

**RFQ 21-06  
EXHIBIT A**

**STORM DRAINAGE MASTER PLAN UPDATE  
CITY OF ST. AUGUSTINE BEACH  
WORK PLAN**



**Prepared by**

**Public Works Department  
City of St. Augustine Beach, Florida  
and  
Stone, Joca & Mahoney, Inc.  
Consulting Engineers  
Jacksonville, Florida**

**February, 2004**

**STORM DRAINAGE MASTER PLAN UPDATE  
CITY OF ST. AUGUSTINE BEACH  
WORK PLAN**

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Part II - Other Improvements Project Data Sheets and Drawings	28 Sheets

# **STORM DRAINAGE MASTER PLAN UPDATE CITY OF ST. AUGUSTINE BEACH WORK PLAN**

## **Summary**

The Work Plan presented in this document was developed by the Public Works Department in conjunction with our consulting engineers, Stone, Joca & Mahoney, using data developed in the process of mapping and modeling the existing system and information from other staff, elected officials and citizens. The projects proposed are designed to solve known problems and to improve drainage within the City. The projects specifically design to fill existing major ditches were included partly because of an expressed increasing concern over the possibility of insect borne disease resulting from these open ditches.

Projects are divided into two parts designated as follow: Part I - Major Ditch Improvements and Part II - Other Improvements.

Priorities are recommended based on the judgement of the plan developers and presented for consideration of the City Commission who is responsible for making the final decisions. Generally, projects can be constructed in almost any order provided the following constraints are met.

- Prior to piping the 2<sup>nd</sup> Avenue Ditch (Project No. 11), the replacement of the culverts along 11<sup>th</sup> Street - Project No. 1 - needs to be constructed.
- Projects that are divided into phases should be constructed as indicated to assure the pipe for the particular system is constructed from the downstream end to the upstream end.

Eighteen (18) separate projects are proposed with an estimated project costs of \$3,430,000. Project costs include planning, surveying, and engineering costs as well as the actual construction costs. Specifically excluded are possible costs associated with such things as wetlands mitigation and other environmental factors. Costs are also based on current conditions. As projects are deferred for significant periods of time, estimates will need to be updated.

There are several areas that this plan does not address. The most significant of these areas is the Linda Mar subdivision. Several places in this subdivision experience problems during periods of heavy rainfall. These problems were addressed by another consulting engineer in a study done for the City. This study recommended considering several alternatives including a swale system and a small retention area in the public right-of-way. Also included was a separate alternative which involved pumping stormwater from the eastern part of the subdivision to the S. R. A1A storm sewer system similar to what is done in the Sandpiper subdivision. The City Commission authorized design of the alternative that included the retention area, but, because of doubts of the effectiveness of that alternative, the project was deferred. As this work plan is further refined,

staff will reinvestigate this area and make specific recommendations to the Commission.

Also, areas in private subdivisions where the City has no jurisdiction were not addressed in the work plan; however, the runoff from these subdivisions was accounted for as it effected downstream systems.

**STORM DRAINAGE MASTER PLAN UPDATE**  
**CITY OF ST. AUGUSTINE BEACH**  
**WORK PLAN**  
**Storm Drainage Project Listing and Estimated Costs**

**Phase I - Immediate Improvements**

Proj. No.	Description	Estimated
	<u>Cost</u>	
1	Mizell Road Detention Pond Improvements	Grant
2	Remove Piping in Conflict Structures in 16 <sup>th</sup> Street Outfall	By SJC
3	Lower Overflow Weir - North Pond	\$ 25,000
4	11 <sup>TH</sup> Street Ditch from Pond at S.R. A1A to Mickler Boulevard	\$ 145,000
5	11 <sup>th</sup> Street Ditch from Mickler Boulevard to Runk's Ditch	\$ 125,000
6	Runk's Ditch Piping - City Share	\$ 75,000
7	Atlantic Alley Improvements from 6 <sup>th</sup> Street to 8 <sup>th</sup> Street	\$ 155,000
8	Atlantic Alley Improvements from 8 <sup>th</sup> Street to 9 <sup>th</sup> Street	\$ 105,000
9	Lake Overflow Connection - Lake Shore Drive	\$ 20,000
10	2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> Streets at A1A Beach Boulevard	\$ 35,000
11	2 <sup>nd</sup> Avenue Ditch Piping - 10 <sup>th</sup> Street to 2nd Avenue to 8 <sup>th</sup> Street	\$ 295,000
12	2 <sup>nd</sup> Avenue Ditch Piping from 8 <sup>th</sup> Street to 3 <sup>rd</sup> Street	\$ 195,000
13	D Street Improvements from 5 <sup>th</sup> Avenue to 3 <sup>rd</sup> Avenue	\$ 240,000
14	7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street Piping at Runk's Ditch	\$ 35,000
15	Woodland Avenue Improvements	\$ 20,000
16	Linda Mar Subdivision Pumping Station and Force Main	\$ 200,000
17	1 <sup>st</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End	\$ 100,000
18	Seawinds Condominium Connection to A1A Beach Boulevard	By Condo
19	Ocean Villas Condominium Connection to A1A Beach Boulevard	By Condo
20	Ponce Landing Condominium Connection to A1A Beach Boulevard	<u>By Condo</u>

Total - Phase I \$1,770,000

**Part II - Later Improvements**

21	2 <sup>nd</sup> Avenue Ditch Piping from 3 <sup>rd</sup> Street to C Street	\$ 160,000
22	16 <sup>th</sup> Street Ditch from Mickler Boulevard to Oceans Woods Ditch	\$ 75,000
23	Mickler Boulevard Ditch from 16 <sup>th</sup> Street to Pope Road	\$ 165,000
24	Ocean Woods Ditch Piping	\$ 110,000
25	2 <sup>nd</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End	\$ 35,000
26	B Street Drainage Improvements from 2 <sup>nd</sup> Avenue to 3 <sup>rd</sup> Avenue	\$ 120,000
27	Alley Improvements between A Street and 1 <sup>st</sup> Street	\$ 15,000
28	Ocean Drive Catch Basin	\$ 10,000
29	9 <sup>th</sup> Street from 2 <sup>nd</sup> Avenue east to Motel	<u>\$ 35,000</u>

Total - Phase II \$ 725,000

## Deleted Projects

Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 16 <sup>th</sup> Street	Deleted
Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 1200' South	Deleted
Mickler Boulevard Ditch from 1300' North to A Street	Deleted

# STORM DRAINAGE MASTER PLAN UPDATE CITY OF ST. AUGUSTINE BEACH WORK PLAN

## Recommended Order of Work

Project No.	Description
<hr/>	
6	Runk's Ditch Piping
7A	Atlantic Alley Improvements from 6 <sup>th</sup> Street to 8 <sup>th</sup> Street
7B	Atlantic Alley Improvements from 8 <sup>th</sup> Street to 9 <sup>th</sup> Street
8	Lake Overflow Connection - Lake Shore Drive
9	Miscellaneous Improvements - 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> Streets at A1A Beach Boulevard
10	D Street Improvements from 5 <sup>th</sup> Avenue to 3 <sup>rd</sup> Avenue
1	11 <sup>TH</sup> Street Ditch from Pond at S.R. A1A to Mickler Boulevard
2	11 <sup>th</sup> Street Ditch from Mickler Boulevard to Runk's Ditch
11A	2 <sup>nd</sup> Avenue Ditch Piping - 10 <sup>th</sup> Street to 2nd Avenue to 8 <sup>th</sup> Street
11B	2 <sup>nd</sup> Avenue Ditch Piping from 8 <sup>th</sup> Street to 3 <sup>rd</sup> Street
11C	2 <sup>nd</sup> Avenue Ditch Piping from 3 <sup>rd</sup> Street to C Street
12	Woodland Avenue Improvements
13	Ocean Woods Ditch Piping
14	7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street Piping at Runk's Ditch
15	1 <sup>st</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End
16	2 <sup>nd</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End
17	B Street Drainage Improvements from 2 <sup>nd</sup> Avenue to 3 <sup>rd</sup> Avenue
18	Alley Improvements between A Street and 1 <sup>st</sup> Street
3	16 <sup>th</sup> Street Ditch from Mickler Boulevard to Oceans Woods Ditch
4A	Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 16 <sup>th</sup> Street
4B	Mickler Boulevard Ditch from 16 <sup>th</sup> Street to Pope Road
5A	Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 1200' South
5B	Mickler Boulevard Ditch from 1300' North to A Street

# **STORM DRAINAGE MASTER PLAN UPDATE CITY OF ST. AUGUSTINE BEACH WORK PLAN**

## **Project Listing**

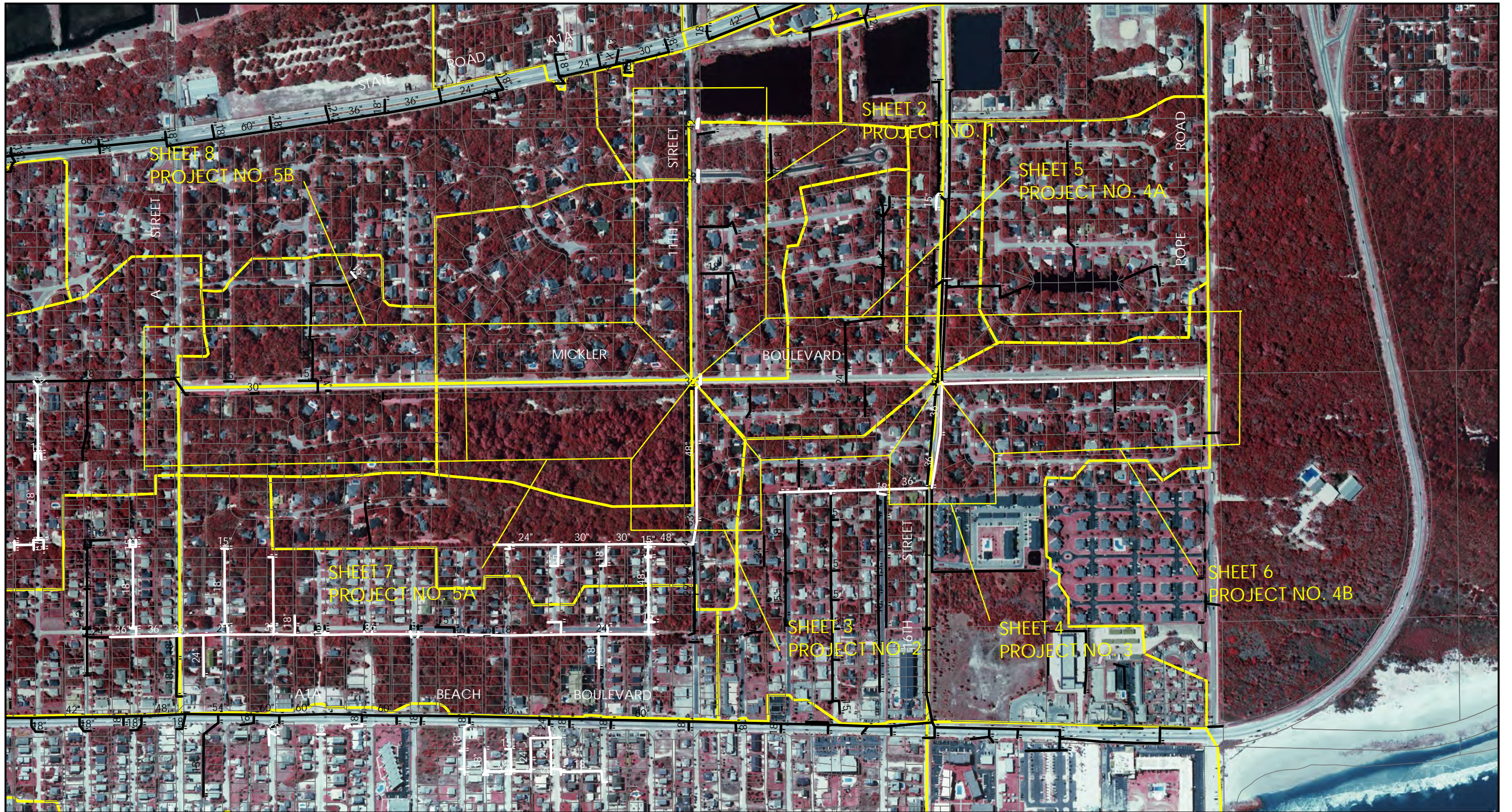
### **PART I - MAJOR DITCH IMPROVEMENTS**

Project No.	Description
1	11 <sup>TH</sup> Street Ditch from Pond at S.R. A1A to Mickler Boulevard
2	11 <sup>th</sup> Street Ditch from Mickler Boulevard to Runk's Ditch
3	16 <sup>th</sup> Street Ditch from Mickler Boulevard to Oceans Woods Ditch
4A	Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 16 <sup>th</sup> Street
4B	Mickler Boulevard Ditch from 16 <sup>th</sup> Street to Pope Road
5A	Mickler Boulevard Ditch from 11 <sup>th</sup> Street to 1200' South
5B	Mickler Boulevard Ditch from 1300' North to A Street

### **PART I - OTHER IMPROVEMENTS**

Project No.	Description
6	Runk's Ditch Piping
7A	Atlantic Alley Improvements from 6 <sup>th</sup> Street to 8 <sup>th</sup> Street
7B	Atlantic Alley Improvements from 8 <sup>th</sup> Street to 9 <sup>th</sup> Street
8	Lake Overflow Connection - Lake Shore Drive
9	Miscellaneous Improvements - 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> Streets at A1A Beach Boulevard
10	D Street Improvements from 5 <sup>th</sup> Avenue to 3 <sup>rd</sup> Avenue
11A	2 <sup>nd</sup> Avenue Ditch Piping - 10 <sup>th</sup> Street to 2nd Avenue to 8 <sup>th</sup> Street
11B	2 <sup>nd</sup> Avenue Ditch Piping from 8 <sup>th</sup> Street to 3 <sup>rd</sup> Street
11C	2 <sup>nd</sup> Avenue Ditch Piping from 3 <sup>rd</sup> Street to C Street
12	Woodland Avenue Improvements
13	Ocean Woods Ditch Piping
14	7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street Piping at Runk's Ditch
15	1 <sup>st</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End
16	2 <sup>nd</sup> Street Improvements from 2 <sup>nd</sup> Avenue to West End
17	B Street Drainage Improvements from 2 <sup>nd</sup> Avenue to 3 <sup>rd</sup> Avenue
18	Alley Improvements between A Street and 1 <sup>st</sup> Street





This map prepared by the City of St. Augustine Beach Public Works Department utilizing data from various sources. It is intended to be illustrative and to provide general information only.



SCALE: 1" = 500'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- " Proposed Catch Basin
- ! Proposed Manhole
- Existing Pipe
- ! Existing Manhole
- " Existing Catch Basin

## PART I MAJOR DITCH IMPROVEMENTS KEY MAP

SHEET 1



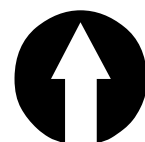
## PROJECT DATA SHEET

Project No.	1
Name:	11 <sup>th</sup> Street Ditch
Location:	Pond at S. R. A1A to Mickler Boulevard.
Purpose:	The purpose of the project is increase the capacity of the ditch along 11 <sup>th</sup> Street by replacing existing double pipes in three places with 8' x 5' concrete box culverts and regrading the ditch the entire length.
Description:	<p>The project consist of replacing existing double pipes with 8' x 5' concrete box culverts at the following locations:</p> <ul style="list-style-type: none"><li>· The City's access road just east of the retention pond;</li><li>· The entrance to Spanish Oaks subdivision; and,</li><li>· The intersection of Mickler Boulevard.</li></ul>
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$350,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

	Proposed Pipe
	Proposed Catch Basin
	Proposed Manhole
	Existing Pipe
	Existing Manhole
	Existing Catch Basin

## PART I MAJOR DITCH IMPROVEMENTS

PROJECT NO. 1  
11TH STREET DITCH  
POND TO MICKLER BOULEVARD

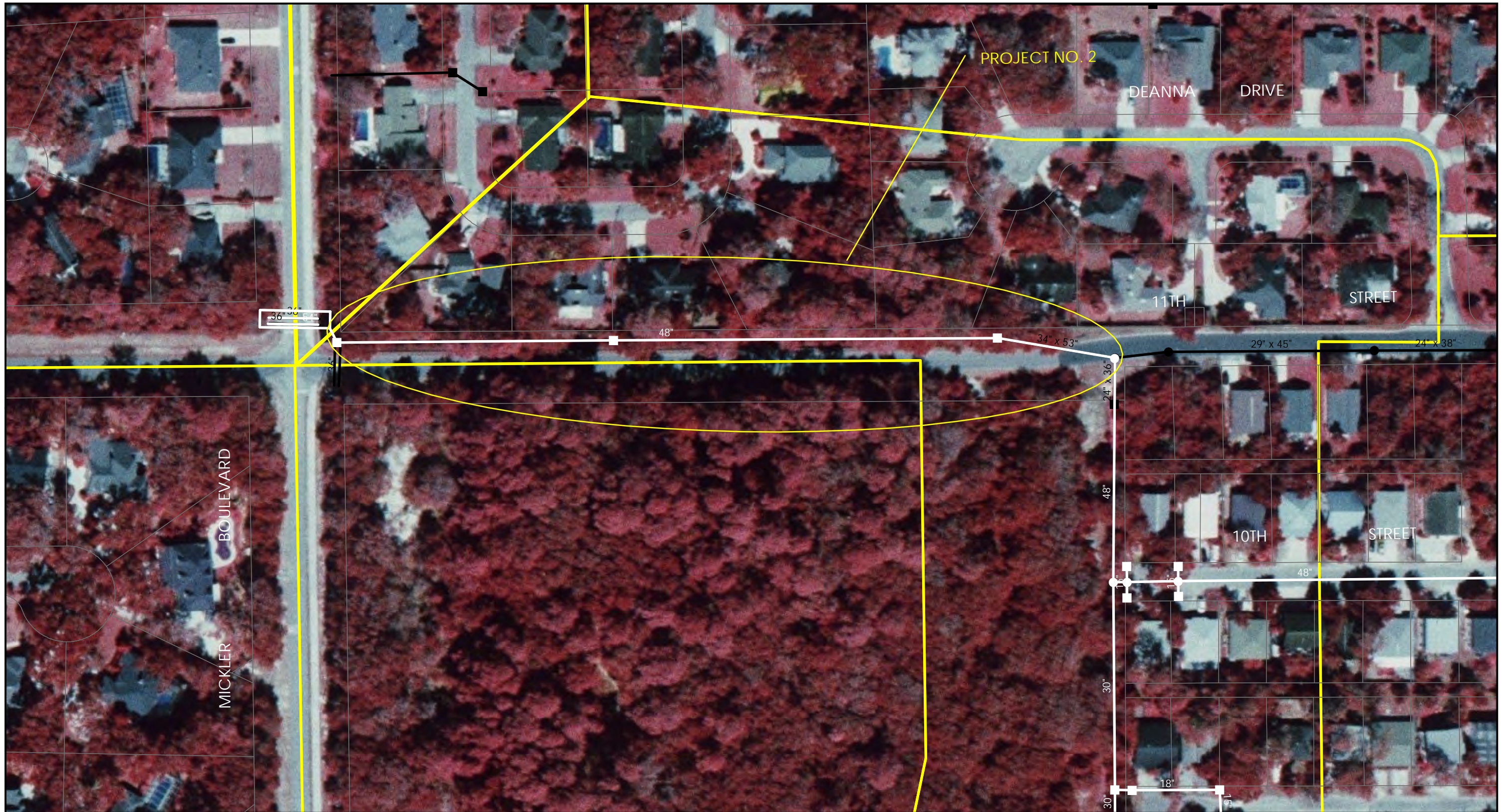
SHEET 2



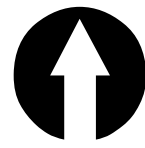
## PROJECT DATA SHEET

Project No.	2
Name:	11 <sup>th</sup> Street Ditch Piping
Location:	Mickler Boulevard to Runk's Ditch
Purpose:	The purpose of the project is improve drainage in the area of Coquina Gables generally south of C Street and east of 3 <sup>rd</sup> Avenue and all along 2 <sup>nd</sup> Avenue to 11 <sup>th</sup> Street by piping the existing 11 <sup>th</sup> Street ditch from Mickler Boulevard to Runk's Ditch. The piped system will have adequate capacity and will provide positive drainage. Piping the ditch will also result in a more pleasing visual condition.
Description:	The project consists of the construction of a new storm sewer along the existing ditch from Mickler Boulevard to Runk's Ditch.
Prerequisite Projects:	None
Construction Order:	N/A
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$125,000





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CITY OF ST. AUGUSTINE BEACH  
Storm Drainage System  
MASTER PLAN UPDATE  
PROPOSED IMPROVEMENTS

Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

PART I  
MAJOR DITCH IMPROVEMENTS  
  
PROJECT NO. 2  
11TH STREET DITCH  
MICKLER BOULEVARD TO RUNK'S DITCH  
  
SHEET 3



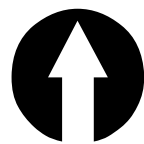
## PROJECT DATA SHEET

Project No.	3
Name:	16 <sup>th</sup> Street Ditch Piping
Location:	Mickler Boulevard to Ocean Woods Ditch
Purpose:	The purpose of the project is improve drainage in the area from 12 <sup>th</sup> through 16 <sup>th</sup> Streets west A1A Beach Boulevard by piping the existing 16 <sup>th</sup> Street ditch from Mickler Boulevard to the Oceans Woods Ditch. The piped system will have adequate capacity and will provide positive drainage. Piping the ditch will also result in a more pleasing visual condition.
Description:	The project consists of the construction of a new storm sewer along the existing ditch from Mickler Boulevard to the Oceans Woods Ditch.
Prerequisite Projects:	None
Construction Order:	N/A
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$75,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART I MAJOR DITCH IMPROVEMENTS

PROJECT NO. 3  
16TH STREET DITCH  
MICKLER BOULEVARD TO OCEAN WOODS DITCH  
SHEET 4



## PROJECT DATA SHEET

Project No.	4						
Name:	Mickler Boulevard Ditch Piping						
Location:	11 <sup>th</sup> Street to Pope Road						
Purpose:	The purpose of the project is improve drainage in the area north of 11 <sup>th</sup> Street to Pope Road by piping the existing Mickler Boulevard Ditch from 11 <sup>th</sup> Street to Pope Road. The piped system will have adequate capacity and will provide positive drainage. Piping the ditch will also result in a more pleasing visual condition.						
Description:	<p>Phase A of the project consists of the construction of a new storm sewer along the existing ditch from 11<sup>th</sup> Street to 16<sup>th</sup> Street.</p> <p>Phase B of the project consists of construction of a new storm sewer along the existing ditch from 16<sup>th</sup> Street to Pope Road</p>						
Prerequisite Projects:	None						
Construction Order:	Phase A, Phase B						
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach						
Estimated Project Costs:	<table><tbody><tr><td>Phase A</td><td>\$260,000</td></tr><tr><td>Phase B</td><td><u>\$165,000</u></td></tr><tr><td>Total</td><td>\$425,000</td></tr></tbody></table>	Phase A	\$260,000	Phase B	<u>\$165,000</u>	Total	\$425,000
Phase A	\$260,000						
Phase B	<u>\$165,000</u>						
Total	\$425,000						





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

—	Proposed Pipe
⌐	Proposed Catch Basin
!	Proposed Manhole
—	Existing Pipe
!	Existing Manhole
⌐	Existing Catch Basin

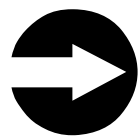
## PART I MAJOR DITCH IMPROVEMENTS

PROJECT NO. 4A  
MICKLER BOULEVARD DITCH  
11TH STREET TO 16TH STREET  
SHEET 5





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART I MAJOR DITCH IMPROVEMENTS

PROJECT NO. 4B  
MICKLER BOULEVARD DITCH  
16TH STREET TO POPE ROAD

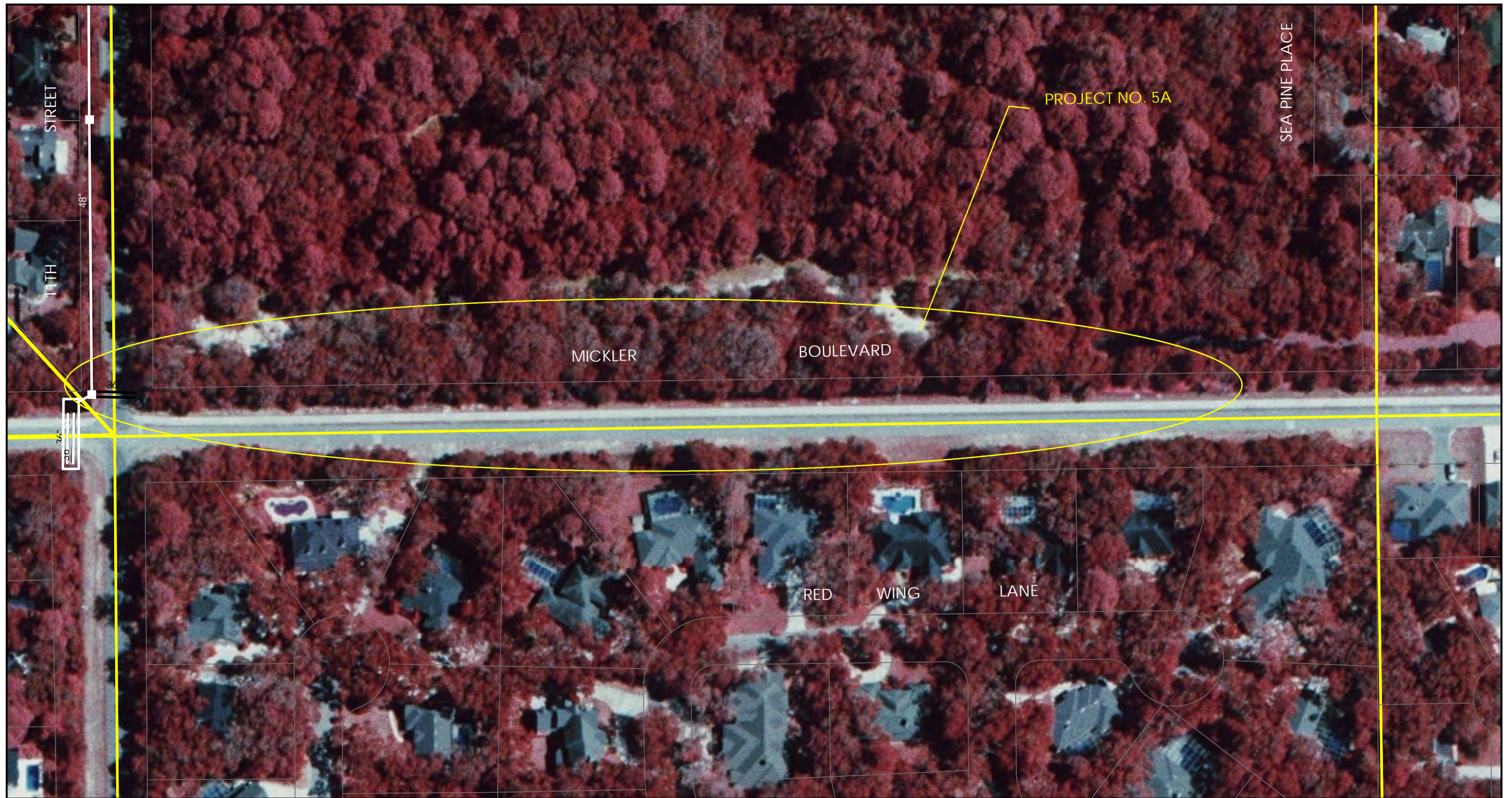
SHEET 6



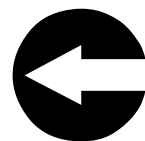
## PROJECT DATA SHEET

Project No.	5						
Name:	Mickler Boulevard Ditch Piping						
Location:	11 <sup>th</sup> Street to A Street						
Purpose:	The purpose of the project is improve drainage in the area south and west of 11 <sup>th</sup> Street by piping the existing Mickler Boulevard Ditch from 11 <sup>th</sup> Street to A Street to a point of connection with the existing storm sewer from 5 <sup>th</sup> Avenue. The piped system will have adequate capacity and will provide positive drainage. Piping the ditch will also result in a more pleasing visual condition.						
Description:	<p>Phase A of the project consists of the construction of a new storm sewer along the existing ditch from 11<sup>th</sup> Street to a point approximately 1,220 feet south of 11<sup>th</sup> Street.</p> <p>Phase B of the project consists of construction of a new storm sewer along the existing ditch from the ending point of Phase B to Pope Road.</p>						
Prerequisite Projects:	None						
Construction Order:	Phase A, Phase B						
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach						
Estimated Project Costs:	<table><tbody><tr><td>Phase A</td><td>\$315,000</td></tr><tr><td>Phase B</td><td><u>\$310,000</u></td></tr><tr><td>Total</td><td>\$625,000</td></tr></tbody></table>	Phase A	\$315,000	Phase B	<u>\$310,000</u>	Total	\$625,000
Phase A	\$315,000						
Phase B	<u>\$310,000</u>						
Total	\$625,000						





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART I MAJOR DITCH IMPROVEMENTS

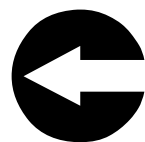
PROJECT NO. 5A  
MICKLER BOULEVARD DITCH  
11TH STREET TO 1200' SOUTH

SHEET NO. 7





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SCALE: 1" = 100'

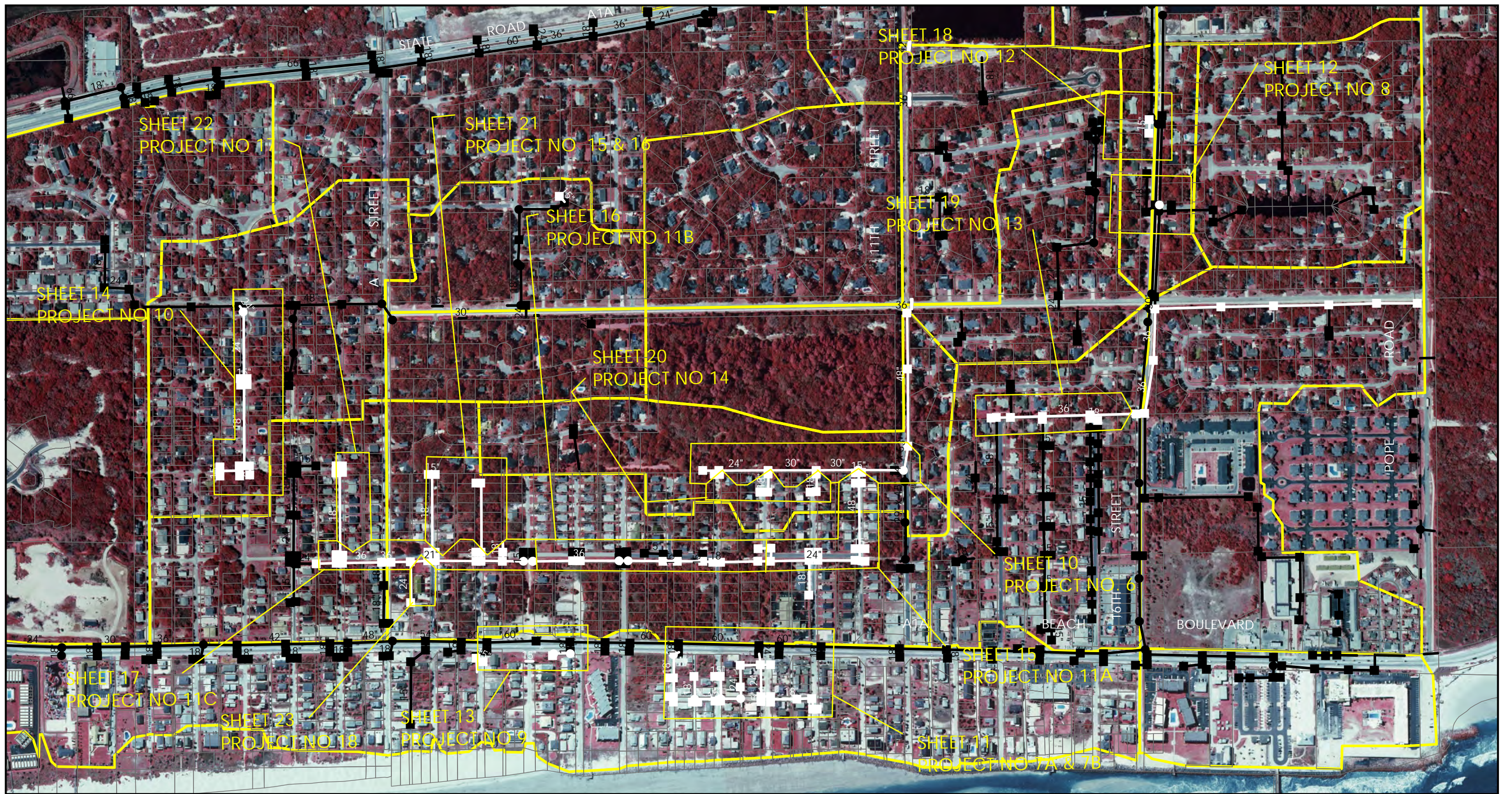
# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend	
<span style="color: yellow;">—</span>	Proposed Pipe
<span style="background-color: black; color: black;">■</span>	Proposed Catch Basin
<span style="color: black;">●</span>	Proposed Manhole
<span style="color: black;">—</span>	Existing Pipe
<span style="color: black;">●</span>	Existing Manhole
<span style="background-color: black; color: black;">■</span>	Existing Catch Basin

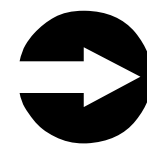
## PART I MAJOR DITCH IMPROVEMENTS

PROJECT NO. 5B  
MICKLER BOULEVARD DITCH  
1300' NORTH TO A STREET





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SCALE: 1" = 500'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

- Legend
- Proposed Pipe
  - Proposed Catch Basin
  - Proposed Manhole
  - Existing Pipe
  - Existing Manhole
  - Existing Catch Basin

## PART II OTHER IMPROVEMENTS KEY MAP

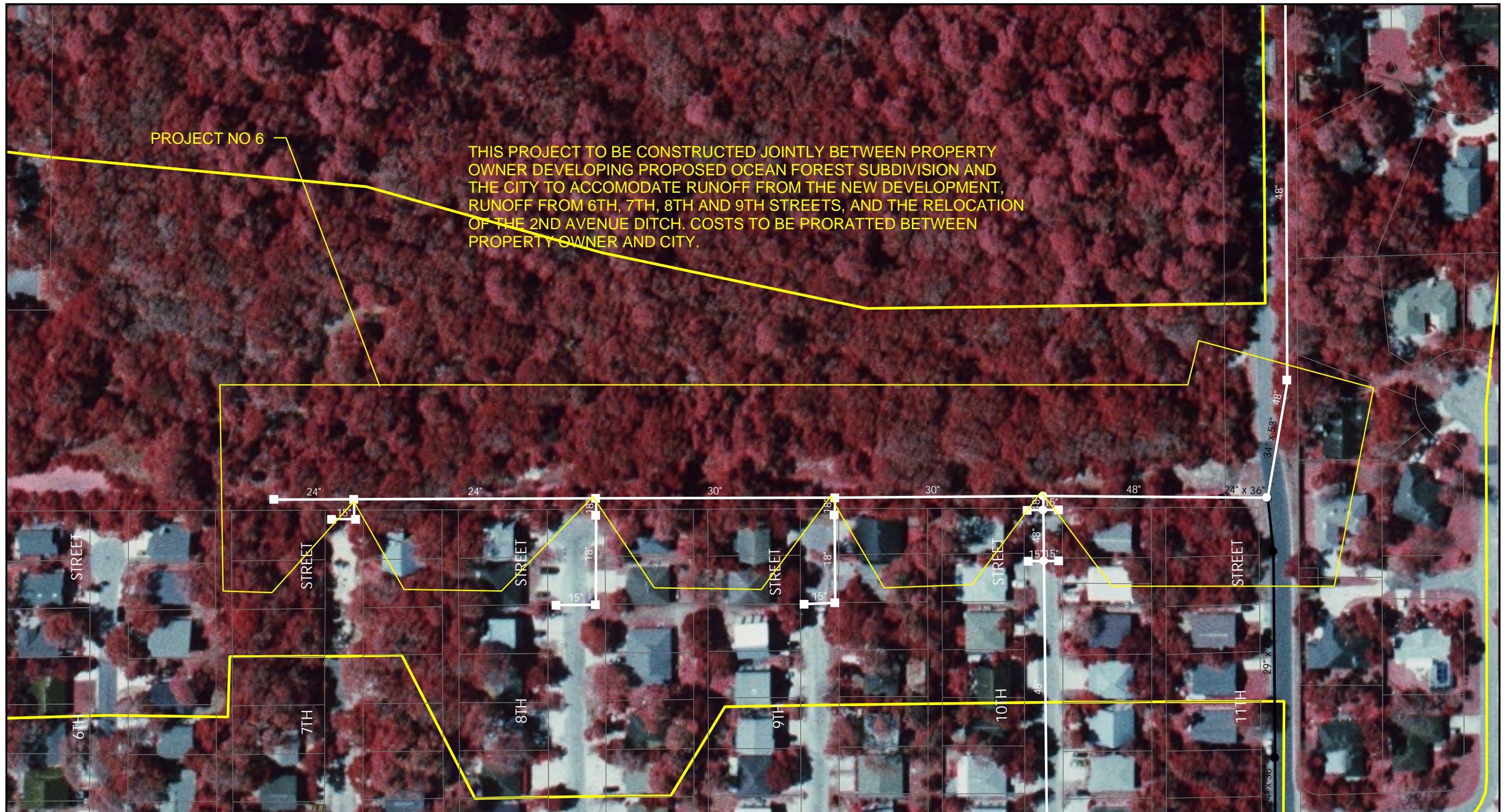
SHEET NO. 9



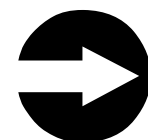
## PROJECT DATA SHEET

Project No.	6
Name:	Runk's Ditch
Location:	Runk's Ditch from 11 <sup>th</sup> Street to near 6 <sup>th</sup> Street.
Purpose:	The purpose of the project is accommodate overflow from an existing and new stormwater retention areas to be constructed as a part of the proposed Ocean Forest subdivision, to provide drainage for the west ends of 6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> , and 9 <sup>th</sup> Streets, and to accept flow from the proposed 2 <sup>nd</sup> Avenue ditch piping project (Project No. 11) via 10 <sup>th</sup> Street.
Description:	The project consist of construction of a new storm sewer system from the existing ditch on 11 <sup>th</sup> Street south across 11 <sup>th</sup> Street and along Runk's Ditch to the vicinity of 6 <sup>th</sup> Street. A structure to accommodate flow from Project No. 11 will be constructed at 10 <sup>th</sup> Street. Additional structures will be constructed the proposed retention areas and the west ends of 7 <sup>th</sup> , 8 <sup>th</sup> , and 9 <sup>th</sup> Streets.
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$190,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend	
	Proposed Pipe
	Proposed Catch Basin
	Proposed Manhole
	Existing Pipe
	Existing Manhole
	Existing Catch Basin

## PART II OTHER PROJECTS

PROJECT NO 6  
RUNK'S DITCH

SHEET NO 10



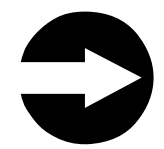
## PROJECT DATA SHEET

Project No.	7						
Name:	Atlantic Alley Improvements						
Location:	Atlantic Alley from 6 <sup>th</sup> Street to 9 <sup>th</sup> Street						
Purpose:	The purpose of the project is to provide drainage for Atlantic Alley from 6 <sup>th</sup> Street to 9 <sup>th</sup> Street and the low areas along 6 <sup>th</sup> Street, 7 <sup>th</sup> Lane, 7 <sup>th</sup> Street and unopened 8 <sup>th</sup> Lane between A1A Beach Boulevard and Atlantic Alley. A low area on 9 <sup>th</sup> Street east of Atlantic Alley would also be drained.						
Description:	<p>Phase A of the project consist of construction of a new storm drain system from an existing catch basin at the intersection of 8<sup>th</sup> Street and A1A Beach Boulevard east and south to unopened 8<sup>th</sup> Lane and then east to Atlantic Alley. From this point, the system will extend south along Atlantic Alley to 7<sup>th</sup> Lane. Side systems will be constructed individually from Atlantic Alley westward along 7<sup>th</sup> Street, 7<sup>th</sup> Lane, and 6<sup>th</sup> Street to collect storm water in the mid-block areas toward A1A Beach Boulevard. Another system will be constructed along 6<sup>th</sup> Street from A1A Beach Boulevard to Atlantic Alley.</p> <p>Phase B is a subsystem that will be constructed from 8<sup>th</sup> Street and A1A Beach Boulevard east on 8<sup>th</sup> Street to Atlantic Alley, then north on Atlantic Alley to 9<sup>th</sup> Street. The system will then extend east on 9<sup>th</sup> Street to an existing low point.</p>						
Prerequisite Projects:	None						
Construction Order:	Phase A, Phase B						
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach						
Estimated Project Costs:	<table><tr><td>Phase A</td><td>\$155,000</td></tr><tr><td>Phase B</td><td><u>\$105,000</u></td></tr><tr><td>Total</td><td>\$260,000</td></tr></table>	Phase A	\$155,000	Phase B	<u>\$105,000</u>	Total	\$260,000
Phase A	\$155,000						
Phase B	<u>\$105,000</u>						
Total	\$260,000						





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

PART II  
OTHER IMPROVEMENTS

PROJECT NO 7A & 7B  
ATLANTIC ALLEY IMPROVEMENTS  
6TH STREET TO 9TH STREET

SHEET NO 11



## PROJECT DATA SHEET

Project No.	8
Name:	Lake Overflow Connection
Location:	Lake Shore Drive and 16 <sup>th</sup> Street
Purpose:	The purpose of the project is connect the overflow storm drain from the Woodland Subdivision lake to 72" storm drain on 16 <sup>th</sup> Street to provide more positive protection to surrounding properties. The existing overflow storm drain connects to a smaller system that flows east along the north side of 16 <sup>th</sup> Street from Lake Sienna to the Mickler Boulevard ditch.
Description:	The project consist of construction of a new storm sewer manhole over the existing storm drain on the north side of 16 <sup>th</sup> Street and connecting it to an existing 24" concrete pipe stubbed out from the existing 72" storm drain system in the middle of 16 <sup>th</sup> Street. The existing 24" pipe was installed for this purpose.
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$20,000



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CITY OF ST. AUGUSTINE BEACH  
Storm Drainage System  
MASTER PLAN UPDATE  
PROPOSED IMPROVEMENTS

SHEET NO 12

PART II  
OTHER IMPROVEMENTS

PROJECT NO 8  
LAKE OVERFLOW CONNECTION  
LAKE SHORE DRIVE  
AT 16TH STREET

## PROJECT DATA SHEET

Project No.	9
Name:	Miscellaneous Improvements A1A Beach Boulevard at 2 <sup>nd</sup> Street, 3 <sup>rd</sup> Street, and 4 <sup>th</sup> Street
Location:	A1A Beach Boulevard at 2 <sup>nd</sup> Street, 3 <sup>rd</sup> Street, and 4 <sup>th</sup> Street
Purpose:	<p>The purpose of the project is improve drainage in the area along the east side of A1A Beach Boulevard from 2<sup>nd</sup> Street to 4<sup>th</sup> Street. At 2<sup>nd</sup> Street the improvements will provide for local drainage on both sides of the street where water currently ponds. It will also provide for drainage on the south side of 2<sup>nd</sup> Street as it is further developed.</p> <p>The purpose of work at 3<sup>rd</sup> Street and 4<sup>th</sup> Street is to provide a pop-off for storm water collected in two low areas in the City-owned plazas on each side of 3<sup>rd</sup> Street. Water collecting in these areas has backed up on 3<sup>rd</sup> Street and has threatened the apartment buildings to the east.</p>
Description:	<p>At 2<sup>nd</sup> Street, the project consist of construction of new storm sewer catch basins on the north and south sides of the roadway where catch basins and piping existed prior to the improvements of A1A Beach Boulevard and connecting these catch basins to the A1A Beach Boulevard system. A new storm sewer will also be extended east on the south side of 2<sup>nd</sup> Street to accommodate flow from that area.</p> <p>At 3<sup>rd</sup> Street, an equalization culvert would be constructed under the roadway to connect the two low areas. To provide for pop-off (or overflow) a catch basin with a top elevation set approximately 12-inches below the centerline elevation of 3<sup>rd</sup> Street will be constructed and piped into the A1A Beach Boulevard system near 4<sup>th</sup> Street.</p>
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach

Estimated Project Costs:     \$35,000





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# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

SHEET NO 13

## PART II OTHER IMPROVEMENTS

PROJECT NO 9  
2ND STREET, 3RD STREET  
& 4TH STREET  
AT  
A1A BEACH BOULEVARD

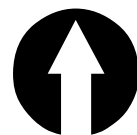
## PROJECT DATA SHEET

Project No.	10
Name:	D Street Improvements
Location:	D Street from 5 <sup>th</sup> Avenue and 3 <sup>rd</sup> Avenue from D Street south to alley.
Purpose:	The purpose of the project is improve drainage along D Street from 5 <sup>th</sup> Avenue to 3 <sup>rd</sup> Avenue and to provide for drainage in a low area in the alley and City-owned plaza on 3 <sup>rd</sup> Avenue between D Street and E Street.
Description:	The project consist of construction of a new storm sewer system on D Street from the existing system at 5 <sup>th</sup> Avenue to 3 <sup>rd</sup> Avenue. Catch basins, to provide local drainage, will be installed at the intersections of 4 <sup>th</sup> Avenue and 3 <sup>rd</sup> Avenue. The system will then extend south on 3 <sup>rd</sup> Avenue to the alley between D Street and E Street. Catch basins will be installed to serve these areas.
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$240,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend	
	Proposed Pipe
	Proposed Catch Basin
	Proposed Manhole
	Existing Pipe
	Existing Manhole
	Existing Catch Basin

PART II  
OTHER IMPROVEMENTS  
  
PROPOSED PROJECT NO 10  
D STREET  
5TH AVENUE TO 3RD AVENUE



## PROJECT DATA SHEET

Project No. 11

Name: 2<sup>nd</sup> Avenue Ditch Piping

Location: Runk's Ditch, 10<sup>th</sup> Street, and 2<sup>nd</sup> Avenue from 11<sup>th</sup> Street to B Steet

Purpose: The purpose of the project is improve drainage in the area of Coquina Gables generally south of C Street and east of 3<sup>rd</sup> Avenue and all along 2<sup>nd</sup> Avenue to 11<sup>th</sup> Street by piping the existing 2<sup>nd</sup> Avenue ditch. The piped system will have adequate capacity and will provide positive drainage. Piping the ditch will also result in a more pleasing visual condition.

Description: The project will be constructed in 3 phases, beginning at the low end of the system at 10<sup>th</sup> Street and Runk's Ditch.

Phase A consists of connecting a new storm sewer system to a manhole constructed as a part of Project No. 6 on 10<sup>th</sup> Street at Runk's ditch and construction of the system south along 10<sup>th</sup> Street to 2<sup>nd</sup> Avenue and then run along 2<sup>nd</sup> Avenue to 8<sup>th</sup> Street.

Phase B consists of construction the new system along 2<sup>nd</sup> Avenue from 8<sup>th</sup> Street to 3<sup>rd</sup> Street.

Phase C is the continuation of the system along 2<sup>nd</sup> Avenue from 3<sup>rd</sup> Street to a point south of B Street.

Prerequisite Projects: Project No. 1 and Project No. 6

Construction Order: Phase A, Phase B, Phase C

Permits Required: St. Johns River Water Management District  
City of St. Augustine Beach

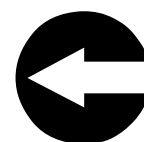
Estimated Project Costs:

Phase A	\$295,000
Phase B	\$195,000
Phase C	<u>\$160,000</u>
Total	\$650,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART II OTHER IMPROVEMENTS

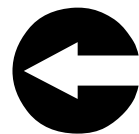
PROJECT NO 11A  
2ND AVENUE DITCH  
10TH STREET TO 8TH STREET

SHEET NO 15





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend	
	Proposed Pipe
	Proposed Catch Basin
	Proposed Manhole
	Existing Pipe
	Existing Manhole
	Existing Catch Basin

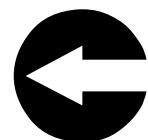
## PART II OTHER IMPROVEMENTS

PROJECT NO 11B  
2ND AVENUE DITCH  
8TH STREET TO 3RD STREET





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART II OTHER IMPROVEMENTS

### PROJECT NO 11C

2ND AVENUE DITCH  
3RD STREET TO C STREET

SHEET NO 17



## PROJECT DATA SHEET

Project No.	12
Name:	Woodland Avenue Improvements
Location:	Woodland Avenue at 16 <sup>th</sup> Street
Purpose:	The purpose of the project is improve drainage at the intersection of Woodland Avenue and 16 <sup>th</sup> Street. Presently local ponding occurs after a moderate rain event at both corners of this intersection
Description:	The project consists of construction one catch basin on each corner and connecting them to a nearby storm sewer manhole.
Prerequisite Projects:	None
Construction Order:	N/A
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$20,000



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**CITY OF ST. AUGUSTINE BEACH**  
**Storm Drainage System**  
**MASTER PLAN UPDATE**  
**PROPOSED IMPROVEMENTS**  
**SHEET NO 18**

**PART II**  
**OTHER IMPROVEMENTS**  
**PROJECT NO 12**  
**WOODLAND AVENUE**  
**AT 16TH STREET**

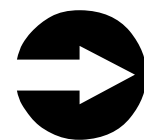
## PROJECT DATA SHEET

Project No.	13
Name:	Ocean Woods Ditch Piping
Location:	Existing easement along east boundary of Ocean Woods Subdivision from 13 <sup>th</sup> Street to 16 <sup>th</sup> Street
Purpose:	The purpose of the project is improve drainage and aesthetics in the area surrounding the Ocean Wood ditch.
Description:	The project consists of constructing a storm sewer along the Ocean Woods ditch from an existing pipe at 16 <sup>th</sup> Street to an existing pipe at 13 <sup>th</sup> Street.
Prerequisite Projects:	None
Construction Order:	N/A
Permits Required:	St. Johns River Water Management District St. Johns County City of St. Augustine Beach
Estimated Project Costs:	\$110,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

Legend	
<span style="color: yellow;">—</span>	Proposed Pipe
<span style="background-color: white; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Proposed Catch Basin
<span style="color: white; background-color: black; border-radius: 50%; display: inline-block; width: 10px; height: 10px;"></span>	Proposed Manhole
<span style="color: black;">—</span>	Existing Pipe
<span style="color: black; background-color: black; border-radius: 50%; display: inline-block; width: 10px; height: 10px;"></span>	Existing Manhole
<span style="background-color: black; display: inline-block; width: 10px; height: 10px;"></span>	Existing Catch Basin

## PART II OTHER IMPROVEMENTS

PROJECT NO 13  
OCEAN WOODS DITCH  
13TH STREET TO 16TH STREET

SHEET NO 19



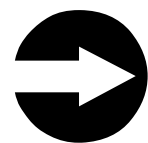
## PROJECT DATA SHEET

Project No.	14
Name:	7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street at Runk's Ditch
Location:	Intersections of 7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street with Runk's Ditch.
Purpose:	The purpose of the project is to improve drainage on 7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street by discharging runoff into Runk's Ditch through a storm sewer system.
Description:	The project consists of constructing a separate storm sewer system generally at or near the west ends of 7 <sup>th</sup> Street, 8 <sup>th</sup> Street, and 9 <sup>th</sup> Street and tie the systems into a new storm drain planned by the developer of the property to the west. Should the property not be developed or should the existing ditch not be piped, each system would discharge directly into the ditch.
Prerequisite Projects:	None
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$35,000





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SCALE: 1" = 100'

# CITY OF ST. AUGUSTINE BEACH Storm Drainage System MASTER PLAN UPDATE PROPOSED IMPROVEMENTS

## Legend

- Proposed Pipe
- Proposed Catch Basin
- Proposed Manhole
- Existing Pipe
- Existing Manhole
- Existing Catch Basin

## PART II OTHER IMPROVEMENTS

PROJECT NO 14  
7TH STREET, 8TH STREET & 9TH STREET  
AT RUNK'S DITCH

SHEET NO 20



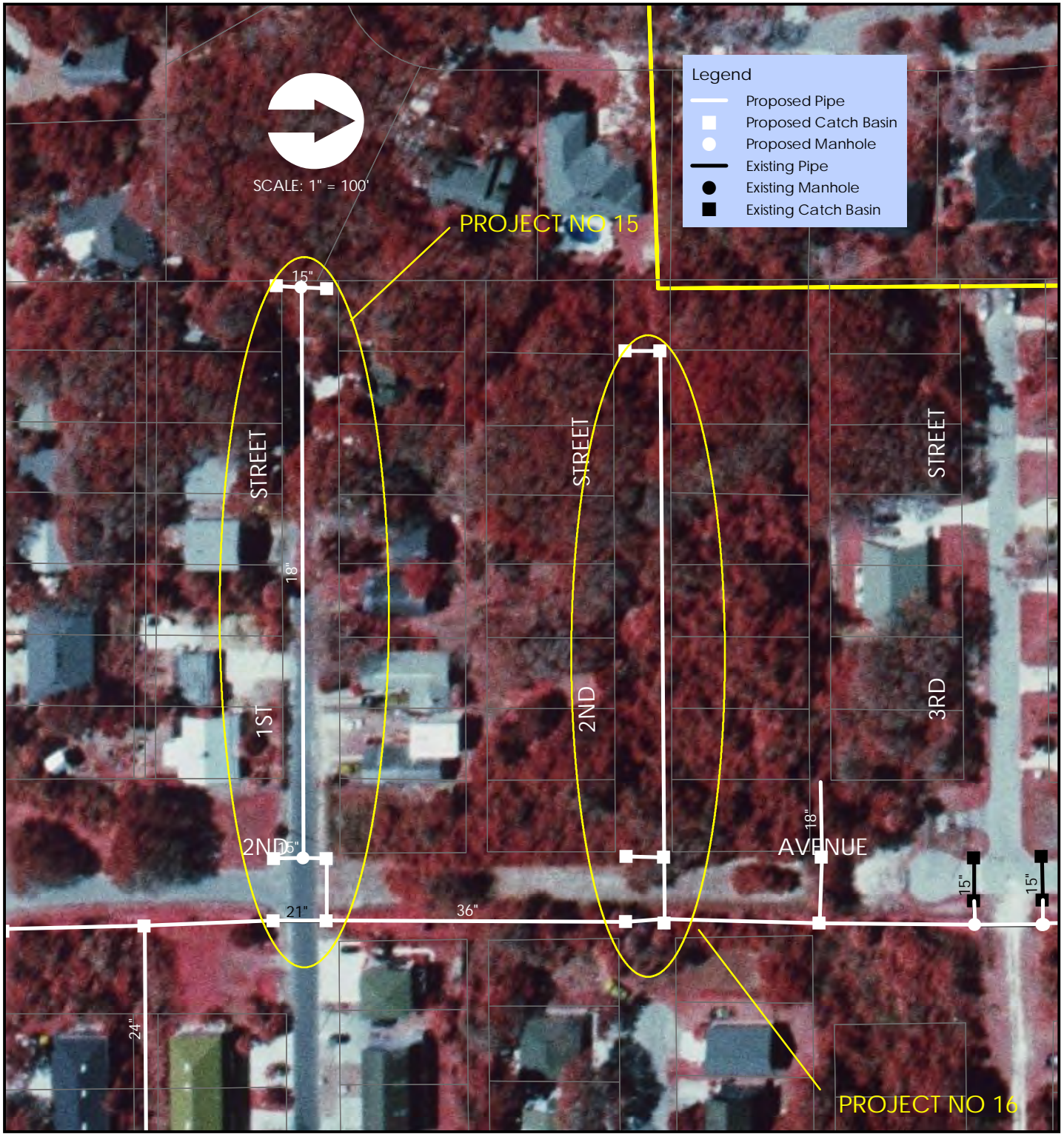
## PROJECT DATA SHEET

Project No.	15
Name:	1 <sup>st</sup> Street Drainage Improvements
Location:	1 <sup>st</sup> Street from 2 <sup>nd</sup> Avenue west to end.
Purpose:	The purpose of the project is to improve drainage on 1 <sup>st</sup> Street west of 2 <sup>nd</sup> Avenue and to provide better drainage in a low area in the southeast corner of Sea Oaks Subdivision.
Description:	The project consists of constructing a storm sewer system west on 1st Street from 2 <sup>nd</sup> Avenue to near the boundary of Sea Oaks Subdivision. This will provide for drainage for the area adjacent to 1 <sup>st</sup> Street as well as a part of Sea Oaks Subdivision.
Prerequisite Projects:	2 <sup>nd</sup> Avenue Ditch Piping
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$100,000

## PROJECT DATA SHEET

Project No.	16
Name:	2 <sup>nd</sup> Street Drainage Improvements
Location:	2 <sup>nd</sup> Street from 2 <sup>nd</sup> Avenue west to end.
Purpose:	The purpose of the project is to improve drainage on 2 <sup>nd</sup> Street west of 2 <sup>nd</sup> Avenue and to provide better drainage in a low area in the southeast corner of Sea Oaks Subdivision.
Description:	The project consists of constructing a storm sewer system west on 1st Street from 2 <sup>nd</sup> Avenue to near the boundary of Sea Oaks Subdivision. This will provide for drainage for the area adjacent to 1 <sup>st</sup> Street as well as a part of Sea Oaks Subdivision. This project should be constructed concurrently with any paving improvements made to 2 <sup>nd</sup> Street.
Prerequisite Projects:	2 <sup>nd</sup> Avenue Ditch Piping
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$35,000





CITY OF ST. AUGUSTINE BEACH  
 Storm Drainage System  
 MASTER PLAN UPDATE  
 PROPOSED IMPROVEMENTS

PART II  
 OTHER IMPROVEMENTS

PROJECT NO 15  
 1ST STREET  
 2ND AVENUE TO WEST

PROJECT NO 16  
 2ND STREET  
 2ND AVENUE TO WEST

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## PROJECT DATA SHEET

Project No.	17
Name:	B Street Drainage Improvements
Location:	B Street from 2 <sup>nd</sup> Avenue to 3 <sup>rd</sup> Avenue
Purpose:	The purpose of the project is to improve drainage on B Street from 2 <sup>nd</sup> Avenue to 3 <sup>rd</sup> Avenue particularly at its intersection with 3 <sup>rd</sup> Avenue. Local ponding has been reported at this intersection after moderate rain events.
Description:	The project consists of constructing a storm sewer system west on B Street from 2 <sup>nd</sup> Avenue to 3rd Avenue.
Prerequisite Projects:	2 <sup>nd</sup> Avenue Ditch Piping
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$120,000







## PROJECT DATA SHEET

Project No.	18
Name:	Alley Improvements - Between a Street and 1 <sup>st</sup> Street
Location:	Alley - East of 2 <sup>nd</sup> Avenue between A Street and 1 <sup>st</sup> Street
Purpose:	The purpose of the project is to improve drainage and fill an existing ditch in an abandoned alley as requested by adjoining property owners. The existing ditch provides drainage to City owned plazas and other private properties to the east.
Description:	The project consists of constructing a storm sewer pipe from 2 <sup>nd</sup> Avenue east to a point suitable for installation of a catch basin to serve surrounding areas.
Prerequisite Projects:	2 <sup>nd</sup> Avenue Ditch Piping
Construction Order:	None
Permits Required:	St. Johns River Water Management District City of St. Augustine Beach
Estimated Project Costs:	\$15,000



