

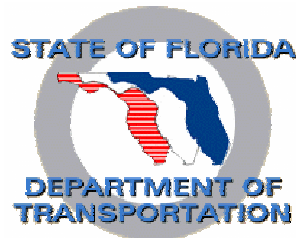
# DRAFT Concept Study

Indian River Elementary

STUDY 6D  
VOLUSIA COUNTY

District Wide Community Traffic Safety Program C-8G33  
Financial Project No. 237995-1-32-06  
FDA No. 326.124

Prepared For:



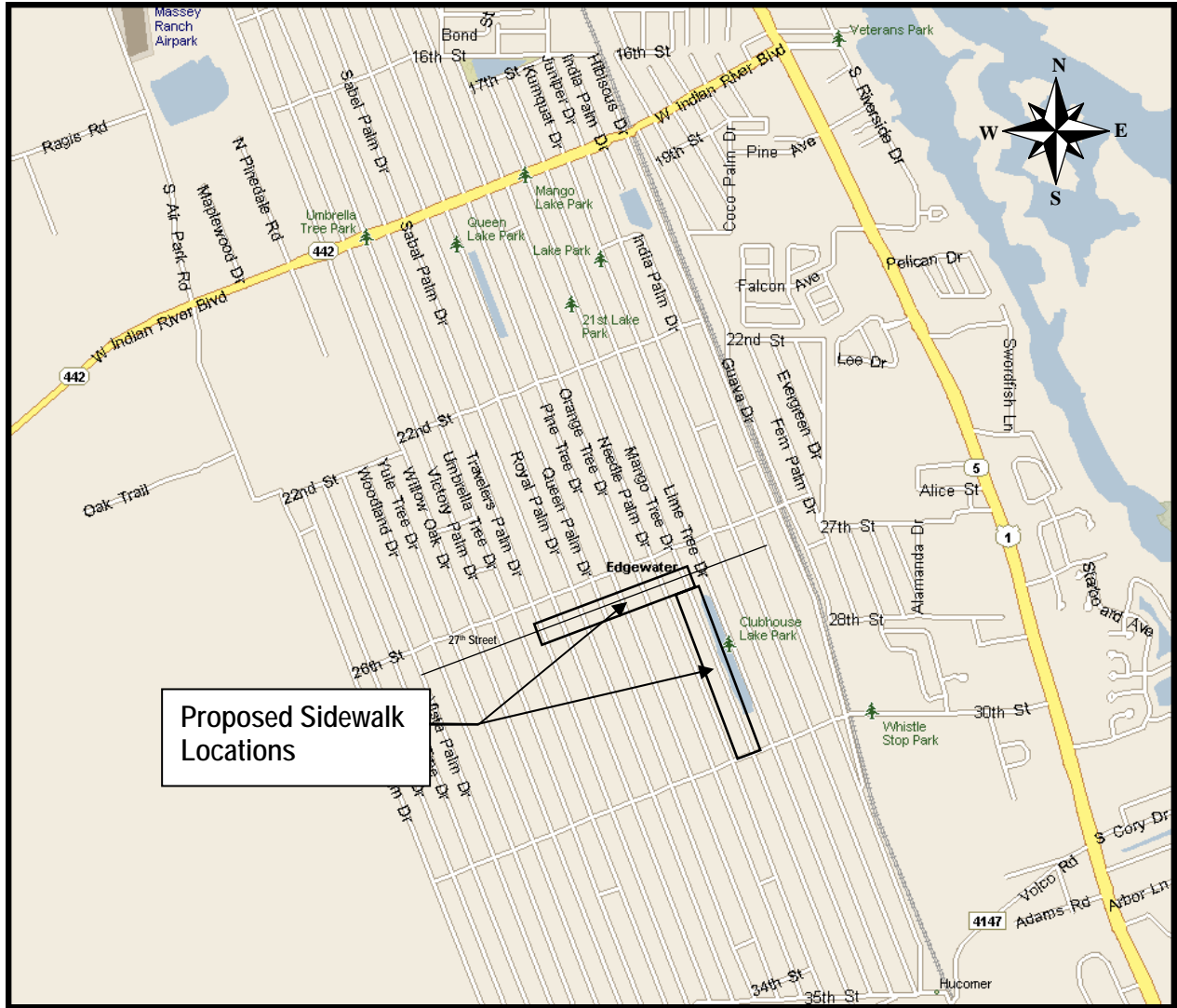
Prepared By:



Maitland, Florida  
July 2006

Engineer of Record: Kevin R. Carey  
P.E. No. 61635

# PROJECT LOCATION MAP



## Project Description

Indian River Elementary School is located in Edgewater, Volusia County, Florida. The sidewalk segments under study are located west of the school. Sidewalk is proposed on Mango Tree Drive from 30<sup>th</sup> Street to the 27<sup>th</sup> Street right of way and along the 27<sup>th</sup> Street right of way from Mango Tree Drive to Travelers Palm Drive. Mango Tree Drive is a two lane undivided roadway with an open drainage system. 27<sup>th</sup> Street right of way is primarily a drainage retention area but is also used by local residents for driveway access.

**Request:** FDOT has requested that concept studies be performed on Mango Tree Drive from 30<sup>th</sup> Street to the 27<sup>th</sup> Street right of way and along the 27<sup>th</sup> Street right of way from Mango Tree Drive to Travelers Palm Drive.

**Scope of work:** The scope of work includes the following:

### Mango Tree Drive

- Install a 5' sidewalk on the east side of Mango Tree Drive from 30<sup>th</sup> Street to the 27<sup>th</sup> Street right of way.
- Replace any disturbed sod in-kind.
- Relocate mailboxes as needed.
- Remove foliage as needed.
- Rebuild driveways as needed.
- Remove existing school zone crosswalk and signage on 30<sup>th</sup> Street and replace with a school zone crosswalk across the east approach and signage.
- Provide crosswalk and pedestrian warning signs at the 27<sup>th</sup> Street right of way.

### 27<sup>th</sup> Street Right of Way

- Install a 5' sidewalk along the 27<sup>th</sup> Street right of way. The sidewalk is to be 6" in depth to accommodate maintenance vehicles.
- Provide extensions to driveways as needed.
- Provide drainage piping underneath the sidewalk where sidewalk crosses existing ditches.
- Replace any disturbed sod in-kind.
- Adjust water valves as needed.
- Adjust/replace existing drainage utilities as needed.
- Remove foliage as needed.
- Provide a crosswalk and pedestrian warning signs on all cross streets.

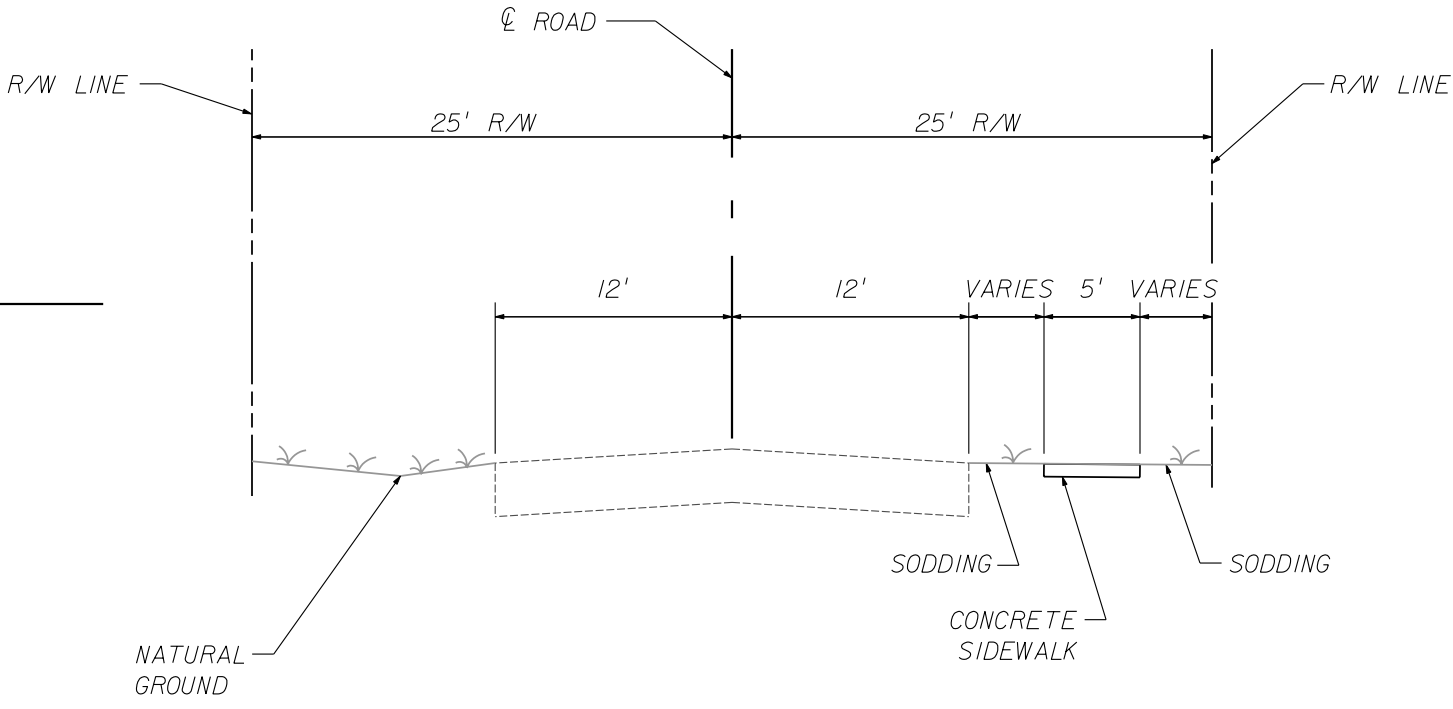
The total estimated cost for this project is \$417,855.

Kevin R. Carey, P.E.

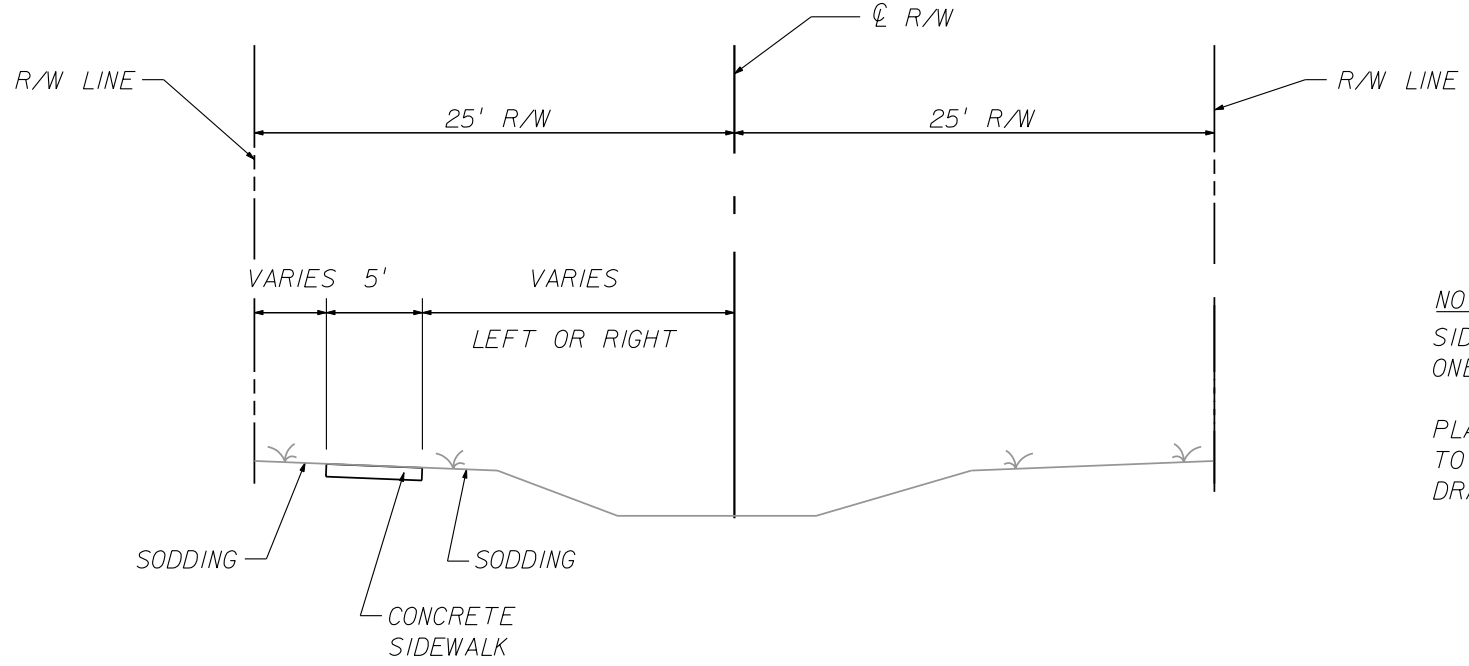
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## APPENDIX

TYPICAL SECTION  
MANGO TREE DRIVE  
NTS



TYPICAL SECTION  
27TH STREET RIGHT OF WAY  
NTS



**NOTE:**  
SIDEWALK IS TO BE PLACED ON  
ONE SIDE ONLY.  
  
PLACEMENT OF SIDEWALK VARIES  
TO MINIMIZE IMPACTS TO  
DRAINAGE SYSTEM.

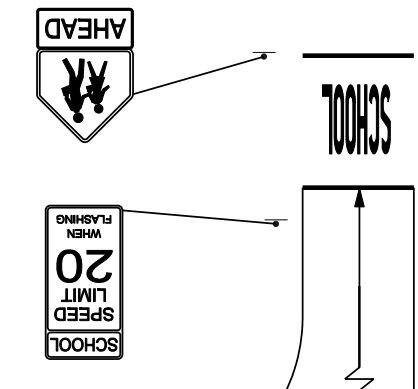
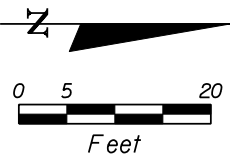
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□	UTILITY BOX	◇	POWER POLE	○	MANHOLE	—x—x—	FENCE
⊠	WATER VALVE	○	LIGHT POLE	⊔	MITERED END SECTION	☁	TREE/SHRUB
●	SIGN	⊙	HYDRANT	⌒	DRAINAGE INLET	▨	BUILDING

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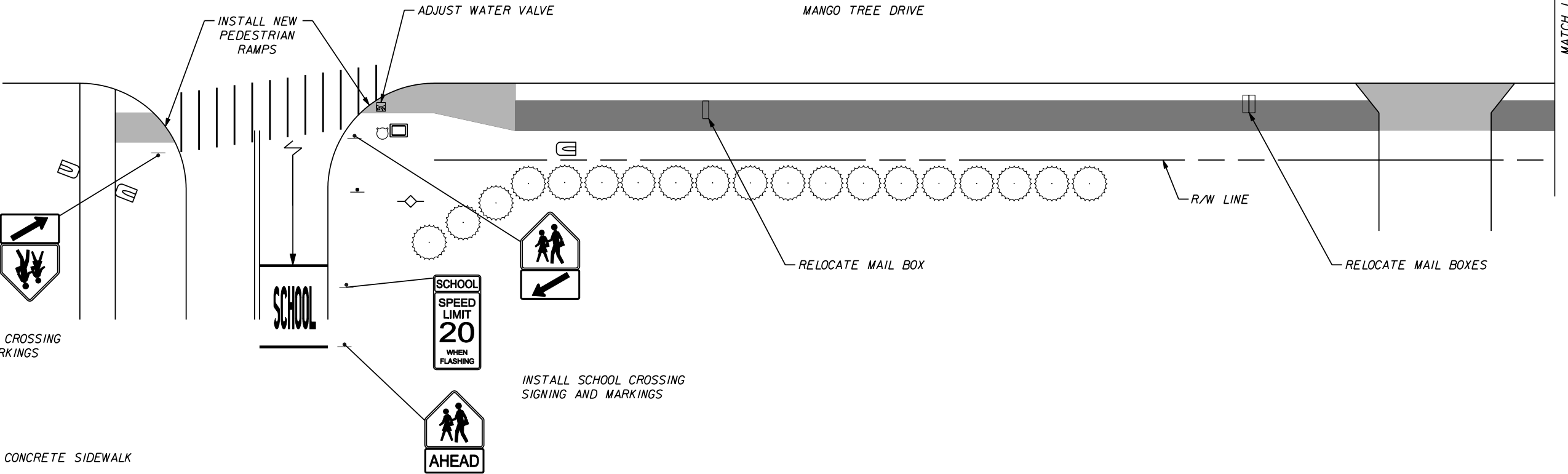
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INSTALL SCHOOL CROSSING  
SIGNING AND MARKINGS



REMOVE EXISTING SCHOOL CROSSING  
SIGNING AND MARKINGS



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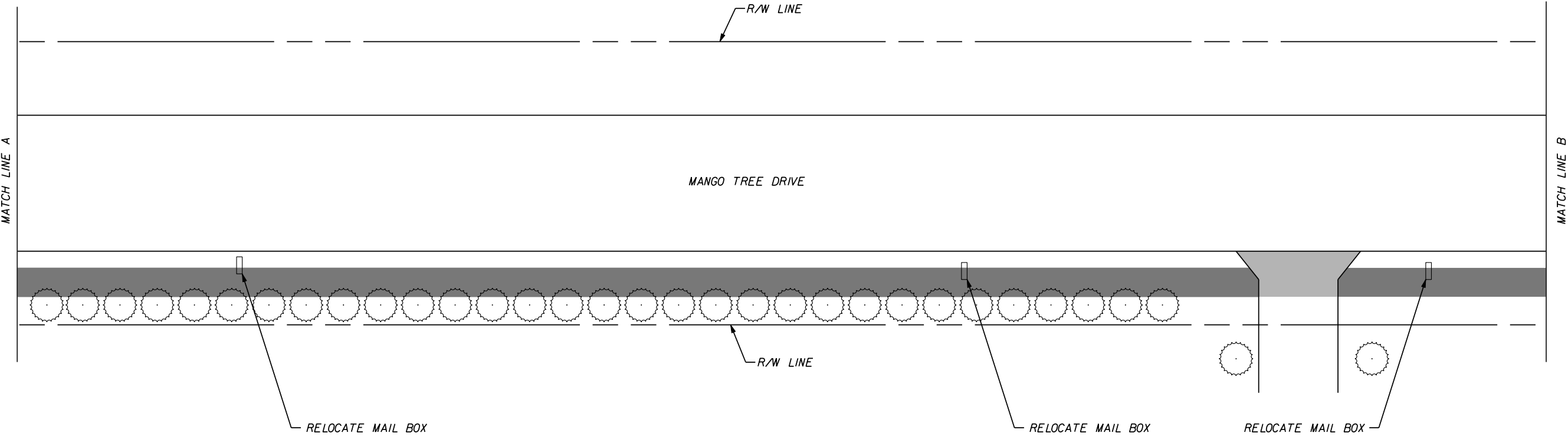
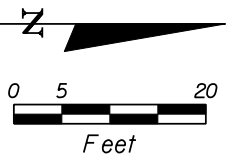
- 4" CONCRETE SIDEWALK
- 6" CONCRETE SIDEWALK

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|---------------|------------------|-----------------------|--------------|
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| □ UTILITY BOX | ◇ POWER POLE     | ○ MANHOLE             | —X—X— FENCE  |
| ⊠ WATER VALVE | ○ LIGHT POLE     | ⊠ MITERED END SECTION | ☁ TREE/SHRUB |
| • SIGN        | ○ HYDRANT        | ⊠ DRAINAGE INLET      | ▨ BUILDING   |



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















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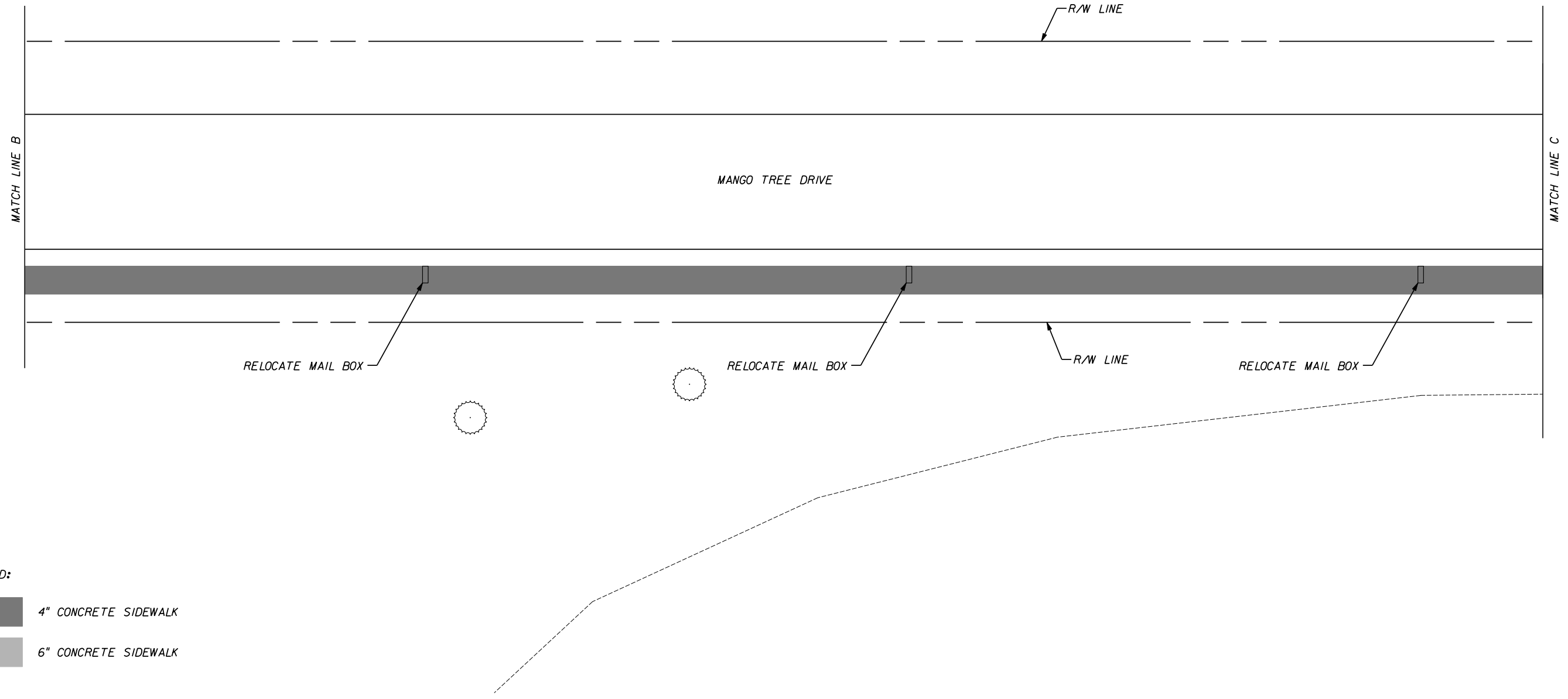
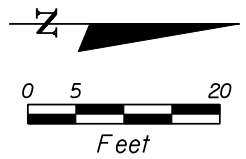
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-  6" CONCRETE SIDEWALK

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	UTILITY BOX		POWER POLE		MANHOLE		FENCE
	WATER VALVE		LIGHT POLE		MITERED END SECTION		TREE/SHRUB
	SIGN		HYDRANT		DRAINAGE INLET		BUILDING

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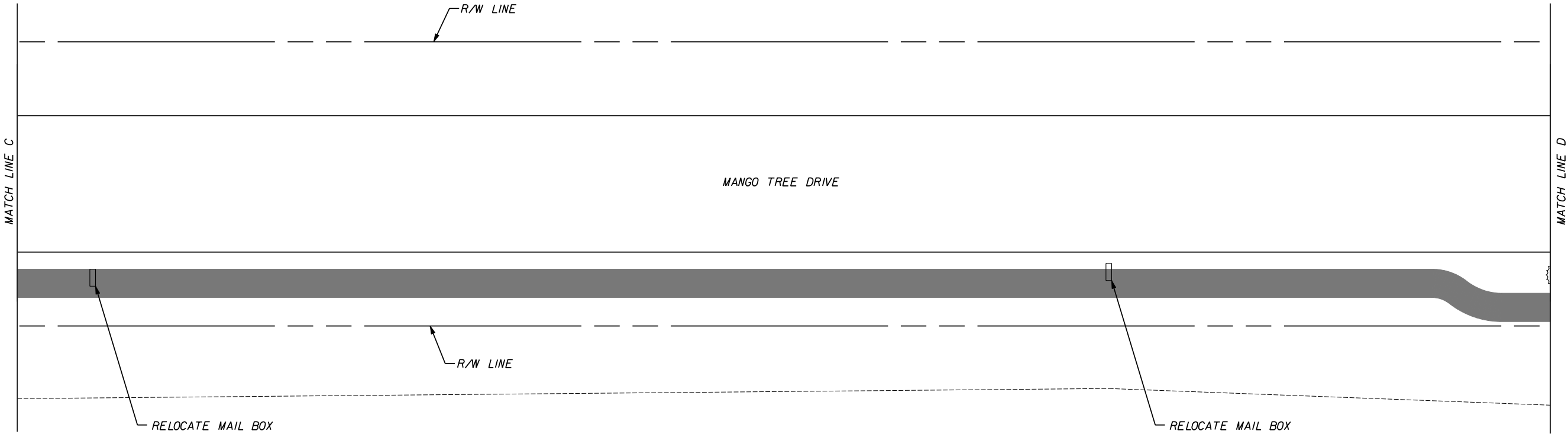
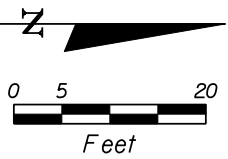
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














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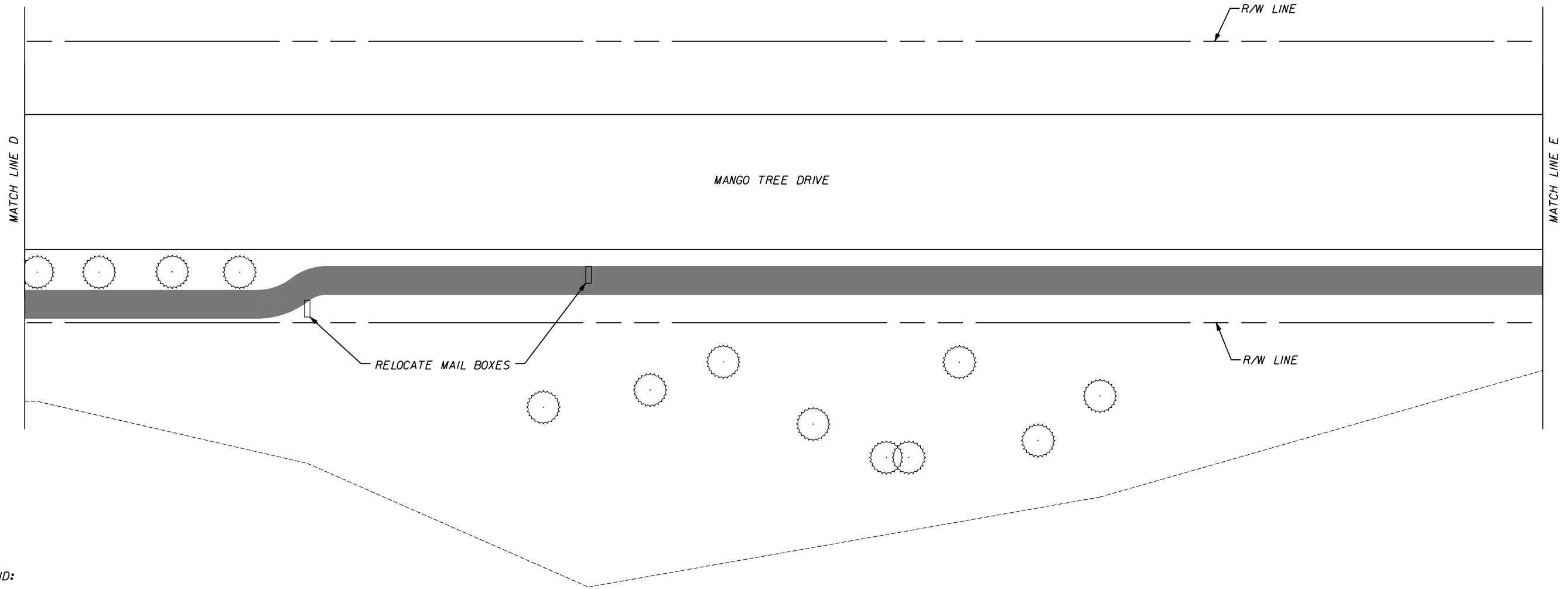
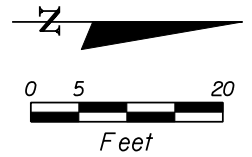
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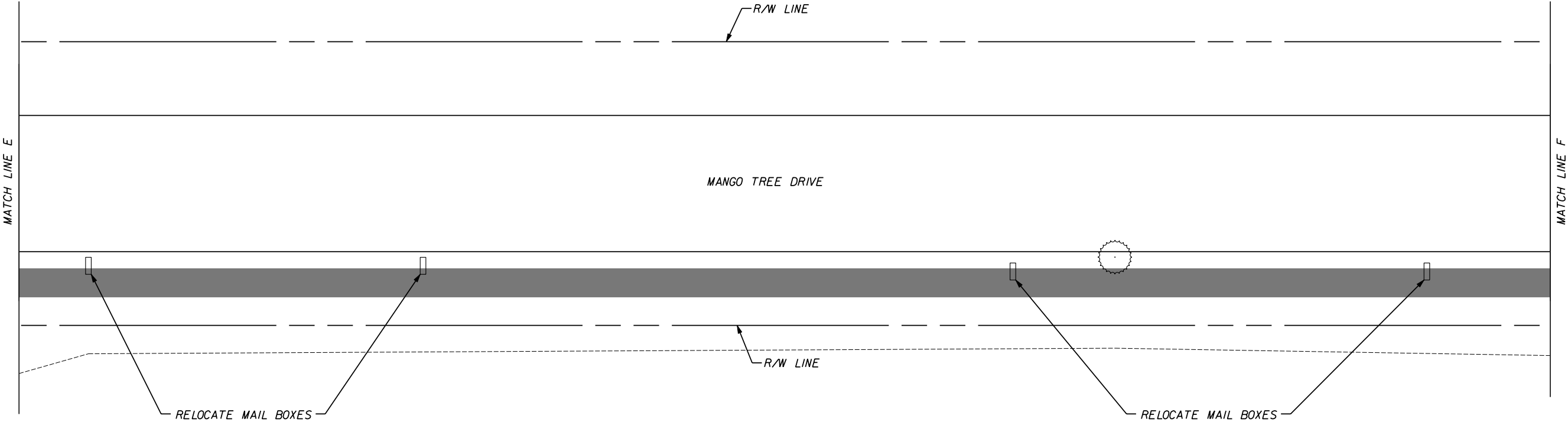
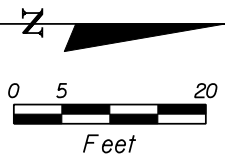
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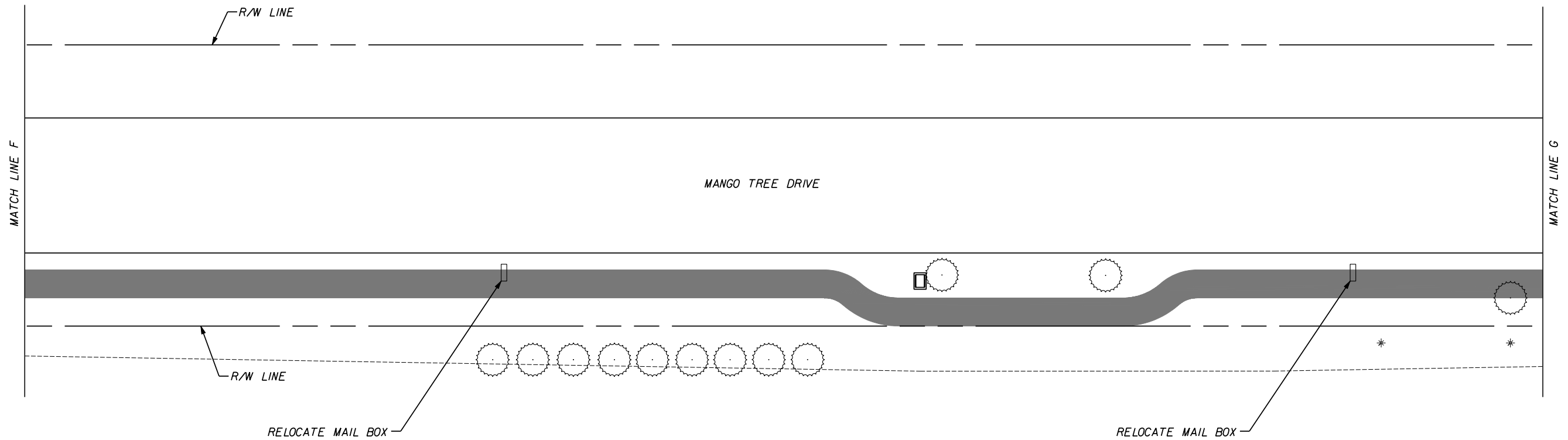
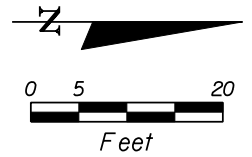
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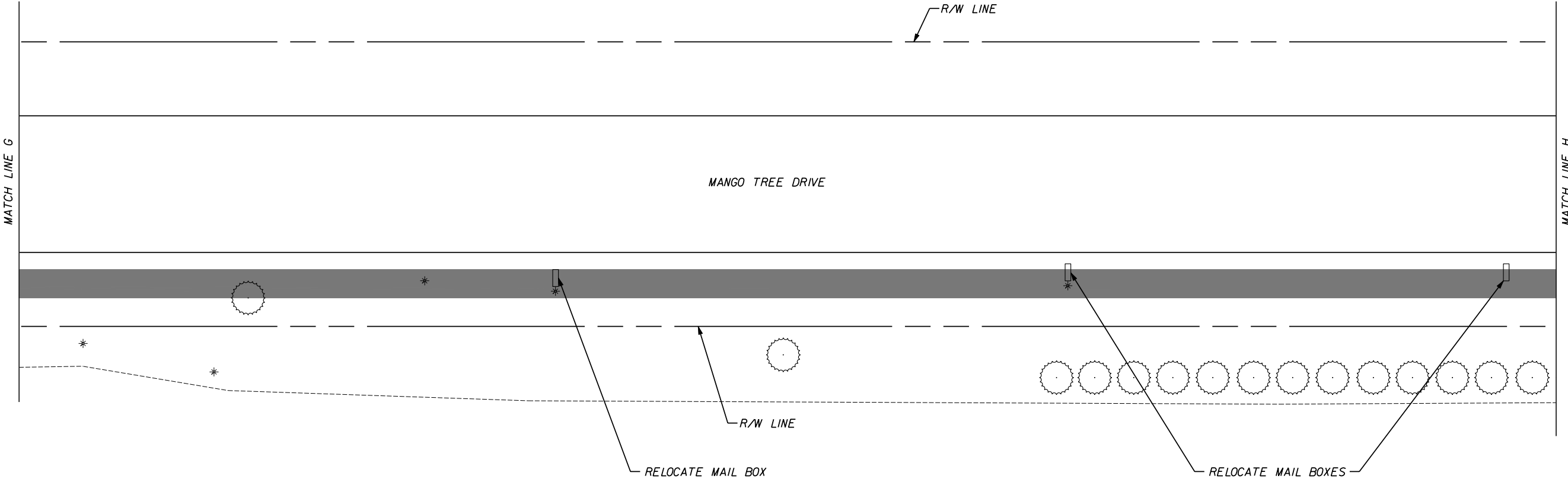
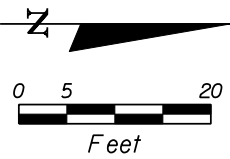
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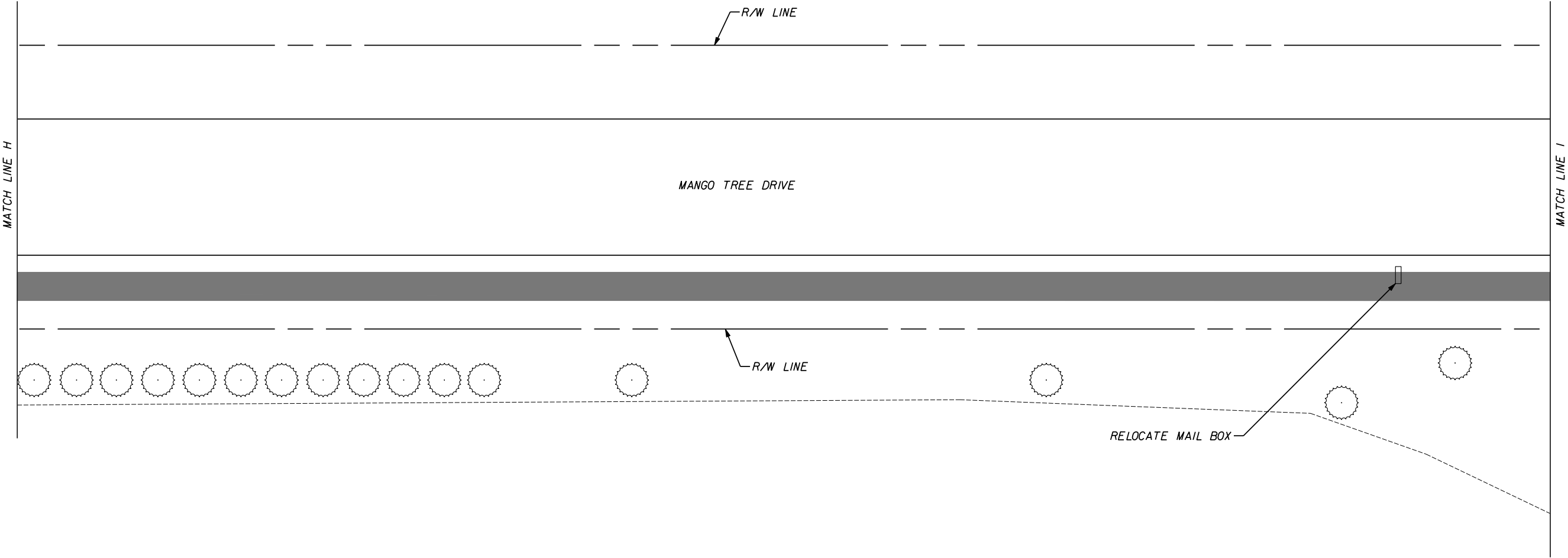
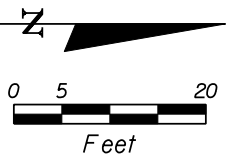
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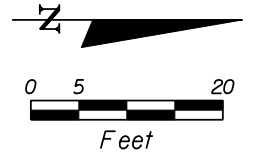
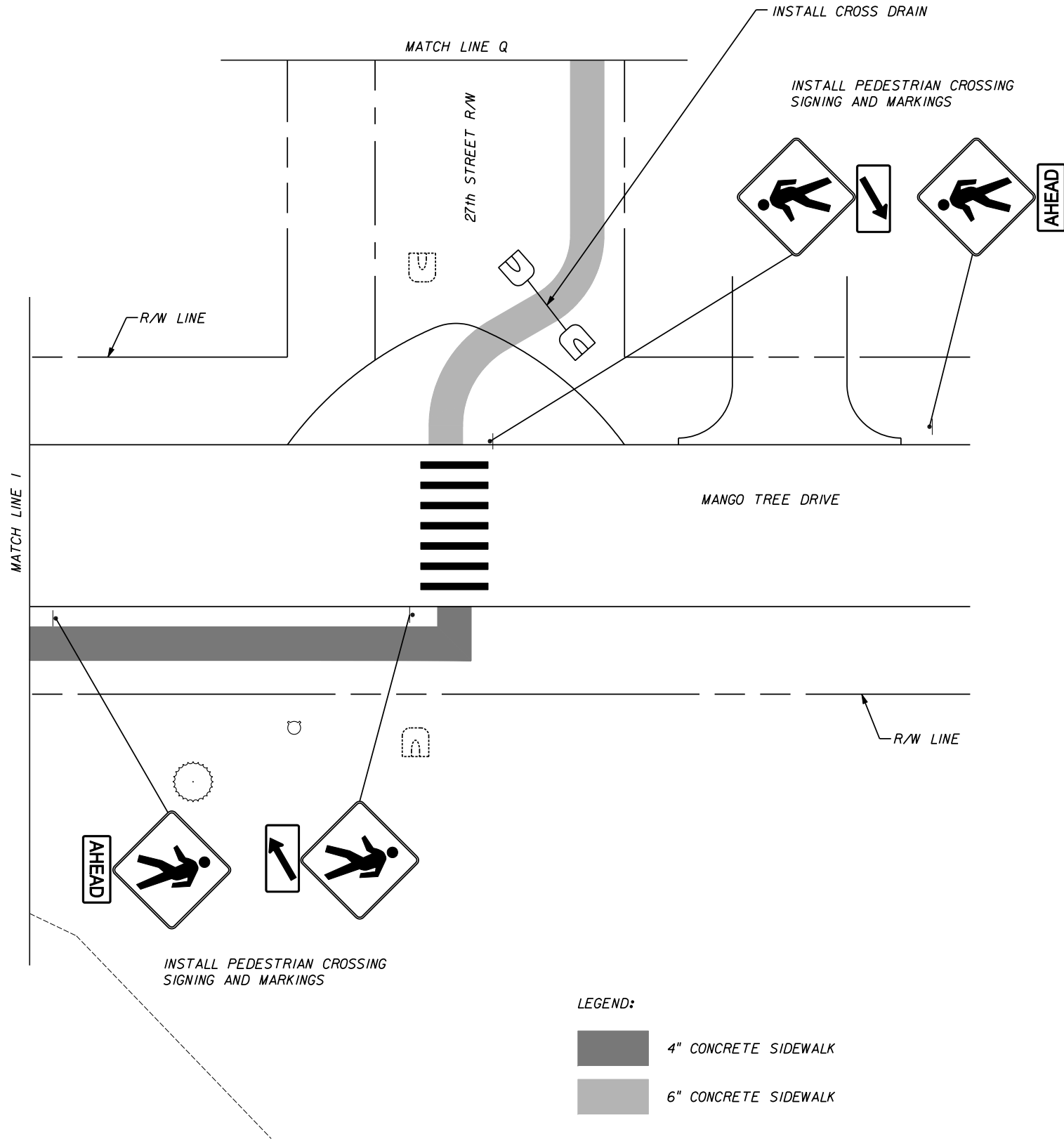
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INDIAN RIVER ELEMENTARY SCHOOL

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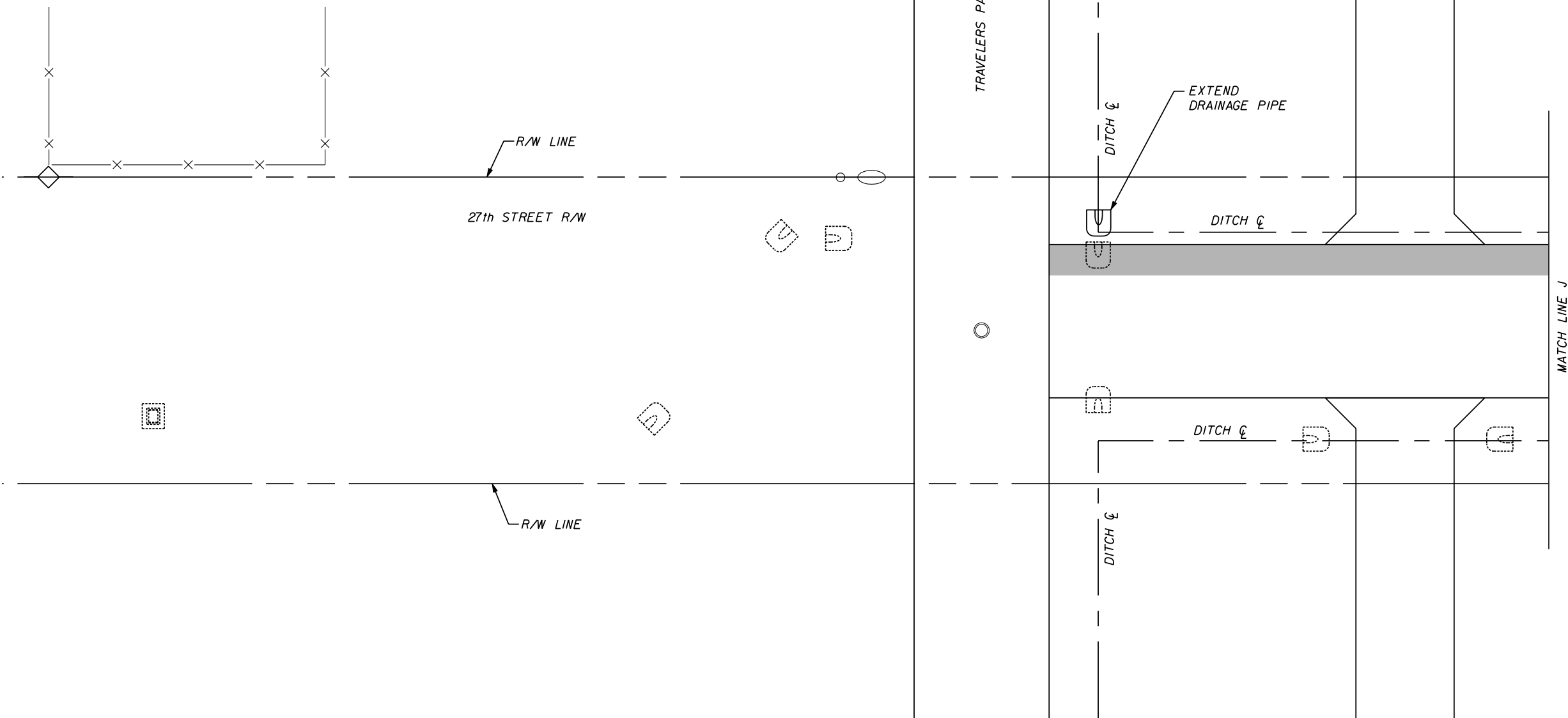
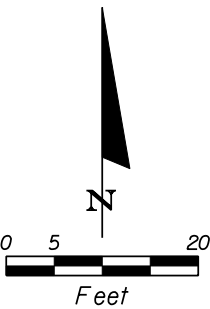


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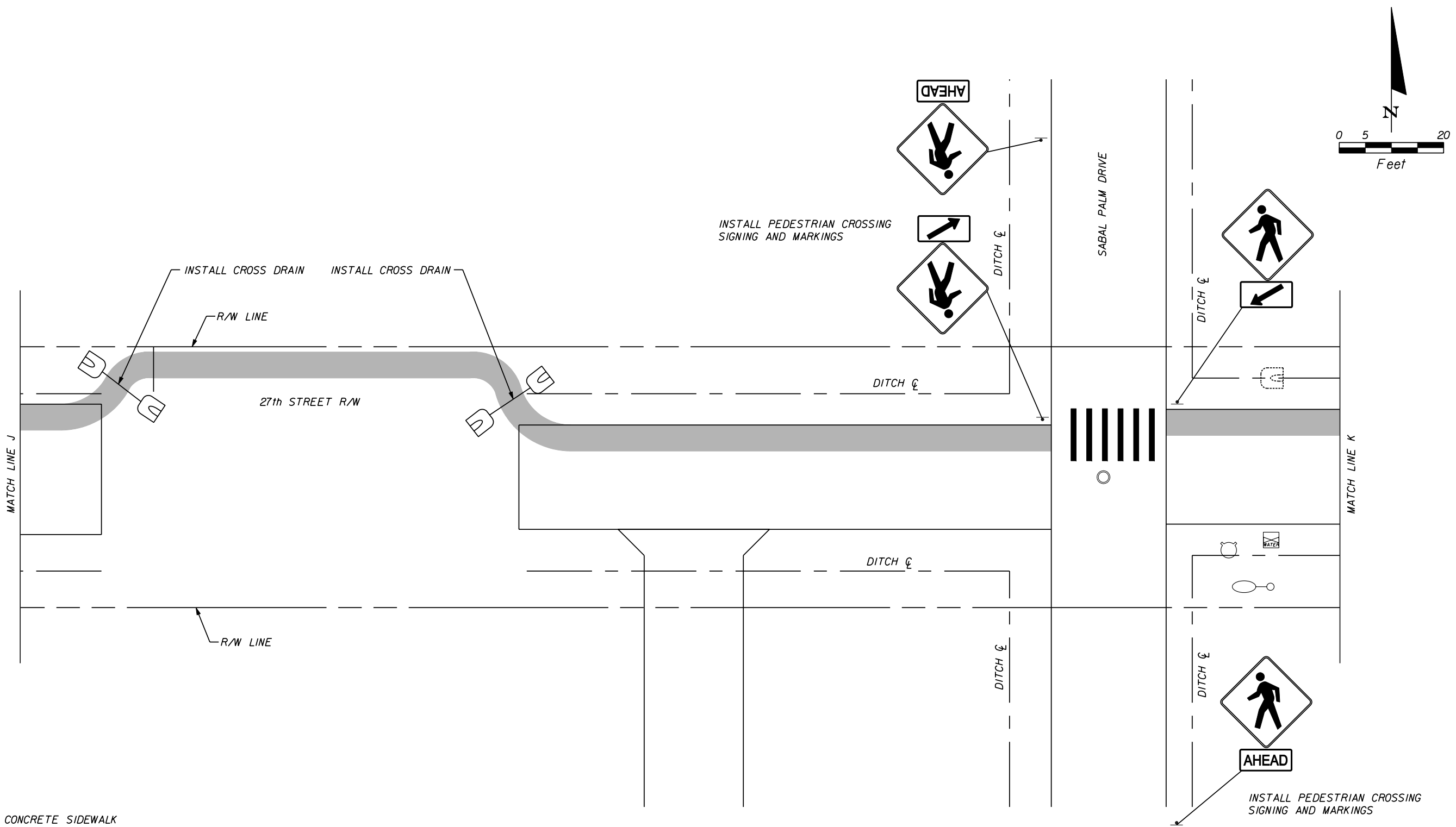
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









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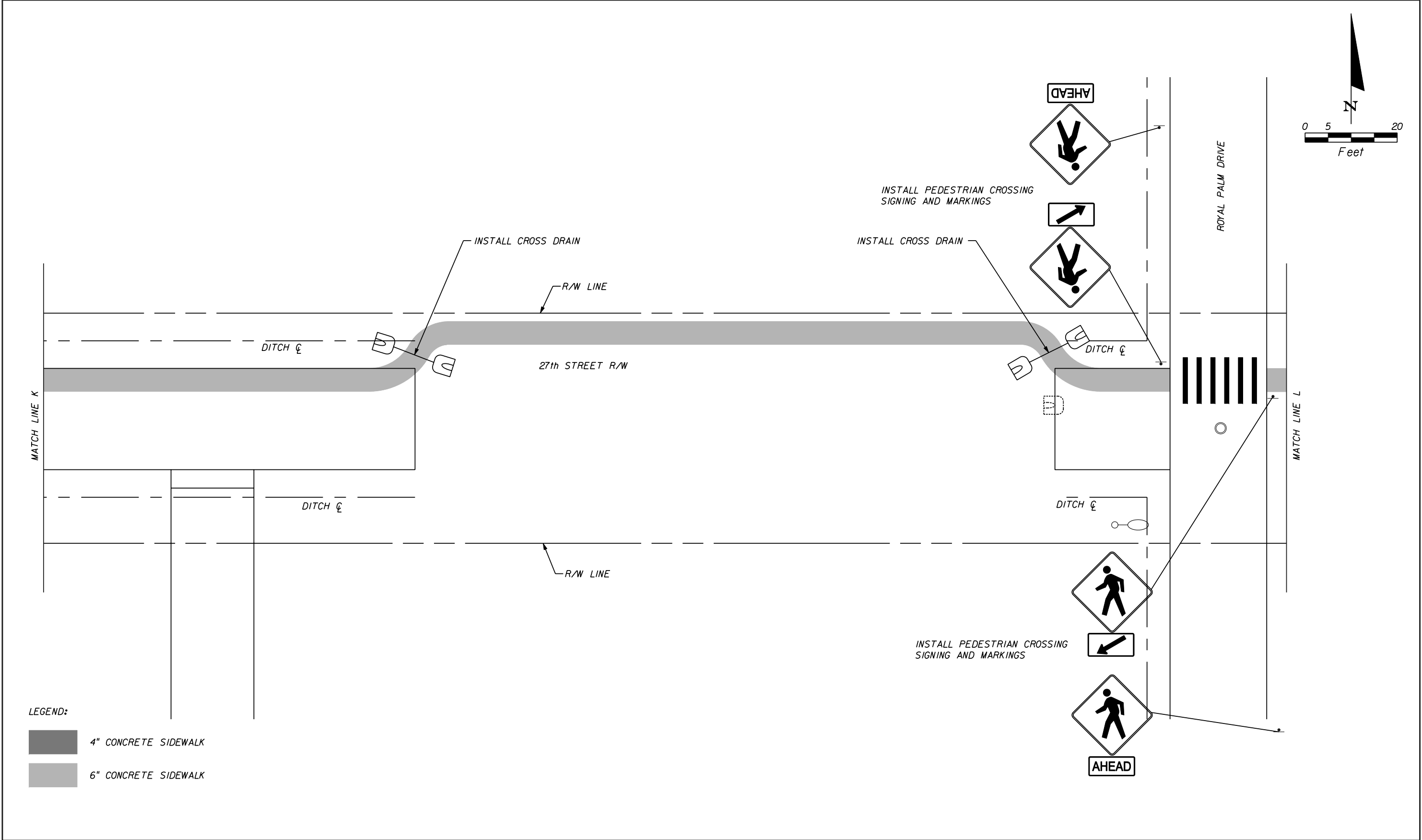
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















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| • SIGN  |  HYDRANT    |  DRAINAGE INLET      |  BUILDING   |

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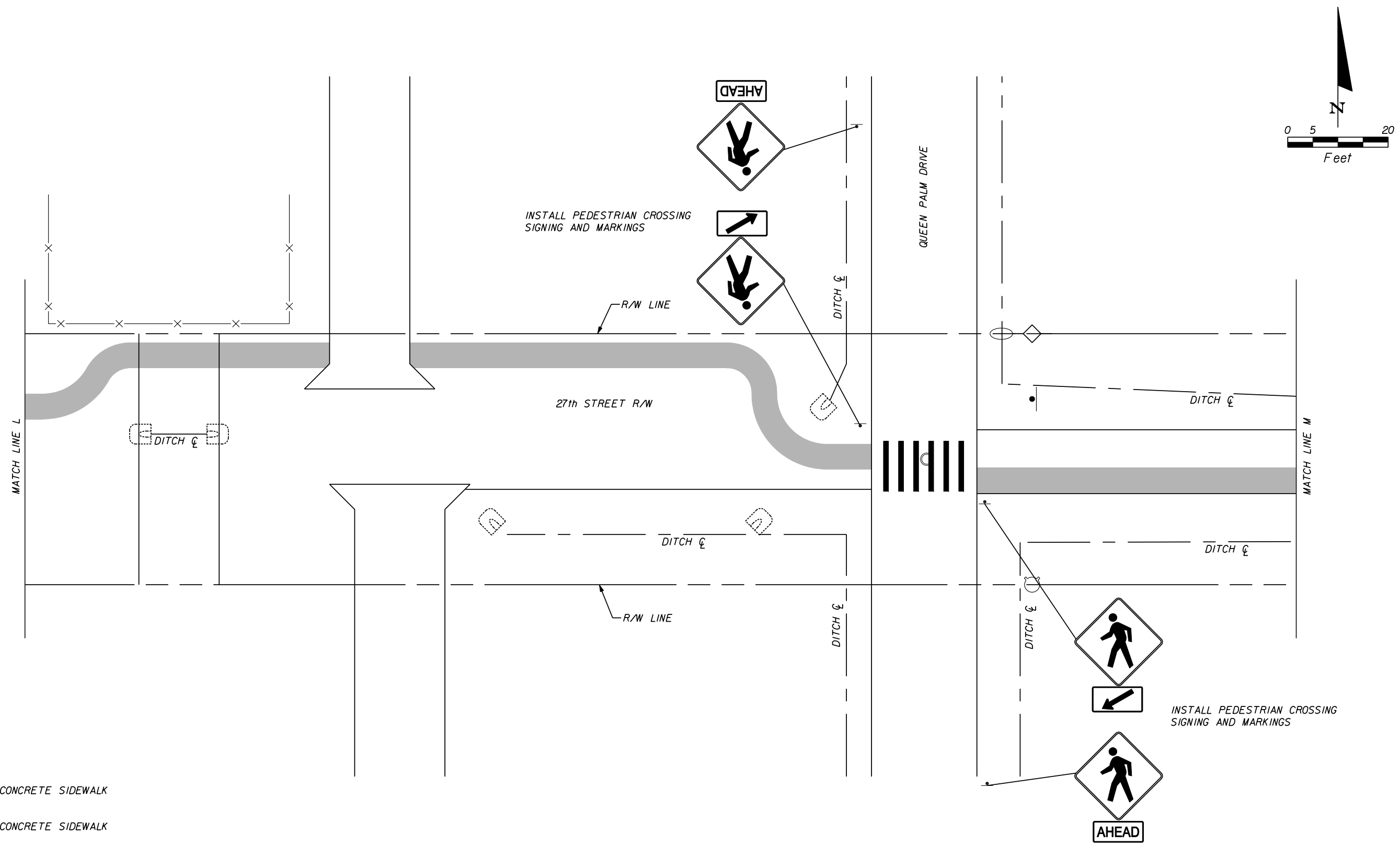


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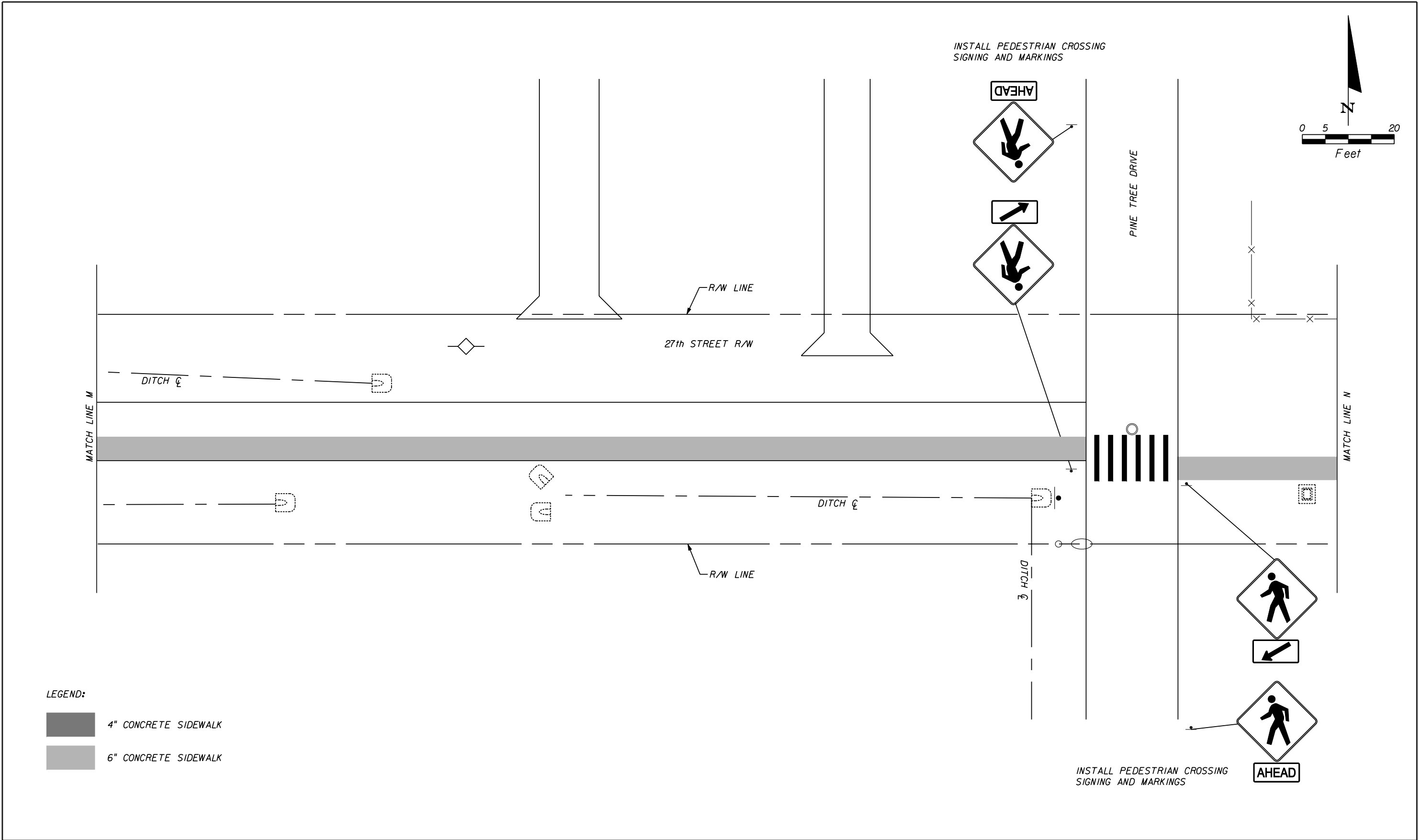


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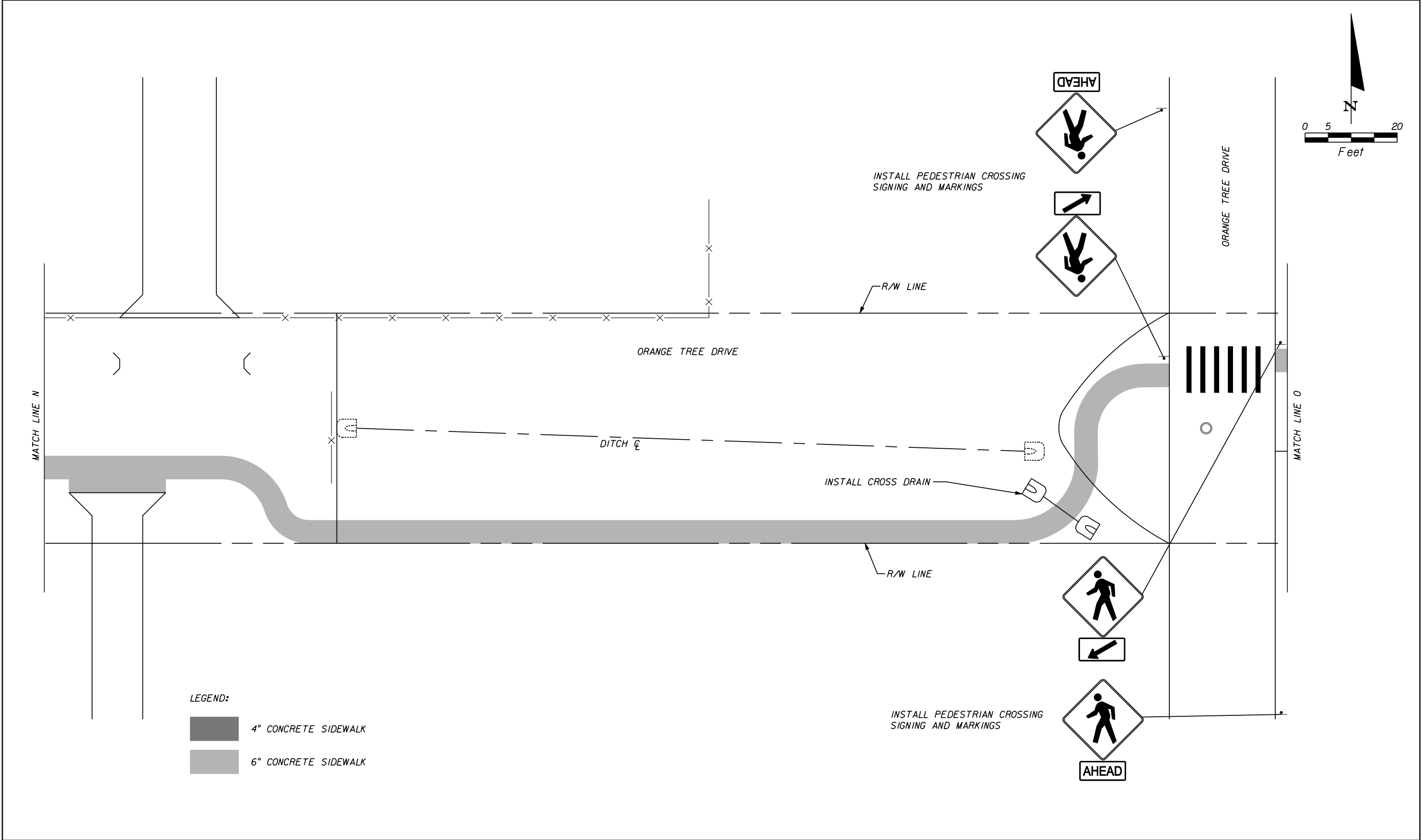


→	GUY WIRE	✱	SPRINKLER HEAD	□	DITCH BOTTOM INLET	□	MAIL BOX
□	UTILITY BOX	◇	POWER POLE	○	MANHOLE	—x—x—	FENCE
⊞	WATER VALVE	○—	LIGHT POLE	⌋	MITERED END SECTION	☁	TREE/SHRUB
●	SIGN	⊙	HYDRANT	⌋	DRAINAGE INLET	▨	BUILDING

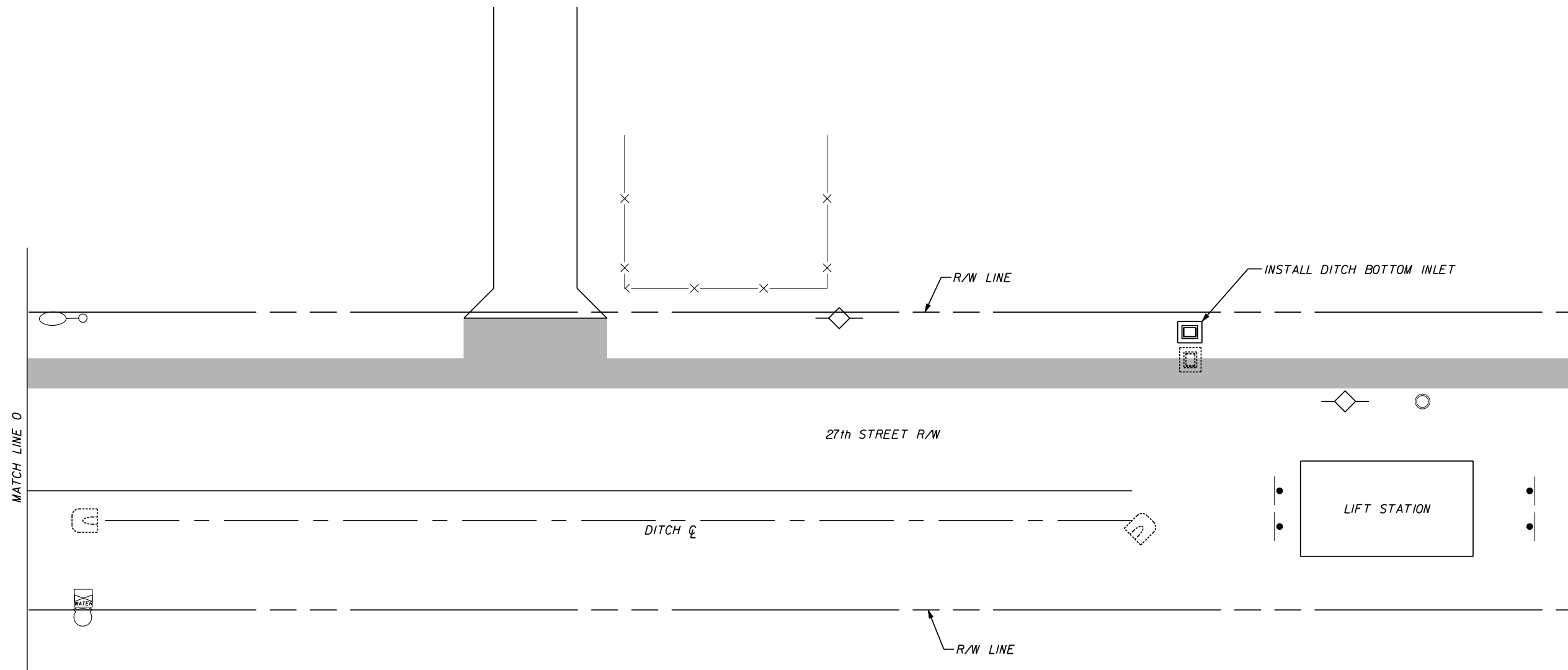
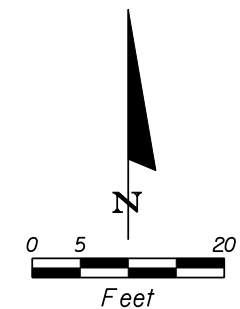
*Faller, Davis & Associates, Inc.*

DISTRICT WIDE COMMUNITY  
TRAFFIC SAFETY PROGRAM  
INDIAN RIVER ELEMENTARY SCHOOL

PAGE  
NO.



<div>→ GUY WIRE</div> <div>□ UTILITY BOX</div> <div> WATER VALVE</div> <div>• SIGN</div> <div> SPRINKLER HEAD</div> <div> POWER POLE</div> <div> LIGHT POLE</div> <div> HYDRANT</div> <div> DITCH BOTTOM INLET</div> <div>○ MANHOLE</div> <div> MITERED END SECTION</div> <div> DRAINAGE INLET</div> <div> MAIL BOX</div> <div>—x—x— FENCE</div> <div> TREE/SHRUB</div> <div> BUILDING</div>				<i>Faller, Davis &amp; Associates, Inc.</i>		DISTRICT WIDE COMMUNITY TRAFFIC SAFETY PROGRAM INDIAN RIVER ELEMENTARY SCHOOL		PAGE NO.



LEGEND:

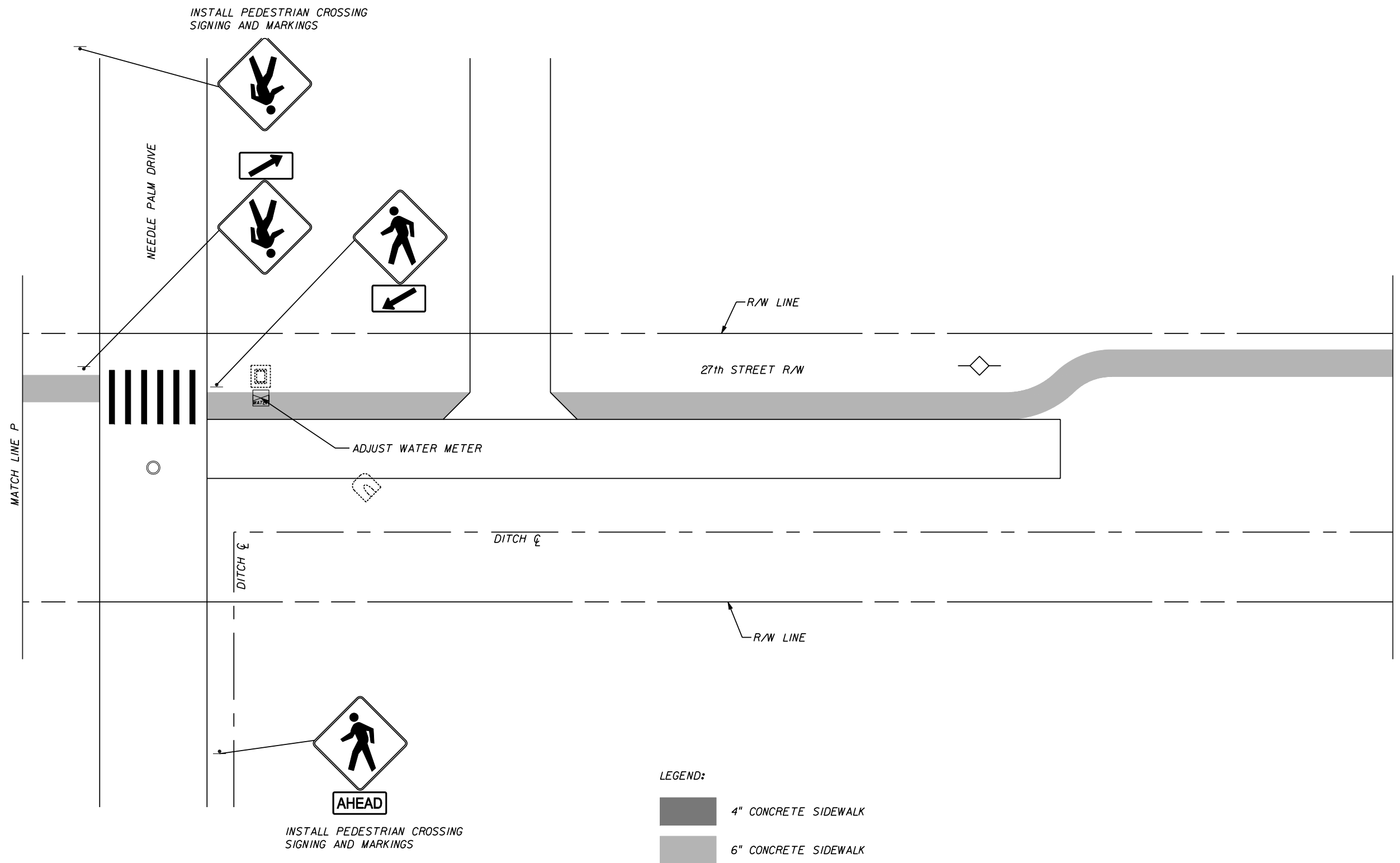
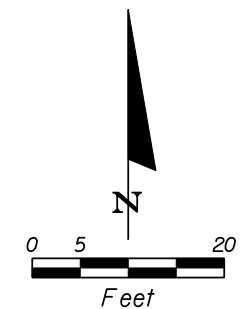
- 4" CONCRETE SIDEWALK
- 6" CONCRETE SIDEWALK

	GUY WIRE		SPRINKLER HEAD		DITCH BOTTOM INLET		MAIL BOX
	UTILITY BOX		POWER POLE		MANHOLE		FENCE
	WATER VALVE		LIGHT POLE		MITERED END SECTION		TREE/SHRUB
	SIGN		HYDRANT		DRAINAGE INLET		BUILDING

Faller, Davis & Associates, Inc.

DISTRICT WIDE COMMUNITY  
TRAFFIC SAFETY PROGRAM  
INDIAN RIVER ELEMENTARY SCHOOL

PAGE  
NO.



→	GUY WIRE	*	SPRINKLER HEAD	□	DITCH BOTTOM INLET	□	MAIL BOX
□	UTILITY BOX	◇	POWER POLE	○	MANHOLE	-x-x-	FENCE
⊠	WATER VALVE	○	LIGHT POLE	C	MITERED END SECTION	☁	TREE/SHRUB
•	SIGN	Q	HYDRANT	⌒	DRAINAGE INLET	▨	BUILDING

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DISTRICT WIDE COMMUNITY  
TRAFFIC SAFETY PROGRAM  
INDIAN RIVER ELEMENTARY SCHOOL

PAGE  
NO.

	FDOT Cost Estimate				
<b>Study Type</b>	Concept Report				
<b>County</b>	Volusia				
<b>State Road</b>	N/A				
<b>Side Street</b>	Mango Tree Drive/27th Street ROW				
Pay Item	Description	Unit	Quantity	Unit Price	Total Cost
101-1	Mobilization (10% of Construction Items)	LS	1	\$28,698.40	\$28,698.40
102-1	Maintenance of traffic	ED	60	\$500.00	\$30,000.00
102-60	Work Zone Signs	ED	720	\$0.30	\$216.00
102-74-1	Barricade (Temporary) (Types I,II,VP & Drum)	ED	2970	\$0.30	\$891.00
102-77	High Intensity Flashing Lights (Temp-Type B)	ED	240	\$0.50	\$120.00
104-13-1	Silt Fence Staked (Type III)	LF	4445	\$2.00	\$8,890.00
110-1-1	Clearing and Grubbing	LS/AC	1.32	\$25,000.00	\$33,000.00
110-7-1	Mailbox (Relocate)	EA	23	\$127.00	\$2,921.00
120-1	Regular Excavation	CY	380	\$40.00	\$15,200.00
120-6	Embankment	CY	72	\$9.00	\$648.00
425-1-501	Inlet (Ditch Bottom)	EA	1	\$3,000.00	\$3,000.00
425-6	Valve Box (Adjust)	EA	1	\$450.00	\$450.00
430-172-125	Pipe Culvert Optional Material	LF	70	\$80.00	\$5,600.00
430-982-625	Mitred End Section (18")	EA	13	\$900.00	\$11,700.00
522-1	Sidewalk Concrete (4" Thick)	SY	1319	\$55.00	\$72,545.00
522-2	Sidewalk Concrete (6" Thick)	SY	1129	\$70.00	\$79,030.00
570-1-2	Performance Turf	SY	4086	\$3.00	\$12,258.00
700-40-1	Sign F&I	AS	30	\$247.00	\$7,410.00
700-46-11	Sign Existing (Remove)	AS	8	\$20.00	\$160.00
711-3	Pavement Messages (Thermoplastic) (School)	EA	2	\$121.00	\$242.00
711-35-121	Traffic Stripe Solid (Thermoplastic) 12" White	LF	484	\$2.00	\$968.00
711-35-241	Traffic Stripe Solid (Thermoplastic) 24" White	LF	46	\$2.50	\$115.00
711-7	Pavt Marking Remove	SF	270	\$6.00	\$1,620.00
		Subtotal			\$315,682.40
		PECEI (25% Project Total)			\$78,920.60
		Contingency (10% Project Total)			\$31,568.24
		Project Total			\$426,171



SAFE ROUTES TO SCHOOL QUESTIONNAIRE					
School Name	INDIAN RIVER ELEM.			Date	5/06
Mailing Address		City		Zip	
School Principals Name			Phone ( )		
Contact Person	MIKE NEIDHART	VC MPO	Phone ( )		

Please contact your local City/County Engineer for guidance below.

IMPROVEMENT NEEDS	
Nature of ped/bike improvement	8' SIDEWALK ON MANGO TREE DRIVE TRAIL AND ON 21 <sup>st</sup> ST.
Severity of problem (circle 1)	Barricade to travel    Obstructs travel (alternate/detour available) <u>Impedes travel (useable)</u>
Proposed improvement	SIDEWALK
From (include side of road)	To
Length Of Segment	4- 5000 FT    Roadway Jurisdiction <u>EDGEWATER</u>
Distance to Schools	Attach Map
Will this complete a network?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial    (Attach network sketch)
<b>Constructability:</b>	
Above roadway has a <input checked="" type="checkbox"/> Grass Shoulder <input type="checkbox"/> Paved Shoulder <input type="checkbox"/> an Open Ditch <input type="checkbox"/> Curb/Gutter    Check all that apply	
Can be built within existing State/City/County Right of Way <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Right of Way (check with your public works and attach maps)	
Proposed sidewalk will cross Railroad tracks <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Proposed sidewalk will cross a bridge <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Number of K thru 8th grade children who currently use this route or detour to another	
Number of K thru 8th grade children who could potentially use route after improvement	
Segment Ped/Bike Crash History	2003    0    2004    0    2005    0
Currently Participates in Safe Ways to Schools	(Provide Documentation) Yes <input type="checkbox"/> No <input type="checkbox"/>
Post Implementation Evaluation: Ability and commitment. State how you would assist with evaluation	

Return this form to	State of Florida Department of Transportation District Five Safety Office 719 S. Woodland Blvd., M.S. #3-562 DeLand, Florida 32720-6834	Phone (386) 943-5334 Fax (386) 736-5349 E-Mail Anthony.Nosse@DOT.State.FL.US
Locations must be within 2 miles of schools serving Kindergarten through 8th grades and proposed improvements must result in increases to the number of these children walking or biking to school.		

Is the local engineering agency which has jurisdiction of the road LAP certified?    ☒ Yes    ☐ No

VOLusia CO. WOULD CONSTRUCT

*Safe Routes to Schools (Revised)**May 2006***Submitting Agency:** Volusia County MPO**Contact:** Mike Neidhart, PhD, AICP: 386-226-0422**Project Name:** Mango Tree Drive Trail (Revised)**Project Location:** Mango Tree Drive from 30<sup>th</sup> Street to 27<sup>th</sup> Street, Edgewater, FL**Schools Served:** Indian River Elementary School and Future Middle School**LAP Coordinator:** Volusia County**Maintaining Agency:** City of Edgewater

**Background:** The Volusia County MPO was awarded a Florida Department of Transportation Safety Grant in 2005 to study bicycle and pedestrian safety issues at ten elementary schools within the MPO's jurisdictional planning area. Indian River Elementary School was one of the ten schools reviewed. A trail along Mango Tree Drive Trail was recommended as a pedestrian/bicyclist route in the study.

**Safety Issue:** The majority of students attending Indian River Elementary live in the Florida Shores Community and many children walk or ride their bicycles to school. There are no sidewalks connecting the north side of the community to the "collector" sidewalk on the south side of 30<sup>th</sup> Street. Students use the grid of roadways to reach the sidewalk and often cross 30<sup>th</sup> Street at places where there are no crossing guards.

**Project Goals:**

- Create a north/south trail facility to provide a safer route for bicyclists and pedestrians.
- Encourage students to cross 30<sup>th</sup> Street at Mango Tree Drive where the crossing guard is located.
- Provide a successful pilot project for the community to increase support for sidewalk facilities.

**Project Description:** Construct an 8' wide concrete trail within City right-of-way on the east side of Mango Tree Drive from 27<sup>th</sup> Street to 30<sup>th</sup> Street. The trail will connect to the existing sidewalk on the south side of 30<sup>th</sup> Street via the existing crossing guard located at 30<sup>th</sup> Street and Mango Tree Drive. This project will tie into the proposed 27<sup>th</sup> Street sidewalk (under separate application) from Mango Tree Drive Trail to Travelers Palm Drive. Total length of trail is approximately 2,500 linear feet. (See attached map)

**Context:** Florida Shores is a large development within the City of Edgewater that was built in the 1960's on dirt roads with small lots. In the 1990's, the City connected the development to the sewer system and paved the roads. Sections of right-of-way were used to create drainage swales and add stormwater retention. The improvements did not include sidewalks and the City is now planning a critical network of sidewalks to increase pedestrian safety. Indian River Elementary School, with 717 students, is located approximately 1600' from the project site. Additionally, a middle school is planned within 2 miles of the project site.

**Existing Conditions:** The right-of-way on Mango Tree Drive is 50' wide. A paved 22' wide roadway is centered in the right-of-way, leaving 14' of right-of-way for the proposed trail. The majority of the trail, approximately 1,950 linear feet, will be located along the west side of the city owned Magnolia Lake retention facility. The section between 30<sup>th</sup> Street and the beginning of Magnolia Lake measures approximately 550 linear feet.

### Project Photographs

1. Looking east along 30<sup>th</sup> Street: The sidewalk along the south side of 30<sup>th</sup> serves numerous schoolchildren as they ride their bicycles or walk to school. Mango Tree Drive intersects 30th Street near the school.



2. Looking south along Mango Tree Drive: The edge of pavement to the right-of-way line measures approximately 14'.



3. Looking north along Mango Tree Drive: Magnolia Lake is a drainage facility that is a successful community amenity.



4. Looking east along the 27<sup>th</sup> Street right-of-way: This section of the right-of-way is currently used for drainage and maintenance access. The 27<sup>th</sup> Street sidewalk (under a separate application) is proposed for this right-of-way from Mango Tree Drive to Travelers Palm Drive.



**Project Recommendations:** The following project recommendations are based on field observations and City of Edgewater plat information. There appears to be sufficient right-of-way for the implementation of the proposed improvement. Project recommendations are for planning and budgeting purposes only. Engineering documents will be required for this project.

Estimated project construction includes the following:

- Construct an 8' wide concrete trail approximately 2,500' long within the east side of the Mango Tree Drive right-of-way. Construct the trail flush with grade and provide a minimum 5' grass separation strip from the edge of pavement.
  - There are no known utility conflicts
  - There are up to 7 driveway crossings ( parcels front the proposed trail)
  - There may be private irrigation on public property that needs to be relocated.
- Sod disturbed areas.
- If needed, re-align the existing crosswalk across 30<sup>th</sup> Street to line up with proposed trail. Move associated signage as necessary.

**Estimated Cost**

Mango Tree Drive Trail  
 Segment 1  
 Length (LF) 2,500.00

From: 27th Street  
 To: 30th Street

FDOT Pay Item Number	Description	Quantity	Unit Type	Unit Price	Extension
101-1	Mobilization	1.00	LS	\$ 35,000.00	\$ 35,000.00
104-10-1	Hay Bales	8.00	EA	\$ 5.06	\$ 40.48
104-13-2	Silt Fence (Type IV)	2,500.00	LF	\$ 2.32	\$ 5,800.00
110-1-1	Clearing & Grubbing	1.00	AC	\$ 8,690.61	\$ 8,690.61
110-4	Pavement Removal of Existing Concrete	210.00	SY	\$ 14.75	\$ 3,097.50
120-1	Excavation - Regular	118.00	CY	\$ 5.18	\$ 611.24
120-2-2	Excavation - Borrow (Truck Measure)	118.00	CY	\$ 7.32	\$ 863.76
430-172129	Pipe Culvert (Optional Mat.) (Round)(24" CD)	20.00	LF	\$ 64.58	\$ 1,291.60
430-982129	Mitered End Section (Optional Mat.)(Round)(24" CD)	2.00	EA	\$ 1,241.50	\$ 2,483.00
522-1	Concrete Sidewalk (4" Thick)	2,300.00	SY	\$ 25.38	\$ 58,374.00
522-2-C2	Colored Concrete Sidewalk (6" Thick)	128.00	SY	\$ 58.75	\$ 7,520.00
523-1-2	Patterned, Textured Concrete	30.00	SY	\$ 26.41	\$ 792.30
570-5	Fertilizer	0.56	TN	\$ 183.68	\$ 102.86
570-1-2	Sodding	2,500.00	SY	\$ 3.00	\$ 7,500.00
102912-1	Pavement Marking Removal	336.00	LF	\$ 2.26	\$ 759.36
711-35-61	Traffic Stripe Solid (Thermoplastic) (White) 6"	336.00	LF	\$ 0.99	\$ 332.64
904-71137	Thermo (No Track) (White) (Solid) 24"	48.00	LF	\$ 6.20	\$ 297.60
					\$ -
					\$ -
	<b>Subtotal</b>				<b>\$ 133,556.95</b>
102-1	Maintenance of Traffic (10% of Construction Cost)	1	LS		\$ 13,355.70
	Estimated Design Cost (Survey, Permits, CEI)	1	LS		\$ 44,073.79
	Contingency 15%	1	LS		\$ 28,647.97
	<b>Total</b>				<b>\$ 219,634.41</b>

Note: Costs estimated above are based on Statewide Averages.  
 Costs for SJRWMD or Volusia County permits are not included.



*Safe Routes to Schools - 27<sup>th</sup> St. Sidewalk**May 2006***Submitting Agency:** Volusia County MPO**Contact:** Mike Neidhart, PhD, AICP: 386-226-0422**Project Name:** 27<sup>th</sup> Street Sidewalk**Project Location:** 27<sup>th</sup> Street from Mango Tree Drive to Travelers Palm Drive,  
Edgewater, FL**Schools Served:** Indian River Elementary School and Future Middle School**LAP Coordinator:** Volusia County**Maintaining Agency:** City of Edgewater

**Background:** The Volusia County MPO was awarded a Florida Department of Transportation Safety Grant in 2005 to study bicycle and pedestrian safety issues at ten elementary schools within the MPO's jurisdictional planning area. Indian River Elementary School was one of the ten schools reviewed. An east-west pedestrian/bicycle connector was recommended for the 27<sup>th</sup> Street corridor that currently serves as a stormwater and retention area. The right-of-way is closed to vehicular through traffic.

**Safety Issue:** The majority of students attending Indian River Elementary live in the Florida Shores Community and many children walk or ride their bicycles to school. There are no sidewalks connecting the north side of the community to the "collector" sidewalk on the south side of 30<sup>th</sup> Street. Students use the grid of roadways to reach the sidewalk and often cross 30<sup>th</sup> Street at places where there are no crossing guards. This sidewalk/trail would provide an east-west student collector that connects to the proposed Mango Tree Drive Trail.

**Project Goals:**

- Create an east-west trail facility to connect to the proposed Mango Tree Drive Trail, directing students to the existing crossing guard located on 30<sup>th</sup> and Mango Tree Drive. Reduce the number of students crossing 30<sup>th</sup> at unmarked and unsupervised locations.
- Develop a primary spine for bicycle and pedestrian facilities that is separated from vehicular traffic as much as possible.
- Provide a successful pilot project for the community to increase support for sidewalk facilities.

**Project Description:** Construct a 6' to 8' wide concrete sidewalk within City right-of-way on the 27<sup>th</sup> Street right-of-way, currently used for drainage. The trail will connect to the proposed Mango Tree Drive Trail, creating a continuous sidewalk/trail to the existing crossing guard location at Mango Tree Drive and 30th Street. Total length of the proposed sidewalk is approximately 2,500 linear feet. The thickness of concrete should be 6" for this project to accommodate occasional service vehicles. (See attached map)

**Context:** Florida Shores is a large development within the City of Edgewater. The community was developed in the 1960's on dirt roads with small lots. In the 1990's, the City connected the



development to the sewer system and paved the roads. Sections of right-of-way were used to create drainage swales and add stormwater retention. The improvements did not include sidewalks and the City is now planning a critical network of sidewalks to increase pedestrian safety. Indian River Elementary School, with 717 students, is located approximately 1600' from the project site (including the Mango Tree Drive Trail). Additionally, a middle school is planned within 2 miles of the project site.

**Existing Conditions:** The right-of-way on 27<sup>th</sup> is 50' wide. The right-of-way no longer serves vehicular traffic, with the exception of occasional driveway access. The right-of-way is used for drainage and retention. There appears to be enough space for a meandering 6' to 8' wide walkway.

### Project Photographs

1. Looking west along the 27<sup>th</sup> Street right-of-way: This section of the right-of-way is used for drainage and maintenance access.



2. 27<sup>th</sup> Street looking west: Portions of the right-of-way have an existing stabilized dirt road. The right-of-way is closed to vehicular through traffic. Several dirt access drives have been "grandfathered" in to provide access to garages.



3. Looking east along the 27<sup>th</sup> St. right-of-way: Note the existing dirt road section proposed for sidewalk use.



**Project Recommendations:** The following project recommendations are based on field observations and City of Edgewater plat information. There appears to be sufficient right-of-way for the implementation of the proposed improvement. Project recommendations are for planning and budgeting purposes only. Engineering documents will be required for this project. The City of Edgewater has offered to hold public involvement meetings to increase the overall success of the project.

Estimated project construction includes the following:

- Construct a 6' to 8' wide concrete sidewalk along the 27<sup>th</sup> Street right-of-way, using the existing dirt road bed where possible. Locate sidewalk at the top of bank in areas where retention areas are located. The sidewalk should be 6" thick.
- Relocate dirt driveways (5 estimated) as needed to accommodate the sidewalk.
- Create seven (7) painted crosswalks to connect sidewalk sections.
- Sod disturbed areas.

**Estimated Calculations:** 2,100 linear feet of 6" thick sidewalk, 6-8 feet wide. The estimated cost for this project is \$200,000.

11728	11745	11742	11741	11740	11739	11738	11737	11736	11735	11734	11733	11732	11731	11730	11729	11728	11727	11726	11725	11724	11723	11722	11721	11720	11719	11718	11717	11716	11715	11714	11713	11712	11711	11710	11709	11708	11707	11706	11705	11704	11703	11702	11701	11700	11699	11698	11697	11696	11695	11694	11693	11692	11691	11690	11689	11688	11687	11686	11685	11684	11683	11682	11681	11680	11679	11678	11677	11676	11675	11674	11673	11672	11671	11670	11669	11668	11667	11666	11665	11664	11663	11662	11661	11660	11659	11658	11657	11656	11655	11654	11653	11652	11651	11650	11649	11648	11647	11646	11645	11644	11643	11642	11641	11640	11639	11638	11637	11636	11635	11634	11633	11632	11631	11630	11629	11628	11627	11626	11625	11624	11623	11622	11621	11620	11619	11618	11617	11616	11615	11614	11613	11612	11611	11610	11609	11608	11607	11606	11605	11604	11603	11602	11601	11600	11599	11598	11597	11596	11595	11594	11593	11592	11591	11590	11589	11588	11587	11586	11585	11584	11583	11582	11581	11580	11579	11578	11577	11576	11575	11574	11573	11572	11571	11570	11569	11568	11567	11566	11565	11564	11563	11562	11561	11560	11559	11558	11557	11556	11555	11554	11553	11552	11551	11550	11549	11548	11547	11546	11545	11544	11543	11542	11541	11540	11539	11538	11537	11536	11535	11534	11533	11532	11531	11530	11529	11528	11527	11526	11525	11524	11523	11522	11521	11520	11519	11518	11517	11516	11515	11514	11513	11512	11511	11510	11509	11508	11507	11506	11505	11504	11503	11502	11501	11500	11499	11498	11497	11496	11495	11494	11493	11492	11491	11490	11489	11488	11487	11486	11485	11484	11483	11482	11481	11480	11479	11478	11477	11476	11475	11474	11473	11472	11471	11470	11469	11468	11467	11466	11465	11464	11463	11462	11461	11460	11459	11458	11457	11456	11455	11454	11453	11452	11451	11450	11449	11448	11447	11446	11445	11444	11443	11442	11441	11440	11439	11438	11437	11436	11435	11434	11433	11432	11431	11430	11429	11428	11427	11426	11425	11424	11423	11422	11421	11420	11419	11418	11417	11416	11415	11414	11413	11412	11411	11410	11409	11408	11407	11406	11405	11404	11403	11402	11401	11400	11399	11398	11397	11396	11395	11394	11393	11392	11391	11390	11389	11388	11387	11386	11385	11384	11383	11382	11381	11380	11379	11378	11377	11376	11375	11374	11373	11372	11371	11370	11369	11368	11367	11366	11365	11364	11363	11362	11361	11360	11359	11358	11357	11356	11355	11354	11353	11352	11351	11350	11349	11348	11347	11346	11345	11344	11343	11342	11341	11340	11339	11338	11337	11336
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50' TWENTY-SEVENTH STREET			50' TWENTY-EIGHTH STREET			50' TWENTY-NINTH STREET		
104301	103774	103718	102682	102061	101150	100943		
10429	103773	103717	102681	10205	10149	10093		
10428	103772	103716	10260	10204	10148	10092		
10427	103771	103715	10259	10203	10147	10091		
10426	103770	103714	10258	10202	10146	10090		
10425	103769	103713	10257	10201	10145	10089		
10424	103768	103712	10256	10200	10144	10088		
10423	10367	103711	10255	10199	10143	10087		
10422	10366	103710	10254	10198	10142	10086		
10421	10365	103709	10253	10197	10141	10085		
10420	10364	103708	10252	10196	10140	10084		
10419	10363	103707	10251	10195	10139	10083		
10418	10362	103706	10250	10194	10138	10082		
10417	10361	103705	10249	10193	10137	10081		
10416	10360	103704	10248	10192	10136	10080		
10415	10359	103703	10247	10191	10135	10079		
10414	10358	103702	10246	10190	10134	10078		
10413	10357	103701	10245	10189	10133	10077		
10412	10356	103700	10244	10188	10132	10076		
10411	10355	103699	10243	10187	10131	10075		
10410	10354	103698	10242	10186	10130	10074		
10409	10353	103697	10241	10185	10129	10073		
10408	10352	103696	10240	10184	10128	10072		
10407	10351	103695	10239	10183	10127	10071		
10406	10350	103694	10238	10182	10126	10070		
10405	10349	103693	10237	10181	10125	10069		
10404	10348	103692	10236	10180	10124	10068		
10403	10347	103691	10235	10179	10123	10067		
10402	10346	103690	10234	10178	10122	10066		
10401	10345	103689	10233	10177	10121	10065		
10400	10344	103688	10232	10176	10120	10064		
10399	10343	103687	10231	10175	10119	10063		
10398	10342	103686	10230	10174	10118	10062		
10397	10341	103685	10229	10173	10117	10061		
10396	10340	103684	10228	10172	10116	10060		
10395	10339	103683	10227	10171	10115	10059		
10394	10338	103682	10226	10170	10114	10058		
10393	10337	103681	10225	10169	10113	10057		
10392	10336	103680	10224	10168	10112	10056		
10391	10335	103679	10223	10167	10111	10055		
10390	10334	103678	10222	10166	10110	10054		
10389	10333	103677	10221	10165	10109	10053		
10388	10332	103676	10220	10164	10108	10052		
10387	10331	103675	10219	10163	10107	10051		
10386	10330	103674	10218	10162	10106	10050		
10385	10329	103673	10217	10161	10105	10049		
10384	10328	103672	10216	10160	10104	10048		
10383	10327	103671	10215	10159	10103	10047		
10382	10326	103670	10214	10158	10102	10046		
10381	10325	103669	10213	10157	10101	10045		
10380	10324	103668	10212	10156	10100	10044		
10379	10323	103667	10211	10155	10099	10043		
10378	10322	103666	10210	10154	10098	10042		
10377	10321	103665	10209	10153	10097	10041		
10376	10320	103664	10208	10152	10096	10040		
10375	10319	103663	10207	10151	10095	10039		

60' THIRTIETH STREET

MANGO

TREE

DRIVE

50'

MAGNOLIA

LAKE

LIME

TREE

DRIVE

50'

KUMQUAT

DRIVE

50'

12

7902  
7901  
7900  
7899  
7898  
7897  
7896  
7895

TWENT

8038	7974
8037	7973
8036	7972
8035	7971
8034	7970
8033	7969
8032	7968
8031	7967
8030	7966
8029	7965
8028	7964
8027	7963
8026	7962
8025	7961
8024	7960
8023	7959
8022	7958
8021	7957
8020	7956
8019	7955
8018	7954
8017	7953
8016	7952
8015	7951

KUMQUAT

7894	7893
7892	7891
7890	7889
7888	7887
7886	7885
7884	7883
7882	7881
7880	7879
7878	7877
7876	7875
7874	7873
7872	7871

8132	8085
8131	8084
8130	8083
8129	8082
8128	8081
8127	8080
8126	8079

LIME

THIRTIETH

8219	8172
8218	8171
8217	8170
8216	8169
8215	8168
8214	8167
8213	8166
8212	8165
8211	8164
8210	8163
8209	8162
8208	8161
8207	8160
8206	8159
8205	8158
8204	8157
8203	8156
8202	8155
8201	8154
8200	8153
8199	8152
8198	8151
8197	8150
8196	8149

NEEDLE

MANGO

8125	8078
8124	8077
8123	8076
8122	8075
8121	8074
8120	8073
8119	8072
8118	8071
8117	8070
8116	8069
8115	8068
8114	8067
8113	8066
8112	8065
8111	8064
8110	8063
8109	8062
8108	8061
8107	8060
8106	8059
8105	8058
8104	8057
8103	8056
8102	8055

TREE

DRIVE

8014	7950
8013	7949
8012	7948
8011	7947
8010	7946
8009	7945
8008	7944
8007	7943
8006	7942
8005	7941
8004	7940
8003	7939
8002	7938
8001	7937
8000	7936
7999	7935
7998	7934
7997	7933
7996	7932
7995	7931
7994	7930
7993	7929
7992	7928
7991	7927

DRIVE

7870	7869
7868	7867
7866	7865
7864	7863
7862	7861
7860	7859
7858	7857
7856	7855
7854	7853
7852	7851
7850	7849
7848	7847

THIRTYFIRST

8258	8242
8257	8241
8256	8240
8255	8239
8254	8238
8253	8237
8252	8236
8251	8235
8250	8234
8249	8233
8248	8232
8247	8231
8246	8230
8245	8229
8244	8228
8243	8227

8195	8148
8194	8147
8193	8146
8192	8145
8191	8144
8190	8143
8189	8142
8188	8141
8187	8140
8186	8139
8185	8138
8184	8137
8183	8136
8182	8135
8181	8134
8180	8133

8101	8054
8100	8053
8099	8052
8098	8051
8097	8050
8096	8049
8095	8048
8094	8047
8093	8046
8092	8045
8091	8044
8090	8043
8089	8042
8088	8041
8087	8040
8086	8039

7990	7926
7989	7925
7988	7924
7987	7923
7986	7922
7985	7921
7984	7920
7983	7919
7982	7918
7981	7917
7980	7916
7979	7915
7978	7914
7977	7913
7976	7912
7975	7911

ST

7846	7766
7845	7765
7844	7764
7843	7763
7842	7762
7841	7761
7840	7760
7839	7759
7838	7758
7837	7757
7836	7756
7835	7755
7834	7754
7833	7753
7832	7752
7831	7751

THIRTYSECOND

STREET

6

[illegible]

[illegible]