3R - Feature,Maximum (1024+) System/Groups	6	Each	0.00	0.00
DPPL4F - Feature,P25 Phase 2, TDMA	6	Each	0.00	0.00
DPPRO - Feature, Provoice	6	Each	0.00	0.00
DPP25ED - Feature Package, P25 Trunking & EDACS	6	Each	0.00	0.00
DPPA3R - Battery, Li-Ion, 2400 mAh	6	Each	0.00	0.00
DPPA3R - Battery, Li-Ion, 2400 mAh - One batter is included with the package. Customer requested extra battery quoted.	6	Each	57.60	345.60
DPNC5X - Antenna,764-870MHz,1/4 Wave Whip	6	Each	0.00	0.00
DPHC7P - Belt Clip,Metal	6	Each	0.00	0.00
DPCH4G - Charger,Single Bay,Tri-Chemestry,XG-25P	6	Each	0.00	0.00
FM014712 - Cover, UDC Weather Proof, P5300/P5400	6	Each	0.00	0.00
DPPL7G - FEATURE, ESK/P25 PERSONALITY LOCK	6	Each	0.00	0.00
DPPL5K - Feature,ProFile OTAP	6	Each	0.00	0.00

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QUOTATION

Page	2/2
Date	4/8/2015
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Description	Qty	Unit	Sale Price	Total
Terminal Trade-in Program - Trade in program is one for one on the purchase of a new radio. Traded radio can either be a portable or mobile and must be funcitional on the 800 MHz system.	(6)	EA	(195.00)	(1,170.00)
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	6	Each	864.00	5,184.00
Program, Portable Scan	6	Each	42.00	252.00
Shipping and Handling - Shipping and handling is based upon quantity ordered and subject to change. - Allow 8 -10 weeks delivery ARO.	1	Each	50.00	50.00
			Subtotal:	17,516.00

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	17,516.00

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500815

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA

Site	City of Ormond Beach - Police Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100PD	XG75P Scan Portable	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75P Scan Portable Package for Police Dept. - Pricing Per Harris MBP-15923 and is valid through December 31. 2018.				
EVXGPB78B - Portable XG-75, 764-870 MHz, Scan, Black - The below zero dollar software and accessories are provided with the package purchase.	87	Each	3,330.41	289,745.67
MAEVNPL3R - Feature, Maximum (1024+) Systems/Groups	87	Each	0.00	0.00
EVXGNPL4F - Feature Package, P25 PHASE 2 TDMA	87	Each	0.00	0.00
EVPRO - Feature, Provoice	87	Each	0.00	0.00
EVP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	87	Each	0.00	0.00
EVPA3R - Battery,Li-Ion,2400mAH	87	Each	0.00	0.00
EVPA3R - Battery,Li-Ion,2400mAH - One battery is included with the package. Customer requested extra battery quoted.	87	Each	57.60	5,011.20
MAEVNNC5X - Antenna, 764-870 MHz, 1/4 Wave Whip (KRE10115062)	87	Each	0.00	0.00
MAEVNHC2G - Belt Clip, Standard (CC23894)	87	Each	0.00	0.00
MAEVNCH9T - `Charger, Single, Tri-Chemistry (CH104560007)	87	Each	0.00	0.00
FM014712 - Cover, UDC Weather Proof, P5300/P5400	87	Each	0.00	0.00
MAEVNPL7G - Feature,ESK/P25 Personality Lock	87	Each	0.00	0.00

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QUOTATION

Page	2/2
Date	4/8/2015
Quote Number	QTE1500815

Description	Qty	Unit	Sale Price	Total
MAEVPKG8F - Feature, Encryption (includes 256-B AES Encryption for P25 T	87	Each	0.00	0.00
MAEVNPL5K - Feature, Profile OTAP Over the Air Programming	87	Each	0.00	0.00
V2S2ER12111 - Storm Speaker Mic, P5300/P5400	87	Each	108.12	9,406.44
Terminal Trade-in Program - Trade in is one for one on the purchase of a new radio. Traded radio can be either mobile or portable, but must be a functioning radio on the 800MHz system.	(87)	EA	(195.00)	(16,965.00)
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	87	Each	864.00	75,168.00
Program, Portable Scan	87	Each	42.00	3,654.00
Shipping and Handling - Shipping and handling is based upon quantity ordered and is subject to change. - Please allow 8 - 10 weeks delivery ARO.	1	Each	250.00	250.00
			Subtotal:	366,270.31

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	366,270.31

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500818

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Site	City of Ormond Beach - Police Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100PD	XG75M/M7300 Scan Mobile Packag	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75M/M7300 Scan Mobile Package for Police Vehicles - Pricing Per Harris MBP-15923 and is valid through December 31, 2018.				
MAMWSDMXX - Mobile,M7300, 764-870 MHz, Half Duplex, Unencrypted software and standard accessories are included in the package purchase as indicated by zero dollar items.	81	Each	4,254.81	344,639.61
MWP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	81	Each	0.00	0.00
MWPRO - Feature, Provoice	81	Each	0.00	0.00
MWPL4F - Feature, P25 Phase 2, TDMA	81	Each	0.00	0.00
MAMWNPL3R - Feature, Max(1024+) Sys/Grp Option	81	Each	0.00	0.00
MAMWNCP9E - Control Unit, CH-721, Scan, Remote Mount	81	Each	0.00	0.00
MAMWNZN7R - M7300 Remote Mount Accessory Kit	81	Each	0.00	0.00
MAMWNMC7Z - Microphone,Standard,CH721 Control Unit	81	Each	0.00	0.00
AN225001001 - Antenna Element, 700/800 3dB	81	Each	0.00	0.00
AN125001002 - Antenna, Base, Standard Roof Mnt Low Loss	81	Each	0.00	0.00
MAMWPKG8F - Feature,256-AES,64-DES ECP Encryption	81	Each	0.00	0.00
MAMWNPL7G - Feature, ESK/P25 Personality Lock	81	Each	0.00	0.00

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QUOTATION

Page	2/2
Date	4/8/2015
Quote Number	QTE1500818

Description	Qty	Unit	Sale Price	Total
MAMWNPL5K - Feature,ProFile Over-the-Air-Programming	81	Each	0.00	0.00
Terminal Trade-in Program - Trade in program is one for one on the purchase of a new radio. Traded radio can either be a portable or mobile and must be functional on the 800 MHz system.	(81)	EA	(195.00)	(15,795.00)
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	81	Each	1,056.00	85,536.00
Program, Rear Mount Radio - Installation was not quoted per customer request.	81	Each	42.00	3,402.00
Estiimated Shipping and Handling - Shipping and handling is estimated and subject to change based on quantity ordered. - Allow 8 - 10 weeks delivery ARO	1	Each	300.00	300.00
			Subtotal:	418,082.61

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	418,082.61

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500816

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Site	City of Ormond Beach - Police Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100PD	XG75M Base Units	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75 Front Mount Base Units Police EOC				
- Package Pricing per Harris MBP-15923 and is valid through December 31, 2018.				
MAMWSDMXX - Mobile,M7300, 764-870 MHz, Half Duplex, Unencrypted	4	Each	4,301.43	17,205.72
- The below zero dollar software and accessories are included in with the package purchase.				
MWP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	4	Each	0.00	0.00
MWPRO - Feature, Provoice	4	Each	0.00	0.00
MWPL4F - Feature, P25 Phase 2, TDMA	4	Each	0.00	0.00
MAMWNMC7Z - Microphone,Standard,CH721 Control Unit	4	Each	0.00	0.00
MAMWNCP9G - Control Unit, CH-721, Scan, Front Mount	4	Each	0.00	0.00
SEC1223 - 23 Amp Power Supply	4	Each	0.00	0.00
MAMWNPL5K - Feature,ProFile Over-the-Air-Programming	4	Each	0.00	0.00
MAMWNPL7G - Feature, EDACS Security Key	4	Each	0.00	0.00
MAMWNPL3R - Feature, Max(1024+) Sys/Grp Option	4	Each	0.00	0.00
- Will utilize customer's existing antenna and coax unless otherwise specified.				
MAMWNZN6W - Accessory Kit, M7300 Front Mount	4	Each	0.00	0.00
Terminal Trade-in Program	(4)	EA	(195.00)	(780.00)

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500808

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA
Site	City of Ormond Beach - Fire Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100FD	XG75M Base Units	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75 Front Mount Base Units for Fire Dept. - Package Pricing per Harris MBP-15923 and is valid through December 31, 2018.				
MAMWSDMXX - Mobile,M7300, 764-870 MHz, Half Duplex, Unencrypted - The below zero dollar software and accessories are included in with the package purchase.	5	Each	4,301.43	21,507.15
MWP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	5	Each	0.00	0.00
MWPRO - Feature, Provoice	5	Each	0.00	0.00
MWPL4F - Feature, P25 Phase 2, TDMA	5	Each	0.00	0.00
MAMWNMC7Z - Microphone,Standard,CH721 Control Unit	5	Each	0.00	0.00
MAMWNCP9G - Control Unit, CH-721, Scan, Front Mount	5	Each	0.00	0.00
SEC1223 - 23 Amp Power Supply	5	Each	0.00	0.00
MAMWNPL5K - Feature,ProFile Over-the-Air-Programming	5	Each	0.00	0.00
MAMWNPL7G - Feature, EDACS Security Key	5	Each	0.00	0.00
MAMWNPL3R - Feature, Max(1024+) Sys/Grp Option - Will utilize customer's existing antenna and coax unless otherwise specified.	5	Each	0.00	0.00
MAMWNZN6W - Accessory Kit, M7300 Front Mount	5	Each	0.00	0.00
Terminal Trade-in Program	(5)	EA	(195.00)	(975.00)

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QUOTATION

Page	2/2
Date	4/8/2015
Quote Number	QTE1500808

Description	Qty	Unit	Sale Price	Total
- Trade in program is one fore one on the purchase of a new radio. Traded radio can either be a portable or mobile must be functional on the 800 MHz system.				
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	5	Each	1,056.00	5,280.00
Program, Front Mount Radio	5	Each	42.00	210.00
Install, Front Mount Radio - Labor to swap out base unit radios at Fire Stations.	5	Each	165.00	825.00
Shipping and Handling - Shipping and handling is estitmated and subject to change based upon quantity ordered. - Please allow 8 - 10 weeks delivery ARO.	1	Each	50.00	50.00
			Subtotal:	26,897.15

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	26,897.15

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500809

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA

Site	City of Ormond Beach - Fire Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100FD	XG75M/M7300 Scan Mobile Packag	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75M/M7300 Scan Mobile Package for Fire Vehicles - Pricing Per Harris MBP-15923 and is valid through December 31, 2018.				
MAMWSDMXX - Mobile,M7300, 764-870 MHz, Half Duplex, Unencrypted software and standard accessories are included in the package purchase as indicated by zero dollar items.	16	Each	4,254.81	68,076.96
MWP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	16	Each	0.00	0.00
MWPRO - Feature, Provoice	16	Each	0.00	0.00
MWPL4F - Feature, P25 Phase 2, TDMA	16	Each	0.00	0.00
MAMWNPL3R - Feature, Max(1024+) Sys/Grp Option	16	Each	0.00	0.00
MAMWNCP9E - Control Unit, CH-721, Scan, Remote Mount	16	Each	0.00	0.00
MAMWNZN7R - M7300 Remote Mount Accessory Kit	16	Each	0.00	0.00
MAMWNMC7Z - Microphone,Standard,CH721 Control Unit	16	Each	0.00	0.00
AN225001001 - Antenna Element, 700/800 3dB	16	Each	0.00	0.00
AN125001002 - Antenna, Base, Standard Roof Mnt Low Loss	16	Each	0.00	0.00
MAMWPKG8F - Feature,256-AES,64-DES ECP Encryption	16	Each	0.00	0.00
MAMWNPL7G - Feature, ESK/P25 Personality Lock	16	Each	0.00	0.00

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QUOTATION

Page	2/2
Date	4/8/2015
Quote Number	QTE1500809

Description	Qty	Unit	Sale Price	Total
MAMWNPL5K - Feature,ProFile Over-the-Air-Programming	16	Each	0.00	0.00
Terminal Trade-in Program - Trade in program is one for one on the purchase of a new radio. Traded radio can either be a portable or mobile and must be functional on the 800 MHz system.	(16)	EA	(195.00)	(3,120.00)
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	16	Each	1,056.00	16,896.00
Program, Rear Mount Radio - Installation was not quoted per customer request.	16	Each	42.00	672.00
Estiimated Shipping and Handling - Shipping and handling is estimated and subject to change based on quantity ordered. - Allow 8 - 10 weeks delivery ARO	1	Each	150.00	150.00
			Subtotal:	82,674.96

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	82,674.96

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QUOTATION

Page	1/2
Date	4/8/2015
Quote Number	QTE1500811

Bill To	City of Ormond Beach Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277 USA

Site	City of Ormond Beach - Fire Department Accounts Payable P.O. Box 277 Ormond Beach, FL, 32175-0277
Contact	Voice: Fax:

Site Number	Description	Salesperson	Reference
ORM100FD	XG75P Scan Portable	Grayson, Garin L.	Capital Improvement Quote

Description	Qty	Unit	Sale Price	Total
XG75P Scan Portable Package for Fire Dept. - Pricing Per Harris MBP-15923 and is valid through December 31. 2018.				
EVXGPB78B - Portable XG-75, 764-870 MHz, Scan, Black - The below zero dollar software and accessories are provided with the package purchase.	33	Each	3,330.41	109,903.53
MAEVNPL3R - Feature, Maximum (1024+) Systems/Groups	33	Each	0.00	0.00
EVXGNPL4F - Feature Package, P25 PHASE 2 TDMA	33	Each	0.00	0.00
EVPRO - Feature, Provoice	33	Each	0.00	0.00
EVP25ED - FEATURE PACKAGE,P25 TRUNKING & EDACS	33	Each	0.00	0.00
EVPA3R - Battery,Li-Ion,2400mAH	33	Each	0.00	0.00
EVPA3R - Battery,Li-Ion,2400mAH - One battery is included with the package. Customer requested extra battery quoted.	33	Each	57.60	1,900.80
MAEVNNC5X - Antenna, 764-870 MHz, 1/4 Wave Whip (KRE10115062)	33	Each	0.00	0.00
MAEVNHC2G - Belt Clip, Standard (CC23894)	33	Each	0.00	0.00
MAEVNCH9T - `Charger, Single, Tri-Chemistry (CH104560007)	33	Each	0.00	0.00
FM014712 - Cover, UDC Weather Proof, P5300/P5400	33	Each	0.00	0.00
MAEVNPL7G - Feature,ESK/P25 Personality Lock	33	Each	0.00	0.00

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QUOTATION

Page	2/2
Date	4/8/2015
Quote Number	QTE1500811

Description	Qty	Unit	Sale Price	Total
MAEVPKG8F - Feature, Encryption (includes 256-B AES Encryption for P25 T	33	Each	0.00	0.00
MAEVNPL5K - Feature, Profile OTAP Over the Air Programming	33	Each	0.00	0.00
V2S2ER12111 - Storm Speaker Mic, P5300/P5400	33	Each	108.12	3,567.96
Terminal Trade-in Program - Trade in is one for one on the purchase of a new radio. Traded radio can be either mobile or portable, but must be a functioning radio on the 800MHz system.	(33)	EA	(195.00)	(6,435.00)
8 Year Extended Warranty Purchase of an optional 8 year extended warranty for a total of 10 years of coverage per portable radio. **Please see extended warranty flyer or contact a Ci representative for details.	33	Each	864.00	28,512.00
Program, Portable Scan	33	Each	42.00	1,386.00
Shipping and Handling - Shipping and handling is based upon quantity ordered and is subject to change. - Please allow 8 - 10 weeks delivery ARO.	1	Each	150.00	150.00
			Subtotal:	138,985.29

Prices quoted are valid for (30) Days from Document Date.
Orders may be subject to shipping & handling charges.
All warranties are manufacture's warranties.

Plus Tax	0.00
Total Due (USD)	138,985.29

By signing this Quotation and/or submitting a purchase order pursuant to this Quotation you acknowledge that you have read and agree to be bound by Communications Int'l. Inc.'s Terms and Conditions of Sale Service and Technical Support.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Backup Server Upgrade

PROJECT#

301216

CATEGORY

Technology

FUND

301-General Capital Improvement

PROJECT LOCATION

Hardened Data Center

MANAGEMENT

Information Technology

PROJECT SCOPE

Upgrade the existing backup server storage capacity to accommodate data growth and data retention requirements. Replace the existing backup server with a current model that has nearly double the storage capacity and performance.

JUSTIFICATION

The current backup system was purchased in 2013 to modernize the system backup process, increase reliability, and reduce staff time to monitoring and maintain good system backups. Since then data has grown at a steady rate, backups are taking longer. Staff has worked with the system to optimize backup schedules and strategies. Staff can only stretch the available resources so far, additional capacity and performance will be needed soon The proposed backup server has double the storage capacity of the current model and should have sufficient storage to outlast the expected lifespan of 3 years.

Staff has included a current quote which includes current trade-in credits. Due to the likely implementation timing of this project in early 2016, these credits will be significantly less.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Backup Servers	0	0	100,000	0	0	100,000
Total	0	0	100,000	0	0	100,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	0	100,000	0	0	100,000
Total	0	0	100,000	0	0	100,000

4/13/2015

Statement of Work

Unitrends Appliance Trade-Up

Presented to:

City of Ormond Beach

6810 New Tampa Hwy
Suite 600
Lakeland, FL 33815
Phone: 863-802-8888
Fax:

Scope of Work Pricing

To: Ken White
City of Ormond Beach
22 S Beach St.
Ormond Beach, 32174-6386

Quote #: DSMQ1773
Quote Date: Apr 13, 2015
Quote Prepared by: Jack Trantham

Item	Description	Loc	Qty	Per Unit	MRC	NRC
	Data Protection					
1	933S 3 year 24/7 Support Appliance	Site	1			$104,473.00
2	Trade-Up Credit 823	Site	1			-$14,662.00
3	Prorated Support Credit	Site	1			-$13,438.33

CONTRACT EXPIRES ON 12/15/17

Total	*$0.00*	*$76,372.67*

Total MRC	*$0.00*
Total NRC	*$76,372.67*

- Optional remote install service up to twenty-five clients for 933 solution $4,799.00

IT Disaster Recovery Services 991-268-11-1
Trade-in Asset:
Asset # 823-101-50272
Contract # SRN-000127571
Item # R-RC822
- Please note that the trade-in and support discounts above are contingent upon the return of the appliance being traded. This unit
must be returned within 60 days of the receipt of your new Unitrends appliance or you will be invoiced the discounted cost.
- 3 Years Solution entitles you to a Next Gen, same model, appliance upgrade with your first renewal.
-Tax is additional and not part of the totals listed above.
- Freight Charges incurred to DSM will be passed on to customer.
- Equipment procured for this engagement will be invoiced upon receipt by DSM.

TERMS: Any invoice not paid by the due date, as specified in such Invoice, shall be subject to a late charge at eighteen percent (18%) per annum or the highest rate allowed by Florida law. Applicant hereby waives all privileges and rights available under Chapter 47, Florida Statutes relating to venue, as it now exists or may hereafter be amended including any right to forum non conveneons, and further agrees that venue of any action brought on any account of Applicant shall be in the Courts of Polk County, Florida, exclusively. Applicant waives any right to jury trial in any action brought in connection with any account of Applicant. Applicant agrees to provide written notice to DSM Technology Consultants, LLC (DSM) of any changes in the form of ownership of Applicant's business within five (5) days of such change. In the event of default of any description, Applicant agrees to pay all costs of collection, including reasonable attorney's fees incurred by DSM, whether involving litigation or not, whether incurred prior to or after entry of judgment or other relief for DSM.

Quote Valid for Sixty (60) days.

Acceptance

By signature, this Scope or Work is accepted and DSM is authorized to proceed at the direction of the City of Ormond Beach representative in accordance with the Scope of services.

Project: Unitrends Appliance Trade-Up
MRC Totals: $0.00
NRC Totals: $76,372.67

DSM Technology Consultants, LLC	City of Ormond Beach
By: _____ *Signature*	By: _____ *Signature*
Name: Karl Muehlberger *Print Name*	Name: _____ *Print Name*
Title: CFO	Title: _____
Date: _____	Date: _____

Purchase Order #_____

CAPITAL PROJECT DETAIL

PROJECT TITLE

Communication Infrastructure Fleet

PROJECT#

301219

CATEGORY

Technology

FUND

301-General Improvement Fund

PROJECT LOCATION

Fleet

MANAGEMENT

Engineering

PROJECT SCOPE

Connection of fuel island and security lighting to the Public Works Fleet operations building.

JUSTIFICATION

An investment has been made in a data retrieval system that will collect vehicle metrics as City vehicles are fueled. An existing data connection system was used to tie the system to Fleet administration. Upgrade of the outdated system will provide a quicker, more reliable connection less susceptible to power surges.

PROJECT COST METHODOLOGY

Cost estimated from current continuing contract the City has with Danella

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Fiber Optics	0	0	0	0	15,000	15,000
Total	0	0	0	0	15,000	15,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP	0	0	0	0	15,000	15,000
Total	0	0	0	0	15,000	15,000

Ormond Beach - Fiber Connect - Phase 3 - *Fleet Building connect building fuel island and security lighting*

Item #	Description	Qnty	Unit	Amount	Ext.
1	City Right of way permit	700	Ft	$0.25	$175.00
2	Job Design per ft (3500 ft minimum to include access & maintenance loops) price will include drawings delivered & retrieved from MLGW, obtain city right of way permits, GPS Data, and asbuilt drawings submitted to city at completion	700	Ft	$0.75	$525.00
3	Furnish & Install Muletape	700	Ft	$0.25	$175.00
4	Furnish & Install #12 Tracer wire	850	ft	$0.35	$297.50
5	Furnish & Install 24 count fiber	850	Ft	$1.44	$1,224.00
6	Furnish & Install 48 count fiber	850	Ft	$1.64	$1,394.00
7	Trench 2" 36" - Hand dig	500	Ft	$5.50	$2,750.00
8	Furnish & Directional Bore 2"	0	Ft	$12.00	$0.00
9	Core Bore	2	Ea	$100.00	$200.00
10	Furnish Warning Tape	1	Roll	$50.00	$50.00
11	Furnish & Install 24"x36"x18" Handhole w/ 20k lid	5	Ea	$600.00	$3,000.00
12	Ground Wire 6 Awg (500' reel)	1	reel	$220.00	$220.00
13	Mid sheath Fiber Entry	1	Ea	$350.00	$350.00
14	Install new splice case & prep cable	3	Ea	$250.00	$750.00
15	Prep cable in panel	3	Ea	$150.00	$450.00
16	Splice 97-288 Fibers	24	Ea	$15.00	$360.00
17	Splice trays	2	Ea	$55.00	$110.00
18	Small Splice case (runt)	2	Ea	$169.20	$338.40
19	Med Splice case (6.5x22)	1	Ea	$388.92	$388.92
20	Furnish Wall Mount Panel	3	Ea	$235.00	$705.00
21	install wall mount panel	3	Ea	$75.00	$225.00
22	pigtails	24	Ea	$21.00	$504.00
23	Bulkheads	2	Ea	$80.00	$160.00
24	Furnish & Install 2" riser with LB	2	Ea	$175.00	$350.00

$14,701.82

FLEET FACILITIES
COMMUNICATION
INFRASTRUCTURE
EXPANSION & UPGRADES
Transfer Station Road
FEC R.R.
N Orchard St
Wilmette Ave
Fleet
N
W
E
S
Legend
PROPOSED CONDUIT
UTILIZE EXISTING CONDUIT
PS
LIFTSTATION
0
50
100
200
Feet
Prepared By: City of Ormond Beach G.I.S. Department 5/21/2015

TRANSPORTATION IMPROVEMENTS

CAPITAL PROJECT DETAIL

PROJECT TITLE

Forest Hill Trail

PROJECT#

308101

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Trail connecting the Forest Hills neighborhood to Mayfield Terrace. Before this project commences, a neighborhood meeting will be conducted to solicit input on this project.

JUSTIFICATION

Volusia Transportation Planning Organization conducted a study titled “Bicycle and Pedestrian School Safety Review" in November 2008 for Tomoka Elementary. Due to budget reductions, students living in the Forest Hills neighborhood are no longer provided courtesy bus transportation since the 2008/2009 school year. If they walk or ride bicycles to and from school, they currently would need to travel along Nova Road and S.R. 40 to reach Old Tomoka Road and the school. These roads are busy and the distance exceeds one mile. The study recommended this project to be a Priority Project. It recommended considering pursuing the construction of a trail to connect the Forest Hills neighborhood to Mayfield Terrace to provide students with an alternative to Nova Road. This would require a pedestrian bridge over a canal would provide a shortcut for students living in the Forest Hills neighborhood.

PROJECT COST METHODOLOGY

Trail connecting the Forest Hills neighborhood to Mayfield Terrace.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design	57,404	0	0	0	0	57,404
Construction	0	589,288	0	0	0	589,288
Total	57,404	589,288	0	0	0	646,692

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
FDOT JPA	51,664	530,359	0	0	0	582,023
Property Taxes-Transportation	5,740	58,929	0	0	0	64,669
Total	57,404	589,288	0	0	0	646,692

Haas Park Sidewalk Connection Tomoka Elementary to Forest Hill

FDOT Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
101-1	Mobilization	1	LS	$ 18,891.00	$ 18,891.00
102-1	Maintenance of Traffic	1	LS	$ 7,500.00	$ 7,500.00
104-10-2	Synthetic Bales	24	EA	$ 7.00	$ 168.00
104-13-1	Silt Fence (Type III)	3,700	LF	$ 1.50	$ 5,550.00
110-1-1	Clear and Grub	1.0	AC	$ 8,400.00	$ 8,400.00
120-1	Regular Excavation	100	CY	$ 6.00	$ 600.00
120-6	Embankment	524	CY	$ 8.00	$ 4,192.00
515-2302	Ped./Bicycle Railing, Aluminum, 54" Picket Rail	434	LF	$ 45.00	$ 19,530.00
522-2	10-ft. Wide Concrete Sidewalk, 6"	3,150	SY	$ 36.75	$ 115,762.50
1-ob	10 ft wood boardwalk w handrails	5,250	SF	$ 36.75	$ 192,937.50
570-1-2	Performance Turf	1,340	SY	$ 3.50	$ 4,685.31
2-OB	Street light w/system controller	30	AS	$ 5,250.00	$ 157,500.00
			TOTAL BASE BID		**$ 535,716.31**
			CEI		**$ 53,571.63**
			TOTAL CONSTRUCTION COST		**$ 589,287.94**
				FDOT	**$ 530,359.15**
				10% Match	**$ 58,928.79**

			FDOT Fund	10% Match
2015/2016	Design Costs	$57,404.00	$ 51,663.60	$ 5,740.40
2016/2017	Construction Subtotal	$535,716.31	$ 482,144.68	$ 53,571.63
2016/2017	CEI Cost	$53,571.63	$ 48,214.47	$ 5,357.16
	Total Project Cost	$646,691.94	$ 582,022.75	$ 64,669.19

Total by Year

	Cost	FDOT Fund	10% Match
2015/2016	**$57,404.00**	**$ 51,663.60**	**$ 5,740.40**
2016/2017	**$589,287.94**	**$530,359.15**	**$58,928.79**
All years	**$646,691.94**	**$582,022.75**	**$64,669.19**

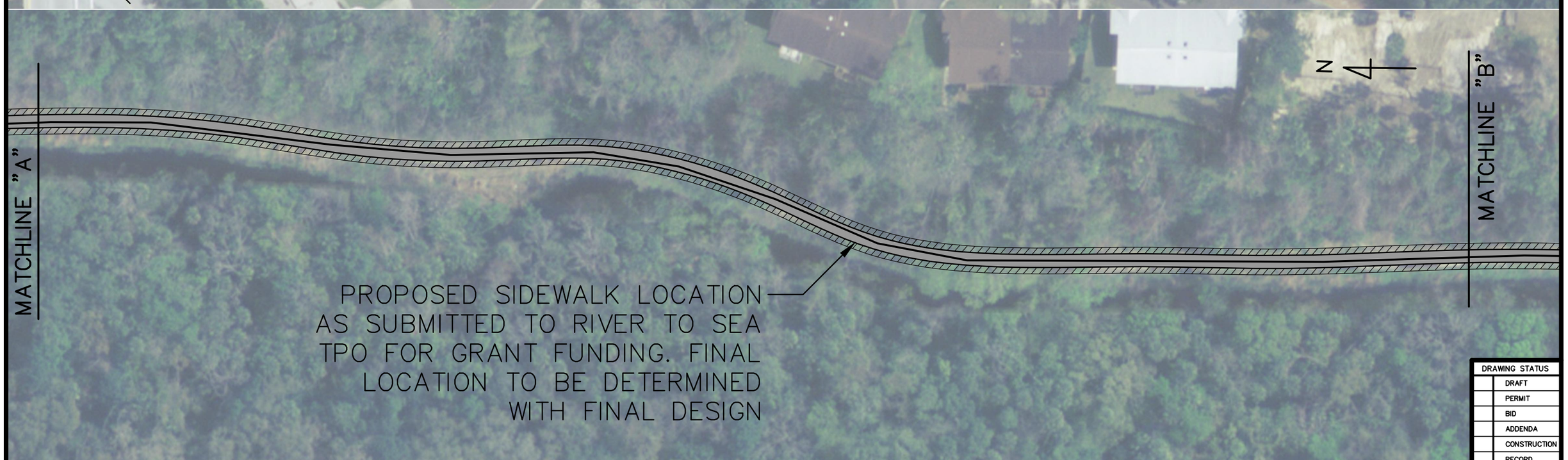
Forest Hills Connector Path to Tomoka Elementary

PATH ROUTE
SCOTTSDALE DRIVE TO
OLD TOMOKA ROAD

Main Trl
Rocky Creek Trl
Misner's Trl
Misner's Way
Winding Woods Trl
Kim Ct
Marjorie Trl
Pinion Cir
Colina Pl
Cuadro Pl
Fiesta Dr
N Nova Rd (S.R. 5A)
Sterthaus Dr
N Old Kings Rd
Alicen Ct
W Granada Blvd (S.R. 40)
Appaloosa Trl
Setting Sun Trl
Rising Moon Trl
Little Pond Trl
Cherokee Trl
Indian Trl
Soco Trl
Old Tomoka Rd
Magnolia Ave
Oak Ave
S Old Kings Rd
Reflections Village Dr
Old Macon Dr
Oak Village Dr
Old Mill Run
Village Dr
Willow Run
Quail Run
Forest Ct
Brookwood Dr
Mayfield Ter
Sawtooth Ln
Mayfield Cir
Brookwood Ct
Southern Pine Trl
Fishermans Cir
Sandpiper Cir
Red Maple Cir
Sugarberry Cir
Woodlands Blvd
Hamlet Cir
Woodlands Cir
Military Blvd
Royal Rd
Linden St
Capen St
Forest Hills Blvd
Scottsdale Dr
Moreland Blvd
Fernery Trl
S Nova Rd (S.R. 5A)
Fernway Dr
Horseshoe Falls Dr
Rainbow Falls Dr
Linden Falls Dr
Chardon Rd
Thackery Rd
Gallaten Rd

Sidewalks
Golf Courses
Traffic Signals
Airport and Railroad
AIRPORT
RAILROAD
City Streets
DIRT
MAJOR
PAVED
Water Features
Property Lines
City Limits
ORMOND BEACH
HOLLY HILL
DAYTONA BEACH
600 ft

GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such damages.



DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

FRED COSTELLO, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

HAAS PARK
SIDEWALK IMPROVEMENTS

PLAN VIEW

DATE: 5/20/15	PROJECT NO.: 00–	
SCALE: 1"=20'	FILE NAME: NRDGWDSW.DWG	
DRAWN BY: MC	SHEET 2 OF 9	

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

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HAAS PARK
SIDEWALK IMPROVEMENTS

PLAN VIEW

DATE: 5/20/15	PROJECT NO.: 00--
SCALE: 1"=20'	FILE NAME: NRDGWDSW.DWG
DRAWN BY: MC	SHEET 3 OF 9

RESOLUTION NO. 2011-54

A RESOLUTION AUTHORIZING THE SUBMITTAL OF AN XU BICYCLE/PEDESTRIAN GRANT APPLICATION TO THE VOLUSIA COUNTY TRANSPORTATION PLANNING ORGANIZATION FOR FUNDING ASSISTANCE RELATIVE TO CONSTRUCTION OF A BICYCLE/PEDESTRIAN SIDEWALK FROM TOMOKA ELEMENTARY SCHOOL TO THE FOREST HILLS SUBDIVISION; AUTHORIZING THE EXECUTION OF ALL DOCUMENTS INCIDENTAL THERETO, INCLUDING ANY CONTRACT NECESSARY FOR THE CITY TO ACCEPT THE GRANT AWARD; AND SETTING FORTH AN EFFECTIVE DATE.

WHEREAS, the City Commission desires to construct a bicycle/pedestrian sidewalk from the Forest Hills subdivision to the Tomoka Elementary School ("the Project"), and

WHEREAS, the total Project cost is $510,205.00, and

WHEREAS, the Volusia County Transportation Planning Organization has a current grant cycle open under which the City can submit an XU Bicycle/Pedestrian Grant and request maximum funding assistance in the amount of $459,184.50, and

WHEREAS, the City Commission desires to submit a grant application to the Volusia County Transportation Planning Organization (a copy of which is attached hereto and incorporated herein by reference) for the purpose of obtaining funding assistance in the amount of $459,184.50 for the Project, and

WHEREAS, the City is required to make a 10% matching contribution of at least $51,020.50, and

WHEREAS, the City Manager hereby certifies that the City's matching funds are appropriated in the General Fund in the amount of $51,020.50 and are not appropriated for any other purpose, now therefore

BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF ORMOND BEACH, VOLUSIA COUNTY, FLORIDA, THAT:

SECTION ONE. The City Manager or her designee is hereby authorized and directed to submit an XU Bicycle/Pedestrian grant application, including any and all documents that are necessary and incidental thereto, to the Volusia County Transportation Planning Organization in the amount of $459,184.50 for the purpose of constructing a bicycle/pedestrian sidewalk from the Forest Hills subdivision to Tomoka Elementary School.

SECTION TWO. The Mayor and City Manager are hereby further authorized and directed to execute any contract, including any and all documents that are necessary and incidental thereto, for the City to accept the grant award.

SECTION THREE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED this 5th day of April, 2011.

Ed Kelley

ED KELLEY
Mayor

ATTEST:

Veronica Patterson

VERONICA PATTERSON
City Clerk

Volusia TPO
2011 Priority Application for

XU Bicycle/Pedestrian Projects

Initial Project Screening:

Any project submitted by a local government for consideration needs to meet the following screening criteria:

- For any proposed facility to be considered eligible through the TPO process, the project must be included on the ***Volusia TPO's Bicycle/Pedestrian Plan***.
- A ***ten percent (10%) local match*** is required for funding of XU projects. Projects whose sponsors are willing and able to provide a local match **greater than 10%** will be awarded additional points.
- Is this ***Shared Use Path*** project at least 10 feet wide?
  - If **Yes** – the project is eligible.
  - If **No** – if this project is at least 5 feet wide then it may be eligible to be submitted as a sidewalk project.
- Is this ***Sidewalk*** project at least 5 feet wide?
  - If **Yes** – the project is eligible.
  - If **No** – the project application is not acceptable.

XU Project Application Submittal Procedures:

Any project submitted by a local government for consideration MUST include the following information/materials:

- **Each application MUST include a Project Map** that clearly identifies the termini of the project and Proximity to Community Assets through the use of a one (1) mile radius buffer for Shared Use Path projects and a one-half (½) mile radius buffer for Sidewalk projects. Each map should be no larger than 11"x17".

  In addition, all maps MUST include a **Scale** (in subdivisions of a mile), **North Arrow, Title** and **Legend**. Photographs are optional.
- Each application MUST be submitted as: (1) digital media in Portable Document Format (PDF), compatible with MS Windows and Adobe Acrobat® Version 9.3 or earlier, and (2) include one printed "hard-copy."
- Electronic documents may be submitted through our FTP site, as an attachment to email, on a CD or DVD.
- The application and all supporting documentation shall be included in one electronic PDF file.
- If documents are scanned, we recommend scanning at a minimum 300 dpi to balance legibility and file size.
- **Applications will be reviewed for ranking each year.** The TPO will then distribute the copies to the Bicycle and Pedestrian Advisory Committee for review and scoring.
- Applications will be ranked based on the information supplied in the application.
- **Please submit any ROW information as available.**
- **Incomplete applications will not be accepted.**

Criteria #1 – Proximity to Community Assets (30 points max.)

This measure will estimate the potential demand of bicyclists and pedestrians based on the number of productions or attractions the facility may serve within a one (1) mile radius for Shared Use Paths or a one-half (½) mile radius for Sidewalks. A maximum of 30 points will be assessed overall, and individual point assignments will be limited as listed below.

For the application list and describe how the facilities link directly to community assets and who is being served by the facility. Show each of the Community Assets on a Project Area Map through the use of a buffer - a one (1) mile radius for Shared Use Path projects or a one-half (½) mile radius for Sidewalk projects.

Proximity to Community Assets	**Check All that Apply**	**Max. Points**
Residential developments, apartments, community housing	☒	5
Activity centers, town centers, office parks, post office, city hall/government buildings, shopping plaza, malls, retail centers	☐	5
Parks, trail facilities, recreational facilities	☒	5
Medical/health facilities, nursing homes, assisted living, rehabilitation center	☐	5
School bus stop	☐	5
Schools	☒	**5**
Maximum Point Assessment		**30**

Criteria #1 Description (if needed): Students living in the Forest Hill subdivision are no longer provided curtesy bus transportation. If they walk or ride bicycles to and from school, they currently would need to walk along Nova Road and SR40 to reach Old Tomoka Road and the school. These roads are busy and the distance exceeds one mile. The proposed 10 foot trail would require no ROW since the land on which the trail would lie is City of Ormond Beach property. The trail would traverse Haas Park which is a linear park that runs parrallel to Misener's Branch creek. A bridge is proposed that would connect the trail from Haas Park to Old Tomoka Road.

Criteria #2 – Connectivity (30 points max.)

This criterion considers the gaps that exist in the current network of bike lanes, bike paths and sidewalks. The measurement will assess points based on the ability of the proposed project to join disconnected networks or complete fragmented facilities.

For the application list and describe how this project fits into the local and regional bicycle/pedestrian networks and/or a transit facility. Depict this on the map and describe in the document.

Network Connectivity	**All that Apply**	**Max. Points**
Project provides access to a transit facility	☐	5
Project extends an existing bicycle/pedestrian facility (at one end of the facility)	☐	5
Project provides a connection between two existing or planned/programmed bicycle/pedestrian facilities	☐	10
Project has been identified as "needed" in an adopted document (i.e. A	☒	10

comprehensive plan, master plan, arterial study)		
Maximum Point Assessment		**30**

Criteria #2 Description (if needed): The Forest Hills Connector is in the City's adopted Multimodal Strategy as well as a Recommended Priority Project in the TPO's adopted Bicycle and Pedestrian School Safety Review Study for Tomoka Elementary School. Attached as support documents are the Multimodal Strategy and Bicycle & Pedestrian School Safety Review Study for Tomoka Elementary School.

Criteria #3 – Safety (25 points max.)

This measure provides additional weight to applications that have included safety as a component of the overall project and includes school locations identified as hazardous walking/biking zones and areas with significant number of safety concerns.

For the application list and describe whether the proposed facility is located within a "hazardous walk/bike zone" and/or provide documentation that illustrates how bicycle or pedestrian safety could be enhanced by the construction of this facility.

Safety	All that Apply	**Max. Points**
The project is located in an area identified as a hazardous walk/bike zone by Volusia County Schools.	☐	15
The project removes or reduces potential conflicts (bike/auto and ped/auto). There is a pattern of bike/ped crashes along the project route. Please provide documentation such as photos or video of current situation/site or any supportive statistics or studies	☒	10
Maximum Point Assessment		**25**

Criteria #3 Description (if needed): There was only 1 bicycle and pedestrian crash within the existing walk zone of the Tomoka Elementary school during estimated school travel times between 2005-2007. However, while sidewalks exist for those students west of Misner's Branch, the distance exceeds 1 mile. The proposed Forest Hills Connector would eliminate the need for children to use sidewalks along Nova and SR40 to get to the school. With the elimination of bus transportation, the Study recommended the Forest Hills Connector as a Priority Project to link residential subdivision west of Misener's Branch to Tomoka ES .

Criteria #4 – Public Support/Special Considerations (5 points max.)

This is an opportunity for applicant to provide other relevant data that may provide ***additional*** information as related to the project application.

For the application list and describe whether the proposed facility has examples of public support (i.e., documented requests from community groups, homeowners associations, school administrators, as well as letters of support, signed petitions, documented public comments) or any special issues or concerns that are not being addressed by the other criteria.

Special Considerations	**All that Apply**	**Max. Points**

Is documented public support provided for the project? Are there any special issues or concerns?	☒	5
Maximum Point Assessment	☐	**5**

Criteria #4 Description (if needed): The City's Multimodal Strategy had extensive public participation as part of the updating of the Comprehensive Plan. The Tomoka ES Bike/Pedestrian Study Review was incorporated into the City's non-motorized strategy with the goal to ensure that 75% of all residents within a 1/4 mile of the transit corridor (SR40) has sidewalk/trail accessibility to parks, schools, commercial areas and transit stops.

Criteria #5 – Local Matching Funds > 10% (10 points max.)

If local matching funds greater than 10% of the estimated project cost are available, describe the local matching fund package in detail.

Local Matching Funds > 10%	**Check One**	**Max. Points**
Is a local matching fund package greater than 10% of the estimated project cost documented for the project?		
10.0% < Local Matching Funds < 12.5%	☒	1
12.5% ≤ Local Matching Funds < 15.0%	☐	2
15.0% ≤ Local Matching Funds < 17.5%	☐	3
17.5% ≤ Local Matching Funds < 20.0%	☐	4
20.0% ≤ Local Matching Funds < 22.5%	☐	5
22.5% ≤ Local Matching Funds < 25.0%	☐	6
25.0% ≤ Local Matching Funds < 27.5%	☐	7
27.5% ≤ Local Matching Funds < 30.0%	☐	8
30.0% ≤ Local Matching Funds < 32.5%	☐	9
32.5% ≤ Local Matching Funds	☐	10
Maximum Point Assessment		**10**

Criteria #5 Description (if needed): _____

Criteria #6 – Value-Added Tie Breaker (if necessary) (variable points)

Projects with equal scores after evaluations using the five Project Proposal Criteria are subject to the Value-Added Tie Breaker. The BPAC and Project Review Subcommittee are authorized to award tie breaker points based on the additional value added by the project. A written explanation of the circumstances and amount of tie breaker points awarded for each project will be provided.

Volusia TPO
2011 Project Process for
XU Bicycle/Pedestrian Projects

1. Local government submits project(s)

2. BPAC reviews and ranks projects for feasibility studies

3. TPO requests a Fee Proposal from consultant to perform a feasibility study

4. TPO schedules a scoping meeting with the consultant and local government

5. Consultant provides Fee Proposal to TPO

6. Local government pays the 10% local match for the feasibility study based on the Fee Proposal. TPO pays the majority of the cost for a consultant to perform feasibility studies on the highest ranking projects. (Local governments can bypass the TPO Study if they pay for the feasibility study themselves.)

7. TPO gives the consultant a Notice to Proceed on the feasibility study

8. Draft feasibility study is reviewed and approved by the TPO and local government

9. Final feasibility study is completed

10. Local government gives the TPO an "unofficial" go-ahead for their project, based on the cost from the feasibility study and submits a project letter of commitment to the TPO

11. FDOT (i.e., Special Projects Coordinator) conducts a field review of the project

12. FDOT schedules an intake meeting with the local government, TPO and FDOT staff to review the project

13. TPO coordinates with FDOT to program the project in the next available fiscal year of the FDOT Work Program

14. Construction of top ranked project: 2-3 years

CITY MANAGER
MEMORANDUM

TO: The Honorable Mayor Kelley and City Commissioners

FROM: Joyce Shanahan, City Manager

DATE: March 31, 2011

SUBJECT: XU Bicycle/Pedestrian Grant application submittal

Introduction: This is a request for approval to submit an XU Bicycle/Pedestrian grant application to the Volusia County Transportation Planning Organization for funding assistance relative to connecting the Tomoka Elementary School to the neighborhood of Forest Hills.

Background: Volusia Transportation Planning Organization conducted a study titled "Bicycle and Pedestrian School Safety Review" in November 2008 for Tomoka Elementary. Due to recent reductions in budget, students living in the Forest Hills neighborhood are no longer provided courtesy bus transportation since the 2008/2009 school year. If they walk or ride bicycles to and from school, they currently would need to travel along Nova Road and S.R. 40 to reach Old Tomoka Road and the school. These roads are busy and the distance exceeds one mile.

The Study recommended pursuing the construction of a trail to connect the Forest Hills neighborhood to Mayfield Terrace to provide students with an alternative to Nova Road. This would require a pedestrian bridge over a canal thus providing a shortcut for students living in the Forest Hills neighborhood. The study recommended this project to be a Priority Project.

Discussion: The cost of the 10 foot wide sidewalk and lighting system is estimated to be $510,205. The XU Bicycle/Pedestrian grant requires a 10% match. Staff has prepared an XU Bicycle/Pedestrian grant application to the Volusia County Transportation Planning Organization. The grant requires a 10% match by the City. Thus, the City's required match is $51,020.50 for the purpose of obtaining funding assistance for making the recommended improvements.

Budget Impact: As a result of property tax revenue reductions over the last several years, funding within the Transportation Fund has declined. Both current and future transportation revenue has been committed to completing Hand Avenue, John Anderson, and a limited scope of road resurfacing throughout the City. Thus, Transportation Fund revenue is not available for grant matching. If the City Commission desires to pursue this grant, the City's 10% match of $51,020.50 would need to be provided by the General Fund.

Recommendation: Staff recommends approval of the resolution to submit the XU Bicycle/Pedestrian grant application.

Reviewed by: _____ 3/29/11
Theodore S. MacLeod, P.E. — Date
Assistant City Manager

_____ 3/31/11
Kelly McGuire, Finance Director — Date

Approved by: _____ 3/29/2011
Joyce A. Shanahan, City Manager — Date

Prepared by Larry Rivera, Civil Engineer

CAPITAL PROJECT DETAIL

PROJECT TITLE

Railroad Crossing

PROJECT#

308112

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

Various

MANAGEMENT

Engineering

PROJECT SCOPE

Reconstruction of the railroad crossings by the Florida East Coast Railroad

JUSTIFICATION

The City through an agreement with the Florida East Coast Railroad (FEC) for roadway crossings of the railway is required to fund the railroad crossing improvements as identified by the FEC. Average costs for repairs average around $50,000. FEC does not have a planned improvement program that they are able to provide.

PROJECT COST METHODOLOGY

Estimated amount from previous years. Cost varies depending of number of lanes and work to be done

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Railroad Crossing	50,000	50,000	50,000	50,000	50,000	250,000
Total	50,000	50,000	50,000	50,000	50,000	250,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-Transportation	50,000	50,000	50,000	50,000	50,000	250,000
Total	50,000	50,000	50,000	50,000	50,000	250,000

Railroad Crossings

CITY OF ORMOND BEACH FLORIDA

Emergency Generators

Stormwater Ponds

Airport and Railroad

AIRPORT

RAILROAD

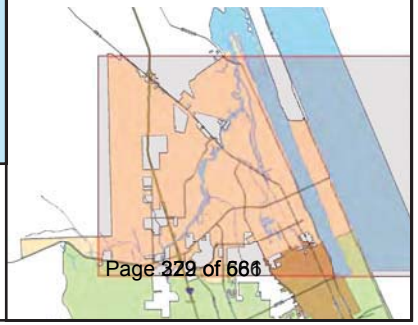
Major Roads

I-95

MAJOR

Water Features

1.200 miles



GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such damages.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Road Resurfacing

PROJECT#

308113

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

Various

MANAGEMENT

Engineering

PROJECT SCOPE

Resurfacing of City streets as part of an on-going maintenance policy in order to prevent street deterioration and excessive reconstruction costs.

JUSTIFICATION

The results of a 1995 survey of City residents regarding their relative satisfaction with City services indicated that street repair was the lowest rated City service. In addition, based on the level of funding that existed prior to 1997, the backlog of resurfacing would continue to increase and the condition of local roads would deteriorate further to the point where reconstruction would be necessary at an average cost of $1,367,000 per mile rather than $183,000 per mile for resurfacing.

Consequently, a comprehensive road improvement plan with a dedicated funding source was developed and approved by the City Commission. The road improvement program is intended to reduce the projected road improvement backlog to a manageable level and protect the City's 161-mile road network that is valued at $44 million.

PROJECT COST METHODOLOGY

Estimates are base upon unit pricing from recent bids of similar roadway resurfacing project within the City.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
2016 Road Resurfacing	550,000	0	0	0	0	550,000
2017 Roadway Resurfacing	0	450,000	0	0	0	450,000
2018 Roadway Resurfacing	0	0	450,000	0	0	450,000
2019 Roadway resurfacing	0	0	0	450,000	0	450,000
2020 Roadway resurfacing	0	0	0	0	450,000	450,000
2015 Road Resurfacing	0	0	0	0	0	0
Total	550,000	450,000	450,000	450,000	450,000	2,350,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Road Resurfacing

PROJECT#

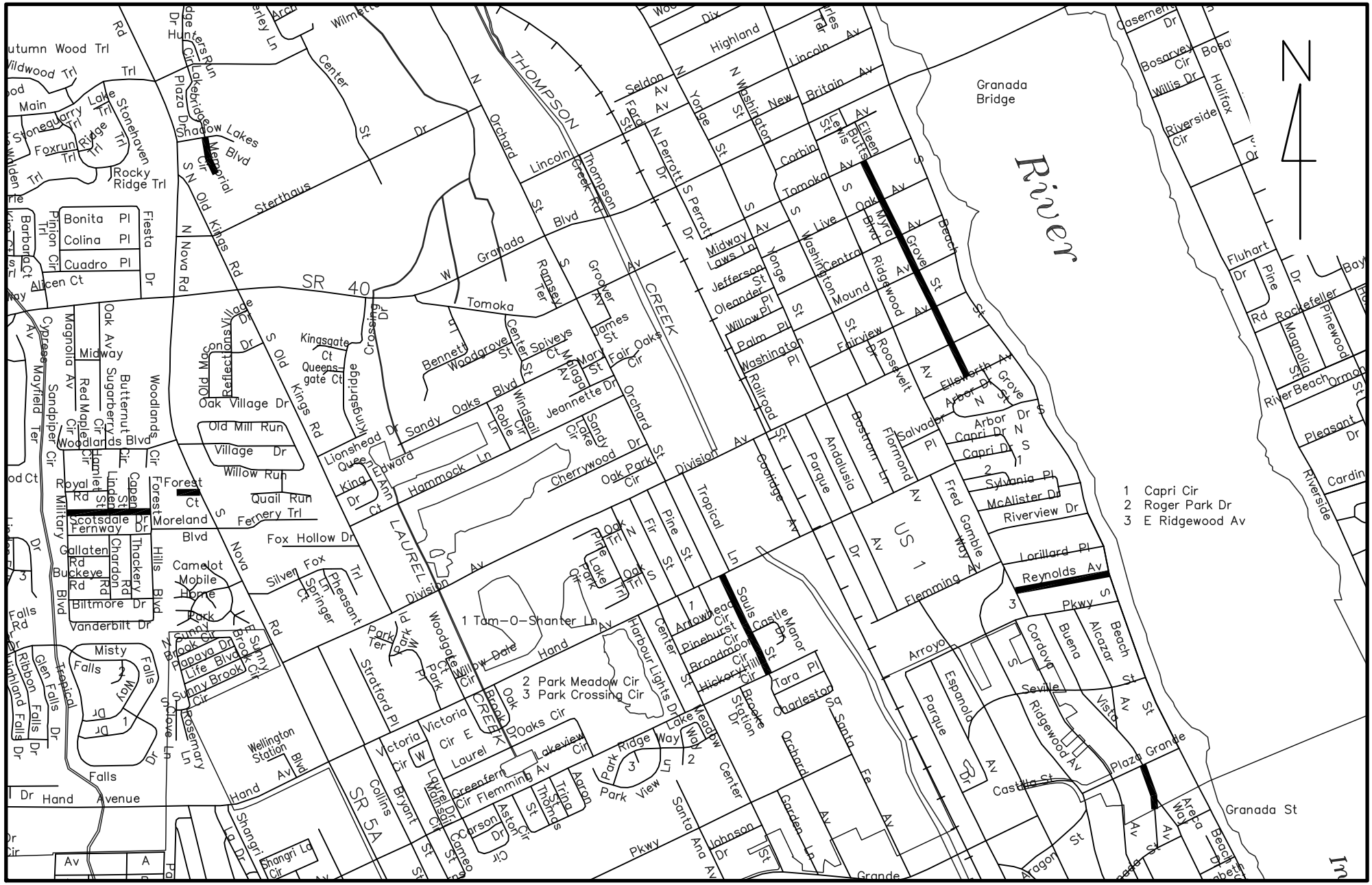
308113

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Local Option Gas Tax	550,000	450,000	450,000	450,000	450,000	2,350,000
Total	550,000	450,000	450,000	450,000	450,000	2,350,000

ROADWAY RESURFACING 5-YEAR SCHEDULE (2016-2020)

2016			Length (feet)	Cost
AMSDEN RD	JOHN ANDERSON DR	A1A	2,556	$ 59,608
BUENA VISTA AVE	PLAZA GRANDE	CITY LIMIT	550	$ 12,883
SCOTTSDALE DR	FOREST HILLS BLVD	MILITARY BLVD	1,010	$ 26,977
OVERBROOK DR	PARKSIDE DR	BROOKSIDE DR	2,066	$ 48,393
HUNT MASTER CT	SHADOW CROSSINGS BL\	HUNT MASTER CT	2,729	$ 67,119
MEMORIAL CIR	SHADOW LAKES BLVD	CUL-DE-SAC	465	$ 15,544
REYNOLDS AV	E RIDGEWOOD AVE	S. BEACH ST	1,400	$ 32,793
SAULS ST	HAND AVE	FLEMING AVE	1,329	$ 32,687
SIGNAL AVE	SUNSHINE BLVD	CUL-DE-SAC	1,500	$ 35,136
FOREST CT	NOVA RD	END	282	$ 6,580
GROVE ST	TOMOKA AVE	ELLSWORTH AVE	2,892	$ 67,741
PINELAND TRAIL	NORTH SEG	TYMBER CREEK RD	3,960	$ 98,106
		TOTAL	**20,739**	**$ 503,568**
2017				
JAMESTOWN DR	PENINSULA DR	LOYOLA DR	1,365	$ 31,973
LAUREL OAKS CIR	FLEMING AVE	LAUREL DR	2,800	$ 65,586
WOODLAND TR	AIRPORT RD	PINE BLUFF TR	2,446	$ 65,332
S. RIDGEWOOD AVE	CASTILLA ST	PLAZA GRANDE	203	$ 4,993
WARWICK AVE	MACINTOSH RD	N. YOUNGE ST	800	$ 18,739
SILVER FOX TRL	NOVA RD	CUL-DE-SAC	1,569	$ 52,012
FOX HOLLOW DR	SILVER FOX TRL	FOX HOLLOW DR	953	$ 31,592
SPRINGER CT	SILVER FOX TRL	CUL-DE-SAC	200	$ 6,630
PHEASANT LN	SILVER FOX TRL	CUL-DE-SAC	265	$ 8,785
ANDALUSIA AVE	DIVISION AVE	HAND AVE	1,320	$ 30,919
BANYAN DR	N. HALIFAX DR	CUL-DE-SAC	1,093	$ 30,940
BOSARVEY DR	COQUINA DR	S. HALIFAX DR	1,400	$ 32,793
COQUINA CT	BOVARD AVE	VINING CT	1,200	$ 28,108
CORDOVA AVE	SEVILLE ST	S. CITY LIMITS	1,665	$ 39,008
		TOTAL	**17,279**	**$ 447,411**
2018				
DAWN DR	N. HALIFAX DR	LUNA DR	1,000	$ 23,424
E VICTORIA CIR	LAUREL DR	LAUREL DR	960	$ 22,487
EDGEWOOD WAY	NORTHSIDE DR	PARKSIDE DR	400	$ 9,369
HALL DR	RAY MAR DR	OCEAN TE	300	$ 7,027
HERNANDEZ AVE	N.BEACH ST	N. RIDGEWOOD AVE	1,200	$ 28,108
WILDWOOD TRAIL	MAIN TRAIL	CUL-DE-SAC	1,117	$ 42,223
HIGHLAND AVE	N. BEACH ST	N. RIDGEWOOD AVE	1,200	$ 28,108
HIGHLAND AVE	N. RIDGEWOOD AVE	N.YOUNGE ST	1,600	$ 37,478
IVANHOE DR	HARVARD DR	PENINSULA DR	1,210	$ 31,177
LAUREL DR	HAND AVE	FLEMING AVE	1,290	$ 31,727
LUNA DR	DAWN DR	RAY MAR DR	300	$ 7,027
MARJORIE TRL	WINDING WOODS TRL	CUL-DE-SAC	1,600	$ 37,478
MOUND AVE	S.BEACH ST	S. RIDGEWOOD AVE	1,100	$ 25,766
N WEDGEWOOD CIR	OCEAN SHORE BLVD	ALDEN DR	1,200	$ 28,108
NORTHSIDE DR	OAKBROOK DR	EDGEWOOD WAY	2,800	$ 65,586
OAK BROOK DR	HAND AVE	HAND AVE	1,315	$ 34,812
		TOTAL	**18,592**	**$ 459,907**
2019				
PINE RD	RIVERSIDE DR	FLUHART DR	1,000	$ 21,081
PLAZA GRANDE	S. BEACH ST	CORDOVA AVE	885	$ 20,730
RIVER PINE WAY	NORTHSIDE DR	OVERBROOK DR	200	$ 4,685
RIVERVIEW DR	S. RIDGEWOOD AVE	S. BEACH ST	1,234	$ 27,460
S. RIDGEWOOD AVE	LORILLARD PL	ARROYO PKWY	971	$ 22,744
S. WEDGEWOOD CIR	ALDEN DR	N WEDGWOOD CIR	600	$ 14,054
SALVADOR PL	FLORMOND AVE	S. RIDGEWOOD AVE	400	$ 9,369
E RIDGEWOOD AVE	LORILLARD AVE	ARROYO PKWY	710	$ 16,631
SHERBOURNE WAY	WANDERING OAKS DR	OVERBROOK DR	240	$ 5,622
TARA PL	CHARLESTON SQ	CHARLESTON SQ	670	$ 15,694
THOMAS ST	FLEMING AVE	AARON CIR	520	$ 12,180
W VICTORIA CIR	LAUREL DR	LAUREL DR	730	$ 17,099
WALDEN LN	SYCAMORE CIR	SYCAMORE CIR	466	$ 11,461
WANDERING OAKS DR	PARKSIDE DR	BROOKSIDE DR	2,000	$ 46,847
WARWICK AVE	N. RIDGEWOOD AVE	MCINTOSH RD	800	$ 18,739
WINDWARD LN	ROYAL PALM AVE	WINDWARD CIR	800	$ 28,108
WOODLAND AVE	N. RIDGEWOOD AVE	N. YOUNGE ST	1,360	$ 31,856
BONITA PL	PINION CIR	FIESTA DR	1,000	$ 23,424
BRIARGATE LOOK	AIRPORT RD	AIRPORT RD	2,327	$ 54,516
COLINA PL	FIESTA DR	PINION CIR	1,000	$ 23,424
CROSSING TRL	CLYDE MORRIS BLVD	CUL-DE-SAC	835	$ 28,387
		TOTAL	**18,748**	**$ 454,113**
2020				
ANDALUSIA AVE	DIVISION AVE	HAND AVE	1,320	$ 37,500
N SAINT ANDREWS DR	TOMOKA OAKS BLVD	EAGLE DR	6,200	$ 230,655
S. BEACH ST -ACCESS RD)	PLAZA GRANDE	RIVERVIEW DR	3,200	$ 81,818
CARDINAL DR	FLAMINGO DR	FLAMINGO DR	1,273	$ 22,276
WILMETTE AVE	N. CENTER ST	FEC RR	1,993	$ 80,889
		TOTAL	**13,986**	**$ 453,138**

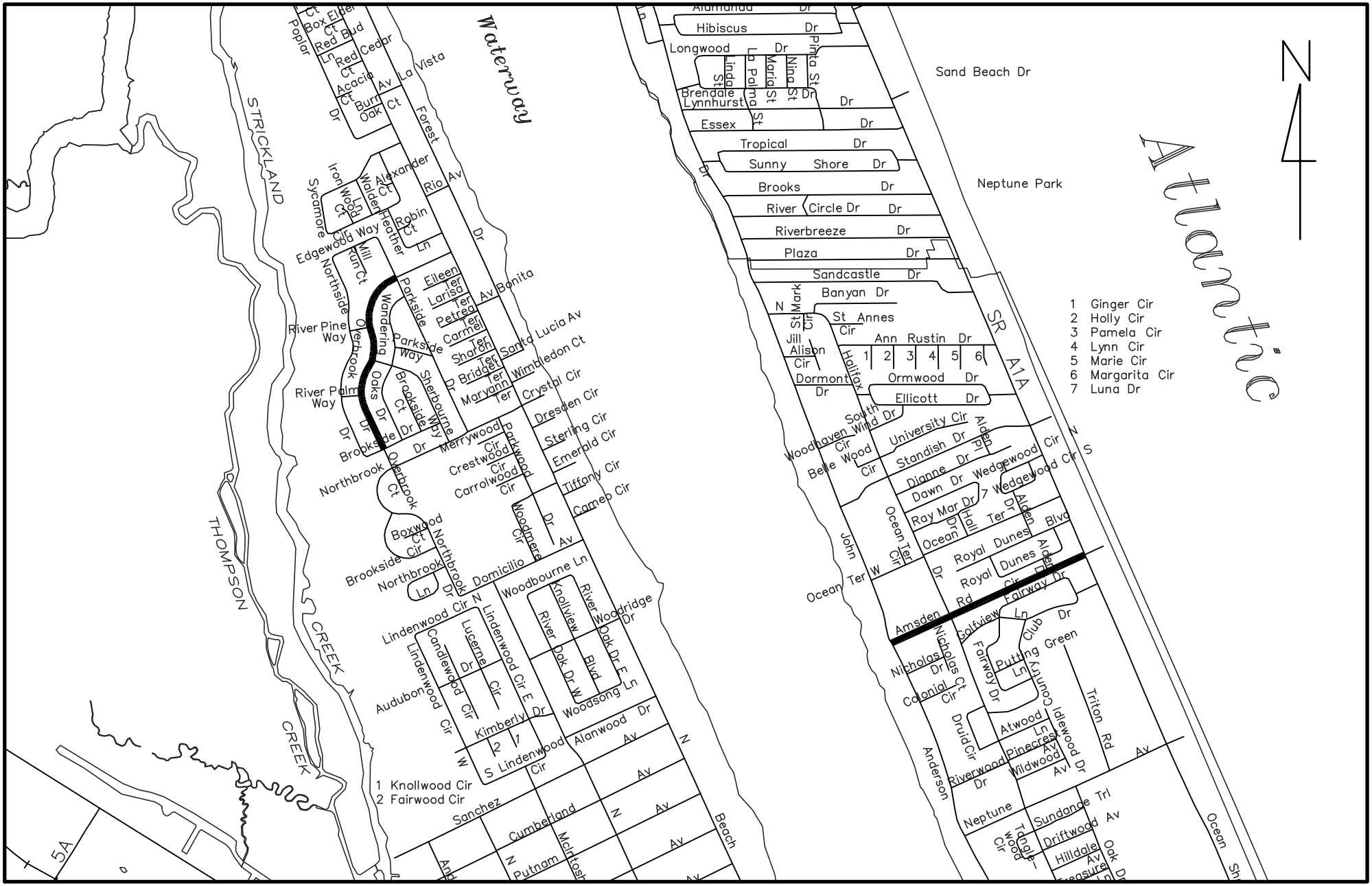
FY 2016 ROADWAY RESURFACING



LOCATION MAP

SHEET 1 OF 4

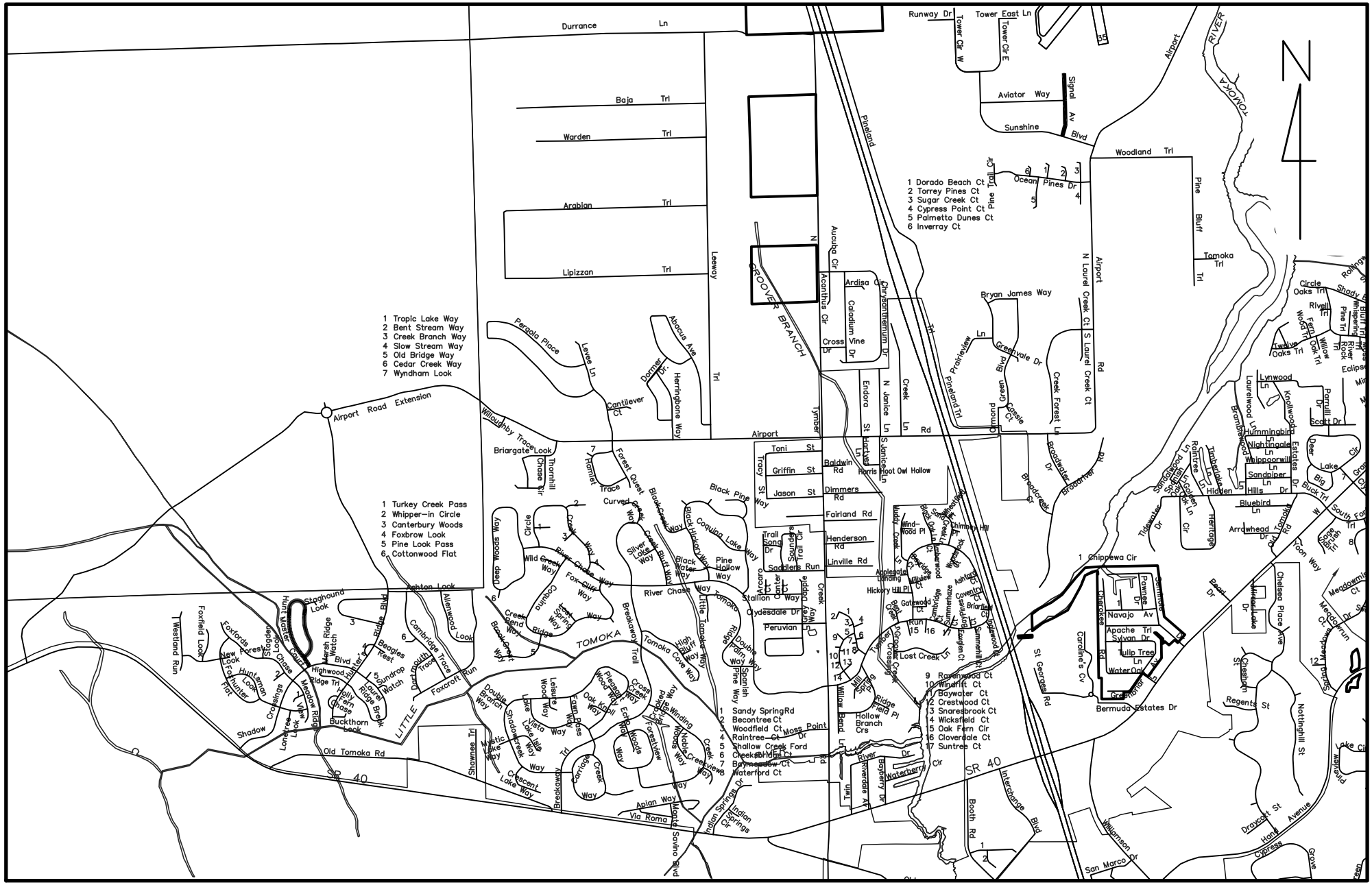
FY 2016 ROADWAY RESURFACING



LOCATION MAP

SHEET 2 OF 4

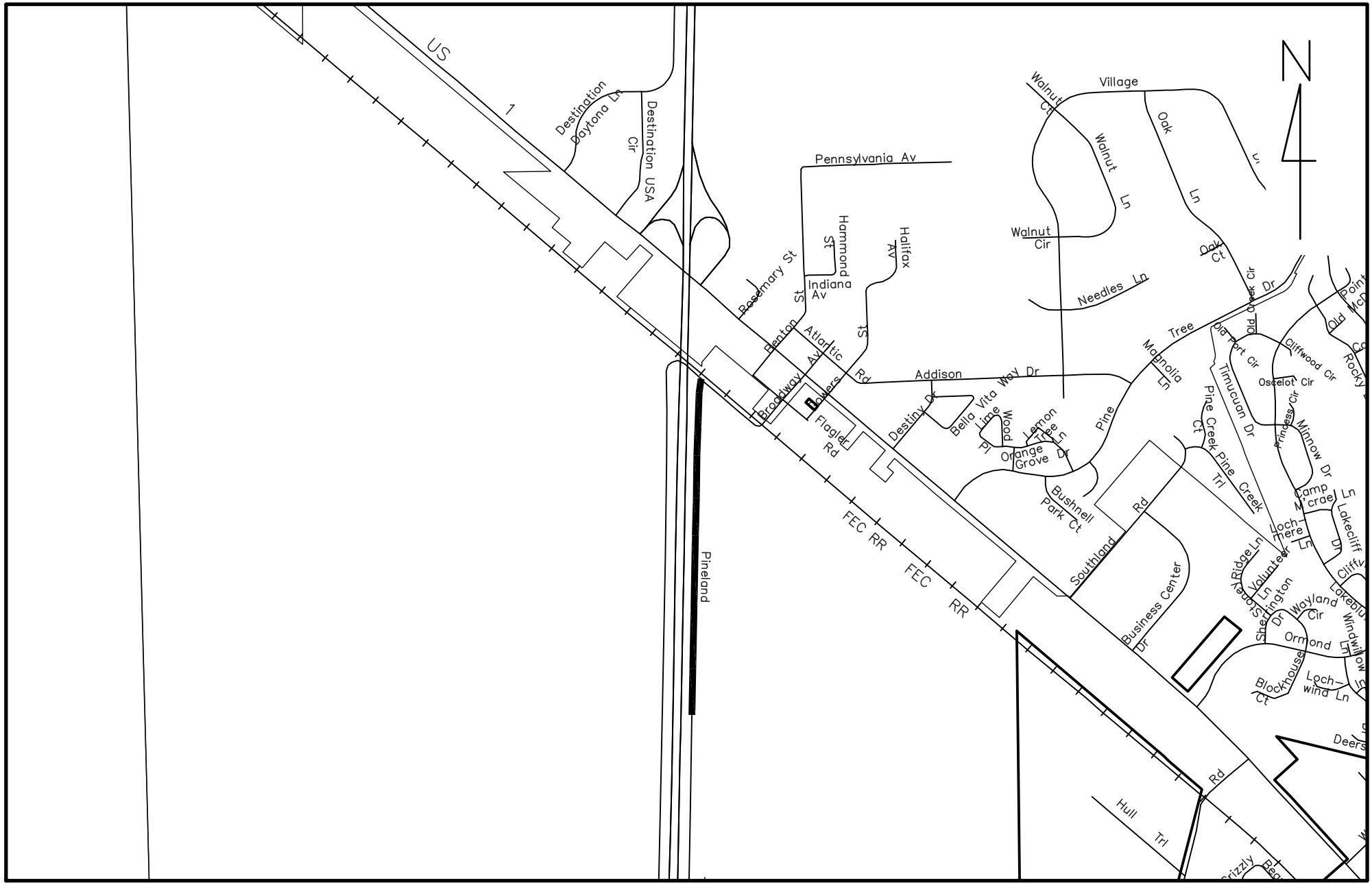
FY 2016 ROADWAY RESURFACING



LOCATION MAP

SHEET 3 OF 4

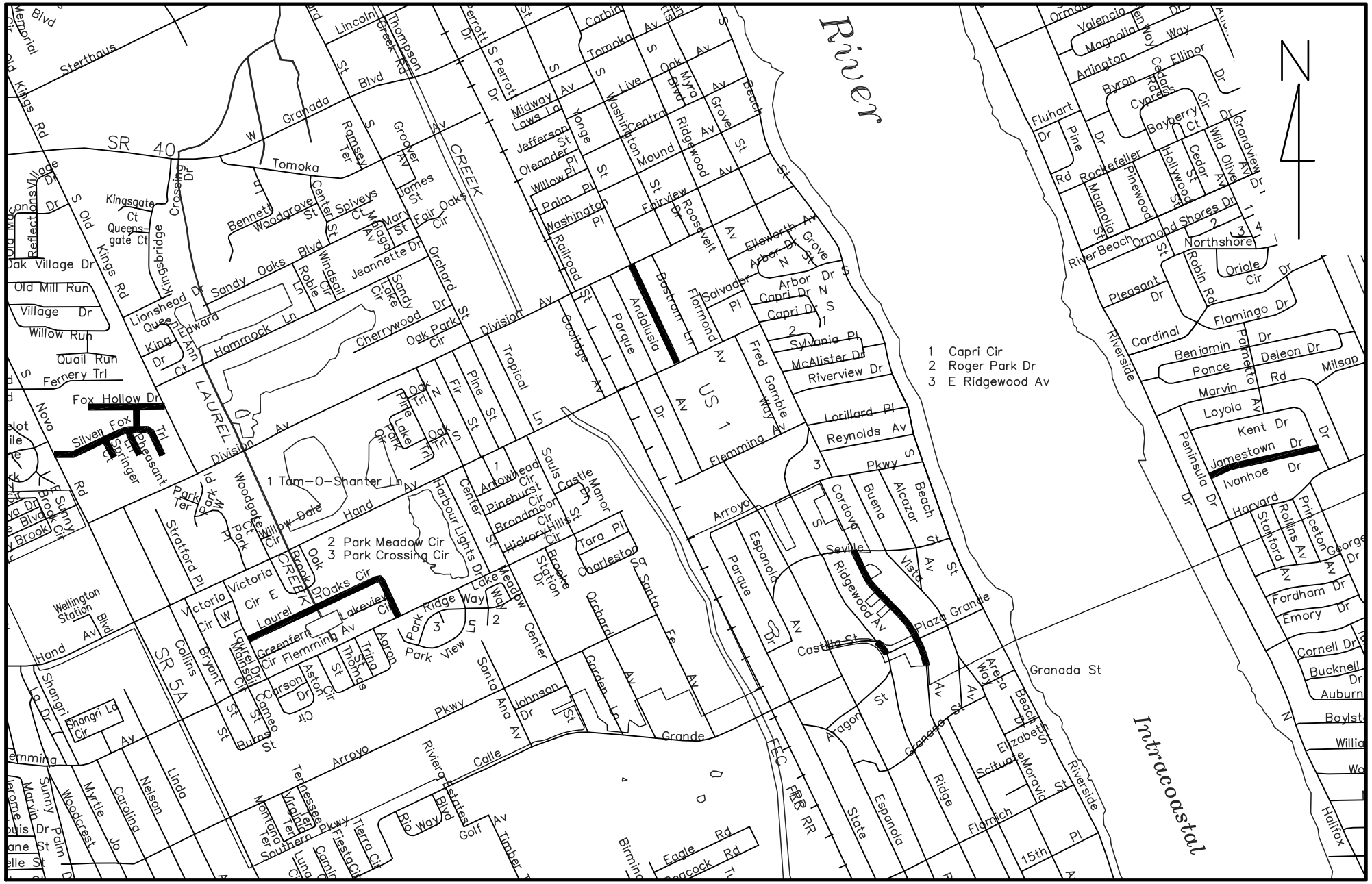
FY 2016 ROADWAY RESURFACING



LOCATION MAP

SHEET 4 OF 4

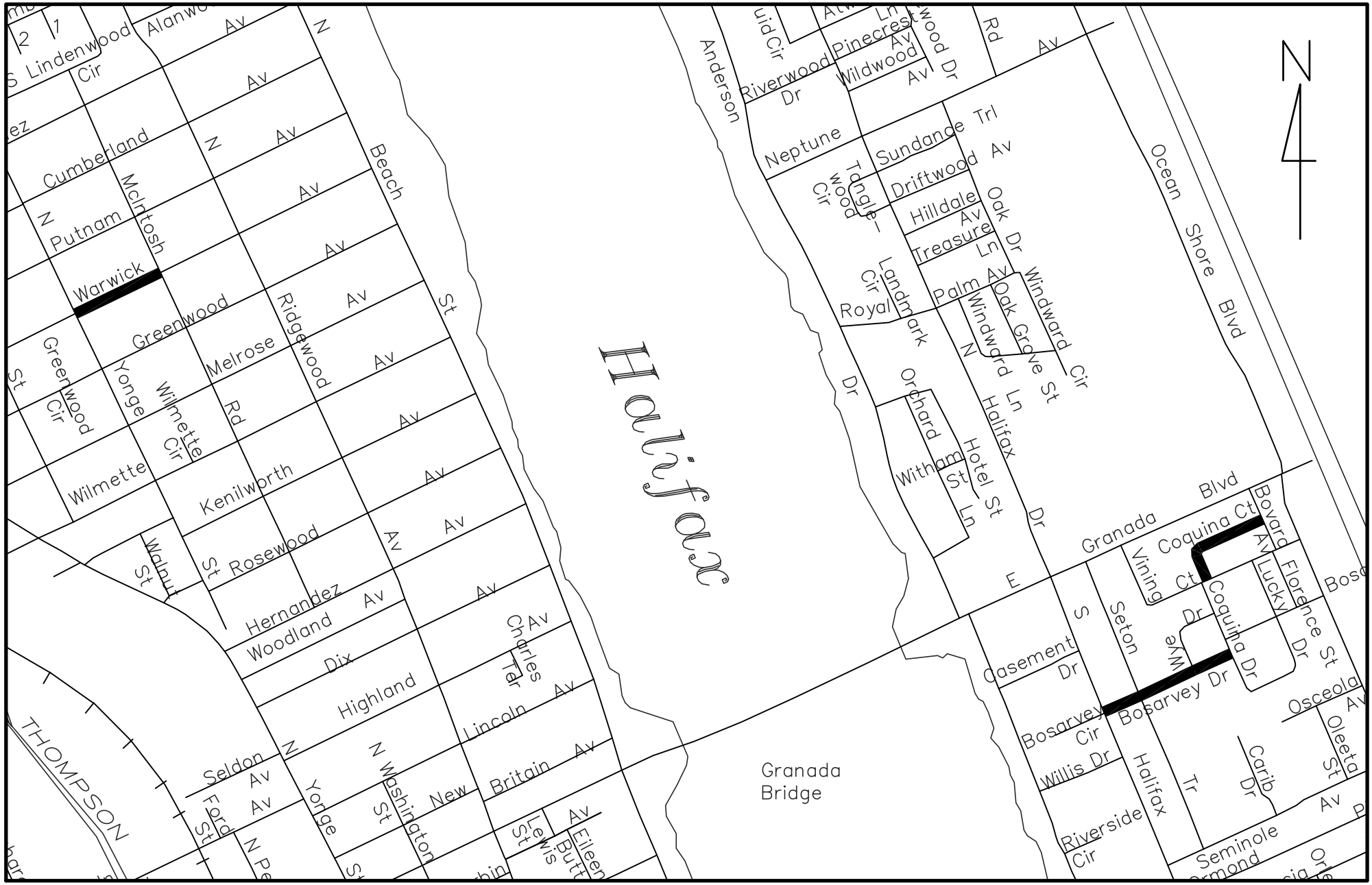
FY 2017 ROADWAY RESURFACING



LOCATION MAP

SHEET 1 OF 4

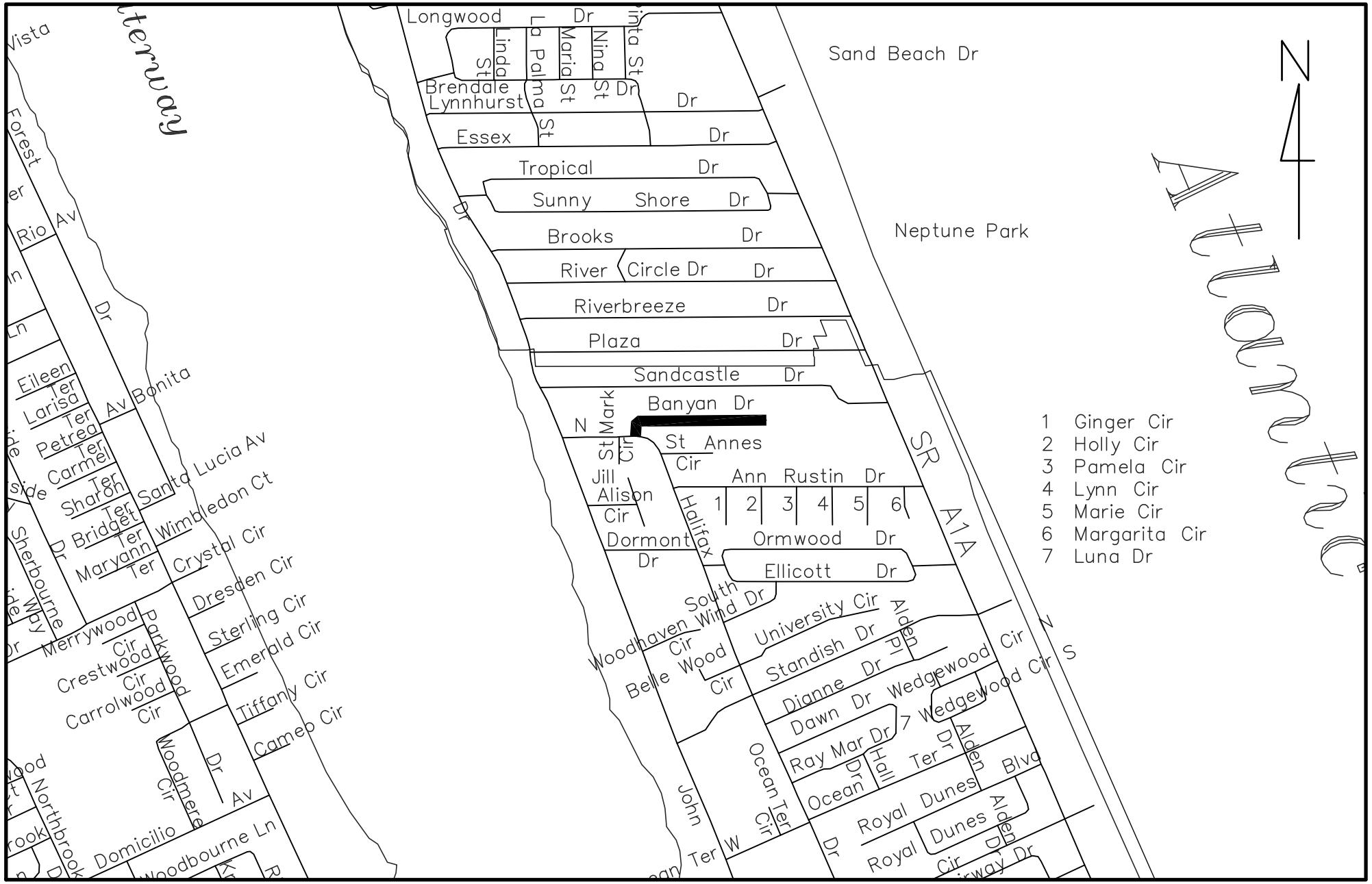
FY 2017 ROADWAY RESURFACING



LOCATION MAP

SHEET 2 OF 4

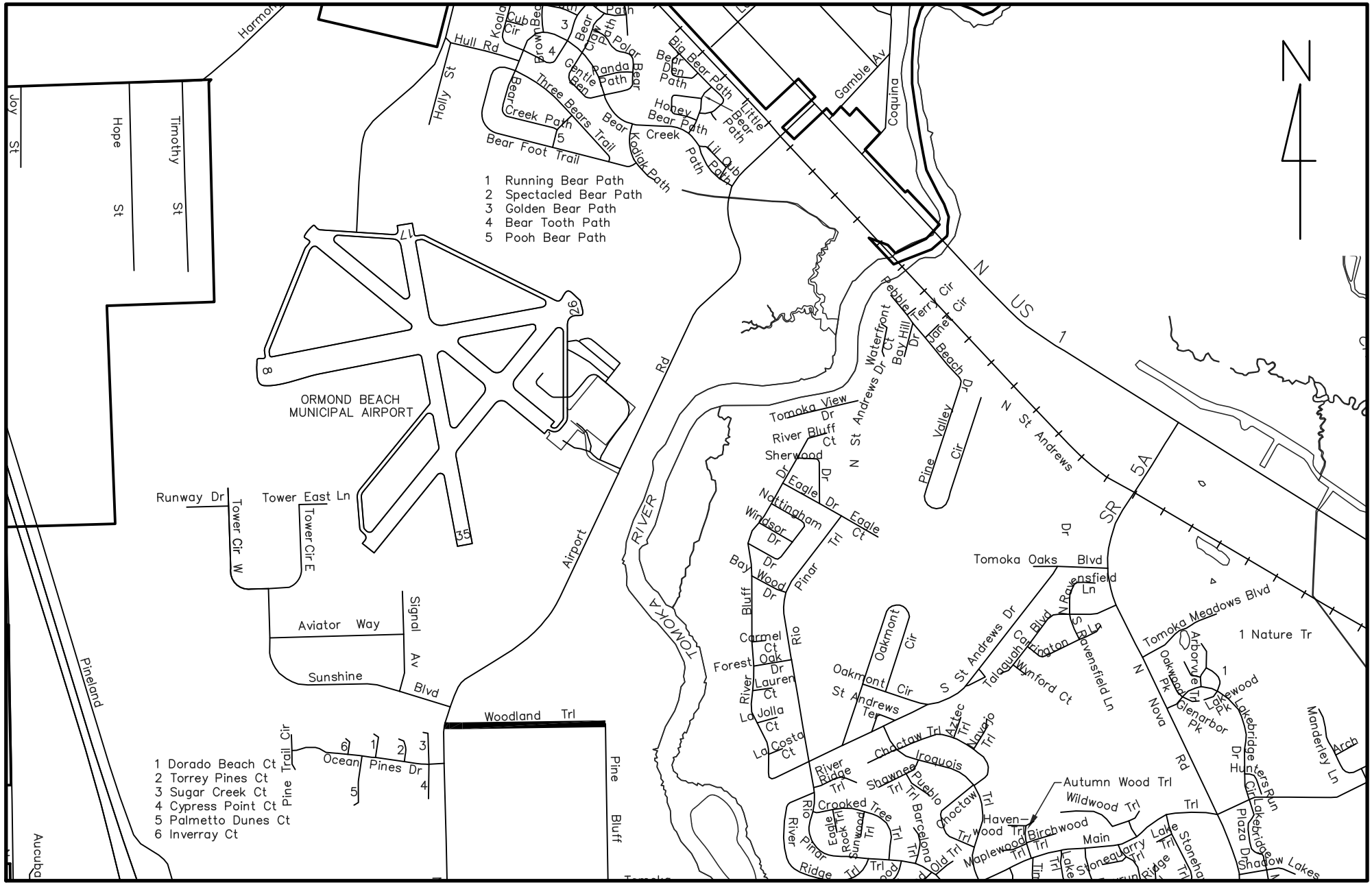
FY 2017 ROADWAY RESURFACING



LOCATION MAP

SHEET 3 OF 4

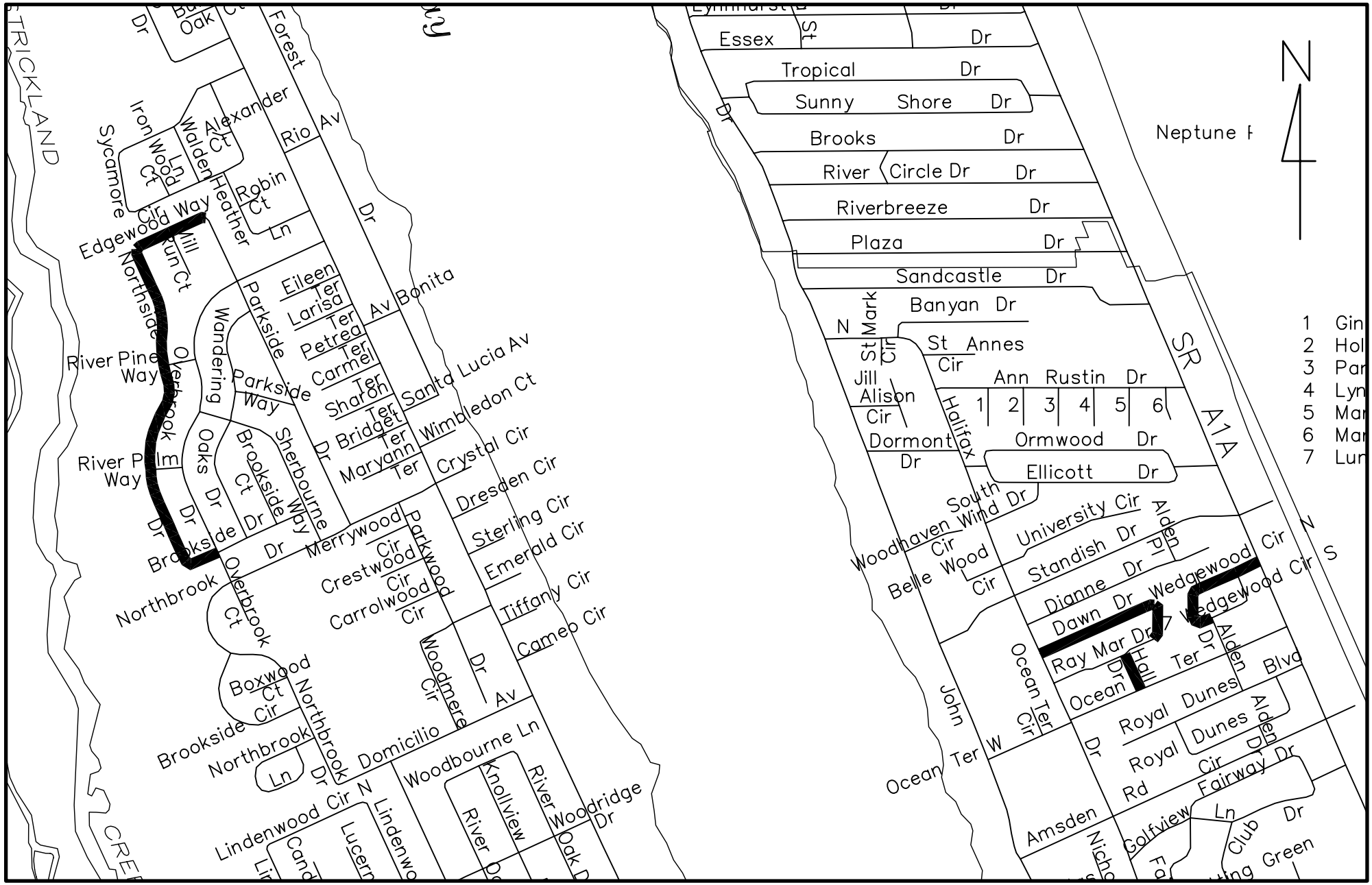
FY 2017 ROADWAY RESURFACING



LOCATION MAP

SHEET 4 OF 4

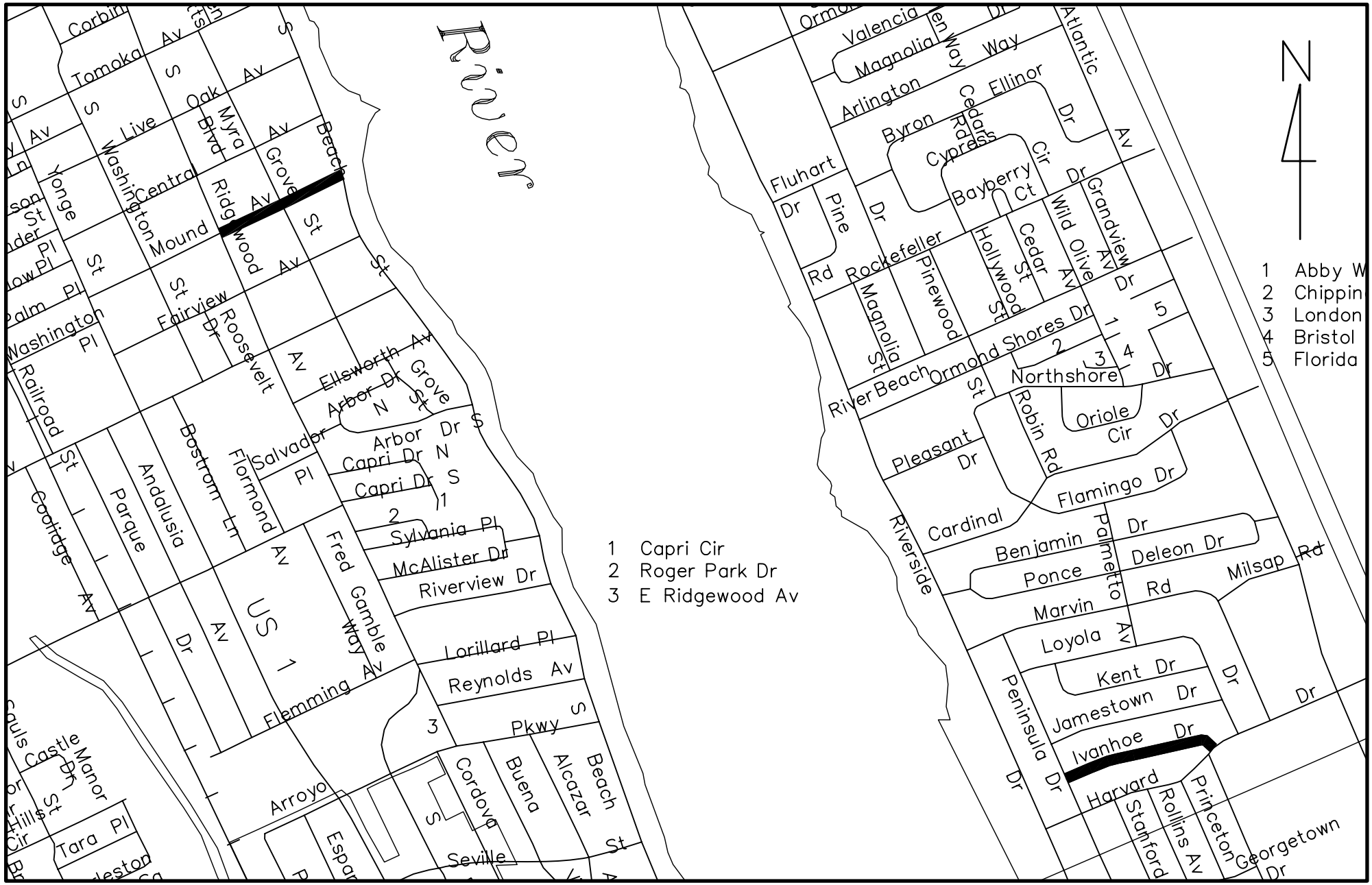
FY 2018 ROADWAY RESURFACING



LOCATION MAP

SHEET 1 OF 5

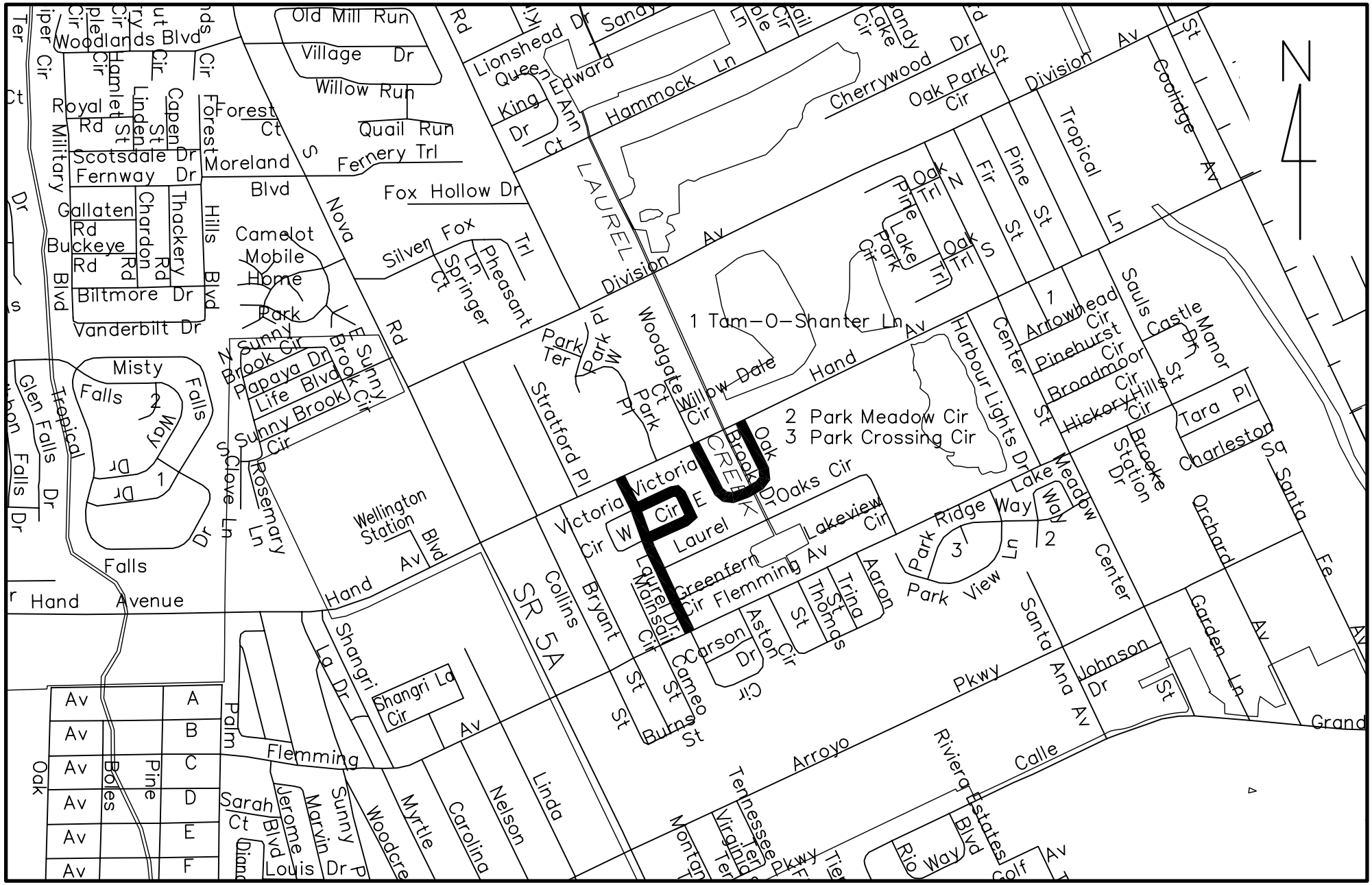
FY 2018 ROADWAY RESURFACING



LOCATION MAP

SHEET 2 OF 5

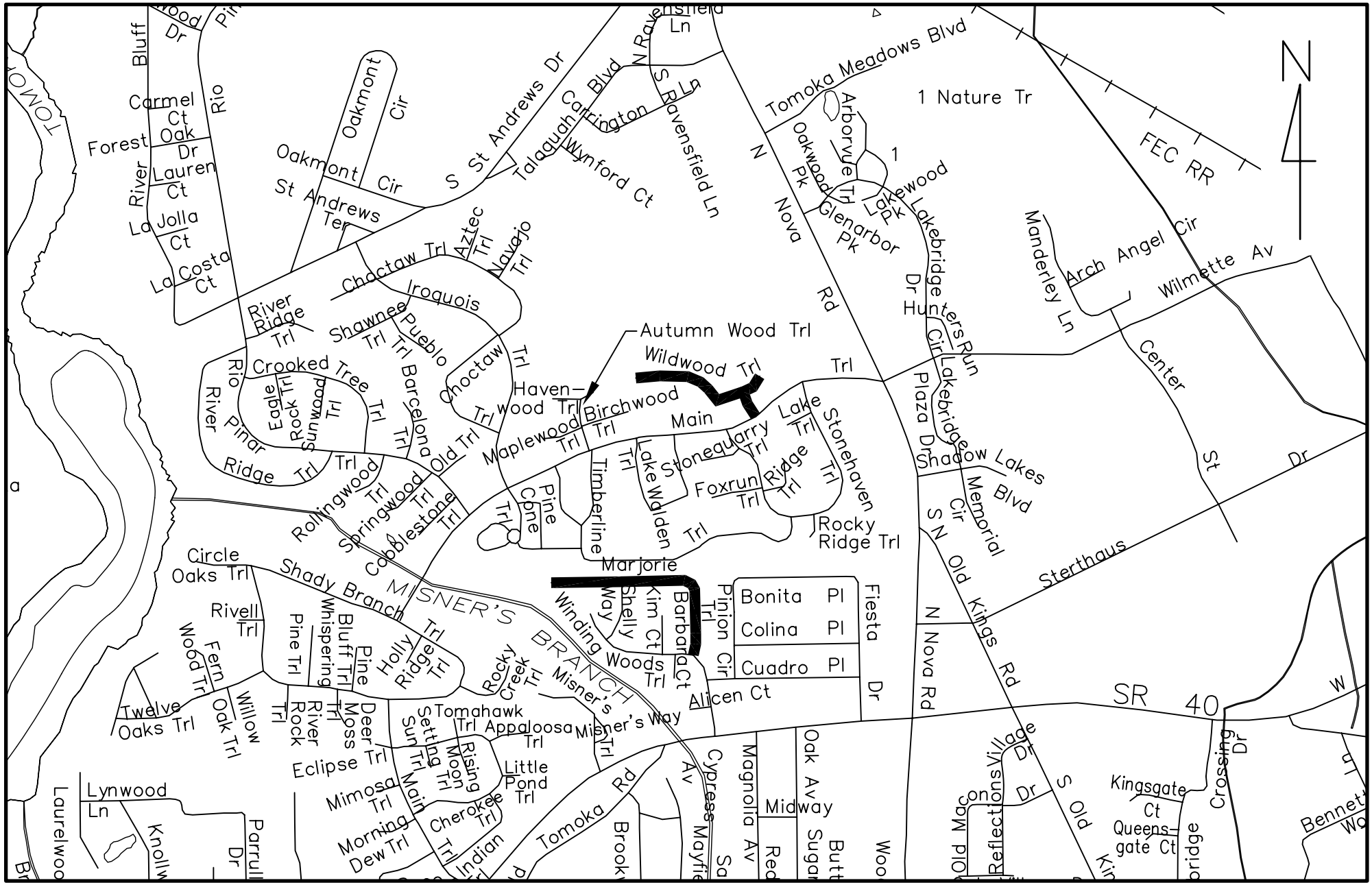
FY 2018 ROADWAY RESURFACING



LOCATION MAP

SHEET 3 OF 5

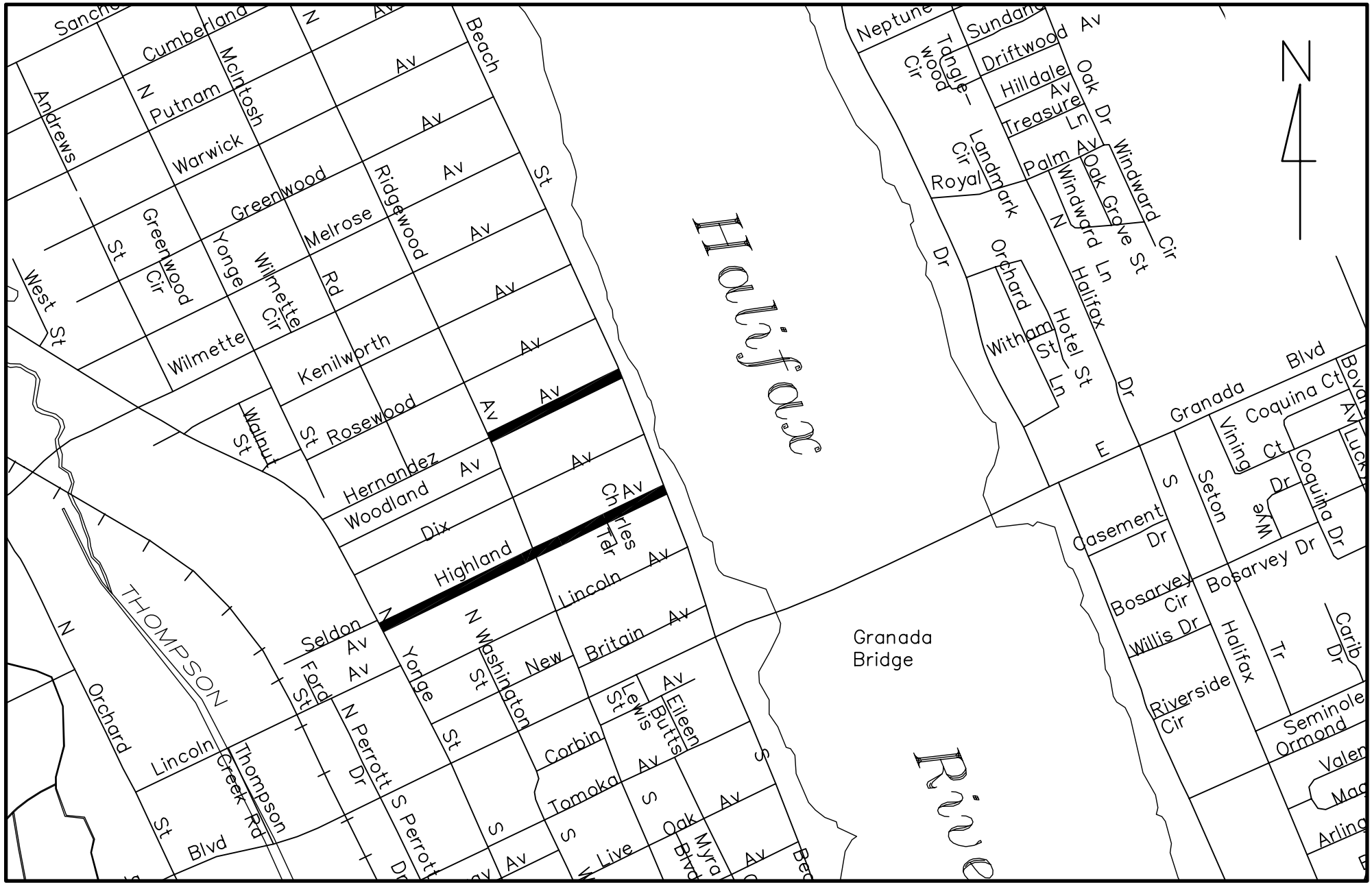
FY 2018 ROADWAY RESURFACING



LOCATION MAP

SHEET 4 OF 5

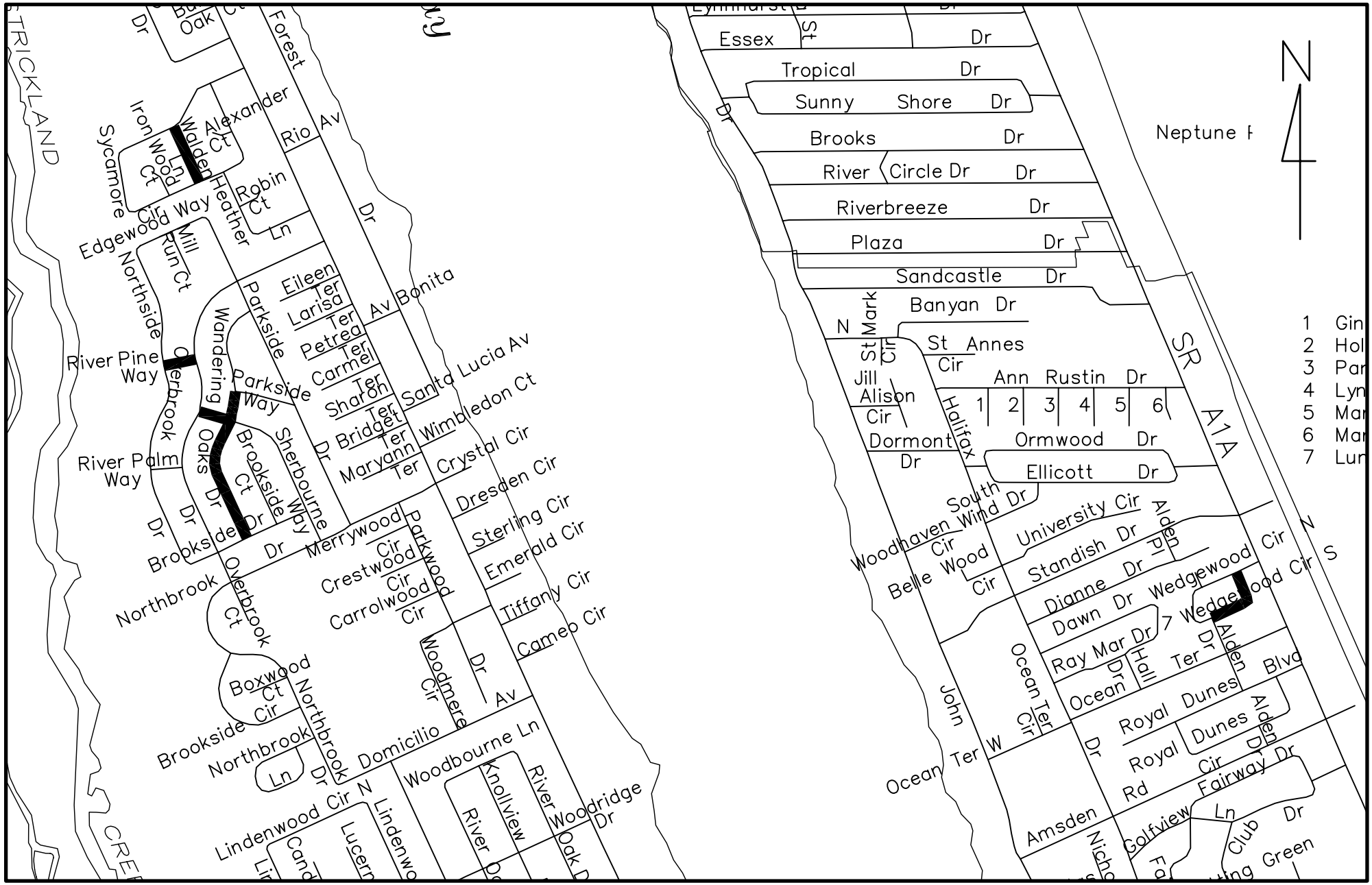
FY 2018 ROADWAY RESURFACING



LOCATION MAP

SHEET 5 OF 5

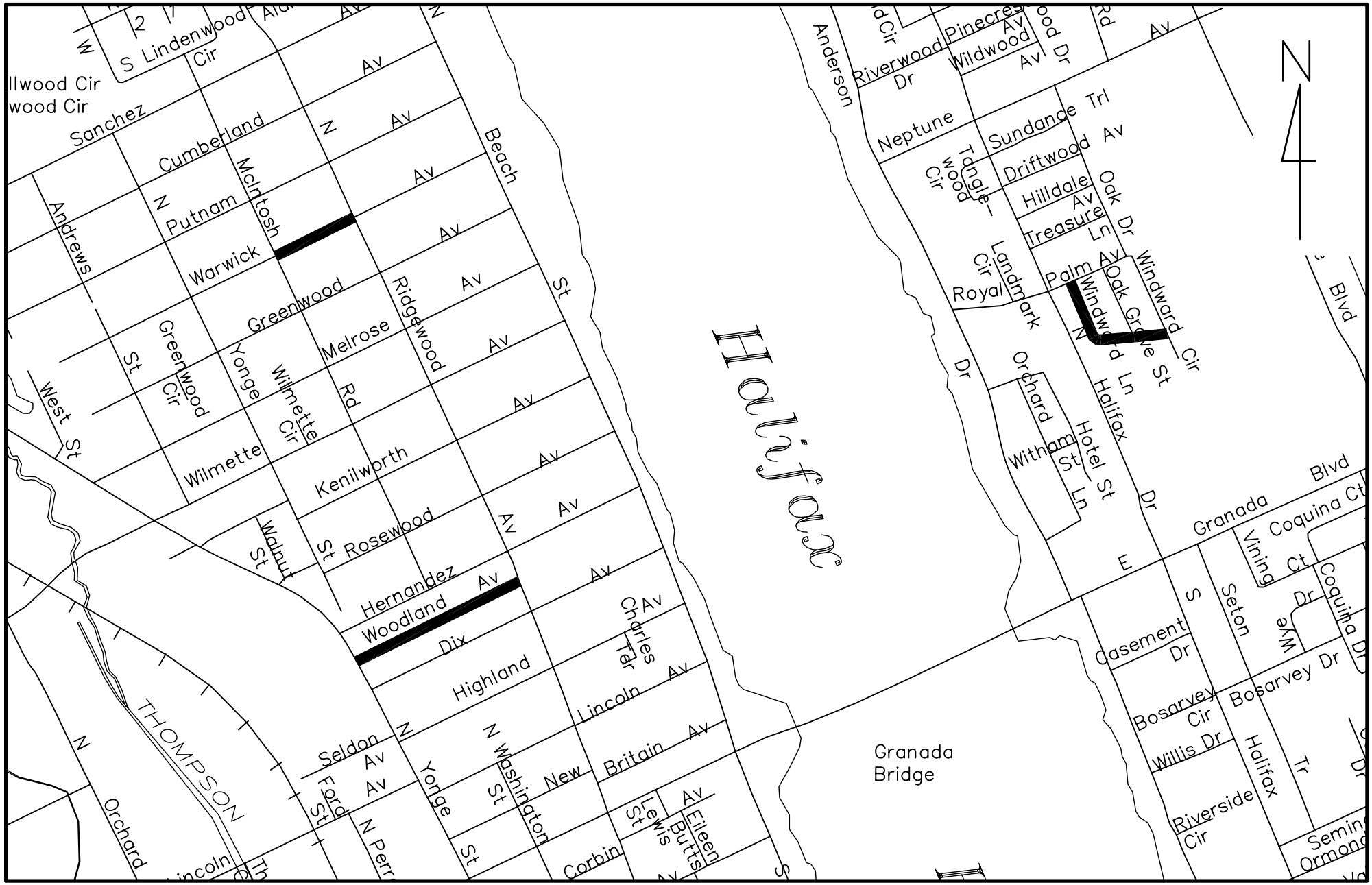
FY 2019 ROADWAY RESURFACING



LOCATION MAP

SHEET 1 OF 5

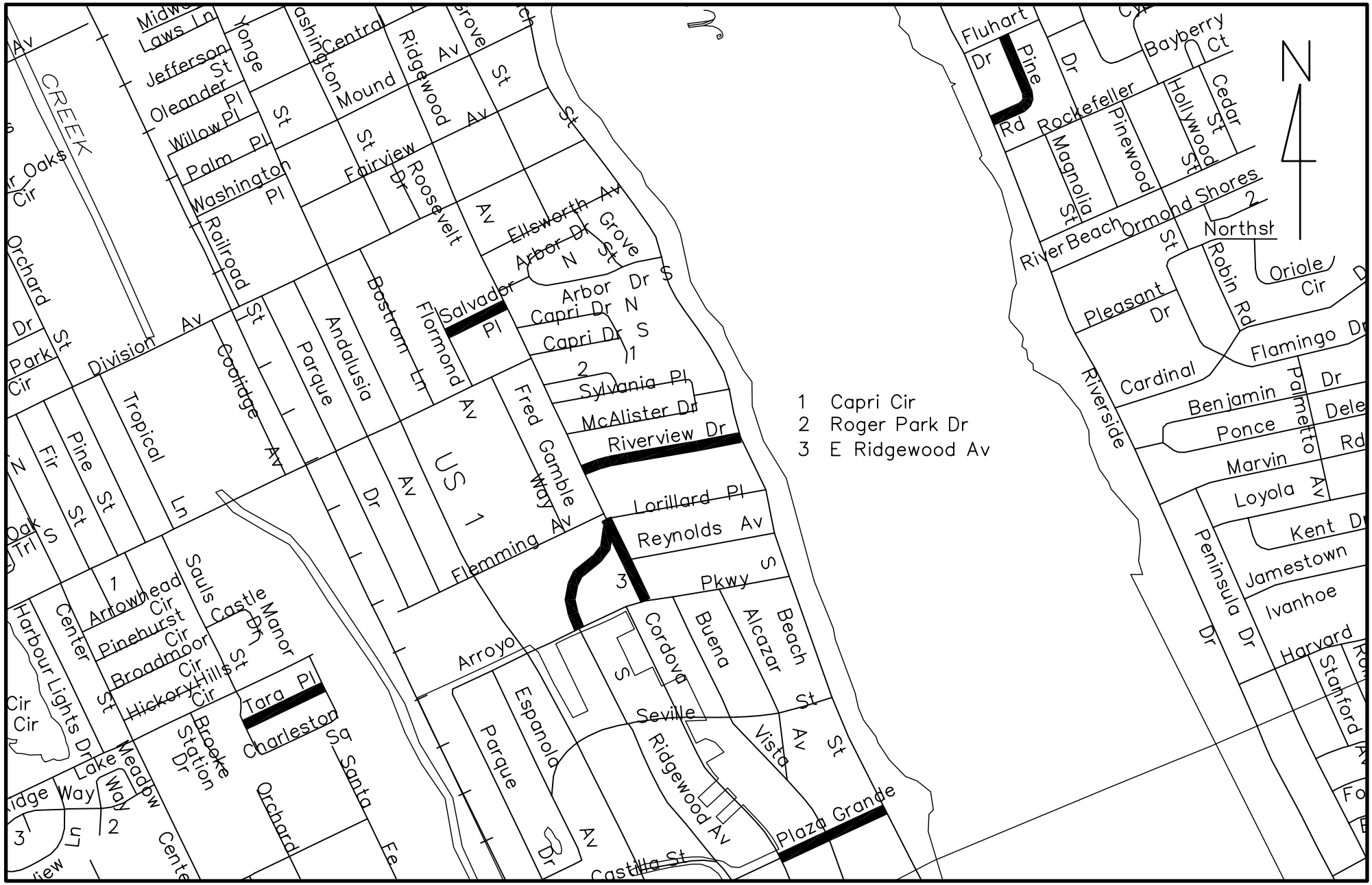
FY 2019 ROADWAY RESURFACING



LOCATION MAP

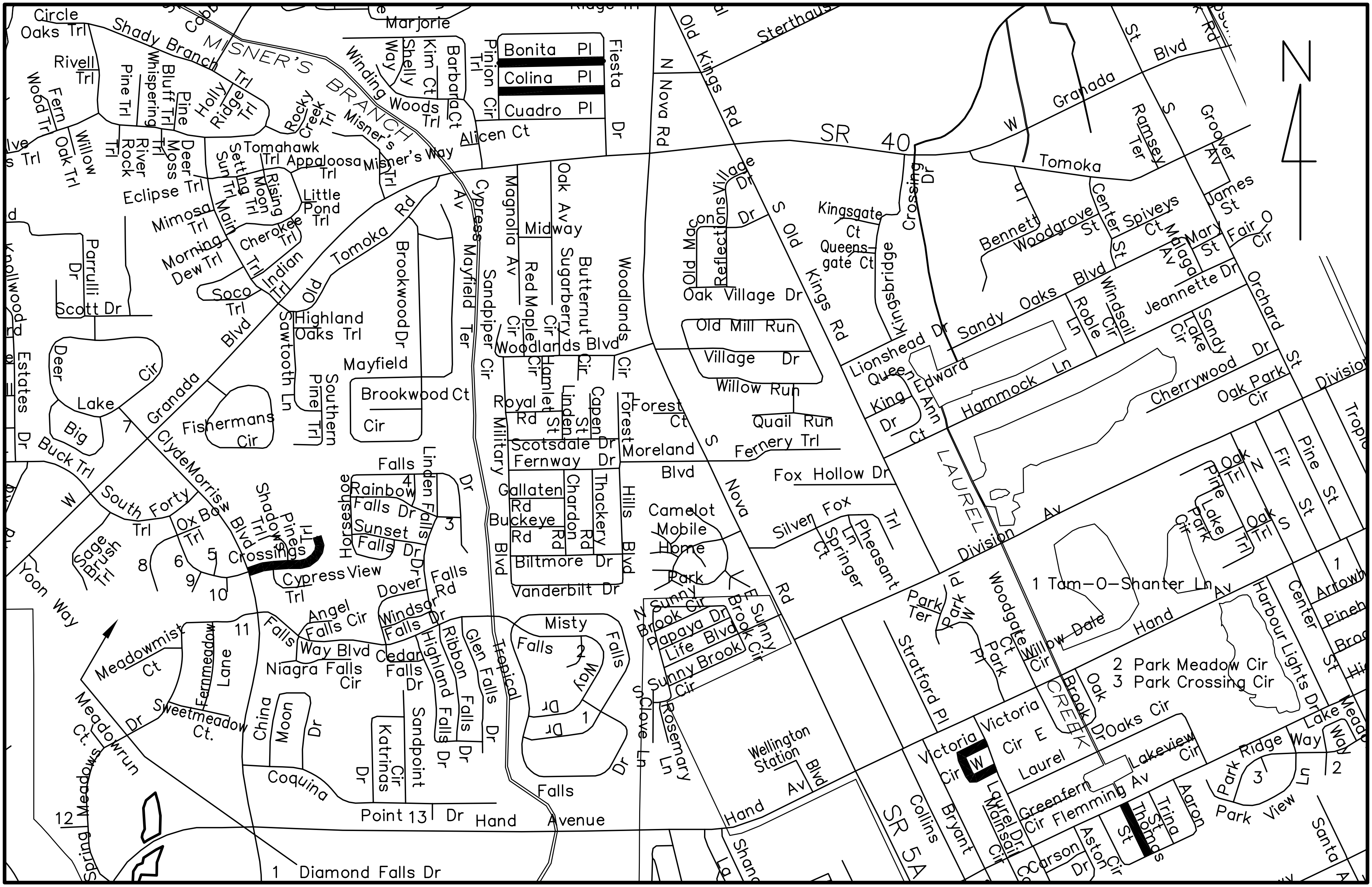
SHEET 2 OF 5

FY 2019 ROADWAY RESURFACING



LOCATION MAP

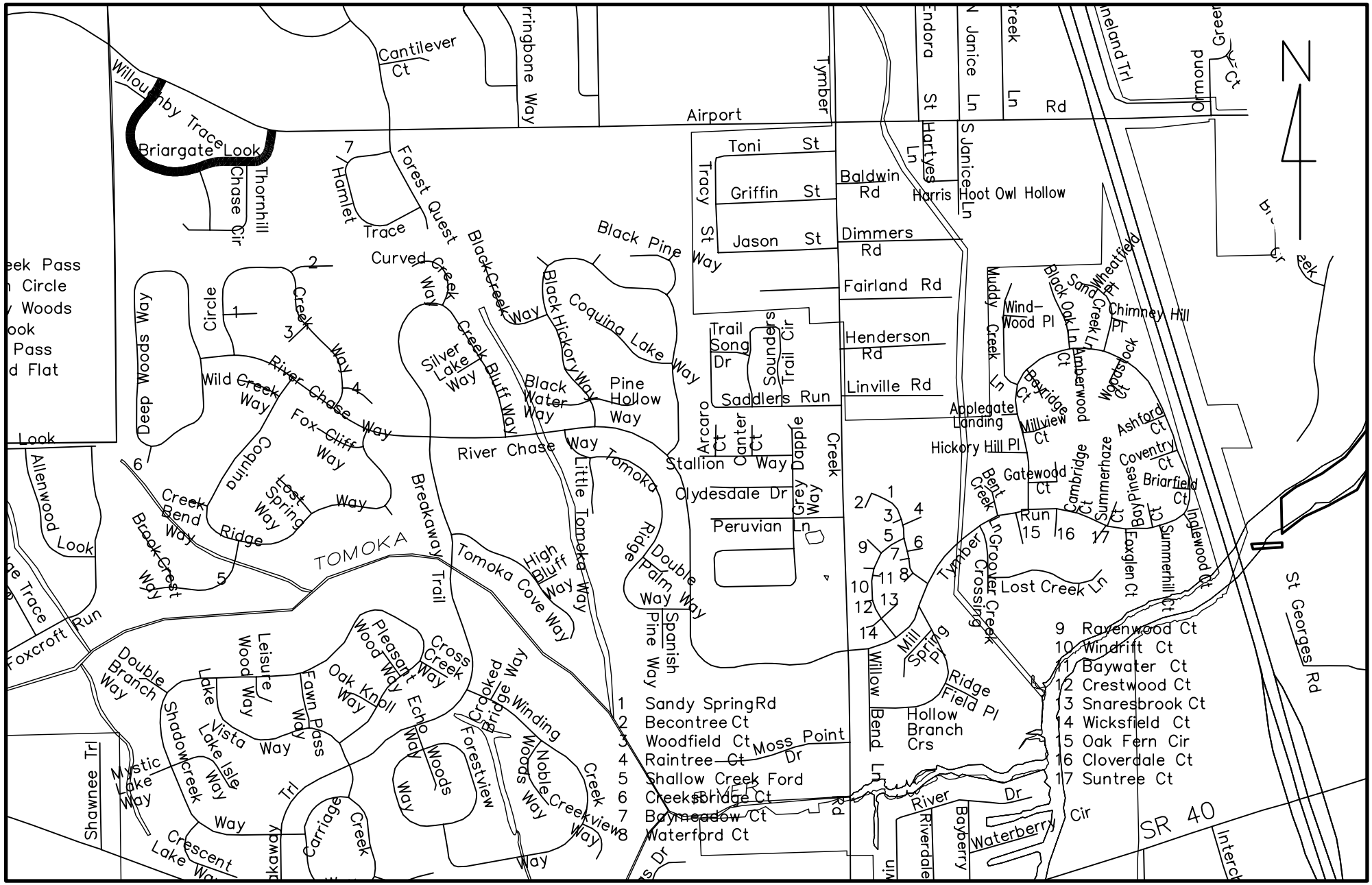
FY 2019 ROADWAY RESURFACING



LOCATION MAP

SHEET 4 OF 5

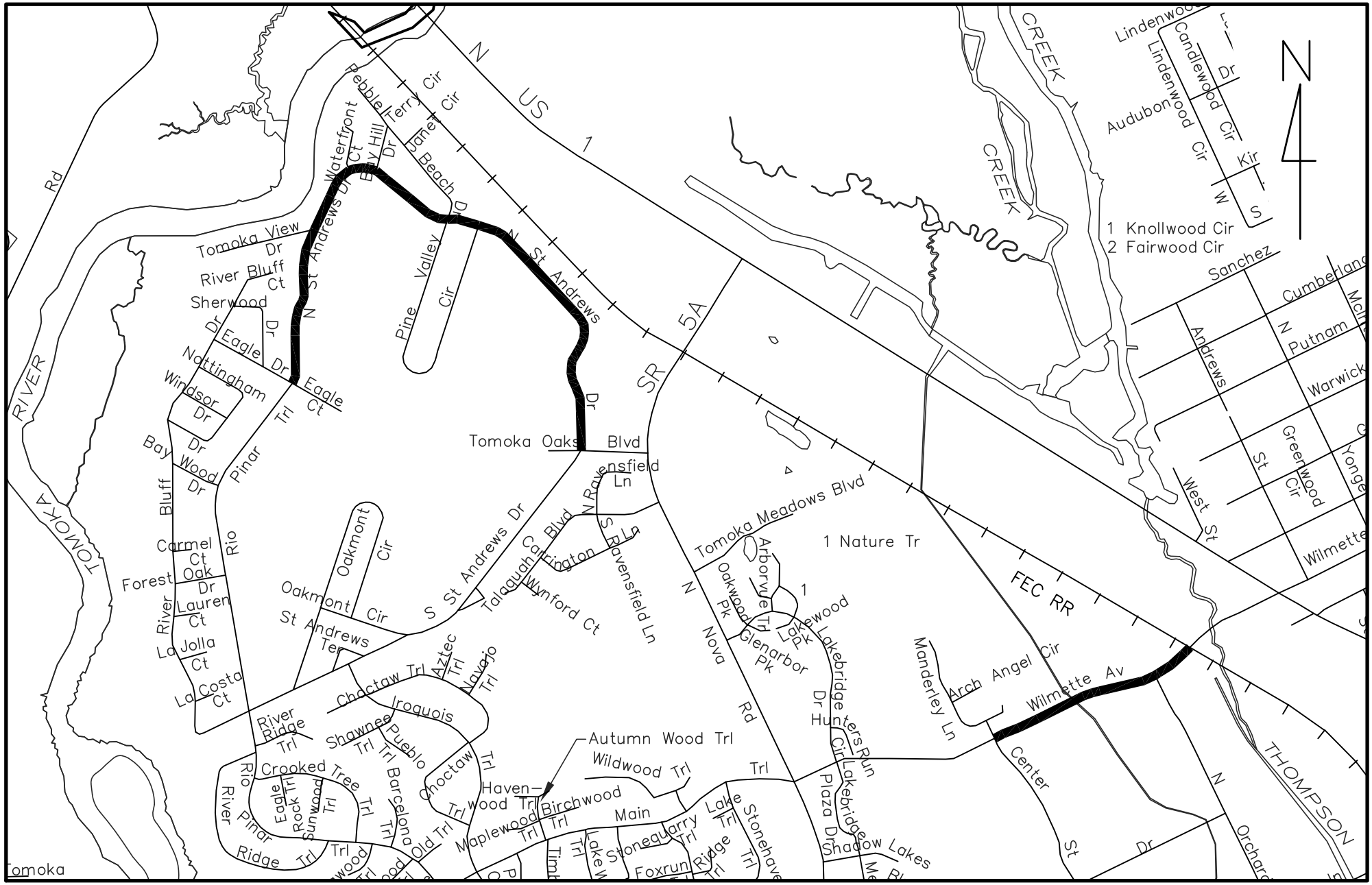
FY 2019 ROADWAY RESURFACING



LOCATION MAP

SHEET 5 OF 5

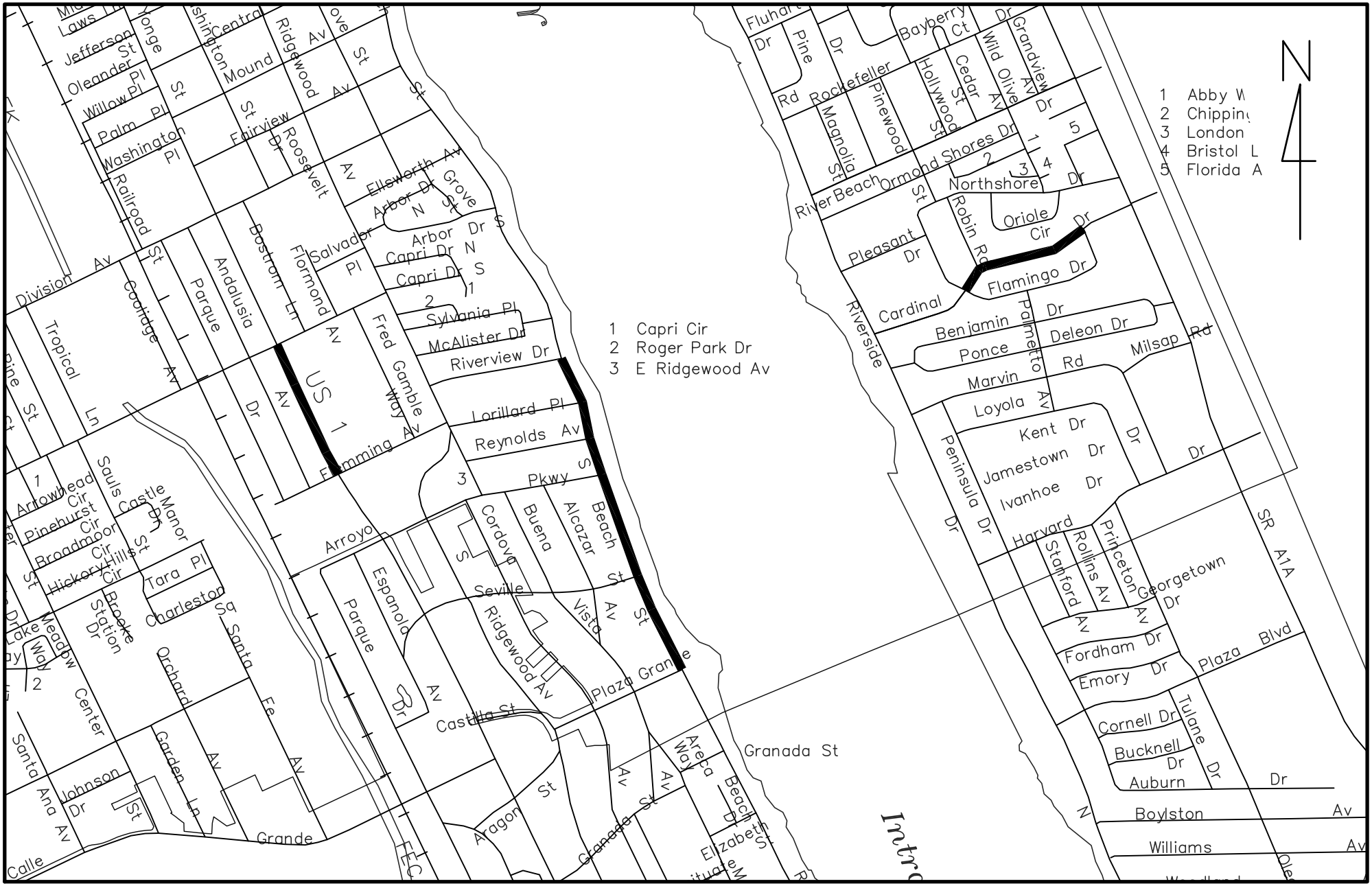
FY 2020 ROADWAY RESURFACING



LOCATION MAP

SHEET 1 OF 2

FY 2020 ROADWAY RESURFACING



LOCATION MAP

SHEET 2 OF 2

CAPITAL PROJECT DETAIL

PROJECT TITLE

Street Light Maintenance

PROJECT#

308114

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

Nova Road

MANAGEMENT

Engineering

PROJECT SCOPE

Painting of the faded or damaged city-maintained street lights on Nova Road.

JUSTIFICATION

With the reconstruction of Nova Road, green painted street light posts were included as part the project at the City's request. Maintenance of these light posts will be required to prevent against corrosion and normal wear. 120 light posts were installed along the roadway corridor. A six year maintenance cycle began in FY2011-2012 with a number of the lights being painted in December 2012 / January 2013. The current projections complete the painting from the previous termination of work to the south City Limits.

PROJECT COST METHODOLOGY

Quote of $2,100.00 per pole

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Street Light Maintenance	40,000	30,000	0	65,000	65,000	200,000
Total	40,000	30,000	0	65,000	65,000	200,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-Transportation	40,000	30,000	0	65,000	65,000	200,000
Total	40,000	30,000	0	65,000	65,000	200,000

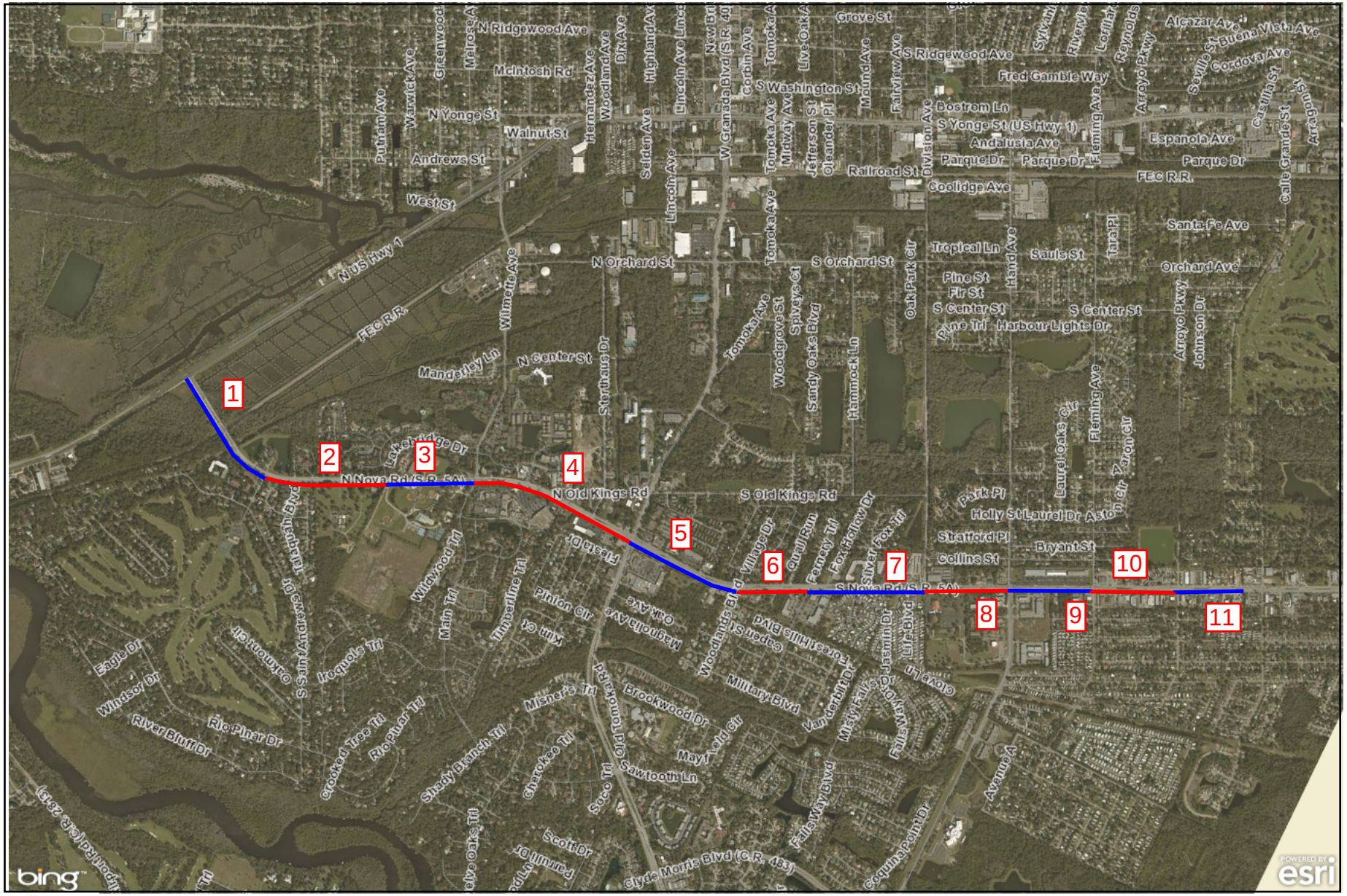
Street Light Maintenance

Nova Road

	Segment From	Segment To	Number	Cost Per Pole	Cost Per Segment
1	US 1	Tomoka Oaks	11	$ 2,100.00	$ 23,100.00
2	Tomoka Oaks	Nova Rec - N	11	$ 2,100.00	$ 23,100.00
3	Nova Rec - N	Main Trail	8	$ 2,100.00	$ 16,800.00
4	Main Trail	West Granada	17	$ 2,100.00	$ 35,700.00
5	West Granada	Woodlands	12	$ 2,100.00	$ 25,200.00
6	Woodlands	Moreland Blvd	7	$ 2,100.00	$ 14,700.00
7	Moreland Blvd	Division	12	$ 2,100.00	$ 25,200.00
8	Division	Hand	9	$ 2,100.00	$ 18,900.00
9	Hand	Flemming	9	$ 2,100.00	$ 18,900.00
10	Flemming	Arroyo Pkwy	8	$ 2,100.00	$ 16,800.00
11	Arroy Pkwy	So. City Limits	5	$ 2,100.00	$ 10,500.00

	2015/16	2016/17	2017/18	2018/19	2019/2020
Segments	8 - 11		1 - 3	4 - 5	6 - 7
Cost	$ 65,100.00		$ 63,000.00	$ 60,900.00	$ 39,900.00
Permit / Engineering	$ 4,900.00		$ 7,000.00	$ 4,100.00	$ 5,100.00
Budget	$ 70,000.00	$ -	$ 70,000.00	$ 65,000.00	$ 45,000.00

Nova Road Street Light Maintenance



2,524 ft

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CAPITAL PROJECT DETAIL

PROJECT TITLE

Traffic Signal Maintenance

PROJECT#

308115

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

City-wide

MANAGEMENT

Engineering

PROJECT SCOPE

Maintenance and upgrades to existing traffic signals to includes repainting of traffic signals and other traffic control devices as needed on a City-wide basis. The attached schedule and map provides those intersections and the years for which maintenance has been assigned.

JUSTIFICATION

Normal wear and tear under extreme weather conditions requires refurbishing of these highly visible traffic signals to be required every 5-7 years. If regular maintenance including the painting of the mast arms is not performed, the mast arms are subject to corrosion and potential structural failure. The proposed schedule factors in the time since last painting and completes the current re-painting cycle.

PROJECT COST METHODOLOGY

Historic Bid Information (2013/14 contract for mast arm painting)

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Signal Rehabilitation	0	70,000	65,000	70,000	45,000	250,000
Total	0	70,000	65,000	70,000	45,000	250,000

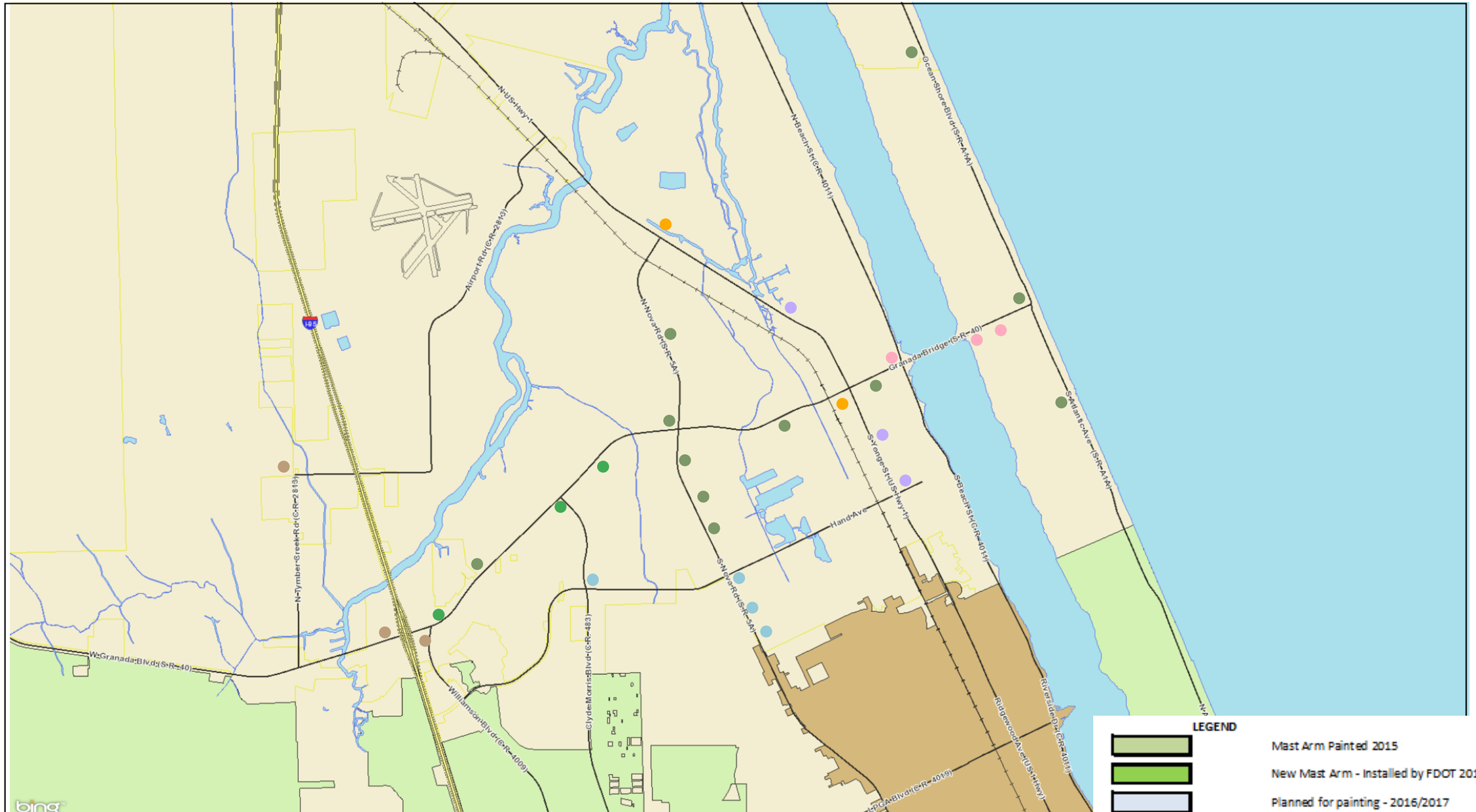
REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-Transportation	0	70,000	65,000	70,000	45,000	250,000
Total	0	70,000	65,000	70,000	45,000	250,000

	Mast Arm	Location		Apr-15				2015 / 2016	2016 / 2017	2017 / 2018	2018/2019	2019/2020
	Structure #	Main Facility	Intersecting Facility	Age	Rank	YR - 1	YR - 2	YR -3	YR-4	YR-5	YR-5	
1	79M003	I-95 NB	SR-40(Granada Blvd)	9	9					$ 20,081.60		
2	79M004	I-95 SB	SR-40(Granada Blvd)	9	9					$ 20,081.60		
3	79M019	US-1/SR-5	Hand Ave.	7	4							
4	79M020	US-1/SR-5	Division Ave	15	1							
5	79M021	US-1/SR-5	Wilmette Ave.	15	2							
6	79M036	SR-5A/Nova Rd	Golf Ave.	13	6				$ 15,145.90			
7	79M037	SR-5A/Nova Rd	Flemming Ave.	13	6				$ 15,145.90			
8	79M038	SR-5A/Nova Rd	Hand Ave.	13	6				$ 18,528.40			
9	79M039	SR-5A/Nova Rd	Division Ave	1	23	$ 17,656.00						
10	79M040	SR-5A/Nova Rd	Woodlands Blvd.	1	23	$ 20,119.00						
11	79M041	SR-5A/Nova Rd	Fire Station 92	1	23	$ 13,769.00						
12	79M042	SR-5A/Nova Rd	SR-40(Granada Blvd)	1	19	$ 20,119.00						
13	79M043	SR-5A/Nova Rd	Wilmette Ave.	1	23	$ 18,256.00						
14	79M059	SR-600/SR-A1A	Fire Station 91	1	15		$ 9,456.00					
15	79M060	SR-600/SR-A1A	SR-40(Granada Blvd)	1	14		$ 11,550.00					
16	79M061	SR-600/SR-A1A	Neptune Ave.	1	15		$ 13,394.00					
17	79M114	SR-40(Granada Blvd)	Seminole	1	23		$ 16,844.00					
18	79M115	SR-40(Granada Blvd)	Orchard Street	1	23		$ 11,550.00					
19	79M116	SR-40(Granada Blvd)	Ridgewood Ave.	1	23		$ 10,244.00					
20	79M117	SR-40(Granada Blvd)	Beach Street	4	13						$ 22,130.90	
21	79M118	SR-40(Granada Blvd)	John Anderson Dr.	4	11						$ 22,130.90	
22	79M119	SR-40(Granada Blvd)	Halifax Dr.	4	11						$ 22,130.90	
23		SR-40(Granada Blvd)	Main Trail/Old Tomoka	1	19							
24		SR-40(Granada Blvd)	Clyde Morris Blvd.	1	19							
25		SR-40(Granada Blvd)	Williamson Blvd.	1	19							
26		SR-5A/Nova Rd	US-1/SR-5	3	17							$ 20,081.60
27		Airport Road	Tymber Creek Rd.	15	3					$ 20,081.60		
28		Clyde Morris Blvd.	Hand Avenue	15	5				$ 18,528.40			
29		SR-40(Granada Blvd)	US-1/SR-5	3	17							$ 22,130.90
						$ 89,919.00	$ 73,038.00	$ -	$ 67,348.60	$ 60,244.80	$ 66,392.70	$ 42,212.50

LEGEND

- Mast Arm Painted 2015
- New Mast Arm - Installed by FDOT 2014
- Planned for painting - 2016/2017
- Planned for Painting - 2017/2018
- Planned for Painting Year 2018/2019
- Planned for Painting Year 2019/2020
- Galvanized Mast Arm - Painting Not Planned

Mast Arm Painting Schedule



4,405 ft

LEGEND

- Mast Arm Painted 2015
- New Mast Arm - Installed by FDOT 2014
- Planned for painting - 2016/2017
- Planned for Painting - 2017/2018
- Planned for Painting Year 2018/2019
- Planned for Painting Year 2019/2020
- Galvanized Mast Arm - Painting Not Planned

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CAPITAL PROJECT DETAIL

PROJECT TITLE

US 1 North Sidewalk

PROJECT#

308118

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

North US 1 between Wilmette Ave. and Airport Road

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of an eight foot wide sidewalk connecting Wilmette Avenue, Nova Road, and Airport Road

JUSTIFICATION

The Florida Department of Transportation working with the River to Sea TPO completed a report for the US 1 Corridor Improvement Program in April, 2014. A component in this report is the construction of a connecting sidewalk along US 1, north from Wilmette Avenue connecting northern areas to the central City core. This project proposes extending sidewalk to the northern City Limits, proving a connection from Wilmette Avenue to Nova Road, across the Tomoka River, and to Airport Road for use by pedestrians and bicyclists.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and Construction	61,700	185,100	1,234,000	0	0	1,480,800
Total	61,700	185,100	1,234,000	0	0	1,480,800

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
TPO Grant (pending)	55,530	166,590	1,110,600	0	0	1,332,720
Property Taxes-Transportation	6,170	18,510	123,400	0	0	148,080
Total	61,700	185,100	1,234,000	0	0	1,480,800

City of Ormond Beach
4/3/2015

Proposed N. US1 Sidewalk, Wilmette Ave. to Airport Rd.

Project Notes: Total length of route, from Airport Rd to Wilmette Ave is approximately 2.2 miles. A proposed sidewalk of 12 ft was referenced per FDOT and Volusia TPO US1 corridor improvement program study, April 30, 2014; however, review of existing site condition appear that obstacles will limit width to a maximum of 8 ft, which this estimate is based upon.

Wilmmete Ave. to Nova Road, route distance 1.07 m	Proposed Sidewa	5740	ft
Nova Rd to Airport Rd, route distance 1.11 miles	Proposed Sidewa	4860	ft

Project Probable Cost

Construction

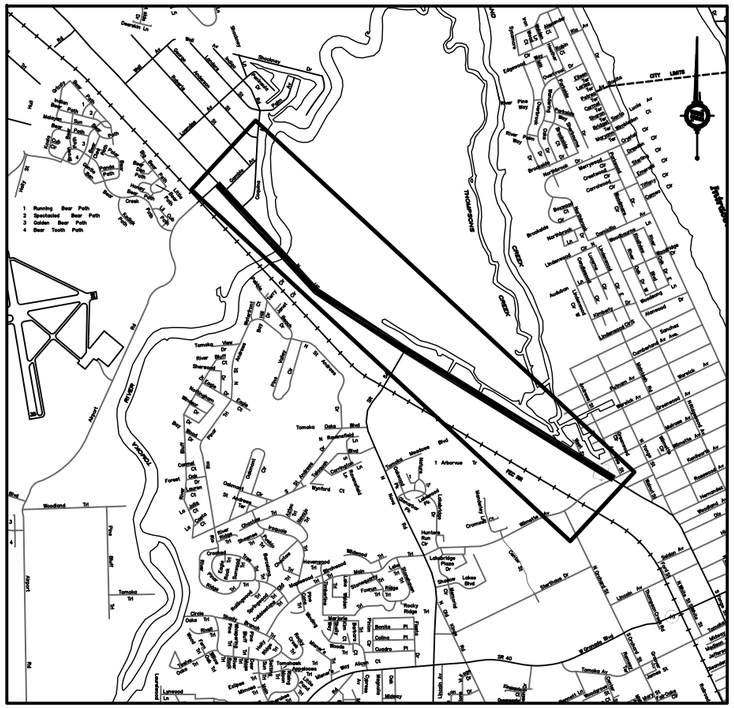
Item No.	Description	Estimated Quantity	Unit	Unit Price	Item Price
1	Mobilization/ Demobilization (~5%)	1	LS	$53,000.00	$53,000
2	Construct concrete sidewalk	9,500	SY	$30.00	$285,000
3	Furnish & Install Hand Railing along Sidewalk	490	LF	$50.00	$24,500
4	Drainage Swale Modification For Sidewalk	1,500	LF	$250.00	$375,000
5	Furnish and Install Ped-Signalization	3	EA	$70,000.00	$210,000
6	Utility Relocation and adjustments	1	LS	$50,000.00	$50,000
7	Furnish & Install ADA Ramp and Detectable Pad	30	EA	$400.00	$12,000
8	Furnish & Install Bahia Sod	7,800	SY	$2.50	$19,500
9	Thermoplastic Striping	1	LS	$10,000.00	$10,000
10	Furnish & Install Barrier Wall	120	SF	$350.00	$42,000
11	Furnish and Install Signage	1	LS	$2,000.00	$2,000
12	Getechnical Services	1	LS	$6,000.00	$6,000
13	Maintenance of Traffic	1	LS	$25,000.00	$25,000
14	As-Builts & Survey Site Layout	1	LS	$7,000.00	$7,000

		TPO Funding	City Match
Construction	**$1,121,000**		
Contingency (10%)	**$112,100**		
Construction Budget	**$1,234,000**	$ 1,110,600.00	$ 123,400.00
Engineering (15%)	**$185,100**	$ 166,590.00	$ 18,510.00
Feasibilty Study (5%)	**$61,700**	$ 55,530.00	$ 6,170.00
TOTAL PROBABLE PROJECT COST	**$1,480,800**		

CITY OF ORMOND BEACH

N US 1
SIDEWALK IMPROVMENTS

▭ = SITE LOCATION



SITE LOCATION MAP

SHEET	DESCRIPTION
1	COVER SHEET & PROJECT LOCATION MAP
2	PLAN
3	PLAN
4	PLAN
5	PLAN
6	PLAN

MAYOR

ED KELLEY

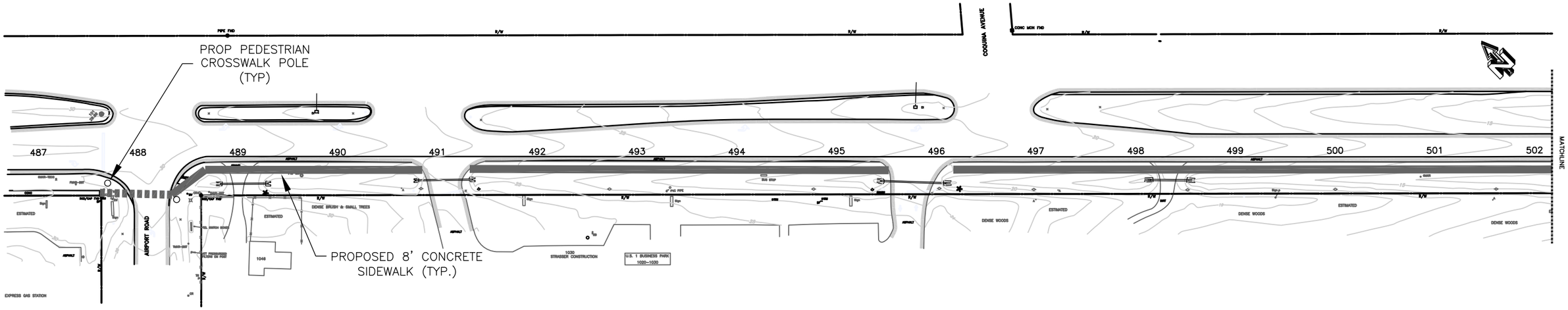
COMMISSIONERS

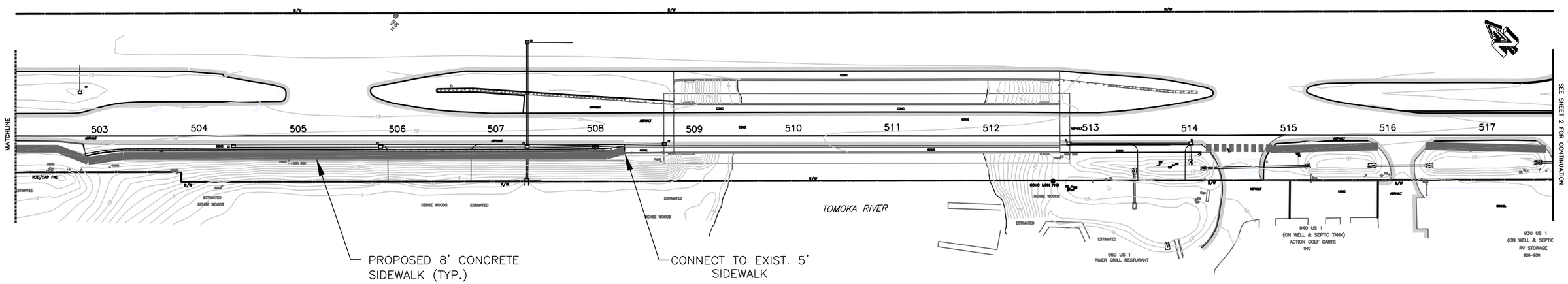
JAMES STOWERS, ZONE 1
TROY KENT, ZONE 2
RICK BOEHM, ZONE 3
BILL PARTINGTON, ZONE 4

CITY MANAGER

JOYCE SHANAHAN

PREPARED BY THE ENGINEERING DIVISION





NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

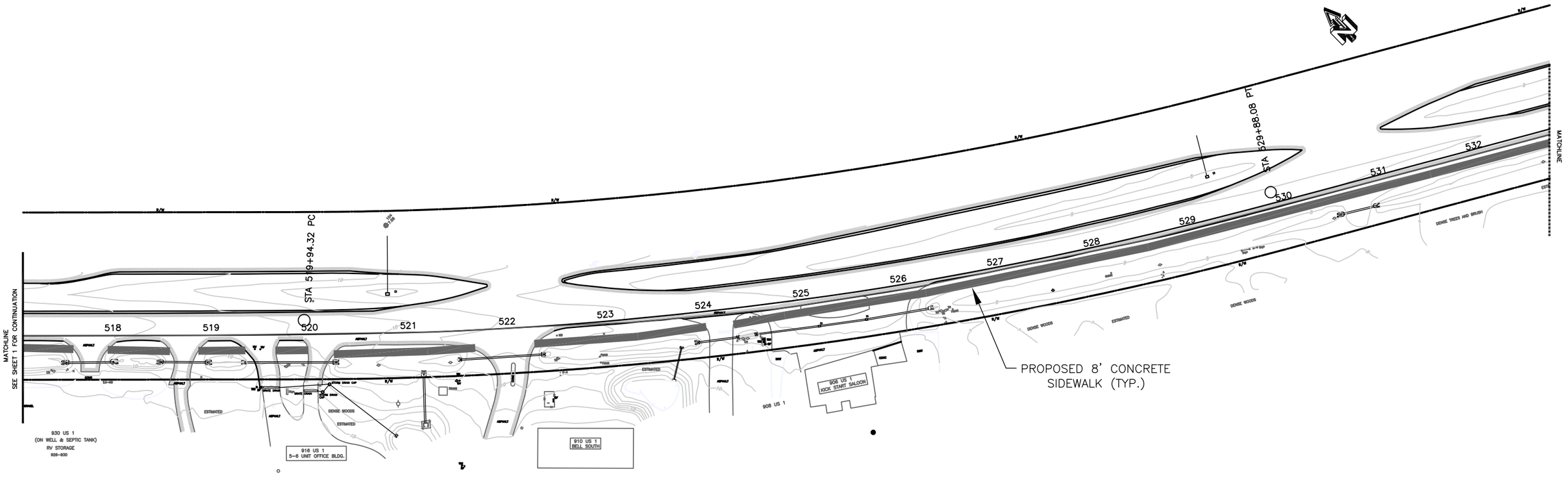
ED KELLEY, MAYOR
JOYCE A SHANAHAN, CITY MANAGER

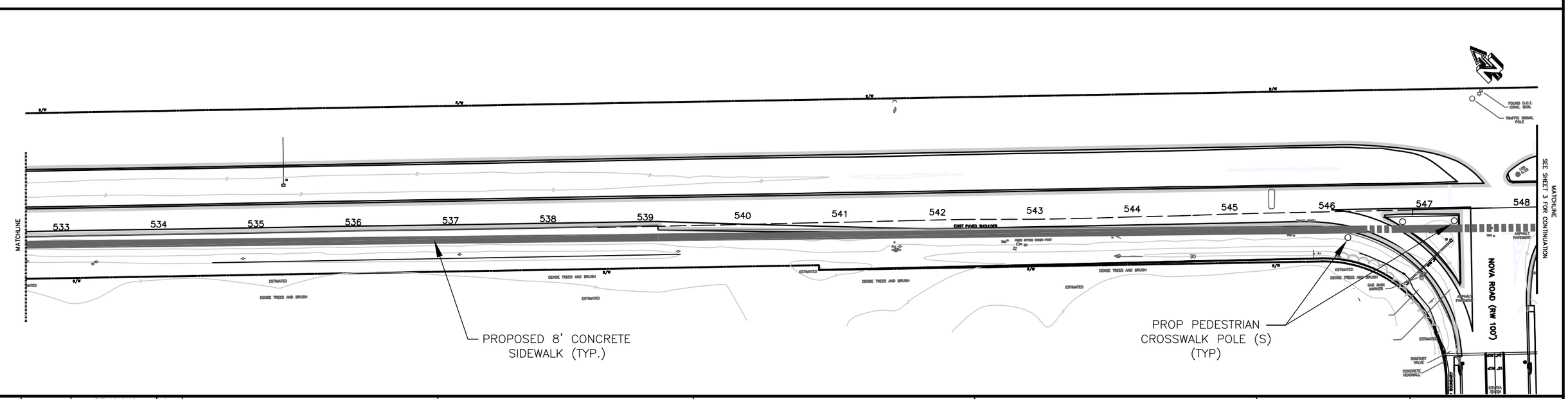
JOHN NOBLE, P.E., CITY ENGINEER

N US HIGHWAY 1

PROPOSED SIDEWALK

DATE:	04/02/15	PROJECT NO.:	2015-XX
SCALE:	1"=100'	FILE NAME:	NUS1SDWK.DWG
DRAWN BY:	CO	SHEET:	1 OF 5





NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

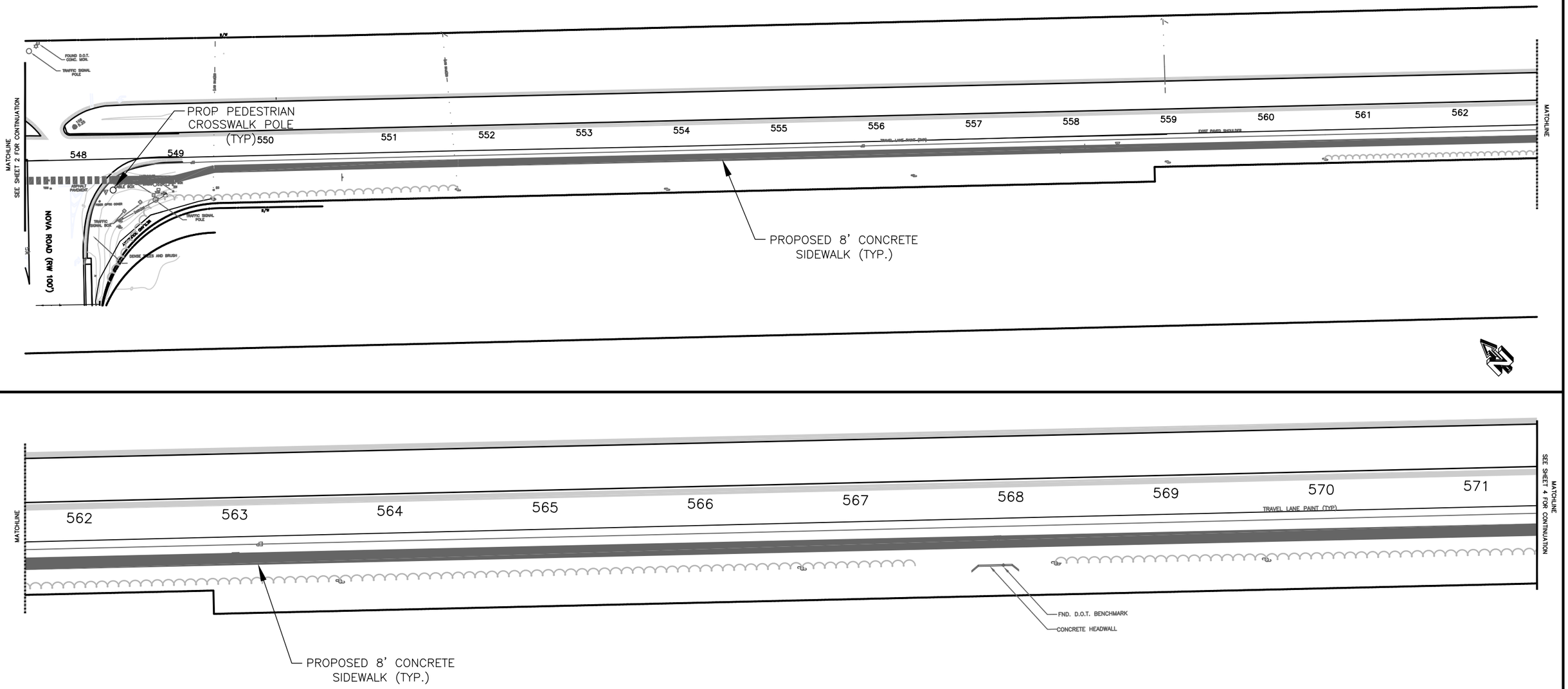
ED KELLEY, MAYOR
JOYCE A SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E., CITY ENGINEER

N US HIGHWAY 1

PROPOSED SIDEWALK

DATE:	04/02/15	PROJECT NO.:	2015-XX
SCALE:	1"=100'	FILE NAME:	NUS1SDWK.DWG
DRAWN BY:	CO	SHEET:	2 OF 5



NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

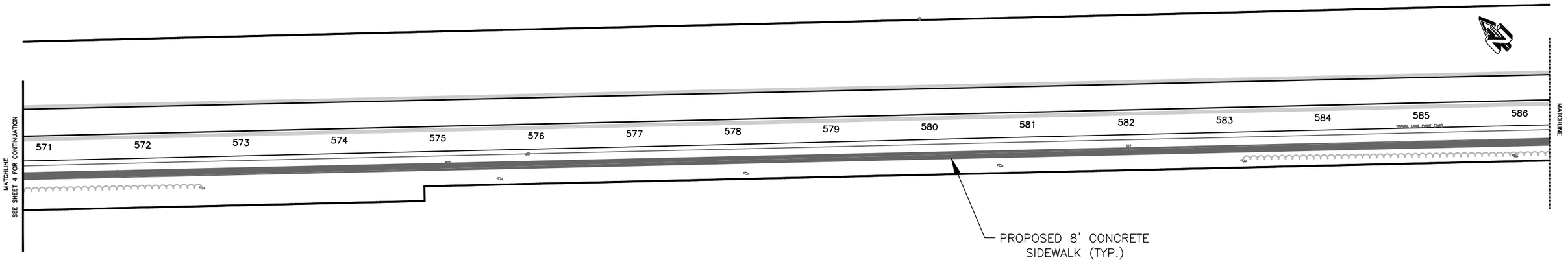
ED KELLEY, MAYOR
JOYCE A SHANAHAN, CITY MANAGER

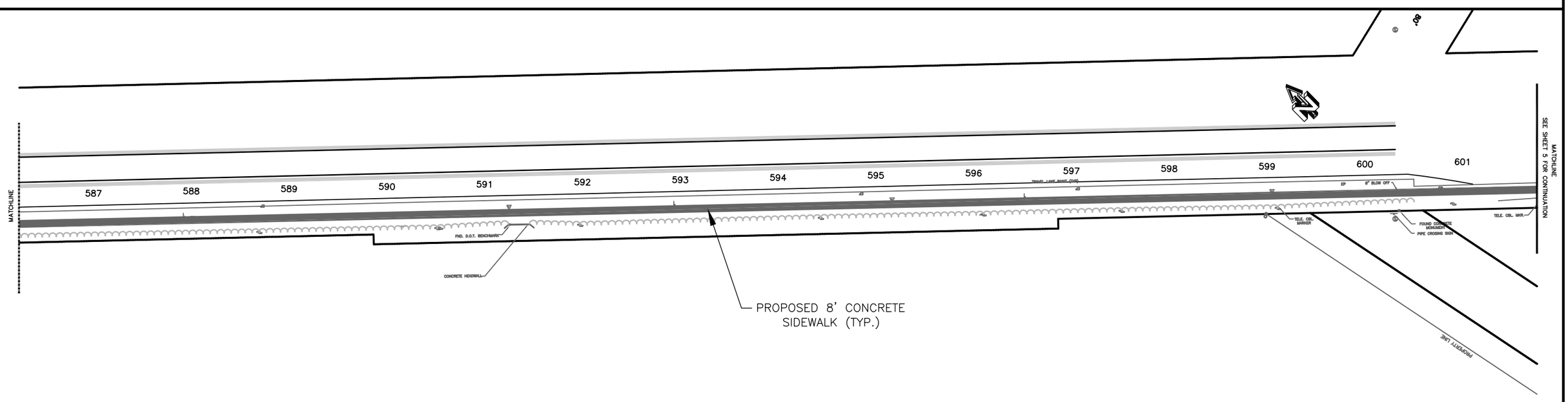
JOHN NOBLE, P.E., CITY ENGINEER

N US HIGHWAY 1

PROPOSED SIDEWALK

DATE:	04/02/15	PROJECT NO.:	2015-XX
SCALE:	1"=100'	FILE NAME:	NUS1SDWK.DWG
DRAWN BY:	CO	SHEET:	3 OF 5





NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

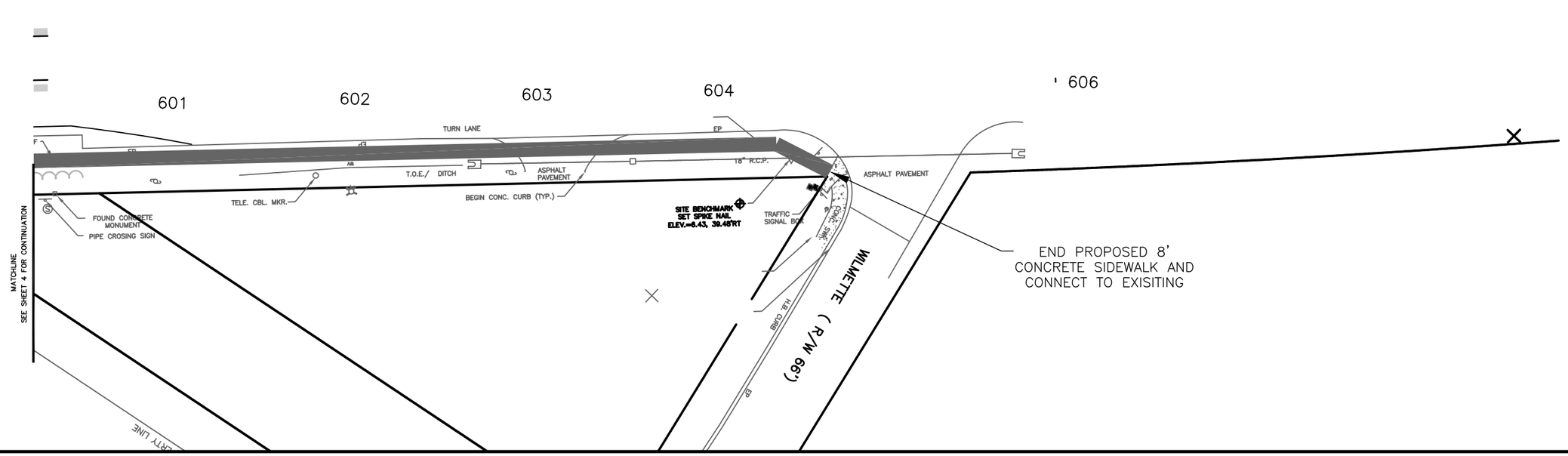
ED KELLEY, MAYOR
JOYCE A SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E., CITY ENGINEER

N US HIGHWAY 1

PROPOSED SIDEWALK

DATE:	04/02/15	PROJECT NO.:	2015-XX
SCALE:	1"=100'	FILE NAME:	NUS1SDWK.DWG
DRAWN BY:	CO	SHEET:	4 OF 5



NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE A SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E., CITY ENGINEER

N US HIGHWAY 1

PROPOSED SIDEWALK

DATE:	04/02/15	PROJECT NO.:	2015-XX
SCALE:	1"=100'	FILE NAME:	NUS1SDWK.DWG
DRAWN BY:	CO	SHEET:	5 OF 5

US 1 Sidewalk Wilmette Ave. to Airport Road

1,957 ft

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Wilmette Avenue Intersection

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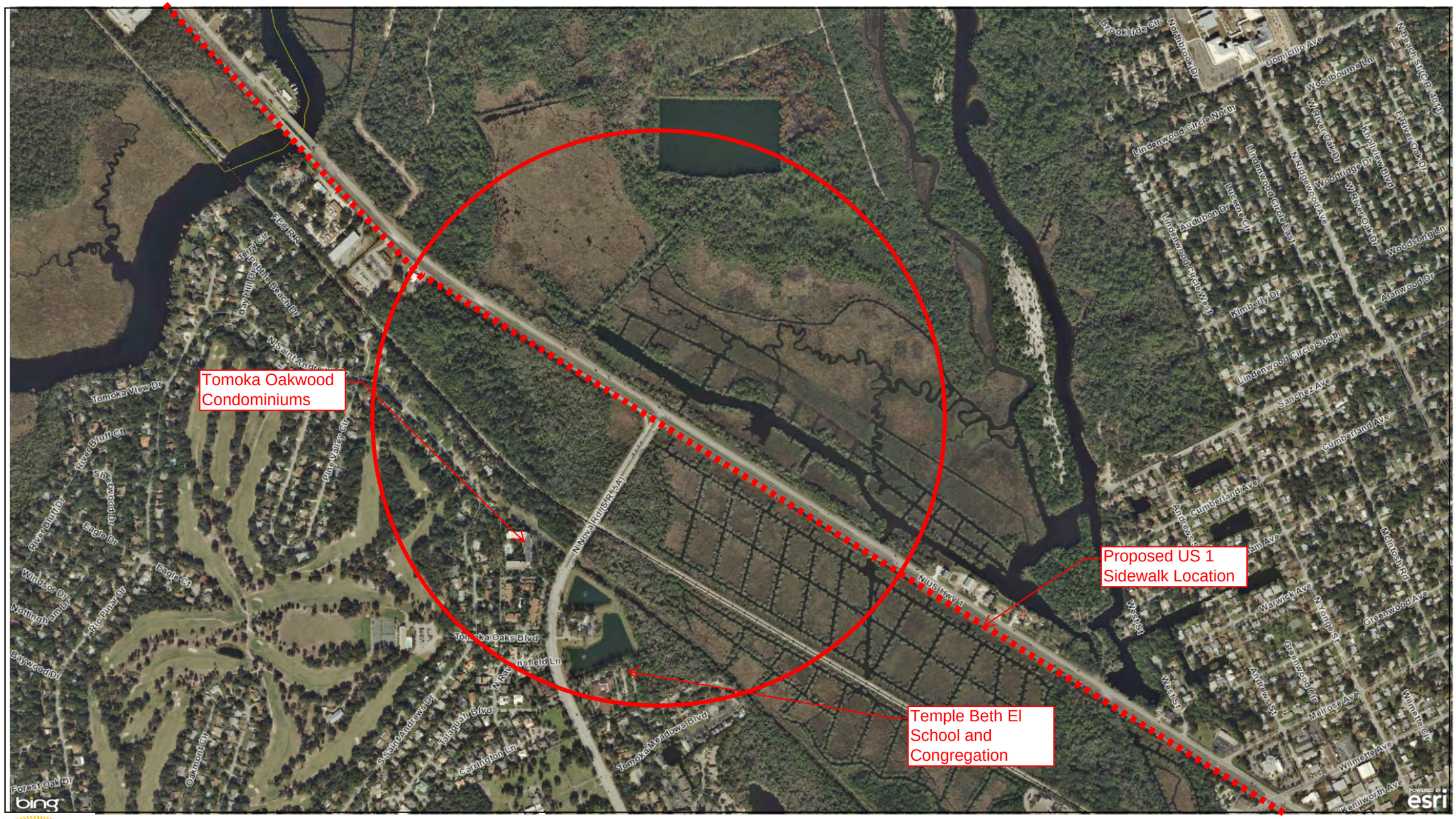
Nova Road Intersection



898 ft

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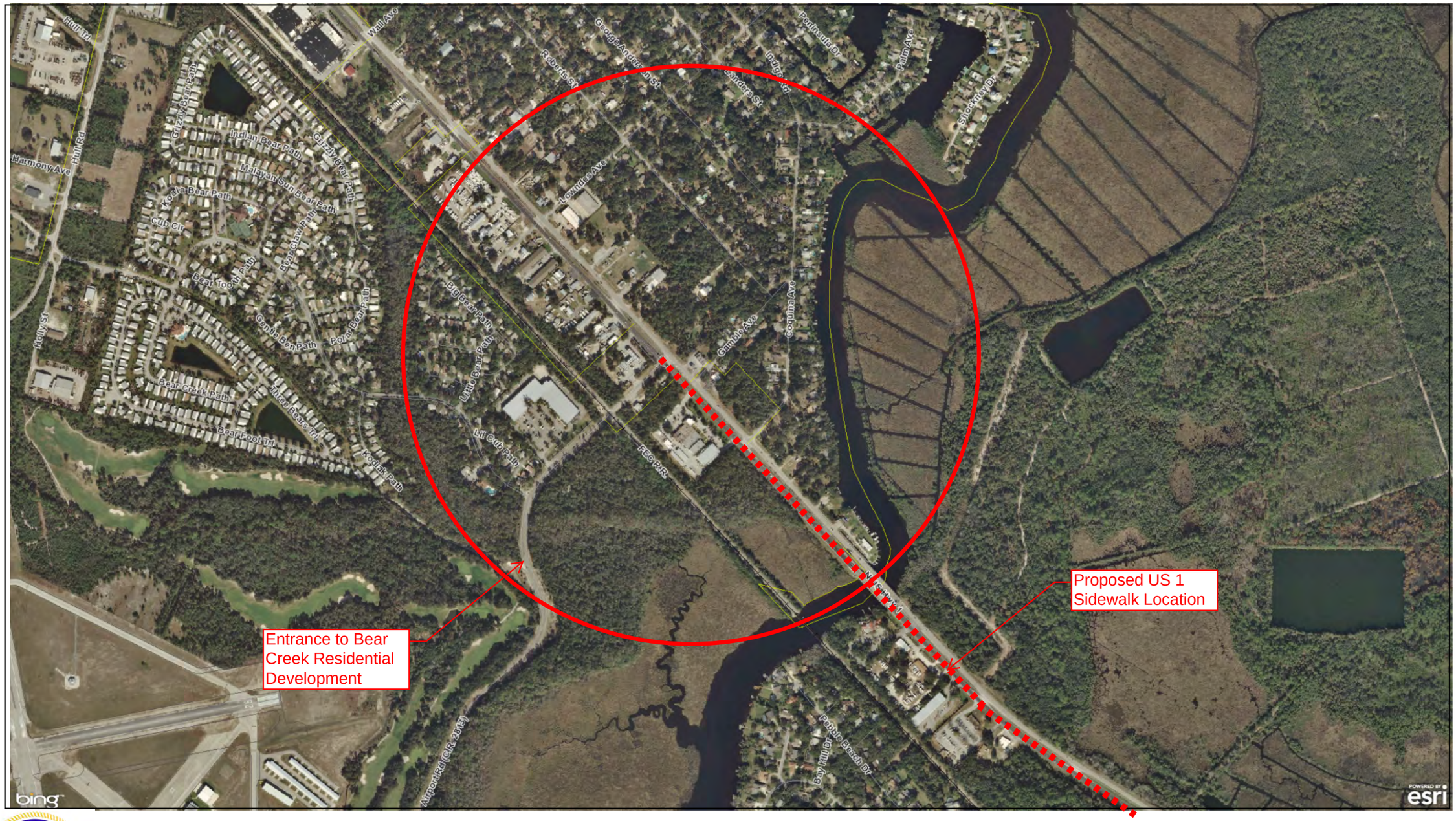
Airport Road Intersection



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CAPITAL PROJECT DETAIL

PROJECT TITLE

A1A Mast Arm Installation

PROJECT#

308107

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

A1A

MANAGEMENT

Engineering

PROJECT SCOPE

Installation of mast arm traffic signals to replace the current span wire signals at intersections of Cardinal Dr. and Harvard Dr. on A1A.

JUSTIFICATION

This project was identified as a priority in 2012; a subsequent application was made to the Volusia County MPO, authorized by resolution 2012-46, for assistance in the conversion of the current span wire traffic signals to mast arm assemblies. The signals included in this project are ones located on a designated evacuation route which is also subject to hurricane force winds and tidal surges. The increased reliability of mast arm signals under storm conditions has made it a priority of the Florida Department of Transportation to convert signals east of I95 to mast arms. Additional consideration for the replacement of these signals with mast arms being the deterioration of the signals due to age and the harsh coastal conditions encountered at these two locations. Completion of this project will result in the benefit of increased reliability of the assemblies under storm conditions, increased road efficiency, a maintenance cost reduction of mast arms compared to span wire signals, as well as the aesthetic benefit that conversion of the signals would provide.

PROJECT COST METHODOLOGY

FDOT Annual Statewide Averages 2012. The budget reflects costs included in the initial application. Current estimates indicate the actual cost may be significant lower than originally projected.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Mast Arm Traffic Signal	50,000	0	500,205	0	0	550,205
Total	50,000	0	500,205	0	0	550,205

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-Transportation	50,000	0	5,021	0	0	55,021
TPO	0	0	495,184	0	0	495,184
Total	50,000	0	500,205	0	0	550,205

Comprehensive Plan Compliance and Economic Development			Points
Directly contributes to the satisfaction of one or more goals/objectives in the adopted comprehensive plan	Select all that apply	☒	0 - 5
Directly supports economic development (e.g., supports community development in major development areas, supports business functionality, and/or supports creation or retention of employment opportunities)		☒	0 - 5
Subtotal			**0 - 10**

Commentary: *The conversion of span wire signal heads to mast arms enhances the existing multimodal corridor designed in the City's Comprehensive Plan and Mobility Strategy. The Comprehensive Plan calls for establishing a CRA redevelopment plan along A1A to include the streetscape of A1A. Mast arms are considered an aesthetic improvement and therefore improves one element of the streetscape along the corridor.*

Criteria #6 – Infrastructure Impacts (20 points max.)

This criterion looks at impacts to adjoining public or private infrastructure, which may be in the way of the project. The less existing infrastructure is impacted the more points a project will score.

In the space provided below for commentary, describe the infrastructure impacts that will occur as a result of constructing the proposed project. When completing your application, please consider the drainage issues that may be involved (see notes below for a more detailed explanation).

Infrastructure Impacts			Points
Major Drainage Impact – relocating or installing new curb inlets or other extensive drainage work is required, or drainage impact has not yet been determined	Select only[8]	☐	0
Minor Drainage Impact – extending pipes, reconfiguring swales or other minor work is required		☐	0 - 2
No Drainage Impact – no drainage work required		☒	0 - 4
Relocation of private gas utility or fiber optic communication cable is not required[8]	Select all that apply	☒	0 - 3
Relocation of public/private water or sewer utility is not required[9]		☒	0 - 3
Relocation of telephone, power, cable TV utilities is not required[10]		☒	0 - 3
No specimen or historic trees ≥ 18" diameter will be removed or destroyed		☒	0 - 3
No new railroad crossing or alteration of existing crossing is required		☒	0 - 4
Subtotal			**0 - 20**

[8] ADA pedestrian crossings at intersections may impact drainage significantly. Attached Traffic Study should address drainage impacts.

[9] Typically, these are underground utilities that can only be determined by a complete set of plans. Attach plans showing no impacts; otherwise, assumption is in urban area utilities will be affected.

[10] Typically, above ground utilities are not affected except for widening and turn lane projects.

Commentary: *This is a conversion of an existing signalized intersection from span wires to mast arms. The location of the mast arms will be such that there is adequate rights-of-way for placement of said mast arm.*

Attachment: Mast Arm-A1A Cardinal Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

2012 Application for Project Prioritization

XU Traffic Operations/ITS/Safety Projects

January 2012

General Instructions:

For the 2012 Call for Projects, the VTPO is accepting applications for Feasibility Studies and Project Implementation.

Applicants must use the attached VTPO XU Traffic Operations/ITS/Safety Project application form whether applying for a Feasibility Study or for Project Implementation.

If applying for a Feasibility Study, you will complete only the first part of the application.

No project will advance beyond a Feasibility Study unless the VTPO receives an application for prioritization of the Project Implementation phase. Applications for prioritization of the Project Implementation phase will be accepted only if a Feasibility Study has already been completed or if the project does not require a Feasibility Study.

When applying for prioritization of the Project Implementation phase, you must complete the entire application. Information that was provided previously in an application for Feasibility Study must be updated to reflect findings and recommendations from the completed Feasibility Study.

Applications will be ranked based on the information supplied in the application.

Incomplete applications will not be accepted.

Project Qualification:

Except for certain improvements identified in 23 U.S.C. §133[1], only projects located on Federal-Aid Roads (roads on the National Highway System (NHS) or functionally classified as Urban Collector / Rural Major Collector, or higher) may be funded with Federal XU.

Only applications for Traffic Operations, Intelligent Transportation Systems (ITS) and Safety Projects will be considered. These projects are relatively low-cost enhancements to improve the operational safety and efficiency of the existing traffic circulation system. They are quick responses to implement low-cost improvements. They are typically narrow in scope and focus on improvements to traffic operations and modifications to traffic control devices. The following list of projects is representative of qualifying projects; however, it is not exhaustive:

1. Adding or extending left and/or right turn lanes;
2. improved signage or signalization;
3. targeted traffic enforcement;
4. limitation or prohibition of driveways, turning movements, truck traffic, and on-street parking;
5. modification of median openings;
6. replacement of standard intersections with traffic circles or roundabouts;
7. traffic incident response plans;
8. realignment of a road;
9. intelligent transportation systems (ITS) such as dynamic message signs and adaptive signal control systems;

[1] These exceptions include: carpool projects, fringe and corridor parking facilities and programs, bicycle transportation and pedestrian walkways, modification of public sidewalks to comply with the Americans with Disabilities Act, highway and transit safety infrastructure improvements and programs, hazard eliminations, projects to mitigate hazards caused by wildlife, and railway-highway grade crossings.

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

10. traffic calming roadway designs or devices; and
11. street lighting to improve traffic safety.

Local Match Requirement:

VTPO Resolution 2011-03 requires a local match of ten (10) percent of the total amount of XU funds programmed for each project. For this purpose, local match is defined as non-federal cash match and/or in-kind services that advance the project. This resolution also reaffirms the VTPO's policy that the applicant (project originator) shall be responsible for any cost overruns encountered on a project funded with XU funds unless the project is on the state highway system, in which case, the State DOT shall be responsible for any cost overruns.

Electronic and "Hard Copy" Submittal Requirement:

1. Applications and supporting documentation shall be submitted as digital media in Portable Document Format (PDF), compatible with MS Windows and Adobe Acrobat Version 9.3 or earlier.
2. Electronic documents may be submitted through our FTP site, as an attachment to email, on a CD, DVD or USB flash drive.
3. The application and all supporting documentation shall be included in one electronic PDF file.
4. All document pages shall be oriented so that the top of the page is always at the top of the computer monitor.
5. Page size shall be either 8-1/2" by 11" (letter) or 11" by 17" (tabloid).
6. PDF documents produced by scanning paper documents are inherently inferior to those produced directly from an electronic source. Documents which are only available in paper format should be scanned at a resolution which ensures the pages are legible on both a computer screen and a printed page. We recommend scanning at 300 dpi to balance legibility and file size.
7. If you are unable to produce an electronic document as prescribed here, please call us to discuss other options.
8. In addition to the digital submittal, we require one (1) complete paper copy of the application and all supporting documents. This must be identical to the digital submittal.

VTPO staff will provide assistance in completing an application to any member local government that requests it.

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

2012 Application for Project Prioritization

XU Traffic Operations/ITS/Safety Projects

Project Title: *Mast Arm Installation on A1A at Harvard Drive*

Applicant (project sponsor): *City of Ormond Beach*

Contact Person: *Larry Rivera* **Job Title:** *Civil Engineer*

Address: *22 South Beach Street, Ormond Beach, Florida 32174*

Phone: *386 615-7049* **FAX:** *386 676-3304*

E-mail: *rivera@ormondbeach.org*

Governmental entity with maintenance responsibility for roadway facility on which proposed project is located: *FDOT is responsible entitiy for roadway facility but the City has maintenance of traffic signalsl thru a maintenance agreement with FDOT*

[If not the same as Applicant, attach a letter of support for proposed project from the responsible entity. This letter of support must include a statement describing the responsible entity's expectations for maintenance of the proposed improvements, i.e., what the applicant's responsibility will be.]

Is the Applicant LAP certified to administer the proposed project? ☐ Yes ☒ No

If the Applicant is not LAP certified, explain how you intend to comply with the Local Agency Program (LAP) requirements: *We have obtained project specific LAP certification for multiple projects in design and construction*

Priority of this proposed project relative to other applications submitted by the Applicant: *high*

Project Description: *This is to convert the the intersections from span wire assembly to mast arms*

Project Location (include project length and termini, if appropriate, and attach location map): *A1A atHarvard Dr*

Project Eligibility for XU Funds *(check the appropriate box)*:

☒ the proposed improvement is located on the Federal-aid system;

☐ the proposed improvement is **not** located on the Federal-aid system, but qualifies as a type of improvement identified in 23 U.S.C. §133 that is not restricted to the Federal-aid system.

The Applicant is requesting (check only one): ☐ **Feasibility Study** ☒ **Project Implementation**

[If requesting a Feasibility Study, the Applicant will be required to submit a new application for Project Implementation after the Feasibility Study has been completed. If requesting Project Implementation, attach a copy of the completed Feasibility Study, or explain in the space provided below for commentary why a Feasibility Study is not necessary.]

Commentary: *A feasibility study or warrant study is not required. These intersection are already signalized and it is the desire of the City to convert them from span wires to mast poles since they are located on a coastal road facility that is subject to huricane force winds. A1A lies within the coastal high hazard area and is subject to tidal surges. A1A is a designated evacuation routein the City's 2010-25 Comprehensive Plan.*

Project Purpose and Need Statement:

In the space provided below, describe the Purpose and Need for this proposed project. It is very important that your Purpose and Need statement is clear and complete. It will be the principal consideration in ranking your application for a Feasibility Study. It must convince the public and decision-makers that the expenditure of funds is necessary and worthwhile and that the priority the project is being given relative to other needed transportation projects is warranted. The project Purpose and Need will also help to define the scope for the Feasibility Study, the consideration of alternatives (if appropriate), and ultimate project design.

The Purpose is analogous to the problem. It should focus on particular issues regarding the transportation system (e.g., mobility and/or safety). Other important issues to be addressed by the project such as livability and the environment should be identified as ancillary benefits. The Purpose should be stated in one or two sentences as the positive outcome that is expected. For example, the purpose is to reduce intersection delays or to reduce rear end collisions. It should avoid stating a solution as a purpose such as: "the purpose of the project is to add an exclusive left turn lane". It should be stated broadly enough so that no valid solutions will be dismissed prematurely.

The Need should establish the evidence that the problem exists, or will exist if anticipated conditions are realized. It should support the assertion made in the Purpose statement. For example, if the Purpose statement is based on safety improvements, the Need statement should support the assertion that there is or will be a safety problem to be corrected. When applying for a Feasibility Study, you should support your Need statement with the best available evidence. However, you will not be expected to undertake new studies.

Commentary: *While Signal head placement has a negligible effect on intersection capacity, tthe placement of traffic signal heads on mast arms at A1A and Harvard Dr will be particularly advantageous for heavy vehicles, giving them additional time to decelerate and come to a full stop. Span wire installations at these intersections have higher maintenance costs than mast arms. While it is recognized that span wire and mast arm types may need additional reinforcements if installed in a location known for strong winds, FDOT policy is to convert all span wire interesections along the coast (east of I-95) to mast arms. As a side benefit, span wire installations are generally considered less aesthetically pleasing than mast arms because of overhead wires.*

*** **STOP HERE IF YOU ARE APPLYING FOR A FEASIBILITY STUDY. COMPLETE THE FOLLOWING SECTIONS ONLY IF YOU ARE APPLYING FOR PROJECT IMPLEMENTATION.** ***

Criteria #1 – Location (5 points max.)

This criterion looks at the classification of the roads that will benefit from a proposed project. This criterion gives more points to projects that provide a benefit on roads that are classified at a higher level. If a project benefits more than one road, the road that has the highest classification will be used to allocate points.

VTPO staff will review the application to determine the classification of the roads benefitting from the proposed project.

Project located on a ...			Points
Non-Federal Functionally Classified Road	Select only one	☐	0
Local Road (Federal Functional Classification)		☐	0
Rural Minor Collector (Federal Functional Classification)		☐	0
Urban Minor Collector Road (Federal Functional Classification)		☐	2
Major Collector Road (Federal Functional Classification)		☐	3
Minor Arterial Road (Federal Functional Classification)		☐	4
Principal Arterial Road (Federal Functional Classification)		☒	5
Subtotal			**0 - 5**

Commentary: *The City's Transportation Element of the 2010-25 Comprehensive Plan classifies A1A from SR40 south to the city line as a Principal Arterial Road. South Atlantic (A1A) is listed on the FDOT District 5 2005*

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

Federal Functional Classification list (ID# 79080000)

Criteria #2 – Project Readiness (15 points max.)

This criterion looks at the amount of work required to develop the project and get it ready for construction. The closer a project is to the construction phase, the more points it is eligible for.

Check the appropriate boxes to indicate which phases of work have already been completed or will not be required. For each phase that will not be required, explain why in the space provided for commentary. Include with this application a copy of any relevant studies, warrants, designs, and/or permits. If this is an application for Project Implementation, you must attach a copy of the project scope and cost estimate.

Phasing Already Completed or Not Required[1]		Completed	Not Required	Required But Not Completed (no points)	Unknown or TBD (no points)	Points
Feasibility Study/Conceptual Design/Cost Estimate	Check only one in each row	☐	☒	☐	☐	0 - 3
PE (Design)		☐	☐	☒	☐	0 - 3
Environmental		☐	☒	☐	☐	0 - 3
Right-of-Way Acquisition		☐	☒	☐	☐	0 - 3
Permitting		☐	☐	☒	☐	0 - 3
Subtotal						**0 - 15**

[1] Since XU funding is Federal funding, all activities or work, including that which is done in advance of applying for Federal funds, must comply with all applicable Federal statutes, rules and regulations.

Commentary: *A feasibility or warrant study is not required since the signals exist. Only design drawings and a permit from FDOT is required to convert signalized interesections from span wire to mast arm. This project has been discussed with the County and FDOT and both support the project.*

Criteria #3 – Mobility and Operational Benefits (30 points max.)

This criterion looks at the extent of traffic operational benefits that will be derived from a proposed project.

In the space provided below for commentary, describe the operational benefits of the proposed project. When putting your application together please include a copy of any approved signal warrant or street lighting studies.

Mobility and Operational Benefits				Points
Existing volume to capacity ratio (i.e., existing congestion severity) [Must be documented.]	Select only one	< 0.75	☐	0
		0.75 to 0.99	☒	0 - 3
		1.00 to 1.25	☐	0 - 4
		>1.25	☐	0 - 5
Mobility Enhancements (i.e., level of increased mobility that a project will provide)	Select all that apply	None	☐	0
		Bike, Pedestrian or Transit	☐	0 - 5
		Access Management, ITS, Critical Bridge, Intersection Improvement, or Traffic Signal Retiming[2]	☒	0 - 10
Approved signal warrant (new signals only), left turn phase warrant, left turn lane warrant, street light warrant or widening justification[3], access management or ITS improvements[4]	Select only one	No	☒	0
		Yes	☐	0 - 5

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

Mobility and Operational Benefits				Points
Hurricane evacuation or secondary evacuation route upgrade including, but not limited to, converting critical traffic signal to mast arm or other operational improvements.[5]	Select only one	No	☐	0
		Yes	☒	0 - 5
Subtotal				**0 - 30**

[2] Attach Traffic Signal Timing Study.

[3] Attach Warrant Study to application; otherwise VTPO staff will assume that a Warrant Study justifying the improvement has not been completed.

[4] Access management and ITS improvements include, but are not limited to, addition of non-traversable median greater than 50% project length, addition of curb/gutter at intersection or greater than 50% project length, closure of minor intersections or crossovers, reduction of the number of access points (driveways or driveway widths), elimination of existing at-grade RR crossing, elimination of existing on-street parking, provision of traffic signal preemption for emergency vehicles, connection of three or more traffic signals, and new connection of traffic signal system to computerized signal control.

[5] The term "other operational improvements" includes any improvement that will likely result in a significant: a) increase in vehicular capacity or b) reduction in the probable occurrence or severity of traffic delay and/or disruption from signal failure, lane blockage, etc.

Commentary: *the V/C Ratio of 0.563 (between SR40 to Plaza)is quoted from Volusia County's 2011LOS Service Analysis. The conversion from span wire to mast arm will improve road efficiency as well as reduce maintenance costs. The road is on a designated evaluation route in the City's Comprehensive Plan and is within the coastal high hazard area.*

Criteria #4 – Safety Benefits (20 points max.)

This criterion looks at the extent of safety benefits that will be derived from a proposed project. The distinction between the categories of benefits will be coordinated with the Community Traffic Safety Teams (CTST).

In the space provided below for commentary, describe the safety benefits expected from the proposed project, and explain how the proposed project will help to achieve those benefits. VTPO staff will work with the appropriate agencies to determine the intersection and corridor crash rates.

Safety Benefits[6]			Points
On Florida DOT's High Crash List?	Select all that apply	☐	0 - 4
Intersection Crash Rate ≥ 2 per million entering vehicles[7]		☒	0 - 4
Corridor Crash Rate ≥ 2 per vehicle million miles[7]		☐	0 - 4
Street lights needed (Nighttime to Daytime Crash Rate ≥ 2[7])		☐	0 - 4
Provides pedestrian safety features (e.g., RR crossing or intersection crossing)		☐	0 - 4
Subtotal			**0 - 20**

[6] If an application scores very high in this criterion, the VTPO may submit application to either the East or West Volusia CTST for Safety Fund consideration.

[7] Applicant must use crash rate calculation methodology provided by VTPO.

Commentary: _____

Criteria #5 – Comprehensive Plan and Economic Development (10 points max.)

This criterion looks at the degree to which the proposed project will contribute to the satisfaction of one or more of the local government's adopted comprehensive plan goals or objectives, and the degree to which it supports economic development. Points should be awarded in proportion to how well the project will show direct, significant and continuing positive influence. Temporary effects related to project construction, such as the employment of construction workers, will not be considered.

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

Comprehensive Plan Compliance and Economic Development			Points
Directly contributes to the satisfaction of one or more goals/objectives in the adopted comprehensive plan	Select all that apply	☒	0 - 5
Directly supports economic development (e.g., supports community development in major development areas, supports business functionality, and/or supports creation or retention of employment opportunities)		☒	0 - 5
Subtotal			**0 - 10**

Commentary: *The conversion of span wire signal heads to mast arms enhances the existing multimodal corridor designed in the City's Comprehensive Plan and Mobility Strategy. The Comprehensive Plan calls for establishing a CRA redevelopment plan along A1A to include the streetscape of A1A. Mast arms are considered an aesthetic improvement and therefore improves one element of the streetscape along the corridor.*

Criteria #6 – Infrastructure Impacts (20 points max.)

This criterion looks at impacts to adjoining public or private infrastructure, which may be in the way of the project. The less existing infrastructure is impacted the more points a project will score.

In the space provided below for commentary, describe the infrastructure impacts that will occur as a result of constructing the proposed project. When completing your application, please consider the drainage issues that may be involved (see notes below for a more detailed explanation).

Infrastructure Impacts			Points
Major Drainage Impact – relocating or installing new curb inlets or other extensive drainage work is required, or drainage impact has not yet been determined	Select only[8]	☐	0
Minor Drainage Impact – extending pipes, reconfiguring swales or other minor work is required		☐	0 - 2
No Drainage Impact – no drainage work required		☒	0 - 4
Relocation of private gas utility or fiber optic communication cable is not required[8]	Select all that apply	☒	0 - 3
Relocation of public/private water or sewer utility is not required[9]		☒	0 - 3
Relocation of telephone, power, cable TV utilities is not required[10]		☒	0 - 3
No specimen or historic trees ≥ 18" diameter will be removed or destroyed		☒	0 - 3
No new railroad crossing or alteration of existing crossing is required		☒	0 - 4
Subtotal			**0 - 20**

[8] ADA pedestrian crossings at intersections may impact drainage significantly. Attached Traffic Study should address drainage impacts.

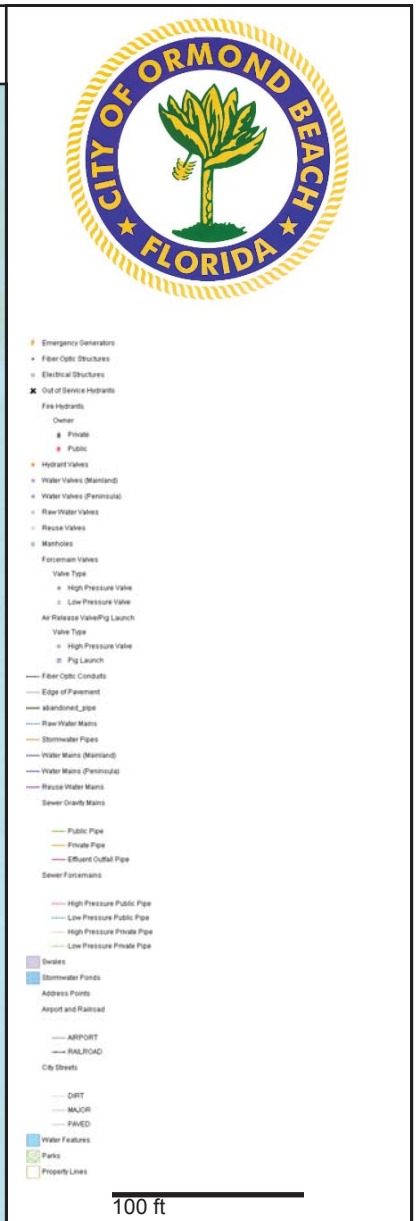
[9] Typically, these are underground utilities that can only be determined by a complete set of plans. Attach plans showing no impacts; otherwise, assumption is in urban area utilities will be affected.

[10] Typically, above ground utilities are not affected except for widening and turn lane projects.

Commentary: *This is a conversion of an existing signalized intersection from span wires to mast arms. The location of the mast arms will be such that there is adequate rights-of-way for placement of said mast arm.*

Attachment: Mast Arm-A1A Harvard Application (RES-2012-46 : Grant Application - Mast Arms for Traffic Signals)

A1A and Cardinal Dr intersection



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Estimate for Mast Arm at Cardinal Drive and A1A

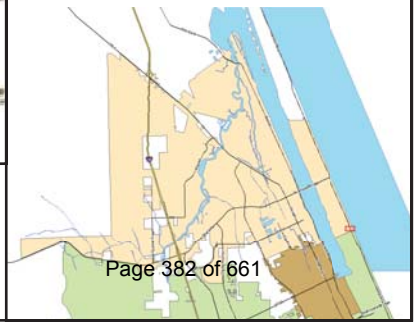
Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
101-1	MOBILIZATION	1	LS	$ 7,297.41	$ 7,297.41
102-1	MAINTENANCE OF TRAFFIC	1	LS	$ 9,802.00	$ 9,802.00
102-14	TRAFFIC CONTROL OFFICER	16	HR	$ 44.28	$ 708.48
555-1-1	Directional bore less than 6"	400	LF	$ 15.00	$ 6,000.00
630-111	CONDUIT-SIGNALS, F& I, ABOVE GROUND	24	LF	$ 15.61	$ 374.64
630-112	CONDUIT-SIGNALS, F& I, UNDERGROUND	63	LF	$ 4.40	$ 277.20
630-113	CONDUIT-SIGNALS, F&I, UNDER EXIST PAVT	24	LF	$ 16.02	$ 384.48
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1	PI	$ 3,582.24	$ 3,582.24
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	6	EA	$ 384.35	$ 2,306.10
639-1-22	SIGNAL,ELE SIGNAL,ELE SIGNAL,ELECT POWER SERV,UNDERGROUND	1	EA	$ 1,384.85	$ 1,384.85
639-2-1	SIGNAL,ELE SIGNAL,ELE SIGNAL,ELECTRICAL SERVICE WIRE	212	LF	$ 1.95	$ 413.40
639-3-11	SIGNAL,ELEC SERV DISCON, F&I, CABINET	1	LF	$ 705.80	$ 705.80
650-51311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	8	EA	$ 843.74	$ 6,749.92
650-51511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD		EA	$ 1,352.97	$ -
663-74-14	VEH DETECTOR ASSEM, F&I, EMERGENCY PRE-E	1	EA	$ 2,830.90	$ 2,830.90
649-31201	M/ARM,F&I, WS-130,SINGLE ARM,W/0 LUM-36	2	EA	$ 15,864.09	$ 31,728.18
649-31203	M/ARM,F&I, WS-130,SINGLE ARM,W/0 LUM-60	2	EA	$ 25,124.32	$ 50,248.64
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	8	EA	$ 607.50	$ 4,860.00
670-5111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1	EA	$ 20,930.89	$ 20,930.89
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8	EA	$ 43.72	$ 349.76
690-20	SIGNAL PEDESTRIAN ASSEMBLY REMOVAL	8	EA	$ 44.57	$ 356.56
690-34	COMPLETE POLE REMOVAL- DEEP,	4	EA	$ 1,858.47	$ 7,433.88
690-50	CNTRL ASSEM, REM, COMPLETE ASSEMB	1	EA	$ 521.63	$ 521.63
690-90	SPAN WIRE ASSEMBLY, REMOVE	1	PI	$ 423.15	$ 423.15
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1	PI	$ 572.86	$ 572.86
699-1-1	INTERNAL ILLUM SIGN, FURNISH & INST, NA	1	EA	$ 2,804.72	$ 2,804.72
					$ -
					$ -
					$ -
					$ -
		TOTAL CONSTRUCTION ESTIMATE			**$ 163,047.69**

Subtotal	$163,047.69
Design Costs	$24,457.15
CEI Cost	$16,304.77
Contingency	
Total Project Cost	$203,809.62

A1A and Harvard Dr

Emergency Generators
Fiber Optic Structures
Electrical Structures
Out of Service Hydrants
Fire Hydrants
Owner
Private
Public
Hydrant Valves
Water Valves (Mainland)
Water Valves (Peninsula)
Raw Water Valves
Reuse Valves
Manholes
Forcemain Valves
Valve Type
High Pressure Valve
Low Pressure Valve
Air Release Valve/Pig Launch
Valve Type
High Pressure Valve
Pig Launch
Fiber Optic Conduits
Edge of Pavement
abandoned_pipe
Raw Water Mains
Stormwater Pipes
Water Mains (Mainland)
Water Mains (Peninsula)
Reuse Water Mains
Sewer Gravity Mains
Public Pipe
Private Pipe
Effluent Outfall Pipe
Sewer Forcemains
High Pressure Public Pipe
Low Pressure Public Pipe
High Pressure Private Pipe
Low Pressure Private Pipe
Swales
Stormwater Ponds
Address Points
Airport and Railroad
AIRPORT
RAILROAD
City Streets
DIRT
MAJOR
PAVED
Water Features
Parks
Property Lines

100 ft



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630-112	CONDUIT-SIGNALS, F& I, UNDERGROUND	76	LF	$ 4.40	$ 334.40
630-113	CONDUIT-SIGNALS, F&I, UNDER EXIST PAVT	33	LF	$ 16.02	$ 528.66
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	1	PI	$ 3,582.24	$ 3,582.24
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	6	EA	$ 384.35	$ 2,306.10
639-1-22	SIGNAL,ELE SIGNAL,ELE SIGNAL,ELECT POWER SERV,UNDERGROUND	1	EA	$ 1,384.85	$ 1,384.85
639-2-1	SIGNAL,ELE SIGNAL,ELE SIGNAL,ELECTRICAL SERVICE WIRE	196	LF	$ 1.95	$ 382.20
639-3-11	SIGNAL,ELEC SERV DISCON, F&I, CABINET	1	LF	$ 705.80	$ 705.80
650-51311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6	EA	$ 843.74	$ 5,062.44
650-51511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2	EA	$ 1,352.97	$ 2,705.94
663-74-14	VEH DETECTOR ASSEM, F&I, EMERGENCY PRE-E	1	EA	$ 2,830.90	$ 2,830.90
649-31201	M/ARM,F&I, WS-130,SINGLE ARM,W/0 LUM-36	2	EA	$ 15,864.09	$ 31,728.18
649-31203	M/ARM,F&I, WS-130,SINGLE ARM,W/0 LUM-60	2	EA	$ 25,124.32	$ 50,248.64
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	8	EA	$ 607.50	$ 4,860.00
670-5111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1	EA	$ 20,930.89	$ 20,930.89
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8	EA	$ 43.72	$ 349.76
690-20	SIGNAL PEDESTRIAN ASSEMBLY REMOVAL	8	EA	$ 44.57	$ 356.56
690-34	COMPLETE POLE REMOVAL- DEEP,	3	EA	$ 1,858.47	$ 5,575.41
690-50	CNTRL ASSEM, REM, COMPLETE ASSEMB	1	EA	$ 521.63	$ 521.63
690-90	SPAN WIRE ASSEMBLY, REMOVE	1	PI	$ 423.15	$ 423.15
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1	PI	$ 572.86	$ 572.86
699-1-1	INTERNAL ILLUM SIGN, FURNISH & INST, NA	1	EA	$ 2,804.72	$ 2,804.72
					$ -
					$ -
					$ -
					$ -
		TOTAL CONSTRUCTION ESTIMATE			**$ 162,089.81**

Subtotal	$162,089.81
Design Costs	$24,313.47
CEI Cost	$16,208.98
Contingency	
Total Project Cost	$202,612.26

CAPITAL PROJECT DETAIL

PROJECT TITLE

Tomoka State Park Sidewalk

PROJECT#

308117

CATEGORY

Transportation

FUND

308-Transportation

PROJECT LOCATION

Tomoka State Park

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a Sidewalk Connecting Sanchez Park to Tomoka State Park

JUSTIFICATION

A mixed use sidewalk connecting Sanchez Park to Tomoka State Park has been identified in studies by the City of Ormond Beach, Volusia County Metropolitan Planning Organization, and State of Florida as an integral element in connecting adjacent facilities as well as a retracing of the Kings Highway Corridor. This project continues the Phase 1 project the built a sidewalk from the Tomoka State Park entrance to Inglesa Avenue with a second phase connecting Inglesa to Sanchez Park.

PROJECT COST METHODOLOGY

Bid costs received for similar scope of work.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Design and Construction	0	0	945,989	0	0	945,989
Total	0	0	945,989	0	0	945,989

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
TPO	0	0	859,990	0	0	859,990
Property Taxes-Transportation	0	0	85,999	0	0	85,999
Total	0	0	945,989	0	0	945,989

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

Exhibit 'A' Cost Estimate

TOMOKA STATE PARK SIDEWALK ESTIMATE

FDOT Pay Item Number	Pay Item Description	Estimated Quantity	Unit Type	Unit Cost	Total Labor Cost
BASE BID ITEMS					
101-1	Mobilization	1	LS	$ 20,000.00	$ 20,000.00
102-1	Maintenance of Traffic	1	LS	$ 4,000.00	$ 4,000.00
104-10-3	Synthetic Barrier	100	LF	$ 0.90	$ 90.00
104-13-1	Silt Fence (Type III)	24,200	LF	$ 0.54	$ 13,068.00
110-1-1	Clear and Grub	3.8	AC	$ 7,856.00	$ 29,937.92
120-1	Regular Excavation	207	CY	$ 4.84	$ 1,003.85
120-6	Embankment	2,815	CY	$ 7.53	$ 21,195.56
522-2	10-ft. Wide Concrete Sidewalk, 6"	12,667	SY	$ 32.00	$ 405,333.33
570-1-2	Performance Turf	12,667	SY	$ 3.33	$ 42,180.00
700-40-1	Sign (F&I) Single Post (12'-0")		AS	$ 1,000.00	$ -
711-11125	Stop Bar - 24" Thermo White		LF	$ 4.06	$ -
711-11224	Traffic Stripe (Thermo) (white) 18"		LF	$ 2.47	$ -
711-11111	Traffic Stripe (Thermo) (white) 6"		LF	$ 0.93	$ -
	10-ft. Wood Boardwalk	7,000	SF	$ 35.00	$ 245,000.00
			TOTAL BASE BID		**$ 781,808.67**

Subtotal	$781,808.67		
Survey / Design Costs	$85,998.95		
CEI Cost	$78,180.87	70362.78	7818.087
Contingency			
Total Project Cost	$945,988.49		

Station Begin	End	Construciton	Clear
0+00	2+00	sidewalk	brush
2+00	9+00	boardwalk	brush
9+00	18+00	sidewalk	footpath
18+00	47+00	sidewalk	service road
47+00	115+00	sidewalk	brush
115+00	121+00	sidewalk	service road

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 0+00 TO 10+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 3 of 18

DRAWING STATUS	
	DRAFT
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	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 10+00 TO 22+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 14 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 5+00 TO 16+00

DATE: 5/6/14	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 15 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 34+00 TO 46+00

DATE: 5/30/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 16 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 46+00 TO 54+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 17 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
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	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 54+00 TO 66+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 18 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 66+00 TO 78+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 19 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 78+00 TO 90+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 10 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 90+00 TO 102+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 11 of 18

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

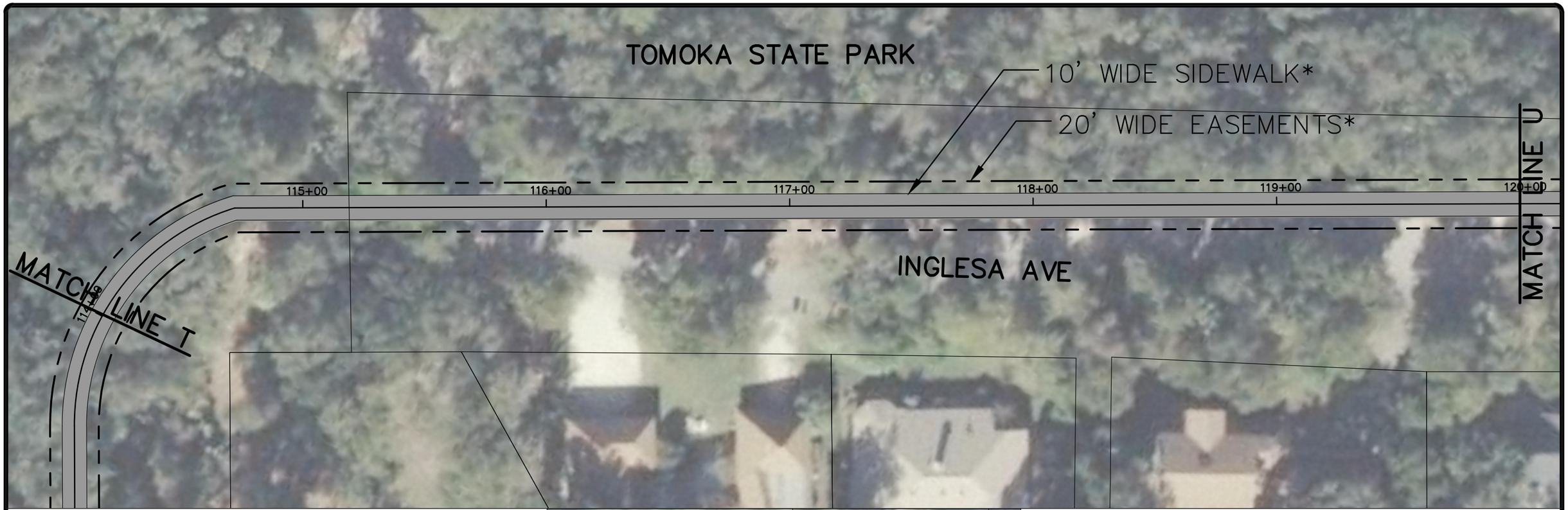
ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

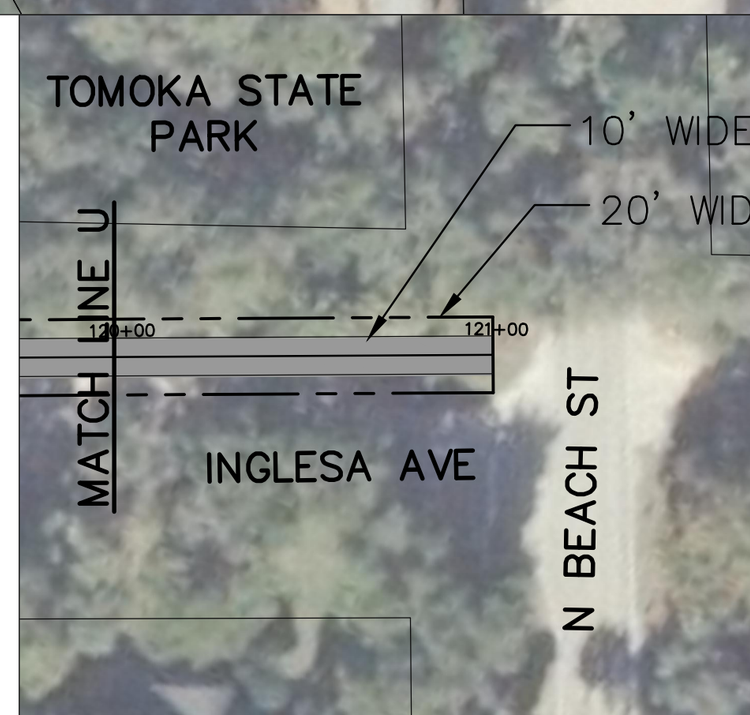
JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 102+00 TO 114+00

DATE: 5/20/15	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 12 of 18





* PROPOSED LOCATION AS SUBMITTED RIVER TO SEA TPO FOR GRANT FUNDING. FINAL LOCATION TO BE DETERMINED WITH FINAL DESIGN

DRAWING STATUS	
	DRAFT
	PERMIT
	BID
	ADDENDA
	CONSTRUCTION
	RECORD

NO.	DATE	REVISIONS	BY

City of Ormond Beach
Engineering Division

ED KELLEY, MAYOR
JOYCE SHANAHAN, CITY MANAGER

JOHN NOBLE, P.E. CITY ENGINEER

TOMOKA STATE PARK SIDEWALK FROM INGLESA TO SANCHEZ PARK

SIDEWALK PLAN 114+00 TO 121+00

DATE: 5/6/14	PROJECT NO.: 00–
SCALE: 1"=40'	FILE NAME:
DRAWN BY: MC	SHEET: 13 of 18

VEHICLE AND EQUIPMENT REPLACEMENT

CAPITAL PROJECT DETAIL

PROJECT TITLE

Advanced Life Support Cardiac Monitors

PROJECT#

301214

CATEGORY

Vehicle and Equipment Replacement

FUND

301-General Improvement Fund

PROJECT LOCATION

Fire

MANAGEMENT

Fire

PROJECT SCOPE

This project involves the purchase of five Cardiac Monitors to replace the existing Cardiac Monitors currently utilized in providing Advanced Life Support Emergency Medical Services. Four of the Cardiac Monitor units will be on our frontline apparatus and one will be a spare unit in the event that a monitor needs servicing or repair.

JUSTIFICATION

Our current Cardiac monitors do not meet the current National Standard of Care as outlined by the American Heart Association. The new standard of care requires that cardiac monitors have the capability to transmit 12 lead EKG's to the hospital from the field. Our current monitors would need an update to both the software and the hardware in order to meet that requirement. Our Medical Director Dr. Peter Springer has not mandated the upgrade yet to meet the national standard of care but anticipates doing so in 2016. Four of our current monitors were purchased in 2005 and three were purchased in 2006. Industry standards show that after 10 years technology has improved significantly and that manufacturers stop supporting the outdated technology.

PROJECT COST METHODOLOGY

Project Cost estimate had been provided from supplier quote.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Monitors				0	110,676	0	0	0	110,676
Total				0	110,676	0	0	0	110,676

REVENUE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Property Taxes-General CIP				0	110,676	0	0	0	110,676
Total				0	110,676	0	0	0	110,676

QUOTE DATE	QUOTE NUMBER	PAGE
04/02/2015	2300506281	1 / 7

LAST UPDATED	TIME
04/02/2015	19:33:07

EXPIRATION DATE	INCOTERMS
06/02/2015	FOB DESTINATION

PAYMENT TERMS
Net 45 Days
Subject to Credit Approval

FORMAL QUOTE

Philips Healthcare
3000 Minuteman Road,MS0400
Andover, MA 01810-1099

Email PO to: Healthcare.Orders@philips.com
or
Fax PO to: 1-800-947-3299
or
Mail PO to:
Philips Healthcare
Order Processing, MS0400
Andover, MA 01810-1099

800-934-7372

CUSTOMER:
Attention:

Ormond Fire Department
364 S Atlantic Ave
ORMOND BEACH FL 32176-8148
UNITED STATES

Customer Number : 94039174

SALES REPRESENTATIVE

Jim Wallace Ph: 315-703-1872

Fax:

QUOTE CONTACT

Lisa Fifty

Federal EIN: 13-3429115

ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)
		SPECIAL COMMENTS 2015-3_5 new MRx with trade in units customer to pay upfront for support				
10	M3536A 861289	HeartStart MRx ALS monitor	5	PCE	10,700.00	53,500.00
		A23 SpO2, NIBP, CO2 (Grey)	5		9,615.00	48,075.00
		B01 Noninvasive Pacing	5		2,350.00	11,750.00
		B02 12 Lead ECG acquisition	5		4,000.00	20,000.00
		B06 12-LD Trans. Bluetooth	5		2,121.99	10,609.95
		B08 Q-CPR	5		2,995.00	14,975.00
		B09 Q-CPR Data Capture	5		200.00	1,000.00
		C03 Data Card	5		98.00	490.00
		C05 Lithium Ion Battery	5		415.00	2,075.00
		C06 AC Power Module	5		425.00	2,125.00
		C21 Blk soft case-pads/paddles	5		.00	.00
		D01 Wireless Link-Generic	5		4,995.00	24,975.00
		LP1 User Instructions Guide	5		.00	.00
		M3508A Standard Pad Cable	5		.00	.00
		W22 2-yr Bench Repair Warranty	5		.00	.00
		Agreement Discount			-30.00 %	-56,872.49
		Promotion discount			-4,000.00	-20,000.00
		Special Discount			-10.00 %	-18,957.50

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Philips Healthcare
3000 Minuteman Road,MS0400
Andover, MA 01810-1099

QUOTE DATE	QUOTE NUMBER	PAGE
04/02/2015	2300506281	2 / 7

LAST UPDATED	TIME
04/02/2015	19:33:07

EXPIRATION DATE	INCOTERMS
06/02/2015	FOB DESTINATION

FORMAL QUOTE

REPRINT

ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)
		Net price				93,744.96
		Agreement: MH537				
20	861431 861431	Event Review Pro 4.x	1	PCE		
		A01 Single-PC License	1		2,570.00	2,570.00
		Agreement Discount			-35.00 %	-899.50
		Special Discount			-5.00 %	-128.50
		Net price				1,542.00
		Agreement: MH537				
30	861451 861451	HeartStart Data Messenger	6	PCE		
		A01 - Single PC License	6		215.00	1,290.00
		Agreement Discount			-35.00 %	-451.50
		Special Discount			-5.00 %	-64.50
		Net price				774.00
		Agreement: MH537				
40	890416	Monitoring & Cardiology ServiceAgreement	1	PCE	14,615.00	14,615.00
		A08 Performace Assurance Service A11 3 Years of Service B01 Bench Repair				
		Net price				14,615.00
		Total Quotation List Price				208,049.95
		Less All Applicable Discounts				-97,373.99
		Total Quotation Net Price				**110,675.96**

Philips Healthcare is pleased to inform you that financing of its products and services is available to qualified applicants. To obtain more information
contact Philips Medical Capital @ 866-513-4PMC.
*
Contract information for:Oklahoma Naspo States Contract
*
Prices quoted are subject to and reflect applicable discounts per the terms and conditions of the following contract:

THIS QUOTATION CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION OF PHILIPS HEALTHCARE AND IS INTENDED FOR USE ONLY BY THE CUSTOMER WHOSE NAME APPEARS ON THIS QUOTATION. IT MAY NOT BE DISCLOSED TO THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT OF PHILIPS HEALTHCARE.

ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)

Contract #MH537 Expiration:Mar. 31, 2016
*
The discount quoted herein is a combination
of the Purchase Agreement Discount and
a Special Negotiated Discount.
*
The products listed herein are part of
a Philips Promotion entitled:
Buy More-Trade More-Save More - 11981NAUS
To qualify for the special discounts
noted herein, all products within the
Promotion configuration must be ordered.
No changes and/or substitutions will be
allowed. All orders for this promotion must
be received on or before 12/31/2015
The trade-in allowance quoted herein exceeds Philips' estimate of the fair market value of the units by $1500.00 each. This amount may be considered a price reduction or discount under 42 USC 1001.952(h).
*
This quotation is issued pursuant to, and any PO for the items herein will be accepted subject to the Terms of Contract#MH537 .
If no contract is identified in the previous sentence or the products and/or services are not covered by this contract, this quotation is issued pursuant to, and any PO for the items herein will be accepted subject to the Philips Terms and Conditions of Sale posted at http://www.healthcare.philips.com/main/terms_conditions/ and the terms herein.
*
MD Buyline -- Please be aware that MD Buyline utilizes Philips current list prices as the basis of calculation for discount comparisons. If you are a customer utilizing a GPO contract with fixed pricing, it is likely that the list price on this quotation is based on an older published price list, and may be considerably less than the current list pricing that MD Buyline uses in its analysis. As such, the MD Buyline discount recommendation may be higher than the Philips offering for your particular purchase. If you have a question, please ask your Sales Representative for clarification. Should you have concerns or want additional information relative to how discount comparisons are calculated at MD Buyline, please call your analyst at MD Buyline.
*
All work is scheduled within normal working hours;
Monday through Friday, 8 a.m. to 5 p.m. excluding Philips holidays.
All pricing is based on travel zones 1-3. For travel zones beyond 1-3, consult your Philips sales rep for alternate pricing.

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ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)

It is the customers responsibility to provide Philips with the access necessary to complete the quoted work in a continuous start to finish manner.
Excessive delays and multiple visits will result in additional charges.
All prices are based upon 'adequate access' to work areas that are free from obstruction.
If it is determined, during the implementation that asbestos removal is required; Philips will suspend performance until the Customer remediates the asbestos.
Philips will work with the customers staff to reduce the downtime during the system transition.
*
*
Products are for USA end-use only. Taxes, if applicable, are not included unless noted but will be added to the invoice. The Purchase Order must reference the Quote Number and your Purchase Agreement. Please indicate your requested delivery date and your preference, if any, to accept and pay for partial shipments. If this quote includes Value-Added Services, they may be invoiced separately. Additional sold training must be completed within twelve months of delivery/installation. System cabling, if included, is specified at the standard grade unless noted otherwise.
*
This quote specifically excludes Licensing & Permit Fees, Prevailing Wage Compensation and Union Labor.
*
IMPORTANT NOTICE: Health care providers are reminded that if the transactions herein include or involve a loan or a discount (including a rebate or other price reduction), they must fully and accurately report such loan or discount on cost reports or other applicable reports or claims for payment submitted under any federal or state health care program, including but not limited to Medicare and Medicaid, such as may be required by state or federal law, including but not limited to 42 CFR 1001.952(h).
*
Not binding until accepted in writing by Philips in Andover or invoiced by Philips.
*
Any purchase order or resulting agreement shall be subject to the Philips Terms and Conditions and the following terms which customer accepts.
*
For certain agreements, Philips may conduct a qualification inspection to verify that customer is suitably trained, the equipment is in serviceable condition, and all like equipment is covered by a valid

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ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)

Philips warranty or service agreement.
*
Any resulting agreement is subject to cancellation by Philips if customer fails to satisfy these conditions during the term.
*
*
Biomed Support - a new agreement for Biomeds and clinicians that want unfettered technical and clinical support, direct connection to technical engineers and discounts on parts. This agreement is great for Biomeds that make regular use of Philips technical support and genuine Philips parts, and ensures clinicians have access to clinicians when necessary. It is designed to cover an entire facility, with affordable pricing and straightforward quoting.
*
Biomed Alliance - designed for the Philips-trained Biomed department that wants to limit parts and support costs, this agreement provides unlimited parts and technical support for all products covered. If the customer would like Philips field service engineers to back them up with their support efforts, a Second Response option is available to provide an onsite field service engineer for situations where the local biomed team is not able to resolve a problem after attempting repairs and receiving guidance remotely. This agreement also provides access to clinician support.
*
Bench Repair - provides bench repair services at a Philips repair facility. This service is great for products where software and hardware reliability and compatibility are critical and factory quality repairs ensure that repairs meet current manufacturing standards. A Performance Assurance option is available for products that require annual preventive maintenance.
*
Unit Exchange - Unit Exchange provides a fast replacement of failed or problem units. Under this agreement, customers can receive a new unit as soon as the next business day. This agreement is a good fit for products where time is critical and spare units are not available.
*
Comprehensive Onsite - With Comprehensive Onsite, Philips provides onsite support for covered equipment. This agreement is good for products and for care areas where technical expertise is critical and hands on Philips engineers will support the clinical and technical needs of the department. A Performance Assurance option is available for products that require annual preventive maintenance. This agreement also provides access to remote clinician support.
*
Software Maintenance Agreement - The software maintenance agreement

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ITEM	PRODUCT	DESCRIPTION	QUANTITY	UNIT OF MEASURE	UNIT AMOUNT (USD)	TOTAL AMOUNT (USD)

includes Philips highest levels of remote support and includes software upgrades and remote clinician support. PTU Standard and PTU Basic are still key components of these agreements, with PTU Standard providing all installations and PTU Basic providing up to 2 installations over 5 years. Remote support includes new Remote Access services that enable Philips technical engineers to maximize system uptime through remote diagnostic tools and processes.

*

If the customer would like Philips field service engineers to back them up with their support efforts, a Second Response option is available to provide an onsite field service engineer for situations where the local biomed team in cooperation with Philips remote services is not able to resolve a problem in time to meet service level commitments.

*

Legacy Agreement Types

*

Gold Service - On-site maintenance and repair 8-5, M-F; Clinical Ed and upgrade discounts.

*

Silver Service - On-site repair 8-5, M-F.

*

First Response - On-site repair with biomed screening, InCenter subscription.

*

Co-op Response - Backup on-site repair only 8-5, M-F, InCenter subscription.

*

*

Remote Response - Labor, parts, phone support 8-5, M-F, InCenter subscription.

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This quotation contains confidential and proprietary information of Philips Healthcare and is intended for use only by the customer whose name appears on this quotation.It may not be disclosed to third parties without prior written consent of Philips Healthcare

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CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-Fire E94

PROJECT#

30217M

CATEGORY

Vehicle and Equipment Replacement

FUND

302-General Vehicle Replacement Fund

PROJECT LOCATION

Various City Departments

MANAGEMENT

Fleet

PROJECT SCOPE

Replacement of E94.

JUSTIFICATION

The replacement schedule has been designed to replace vehicles which have been identified as incurring the greatest maintenance expense over the life of the vehicle, reaching or exceeding the expected life in terms of age, and having relative high mileage. The benefits of the replacement program are reflected in the reduction of the City's Fleet Maintenance operating and labor costs, as well as lower vehicle downtime.

PROJECT COST METHODOLOGY

Average of Holly Hill E-One bid and Pierce quote. Total cost $400,000. A 5 year lease purchase planned.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Pierce Pumper E94	1996	Fire	52	0	80,000	80,000	80,000	80,000	320,000
Total				0	80,000	80,000	80,000	80,000	320,000

REVENUE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
General Fund Lease				0	80,000	80,000	80,000	80,000	320,000
Total				0	80,000	80,000	80,000	80,000	320,000

FY 2015-2016 Budget
Vehicle & Motorized Equipment Serviceability Report

Department/Division: 2502 Fire **Priority** _____ **of** _____

This request is included in: ☐ **Budget Submission** ☐ **List of Adds**

Vehicle/Equipment #: 052	**Vehicle/Equipment Type (make, model, etc.): 1996 Pierce Pumper**
Purchase Date (year & age): 05-21-1996	**Scheduled Replacement Date (per schedule): 05-21-2011**
Mileage11187 hours	**Estimated Repair Cost: $45,000.00 Note AC and wiring cost unknow**

A bumper-to-bumper inspection ahs been performed on this vehicle/equipment:

Technician: **Date:**

The following parts/repairs are required for this vehicle/equipment, but have been deferred:

Part/Repair	Estimated Cost (materials & Labor)
Paint work Decals replaced and painted	$9,000.00
Engine rebuild Note wiring cost unknow	$25,000.00
Interior repairs	$3,500.00
Suspension repairs	$7,500.00
	Total: $

Two-year maintenance history:

Year	Cost (materials & labor):	Days Out-of-Service
2013	$17,600.75	10
2014	$12,236.07	30

Fleet Recommendation:

☐ **Remove from Fleet** ☐ **High Maintenance** ☐ **Do Not Replace**
x

Comments:

This car average17,000 miles per year by the time replacement comes perjected to have 120000 miles

Fleet Maintenance Superintendent: **Date:**

Fleet Systems Specialist: **Date:**

Fleet Manager: **Date:**

City Manger Concurrence:

☐ **Approved** ☐ **Denied**

City Manager: _____ **Date:** _____

Evaluation for 052 date 05-01-2015

Interior: driver seat worn and torn front passage seat worn, rear seats worn and torn. Door panels worn and coming apart. Head liner is coming apart, AC condenser housing coming apart front and rear. Housing is not available any more. Seat belts worn. Exterior. The paint is faded and chips and scratches all around the truck. Decals are coming off and cracked. The wiring thru out the truck is breaking down. The protective covering is coming off. The wire loom is breaking off. There has been a number of over lays done on the truck. Right rear bumper has a dent. All of the roll up doors are hard to open as the springs are worn. There is rust around the front windows. Light bar lenses are faded. It has strobe system on this truck which is old and not a bright as once was. Engine insulation blank is breaking down. Rear AC housing is cracked. The engine is using oil and front and rear engine crank seals are leaking. The engine has high crank pressure a sign of piston ring problem. Suspension front and rear are worn. Transmission has a leak at tail shaft. The transfer case has a small leak. The fire water pump has lost some of its performance. The pump housing and piping has electrolysis and a lot of rust.

Equipment Inventory - FASTER 5.69.109

Equipment Information::Company 001 Ormond Beach Active Fleet

Equipment Number	Year	Make	Model	Shop	TSet	License
052	1996	PIERCE	PUMPER	01	EQ	121350

Print

Meter	Reading
H	11187

Parent Equipment
Component
Link: None / Permanent / Removable
Status: Attached

Class: FIRE — FIRE ENGINES EQUIP
Department: 2502 ... FIRE SUPPRESSION
Serial Number: 4PICA02DXTA000362
Location
MG: UNDEFINED
Color: RED
Priority
Site: 001 Conversion Added Code
Employee: UNDEFINED
EAC: 08 Monday-Friday 7-3:30
Depreciation: 21774.50
Last Work Order: 0000085015

Status: A
Motor Pool

Last PM

Type	Date Done
A	04/02/2015

Master | Billing | Notes | Acq/Disp | Vehicle Replacement | Search | Query | History | Componer

Date 05/21/1996 Cost 217745.00 Maint $ LTD 192583.73 Inflation Rate .03500 Salvage Rate .07000
Fund Major Grouping Highest Meter 5.0 Maintenance 8.8 Age 5.0

Expected Life In Meters

Type	Fuel?	Date	Time	Actual	Acquire	BeginFY
H	X	01/25/2005	09:22:24	11187	0	11087

	Remaining Life	Replacement	Replacement	Monthly Recovery
Original:	-49	05/21/2011	367807.80	2043.38
Adjusted:	0	05/01/2015	424227.20	1852.52

Salvage Value	15242.15
Recovery Collected	0.00
Recovery Balance	424227.20
Life Expectancy Months	180
Current Life In Months	229
Total Points	15.0
Condition Factor	0.00

Vehicle Replacement Upd

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-General

PROJECT#

30216M

CATEGORY

Vehicle and Equipment Replacement

FUND

302-General Vehicle Replacement Fund

PROJECT LOCATION

Various City Departments

MANAGEMENT

Fleet

PROJECT SCOPE

The project involves the continued implementation of a comprehensive vehicle replacement schedule for the City's fleet. Vehicles included after FY 2012-13 will be evaluated at the appropriate time. These vehicles are being shown for scheduling purposes only and will not necessarily be replaced in the year shown.

JUSTIFICATION

The replacement schedule has been designed to replace vehicles which have been identified as incurring the greatest maintenance expense over the life of the vehicle, reaching or exceeding the expected life in terms of age, and having relative high mileage. The benefits of the replacement program are reflected in the reduction of the City's Fleet Maintenance operating and labor costs, as well as lower vehicle downtime.

PROJECT COST METHODOLOGY

State contract pricing.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Ford Crown Vic	2009	Police	New	38,000	0	0	0	0	38,000
Ford Crown Vic	2009	Police	New	38,000	0	0	0	0	38,000
Ford Crown Vic	2009	Police	New	38,000	0	0	0	0	38,000
Ford Crown Vic	2009	Police	New	38,000	0	0	0	0	38,000
Ford Crown Vic	2009	Police	New	38,000	0	0	0	0	38,000
Chevy 4x4	2007	Fleet	807	28,000	0	0	0	0	28,000
NID Vehicle	New	NID	New	24,500	0	0	0	0	24,500
Ford Crown Vic	2009	Police	6	38,000	0	0	0	0	38,000
Chev Colorado pu	2008	Police CSO	63	23,000	0	0	0	0	23,000
Chev Colorado pu	2008	Police CSO	67	23,000	0	0	0	0	23,000
Chevrolet 1/2 ton truck	2004	Bldg Insp.	128	21,000	0	0	0	0	21,000
Chev 1/2 ton pickup truck	2006	Bldg Insp.	150	21,000	0	0	0	0	21,000
GMC Sonoma pickup truck	2001	Bldg. Insp.	213	21,000	0	0	0	0	21,000
Chev 3/4 ton pickup	2008	Streets	377	21,000	0	0	0	0	21,000
Ford Crown Vic	2009	Police	5	0	37,500	0	0	0	37,500
Chev Colorado pu	2008	Police CSO	49	0	18,000	0	0	0	18,000
Ford Crown Vic	2008	Police	116	0	37,500	0	0	0	37,500
Ford Crown Vic	2008	Police	118	0	37,500	0	0	0	37,500
Chev 4x4 3/4 ton pickup truck	2005	Engineering	159	0	24,000	0	0	0	24,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-General

PROJECT#

30216M

Ford Focus	2000	City Hall	205	0	16,000	0	0	0	16,000
GMC Sonoma	2001	City Hall	212	0	15,000	0	0	0	15,000
Ford F800 Dump Truck	1995	Streets	253	0	63,000	0	0	0	63,000
Ford Crown Vic	2008	Police	119	0	0	40,200	0	0	40,200
Ford Crown Vic	2008	Police	121	0	0	40,200	0	0	40,200
Ford Ranger	2005	NID	210	0	0	18,000	0	0	18,000
Chevy Uplander Van	2008	Police PAL	508	0	0	18,000	0	0	18,000
Chevy Uplander Van	2008	L Services	509	0	0	18,000	0	0	18,000
Ford Crown Vic	2011	Police	19	0	0	0	40,200	0	40,200
Ford Crown Vic	2011	Police	39	0	0	0	40,200	0	40,200
Kawasaki	2009	Police	91	0	0	0	26,000	0	26,000
Kawasaki	2009	Police	95	0	0	0	26,000	0	26,000
Ford Focus	2001	Stormwater	211	0	0	0	18,000	0	18,000
Int'l Boom Truck	2001	Streets	284	0	0	0	106,000	0	106,000
Wacker asphalt roller	2006	Streets	E278	0	0	0	12,000	0	12,000
Ford Crown Vic	2011	Police	22	0	0	0	0	40,200	40,200
Ford Explorer	2011	Fire	46	0	0	0	0	25,000	25,000
Ford Crown Vic	2011	Police	60	0	0	0	0	40,200	40,200
Ford Crown Vic	2011	Police	65	0	0	0	0	40,200	40,200
Ford Crown Vic	2011	Police	66	0	0	0	0	40,200	40,200
Chevy Equinox	2011	Police	84	0	0	0	0	22,000	22,000
Chevy Impala	2011	Police	85	0	0	0	0	22,000	22,000
Ford Crown Vic	2011	Police	77	0	0	0	0	40,200	40,200
Ford Crown Vic	2011	Police	87	0	0	0	0	40,200	40,200
Sterling 14 yd dump truck	2004	Streets	272	0	0	0	0	67,000	67,000
Ford 3/4 ton pickup truck	2003	L Services	530	0	0	0	0	19,000	19,000
Total				410,500	248,500	134,400	268,400	396,200	1,458,000

REVENUE	**Year**	**Dept**	**Veh #**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**Total 2015-16 to 2019-20**
Vehicle Replacement Fund				196,000	248,500	134,400	268,400	396,200	1,243,500
General Fund Reserve				214,500	0	0	0	0	214,500
Total				410,500	248,500	134,400	268,400	396,200	1,458,000

Vehicle and Equipment Repair/Replacement Evaluation

Vehicle # 006 **Evaluated** **Danny McIlrath**

Dept. 2005 Police Department _____ **Supervisor:** _____

	Points Assigned	Comments
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	6	2009 Ford Crown Vic
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	10	100,389
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	5	Deck lid paint coming off Headlights lenses faded out. Light bar lenses faded out, rims rusted, driver seat worn andsteering wheel worn, steering coloum loose worn. Driver door hinges worn loose, power steering pump has noise. Suspension fron is worn. AC compressor has noise. Engine rear mail seal and front engine oil seal small leak, Paint and decals chipped around vehicle.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	5	PD
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	3	In just about every month
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	5	Acg cost $26,674.00 LTD M&R $11,328.00 % of purchase 44% cost per mile .10
Have warranties expired?	yes	
Total Points	**48**	**(Shop Supervisor approval required)**

28 + points — Needs immediate replacement
23-27 points — Condition is borderline
18-22 points — Condition is fair/good
Under 18 points — Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 063	**Evaluated by: Danny McIlrath**	
Dept.:	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev Colorado
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	10	98,476
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Rear crank seal leak, rust on body and undcarriage front suapension worn, driver seat worn, driver door panel worn cracked, steering coloum worn loose, rust under hood
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	2	CSO for PD
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	Don't see it but every other month
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg cost $13,203.00 LTD M&R $9,507.37 % of purchase 72% cost per mile .30
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**27**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 067	**Evaluated by: Danny McIlrath**	
Dept.: 2009 Police Comm.	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev Colorado
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	10	102,990
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	4	under carriage and exhaut has significant rust, headlight and turn signal lenses are faded, engine burns exessive oil, engine idles is rough interior and exterior are OK. No major dents or paint problem,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	PD community service.
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	3	in shop about once a month,
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	4	ACG cost $13203.00 LTD M&R $9262.90 % of purchase 70% cost per mile 029
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**31**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 128	**Evaluated by: Danny McIlrath**	
Dept.: Building inspection	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	11	2004 Chev 1/2 ton PU
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	12	121,960
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Head liner falling, Rust under cab and tail gate, rear crankshaft leak, driver side seat worn torn, headlights faded,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	In the field building inspection
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	every other month we would see it.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	4	AGC cost $11,155.00 LTD M&R $9,676.54 % of purchase 86% cost per mile .35.
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**35**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 150	**Evaluated by: Danny McIlrath**	
Dept.: 0702 Building inspection	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	9	2006 Chev 1/2 ton PU
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	12	1,244,024
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Front end worn out , oil pan for engine leaking, rear and front crank shaft are leaking, Paint and body has many scratches around it, Engine uses oil. Interior is worn.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	2	don't see it much
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	Don't see it much
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	ACG cost $14263.00 LTD M&R $11588.10 % of purchase 81% cost per mile .38
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**31**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 213	**Evaluated by: Danny McIlrath**	
Dept.: 0702 Building Inspection	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	14	2001 GMC Sonoma
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	8	76,961
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	5	Has excessive rust, front suspension worn, Body right rear bed side has a dent, dings and a dent driver door, door panel faded and cracked over head light broken, dash is cracked and warped, drivers door handle rusted bad, Rusted bad at body welded to hings, window shield gasket torn, driver seat torn worn, third brake light faded and cracked and rusted. headlights faded,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	Building inspection field work.
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	3	In shop every other month
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	4	Acg cost $13,264.45 LTD $9,697.66 % of purchase 73%cost per mile .34
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**37**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 290	**Evaluated by: Danny McIlrath**	
Dept.: 3001	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	5	2010 Johnson Sweeper
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	7	6518 hours
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	4	The sweeper has had many repairs with the exhaust system the engine has been worked on. Burns oil, the DPT exhaust fuel system one of first of this system out and we havwe had a lot of problem. The cab has a lot of rust. The hopper body has been repaired twice, The under body has a lot of rust and the frame is rusted bad. AC is weak, Interior is worn and the seat is breaking down.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	5	street sweeping
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	5	in the shop once are twicwe a week.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	5	Acg cost $199504.00 LTD M&R $127312.77 % of purchase 64% cost per hour $28.69
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**31**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 377	**Evaluated by: Danny McIlrath**	
Dept.: 3003 Roadside	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev 3/4 PU
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	9	90,502
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Right front door bent at rear edge cab and bed has dents all minor, all suspension front and rear worn. Engine rear crank seal leaking.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	water department field service work
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	1	see it every couple of months are so.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	ACG cost $18,525.00 LTD M&R $6039.47 % of purchase 56% cost per mile .34
Have warranties expired?	Yes	☐X **Check if general overall condition can defer replacement**
Total Points	**26**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 807	**Evaluated by: Danny McIlrath**	
Dept.: 3015 Fleet	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	8	2007 Chev 1/2 ton 4X4 P/U
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	10	96,655
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	scratches around bed and dents on side panel of truck bed. Seat drive side worn, Steering coloum worn, Rear main seal of engine leak, head liner coming down, Power steering pump noises,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	Field service work
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	In shop every three months.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	2	Acg cost $21,143.00 LTD M&R $9,135.18 % of purchase 43% cost per mile .25
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**28**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 005	**Evaluated by: Danny McIlrath**	
Dept.: 2005 PD operation	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	6	2009 Ford Crown Vic
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	7	73769 miles
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	2	Light bar lenses faded, minor oil leak at rear of oil pan, rims rusted,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	5	PD Patrol
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	1	Don't it much at all,
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg cost $26,674.00 LTD M&R $11537.75 % of purchase 43% cost per mile .49
Have warranties expired?	yes	☐ **X** **Check if general overall condition can defer replacement**
Total Points	**24**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 049	**Evaluated by: Danny McIlrath**	
Dept.: 2009 PD Comm.	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev Colorado
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	8	85,047
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	2	Moisture behind head lights lennses faded, transmission leak at fronr seal, under carriage has a lot of rust, wheels rusted, paint is chipping,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	PD CSO operation
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	In shop every other month
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Agc cost $13203.00 LTD M&R $9122.49 % of purchase 69% cost per mile .31
Have warranties expired?	yes	☐X **Check if general overall condition can defer replacement**
Total Points	**25**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 116	**Evaluated by: Danny McIlrath**	
Dept.: 2005 PD	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Ford Crown vic
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	7	74,470
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Rt center body mount bent, driver side seat torn/worn, paint chipped , Floor mat worn thur, left rear quarter panel dent, lenses headlight and light bar faded,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	5	PD patrol
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	don't see that much every third month,.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	2	ACG cost $21255.00 LTD M&R $11999.21 % of purchase 56%
Have warranties expired?	yes	☐X **Check if general overall condition can defer replacement**
Total Points	**26**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 118	**Evaluated by: Danny McIlrath**	
Dept.: 2005 PD	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Ford Crown Vic
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	7	76,313
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Deck lid paint coming off headlights lenses faded out. Light bar lenses faded , driver seat worn and steering wheel worn, steering coloum loose and worn, AC compressor has noise paint and decals chipped around car
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	5	PD
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	See it about every other month.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg cost $21255.00 LTD M&R $11977.33 %of purchase 56% cost per mile .45
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement yes**
Total Points	**26**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 335	**Evaluated by: Danny McIlrath**	
Dept.: 0304 Utility Billing	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev Colorado
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	5	55,685
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	2	drive door handle broken, tail light lenses rear cracked faded, minor scratches and dings on exterior, left rear bumper small dent, left rear quarter panel small dent, pinion seal showing small seepage, transmission has blow by, rust under carriage,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	meter reading
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	1	don't see it much
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg cost $13203.00 LTD M&R $7481.84 % of purchase 56% cost per mile .37
Have warranties expired?	yes	☐X **Check if general overall condition can defer replacement**
Total Points	**21**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 336	**Evaluated by: Danny McIlrath**	
Dept.: 0304 Utility billing	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 Chev PU
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	7	73,321
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	2	Driver seat worn torn, third brake light rusting, rear engine seal leak,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	Utility billing meter reading.
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	1	Not in much at all
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	2	ACG cost $16,918.00 LTD M&R $ 7904.73 % of purchase 46% cost per mile .39
Have warranties expired?	yes	☐X **Check if general overall condition can defer replacement**
Total Points	**22**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-Solid Waste

PROJECT#

46016M

CATEGORY

Vehicle and Equipment Replacement

FUND

460-Solid Waste

PROJECT LOCATION

Various City Departments

MANAGEMENT

Fleet

PROJECT SCOPE

The project involves the continued implementation of a comprehensive vehicle replacement schedule for the City's fleet. Vehicles included after FY 2012-13 will be evaluated at the appropriate time. These vehicles are being shown for scheduling purposes only and will not necessarily be replaced in the year shown.

JUSTIFICATION

The replacement schedule has been designed to replace vehicles which have been identified by the Fleet Manager as: 1) incurring the greatest maintenance expense over the life of the vehicle, 2) reaching or exceeding their expected life in terms of age, and 3) having relatively high mileage.

The benefits of the replacement program are reflected in the reduction of the City's Fleet Maintenance operating and labor costs, as well as lower vehicle downtime which in turn increases service availability to the community.

PROJECT COST METHODOLOGY

State contract pricing.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Street Sweeper	2010	Solid Waste	290	228,000	0	0	0	0	228,000
Total				228,000	0	0	0	0	228,000

REVENUE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Solid Waste Charges				114,000	0	0	0	0	114,000
Stormwater Charges				114,000	0	0	0	0	114,000
Total				228,000	0	0	0	0	228,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-Stormwater

PROJECT#

30216M

CATEGORY

Vehicle and Equipment Replacement

FUND

302-General Vehicle Replacement Fund

PROJECT LOCATION

Various City Departments

MANAGEMENT

Fleet

PROJECT SCOPE

The project involves the continued implementation of a comprehensive vehicle replacement schedule for the City's fleet. Vehicles included after FY 2012-13 will be evaluated at the appropriate time. These vehicles are being shown for scheduling purposes only and will not necessarily be replaced in the year shown.

JUSTIFICATION

The replacement schedule has been designed to replace vehicles which have been identified by the Fleet Manager as: 1) incurring the greatest maintenance expense over the life of the vehicle, 2) reaching or exceeding their expected life in terms of age, and 3) having relatively high mileage.

The benefits of the replacement program are reflected in the reduction of the City's Fleet Maintenance operating and labor costs, as well as lower vehicle downtime which in turn increases service availability to the community.

PROJECT COST METHODOLOGY

State contract pricing.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Ford 4x4 3/4 ton	2005	Stormwater	249	0	24,000	0	0	0	24,000
Sterling heavy truck	2004	Stormwater	255	0	0	260,000	0	0	260,000
Chevy 4x4 3/4 ton	2006	Stormwater	265	0	0	30,000	0	0	30,000
Ford 1 ton utility	2008	Stormwater	280	0	0	24,000	0	0	24,000
Dump Truck	2006	Stormwater	263	0	0	0	0	110,000	110,000
CAT 928G	2003	Streets	277	0	0	0	0	235,000	235,000
Total				0	24,000	314,000	0	345,000	683,000

REVENUE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Stormwater Charges				0	24,000	314,000	0	345,000	683,000
Total				0	24,000	314,000	0	345,000	683,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-Water & Wastewater

PROJECT#

40816M

CATEGORY

Vehicle and Equipment Replacement

FUND

408-Water and Wastewater Vehicle Repl.

PROJECT LOCATION

Various City Departments

MANAGEMENT

Fleet

PROJECT SCOPE

The project involves the continued implementation of a comprehensive vehicle replacement schedule for the City's fleet. Vehicles included after FY 2012-13 will be evaluated at the appropriate time. These vehicles are being shown for scheduling purposes only and will not necessarily be replaced in the year shown.

JUSTIFICATION

The replacement schedule has been designed to replace vehicles which have been identified by the Fleet Manager as: 1) incurring the greatest maintenance expense over the life of the vehicle, 2) reaching or exceeding their expected life in terms of age, and 3) having relatively high mileage. The benefits of the replacement program are reflected in the reduction of the City's Fleet Maintenance operating and labor costs, as well as lower vehicle downtime which in turn increases service availability to the community.

PROJECT COST METHODOLOGY

State contract pricing.

EXPENDITURE	Year	Dept	Veh #	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Cat 416C backhoe	1998	Water	322	96,000	0	0	0	0	96,000
GMC 1 Ton	2008	Waste Water	343	28,000	0	0	0	0	28,000
GMC 1 Ton	2008	Waste Water	345	28,000	0	0	0	0	28,000
Thompson pump	1998	Waste Water	394	32,000	0	0	0	0	32,000
Chevy 2500	2009	Water	320	0	21,000	0	0	0	21,000
Ford 1 ton utility truck	2008	Water	321	0	25,000	0	0	0	25,000
Ford 1 ton utility truck	2008	Wastewater	357	0	25,000	0	0	0	25,000
Ford 1 ton utility truck	2008	Water	374	0	25,000	0	0	0	25,000
Cat 303.5	2001	Water	303	0	0	75,000	0	0	75,000
Chevy Colorado	2011	Utility Billing	338	0	0	22,000	0	0	22,000
International dump	2003	Wastewater	352	0	0	75,000	0	0	75,000
Chevy 4500	2009	Water	363	0	0	85,000	0	0	85,000
Chevy 1 1/2 ton Pickup	2011	Wastewater	351	0	0	0	27,000	0	27,000
Chevy 2500	2011	Waste Water	358	0	0	0	29,000	0	29,000
Thompson Pump	2001	Wastewater	375	0	0	0	35,000	0	35,000
Chevy 2500 4x4	2011	Waste Water	361	0	0	0	0	22,000	22,000
GMC 3/4 ton utility	2002	Wastewater	362	0	0	0	0	24,000	24,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Vehicle Replacement-Water & Wastewater

PROJECT#

40816M

Total				184,000	96,000	257,000	91,000	46,000	674,000

REVENUE	**Year**	**Dept**	**Veh #**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**Total 2015-16 to 2019-20**
Water & Sewer Charges				184,000	96,000	257,000	91,000	46,000	674,000
Total				184,000	96,000	257,000	91,000	46,000	674,000

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 322	**Evaluated by: Danny McIlrath**	
Dept.: 3023 Water Dist	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	17	1998 Cat 416C Back Hoe
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	4	4014 Hours
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Right side cab door rusted bad needs replacement, AC system weak and the evaporator and evaporator box are rusted bad, all the joints and pins on the back hoe arm are worn, all the pins and joints on the bucket are worn, The cab has rust, The hoses have aged and are cracked, The floor of the cab is rusted,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	used in waste water and water department
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	3	comes to fleet about every month.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	4	Acg $60,960.87 LTD M&R $44,491.60 % of purshase 72% cost per hour $13.59
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**34**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 343	**Evaluated by: Danny McIlrath**	
Dept.: 3022 WWT	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 GMC 1 Ton Utility Body
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	11	115,236
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	3	Driver seat is worn out and torn, will need replaceing driver side door seal bad, driver door hinges worn, engine rear seal leak, front suspension worn left side bad. Some small dents and scratches around truck.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	Field service truck Waste Water Collections
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	In shop every 2 to 3 months.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	ACG cost $23,522.00 LTD M&R $9342.33 % of purchase 40% cost per mile .38
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**29**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 345	**Evaluated by: Danny McIlrath**	
Dept.: 3023 Water Dist	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	7	2008 GMC 1 Ton Utility
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	9	94,037
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	4	Utility body paint coming off chipped small dents, Cab small dents and panit chipped and scratches all around, driver seat creaked and worn, left door panel broken, driver door hinge worn loose, engine rear main seal leak, rust under hood,
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	Field service work utility
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	2	in every couple of months or so.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg cost $23,522.00 LTD M&R $8,111.41 % of purchase 34% cost per mile 042
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**28**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 394	**Evaluated by: Danny McIlrath**	
Dept.: 3024 Wastewater collect	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	20	1988 Thompson pump 6V129
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	3	3061 hours
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	5	engine has been on several times has excess oil burning and blow by, The pump housing volute is worn bad, pump seals worn, vacum pump worn oil blow by.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	waste water pump
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	4	in shop every week when in use.
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	5	Acg cost $11,029.90 LTD M&R $19,487.26 %of purchase 1.70% cost per hour $6.98
Have warranties expired?	yes	☐ **Check if general overall condition can defer replacement**
Total Points	**35**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

Vehicle and Equipment Repair/Replacement Evaluation		
Vehicle: # 352	**Evaluated by: Danny McIlrath**	
Dept.: 3024 Wastewater collect	**Supervisor:**	
	Points Assigned	**Comments**
Year of vehicle. One point assigned per year. Example: A 2000 vehicle would be assigned 9 points because it is 9 years old.	12	2003 International dump
Mileage or hours of use. One point is assigned for each 10,000 miles or 1,500 hours of operation. Example: A vehicle with 87,000 miles would receive 9 points as it is rounded up.	3	32277 miles.
General overall condition. This category takes into consideration body condition, rust, interior condition, anticipated repairs, etc. A scale from 1-5 is used, with 5 being an extremely poor…possibly unsafe condition.	2	Seat driver worn dump body has rust. But truck is in good condition.
Type of service. Points are assigned as either 1,3,or 5 depending on the type of use the vehicle had during most of its life. Example: A '5' would be assigned to vehicles that were utilized as patrol cars as that is considered severe service, while a staff car would be a '1'.	3	waste water work in the field.
Reliability of vehicle. Points are assigned as 1-5 depending on the frequency that the vehicle is in the shop for repairs. A '5' should be assigned to a vehicle that is in the shop 3 or more times a month on average. A '1' would be used for once every 3 months or less.	1	Don't see it much
Total operating cost. Points are assigned as 1,3,or 5 depending on the total cost per mile factor. This figure includes maintenance and operational costs in relation to other vehicles utilized for the same purpose.	3	Acg $44,238.00 LTD M&R $ 23863.57 % of purchase 53%cost per mile .89
Have warranties expired?	yes	☐X **Check if general overall condition can defer replacement**
Total Points	**24**	**(Shop Supervisor approval required)**

28 + points	Needs immediate replacement
23-27 points	Condition is borderline
18-22 points	Condition is fair/good
Under 18 points	Condition is good/excellent

WATER AND WASTEWATER IMPROVEMENTS

TABLE OF CONTENTS

Project **Page Number**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Wastewater Sludge Thickener Upgrades

PROJECT#

409172

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities

PROJECT SCOPE

Project includes sludge holding tanking cleaning and grit disposal, aeration system equipment upgrades (3 each blower assemblies and 2 each tank diffuser systems)

JUSTIFICATION

To encourage reliable and efficient operation and maintenance of its wastewater treatment system, a planned schedule of improvement and a commitment to investing in regular system improvements is necessary. Additionally, operations staff assesses current year facility operations and determines future year priorities for rehabilitation and upgrades necessary to effect efficient operations. The tank maintenance and aeration system components described in this project have been in operation at the water treatment facility for several years. Updating the aged sludge thickening aeration system and blowers with new technology Hyperbolic mixers will promote reliable and efficient and compliant biodolids management and disposal. The described systems were not included in the scope of work recently completed with the 8 MGD rehabilitation and expansion project. Upgrades and modernization of blowers and diffuser systems will promote more efficient air flow to settled sludge component of treatment process enabling better operational control parameters and quality of centrate returning to the plant flow.

PROJECT COST METHODOLOGY

Updated Utility Master Plan - Project WWT-3A. Total cost anticipated to be $550,000 of which $225,000 was budgeted in FY 2014-15 and will be reappropriated.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
WWTP Sludge Thickener Upgrades	325,000	0	0	0	0	325,000
Engineering Services	0	0	0	0	0	0
Total	325,000	0	0	0	0	325,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	325,000	0	0	0	0	325,000
Total	325,000	0	0	0	0	325,000

Table 7.3-2
Project WWT-2
(Short Term < 5 years)
Clarifier Weir Covers & MLS #1Communitor

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Clarifier Weir Covers	4	EA	$60,000	$240,000
2	Comminutor Assemblies	2	EA	$60,000	$120,000
	Total Estimated Construction				*$360,000*
	Contingency @ 20%				$72,000
	Eng., C.A., & Inspection @ 15%				$54,000
	TOTAL ESTIMATED PROJECT COST				**$486,000**

WWT-3. Sludge Digester Improvements (Short Term < 5 years)

Aerated Sludge Holding (Digesters)

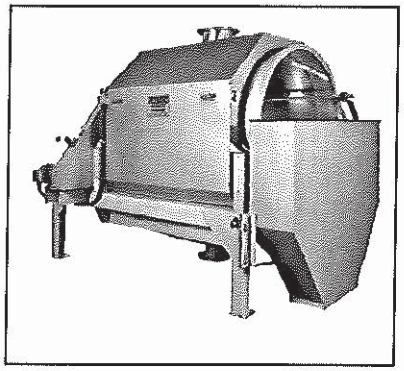
The existing aerated sludge holding tanks are utilized to temporarily hold waste sludge prior to dewatering and disposal. The City is not digesting to achieve Class B or other. In fact, excessive sludge holding times are detrimental to the biological nutrient removal (BNR) process. All of the phosphorous removed in the BNR process is stored in the waste sludge. Excessive sludge holding times contributes to cell destruction in the holding tanks and subsequent release of phosphorous back to the head of the plant.

It is important to maintain good aeration, and to have sufficient storage volume to allow effective control of solids inventory; however, additional volume is not necessary. The biggest problem with the current system are the blowers and diffusers. They are old and have reached the end of their useful life. New technology is available which provides better mixing and aeration, with far less horsepower. Similar to the Invent mixers proposed for installation in the Fermentation and Anoxic basins, the hyperbolic mixing/aeration system combines the mixers with a circular diffuser ring which is installed under the mixer. The air

bubbles are sheared by the hyperboloid mixer which increases the air transfer efficiency and satisfies the mixing requirements in the tanks.

The air flow required to mix digesters far exceeds the air requirement to sustain aerobic conditions. As such, using a mixer in combination with aeration provides the best of both worlds and reduces the energy requirement to maintain a D.O. of 2 mg/l. It is estimated that two (2) 15 hp mixers and one (1) 30 HP positive displacement blower will satisfy the mixing and aeration needs for both digesters. Two (2) blowers are proposed for Class I reliability standards.

The City may also want to consider installation of rotary drum thickeners (RDT) in order to enhance the storage capacity in the existing digesters and possibly allow the operation of a single digester in lieu of 2. The drum thickeners (shown below) utilize polymer and sludge retention screens to thicken sludge from approximately 0.8% to 3 or 4%. This increases the effective storage volume, reduces the mixing energy required to mix the extra water in the thinner sludge and provides a greater degree of redundancy and reliability. There is also an advantage to feeding thicker sludge to the subsequent dewatering process.



Sludge Dewatering

The City currently operates two (2) sludge centrifuges to dewater waste activated sludge (WAS). They were installed in 2008, and were overhauled in 2014. Both centrifuges must

be maintained on an on-going basis. It is expensive and time consuming. There can be a discussion of different types of centrifuges and which manufacturer provides the most reliable equipment; however, it is generally understood that centrifuges are high speed devices and require more maintenance and service than other dewatering equipment.

They offer the advantage of producing a drier end product than a belt filter press, 18% vs 14%, but that does come at a price. The other problem is the current configuration of the dewatering building. It is not configured to allow for belt filter presses, there is insufficient room.

Sludge dewatering technology has advanced and new equipment is available which produces a dry sludge product without the energy and maintenance associated with a centrifuge. *Screw Press* devices combine the configuration of a centrifuge along with the low horsepower and slow speed of a belt filter press. A typical screw press is depicted below. They can be easily retrofitted into the existing building and typically produce a dewatered product of 17 – 18% at a polymer feed rate of 25 gallon per dry ton.

Screw press devices run at a lower throughput than centrifuges, because they are designed to be run continuously. For example, a centrifuge operating at 120 GPM for 8 hours can dewater 5,760 gallons of sludge. A screw press operating at 40 GPM for 24 hours can dewater the same volume of sludge, using less energy. Rotary drum thickeners are also very compatible with screw press installations because they pre-thicken the WAS to provide for lower feed rates.

Currently, the digesters, blowers, diffusers and centrifuges create significant maintenance issues. The digester blowers and diffusers are especially problematic. This plan recommends installation of: hyperbolic mixer/aerators, blowers, two (2) rotary drum thickeners and two (2) screw presses. New polymer feed equipment is also recommended. Estimated costs for all proposed improvements are detailed below.

Table 7.3-3A
Project WWT-3A
(Short Term < 5 years)
Sludge Digester Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	New Hyperbolic Mixer/Aerators	2	EA	$50,000	$100,000
2	New PD Blowers with VFDs	2	EA	$50,000	$100,000
3	Electrical and Instrumentation	1	LS	$25,000	$25,000
4	Mechanical and Structural	1	LS	$25,000	$25,000
	Total Estimated Construction				*$250,000*
	Contingency @ 20%				$50,000
	Eng., C.A., & Inspection @ 15%				$37,500
	TOTAL ESTIMATED PROJECT COST				**$337,500**

Table 7.3-3B
Project WWT-3B
(Short Term < 5 years)
Sludge Dewatering Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Rotary Drum Thickeners	2	EA	$300,000	$600,000
2	Screw Press & Polymer Feed	2	EA	$250,000	$500,000
3	Electrical and Instrumentation	1	LS	$50,000	$50,000
4	Mechanical and Structural	1	LS	$150,000	$150,000
	Total Estimated Construction				*$1,300,000*
	Contingency @ 20%				$260,000
	Eng., C.A., & Inspection @ 15%				$195,000
	TOTAL ESTIMATED PROJECT COST				**$1,755,000**

WWT-4, Laboratory Upgrades (Short Term < 5 years)

CAPITAL PROJECT DETAIL

PROJECT TITLE

Water Plant Lime Silo Dust Collector Replacement

PROJECT#

409183

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities

PROJECT SCOPE

Project includes engineering design and construction of existing lime silo structural modifications and replacement of the lime dust collection system.

JUSTIFICATION

The current lime storage silo and dust bagging system is several years old and does not operation in accordance with the original design intent. Lime delivery and use is a rigorous activity and is a primary component of the lime softening process at the City's Water Treatment Facility. Replacement of this system will improve materials handling, operator safety and efficiency and improve housekeeping practices at the facility.

PROJECT COST METHODOLOGY

Cost estimate provided.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Lime Dust Collection System Replacment	290,000	0	0	0	0	290,000
Engineering Design Services	0	0	0	0	0	0
Total	290,000	0	0	0	0	290,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	290,000	0	0	0	0	290,000
Total	290,000	0	0	0	0	290,000

WT-2. Lime Silo Dust Arrestor (Short Term < 5 years)

The lime softening and recarbonation process was recently rehabilitated. It is in good condition, except for the lime silo dust arrestor. This should be scheduled for replacement as a short term project. The estimated project costs are detailed below:

Table 5.3 -2
Project WT-2
(Short Term < 5 years)
Lime Silo Dust Arrestor

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Replace Lime Silo Dust Arrestor	1	LS	$200,000	$200,000
2	Installation and Electrical	1	LS	$40,000	$40,000
	Total Estimated Construction				*$240,000*
	Contingency @ 20%				$48,000
	Eng., C.A., & Inspection @ 15%				$36,000
	TOTAL ESTIMATED PROJECT COST				**$324,000**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Hydrant Replacement

PROJECT#

409181

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

Replacement of approximately one hundred twenty (120) older fire hydrants (30 per annual period) found outdated or improperly configured or in need of repair. Replacement hydrant locations identified by water distribution staff and bid documents prepared for furnish & install by successful contractor. The first phase of this project was initiated in FY 2014-15.

JUSTIFICATION

Continued need for replacement of aged and/ or discontinued distribution system components. Additional components of project include restoration and strategic valve placement activities.

PROJECT COST METHODOLOGY

Itemized Cost Estimate (Typical Budget Format) with recent bid costs for pertinent items utilized.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Hydrant Replacement	161,000	161,000	0	0	0	322,000
Total	161,000	161,000	0	0	0	322,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	161,000	161,000	0	0	0	322,000
Total	161,000	161,000	0	0	0	322,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

City-wide Meter Replacement

PROJECT#

409169

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utility Billing

PROJECT SCOPE

Strategic replacement of all visual and touch read meters.

JUSTIFICATION

Over time, meters become inaccurate or stop completely resulting in inaccurate readings and billings. Meter replacement is recommended after ten years of life. Most of the City's visual and touch read meters are well in excess of their life cycle. This program provides for a comprehensive meter replacement. The first year of the program will focus on replacement of primarily visual read meters in areas which provide the greatest safety concern for meter readers who must walk to each location in order to obtain the readings. Future year programs will focus on areas with visual and touch read meters based on age. The entire program will take approximately 8 years to replace all touch and visual read meters with an annual allocation of approximately $500,000.

PROJECT COST METHODOLOGY

Estimates provided by current meter supplier.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Meter Replacement	555,000	515,000	530,000	490,000	500,000	2,590,000
Total	555,000	515,000	530,000	490,000	500,000	2,590,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	555,000	515,000	530,000	490,000	500,000	2,590,000
Total	555,000	515,000	530,000	490,000	500,000	2,590,000

Utilities Division Meter Change Out Program

		FY 2015-16		FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20	
Meter Type	**Cost Methodology**	**# of Meters**	**Cost**	**# of Meters**	**Cost**	**# of Meters**	**Cost**	**# of Meters**	**Cost**	**# of Meters**	**Cost**
5/8" VR	$188.50 per meter $32.00 to change out	2,110	465,255	1,625	363,188		-		-		-
5/8" TR	$188.50 per meter $32.00 to change out	320	70,560	525	117,338	2,075	463,763	2,150	480,525	2,200	491,700
1" VR	$235.00 per meter $32.00 to change out	20	5,340	15	4,050		-		-		-
1" TR	$235.00 per meter $32.00 to change out	10	2,670	13	3,510	74	19,980	24	6,480	-	-
1.5" VR	$381.00 per meter $100.00 to change out		-		-		-		-		-
1.5" TR	$381.00 per meter $100.00 to change out		-	2	968	1	484	-	-	-	-
2" VR	$499.00 per meter $100.00 to change out	2	1,198	1	602		-		-		-
2" TR	$499.00 per meter $100.00 to change out		-		-	4	2,408	-	-	-	-
Totals		2,462	$ 545,023	2,181	$ 489,655	2,154	$ 486,635	2,174	$ 487,005	2,200	$ 491,700
Contingency 2%	For Miscellaneous Parts		10,900		9,793		9,733		9,740		9,834
Grand Totals		**2,462**	**$ 555,923**	**2,181**	**$ 499,448**	**2,154**	**$ 496,367**	**2,174**	**$ 496,745**	**2,200**	**$ 501,534**

*Change out cost increases by $3 beginning in FY 2016-17

VR = Visual Read Meters
TR = Touch Read Meters

Water Meter Replacement Project

Legend

- Phase3 - FY 2015-16
- Corporate Limits
- Ormond Beach
- Ormond by the Sea
- Holly Hill
- Daytona Beach
- Volusia/Flagler County

N
W E
S

1" = 2000'

2,000 0 6,000 Feet

Prepared By: City of Ormond Beach G.I.S. Department 04/29/2015

CAPITAL PROJECT DETAIL

PROJECT TITLE

General Facility and System Upgrades

PROJECT#

409187

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

An annual allocation to fund a regular maintenance program for the water and wastewater plants and associated systems.Projects include equipment replacement such as remote lift stations, pump station, fermentation basins, post anoxic reactors, recycle pump station, clarifiers, sludge return pump building, filters and chlorine contact tank, chlorine storage, generator and control buildings, the centrifuge structure and safety components such as hand railings, non-skid grating and stairs.

JUSTIFICATION

In order for the City to remain reliable and efficient in the operation and maintenance of its water and wastewater system, a planned schedule of improvements and a commitment to investing in regular system improvements is necessary. Although many critical components in the WWTP were replaced or upgraded with the WWTP Rehabilitation Projects, additional annual periodic maintenance and equipment replacement needs arise and are anticipated due to the aggressive nature of the product treated and the corrosive environment where the plant is located. This budget request contains funding resources for replacement or repair of both the plants and remote collection system equipment and infrastructure.

PROJECT COST METHODOLOGY

Historical expenditures.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
General Facility Upgrades	200,000	200,000	200,000	200,000	200,000	1,000,000
Total	200,000	200,000	200,000	200,000	200,000	1,000,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	200,000	200,000	200,000	200,000	200,000	1,000,000
Total	200,000	200,000	200,000	200,000	200,000	1,000,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Water Storage Tank Repairs

PROJECT#

409180

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

Tank Inspection, Cleaning and Repairs.

JUSTIFICATION

Future Year Repairs and Maintenance needs to be determined during inspection period. Concrete Ground Storage Tanks (GST) include: 2.5 Million Gallon (MG) Water Treatment Plant (WTP), 1 MG Standish, 3 & 4 MG Reuse Orchard and 750K GST Hunter's Ridge; Steel tanks include 200K Elevated Storage Tank (EST) WTP, 400K EST Breakaway Trails (BAT), 1 MG EST Leeway, 300K & 900K GST BAT

PROJECT COST METHODOLOGY

Previous Contract Pricing and Vendor Quotations Utilized

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Tank Repairs	200,000	100,000	100,000	100,000	0	500,000
Total	200,000	100,000	100,000	100,000	0	500,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	200,000	100,000	100,000	100,000	0	500,000
Total	200,000	100,000	100,000	100,000	0	500,000

City of Ormond Beach, Florida
4/15/2013

Elevated Water Storage Tank Rehabilitation 2014
Probable Cost

Exterior and Interior Renovation

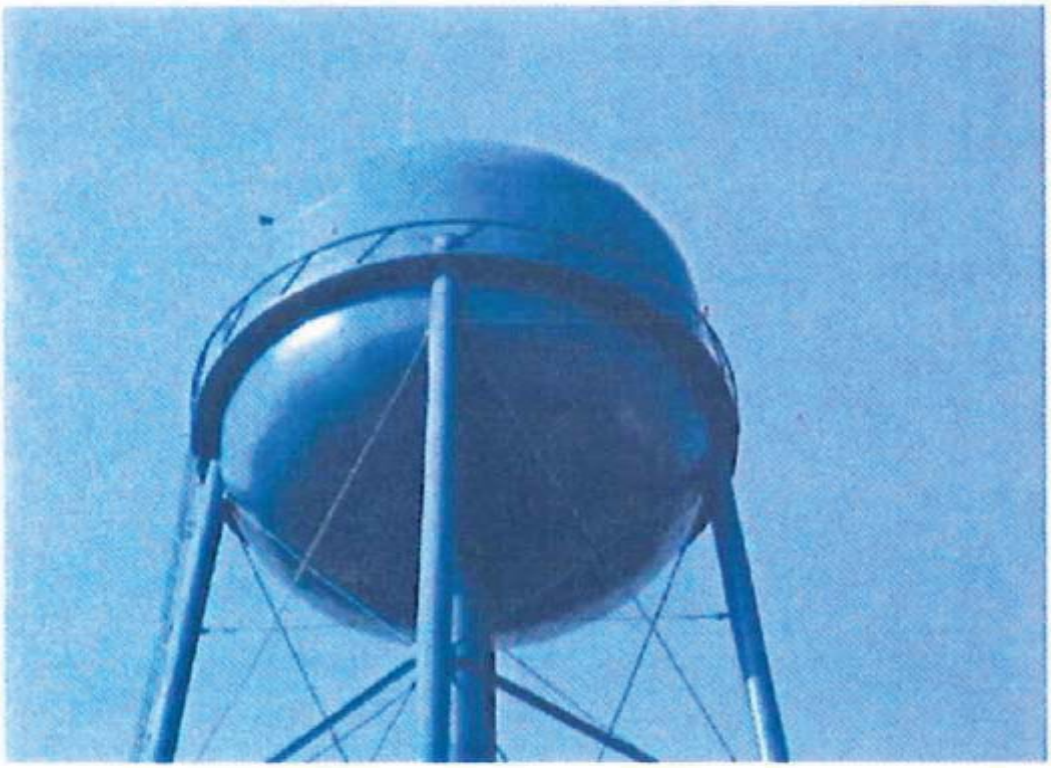
Estimated Construction Cost

Item Num	Item Description	QTY	Unit	Unit Cost	Item Cost
1	Leeway Tank	1	LS	$ 58,000.00	$ 58,000.00
2	Water Plant	1	LS	$ 42,000.00	$ 42,000.00

Construction Sub-Total=	$	100,000.00
Contingency (10%)=	$	10,000.00

Construction Budget=	**$**	**110,000.00**
ENGINEERING & PERMITTING (15%)=	$	16,500.00
Sub-Total=	$	126,500.00
PROJECT Budget Value=	**$**	**127,000.00**

2.5 Million Gallon Water Storage Tank Located at the Water Plant



200,000 Gallon Elevated Water Storage Tank Located at the Water Plant

BID RESPONSE FORM
(continued)

This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the CITY.

THIS BID IS SUBMITTED BY:

COMPANY NAME: Underwater Solutions Inc.

VENDOR/CONTRACTOR LICENSE NUMBER: _____

ADDRESS: P.O. Box 208

Mattapoisett, MA 02739

PHONE NO.: (508) 758-6126 FAX NO.: (508)758-7128

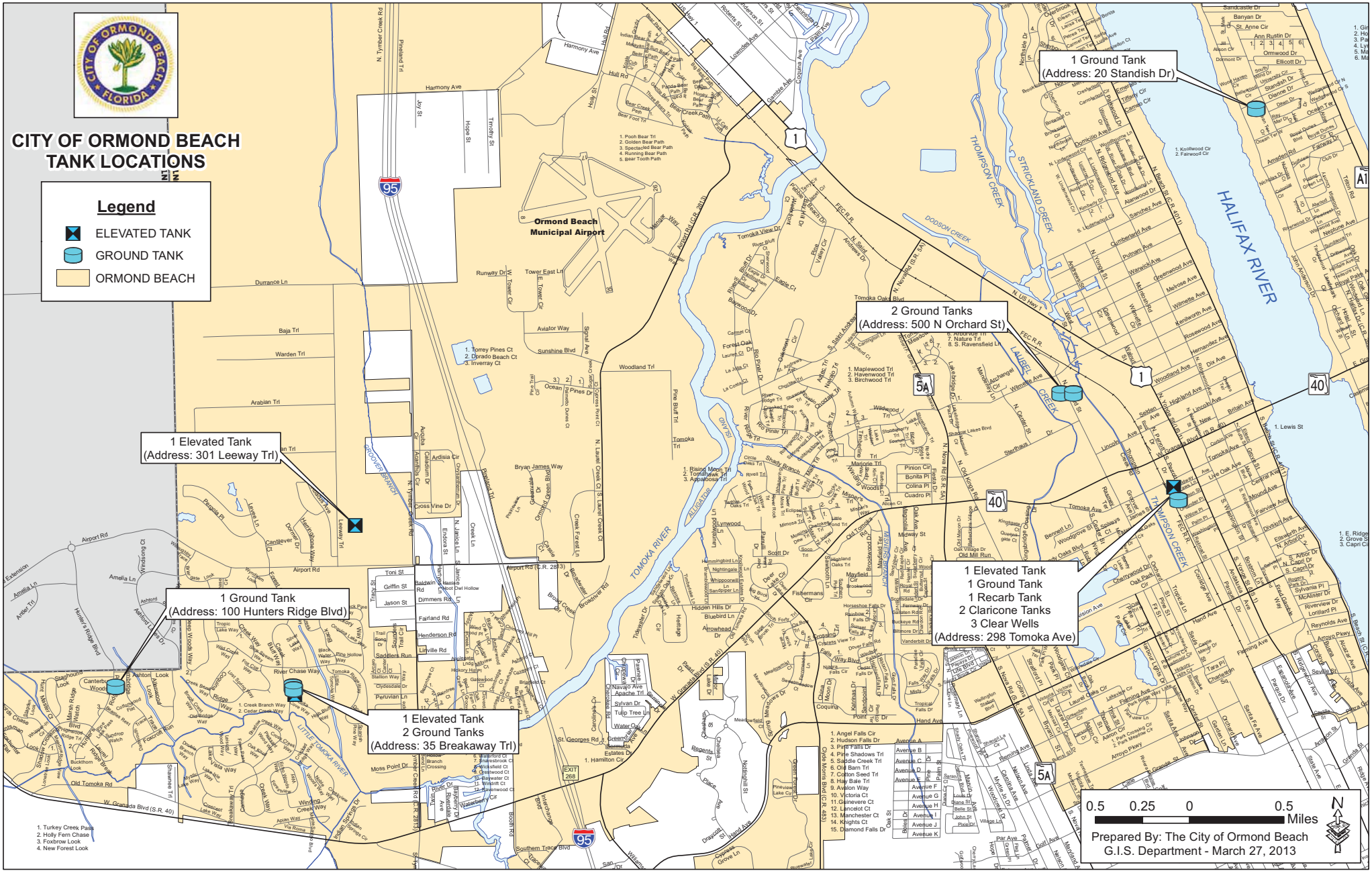
SUBMITTER'S NAME: Deborah J. Cornish
(Typed or Printed in Ink)

TITLE: Treasurer

AUTHORIZED SIGNATURE: I, _____ hereby
(Original Signature)

declare that I have read and fully understand the Invitation to Bid, including the General Conditions, Specifications and Drawings (when applicable) and that I am duly authorized to sign and submit this bid.

The CITY reserves the right to reject any and all bids, to waive informalities, and to accept any bid or parts thereof as the CITY, in its sole discretion, determines to be in the best interest of the CITY.


CITY OF ORMOND BEACH
TANK LOCATIONS
Legend
ELEVATED TANK
GROUND TANK
ORMOND BEACH
1 Ground Tank
(Address: 20 Standish Dr)
2 Ground Tanks
(Address: 500 N Orchard St)
1 Elevated Tank
(Address: 301 Leeway Trl)
1 Ground Tank
(Address: 100 Hunters Ridge Blvd)
1 Elevated Tank
2 Ground Tanks
(Address: 35 Breakaway Trl)
1 Elevated Tank
1 Ground Tank
1 Recarb Tank
2 Claricone Tanks
3 Clear Wells
(Address: 298 Tomoka Ave)
Ormond Beach
Municipal Airport
HALIFAX RIVER
TOMOKA RIVER
THOMPSON CREEK
STRICKLAND CREEK
LAUREL CREEK
DODSON CREEK
0.5 0.25 0 0.5
Miles
N
Prepared By: The City of Ormond Beach
G.I.S. Department - March 27, 2013

STORAGE TANK INFORMATION

STORAGE TANK DATA

TANK NUMBER	LOCATION	TYPE	CONTENTS	CAPACITY GALLONS	INSIDE DIAMETER FEET	MATERIAL	COVERED	DRAINED
1	Water Plant	Ground Storage	Potable Water	2,500,000	120	Concrete	Yes	No
2	Water Plant	Elevated	Potable Water	250,000	50	Steel	Yes	Yes
3	Water Plant	Clear Well	Potable Water	25,000	19' 8" Long 16' 6" Wide	Concrete	Yes	No
4	Water Plant	Clear Well	Potable Water	25,000	19' 8" Long 16' 6" Wide	Concrete	Yes	No
5	Water Plant	Clear Well	Potable Water	10,000	12' Long 12' Wide	Concrete	Yes	No
6	Water Plant	Claricone	Lime Softened Water	130,000	Varies Conical 47' to 9.5'	Steel	No	Yes

STORAGE TANK INFORMATION (CONT'D)

STORAGE TANK DATA

TANK NUMBER	LOCATION	TYPE	CONTENTS	CAPACITY GALLONS	INSIDE DIAMETER FEET	MATERIAL	COVERED	DRAINED
7	Water Plant	Claricone	Lime Softened Water	130,000	Varies Conical 47' to 9.5'	Steel	No	Yes
8	Water Plant	Elevated	pH Adjusted	170,000	40	Concrete	No	Yes
9	Orchard St	Ground Storage	Reclaimed Water	4,000,000	162	Concrete	Yes	Yes
10	Orchard St	Ground Storage	Reclaimed Water	3,000,000	140	Concrete	Yes	Yes
11	Standish	Ground Storage	Potable Water	1,000,000	105	Concrete	Yes	Yes
12	Leeway	Elevated	Potable Water	1,000,000	86	Steel	Yes	Yes

STORAGE TANK INFORMATION (CONT'D)

STORAGE TANK DATA

TANK NUMBER	LOCATION	TYPE	CONTENTS	CAPACITY GALLONS	INSIDE DIAMETER FEET	MATERIAL	COVERED	DRAINED
13	Shadow Crossings	Ground Storage	Reclaimed Water	750,000	67	Concrete	Yes	Yes
14	Breakaway Trails	Elevated	Reclaimed Water	400,000	46	Steel	Yes	Yes
15	Breakaway Trails	Ground Storage	Reclaimed Water	900,000	82	Steel	No	Yes
16	Breakaway Trails	Ground Storage	Reclaimed Water	300,000	47.5	Steel	No	Yes

CAPITAL PROJECT DETAIL

PROJECT TITLE

Lift Station Rehabilitation

PROJECT#

409175

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

Rehabilitation of wastewater lift station wetwell and valve vault structures and replacement of lift station electrical and mechanical equipment to include pumping, base and riser piping and valve systems. Electrical panel and component replacement is also to be performed.

JUSTIFICATION

In order for the City to encourage reliable and efficient operation and maintenance of its wastewater collection system, a planned schedule of improvement and a commitment to investing in regular system improvements is necessary. Many of the components in the wastewater lift station system have been in service for several years. The 2015 Water/ Wastewater Master Plan Update identified specific needs and established a priority for implementation of the City lift station system rehabilitative needs. Additionally, operations staff assesses current year facility operations and makes determination as to the level of rehabilitation necessary to effect efficient operations. The stations listed are staff's recommended lift station rehabilitative priorities based upon the recent level of preventative and emergency maintenance support reported by operational staff. The 2007 Wastewater Master plan update indicates mechanical/ structural/ electrical condition status for all lift station facilities. Periodic power service and pump upgrades are recommended based upon increased pressure conditions encountered in adjacent force main systems serving the area.

PROJECT COST METHODOLOGY

Recent Projects Bids - Similar Work Authorizations - Utility Master Plan Update 2015

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction Facility Rehab (10M - BAT - SC)	540,000	0	0	0	0	540,000
Engineering Design	60,000	40,000	40,000	60,000	40,000	240,000
Construction Facility Rehab (ABP - 12M)	0	360,000	0	0	0	360,000
Construction Facility Rehab (3M - TM)	0	0	360,000	0	0	360,000
Construction Facility Rehab (5M - 7M1)	0	0	0	540,000	0	540,000
Construction Facility Rehab (8M - Homac)	0	0	0	0	360,000	360,000
Construction Facility Rehab (8M-1)	0	0	0	0	0	0
Total	600,000	400,000	400,000	600,000	400,000	2,400,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Lift Station Rehabilitation

PROJECT#

409175

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	600,000	400,000	400,000	600,000	400,000	2,400,000
Total	600,000	400,000	400,000	600,000	400,000	2,400,000

City of Ormond Beach

TANK INSPECTION AND CLEANING SERVICES
Bid No. 2013-11

The BIDDER will complete the Work, as described herein, for the following price(s):

BID SCHEDULE

ITEM NO.	DESCRIPTION	TOTAL ESTIMATED BID
1.	Cleaning and Inspection of Water Plant Ground Storage Tank	$ 4,420.00
2.	Cleaning and Inspection of Water Plant Elevated Tank	$ 4,420.00
3.	Cleaning and Inspection of Water Plant .025 MG Clearwell	$ 4,420.00
4.	Cleaning and Inspection of Water Plant .025 MG Clearwell	$ 4,420.00
5.	Cleaning and Inspection of Water Plant .010 MG Clearwell	$ 4,420.00
6.	Cleaning and Inspection of Water Plant Claricone	$ 4,420.00
7.	Cleaning and Inspection of Water Plant Claricone	$ 4,420.00
8.	Cleaning and Inspection of Water Plant Elevated Tank	$ 4,420.00
9.	Cleaning and Inspection of Orchard St. 4MG GST	$ 4,420.00
10.	Cleaning and Inspection of Orchard St. 3MG GST	$ 4,420.00
11.	Cleaning and Inspection of Standish Ground Storage Tank	$ 4,420.00
12.	Cleaning and Inspection of Leeway Elevated Tank	$ 4,420.00
13.	Cleaning and Inspection of Shadow Crossings GST	$ 4,420.00
14.	Cleaning and Inspection of Breakaway Trails Elevated Tank	$ 4,420.00
15.	Cleaning and Inspection of Breakaway Trails 0.9 MG GST	$ 4,420.00
16.	Cleaning and Inspection of Breakaway Trails 0.3 MG GST	$ 4,420.00

TOTAL BID $ 70,720.00

*To be completed during our Winter 2014 mobilization (January - April 2014)

(Figures)

Seventy-thousand, seven hundred twenty dollars

(Words)

The bid basis for the contract award is the sum of the unit prices for the individual items.

CIP Lift Station Rehabilitation R&R Project 2015/16 - 2019/20
(Updated May 2015)

Facility Rehabilitation Project Overview Tentative Schedule:

8M1	2014/2015 (Design Underway)
10M – BAT/Shadow Xings	2015/2016
Airport Business Park - 12M	2016/2017
3M – Tomoka Meadows	2017/2018
5M – 7M1	2018/2019
8M – Homac	2019/2020

8M1 (2014/15)

Electrical

- Replace Control Cabinet using New Flygt APP series controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Replace FPL Meter can with new Stainless Steel Disconnect can
- Reuse existing SCADA cabinet and contents– using same Stainless Steel mounting specs as Control Cabinet
- Remove existing fiberglass pole
- Install new lamp on existing concrete pole
- Install underground 2” PVC conduits (installed as per NEC code) for each pump lead and separate 2” conduit for Probe/Float leads from Wet Well to Control Cabinet

Valve Box

- Replace valve box using precast concrete structure (existing box is broken)
- Replace top slab including new aluminum Safety Hatch
- Install valve box drain to Wet Well to include check valve in Wet Well
- Replace check valves using 4” check valves-external lever & spring-bronze seat-13” lay length-cast iron-flange X flange check valves
- Replace gate valves using 4” gate valves-2” square lug stem top-EPDM seat-9” lay length-flange X flange-cast iron gate valves

Wet Well

- Replace top slab to include new aluminum Safety Hatch
- Sewper coat Wet Well or other approved
- Replace riser stack pipes through to check valves at valve box using ductile iron pipe with all 316 Stainless Steel hardware or HDPE pipe with all welded seams at joints and 90s and all 316 Stainless Steel hardware at any flange connections
- Replace guide rails using Flygt Stainless Steel guide rails
- Install Flygt Wet Well invert using Flygt base elbows
- Replace pumps upgrading from existing Flygt 3102 pumps with 435 impellers (8M2 pumps in to this station and sometimes overpowers it temporarily)

Grounds

- Relocate Camphor tree or remove and replace as per agreement with home owner
- Remove concrete structure around Wet Well and Valve Box (knee wall that has been damaged by tree roots and tree trunk – concrete slab between Wet Well and Valve Box)
- Maintain existing hedge line around lift station

10M (2015/16)

Electrical

- Replace Control Cabinet using New Flygt APP series controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Replace FPL Meter can with new Stainless Steel Disconnect can
- Reuse existing SCADA cabinet and contents – using same Stainless Steel mounting specs as Control Cabinet
- Remove existing fiberglass pole
- Install new lamp on existing concrete pole
- Install underground 2" PVC conduits (installed as per NEC code) for each pump lead and separate 2" conduit for Probe/Float leads from Wet Well to Control Cabinet

Valve Box

- Repair valve box as needed
- Replace top slab including new safety hatch
- Repair existing valve box drain to Wet Well to include check valve in Wet Well
- Replace check valves using 4" check valves-external lever & spring-bronze seat-13" lay length-cast iron-flange X flange check valves
- Replace gate valves using 4" gate valves-2" square lug stem top-EPDM seat-9" lay length-flange X flange-cast iron gate valves

Wet Well

- Replace top slab to include new Safety Hatch cover
- Sewper coat Wet Well
- Replace riser stack pipes through to check valves at valve box using ductile iron pipe with all 316 Stainless Steel hardware or HDPE pipe with all welded seams at joints and 90s and all 316 Stainless Steel hardware at any flange connections
- Replace guide rails using Flygt Stainless Steel guide rails
- Install Flygt Wet Well invert using Flygt base elbows
- Replace existing pumps using Flygt 3102 pumps with 435 impellers (current pumps and impellers are sufficient but need to be replaced with new units)

Grounds

- Maintain existing Coquina rock line around lift station

Breakaway Trails (2015/16)

Electrical

- Replace Control Cabinet using New MultiSmart controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Relocate control cabinet away from wet well and corrosive gasses
- Install local control cabinet using simple H.O.A. switches at wet well to include isolation disconnects for each individual pump (as master control cabinet with circuit breakers will no longer be local to the wet well)
- Upgrade FPL incoming power to 230 volt 3 phase
- Reuse existing SCADA cabinet
- Install new lighting around wet well
- Install intermediate stainless steel cabinet/junction box at wet well for pump power leads and level control contacts

Odor Control Unit

- Repair/Replacement/ Removal considerations of existing unit (to be engineered accordingly for elimination of odor concerns if any)

Wet Well

- Repair leaks in both Influent Drop Chutes
- Inspect and replace as needed any and all hardware damaged by corrosion at that time
- Upgrade all pumps to accommodate new FPL power of 230 volt 3 phase – current pump winding sets are 208 volt

Valve Box

- Paint valve box with epoxy paint
- Inspect and repair/replace as needed any and all components damaged by corrosion at that time

Shadow Crossings (2015/16)

Electrical

- Inspect and repair/replace as needed any and all components damaged by corrosive gasses at that time
- Install intermediate cabinet/junction box below master control cabinet for all connections directly plumbed to wet well

Odor Control Unit

- Service unit according to manufacturer's guide lines
- Replace timer device
- Change discharge plumbing to accommodate for customer complaints
- Upgrade media as needed (to be engineered) to accommodate for customer complaints

Wet Well

- Repair leaks in both Influent drop chutes
- Modify South Influent drop chute to allow for cover to be installed as per original design
- Replace both pump Riser Stack pipes with HDPE piping to include all welded seems at 90s and flanges, from the base elbows out through to the check valves in the valve box
- Install stainless steel support bracket half way up the Riser Stack pipes mounted at opposing walls of the wet well to eliminate flexibility in HDPE piping
- Inspect and repair/replace any and all hardware in wet well damaged by corrosion at that time
- Use only 316 stainless steel hardware throughout wet well and valve box

Valve Box

- Paint valve box with epoxy paint
- Inspect and repair/replace as needed any and all components damaged by corrosion at that time

Grounds

- Install higher hedge line around entire perimeter to reduce noise level caused by Odor Control unit and defuse/dissipate discharge from Odor Control unit
- Replace chain link fence with white PVC privacy fencing and gate assembly

Airport Business Park (2016/17)

Electrical

- Replace Control Cabinet using New Flygt APP series controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Replace FPL Meter can with new Stainless Steel Disconnect can
- Reuse existing SCADA cabinet and contents – using same Stainless Steel mounting specs as Control Cabinet
- Install new lamp on existing pole
- Install underground 2" PVC conduits (installed as per NEC code) for each pump lead and separate 2" conduit for Probe/Float leads from Wet Well to Control Cabinet

Valve Box

- Repair valve box as needed
- Repair existing valve box drain to Wet Well to include check valve in Wet Well
- Replace check valves using 4" check valves-external lever & spring-bronze seat-13" lay length-cast iron-flange X flange check valves
- Replace gate valves using 4" gate valves-2" square lug stem top-EPDM seat-9" lay length-flange X flange-cast iron gate valves
- Install Emergency Pump Out Port in valve box using 3" Cam/Lock fittings

Wet well – Collection System

- Repair upstream piping to manhole (deep piping repair)

12M (2016/17)

Electrical

- Replace Control Cabinet using New Flygt APP series controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Replace FPL Meter can with new Stainless Steel Disconnect can
- Reuse existing SCADA cabinet and contents – using same Stainless Steel mounting specs as Control Cabinet
- Install new lamp on existing pole
- Install underground 2" PVC conduits (installed as per NEC code) for each pump lead and separate 2" conduit for Probe/Float leads from Wet Well to Control Cabinet

Valve Box

- Install concrete valve box at current Emergency Pump Out Port

3M (2017/18)

Electrical

- Replace Control Cabinet using New Flygt APP series controller – all Stainless Steel upright mounting poles – all Stainless Steel horizontal mounting Unistrut – all 316 Stainless Steel hardware
- Replace FPL Meter can with new Stainless Steel Disconnect can
- Reuse existing SCADA cabinet and contents – using same Stainless Steel mounting specs as Control Cabinet
- Install new lamp on existing pole
- Install underground 2" PVC conduits (installed as per NEC code) for each pump lead and separate 2" conduit for Probe/Float leads from Wet Well to Control Cabinet
- Have FPL change incoming power to 230 volt 3 phase
- Eliminate transformer

Valve Box

- Repair valve box as needed
- Repair existing valve box drain to Wet Well to include check valve in Wet Well
- Replace check valves using 4" check valves-external lever & spring-bronze seat-13" lay length-cast iron-flange X flange check valves
- Replace gate valves using 4" gate valves-2" square lug stem top-EPDM seat-9" lay length-flange X flange-cast iron gate valves
- Install Emergency Pump Out Port in valve box using 3" Cam/Lock fittings

Wet Well

- Replace top slab to include new Safety Hatch cover
- Sewpercoat Wetwell
- Replace riser stack pipes through to check valves at valve box using ductile iron pipe with all 316 Stainless Steel hardware or HDPE pipe with all welded seams at joints and 90s and all 316 Stainless Steel hardware at any flange connections
- Replace guide rails using Flygt Stainless Steel guide rails
- Install Flygt Wet Well invert using Flygt base elbows
- Replace existing pumps using Flygt 3102 pumps with 435 impellers (current pumps and impellers are sufficient but need to be replaced with new units)

Tomoka Meadows (2017/18)

Wet Well

- Replace Wet Well lid with new concrete lid with correct hatch door size to properly mount guide rail hardware and allow fitment of pumps

Phasing SSES would allow staff to focus upon one (1) geographic region at a time and develop a phased construction program sooner. It is recommended that the service area be divided as follows:

Year #1- North and South Peninsula, to include all beachside areas.

Year #2- Mainland East, to include all mainland areas east of the FEC railroad.

Year #3- Mainland West, to include all areas west of the FEC railroad.

8.6 Project Descriptions and Preliminary Cost Estimates

WW-1, Lift Station Replacements (Short Term < 5 years)

Table 8.3-1 categorizes the condition of each station. Those elements categorized as 'poor' are critical and should be addressed immediately. The following lift stations have multiple elements characterized as being in poor and fair condition. The recommendations for these stations are for replacement or rehabilitation of deteriorated components. The stations include:

- BAT
- 10 M
- ABP
- 12 M
- 3 M
- 5 M
- 7 M1
- 8 M

Estimated cost for eight (8) stations at $200K per station = $1,600,000 or $400,000/yr over 4 years.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Meter Installation

PROJECT#

409178

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

Estimated new meter purchases for both residential and commercial applications. Purchase of repair and replacement equipment for meter register components. Meter testing results indicate the existing aged meters sampled were within acceptable tolerance ranges for accuracy. Future year testing will be performed from time to time to determine frequency of necessary meter replacement activities. Estimated Commercial Meter Needs: 3/4" (100 ea.), 1" (25 ea.), 1-1/2" - 2" (25 ea.), 3" (5 ea.), 4" & above (5 ea.). Estimated Residential Meter Needs to include irrigation meter requests: 3/4 - 1" (100 ea.).

JUSTIFICATION

New meters are required to be purchased, for installation by distribution system crew staff, for all new residential and commercial development project requests during the annual period. New commercial and residential meter requests fluctuate from year to year and staff has estimated the anticipated meter purchase needs for the upcoming year. Future year needs will be adjusted based upon rate of development indicators. Additionally, meter replacement needs are also currently funded from this budget allocation.

PROJECT COST METHODOLOGY

Recent purchase prices contained in current purchase agreement with Sunstate (Neptune) Meters.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Commercial Meters - Various Sized	60,000	60,000	60,000	60,000	60,000	300,000
Residential Meters - 3/4" & 1"	20,000	20,000	20,000	20,000	20,000	100,000
Electronic Register R/R	10,000	10,000	10,000	10,000	10,000	50,000
Total	90,000	90,000	90,000	90,000	90,000	450,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	90,000	90,000	90,000	90,000	90,000	450,000
Total	90,000	90,000	90,000	90,000	90,000	450,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Pretreatment Effluent Pump (PEP) Replacement

PROJECT#

409177

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities Division

PROJECT SCOPE

Intended rehabilitation efforts include replacement of approximately 100 low-pressure effluent pump systems per year with more durable cast iron pumps in the West Ormond low pressure sewer system. Additionally, the project includes rehabilitation of approximately 25 systems to include necessary tank and riser repairs and pump replacement. The project also includes an estimated 10 new PEPSystem installation per year for developing lots.

JUSTIFICATION

The wastewater system in a portion of West Ormond (HR/ BAT areas) utilizes a low pressure pump to pump wastewater after primary treatment from each home's pretreatment effluent tank system (PEPSystem). The original and historic replacement pumps have exhibited a relatively short life cycle ranging from 3 to 5 years. Approximately 200 units remain for installation on undeveloped lots estimated at a rate of 10 per year.

Several original low-pressure pumps, Type E-3 and Type ME-40 were made of less durable materials and were replaced over the years with a more durable pump system. The expected life of the replacement pumps, Tsurumi 4-PSHA are found to add 3 plus years of useful life than previous models used. The PEP tank rehabilitation costs include removal of accumulated solids and replacement of components found deteriorated to include: electrical junction and control box, pump and chamber, float, riser and redundant check valve.

PROJECT COST METHODOLOGY

Updated PEP System Tank, Components and Pump Quotations from existing and interested vendors

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
PEP System Rehabilitation	70,000	70,000	70,000	70,000	70,000	350,000
PEP System Tank Systems	30,000	30,000	30,000	30,000	30,000	150,000
Total	100,000	100,000	100,000	100,000	100,000	500,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water & Sewer Charges	100,000	100,000	100,000	100,000	100,000	500,000
Total	100,000	100,000	100,000	100,000	100,000	500,000

UP

CORTEN STEEL
CONTAINER
PUMP

FREQUENTLY ASKED QUESTIONS

Who Operates And Maintains the PEP System?

The City of Ormond Beach owns, operates and maintains all components of the PEP system, including the control panel, tank, pump, service line and pressure sewer. The sewer lateral from the home to the tank is actually part of the homeowner's plumbing system, and thus must be maintained by the homeowner.

What Happens If There Is A Power Failure?

If the power is off, the pump will not run. However, there is no cause for worry. The tank has a built-in safety factor that will allow continued use of the PEP system. However, it would be prudent to reduce water usage until power is restored. Please note that water usage will naturally be reduced during a power outage, since water intensive appliances such as dishwashers and washing machines will also not be operable.

Who Do I Call If There Is A Problem, Or I Need More Information?

If the red light on the control panel is lit, or if the audible alarm is sounding, please call The City of Ormond Beach at 676-3230 or 676-3220. Please also call if you would like more information. If you prefer to correspond by mail, or would like to visit our facilities, our address is 501 N. Orchard St., Ormond Beach, FL 32174.

DEPARTMENT
OF
PUBLIC WORKS

UTILITIES DIVISION

501 NORTH ORCHARD STREET
ORMOND BEACH, FLORIDA 32174
(386) 676-3230

THE PEP BOOKLET

REVIEW OF IMPORTANT INFORMATION

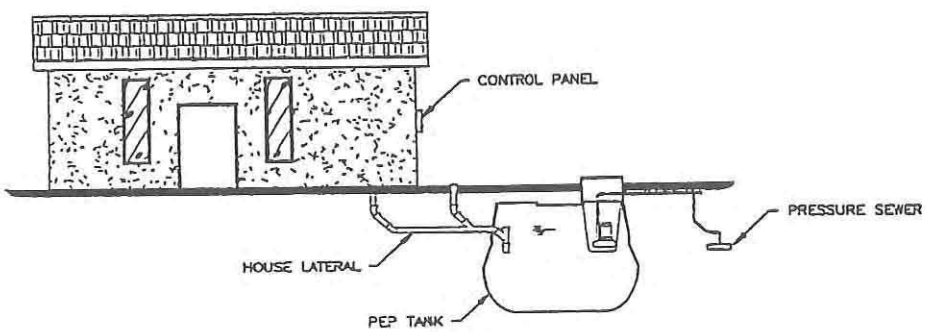
We encourage you to read the entire booklet for a sound understanding of the Pretreatment Effluent Pumping (PEP) System. However, for a quick review of important information, turn to Page 5 for a summary of "Do's and Don'ts". Also check Page 7 for answers to "Frequently Asked Questions".

Introduction

The City of Ormond Beach has prepared this information guide for homeowners who are users of the "PEP" system. PEP is an acronym for "Pretreatment Effluent Pumping." PEP is a vital part of your community's wastewater collection and treatment system. This guide will explain how the PEP system works and how it is maintained. The brochure explains how homeowners can optimize the performance of the PEP system by adhering to a few simple "Do's and Don'ts".

What Is PEP?

The Pre-treatment Effluent Pumping (PEP) system essentially consists of a sewer lateral, a tank, a pump, a service line, and a control panel (see picture below).

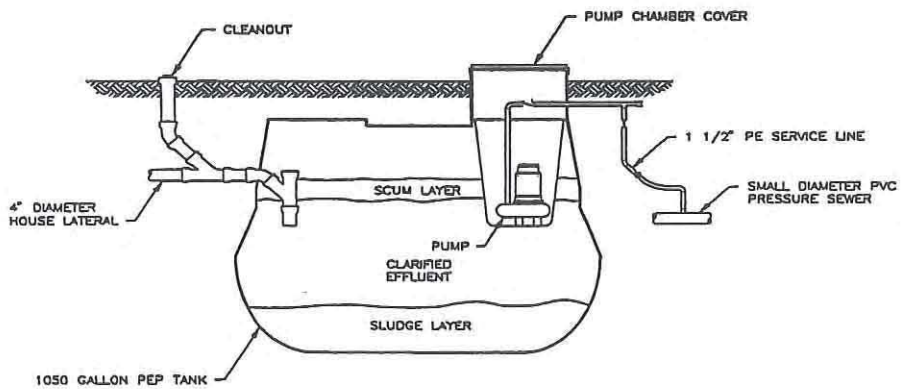


PEP SYSTEM

The system, which is located within your side yard, was installed by the developer or The City of Ormond Beach when your home was constructed. All system components are buried, with the exception of the control panel, which is mounted on the outside wall of your home. The control panel provides power to the pump and controls its operation. The system works as follows: Raw sewage flows through the sewer lateral from your home to the tank. The sewage is then treated within the tank to produce "pretreated effluent", hence giving the PEP system its name. The pretreated effluent is then pumped through the service line to a pressure sewer located alongside the street. This pressure sewer is connected to the main collection system, which consists of larger sewers and pumping stations. The main collection system conveys the pretreated effluent to a central wastewater treatment and disposal facility operated by The City of Ormond Beach.

How Does The PEP System Work?

The PEP tank is constructed of reinforced fiberglass and has a capacity of 1,050 gallons. Heavy material in the sewage falls to the bottom of the tank to form a sludge layer (see cutaway section of tank below).



DETAIL OF PEP SYSTEM

This sludge layer is constantly decomposing. Lighter material floats to the top of the tank to form a "scum layer". What is left in the middle is

the pretreated effluent that is pumped from the tank. This pretreated effluent is identical to the water that is discharged to the environment by a typical septic tank and drain field system. However, with the PEP system, the pretreated effluent is conveyed to the wastewater treatment facility for further purification.

How is the PEP System Maintained?

Your PEP system is owned, operated and maintained by The City of Ormond Beach. The City has responsibility for the control panel, tank, pump, service line and pressure sewer. In order to ensure the smooth operation of your PEP system, The City of Ormond Beach performs a visual inspection on a regularly scheduled basis. You may notice one of the service trucks at your home during the inspection process. This truck carries all of the testing equipment and spare parts necessary to make any needed repairs.

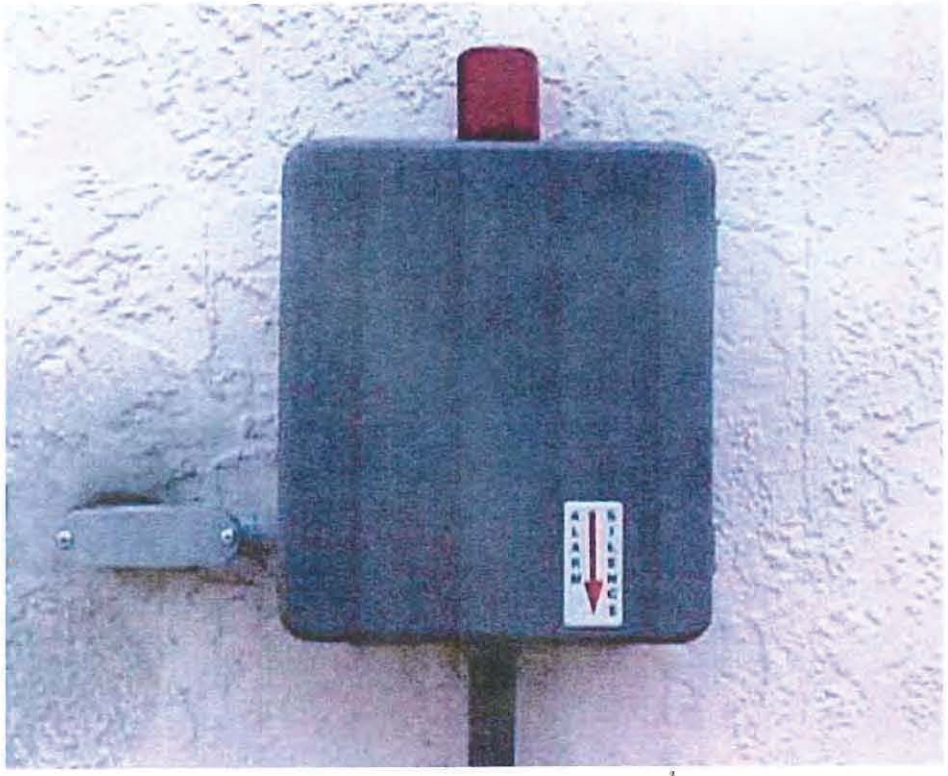
The PEP system inspection includes the following:

- Check the condition of the clean-out plug, stack, tee and 90° bend.
- Check for unusual ground settlement and sinkholes.
- Verify that the control panel is working properly, including the alarm light and alarm functions.
- Verify the isolation valve is exposed and operational.

The City maintains maintenance records for each PEP system within the City. This facilitates the long-term care of your PEP system.

Control Panel Power Supply

Although the control panel is operated and maintained by The City of Ormond Beach, the homeowner is responsible for supplying power to the panel (this is physically handled by the electrical contractor who helped build your home). The control panel must be supplied by a dedicated 115-volt, single phase, 20-amp circuit direct from the main electrical distribution panel that serves the home.



Homeowner Maintenance Responsibilities

The City of Ormond Beach operates and maintains all PEP system components except the sewer lateral (the lateral is actually part of the home plumbing system). Thus, if the sewer lateral becomes clogged, it is the homeowner's responsibility to clean the pipe. Such cleaning is normally handled by a plumber.

A "red" light is mounted on the outside of the panel (see picture). In addition, an **"audible alarm silence button"** is mounted on the front or bottom of the panel. If the red light is lit, and/or the audible alarm is sounding, then the system needs to be serviced. Please call the City of Ormond Beach at 676-3230 or 676-3220 if your notice any of the following:

Red Light Is Lit And/Or The Audible Alarm Is Sounding

This means that the water level in the tank is higher than the design level. Just press the audible alarm silence button and call The City of Ormond Beach immediately. Although the tank has some excess capacity or volume, it would be prudent to reduce water usage until the problem is corrected. Service personnel strive to be on-site within several hours; thus, there should be no undue inconvenience.

If the problem is associated with the main PEP system (panel, tank, pump, service line or pressure sewer), then the utility will correct the problem immediately. However, if the problem is caused by a clogged sewer lateral, then the homeowner will be advised to call a plumber.

Do's and Don'ts

As a homeowner served by the PEP system, there are a few things that you should not do. The PEP system, like all other public wastewater collection systems, is designed to handle normal domestic sewage. It is not a solid waste receptacle. Please do not dispose of any of the following items into your house drains:

1. Plastic of any kind
2. Sanitary napkins and other feminine hygiene materials
3. Cigarette butts (the filters will not decompose)
4. Contraceptives
5. Excessive grease
6. Coffee Grounds and other inorganic materials

Homeowners must also be aware of the location of their PEP system. Buried system components are typically located within a 7.5-foot wide easement along one side of your lot. Please do not conduct any of the following activities within the vicinity of your PEP system. These activities may result in damage to the PEP tank or piping.

Prohibited Activities Around PEP System

1. Digging.
2. Driving heavy vehicles such as cars or trucks.
3. Planting trees, shrubs, etc., that may have a deep root system

PEPSYSTEM

TSUPPLI PUMPS #405

alphagenerai

City of Ormond Beach
501 North Orchard Street
Ormond Beach, FL 32174

February 28, 2012

1050 GALLON PEP TANK (TRAFFIC RATED) ASSEMBLED W/4" INLET, SIMPLEX CONTROL PANEL, HIGH WATER ALARM FLOAT, 16" PUMP CHAMBER INSERT, TWO MANWAY LIDS, ELECTRICAL JUNCTION BOX.

$2,030.50 each

ITEMIZED REPLACEMENT / REPAIR PARTS

1050 GALLON PEP TANK	$ 1,393.20
MANWAY LID	45.00
16" PUMP CHAMBER	204.00
ELECTRICAL JUNCTION BOX	50.00
1 ½" ADAPT-A-FLEX	6.50
4" ADAPT-A-FLEX	10.50
INLET TEE	25.00
SIMPLEX CONTROL PANEL	302.00
HIGH LEVEL ALARM FLOAT	35.00
6" TOWER EXTENSION (OLD STYLE)	31.00
12" TOWER EXTENSION (OLD STYLE)	62.00
18" TOWER EXTENSION (OLD STYLE)	93.00
24" TOWER EXTENSION (OLD STYLE)	124.00
6" TOWER EXTENSION (NEW STYLE FLANGED)	60.00
12" TOWER EXTENSION (NEW STYLE FLANGED)	117.00
18" TOWER EXTENSION (NEW STYLE FLANGED)	163.00
24" TOWER EXTENSION (NEW STYLE FLANGED)	210.00

Thanks and have a GREAT day.

Total 809..

Bob Rapp

P.O. BOX 3331 - SEBRING, FLORIDA 33871-3331
(863) 382-1544 - (863) 382-0567 Fax - (800) 628-3327
www.alphagenerai.com - bob@alphagenerai.com

PUPSYSTEM

GORMAN DAYTONA
440 3RD ST
HOLLY HILL FL 32117-4365
386-253-3633 Fax 386-238-1215

Quotation

QUOTE DATE	QUOTE NUMBER
03/30/12	S008243405

QUOTED BY:
GORMAN DAYTONA
440 3RD ST
HOLLY HILL FL 32117-4365
386-253-3633 Fax 386-238-1215

PAGE NO: 1 of 1

Printed : 11:34:47 30 MAR 2012

QUOTE TO:
CASH SALES DAYTONA/WELL
440 THIRD STREET
HOLLY HILL, FL 32117

SHIP TO:
CASH SALES DAYTONA/WELL
CITY OF ORMAND BEACH
ORMOND BEACH, FL ORMOND BEA

QUOTED FOR	CUSTOMER PURCHASE ORDER NUMBER	CUSTOMER RELEASE NUMBER	SALESPERSON
JAMES DAVIS	STEP SYSTEM		House

BUYER	SHIP VIA	TERMS	EXPIRATION DATE	FREIGHT ALLOWED
Randy Smith	OT OUR TRUCK	CASH	05/14/12	No

QUOTE QTY	OUR PART#	DESCRIPTION	NET PRC	EXT PRC
1ea	294843	INF IM1060P/2 1060GAL DBL COMP SEPTIC TANK C4 ***SINGLE COMPARTMENT TANK***	733.333	733.33
1ea	300409	POL PL-STEP49 STEP SYST CMPLT	1060.000	1060.00
1ea	269136	INF TWRIS-2406 24X6 GREEN RISER	30.554	30.55
1ea	269138	INF TWRIS-2412 24X12 GREEN RISER	52.277	52.28
1ea	269140	INF TWRIS-2418 24X18 GREEN RISER	62.954	62.95
		TAXES NOT INCLUDED		

Pumps only $300

Prices subject to change without notice. Orders for special material accepted with the distinct understanding that they are not subject to cancellation. Not responsible for delays by reason of strikes, accidents or causes beyond our control. We do not assume responsibility for quantities or descriptions. Prices contained in this quotation are subject to price in effect at time of shipment. Prices are also subject to typographical and clerical errors. Items quoted and quantities listed are our interpretation of material needed and should be checked against the plans and specifications. After expiration of this quotation, we reserve the right to review our prices before acceptance of any orders. We thank you for this opportunity of quoting.

Subtotal	1939.11
Bid Total	1939.11

CAPITAL PROJECT DETAIL

PROJECT TITLE

Sanitary Sewer Inflow Infiltration

PROJECT#

409179

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

The updated Utility Master Plan recommends that a City-wide Sanitary Sewer investigation and repair project be undertaken to address Infiltration and inflow that is occurring. The project would include a video inspection of the City Sewer system and subsequent lining of identified deficient pipe.

JUSTIFICATION

Inflow and infiltration can result in surcharging of sewer lines, hydraulic overload of the pump stations and inadequate treatment at the plant because of the increased hydraulic loading. In economic terms, the effects of inflow and infiltration result in the City incurring additional costs to collect, pump, treat and dispose of surface water and groundwater that are flowing into the system. Furthermore, I/I reductions can extend the capacity life of the facility by reducing unnecessary groundwater and surface water flows to the collection system.

A significant portion of gravity sewer pipeline consists of old clay pipe with joints every five (5) feet. Consequently, these pipelines need to be assessed periodically to determine whether infiltration is occurring as a result of needed repairs. Many of the older system sanitary manholes are constructed of brick and have a higher likelihood of leakage compared to newer precast concrete manholes meeting current standards. Re-lining the old brick manholes with corrosive resistant material has been found effective to reduce inflow and infiltration and prolong manhole life. Force mains provide the corridors for pumped sewerage received by the City's collection system.

PROJECT COST METHODOLOGY

Updated Master Plan. Actual pipeline repair costs will be determined once gravity sewer pipeline investigation work is completed.

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Investigation and Repairs	250,000	250,000	250,000	250,000	250,000	1,250,000
Total	250,000	250,000	250,000	250,000	250,000	1,250,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	250,000	250,000	250,000	250,000	250,000	1,250,000
Total	250,000	250,000	250,000	250,000	250,000	1,250,000

WW-2, Group 1 Gravity Sewer Rehabilitation Projects (Short Term < 5 years)

Section 4.5 detailed inflow/infiltration (I/I) challenges faced by the City. The City completed recent lining of the worst I/I areas; however, a recent system evaluation has not been completed. This project would need a condition assessment of the entire wastewater gravity collection system by televising and grading deficiencies by a certified contractor. The condition assessment will allow the City to prioritize deficiencies within the collection system that contribute to I/I. Future repair, lining, and rehabilitation work will be prioritized based on these findings. A budgetary cost estimate to perform this 'system wide' evaluation is $250,000/year over a 3 year period for a total expenditure of $750,000. This evaluation should be completed within the next 5 years. While the extent of rehabilitation work is unknown at this time, a budgetary estimate of $3,000,000 over the next five (5) years is recommended.

Estimated cost five (5) year cost = $3,750,000

WW-3, US-1 Force Main (Airport Road to Ormond Crossings and Plantation Oaks by Developers) (Short Term < 5 years)

Phase I of Ormond Crossings is under review and scheduled for construction in 2015 or 2016. A 12" force main from Ormond Crossings to Airport Road will be required to provide sewer service for the development. Plantation Oaks anticipated that the developers will bear this cost.

The route is depicted on ***Figure MB-5*** in the accompanying Map Book. It parallels an existing 8" and 10" force main. Approximate pipe length is 9,000 LF.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Water Main Replacement

PROJECT#

409173

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

As part of the Utility Master Plan Upgrade, the City's water system was modeled to determine improvements needed to reinforce and increase water pressures throughout the City. The report identified these areas and made recommendations on system improvements. Replacement of substandard 2-inch diameter water mains throughout the City was identified as a priority recommendation. The majority of the 2-inch mains throughout the City are in excess of 30 years old and have outlived their service life. When feasible the mains are replaced concurrently with stormwater and road improvement projects. In addition, replacement of asbestos cement pipe will also be included within streets undergoing improvements when the asbestos cement pipe will be in conflict with proposed improvements or is identified as a maintenance problem main. The total estimated cost to replace all substandard water mains was estimated to be $11,250,000 in the 2007 Master Plan Update. At the commission's request staff has accelerated the replacement schedule to address the most significant problem areas known to staff and address the replacement recommendations within the City's Utility Master Plan.

JUSTIFICATION

Hydraulic modeling of the distribution system demonstrated that under fire flow conditions residual pressures below the minimum allowed (20 psi) were observed in certain areas throughout the City. Most of the low pressures were due to commercial fire demands of 2,000 gallons per minute. Reinforcement of the City's distribution system with construction of larger mains and improved looping will increase pressures to provide adequate fire service and system pressures during peak demand periods. The utility system contains extensive areas of 2-inch diameter water main. In certain areas of the distribution system this small diameter pipe is resulting in lower than desired distribution system pressures during peak demand. In addition, metallic 2-inch diameter pipe presents corrosion, taste, odor, and “black/red water” concerns. The current standard in the City’s Land Development Code is a minimum size of an 8-inch main for new subdivisions, which is the minimum size recommended for fire suppression.

The replacement program allows for the systematic replacement of small diameter pipe with larger diameter pipe that will achieve lower pressure losses, reduce high service pumping costs, improve fire suppression capability and enhance distribution system water quality. Furthermore, the 30 to 40 year old asbestos-cement pipe is prone to failure if disturbed by local construction activities, and is difficult to repair because it is no longer manufactured.

PROJECT COST METHODOLOGY

Costs based on average bid prices received with the 2013 and 2015 bids for the first 2 phases of 2-inch water main replacement project

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	237,000	0	180,000	0	0	417,000
Construction	0	1,575,000	0	1,200,000	0	2,775,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Water Main Replacement

PROJECT#

409173

Total	237,000	1,575,000	180,000	1,200,000	0	3,192,000

REVENUE	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**Total 2015-16 to 2019-20**
Bond Proceeds	237,000	1,575,000	180,000	1,200,000	0	3,192,000
Total	237,000	1,575,000	180,000	1,200,000	0	3,192,000

Utilities Division - Water Distribution 2" Water Main Replacement Priority List

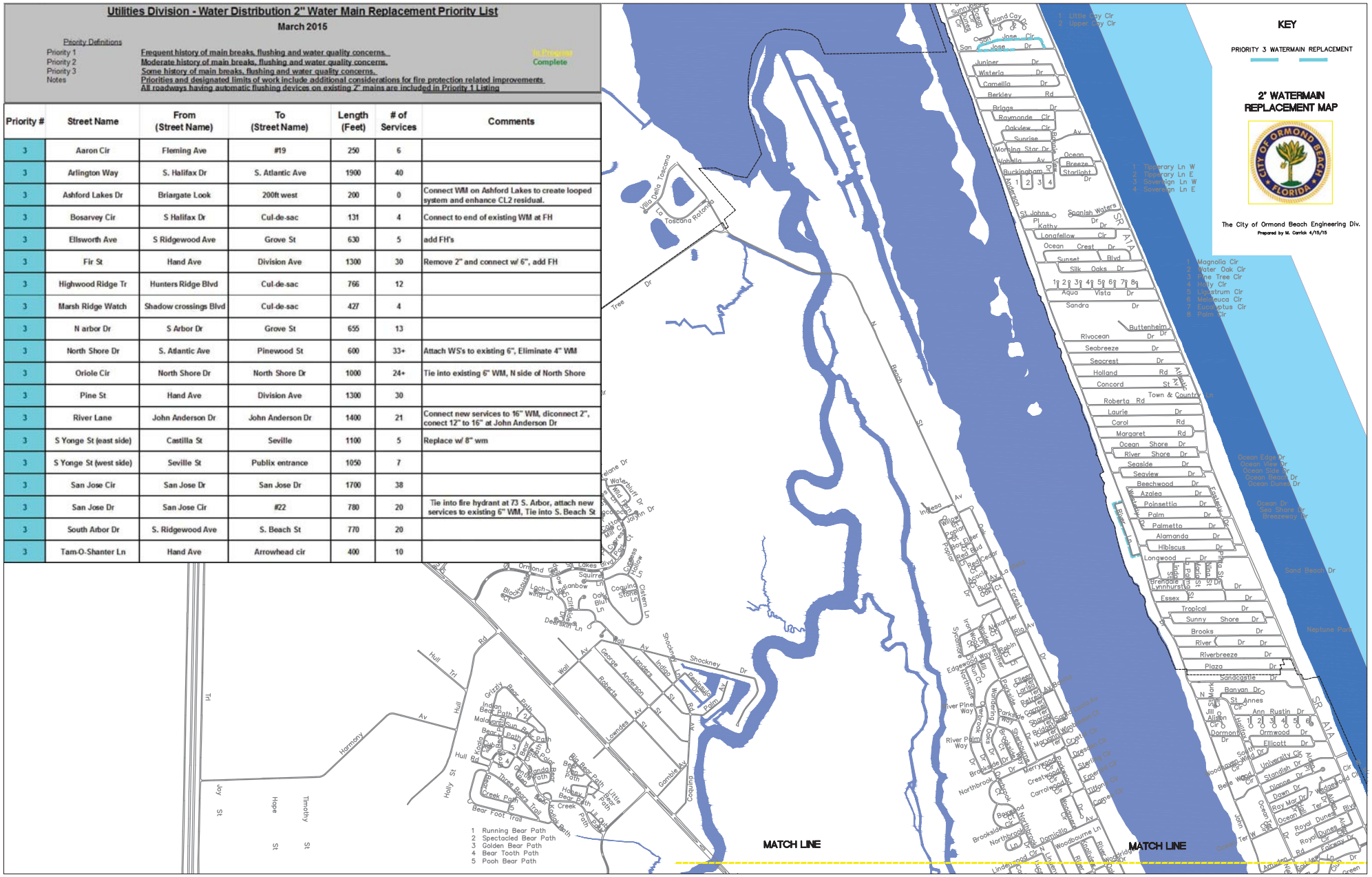
March 2015

Priority Definitions

Priority 1 — Frequent history of main breaks, flushing and water quality concerns.
Priority 2 — Moderate history of main breaks, flushing and water quality concerns.
Priority 3 — Some history of main breaks, flushing and water quality concerns.
Notes — Priorities and designated limits of work include additional considerations for fire protection related improvements
All roadways having automatic flushing devices on existing 2" mains are included in Priority 1 Listing

In Progress
Complete

Priority #	Street Name	From (Street Name)	To (Street Name)	Length (Feet)	# of Services	Comments
3	Aaron Cir	Fleming Ave	#19	250	6	
3	Arlington Way	S. Halifax Dr	S. Atlantic Ave	1900	40	
3	Ashford Lakes Dr	Briargate Look	200ft west	200	0	Connect WM on Ashford Lakes to create looped system and enhance CL2 residual.
3	Bosarvey Cir	S Halifax Dr	Cul-de-sac	131	4	Connect to end of existing WM at FH
3	Ellsworth Ave	S Ridgewood Ave	Grove St	630	5	add FH's
3	Fir St	Hand Ave	Division Ave	1300	30	Remove 2" and connect w/ 6", add FH
3	Highwood Ridge Tr	Hunters Ridge Blvd	Cul-de-sac	766	12	
3	Marsh Ridge Watch	Shadow crossings Blvd	Cul-de-sac	427	4	
3	N arbor Dr	S Arbor Dr	Grove St	655	13	
3	North Shore Dr	S. Atlantic Ave	Pinewood St	600	33+	Attach WS's to existing 6", Eliminate 4" WM
3	Oriole Cir	North Shore Dr	North Shore Dr	1000	24+	Tie into existing 6" WM, N side of North Shore
3	Pine St	Hand Ave	Division Ave	1300	30	
3	River Lane	John Anderson Dr	John Anderson Dr	1400	21	Connect new services to 16" WM, diconnect 2", conect 12" to 16" at John Anderson Dr
3	S Yonge St (east side)	Castilla St	Seville	1100	5	Replace w/ 8" wm
3	S Yonge St (west side)	Seville St	Publix entrance	1050	7	
3	San Jose Cir	San Jose Dr	San Jose Dr	1700	38	
3	San Jose Dr	San Jose Cir	#22	780	20	Tie into fire hydrant at 73 S. Arbor, attach new services to existing 6" WM, Tie into S. Beach St
3	South Arbor Dr	S. Ridgewood Ave	S. Beach St	770	20	
3	Tam-O-Shanter Ln	Hand Ave	Arrowhead cir	400	10	



Utilities Division - Water Distribution 2" Water Main Replacement Priority List

March 2015

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3	Fir St	Hand Ave	Division Ave	1300	30	Remove 2" and connect w/ 6", add FH
3	Highwood Ridge Tr	Hunters Ridge Blvd	Cul-de-sac	766	12	
3	Marsh Ridge Watch	Shadow crossings Blvd	Cul-de-sac	427	4	
3	N arbor Dr	S Arbor Dr	Grove St	655	13	
3	North Shore Dr	S. Atlantic Ave	Pinewood St	600	33+	Attach WS's to existing 6", Eliminate 4" WM
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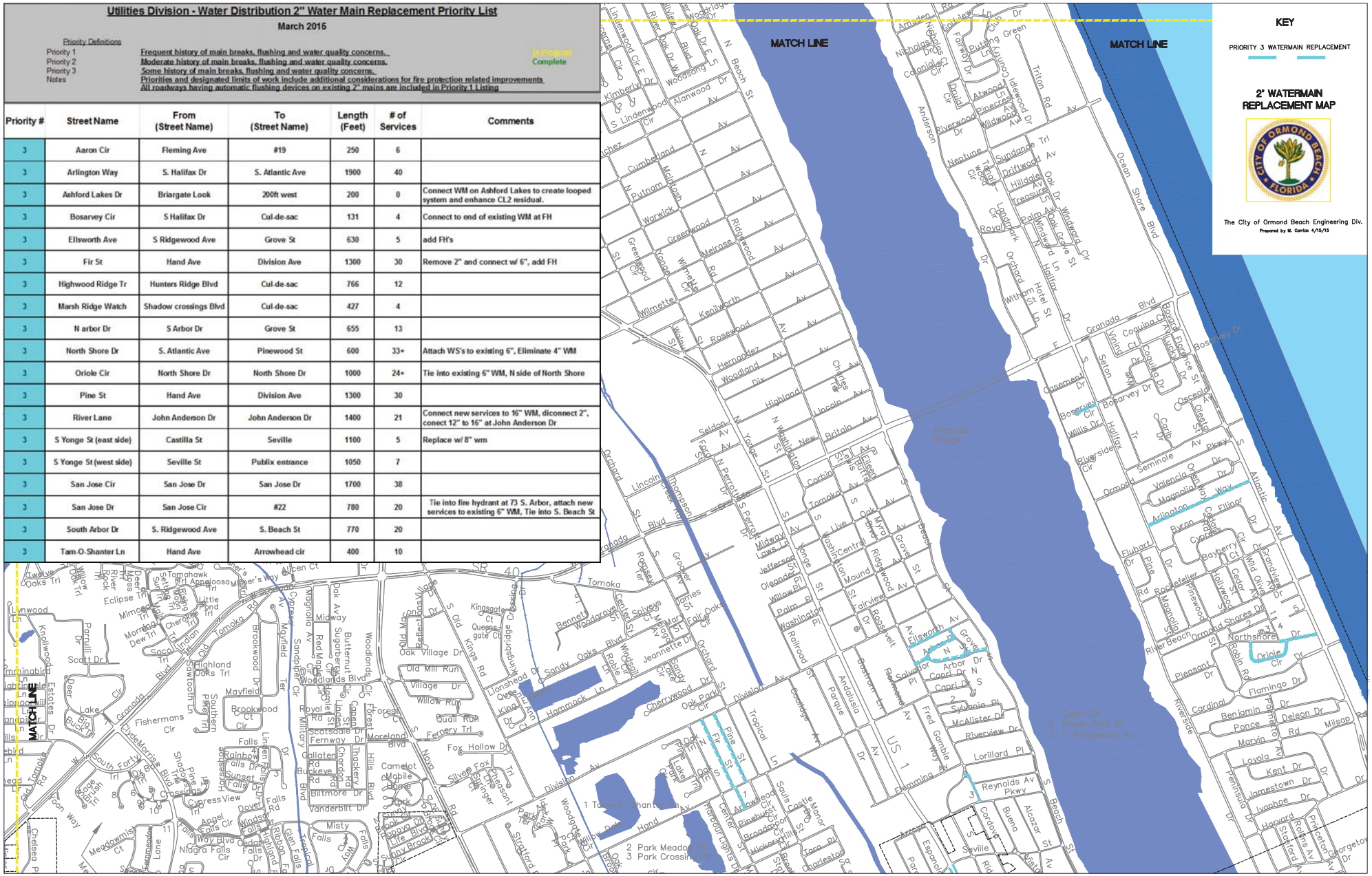

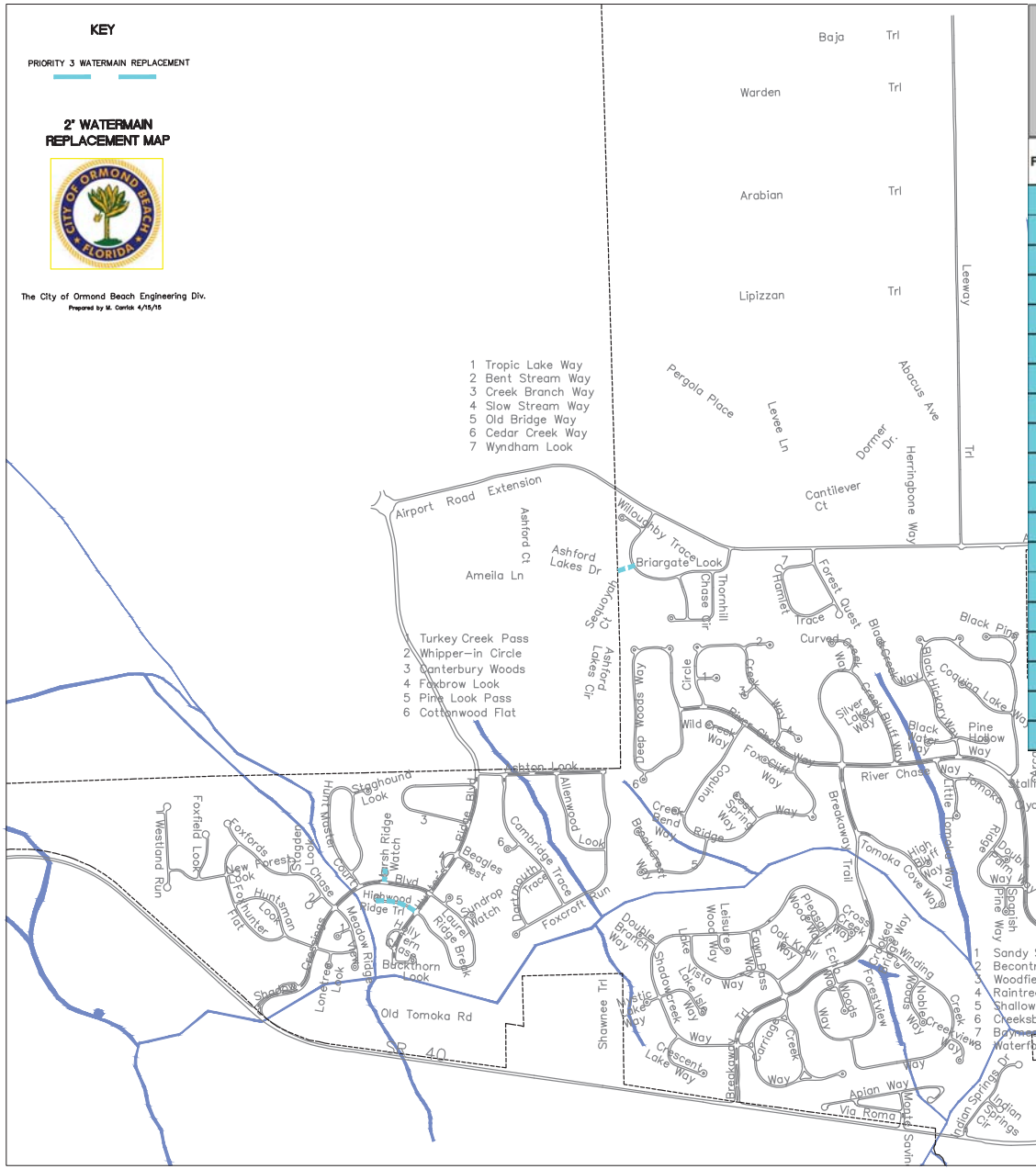

Utilities Division - Water Distribution 2" Water Main Replacement Priority List

March 2015

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	All roadways having automatic flushing devices on existing 2" mains are included in Priority 1 Listing

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3	Bosarvey Cir	S Halifax Dr	Cul-de-sac	131	4	Connect to end of existing WM at FH
3	Ellsworth Ave	S Ridgewood Ave	Grove St	630	5	add FH's
3	Fir St	Hand Ave	Division Ave	1300	30	Remove 2" and connect w/ 6", add FH
3	Highwood Ridge Tr	Hunters Ridge Blvd	Cul-de-sac	766	12	
3	Marsh Ridge Watch	Shadow crossings Blvd	Cul-de-sac	427	4	
3	N arbor Dr	S Arbor Dr	Grove St	655	13	
3	North Shore Dr	S. Atlantic Ave	Pinewood St	600	33+	Attach WS's to existing 6", Eliminate 4" WM
3	Oriole Cir	North Shore Dr	North Shore Dr	1000	24+	Tie into existing 6" WM, N side of North Shore
3	Pine St	Hand Ave	Division Ave	1300	30	
3	River Lane	John Anderson Dr	John Anderson Dr	1400	21	Connect new services to 16" WM, diconnect 2", conect 12" to 16" at John Anderson Dr
3	S Yonge St (east side)	Castilla St	Seville	1100	5	Replace w/ 8" wm
3	S Yonge St (west side)	Seville St	Publix entrance	1050	7	
3	San Jose Cir	San Jose Dr	San Jose Dr	1700	38	
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3	South Arbor Dr	S. Ridgewood Ave	S. Beach St	770	20	
3	Tam-O-Shanter Ln	Hand Ave	Arrowhead cir	400	10	

Utilities Division - Water Distribution 2" Water Main Replacement Priority List

March 2015

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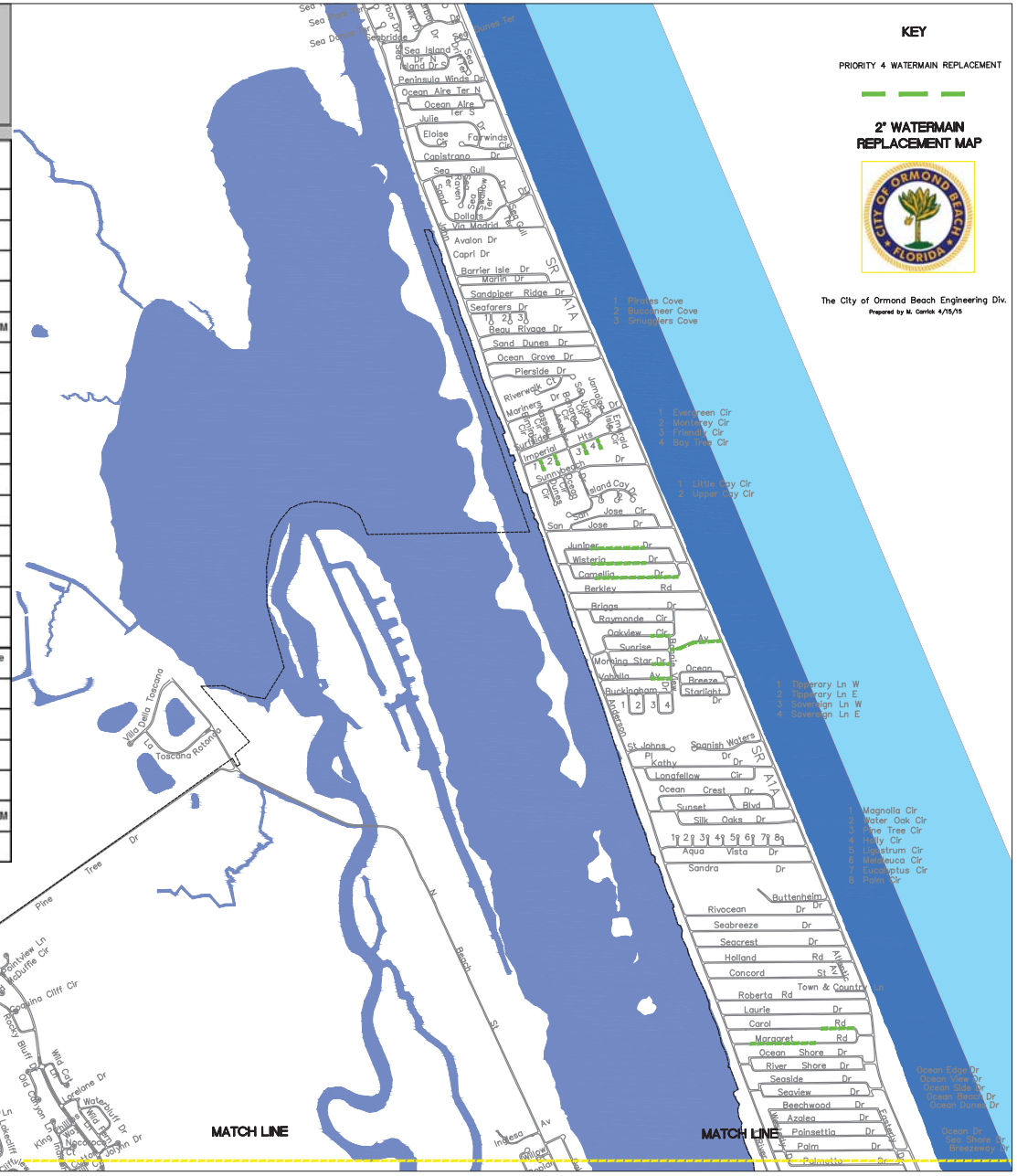
Priority #	Street Name	From (Street Name)	To (Street Name)	Length (Feet)	# of Services	Comments
4	Acacia Ct	Poplar Dr	Cul-de-sac	250	3	Add Fire Hydrants
4	Alexander Ct	Sycamore Cir	Cul-de-sac	200	5	
4	Bellewood Cir	N Halifax Dr	Cul-de-sac	417	8	
4	Camelia Dr.	#2	#40	2200	50	
4	Carol Rd	#26	#7		73	Connect WM, connect all water services to 6" WM
4	Emerald Isle Cir	Imperial Hieghts Dr	Cul-de-sac	220	5	
4	Evergreen Cir	Imperial Hieghts Dr	Cul-de-sac	300	6	
4	Friendly Cir	Imperial Hieghts Dr	Cul-de-sac	300	6	
4	Juniper Dr	#32	#14	820	20	
4	Margaret Rd	#68	#30	950	59	Connect 6" WM, Add FH's, Tie WS to 6"
4	McIntosh Rd	Wilmette Ave	Hernandez Ave	1400	30	
4	Monterey Cir	Imperial Hieghts Dr	Cul-de-sac	300	6	
4	Morning Star Dr	#25	Bonnie View Dr	1400	30	
4	Oakview Cir	#23	Bonnie View Dr	515	12	
4	Putnam Ave	N. Beach St	Deadend, west of Andrews	3300	70	Add fire hydrants
4	S Washington St	Tomoka Ave	Central Ave	1020	20	Eliminate the 2" WM and tie new services to the 6" across the street
4	S. Washington St	Division Ave	Fairview Ave		8	Connect to existing 6" at #2 San Jose Cir
4	Sunny Shore Dr.	#55	JAD	590	68	
4	Sunrise Dr	Bonnie View Dr	Ocean Shore Blvd	865	15	add FH's
4	Valhalla Ave	#27	Bonnie View Dr	400	8	
4	Wilmette Cir	Wilmette Ave	Cul-de-sac	220	8	Connect WM, connect all water services to 6" WM
4	Wysteria Dr	#13	#31	765	18	



Utilities Division - Water Distribution 2" Water Main Replacement Priority List

March 2015

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4	Camelia Dr.	#2	#40	2200	50	
4	Carol Rd	#26	#7		73	Connect WM, connect all water services to 6" WM
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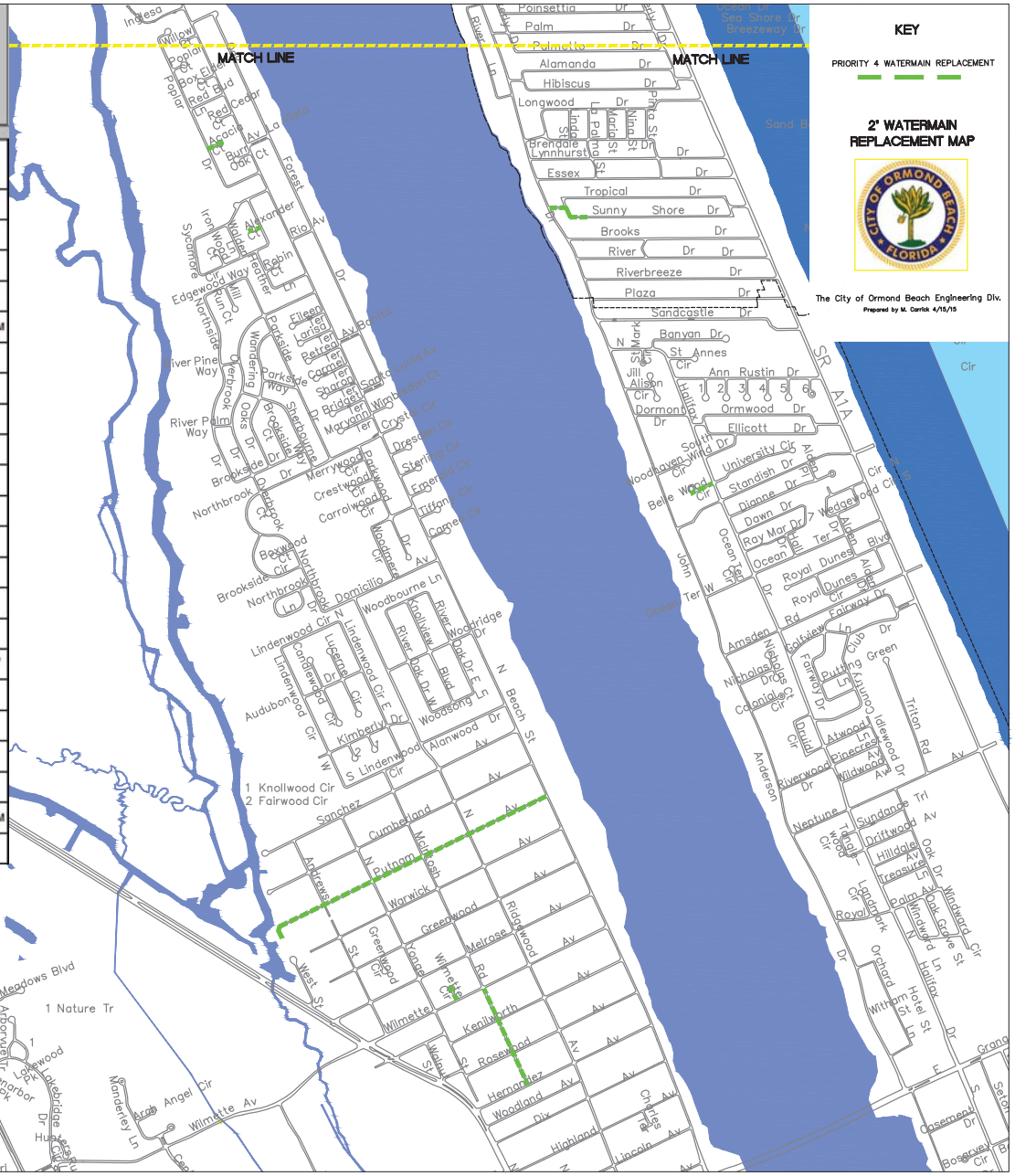


CAPITAL PROJECT DETAIL

PROJECT TITLE

Outfall Pipe Replacement

PROJECT#

409192

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Replacement of the failed effluent outfall pipe within the Halifax River

JUSTIFICATION

The existing effluent outfall pipe is in poor condition and broken in several locations resulting in inadequate diffusion. FDEP has observed the boils caused by the damaged outfall pipe and has requested the City repair or replace the pipe. Miscellaneous piping reconfiguration and valve replacement for nearby reuse and force main piping systems to be included with scope of outfall repairs as found necessary.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, and Inspection	90,000	0	0	0	0	90,000
Construction	0	600,000	0	0	0	600,000
Total	90,000	600,000	0	0	0	690,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	90,000	600,000	0	0	0	690,000
Total	90,000	600,000	0	0	0	690,000

7.3 WWTP Upgrades and Improvements

This section details treatment plant improvements that are necessary, independent of the capacity expansion alternatives, based upon a site survey. Improvements are broken down into categories on the basis of their function and relative location in the process.

WWT-1 Outfall Pipe Replacement (Short Term < 5 years)

The existing outfall is in poor condition and requires replacement of all subaqueous portions. In order to maintain treatment plant operations, the outfall must remain in service during construction; therefore, replacement is recommended in lieu of sliplining. the outfall discharge is approximately 1,000 ' from shore. Conventional sub-aqueous excavation and installation of 30" fusible PVC or HDPE is recommended.

Table 7.3-1
Project WWT-1
(Short Term < 5 years)
Outfall Pipe Replacement

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Install 30" HDPE Subaqueous Pipe	1000	LF	$400	$400,000
2	Construct Outfall Diffuser	1	LS	$100,000	$100,000
3	Tie-Ins, Valves and Fittings	1	LS	$100,000	$100,000
	Total Estimated Construction				*$600,000*
	Contingency @ 20%				$120,000
	Eng., C.A., & Inspection @ 15%				$90,000
	TOTAL ESTIMATED PROJECT COST				**$810,000**

CAPITAL PROJECT DETAIL

PROJECT TITLE

MLS Comminutor

PROJECT#

409190

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of 2 comminutor assemblies at the master influent structure to reduce clogging that occurs at the influent pump station

JUSTIFICATION

The changing dynamics of wastewater has resulted in an increase in the number of "disposable" towels entering the waste stream these towels have the propensity to combine into what are termed "rags" that have the ability to clog pump impellers resulting in timely and costly maintenance of pumps. Comminutors are device that shred the rags ahead of the pumps and thus prevent the clogging that occurs.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

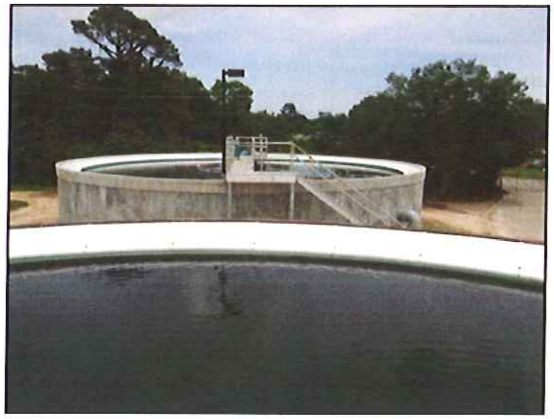
EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	21,600	0	0	0	0	21,600
Construction	0	144,000	0	0	0	144,000
Total	21,600	144,000	0	0	0	165,600

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	21,600	144,000	0	0	0	165,600
Total	21,600	144,000	0	0	0	165,600

WWT-2, Clarifier Weir Covers & MLS #1 Comminutor (Short Term < 5 years)

The WWTP has (4) 80' diameter clarifiers. They are conservatively sized at 398 GPD/SF for 8.0 MGD ADF conditions. It is conservative to increase the design loading rate to 498 GPD/SF for 10.0 MGD ADF conditions. Therefore, the existing clarifiers are adequate to support a capacity increase.

The only change proposed for the existing clarifiers is the installation of clarifier covers. The covers, pictured below, are installed around the perimeter of the clarifier and completely cover the weirs and baffles. The covers eliminate sunlight and therefore eliminate algae and the need to clean the weirs. Cleaning the weirs is probably one of the most maintenance intensive jobs at the WWTP and it provides absolutely no process enhancement. It is strictly a laborious task which must be performed constantly. The weir covers will completely eliminate the need to perform this task and increase the availability of staff by approximately 8 – 16 hours per week to perform other duties.



The weir covers are another fairly inexpensive project that could be constructed at any time. It is the recommendation of staff to expedite this project. A cost estimate is detailed below. The addition of two (2) comminutors assemblies at MLS #1 is also recommended at this time to reduce pump clogging issues.

Table 7.3-2
Project WWT-2
(Short Term < 5 years)
Clarifier Weir Covers & MLS #1Communitor

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Clarifier Weir Covers	4	EA	$60,000	$240,000
2	Comminutor Assemblies	2	EA	$60,000	$120,000
	Total Estimated Construction				*$360,000*
	Contingency @ 20%				$72,000
	Eng., C.A., & Inspection @ 15%				$54,000
	TOTAL ESTIMATED PROJECT COST				**$486,000**

WWT-3. Sludge Digester Improvements (Short Term < 5 years)

Aerated Sludge Holding (Digesters)

The existing aerated sludge holding tanks are utilized to temporarily hold waste sludge prior to dewatering and disposal. The City is not digesting to achieve Class B or other. In fact, excessive sludge holding times are detrimental to the biological nutrient removal (BNR) process. All of the phosphorous removed in the BNR process is stored in the waste sludge. Excessive sludge holding times contributes to cell destruction in the holding tanks and subsequent release of phosphorous back to the head of the plant.

It is important to maintain good aeration, and to have sufficient storage volume to allow effective control of solids inventory; however, additional volume is not necessary. The biggest problem with the current system are the blowers and diffusers. They are old and have reached the end of their useful life. New technology is available which provides better mixing and aeration, with far less horsepower. Similar to the Invent mixers proposed for installation in the Fermentation and Anoxic basins, the hyperbolic mixing/aeration system combines the mixers with a circular diffuser ring which is installed under the mixer. The air

CAPITAL PROJECT DETAIL

PROJECT TITLE

Rima Ridge Auxiliary Power Generator

PROJECT#

409194

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Public Works Dept. - Utilites Division

PROJECT SCOPE

Replace aged 125 KW auxiliary power generator unit located at Well 35R currently serving Wells 35R and 36R in the Rima Ridge Wellfield with a 150 KW generator having capacity, configuration and controls to operate additional Wells 37R and 38R during power loss independently or collectively.

JUSTIFICATION

Improve reliability of essential water supply components by upgrading existing power generator unit to expand auxiliary power to serve Wells 35R, 36R, 37R and 38R in the Rima Ridge Wellfield.

PROJECT COST METHODOLOGY

Consultant Provided Cost Estimate

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Purchase Generator Set	120,000	0	0	0	0	120,000
Construction Bldg Elec/ Mech Sys & Install	68,000	0	0	0	0	68,000
Engineering Services	12,000	0	0	0	0	12,000
Total	200,000	0	0	0	0	200,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	200,000	0	0	0	0	200,000
Total	200,000	0	0	0	0	200,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

South Peninsula Reclaimed Water Main Expansion

PROJECT#

435040

CATEGORY

Water and Wastewater Improvements

FUND

435-Wastewater Impact Fees

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Extend Reclaimed water mains and connect existing Dry lines installed under the previous 2-inch water main replacement project.

JUSTIFICATION

The City Commission has identified serving the South Peninsula with reclaimed water to be a high priority project. Reuse of effluent reduces the City's Discharge of effluent into the Halifax River and reduces water consumption and helps to offset saltwater intrusion along the peninsula.Staff has applied for a grant from the SJRWMD and submitted a legislative funding request for this project.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, C.A., and Inspection	270,000	130,000	0	0	0	400,000
Construction	0	3,208,400	0	0	0	3,208,400
Total	270,000	3,338,400	0	0	0	3,608,400

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Wastewater Impact Fees	270,000	938,400	0	0	0	1,208,400
Bond Proceeds	0	1,200,000	0	0	0	1,200,000
SJRWMD Grant	0	1,200,000	0	0	0	1,200,000
Total	270,000	3,338,400	0	0	0	3,608,400

CAPITAL PROJECT DETAIL

PROJECT TITLE

N. Peninsula Water System Improvements

PROJECT#

409191

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Water system upgrades on the North Peninsula to address low pressures and provide adequate pressures for fire service to the area.

JUSTIFICATION

The north Peninsula water mains were installed over 50 years ago and many areas do not have adequate pressures for required fire flow service. Improvements to the system will increase pressures and provide adequate fire flow pressure throughout the system.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	70,200	0	0	0	0	70,200
Construction	0	562,000	0	0	0	562,000
Total	70,200	562,000	0	0	0	632,200

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	70,200	562,000	0	0	0	632,200
Total	70,200	562,000	0	0	0	632,200

Project W-5, North Peninsula Water System Improvements (Mid Term 5 – 10 years)

See Section 6.6 for details of improvements. The conceptual costs are in the following table.

Table 6.8-6
Project W-5
(Mid Term 5 – 10 years)
North Peninsula Water System Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total*
1	Construct 8" HDPE Directional Drill Water Main	4,000	LF	$75	$300,000
2	Provide and Install Fire Hydrant Assembly	8	EA	$3,000	$24,000
3	Valves and Fittings	1	LS	$120,000	$120,000
4	Service Laterals	40	EA	$600	$24,000
	Total Estimated Construction				*$468,000*
	Contingency @ 20%				$93,600
	Eng., C.A., & Inspection @ 15%				$70,200
	TOTAL ESTIMATED PROJECT COST				**$631,800**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Process and Instrumentation Control Improvements

PROJECT#

409193

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Utilities

PROJECT SCOPE

Supervisory Control and Data Acquisition (SCADA) System Upgrades and Platform Standardization

JUSTIFICATION

The City Utilities Division currently operates the water and wastewater treatment plants with a SCADA system platform comprised of different versions of Intollution (IFIX) based software for monitoring plant equipment instrumentation and controls functions. The City's remote source water wells are also monitored with the water plant IFIX System. Another SCADA platform, Open Enterprise - Emerson Process and Controls, is currently utilized for monitoring approximately eighty (80) remote lift stations throughout the City's wastewater collection system. The software platforms for each of these systems are also several revisions old with no support contracts in place with either system vendor. These systems were originally procured over several years and in conjunction with several different projects and subcontracted SCADA system integration services providers. Upon staff realization of the difficulties and costs for maintenance and periodic trouble shooting of these varying systems, the Water and Wastewater Master Plan update included performance of a needs assessment and review of the overall system for development of a standardized system for all in-plant and remote components (hardware and software) for purposes of defining a scope of work and associated costs for eventual implementation. Needs also identified include new updated server configurations compatible with current Microsoft support platforms and consistent with other City standard server devices for placement in controlled and secure environments for security and reliability considerations. The goal of this project is to develop one SCADA system platform for operating all water and wastewater in-plant and remote well, lift station and reuse storage and pumping systems configured appropriately for redundancy and reliability. The scope of work for eventual integration will be structured to include pricing proposals for onsite/ offsite integration services and software license support for a multi-year period. Also to be developed with the scope of work will be standards for in-plant and remote system controls components and programs, nomenclature and numerization for labeling and identifying facilities/ components/ locations as well as including operator defined trending and reporting standards. It is intended that eventual annual software support activities and costs for selected SCADA software will be identified in the eventual software proposal and will be included in subsequent year operations budgets.

PROJECT COST METHODOLOGY

Master Plan Update - Specialty Consultant Defined Price Estimates

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Implementation Services	200,000	300,000	200,000	0	0	700,000
Hardware/ Software Procurement	200,000	0	0	0	0	200,000
Engineering Services (HW Arch / SW RFP-Integ)	150,000	0	0	0	0	150,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Process and Instrumentation Control Improvements

PROJECT#

409193

Total	550,000	300,000	200,000	0	0	1,050,000

REVENUE	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**Total 2015-16 to 2019-20**
Bond Proceeds	550,000	300,000	200,000	0	0	1,050,000
Total	550,000	300,000	200,000	0	0	1,050,000

City of Ormond Beach, FL

SCADA Assessment and Plan

Prepared for Quentin L Hampton Associates

1.0) Executive Summary

The City of Ormond Beach has a modern, complex Water/Wastewater Supervisory, Control and Data Acquisition (SCADA) system, which has grown project by project, without a defined, overall direction or set of standards. The purpose of this document is to outline a series of steps to create an overall direction and set of standards for the City moving forward, enhancing security, operability, maintenance and overall value for the City.

2.0) History

The City of Ormond Beach has performed multiple capital improvement projects over the last ten years, many of which have included a SCADA component. Each project has been performed based upon a loose hardware/software standard by the City, primarily only specifying the manufacturers of the portions of the hardware and software. Beyond that, how the systems were programmed and installed was primarily up to the individual engineering firm and individual integrators. This has created a mix of hardware and software platforms, as well as varying communications strategies. Additionally, the City has taken the first step towards a unified SCADA system by creating a Wide Area Network, connecting the Water (WTP) and Wastewater (WWTP) plants with a high speed connection.

3.0) Existing System

3.1) Wastewater Treatment Plant

3.1.a) Network

The WWTP consists of an Ethernet based Local Area Network (LAN), mixed over copper and fiber. This system connects Programmable Logic Controllers (PLC), variable speed drives (VFD), servers and workstations to form a single LAN. This LAN is not well documented in one location, and understanding it, and thus troubleshooting it, is difficult. Appendix A has the currently best available documentation of the system. The LAN Switch infrastructure consists of a combination of Hirschmann and Garrettcom switches in the panels, and a Garrettcom switch in the server rack. The current network is not well documented, and appears to be a star configuration. Remote communications to the liftstations are via licensed frequency radio, with some radio communications issues in some of the outlying stations. Wide Area Network (WAN) connection is in the Janitor's closet (shown to the left) and connects the plant to the City network, and through that network to the WTP.

This connection is important as the radio data is run over the WAN, and information from the various lift stations is transmitted back to the WTP for service area pressure monitoring. The connection to the City network does not appear to be well documented or maintained.

To the left is a typical network connection in the drives located on the treatment structure. Please note that the whole system is hanging by the power wires, the DIN rail that the equipment is mounted to is not fastened to anything.

3.1.b) Programmable Logic Controllers

The PLCs are a mix of Emerson ControlWave, Allen-Bradley SLC, and Modicon Momentum PLCs. The Allen-Bradley and Modicon PLCs are for the travelling bridge filter and the switchgear, and are not currently connected to the network. The Controlwave PLCs are located in four locations, PLC 1, 2, 3 & 4, and provide primary plant control and all data acquisition for the WWTP. All four of the primary control PLC panels have UPSs internal to the panels. Documentation for the panels seems to be acceptable, but hard to access.

3.1.c) SCADA Operator Interface

The SCADA Operator Interface Software is from two different manufacturers. The Lift Station SCADA software is Emerson Open Enterprise software. This is a standalone system, and does not connect to the Plant SCADA system. There are two computers running this software, a server and a workstation.

Software on these computers is as follows:

Computer Name: **obswwsa (Liftstation Server)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Pentium D 3.2 GHz
Memory –	4GB RAM
Mfg –	Dell Power Edge 840, Service Tag FY8FZD1
SCADA Software –	OpenEnterprise Version 8.02.140.18
	Open BSI 5.7 SP1
	ControlWave Designer License
	Network Edition License
	Win911 Version 7.15.00.00

Computer Name: **(Liftstation View)**

OS –	Windows XP Service Pack 3
Processor –	Intel E6400, 2.13, 2M Core Duo
Memory –	1GB RAM
Mfg –	Dell Optiplex 745, Service Tag 18QQWC1
SCADA Software –	OpenEnterprise Version license lost, no further information

The current Lift Station system allows for monitoring, with no control. The operations staff has to currently reboot the computer frequently to establish communications and login. There is also no historian software, so storage and retrieval of data will be difficult.

The second SCADA system in the plant consists of GE Proficy iFIX in a client/server based structure. These SCADA Operator interfaces are broken up in to two classes, Operator Interface Terminals (OIT) that local to the process, and plant workstations in the control room. The OITs are Modicon Magelis Industrial Computers, running iFIX client software, so if connection to the server is lost, there is no view of the plant data. All four of these are experiencing problems, from complete failure to lost data connections.

The second class is the control room Operator Workstations. These are configured as follows:

Computer Name: **WWClient5, 6 (Operator Workstations)**

OS –	Windows XP Service Pack 3
Processor –	Intel Core 2 Duo 2.93 GHz
Memory –	3.25 GB RAM
Mfg –	Indeterminate
SCADA Software –	Proficy Historian 4.0.0.176 iFix Version 5.0 Build 6667 SyTech Inc XL Reporter Version 9.01 (only WWClient5) MSOffice 2007

Computer Name: **WWClient7 (Laptop)**

OS –	Windows 7 Home Premium SP1
Processor –	Intel Core i3-2350M 2.3 GHz
Memory –	2.0 GB RAM
Mfg –	Dell Latitude E5530 Service Tag BYGRGVI
SCADA Software –	Open BSI Version 5.8 Build 0630 Hardware Key for Licensing Proficy Historian 4.0.0.176 iFix Version 5.5 Build 8120 SyTech Inc XL Reporter Version 9.01

MSOffice 2007

These workstations are supported by a set of servers located in a rack in the control room. These servers are of indeterminate manufacture (no tags or markings), and are

covered in dust, which will shorten the life of these servers. They are running Server 2003, which is scheduled to become obsolete in approximately six months. Also, the domain controller has not been set up, so there is not a WWTP domain authentication process. The Historian Server has a missing password, and once that is resolved, the hard drives need to be backed up as they are currently full, and the historian needs to be configured for a data capture scenario that makes sense for the operations staff. Additionally, there are two UPS systems, one in use, one appears to be abandoned in place.

The servers are configured as follows:

Computer Name: **WWOB1, WWOB2 (Primary and Secondary Plant Data Server)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Xeon 2.4 GHz
Memory –	4GB RAM
Mfg –	Indeterminate
SCADA Software –	Open BSI 5.7 SP1 Patch for NetView SP Network Edition OPC Server Proficy iFix version 5.0 (Build 6667) MYTSOFT version 1.78 Proficy Historian 4.0.0.176 (same for Client Server) SDK13 4.0.0.0

Computer Name: **Ormond Beach WWTP (Domain Controller)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Xeon 2.4 GHz
Memory –	4GB RAM
Mfg –	Indeterminate

SCADA Software –	Open BSI 5.7 SP1 Patch for NetView SP Network Edition – Licensed OPC Server – Licensed Proficy iFix version 5.0 (Build 6667) MYTSOFT version 1.78 Proficy Historian 4.0.0.176 (same for Client Server) SDK13 4.0.0.0

Computer Name: **??????? (Historian Server, no password, no info)**

OS –	Server 2003 R2 Standard Service Pack 2 (Likely)
Processor –	Intel Xeon 2.4 GHz (Likely)
Memory –	4GB RAM (Likely)
Mfg –	Indeterminate
SCADA Software –	Open BSI 5.7 SP1 Patch for NetView SP (Likely) Network Edition – Licensed (Likely) OPC Server – Licensed (Likely) Proficy iFix version 5.0 (Build 6667) (Likely) MYTSOFT version 1.78 (Likely) Proficy Historian 4.0.0.176 (Likely) SDK13 4.0.0.0 (Likely)

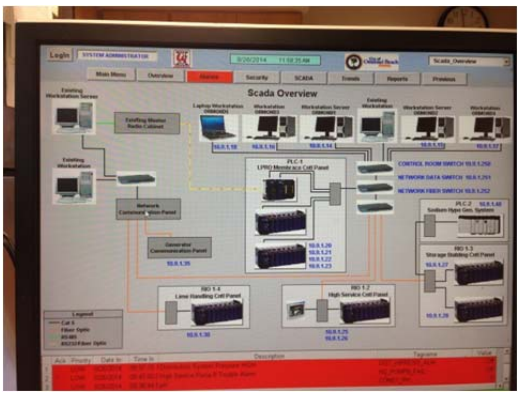
Rack Network Switch -	Garrettcom Magnum 6K32F managed switch
Rack KVM Switch -	Belkin OmniView PR03 KVM
Rack UPS -	APC Smart-UPS 3000XL Tripp-Lite Model: BP72V28RF3U (abandoned in place)

With all of the above SCADA software, there does not appear to be any support contracts in place, and the software appears to be several revisions old, and there are different revisions on different machines.

3.2) Water Treatment Plant

3.2.a) Network

The WTP consists of an Ethernet based Local Area Network (LAN), mixed over copper and fiber. This system connects Programmable Logic Controllers (PLC), variable speed drives (VFD), servers and workstations to form a single LAN. This LAN is not well documented in one location, and understanding it, and thus troubleshooting it, will be difficult. Appendix B has the currently best available documentation of the system. There is a good depiction of a network on the local SCADA system (shown to the left) but it is obsolete. There is only one workstation, located in an office not in the control room, which is functional. The operators are using the two servers as workstations, which is not good practice. Additionally, RIO 1-2 has been changed to a PLC, and there should be some indication of which PLC controls which RIO panel. The current network appears to be a laid out in a star configuration, with a switch infrastructure consisting of a combination of Ntron, Sixnet, Blackbox, Netgear and Transition switches in the panels, and additional switches in the operations room. The LAN also connects to the City network, and documentation seemed to be non-existent, and again, this connection is important, as all of the radio data for the lift stations crosses this network. Remote communications to the distribution system and wells are via licensed frequency radio, with some communications issues in some of the outlying stations. The distribution/well and collections system master radios all reside on the WTP site. Documentation appeared to be missing for the radio panel.



3.2.b) Programmable Logic Controllers

The PLCs are a mix of Emerson ControlWave (PLC-1, RIO 1-2, 3, 4), Allen-Bradley CompactLogix (PLC-2), Allen-Bradley SLC 5/05 (Lime Building Transfer Control Panel), and Amocams PLCs (Generator Building). The Allen-Bradley and Amocams PLCs are for the hypochlorite generation and generator, and are connected to the network. The ControlWave PLCs are located in four locations, PLC 1, RIO-1-2, 3, 4 and provide primary plant control and most data acquisition for the WWTP. All of the primary control PLC panels have UPSs internal to the panels. Documentation for the panels seems to be lacking.

3.2.c) SCADA Operator Interface

The SCADA system in the plant consists of GE Proficy iFIX in a client/server based structure. These SCADA Operator interfaces are broken up in to two classes, Operator Interface Terminals (OIT) that local to the process, and plant workstations in the control room. The local OITs are an Allen-Bradley Standalone OIT at the Chlorine Generator, Lime Transfer Pumping and Centrifuge system running RSViewME and Modicon Magelis Industrial Computers running iFIX Server software for the High Service Pump System and iFIX client for the Filter System. The Magelis for the filter system has failed, and the Magelis in the High Service Pump panel is kept turned off, as when left on, it locks up the PLC.

The workstations are configured as follows:

Computer Name: **Ormond3 (Office Workstation - Non-functional)**

OS –	Windows XP Service Pack 2
Processor –	Intel Pentium D 3.00 GHz
Memory –	1.0 GB RAM
Mfg –	Dell OptiPlex GX745 Service Tag 9FV9WC1
SCADA Software –	Proficy iFix Version 4 Build 6192
	MSOffice 2003

Computer Name: **Ormond4 (Office Workstation)**

OS –	Windows XP Service Pack 2
Processor –	Intel Pentium D 3.00 GHz
Memory –	1.0 GB RAM
Mfg –	Dell OptiPlex GX745 Service Tag 6FV9WC1
SCADA Software –	Proficy iFix Version 4 Build 6192
	MSOffice 2003

Computer Name: **Ormond5 (Engineering Laptop)**

OS –	Windows XP Service Pack 2
Processor –	Intel Core 2 1.66 GHz
Memory –	1.0 GB RAM
Mfg –	Dell Latitude D820 Service Tag HF98WC1
SCADA Software –	Proficy iFix Version 4 Build 6192
	Open BSI Version 5.7 SP1
	ControlWave Designer
	Network Edition
	Object Server
	OPC Server
	ACCOL Workbench

Computer Name: **Ormond6 (High Service Pump Station)**

OS –	Windows XP Service Pack 2
Processor –	
Memory –	
Mfg –	Magelis Compact PC
SCADA Software –	Proficy iFix Version 4 Build 6192
	Open BSI Version 5.7 SP1
	ControlWave Designer
	Network Edition
	OPC Server

These workstations are supported by a pair of servers located on desks in the control room. These servers are currently being used as operator workstations, which is not standard practice for servers. The servers were also set up for redundancy, however, according to operations staff, the redundancy is not functional. The remaining computers in the control room were non-functional at the time of this survey.

The servers are configured as follows:

Computer Name: **Ormond1 (Primary Plant Data Server)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Pentium D 3.2 GHz
Memory –	2.0 GB RAM
Mfg –	Dell PowerEdge 840 Service Tag BW8HWC1
SCADA Software –	GE Industrial Gateway Server 7.51
	Open BSI Version 5.7 SP1
	CW Designer
	Network Edition
	OPC Server
	Proficy iFix Version 4 Build 6192
	Sytech XL Reporter 8.01
	Microsoft Office 2003

Computer Name: **Ormond2 (Secondary Plant Data Server)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Pentium D 3.2 GHz
Memory –	2.0 GB RAM
Mfg –	Dell PowerEdge 840 Service Tag 8W8HWC1
SCADA Software –	GE Industrial Gateway Server 7.51
	Open BSI Version 5.7 SP1
	CW Designer

Network Edition
OPC Server
Proficy iFix Version 4 Build 6192 (no HASP Key error)
Sytech XL Reporter 8.01
Microsoft Office 2003
Win911 Version 7.05.00.00 (not being used)
AB Driver Version V5.0.1159.0-U

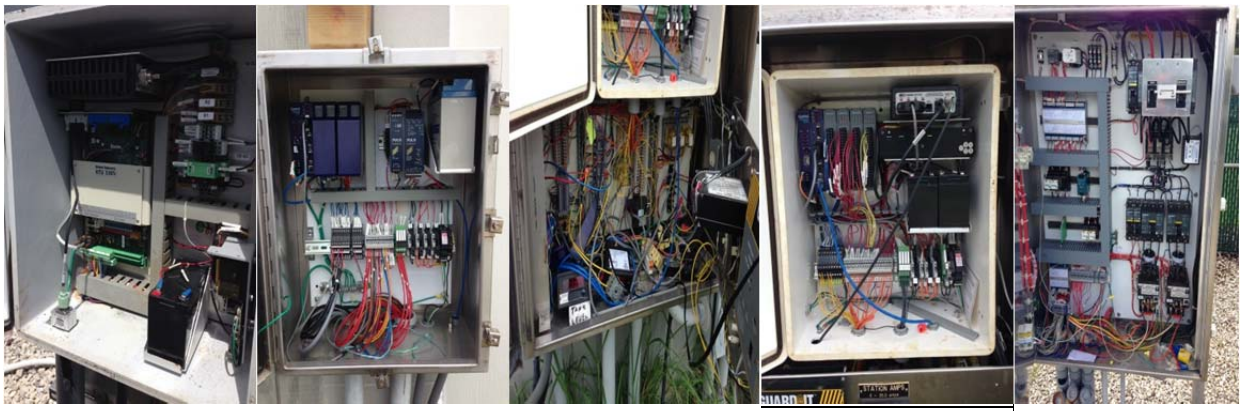
3.3) Lift Stations and Wells

3.3.a) Network

All out of plant systems are over licensed frequency radios, over MDS 9790 radios. The water system uses 958.23125 MHz, and the collection/reclaim system uses 958.50625 MHz. Master radios are located at the water plant, with the antennae mounted on top of the water tower, and radios and combiners in an enclosure at the base. The master radio system did not appear to have available documentation. These frequencies provide a relatively high volume of data transfer, but suffer in range and ability to transmit through objects such as trees and buildings. According to operations, some of the outlying stations have intermittent communications, likely due to this. The master radio for the lift stations connects over the City network to the WWTP.

3.3.b) Programmable Logic Controllers/Lift Station and Well Pump Control Panels

The current out of plant controls have Emerson ControlWave Micro RTUs, obsolete Bristol 3330 RTUs, and Flygt controllers. There is not a current standard for RTUs or pump control panels, which allows for a wide variation in assembled systems, as seen in various locations.



As we were informed that the well and lift station RTU panels are the same, only the lift station variations are shown above. The system at Breakaway Trails needs well defined plan for usage, and then a full re-design of the controls. Specifically, given the pump control panel sits right at the wet well and is being regularly destroyed by hydrogen sulfide, the panel should be relocated inside the building, and only the motor feeds run out to the wet well.

3.3.C) SCADA Operator Interface

The Lift Station SCADA software is Emerson Open Enterprise software. This is a standalone system, and does not connect to the WWTP Plant SCADA system. There are two computers running this software, a server and a workstation.

Software on these computers is as follows:

Computer Name: **obswwsa (Liftstation Server)**

OS –	Server 2003 R2 Standard Service Pack 2
Processor –	Intel Pentium D 3.2 GHz
Memory –	4GB RAM
Mfg –	Dell Power Edge 840, Service Tag FY8FZD1
SCADA Software –	OpenEnterprise Version 8.02.140.18 Open BSI 5.7 SP1 ControlWave Designer License Network Edition License Win911 Version 7.15.00.00

Computer Name: **(Liftstation View – Not used)**

OS –	Windows XP Service Pack 3
Processor –	Intel E6400, 2.13, 2M Core Duo
Memory –	1GB RAM
Mfg –	Dell Optiplex 745, Service Tag 18QQWC1
SCADA Software –	OpenEnterprise Version license lost, no further information was able to be retrieved.

The current Lift Station system allows for monitoring, with no control. The operations staff has to currently reboot the computer frequently to establish communications and login. There is also no historian software, so storage and retrieval of data will be difficult.

4.0) Planning for the Future

4.1) Wastewater Treatment Plant

4.1.a) Network

There are two critical tasks for the WWTP network.

Task #1 – Documentation for the LAN/WAN
There did not appear to be anyone that had a full and complete knowledge of the local/wide area network. Appendix A shows the network layouts available, but none of them give a true picture of the existing network. Without this documentation, troubleshooting the network becomes problematic. And, it would require re-familiarizing yourself with the network every time you have to troubleshoot or add segments.

Task #2 – Clean up the WAN location
Given the state of the network system inside the Janitor's closet, there is a real possibility that the system could be inadvertently damaged. The equipment in that room should be moved to a location suitable for IT equipment, or the room should be converted into a dedicated IT room.

Future Planning non-critical Tasks:

Task #3 – Review the network design after it is documented. Where required, redesign to remove non-standard configurations and increase compatibility, security and reliability.

Task #4 – Select a standard managed switch, and implement those switches and the management software. This will allow you to monitor the health of the network and proactively resolve any issues. It will also allow you to increase your network security, by disabling ports not in use, as well as locking a port down to a specific MAC address.

Task #5 – Migrate the network from a star configuration to a self-healing ring configuration. This will provide fault tolerance should a portion of the communications structure, fiber or copper, be destroyed.

Task #6 – Create and document an IP address standard for the plant LAN, in order to allow proper segmenting of the network, and management of traffic.

Task #7 – Deploy a proper firewall between the plant LAN and the City WAN, in order to properly secure the additional connectivity.

Task #8 – Deploy a remote access server that will allow staff to view the plant remotely. This will decrease the time and number of callouts for troubleshooting process problems.

Task #9 – Review installed network equipment for proper installation. Start with drives on treatment structure.

4.1.b) Programmable Logic Controllers

There are currently no critical tasks for the PLCs.

Future Planning non-critical Tasks:

Task #1 – Evaluate and select a standard in plant PLC platform. ControlWave is a good platform, but it has challenges. No local stocking distribution, thus requiring the City to maintain a complete spare parts stock. Package equipment suppliers will generally not furnish ControlWave with their packages, thus you will always have a mix of PLCs in your plants, requiring staff to be proficient in multiple platforms. Currently, there are three different PLCs in your plant, ControlWave, Allen-Bradley and Modicon.

Task #2 – Start to develop and deploy standard PLC code throughout your system. 80-90% of the PLC code performs the same functions on every project using different methodology. Like travelling, you can get to your destination multiple ways. Develop standard code, and require that any integrator use it. This will allow staff to be far more efficient troubleshooting and modifying the systems, if they don't have to figure out different code for every pumping system.

Task #3 – Develop a tagging standard for PLC programming. A tagging standard allows a person familiar with the system to know exactly what the tag refers to. It might look something like PLANT_PROCESS_PLCorRIO_DEVICE_NUMBER, where PLANT may be WTP or LSXX, PROCESS may be HDW or FLTR or LPRO, PLCor RIO would be the PLC or RIO number/rack/slot/point, DEVICE would be LIT or MOV, and NUMBER would be the process ID number. WWTP_HDW_P1R1S3P13_LIT_508 would be at the WWTP, headworks, PLC1/Rack1/Slot3/Point13, it's a level indicating transmitter, and the number is 508. This will allow staff to quickly look at the tag, and know exactly where they need to go to troubleshoot or modify the system.

Task #4 – Develop a preventative maintenance plan for each PLC panel. This should include at minimum a processor check for errors, UPS battery check, OIT check for

errors, network switch check, and general physical inspection. This should be performed at minimum every six months. UPS batteries should be replaced annually.

4.1.c) SCADA Operator Interface

There are six critical tasks for the WWTP SCADA Operator Interface.

Task #1 – Change passwords on all computers from the integrator password to a City developed password. Create an additional account for integrators and require they use that account to service your system so your passwords are not changed or lost. Document the passwords, and store in an area accessible to staff with the required privleges. This will provide for better security for your servers.

Task #2 – Acquire the password for the Historian. Back-up data and create room on the hard drive. Review the historian setup with the operations staff. Create a plan to revise setup to better reflect the data requirements of the plant (All the data stored as fast as possible is not a good plan, just eats hard drive space).

Task #3 – Move the server rack in to a location suitable for IT equipment, dust free and cool. This is critical to proper operation and longevity.

Task #4 – As your current MS operating systems are obsolete and out of support (Windows XP April 8, 2014) or will be in shortly (Windows Server 2003 July 14, 2015), it is critical that a planned migration be started now.

Task #5 – Should be done at the same time as task #3. It would be a good time to re-engineer your server/workstation system, to reduce your licensing costs. With the proper network connectivity, it may be possible to use only two servers, one at the WTP and one at the WWTP. This will provide the required redundancy, as well as reduce costs. Additionally, you could run only one historian system. This is only possible if the three systems (WTP, WWTP and Remotes) do not have any identical tags. This would also be the time to bring your software all up to the current revision level, and get it under contract. Be prepared to spend between 10 & 20% of the software cost per year for software support. It would also be the time to bring your lift station system in to the iFIX system, and remove that platform from your system. This will allow reduced overall software costs and reduced staff training requirements.

Task #6 – Fix the Local OITs so they are functional again, both the software configuration issues and the hardware fault issues.

Future Planning non-critical Tasks:

Task #7 – Start to develop and deploy standard HMI objects, tagging and standards throughout your system. Very similar to the PLC code and tagging standards, this will make your SCADA Operator Interface much more user friendly, easier to maintain, modify, and operate. Again, once a standard is developed, you must insist that any integrator follow it to the letter. The objects developed can also be tied directly to standard code blocks in the PLCs, so that when you add an additional piece of equipment, like a VFD or a valve, the standard PLC code is dropped in to the program, the standard graphic object is dropped on to the SCADA screen, and all of the matching tags for both are automatically created, and tied together.

Task #8 – Remote OIT terminals that are currently clients to the servers could be migrated to small standalone applications for that process area. This will allow you to continue to operate the plant if something catastrophic happens to the server based system.

Task #9 – Develop a preventative maintenance plan for each PLC panel. This should include at minimum a processor check for errors, UPS battery check, OIT check for errors, network switch check, and general physical inspection. This should be performed at minimum every six months. UPS batteries should be replaced annually.

Task #10 – Connect the travelling bridge filter and the generator PLCs to the SCADA system and display the information on dedicated screens. This will enhance the operations staff's ability to monitor, control and troubleshoot the plant equipment and process.

Task #11 – Incorporate user specific logins to track operations. This will allow supervisors to see who is struggling with operations decision making and allow additional training or mentoring to be applied.

Task #12 – Automate the monthly operations reports, deliver to the appropriate personnel via email, or hard copy. Create additional operations reports to assist staff in efficiently operating the plant. Create a daily report for plant superintendents delivered automatically.

Task #13 – Integrate a Computer Maintenance Management System in to the SCADA system, with the ability to generate work orders based upon runtimes, alarms, an operator generated event, or any other event defined.

4.2) Water Treatment Plant

4.2.a) Network

There is one critical task for the WTP network.

Task #1 – Documentation for the LAN/WAN
There did not appear to be anyone that had a full and complete knowledge of the local/wide area network. Appendix A shows the network layouts available, but none of them give a true picture of the existing network. Without this documentation, troubleshooting the network becomes problematic. And, it would require re-familiarizing yourself with the network every time you have to troubleshoot or add segments.

Future Planning non-critical Tasks:

Task #2 – Review the network design after it is documented. Where required, redesign to remove non-standard configurations and increase compatibility security and reliability.

Task #3 – Select a standard managed switch, and implement those switches and the management software. Given the quantity of different switch manufacturers in your network, there is potential for compatibility issues, especially with fiber. This will also allow you to monitor the health of the network and proactively resolve any issues. You will increase your network security, by disabling ports not in use, as well as locking a port down to a specific MAC address.

Task #4 – Migrate the network from a star configuration to a self-healing ring configuration. This will provide fault tolerance should a portion of the communications structure, fiber or copper, be destroyed.

Task #5 – Create and document an IP address standard for the plant LAN, in order to allow proper segmenting of the network, and management of traffic.

Task #6 – Deploy a proper firewall between the plant LAN and the City WAN, in order to properly secure the additional connectivity.

Task #7 – Deploy a remote access server that will allow staff to view the plant remotely. This will decrease the time and number of callouts for troubleshooting process problems.

4.2.b) Programmable Logic Controllers

There is one critical task for the WTP PLCs.

Task #1 – Evaluate and remove the Amocams PLC from the generator building. Staff is unsure if it does anything, but they are concerned about working in the area due to that unknown. Equipment should not be abandoned in place, but should be removed and all documentation changed so that staff does not have to re-investigate the equipment everything they need to perform an operation in that building.

Future Planning non-critical Tasks:

Task #2 – Evaluate and select a standard in plant PLC platform. ControlWave is a good platform, but it has challenges. No local stocking distribution, thus requiring the City to maintain a complete spare parts stock. Package equipment suppliers will generally not furnish ControlWave with their packages, thus you will always have a mix of PLCs in your plants, requiring staff to be proficient in multiple platforms. Currently you have four types of PLCs in your plant, ControlWave, Allen-Bradley (SLC and CompactLogix) and Amocams.

Task #3 – Start to develop and deploy standard PLC code throughout your system. 80-90% of the PLC code performs the same functions on every project using different methodology. Like travelling, you can get to your destination multiple ways. Develop standard code, and require that any integrator use it. This will allow staff to be far more efficient troubleshooting and modifying the systems, if they don't have to figure out different code for every pumping system.

Task #4 – Develop a tagging standard for PLC programming. A tagging standard allows a person familiar with the system to know exactly what the tag refers to. It might look something like PLANT_PROCESS_PLCorRIO_DEVICE_NUMBER, where PLANT may be WTP or LSXX, PROCESS may be HDW or FLTR or LPRO, PLCor RIO would be the PLC or RIO number/rack/slot/point, DEVICE would be LIT or MOV, and NUMBER would be the process ID number. WWTP_HDW_P1R1S3P13_LIT_508 would be at the WWTP, headworks, PLC1/Rack1/Slot3/Point13, it's a level indicating transmitter, and the number is 508. This will allow staff to quickly look at the tag, and know exactly where they need to go to troubleshoot or modify the system.

Task #5 – Develop a preventative maintenance plan for each PLC panel. This should include at minimum a processor check for errors, UPS battery check, OIT check for errors, network switch check, and general physical inspection. This should be performed at minimum every six months. UPS batteries should be replaced annually.

Task #6 – Finish the centrifuge system or remove the equipment. Abandonment in place causes problems in the future as people try to discern what is functioning and what is not. When finished, connect it to the SCADA system.

4.2.c) SCADA Operator Interface

There are six critical tasks for the WTP SCADA Operator Interface.

Task #1 – Change passwords on all computers from the integrator password to a City developed password. Create an additional account for integrators and require they use that account to service your system so your passwords are not changed or lost. Document the passwords, and store in an area accessible to staff with the required privleges. This will provide for better security for your servers.

Task #2 – Move the servers in to a location suitable for IT equipment, dust free and cool. This is critical to proper operation and longevity. The operators should not be using the servers as workstations.

Task #3 – Repair/replace the non-functional control room workstations and local OITs. There should be at least two workstations in the control room, and the unit at the High Service Pump Station should be diagnosed and repaired so that it can function without causing a failure of the High Service Pump PLC. The non-functional OIT at the filter panel should also be fixed.

Task #4 – As your current MS operating systems are obsolete and out of support (Windows XP April 8, 2014) or will be in shortly (Windows Server 2003 July 14, 2015), it is critical that a planned migration be started now.

Task #5 – Should be done at the same time as task #3. It would be a good time to re-engineer your server/workstation system, to reduce your licensing costs. With the proper network connectivity, it may be possible to use only two servers, one at the WTP and one at the WWTP. This will provide the required redundancy, as well as reduce costs. Additionally, you could run only one historian system. This is only possible if the three systems (WTP, WWTP and Remotes) do not have any identical tags. This would also be the time to bring your software all up to the current revision level, and get it under contract. Be prepared to spend between 10 & 20% of the software cost per year for software support. It would also be the time to bring your lift station system in to the iFIX system, and remove that platform from your system. This will allow reduced overall software costs and reduced staff training requirements.

Task #6 – Fix the Local OITs so they are functional again, both the software configuration issues and the hardware fault issues.

Future Planning non-critical Tasks:

Task #7 – Start to develop and deploy standard HMI objects, tagging and standards throughout your system. Very similar to the PLC code and tagging standards, this will make your SCADA Operator Interface much more user friendly, easier to maintain, modify, and operate. Again, once a standard is developed, you must insist that any integrator follow it to the letter. The objects developed can also be tied directly to standard code blocks in the PLCs, so that when you add an additional piece of equipment, like a VFD or a valve, the standard PLC code is dropped in to the program, the standard graphic object is dropped on to the SCADA screen, and all of the matching tags for both are automatically created, and tied together.

Task #8 – Remote OIT terminals that are currently clients to the servers could be migrated to small standalone applications for that process area. This will allow you to continue to operate the plant if something catastrophic happens to the server based system.

Task #9 – Develop a preventative maintenance plan for each PLC panel. This should include at minimum a processor check for errors, UPS battery check, OIT check for errors, network switch check, and general physical inspection. This should be performed at minimum every six months. UPS batteries should be replaced annually.

Task #10 – Incorporate user specific logins to track operations. This will allow supervisors to see who is struggling with operations decision making and allow additional training or mentoring to be applied.

Task #11 – Automate the monthly operations reports, deliver to the appropriate personnel via email, or hard copy. Create additional operations reports to assist staff in efficiently operating the plant. Create a daily report for plant superintendents delivered automatically.

Task #12 – Integrate a Computer Maintenance Management System in to the SCADA system, with the ability to generate work orders based upon runtimes, alarms, an operator generated event, or any other event defined.

4.3) Remote Lift Stations and Wells

4.3.a) Network

There no critical tasks for the Remote Network.

Future Planning non-critical Tasks:

Task #1 – Perform a radio survey on the outlying stations. Establish what the minimum Received Signal Strength Indication (RSSI) is, and what falls within the margins for the radio. Likely, given the history expressed by staff, some repeaters or additional master radios may be necessary. If they are, it would be best to site them around an existing City facility, so that access to the City's network is available. It is best to get your radio signals on to a hard network connection as close to the remote radios as possible. A second, more expensive option would be to evaluate a different frequency that allows a longer distance between remotes and the base station master radios.

Task #2 – Create a preventative maintenance program for the remote sites. Annually check all antenna connections, azimuths and elevations. This is important, as the RSSI will degrade significantly due to corrosion on the connections, and frequently, major storms will cause yagi antennae to rotate around their antenna pole. The RTU processor and radio should be checked for errors and RSSI, UPS should be checked, and a general physical inspection should be performed. UPS batteries should be replaced annually.

3.3.b) Programmable Logic Controllers/Lift Station and Well Pump Control Panels

There is one critical task for the Programmable Logic Controllers/Lift Station and Well Control Panels.

Task #1 – Redesign the Breakaway Trails master lift station control panel. One likely location is the building on site. This will allow for the proper environmental protection for the equipment.

Future Planning non-critical Tasks:

Task #2 – Evaluate the RTU platform in concert with your plant PLC evaluation. It is probable that the same hardware/software platform will fit both locations, reducing staff training, minimizing spare parts, and reducing troubleshooting time.

Task #3 - Develop a standard lift station control panel and RTU panel. Ensure they are designed and built to the proper UL508, and NEC standards. Publish the standard to your developers and engineers, and ensure that you review the plans prior to build for compliance. This will reduce spare parts inventory, training requirements, and maintenance time. Appendix C has a sample standard lift station package as provided by Hillsborough County for their contractors, and for retrofit of existing stations.

Task #4 – Replace obsolete and non-compliant RTU and Pump Control hardware. Specifically, the Bristol 3330 system is completely obsolete, and there still are a number of them in your system. It is better/cheaper to replace obsolete hardware in a planned event, rather than an emergency event. A planned migration of five to ten lift station or well systems per year will get the standard fully in place without creating a major budget issue.

4.3.C) SCADA Operator Interface

There is one critical task for the SCADA Operator Interface.

Task #1 – Migrate the system to your existing plant SCADA system. This will allow full integration of your system, and will easily allow operators to view not only the plant process, but have some notice as to large flow events that are going to hit the plant.

Future Planning non-critical Tasks:

Task #2 – Upgrade the signals from the lift stations to allow additional monitoring and some control at the lift stations. Monitoring of points like pump amperage draw, phase monitoring, and flow monitoring will allow some predictive maintenance prior to failure. Additionally, there is the potential to use your lift station system as an equalization basin, better regulating flow through the plant, thus improving the treatment process.

Task #3 – Incorporate the lift stations in to the historian system, giving better access to the historical data, allowing easier troubleshooting, and better decision making as to where time and money is spent to upgrade the system.

Task #4 – Incorporate user specific logins to track operations. This will allow supervisors to see who is struggling with operations decision making and allow additional training or mentoring to be applied.

Task #5 – Create automated monthly operating reports for the wells. Automatically deliver via email to the appropriate personnel.

Task #12 – Integrate a Computer Maintenance Management System in to the SCADA system, with the ability to generate work orders based upon runtimes, alarms, an operator generated event, or any other event defined.

5.0) System Wide Planning for the Future

Task #1 – Documentation for the system seems to be good in some places, not so good in others, typical of a system such as this. There should be a concentrated effort to gather all of the drawings, programs, manuals, calibration sheets and training materials, then verify that they are accurate. Items that have been confirmed accurate should be placed in a central, electronic repository that is accessible to staff based upon their permissions. All drawings should be in AutoCad, with a check out, check in procedure so that only one entity may make changes at any one time. The same holds true for PLC programs and SCADA configurations. This ensures that your documentation is current, allowing for much faster and easier retrieval by any staff authorized, and thus faster troubleshooting or system improvements. It also eliminates the repository being in single location or person, which creates a set of problems if there is an event that limits access to the location or person. This will end up being a fairly cumbersome task, if you do not already have the structure and/or the documentation in house, but it is critical to the operations and maintenance, as well as future upgrades, of your systems.

Task #2 – Mentioned through each of the plant write-ups, but it bears mentioning again, as it is a crucial step towards integrating your entire system, and that is the task of defining a standard data tag structure, standard graphics objects, and standard PLC code. This will ensure the ease of troubleshooting your existing system by anyone, as the code and objects will be standardized.

Task #3 – Verify the system provides operations with the information to make the required process decisions. The current systems were installed using a set of plans and specifications developed by differing engineering firms. These systems may or may not have the all of the information required to ensure that the operations staff has the information to operate and troubleshoot the processes, both in real time and using a historical perspective. Several operations workshops with the staff at the different plants will ensure they have the information, and if not, what additional information and features they require to efficiently perform their duties. Once it is determined what operations requires to efficiently operate the plant, then set a plan to present the existing data in the best format for operations, and add any additional data they may require for their decision making.

Task #4 – Create a continuing education training program for operations and maintenance staff. When you find personnel interested in controls, additional hardware specific maintenance training for those personnel will give you much easier path for system maintenance. There are people in every organization that like challenges and have the aptitude for the work. Find the right person, and your operations and maintenance will become much easier. The continuing education program should also include maintenance training for the equipment that feed information into, or are operated by, the SCADA system, field transmitters, analytical devices, valves, drives, etc. These require good mechanical, electrical and item specific training to efficiently maintain the support equipment. Finally, the continuing education program should include operations training to allow them to efficiently interpret the data from the SCADA system. Operations is the first line of maintenance, and with the correct training, they can interpret whether the item is a SCADA issue, or a process issue. That training will also allow them to help with predictive maintenance, as they will notice items degrading.

Task #5 – Begin the search to hire a trained, control system engineer to assist in the maintenance and modifications to the system. Continue to foster good relations with the City IT department, allowing the new control systems engineer to focus on the maintenance and improvements to the PLC and SCADA hardware and software, instead of chasing network issues.

Task #6 – Create a maintenance service contract with a quality Control Systems Integration firm that has experience with your equipment. Turn that service contract in to a partnership, and the benefits to the City will be compounded. Use them as an extension of your O&M personnel. A lot of the items in tasks #1-#4 can be handled in a stopgap measure until the City personnel come up to speed. Several samples of RFPs for this task can be found in appendix #6.

Task #7 – Review the security of the entire control system, from the switches through the LAN, WAN, Remote Access Servers, etc. Apply the City IT security standards to the control system network.

6.0) Conclusion

The City of Ormond Beach's SCADA system is currently running in a precarious fashion. On the surface, things seem to be running well, but the system is one or two critical issues from a crisis. The critical items listed herein should be addressed as soon as possible.

In moving forward, it is imperative that the City decide on which hardware and software platforms to standardize upon, reduce their current installed base to those standards, and then create a set of specifications for the consultants, requiring their use when planning capital improvement projects. The City must also create a set of software standards that any systems integrator working on the system must be required to use. Steps that should be taken immediately:

1.) Stabilize the existing system
    a. Replace all computers with current models of like IT hardware ($100,000.00) purchased by the City
    b. Replace all computer operating systems with current, supported operating systems purchased with computer by the City
    c. Update iFIX SCADA licenses to the current versions ($122,000.00 including 1 year of support) purchased by the City
        i. iFIX is available, and is an easy migration from 4.0/5.0 to 5.8 with likely some graphics clean up the only required tasks
        ii. Implement the redundancy on the updated hardware
        iii. Changing OpenBSI from 5.7 to 5.8 will likely require significant work, as they have done away with the OPC server and are now using an Object Server, keep the same.
        iv. Win911 has been totally upgraded, so there will be programming required there, but since it does not appear to be used, should not present an issue, do not upgrade.

v. SyTech XLReporter has a fairly simple upgrade procedure for versions above 7, since yours are 8 and 9, should be simple. Since you are not using them now, not sure it matters, do not upgrade.

d. Labor to perform the upgrade $36,000.00

2.) Hire a consultant to perform the following tasks:

a. Evaluate the existing communications networks, and perform a full design for the SCADA system communications system ($40,000.00), re-using the pieces that are still viable. This should include:

i. Internal and external Security
ii. Server/Workstation Hardware and Operating Systems
iii. Network Switching Hardware
iv. LAN/WAN segmentation and addressing
v. Communications media
vi. Topology (ring vs star)
vii. Equipment locations

b. Either create an RFP ($15,000.00) to evaluate SCADA software packages ($200,000.00), or stick with the an update your current SCADA software ($192,000.00 including one year support)

i. Most cost effective and shortest implementation time would be to upgrade the existing GE iFIX software to current revisions. This can be done relatively easily by updating the licenses, and programming ($48,000.00) to clean up any graphics/redundancy issues. This leverages your current system code, with very little new code and would get the stability back in to your system.

1. Two iFIX servers with redundancy
2. One 20,000 point historian with redundant collector
3. Twelve in-plant Thick Clients
4. Five Webspace Clients
5. One Win911 Enterprise
6. One Sytech XL Reporter Enterprise
7. Two OpenBSI 5.8 Licenses
8. Annual support is currently 17% of software cost or $26,706.00

ii. Longest implementation would be to completely change out your SCADA software, which would be approximately the same cost as upgrading, plus re-programming the entire system ($200,000.00)

c. Create the specifications for the following ($200,000.00):

i. System wide tagging standard for all data
ii. Standard lift station PLC program
iii. Detailed software standard for the PLC application code
iv. Detailed software standard for the SCADA software code
v. Detailed alarming standard, including classification of alarms

vi. Detailed report generation standard
vii. Any process changes required
viii. Any additional hardware that needs to be purchased
ix. Any additional work required by the City (re-wiring lift stations, etc.)

d. Create an RFP for Systems Integration firms to propose on the following work ($100,000.00):
    i. Install City procured hardware
    ii. Install City procured software
    iii. Write the standard PLC code modules
    iv. Write the standard SCADA code modules
    v. Write the standard report modules
    vi. Provide a factory demonstration test of the modules
    vii. Re-write the entire SCADA HMI code using the new modules
    viii. Re-write the PLC code using the new modules
    ix. Re-write the reports using the new modules
    x. Re-do the alarming software using the new standards
    xi. Procure any additional materials not procured by the IT department
    xii. Perform installation and documented checkout of the new system
    xiii. Perform training on the above system

3.) Hire a Systems Integration firm for the above work ($1,000,000.00-$2,000,000.00)

As the system is enhanced, staff training is going to become even more important. Maintenance of a complex system such as the City's should not be left to personnel without the appropriate training, or the results will be sub-optimal. Operations personnel cannot be left out of this equation, as in order to fully leverage your system, the staff who perform the day to day operations must technically keep up with the system, from the operations perspective.

Finally, documentation of the system is critical. As improvements and enhancements are implemented, your documentation MUST be kept current, as it is a much easier task then to go back and re-figure it out when there is a problem. Current documentation/storage appears to be inadequate for your system and the maintenance/enhance thereof. When equipment/systems are removed from service, it needs to be removed from the documentation, and physically removed from the plants.

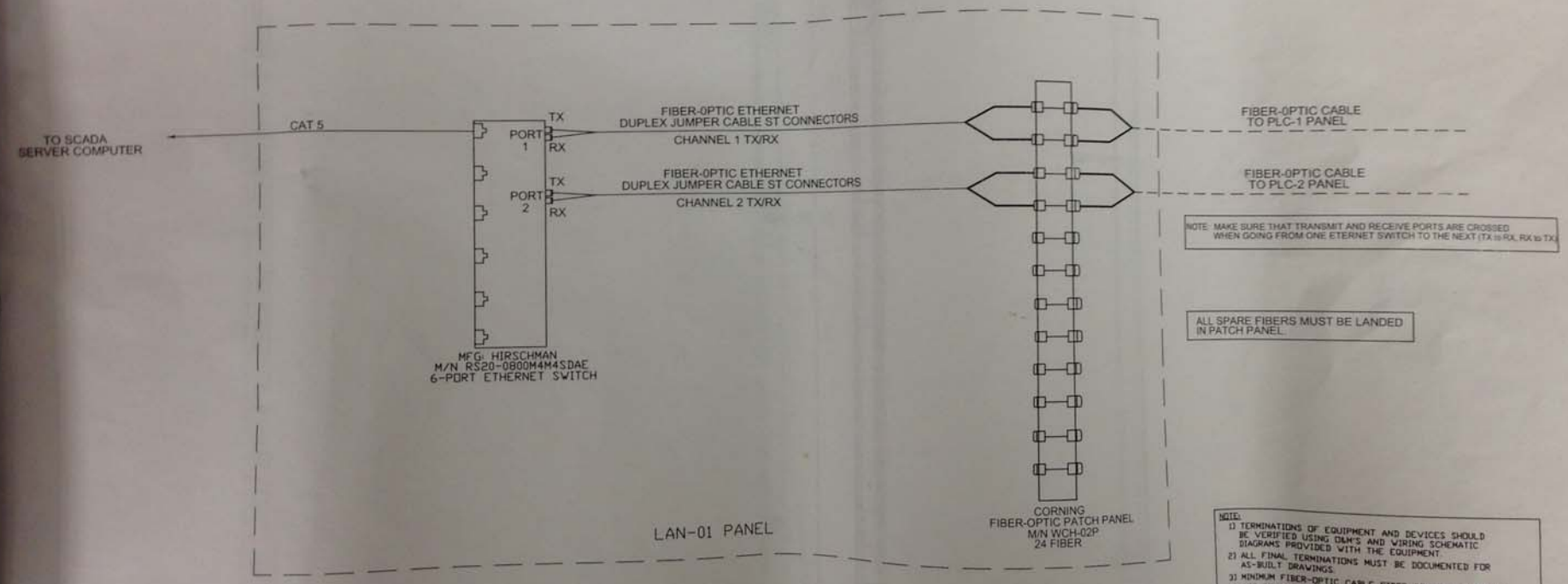
The City of Ormond Beach has the infrastructure in place for a first class SCADA system, and is within easy migration to a showpiece for the State.

Questions about this document please contact:

Revere Control Systems, Inc.
3810 Drane Field Rd #16
Lakeland, FL 33811
Sean Gucken
727.431.2011
sgucken@reverecontrol.com

EXISTING CONTROL ROOM LAN PANEL LAN-01

LAN-01 COMMUNICATIONS



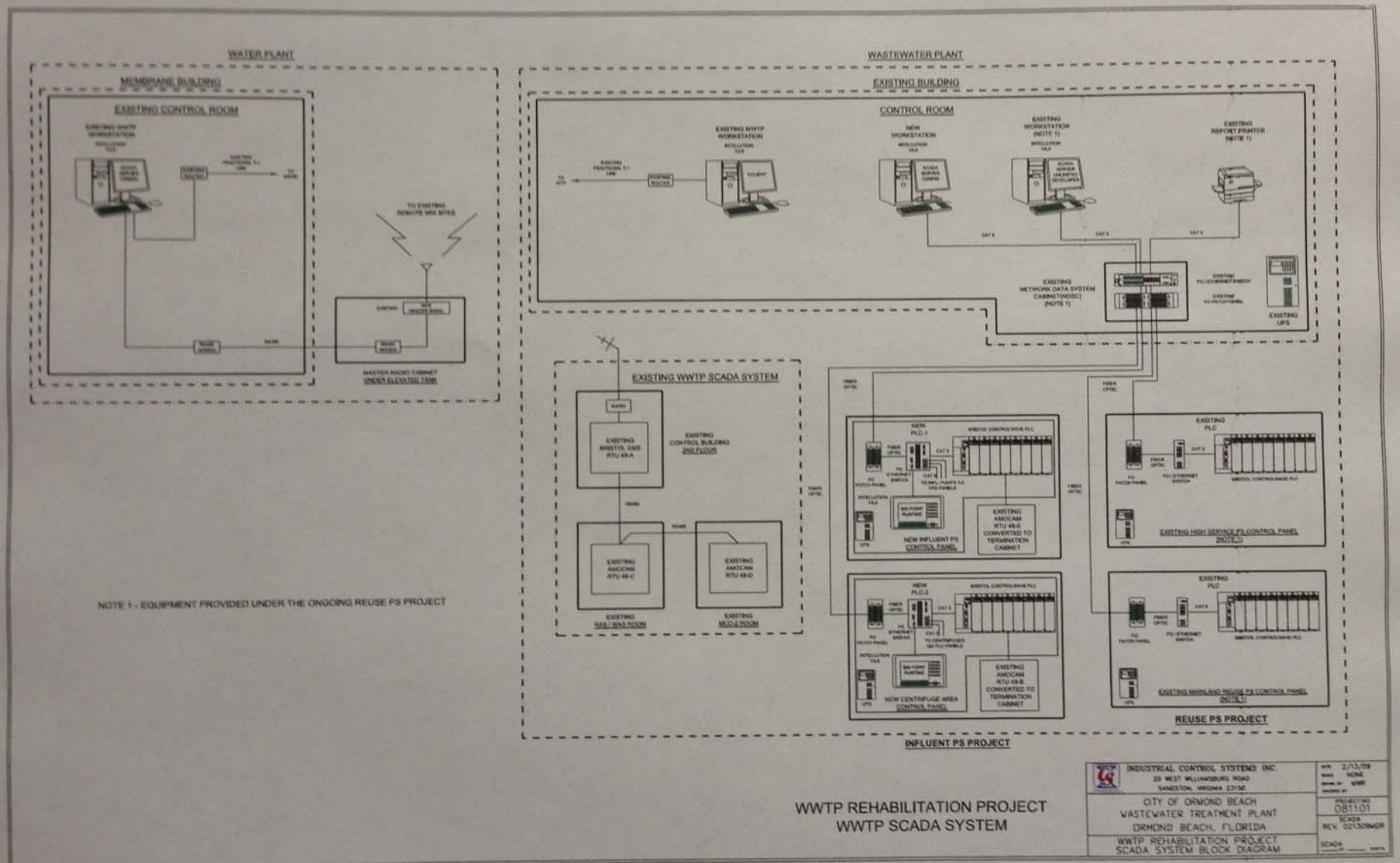
NOTE:
1) TERMINATIONS OF EQUIPMENT AND DEVICES SHOULD BE VERIFIED USING O&M'S AND WIRING SCHEMATIC DIAGRAMS PROVIDED WITH THE EQUIPMENT.
2) ALL FINAL TERMINATIONS MUST BE DOCUMENTED FOR AS-BUILT DRAWINGS.
3) MINIMUM FIBER-OPTIC CABLE FIBER COUNT IS 12-FIBER
4) SEE SCADA BLOCK DIAGRAM FOR DETAILS ON CONNECTIVITY

INDUSTRIAL CONTROL SYSTEMS INC.
20 WEST WILLIAMSBURG ROAD
SANDSTON, VIRGINIA 23150

CITY OF ORMOND BEACH
WASTEWATER TREATMENT PLANT REHAB
ORMOND BEACH, FLORIDA

LAN PANEL LAN-01
COMMUNICATIONS

DATE 7/17/09
SCALE NONE
DRAWN BY MDR
CHECKED BY HGL
PROJECT NO. 081101
LAN-01 COMM
REV 072309MDR
4 OF ___ SHEETS


WATER PLANT
MEMBRANE BUILDING
EXISTING CONTROL ROOM
TO EXISTING REMOTE WW SITES
MASTER RADIO CABINET UNDER ELEVATED TANK
WASTEWATER PLANT
EXISTING BUILDING
CONTROL ROOM
EXISTING WWTP WORKSTATION
NEW WORKSTATION
EXISTING WORKSTATION (NOTE 1)
EXISTING REPORT PRINTER (NOTE 1)
EXISTING NETWORK DATA SYSTEM CABINET(NDSC) (NOTE 1)
EXISTING UPS
EXISTING WWTP SCADA SYSTEM
EXISTING CONTROL BUILDING 2ND FLOOR
EXISTING AMCOM RTU 48-C
EXISTING AMCOM RTU 48-D
EXISTING RAS / WAS ROOM
EXISTING MCC-2 ROOM
NEW PLC-1
NEW INFLUENT PS CONTROL PANEL
EXISTING AMCOM RTU 48-E CONVERTED TO TERMINATION CABINET
NEW PLC-2
NEW CENTRIFUGE AREA CONTROL PANEL
EXISTING AMCOM RTU 48-B CONVERTED TO TERMINATION CABINET
EXISTING PLC
EXISTING HIGH SERVICE PS CONTROL PANEL (NOTE 1)
EXISTING MAINLAND REUSE PS CONTROL PANEL (NOTE 1)
REUSE PS PROJECT
INFLUENT PS PROJECT
NOTE 1 - EQUIPMENT PROVIDED UNDER THE ONGOING REUSE PS PROJECT
WWTP REHABILITATION PROJECT
WWTP SCADA SYSTEM
INDUSTRIAL CONTROL SYSTEMS INC.
20 WEST WILLIAMSBURG ROAD
SANDSTON, VIRGINIA 23150
CITY OF ORMOND BEACH
WASTEWATER TREATMENT PLANT
ORMOND BEACH, FLORIDA
WWTP REHABILITATION PROJECT
SCADA SYSTEM BLOCK DIAGRAM
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SCADA
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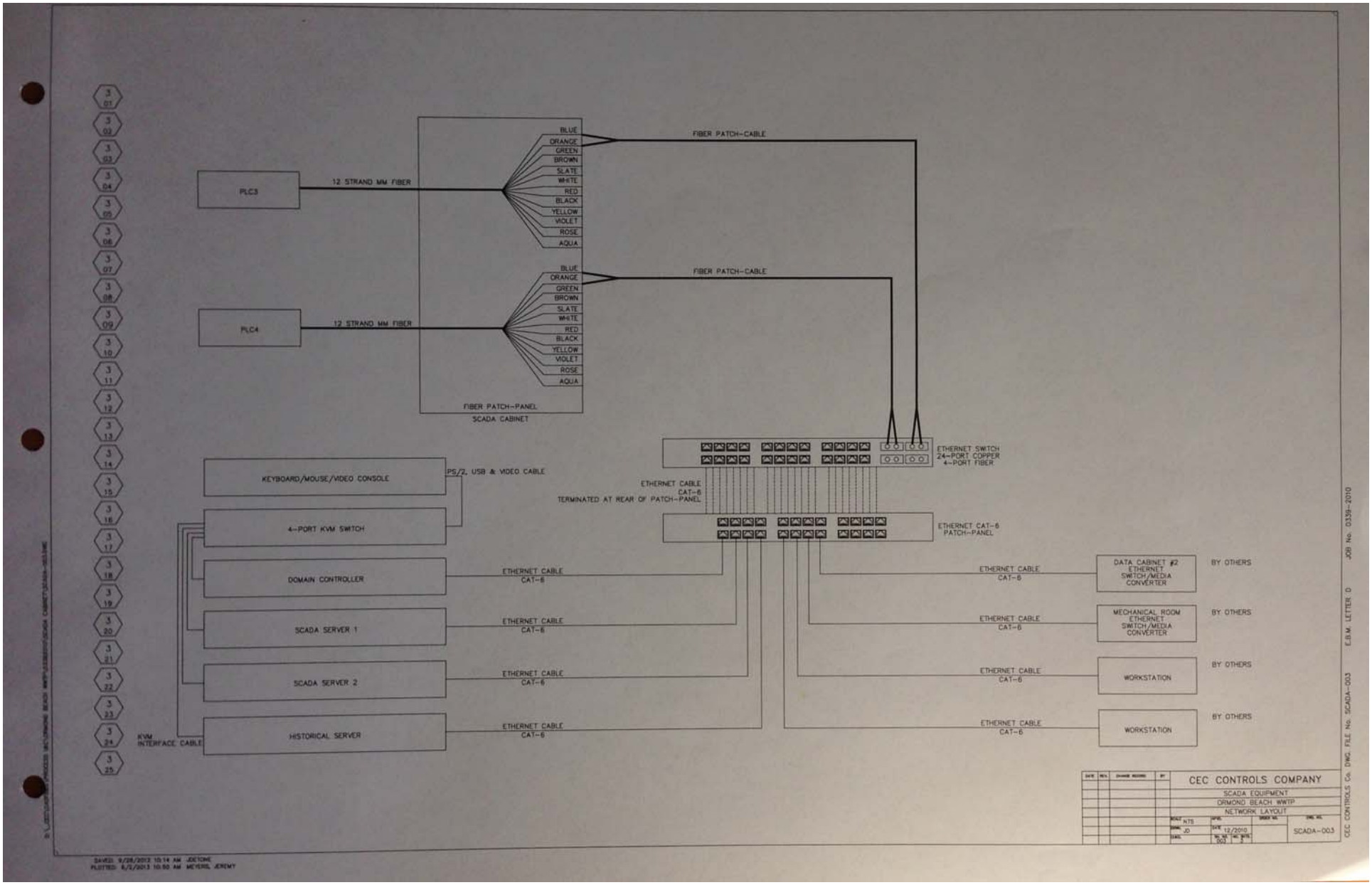
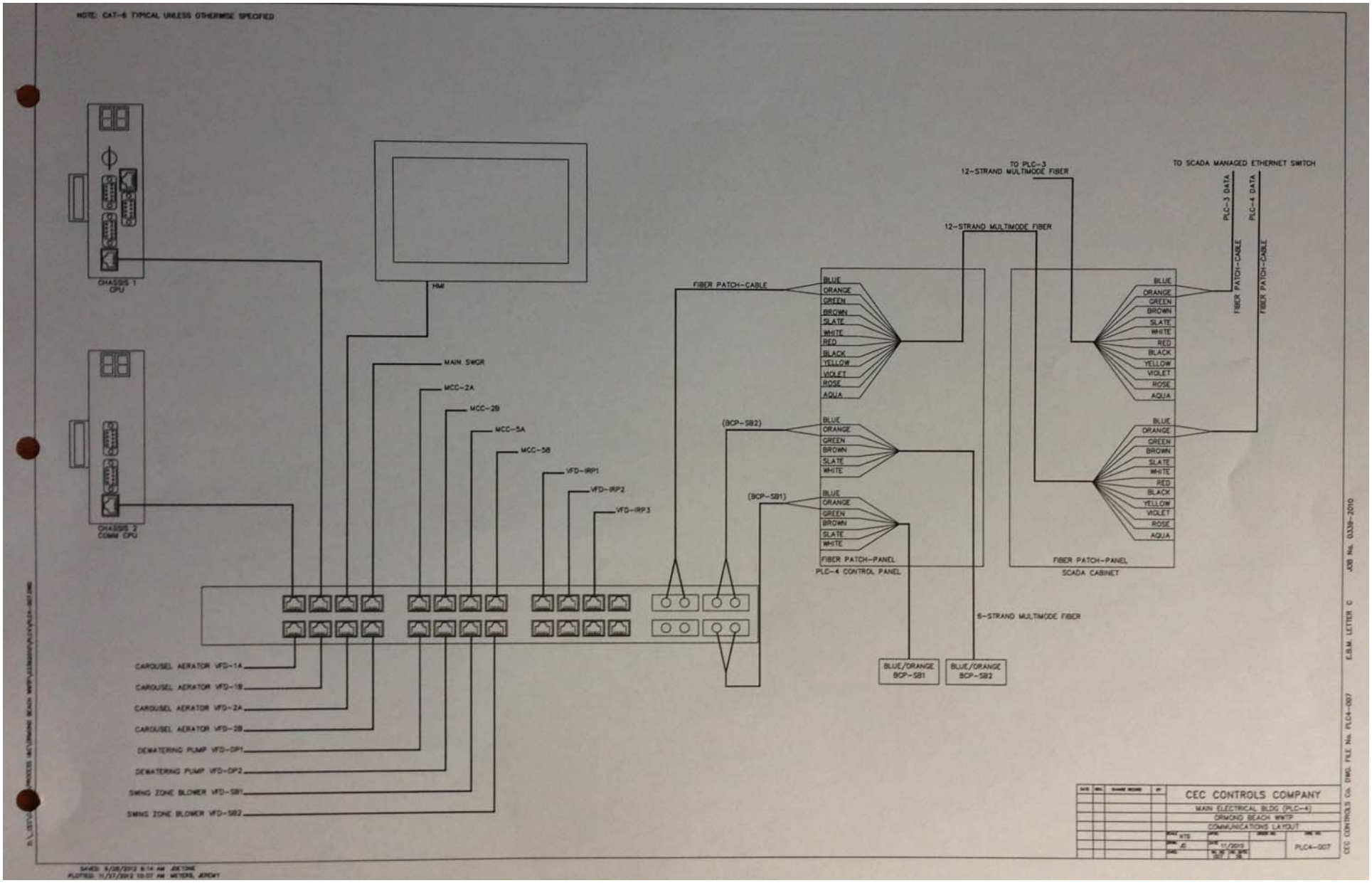
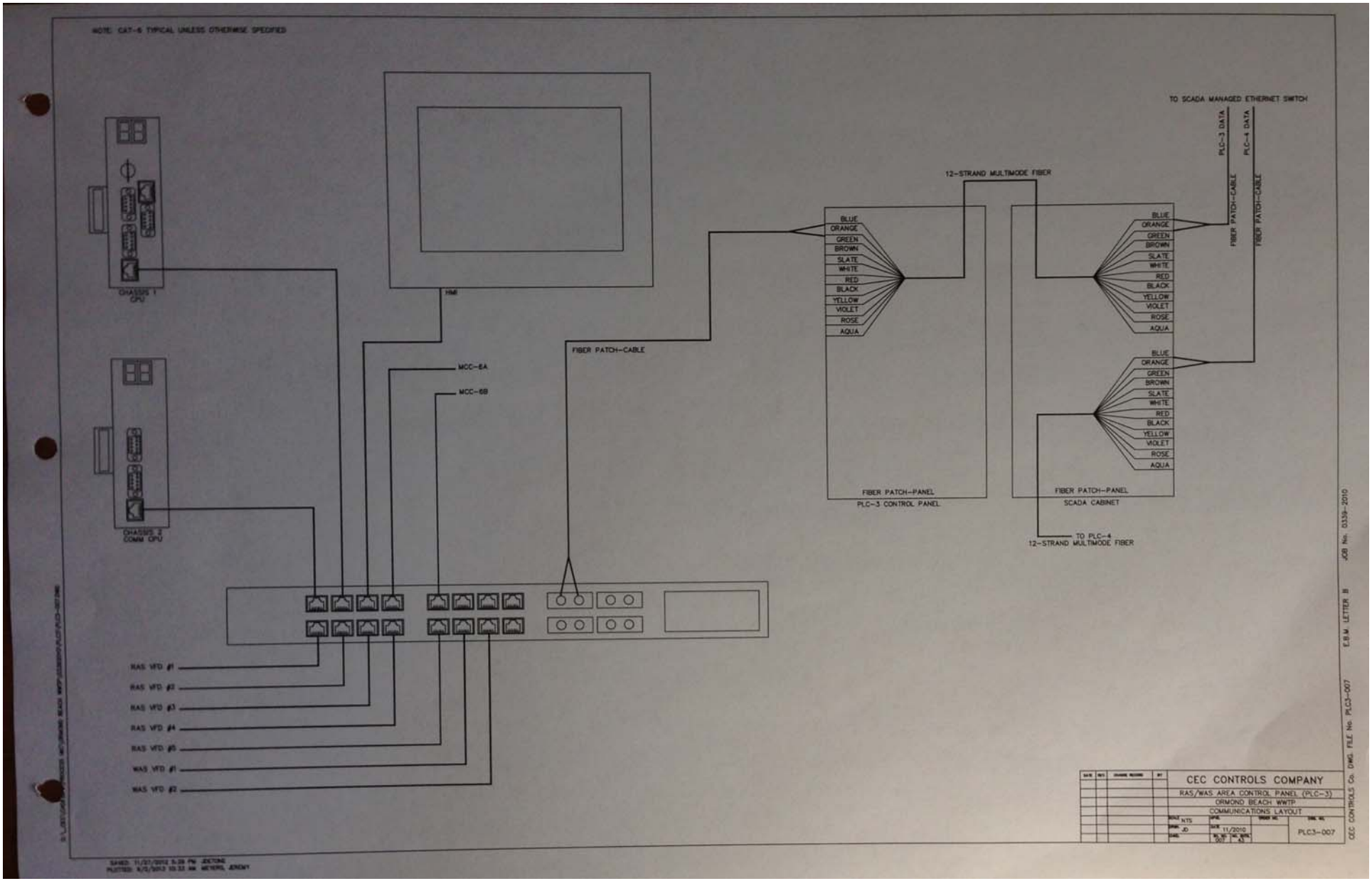
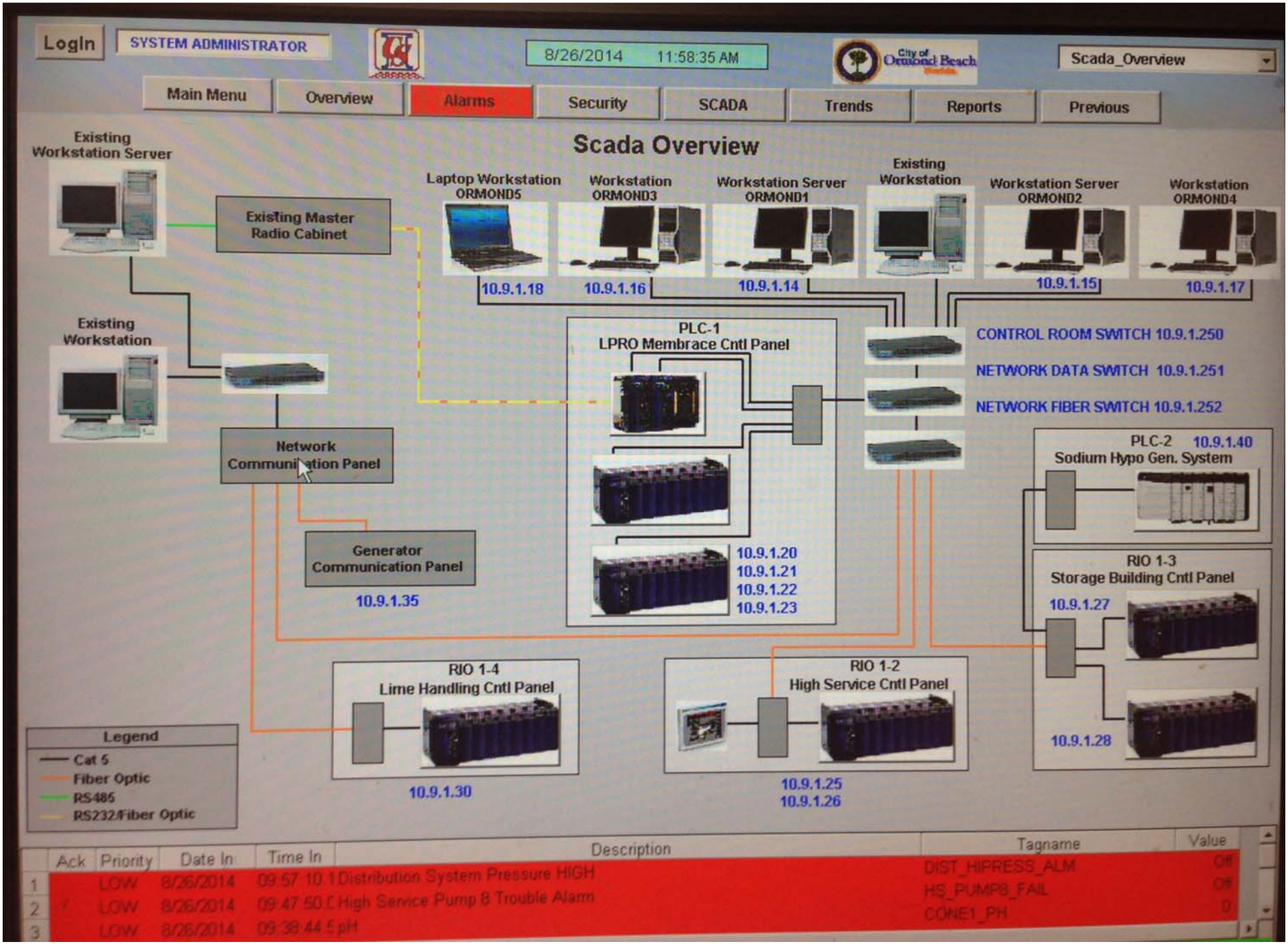

PLC3
12 STRAND MM FIBER
PLC4
12 STRAND MM FIBER
BLUE
ORANGE
GREEN
BROWN
SLATE
WHITE
RED
BLACK
YELLOW
VIOLET
ROSE
AQUA
FIBER PATCH-CABLE
FIBER PATCH-PANEL
SCADA CABINET
ETHERNET SWITCH
24-PORT COPPER
4-PORT FIBER
ETHERNET CABLE
CAT-6
TERMINATED AT REAR OF PATCH-PANEL
ETHERNET CAT-6
PATCH-PANEL
KEYBOARD/MOUSE/VIDEO CONSOLE
PS/2, USB & VIDEO CABLE
4-PORT KVM SWITCH
KVM
INTERFACE CABLE
DOMAIN CONTROLLER
SCADA SERVER 1
SCADA SERVER 2
HISTORICAL SERVER
ETHERNET CABLE
CAT-6
DATA CABINET #2
ETHERNET
SWITCH/MEDIA
CONVERTER
MECHANICAL ROOM
ETHERNET
SWITCH/MEDIA
CONVERTER
WORKSTATION
WORKSTATION
BY OTHERS
CEC CONTROLS COMPANY
SCADA EQUIPMENT
ORMOND BEACH WWTP
NETWORK LAYOUT
NTS
JD
12/2010
SCADA-003
CEC CONTROLS Co. DWG. FILE No. SCADA-003
E.B.M. LETTER D
JOB No. 0339-2010


NOTE: CAT-6 TYPICAL UNLESS OTHERWISE SPECIFIED
CHASSIS 1
CPU
CHASSIS 2
COMM CPU
HMI
MAIN SWGR
MCC-2A
MCC-2B
MCC-5A
MCC-5B
VFD-IRP1
VFD-IRP2
VFD-IRP3
CAROUSEL AERATOR VFD-1A
CAROUSEL AERATOR VFD-1B
CAROUSEL AERATOR VFD-2A
CAROUSEL AERATOR VFD-2B
DEWATERING PUMP VFD-DP1
DEWATERING PUMP VFD-DP2
SWING ZONE BLOWER VFD-SB1
SWING ZONE BLOWER VFD-SB2
FIBER PATCH-CABLE
(BCP-SB2)
(BCP-SB1)
BLUE
ORANGE
GREEN
BROWN
SLATE
WHITE
RED
BLACK
YELLOW
VIOLET
ROSE
AQUA
FIBER PATCH-PANEL
PLC-4 CONTROL PANEL
TO PLC-3
12-STRAND MULTIMODE FIBER
12-STRAND MULTIMODE FIBER
6-STRAND MULTIMODE FIBER
BLUE/ORANGE
BCP-SB1
BLUE/ORANGE
BCP-SB2
TO SCADA MANAGED ETHERNET SWITCH
PLC-3 DATA
PLC-4 DATA
FIBER PATCH-CABLE
FIBER PATCH-CABLE
FIBER PATCH-PANEL
SCADA CABINET
CEC CONTROLS COMPANY
MAIN ELECTRICAL BLDG (PLC-4)
ORMOND BEACH WWTP
COMMUNICATIONS LAYOUT
NTS
11/2015
PLC4-007
CEC CONTROLS Co. DWG. FILE No. PLC4-007
E.B.M. LETTER C
JOB No. 0339-2010


NOTE: CAT-6 TYPICAL UNLESS OTHERWISE SPECIFIED
CHASSIS 1 CPU
CHASSIS 2 COMM CPU
HMI
MCC-6A
MCC-6B
FIBER PATCH-CABLE
12-STRAND MULTIMODE FIBER
BLUE
ORANGE
GREEN
BROWN
SLATE
WHITE
RED
BLACK
YELLOW
VIOLET
ROSE
AQUA
FIBER PATCH-PANEL
PLC-3 CONTROL PANEL
SCADA CABINET
TO PLC-4
12-STRAND MULTIMODE FIBER
TO SCADA MANAGED ETHERNET SWITCH
PLC-3 DATA
PLC-4 DATA
RAS VFD #1
RAS VFD #2
RAS VFD #3
RAS VFD #4
RAS VFD #5
WAS VFD #1
WAS VFD #2
CEC CONTROLS COMPANY
RAS/WAS AREA CONTROL PANEL (PLC-3)
ORMOND BEACH WWTP
COMMUNICATIONS LAYOUT
NTS
JD
11/2010
PLC3-007
CEC CONTROLS Co. DWG. FILE No. PLC3-007
E.B.M. LETTER B
JOB No. 0339-2010


Login
SYSTEM ADMINISTRATOR
8/26/2014 11:58:35 AM
City of Ormond Beach
Scada_Overview
Main Menu
Overview
Alarms
Security
SCADA
Trends
Reports
Previous
Scada Overview
Existing Workstation Server
Existing Master Radio Cabinet
Laptop Workstation ORMOND5
Workstation ORMOND3
Workstation Server ORMOND1
Existing Workstation
Workstation Server ORMOND2
Workstation ORMOND4
10.9.1.18
10.9.1.16
10.9.1.14
10.9.1.15
10.9.1.17
Existing Workstation
PLC-1
LPRO Membrace Cntl Panel
CONTROL ROOM SWITCH 10.9.1.250
NETWORK DATA SWITCH 10.9.1.251
NETWORK FIBER SWITCH 10.9.1.252
Network Communication Panel
PLC-2 10.9.1.40
Sodium Hypo Gen. System
Generator Communication Panel
10.9.1.35
10.9.1.20
10.9.1.21
10.9.1.22
10.9.1.23
RIO 1-3
Storage Building Cntl Panel
10.9.1.27
10.9.1.28
RIO 1-4
Lime Handling Cntl Panel
10.9.1.30
RIO 1-2
High Service Cntl Panel
10.9.1.25
10.9.1.26
Legend
Cat 5
Fiber Optic
RS485
RS232/Fiber Optic
Ack Priority Date In Time In Description Tagname Value
1 LOW 8/26/2014 09:57:10.1 Distribution System Pressure HIGH DIST_HIPRESS_ALM Off
2 LOW 8/26/2014 09:47:50.0 High Service Pump 8 Trouble Alarm HS_PUMP8_FAIL Off
3 LOW 8/26/2014 09:38:44.5 pH CONE1_PH 0

PLAN SYMBOLS

	HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2 #12 CONDUCTORS.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
	FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
	CONCRETE ENCASED DUCTBANK.
A	CEILING MOUNTED LIGHTING FIXTURE, LETTER INDICATES TYPE (TYPICAL).
	WALL MOUNTED LIGHTING FIXTURE.
	FLUORESCENT LIGHTING FIXTURE, CEILING MOUNTED.
	EXTERIOR LUMINAIRE AND MOUNTING STANDARD.
	EXISTING EXTERIOR LIGHTING
	EMERGENCY BATTERY PACK LIGHTING FIXTURE.
J	JUNCTION BOX N.E.C. SURFACE MOUNTED UNLESS INDICATED OTHERWISE.
J	JUNCTION BOX PER N.E.C., FLUSH MOUNTED UNLESS INDICATED OTHERWISE.
	FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.
	FLUSH OR SURFACE MOUNTED POWER PANELBOARD.
30	DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.
	90A, 208V, 1ø WELDING OUTLET
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 2" ABOVE COUNTER AS REQUIRED.
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH, FLOOR MOUNTED OUTLET BOX.
	20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED.
	DISCONNECT RACK MOUNTED
	HOA/DISCONNECT RACK MOUNTED
	30A, 250V 1Ø, 3W SINGLE RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
S	SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).
S	SINGLE POLE SWITCH, SURFACE MOUNTED.
S_3	THREE-WAY SWITCH IN FLUSH OUTLET BOX.
S_M	MOTOR DUTY, SINGLE PHASE DISCONNECT, NEMA 4X STAINLESS STEEL
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS
10	ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
F 30/20	FUSED DISCONNECT SWITCH (30/20: 30=SWITCH RATING, 20=FUSE RATING)
M	MOTORIZED VALVE
	COMBINATION MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE
T	THERMOSTAT
	ELECTRIC HEATER
	FLUSH OUTLET BOX AND TELEPHONE COVER PLATE 48" ABOVE FINISHED FLOOR.
C	CONTROL PULLBOX. SEE "PULL BOX DETAIL"
P	POWER MANHOLE. SEE "MANHOLE DETAIL"
TC	TERMINATION CABINET, CLASS 1, DIVISION 2
	EYS FITTING AND CORRESPONDING "CHICO" CEMENT. COMBINATION SHALL BE RATED TO PROVIDE A CLASS 1, DIVISION 2 INSTALLATION.
XX	MAJOR COMPONENT, X COMPONENT NUMBER
A–V	NAMEPLATE SCHEDULE

PLAN SYMBOLS (CONTINUED)

AIT	ANALYZING INDICATING TRANSMITTER
FE	FLOW ELEMENT
LS	LEVEL SWITCH
LE	LEVEL ELEMENT
PS	PRESSURE SWITCH
ZS	ZERO SPEED SWITCH
SV	SOLENOID VALVE
LLS	LIQUID LEVEL SWITCH
FS	FLOW SWITCH
FIT	FLOW INDICATING TRANSMITTER
LIT	LEVEL INDICATING TRANSMITTER

SINGLE LINE DIAGRAM SYMBOLS

	COMBINATION MOTOR STARTER
V	VOLTMETER
A	AMMETER
VS	THREE PHASE VOLT SWITCH
AS	THREE PHASE AMP SWITCH
GFI	GROUND FAULT INTERRUPTER
W	WATT HOUR METER
	FUSE
	CAPACITOR
	DRAW-OUT CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	TYPICAL SELECTOR SWITCH AND CONTROL. SEE ELEMENTARY DIAGRAMS FOR EXACT TYPE.
10	ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
1	ELECTRIC D.C. MOTOR, NO. INDICATES HORSEPOWER.
	SERVICE OR EQUIPMENT GROUND.
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS
	LIGHTING PANELBOARD
	POWER PANELBOARD
K	KIRK KEY INTERLOCK
	CURRENT TRANSFORMERS
	POTENTIAL TRANSFORMERS
	MANUAL OR AUTOMATIC TRANSFER SWITCH

CONTROL DIAGRAM SYMBOLS

	DUPLEX RECEPTACLE
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	PRESSURE SWITCH, NORMALLY OPEN
	PRESSURE SWITCH, NORMALLY CLOSED
	FLOAT SWITCH, NORMALLY OPEN
	FLOAT SWITCH, NORMALLY CLOSED

CONTROL DIAGRAM SYMBOLS (CONTINUED)

	FLOW SWITCH, NORMALLY OPEN
	FLOW SWITCH, NORMALLY CLOSED
	TEMPERATURE SWITCH, NORMALLY OPEN
	TEMPERATURE SWITCH, NORMALLY CLOSED
	NORMALLY OPEN, TIMED TO CLOSE CONTACT
	NORMALLY CLOSED, TIMED TO OPEN CONTACT
	NORMALLY CLOSED, TIMED TO CLOSE CONTACT
	NORMALLY OPEN, TIMED TO OPEN CONTACT
LS	LIMIT SWITCH
XS	TORQUE SWITCH
PS	PRESSURE SWITCH
ZS	ZERO SPEED SWITCH
SV	SOLENOID VALVE
LLS	LIQUID LEVEL SWITCH
VS	VIBRATION SWITCH
AR	ALARM RELAY
AT	ALARM TIMER
CR	CONTROL RELAY
M	MOTOR STARTER
TR	TIMING RELAY
A	ALARM INDICATING LIGHT
R	RUN INDICATING LIGHT
	MOMENTARY CONTACT PUSHBUTTON
	MOMENTARY BREAK PUSHBUTTON OR RESET
K	KEYED SWITCH
	MAINTAINED CONTACT ON–OFF SWITCH
	START/STOP (S/S) CONTROL SWITCH MAINTAINED CONTACT
	THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH
	FUSE
	MOLDED CASE CIRCUIT BREAKER
	CONTROL POWER TRANSFORMER
	REMOTE TERMINAL BLOCK POINT
	HORN

ABBREVIATIONS

A	AMPERES
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AER	AERATOR
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CLB	CURRENT LIMITING BREAKER
CP	CONTROL PANEL
CU	COPPER
DH	DATA HIGHWAY
DISC	DISCONNECT
DO	DIGITAL OUTPUT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EFF	EFFLUENT
ELEC	ELECTRICAL
ELR	EMERGENCY LOCK-OUT RELAY
EM	EMERGENCY
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ESB	ENERGY SAVING BALLAST
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER

ABBREVIATIONS (CONTINUED)

EVA	ELECTRIC VALVE ACTUATOR
EXH	EXHAUST
EXIST	EXISTING
F&I	FINISH AND INSTALL
FPL	FLORIDA POWER AND LIGHT
FVNR	FULL VOLTAGE NON-REVERSING
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GND, G	GROUND
GRS	GALVANIZED RIGID STEEL
HOA	HAND-OFF-AUTOMATIC
HOLR	HAND-OFF-LOCAL-REMOTE
HOR	HAND-OFF-REMOTE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HWY	HIGHWAY
INSTR	INSTRUMENTATION
IPS	INFLUENT PUMP STATION
KVA	KILOVOLT-AMPERES
KW	KILOWATT
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSC	MANUFACTURER SUPPLIED CABLE
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MERCURY VAPOR
NEC	NATIONAL ELECTRIC CODE
NEUT, N	NEUTRAL
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
P	POLE
PC	PHOTOCELL
PCP	PUMP CONTROL PANEL
PE	POWER EQUIPMENT
PM	PHASE MONITOR
PNL	PANEL
PS	PUMP STATION
PVC	POLYVINYL CHLORIDE
RA	RIGID ALUMINUM
RECPT	RECEPTACLE
RTU	REMOTE TELEMETRY UNIT
RVNR	REDUCED VOLTAGE NON-REVERSING
SH	SHIELDED
SS	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
STR	STARTER
SUPP	SUPPRESSOR
SW	SWITCH
SWGR	SWITCHGEAR
TBR	TO BE REMOVED
TD	TIME DELAY
TR	TRANSFORMER
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
UV	ULTRAVIOLET
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
W/	WITH
WP	WEATHERPROOF
ø	PHASE

NOTES

1. ALL WORK SHALL COMPLY WITH N.E.C. AND LOCAL CODES.
2. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN SPECS.
3. ALL CONTROL PANELS SHALL BE UL LISTED.
4. THESE DRAWINGS ARE INTENDED TO SHOW STANDARDS ON NEW PUMP STATIONS. AT THE COUNTY'S DISCRETION REHABS AND RENOVATIONS MAY HAVE DIFFERING DETAILS ON A SITE BY SITE BASIS.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION ELECTRICAL, CONTROL & INSTRUMENTATION

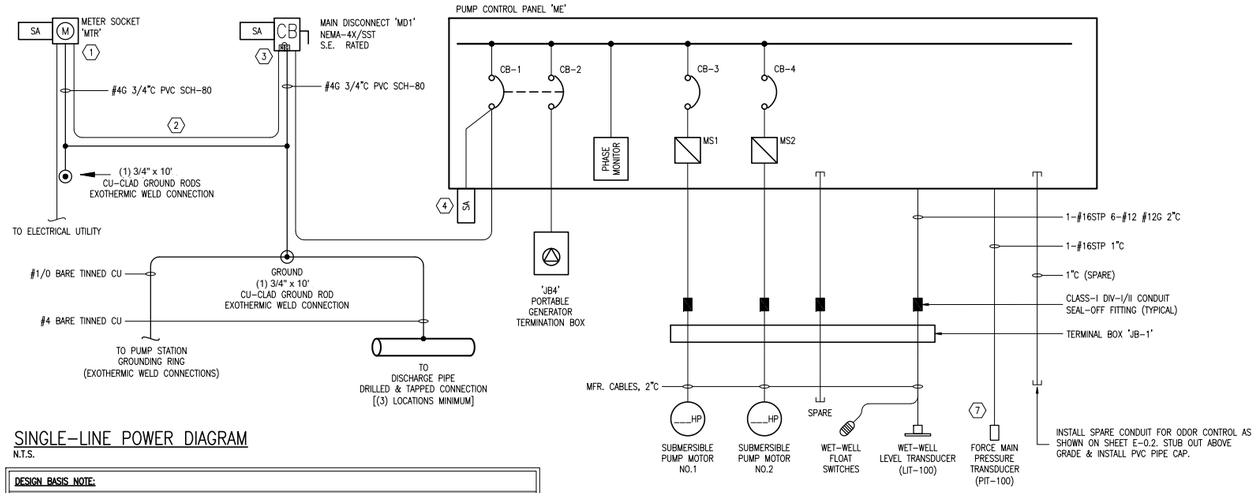
ELECTRICAL SYMBOLS, NOTES, AND ABBREVIATIONS

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-0.0

STATUS: CONFORMED
REVISION



SINGLE-LINE POWER DIAGRAM

N.T.S.

DESIGN BASIS NOTE:

THIS DRAWING REPRESENTS THE STANDARD DESIGN FOR ALL HILLSBOROUGH COUNTY STANDARD WASTEWATER PUMPING STATIONS. IT WAS DEVELOPED TO IMPROVE RELIABILITY AND MAINTAINABILITY, MINIMIZE SPARE PARTS AND INCREASE SERVICE LIFE. ALL REQUESTS FOR DEVIATION FROM THIS STANDARD MUST BE MADE IN WRITING AND WRITTEN APPROVAL RECEIVED BEFORE MODIFICATIONS ARE MADE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS NECESSARY TO RESTORE UNAUTHORIZED MODIFICATIONS.

DESIGN ENGINEER NOTE: ***THIS IS NOT A CONSTRUCTION DRAWING***

DESIGN ENGINEER SHALL REFER TO ELECTRICAL DRAWINGS, MECHANICAL DRAWINGS, AND THE HILLSBOROUGH COUNTY WATER AND WASTEWATER TECHNICAL SPECIFICATION IN ORDER TO COORDINATE THE MECHANICAL AND ELECTRICAL INSTALLATIONS. DESIGN ENGINEER SHALL NOT USE THIS DRAWING FOR A SPECIFIC SITE INSTALLATION. FOR EACH INSTALLATION A SPECIFIC SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS (IF DEEMED NECESSARY BY THE DESIGN ENGINEER) MUST BE PREPARED IN ACCORDANCE WITH F.S. 471 AND RULES 61G.

480VAC LOAD CALCULATIONS

DESCRIPTION				AMPERES
PUMP NO.1	__HP	480VAC	3-ϕ	__AMPS
PUMP NO.2	__HP	480VAC	3-ϕ	__AMPS
		MOTOR SUB TOTAL:		__AMPS
		25% OF LARGEST MOTOR:		__AMPS
		TOTAL MOTOR LOAD:		__AMPS
ODOR CONTROL SYSTEM (FUTURE)	1200W	480VAC	3-ϕ	10
TRANSFORMER	3KVA	480VAC	3-ϕ	6.25
		TOTAL MAXIMUM PHASE AMPERES:		__AMPS

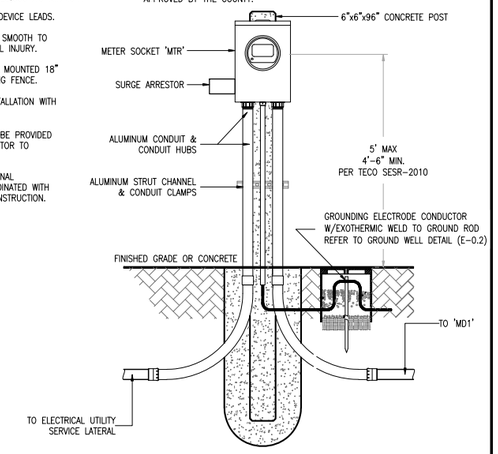
SERVICE SIZE: ___A, 480VAC, 3ϕ, 4-WIRE, MINIMUM

KEYNOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TECO FOR METERING REQUIREMENTS AND SERVICE CONSTRUCTION STANDARDS (SESR-2010). WIRE IDENTIFICATION AND PHASE ARRANGEMENT SHALL BE PER NEC.
2. EQUIPMENT AND WIRE SHALL BE SIZED AND RATED ACCORDING TO THE SERVICE VOLTAGE AND RESPECTIVE PUMP SIZES AT THE STATION. REFER TO CROSS REFERENCE TABLE ON DRAWING E-1.2.
3. MD1, CB1 THRU CB5, AND CB10 SHALL BE CAPABLE OF INTERRUPTING A FAULT CURRENT OF 25,000 AIC MINIMUM.
4. CONTRACTOR SHALL NOT SPLICE SA DEVICE LEADS.
5. ROUND OVER AND GRIND ALL EDGES SMOOTH TO PROTECT PERSONNEL FROM POTENTIAL INJURY.
6. ALARM STROBE AND HORN SHALL BE MOUNTED 18" MINIMUM ABOVE TOP OF SURROUNDING FENCE.
7. CONTRACTOR SHALL COORDINATE INSTALLATION WITH ENGINEER/HCPU.
8. TELECOM SERVICE CONNECTION WILL BE PROVIDED ON A CASE BY CASE BASIS CONTRACTOR TO COORDINATE WITH HCPU.
9. RACK-MOUNT POWER RECEPTACLE: FINAL INSTALLATION LOCATION TO BE COORDINATED WITH COUNTY REPRESENTATIVE DURING CONSTRUCTION.

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
2. ALL POWER & CONTROL CONDUCTORS SHALL BE 600V RATED THHN/THWN-2 STRANDED CU AND SIZED PER NEC.
3. ALL EXPOSED CONDUITS SHALL BE ALUMINUM THRU FIRST UNDERGROUND 90° BEND. WHERE IN CONTACT WITH CONCRETE SLAB, ALUMINUM CONDUIT SHALL BE COATED USING BITUMINOUS PAINT.
4. ALL UNDERGROUND CONDUITS SHALL BE PVC SCH-80.
5. ALL MECHANICAL CONNECTIONS SHALL BE THROUGH-BOLTED MADE WITH STAINLESS STEEL HARDWARE AND FASTENERS WHICH INCLUDE HEAVY GAUGE FLAT AND LOCK WASHERS.
6. ALL NEW PUMP STATIONS SHALL HAVE 480/277V, 3PH, 4-WIRE, 60HZ SERVICE, AS DESCRIBED IN THE COUNTY TECHNICAL SPECIFICATIONS, UNLESS OTHERWISE APPROVED BY THE COUNTY.

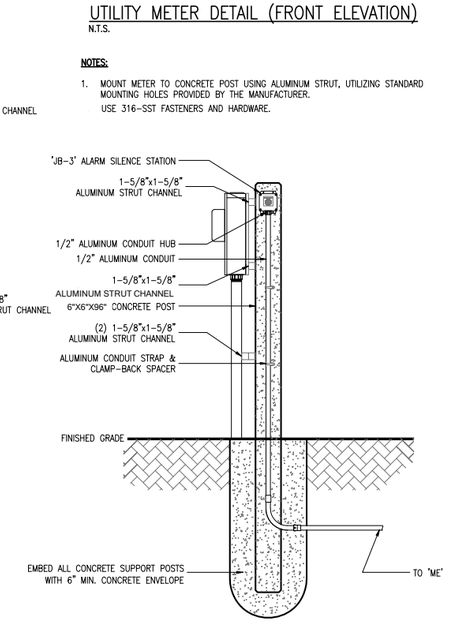


UTILITY METER DETAIL (FRONT ELEVATION)

N.T.S.

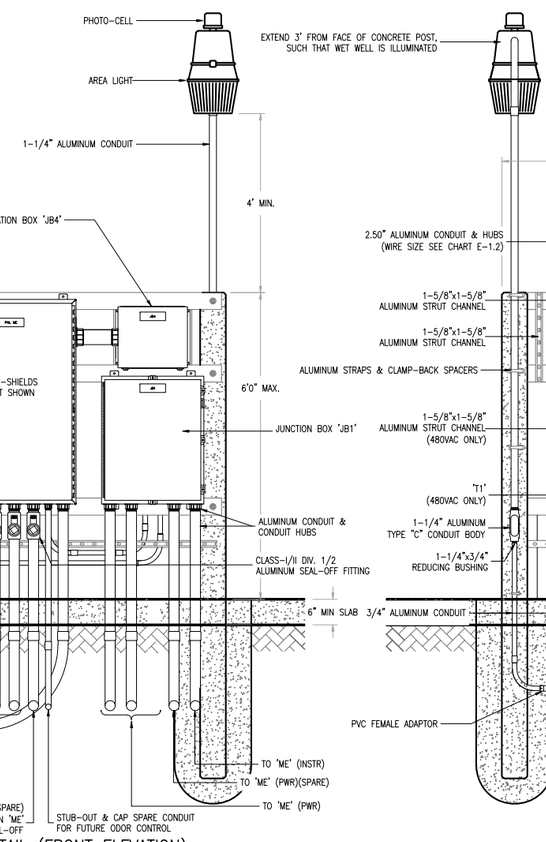
NOTES:

1. MOUNT METER TO CONCRETE POST USING ALUMINUM STRUT, UTILIZING STANDARD MOUNTING HOLES PROVIDED BY THE MANUFACTURER. USE 316-SST FASTENERS AND HARDWARE.



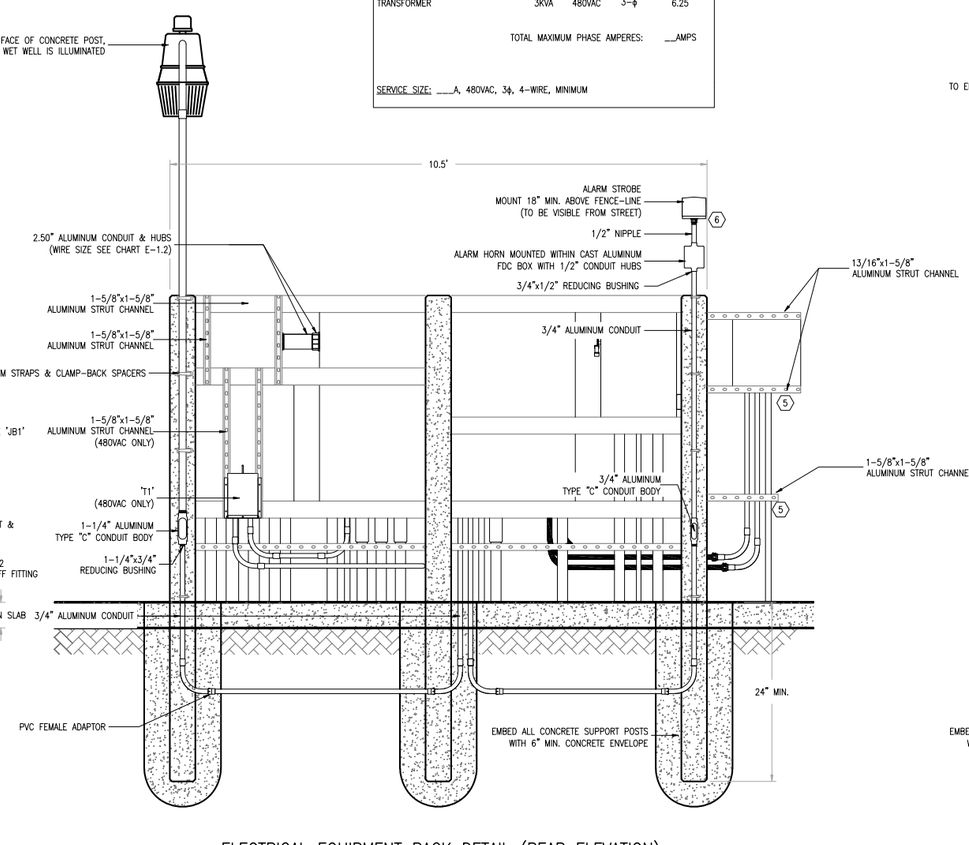
UTILITY METER DETAIL (RIGHT-SIDE ELEVATION)

N.T.S.



ELECTRICAL EQUIPMENT RACK DETAIL (FRONT ELEVATION)

N.T.S.



ELECTRICAL EQUIPMENT RACK DETAIL (REAR ELEVATION)

N.T.S.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

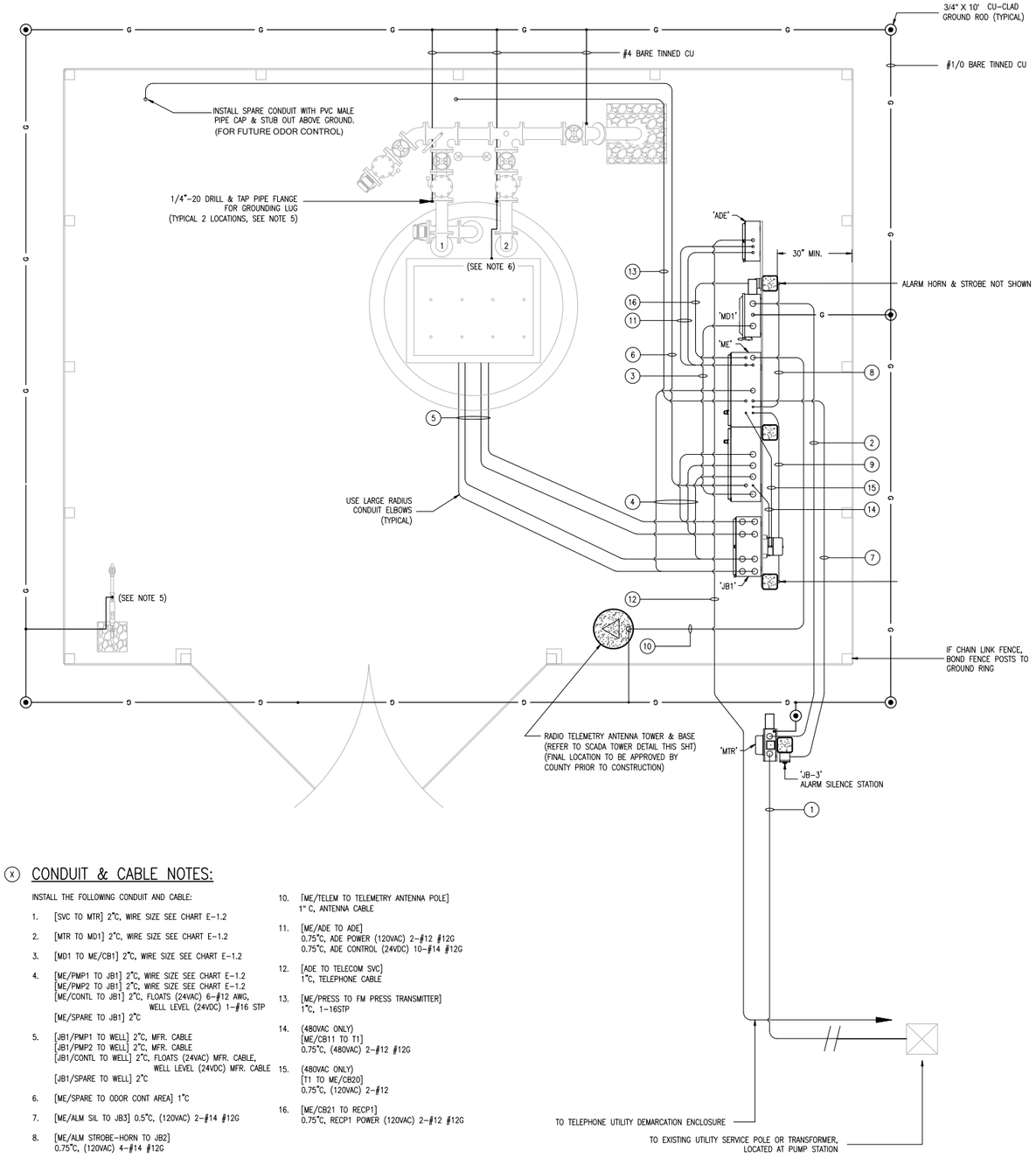
ELECTRICAL POWER PLAN AND DETAIL
(3PH) 480V/3-20HP

DATE:	OCTOBER 2011
PROJ. #	1179-0013
DRAWN	
DESIGNED	
CHECKED	
PROJ. MGR.	

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-0.1

STATUS: CONFORMED
REVISION



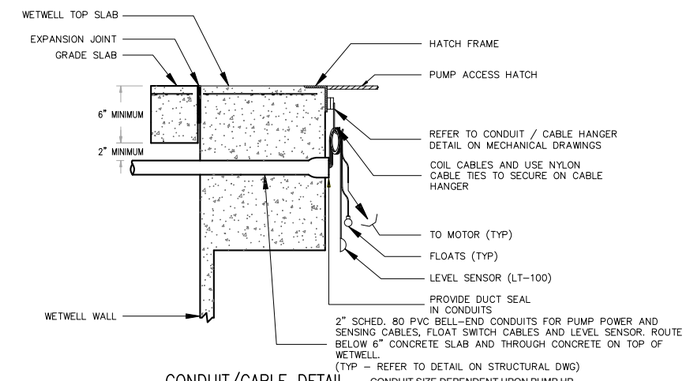
ELECTRICAL SITE PLAN

1/2" = 1'

(X) CONDUIT & CABLE NOTES:

INSTALL THE FOLLOWING CONDUIT AND CABLE:

1. [SVC TO MTR] 2"C, WIRE SIZE SEE CHART E-1.2
2. [MTR TO MD1] 2"C, WIRE SIZE SEE CHART E-1.2
3. [MD1 TO ME/CB1] 2"C, WIRE SIZE SEE CHART E-1.2
4. [ME/PMP1 TO JB1] 2"C, WIRE SIZE SEE CHART E-1.2
   [ME/PMP2 TO JB1] 2"C, WIRE SIZE SEE CHART E-1.2
   [ME/CONTL TO JB1] 2"C, FLOATS (24VAC) 6-#12 AWG, WELL LEVEL (24VDC) 1-#16 STP
   [ME/SPARE TO JB1] 2"C
5. [JB1/PMP1 TO WELL] 2"C, MFR. CABLE
   [JB1/PMP2 TO WELL] 2"C, MFR. CABLE
   [JB1/CONTL TO WELL] 2"C, FLOATS (24VAC) MFR. CABLE, WELL LEVEL (24VDC) MFR. CABLE
   [JB1/SPARE TO WELL] 2"C
6. [ME/SPARE TO ODOR CONT AREA] 1"C
7. [ME/ALM SIL TO JB3] 0.5"C, (120VAC) 2-#14 #12G
8. [ME/ALM STROBE-HORN TO JB2] 0.75"C, (120VAC) 4-#14 #12G
9. [ME/AREA LIGHT TO AREA LIGHT] 0.75"C, (120VAC) 3-#12 #12G
10. [ME/TELEM TO TELEMETRY ANTENNA POLE] 1" C, ANTENNA CABLE
11. [ME/ADE TO ADE] 0.75"C, ADE POWER (120VAC) 2-#12 #12G 0.75"C, ADE CONTROL (24VDC) 10-#14 #12G
12. [ADE TO TELECOM SVC] 1"C, TELEPHONE CABLE
13. [ME/PRESS TO FM PRESS TRANSMITTER] 1"C, 1-16STP
14. (480VAC ONLY) [ME/CB11 TO T1] 0.75"C, (480VAC) 2-#12 #12G
15. (480VAC ONLY) [T1 TO ME/CB20] 0.75"C, (120VAC) 2-#12
16. [ME/CB21 TO RECP1] 0.75"C, RECP1 POWER (120VAC) 2-#12 #12G

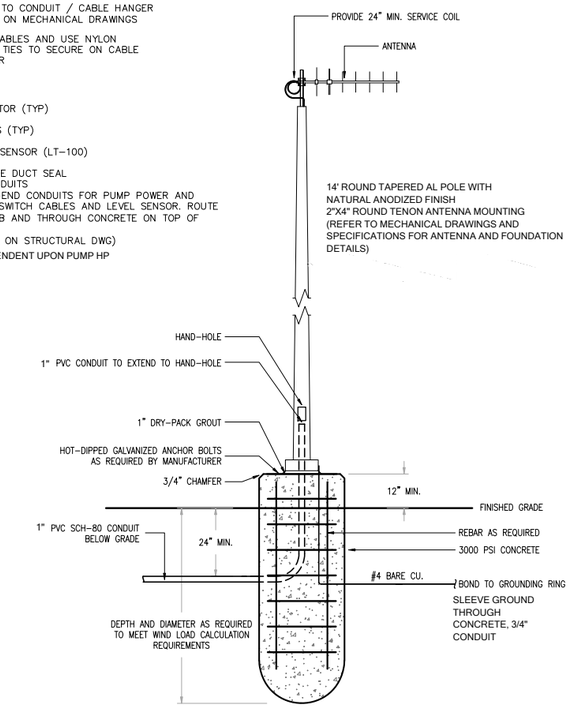


CONDUIT/CABLE DETAIL

N.T.S.

GENERAL NOTES:

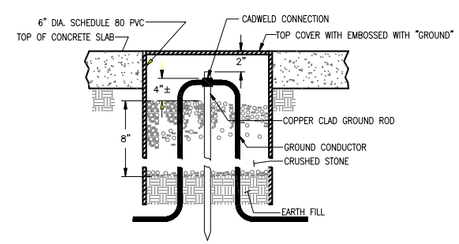
1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NEC, NESC AND LOCAL CODES INCLUDING OWNER'S STANDARDS AND REQUIREMENTS.
2. ALL POWER & CONTROL CONDUCTORS SHALL BE 600V RATED THHN/THWN-2 STRANDED CU AND SIZED PER NEC.
3. ALL EXPOSED CONDUITS SHALL BE ALUMINUM THRU FIRST UNDERGROUND 90' BEND. WHERE IN CONTACT WITH CONCRETE SLAB, ALUMINUM CONDUIT SHALL BE COATED USING BITUMINOUS PAINT.
4. ALL UNDERGROUND CONDUITS SHALL BE PVC SCH-80.
5. ALL MECHANICAL CONNECTIONS SHALL BE THROUGH-BOLTED MADE WITH STAINLESS STEEL HARDWARE AND FASTENERS WHICH INCLUDE HEAVY GAUGE FLAT AND LOCK WASHERS.
6. GROUND CONDUCTOR AT FORCEMAIN PIPING SHALL EXTEND THROUGH SLAB VIA 1" SCH. 80 PVC CONDUIT. BOND GROUND CONDUCTOR TO PUMPS ABOVE GRADE PIPING AT CHECK VALVES FLANGE CONNECTION AND TO FORCEMAIN FLANGE CONNECTION.



NOTE: PROVIDE ANCHORS, HARDWARE, CONCRETE SUPPORTS, ETC., AS NEEDED TO SECURE ANTENNA TOWER.

SCADA ANTENNA TOWER DETAIL

N.T.S.



DETAIL NOTES:

1. TYPICAL FOR EACH GROUND ROD.
2. 3/4" x 10' COPPER CLAD DRIVEN GROUND ROD, THREE (3) GROUND RODS MINIMUM PER SITE.
3. CONTRACTOR SHALL MEASURE THE RESISTANCE OF INSTALLED GROUNDING ELECTRODES AND IF ABOVE NEC ARTICLE 250 ALLOWABLE VALUE, CONTRACTOR SHALL AUGMENT THE GROUND SYSTEM AS NECESSARY.

GROUND ROD WELL DETAIL

N.T.S.

DESIGN BASIS NOTE:

THIS DRAWING REPRESENTS THE STANDARD DESIGN FOR ALL HILLSBOROUGH COUNTY STANDARD WASTEWATER PUMPING STATIONS. IT WAS DEVELOPED TO IMPROVE RELIABILITY AND MAINTAINABILITY, MINIMIZE SPARE PARTS AND INCREASE SERVICE LIFE. ALL REQUESTS FOR DEVIATION FROM THIS STANDARD MUST BE MADE IN WRITING AND WRITTEN APPROVAL RECEIVED BEFORE MODIFICATIONS ARE MADE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS NECESSARY TO RESTORE UNAUTHORIZED MODIFICATIONS.

DESIGN ENGINEER NOTE: *THIS IS NOT A CONSTRUCTION DRAWING*

DESIGN ENGINEER SHALL REFER TO ELECTRICAL DRAWINGS, MECHANICAL DRAWINGS, AND THE HILLSBOROUGH COUNTY WATER AND WASTEWATER TECHNICAL SPECIFICATION IN ORDER TO COORDINATE THE MECHANICAL AND ELECTRICAL INSTALLATIONS. DESIGN ENGINEER SHALL NOT USE THIS DRAWING FOR A SPECIFIC SITE INSTALLATION. FOR EACH INSTALLATION A SPECIFIC SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS (IF DEEMED NECESSARY BY THE DESIGN ENGINEER) MUST BE PREPARED IN ACCORDANCE WITH F.S. 471 AND RULES 61G.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL SITE PLAN AND DETAIL

(3PH) 480V/3-20HP)

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

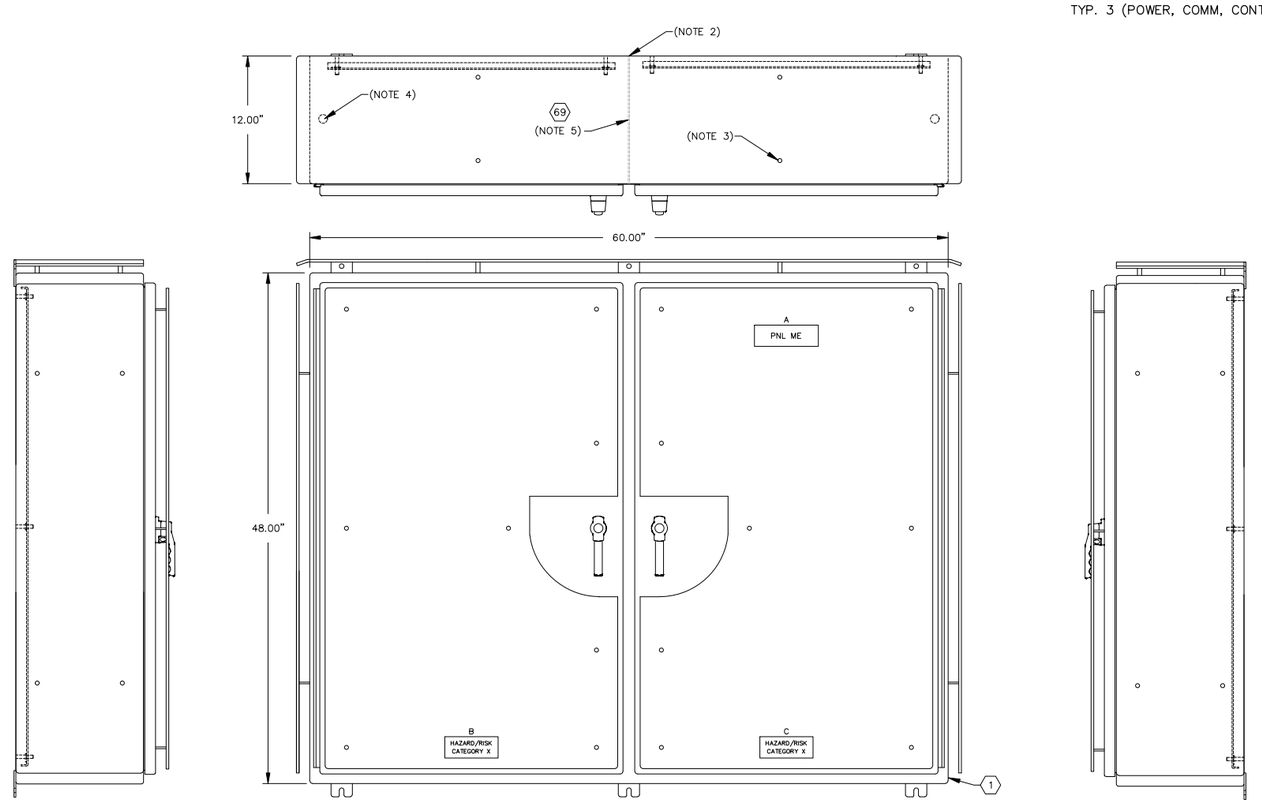
SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-0.2

STATUS: CONFORMED
REVISION

NOTES:

1. REFER TO SHT. E-1.2 FOR BILL OF MATERIAL, NAMEPLATE LEGEND AND ELECTRICAL SIZING; E-1.3 THRU E-1.8 FOR SCHEMATICS.
2. WELDED CABINET DIVIDER SHALL PROVIDE COMPLETE ISOLATION BETWEEN CABINET HALVES.
3. ATTACH SUN-SHIELD WITH STAINLESS STEEL HARDWARE. TYPICAL.
4. REMOVABLE LIFTING EYE SOCKET. IMMEDIATELY AFTER CABINET INSTALLATION, INSTALL SS PLUG BOLT AND RUBBER WASHER TO PROVIDE WATER-TIGHT SEAL. TYPICAL (2).
5. INSTALL PASS-THROUGH CABLE FITTINGS AT DIVIDER PLATE (BOTTOM & CENTERED) TYP. 3 (POWER, COMM, CONTROL)



EXTERIOR ELECTRICAL/CONTROL CABINET, (ME)

5/32"=1'

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

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HILLSBOROUGH COUNTY
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DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
EXTERIOR LAYOUT
(3PH)(480V/3-20HP)

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

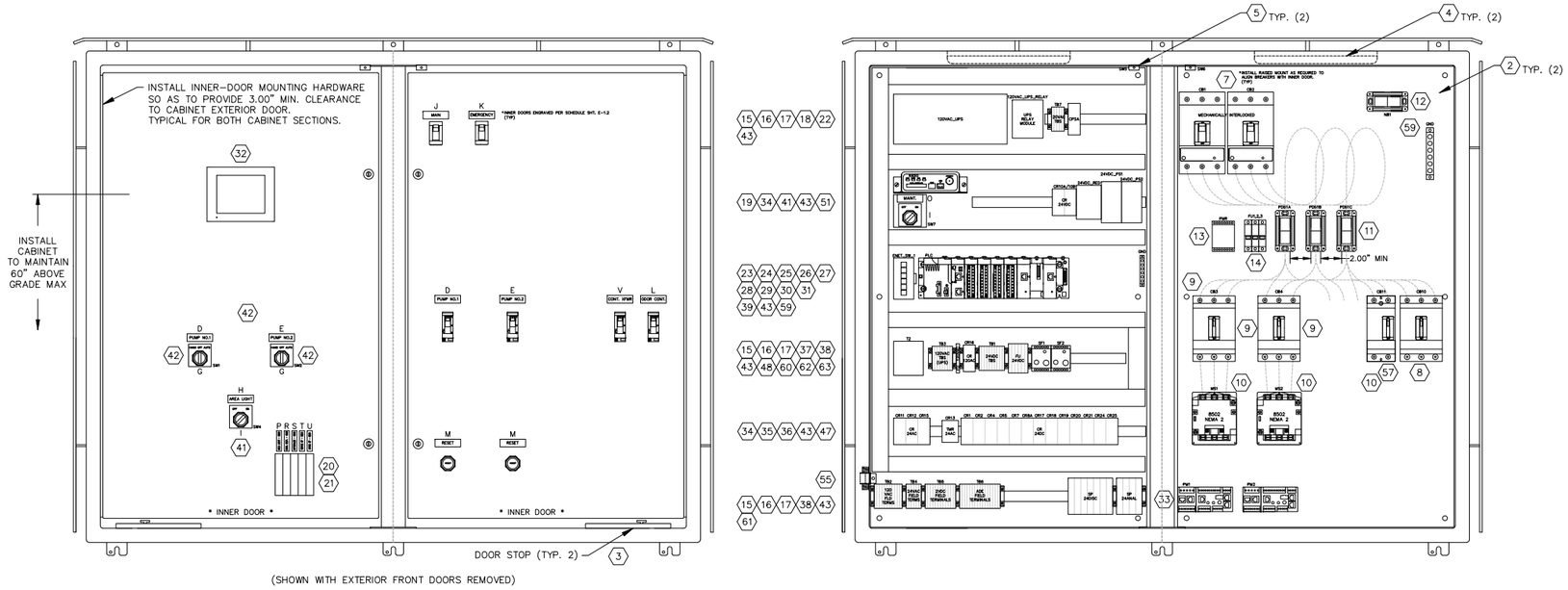
SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-1.0

STATUS: CONFORMED
REVISION

NOTES:

1. REFER TO SHT. E-1.2 FOR BILL OF MATERIAL, NAMEPLATE LEGEND AND ELECTRICAL SIZING; E-1.3 THRU E-1.8 FOR SCHEMATICS.
2. INSTALL STAND-OFF BRACKETS AS REQ'D TO EXTEND CIRCUIT BREAKERS TO INNER DOOR.



INTERIOR ELECTRICAL/CONTROL CABINET, (ME)

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

SEAL

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HILLSBOROUGH COUNTY
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ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
INTERIOR LAYOUT
(3PH)(480V/3-20HP)

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
E-1.1

STATUS: CONFORMED
REVISION

LIST OF MAJOR COMPONENTS

ELECTRICAL/CONTROL CABINET (ME)

ITEM NO.	QTY.	DEVICE ID	MANUFACTURER	PART NO.	DESCRIPTION
1	1		HOFFMAN	A48H6012WFSSLP-3PT (CUSTOM)	ENCLOSURE, 48"Hx60"Wx12"D, TWO-DOOR, WELDED CABINET DIVIDER, NEMA 4X, 304 SS, 3-PT LATCHES, SUN-SHIELDS, EPOXY WHITE FINISH INNER-DOOR BOTH SIDES: 43.5"Hx27"W, ALUMINUM, 0.125" THICK MIN., POWDER-COAT IRON GRAY TEXTURE FINISH (HBT2-C0009-C50)
2	2		HOFFMAN	(CUSTOM)	SUBPANEL, 45"Hx27"W, 304SS, EPOXY WHITE FINISH
3	2		FABTECH	NH-45013	DOOR STOP KIT, 316 SS
4	2		GE	UCF18/DW/ADV-16547	CABINET LIGHT, FLUORESCENT
	2		GE	F15T8/WW-10147	CABINET LIGHT, BULB
5	2	SW5, SW6	SQUARE-D	9007-AP221	DOOR SWITCH
6	1	JB4			GENERATOR TERMINATION PANEL, REFER TO SHT. E-5.0
7	2	CB1, CB2	SEE CHART THIS SHT.		
			SQUARE-D	JGL36150T S29354	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 150 AMP TRIP UNIT, MECH-INTERLOCK
8	1	CB10	SQUARE-D	HGL36020T	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 20 AMP TRIP UNIT
9	2	CB3, CB4	SEE CHART THIS SHT.		
			SQUARE-D	HGL36020T	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 15 AMP TRIP UNIT
			SQUARE-D	HGL36030T	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 20 AMP TRIP UNIT
			SQUARE-D	HGL36045T	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 25 AMP TRIP UNIT
			SQUARE-D	HGL36050T	CIRCUIT BREAKER, MOLDED-CASE, 600V, 3 POLE, 40 AMP TRIP UNIT
10	2	MS1, MS2	SEE CHART THIS SHT.		
			SQUARE-D	8502-SCO2-V02S	CONTACTOR, 3 POLE, SIZE 1, 27A CONT.
			SQUARE-D	8502-SDO2-V02S	CONTACTOR, 3 POLE, SIZE 2, 45A CONT.
11	3	PDB1A,B,C	BUSSMANN	16325-1	POWER DISTRIBUTION BLK, 1 POLE, 350A, 600VAC, PRIM: 2 CONN: 14-2/0 CU, SEC: 6 CONN 14-4 CU
12	1	NB1	BUSSMANN	16325-1	POWER DISTRIBUTION BLK, 1 POLE, 350A, 600VAC, PRIM: 2 CONN: 14-2/0 CU, SEC: 6 CONN 14-4 CU
13	1	PMR	MACROMATIC	PMPU	PHASE MONITOR RELAY
			SQUARE-D	8501NR51	RELAY BASE
14	1	FU1,FU2,FU3	SQUARE-D	DFCC3V	3 POLE FUSE HOLDER
	3		BUSSMANN	LP-CC-1	1 AMP CLASS CC FUSE
15	76		ENTRELEC	115 116.07	TERMINAL BLOCK, 30A
16	10		ENTRELEC	118 368.16	TERMINAL BLOCK END BARRIER
17	19		WAGO	249-117	TERMINAL BLOCK END STOP
18	1	120VAC_UPS	SOLA	SDU-850	UNINTERRUPTIBLE POWER SUPPLY, 120VAC, 1PH, 850VA
	1	120VAC_UPS_RELAY	SOLA	RELAYCARD-SDU	UNINTERRUPTIBLE POWER SUPPLY ALARM RELAY MODULE
19	2	24VDC_PS1,24VDC_PS2	WEIDMULLER	8951360000	POWER SUPPLY, 24VDC, 10AMP
	1	24VDC_RED	WEIDMULLER	8710620000	POWER SUPPLY REDUNDANCY MODULE
20	4	CB20, CB22, CB23, CB24	SQUARE-D	QOU1103100	CIRCUIT BREAKER, 1 POLE, 10 AMP, W/PANEL MOUNT BRACKETS
21	1	CB21	SQUARE-D	QOU1153100	CIRCUIT BREAKER, 1 POLE, 15 AMP, W/PANEL MOUNT BRACKETS
22	1	CPSA	CITEL	DS42S-120	SURGE ARRESTOR, 120VAC
23	1	PLC_BP	MODICON	BMXXBP0800	M340, BACKPLANE, 8-SLOT
24	1	PLC_PS	MODICON	BMXCPS3500	M340, POWER SUPPLY MODULE, 120VAC INPUT
25	1	PLC_MOD_0	MODICON	BMXP342020	M340, PROCESSOR MODULE, MODBUS, ETHERNET
26	2	PLC_MOD_1,2	MODICON	BMXDDI1602	M340, DISCRETE INPUT MODULE, 16PT
27	1	PLC_MOD_3	MODICON	BMXDRA1605	M340, DISCRETE OUTPUT MODULE, 16PT
28	1	PLC_MOD_4	MODICON	BMXAMI0810	M340, ANALOG INPUT MODULE, 8PT
29	0		MODICON	BMXAMO0210	M340, ANALOG OUTPUT MODULE, 2PT (VFD INSTALLATIONS ONLY)
30	4		MODICON	BMXFTB2000	TERMINAL CONNECTOR
31	1	PLC_MOD_5	MODICON	BMXNOE0100	M340, I-O SCANNER MODULE
	1	PLC_MOD_7	MODICON	BMXNOR0200H	M340, DNP COMM MODULE
32	1	OPI	MODICON	MAGELIS XBTGT2930	OPERATOR INTERFACE PANEL, 5.7", COLOR, TOUCHSCREEN, 24VDC, ENET
33	2	PM1, PM2	SQUARE-D	LTMR27EBD	TSYS-T, CONTROLLER
	2		SQUARE-D	LTMEV40BD	TSYS-T, EXTENSION MODULE
	2		SQUARE-D	LTMCC004	TSYS-T, CONNECTOR
	2		SQUARE-D	9001SKR1BH5	PUSH BUTTON, N.O. CONTACT
34	15	CR1,2,4,5,7,8A,10A,10B ,17,18,19,20,21,24,25	SQUARE-D	RXM4AB1BD	CONTROL RELAY, 24VDC COIL, 4PDT, 5A CONTACTS
	4		SQUARE-D	RXM040W	DIODE MODULE, 6-230VDC (FOR CR4, CR5, CR24, CR25)
35	3	CR11,12,15	SQUARE-D	RXM4AB1B7	CONTROL RELAY, 24VAC COIL, 4PDT, 5A CONTACTS
36	20		SQUARE-D	RXZE2M114	RELAY BASE
37	2	SF1, SF2	CROUZET/SYRELEC	PNRU110A/BE	LEAK DETECTION RELAY / SEAL-FAIL RELAY
	2		SQUARE-D	8501NR51	RELAY BASE
			*FOR FLYGT PUMPS ONLY		
			ITT/FLYGT	MINI-CAS	SUPERVISION RELAY FOR TEMPERATURE AND LEAKAGE SENSORS
38	4	SP-1,2,24,25	CITEL	DLA-24D3	SURGE PROTECTOR, ANALOG, 24VDC, SINGLE CHANNEL, PLUG & BASE
39	1	ENET_SW_1	CONNEXIUM	TC-SESB083F23F0	ETHERNET SWITCH, MANAGED
40	1	RECP1	HUBBELL	GFTR15GY	RECEPTACLE, 125VAC, DUPLEX, GFCI, 15A, 10kA SCCR
	1		THOMAS & BETTS	IH3-2-LM	RECEPTACLE BOX, DIE-CAST ALUMINUM, WEATHERPROOF, (3) 3/4" HOLES
	1		INTERMATIC	WP1010MXD	RECEPTACLE COVER, DIE-CAST ALUMINUM, WEATHERPROOF, WHILE-IN-USE
41	2	SW4,SW7	SQUARE-D	9001 KS11BH2	SELECTOR SWITCH, 2-POS, MAINTAINED
42	2	SW1, SW2	SQUARE-D	9001 KS43BH2	SELECTOR SWITCH, 3-POS, MAINTAINED
43	12		IBOCO	IB-T1-1030W	WIRE DUCT, 1"W x 3"H, WHITE (PER FT, 6' MIN)
	12		IBOCO	IB-T1-1530W	WIRE DUCT, 1.5"W x 3"H, WHITE (PER FT, 6' MIN)
44	1		FEDERAL SIGNAL	141ST-24R	STROBE LIGHT, RED, 24VDC (REMOTE FROM ME)
45	1		FEDERAL SIGNAL	450-24-31 w/WB	ALARM HORN, 24VDC, w/ALUMINUM WP HOUSING (REMOTE FROM ME)
46					*NOT USED
47	1	CR13	SQD	9050JCK11V14	RELAY, 24VAC, TIME-DELAY, 1-10 SECONDS
	1		SQUARE-D	8501NR51	RELAY BASE
48	1	T2	SQUARE-D	9070T100D23	TRANSFORMER, 120V/24V, 1PH, 100VA
49	1	LT-100	ENDRESS HAUSER	FMX21-FE-2-2-1H-G-K-41-A-PO-PS	PRESSURE TRANSMITTER, SUBMERSIBLE (WET WELL LEVEL)
50	1	PIT-100	ROSEMOUNT	3051TG3A2B21AT1M5	PRESSURE TRANSMITTER, W/LCD DISPLAY (FORCE MAIN PRESSURE)
51	1	RAD1	MDS	220-MDS-SD2P-B-ES-E THERNET	RADIO TRANSCEIVER (COUNTY WILL PROVIDE FREQS AT TIME OF ORDER)
52	1	12VDC_PS	PHOENIX CONTACT	STEP-PS-100-240AC/12DC/3	POWER SUPPLY, 12VDC, 3A
53	1		ASTRON	220-4H	ANTENNA, YAGI, 215-225 MHZ, 7 DB GAIN
54	A/R		TIMES MICROWAVE	LMR-400	ANTENNA CABLE, OUTDOOR
55	1		POLYPHASER	IS-50NX-C2	ANTENNA CABLE SURGE SUPPRESSOR
56	1		ANDREWS	F2A-PNMNR-6	ANTENNA JUMPER CABLE, N-MALE 90 TO N-MALE, 6FT
57	1	CB11	SQUARE-D	HGL26015	CIRCUIT BREAKER, MOLDED-CASE, 600V, 2 POLE, 15 AMP
58	1	T1	SQUARE-D	3S1FSS	3KVA 480VAC - 120VAC SINGLE PHASE TRANSFORMER W/ ENCLOSURE
59	1		SQUARE-D	PK0GTA6	GROUND BAR, 6 CONN 14-1/0 CU
60	1	CR16	SQUARE-D	RXM4AB2F7	RELAY, 120VAC, 4DPT, 5A CONTACTS
61	9	SP-5,6,7,8,9,10,11,26,27	CITEL	DLA-24D3	SURGE PROTECTOR, DISCRETE, 24VDC, TWO CHANNEL, PLUG & BASE
62	1	FU4	BUSSMANN	GMA-2-R	FUSE, 2 AMP, FAST ACTING
63	6	FU5,FU6,FU7,FU8,FU9, FU10	BUSSMANN	GMA-500-R	FUSE, 1/2 AMP, FAST ACTING
64	1		ENTRELEC	173 523.11	FUSE TERMINAL BLOCK JUMPER
65	3		ENTRELEC	168 973.07	TERMINAL BLOCK JUMPER
66	7	FU4,5,6,7,8,9,10	ENTRELEC	115 657.25	FUSE TERMINAL BLOCK, 10A
67	2		ENTRELEC	116 951.15	FUSE TERMINAL BLOCK END BARRIER
68					*NOT USED
69	1		HUBBELL	ZS105	CABLE FITTING, PASS-THROUGH (POWER)
	1		HUBBELL	ZS108	CABLE FITTING, PASS-THROUGH (COMMUNICATION)
	1		HUBBELL	ZS210	CABLE FITTING, PASS-THROUGH (CONTROL)
70					*NOT USED

NAMEPLATE SCHEDULE

ELECTRICAL/CONTROL CABINET (ME)

N.P. NO.	QTY	PLATE COLOR/SIZE	LTR COLOR/SIZE	ENGRAVING (LINE1/LINE2/ETC.)
A	1	BLK / 2.00" H x 6.00" W	WHT / 1/2"	PNL ME
B	1	BLK / 2.00" H x 5.00" W	WHT / 3/8"	HAZARD/RISK / CATEGORY X
C	1	BLK / 2.00" H x 5.00" W	WHT / 3/8"	HAZARD/RISK / CATEGORY X
D	2	ENG / 0.75" H x 2.50" W	ENG / 1/4"	PUMP NO.1
E	2	ENG / 0.75" H x 2.50" W	ENG / 1/4"	PUMP NO.2
F				*NOT USED
G	2	ENG / 2.25" H x 2.25" W	ENG / 3/16"	HAND OFF AUTO
H	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	AREA LIGHT
I	2	ENG / 2.25" H x 2.25" W	ENG / 3/16"	OFF ON
J	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	MAIN - CB1
K	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	EMERGENCY - CB2
L	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	ODOR CONT -CB10
M	2	ENG / 0.75" H x 2.50" W	ENG / 1/4"	RESET
N				*NOT USED
O	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	MAINT
P	1	ENG / 0.50" H x 2.00" W	ENG / 3/16"	AREA LIGHT - CB20
R	1	ENG / 0.50" H x 2.00" W	ENG / 3/16"	CONV. RECP. - CB21
S	1	ENG / 0.50" H x 2.00" W	ENG / 3/16"	AUTODIALER - CB22
T	1	ENG / 0.50" H x 2.00" W	ENG / 3/16"	120VAC CONTROL POWER - CB23
U	1	ENG / 0.50" H x 2.00" W	ENG / 3/16"	24VAC CONTROL POWER - CB24
V	1	ENG / 0.75" H x 2.50" W	ENG / 1/4"	CONTROL - CB11
W				*NOT USED

CROSS REFERENCE TABLE

SERVICE VOLTAGE	PUMP HP	MTR–MD1 (AWG)	MD1–ME/CB1 J1/JB4–CB2/N (AWG)	CB1–PDB1 CB2–PDB1 (AWG)	MD1 CB1 CB2	GENERATOR CONNECTION	PDB1–PMR (AWG)	CB3 CB4	MS1 MS2	PDB1–CB3 PDB1–CB4 CB3–MS1 CB4–MS2 MS1–JB1 MS2–JB1 (AWG)	JB1–M1 JB1–M2	ODOR CONTROL CB10	PDB1–CB10 (AWG)	PDB1–CB20 (AWG)	PDB1–CB11 CB11–XFMR1 (AWG)	CB11
480VAC, 3PH, 4W	3	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H15	SIZE 0	3–#12	PER MANUF	H20	3–#12	––	2–#10	H15
480VAC, 3PH, 4W	5	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H15	SIZE 0	3–#12	PER MANUF	H20	3–#12	––	2–#10	H15
480VAC, 3PH, 4W	7.5	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H20	SIZE 1	3–#12	PER MANUF	H20	3–#12	––	2–#10	H15
480VAC, 3PH, 4W	10	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H25	SIZE 1	3–#12	PER MANUF	H20	3–#12	––	2–#10	H15
480VAC, 3PH, 4W	15	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H40	SIZE 2	3–#8	PER MANUF	H20	3–#12	––	2–#10	H15
480VAC, 3PH, 4W	20	3–#1/0, 1–#1/0 N	3–#1/0, 1–#1/0 N, 1–#6 G	3–#1/0	J150(H)	JB4	3–#14	H50	SIZE 2	3–#8	PER MANUF	H20	3–#12	––	2–#10	H15

EQUIPMENT AND CONDUCTORS SHALL COMPLY WITH NEC AND ALL OTHER APPLICABLE CODES, INCLUDING EXISTING COUNTY STANDARDS.

DESIGN BASIS NOTE:

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925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
BILL OF MATERIAL & EQUIP SIZING CHART
(3PH)(480V/3–20HP)

DATE: OCTOBER 2011
PROJ. # 1179–0013
DRAWN
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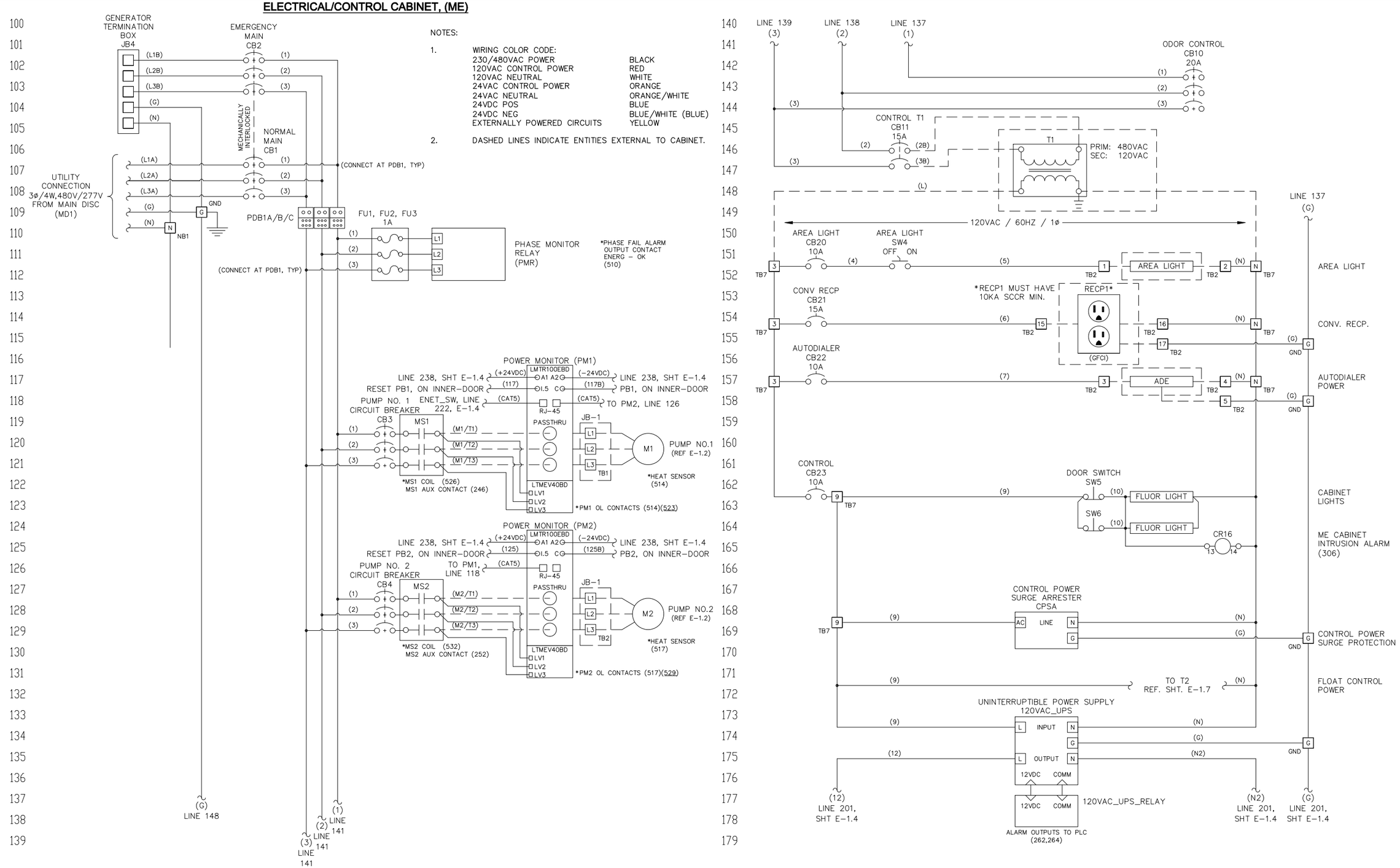
NA

FILE NUMBER
DRAWING NUMBER
E–1.2

STATUS: CONFORMED
REVISION

ELECTRICAL/CONTROL CABINET, (ME)



NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CABINET.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

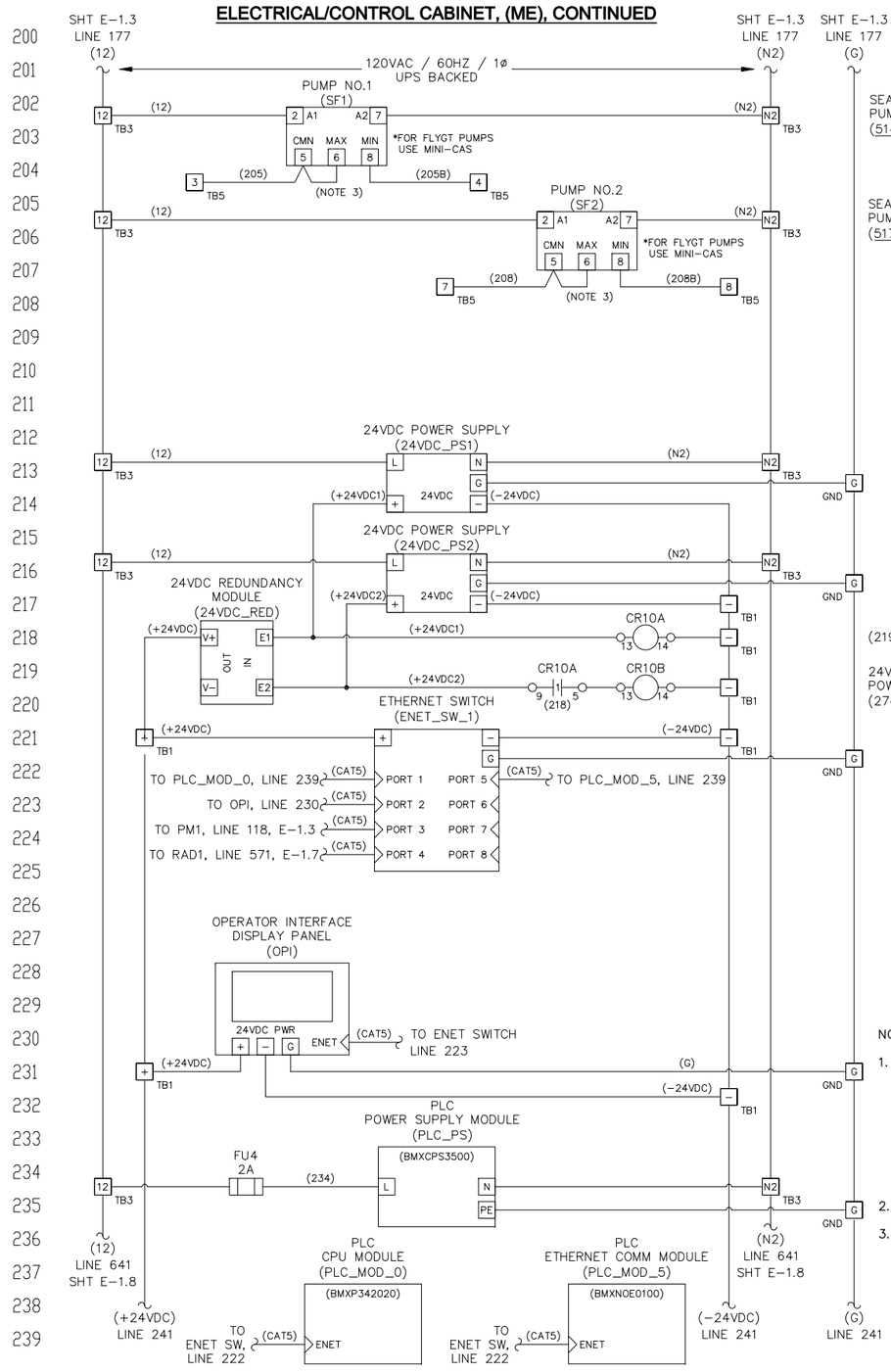
DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

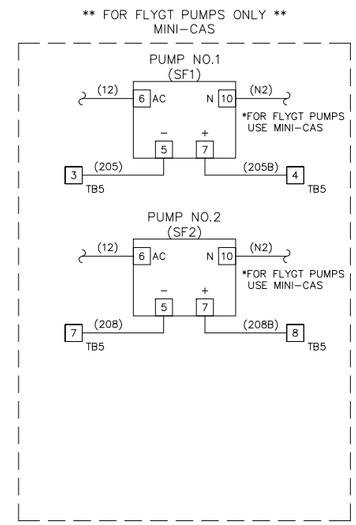
SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-1.3

STATUS: CONFORMED
REVISION

ELECTRICAL/CONTROL CABINET, (ME), CONTINUED





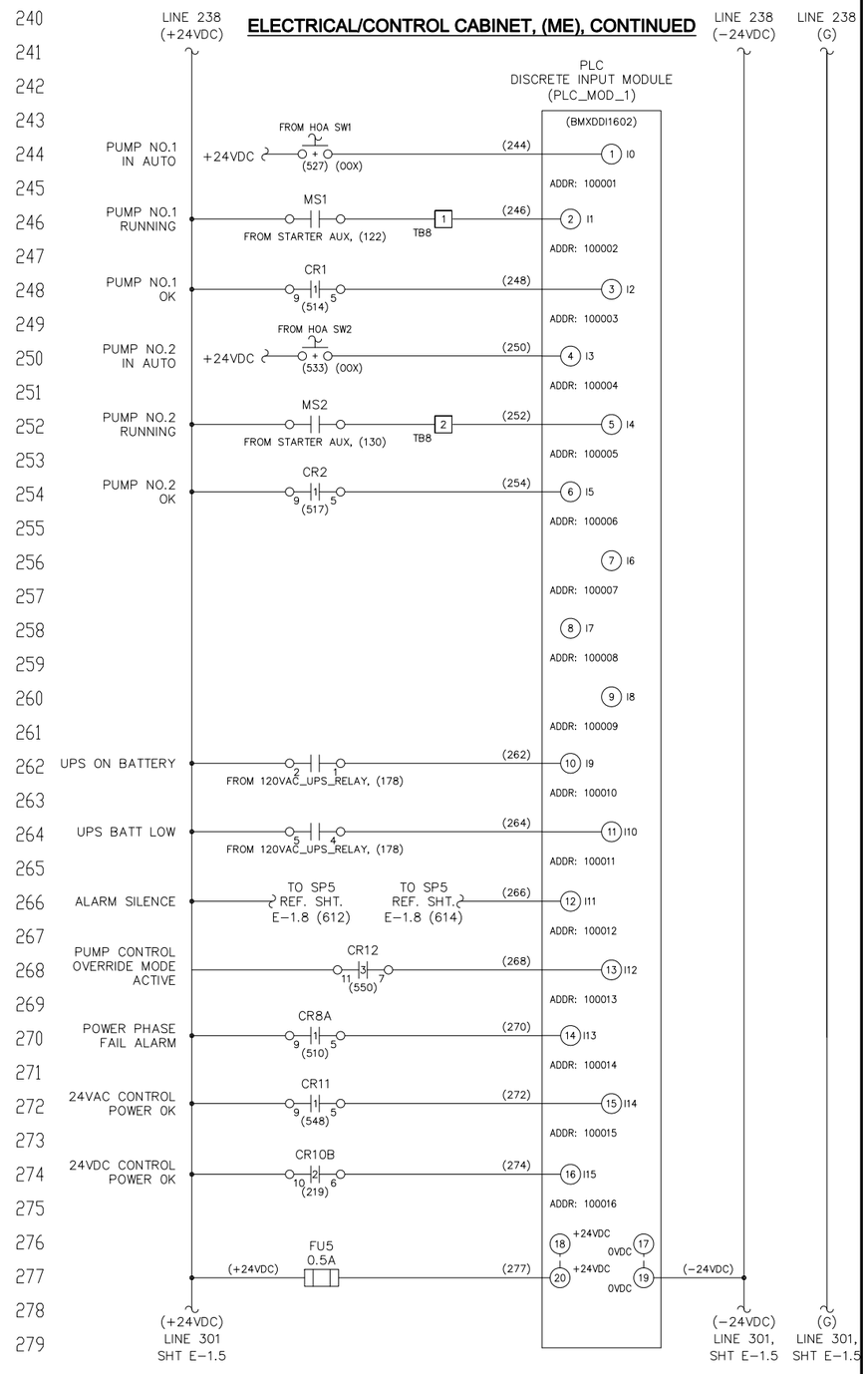
NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CABINET.
3. SENSOR CABLE SHALL CONTAIN HEAT SENSING AND SEAL FAILURE LEADS (4 TOTAL PER PUMP) AND SHALL BE INSTALLED IN CONDUIT WITH MOTOR LEADS FROM JUNCTION BOX JB1 TO THE WET WELL.

ELECTRICAL/CONTROL CABINET, (ME), CONTINUED



REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

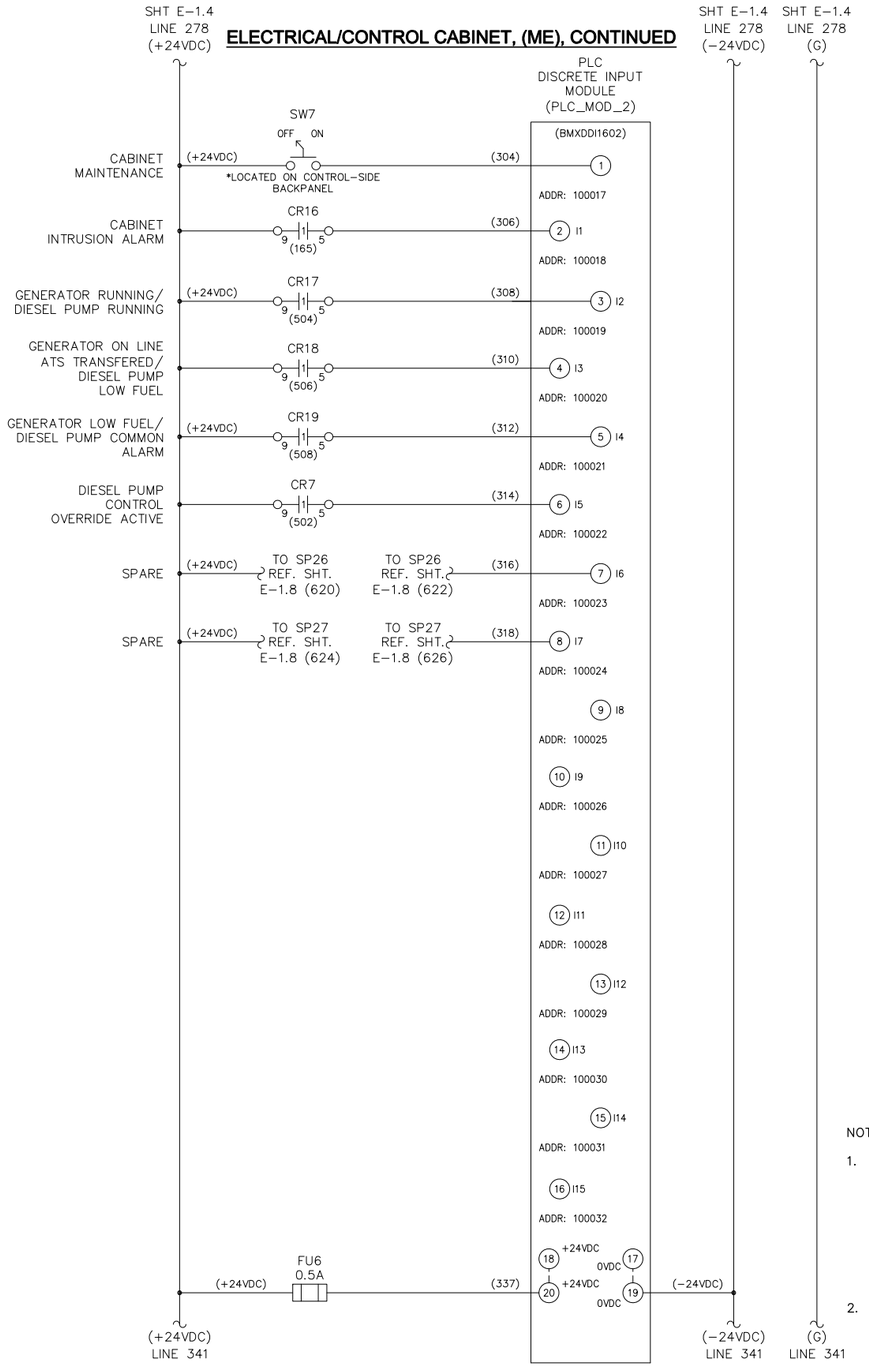
DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
E-1.4

STATUS: CONFORMED
REVISION

ELECTRICAL/CONTROL CABINET, (ME), CONTINUED

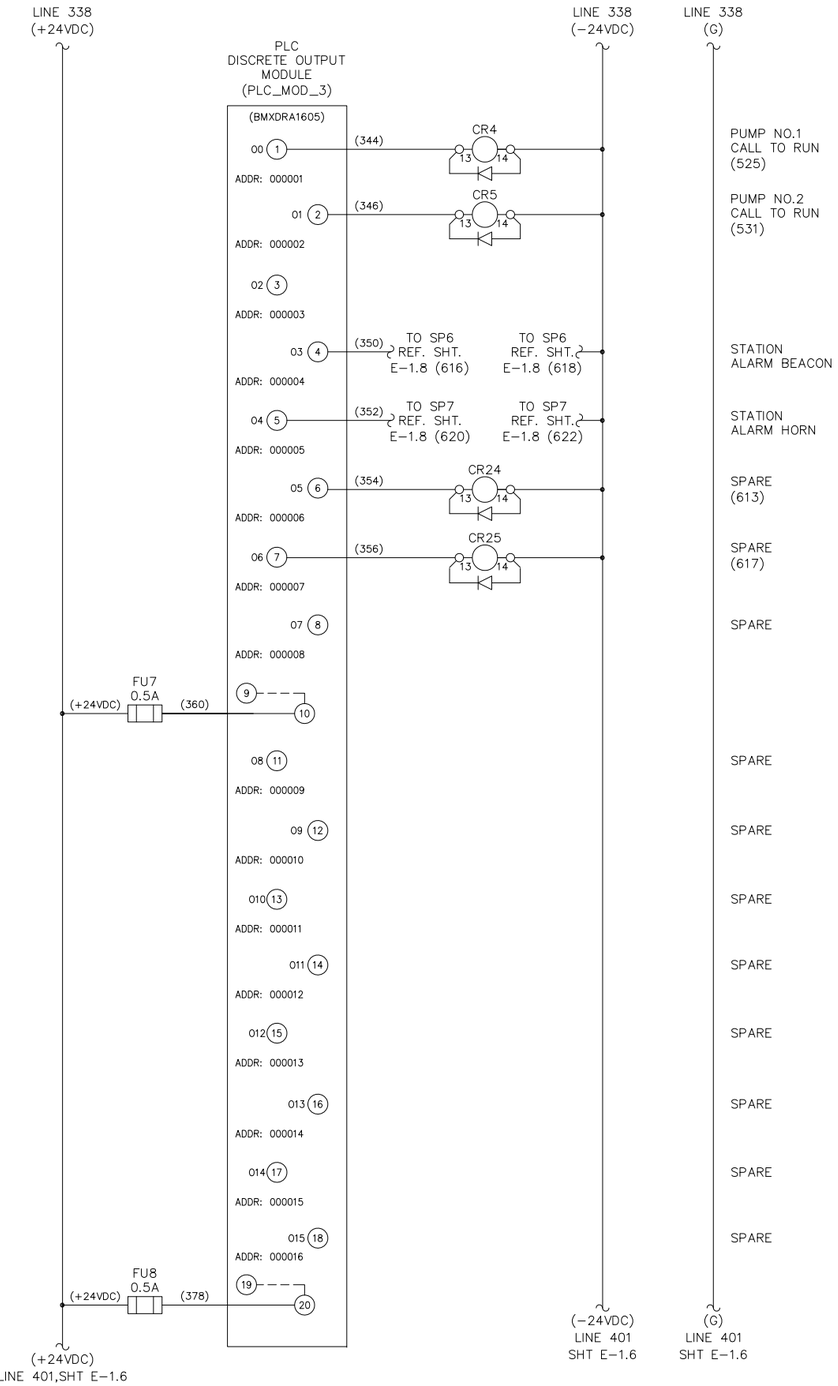


NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CAB.



REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

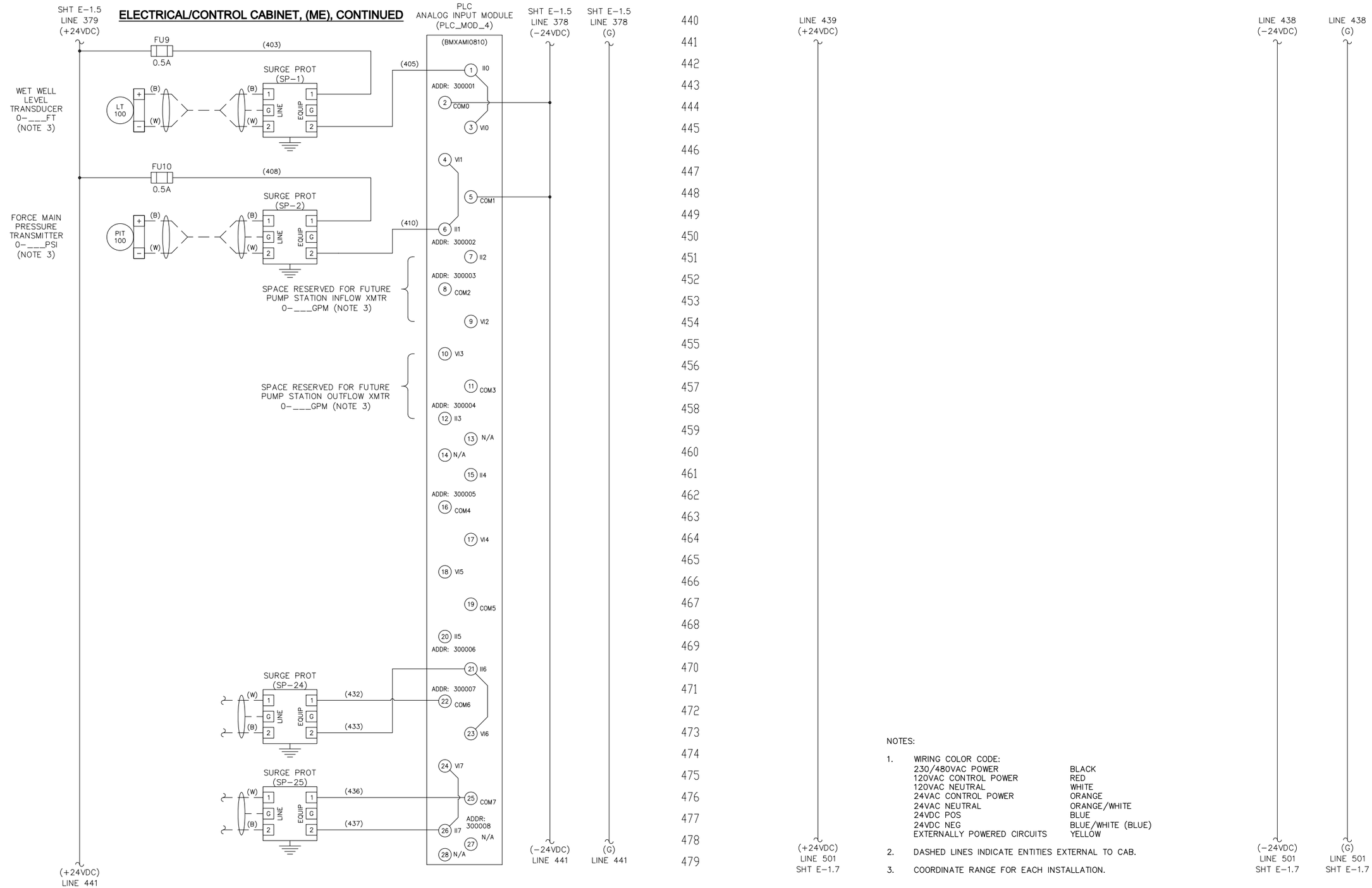
DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-1.5

STATUS: CONFORMED
REVISION

ELECTRICAL/CONTROL CABINET, (ME), CONTINUED



NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CAB.
3. COORDINATE RANGE FOR EACH INSTALLATION.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

SEAL

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

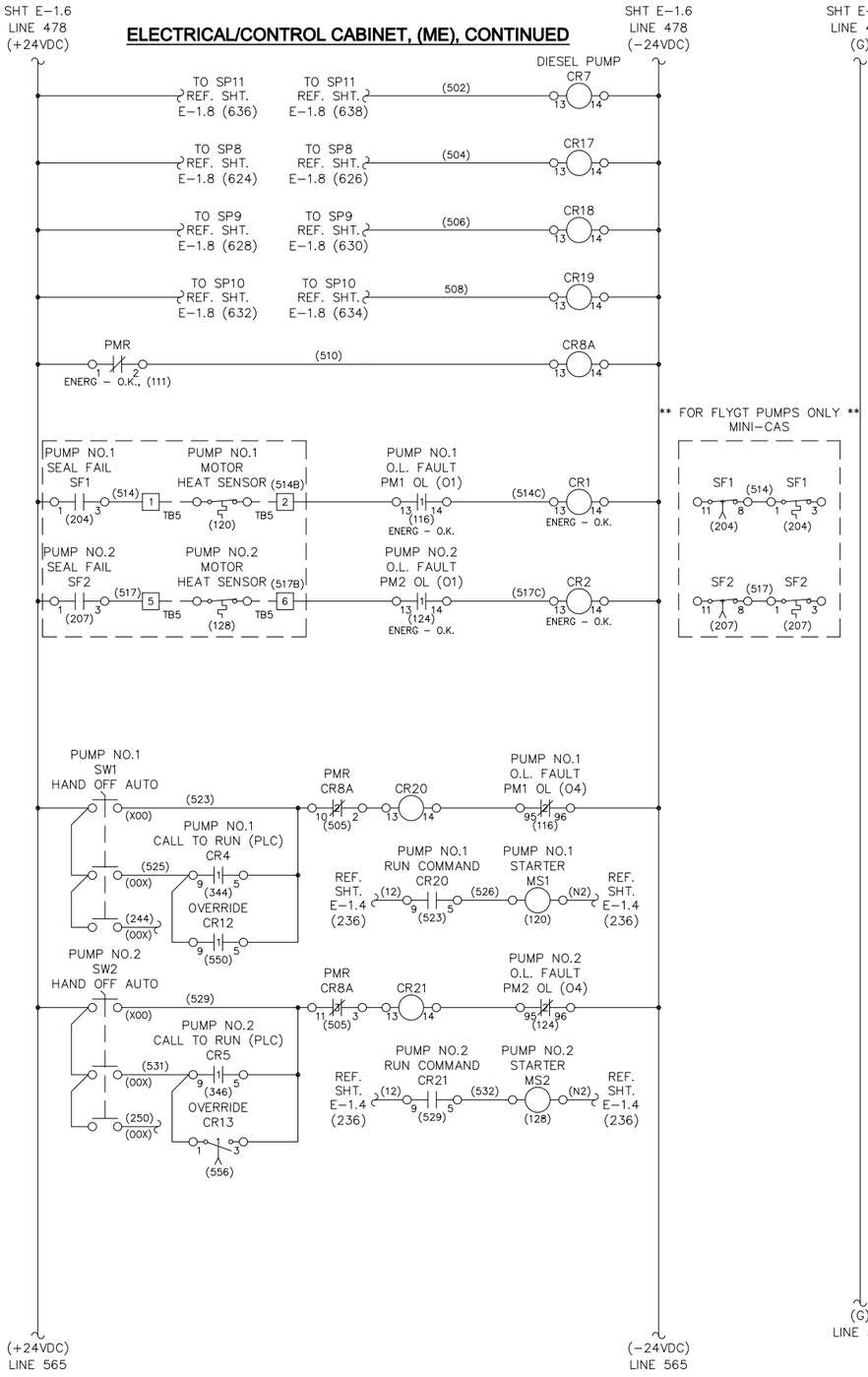
DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
E-1.6

STATUS: CONFORMED
REVISION

ELECTRICAL/CONTROL CABINET, (ME), CONTINUED



DIESEL PUMP CONTROL OVERRIDE ACTIVE (314,550)

GENERATOR RUNNING/ DIESEL PUMP RUNNING (308,608)

GENERATOR ONLINE/ DIESEL PUMP LOW FUEL (310,608)

GENERATOR LOW FUEL/ DIESEL PUMP COMMON ALARM (312,608)

POWER PHASE FAIL ALARM (270,523,529)

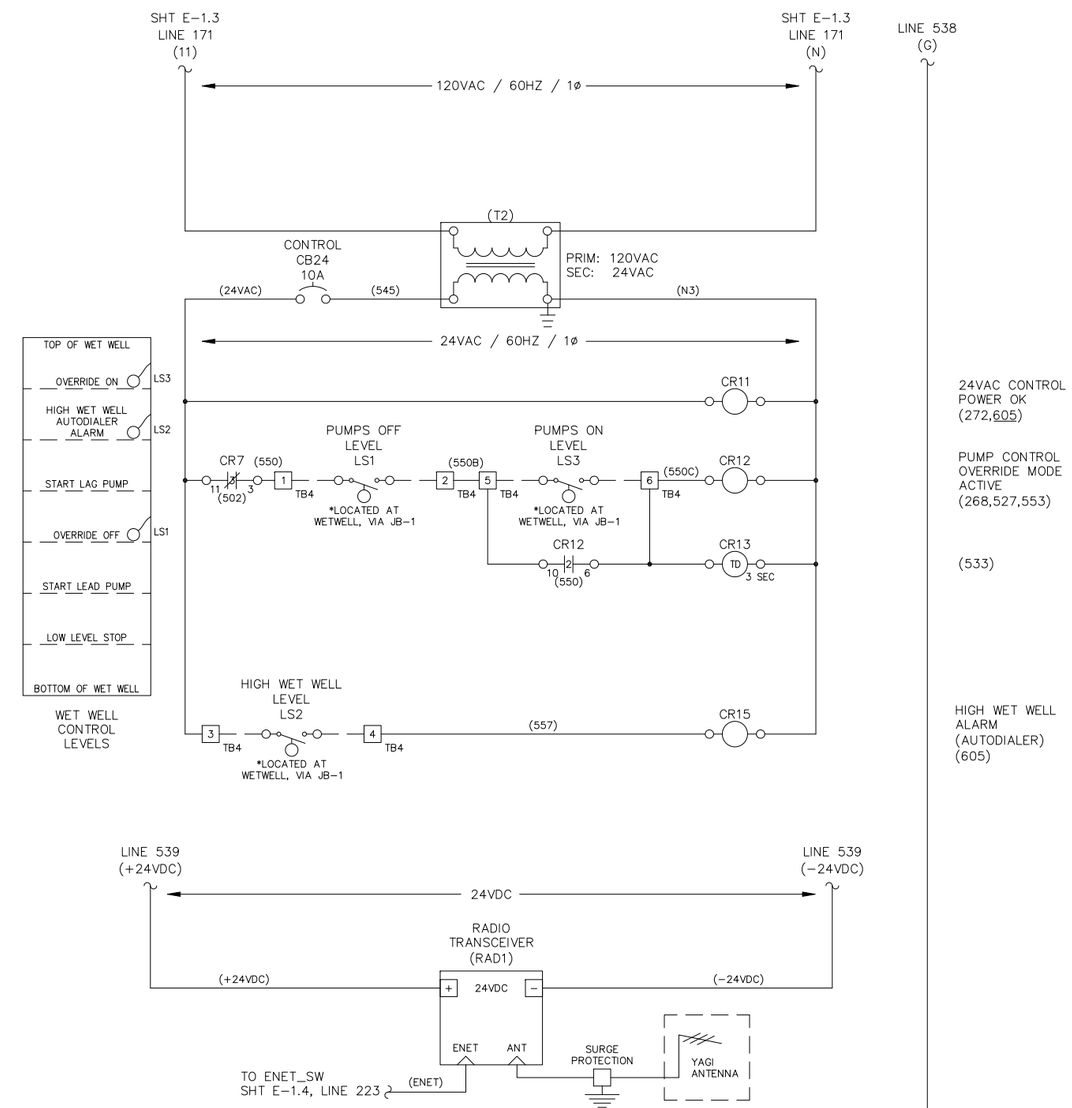
PUMP NO.1 OK (248,602)

PUMP NO.2 OK (254,602)

PUMP NO.1 CALL TO RUN (119)

PUMP NO.2 CALL TO RUN (127)

(G) LINE 541



NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CABINET.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

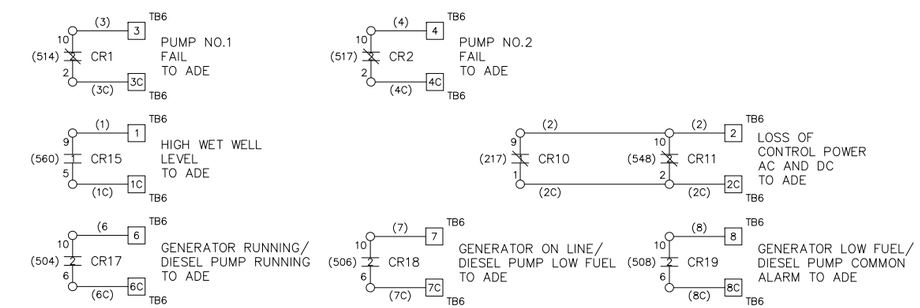
ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

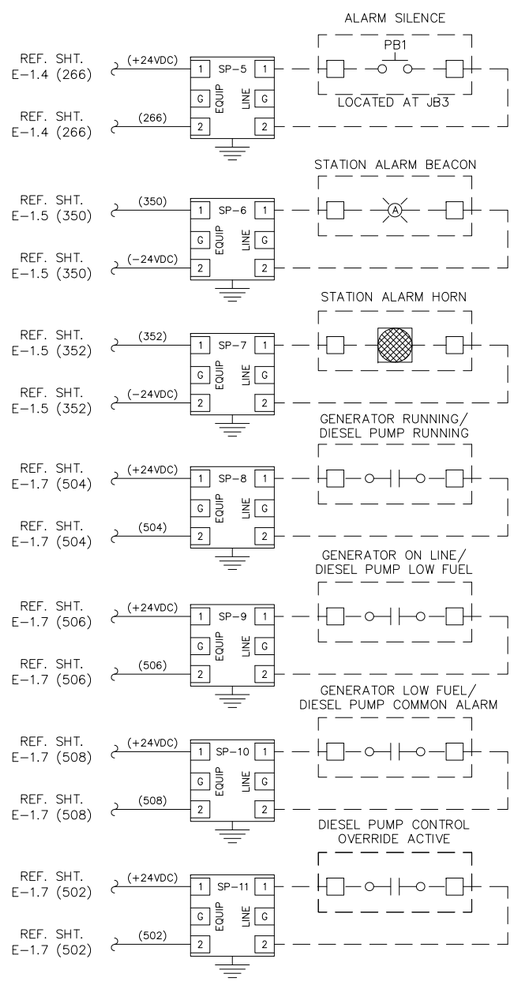
DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-1.7

STATUS: CONFORMED
REVISION



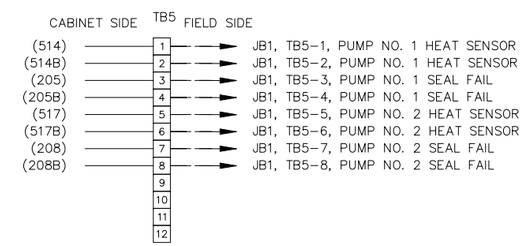


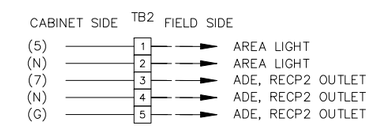
SHT E-1.7
LINE 576
(G)

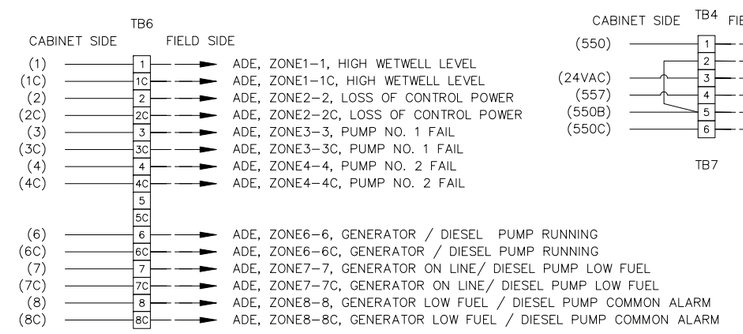
(G)
LINE 641

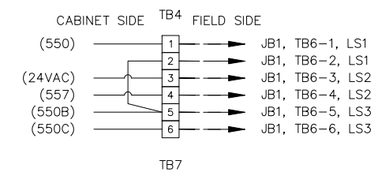
LINE 638
(G)

(G)









NOTES:

1. WIRING COLOR CODE:

230/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VAC CONTROL POWER	ORANGE
24VAC NEUTRAL	ORANGE/WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CABINET.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

DUPLEX WASTEWATER PUMP STATION
ELECTRICAL, CONTROL & INSTRUMENTATION

ELECTRICAL/CONTROL ENCLOSURE
ELECTRICAL SCHEMATICS
(3PH)(480V/3-20HP)

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-1.8

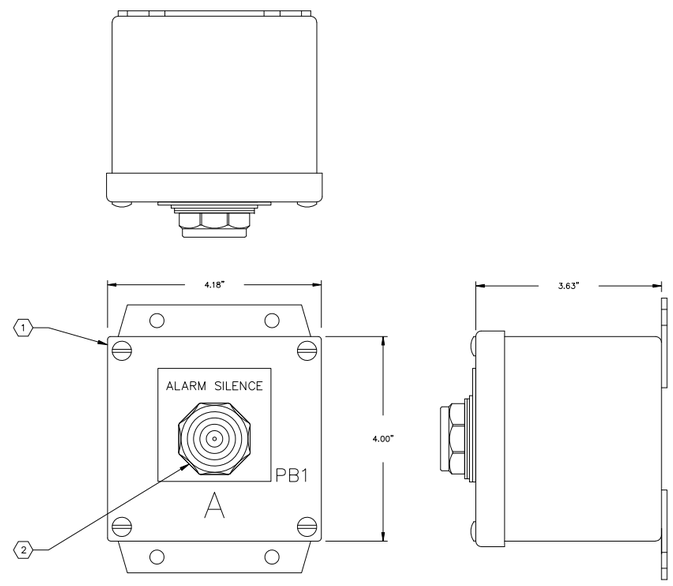
STATUS: CONFORMED
REVISION

LIST OF MAJOR COMPONENTS

ITEM NO.	QTY	DEVICE ID	MANUFACTURER	PART NO.	DESCRIPTION
ALARM SILENCE STATION:					
1	1		SQUARE-D	9001-KYSS100	JUNCTION BOX, 5"Hx4"Wx3.5"D, NEMA 4X, 304SS, SCREW COVER
2	1	PB1	SQUARE-D	9001 KR1BH5	PUSHBUTTON, FULL GUARD, N.O. CONTACTS

NAMEPLATE SCHEDULE

N.P. NO.	QTY	PLATE COLOR/SIZE	LTR COLOR/SIZE	ENGRAVING (LINE1/LINE2/ETC.)
ALARM SILENCE STATION:				
A	1	BLK / 2.25" H x 2.25" W	WHT / 3/16"	ALARM/SILENCE



ALARM SILENCE STATION (JB-3)

3/4"=1"

NOTES:

1. WIRING COLOR CODE:

240/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

ALARM SILENCE STATION

ENCLOSURE LAYOUT AND BILL OF MATERIAL

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-2.0

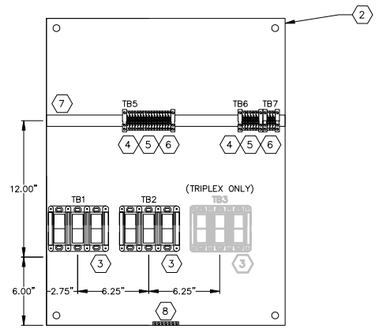
STATUS: CONFORMED
REVISION

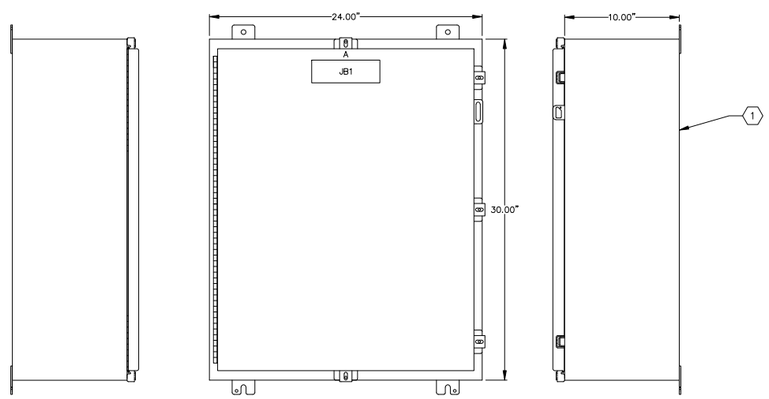
LIST OF MAJOR COMPONENTS

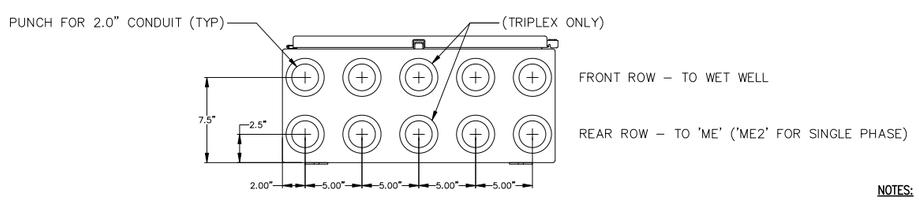
ITEM NO.	QTY.	DEVICE ID	MANUFACTURER	PART NO.	DESCRIPTION
WET WELL JUNCTION BOX (JB1):					
1	1	JB1	HOFFMAN	A30H2410SSLP	ENCLOSURE, 30"Hx24"Wx10"D, NEMA 4X, 304SS, EPOXY WHITE FINISH
2	1		HOFFMAN	A30P24AL	SUBPANEL, 27"Hx21"W, 0.10" THICK, ALUMINUM
3	2	TB1, TB2, TB3*	MARATHON	1333554	POWER DISTRIBUTION BLK, 3 POLE, 310A, 600VAC, PRIM: 1 CONN 6-350 CU, SEC: 2 CONN 14-2/0 CU
		FOR 230V/50HP AND 480V/100HP ONLY:			
	2	TB1, TB2, TB3*	MARATHON	1333565	POWER DISTRIBUTION BLK, 3 POLE, 420A, 600VAC, PRIM: 1 CONN 2-600 CU, SEC: 2 CONN 6-250 CU
4	25	TB5, TB6, TB7	PHOENIX CONTACT	UK5-N	TERMINAL BLOCK
5	3		PHOENIX CONTACT	D-UKK3/5	TERMINAL BLOCK END BARRIER
6	6		PHOENIX CONTACT	1201442	TERMINAL BLOCK END STOP
7	AR		PHOENIX CONTACT		DIN RAIL

NAMEPLATE SCHEDULE

N.P. NO.	QTY	PLATE COLOR/SIZE	LTR COLOR/SIZE	ENGRAVING (LINE1/LINE2/ETC.)
WET WELL JUNCTION BOX (JB1):				
A	1	BLK / 2.00" H x 8.00" W	WHT / 1/2"	JB1

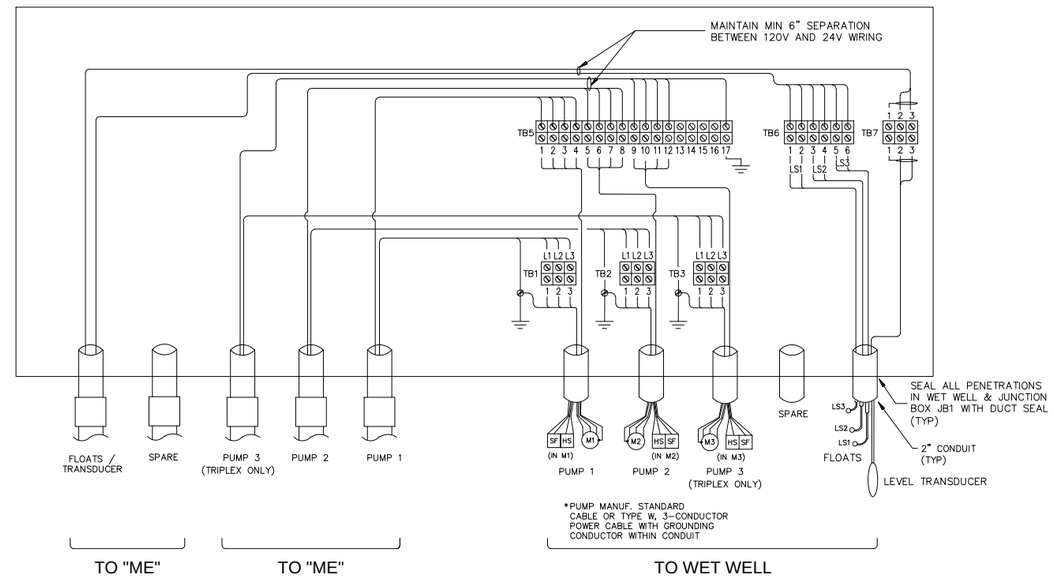






JB1 ENCLOSURE LAYOUT

2" = 1'



JB1 ELECTRICAL SCHEMATIC

NTS

NOTES:

1. APPLY OXIDE-INHIBITING COMPOUND TO ALL ELECTRICAL TERMINATION CONTACT SURFACES, INCLUDING COMPRESSION AND BOLTED CONNECTIONS. PENETROX COMPOUND BURNDY OR EQUAL PRODUCT.
2. SCREW-DOWN CABLE TIES SHALL BE 3M CABLE TIE BASE MODEL 06299 OR PANDUIT MODEL ABM112 OR APPROVED EQUAL. (SIZE AS REQ'D)
3. CONTRACTOR SHALL MOUNT TERMINALS AS SHOWN.

DESIGN BASIS NOTE:

THIS DRAWING REPRESENTS THE STANDARD DESIGN FOR ALL HILLSBOROUGH COUNTY STANDARD WASTEWATER PUMPING STATIONS. IT WAS DEVELOPED TO IMPROVE RELIABILITY AND MAINTAINABILITY, MINIMIZE SPARE PARTS AND INCREASE SERVICE LIFE. ALL REQUESTS FOR DEVIATION FROM THIS STANDARD MUST BE MADE IN WRITING AND WRITTEN APPROVAL RECEIVED BEFORE MODIFICATIONS ARE MADE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS NECESSARY TO RESTORE UNAUTHORIZED MODIFICATIONS.

DESIGN ENGINEER NOTE: ***THIS IS NOT A CONSTRUCTION DRAWING***

DESIGN ENGINEER SHALL REFER TO ELECTRICAL DRAWINGS, MECHANICAL DRAWINGS, AND THE HILLSBOROUGH COUNTY WATER AND WASTEWATER TECHNICAL SPECIFICATION IN ORDER TO COORDINATE THE MECHANICAL AND ELECTRICAL INSTALLATIONS. DESIGN ENGINEER SHALL NOT USE THIS DRAWING FOR A SPECIFIC SITE INSTALLATION. FOR EACH INSTALLATION A SPECIFIC SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS (IF DEEMED NECESSARY BY THE DESIGN ENGINEER) MUST BE PREPARED IN ACCORDANCE WITH F.S. 471 AND RULES 61G.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

WET WELL JUNCTION BOX, (JB1)

CABINET LAYOUT, ELECTRICAL SCHEMATIC, AND BILL OF MATERIAL

DATE:	OCTOBER 2011
PROJ. #	1179-0013
DRAWN	
DESIGNED	
CHECKED	
PROJ. MGR.	

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-3.0

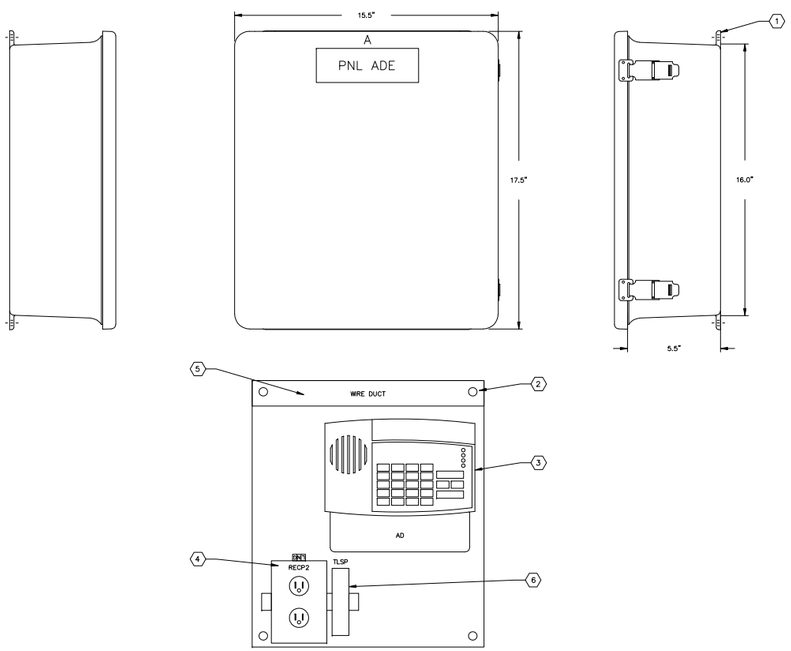
STATUS: CONFORMED
REVISION

LIST OF MAJOR COMPONENTS

ITEM NO.	QTY	DEVICE ID	MANUFACTURER	PART NO.	DESCRIPTION
AUTODIALER PANEL (ADE):					
1	1	ADE	STAHLIN	J1614HPL	ENCLOSURE, 16"Hx14"Wx6"D, NEMA 3R, FIBERGLASS, GREY
2	1		STAHLIN	BP1614AL	SUBPANEL, 16"Hx14"W, ALUMINUM
3	1	AD	PHONETICS, INC.	FGD-0800	ALARM DIALER, SENSAPHONE MODEL 800
4	1	RECP2	PHOENIX CONTACT	EM-DUO-120/15	RECEPTACLE BOX, 120VAC, DUPLEX, NON-GFI, 15A
5	AR		PANDUIT		WIRE DUCT, 1.00"Wx2.00"H
6	1	TLSP	PHOENIX CONTACT	DT-TELE-RJ45	TELEPHONE LINE SURGE PROTECTION, (RJ11, RJ12, RJ45 CONNECTIONS)

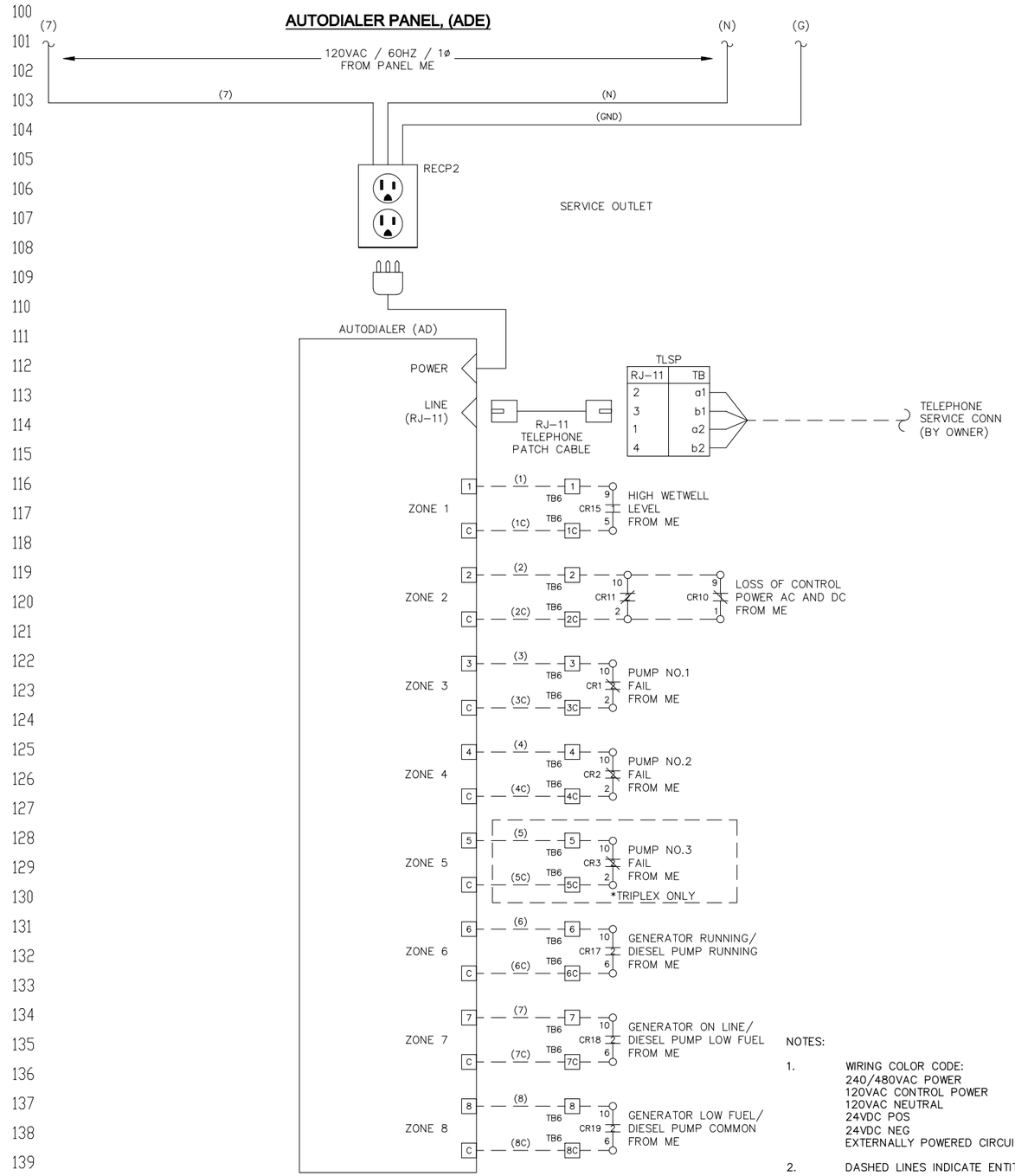
NAMEPLATE SCHEDULE

N.P. NO.	QTY	PLATE COLOR/SIZE	LTR COLOR/SIZE	ENGRAVING (LINE1/LINE2/ETC.)
AUTODIALER PANEL (ADE):				
A	1	BLK / 2.00" H x 6.00" W	WHT / 1/2"	PNL ADE



AUTODIALER PANEL (ADE)

1/4"=1"



NOTES:

1. WIRING COLOR CODE:

240/480VAC POWER	BLACK
120VAC CONTROL POWER	RED
120VAC NEUTRAL	WHITE
24VDC POS	BLUE
24VDC NEG	BLUE/WHITE (BLUE)
EXTERNALLY POWERED CIRCUITS	YELLOW

2. DASHED LINES INDICATE ENTITIES EXTERNAL TO CABINET.

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

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HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

AUTODIALER ENCLOSURE, (ADE)

CABINET LAYOUT, ELECTRICAL SCHEMATIC, AND BILL OF MATERIAL

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

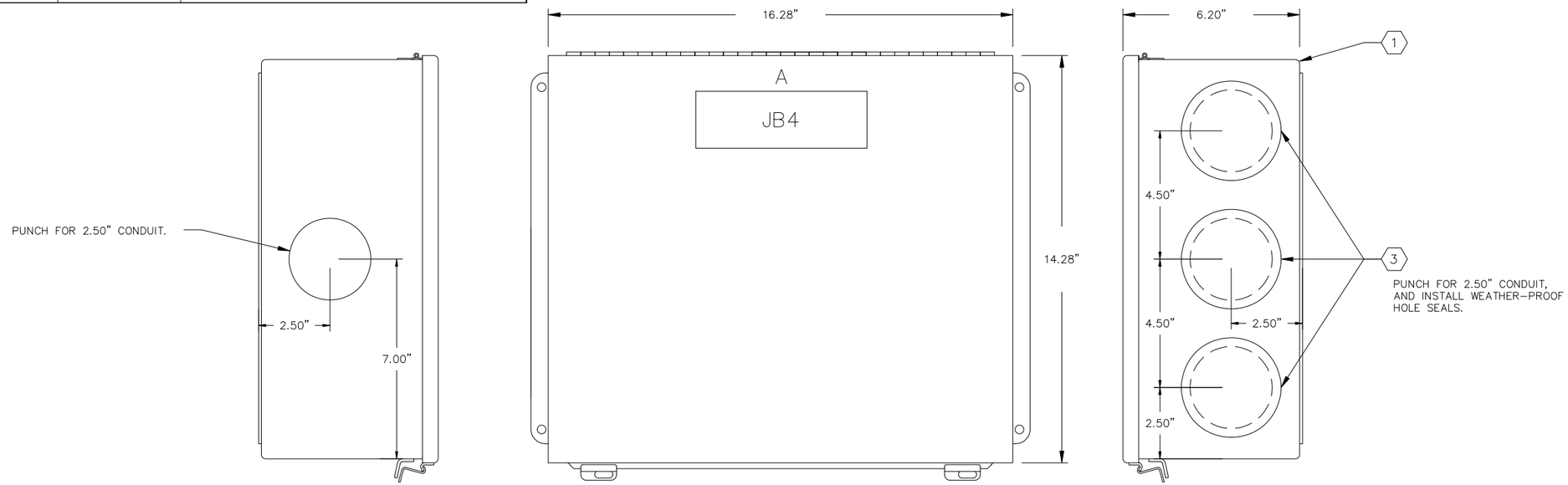
SCALE
HORIZONTAL:
VERTICAL: NA

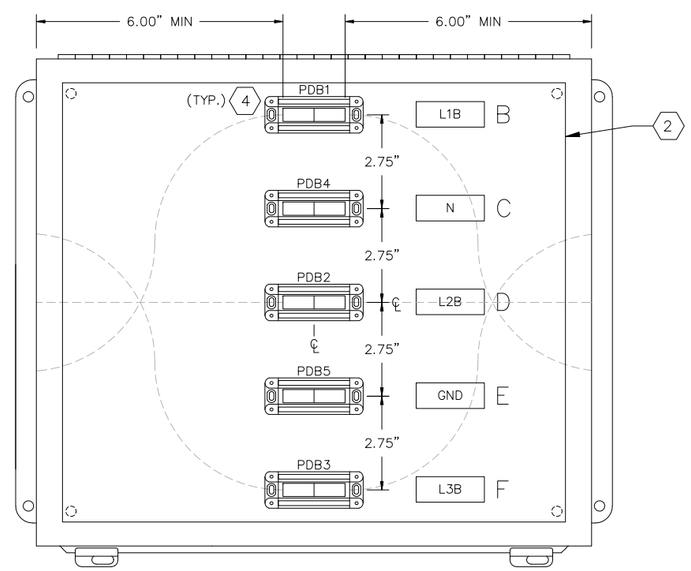
FILE NUMBER
DRAWING NUMBER
E-4.0

STATUS: CONFORMED
REVISION

LIST OF MAJOR COMPONENTS

ITEM NO.	QTY	DEVICE ID	MANUFACTURER	PART NO.	DESCRIPTION
GENERATOR TERMINATION BOX (JB4):					
1	1	JB4	HOFFMAN	A1614CHNFSS6	ENCLOSURE, 16"Hx14"Wx6"D, NEMA 4X, 304 SS, W/ LOCK KIT, EPOXY WHITE FINISH
2	1		HOFFMAN	A16P14SS	SUBPANEL, 14.75"Hx12.88"W, 304 SS, EPOXY WHITE FINISH
3	2		HOFFMAN	AS250SS	HOLE SEAL, 2.50", 300 SERIES SS, WEATHER-PROOF, EPOXY WHITE FINISH
4	5	PDB1,2,3,4,5	BUSSMANN	PDB204-1	POWER DISTRIBUTION BLK, 1 POLE, 175A, 600VAC, PRIM: 1 CONN 8-2/0 CU, SEC: 1 CONN 8-2/0 CU





GENERATOR TERMINATION PANEL (JB4)

1/2"=1"

NAMEPLATE SCHEDULE

N.P. NO.	QTY	PLATE COLOR/SIZE	LTR COLOR/SIZE	ENGRAVING (LINE1/LINE2/ETC.)
GENERATOR TERMINATION BOX (JB4):				
A	1	BLK / 2.00" H x 6.00" W	WHT / 1/2"	JB4
B	1	BLK / 0.75" H x 2.50" W	WHT / 1/4"	L1B
C	1	BLK / 0.75" H x 2.50" W	WHT / 1/4"	N
D	1	BLK / 0.75" H x 2.50" W	WHT / 1/4"	L2B
E	1	BLK / 0.75" H x 2.50" W	WHT / 1/4"	GND
F	1	BLK / 0.75" H x 2.50" W	WHT / 1/4"	L3B

NOTE: FOR USE WITH THE FOLLOWING "ME" PACKAGES ONLY:

- DUP, 3PH/480VAC/3-20HP
- TRI, 3PH/480VAC/3-20HP

REV.NO.	DESCRIPTIONS	DATE
1	CONFORMED	5/17/13

REVISIONS

SEAL

SEAL

HILLSBOROUGH COUNTY
PUBLIC UTILITIES
ENGINEERING & ENVIRONMENTAL SERVICES GROUP
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

GENERATOR TERMINATION BOX, JB4 (SMALL)

CABINET LAYOUT AND BILL OF MATERIAL

DATE: OCTOBER 2011
PROJ. # 1179-0013
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

SCALE
HORIZONTAL:
VERTICAL: NA

FILE NUMBER
DRAWING NUMBER
E-5.0

STATUS: CONFORMED
REVISION

CAPITAL PROJECT DETAIL

PROJECT TITLE

Sludge Dewatering Improvements

PROJECT#

409195

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of rotary drum thickeners and a screw press and polymer feed system

JUSTIFICATION

The existing centrifuges used for dewatering sludge are high maintenance units that operate under high velocity and are routinely having to be serviced at high costs. New technology screw press devices operate at a low torque speed and produce a dryer sludge cake. The rotary drum thickeners operate ahead of the screw presses and pre-thicken the sludge to allow constant feed rates into the screw press. The polymer feed system at the sludge handling facility has reached the end of its service life and needs to be replaced

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	0	195,000	0	0	0	195,000
Construction	0	0	1,560,000	0	0	1,560,000
Total	0	195,000	1,560,000	0	0	1,755,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	0	195,000	1,560,000	0	0	1,755,000
Total	0	195,000	1,560,000	0	0	1,755,000

Table 7.3-2
Project WWT-2
(Short Term < 5 years)
Clarifier Weir Covers & MLS #1Communitor

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Clarifier Weir Covers	4	EA	$60,000	$240,000
2	Comminutor Assemblies	2	EA	$60,000	$120,000
	Total Estimated Construction				*$360,000*
	Contingency @ 20%				$72,000
	Eng., C.A., & Inspection @ 15%				$54,000
	TOTAL ESTIMATED PROJECT COST				**$486,000**

WWT-3, Sludge Digester Improvements (Short Term < 5 years)

Aerated Sludge Holding (Digesters)

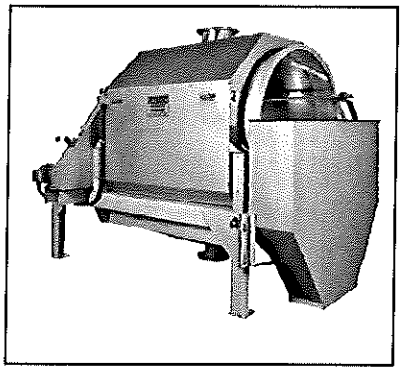
The existing aerated sludge holding tanks are utilized to temporarily hold waste sludge prior to dewatering and disposal. The City is not digesting to achieve Class B or other. In fact, excessive sludge holding times are detrimental to the biological nutrient removal (BNR) process. All of the phosphorous removed in the BNR process is stored in the waste sludge. Excessive sludge holding times contributes to cell destruction in the holding tanks and subsequent release of phosphorous back to the head of the plant.

It is important to maintain good aeration, and to have sufficient storage volume to allow effective control of solids inventory; however, additional volume is not necessary. The biggest problem with the current system are the blowers and diffusers. They are old and have reached the end of their useful life. New technology is available which provides better mixing and aeration, with far less horsepower. Similar to the Invent mixers proposed for installation in the Fermentation and Anoxic basins, the hyperbolic mixing/aeration system combines the mixers with a circular diffuser ring which is installed under the mixer. The air

bubbles are sheared by the hyperboloid mixer which increases the air transfer efficiency and satisfies the mixing requirements in the tanks.

The air flow required to mix digesters far exceeds the air requirement to sustain aerobic conditions. As such, using a mixer in combination with aeration provides the best of both worlds and reduces the energy requirement to maintain a D.O. of 2 mg/l. It is estimated that two (2) 15 hp mixers and one (1) 30 HP positive displacement blower will satisfy the mixing and aeration needs for both digesters. Two (2) blowers are proposed for Class I reliability standards.

The City may also want to consider installation of rotary drum thickeners (RDT) in order to enhance the storage capacity in the existing digesters and possibly allow the operation of a single digester in lieu of 2. The drum thickeners (shown below) utilize polymer and sludge retention screens to thicken sludge from approximately 0.8% to 3 or 4%. This increases the effective storage volume, reduces the mixing energy required to mix the extra water in the thinner sludge and provides a greater degree of redundancy and reliability. There is also an advantage to feeding thicker sludge to the subsequent dewatering process.



Sludge Dewatering

The City currently operates two (2) sludge centrifuges to dewater waste activated sludge (WAS). They were installed in 2008, and were overhauled in 2014. Both centrifuges must

be maintained on an on-going basis. It is expensive and time consuming. There can be a discussion of different types of centrifuges and which manufacturer provides the most reliable equipment; however, it is generally understood that centrifuges are high speed devices and require more maintenance and service than other dewatering equipment.

They offer the advantage of producing a drier end product than a belt filter press, 18% vs 14%, but that does come at a price. The other problem is the current configuration of the dewatering building. It is not configured to allow for belt filter presses, there is insufficient room.

Sludge dewatering technology has advanced and new equipment is available which produces a dry sludge product without the energy and maintenance associated with a centrifuge. *Screw Press* devices combine the configuration of a centrifuge along with the low horsepower and slow speed of a belt filter press. A typical screw press is depicted below. They can be easily retrofitted into the existing building and typically produce a dewatered product of 17 – 18% at a polymer feed rate of 25 gallon per dry ton.

Screw press devices run at a lower throughput than centrifuges, because they are designed to be run continuously. For example, a centrifuge operating at 120 GPM for 8 hours can dewater 5,760 gallons of sludge. A screw press operating at 40 GPM for 24 hours can dewater the same volume of sludge, using less energy. Rotary drum thickeners are also very compatible with screw press installations because they pre-thicken the WAS to provide for lower feed rates.

Currently, the digesters, blowers, diffusers and centrifuges create significant maintenance issues. The digester blowers and diffusers are especially problematic. This plan recommends installation of: hyperbolic mixer/aerators, blowers, two (2) rotary drum thickeners and two (2) screw presses. New polymer feed equipment is also recommended. Estimated costs for all proposed improvements are detailed below.

Table 7.3-3A
Project WWT-3A
(Short Term < 5 years)
Sludge Digester Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	New Hyperbolic Mixer/Aerators	2	EA	$50,000	$100,000
2	New PD Blowers with VFDs	2	EA	$50,000	$100,000
3	Electrical and Instrumentation	1	LS	$25,000	$25,000
4	Mechanical and Structural	1	LS	$25,000	$25,000
	Total Estimated Construction				*$250,000*
	Contingency @ 20%				$50,000
	Eng., C.A., & Inspection @ 15%				$37,500
	TOTAL ESTIMATED PROJECT COST				**$337,500**

Table 7.3-3B
Project WWT-3B
(Short Term < 5 years)
Sludge Dewatering Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Rotary Drum Thickeners	2	EA	$300,000	$600,000
2	Screw Press & Polymer Feed	2	EA	$250,000	$500,000
3	Electrical and Instrumentation	1	LS	$50,000	$50,000
4	Mechanical and Structural	1	LS	$150,000	$150,000
	Total Estimated Construction				*$1,300,000*
	Contingency @ 20%				$260,000
	Eng., C.A., & Inspection @ 15%				$195,000
	TOTAL ESTIMATED PROJECT COST				**$1,755,000**

WWT-4, Laboratory Upgrades (Short Term < 5 years)

CAPITAL PROJECT DETAIL

PROJECT TITLE

WTP Solids Handling Facility Upgrades

PROJECT#

409197

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Replacement of the Solid Handling facility dewatering sturcture and exisiting centrifuges with a new steel building and vacuum presses.

JUSTIFICATION

The existing solid handling facililties are in need of significant repair. Specifically, the dewatering structure and existing centrifuges are in poor condition and should be replaced. The steel structure and wall panels are severly corroded and need to be replaced. Only one of the two centrifuges operates and it does not function well. Both should be replaced with newer technology screw filter presses.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	150,000	0	0	0	0	150,000
Construction	0	1,200,000	0	0	0	1,200,000
Total	150,000	1,200,000	0	0	0	1,350,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	150,000	1,200,000	0	0	0	1,350,000
Total	150,000	1,200,000	0	0	0	1,350,000

WT-4, Solids Handling Facility Upgrades (Short Term < 5 years)

The existing solids handling facilities are in need of significant repair. Specifically, the dewatering structure and existing centrifuges are in poor condition and should be replaced in the near future. The steel structure and wall panels are severely corroded and should be demolished and replaced. Only one (1) of the two (2) existing centrifuges operate. It does not function well. Both should be replaced with two (2) new vacuum filter presses.

The new vacuum filter presses will fit in the upstairs area previously occupied by the centrifuges. Conceptual pricing is detailed below:

Table 5.3-4
Project WT-4
(Short Term < 5 years)
Solids Handling Facility Upgrades

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Demolish Existing Structure	1	LS	$20,000	$20,000
2	Construct New, Corrosion Resistant Building	1	LS	$100,000	$100,000
3	Install Vacuum Thickeners	2	EA	$400,000	$800,000
4	Electrical and Instrumentation	1	LS	$80,000	$80,000
	Total Estimated Construction				*$1,000,000*
	Contingency @ 20%				$200,000
	Eng., C.A., & Inspection @ 15%				$150,000
	TOTAL ESTIMATED PROJECT COST				**$1,350,000**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Secondary Raw Water Main

PROJECT#

434027

CATEGORY

Water and Wastewater Improvements

FUND

434-Water Impact Fees

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construct a secondary 24" raw water main along SR40 from Hunters Ridge to Williamson Boulevard.

JUSTIFICATION

The City receives the majority of its raw water from the Hudson and Rima Ridge wellfields. Currently, there is a single 24" raw water main on SR40 which a significant vulnerability should the line be broken for any reason, A secondary redundant raw water main would enable the raw water flow to continue preventing a potential water shortage at the water treatment plant.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	0	300,000	0	0	0	300,000
Construction	0	0	2,400,000	0	0	2,400,000
Total	0	300,000	2,400,000	0	0	2,700,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Water Impact Fees	0	300,000	2,400,000	0	0	2,700,000
Total	0	300,000	2,400,000	0	0	2,700,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Breakaway Trails Reclaimed Water Storage and Pum

PROJECT#

409188

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a 1.0 MG ground storage Tank and pumping station to serve the Breakaway Trails reuse system and fire protection system

JUSTIFICATION

The existing storage tanks and pump facilities were constructed in the early 1990's and are at the end of their useful life. The storage tanks are steel and neither tank is covered leading to Algea problems which clog irrigation systems and promotes water quality degradation.

PROJECT COST METHODOLOGY

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	0	0	0	240,000	60,000	300,000
Construction	0	0	0	0	2,400,000	2,400,000
Total	0	0	0	240,000	2,460,000	2,700,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	0	0	0	240,000	2,460,000	2,700,000
Total	0	0	0	240,000	2,460,000	2,700,000

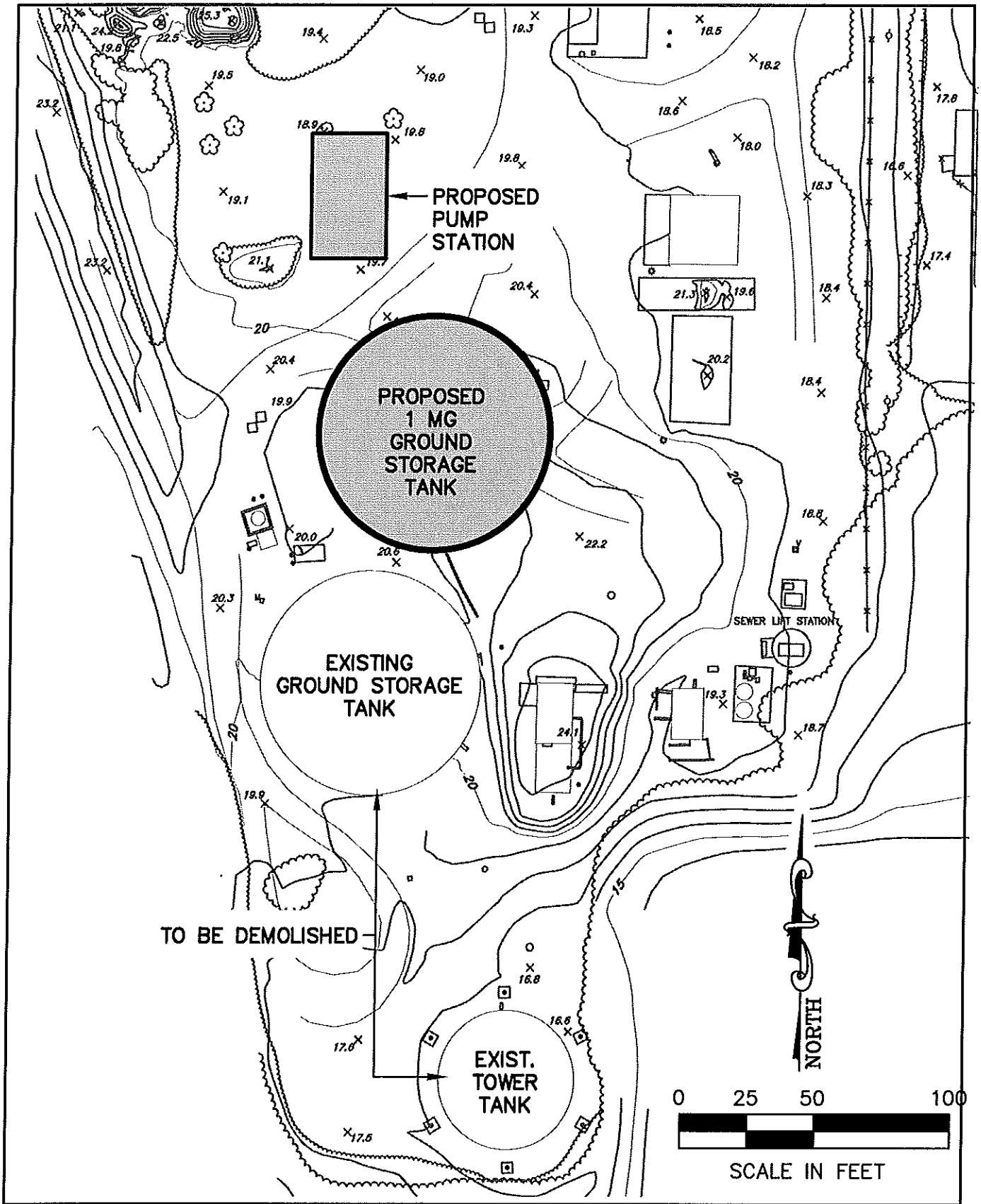
RW-2. Breakaway Trails Reclaimed Water Storage Tank & Pump Station (Short Term < 5 years)

The existing storage tanks and pumping facilities were constructed in the early 1990's and are at the end of their useful life. The storage tanks are steel and neither tank is covered, thus enabling algae growth and water quality degradation. Long term maintenance of both tanks will become an issue as time goes on.

The pumps are fixed speed pumps located on a slab next to the southernmost tank. The figure below depicts the existing tanks and pump station. The tanks discharge into a distribution network that has an elevated steel storage tank. The tank is small and provide little storage capacity. It primary function is to maintain a constant head on the system and provide instantaneous flow in the event of a fire, because the fire protection system is connected to the reuse distribution network.

The existing elevated storage tank is only 120' high and the maximum system pressure is approximately 60 psi. This is a problem because the Breakaway Trails system is connected to Hunter's Ridge system which operates at 75 psi. The Hunter's Ridge system has a pre-stressed concrete ground storage tank and a pump station with conventional centrifugal pumps.

The same type of system is proposed for Breakaway Trails. A conceptual site plan is included herein as ***Figure #9.6-2*** which depicts the proposed layout. A 1 or 2 MG pre-stressed concrete ground storage tank and a high service pump station with three (3) VFD controlled high service pumps is proposed. All of the existing tanks and pumps would be demolished. This system will operate in conjunction with the Hunter's Ridge system and provide storage and pumping for all customers in the western portion of the service area. The estimated project costs are detailed below.



QUENTIN L. HAMPTON ASSOC., INC.
CONSULTING ENGINEERS

FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 626
FAX: 386.761.3977
P.O. DRAWER 290247 PORT ORANGE, FL 32129-0247
PHONE: 386.761.6810

CITY OF ORMOND BEACH UTILITY MASTER PLAN

FIGURE 9.6-2
BREAKAWAY TRAILS CONCEPTUAL RECLAIMED STORAGE TANK AND PS

S:\OB\OB059 Utility Master Plan Update\Cad\Design\Sec5 - Reclaimed Water System\Breakaway Trails Reuse Facility\Breakaway Trails Reuse Facility.dwg, Layout1, 2/6/2015 3:03:12 PM, pjohns

Table 9.6-2
Project RW-2
(Short Term < 5 years)
Breakaway Trails Reclaimed Water Storage Tank and Pump Station

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	2.0 MG Reuse Storage Tank	1	LS	$900,000	$900,000
2	Reuse Pump Station	1	LS	$600,000	$600,000
3	Demolition, Sitework and Yard Piping	1	LS	$350,000	$350,000
4	Electrical and Instrumentation	1	LS	$100,000	$150,000
	Total Estimated Construction				*$2,000,000*
	Contingency @ 20%				$400,000
	Eng., C.A., & Inspection @ 15%				$300,000
	TOTAL ESTIMATED PROJECT COST				**$2,700,000**

RW-3, Reclaimed Water Service to Deer Creek and Saddler's Run (Short Term < 5 years)

Deer Creek

A 10" reclaimed water main was installed under Airport Road on Leeway Trail, at the entrance to Deer Creek Subdivision. The subdivision is currently served by a pump which withdraws stormwater from a pond. A 10" connection, with a check valve, is proposed downstream of the pond pump. A second connection, 8" diameter, is proposed farther to the west at Levee Road. The two (2) connections; one from Hunter's Ridge and the other at Leeway Trail, will provide sufficient flow and pressure. The check valve will prevent higher pressures from Hunter's Ridge from re-circulating to lower pressure zones in BWT. This issue will be resolved upon completion of the storage tank and pump station project.

Saddler's Run

A new 8" reclaimed water main from Black Hickory Drive in BWT to Saddler's Run will enable service to those customers currently using surface water for irrigation. The plats from both subdivisions indicate that each lot as a 7.5' side yard utility easement, 15' total for two (2) lots.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Deer Creek Reclaimed Water Connection

PROJECT#

409171

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Connect Deer Creek Subdivision existing irrigation system to reclaimed watermain along Airport Rd. Connect Saddlers Run Subdivision to reclaimed water

JUSTIFICATION

Deer Creek is a subdivision which is located north of the Airport Road and west of Leeway Tr. Deer Creek has an existing irrigation system which currently is supplied by the water from an onsite stormwater pond. A stubout from the Airport Rd Reclaimed watermain was provided with the construction of that project, which was completed in 2013, that will be used to connect the Deer Creek irrigation system to the reclaimed watermain, In addition a connection at Levee Road will also be required to provide sufficient pressure to serve the Deer Creek Irrigation needs. Saddlers Run also has an internal irrigation system that is not connected to reclaimed water. However, it is adjacent to Breakaway Trails and a connection can be made from Breakaway Trails that can tie-in to the Saddlers run irrigation system.

PROJECT COST METHODOLOGY

Unit Pricing

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construct Improvements	0	0	0	120,000	0	120,000
Engineering	0	0	0	15,000	0	15,000
Total	0	0	0	135,000	0	135,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	0	0	0	135,000	0	135,000
Total	0	0	0	135,000	0	135,000

A 300± LF 8" directional drill will complete the connection between BWT and Saddler's Run. Estimated costs are detailed below:

Table 9.6-3
Project RW-3
(Short Term < 5 years)
Reclaimed Water Service to Deer Creek and Saddler's Run

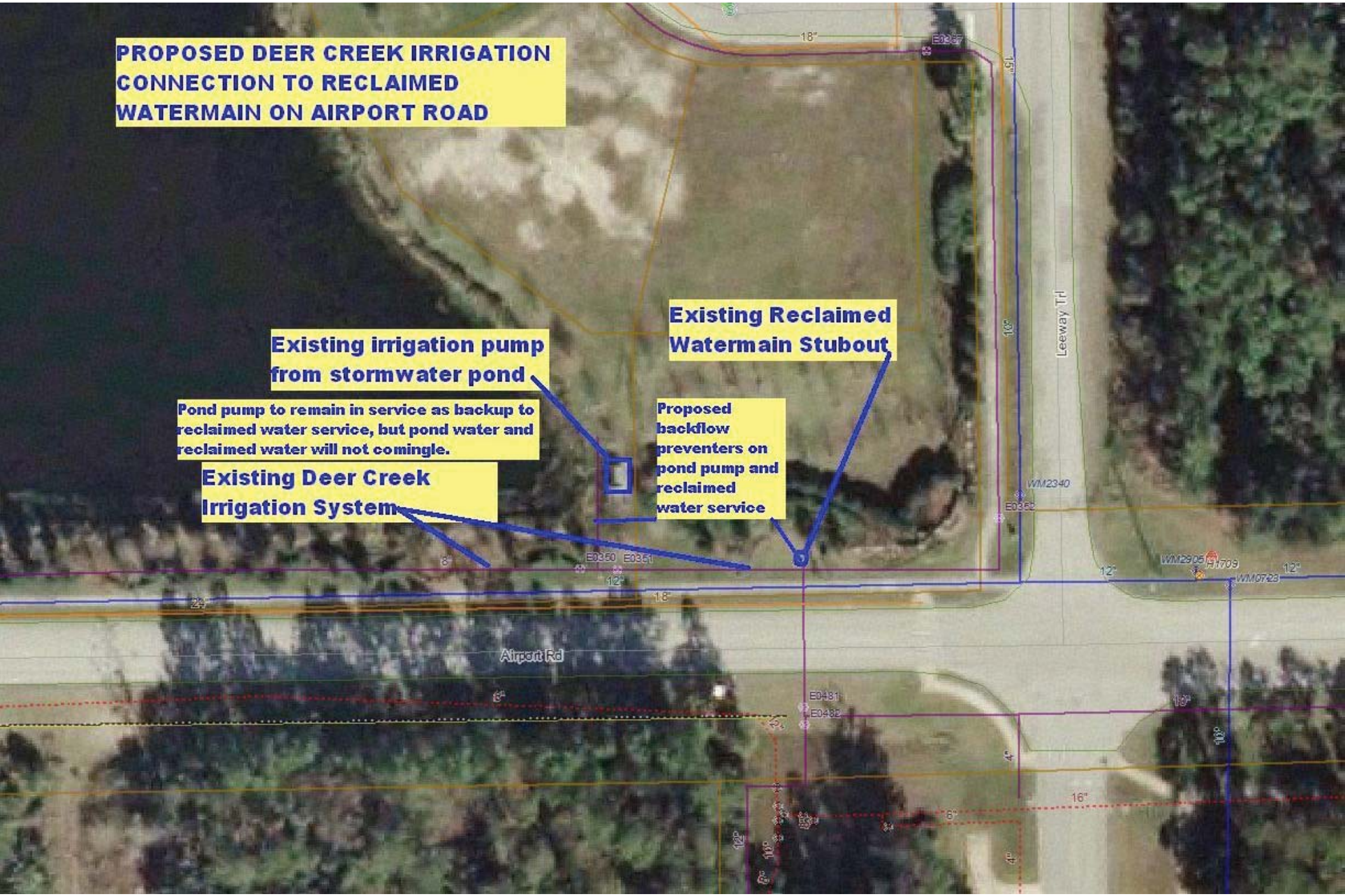
Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Tie-In @ Leeway Trail	1	LS	$10,000	$10,000
2	Tie-In @ Levee Road	1	LS	$40,000	$40,000
3	Service to Saddler's Run	1	LS	$50,000	$50,000
	Total Estimated Construction				*$100,000*
	Contingency @ 20%				$20,000
	Eng., C.A., & Inspection @ 15%				$15,000
	TOTAL ESTIMATED PROJECT COST				**$135,000**

RW-4, Reclaimed Water Service to River Bend Golf Course, (Short Term < 5 years)

A 12" stub-out was installed at River Bend for future connection. It is estimated that the golf course would utilize 200-250k gpd/yr. This connection will be required when the golf course seeks to renew their Consumptive Use Permit (CUP). Estimated costs are detailed below:

Table 9.6-4
Project RW-4
(Short Term < 5 years)
Reclaimed Water Service to River Bend Golf Course

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	12" PVC	100	LF	$120	$12,000
2	Tie-In @ River Bend	1	LS	$50,000	$50,000
3	Electrical Pump Station	1	LS	$18,000	$18,000
	Total Estimated Construction				*$80,000*
	Contingency @ 20%				$16,000
	Eng., C.A., & Inspection @ 15%				$12,000
	TOTAL ESTIMATED PROJECT COST				**$108,000**


PROPOSED DEER CREEK IRRIGATION CONNECTION TO RECLAIMED WATERMAIN ON AIRPORT ROAD
Existing irrigation pump from stormwater pond
Pond pump to remain in service as backup to reclaimed water service, but pond water and reclaimed water will not comingle.
Existing Deer Creek Irrigation System
Existing Reclaimed Watermain Stubout
Proposed backflow preventers on pond pump and reclaimed water service
Leeway Trl
Airport Rd
WM2340
WM2905
WM0723
E0350
E0351
E0481
E0482

CAPITAL PROJECT DETAIL

PROJECT TITLE

Distribution System-North Peninsula

PROJECT#

409155

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of a 0.5 MG ground storage tank and pumping facility on the north peninsula.

JUSTIFICATION

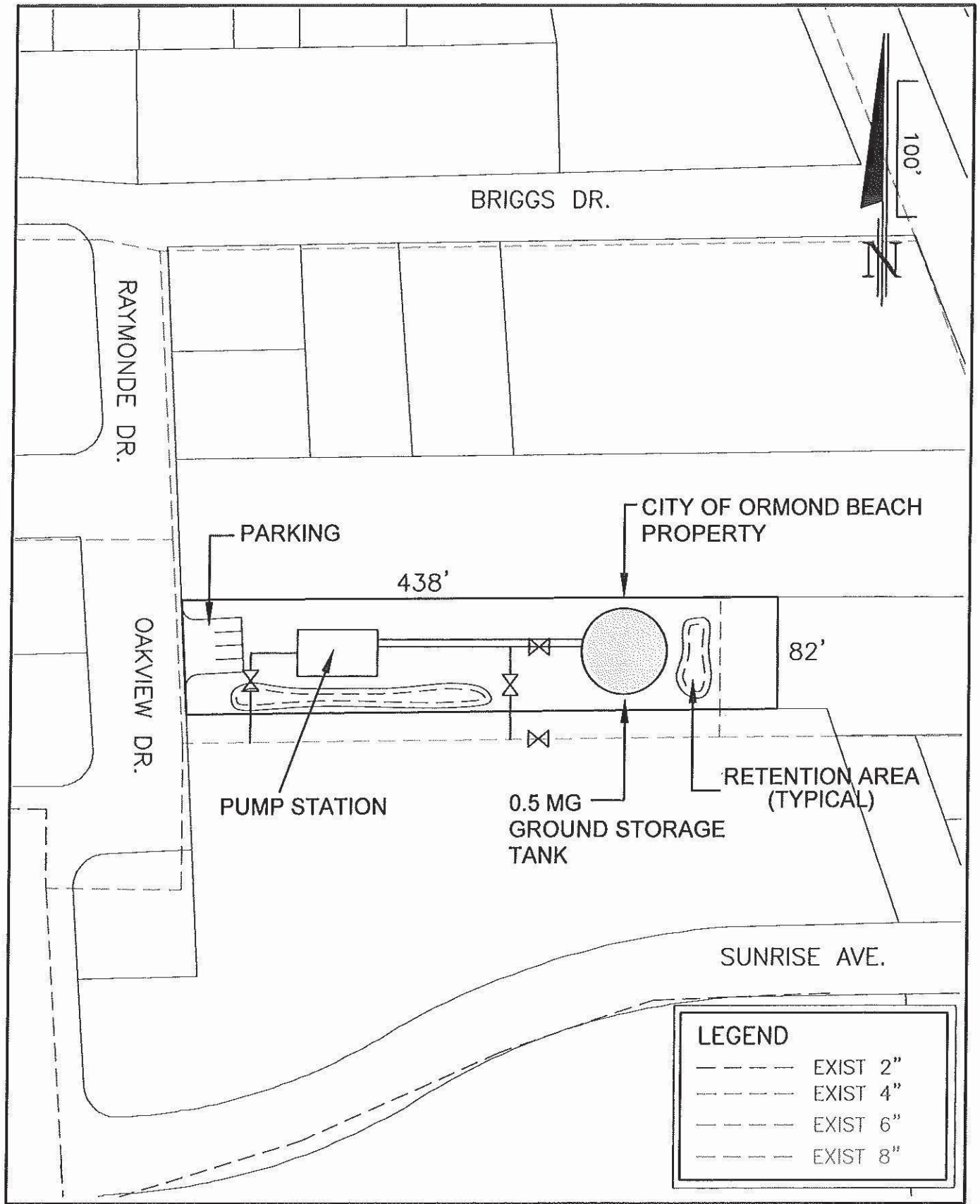
Hydraulic modeling of the distribution system demonstrated that under fire flow conditions residual pressures below the minimum allowed (20 psi) were observed in certain areas throughout the north Peninsula. Most of the low pressures were due to commercial fire demands of 2,000 gallons per minute. The City's Utility Master Plan recommended the construction of a 0.5 MG ground storage tank and pumping facility on property the City owns at the north end of the north peninsula

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Engineering, CA, Inspection	0	0	0	90,000	22,500	112,500
Construction	0	0	0	0	900,000	900,000
Total	0	0	0	90,000	922,500	1,012,500

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds-Water	0	0	0	90,000	922,500	1,012,500
Total	0	0	0	90,000	922,500	1,012,500



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FAX: 386.761.3977
P.O. DRAWER 290247 PORT ORANGE, FL 32129-0247
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CITY OF ORMOND BEACH
UTILITY
MASTER PLAN

FIGURE 10.5-4
NORTH PENINSULA
GST & PUMP STATION

S:\OB\OB31 Utility Master Plan\Cad\Design\Water\OB31 ormond master plan_WATER PROJECTS.dwg, N Pen GST, 11/1/2007 7:54:02 AM, PEJ

Project PW-7, North Peninsula GST and Pump Station

This project was previously discussed in section 10.5.6 as an alternative to a transmission main project to the north. It includes the construction of a 0.5 MG ground storage tank (GST) and a pump station at a North Peninsula site presently owned by the City.

Table PW-7
North Peninsula GST and Pumping Station
Preliminary Cost Estimate

ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
1	0.5 MG Storage Tank	1	LS	$350,000	$350,000
2	Pump Station	1	LS	$250,000	$250,000
3	Site Improvements	1	LS	$150,000	$150,000
				Construction Subtotal	$750,000.00
				Survey, Permitting, Engineering, Legal (15%)	$112,500.00
				Contingency (30%)	$225,000.00
				TOTAL	**$1,087,500.00**

Note: 1. Water main construction costs include valves, services, fittings, and testing.

CAPITAL PROJECT DETAIL

PROJECT TITLE

Force Main Improvements

PROJECT#

435039

CATEGORY

Water and Wastewater Improvements

FUND

435-Wastewater Impact Fees

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Construction of force main improvements as recommended in the Utility Master Plan Update. Williamson Blvd.: 4,500 ft of 8-inch forcemain from I-95 to Williamson at Hand Avenue.

JUSTIFICATION

A single 8-inch main currently provides sewer service from the developed area west of I-95. This main will be undersized assuming development of the SW service area occurs.

PROJECT COST METHODOLOGY

Utility Master Plan Update

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Williamson Boulevard FM - Design	0	0	0	60,000	0	60,000
Williamson Boulevard FM - Const	0	0	0	0	540,000	540,000
Total	0	0	0	60,000	540,000	600,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Wastewater Impact Fees	0	0	0	60,000	540,000	600,000
Total	0	0	0	60,000	540,000	600,000

Project WW-11, Williamson Boulevard Force Main (Western Relief)

Intermediate (6-10 years)

Development within the S.W. Service Area (Wholesale Area) will serve as the catalyst necessitating an additional force main across I-95 and south on Williamson Boulevard. **Figure MB-7** depicts the proposed route.

A single 8" force main is currently the only transmission main under I-95. It has a effective capacity of 700 GPM. Construction of a regional station serving the S.W. area will eclipse the capacity of the existing pipe. A supporting main will be required when substantial development in the S.W. Service Area occurs. It is identified as a short term project due to the uncertainty of future development trends in the referenced area. Another factor affecting this project is scheduling of the new western WWTP. The project may be delayed if flows do not significantly increase or if the western WWTP is built. A preliminary cost estimate is detailed below:

ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
1	8" PVC Force Main	4,000	LF	$50/LF	$200,000
2	8" HDPE Directional Drill	500	LF	$200/LF	$100,000
3	Valves and Fittings	1	LS	$40,000	$40,000
4	Tie-Ins	2	EA	$10,000	$20,000
				Construction Sub-Total	$360,000
				Engineering, C.A., and Inspection @ 15%	$54,000
				Contingency @ 30%	$108,000
				TOTAL COST	**$522,000**

CAPITAL PROJECT DETAIL

PROJECT TITLE

Laboratory Upgrades

PROJECT#

409189

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Laboratory rehabilitation and equipment replacement

JUSTIFICATION

The existing laboratory and equipment are 20 years old and a major refit of lab is required. The cabinetry, countertops, and the majority of equipment requires replacement in order to properly operate a certified lab. Having a certified lab will enhance the efficiency of plant operation and enable rapid test results improving operators ability to maintain plant compliance.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	0	0	0	480,000	0	480,000
Engineering, CA, Inspection	0	0	0	60,000	0	60,000
Total	0	0	0	540,000	0	540,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	0	0	0	540,000	0	540,000
Total	0	0	0	540,000	0	540,000

Currently, the digesters, blowers, diffusers and centrifuges create significant maintenance issues. The digester blowers and diffusers are especially problematic. This plan recommends installation of: hyperbolic mixer/aerators, blowers, two (2) rotary drum thickeners and two (2) screw presses. New polymer feed equipment is also recommended. Estimated costs for all proposed improvements are detailed below.

Table 7.3-3A
Project WWT-3A
(Short Term < 5 years)
Sludge Digester Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	New Hyperbolic Mixer/Aerators	2	EA	$50,000	$100,000
2	New PD Blowers with VFDs	2	EA	$50,000	$100,000
3	Electrical and Instrumentation	1	LS	$25,000	$25,000
4	Mechanical and Structural	1	LS	$25,000	$25,000
	Total Estimated Construction				*$250,000*
	Contingency @ 20%				$50,000
	Eng., C.A., & Inspection @ 15%				$37,500
	TOTAL ESTIMATED PROJECT COST				**$337,500**

Table 7.3-3B
Project WWT-3B
(Short Term < 5 years)
Sludge Dewatering Improvements

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Rotary Drum Thickeners	2	EA	$300,000	$600,000
2	Screw Press & Polymer Feed	2	EA	$250,000	$500,000
3	Electrical and Instrumentation	1	LS	$50,000	$50,000
4	Mechanical and Structural	1	LS	$150,000	$150,000
	Total Estimated Construction				*$1,300,000*
	Contingency @ 20%				$260,000
	Eng., C.A., & Inspection @ 15%				$195,000
	TOTAL ESTIMATED PROJECT COST				**$1,755,000**

WWT-4, Laboratory Upgrades (Short Term < 5 years)

The existing laboratory and equipment are approximately 20 years old and a major refit of the lab is required. The cabinetry, countertops and the majority of equipment requires replacement in order to properly operate a certified lab. Having a certified lab, and lab technicians, on site will enhance the efficiency of plant operation and enable rapid test results. The ability to obtain quick and accurate nutrient and biological test data will improve the operator's ability to maintain compliance with permitted criteria.

Table 7.3-4
Project WWT-4
(Short Term < 5 years)
Laboratory Upgrades

Item	*Description*	*Qty*	*Unit*	*Unit Cost*	*Total Cost*
1	Laboratory Cabinets and Counters	1	LS	$150,000	$150,000
2	Laboratory Equipment	1	LS	$250,000	$250,000
	Total Estimated Construction				*$400,000*
	Contingency @ 20%				$80,000
	Eng., C.A., & Inspection @ 15%				$60,000
	TOTAL ESTIMATED PROJECT COST				**$540,000**

CAPITAL PROJECT DETAIL

PROJECT TITLE

VFD retrofit for Wells 39-41

PROJECT#

409196

CATEGORY

Water and Wastewater Improvements

FUND

409-Water and Wastewater R and R

PROJECT LOCATION

MANAGEMENT

Engineering

PROJECT SCOPE

Convert well pump operation from fixed speed to variable speed

JUSTIFICATION

These wells were previously used for irrigation purposes prior to the conversion of Hunter's Ridge to reuse water. Now these wells serve the potable water demands and should be converted to variable speed pumping to allow for better control of flows to the Water Treatment Plant.

PROJECT COST METHODOLOGY

Updated Utility Master Plan

EXPENDITURE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Construction	0	0	0	0	144,000	144,000
Engineering, CA, Inspection	0	0	0	0	18,000	18,000
Total	0	0	0	0	162,000	162,000

REVENUE	2015-16	2016-17	2017-18	2018-19	2019-20	Total 2015-16 to 2019-20
Bond Proceeds	0	0	0	0	162,000	162,000
Total	0	0	0	0	162,000	162,000

REQUESTS AWAITING FUNDING

CAPITAL PROJECT DETAIL

PROJECT TITLE

Downtown: Granada Bridge Uplighting

PROJECT#

104043

CATEGORY

Community Redevelopment

FUND

104-TIF

PROJECT LOCATION

Granada Bridge

MANAGEMENT

Engineering

PROJECT SCOPE

Prepare a lighting design and specification for FDOT permitting and formal advertised bidding.

JUSTIFICATION

This project was identified by Ormond MainStreet and discussed at the February 4, 2014 City Commission Goals workshop. The intent of the project is to light the Granada Bridge structure from the sides and/or underside, including displays for the seasons, special events, and the holidays. The study initial project scope is to determine the boundaries of what could be permitted and perform a design for construction with cost estimates. Once a cost estimate is developed, it shall be budgeted for construction. The amount provided for funding in FY 2019-20 consists of funds anticipated to be available for construction. This amount may be insufficient to cover the total cost of construction and funding options will be provided after design is complete.

PROJECT COST METHODOLOGY

Costs based on past study and design proposals.

	AMOUNT REQUESTED
EXPENDITURE	
Design	140,000
Construction	1,000,000
Total	1,140,000

	AMOUNT REQUESTED
REVENUE	
To be determined	140,000
To be determined	1,000,000
Total	1,140,000

Projects not recommended for funding in the next five years

Community Redevelopment

Expenditures

Downtown: Granada Bridge Uplighting	1,140,000
Community Redevelopment	1,140,000

Facility Construction and Renovation

Expenditures

MacDonald House Improvements	457,000
Facility Construction and Renovation	457,000

Recreation and Cultural Facility Improvements

Expenditures

Andy Romano Beachfront Park - Pavilion	125,000
Cassen Park Improvements	510,000
Doug Thomas Way Extension	670,000
Environmental Learning Center	105,000
Nova Community Park Access Road	220,000
Nova Community Park Master Plan Future Years	3,388,200
OBSC Future Improvements	1,374,000
Ormond Beach Sports Complex Lighting	495,000
Public Art Program Projects	178,500
Tennis Center Building	175,000
Three Chimneys	110,000
West Ormond Neighborhood Park	2,650,000
Recreation and Cultural Facility Improvement	10,000,700

Stormwater Improvements

Expenditures

Hunters Ridge Shadows Crossing - Phase 1	25,000
Lisa Lake Dredging	600,000
May 2009 Flood Study - Phase II Improvements	8,604,000
Stormwater Improvements	9,229,000
Grand Total	**20,826,700**

GRANADA BRIDGE

AESTHETIC LIGHTING

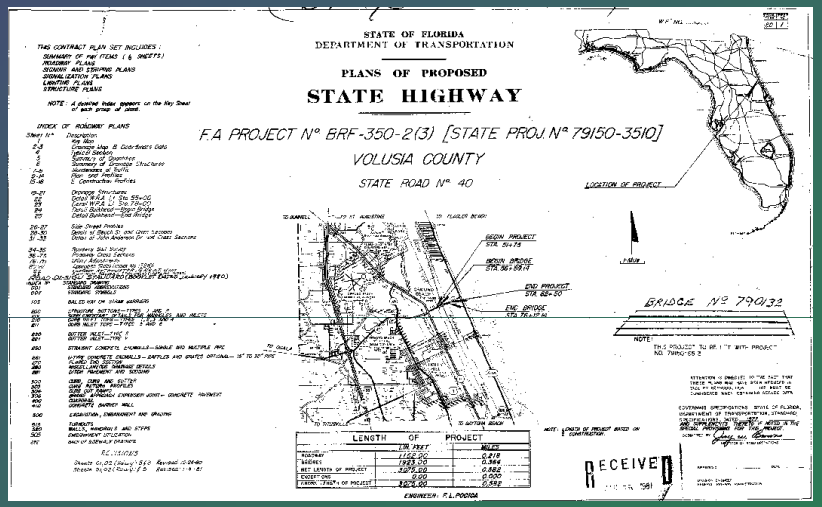
Presented by:

AVCON, INC.
436 W. New York Avenue
DeLand, Florida 32720

ZEVCOHEN & Assoc., Inc.
300 Interchange Blvd., Suite C
Ormond Beach, Florida 32174

OVERVIEW

- Granada Bridge spanning approximately 1,923 feet over the Halifax River Intracoastal Waterway
- Built in 1983 (Prestressed Concrete and Steel)
- Bridge Design Stringer/Multi-Beam or Girder (19 Bridge Spans)
- Provide Aesthetic Lighting Options
- Propose a methodology for installing Aesthetic Lighting and corresponding Electrical Equipment

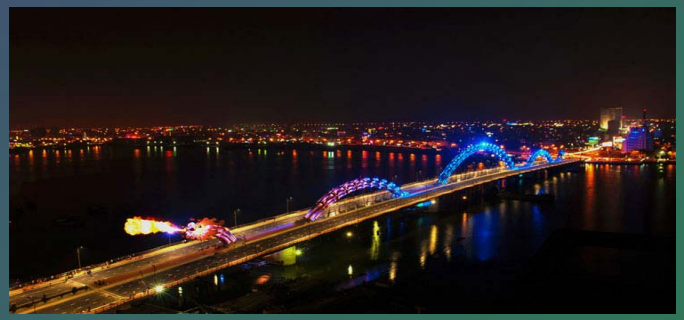


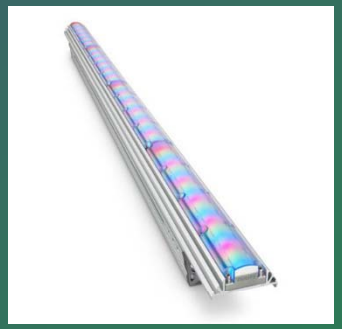
DISCOVERY

- Complete Site Analysis of existing Structure and Utilities
- Onsite Meetings with City Staff, Electrical Engineer (12-12-2014)
- Onsite Meetings with Aesthetic Lighting Designers and lighting manufacturers (01-05-2015)
- Provide feasible Aesthetic Lighting Options and a sustainable installation methodology
- FDOT Plan Review

SUSTAINABILITY

- Proposed innovative LED Technology
- LED Technology provides most sustainable design (over 100,000 operating hours)
- Aesthetic Lighting Manufacturer (Color Kinetics or equivalent)
- Aesthetic LED Lighting provides low maintenance (IP-66 Rated luminaire damp/wet)
- High Performance Multi-Color programmable LED's to produce Dynamic color renditions (Red, Blue, Green)





LIGHTING OPTION 1

- Linear wall grazing of the outboard face of the bridge type IV beams
- High Performance Dynamic color (programmable color renditions)
- LED Color Graze Beams

LIGHTING OPTION 2

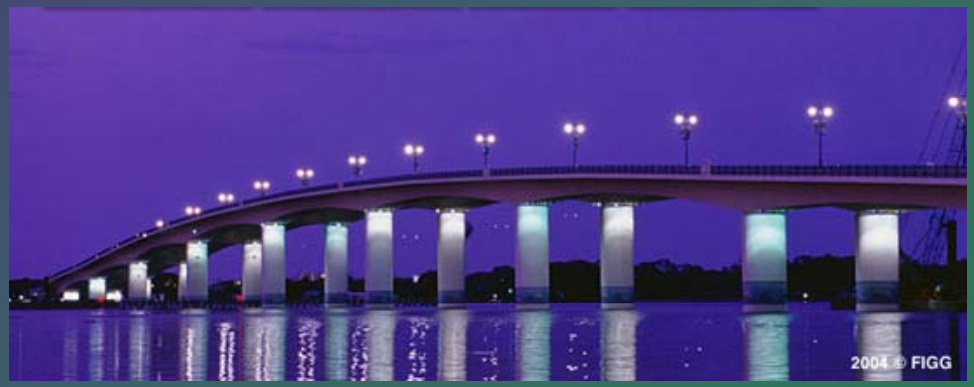
- Wall washing of the outboard surface of the bridge pier columns
- High Performance Dynamic color (programmable color renditions)
- LED Color Blast Column outer face

LIGHTING OPTION 3

- Saturation of the bridge undercarriage
- High Performance Dynamic color (programmable color renditions)
- LED Color Saturate Bridge Undercarriage

LIGHTING EXAMPLES

Roosevelt Bridge
Stuart, FL



International Speedway Bridge
Daytona Beach, FL

Dodge Island Bridge
Miami, FL

Dames Point Bridge
Jacksonville, FL

LIGHTING EXAMPLES

Vincent Thomas Bridge
Los Angeles, CA

Meydan Bridge
Dubai, UAE

Peace Bridge
Buffalo, NY

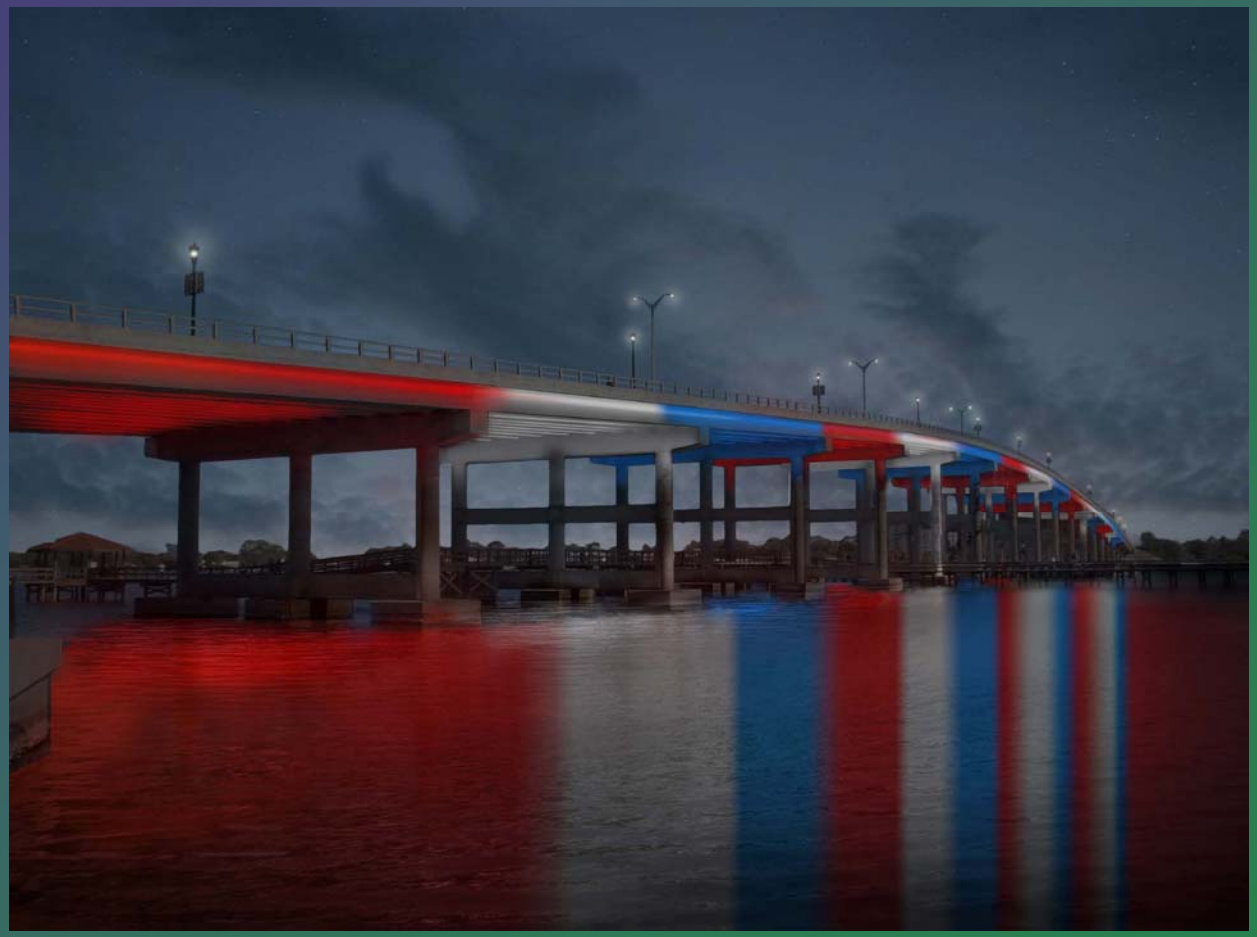
Lupu Bridge
Shanghai, China

LIGHTING CONCEPT 1

- Option 1 – Graze Outside Beam Face
- Option 3 – Saturate Bridge Undercarriage
- $3.65 Million

LIGHTING CONCEPT 1

- Option 1 – Graze Outside Beam Face
- Option 3 – Saturate Bridge Undercarriage
- $3.65 Million



LIGHTING CONCEPT 1

- Option 1 – Graze Outside Beam Face
- Option 3 – Saturate Bridge Undercarriage
- $3.65 Million

LIGHTING CONCEPT 2

- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $1.60 Million

LIGHTING CONCEPT 2

- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $1.60 Million

LIGHTING CONCEPT 2

- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $1.60 Million

LIGHTING CONCEPT 3

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- $3.14 Million

LIGHTING CONCEPT 3

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- $3.14 Million

LIGHTING CONCEPT 3

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- $3.14 Million

LIGHTING CONCEPT 4

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $3.80 Million

LIGHTING CONCEPT 4

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $3.80 Million

LIGHTING CONCEPT 4

- Option 1 – Graze Outside Beam Face
- Option 2 – Blast Outer Column Face
- Option 3 – Saturate Bridge Undercarriage
- $3.80 Million

CAPITAL PROJECT DETAIL

PROJECT TITLE

MacDonald House Improvements

PROJECT#

NA

CATEGORY

Facility Construction and Renovation

FUND

301-General Improvement Fund

PROJECT LOCATION

MacDonald house

MANAGEMENT

Engineering

PROJECT SCOPE

Renovation or demolish. This project will be included for evaluation as part of the proposed historic preservation plan discussed at the City Commission's strategic planning session.

JUSTIFICATION

During renovations of the MacDonald House in 2007, significant structural deterioration was found. The City's construction management firm performed an investigation and provided costs to repair the building. The Historic Landmark Preservation Board recommended funding for this project be appropriated if available to restore the house. However, the cost has significantly increased sine then based on current restoration estimates. Alternatively, the existing building could be demolished for around $15,000 and a new tennis building (approximately 1,000 square feet) could be constructed. Sale of the MacDonald House can also be considered. Relocation of the Historic Society will be required as they currently operate out of the MacDonald House.

PROJECT COST METHODOLOGY

The attached quote was received in 2012 from the City's construction management firm and reflects the price to restore the house and an optional cost to demolish the house. The cost estimate has been updated to reflect current estimated cost based on the Construction Price Index.

	AMOUNT REQUESTED
EXPENDITURE	
Renovation	436,000
Architectural Services	21,000
Total	457,000

	AMOUNT REQUESTED
REVENUE	
To be determined	457,000
Total	457,000

Below is information relative to the State's Special Category Grant Program with a deadline of June 30th. Per the guidelines, municipalities are required to submit a copy of an approved resolution of the match amount. A request can be submitted stating that if a grant award is made for the project, the required matching funds will be available.

Funding	Match Requirements	Deadline/Purpose
$50,000-$500,000 Only 1 application per entity per cycle is allowed.	The grantee is **required to provide a matching share of either $50,000 <u>or 50% of the award request, whichever is the higher amount</u>**. *For example, if the total project cost is $750,000, the grant is $500,000 (maximum), the **<u>City's match would be $250,000</u>**.* The match may be any combination of in-kind services, volunteer labor, donated materials and travel, plus **cash-on-hand which must constitute a minimum of 25% of the total match**. *"Municipalities and counties must submit a copy of the **approved resolution** or a letter signed by the duly authorized representative of the local government, **which includes the dollar amount dedicated to the project**."*	**Application Period:** **May 1-June 30, 2015** **Purpose:** To assist major site-specific archaeological excavations, the **major restoration or rehabilitation of historic buildings or structures**, and major museum exhibits involving the development and presentation of information on the history of Florida.

WEIGEL

July 18, 2012

Mr. John Noble
City Engineer
City of Ormond Beach

RE: Ormond Beach MacDonald House Restoration
Ormond Beach, Florida

Dear John:

We are pleased to our findings and analysis of the feasibility and estimated costs for the restoration of the MacDonald House

Opinion of Probable Cost

The perimeter foundation beam is severely deteriorated due to termite infestation and water infiltration and needs replacement in its entirety along with the major interior ground floor beams located beneath the first floor level and supporting the entire structure. The foundation concrete and masonry support piers are also in various levels of disintegration and differential settlement and need to be repaired, replaced or leveled. Our opinion of the probable cost to remove and replace the ground floor level support beams and piers and provide termite shields is $11,000.00

The exterior siding and exterior wall studs show significant deterioration due to termite infestation and water infiltration and needs replacement to an unknown degree. Unfortunately, the level of structural damage cannot be accurately determined until removal of the siding. Also adding to the level of difficulty of repair is the fact that this building was constructed utilizing the balloon framing technique. The exterior structural studs extend continuous three stories from foundation to roof level. Elevated floor joists are supported by pairs of studs using ledger strips framed between studs. The removal and replacement of these studs will require temporary support measures for elevated floors and roof structure. We estimate that there is in excess of 5,000 square feet of siding and load bearing wall studs that need some form of removal, repair or replacement. Our opinion of the probable cost to remove and replace the siding and exterior structural studs ranges between $50,000.00 and $100,000.00 depending on the severity of the damages found.

In the event the City chooses to pursue the path of remediating the termite and water infiltration damages and restoring the MacDonald House, we would assume that the interior walls, floors, finishes and systems would also be refurbished to bring the facility to current code compliance

and a satisfactory level of usability for future tenants. With over 5,100 sf of floor area to renovate, we would anticipate the interior renovation to range between $220,000 to $300,000.

Summary of Opinion of Probable Costs (potential maximum outlay)

Foundation		**$ 11,000**
Envelope		**$ 100,000**
Interior		**$ 300,000**
	Total	**$ 411,000**

In the event the City chooses not to pursue undertaking this repair, remediation and restoration, we estimate the cost to raze the building and remove it from site and recycle the debris, including all permit fees and utility shut offs to be no greater than **$15,000.**

Please feel free to contact me if you have any further questions regarding our proposal. Thank you for this opportunity to be a part of your team and allowing us to serve your construction needs in the future.

Sincerely,

A. M. WEIGEL CONSTRUCTION, INC.

A. Michael Weigel
President

CAPITAL PROJECT DETAIL

PROJECT TITLE

Andy Romano Beachfront Park - Pavilion

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

839 S. Atlantic Ave.

MANAGEMENT

Engineering

PROJECT SCOPE

Install two pavilions, pavers and furnishings to the south end of the park per the original ZCA design plans.

JUSTIFICATION

The existing pavilions at the newly opened Andy Romano Beachfront Park are being continually used. The City has put into place a rental procedure wherein any of the two out of the four pavilions can be reserved and rented in four-hour increments while the remaining two are open to the public. The future planning for the park includes additional pavilion(s) to the south end of the park where only landscaping currently exists. The additional pavilion(s) would provide much needed space for visitors and could provide additional pavilions available for reservation and rental if the City so chooses.

PROJECT COST METHODOLOGY

Actual 2012 ARBP bid results plus cost adjustment for stand alone projects.

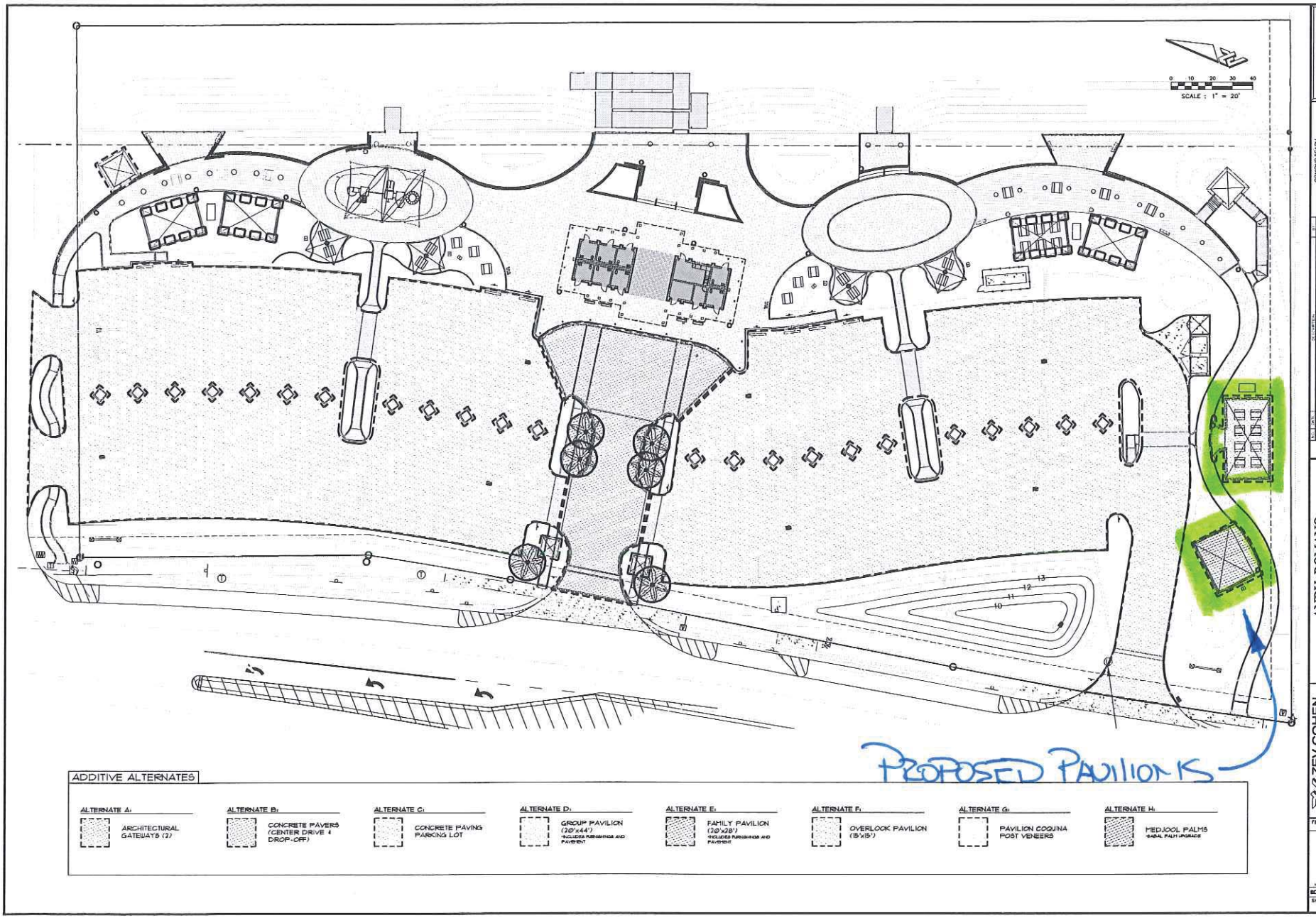
	AMOUNT REQUESTED
EXPENDITURE	
Pavilion (20' x 44' & 20' x 28')	125,000
Total	125,000

	AMOUNT REQUESTED
REVENUE	
To be determined	125,000
Total	125,000

Ormond Beach's Andy Romano Beachfront Park
Bid No. 2012-18
April 10, 2012
ZC 10188

Bid No.	Item Description	West Construction	F & G Construction	Commercial Construction	Hall Construction	Bomar Construction	Saboungi Construction
	PART 1- BASE BID						
1	Site Demo & Site Preparation	$83,800.00	$22,000.00	$14,716.00	$72,608.00	$52,615.00	$29,370.00
2	Site Improvements	$191,000.00	$296,000.00	$344,195.00	$247,170.00	$206,829.00	$191,580.00
3	Site Utilities	$410,000.00	$359,000.00	$397,629.00	$409,323.00	$409,283.00	$409,400.00
4	Landscape & Irrigation	$218,000.00	$153,000.00	$160,402.00	$165,120.00	$109,899.00	$167,590.00
5	Offsite Improvements	$59,000.00	$39,000.00	$42,068.00	$54,076.00	$59,891.00	$38,220.00
6	Pavilion	$166,000.00	$111,000.00	$146,910.00	$156,287.00	$155,657.00	$150,610.00
7	Shade Canopies	$108,000.00	$110,000.00	$93,786.00	$109,954.00	$116,041.00	$105,860.00
8	Playground Equipment & Safety Surface	$60,000.00	$56,000.00	$57,219.00	$58,947.00	$59,220.00	$58,950.00
9	Decorative Pavers, Seating walls & Concrete Edging	$296,000.00	$181,000.00	$246,577.00	$262,784.00	$297,642.00	$190,630.00
10	Splash Pad & Splash Pad Equipment	$244,000.00	$161,000.00	$169,505.00	$206,787.00	$192,640.00	$207,650.00
11	Architectural Features	$737,000.00	$794,000.00	$798,812.00	$654,316.00	$568,568.00	$489,980.00
12	Site Furnishing	$156,000.00	$146,000.00	$180,886.00	$146,630.00	$158,881.00	$148,320.00
13	Site Lighting	$100,000.00	$94,000.00	$130,026.00	$93,769.00	$91,440.00	$96,500.00
14	Beachside Improvements/ Dune Refurbishment	$151,000.00	$266,000.00	$98,598.00	$257,754.00	$133,674.00	$148,780.00
15	General Conditions	$221,000.00	$282,000.00	$103,473.00	$83,475.00	$136,720.00	$140,910.00
	TOTAL BASE BID	**$3,200,800.00**	**$3,070,000.00**	**$2,984,802.00**	**$2,979,000.00**	**$2,749,000.00**	**$2,574,350.00**
	Written Bid Total Provided	$3,200,800.00	$3,070,000.00	$2,984,802.00	$2,979,000.00	$2,749,000.00	$2,572,350.00
	PART 2- ADDITIVE ALTERNATES						
A	Architectural Gateways	$135,600.00	$169,500.00	$184,282.00	$143,511.00	$147,000.00	$163,660.00
B	Concrete Pavers	$54,400.00	$30,000.00	$18,844.00	$30,000.00	$29,800.00	$29,810.00
C	Concrete Pavement Parking Lot	$129,000.00	$118,500.00	$117,988.00	$129,000.00	$40,200.00	$72,820.00
D	Group Pavilion (20' X 44')	$67,500.00	$32,400.00	$63,563.00	$52,816.00	$61,400.00	$68,210.00
E	Family Pavilion (20' X 28')	$44,700.00	$24,800.00	$38,659.00	$32,488.00	$43,300.00	$44,290.00
F	Overlook Pavilion (15' X 15')	$77,900.00	$34,000.00	$37,148.00	$31,275.00	$28,300.00	$22,220.00
G	Pavilion Coquina Post Veneers	$12,000.00	$19,600.00	$91,584.00	$8,778.00	$7,500.00	$52,800.00
H	Medjool Palms	$918,000.00	$38,600.00	$27,300.00	$28,665.00	$31,000.00	~~$937,200.00~~*
	TOTAL WITH ADDED ALTERNATES	**$1,439,100.00**	**$467,400.00**	**$579,368.00**	**$456,533.00**	**$388,500.00**	**$453,810.00**
	TOTAL BID WITH ALTERNATES	**$4,639,900.00**	**$3,537,400.00**	**$3,564,170.00**	**$3,435,533.00**	**$3,137,500.00**	**$3,028,160.00**

*Confirmed to be part of base bid


SCALE : 1" = 20'
0 10 20 30 40
PROPOSED PAVILIONS
ADDITIVE ALTERNATES
ALTERNATE A: ARCHITECTURAL GATEWAYS (2)
ALTERNATE B: CONCRETE PAVERS (CENTER DRIVE & DROP-OFF)
ALTERNATE C: CONCRETE PAVING PARKING LOT
ALTERNATE D: GROUP PAVILION (20'x44') INCLUDES FURNISHINGS AND PAVEMENT
ALTERNATE E: FAMILY PAVILION (20'x28') INCLUDES FURNISHINGS AND PAVEMENT
ALTERNATE F: OVERLOOK PAVILION (15'x15')
ALTERNATE G: PAVILION COQUINA POST VENEERS
ALTERNATE H: MEDJOOL PALMS
ZEV COHEN & ASSOCIATES, INC.
CIVIL ENGINEERS · LANDSCAPE ARCHITECTS
PLANNERS · TRANSPORTATION · ENVIRONMENTAL
WWW.ZEVCOHEN.COM
PROJECT NO: 1918
ISSUE DATE: 2/2021
DESIGNED BY: PM / SBK
DRAFTED BY: SBK
CHECKED BY: PM
APPR. BY: MICHAEL S. BEHRMAN
ZEV COHEN & ASSOCIATES INC. 2010
REVISIONS:
ANDY ROMANO BEACHFRONT PARK
100% CONSTRUCTION DOCUMENTS
ADDITIVE ALTERNATIVE IDENTIFICATION
CITY OF ORMOND BEACH
VOLUSIA COUNTY, FLORIDA
FBE LOCATION
SCALE: 1" = 20'
SHEET HA1 of 7

CAPITAL PROJECT DETAIL

PROJECT TITLE

Cassen Park Improvements

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

1 South Beach Street

MANAGEMENT

Engineering

PROJECT SCOPE

Remove and replace existing restroom with a larger facility with more toilets to meet the need. Pave entrance road and parking areas.

JUSTIFICATION

The current restrooms at Cassen Park are not adequate for the number of people who use the park since there is only one toilet in the men's restroom and two in the women's restroom. The restrooms are used by boaters, walkers, bicyclists, fishermen and other visitors to the park on a consistent basis. The restroom renovation will include three toilets in both the men's and women's restrooms. The park is currently unpaved. The entrance road and parking areas need to be paved which would reduce the continual maintenance that the current shell road requires. It will also increase the level of finish to the park and would define parking spaces enabling the parking lot to be more user friendly and safer for residents.

PROJECT COST METHODOLOGY

Parking area costs were from bid received in 2007 that were rejected at the time. Costs for the bathroom facility provided by City's construction management firm in 2013.

	AMOUNT REQUESTED
EXPENDITURE	
Parking Area Paving	350,000
Bathroom Facility	160,000
Total	510,000

	AMOUNT REQUESTED
REVENUE	
To be determined	510,000
Total	510,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Doug Thomas Way Extension

PROJECT#

301211

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Ormond Beach Sports Complex

MANAGEMENT

Engineering

PROJECT SCOPE

Extend approximately 2,150 feet of two-way paved roadway from Harmony Ave to Hull Rd behind fields 9 through 12.

JUSTIFICATION

Improve park access convenience.

PROJECT COST METHODOLOGY

Similar projects recent bids

	AMOUNT REQUESTED
EXPENDITURE	
Design	100,000
Construction	570,000
Total	670,000

	AMOUNT REQUESTED
REVENUE	
To be determined	670,000
Total	670,000

42104

Ormond Beach Sports Complex

Doug Thomas Way Extension
Probable Cost

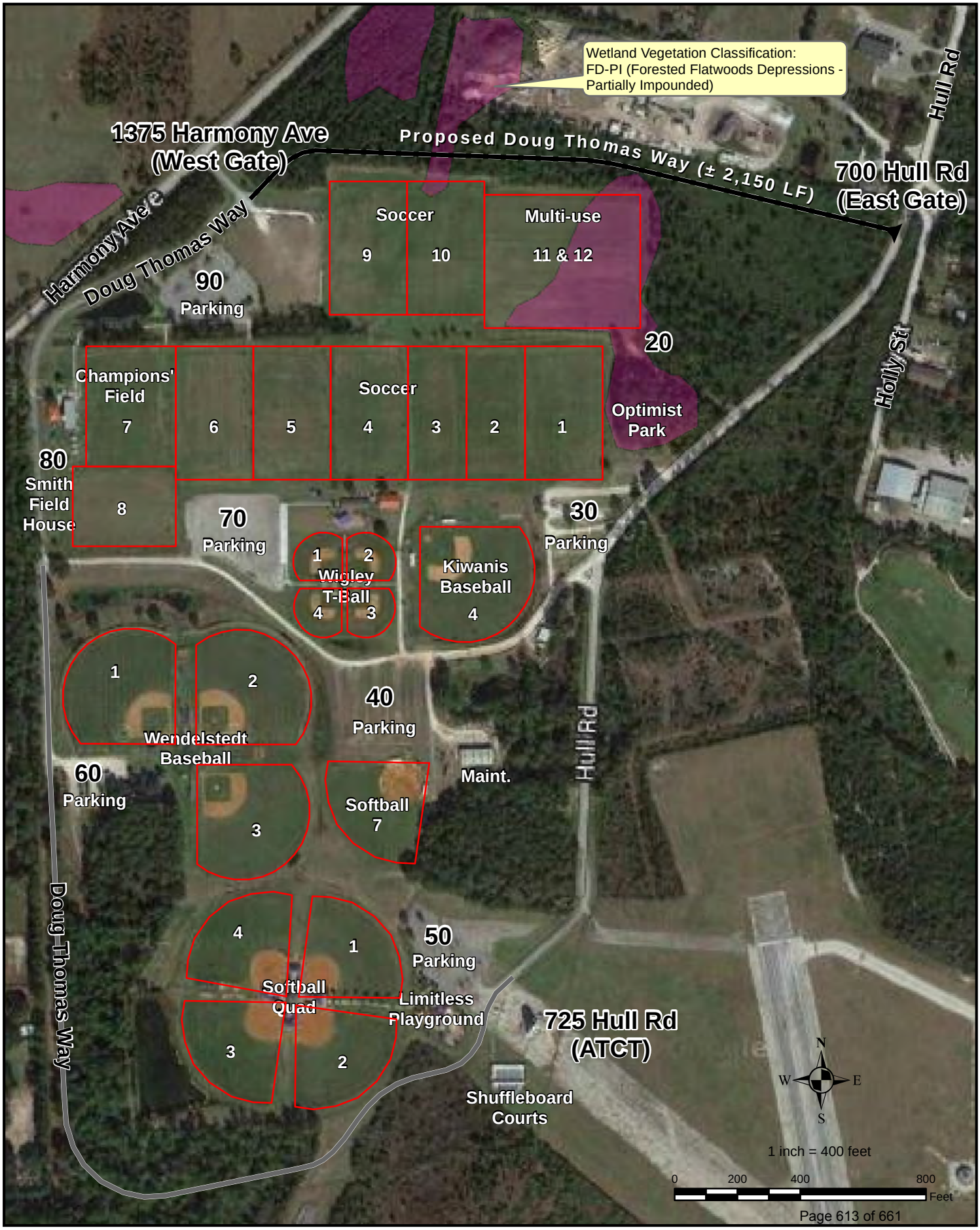
PROJECT DESCRIPTION: Construct approximately 2,150 linear feet of two-way paved road from existing Doug Thomas Way near Harmony Rd access, behind fields 9-12 and connect to hull Rd.

CONSTRUCTION

Item No.	Description	Estimated Quantity	Unit	Unit Price	Item Price
1	Mobilization/ Demobilization (5% maximum of TOTAL BASE BID)	1	LS	$24,445.00	$24,445
2	Tree Removal, Clearing and Grubbing	4	Acre	$10,000.00	$40,000
3	Stabilized Subgrade	5,800	SY	$8.00	$46,400
4	Furnish & Install Crushed Concrete Road Base 8"	5,300	SY	$10.00	$53,000
5	Furnish & Install Compacted Subgrade Import Fill	1,500	CY	$20.00	$30,000
6	Furnish & Install Asphaltic Pavement (S.P. 9.5)	950	Tons	$110.00	$104,500
7	Drainage Ditch Construction (not including sod)	2,150	LF	$30.00	$64,500
8	Thermoplastic Striping	1	LS	$5,000.00	$5,000
9	Signage	1	LS	$2,500.00	$2,500
10	Ditch Blocks	30	Ea.	$200.00	$6,000
11	Overflow weir system	1	LS	$7,000.00	$7,000
12	Bahia Sod	14,000	SY	$3.00	$42,000
13	Silt Fence	4,800	LF	$2.50	$12,000
14	Hydroseed	4,000	SY	$0.75	$3,000
15	Dewatering	1	LS	$10,000.00	$10,000
16	Stormdrain Piping and Structures	1	LS	$50,000.00	$50,000
17	Maintenance of Traffic	1	LS	$5,000.00	$5,000
18	Survey layout and As-Builts	1	LS	$8,000.00	$8,000

Construction Total	$513,345
Engineering, Land Surveying and Permitting (15%)	$77,002
Environmental Survey Reporting and Permitting	$5,000
Gopher Tortoise Relocation	$5,000
Sub-Total	$600,347
Contingency (10%)	$60,035
TOTAL	$660,381
Design Budget	**$100,000**
Construction Budget	**$570,000**

Ormond Beach Sports Complex
Proposed Roadway Alignment & Addressing



CAPITAL PROJECT DETAIL

PROJECT TITLE

Environmental Learning Center

PROJECT#

301164

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Central Park

MANAGEMENT

Engineering

PROJECT SCOPE

Construction (2) wooden land bridges, concrete sidewalk, perform selective pruning and invasive plant removal, and the installation of outdoor appropriate seating to create the first outdoor classroom site near the ELC main building. Purchase furnishing, equipment/ supplies for classroom. Install floating vegetation mats within ELC stormwater retention pond.

JUSTIFICATION

The ELC is scheduled to be completed before the Spring of 2016. The existing island, west of the ELC building is the prime location for the first outdoor encounter area within Central Park. Connecting this island with two wooden land bridges will provide connectivity to the existing concrete trail system and allow better pedestrian access within the park and eliminates the dead-end trail north of Division Avenue. Private donations are being sought to fund this project.

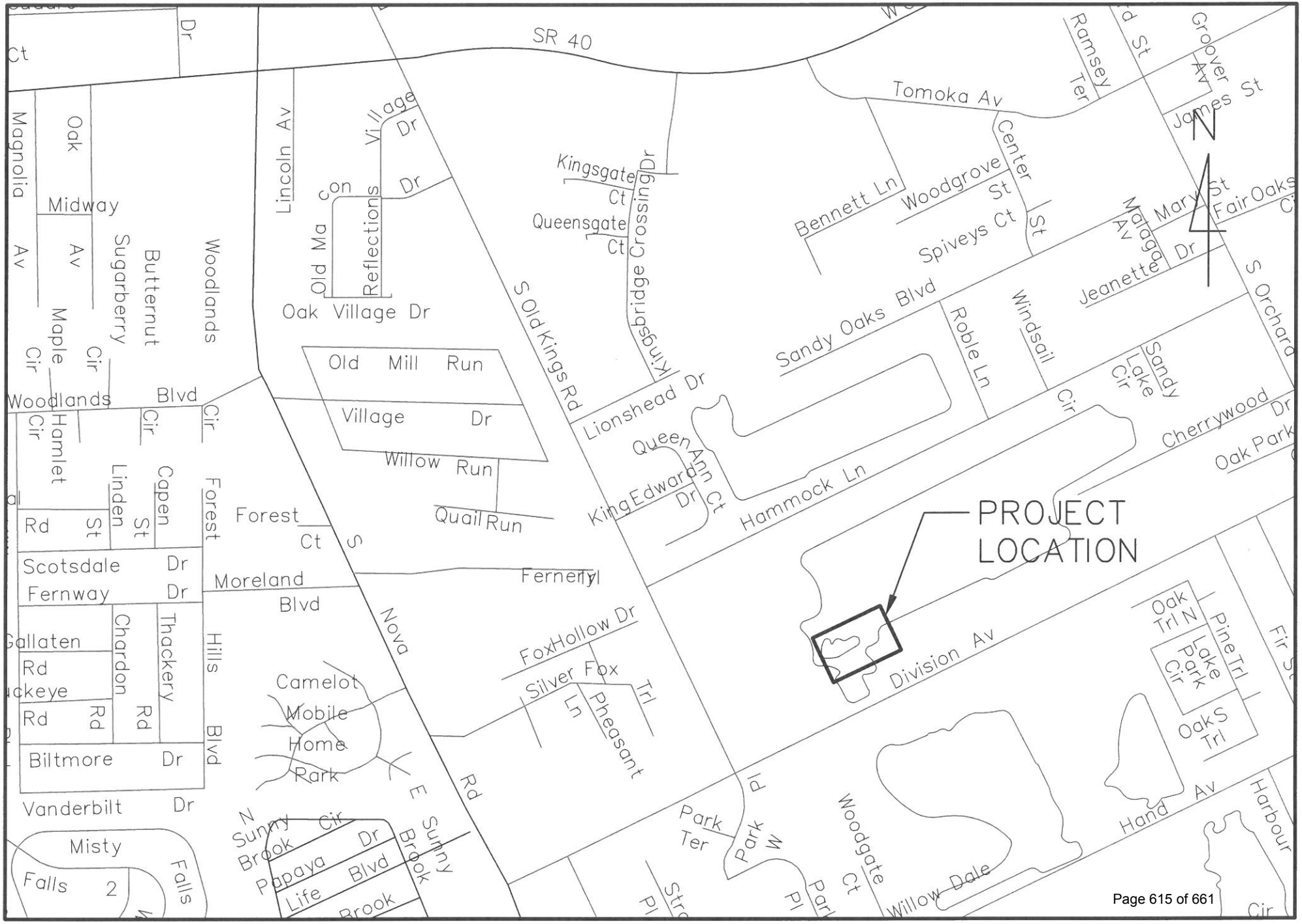
PROJECT COST METHODOLOGY

Based on actual construction costs to build land bridges for the Lake Interconnect project (bid # 2012-07) and recent replacements projects within our parks.

	AMOUNT REQUESTED
EXPENDITURE	
Outdoor Encounter Area	80,000
Floating Vegetation Mats	25,000
Total	105,000

	AMOUNT REQUESTED
REVENUE	
To Be Determined	105,000
Total	105,000

ENVIRONMENTAL LEARNING CENTER



City of Ormond Beach
ESTIMATE of PROBABLE COST

PROJECT TITLE: ELC Outdoor Classroom

PROJECT DESCRIPTION:
DATE:

Item #	Item Description	Qty	Unit	Unit Price	Item Cost
1	Wooden Walkways	2		$ 25,000.00	$ 50,000.00
2	Connection Sidewalk	1		$ 7,500.00	$ 7,500.00
3	Invasive Plant Removal, Tree Prunning & General Cleanup	1		$ 15,000.00	$ 15,000.00
4	Outdoor Seating	1		$ 2,500.00	$ 2,500.00
5				$ -	$ -
6	**Contigency**	1		$ 5,000.00	$ 5,000.00
7				$ -	$ -
8				$ -	$ -
9				$ -	$ -
10				$ -	$ -
11				$ -	$ -
12				$ -	$ -
13				$ -	$ -
14				$ -	$ -
15				$ -	$ -
16				$ -	$ -
17				$ -	$ -
18				$ -	$ -
19				$ -	$ -
20				$ -	$ -

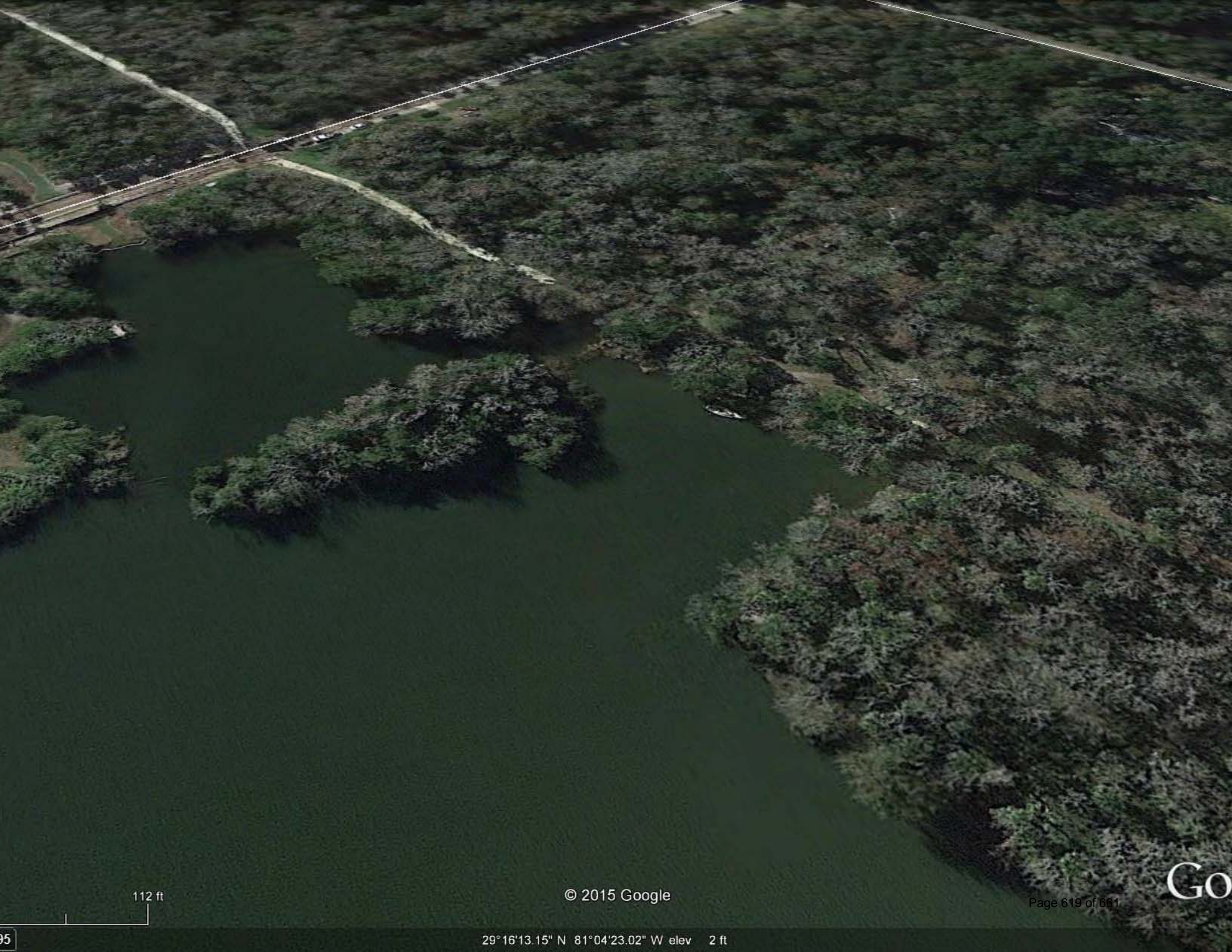
UNITS: LS-Lump Sum, EA-Each, LF-Linear Feet, SY-Square Yards, SF-Square Feet, CY-Cubic Yard, TN-Tons, GAL-US Gallons, LBS-pounds

TOTAL ESTIMATE= $ 80,000.00

ASSUMPTIONS/NOTES:

172 ft
© 2015 Google
29°16'11.01" N 81°04'20.96" W elev 2 ft

Invasive Plant Removal Along Shoreline
oor Classroom
Building and Deck
Future Trail (8')
ure Wooden Bridges (2)
ADA Canoe Launch
Sidewalks (6')
Stormwater and Irrigation Pond
Reforestation Area
Future C
Invasive Plant Removal within Wetlands Area
Welcome Pavillion
(10')
Futur
Parking Area with Bus Loading Zone
Overflow Grass Parking Area
DIVISION AVENUE
Existing Lake InterconnectionTunnel for Canoeing/ Kayaking
Existing Paved Parking Area
Existing
((10')


112 ft
© 2015 Google
Go
95
29°16'13.15" N 81°04'23.02" W elev 2 ft

CAPITAL PROJECT DETAIL

PROJECT TITLE

Nova Community Park Access Road

PROJECT#

301212

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

440 Nova Rd

MANAGEMENT

Engineering

PROJECT SCOPE

Convert the one-way access road behind Ball Field 3 to two-way

JUSTIFICATION

With the development of the skate park expansion, it was necessary to abandon the one-way access road that connected the parking lot behind the gymnastics center to the parking lot west of the recreation center. Although all the parking lot areas are accessible, there is only a one-way route behind Ball Field 3, which connects the parking lots in the south and east parts of the park to the parking area west of the recreation center. This new traffic pattern will be monitored to determine if it will be desirable to convert that one-way road to two-way traffic for public convenience. If it is determined that a two-way road is needed, staff anticipate designing the widening in 2016-17 and constructing in 2017-18. The widening will require construction of a retaining wall between the slope from the recreation center and the road.

PROJECT COST METHODOLOGY

Unit price estimate

	AMOUNT REQUESTED
EXPENDITURE	
Design	33,000
Construction	187,000
Total	220,000

	AMOUNT REQUESTED
REVENUE	
To be determined	220,000
Total	220,000

City of Ormond Beach
3/18/2015

Nova Community Park Two-Way Access Road

[Located between Ball Field 3 and the Recreation Center]

[Project includes constructing a retaining wall and approximately 400 feet of road to widen the existing one way paved road section and constructing a perimeter sidewalk along the ease side of the recreation center.]

Project Probable Cost

Construction

Item No.	Description	Estimated Quantity	Unit	Unit Price	Item Price
1	Mobilization/ Demobilization (5%)	1	LS	$8,269.75	$8,270
2	Remove Existing Vegetated Area	760	SY	$2.00	$1,520
3	Excavate Soil (non-rock)	250	CY	$15.00	$3,750
4	Remove Coquina Rock	350	CY	$100.00	$35,000
5	Relocate Power Junction	1	LS	$2,500.00	$2,500
6	Relocate Water Service	170	LF	$35.00	$5,950
7	Relocate Sewer Service	60	LF	$40.00	$2,400
8	Relocate Irrigation	1	LS	$1,000.00	$1,000
9	Relocate Communication Cable	1	LS	$1,000.00	$1,000
10	Remove Existing Ties	1	LS	$2,000.00	$2,000
11	Demo Existing Concrete Stairs	1	LS	$3,500.00	$3,500
12	Furnish & Install Hand Railing along Rertainaing Wall	250	LF	$50.00	$12,500
13	Furnish & Install Crushed Concrete Roadbase 8-inch	650	SY	$14.00	$9,100
14	Furnish & Install S.P. 9.5 Asphalt	75	Tons	$105.00	$7,875
15	Furnish & Install Bahia Sod	400	SY	$3.50	$1,400
16	Thermoplastic Striping	1	LS	$1,500.00	$1,500
17	Funish & Install Block Retainaing Wall	1,080	SF	$45.00	$48,600
18	Furnish and Install Signage	1	LS	$1,500.00	$1,500
19	Remove Tree & Grub Roots	2	EA	$800.00	$1,600
20	Construct concrete sidewalk	190	SY	$30.00	$5,700
21	Furnish & Install Hand Railing along Sidewalk	80	LF	$50.00	$4,000
22	Site Grading For Sidewalk	1	LS	$2,000.00	$2,000
23	Furnish and Install Speed Table	2	EA	$2,500.00	$5,000
24	Maintenance of Traffic	1	LS	$3,500.00	$3,500
25	As-Builts & Survey Site Layout	1	LS	$2,500.00	$2,500

Construction	**$173,665**
Engineering (15%)	**$26,050**
Sub-Total	**$199,714**
Contingency (10%)	**$19,971**
TOTAL=	$219,686

TOTAL BUDGET VALUE= $220,000

Budget Construction= $187,000

Budget Engineering/Geotech/Surveying= $33,000

LOCATION MAP

NOVA PARK TWO-WAY ACCESS ROAD WIDENING

3/18/15

N
W E
S

CAPITAL PROJECT DETAIL

PROJECT TITLE

Nova Community Park Master Plan Future Years

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Nova Community Park

MANAGEMENT

Leisure Service

PROJECT SCOPE

Phase II includes the construction of roadways, multi-purpose fields, parking, stormwater, utilities bathroom facility, landscape and irrigation.

JUSTIFICATION

The Nova Community Park Master Plan was created by HHI Design and approved as a long range conceptual plan by the City Commission. Future projects include construction of a connector roadway, multipurpose fields and additional parking. The multipurpose fields will be beneficial to programming, especially to Ormond Beach Pride Tackle Football since they currently have to hold their practices at the Calvary Christian football fields. Parking is the #1 need at the Nova Community complex. The anticipated usage for the new multipurpose fields will require the additional parking.

PROJECT COST METHODOLOGY

Preliminary cost estimate prepared by HHI Design

	AMOUNT REQUESTED
EXPENDITURE	
Master Plan Implementation	3,388,200
Total	3,388,200

	AMOUNT REQUESTED
REVENUE	
To be determined	3,388,200
Total	3,388,200

hhi DESIGN planning landscape architecture environmental graphics

Better Living by Design!

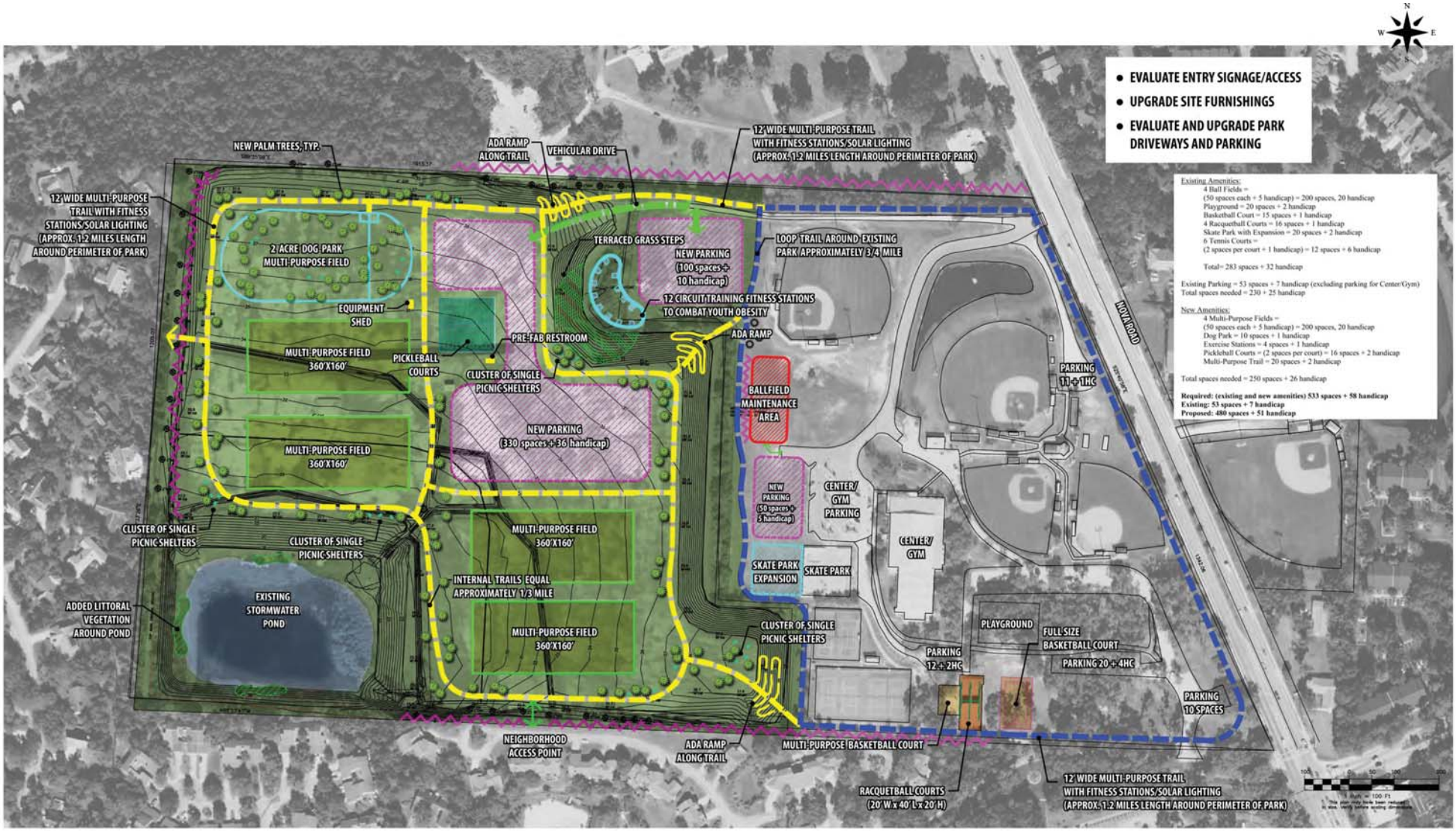
Name of Project **Nova Community Park - Ormond Beach, FL**
New Amenities at Abandoned Landfill site

Preliminary Conceptual Long Range Plan

Project #
Date 10/12/2012
Prepared By CJ/GC

ITEM	QTY	Units	Unit Cost	Subtotal Cost	Notes		
Future Park Amenities						**Phase I**	**Future Years**
1. Hardscape							
12 ft wide Multi-Purpose Trail	7,640	SY	$25.00	$191,000.00	4" Concrete		$191,000.00
ADA ramps	18,500	SF	$20.00	$370,000.00			$370,000.00
New Parking	17,000	SY	$50.00	$850,000.00		$225,000.00	$625,000.00
New Driveways	1,000	SY	$40.00	$40,000.00		$40,000.00	$0.00
Ballfield Maintenance Area	1	LS	$25,000.00	$25,000.00			$25,000.00
			Subtotal	**$1,476,000.00**			
2. Site Furnishings							
Exercise Stations along Trail	8	EA	$3,000.00	$24,000.00	Includes Concrete Pads		$24,000.00
Circuit Training Cluster of Fitness Stations (12 stations)	1	LS	$36,000.00	$36,000.00		$36,000.00	$0.00
			Subtotal	**$60,000.00**			
3. Landscape							
Palm Trees and Small Trees	300	EA	$450.00	$135,000.00	Includes Irrigation	$45,000.00	$90,000.00
Vegetated Buffer	34,000	SF	$8.00	$272,000.00			$272,000.00
Terraced Grass Steps	3,000	LF	$10.00	$30,000.00			$30,000.00
Littoral Plants around Pond	6,000	SF	$4.00	$24,000.00			$24,000.00
			Subtotal	**$461,000.00**			
4. Sports							
Multi-purpose fields	5	EA	$120,000.00	$600,000.00			$600,000.00
Pickleball Courts	8	EA	$30,000.00	$240,000.00			$240,000.00
Top Soil (20,000 CY)	20,000	CY	$11.00	$220,000.00	Delivered and Spread		$220,000.00
			Subtotal	**$840,000.00**			
5. Architectural Elements							
Pre-Fab Restroom and Utility Extension	1	LS	$85,000.00	$85,000.00	Includes Utility Extension		$85,000.00
Equipment Shed	1	LS	$10,000.00	$10,000.00			$10,000.00
Single Picnic Pavilions	27	EA	$6,000.00	$162,000.00			$162,000.00
			Subtotal	**$257,000.00**			
6. Dog Park							
Dog Park	1	LS	$50,000.00	$50,000.00	Includes Agility Equipment	$50,000.00	$0.00
			Subtotal	**$50,000.00**			
			Grand Subtotal:	**$3,144,000.00**		$396,000.00	$2,748,000.00
			20% Contingency:	**$628,800.00**		$79,200.00	$549,600.00
			Engineering	**$150,000.00**		$59,400.00	$90,600.00
			Grand Total:	**$3,922,800.00**		$534,600.00	$3,388,200.00

Notes
1.) All estimates based on HHI Design's Preliminary Conceptual Long Range Plan
2.) Estimate does not include site grading or stormwater.



TranSystems

Conceptual Long Range Master Plan

hhi DESIGN

ISSUE DATE: January 30, 2013

Nova Community Park

Ormond Beach, FL

CAPITAL PROJECT DETAIL

PROJECT TITLE

OBSC Future Improvements

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Ormond Beach Sports Complex

MANAGEMENT

Leisure Services

PROJECT SCOPE

Improvements will include paving the parking at softball Quad, Wendelstedt fields, and Kiwanis/soccer fields. Costs reflect asphalt parking with irrigation and landscaped islands, and includes site lighting of parking areas and paved roads.

JUSTIFICATION

The Leisure Services Advisory Board selected these projects as high priority. Kiwanis/Soccer field parking and lighting is important due to safety concerns about the parking lot lighting and due to the fact that the project would benefit the most people if it were accomplished. Wendelstedt fields parking and lighting projects are considered important projects due to the level of finish they would provide the complex. In outer years the construction, paving and lighting of three additional parking lots will provide much needed parking and overflow parking.

PROJECT COST METHODOLOGY

Consultant estimates for field lighting; field 7 softball cost projected based upon Nova Field 5 costs from 2008/2009 with added cost for larger bleacher configuration.

	AMOUNT REQUESTED
EXPENDITURE	
Kiwanis/Soccer field Parking	470,000
Quad Parking lot	370,000
Wendelstedt parking	300,000
Parking area at soccer field 9 & 10 - Design	101,000
Parking area west of Quad - Design	69,000
Parking area south of Quad - Design	64,000
Total	1,374,000

	AMOUNT REQUESTED
REVENUE	
To be determined	1,374,000
Total	1,374,000

MacDonald, Paul

From: A. Michael Weigel [amweigel@amweigel.com]
Sent: Friday, April 04, 2014 1:50 PM
To: MacDonald, Paul
Cc: Carolin, Robert; Dwight Pickett
Subject: RE: RESTROOM BUILDING probable cost

Paul,

Our opinion of probable cost for the restroom building you described below is as follows:

Building 157,862
Water& Sewer to bldg. 54,161
Sidewalk to bldg. 30,250
Power to bldg. 10,780
Contingency 10,000

Total 263,053

As you can see, the utilities and infrastructure to get to the building are worth approximately $95,000.

This opinion of cost assumes that Zev Cohen will provide Civil Engineering design services similar to previous projects.

We included 1,200 lf of 3" PVC sanitary sewer force main and an E-ONE duplex grinder pump station for the sanitary sewer system.
Since we are unsure of the impact, we have not included any costs associated with the recent emails regarding concerns about the sanitary sewer systems.

We included 439 lf of 2" PVC potable water service and reduced pressure backflow preventers at the building and pump station.

We included 1,100 lf of 5' wide 4" thick sidewalks to connect existing building to existing sidewalks at the parking area to the west of fields #9 and #10.

Since we are unsure of the timing of this project, we have not included any allowances for inflation.

We have not included any permit or impact fees.

If you have any questions, feel free to call.

Sincerely,

A. Michael Weigel

President, A.M. Weigel Construction, Inc.

166 South Palmetto Avenue
Daytona Beach, FL 32114
p: (386) 257-6691
f: (386) 257-6143
c: (678) 878-8068

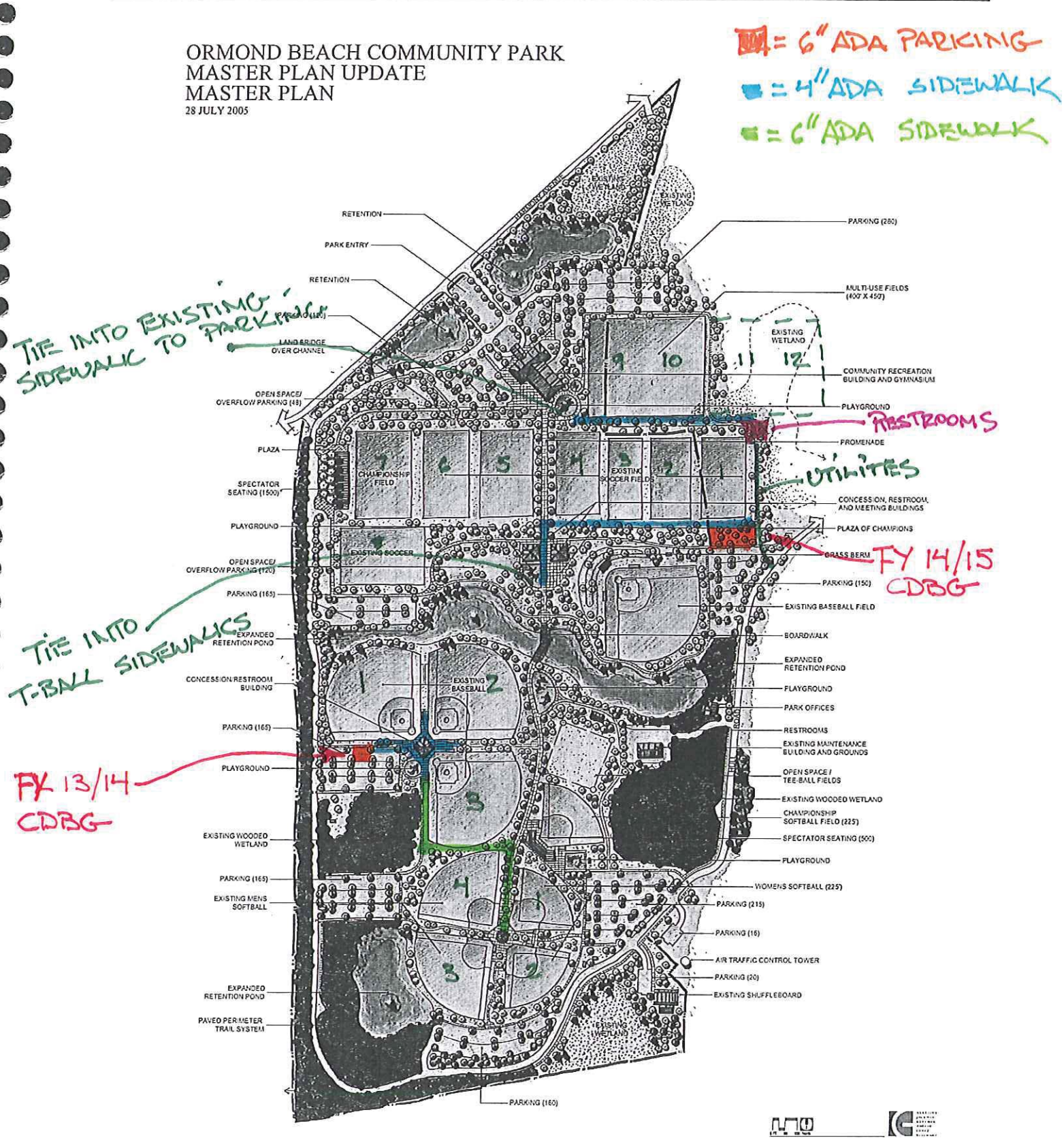
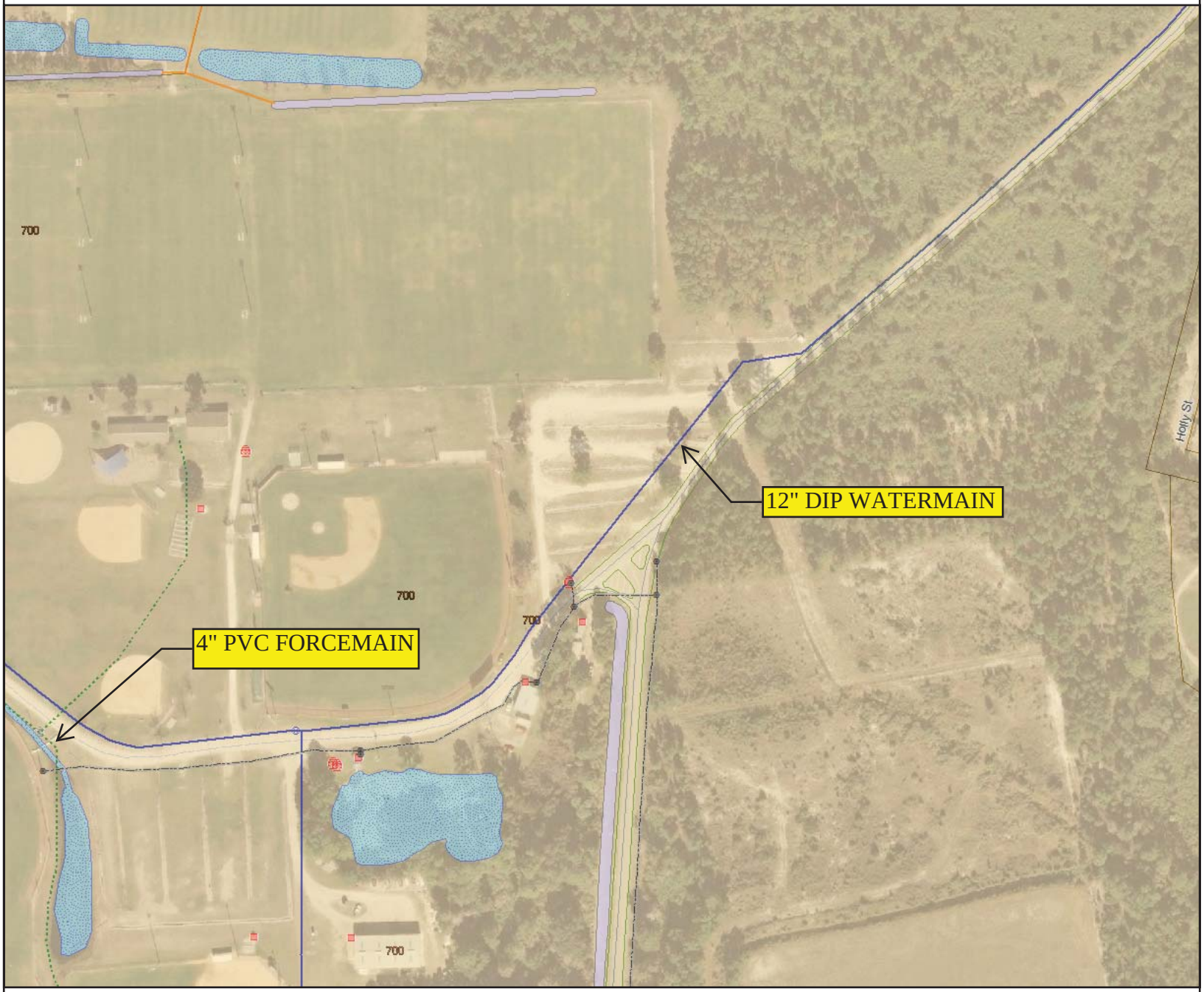
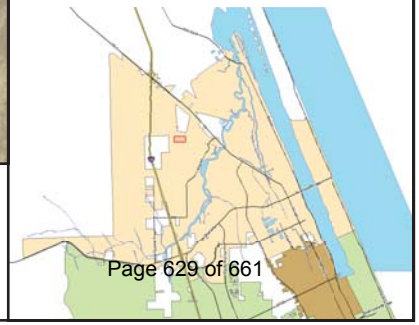


Figure 15: Master Plan

OBSC UTILITY MAP





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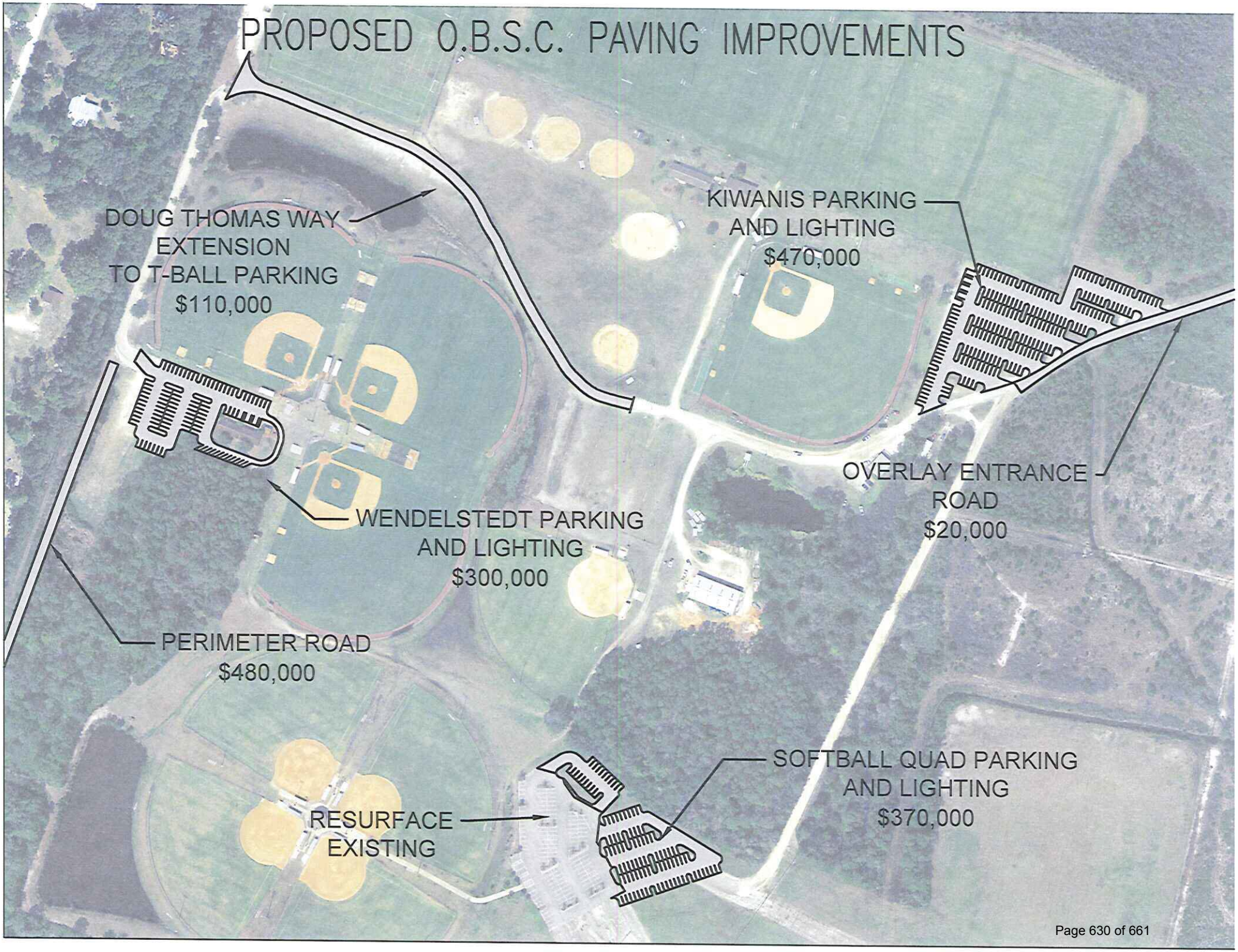
PROPOSED O.B.S.C. PAVING IMPROVEMENTS
DOUG THOMAS WAY EXTENSION TO T-BALL PARKING $110,000
KIWANIS PARKING AND LIGHTING $470,000
OVERLAY ENTRANCE ROAD $20,000
WENDELSTEDT PARKING AND LIGHTING $300,000
PERIMETER ROAD $480,000
SOFTBALL QUAD PARKING AND LIGHTING $370,000
RESURFACE EXISTING

City of Ormond Beach
ESTIMATE of PROBABLE COST

PROJECT TITLE: **Ormond Beach Sports Complex Additional Parking North of Multiuse Field**

PROJECT DESCRIPTION: Identified in the master plan, additional parking areas for the complex are depicted. No preliminary design for these parking areas have been performed, therefore, the estimated cost for constructing these areas is based on the conceptual renderings of the master plan. The cost estimate is significantly limited and subject to change pursuant actual design of the project.

DATE: 3/28/2014

Item #	Item Description	Qty	Unit	Unit Price	Item Cost
1	Mobilization (5% to 6% of subtotal)	1	LS	$ 27,300.00	$ 27,300.00
2	Tree Removal, Clearing and grubbing	3.5	Acres	$ 15,000.00	$ 52,500.00
3	Stabilized Subgrade	8400	SY	$ 7.00	$ 58,800.00
4	Crushed concrete base 8-inch	8400	SY	$ 11.00	$ 92,400.00
5	Stormwater Pond Excavation	8000	CY	$ 8.00	$ 64,000.00
6	Asphalt	720	Tons	$ 95.00	$ 68,400.00
7	Site grading	1	LS	$ 10,000.00	$ 10,000.00
8	Survey & As-Builts	1	LS	$ 5,000.00	$ 5,000.00
9	Silt Fence	2000	LF	$ 2.00	$ 4,000.00
10	Type C catch basins	6	EA	$ 2,500.00	$ 15,000.00
11	18" RCP	300	LF	$ 50.00	$ 15,000.00
12	24" RCP	50	LF	$ 60.00	$ 3,000.00
13	24" MES	1	EA	$ 1,500.00	$ 1,500.00
14	Pond Overflow Structure	1	EA	$ 5,000.00	$ 5,000.00
15	Sod	6000	SY	$ 2.50	$ 15,000.00
16	Wheel Stops	280	EA	$ 50.00	$ 14,000.00
17	Misc Concrete	1	LS	$ 5,000.00	$ 5,000.00
18	Thermo Plastic Striping	1	LS	$ 7,500.00	$ 7,500.00
19	Lighting Poles	18	EA	$ 5,300.00	$ 95,400.00
20	Geotechnical Construction Services	1	LS	$ 6,000.00	$ 6,000.00
21	Gopher Tortoise Relocation and Permitting	1	LS	$ 7,000.00	$ 7,000.00

UNITS: LS-Lump Sum, EA-Each, LF-Linear Feet, SY-Square Yards, SF-Square Feet, CY-Cubic Yard, TN-Tons, GAL-US Gallons, LBS-pounds

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Construction Estimate=	$	571,800.00
Contingency (10%)	$	57,180.00
Construction Budget	**$**	**629,000.00**
Engineering & Permitting	$	94,350.00
Geotechnical & Environmental Reports	$	6,000.00
Contingency (10%)	$	11,000.00
Design Budget	**$**	**101,000.00**
TOTAL ESTIMATED PROJECT COST=	**$**	**730,000.00**

City of Ormond Beach
ESTIMATE of PROBABLE COST

PROJECT TITLE: **Ormond Beach Sports Complex Additional Parking South of Baseball Quad**

PROJECT DESCRIPTION: Identified in the master plan, additional parking areas for the complex are depicted. No preliminary design for these parking areas have been performed, therefore, the estimated cost for constructing these areas is based on the conceptual renderings of the master plan. The cost estimate is significantly limited and subject to change pursuant actual design of the project.

DATE: 3/28/2014

Item #	Item Description	Qty	Unit	Unit Price	Item Cost
1	Mobilization (5% to 6% of subtotal)	1	LS	$ 16,600.00	$ 16,600.00
2	Tree Removal, Clearing and grubbing	2	Acres	$ 15,000.00	$ 30,000.00
3	Stabilized Subgrade	4800	SY	$ 7.00	$ 33,600.00
4	Crushed concrete base 8-inch	4800	SY	$ 11.00	$ 52,800.00
5	Stormwater Pond Excavation	4500	CY	$ 8.00	$ 36,000.00
6	Asphalt	410	Tons	$ 95.00	$ 38,950.00
7	Site grading	1	LS	$ 8,000.00	$ 8,000.00
8	Survey & As-Builts	1	LS	$ 5,000.00	$ 5,000.00
9	Silt Fence	1400	LF	$ 2.00	$ 2,800.00
10	Type C catch basins	4	EA	$ 2,500.00	$ 10,000.00
11	18" RCP	200	LF	$ 50.00	$ 10,000.00
12	24" RCP	50	LF	$ 60.00	$ 3,000.00
13	24" MES	1	EA	$ 1,500.00	$ 1,500.00
14	Sod	3800	SY	$ 2.50	$ 9,500.00
15	Wheel Stops	160	EA	$ 50.00	$ 8,000.00
16	Misc Concrete	1	LS	$ 3,000.00	$ 3,000.00
17	Thermo Plastic Striping	1	LS	$ 5,000.00	$ 5,000.00
18	Lighting Poles	12	EA	$ 5,300.00	$ 63,600.00
19	Geotechnical Construction Services	1	LS	$ 5,000.00	$ 5,000.00
20	Gopher Tortoise Relocation and Permitting	1	LS	$ 5,000.00	$ 5,000.00

UNITS: LS-Lump Sum, EA-Each, LF-Linear Feet, SY-Square Yards, SF-Square Feet, CY-Cubic Yard, TN-Tons, GAL-US Gallons, LBS-pounds

Construction Estimate=	$	347,350.00
Contingency (10%)	$	34,735.00
Construction Budget	**$**	**383,000.00**
Engineering & Permitting	$	57,450.00
Geotechnical & Environmental Reports	$	6,000.00
Contingency (10%)	$	7,000.00
Design Budget	**$**	**64,000.00**
TOTAL ESTIMATED PROJECT COST=	**$**	**447,000.00**

City of Ormond Beach
ESTIMATE of PROBABLE COST

PROJECT TITLE: **Ormond Beach Sports Complex Additional Parking West of Baseball Quad**

PROJECT DESCRIPTION: Identified in the master plan, additional parking areas for the complex are depicted. No preliminary design for these parking areas have been performed, therefore, the estimated cost for constructing these areas is based on the conceptual renderings of the master plan. The cost estimate is significantly limited and subject to change pursuant actual design of the project.

DATE: 3/28/2014

Item #	Item Description	Qty	Unit	Unit Price	Item Cost
1	Mobilization (5% to 6% of subtotal)	1	LS	$ 18,000.00	$ 18,000.00
2	Tree Removal, Clearing and grubbing	2.5	Acres	$ 15,000.00	$ 37,500.00
3	Stabilized Subgrade	5000	SY	$ 7.00	$ 35,000.00
4	Crushed concrete base 8-inch	5000	SY	$ 11.00	$ 55,000.00
5	Stormwater Pond Excavation	4600	CY	$ 8.00	$ 36,800.00
6	Asphalt	450	Tons	$ 95.00	$ 42,750.00
7	Site grading	1	LS	$ 10,000.00	$ 10,000.00
8	Survey & As-Builts	1	LS	$ 5,000.00	$ 5,000.00
9	Silt Fence	1500	LF	$ 2.00	$ 3,000.00
10	Type C catch basins	4	EA	$ 2,500.00	$ 10,000.00
11	18" RCP	200	LF	$ 50.00	$ 10,000.00
12	24" RCP	50	LF	$ 60.00	$ 3,000.00
13	24" MES	1	EA	$ 1,500.00	$ 1,500.00
14	Sod	7500	SY	$ 2.50	$ 18,750.00
15	Wheel Stops	165	EA	$ 50.00	$ 8,250.00
16	Misc Concrete	1	LS	$ 3,000.00	$ 3,000.00
17	Thermo Plastic Striping	1	LS	$ 5,000.00	$ 5,000.00
18	Lighting Poles	12	EA	$ 5,300.00	$ 63,600.00
19	Geotechnical Construction Services	1	LS	$ 5,000.00	$ 5,000.00
20	Gopher Tortoise Relocation and Permitting	1	LS	$ 5,000.00	$ 5,000.00

UNITS: LS-Lump Sum, EA-Each, LF-Linear Feet, SY-Square Yards, SF-Square Feet, CY-Cubic Yard, TN-Tons, GAL-US Gallons, LBS-pounds

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Construction Estimate=	$	376,150.00
Contingency (10%)	$	37,615.00
Construction Budget	**$**	**414,000.00**
Engineering & Permitting	$	62,100.00
Geotechnical & Environmental Reports	$	6,000.00
Contingency (10%)	$	7,000.00
Design Budget	**$**	**69,000.00**
TOTAL ESTIMATED PROJECT COST=	**$**	**483,000.00**

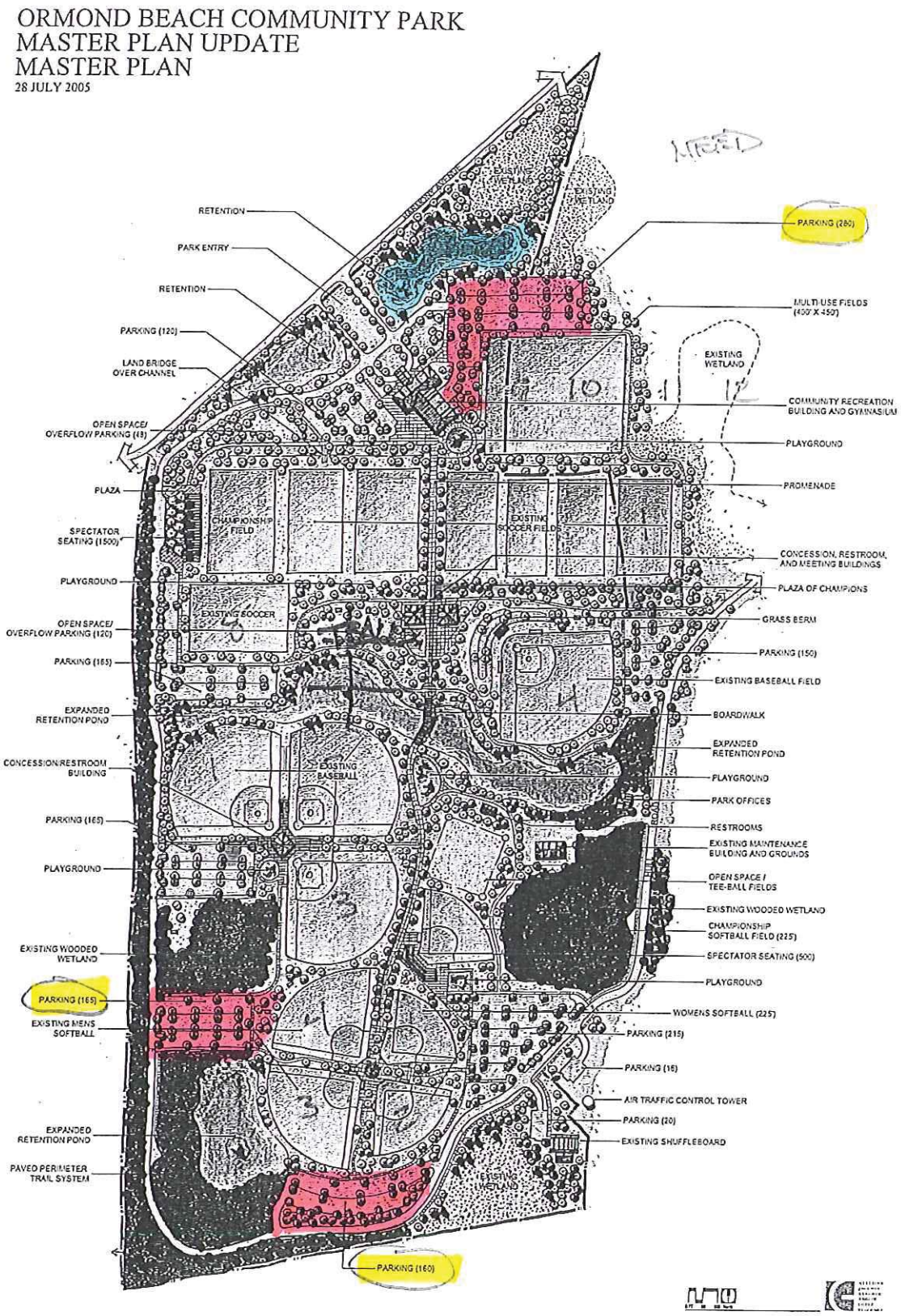


Figure 15: Master Plan

City of Ormond Beach
Sports Complex- Proposed Asphalt Paving Area Improvements
Kiwanis Field Parking Area
PROBABLE COST
5/27/2011

Kiwanis Parking Lot (Area 1)
{Proposed 2" S.P. 9.5 Overlay in lieu of road base + 1.5" asphalt}

Area (Acres)	AREA S.F.	TONS Asphalt	UNIT PRICE/ TON	Asphalt Cost
1.57	68,500	828	$ 95.00	$ 78,633.00

Paving=	$	78,633.00
Grading Prep & Survey=	$	15,700.00
Stormwater Management Pond/Swales/Structures/Stormdrain=	$	137,000.00
Thermo-plastic Striping=	$	5,500.00
Median Landscaping and Irrigation=	$	23,600.00
Mobilization (10% Construction)=	$	23,700.00
Lighting (approx 16 poles @ $5,300)	$	84,800.00
Construction Budget=	**$**	**368,933.00**
ENGINEERING & PERMITTING=	$	52,000.00
Geotechnical=	$	3,100.00
Sub-Total=	**$**	**424,033.00**
Contingency		10%
	$	42,403.30
PROBABLE COST TOTAL=	$	466,436.30
PROJECT Budget Value=	**$**	**470,000.00**

City of Ormond Beach
Sports Complex- Proposed Asphalt Paving Area Improvements
The Quad Parking Lot
PROBABLE COST
5/27/2011

Lot Area 3
{Proposed 2" S.P. 9.5 Overlay in lieu of road base + 1.5" asphalt}

	Area (Acres)	AREA S.F.	TONS Asphalt	UNIT PRICE/ TON	Asphalt Cost
New	0.89	38,768	468	$ 95.00	$ 44,503.00
Existing	1.20	52,272	632	$ 95.00	$ 60,004.00

Paving=	$	104,507.00
Grading Prep & Survey=	$	20,900.00
Stormwater Management Pond/Swales/Structures/Stormdrain=	$	77,536.80
Thermo-plastic Striping=	$	7,300.00
Median Landscaping and Irrigation=	$	13,400.00
Mobilization (10% Construction)=	$	21,100.00
Lighting (approx 11 poles @ $5,300)	$	58,300.00
Construction Budget=	**$**	**303,043.80**
ENGINEERING & PERMITTING=	$	31,000.00
Geotechnical=	$	1,800.00
Sub-Total=	**$**	**335,843.80**
Contingency		10%
	$	33,584.38
PROBABLE COST TOTAL=	$	369,428.18
PROJECT Budget Value=	**$**	**370,000.00**

City of Ormond Beach
Sports Complex- Proposed Asphalt Paving Area Improvements
Wendlestedt Parking Lot
PROBABLE COST
5/27/2011

Lot Area 2
{Proposed 2" S.P. 9.5 Overlay in lieu of road base + 1.5" asphalt}

Area (Acres)	AREA S.F.	TONS Asphalt	UNIT PRICE/ TON	Asphalt Cost
0.84	36,590	442	$ 95.00	$ 42,003.00

Paving=	$	42,003.00
Grading Prep & Survey=	$	8,400.00
Stormwater Management Pond/Swales/Structures/Stormdrain=	$	73,180.80
Thermo-plastic Striping=	$	2,900.00
Median Landscaping and Irrigation=	$	12,600.00
Mobilization (10% Construction)=	$	12,700.00
Lighting (approx 15 poles @ $5,300)	$	79,500.00
Construction Budget=	**$**	**231,283.80**
ENGINEERING & PERMITTING=	$	32,900.00
Geotechnical=	$	1,700.00
Sub-Total=	**$**	**265,883.80**
Contingency		10%
	$	26,588.38
PROBABLE COST TOTAL=	$	292,472.18
PROJECT Budget Value=	**$**	**300,000.00**

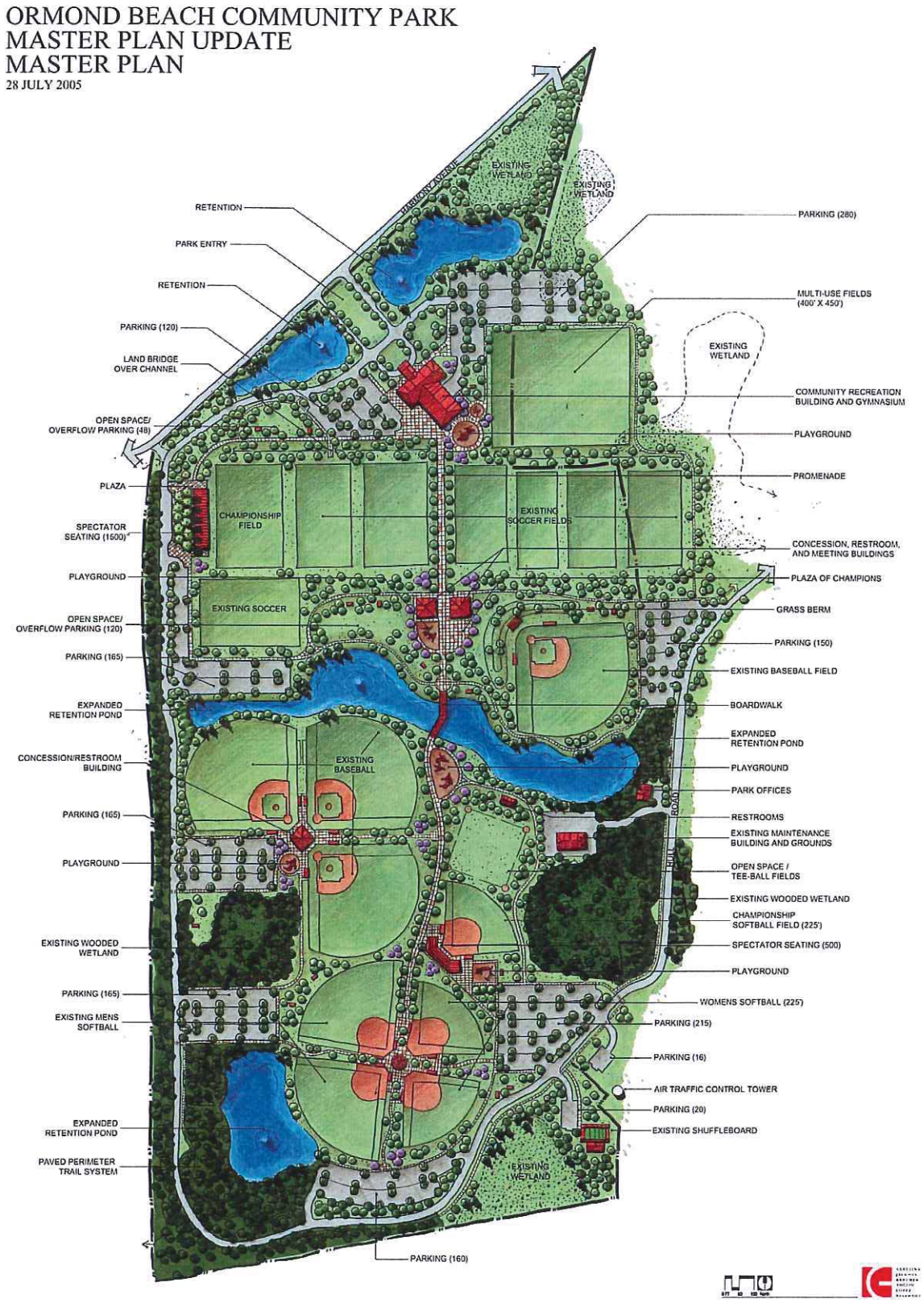


Figure 15: Master Plan

CAPITAL PROJECT DETAIL

PROJECT TITLE

Ormond Beach Sports Complex Lighting

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Soccer Fields 4, 5 & 6

MANAGEMENT

Engineering/Leisure Services

PROJECT SCOPE

Replace twisted wood poles and outdated lighting with Musco Lighting system with automated control system.

JUSTIFICATION

The replacement of poles and lighting on soccer fields #4, 5 and 6 is planned for fiscal year 2017/18. The wood poles were originally installed in 1991 and have become twisted over the years which resulted in the light fixtures having to be removed and relocated a few years ago. The poles have continued to twist and the lighting fixtures are to be replaced using Musco Lighting with automated remote control access. The new lighting comes with a 25 year guarantee and will provide more efficient and environmentally-friendly lighting. The lighting project will be beneficial to the soccer programs and will be an added asset in obtaining future soccer field rentals.

PROJECT COST METHODOLOGY

Musco Lighting Cost Proposal for Soccer Fields 9 & 10

	AMOUNT REQUESTED
EXPENDITURE	
Sports Lighting Soccer Fields 4, 5, 6	495,000
Total	495,000

	AMOUNT REQUESTED
REVENUE	
To be determined	495,000
Total	495,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Public Art Program Projects

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

City-wide

MANAGEMENT

Leisure Services Advisory Board

PROJECT SCOPE

A comprehensive public art program that honors the heritage of the community through thematic content in varied city owned facilities and locations that are used by residents and visitors.

JUSTIFICATION

This project was included in the 2010 LSAB's priority list. While the LSAB recognizes the value of public art placed within the community, they believe that the other needs are more pressing for the City to address at this time. Detailed project estimates would be needed if this project were considered for funding. The Indian Mound Timucua Indian Sculpture would be placed at the Indian Mound on S. Beach Street, pending private funding. Other unfunded projects are listed in outer years.

PROJECT COST METHODOLOGY

	AMOUNT REQUESTED
EXPENDITURE	
Indian Mound Timucua Indian Sculpture	50,000
So. Ormond Neighborhood Sculpture	28,500
Police Station Artwork	25,000
Central Park Trail Phase I Sculpture	25,000
Nova Community Ctr & Sports Complex	25,000
Central Park Phase II Sculpture	25,000
Total	178,500

	AMOUNT REQUESTED
REVENUE	
To be determined	128,500
Private Funding	50,000
Total	178,500

CAPITAL PROJECT DETAIL

PROJECT TITLE

Tennis Center Building

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

104-TIF

PROJECT LOCATION

Casements Tennis Center

MANAGEMENT

Engineering

PROJECT SCOPE

Construct a new 1,000 SF tennis facility at the Casements Tennis Center.

JUSTIFICATION

The operations office for the tennis center is located in the MacDonald House which has significant deterioration due to termite infestation and water infiltration along with major foundation and exterior deterioration. Limited bathroom facilities and office space at the MacDonald house restricts the ability of scheduling events at the tennis center thus reducing the ability to provide economic stimulus to the City. A new facility will support sanctioned tennis tournaments which would occur over several days and provide economic stimulus to the local downtown area.

PROJECT COST METHODOLOGY

Cost estimate received in 2012 from the City's construction management firm. Initial estimate was for a larger structure than currently proposed.

	AMOUNT REQUESTED
EXPENDITURE	
Construct Tennis Facility	175,000
Total	175,000

	AMOUNT REQUESTED
REVENUE	
To be determined	175,000
Total	175,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

Three Chimneys

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

West Granada Boulevard

MANAGEMENT

Quality of Life Board

PROJECT SCOPE

The project provides for dedicated parking for the site owned by the State of Florida and managed by the Historical Trust. This project will be included for evaluation as part of the proposed historic preservation plan discussed at the City Commission's strategic planning session.

JUSTIFICATION

Inclusion of this project was requested by the Quality of Life Board. The project is being considered in order to preserve and develop the area for public use. A conceptual plan was prepared by Planning Department and the Ormond Beach Historic Society.

PROJECT COST METHODOLOGY

Costs are based upon historic costs data.

	AMOUNT REQUESTED
EXPENDITURE	
Dedicated Parking	110,000
Total	110,000

	AMOUNT REQUESTED
REVENUE	
To be determined	110,000
Total	110,000

CAPITAL PROJECT DETAIL

PROJECT TITLE

West Ormond Neighborhood Park

PROJECT#

NA

CATEGORY

Recreation and Cultural Facility Improvements

FUND

301-General Improvement Fund

PROJECT LOCATION

Leeway Trail

MANAGEMENT

Leisure Services Advisory Board

PROJECT SCOPE

Twenty acres park would include athletic fields, (soccer, baseball) open green space; 3/4 to 1 mile trail system; paved parking; restrooms; grills, power course, hard courts, playground and picnic facility.

JUSTIFICATION

This project was included in the 2010 LSAB's priority list. The residents living west of I-95 currently have no park system to utilize for open play activities. Concerned residents have voiced their concerns to the City Commission requesting serious consideration to build a park which has ample parking, large open green space, walking/biking paths, restrooms and picnic facilities. Residents from western Ormond have also expressed the inconvenience of having to drive to either the Nova Community Park or Central Parks for a simple family outing and to enjoy the park system. The Recreation Master Plan clearly identifies, as per a citizen survey, that next to beach parks, residents have requested more open green space, walking trails, bike paths and picnic facilities. It is the City's intent to develop through master planning the twenty acres in conjunction with the needs of those residing in western Ormond. Detailed project estimates would be needed if this project were considered for funding.

PROJECT COST METHODOLOGY

	AMOUNT REQUESTED
EXPENDITURE	
Park	2,650,000
Total	2,650,000

	AMOUNT REQUESTED
REVENUE	
To be determined	2,650,000
Total	2,650,000

City of Ormond Beach, Florida

April 12, 2013

Riviera Park Proposed Parking Upgrades Probable Cost

Project includes paving shell parking areas, installing wheel stops and stall striping and removing and replacing lanscaping adjacent to the parking areas.

Estimated Construction Cost

Item Num	Item Description	QTY	Unit	Unit Cost	Item Cost
1	6-inch Concrete Paving	1250	SY	$ 45.00	$ 56,250.00
2	Grading preparation	1	LS	$ 2,500.00	$ 2,500.00
3	Thermo-plastic Striping	1	LS	$ 3,000.00	$ 3,000.00
4	Wheel Stops	6	EA	$ 20.00	$ 120.00
5	Remove/Replace Landscaping	1	LS	$ 5,000.00	$ 5,000.00
6	Maintenance of Traffic	1	LS	$ 2,000.00	$ 2,000.00
7	Header Curbing	0	LF	$ 30.00	$ 0.00
8	Perimeter Fencing - Thrfee	600	LF	$ 30.00	$ 18,000.00
				Construction Sub-	86,870.00
				Contingency	8,687.00

Construction Budget=	$	95,557.00
ENGINEERING & PERMITTING (10%)=	$	9,555.70
Geotechnical Services (2.5%)=	$	2,388.93
Sub-Total=	$	107,501.63
PROBABLE COST TOTAL=	$	107,501.63
PROJECT Budget Value=	**$**	**110,000.00**

MAP SHOWING A BOUNDARY SURVEY OF

A PART OF LOT G, GRANT LOT 6 1/2; LOT G, GRANT LOT 7; LOT F, GRANT LOT 7 1/2, AND LOT F, GRANT LOT 8, ACCORDING TO PLAT OF ORMOND AS RECORDED IN PLAT BOOK 2, PAGE 118 OF THE CURRENT PUBLIC RECORDS OF VOLUSIA COUNTY FLORIDA LYING IN SECTION 41, HENRY YONGE GRANT, TOWNSHIP 14 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA

LAND DESCRIPTION (Official Records Book 3900, Page 2586)

A portion of the following lots: Lot G, Grant Lot 6 ½; Lot G, Grant Lot 7; Lot F, Grant Lot 7 ½; and Lot F, Grant Lot 8; of the Henry Yonge Grant as per plat recorded in Map Book 2, Page 118, Public Records of Volusia County, Florida, described as follows:

Commence at the Southeast corner of Grant Lot 8, on the West right of way line of Orchard Street, thence South 64 degrees 33 minutes 22 seconds West along the South line of said Grant Lot 8, 1840.5 feet; thence South 25 degrees 27 minutes 38 seconds East 20.00 feet; thence South 64 degrees 33 minutes 22 seconds West 454.0 feet to the Point of Beginning of this description; thence continue South 64 degrees 33 minutes 22 seconds West 275.0 feet; thence North 25 degrees 27 minutes 38 seconds West 278.42 feet to the North line of Grant Lot 8; thence North 64 degrees 31 minutes 51 seconds East along the North line of Grant Lot 8, 739.0 feet; thence South 25 degrees 27 minutes 38 seconds East 824.09 feet to the Northerly right of way line of Granada Avenue, a 100 foot right of way as now laid out and used, said point being on a curve, concave northerly and having a radius of 1860.08 feet; thence westerly along said northerly right of way on an arc distance of 504.15 feet and for through a central angle of 15 degrees 31 minutes 45 seconds; thence North 25 degrees 26 minutes 38 seconds West 330.22 feet to the Point of Beginning.

Except the following:

A portion of the following lots: Lot F, Grant Lot 7 ½ and Lot F, Grant Lot 8, of the Henry Yonge Grant as per plat recorded in Map Book 2, Page 118, public records of Volusia County, Florida, described as follows:

Commence at the Southeast corner of Grant Lot 8, on the West right of way line of Orchard Street; thence South 64 degrees 33 minutes 22 seconds West along the south line of said Grant Lot 8, 1840.5 feet; thence South 25 degrees 27 minutes 38 seconds East 20.00 feet; thence South 64 degrees 33 minutes 22 seconds West 454.0 feet to the Point of Beginning of this description; thence continue South 64 degrees 33 minutes 22 seconds West 275.0 feet; thence North 25 degrees 27 minutes 38 seconds West 278.42 feet to the North line of Grant Lot 8; thence North 64 degrees 31 minutes 51 seconds East along the north line of Grant Lot 8, 275.07 feet; thence South 25 degrees 26 minutes 30 East, a distance of 278.54 feet to the point of beginning.

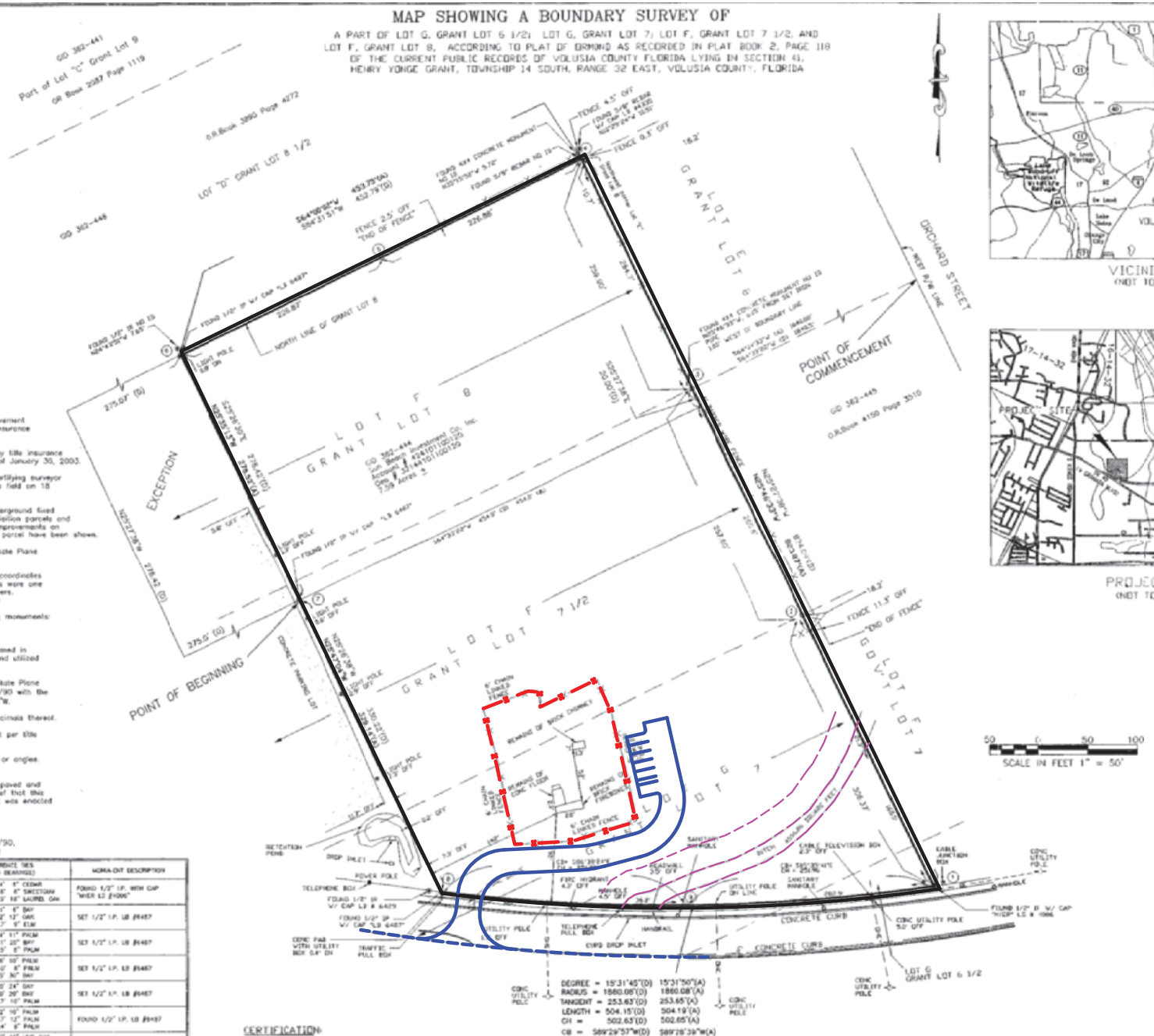
SURVEYOR'S NOTES:

1. This survey certified to: Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, Commonwealth Land Title Insurance Company and American Government Services Corporation.
2. I have reviewed the Commonwealth Land Title Insurance Company title insurance commitment numbered File No. 05590, with an effective date of January 30, 2003.
3. The survey shown and described hereon was reviewed by the certifying surveyor in the office on 21 April 2003. The survey was reviewed in the field on 18 April 2003.
4. All above-ground fixed improvements and any evidence of underground fixed improvements on the acquisition parcels and between the acquisition parcels and the centerline of any contiguous road have been located. All improvements on adjacent parcels pertinent to the boundaries of the acquisition parcel have been shown.
5. The methods and monuments used to establish the 1983/90 State Plane Coordinates are as follows:

   Methods: GPS Satellite observations were utilized to establish coordinates on two points on the site control traverse. The GPS sessions were one hour in duration and were captured on Trimble 4000 SE receivers. Coordinates were then established on the remainder of on-site points using a conventional 1-second theodolite and EDM. Survey based on published monument position for the following monuments:
   79 90 GPS 5
   79 78 A60
   NGS Monument ORS 1934
   Note: The satellite observations for the GPS survey were performed in April, 2003. Traverse points were recovered from that survey and utilized for this survey.
6. Bearings shown hereon are based on Grid North and refer to State Plane Coordinates Florida East Zone, North American Datum of 1983/90 with the bearing of the South line of Grant Lot 8 1/2 being S64°06'02"W.
7. Distances are to US Survey foot and are shown in feet and decimals thereof.
8. The existing ditches which cross the property have no easement per title commitment and could constitute a prescriptive easement.
9. The original subdivision plat shows no monumentation, bearings or angles. Part of the lots do not contain distances.
10. State Road 40 (SR 40), also known as Granada Avenue, is a paved and divided four-lane public highway, and it is this surveyors belief that this roadway was not in existence at the time that the Murphy Act was enacted and therefore the blanket easement does not apply.

COORDINATES – NORTH AMERICAN DATUM 1983/90, FLORIDA EAST ZONE, TRANSVERSE MERCATOR

MONUMENT DESIGNATION	(X) – FEET (Y) – FEET	LATITUDE (N) LONGITUDE (W)	CONVERGENCE SCALE FACTOR	REFERENCE TIES (GRID BEARINGS)	NORMAL-CUT DESCRIPTION
1	632348.99 1797968.98	29 16 43.7976 81 04 20.7325	-0 02 10 0.99994182	N 30° E 14.4' 6" CEDAR N 62° W 17.8' 6" SWEETGUM N 30° W 15.3' 16" laurel oak	FOUND 1/2" I.P. WITH CAP "WHER LS #1006"
2	632412.77 1797961.88	29 16 46.5081 81 04 29.2384	-0 02 11 0.99994182	S 28° E 3.1' 6" BAY N 21° E 38.2' 12" OAK N 13° W 7.7' 9" ELM	SET 1/2" I.P. LB #6487
3	632308.75 1798163.82	29 16 48.8240 81 04 29.5055	-0 02 12 0.99994183	S 24° E 12.4' 11" PALM S 08° W 29.1' 20" BAY N 23° W 41.5' 8" PALM	SET 1/2" I.P. LB #6487
4	632147.73 1798407.08	29 16 51.1403 81 04 30.7830	-0 02 12 0.99994184	S 39° E 15.6' 10" PALM N 87° W 6.0' 8" PALM N 43° E 41.5' 30" BAY	SET 1/2" I.P. LB #6487
5	631953.82 1798328.41	29 16 50.7540 81 04 33.0854	-0 02 14 0.99994185	N 75° E 26.0' 24" BAY S 44° E 24.0' 20" BAY S 60° W 8.7' 10" PALM	SET 1/2" I.P. LB #6487
6	631779.71 1798025.95	29 16 49.1685 81 04 35.3896	-0 02 15 0.99994185	S 73° E 25.2' 10" PALM S 88° W 13.7' 12" PALM N 20° W 24.4' 8" PALM	FOUND 1/2" I.P. LB #6487
7	631950.02 1797977.88	29 16 46.8917 81 04 34.0292	-0 02 14 0.99994185	S 40° E 41.7' 46" LIVE OAK S 04° W 84.0' 50" LIVE OAK N 15° W 15.0' 24" SWEETGUM	FOUND 1/2" I.P. LB #6487
8	632043.96 1797981.38	29 16 45.7491 81 04 32.4084	-0 02 13 0.99994184	N 62° E 34.4' 8" SWEETGUM N 24° E 18.4' 18" SWEETGUM N 29° W 12.8' 20" CEDAR	FOUND 1/2" I.P. LB #6487
9	632224.63 1797966.61	29 16 43.6045 81 04 29.5686	-0 02 12 0.99994183	S 85° E 32.5' 12" SWEETGUM N 23° E 9.8' 4" SWEETGUM N 75° W 10.4' 12" DOUBLE OAK	FOUND 1/2" IRON ROD LB #6485



VICINITY MAP
(NOT TO SCALE)

PROJECT SITE
(NOT TO SCALE)

LEGEND/ABBREVIATIONS

N = NORTH
S = SOUTH
E = EAST
W = WEST
R/W = RIGHT OF WAY
° = DEGREES
' = MINUTES (IN DIRECTION)
" = SECONDS (IN DIRECTION)
' = FEET (IN DISTANCE)
" = INCHES (IN DISTANCE)
CH = CHORD LENGTH
CB = CHORD BEARING
LB = LICENSED BUSINESS
PVC = POLYVINYL CHLORIDE
DIA. = DIAMETER
ID = IDENTIFICATION
GW = GUY WIRE
O.R. = OFFICIAL RECORDS
PC = PAGE
I.P. = IRON PIPE
OHW = OVERHEAD ELECTRIC LINE
OHT = OVERHEAD TELEPHONE LINE
FND = FOUND
IR = IRON ROD
(A) = ACTUAL FIELD DIMENSION
GD = GEOGRAPHIC IDENTIFIER
(D) = DEED

CERTIFICATION:

02 JUNE 2003

DALE V. TRAYLOR
FLORIDA REGISTERED CERTIFICATE NO. 4266
NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

BSM APPROVED
By [illegible] Date 6-9-03

THREE CHIMNEYS
OPTION 'B'

PREPARED BY:
ARC SURVEYING & MAPPING, INC.
5202 SAN JUAN AVENUE
JACKSONVILLE, FLORIDA 32210
PHONE (904) 384-8377 FAX (904) 384-9358
LICENSED BUSINESS NO. 6487

CAPITAL PROJECT DETAIL

PROJECT TITLE

Lisa Lake Dredging

PROJECT#

107141

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Canals in the area of Putnam Ave.

MANAGEMENT

Engineering

PROJECT SCOPE

The project involves the dredging of approximately two (2) feet of silt that has deposited within the canals north of Melrose Avenue and within the 5.8 acre waterway known as Lisa Lake.

JUSTIFICATION

The Lisa Lake waterway is a unique canal system within the City. Since its construction in 1959 the area has become a habitat for birthing and mating manatees. In addition, the area is utilized as habitat to a number of bird and wildlife species. Over the years, the canal system has degraded due to the accumulation of silt resulting from stormwater discharge from local stormwater collection systems that discharge into the canals. Some efforts have been made to reduce the silt deposition, namely the construction of a stormwater collection vortechnic structure at Melrose Avenue and a sediment baffle box on Sanchez Avenue. However, the canals have been impacted to the extent that there is little water depth in some of the basins. This has also affected the use of the waterways by adjacent property owners.

PROJECT COST METHODOLOGY

Cost estimate based on estimate provided by Marine Dredging Company in 2013

	AMOUNT REQUESTED
EXPENDITURE	
Dredging	530,000
Final Design	50,000
Preliminary Engineering Design/Permitting	20,000
Total	600,000

	AMOUNT REQUESTED
REVENUE	
Special Assessment	600,000
Total	600,000

Dredging & Marine Consultants

DMC

ENGINEERS • SCIENTISTS

ENGINEER'S ESTIMATE OF COSTS

City of Ormond Beach
Lisa Lake Dredging

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL AMOUNT
1	Payment and Performance Bond	1	LS	$ 10,000.00	$ 10,000.00
2	Mobilization and Demobilization	1	LS	$ 25,000.00	$ 25,000.00
3	Construction and As-Built Surveying	1	LS	$ 8,000.00	$ 8,000.00
4	Environmental Compliance	1	LS	$ 5,000.00	$ 5,000.00
5	Dredging*	15,800	CY	$ 20.00	$ 316,000.00
6	Dredge Sediment Hauling and Disposal	15,800	CY	$ 5.00	$ 79,000.00
	Contingencies (15%)				$ 66,450.00
	Engineering, Permitting & Existing Structure Asessment				$ 70,000.00
	Construction Management/Admin				$ 25,000.00
				TOTAL	$ 604,450.00
*dredging quantity assumes 2 feet of sediment over a 213,835 square foot project area		ENGINEERS ESTIMATE			$ 605,000.00

LOCATION MAP

Lisa Lake

The City of Ormond Beach
Engineering

Perpared by: 4/3/2013

N
W E
S

CAPITAL PROJECT DETAIL

PROJECT TITLE

May 2009 Flood Study - Phase II Improvements

PROJECT#

107140

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Central Park Area

MANAGEMENT

Engineering

PROJECT SCOPE

This project expands on the Phase I improvements to be completed in 2013-14. This includes the construction of a stormwater pumping station at Central Park off Fleming Ave, and discharge piping to the Halifax River.

JUSTIFICATION

During the May 2009 Storm significant flooding occurred which impacted roads and flooded homes throughout the City. Recommendations to improve the flooding were identified in a Stormwater Investigation Study which was presented to the City Commission. The City Commission approved the study and requested staff to proceed with scheduling and budgeting of the study's recommendations. Phase 2 was also a component of the ongoing flood study underway for the EVRWA. It was anticipated that funding through FEMA would be sought by EVRWA on a regional project basis for this phase of the project; however, that is not expected to happen at this time so City staff proceeded to apply for a FEMA HMGP grant following the notice of funding availability associated with damages from Tropical Storm Debbie,

PROJECT COST METHODOLOGY

Costs were estimated during the grant application process.

	AMOUNT REQUESTED
EXPENDITURE	
Phase II (Construction)	8,604,000
Total	8,604,000

	AMOUNT REQUESTED
REVENUE	
To be determined	8,604,000
Total	8,604,000

Legend

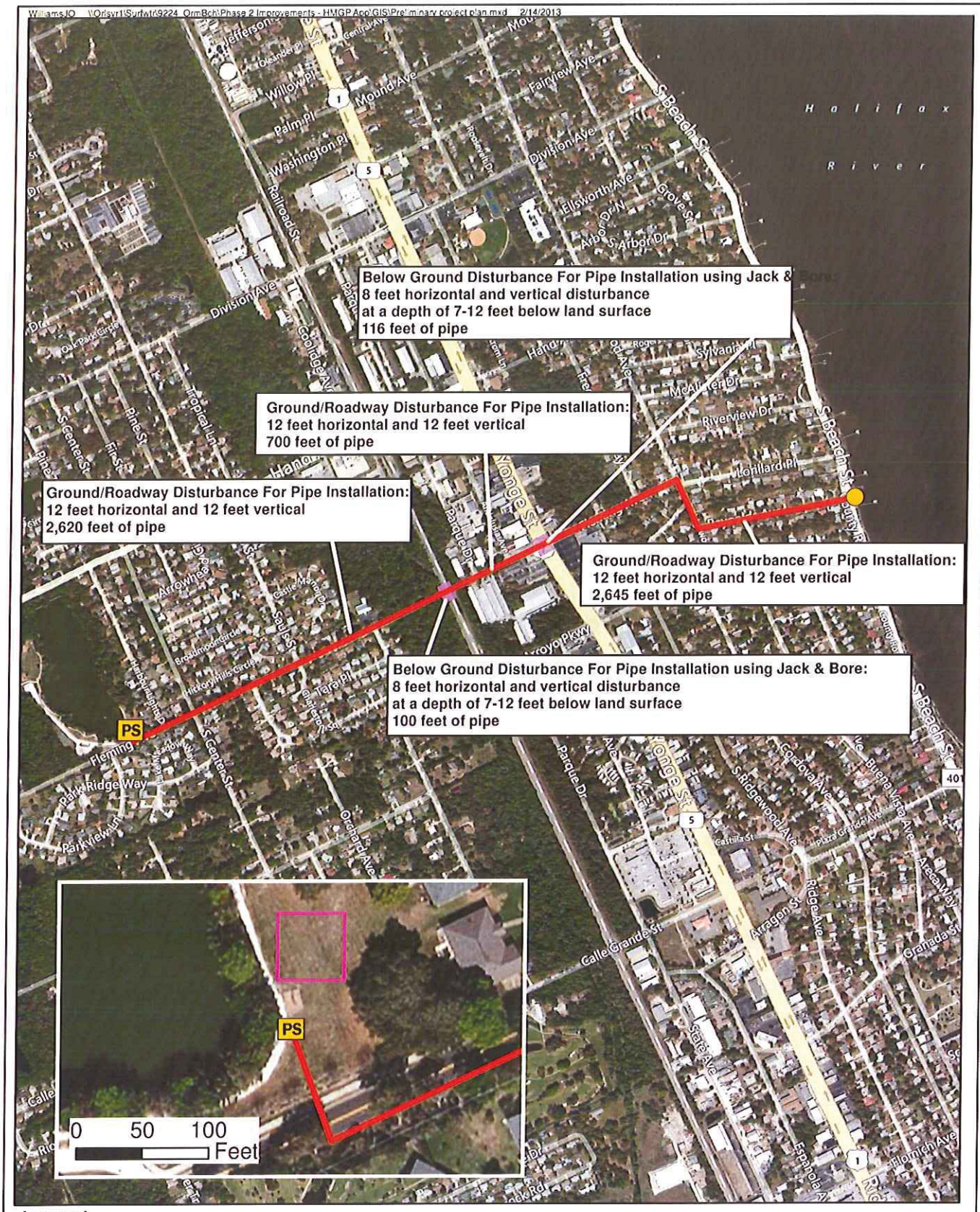
- Flooded Houses (May 2009 Storm Event)
- Additional Historic Flooding Complaints
- PS Proposed Pump Station Location
- Proposed Pipe

N W E S

0 0.25 0.5 Miles

Figure 1
Flooding Complaints in Central Park Area
City of Ormond Beach, FL

CDM Smith



Legend

- PS Proposed Pump Station Location
- Outfall
- Proposed Pipe
- Jack & Bore
- Staging Area

0 500 1,000 Feet

CDM Smith

Figure 4
Preliminary Project Plan
City of Ormond Beach, FL

Table 1
Conceptual Cost Estimate
City of Ormond Beach
Central Park Flood Mitigation Project - Phase II
Fleming Avenue Pump Station

No.	FDOT Pay Item	Item Description	Dimension/ Units	Quantity	Cost per Unit	Cost
1	101-1	Mobilization	LS	1	$223,000	$223,000
2	102-1	Maintenance of Traffic	LS	1	$330,000	$330,000
3	104-13-1	Staked Silt Fence, Type III	LF	12,500	$2.40	$30,000
4	110-1-1	Clearing and Grubbing	AC	1	$12,000	$12,000
5	353-70	Concrete D/W Replacement	CY	170	$400	$68,000
6	430-175-160	60" Reinforced Concrete Pipe	LF	6,000	$280	$1,680,000
7	430-880-04	Flapgate for 60-inch Diameter RCP	EA	1	$21,000	$21,000
8	455-13-3	Sheet Piling, Temporary-Critical	SF	150,000	$0.54	$81,420
9	556-1-9	Jack and Bore, 72" to 84" Casing	LF	220	$2,100	$462,000
10	570-1-2	Performance Turf, Sod (Bahia)	SY	3,200	$3.60	$11,520
11	9999-1	Roadway Replacement	MI	1.2	$407,500	$489,000
12	5000-2	150 cfs Pump Station	LS	1	$1,593,800	$1,593,800
13	5000-3	As-Built Drawing Certification	LS	1	$13,000	$13,000
					Sub-total	$5,014,740
					Engineering Analysis, Modeling, Full Design, and Permitting	$752,000
					*Preliminary Design and HMGP Application**	$47,250
					Sub-Applicant Management Fee (5%)	$291,000
					Total Cost	$6,104,990

Notes:

1. Pipe sizes and lengths are conceptual estimates - dimensions and lengths may change during final design.
2. Construction costs are based on data from FDOT Item Average Unit Cost Statewide and Area 6 (12/1/12-12/31/12) and similar construction projects.
3. Mobilization is approximately 5% of construction costs.
4. Design and permitting fees are approximately 15% of construction costs.
5. Due to lack of current costing data, cost estimate for 60" Flapgate was generated from FDOT Statewide Averages for 2008 (49 - 60")
6. Right-of-way, easements and/or land acquisition are not included in this estimate.

* HMGP Pre-Award Costs

Delton S. Schwalls, P.E., CFM
2/13/2013

CAPITAL PROJECT DETAIL

PROJECT TITLE

Hunters Ridge Shadows Crossing - Phase 1

PROJECT#

CATEGORY

Stormwater Improvements

FUND

107-Stormwater

PROJECT LOCATION

Hunters Ridge

MANAGEMENT

Engineering

PROJECT SCOPE

Address chronic flooding that occurs within the subdivision due to improper grading of the lots within the subdivision.

JUSTIFICATION

Phase 1 of Shadows Crossing in Hunters Ridge experiences chronic flooding adjacent to the road after rain events. The flooding primarily involves standing water within the sidewalk and driveways. This is due to the fact that when the homes were constructed a drainage swale was supposed to be constructed within a drainage easement at the back of the right-of-way on the lots. This swale does not exist and the low point for many of the lots is the sidewalk and thus water stands for extended periods of time after a rain event leaving the sidewalk unusable. The legal Department was consulted on the matter of maintenance responsibility of the drainage system within the subdivision and their response was that the drainage maintenance responsibility is the homeowners association not the City. This project is at the request of the HOA which is appealing to the City Commission to assist in correcting this chronic drainage issue. Staff has received a proposal to perform an engineering study and provide a design for the fix. Once the design is completed then a cost for the fix can be determined and scheduled in the CIP should the City Commission elect to fund this project.

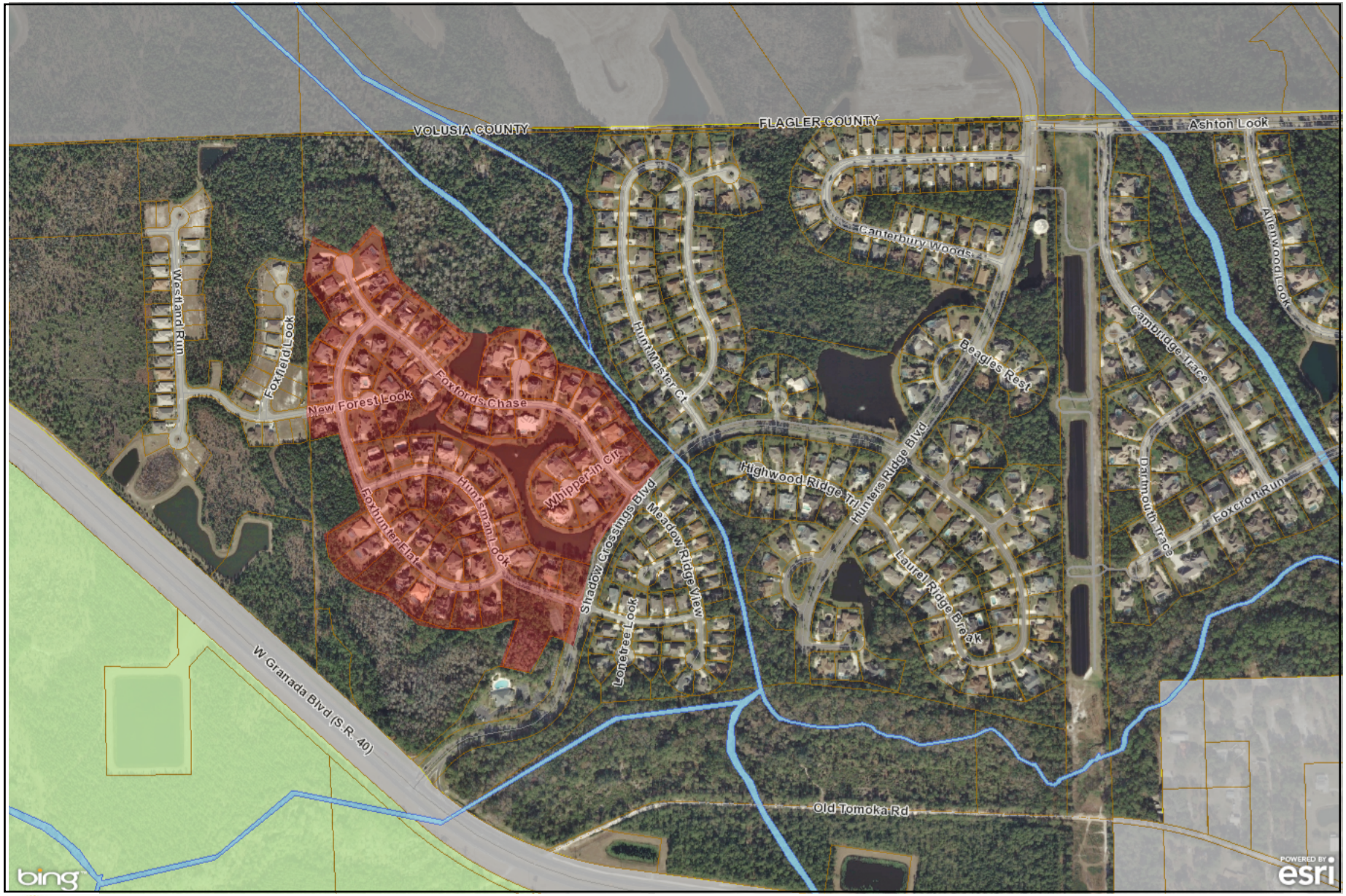
PROJECT COST METHODOLOGY

Cost Proposal

	AMOUNT REQUESTED
EXPENDITURE	
Engineering Study and Design	25,000
Total	25,000

	AMOUNT REQUESTED
REVENUE	
Stormwater Charges	25,000
Total	25,000

Shadow Crossings, Unit 2 of Hunter's Ridge Subdivision, Phase 1



756 ft

GIS data is provided on an "as is" basis. The accuracy or reliability of the data is not guaranteed or warranted in any way. The City of Ormond Beach specifically disclaims any warranty either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The entire risk as to quality and performance of the data is with the end user. In no event will the City, its staff or it's representatives be liable for any direct, indirect, incidental, special, consequential, or other damages, including loss of profit, arising out of the use of this data even if the City has been advised of the possibility of such

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CITY OF ORMOND BEACH

Engineering Division • 22 S. Beach Street • Ormond Beach • Florida • 32174 • (386) 676-3311 • Fax (386) 676-3361

December 19, 2014

TO: Joyce Shanahan, City Manager

FROM: John Noble, City Engineer

RE: Hunters Ridge, Shadow Crossings - Phase 1 Drainage Issue

In November 2013, staff received a copy of a letter from a resident at 25 Foxhunter Flat which depicted his frustration in trying to resolve a drainage issue with the HOA of Hunters Ridge. The major complaint was that after a rain event standing water is contained within the sidewalks and driveway areas for extended periods of time (see photos below). This results in the sidewalk being unusable and the driveways holding water and also results in mosquito breeding concerns and over time the sidewalks become covered with algae making them slippery and dangerous to walk on.

The apparent problem is that the subdivision homes were not graded according to the subdivision design plans. The design plans indicate a sidewalk located 4 feet off the road and then a swale within a 10 foot drainage easement inside the property line. Under this design, all runoff from the road would flow across the sidewalk into the swale area for treatment and percolation. Unfortunately, the various builders of this subdivision did not follow the design plan. Instead the sidewalk was installed as the low point with the yards graded up from the sidewalk to the homes. Swaled driveways instead of culverts were constructed which also hold water.

The legal Department was consulted on the matter of maintenance responsibility of the drainage system within the subdivision and their response is provided below:

The Shadow Crossings plat language is very clear. The Surveyor's Note 14 provides: *"A 10 foot drainage easement is hereby provided along, and inside of, all lots adjacent to streets."*

And the Dedication language provides: *"Drainage easements located within lots are dedicated to the association. The dedication is subject to the right but not the obligation, of the applicable local governmental entity to have access to the drainage areas for inspection, maintenance, repair and other local governmental purposes."*

The drainage easements are the responsibility of the association; not the city. The city is under no obligation to inspect, maintain or repair the drainage system.

The law has long recognized that utility easements granted to a governmental entity provide the governmental entity a right, but not an obligation, to inspect, maintain and repair utilities. Consequently, there is no inconsistency with the plats of Shadow

Crossings. And finally, governmental entities have sovereign immunity from liability regarding inspection, licensing and permitting activities. In theory, a developer/builder who constructs a project in a manner that causes injury to the property of another may, depending on the particular circumstances, be liable for that action subject to the applicable statute of limitations and other available defenses; however, I have no opinion regarding that particular issue in the instant matter.

Even though it appeared clear that the drainage maintenance responsibilities were the HOA's, staff met with the HOA in an attempt to help mediate a solution on behalf of the homeowner. Following the meeting, staff offered to design an engineering solution that would correct the drainage situation for lots 23-29 (the section that included the residents house) and provide this to the HOA and the HOA agreed they would then request costs from local contractors to build it. Staff originally estimated the fix would cost around $10,000 - $15,000. However when the bids were received the low bid was in the amount of $45,085. The reason the cost was high we were told was due to the extensive amount of hand labor that was required due to existing improvements. As this was more than the HOA could afford, the project was placed on hold.

Since then, several residents of the subdivision have continued to complain to the HOA president who in turn requested further assistance from the City in helping fix the problem. On November 13, 2014, the Engineering Division met again with representatives from the Hunter's Ridge Homeowners Association regarding the ongoing drainage issues within Foxhunter Flat and surrounding areas within Shadow Crossings – Phase 1 platted subdivision.

The HOA requested again for the City to help and fund the cost for correcting the drainage, Citing that the drainage problem was not local to only the street section but extended throughout the Phase 1 subdivision. In an attempt to gauge what the cost of the solution would be, a proposal was solicited from one of the City's continuing contract consultants to study the drainage issues in this area, and prepare a preliminary estimate to determine the cost that would likely be encountered for the improvements needed to reduce drainage issues throughout the subdivision. The below summary provides the follow up to those requests.

Drainage Study / Design

Staff requested and received a proposal from Upham, Inc. to perform a drainage study and propose solutions to address the existing drainage issues related to the properties on Foxhunter Flat (23 – 29 along with 25 Foxfords Chase) as well as the other properties located in the 72 lot subdivision platted as Shadow Crossings, Unit 2 of Hunter's Ridge Subdivision, Phase 1. The proposal prepared by Upham broke the request into three tasks.

1. **Preliminary Design** - In this task, the Engineer (Upham) will perform a study of the current drainage conditions which includes, inspection of the existing site conditions, review of any as-built and construction plans available for the subdivision, meeting with the City to discuss preliminary project findings, and preparation of a written report detailing the Engineer's findings, recommended solutions, and a probable cost for repair. The recommendation, as found acceptable will be used as the basis for final design.

2. **Survey** – In this task Upham will collect and prepare a route survey, as required for final design that includes existing topography, visible structures and utilities, driveways, and other surface features. This survey will serve as the base drawing for final design.
3. **Final Design** – Utilizing the findings of the preliminary design study and survey, Upham will prepare bid documents, (plans and specifications) as well as a construction cost estimate for the proposed solution. The City will receive deliverables both hard copy and electronically for bidding and construction

This task is anticipated to take approximately **four months** for full completion, and will be performed by Upham for the lump sum price of **$24,860.00.**

Recommendation

As the drainage system is an HOA maintained system, staff can not recommend City funds be used for the fix unless otherwise directed by the City Commission. As such, staff recommends that the Drainage Study be included in the FY 2015-16 CIP as an HOA requested project to allow the City Commission to decide if they want to consider funding the study and subsequently entertain future funding for recommended improvements as may be determined by the study. This would only pertain to Shadow Crossings – Phase 1 subdivision.

29

FEE AGREEMENT FOR
ENGINEERING AND SURVEYING SERVICES BETWEEN
THE CITY OF ORMOND BEACH AND THE FIRM OF UPHAM, INC.

FOR SHADOW CROSSINGS SIDEWALK AND DRAINAGE IMPROVEMENTS

This Agreement, made and entered into by and between the City of Ormond Beach, Florida (CITY) and Upham, Inc. of 265 Kenilworth Avenue Ormond Beach, Florida (ENGINEER) to the Continuing Contract for Engineering Services between parties dated this _____ day of _____, 2014.

WHEREAS, the CITY and ENGINEER have entered into a Continuing Contract for Engineering Services dated October 19, 2010 per resolution 2010-170.

WHEREAS, the CITY requires surveying and engineering services for a project described as Sidewalk and Drainage Improvements for Lots 1 through 72 of Shadow Crossings, Unit 2 of Hunters Ridge Subdivision, Phase 1; and

WHEREAS, the CITY and the ENGINEER desire to describe the engineering services for the project by entering into this Agreement to the Contract.

W I T N E S S E T H

The CITY and ENGINEER hereby covenant and agree as follows:

Project Description

The referenced project includes all Surveying and Engineering Services required in association with the investigation, survey, design and construction drawings for the determination to correct runoff ponding and drainage blockages along the lot frontages due to existing sidewalk and driveway improvements. The ENGINEER will review existing site conditions and drawings to determine a workable solution to alleviate the ponding of runoff within the rights-of-way.

Scope of Services

I. General

Services to be provided by the ENGINEER are intended to assist the CITY to investigate, survey, develop a design and prepare construction drawings for the project described as **Sidewalk and Drainage Improvements for Lots 1 through 72 of Shadow Crossings.** This requires technical services for the investigation, survey, preliminary and final design of the corrective improvements, construction drawings, cost estimate and other consultation as deemed necessary to complete the project. The anticipated complete scope of the ENGINEER'S services is established herein.

II. Design Phase Services

A. Preliminary Design

1. The ENGINEER shall visit and inspect the existing site conditions and photograph the project area.

2. Review CITY provided as-built or construction drawings, visit the project area after a rainfall event to observe drainage patterns and problem areas.

3. The ENGINEER shall meet with the CITY to discuss the project and preliminary findings of the site inspection.

4. The ENGINEER shall prepare a written narrative of its findings from the investigation and photographs of the problem areas, prepare recommended solution(s) and probable cost for repair.

5. Upon any comments by the CITY, the ENGINEER shall proceed to prepare the final design and construction documents.

B. Surveying

1. The ENGINEER shall provide the route and topographic survey required for the design of the project. This shall include location of structures, visible utilities, and improvements from the edge of pavement to approximately 10 ft beyond the right-of-way, elevations at each driveway, drainage structure, lot line and sidewalk.

C. Final Design

On the consent of the CITY, the ENGINEER shall commence with preparation of the final design. The ENGINEER shall perform the following tasks:

1. Prepare construction drawings and technical specifications per City standards at a scale of no less than 1”=40’, and submit two print (2) 24x36-inch copies and Adobe PDF file to the CITY for comment at 60% and 90%. After review of each submittal, CITY shall return to the ENGINEER one red-lined set for modification. All drawings shall be prepared in AutoCAD 2012 or later.

2. Design of the drainage improvements shall be performed utilizing best engineering practices.

3. Revise drawings after the 60% and 90% submittal to address CITY review comments and submit the final 100% set of drawings in the same quantity and files.

4. Provide to the CITY two (2) complete print copies of the project bid documents (drawings and specifications).

5. Prepare a construction cost estimate at the 90% and 100% stage of the construction drawings.

6. Any and other work deemed necessary to perform a complete functioning design for the proposed improvements.

7. Upon completion of the construction drawings, provide to the CITY two (2) print sets of the construction signed and embossed by the Engineer of Record, AutoCAD DWG and Adobe PDF files.

8. The ENGINEER fully understands the scope of its services for this project to determine a workable and cost effective solution to alleviate the ponding and provide positive outfall to the existing stormwater system.

III. Permitting Phase Services

There are no agency or jurisdiction permitting services anticipated for the project and are excluded from the scope of work.

VI. Schedule and Time Constraints

The total time allowed for completing the Engineering Services required under this Amendment is four (4) months from the date of Notice to Proceed.

VII. Additional Services

The fees for services described within this Amendment include all work specifically stated. It does not any public or neighborhood meeting(s) with residents, construction administration or inspection services, permitting or any other services not outlined in the Agreement. Should such additional services occur, The ENGINEER shall submit its fee for the additional work.

VII. Plans and Document Ownership

The original plans, specifications and permit calculations will become the property of the CITY upon completion of this project.

VIII. Compensation

Payment for all services will be in accordance with the Continuing Contract for Engineering Services as approved by the City Council as dated January 23, 2007 and be drawn down monthly based on a percentage and description of work performed from a lump sum of $24,860.00.

IX. Termination

If at any time during the duration of this Agreement, the CITY determines the construction cost is too prohibitive to continue, the CITY may terminate the conclusion of the ENGINEER's work. At that time, the ENGINEER will conclude its work to date, submit all the drawings and data to the CITY and conclude its fee to date.

IN WITNESS WHEREOF, the parties have made and executed this Agreement this ____

_____ day of _____, 2014.

ENGINEER

By: _____ Date: _____
Roger W, Strcula, PE, CPESC
President, Upham, Inc.

CITY OF ORMOND BEACH

By: _____ Date: _____
Joyce Shanahan, City Manager