

GROVE AND 13th ST. GREEN STREET FEASIBILITY  
ENGINEER'S PRELIMINARY ESTIMATE  
RICK ENGINEERING COMPANY

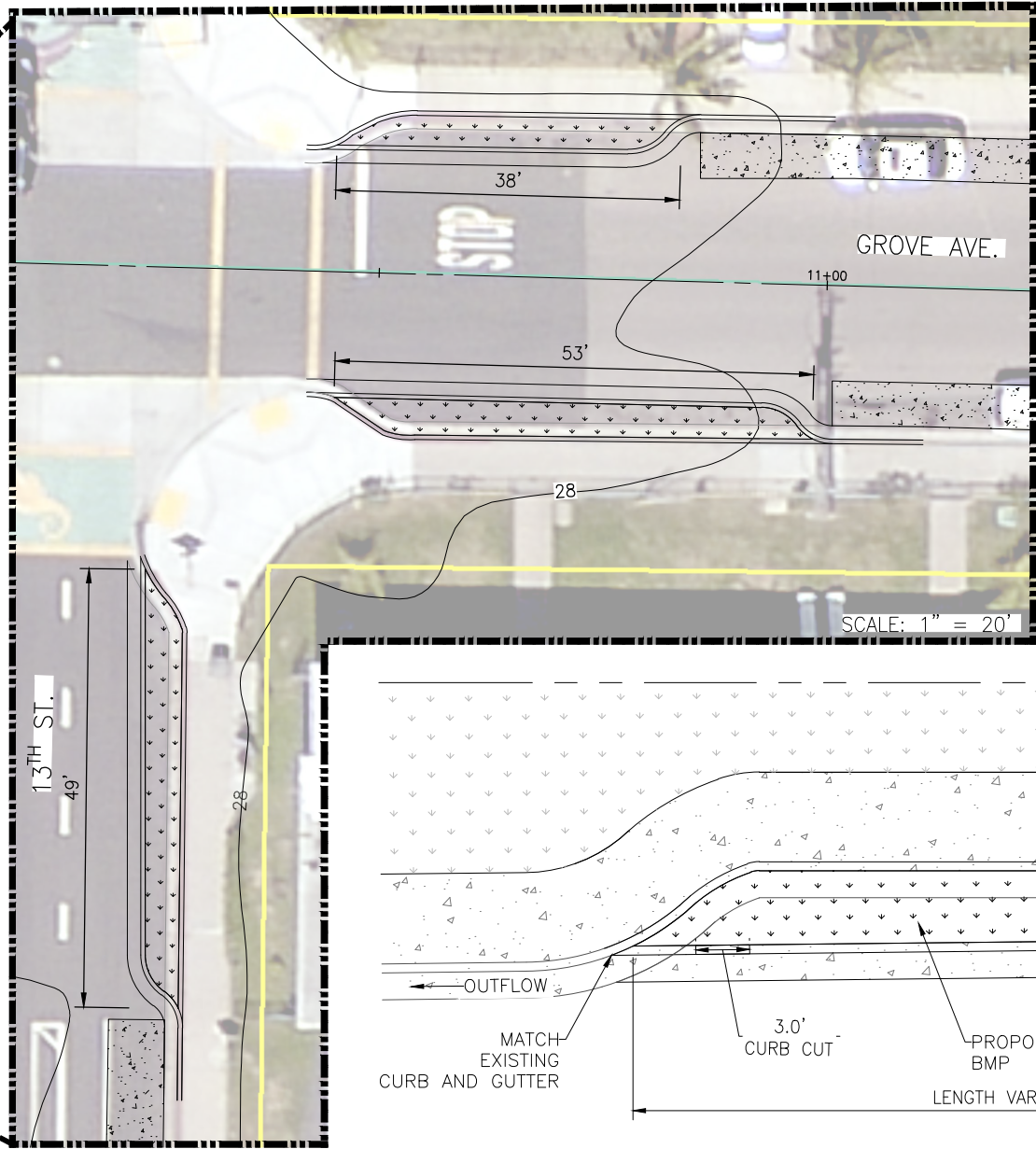
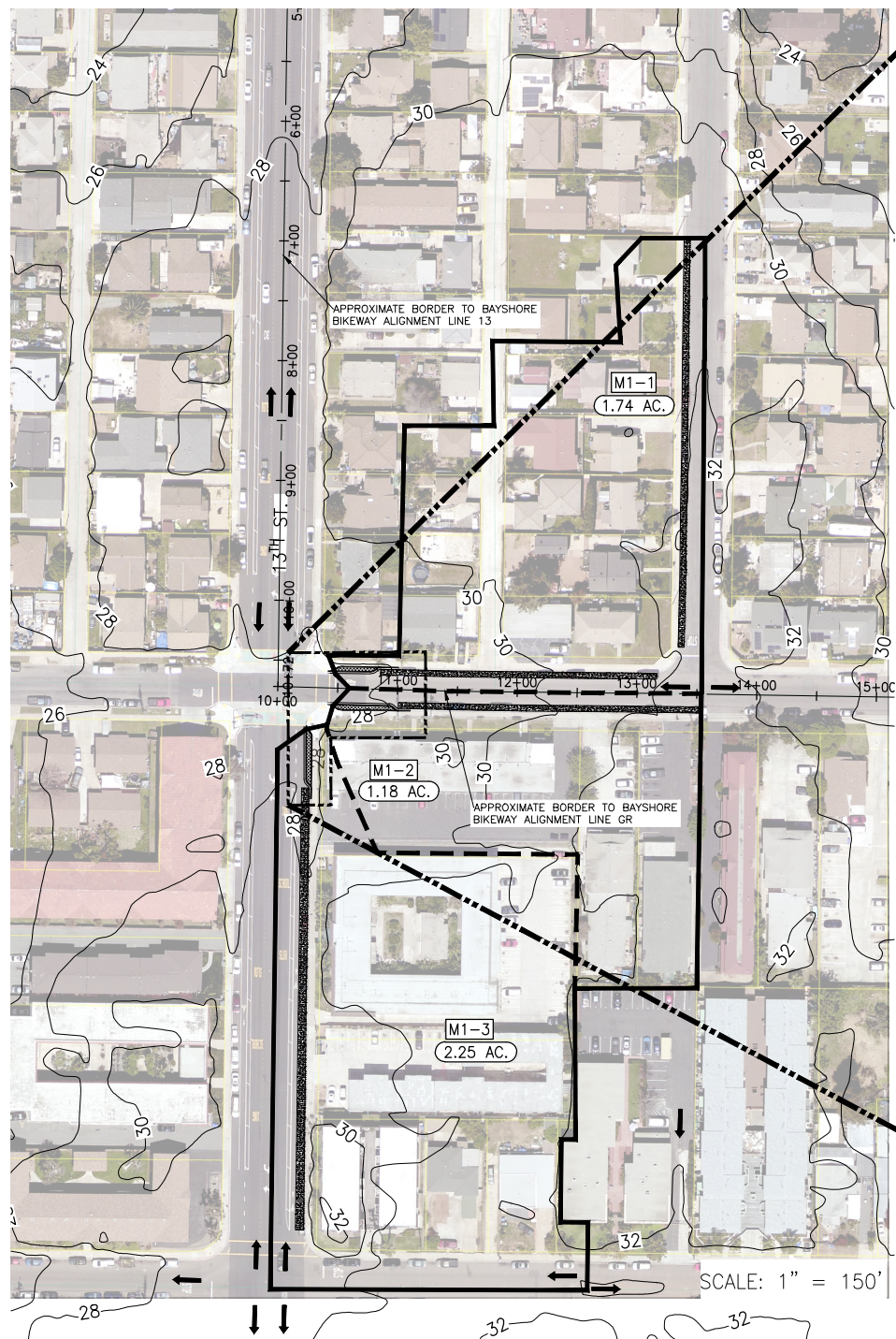
Item	Description	Unit	Quantity	Unit Price	Extension
<b>BASE BID</b>					
1	Mobilization	LS	1	\$100,000.00	\$100,000.00
2	AC Pavement Removal	SF	557	\$4.00	\$2,227.20
3	6" Curb and Gutter	LF	154	\$20.00	\$3,080.00
4	Earthwork and Export	CY	1,659	\$30.00	\$49,764.00
5	Biofiltration Aggregate Layer( 3" No. 33, 3" No. 8, 6" No. 57)	CY	17	\$40.00	\$687.41
6	Mulch	SF	464	\$0.50	\$232.00
7	Biofiltration Soil Mix	CY	26	\$50.00	\$1,288.89

**SUB TOTAL: \$160,000.00**

**CONTINGENCY 20%**

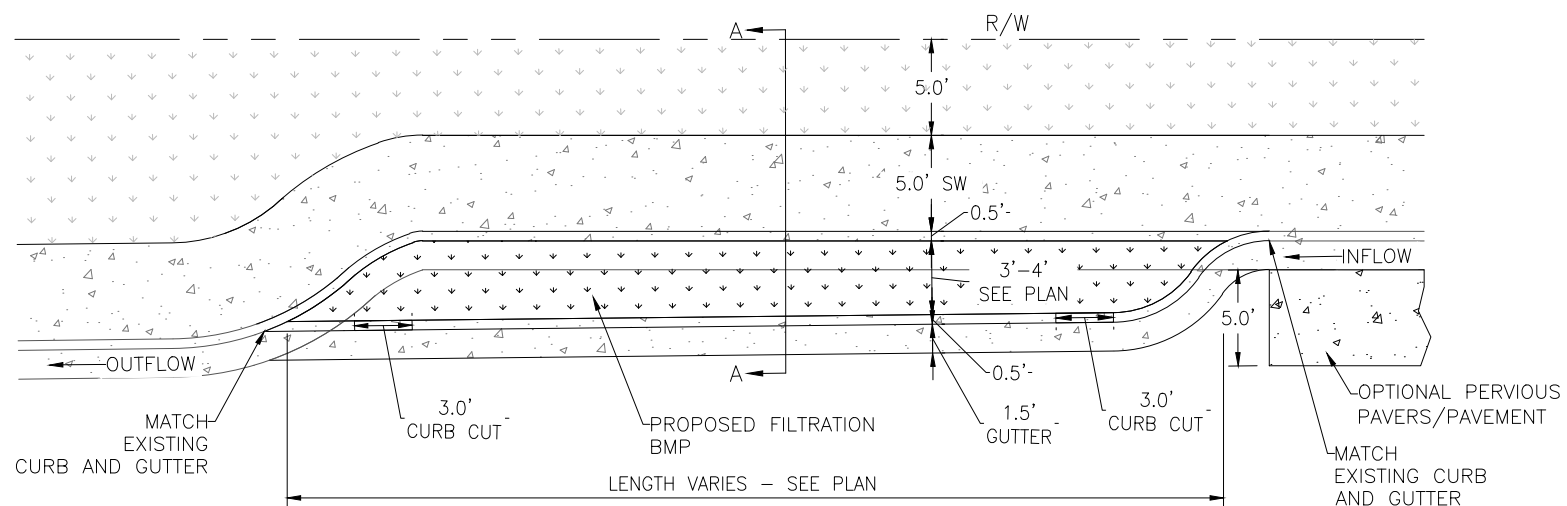
**TOTAL ENGINEER'S ESTIMATE: \$200,000.00**

C:\RICK\Projects\19000\19003\_LauderbachPark\WaterResources\ImperialBeach\19003\_IB\_DWA.01.dwg 2019-11-21 11:12AM - lcastillo

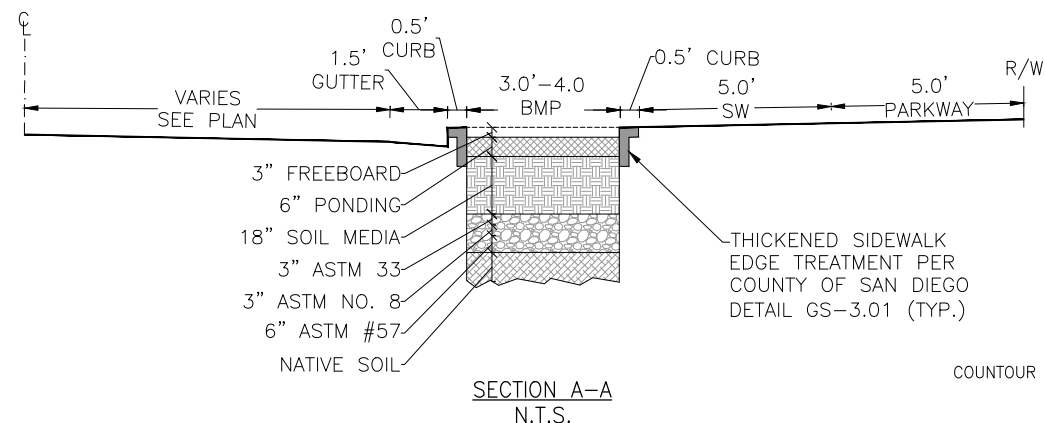


- LEGEND**
- MAJOR BASIN BOUNDARY
  - MINOR BASIN BOUNDARY
  - SURFACE FLOW PATH
  - BMP - REF. DETAIL A
  - X.X AC SUB BASIN AREA
  - XXX BASIN ID

- NOTES:**
- DIMENSIONS OF EXISTING IMPROVEMENTS ARE APPROXIMATE AND HAVE BEEN OBTAINED FROM AERIAL.
  - INITIAL STORMWATER CONCEPTS REFLECT INFILTRATION BMPS WITHOUT AN UNDERDRAIN. INFILTRATION TESTING WILL BE REQUIRED DURING THE DESIGN PHASE TO CONFIRM IN-SITU INFILTRATION RATES.
  - PERVIOUS PAVEMENT/PAVERS AT ALONG PARKING LANE MAY BE SUITABLE FOR ADDITIONAL WATER QUALITY BENEFIT.



**DETAIL A**  
BIORETENTION GREEN STREET CONCEPT  
N.T.S.



**SECTION A-A**  
N.T.S.

COUNTOUR SOURCE: SANGIS/SANDAG  
VERTICAL DATUM: NAVD88  
DATE: NOVEMBER 2014

Design Capture Volume Calculations					BMP Parameters							Provided Bioretention Volume
Basin ID	Area	C	85th Percentile 24-hr Storm Depth	DCV	BMP Footprint	Surface Ponding Depth	Media Thickness	Aggregate Depth	Media Available Pore Space	Aggregate Pore Space	Depth of Retention Storage	
	ac		in	cu ft	sf	in.	in.	in.	in/in	in/in	in.	cu ft
M1-1	1.74	0.78	0.55	2,714	114	6	18	12	0.2	0.4	14	137
M1-2	1.18	0.78	0.55	1,835	180	6	18	12	0.2	0.4	14	216
M1-3	2.25	0.78	0.55	3,499	170	6	18	12	0.2	0.4	14	204

## BORDER TO BAYSHORE BIKEWAY - IMPERIAL BEACH STORMWATER CONCEPTS

JN-19003

**RICK**  
ENGINEERING COMPANY

5620 FRIARS ROAD  
SAN DIEGO, CA 92110  
619.291.0707  
(FAX) 619.291.4165

DATE:	11/20/19
DRAWN BY:	LC
CHECKED BY:	MFR
SCALE:	-
SHEET	1 OF 8

PRELIMINARY - NOT FOR CONSTRUCTION

© 2019 Rick Engineering Company