

Murphys Sanitary District 10 Year Capital Improvement Projects



May 2016

Murphys Sanitary District
15 Ernest Street, Suite A
Murphys, CA 95247

Prepared by:
BLACKWATER
CONSULTING ENGINEERS, INC.

Murphys Sanitary District

10 Year Capital Improvement Program

MAY 2016

Prepared for:

MURPHYS SANITARY DISTRICT
15 Ernest Street, Suite A
Murphys, CA 95247
(209) 728-3094

Prepared by:

BLACK WATER CONSULTING ENGINEERS, INC.
605 Standiford Suite N
Modesto, CA 95350
(209) 322-1820



BLACKWATER
CONSULTING ENGINEERS, INC.

10 Year Capital Improvement Project List - Collection System Improvements

Project No.	Description	Construction Year	Estimated Cost, \$
1	Sewer Replacement, LP-MH 68-MH 60-MH 61-MH 62-MH 64-MH 78, Add new MHs between 60-61, 64-78, and 94-95	2017	457,965
2	Sewer Replacement, MH 175-179, and MH 199-200	2019	170,033
3	Sewer Replacement, MH 96-101	2021	509,119
4	Sewer Replacement, MH 9-11, Replace MH 204, Add a new MH between MH 203-204	2023	114,536
5	Sewer Replacement, MH 64-65, and 76A-77	2025	165,341
6	Sewer Replacement, MH 53-57-LP	2027	234,641
		TOTAL:	1,651,635
Identified Alternate or Future Projects			
7	Sewer Replacement, MH 43-45		171,844
8	Sewer Replacement, MH 19-20, and MH 40-41		129,229
		TOTAL:	301,073

10 Year Capital Improvement Project List - Wastewater Treatment Plant Improvements

Project No.	Description	Construction Year	Estimated Cost, \$
9	Spray Fields Project	2016	250,772
10	Influent Pump Station Improvements	2018	254,375
11	Wastewater Treatment Plant Upgrade	2019	1,011,120
12	Headworks Screening Facilities Improvement and Relocation	2019	433,125
		2016 SUBTOTAL:	250,772
		2018-2019 SUBTOTAL ^a :	1,698,620
		TOTAL:	1,949,392

^aThis subtotal represents the proposed improvements of the State Revolving Fund (SRF) WWTP Upgrades Project

Project Cost Estimates

Detailed cost estimates have been prepared for every project in the Capital Improvement Project (CIP). These are “pre-design” level estimates that will be refined once design is complete. Costs of between 7.5% and 10% are included for engineering design and administration (EDA). These costs may include work performed by a consultant and/or District staff and are shown for budgetary purposes. Since there is a limited amount of information available to craft the cost estimate, contingencies of between 10%-25% have also been added to the project cost based on potential for the project scope to change or for the unit costs to be greater than originally anticipated. Since this is a 10-year CIP, the cost for projects undertaken in years 2-10 will be impacted by inflation. The costs presented in this CIP are based on Engineering News Record (ENR) 20-Cities Construction Cost Index (CCI): 10,242.09 (3/14/2016).

Sewer Replacement, LP-MH 68-MH 60-MH 61-MH 62-MH 64-MH 78, Add new MHs between MH 60-61, MH 64-78, and MH 94-95						Project 1
Project Description:	This project consists of the replacement and installation of approximately 2,024 linear feet of 8" diameter sewer pipe line and 9 manholes, starting at the light pole located approximately 430 feet east of the intersection of State Highway 4 and Pennsylvania Gulch Road and ending at manhole 78. Additional manholes will be placed directly in between manholes 60 and 61, 64 and 78, and 94 and 95 (see SHEETS 2 & 3).					
Expenditures	Budget	16-17	17-18	18-19	19-20	Total Budgeted
CON-Construction	\$407,080	\$0	\$407,080	\$0	\$0	\$407,080
CTGY-CIP Contingency (5%)	\$20,354	\$0	\$20,354	\$0	\$0	\$20,354
EDA-Eng/Design/Admin (7.5%)	\$30,531	\$30,531	\$0	\$0	\$0	\$30,531
Expenditure Totals:	\$457,965	\$30,531	\$427,434	\$0	\$0	\$457,965
Method of Funding:						
Sewer Operations Fund	\$457,965					

Sewer Replacement, MH 175-179, and MH 199-200						Project 2
Project Description:	This project consists of the replacement and installation of approximately 642 linear feet of 8" diameter sewer pipe line and 6 manholes (see SHEET 4).					
Expenditures	Budget	17-18	18-19	19-20	20-21	Total Budgeted
CON-Construction	\$151,140	\$0	\$0	\$151,140	\$0	\$151,140
CTGY-CIP Contingency (5%)	\$7,557	\$0	\$0	\$7,557	\$0	\$7,557
EDA-Eng/Design/Admin (7.5%)	\$11,336	\$0	\$11,336	\$0	\$0	\$11,336
Expenditure Totals:	\$170,033	\$0	\$11,336	\$158,697	\$0	\$170,033
Method of Funding:						
Sewer Operations Fund	\$170,033					

Sewer Replacement, MH 96-101						Project 3
Project Description:	This project consists of the replacement and installation of approximately 2,415 linear feet of 8" diameter sewer pipe line and 6 manholes (see SHEET 2).					
Expenditures	Budget	19-20	20-21	21-22	22-23	Total Budgeted
CON-Construction	\$452,550	\$0	\$0	\$452,550	\$0	\$452,550
CTGY-CIP Contingency (5%)	\$22,628	\$0	\$0	\$22,628	\$0	\$22,628
EDA-Eng/Design/Admin (7.5%)	\$33,941	\$0	\$33,941	\$0	\$0	\$33,941
Expenditure Totals:	\$509,119	\$0	\$33,941	\$475,178	\$0	\$509,119
Method of Funding:						
Sewer Operations Fund	\$509,119					

Sewer Replacement, MH 9-11, Replace MH 204, Add new MH between MH 203-204						Project 4
Project Description:	This project consists of the replacement and installation of approximately 393 linear feet of 8" diameter sewer pipe line and 5 manholes. Manhole 204 will be replaced and a new manhole will be placed directly in between manholes 203 and 204 (see SHEET 4).					
Expenditures	Budget	20-21	21-22	22-23	23-24	Total Budgeted
CON-Construction	\$101,810	\$0	\$0	\$0	\$101,810	\$101,810
CTGY-CIP Contingency (5%)	\$5,091	\$0	\$0	\$0	\$5,091	\$5,091
EDA-Eng/Design/Admin (7.5%)	\$7,636	\$0	\$0	\$7,636	\$0	\$7,636
Expenditure Totals:	\$114,536	\$0	\$0	\$7,636	\$106,901	\$114,536
Method of Funding:						
Sewer Operations Fund	\$114,536					

Sewer Replacement, MH 64-65 and MH 76A-77						Project 5
Project Description:	This project consists of the replacement and installation of approximately 741 linear feet of 8" diameter sewer pipe line and only 3 manholes due to previous replacement of manhole 64 (see SHEET 3).					
Expenditures	Budget	22-23	23-24	24-25	25-26	Total Budgeted
CON-Construction	\$146,970	\$0	\$0	\$0	\$146,970	\$146,970
CTGY-CIP Contingency (5%)	\$7,349	\$0	\$0	\$0	\$7,349	\$7,349
EDA-Eng/Design/Admin (7.5%)	\$11,023	\$0	\$0	\$11,023	\$0	\$11,023
Expenditure Totals:	\$165,341	\$0	\$0	\$11,023	\$154,319	\$165,341
Method of Funding:						
Sewer Operations Fund	\$165,341					

Sewer Replacement, MH 53-57-LP						Project 6
Project Description:	This project consists of the replacement and installation of approximately 1021 linear feet of 8" diameter sewer pipe line and 5 manholes, beginning at the light pole located approximately 90 feet south west of manhole 57 (see SHEET 3).					
Expenditures	Budget	24-25	25-26	26-27	27-28	Total Budgeted
CON-Construction	\$208,570	\$0	\$0	\$0	\$208,570	\$208,570
CTGY-CIP Contingency (5%)	\$10,429	\$0	\$0	\$0	\$10,429	\$10,429
EDA-Eng/Design/Admin (7.5%)	\$15,643	\$0	\$0	\$15,643	\$0	\$15,643
Expenditure Totals:	\$234,641	\$0	\$0	\$15,643	\$218,999	\$234,641
Method of Funding:						
Sewer Operations Fund	\$234,641					

Sewer Replacement, MH 43-45						Project 7
Project Description:	This project consists of the replacement and installation of approximately 775 linear feet of 8" diameter sewer pipe line and 3 manholes (see SHEET 3).					
Expenditures	Budget	26-27	27-28	28-29	29-30	Total Budgeted
CON-Construction	\$152,750	\$0	\$0	\$0	\$152,750	\$152,750
CTGY-CIP Contingency (5%)	\$7,638	\$0	\$0	\$0	\$7,638	\$7,638
EDA-Eng/Design/Admin (7.5%)	\$11,456	\$0	\$0	\$11,456	\$0	\$11,456
Expenditure Totals:	\$171,844	\$0	\$0	\$11,456	\$160,388	\$171,844
Method of Funding:						
Sewer Operations Fund	\$171,844					

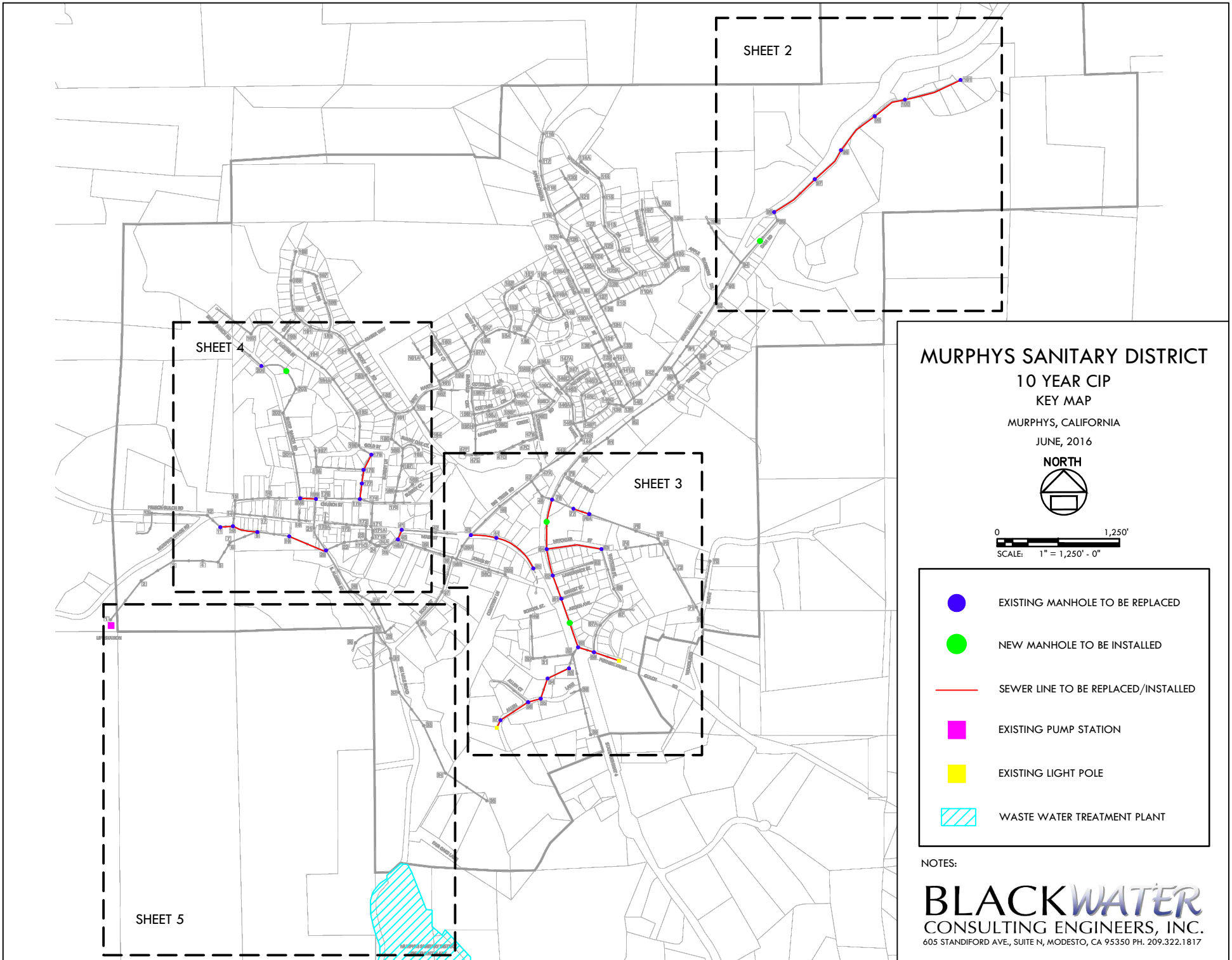
Sewer Replacement, MH 19-20, and MH 40-41						Project 8
Project Description:	This project consists of the replacement and installation of approximately 511 linear feet of 8" diameter sewer pipe line and 4 manholes (see SHEET 4).					
Expenditures	Budget	28-29	29-30	30-31	31-32	Total Budgeted
CON-Construction	\$114,870	\$0	\$0	\$0	\$114,870	\$114,870
CTGY-CIP Contingency (5%)	\$5,744	\$0	\$0	\$0	\$5,744	\$5,744
EDA-Eng/Design/Admin (7.5%)	\$8,615	\$0	\$0	\$8,615	\$0	\$8,615
Expenditure Totals:	\$129,229	\$0	\$0	\$8,615	\$120,614	\$129,229
Method of Funding:						
Sewer Operations Fund	\$129,229					

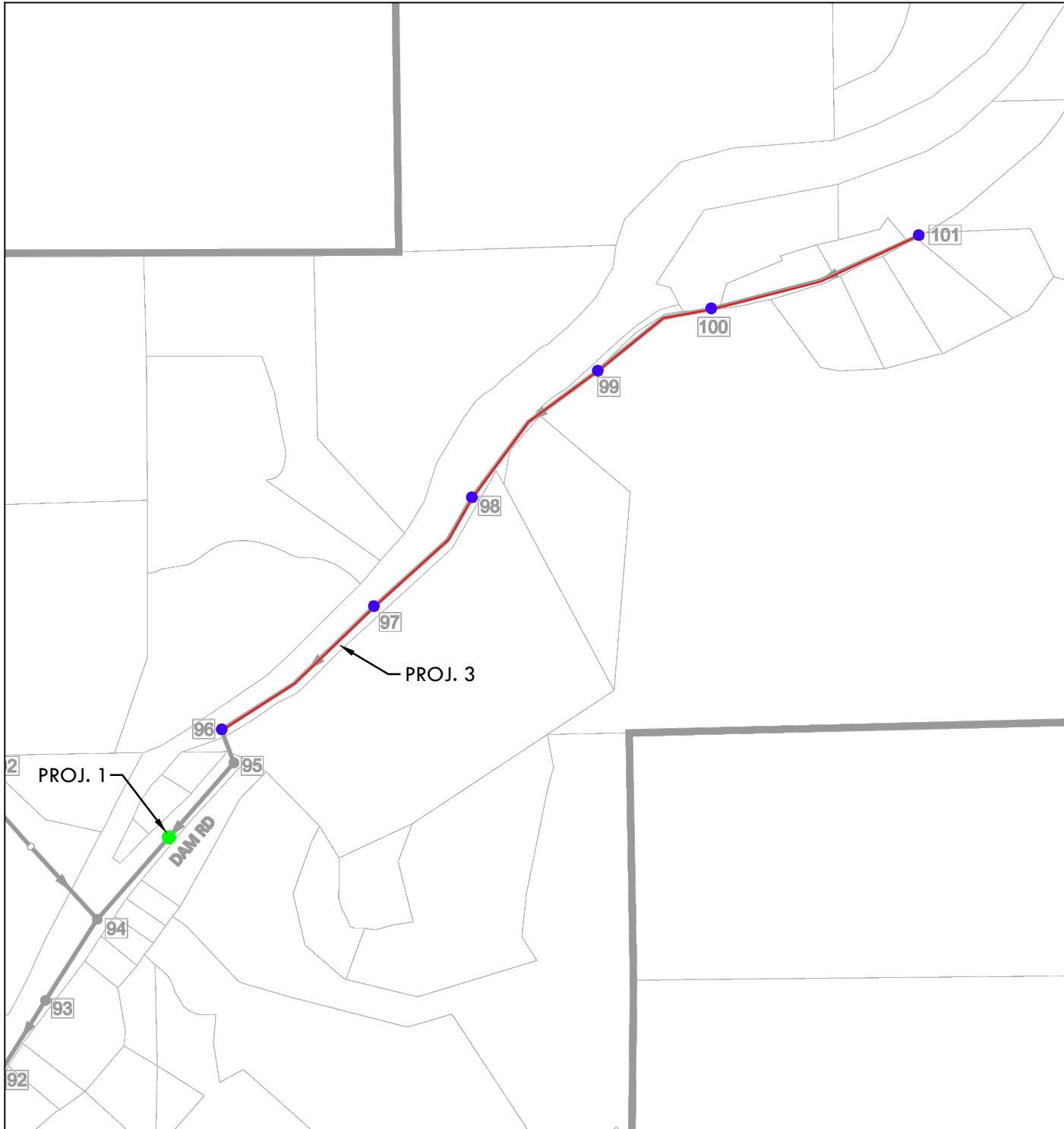
Spray Fields Project						Project 9
Project Description:	This project consists of the installation of a new recycled-water irrigation pump station, installation of approximately 6,400 linear feet of 2" - 4" diameter irrigation pipe line, approximately 60 irrigation sprinklers, and structures to collect and discharge irrigation tailwater (see SHEET 5). Project design is complete and construction is expected to begin late-Spring 2016.					
Expenditures	Budget	13-14	14-15	15-16	16-17	Total Budgeted up to 2017
CON-Construction	\$238,830	n/a	n/a	\$119,415	\$119,415	\$238,830
CTGY-CIP Contingency (5%)	\$11,942	n/a	n/a	\$0	\$11,942	\$11,942
EDA-Eng/Design/Admin (7.5%)	n/a	n/a	n/a	n/a	n/a	\$0
Expenditure Totals:	\$250,772	n/a	n/a	\$119,415	\$131,357	\$250,772
Method of Funding:						
Sewer Operations Fund	\$250,772					

Influent Pump Station Improvements						Project 10
Project Description:	The existing influent pump station consists of two constant speed centrifugal pumps that are nearing the end of their useful life and are difficult to access. This project includes the recommended improvements to the existing pump station including paved access to the pump station building, installation of a buried valve box, and the replacement of the existing influent pumps with new solids handling pumps (see SHEET 5).					
Expenditures	Budget	18-19	19-20	20-21	21-22	Total Budgeted up to 2023
CON-Construction	\$185,000	\$112,000	\$0	\$0	\$73,000	\$185,000
CTGY-CIP Contingency (25%)	\$46,250	\$28,000	n/a	\$0	\$18,250	\$46,250
EDA-Eng/Design/Admin (10%)	\$23,125	\$11,563	\$11,563	\$0	\$0	\$23,125
Expenditure Totals:	\$254,375	\$151,563	\$11,563	\$0	\$91,250	\$254,375
Method of Funding:			Note: Total budgeted amount based on preliminary engineering estimates. Final amount may change, depending on final scope and design.			
Sewer Operations Fund	\$127,188					
Grant (Potential)	\$127,188					

Wastewater Treatment Plant Upgrade						Project 11
Project Description:	This project includes the recommended improvements to the existing wastewater treatment plant to accommodate future growth and reliable operation and compliance with California Regional Water Quality Control Board regulations. Improvements include a new aeration system, sludge removal, and expansion to Pond 4 (see SHEET 5).					
Expenditures	Budget	19-20	20-21	21-22	22-23	Total Budgeted up to 2023
CON-Construction	\$735,360	\$0	\$0	\$367,680	\$367,680	\$735,360
CTGY-CIP Contingency (25%)	\$183,840	n/a	n/a	\$0	\$183,840	\$183,840
EDA-Eng/Design/Admin (10%)	\$91,920	\$45,960	\$45,960	\$0	\$0	\$91,920
Expenditure Totals:	\$1,011,120	\$45,960	\$45,960	\$367,680	\$551,520	\$1,011,120
Method of Funding:			Note: Total budgeted amount based on preliminary engineering estimates. Final amount may change, depending on final scope and design.			
Sewer Operations Fund	\$505,560					
Grant (Potential)	\$505,560					

Headworks Screening Facilities Improvement and Relocation						Project 12
Project Description:		The existing headworks screening facilities are in extremely poor and ineffective condition and are located a distance away from the main treatment facilities. This project will relocate the improved screening facilities to within the existing WWTP facilities, reducing the risk for any accidental discharge of untreated wastewater into the creek (see SHEET 5).				
Expenditures	Budget	19-20	20-21	21-22	22-23	Total Budgeted up to 2023
CON-Construction	\$315,000	\$0	\$0	\$157,500	\$157,500	\$315,000
CTGY-CIP Contingency (25%)	\$78,750	n/a	n/a	\$0	\$78,750	\$78,750
EDA-Eng/Design/Admin (10%)	\$39,375	\$19,688	\$19,688	\$0	\$0	\$39,375
Expenditure Totals:	\$433,125	\$19,688	\$19,688	\$157,500	\$236,250	\$433,125
Method of Funding:		Note: Total budgeted amount based on preliminary engineering estimates. Final amount may change, depending on final scope and design.				
Sewer Operations Fund	\$216,563					
Grant (Potential)	\$216,563					











MURPHYS SANITARY DISTRICT

10 YEAR CIP SHEET 2

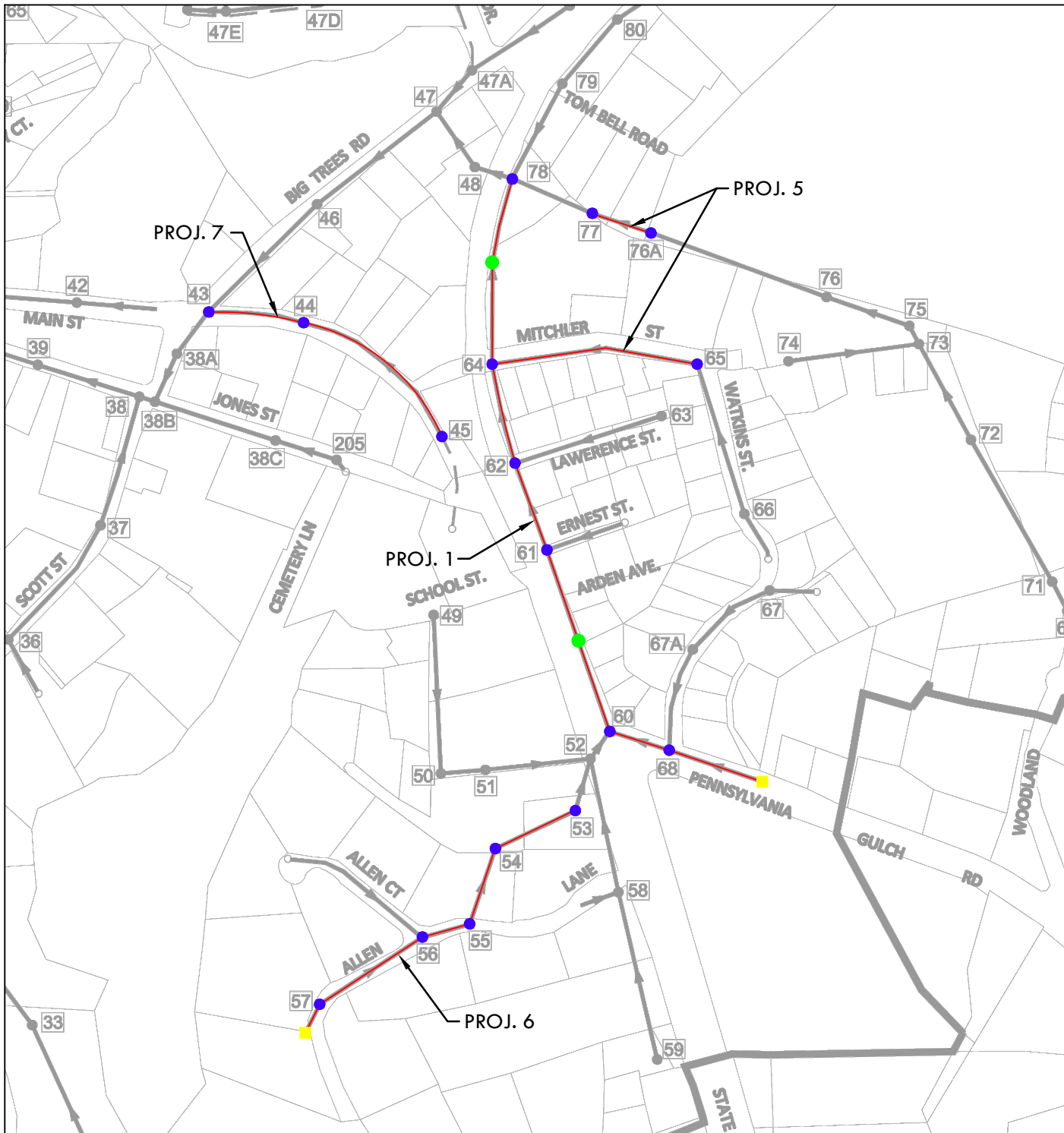
MURPHYS, CALIFORNIA
JUNE, 2016



0 200' 400'
SCALE: 1" = 400' - 0"

-  EXISTING MANHOLE TO BE REPLACED
-  NEW MANHOLE TO BE INSTALLED
-  EXISTING SEWER LINE TO BE REPLACED
-  EXISTING PUMP STATION
-  EXISTING LIGHT POLE
-  WASTE WATER TREATMENT PLANT

NOTES:



MURPHYS SANITARY DISTRICT







10 YEAR CIP

SHEET 3

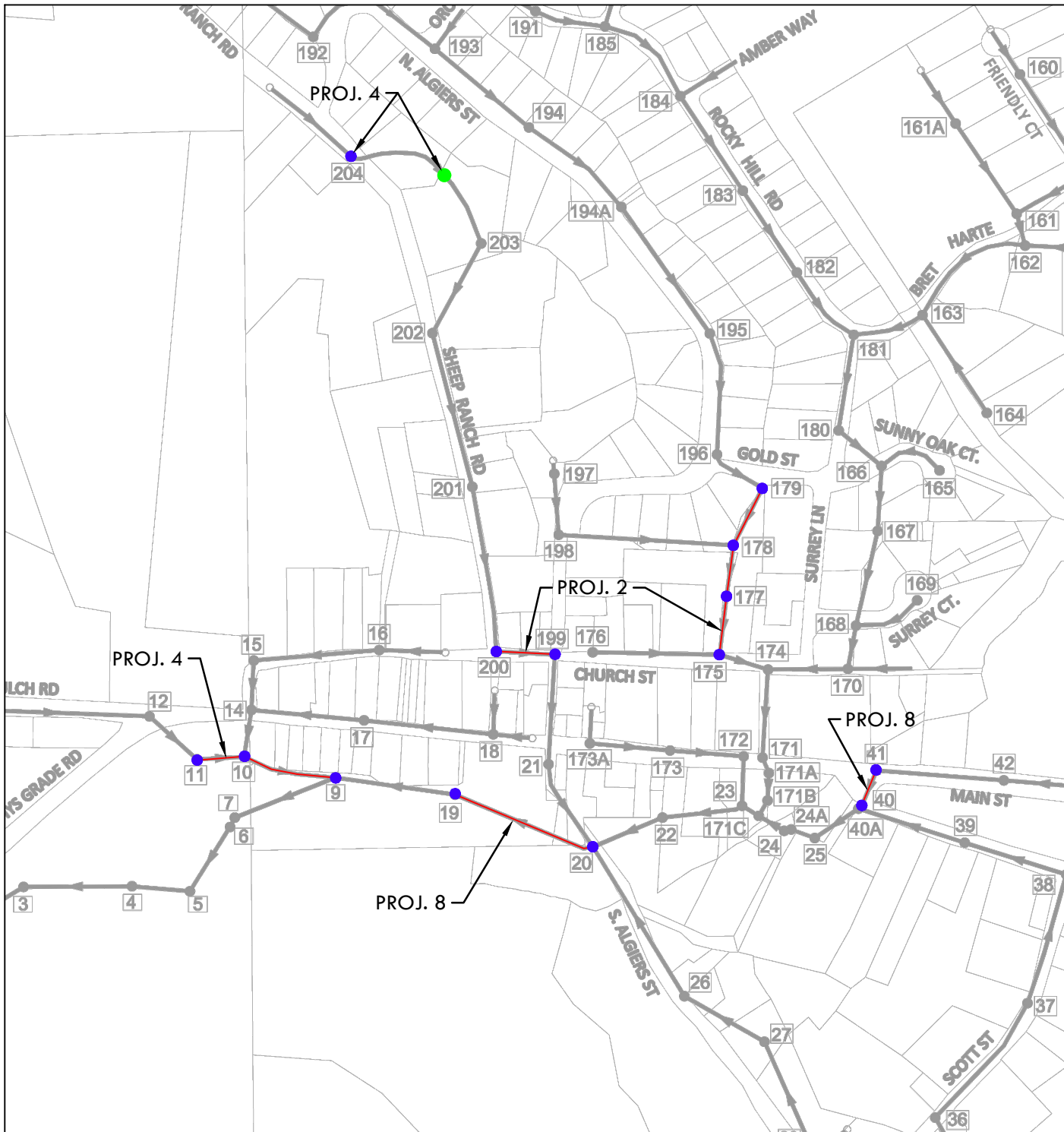
MURPHYS, CALIFORNIA
JUNE, 2016



0 200' 400'
SCALE: 1" = 400' - 0"

	EXISTING MANHOLE TO BE REPLACED
	NEW MANHOLE TO BE INSTALLED
	EXISTING SEWER LINE TO BE REPLACED
	EXISTING PUMP STATION
	EXISTING LIGHT POLE
	WASTE WATER TREATMENT PLANT

NOTES:



MURPHYS SANITARY DISTRICT







10 YEAR CIP

SHEET 4

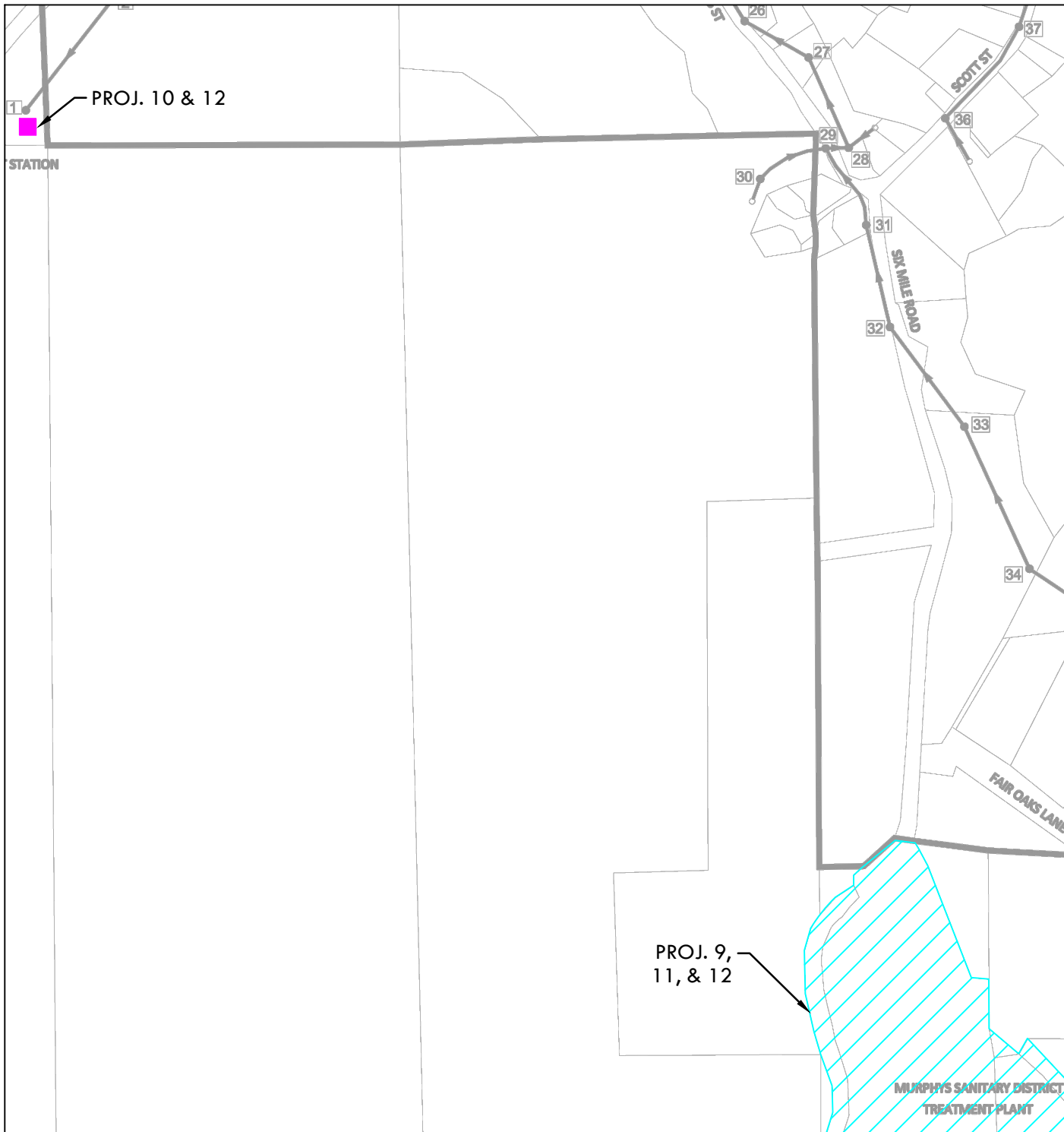
MURPHYS, CALIFORNIA
JUNE, 2016



0 200' 400'
SCALE: 1" = 400' - 0"

	EXISTING MANHOLE TO BE REPLACED
	NEW MANHOLE TO BE INSTALLED
	EXISTING SEWER LINE TO BE REPLACED
	EXISTING PUMP STATION
	EXISTING LIGHT POLE
	WASTE WATER TREATMENT PLANT

NOTES:



MURPHYS SANITARY DISTRICT

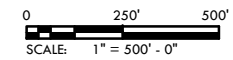
10 YEAR CIP

SHEET 5

MURPHYS, CALIFORNIA

JUNE, 2016

NORTH



	EXISTING MANHOLE TO BE REPLACED
	NEW MANHOLE TO BE INSTALLED
	SEWER LINE TO BE INSTALLED
	EXISTING PUMP STATION
	EXISTING LIGHT POLE
	WASTE WATER TREATMENT PLANT

NOTES: