



CITY OF ISLE OF PALMS, SC

Presentation to Public Works Committee
PHASE 3 DRAINAGE CUTFALS & WATERWAY BLVD PATHWAY STUDY

April 12, 2021



- Phase 3 Drainage Outfalls
 - Project Overview
 - Permitting Status
 - Mitigation
- Waterway Blvd. Pathway Study
 - Study Findings
 - Recommendations
 - Cost Estimates

Project Study Area



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Basin Map

**30th Avenue
61.6 ac.**

**Forest
Trail
196.8 ac.**

**41st
Avenue
92.8 ac.**

0 400 800
Feet



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

30th Avenue Outfall – Existing Conditions



WATERWAY BLVD

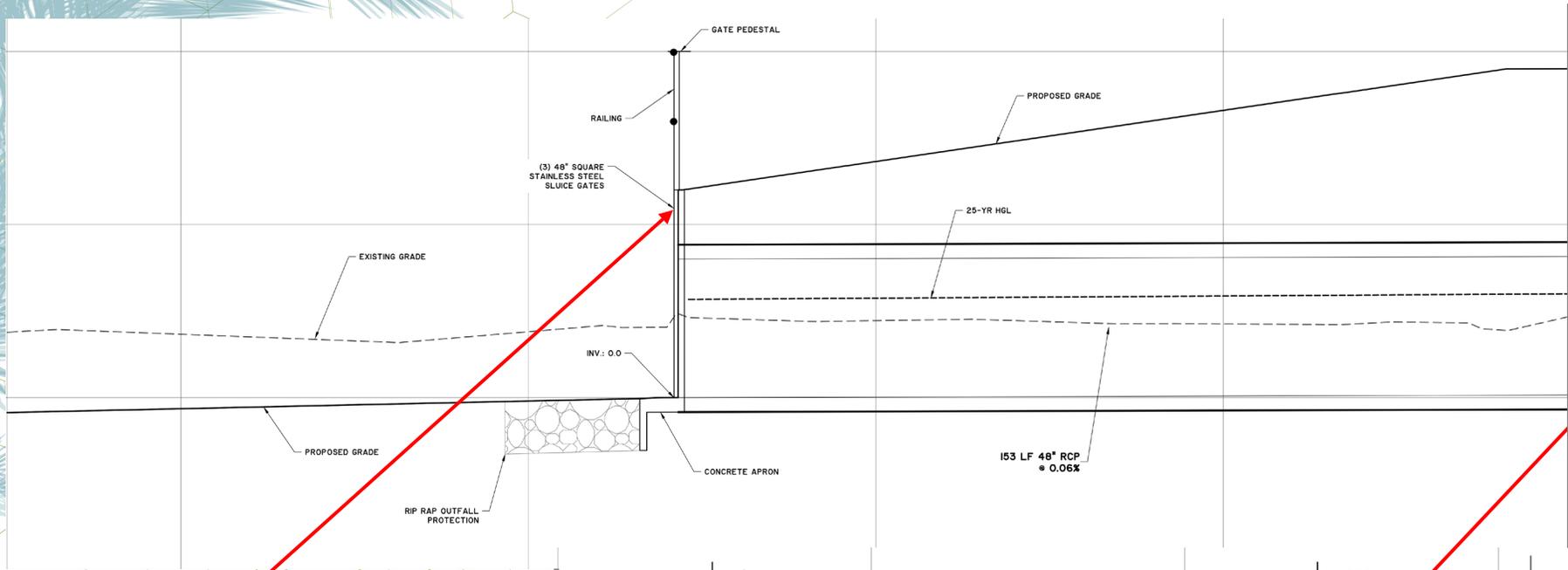
30TH AV



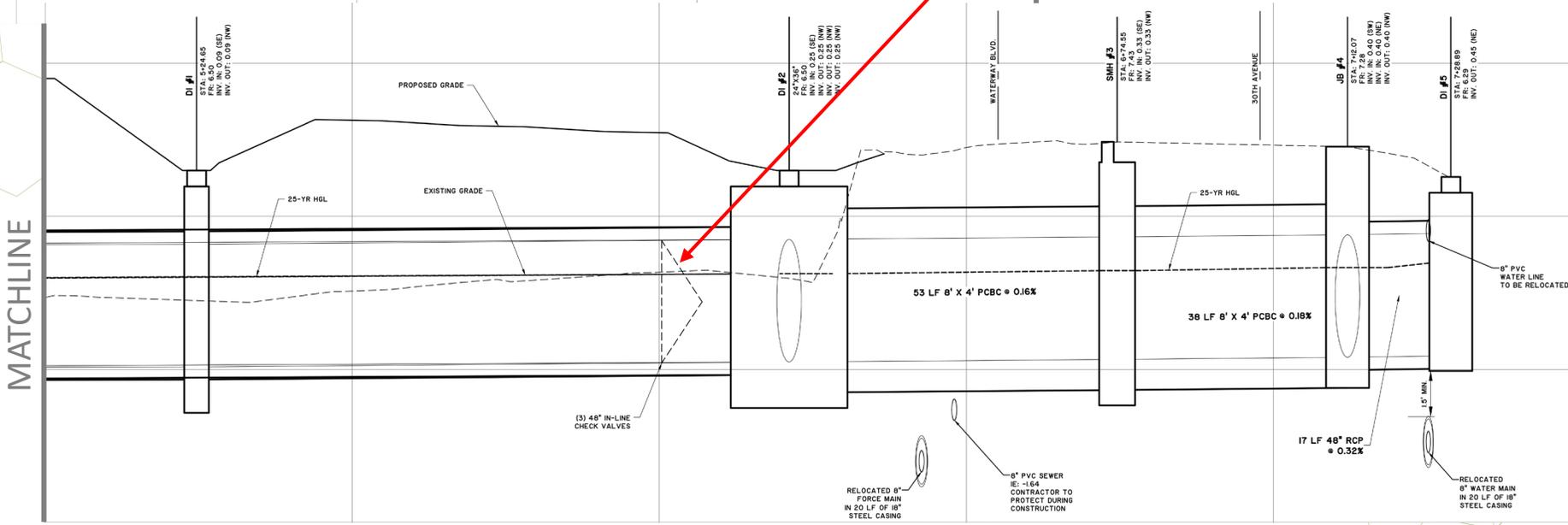
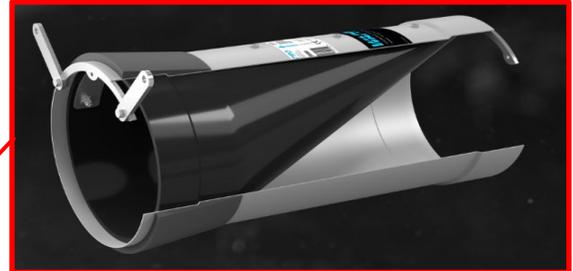
30th Avenue



30th Avenue - Profile



MATCHLINE



- Design Complete
- Permitting
 - Infrastructure Critical Area Permit - Submitted, coordination is ongoing.
 - Channel Critical Area Permit - Submitted, coordination is ongoing.
 - SCDOT Encroachment Permit – Submitted, comments addressed.
 - Charleston County MS4 – Application completed.
 - SCDHEG-CORM(CZO) – Application completed.
 - SCDHEG-BOW(NPDES) – Application completed.

Forest Trails Outfall – Existing Conditions



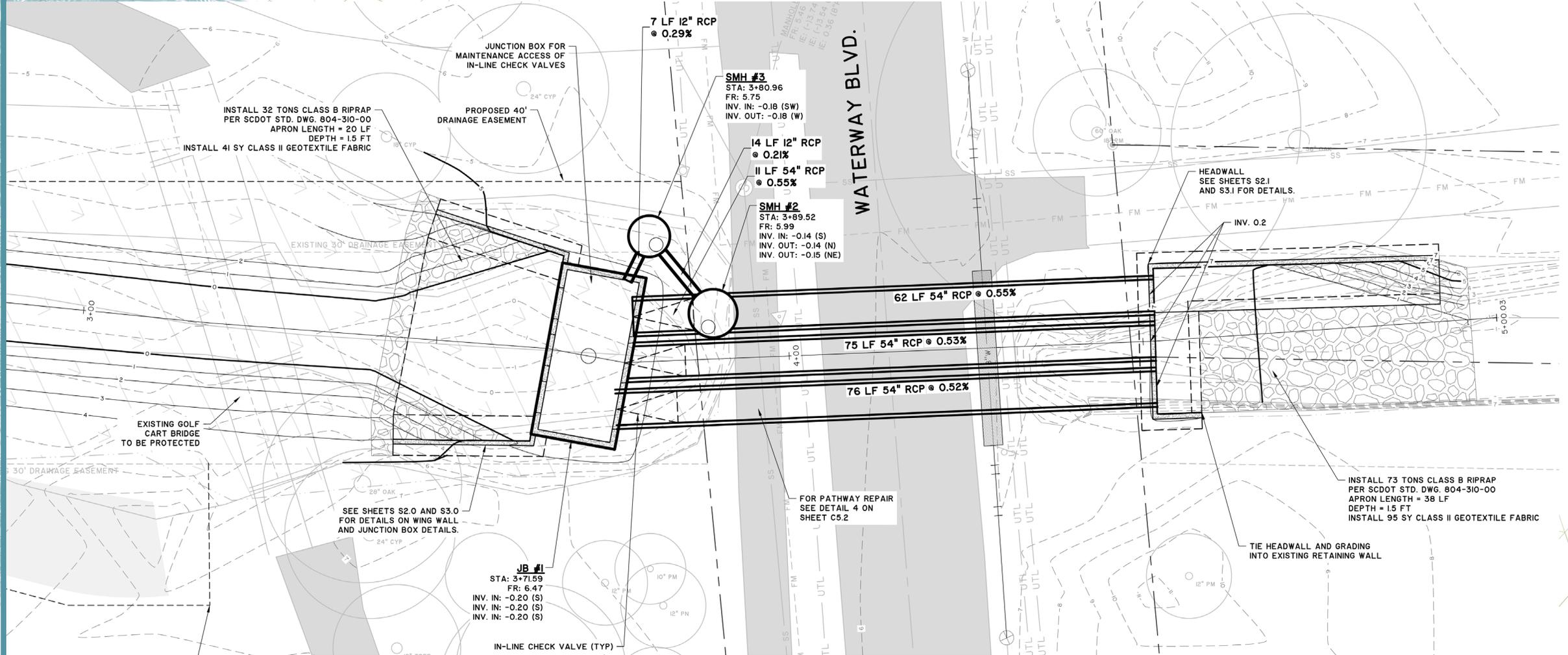
0 40 80 Feet



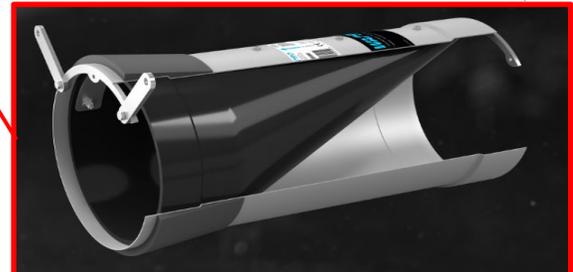
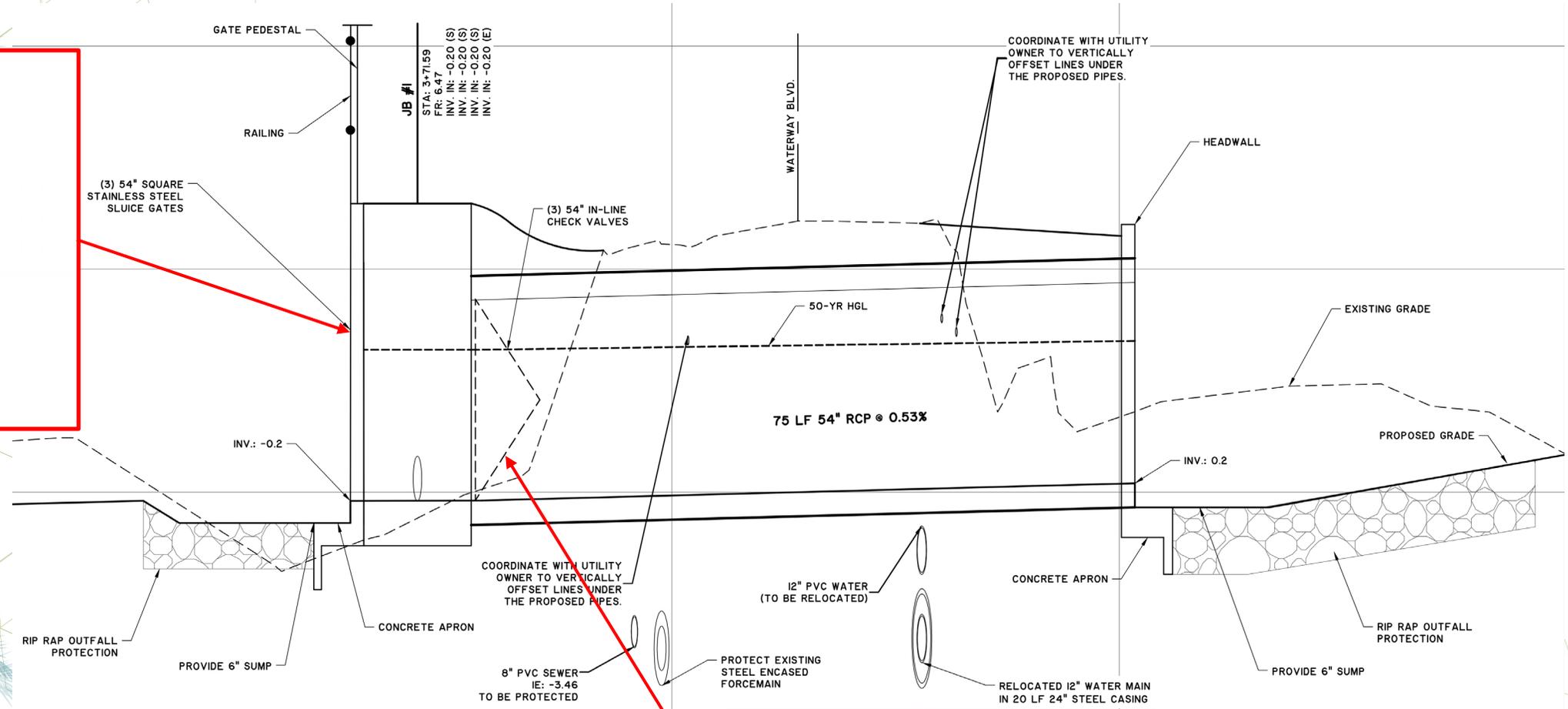
Forest Trail



Forest Trail - Plan

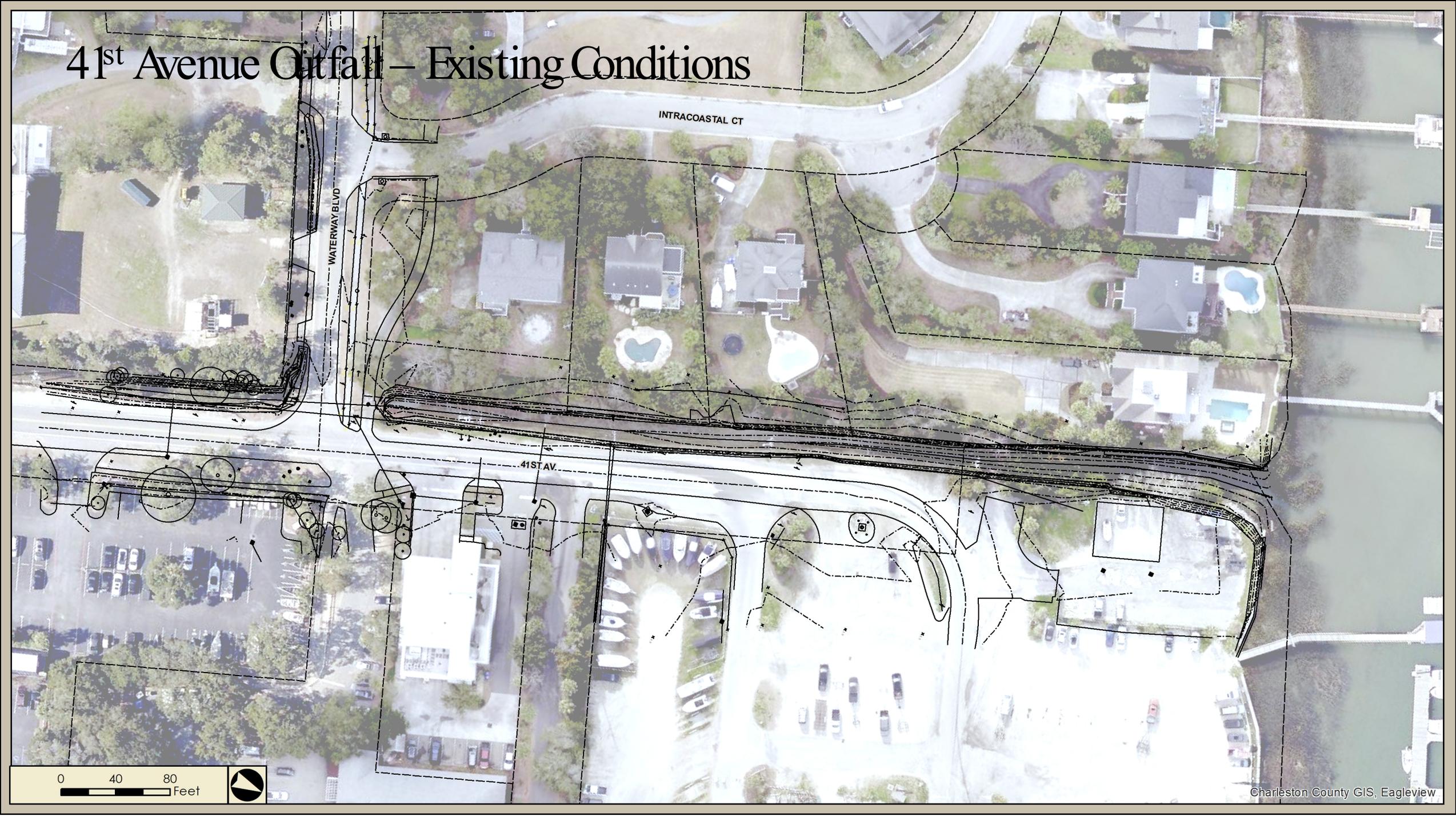


Forest Trail- Profile



- Design Complete
- Permitting
 - Infrastructure Critical Area Permit - Approved.
 - Channel Critical Area Permit - Submitted, coordination is ongoing.
 - SCDOT Encroachment Permit – Submitted, coordination is ongoing.
 - Charleston County MS4 – Submitted.
 - SCDHEG OCRM (CZC) – Submitted, approval pending.
 - SCDHEG BOW (NPDES) – Submitted, approval pending.

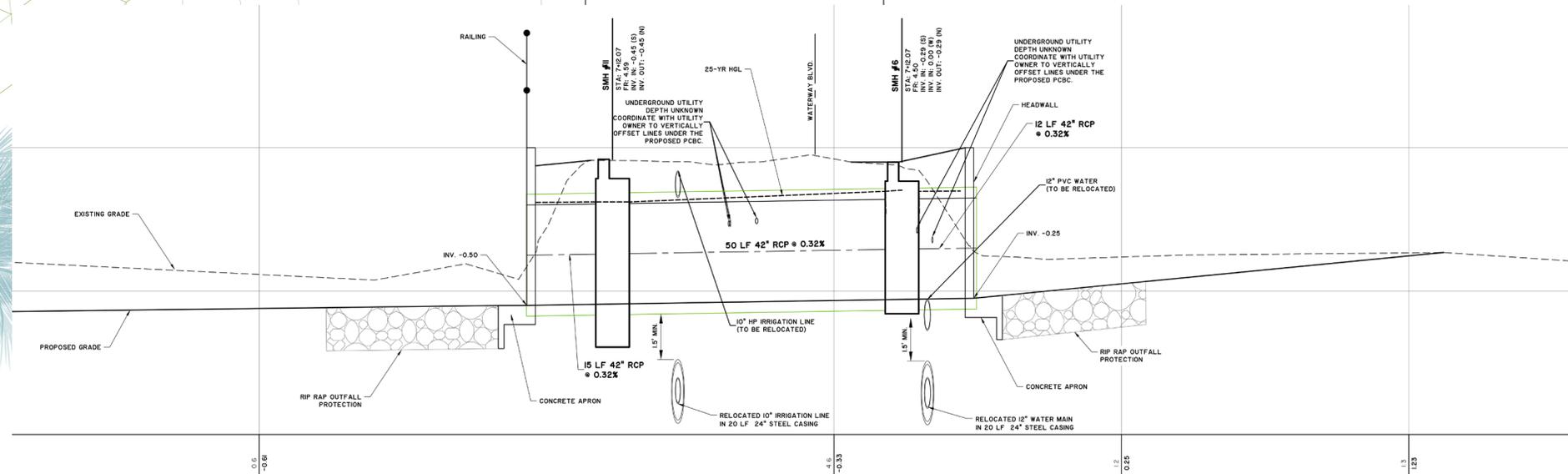
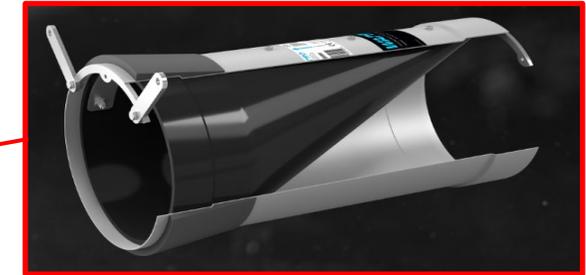
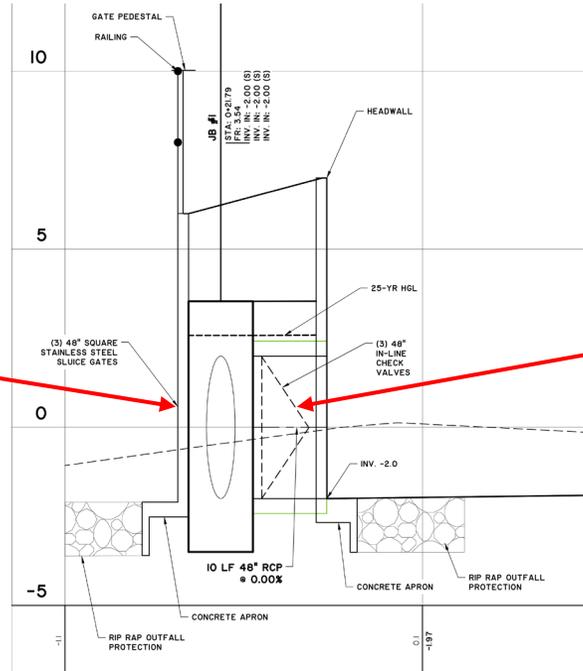
41st Avenue Outfall – Existing Conditions



0 40 80 Feet



41st Avenue - Profile



- **Design Complete**
- **Permitting**
 - Critical Area Permit – Preparing to submit.
 - SCDOT Encroachment Permit – Submitted, addressing comments.
 - Charleston County MS4 – Application completed.
 - SCDHEG-OCRM(CZO) – Application completed.
 - SCDHEG-BOW(NPDES) – Application completed.

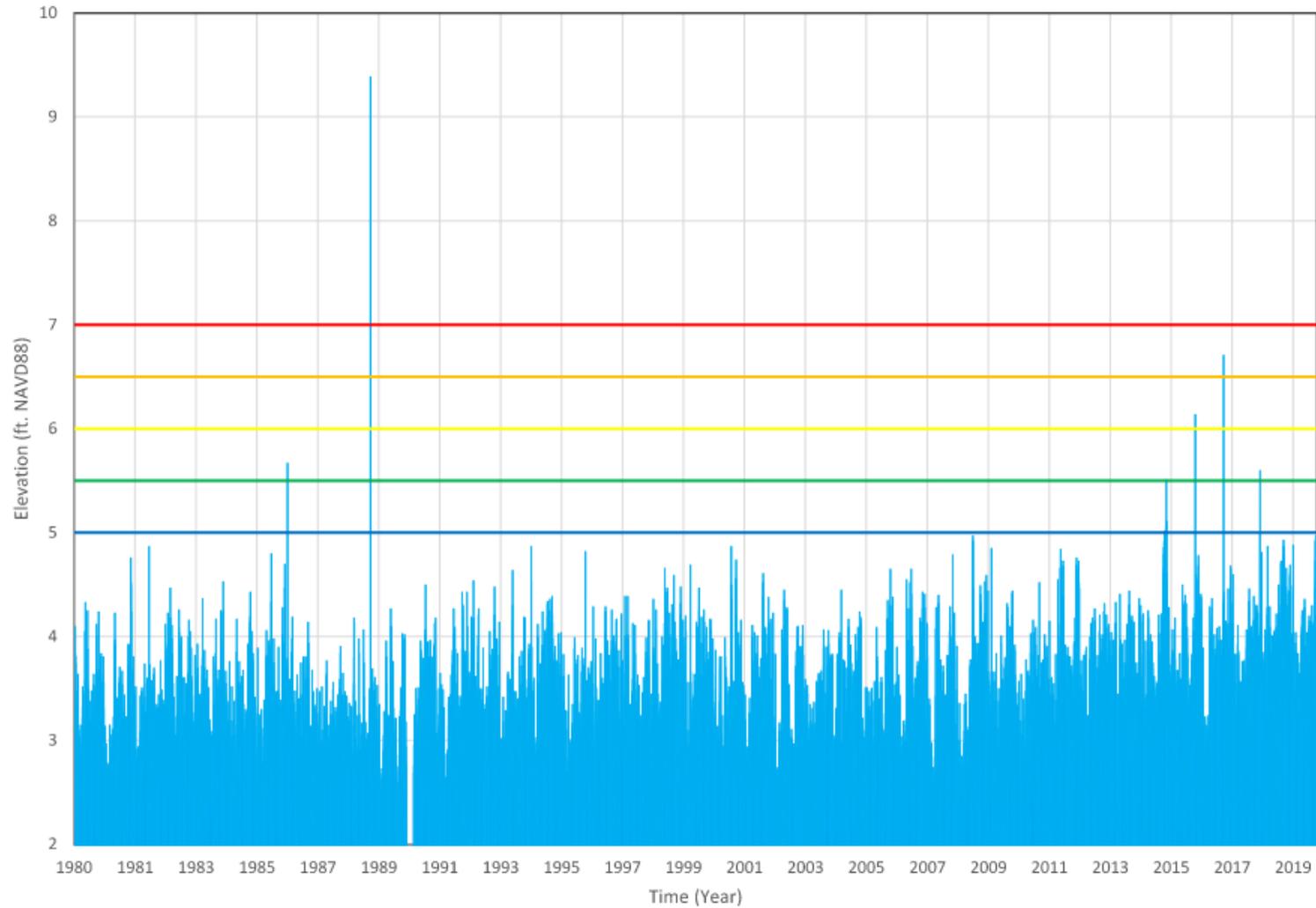
- **Permitting**
 - 5 Total Critical Area Permits
 - Mitigation (excluded from original design contract)
 - Oyster Restoration
 - SCORE Program Donation
- **Funding Assistance**
 - Applied for Two Grants to Date
 - Intend to Apply for Third Grant

■ Study

- Data Collection and Review
 - Charleston County LiDAR
 - Previous IOP/ IOP W&S Projects
 - Tides
- Engineering Analysis
 - Surface
 - Drainage System— Tidal Inundation/ Local Drainage
- Recommended Target— 6.0 ft. NGVD88 (9.14 ft. C&G)
- Preliminary Concept Design
- Field Walk/ Final Concept Design
- Cost Estimates

Waterway Blvd. Pathway Study - Tides

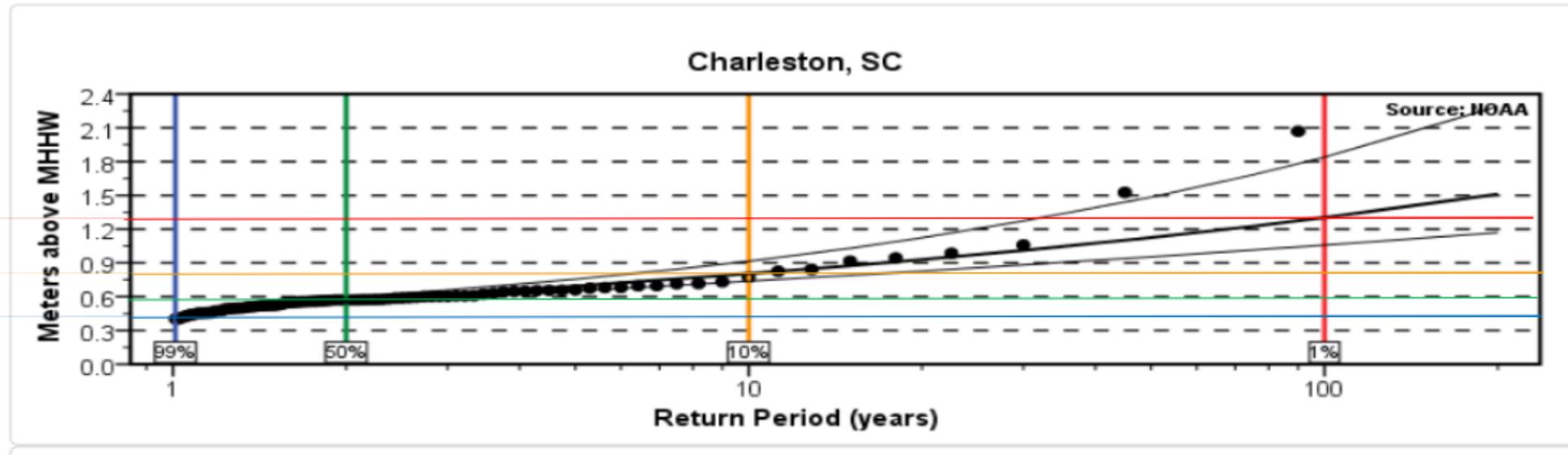
Charleston Harbor Tides



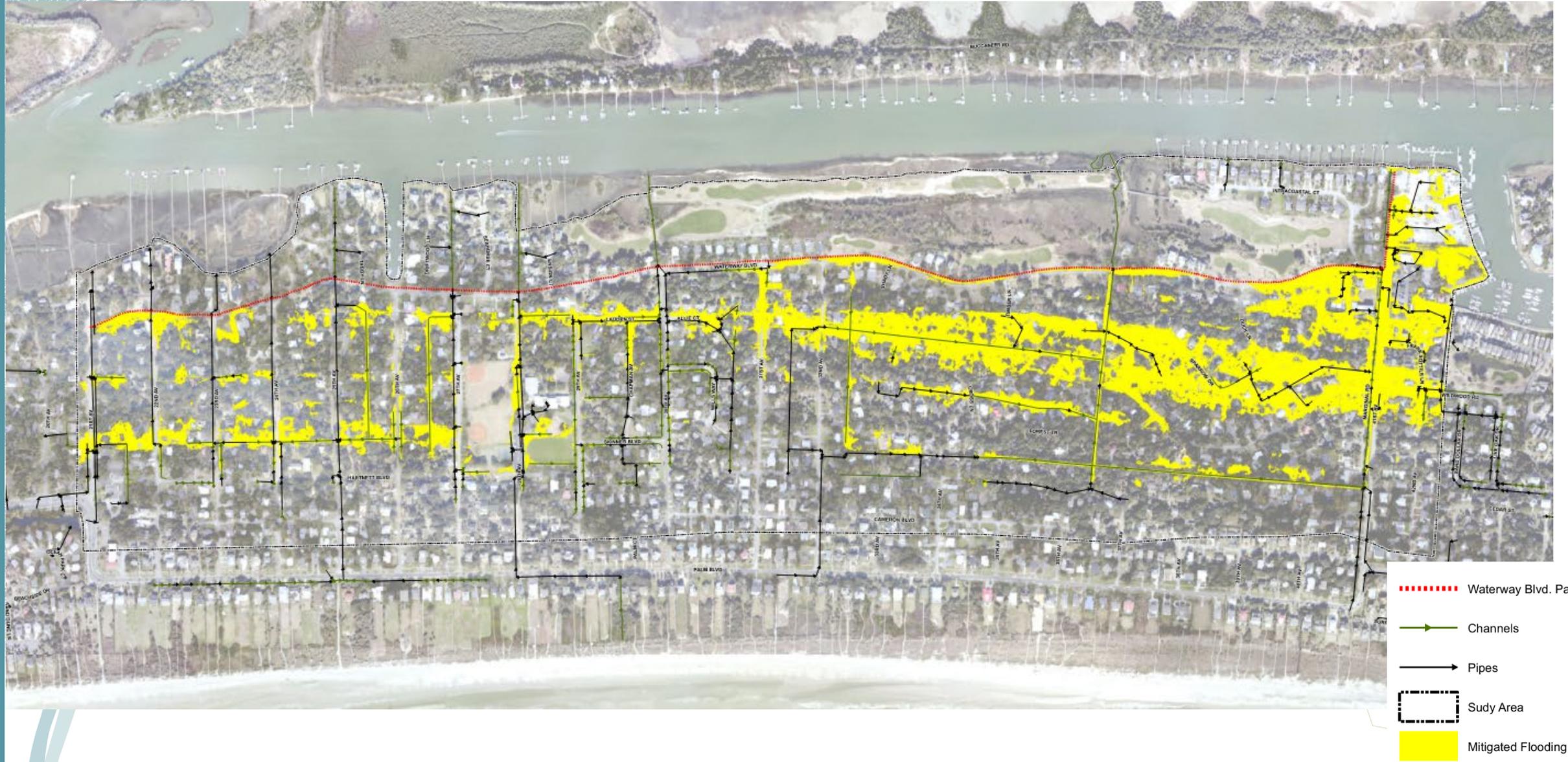
Waterway Blvd. Pathway Study – Proposed Target

City of Isle of Palms
Waterway Blvd. Path - Elevation Study
Charleston Harbor Tidal Return Frequencies

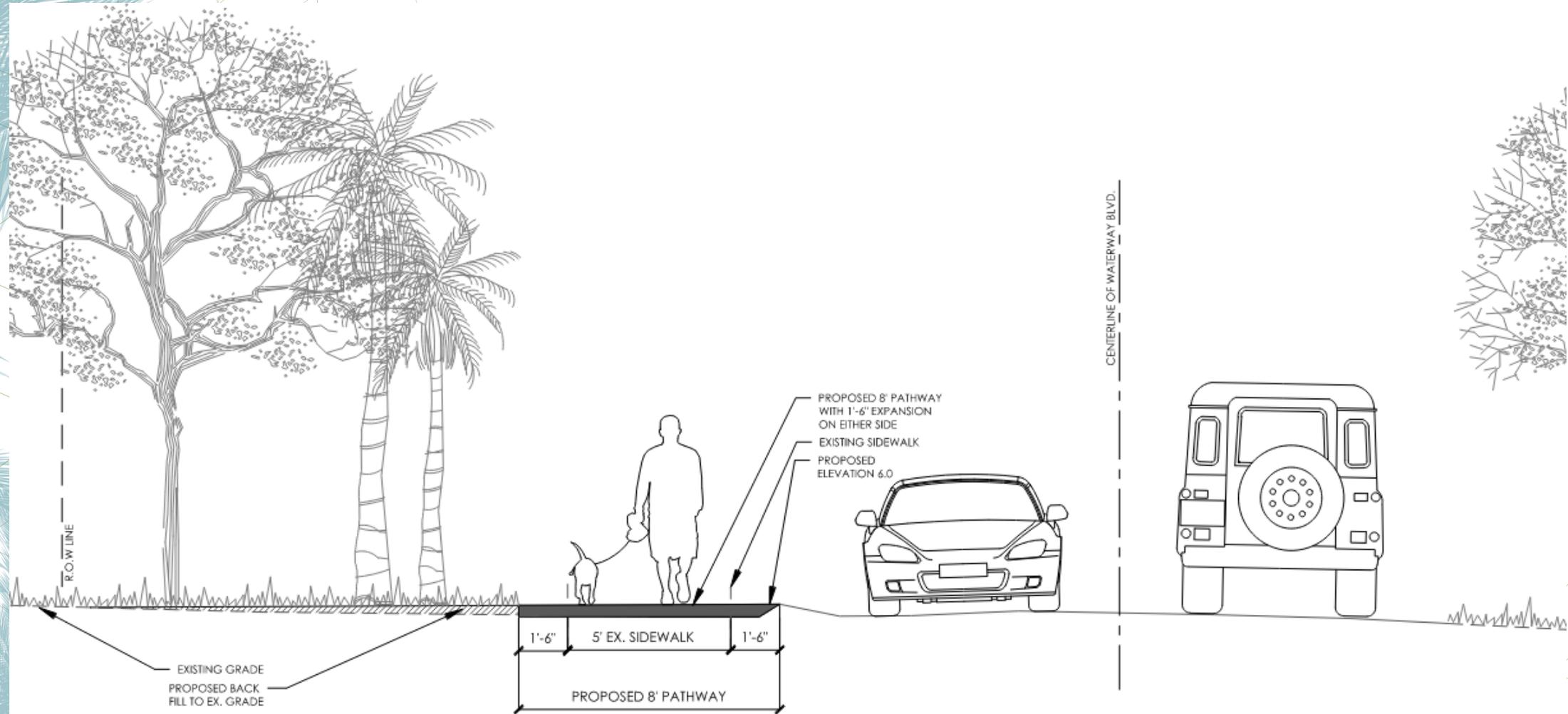
Meters MHHW	Feet MHHW	Feet NAVD88	Annual Prob. Of Exceed.	Return Period	
1.33	4.4	7.0	>1%	+100-yr	
1.18	3.9	6.5	1.7%	~59-yr	
1.03	3.4	6.0	3.7%	~27-yr	Proposed Target
0.88	2.9	5.5	6.7%	~15-yr	
0.72	2.4	5.0	20%	~5-yr	
0.44	1.44	4.1	99%	~1-yr	
0.59	1.94	4.6	50%	2-yr	
0.78	2.56	5.2	10%	10-yr	
1.29	4.23	6.9	1%	100-yr	



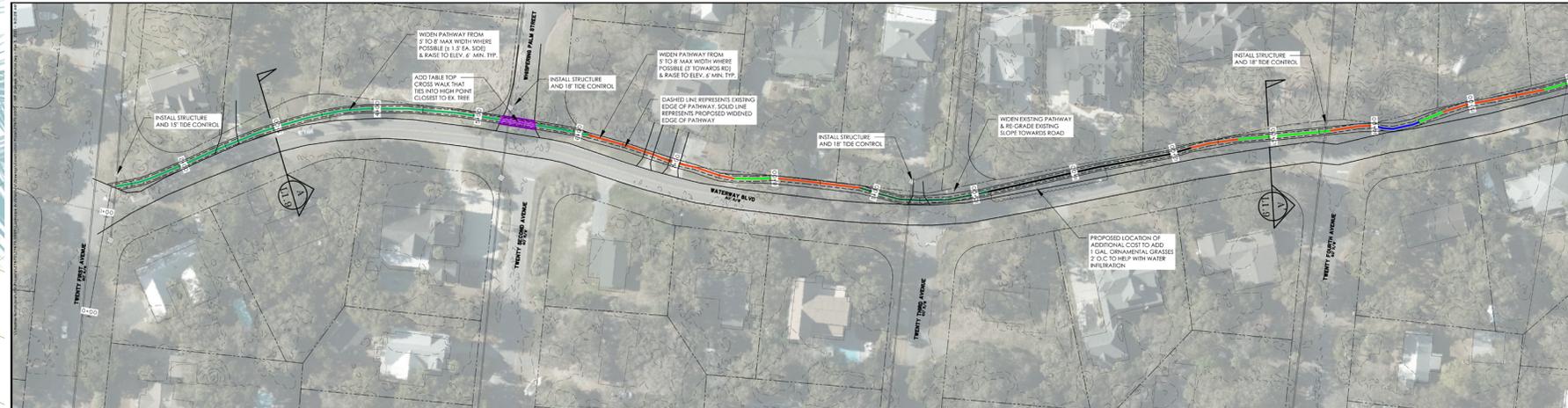
Waterway Blvd. Pathway Study – Target Mtigation (6.0 ft)



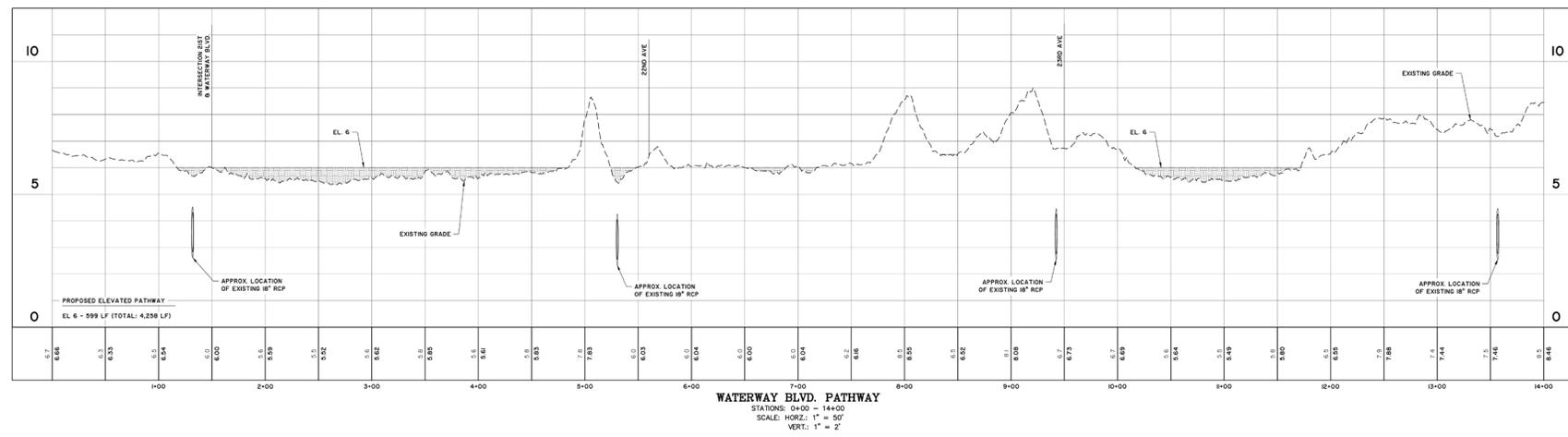
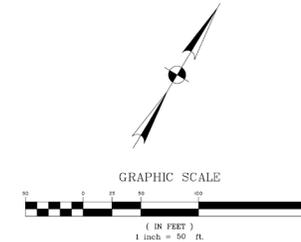
Waterway Blvd. Pathway Study – Typical Section



Waterway Blvd. Pathway Study – Typical Plan & Profile



- KEY:**
- LOCATION OF TABLE TOP CROSSING
 - (TYPICAL TREATMENT 'A') AREA WHERE PATHWAY IS TO BE WIDENED 1.5' ON BOTH SIDES AND RAISED TO ELEV. 6 FT (MIN)
 - (TYPICAL TREATMENT 'B') AREA WHERE PATHWAY IS TO BE WIDENED 3' TOWARDS ROAD
 - (TYPICAL TREATMENT 'C') AREA WHERE PATHWAY IS TO BE WIDENED 3' TOWARDS PROPERTY AND RAISED TO ELEV. 6 FT (MIN)
 - (TYPICAL TREATMENT 'D') AREA WHERE PATHWAY IS TO BE WIDENED 1.5' ON BOTH SIDES AND RAISED TO ELEV. 6 FT (MIN)
 - PROPOSED DRAINAGE IMPROVEMENTS
 - (TYPICAL TREATMENT 'A') AREA WHERE PATHWAY IS TO BE WIDENED 1.5' ON BOTH SIDES.



Pathway Elevation and Widening

ITEM	DESCRIPTION	QUANTITY		COST	
		UNITS	UNIT MEASURE	PER UNIT	TOTAL COST
7141113	18" RC pipe (Class III)	920	LF	\$ 75.00	\$ 69,000.00
	Grate Inlet (48" X48")	9	EA	\$ 4,500.00	\$ 40,500.00
	15" Tide Control Check Valve	5	EA	\$ 3,500.00	\$ 17,500.00
	18" Tide Control Check Valve	4	EA	\$ 3,500.00	\$ 14,000.00
7192020	Drop Inlet (24" x 36")	6	EA	\$ 4,500.00	\$ 27,000.00
	Typical Treatment A	2,250	LF	\$ 73.00	\$ 164,250.00
	Typical Treatment A (driveways)	200	LF	\$ 200.00	\$ 40,000.00
	Typical Treatment A'	3,720	LF	\$ 19.00	\$ 70,680.00
	Typical Treatment B	1,825	LF	\$ 19.00	\$ 34,675.00
	Typical Treatment C	385	LF	\$ 19.00	\$ 7,315.00
	Typical Treatment D	345	LF	\$ 19.00	\$ 6,555.00
	Table Top Crossing	35	LF	\$ 37.00	\$ 1,295.00
				SUBTOTAL	\$ 492,770.00
	Contingency at	25.0	%		\$ 123,192.75
	GRAND TOTAL OPINION OF CONSTRUCTION COST				\$615,963

Pathway Widening Only

ITEM	DESCRIPTION	QUANTITY		COST	
		UNITS	UNIT MEASURE	PER UNIT	TOTAL COST
	Marine Limestone Base Course (4" Uniform)	8,850	LF	\$ 5.00	\$ 44,250.00
	Surface Plane Asphalt Pavement (8' Wide)	8,850	LF	\$ 7.00	\$ 61,950.00
				SUBTOTAL	\$ 106,200.00
	Contingency at	25.0	%		\$ 26,550.25
	GRAND TOTAL OPINION OF CONSTRUCTION COST				\$132,750