

Proposal for  
Moffett Gateway and San Antonio Manhole Survey  
Updated June 15, 2015

## Scope of Services

### Phase 1: San Antonio Manhole Survey

#### Task 1.1: San Antonio Street Sanitary Sewer Manhole Survey

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The City of Mountain View has requested that NV5 locate existing storm drain and sanitary sewer manholes within specific areas of the City, as shown on the maps provided. NV5 is proposing to locate these manholes horizontally utilizing GPS surveying methods. Rim elevations will be measured with conventional leveling (auto level or similar), with elevations being run from the nearest City benchmark. Dips of each manhole will be taken using an extendable level rod. All coordinates and elevations (XYZs) will be tied to the City of Mountain View survey control network. In reviewing the data and maps supplied by the City, a total of 22 sanitary sewer manholes within this project area that need locating (see attached maps in Appendix A) have been identified.

- Deliverable: NV5 will provide sketches of each manhole, showing dip information (direction/depth), as well as a point ASCII file containing XYZ coordinates of each manhole surveyed.

### Phase 2: Moffett Gateway Manhole Survey

#### Task 2.1: Moffett Gateway Manhole Survey

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Twelve storm drain manholes require locating in and around the Moffett Gateway area, as shown in detail on the attached map in Appendix A. As part of the current NV5 engagement, six (6) of these manholes are being located, which leaves the need to locate the remaining six. These six manholes will be located using the methods described in Task 1.1.

- Deliverable: NV5 will provide sketches of each manhole, showing dip information (direction/depth), as well as a point ASCII file containing XYZ coordinates of each manhole surveyed.

### Phase 3: Additional Manhole Survey

#### Task 3.1: Additional Manhole Survey

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A future survey of ten additional manholes may be requested by the City. These ten manholes will be located using the methods described in Task 1.1. It is assumed that these manholes will be located in a

concentrated area rather than spread throughout the City. Additional effort may be required depending on the locations of the existing manholes identified for survey.

- Deliverable: NV5 will provide sketches of each manhole, showing dip information (direction/depth), as well as a point ASCII file containing XYZ coordinates of each manhole surveyed.

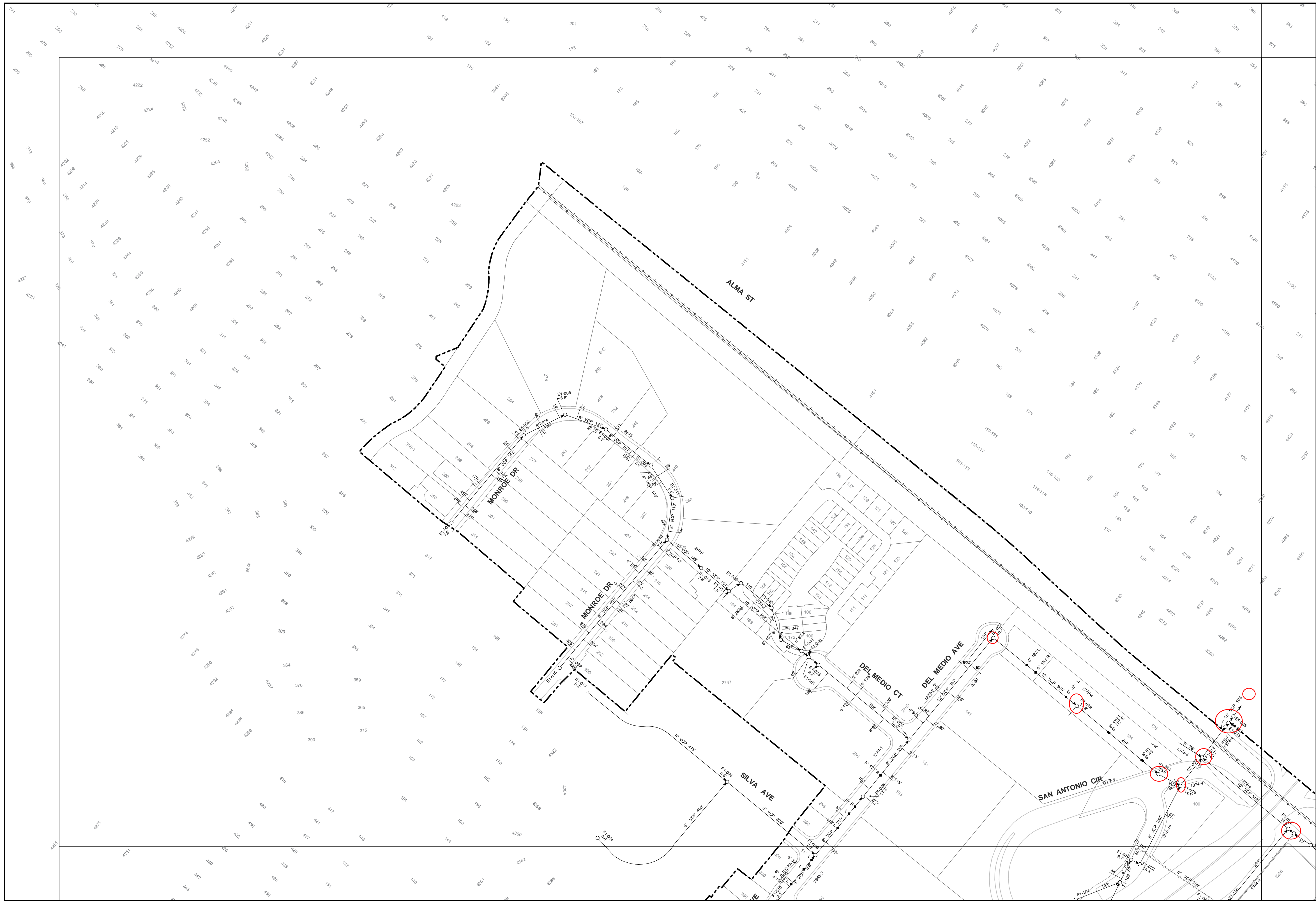
## **Assumptions**

NV5 assumes that the City of Mountain View will provide traffic control, should it be required for the dipping of any of the above identified manholes. Traffic control will be coordinated between NV5 and the City prior to survey crews arriving on site.

# **Appendix A**

## **Manhole Survey Maps**

		D2
	E1	E2
F1		F2

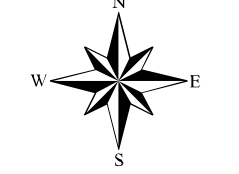


**Road Edge**  
Parcel, Address  
Railroad, Single Track  
Railroad, Double Track  
Trail, Paved  
Trail, Unpaved  
City Limit  
Creek  
Water  
Open Space

**Cast Iron Pipe**  
Concrete  
Ductile Iron Pipe  
Polyvinyl Chloride  
Reinforced Concrete Pipe  
Steel  
Terra Cotta Pipe  
Vitreous Clay Pipe  
Welded Steel Pipe

**Main, Direction of Flow,**  
Diameter, Material, Length  
Abandoned Line  
Abandoned Feature  
Construction Plan File No.  
Lateral, Diameter, Material,  
Material, Distance, Downstream  
Manhole, Direction to  
Property Line, Direction to  
Upstream, Downstream

**Manhole, ID, Depth**  
Cleanout, ID, Depth  
Plug  
Pump Station  
Unknown  
Wye, Diameter, Distance  
from Downstream Manhole,  
Direction Facing Upstream



Original Scale  
1" = 150' (1:1800)

Public Works Department  
**CITY OF MOUNTAIN VIEW**  
231 North Whisman Road Mountain View, CA 94043 Santa Clara County  
**SANITARY SEWER SYSTEM**  
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does not warrant the accuracy of the information contained herein.







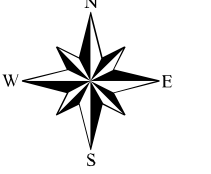
**Public Works Department**  
**CITY OF MOUNTAIN VIEW**  
 231 North Whisman Road Mountain View, CA 94043 Santa Clara County  
**SANITARY SEWER SYSTEM**  
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**Manhole, ID, Depth**  
 Cleanout, ID, Depth  
 Plug  
 Pump Station  
 Unknown  
 Wye, Diameter, Distance from Downstream Manhole, Direction Facing Upstream

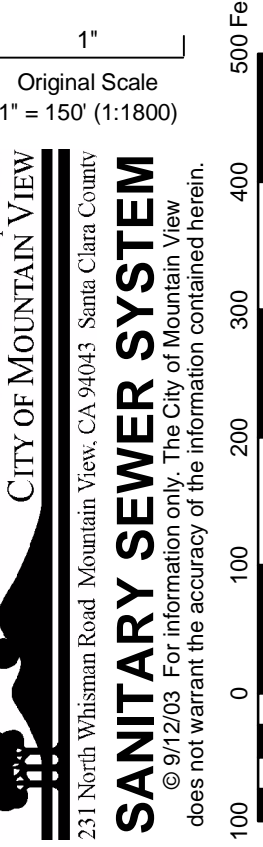
**Main, Direction of Flow, Diameter, Material, Length**  
 Abandoned Line  
 Abandoned Feature  
 Construction Plan File No.  
 Lateral, Diameter, Material, Length, Direction to Downstream Manhole, Distance to Downstream Property Line, Direction to Upstream, Downstream

**Cast Iron Pipe**  
 Concrete  
 Concrete Steel Pipe  
 Ductile Iron Pipe  
 Polyvinyl Chloride  
 Reinforced Concrete Pipe  
 Steel  
 Terra Cotta Pipe  
 Vitreous Clay Pipe  
 Welded Steel Pipe

**Road Edge**  
 Parcel, Address  
 Railroad, Single Track  
 Railroad, Double Track  
 Trail, Paved  
 Trail, Unpaved  
 City Limit  
 Creek  
 Water  
 Open Space



Original Scale  
 1" = 150' (1:1800)







# F2

E1	E2	E3
F1	<b>F2</b>	F3
G1	G2	G3

**Legend:**

- Road Edge
- Parcel, Address
- Railroad, Single Track
- Railroad, Double Track
- Trail, Paved
- Trail, Unpaved
- City Limit
- Creek
- Water
- Open Space

**Cast Iron Pipe:** Concrete, Concrete Steel Pipe, Ductile Iron Pipe, Polyvinyl Chloride, Reinforced Concrete Pipe, Steel, Terra Cotta Pipe, Vitreous Clay Pipe, Welded Steel Pipe

**CP:** CONC, CSP, DFP, PVC, RCP, STEEL, TCCP, VCP, WSP

**Main, Direction of Flow:** Diameter, Material, Length, Abandoned Line, Construction Plan File No., Lateral, Diameter, Material, Manhole, Distance, Property Line, Direction to Upstream, Downstream

**Manhole, ID, Depth:** Cleanout, ID, Depth, Plug, Pump Station, Unknown, Wye, Diameter, Distance from Downstream Manhole, Direction Facing Upstream

**Scale:** Original Scale 1" = 150' (1:1800)

**City of Mountain View:** Public Works Department, 231 North Whisman Road, Mountain View, CA 94043, Santa Clara County

**Sanitary Sewer System:** © 9/12/03. For information only. The City of Mountain View does not warrant the accuracy of the information contained herein.

**Scale Bar:** 0, 100, 200, 300, 400, 500 Feet





**Legend**

**Storm Manhole**

- <all other values>
- Valley Transportation Authority
- Caltrans
- City of Mountain View
- Private

**Storm Drain Inlet**

- <all other values>
- Valley Transportation Authority
- Caltrans
- City of Mountain View
- Private
- Storm Clean Outs

**Storm Outfall**

- Storm Outfall

**Storm Fittings**

- <all other values>
- Cap
- Coupling
- Cross
- Tee

**Storm Main**

- <all other values>
- Valley Transportation Authority
- Caltrans
- City of Mountain View
- Private

**Stormwater Pressure Mains**

- City of Mountain View
- Private

**Storm Channel**

- Storm Channel

**Storm Pump Station Point**

- Storm Pump Station Point
- Storm\_Line\_Abandoned
- Municipal Boundaries





# **Appendix B**

## **Fee Estimate**



### Fee proposal for Moffett Gateway and San Antonio Manhole Survey

	TASKS	Engr Mgr.	Sr. Engr	Asst. Engr	Survey Mgr.	Sr Srvyr	2-Person Srvy Crew	1-person Srvy Crew	Jr Srvyr	Project Asst.	Subtotal NV5 Hours by Task	Sub- Consultant Costs	Subtotal Dollars by Task	Total Dollars by Task
		\$198	\$176	\$105	\$198	\$181	\$280	\$185	\$120	\$90	(including 10% markup)			
	<b>Phase 1 San Antonio Manhole Survey</b>													
Task 1.1	SS Manhole Survey (22 manholes)					4	16	8			28		\$ 6,684	
	<b>Phase 1 Subtotal</b>					<b>4</b>	<b>16</b>	<b>8</b>			<b>28</b>		<b>\$ 6,684</b>	
	<b>Phase 2 Moffett Gateway Manhole Survey</b>													
Task 2.1	SD Manhole Survey (6 manholes)					2	4				6		\$ 1,482	
	<b>Phase 2 Subtotal</b>					<b>2</b>	<b>4</b>				<b>34</b>		<b>\$ 1,482</b>	
	<b>Phase 3 Additional Manhole Survey</b>													
Task 3.1	Additional Manhole Survey (10 manholes)					4	12	4			20		\$ 4,824	
	<b>Phase 3 Subtotal</b>					<b>4</b>	<b>12</b>	<b>4</b>			<b>54</b>		<b>\$ 4,824</b>	
	<b>Total</b>					<b>10</b>	<b>32</b>	<b>12</b>			<b>116</b>		<b>\$ 12,990</b>	<b>\$ 12,990</b>