From: Michael Grbavac [mailto:michael@mgramona.com]
Sent: Monday, February 04, 2019 4:16 PM
To: Wang, Hong <hong.wang@culvercity.org>
Cc: Debora Echeverria <debora@mgramona.com>; Mike Espinosa <mike@mgramona.com>
Subject: Mesmer/Overland Sewer Culver City- Microtunneling

Hong,
I spoke out estimator and Golden State Boring will handle the microtunneling portion of the work, if needed. Golden State Boring will provide a turn key service for this work. If microtunneling is needed, Golden State Boring will use the above company as a third tier sub to perform the microtunneling, please note qualifications.
This does not affect our bid in any way and is at no additional cost to the city.
Let me know if you have any additional questions. Thanks.

MICHAEL GRBAVAC
RAMONA INC.
626-355-1350 OFFICE
626-755-7071 CELL
626-355-5946 FAX

NADA PACIFIC CORPORATION
The Microtunneling Specialists
13206 S. West Avenue - P.O. Box 8 - Caruthers, CA 93609
Tel: (559) 864-8850 - Fax: (559) 864-7012

NADA PACIFIC CORPORATION
SLURRY MICROTUNNELING QUALIFICATIONS

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NADA PACIFIC CORPORATION

The Microtunneling Specialists

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Tel: (559) 864-8850 - Fax: (559) 864-7012

www.nadapacific.com

January 1st, 2019

Subject: Nada Pacific Corporation Introduction

Attn: Director of Project Management

Nada Pacific Corporation (NPC) is a premier utility contractor that specializes in the trenchless installation of pipelines using either the slurry microtunneling or pilot tube microtunneling method.

Founded in 1992 Nada Pacific has completed 89 slurry-microtunnel projects in which 221 drives totaling 160,134 feet of pipe ranging from 24 inch to 102-inch diameter have been installed. In addition, we have completed 14 Pilot Tube Microtunneling (PTMT) projects in which 77 drives totaling 13,679 feet of 4 inch to 36-inch pipe were installed.

These successfully completed projects have prepared our team for your next project. Experience with a wide variety of conditions ranging from environmental concerns, unusual job site locations to practically every geological condition imaginable from low blow count soils to cobble and boulder-laden ground to solid rock. We have worked out of deep shafts in grounds with up to 85 feet of water head. We have completed several drives well over 1,000 feet long that incorporated multiple jacking system components such as Intermediate Jack Stations and redundant guidance systems.

Nada Pacific Corp., a pioneer in the development of microtunneling in the United States can provide valuable input from a projects inception through completion. We take great pride in the fact that our team includes some of the most experienced and knowledgeable managers and foremen in business along with expert operators and crew all dedicated to the success of the project. Add to that a large inventory of state of the art equipment and the result is top quality work at competitive prices.

We currently hold contracting licenses in Arizona, California, Hawaii, Nevada, New Mexico and Washington but we aggressively compete for work throughout North American and continue to look for other locations to expand.

NPC's Slurry Microtunneling Equipment Fleet:

- Five-Control Containers that incorporate laser and gyro guidance systems.
- Ten-Microtunnel Boring Machine's (MTBM's) in 24 inch to 102 inch diameter. We have several increase kits to allow flexibility in size as well as multiple cutter heads to work in soft grounds or through more difficult mixed face conditions.
- Four-Slurry Separation Plants with capacities to 1000 gpm.
- Four-Slurry Centrifuges with 1.5 to 7 ton per hour capacity.
- Seven-Pipe Jacking Frames ranging from 300 to 1,200 tons of thrust and pipe joint lengths up to 20 feet.

- Four-remotely controlled Bentonite pipe lubrication injection systems.
- Six-Cranes ranging from 7.5 to 150 ton capacity.
- Other required support equipment including, generators, spoils handling trucks and trailers, tunnel ventilation, lasers, etc.

Nada Pacific Corporation also has two systems to support PTMT activities.

MISSION STATEMENT:
It is Nada Pacific's goal to:

- Assure the well-being of our employees by making safety in the workplace our top priority.
- Consistently provide quality tunnel installations at a fair price.
- Partner with Owners, Engineers and General Contractors to ensure project success.

Nada Pacific is the microtunneling contractor preferred by Owners, Engineers and Prime Contractors alike… and for good reason. Together, our management team has over 100 years experience.

Cal Terrasas – President, involved in trenchless Industry since 1981
Frank Lorenzen – V.P. of Operations, involved in trenchless Industry since 1983
Larry Tomforde – Sr. Project Management, involved in trenchless Industry since 1983
Denny Vogt – Equipment Manager, involved in trenchless Industry since 1987
Ted Miller – Project Manager, involved in trenchless Industry since 2004

Attached you will find a list of our Clients and Partners.

Please feel contract us at +1 559-864-8850 to discuss our qualifications and capabilities in greater detail. Our web site can be located at www.nadapacific.com.

Respectfully,

Frank Lorenzen

Nada Pacific Corporation
Frank Lorenzen
VP of Operations

Clients and Partners

OWNERS

Alameda County - Zone 7 Water Agency
Alameda County Water District
Alameda County Water District
Central Contra Costa Sanitary District
City of Albany
City of Burlingame
City of L.A.- Wastewater Constr. Div.
City of Los Angeles
City of Milpitas
City of Oakland - Public Works Agency
City Of Oxnard Public Works Division
City of Palo Alto
City of Port Hueneme
City of Redwood City
City of Sacramento
City of San Buenaventura
City of San Jose
City of Santa Clara
City of Santa Cruz Water Dept.
City of Santa Monica
City of Santa Rosa
City of Solana Beach
City of Yuba City
Clark County Water Reclamation District
Eastern Municipal Water District Perris, CA
East Bay Municipal Utility District
Elsinore Valley Water District
Freeport Regional Water Agency
Kaiser Corporation
Livermore-Amador Valley Water Management Agency
Los Angeles Department of Water & Power
Los Angeles County
Los Angeles County Public Works
Los Angeles County Sanitation District
Napa Sanitation District
Orange County Sanitation District
Placer County Water Agency
Sacramento County
Sacramento Regional County Sanitation District
San Rafael Sanitation District
Santa Rosa Sub-regional Water Reclamation
San Francisco Public Utilities Commission
South San Joaquin Irrigation District
Union Sanitary District
Vallejo Sanitation & Flood Control District
City of Amarillo, Texas
Valley Water Management Agency

ENGINEERS

Bennett Trenchless
Black & Veatch
CH2M-HILL
Covello Group
DCM Consulting
DCM Engineering
GeoEngineering
Harris & Associates
Jacobs & Associates
Jacobs Engineering
Kennedy/Jenks
Montgomery Watson
Harza
Nolte Engineering
O´Brien-Kreitzberg
Parsons Brinkerhoff
Staheli Trenchless
Sverdrup Civil, Inc.
URS Corp.
Winzler & Kelly
Kimley-Horn

GENERAL CONTRACTORS

Balfour Beatty Constr.
Christive Corporation
Colich & Sons / J.R. Pipeline - JV
Colich Construction
Cornish Construction
D. W. Young Company
Don Kelly Construction
Frontier Contracting
K. J. Woods Construction
Lamon Construction
Maggiora & Ghilotti, Inc.
McGuire & Hester
Mladen Buntich Construction.
Mountain Cascade
Preston Pipelines, Inc.
R J Gordon Construction
Ranger Pipelines, Inc.
Sierra National
SJ Louis Construction
Steve P. Rados Inc.
Sundt Const. Inc.
T & S Construction
TAB Contractors
Underground Const.
W.A. Rasic Constr.
Spiess Construction
Pulice Construction

MicroTunneling

MICROTUNNELING SPECIALISTS

Nada Pacific Corp.

Nada Pacific Corp.

Has specialized in microtunneling since its inception in 1992 when the first major microtunneling project came to the West Coast. In the Spring of 1992 Nada Pacific Corp, began the installation of 8300 feet of 42" reinforced concrete pipe for the City of Ventura. This project quickly caught the attention of design engineers across the region, and, before long, microtunneling became the designers' choice for pipe installation for soft flowing ground or hard rock conditions. Today, nearly ten years later, Nada Pacific Corp. has successfully installed over 100,000 lf of conduit

Managing partners Stephen Buntich and Cal Terrasas inspect new 72" MTBM unit recently delivered by Akkermann Manufacturing, of Brownsdale Minnesota. The two partners have worked together since Nada Pacific Corp.'s first project in Ventura, Ca.

The Guided Boring System.

which is also referred to as the Pilot Tube System, enables Nada Pacific to install conduits from 4 inch to 24 inch in diameter. It is a proven trenchless method of pipe installation for the increasing demand the Construction Industry has for precision and accuracy. Exact grade and alignment is achieved through video monitor surveillance of an illuminated target via theodolite. Pilot head steering is accomplished by aligning an angled pilot head to the desired course and thrusting forward. Pilot tubes are installed behind the pilot head and rotated while simultaneously thrusting forward. After the pilot head has reached the reception shaft, a reaming head and auger tubes with flighting are installed behind the pilot tubes. With the addition of each section of auger tube in the launch shaft, a section of pilot tube is removed in the reception shaft. The process is repeated until all pilot sections have been removed. A pipe adapter is then installed on the last section of auger casing and subsequent pipes thrust into place while the auger tubes are removed from the reception shaft.

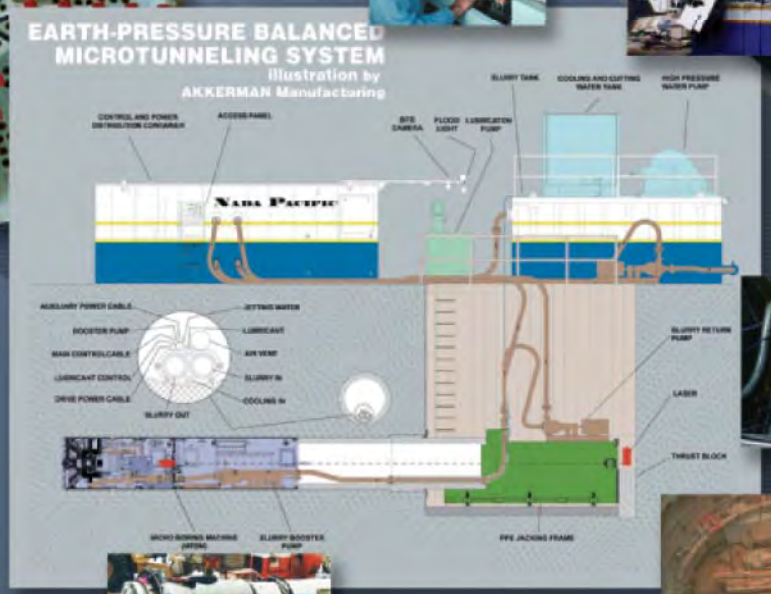
Slurry Earth Pressure Ballance System

Like the guided boring method, the Slurry or Earth-Pressure Balanced Microtunneling system employs laserguided technology to ensure installation is achieved to precise grade and alignment. This extremely accurate system, which requires no personnel-entry, has an impressive record of success in a variety of soil conditions, from flowing soft ground to hard rock. The earth-pressure balance technology is especially effective in very wet soils, or for installations below the water table when dewatering is impractical or impossible. This trenchless system is often employed in wet contaminated soils because it is designed to minimize the amount of contaminated soil and groundwater that is displaced.

The basic layout and operation of a microtunneling system is illustrated below.

As with conventional pipe jackng, hydraulic cylinders are used to advance the pipeline and the microtunneling boring machine (MTBM).

This remotely controlled MTBM pilots the course and excavates the ground. Simultaneously, slurry is pumped to the MTBK, mixed with the spoil and pumped back to the surface. At the surface, Nada Pacific's customized Separation Plant is employed to separate the slurry from the excavated spoil. The slurry is then recycled back into the MTBM. When required, Nada Pacific uses its fleet of water-tight haul units to saftly remove the *semi-saturated* soils from the project site.



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Projects

South Orinda, Ca.

Nada Pacific Corp. Receives Trenchless Technology Project of the Year Award New Installation for 1998 The South Orinda Sewer Improvement Microtunneling Project, for the Central Contra Costa Sanitary District, involved the installation of 8,250 lf of 36" diameter trunk sewer in a combination of claystone and siltstone rock formation, in the valley's primary traffic corridor.

Trenchless Technology - October 1998

Los Angeles, Ca.

Nada Pacific Corp. installed 850' of 84" Permalok steel casing below the Los Angeles Harbor at a depth of 90 feet. This project, at the time, was considered to be the deepest microtunnel in North America.

Pacific Palisades, Ca.

Nada Pacific Corp. installed 2,300 lf of 12" diameter Vitrified Clay Pipe to average depths of 40 feet in this residential drift side community. The project required that streets remain open for residents at all times, and that all work be completed within 70 days.

Ventura, Ca.

This project not only has the dimension of being the first major microtunneling project on the West Coast, it is also the first project constructed by Nada Pacific Corp. The project consisted of 8,300 feet of 42" reinforced concrete pipe in wet and spongy clays.

Pleasanton, Ca.

The 90 foot deep project for the city of Santa Rosa consisted of 270 lf of 60" Permalok casing. The MTBM successfully crossed beneath the Russian River in 91 days.

Los Angeles, Ca.

[illegible] the coast of the CA area.

Nashville, Tennessee February 2001 Stephen and Cal receive award from their peers for their contribution to trenchless technology over the past decade.

For more info call or write to:

NADA PACIFIC Corp.

13206 S. West Avenue
P.O. Box 8
Caruthers, Ca. 93609

(559) 864. 8850

05.02 .5M FP/D.R.A

NADA PACIFIC CORPORATION - MICROTUNNELING EQUIPMENT FLEET

MICROTUNNEL BORING MACHINE FLEET (MTBM'S)

Akkerman Inc. Model - Hp	NPC Fleet No. of Mtbm's	Cutting Head Input HP	Cutting Head Torque		Cutting Head Speed Rage Rpm	Base Equipment			Increase Kit Options		
			Continuous Ft-lbs	Max Int Ft-lbs		Cutter Head		OD	Cutter Head		IK OD
						SCH	DCH		SCH	DCH	
SL24-30 hp	1	30	9,837	14,760	0 to 16	25.5		24	27.25		26.25
SL30-85 hp	2	65	26,384	60,800	0 to 12	31.5		30	37.5		36
									39.5		38.5
SL34-85 Hp	1	70	33,180	67,250	0 to 12	35.5		34	37.5		36.5
									39.5		38.5
SL44-85 Hp	3	70	33,180	67,250	0 to 12	45.5		44	46		44.5
									46.5	47	45.5
									49.5		48.5
									51		50
									52.5		51.5
SL52-125 Hp	1	100	57,090	99,500	0 to 10	54		52.5		57.5	56
									61		59.5
									61.5		60
									64.5		63.5
SL60-150 Hp	1	150	105,000	177,000	0 to 8	61.5	62	60		68.5	67
									73.5		72
									77		76
									87.5		86.5
SL72-250 Hp	1										
Drive Opt 1		250	177000	263000	0 to 8	73.5	74	72	83		82
Drive Opt 2		250	255000	382000	0 to 5				84		83
									85.5		84.5
									89.5	89.5	88
										98	96.5
									103.5		102.5

Control Containers	
Akkeman - Generation	Qty
Gen 1	2
Gen 1.5	2
Gen2	1

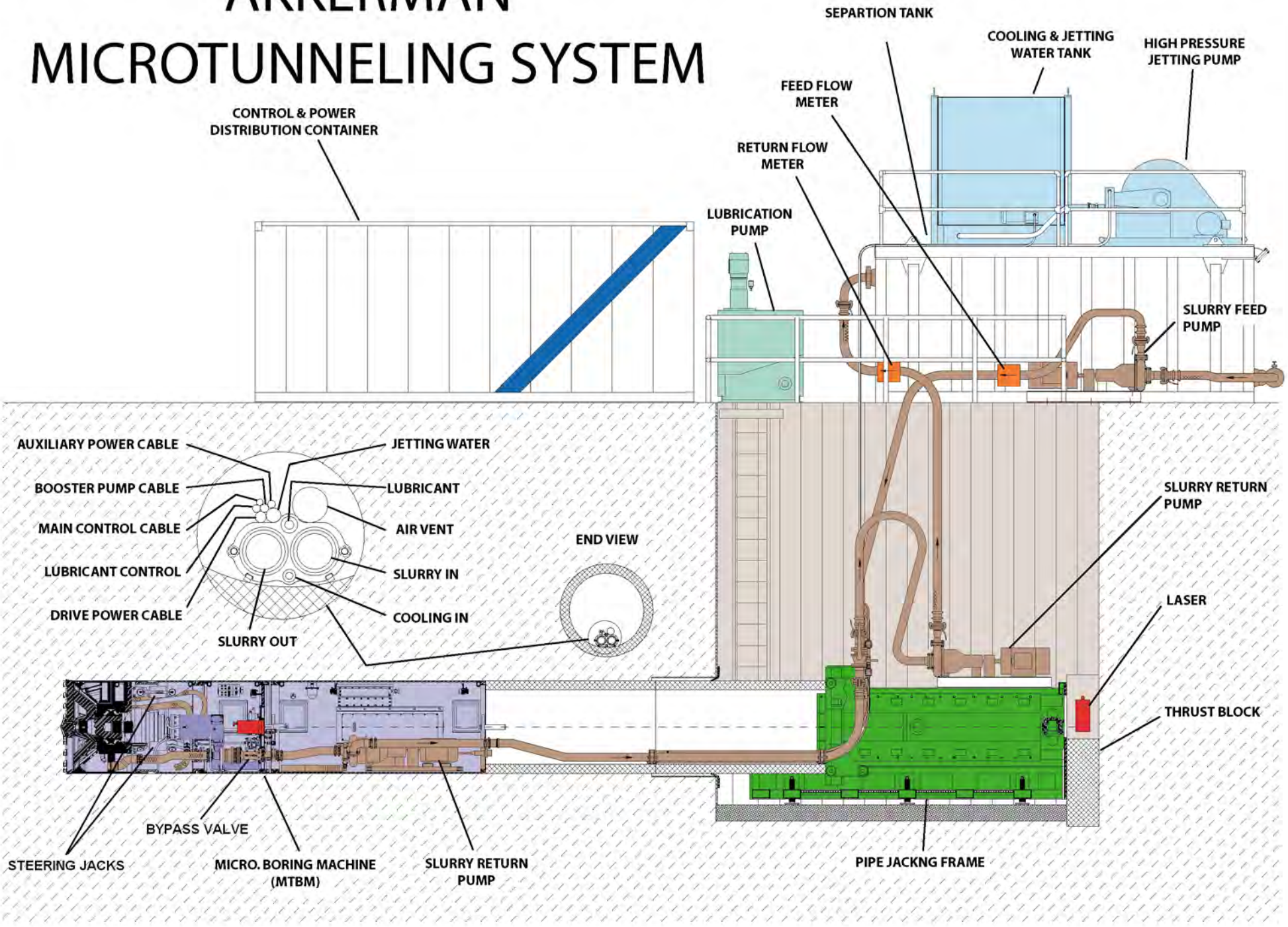
Separation Plants	
GPM Capacity - Equip	Tanks
600 gpm (Derrick/Brandt)	1
800 gpm (Brandt/Derrick)	2
1000 gpm (Derrick/Brandt)	2

Centrifuges	
Model	Qty
Mudcraft-150 gpm	1
Brandt -CF2-250 gpm	2
Derrick 7200-500 gpm	1

Pipe Jacking Frames

Akkerman Model	Qty	Max. Thrust Tons	Max. Pipe OD Inches	Min. Pipe Length Feet	Max Pipe Length Feet
MT340	1	300	34	8	16
MT460	3	400	60	8	20
MT890	1	800	90	8	20
MT8108	1	800	108	8	20
MK875	1	800	75	8	20
MK12108	1	1200	108	8	20

AKKERMAN MICROTUNNELING SYSTEM



AKKERMAN®

Akkerman Product Guide

Microtunnel Boring Machines

The Control Container is the information center for all microtunneling functions. It houses the control console, motor control centers for slurry pumps, MTBM drive motor and the bulkhead panel for electrical and communications connections.

The High Pressure Jetting Pump features a rugged one piece cast iron body and a 75 HP (56 kW) 5-piston pump.

With the cutter face removed, the crushing cone's slurry inlet holes, high pressure jetting nozzles and spoil intake ports are clearly visible. This MTBM SL74 has been skinned to 102-inches (2,591 mm).

Akkerman's Microtunnel Boring Machines (MTBM) install pipe in ground conditions that are generally below the water table. Microtunneling is referred to as non-manned, remote controlled, continuously supported pipejacking. Applications most suitable for this method are gravity flow pipelines requiring precise line and grade in poor soil conditions. As the only US manufacturer of microtunneling equipment, our systems are a fusion of high productivity, dependability and accuracy in a wide range of soil conditions without the need for dewatering.

The electrically powered, Variable Frequency Drive (VFD) controlled MTBM is operated from the control container. Operators are able to monitor and adjust the cutter head's location, rotation, torque, jetting, pipejacking thrust, steering, slurry flow and various pressures from a three-monitor console. Our MTBMs can be equipped with the appropriate cutter face for soft ground, mixed ground and rock for precise ground excavation.

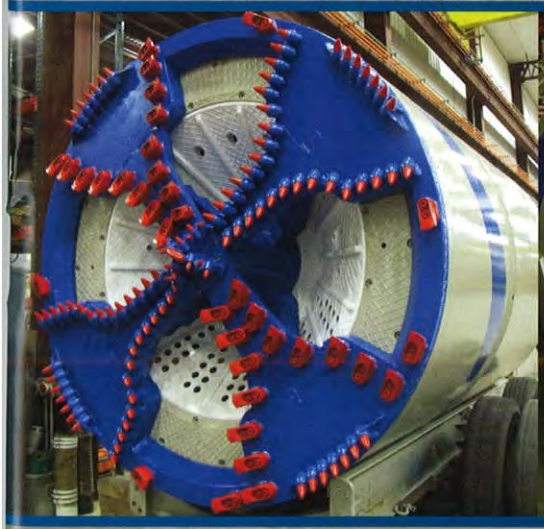
The active target, housed inside a heavy-duty steel cylinder, is mounted in the back center of the MTBM. The guidance system reports the MTBM's pitch and yaw statistics to a monitor in the control console for operator assessment and anticipates the MTBM's location at the cutter face. The MTBM's articulated steering joint allows for active steering control.

Specifications

Product	Longest/ Overall Length**	Pipe OD	Heaviest Section/ Overall Weight**	Drive Motor	Maximum Torque
MTBM SL30	130/255" (3,302/6,477 mm)	30" (762 mm)	10,000/13,000 lbs (4,536/5,896 kg)	75 HP (56 kW)	0-13 rpm (45,400 lbf-ft)
MTBM SL 34	130/255" (3,302/6,477 mm)	34" (864 mm)	12,000/16,000 lbs (5,443/7,257 kg)	75 HP (56 kW)	0-11 rpm (52,800 lbf-ft)
MTBM SL36	130/255" (3,302/6,477 mm)	36" (914 mm)	14,000/18,500 lbs (6,350/8,391 kg)	75 HP (56 kW)	0-8 rpm (74,000 lbf-ft)
MTBM SL 44	120/250" (3,048/6,350 mm)	44" (1,118 mm)	15,000/21,500 lbs (6,804/9,752 kg)	75 HP (56 kW)	0-11 rpm (53,000 lbf-ft)
MTBM SL 46	120/250" (3,048/6,350 mm)	46" (1,168 mm)	16,000/23,500 lbs (7,257/10,659 kg)	75 HP (56 kW)	0-8 rpm (74,000 lbf-ft)
MTBM SL 52.5	126/230" (3,200/5,842 mm)	52.5" (1,334 mm)	20,000/27,500 lbs (9,072/12,474 kg)	100 HP (75 kW)	0-10 rpm (78,000 lbf-ft)
MTBM SL 60	161" (4,089 mm)	60" (1,524 mm)	36,000 lbs (16,329 kg)	150 HP (112 kW)	0-7.7 rpm (153,000 lbf-ft)
MTBM SL 72	161" (4,089 mm)	72" (1,829 mm)	36,000 lbs (16,329 kg)	250 HP (186 kW)	0-7.7 rpm (255,000 lbf-ft)
MTBM SL 74	161" (4,089 mm)	74" (1,880 mm)	36,000 lbs (16,329 kg)	250 HP (186 kW)	0-7.7 rpm (255,000 lbf-ft)

Product	Dimensions w x l x h	Capacity	Pressure	Weight
Control Container	8 x 20 x 8.5' (2.4 x 6 x 2.6 m)	480 VAC/1,200 A	na	21,250 lbs (9,639 kg)
Remote Power Pack	8 x 9.75 x 8.6' (2.4 x 3 x 2.6 m)	150 HP (112 kW)	8,000 psi (550 bar)	13,000 lbs (5,8967 kg)
High Pressure Jetting Pump	38 x 37 x 15" (965 x 940 x 381 mm)	75 HP (56 kW)	3,500 psi (240 bar)	1,240 lbs (562 kg)
Cooling Water Tank	6 x 14.5 x 6.5' (1.8 x 4.4 x 2 m)	1,685 gal (6,378 L)	250 psi (1,724 kPa)	2,200 lbs (998 kg)

*Note: Akkerman standard sizes can be customized to suit project needs.
**Actual weights may very based on specific configuration.

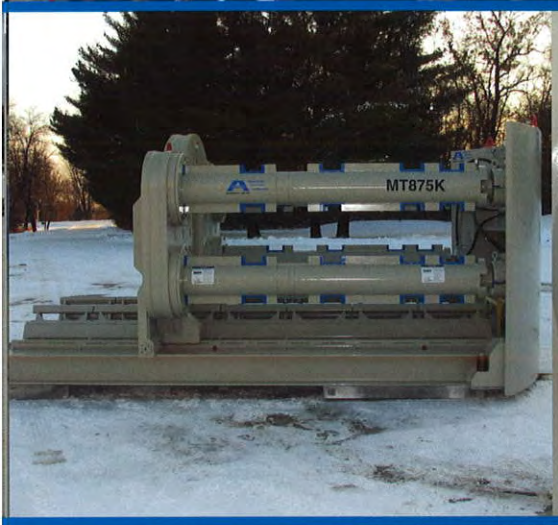


Our MTBMs can be equipped with the appropriate cutter face for job requirements. Shown here is the soft ground configuration featuring a combination of carbide drag and bullet bits.

The mixed ground cutter face configuration features bullet bits and cutter discs.

The MTBM operator maintains control of all microtunneling functions during operation from a three-monitor console in a climate controlled environment.

Microtunneling Jacking Frames



The MT875K operates out of a mere 20-foot (6.1 m) shaft while jacking pipe with 800 tons @ 8,000 psi (726 mt @ 550 bar) of force.

The keyhole jacking frames feature keyed blocks on the jacking cylinders to continuously advance the machine.

The thrust block features a notched area for placement of the guidance system. A winch pullback option is also available.

Our family of keyhole jacking frames allows the customer to operate a high-capacity jacking frame out of a minimal launch shaft.

Collectively, keyhole jacking frames will operate out of a 16-24 foot (4.87 – 7.3 m) shaft and feature 800-1,200 tons (726-1089 mt) of thrust capacity at 8,000 psi (550 bar) while advancing pipe with a maximum OD of 102-inch (2,591 mm). All frames are able to push 10-feet (3 m) of laid length pipe sections, expanding for longer lengths with add-on components and a larger shaft size. The keyhole frame utilizes keyed blocks on the jacking cylinders to continuously advance the machine. The thrust block is pulled back to the retracted position with an in-line hydraulic winch. The thrust block features a guidance system notch for protection and to ensure the accuracy of the bore.

The forward advancement from the jacking frame on the pipe, combined with the rotating action of the MTBM's cutter head removes spoils and forces them to the crusher cone. If required, the 75 HP (56 kW), five-piston high pressure jetting pump provides high velocity jetting to the cutter face for clay and silty soil. Inside the crusher cone, cobbles are crushed to a size that passes through the slurry inlet holes for transport in the slurry lines. Feed, return, and booster pumps keep the slurry moving to the separation tank and re-circulated back to the cutter face in a closed system. Sensors and flow meters monitor the slurry pressures and flows to avoid spoil settlement. This system can also be reversed to flush out the slurry lines.

Akkerman microtunneling system components are manufactured to maximize usage options. MTBMs can be fitted with increase kits to accommodate larger diameter pipes. We work closely with our customers, thoroughly analyzing the project and recommending a system to help complete the job efficiently and on budget. Our highly experienced staff of engineers, technicians, and salespeople is committed to providing solutions customized for your specific needs.

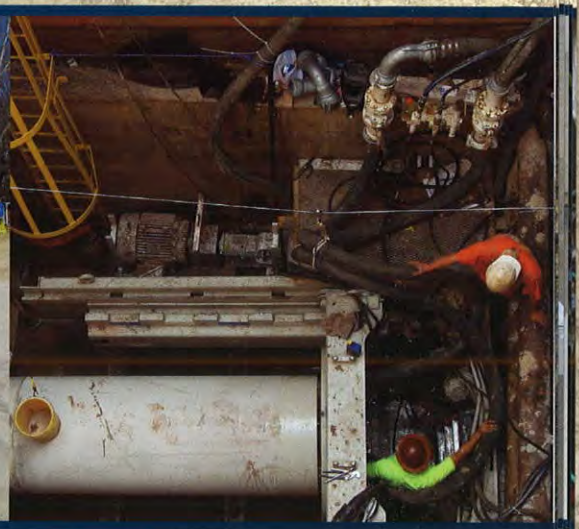
Specifications

Product	Dimension w x l x h	Pipe OD	Thrust Capacity	Minimum Shaft Size
MT860K	9 x 15.6 x 6.5' (2.7 x 4.8 x 2 m)	60" (1,524 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	16'** (4.9 m)
MT875K	10.9 x 15.9 x 7.3' (3.3 x 4.8 x 2.2 m)	75" (1,905 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	20'** (6.1 m)
MT890K	12.7 x 16.3 x 8.5' (3.9 x 5 x 2.6 m)	90" (2,286 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	20'** (6.1 m)
MT8102K	13 x 16.4 x 9.6' (4 x 5 x 2.9 m)	102" (2,591 mm)	800 ton @ 8,000 psi*** (726 mt @ 550 bar)	24'** (6.1 m)

*Note: Akkerman standard sizes can be customized to suit project needs.
**Shaft size is dependent upon launch seal and reaction block configuration.
***The thrust capacity on the MT8102K frame can be increased to 1,200 tons (1,090 mt) with the addition of a cylinder kit.

The laser guidance slot is visible here along with the frame's hydraulics and the winch pullback for the thrust block.

The Remote Hydraulic Power Pack houses a 27 gpm @ 8,000 psi (550 bar) high pressure pump. The main displacement pump contains a 150 HP (112 kW) electric motor and variable frequency drive for output flow control.



Feed, return and booster pumps keep spoils moving to the separation tank where they are re-circulated in a closed system.

AKKERMAN

CORPORATE HEADQUARTERS
Akkerman Inc. | 58256 266th St., Brownsdale, MN 55918 | USA
Ph.: 800.533.0386 | Fx.: 507.567.2605
E-mail: *akk@akkerman.com* | *www.akkerman.com*

rev. 04182011

NADA

PACIFIC

CORPORATION

Project List

NADA PACIFIC MICROTUNNELING PROJECTS LIST

All projects listed use slurry/earth pressure to counter-balance soil and water pressures.
All projects listed used a slurry removal system to transport spoils to the surface.
DCH denotes the projects on which a Disk Cutter Head was used.

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
1	**Project:** Bristol Relief Sewer Ventura, CA **Agency:** City of San Buenaventura 501 Poli St. - Ventura, CA 93002 Marquita Ellias (805) 658-4778 **Prime:** Mladen Buntich Constr. Mladen Buntich, Jr (818) 325-2709	Nov-92	Dec-93	8,900	660	36	RCP				
2	**Project:** Francisco Boulevard Force Main San Rafael, CA **Agency:** San Rafael Sanitation District 1313 Fifth Ave. - San Rafael, CA 94915 John Hill (707) 792-1534 **Prime:** Maggiora & Ghilotti, Inc.	May-94	Jun-94	430	430		Permalok				
3	**Project:** Vicksburg Avenue - 96th Interceptor Los Angeles, CA **Agency:** City of L.A.- Wastewater Constr. Div. 100 N. Sepulveda Blvd - El Segundo, CA 90245 Raul Godinez (310) 524-8236 **Prime:** Mladen Buntich Constr. Mladen Buntich, Jr (818) 325-2709	Mar-95	Aug-95	5,417	739	42	Hobas	1 ea.			
4	**Project:** Santa Rosa Subregional Water Reclaimation System Rohnert Park, CA **Agency:** City of Santa Rosa	Jun-95	Jul-95	430	430		Permalok				
5	**Project:** Pleasant Hill Relief Interceptor Ph. III Pleasant Hill, CA **Agency:** Central Contra Costa Sanitary District 5019 Imhoff Place - Martinez, California 94553 Tad J. Pilecki (925) 229-7273 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Aug-95	Nov-95	3,015	689	48	RCP	1 ea.			
6	**Project:** Peralta Boulevard Sanitary Sewer Fremont, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Sanji Gahssian (510) 790-0100 **CM:** O'Brien-Kreitzberg Blaise Cullen, P.E. (415) 777-0188 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	May-96	Oct-96	2,840	430	18	VCP Polycrete				
7	**Project:** Martinez East Side Sewer Improvements, Martinez, CA **Agency:** Central Contra Costa Sanitary District 5019 Imhoff Place - Martinez, California 94553 Kent Von Aspern (925) 228-9500 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Oct-98	Mar-99	3,147 201		24 24	VCP Pipeform				
8	**Project:** Lower Warren Avenue Sewer Project Fremont, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **Prime:** D. W. Young Company	Oct-96	Dec-96	1,000	445		Permalok				
9	**Project:** Loma Santa Fe Grade Separator Solana Beach, CA **Agency:** City of Solana Beach 635 So. Hwy 101 - Solana Beach, CA 92075 Chandra Collure (619) 755-2998 **Prime:** Christive Corporation	Mar-97	Apr-97	1,000	680	60	Hobas	1			

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
10	**Project:** Upper Fremont Boulevard Sewer Project - Phase 1 Fremont, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM:** O'Brien-Kreitzberg Blaise Cullen, P.E. (415) 777-0188 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	May-97	Sep-97	5,300	465	21	Polycrete				
11	**Project:** Blaine Avenue Relief Sewer Newark Subbasin Fremont, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM:** Montgomery Watson 1340 Treat Boulevard, Su. 300 Craig Pyle (510) 945-1760 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Aug-97	Oct-97	1,976	380	36	Hobas				
12	**Project:** Joint Outfall "C" Unit 3B Trunk Sewer Long Beach, CA **Agency:** Los Angeles County Sanitation District 1955 Workman Mill Rd.- Whittier, CA.90601 Tommy Sung (562) 699-7411 **Prime:** Mladen Buntich Constr. Mladen Buntich, Jr (818) 325-2709	Oct-97	Jan-98	1,356	780	60	RCP	Many			
13	**Project:** South Orinda Sewer Improvements - Phase 1 Orinda, CA **Agency:** Central Contra Costa Sanitary District 5019 Imhoff Place - Martinez, California 94553 Tad J. Pilecki (925) 229-7273 **CM:** Montgomery Watson Harza 1340 Treat Boulevard, Su. 300 Craig Pyle (925) 274-5800 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Nov-97	Oct-98	6,245	640	36	RCP	1-2 ea.			
14	**Project:** California Drive Interceptor Sewer Project Burlingame, CA **Agency:** City of Burlingame	Mar-98	Nov-98	2,250 646	540	36 51	Hobas Hobas				
15	**Project:** Irvington Warm Springs Pipeline Fremont, CA **Agency:** Alameda County Water District	Nov-98	Feb-98	275	275		Permalok				
16	**Project:** Martinez East Side Sewer Improvements, Martinez, CA **Agency:** Central Contra Costa Sanitary District 5019 Imhoff Place - Martinez, California 94553 Kent Von Aspern (925) 228-9500 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Oct-98	Feb-99	3,147 201		24 24	VCP Pipeform				
17	**Project:** Appiam Way Influent Sewers & Forcemain Santa Monica, CA **Agency:** City of Santa Monica **Prime:** Mladen Buntich Constr. Mladen Buntich, Jr (818) 325-2709	Mar-99	May-99	620	620	60/73.5	RCP	2			
18	**Project:** Stevenson Blvd Sanitary Sewer Improvement Project Fremont, CA **Agency** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM** O'Brien-Kreitzberg Blaise Cullen, P.E. (415) 777-0188 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Mar-99	Sep-99	6,040	460	21	Polycrete				

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
19	**Project:** Upper Warren Avenue Sewer Project Fremont, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM:** Sverdrup Civil, Inc Tom Buckman (510) 256-7500 **Prime:** K. J. Woods Construction Kieran Woods (415) 759-0506	May-99	Aug-99	1,940	454	18	Polycrete				
20	**Project:** Fries Avenue Force Main Relocation Long Beach, CA **Agency:** Los Angeles County Sanitation District 1955 Workman Mill Rd.- Whittier, CA.90601 Tommy Sung (562) 699-7411 **Prime:** Mladen Buntich Constr. Mladen Buntich, Jr (818) 325-2709	Sep-99	Oct-99	830	830	44"	Permalok	3	SM very loose	90'	
21	**Project:** Redwood Street Sanitary Sewer Rerouting Project Vallejo, CA **Agency:** Vallejo Sanitation & Flood Control District Rudolph Ohlemutz (707) 644-8949 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Oct-99	Dec-99	1,287	287	18	Polycrete				
22	**Project:** Thompson Pump Plant Los Angeles, CA. **Agency:** City of Los Angeles	Jan-00	Jan-00	96	96	18	Polycrete				
23	**Project:** Amarillo Ave & Embarcadero Way Relief Sewer Palo Alto, CA. **Agency:** City of Palo Alto 1007 Elwell Ct. - Palo Alto, CA 94303 Edward Wu (650) 566-4512 **CM:** Kenedy/Jenks 2191 E. Bayshore Dr., Su. 200 Jim Flanigan (650) 852-2815 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Jan-00	Apr-00	2,796	554	42	Polycrete	1			
24	**Project:** Parallel Force Main Project, Milpitas, CA **Agency:** City of Milpitas	Aug-00	Sep-00	532	532	48	Steel Csg				
25	**Project:** Newark Subbasin Upper Relief Sewer Project Newark, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM:** O'Brien-Kreitzberg Blaise Cullen, P.E. (415) 777-0188 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Nov-00	Jan-01	3,480	501	21	Polycrete				
26	**Project:** Kaiser-Randum Land Reclaimation Project Livermore CA **Agency:** Kaiser Corporation **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Jan-01	Jan-01	400	400	36	Polycrete				
27	**Project:** Coastal Distribution Local Water Supply Project Watsonville, CA **Agency:** Valley Water Management Agency **Prime:** Ranger Pipelines	Feb-01	Feb-01	91	91	36	RCCP				
28	**Project:** Woodside Trunk Sewer Rehabilitation Project Rocklin, CA **Agency:** South Placer Municipal Utility District 3671 Taylor Road - Loomis, CA 95650 **CM:** Bennett & Staheli Engineers 90 Blue Ravine Rd, Su. 165 - Folsom, CA 95630 Dave Bennett (916) 294-0095 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Feb-01	Apr-01	1224	245	36	Polycrete				

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
29	**Project:** Outfall D Manhatten Beach, CA **Agency:** City of Los Angeles **Prime:** Cornish Construction		Jan-01	440	440	44	Permalok	3			
30	**Project:** Pleasant Hill Relief Interceptor, Phase 4, Pleasant Hill, CA **Agency:** Central Contra Costa Sanitary District 5019 Imhoff Pl. - Martinez, CA 94553 Tad J. Pilecki (925) 229-7273 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	May-01	Oct-01	666 1287	666	36 30	Polycrete				
31	**Project:** Hollywood Main Replacement Sewer, Hollywood, CA **Agency:** City of Los Angeles **Prime:** Mladen Buntich Mladen Buntich, Jr (818) 325-2709	Jun-01	Mar-02	2877 725		30 15	Polycrete				
32	**Project:** Geysers Recharge Project, Healdsburg Pipeline Healdsburg, CA **Agency:** Santa Rosa Subregional Water Reclamation 69 Stony Circle - Santa Rosa, CA. 95401 Dan Carlson (707) 543-3930 **CM:** CH2M HILL 2485 Natomas Park Dr, Sacramento, CA. 96001 Ben Romero (916) 920-0300 **Prime:** Steve P. Rados Inc. Steve Rados (714) 835-4612	Aug-01	Jun-02	1110	680	60	Permalok	2	SM very loose SC saturated GM w/ cobbles GC	68'	
33	**Project:** Friendly Acres Storm Drain Improvement - Phase II Redwood City, CA **Agency:** City of Redwood City **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Sep-01	Feb-02	590	590	66/79.5	RCP	1	Squeezing Bay Mud		
34	**Project:** Sacramento River Water Treatment & Intake Sacramento CA **Agency:** City of Scaramento **Prime:** Balfour Beatty Constr.	Oct-01	Dec-01	700	700	72	Permalok				
35	**Project:** ARP Wells To Desalination Facility Supply Pipelines Newark, CA **Agency:** Alameda County Water District **Prime:** KJ Woods Construction Kieran Woods (415) 759-0506	Nov-01	Apr-02	821	420	30	Permalok				
36	**Project:** Marina Del Rey 24-inch Feedline Phase 1A Marina Del Rey, CA **Agency:** Los Angeles County **Prime:** Mladen Buntich Mladen Buntich, Jr (818) 325-2709	Feb-02	May-02	528	528	36	Permalok				
37	**Project:** Hollywood Main Sewer Replacement Los Angeles, CA **Agency:** City of Los Angeles **Prime:** Mladen Buntich Mladen Buntich, Jr (818) 325-2709	Oct-01	Feb-02	2877 725		27 15	Polycrete VCP				
38	**Project:** Dominguez Gap Barrier Project, Long Beach, CA **Agency:** Los Angeles County Public Works Eddie Lyons (626) 458-3104 **Prime:** Mladen Buntich Mladen Buntich, Jr (818) 325-2709	Jul-03	Oct-03	2458	953	57/60.0	Hobas	2			
39	**Project:** Alvarado Blvd Trunk Sewer Project Ph. I Union City, CA **Agency:** Union Sanitary District 37532 Dusterberry Way - Fremont, CA 94536 Jesse Gill (510) 790-0100 **CM:** URS Corp. 50 Fremont St. - San Francisco, CA 94105 Blaise Cullen (415) 777-0188 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Jul-03	May-04	7220	820	39	Polycrete	Many	SM very soft CL soft swelling	20'	low

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40	**Project:** Export Pipeline Castro Valley/Lewelling Segment Castro Valley & San Leandro, CA **Agency:** LVWMA 7051 Dublin Blvd. - Dublin, CA 94568 Vivian Housen (925) 485-5413 **CM:** Covello Group 1660 Olympic Blvd. - Walnut Creek, CA. 94596 Mike Jaeger (925) 933-2300 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Jun-03	Feb-04	7570 650	980	36/45.5 55	RCCP Steel Csg	1 ea.	SC soft - stiff ML CL swelling OH mixed & changing	21'	15 - 35
41	**Project:** Nummi Supply Pipeline Relocation Newark, CA **Agency:** Alameda County Water District 43885 South Grimmer Blvd. - Fremont Ca. 94538 Kalpana Gandhi (510) 668-4474 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Aug-03	Dec-03	360	360	24	Permalok		CH stiff - hard	12'	
42	**Project:** SSJID Country Water Transmission Pipeline Manteca, CA **Owner:** South San Joaquin Irrrigation District 11011 East Highway 120 Manteca Ca 95336 **CM:** Notle Engineering 1731 North First Street, Suite A - San Jose, CA 95112 George Otte (408) 392-7200 **Prime:** Ranger Pipelines John Sullivan (415)822-3700	Aug-04	Oct-04	785	440	42/44.5	Hobas	1 ea.	ML soft - very soft CL swelling changing	15'	
43	**Project:** Silicon Valley Power 230KV Transmission Line Santa Clara, CA **Owner:** City of Santa Clara **Prime:** Underground Const. Dale McCourt (707)746-8800	Nov-04	Nov-04	480	480	36/44.1	Polycrete		MH Firm	25'	20s
44	**Project:** Fair Oaks/South Orangevale sewer Improvement Fair Oaks, CA **Owner:** Sacramento County 9660 Ecology Lane - Sacramento, Ca. 95814 August Lopez (916) 491-3161 **Prime:** Ranger Pipelines John Sullivan (415)822-3700	Oct-04	Mar-05	2550	570	27/33.5	Polycrete		SM soft - stiff SC ML mixed & changing	dry	15 -60
45	**Project:** Alvarado Blvd Trunk Sewer Project - Ph II, Union City, CA **Owner:** Union Sanitary District 5072 Benson Rd., Union City, CA 94587 Rollie Arbolante (510) 477-7500 **CM:** URS 50 Fremont St. - San Francisco, CA 94105 Blaise Cullen (415) 777-0188 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Jun-04	Jun-05	5274 1252 384 256	776	24/30.0 36/44.1 21/26.5 36	Polycrete Polycrete Polycrete Permalok	1	MH soft - very soft CH swelling Bay Mud	11'	Low to 25
46	**Project:** Highway 87 Detour II Project San Jose, CA **Owner:** City of San Jose 1661 Senter Rd. - San Jose, CA 95112 Rich Coco (408) 998-6095 **Prime:** McGuire & Hester Mike Hester (510) 632-7676	Feb-05		211		60"	Hobas			30'	
47	**Project:** Eagle Rock Interceptor Sewer Eagle Rock, CA **Owner:** City of Los Angeles PW Jun Espiritu (323) 266-7518 **Prime:** Colich Construction	Apr-05	Feb-06	3072	610 460	36/38.3 28/30	Hobas Hobas	1	SC soft - very stiff SM mixed face	20'	18 - 55

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
48	**Project:** U & S Streets Inline Storage Project Sacramento, CA **Owner:** City of Sacramento Bill Zehnder **CM:** Bennett / Staheli 90 Blue Ravine Rd, Su. 165 - Folsom, CA 95630 Matt Wallin (916) 294-0095 **Prime:** T & S Construction Art Spinella (916)381-3052	Jun-05	Jun-05	520	524	66/79.5	RCP	1	ML soft - stiff CL swelling flowing	22'	33/ft
49	**Project:** Upper NW Interceptor 5 & 6 Sacramento, CA **Owner:** SRCSD 10545 Armstrong Ave #101 - Sacramento, CA Roy Carlson (916) 876-6387 **CM:** MWH 3321 Power Inn Rd. - Su. 300 - Sacramento CA 95826 Glen Grant (707) 249-8851 **Prime:** Frontier Contracting	Jul-05	Aug-05	1044	528 516	48/63.0 66/82.5	RCP RCP		MH firm CL swelling	5'	up to 35
50	**Project:** Sacramento Airport Domestic Water Sacramento, CA **Owner:** Sacramento County **Prime:** Sierra National Pete Regan (916) 481-6792	Aug-05	Aug-05	340	340	49	Permalok		SM Soft SC Swelling	10'	10 - 25
51	**Project:** Redwood Trunk Sewer - Hemlock Segment Oxnard, CA **Owner:** City Of Oxnard Public Works Division 305 West Third Street - Oxnard CA 93030 James Colton (805) 385-7831 **CM:** Harris & Assoc. 2934 Teal Club Road - Oxnard Ca. 93030 George Pendergrass (805) 815-3188 **Prime:** Don Kelly Construction Don Kelly (520)399-4606	Jun-05	Nov-06	3450	1030	36/44.1	Polycrete	3 2 1	SC loose to GM dense cobbles boulders	8 - 20'	15 - 30s
52	**Project:** Walnut Creek/San Ramon Valley Trans Pipeline Walnut Creek, CA **Owner:** EBMUD 375 11th St. - Oakland, CA 94607 Joe Kacyra (925)930-8097 **CM:** Jacobs & Assoc. Craig Camp (619) 260-5570 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Jan-06	May-06	860 1230	860	84 94	Steel Csg. Steel Csg.	2	CH very stiff CL Swelling	20'	mid 20s to 40
53	**Project:** North Napa Bypass Sewer & Siphon Napa, CA **Owner:** Napa Sanitation District 935 Hartle Ct. - Napa, CA 94558 Carl Jacobson (707) 258-6000 **CM:** Winzler & Kelly 495 Tesconi Circle - Santa Rosa, CA 95401-4696 Jim Winter (707) 523-1010 **Prime:** K.J. Woods Construction Kieran Woods (415) 759-0506	Sep-06	Oct-06	542	292	72	Permalok		SM soft - stiff SC cobbles cohesive & non-cohesive flowing	34'	teens to 68
54	**Project:** Bay St. Reservoir System Transmission Imprvmt. Santa Cruz, CA **Owner:** City of Santa Cruz Water Dept. 809 Center St. Rm. 102 - Santa Cruz, CA 95062 Doug Valby (831) 420-5212 **Prime:** Mountain Cascade Roger Williamson (510) 373-8370	Nov-06	Dec-06	460	460	36	Permalok		SC soft SM Flowing non-cohesive	20'	20 - 78
55	**Project:** Solids Dewatering Facility Las Vegas, NV **Owner:** Clark County Water Reclamation District 5857 Flamingo Road Las Vegas, NV 89211-5598 **CM:** Harris & Assoc. 2310 Paseo Del Prado, Su.A104 - Las Vegas, NV 89102 Lorenzo Portillo (702) 597-9410 **Prime:** TAB Contractors Derek Stott (702) 642-3033	Jun-07	Aug-07	294 688	294 294	36 49.5	Permalok Permalok		SC stiff - hard GC Dense Caliche	21'	66 - 320 Ref.

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
56	**Project:** North San Jacinto Sewer Project – Phase 2 San Jacinto, CA **Owner:** Eastern Municipal Water District 2270 Trumble Rd. Perris, CA 92572-8300 (951) 928-3777 **Prime:** W.A. Rasic Construction Jeremy Juarez (562) 928-6111	Jun-07	Oct-07	2202 1304	402 450	24 27	Polycrete Polycrete		SM stiff - hard SW Dense SP	10'	20 - 44
57	**Project:** Folsom South Canal Connection Project Mokelumne River to Mokelumne Aqueducts Clements, CA 95227 **Owner:** EBMUD P.O Box 610 Clements, CA 95227 (209) 327-1076 **CM:** Bennett Trenchless Engrs. 90 Blue Ravine Rd. - Suite 165 - Folsom, CA 95630 Matthew Wallin (916) 294-0095 **Prime:** Sundt Construction, Inc. John McGinnis (916) 830-3000	Dec-07	Feb-08	242 434	242 434	88 72	Permalok RCCP	2	SP MD AG SO 2,500 psi mixed & changing DCH	30'	26 - 32 2500 psi
58	**Project:** North Outfall Sewer (W.O. SZC11307) Los Angeles, CA **Owner:** City of Los Angeles Wastewater Conveyance Construction Div. **Prime:** Colich & Sons / J.R. Pipeline - JV Brad Sims (310) 397-9990	Mar-08	May-08	200 110	200 110	72 49.5	Hobas Permalok		SP, ML, MH		8 - 54
59	**Project:** Avenue 45 Los Angeles, CA **Owner:** City of Los Angeles Wastewater Conveyance Construction Div. 1149 S. Broadway - Su. 620 Los Angeles, CA 90014 **Prime:** Mladen Buntich Construction / Pacific Boring - JV Lee Roesner (909) 920-9977	May-08	Jun-08	312	312	44.5	Permalok		Tmsi Puente Formation DCH	30 -35	<3600 psi
60	**Project:** FRWA Segment 3 Florin, CA **Owner:** Freeport Regional Water Agency 9240 Laguna Springs Dr.- Su 100 Elk Grove, CA 95758 Tom Dugan (916) 226-8300 **CM:** Parsons - Henry Thom **Prime:** SJ Louis Construction Mike Bollinger (916) 688-9696	Jun-08	Jul-08	309	309	88	Permalok		SM, GM w/ cobbles & gravel non-cohesive DCH		up to 50/6"
61	**Project:** FRWA Segment 1 Elk Grove, CA **Owner:** Freeport Regional Water Agency 9240 Laguna Springs Dr.- Su 100 Elk Grove, CA 95758 Tom Dugan (916) 226-8300 **CM:** Parsons - Henry Thom **Prime:** Mountain Cascade Randy Buckman (925) 373-8370	Oct-07	Oct-08	1307 536	1050 Changed to Bore & Jack (COC)	102	Permalok	3 1	SM, ML, CL soft - very hard gravel w/ cobbles Hard jet grout Sand w/ Cobbles	30 to 40 ft.	< 10 to 90/11"
62	**Project:** A-line Relief Interceptor, Ph. 2A Concord, CA **Owner:** Central Contra Costa Sanitary District 5019 Imhoff Place - Martinez, California 94553 Alex Rozul (925) 228-9500 **Prime:** Mountain Cascade Jim Ratkiff (925) 373-8370	Jun-08	Sep-08	870	460	72	RCP	1	CH w/ sand & gravel stiff	up to 15 ft.	up to 21
63	**Project:** Altamont Pipeline - Livermore Reach Livermore, CA **Owner:** Alameda County - Zone 7 Water Agency 100 N. Canyons Pkwy. - Livermore, CA 94551 Rich Putich (925) 454-5038 **CM:** Harris & Associates 4046 First St., Su.102 - Livermore, CA 94551 Craig Pyle (925) 455-0210 **Prime:** Ranger Pipelines, Inc. Peter Cuddihy (415) 822-3700	Sep-08	Sep-08	373	373	55.5	Permalok		SM, SC w/ gravel dense non-cohesive & cohesive	12 ft.	26

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64	**Project:** Folsom South Canal Connection Project Clay Station Rd to Jack Tone Rd - Spec 1954 Galt, CA **Owner:** EBMUD P.O Box 610 - Clements, CA 95227 (209) 327-1076 **CM:** Bennett Trenchless Engrs. 90 Blue Ravine Rd. - Suite 165 - Folsom, CA 95630 Matthew Wallin (916) 294-0095 **Prime:** SJ Louis Construction Anita Mehle (320) 253-9291	Dec-08	Dec-08	110	110	102	Permalok		SC, CL Med. Dense Very Stiff swelling	8 ft.	84
65	**Project:** Neilson St. Storm Drain & Sanitary Improvements Albany, CA **Owner:** City of Albany Randy Liptien **CM:** URS Greg Jacobs (510) 893-3600 **Prime:** Ranger Pipelines, Inc. Peter Cuddihy (415) 822-3700	Oct-08	Dec-08	1380	520	30/38.75	RCP		CL, CH, SM, SC Dense - Very Dense Stiff - Hard mixed & changing	8 ft.	up to 50/4 "
66	**Project:** ARP Wells to Desal Pipelines, Phase 2 Fremont, CA **Owner:** Alameda County Water District Juniet Rotter (510) 668-4487 **CM:** DCM Engineering 484 N. Wiget Lane - Walnut Creek, CA 94598 Rob Kahl (925) 945-0677 **Prime:** R J Gordon Construction Noah Johnson (925) 680-8660	Mar-09	Mar-09	290	290	36	Permalok		SW, SM Loose, Wet CL Stiff, Wet Swelling Mixed face	8 ft.	6 20
67	**Project:** 29th Ave Relief Sewer Oakland, CA **Owner:** City of Oakland - Public Works Agency 250 Frank Hogawa Plaza, Suite 4314 Oakland, CA 94612-2033 David Ng (510) 238-7267 **Prime:** McGuire & Hester Kyle Carone (510) 632-7676	May-09	May-09	307	307	24	Polycrete		SC stiff CL swelling	5'	36
68	**Project:** Newport Trunk Sewer & Force Main Huntington Beach, CA **Agency:** Orange County Sanitation District 10844 Ellis Avenue Fountain Valley, CA 92728-7018 Clark Dupont (714) 962-2411 **Prime:** Mladen Buntich Construction Lee Roesner (909) 920-9977	May-09	Oct-09	1,622	1376	94/96	Permalok	4	SP very loose to SM dense w/ gravel, cobbles, boulders flowing DCH	48'	2 - 20s
69	**Project:** Secret Town Pipeline Ph. II Improvements Secret Town, CA **Owner:** Placer County Water Agency 144 Ferguson Road Auburn, CA 95604 Ken Powers (530) 823-4850 **CM:** Bennett Trenchless Engrs. 90 Blue Ravine Rd. - Suite 165 - Folsom, CA 95630 Matthew Wallin (916) 294-0095 **Prime:** Preston Pipelines, Inc. Darin Gossett (916) 386-1500	Oct-09	Nov-09	280	280	54/55.5	Permalok		Rock up to 9,000 psi DCH	n/a	
70	**Project:** J Station Elimination Port Hueneme, CA **Owner:** City of Port Hueneme 250 N. Ventura Rd. Port Hueneme, CA 93041 Kit Nell (805) 986-6658 **Prime:** Mladen Buntich Construction Lee Roesner (909) 920-9977	Oct-09	Nov-09	630	320	36.7/44.1	Polycrete		GP loose to SP dense cobbles flowing DCH	12'	
71	**Project:** Walton 14-inch Water Distribution Line Yuba City, CA **Owner:** City of Yuba City 1201 Civic Center Blvd. Yuba City, CA 95993 David Barone (530) 822-4632 **Prime:** Lamon Construction John Montgomery (530) 671-1370	Jan-10	Feb-10	339	339	72"	Permalok		SC swelling SM cohesive	10'	20s

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
72	**Project:** Alameda Siphon 4 Sunol, CA **Owner:** SFPUC / WSIP 1145 Market St. San Francisco, CA Eric Gee (925) 862-5700 **CM:** CH2M-Hill Andrew Finney (916) 920-0300 **Prime:** Steven P. Rados Jim Pelletier (916) 475-1654	Sep-10	Nov-10	560	560	94.5/96	Permalok		GP cobbles GC Boulders to 36" mixed fac non-cohesive DCH	8'	up to refusal
73	**Project:** Lakeshore Trunk Sewer Lake Elsinore, CA **Owner:** EVMWD 31315 Chaney St Lake Elsinore, CA 92531 Paul Carver (951) 674-3146 X 8219 **CM:** Kennedy/Jenks Behrouz Tehrani (949) 261-1577 **Prime:** Mladen Buntich Construction Lee Roesner (909) 920-9977	Mar-10	Dec-10	8,740	1006	54/66.5"	RCP		R-2 Bedrock 6,000 psi DG Decomp. Granite CL w/ cobbles ML high pH DCH	13'	
74	**Project:** BDPL5 - WD2541 Newark, CA **Owner:** SFPUC / WSIP Program 1145 Market St. San Francisco, CA 94103 Jessica Romm (415) 551-4652 **CM:** Jacobs Engg. Dennis Graham (510) 438-0400 Jack Santos (510) 249-6902 **Prime:** Ranger Pipelines Peter Cuddihy (415) 822-3700	Jun-10	Jul-11	2,376	1189	87.5"	Permalok	3	SM very loose to SC dense SP CL swelling changing flowing DCH	up to 22'	,
75	**Project:** Stone Hollywood Trunk Line Los Angeles, CA **Owner:** L. A. Dept of Water & Power Box 5111, Room 1348 Los Angeles, CA 90051-5007 Alex Liu (213)367-5288 **Prime:** Mladen Buntich Construction Lee Roesner (909) 920-9977	Aug-11	Sep-11	330	330	72"	Permalok		SC Loose to SP dense SM CL soft to stiff saturated DCH	60'	8 - 37
76	**Project:** Laguna Treatment Plant Trunk Sewer Interconnect Santa Rosa, CA **Owner:** City of Santa Rosa, Engg Div. 69 Story Circle Santa Rosa, CA 95401 Tracy Duenas (707) 543-3952 **Prime:** Sierra Mountain Construction Doug Benton (415-896-2859)	Dec-11	Jan-12	465	465	48/58"	RCP		CH soft to stiff CL mixed face	5	6-10
77	**Project:** Sewer Lift Station No. 10 - Contract 2011-02 King County, WA Contract Value: $500,000 **Owner:** Northshore Utility District 6830 NE 185th St. Kenmore, WA 98028 Engineering: (425) 398-4400, Stephen Dennehy **CM:** Staheli Trenchless Consultants Matt Pease (425) 205-4930 **Contr.** Pacific Boring Steve Galyer (559) 864-9444	Feb-12	Apr-12	760	760	48/59.5"	RCP	2	GM gravel, cobbles SP non-cohesive SC mixed face DCH	15	teens to refusal
78	**Project:** Salinity Mgmt. Pipeline, Ph. 2A Camarillo, CA Contract Value: $497,000 **Owner:** Calleguas Municipal Water District 2100 Olsen Rd. Thousand Oaks, CA 91360 Robert Beamer (805) 579-7118 **CM:** Staheli Trenchless Consultants Matt Pease (425) 205-4930 **Contr.** Mladen Buntich Construction Ben Sebat (909) 920-9977	Jun-12	Jul-12	335	335	44.5"	Permalok		SM Silty Sand GM gravel flowing non-cohesive mixed face DCH	15	teens to 40s

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
79	**Project:** Agua Fria , Toroges,& Caliente Creek Improvements Fremont, CA Contract Value: $922,755 **Owner:** Valley Transit Authority 3331 N. 1st St., San Jose, CA 95134 Jim Constantini (408)321-5661 **CM:** URS (now AECOM) Blaise Cullen (415) 774-2700 **Contr.** Con-Quest Paul Loukianoff (415) 206-0524	Jul-12	Aug-12	511	511	78"/96.5"	RCP	2	SM stiiff to SC hard CL swelling DCH	6	teens to 55
80	**Project:** North Plains East Trunk Extension Proj. No. 6261 North Plains, OR Contract Value: $746,635 **Owner:** Clean Water Services 2550 SW Hillsboro Hwy. Hillsboro, OR 97123 Duke Tran (503) 681-5116 **CM:** Tetra Tech Steven L. Kraushaar (503) 684-9097 **Contr.** K & E Excavating Steve Smith (503) 399-4833	Sep-12	Oct-12	711	711	44.5"	Permalok	1	CL soft - stiff SM CH wood debris DCH	16	2 - 29
81	**Project:** Hueneme Road Recycled Water Project Oxnard, CA Contract Value: $737,813 **Owner:** City of Oxnard - Public Works Dept. Design & Construction Services 305 West Third St., Oxnard,CA 93030 Raymond Williams - (805) 385-7902 **CM:** Jensen Design & Survey 1672 Donlon St. - Ventura, CA 93003 Lawrence Faulkner (805) 633-2234 **Contr.** Mladen Buntich Construction Antony Christensen (909) 920-9977	May-13	Jun-13	536	536	60.0"	Permalok		SC Firm to CL Very Stiff DCH	23 ft.	
82	**Project:** Miller Park to Pershing Sewer Separation Project Omaha, NE Contract Value: $1,098,500 **Owner:** City of Omaha - CSO Program 222 S. 15th St. - Su. 1406S Omaha, NE 68102 Tom Glow (402) 341-0235 **CM:** Carollo Engineers 11422 Miracle Hills Drive, Suite 115 Omaha, NE 68154 Weston Engel (402) 496-4088 **Contr.** Graham Construction Clayton Wachal (402) 891-9651	Sep-13	Nov-13	1,296	1296	60.0"	RCP	3	CL Soft to Stiff Sticky	20 ft.	
83	**Project:** Lift Station 11B, Contract 04-2007S Covington, WA Contaract Value: $1,141,695 **Owner:** Soos Creek Water and Sewer District P.O. Box 58039 Renton, WA 98058-1039 (253) 630-9900 **CM:** Tetra Tech 1420 Fifth Ave. - Ste. 600 Seattle, WA 98101 (206) 883-9300 **Contr.** Pease & Sons, Inc. Harrison Hotchkiss			427	427	72.0"	Permalok		Qpnf formation GP Cobbles Boulders SP Gravel DCH	25 ft.	refusal
84	**Project:** Ute Reservoir Intake Screens and Tunnel Logan, NM Contract Value: $631,335 **Owner:** Eastern New Mexico Water Utility Authority OCCAM - Program Manager Paul Van Gulick - (575)937-0319 **Engr.** CH2M-Hill Greg Gates (262) 225-8099 **Contr.** ASI / ECI Shane McFadden	Mar-14	Apr-14	233	233	60.0"	Permalok (gasketed)		Fractured Rock Trujillo Formation UCS: up to 10,000 psi DCH	55 ft.	

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
85	**Project:** 48" Force Main Reliability Improvement Project - Unit 1 Redwood City, CA Contract Value: $2,875,119 **Owner:** Silicon Valley Clean Water 1400 Radio Road, Redwood City, CA 94065 (650) 591-7121 **CM:** The Covello Group 1660 Olympic Blvd. - Suite 330 Walnut Creek, CA 94596 Mike Jaeger - (925)933-2300 **Contr.** Power Engineering Construction Ken Lindberg	Oct-13	Jun-14	2,250	900	72.0"	Permalok		Bay Mud CL Clay CH Clay SM Silty sand SP Sand some wood DCH	45 ft.	4 - 100
86	**Project:** Mesa Road Trunk Sewer Project Goleta, CA Contract Value: $1,226,600 **Owner:** Goleta West Sanitary District PO Box 4, Goleta, CA 93116 Mark Nation - (805) 968-2617 **CM:** Penfield & Smith 111 East Victoria Street, Santa Barbara, CA 93101 David Rundle - (805) 963-9532 **Contr.** Mladen Buntich Construction Antony Christensen (909) 920-9977	Jul-14	Aug-14	1,420	730	42 / 44.5	Hobas	1 ea	Qe Estuarine SC Sandy Clay CH Fat Clay Organics rootlets cobbles baselined	0 - 6	0 - 20s
87	**Project:** Georgia Street Interceptor Amarillo, TX Contract Value: $1,521,218 **Owner:** City of Amarillo, TX 509 S.E. Seventh Ave Amarillo, TX 79105 David Mullins (806) 379-9306 **Eng/CM** Kimley - Horn 601 NW Loop 410 - Suite 350 San Antonio, TX 78216 Ryan Sowa (201) 321-3414 **Contr.** Spiess Construction Company, Inc. Mike Olson (702) 755-5751	May-15	Jul-15	2,399	750	42 / 44.5	Hobas		SC Sandy Clay CL Sandy Lean Clay CH Fat Clay Calc. Nodules		13-52
88	**Project:** Schwerin Street Sewer System Improvement Project San Francisco, CA Contract Value: $626,208 **Owner:** SFPUC 525 Golden Gate Avenue SF, CA 94102 Jeff Young (415) 265-5014 **Engr.** McMillen-Jacobs Norm Joyal **Contr.** JMB Construction Niall Kelly	Aug-15	Sep-15	600	600	60"	Hobas	1	SC Colma Sand SM Hard Clay SP Gravel many rocks DCH	10'	up to 50/5"
89	**Project:** Industrial Road Parallel Sanitary Sewer San Carlos, CA Contract Value: $729,905 **Owner:** City of San Carlos - Public Works 600 Elm Street San Carlos, CA 94070-3085 Huy Nguyen (650) 802-4198 **Eng/CM** Hatch Mott MacDonald Nick Goodenow (925) 398-7282 **Contr.** KJ Woods Construction Kieran Woods	Dec-15	Jan-16	400	400	45.5"	Permalok	1	CL Sandy Clay SC stiff - very stiff GP Gravel GC DCH	10'	23
90	**Project:** Agua Hedionda Sewer Lift Station Carlsbad, CA Contract Value: $2,819,260 **Owner:** City of Carlsbad, CA City of Vista, CA **Eng:** Brown & Caldweld / McMillen-Jacobs J.P. Semper / Norm Joyal **CM:** Arcadis / MJS Construction Management & Engineering Mark Sullivan / Alec Anderson (MT Inspection) **CM:** Butier Engineering, Inc. Jason Kraus **Contr.** Pulice Construction, Inc. Rob Williams (619) 772-6502	Jul-16	Jun-17	3,999	753	57"/60"	Hobas	7	Old Paralic Deposits Santiago Formation SC Dense SM Medium Dense CL Very Stiff GP Gravel DCH	5'	30-50 50/3"

Ref No.	Project Information	Date Start	Date Compl.	Total Length	Longest Drive	Pipe ID/OD	Pipe Type	IJS	Soil Group Description	Soil Hyd. Head	Soil N Values
91	**Project:** Sewer & AC Water Group 827 San Diego, CA Contract Value: $1,533,600 **Owner:** City of San Diego, CA **Eng:** City of San Diego, CA **CM:** City of San Diego, CA **Contr.** Ortiz Corp. Jose Ortiz (619) 434-7925	Jan-17	May-17	2,001	600	27"/34"	Polycrete	0	Bay Deposits Terrace Deposits ML-CL: Clayey sitlt to silty clay ML-SM: Sandy silt to silty sand	10	0 to 30
92	**Project:** USD Twin Force Main Newark, CA Contract Value: $719,700 **Owner:** Lyons Homes Union Sanitary District **Eng:** Coleman Engineering **CM:** Tanner Pacific **Contr.** McGuire and Hester Micheal Laganowsky (510) 282-6319	Jan-18	Feb-18	280	140	43"/44.5"	Permalok	0	Bay Mud GW: Gravel ML: Sandy Silt SP: Silty Sand DCH	15	3-20
				166,194							

NADA

PACIFIC

CORPORATION

Project Articles

Mesa Road Trunk Sewer Project
Goleta West Sanitary District

General Contractor: **Mladen Buntich Construction**

Microtunneling Contractor: **Nada Pacific Corporation**

In order to accommodate increased system flows and improve wetland protections for Goleta Slough, Goleta West Sanitary District needed to replace and relocate a main sewer line along Mesa Road, near the UC Santa Barbara campus. The Board of Directors decided to abandon the existing pipeline and relocate a new pipeline into Mesa Road, out of the sensitive wetland area. While the decision to move the line was determined to be more costly, the environmental benefits are significant.

In addition to open trench work, the project design called for direct jack microtunneling a total of 1,600 feet of 42-inch FRP under Mesa Road.

Among the challenges to the microtunneling portion of the project were:

- An extremely tight schedule. Mesa Road is a main traffic artery to UCSB and construction needed to be completed within a very tight period while school was on summer break.
- A very flat grade with unusually tight tolerance requirements with base-lined soil conditions that included very loose (0 - blow count, push) estuarine and cobbles. There was concern that steering would be difficult in the very loose ground, especially if a heavy mixed soil cutterhead was needed for the cobbles.

The project was bid in April of 2014. The low bidder was **Mladen Buntich Construction** with **Nada Pacific Corp**. as microtunneling subcontractor.

The design called for five microtunnel reaches. But given the tight schedule, the Contractors proposed doing just two longer reaches of 730 & 690 feet out of a common launch shaft. This would eliminate two moves (setups) which would save significant time.

With the launch shaft completed, Nada Pacific mobilized to the site starting July 7th and launched for the first drive on July 14. Working single shifts, Nada Pacific completed the 730-foot microtunnel in just 10 days (including launch & retrieval).

An unexpected challenge came when ultra-fine clay with organics were encountered that would not separate from the slurry water. After conferring with a slurry consultant, the plant centrifuge operation was adjusted and additional polymers were introduced to the slurry. This allowed the separation plant to keep up with the fast excavation pace.

The second drive was similar. The 690-foot drive was completed in 9 days. This beat the tight microtunneling schedule. Both drives were well within the allowed line and grade tolerances. A soft ground cutterhead was used and no cobbles were encountered.

Georgia Street Interceptor & SW 28th Avenue Gravity Lines

Amarillo, TX

Owner / CM: **City of Amarillo, TX**

Design Engineer: **Kimley-Horn and Associates**

General Contractor: **Spiess Construction Co., Inc.**

Microtunneling Contractor: **Nada Pacific Corp.**

The City of Amarillo, Texas planned for the installation of a new gravity flow sewer main under Georgia Street. The project would allow the abandonment of an existing lift station and would provide both efficiency and increased capacity for the wastewater system in the area. The City employed Kimley-Horn and Associates for the design. The bid design called for the trenchless installation of approximately 2,400 linear feet of 36-inch sewer with options for tunnel liner, jacked casing or direct jacked carrier pipe. The alignment ran about 20 feet deep under the center of busy Georgia Street leaving two lanes of traffic open on both sides during construction. Because it was connecting to existing lines the sewer installation required an extremely tight 1-inch grade tolerance.

The project was bid in December of 2014. Spiess Construction was low bidder as general contractor with Nada Pacific as the microtunneling subcontractor.

After the bid the contractor team proposed a plan to direct jack the carrier pipe, but would reduce the number of shafts and extend the drive lengths from the bid design. This also required increasing the pipe size to 42" inside diameter to lower the risk of the longer reaches. The result would be less disruption to surface activity, better traffic flow and access to local businesses. The plan was accepted by the Owner.

The microtunneling plan was for four drives; 440, 450, 750 and 700 linear feet. There would be two jacking shafts and three receiving shafts. Once the drives were completed Spiess would excavate down and install two manholes that were originally located in jacking / receiving shafts. Nada Pacific chose to use their Akkerman microtunneling system and slurry separation system. They would install Hobas fiberglass reinforced jacking pipe (FRP).

A jacking can was positioned behind the MTBM on each drive and an additional IJS was installed mid-way on each of the longer drives. Due to the proper use of bentonite lubrication the maximum safe jacking capacity of the pipe was never reached so neither the jacking can nor the IJS needed to be activated.

The soil was generally the stiff clay and sandy clay that was indicated in the Geotechnical Report. There were some unanticipated caliche nodules, but they had minimal impact on production. Overall, the crew averaged over 80 feet per single shift and 100 feet on the last (700 foot) drive. All drives were installed within the tight tolerance requirements. And there were no claims or disputes.

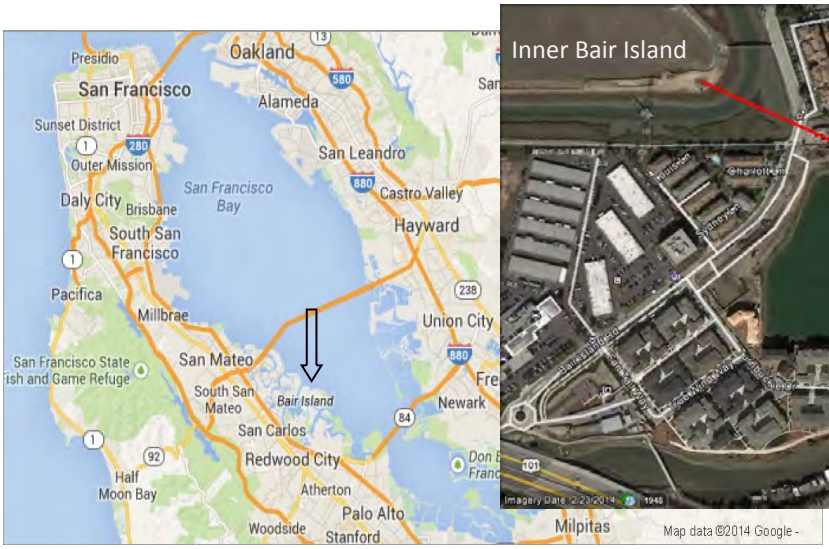
Another successful project due to Owner / Contractor teamwork and expertise.

48-inch Force Main—Unit 1 Project

Redwood City, CA

Owner: **Silicon Valley Clean Water (SVCW)**
Construction Manager: **The Covello Group**
General Contractor: **Power Engineering Corp.**
Microtunneling Contractor: **Nada Pacific Corp.**

The Silicon Valley Clean Water (SVCW) has plans for construction of the 48-inch Force Main Reliability Improvement Project, which is located just west of the San Francisco Bay within the cities of San Carlos and Redwood City, CA. The primary objective of the project is to replace and upgrade the aging pipe that has a history of leakage and damage because of the unstable "bay mud" ground conditions in the area. Bair Island is part of the Don Edwards National Wildlife Refuge. The project would improve pipeline reliability, reduce service disruption and reduce maintenance and environmental costs associated with pipe leaks. The project consists of four Units or segments. Units 2, 3 & 4 are in design stage and are scheduled to be out for bids in 2016.



Unit 1 (Maple Street to Inner Bair Island) was completed in the fall of 2014. It consisted of open trench work, (4) shafts and (3) microtunnel reaches that connected the Maple Street Pump Station to the future force mains extending from Inner Bair Island. Power Engineering Corporation of Alameda, CA was the low bidder with Nada Pacific Corporation of Caruthers, CA doing the microtunneling and Drill Tech Drilling & Shoring of Antioch, CA constructing the shafts.

The specifications called for secant pile shafts for the first two reaches. The Contractor proposed Cutter Soil Mix (CSM) shafts. The depth of the pipeline was designed to be about 38 feet, in order to maintain sufficient cover while tunneling under the canal. The water head would approach 30 feet at high tide. The encasements for the microtunnel portal seal assembly were embedded into the shaft headwalls during shaft construction to assure the necessary seal.

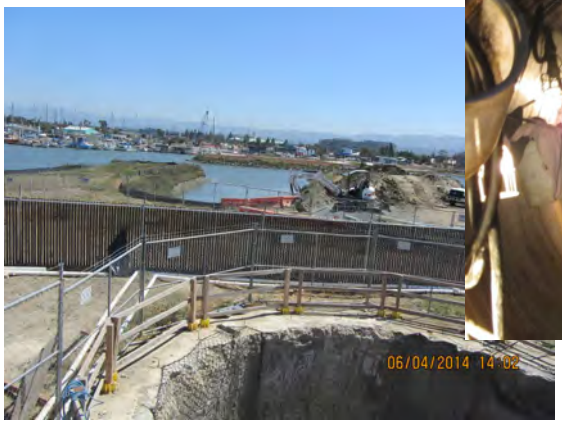
The plan was to jack 72-inch diameter Permalok steel casing, after which the 48-inch carrier pipe would be installed.

Nada Pacific chose to use a mixed-soil combination cutterhead with discs for the MTBM in order to excavate through the CSM shaft walls. It would also be beneficial if unexpected obstructions were encountered in the layers of old and new "bay mud", which would turn out to be prophetic. The work area posed several challenges. There was limited setup area, access to site was restricted and it was necessary to alter the crane lifting plan to safely work near the high voltage power lines.

The first microtunnel (Reach No. 4) was 490 feet long and crossed under Bair Island Road and a saltwater canal to Inner Bair Island. The drive was completed without a hitch.

The second microtunnel (Reach No. 3) was 860 feet long. It ran to the end of a narrow peninsula between a marina and cove and under PG&E high voltage power line towers.
This drive was completed in 15 single-shift days. A fair amount of wood (apparently old pilings) was excavated and digested through the slurry system, but it did not impede the operation.

The third microtunnel (Reach 2) was added after Reaches 3 and 4 were underway. It was 900 feet long and crossed under a marina on Redwood Creek and an access canal to the cove. There was concern that historical pilings for the marina may be in the path of the microtunnel. So the Engineers stipulated that a pattern of nine pilot tube probes be done prior to microtunneling. The two rows of probes were done just above the tunnel zone and extended out under the marina 250 feet. Something was hit during one of the probes. An additional unimpeded probe was performed that gave the assurance that the obstruction did not extend into the tunnel zone. Reach 2 was completed 15 days.

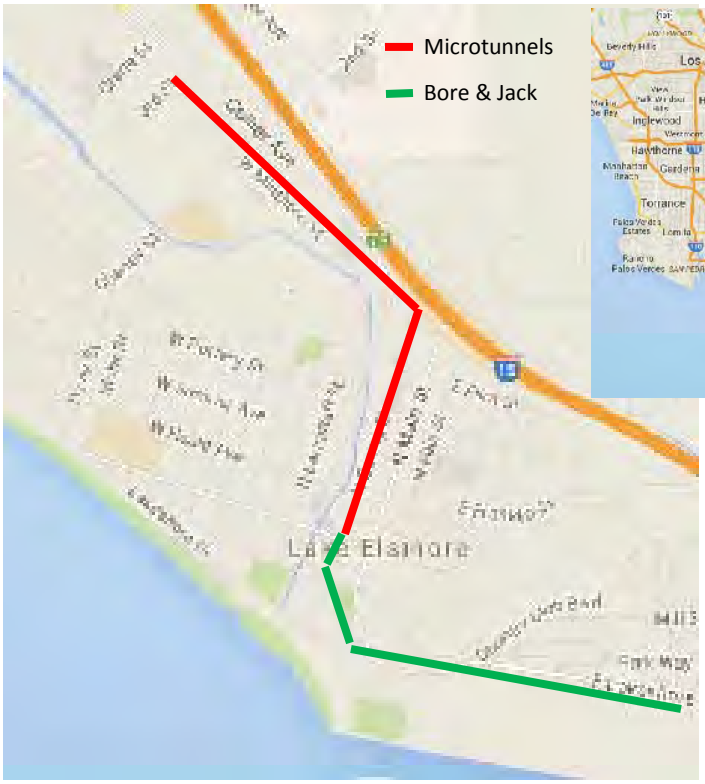


LAKESHORE TRUNK SEWER - NORTH REACH PROJECT

LAKE ELSINORE, CA

Owner: **ELSINORE VALLEY MUNICIPAL WATER DISTRICT**
Engineer: **KENNEDY / JENKS CONSULTANTS**

General Contractor: **MLADEN BUNTICH CONSTRUCTION**
Microtunneling Contractor: **NADA PACIFIC CORPORATION**



BACKGROUND

Elsinore Valley is in a desert region of the Inland Empire in southern California. The Elsinore Valley Municipal Water District (EVMWD) was formed in 1950 when Lake Elsinore residents saw the need for a municipal water district that could protect their water and secure imported water from outside water districts. Today, the Valley is thriving. It supports a prosperous economy and an enviable quality of life - all supported by water. Due to the population growth, the EVMWD's aging trunk sewer pipeline was near capacity. The proposed Lakeshore Trunk Sewer would serve as a parallel relief sewer collection system that would alleviate the capacity issues of the existing interceptor system. The master plan called for a 7-mile long sewer with diameters ranging from 33 to 54-inches. It would be constructed in three phases, consisting of the Malaga Reach, North Reach, and South Reach. The North Reach consisted of the construction of approximately 3.5 miles of 54-inch diameter sewer through the center of town in Lakeshore Drive, Spring Street, and Minthorn Street. The new 54" pipeline would augment and increase capacity for future growth. In an effort to minimize traffic impacts, the majority of the pipeline would be constructed utilizing microtunneling techniques. Kennedy/Jenks Consultants (KJ) was hired for design and support services of the project.

In an effort to minimize traffic impacts, the majority of the pipeline would be constructed utilizing microtunneling techniques.

NORTH REACH PROJECT

The North Reach phase of the project was awarded in late 2009 to low bidder Mladen Buntich Construction with Nada Pacific Corporation as microtunneling subcontractor. The trenchless portion of the project included 2,835 feet of Bore and Jack which was completed by Pacific Boring, Nada Pacific's sister company. The Microtunneling consisted of over 9,100 feet of 54-inch inside diameter RCP with t-lock liner. The path of the microtunneling was adjacent to a drainage canal and along Spring and Minthorn Streets, both busy city arteries. There were a total of (10) microtunnel drives, of which seven were over 900 feet long. The schedule was extremely tight and required two microtunneling crews working around the clock for a large portion of the project.

Ground conditions were very challenging. They included bedrock with up to 6,000 psi unconfined compressive strength, decomposed granite, clays, sands and silts with cobbles and boulders. The water table was well above the tunnel zone.

Nada Pacific chose to use an Akkerman Microtunneling Boring Machine (MTBM) and a mixed-ground cutterhead with a combination of Palmieri roller (disc) cutters and carbide teeth.

Since there were many long reaches Nada used a recoverable Jacking Can behind the MTBM in conjunction with multiple Intermediate Jacking Stations.

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Spoils pile with crushed decomposed granite. Cobbles and small boulders were also encountered.

Akkerman Microtunneling Boring Machine (MTBM) and a mixed-ground cutterhead with a combination of Palmieri roller (disk) cutters and carbide teeth

Recoverable Jacking Can with over 600 tons of thrust capacity

For guidance Nada Pacific incorporated the Herrenknecht Universal Navigation System - Electric Water Level with the laser / target system.

Other support equipment included a three-stage Separation Plant with a Derrick model 7200 Centrifuge.

The project was completed to the Owner's satisfaction, on budget and ahead of schedule.

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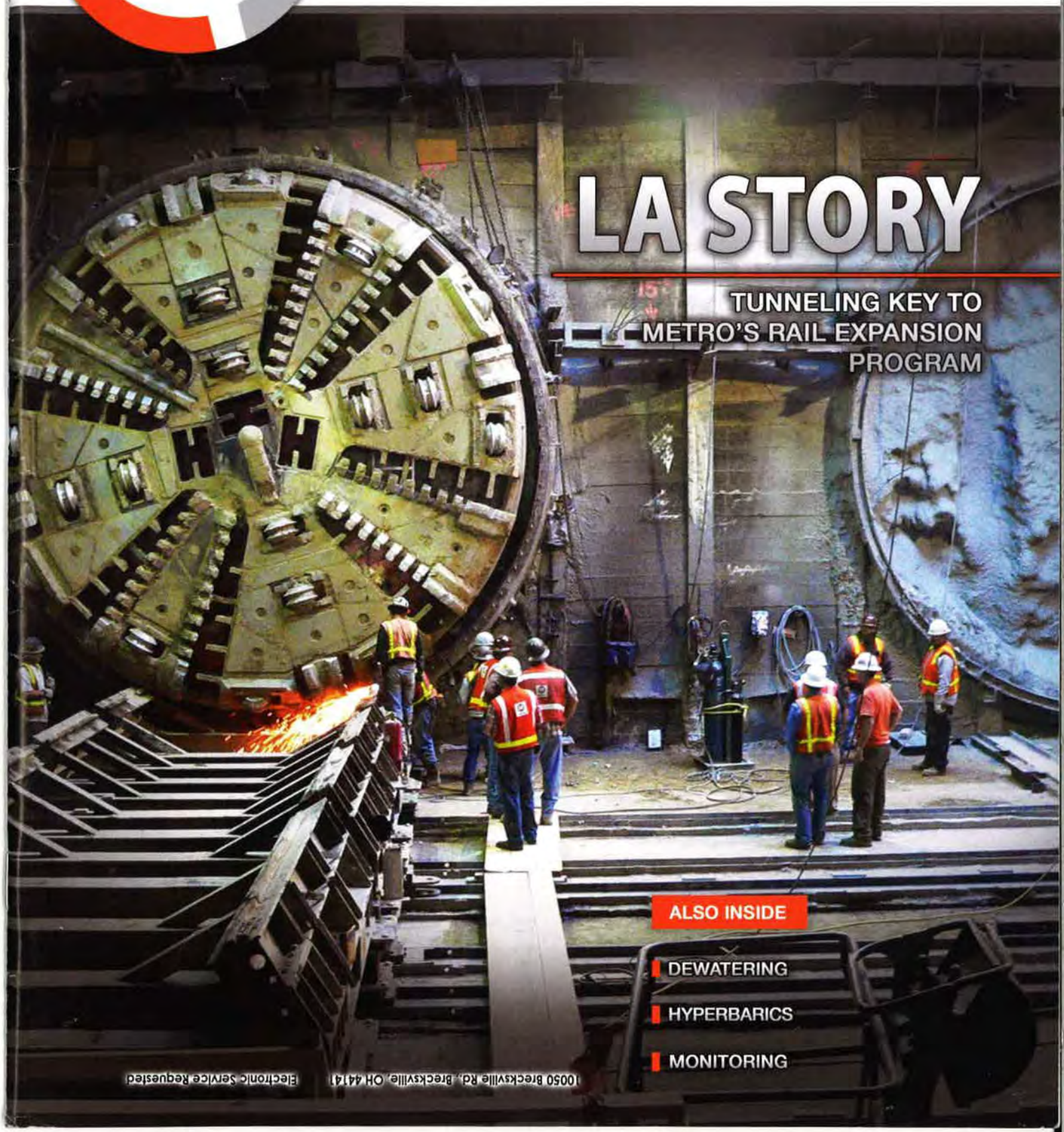
JUNE 2014



LA STORY

TUNNELING KEY TO METRO'S RAIL EXPANSION PROGRAM

ALSO INSIDE

- DEWATERING
- HYPERBARICS
- MONITORING

BELOW TOP:
Nada Pacific's SL60 MTBM emerges from a 1,292-lf drive for the City of Omaha.

BELOW BOTTOM:
The microtunneling contractor launched from a 40-ft long by 16-ft wide by 8-ft high concrete block (200 CY) on top of 30-ft long H-piles driven into bedrock and anchors drilled into the bedrock at a 45 degree angle.

REACTING TO THE SITUATION: SLURRY MICROTUNNELING FOR THE CITY OF OMAHA

By Laura Anderson

The Miller Park to Pershing Detention Basin Sewer Separation Project will divert storm water flows to the Pershing Detention Basin and is part of the City of Omaha's Clean Solutions for Omaha initiative. The majority of this conveyance was an extensive 1,292 lf, 60-in. ID RCP microtunneled alignment where the MTBM was launched from a specialized concrete thrust block, designed to withstand the jacking force for this great distance.

Additional work on the Miller Park to Pershing Detention Basin Sewer Separation Project included 1,008 lf of 60-in. ID RCP open-cut pipelines, outlet modifications in Miller Park, a new inlet into Pershing Detention Basin and construction of a storm water swale. Before construction, storm waters flowed into a combined sewer system that is slated for upgrade in 2016. Construction began in July 2013 and is anticipated for completion in July 2014. Project costs are $5,187,000

The Clean Solutions for Omaha (CSO) initiative contains 92 construction projects outlined in the city's long-term control plan to improve water quality in the Missouri River and Papillion Creek. When complete, these efforts will reduce the number of combined sewage and storm water flows from 52 occurrences per year to four. Construction on the CSO initiative began in 2010, will continue through 2027 with total project costs estimated at $2 billion.

Graham Construction of Omaha was the project's general contractor. The overall project designer was Carrollo Engineers of Omaha. Nada Pacific Corporation of Caruthers, California, was responsible for microtunneling construction. Nada was established in 1992 and has installed more than 150,000 lf of pipeline via slurry microtunneling methods since its founding. Bennett Trenchless Engineers of Folsom, California, provided microtunnel design services.

A microtunneled solution was required for this tunnel due to the topography, geotechnical reports reflecting blow counts as low as 2, existing utilities and the presence of ground water above the tunnel zone. The full length of the 1,292-lf drive ran along Redick Avenue, along the northeastern quadrant of Miller Park at a 0.65 percent uphill grade in a mostly residential region of northern Omaha.

The project was awarded in April 2013 and required detailed coordination for the sequence of construction phases by Graham Construction. Nada Pacific had a firm window of opportunity to get the tunnel installed for subsequent project progression, while facing inevitable freezing temperatures.

GETTING STARTED

Originally, the design called for a traditional shaft, but Graham, with the assistance of Engineering Partners of Eagan, Minn., realized that the native soil would not be able to withstand the jacking force. Clayton Wachal, project manager with Graham, stated: "The original design called for the installation of the jacking shaft 30 ft into the bluff where the shaft would have had a 35-ft head wall and 12-ft back wall. Not only did this create unequal pressures for shoring, it also made access impossible."

Wachal further described the challenge. "The tunnel began at the bottom of a bluff and was to be pushed into a condensed neighborhood. This provided zero resistance for the machine since the invert of the pipe was 3 ft above existing grade," he said.

Conversations and calculations ensued between Graham, Nada Pacific and the engineers that resulted in the determination that the custom man-made concrete structure would be needed to bear the reactive thrust load to complete a tunnel of this length. Wachal described the solution as "moving the jacking shaft out 30 ft to level ground to build a thrust block which consisted of a 40-ft long by 16-ft wide by 8-ft high concrete block (200 CY) on top of 30-ft long H-piles driven into bedrock and anchors drilled into the bedrock at a 45 degree angle."

PUSHING THROUGH

Nada Pacific brought its Akkerman SL60 MTBM with a soft-ground cutter face, an MK875T keyed jacking frame, control container, bentonite pump, four jacking stations, a jacking can and a U.N.S. guidance system for the exceptional distance.

American Concrete supplied the concrete pipe featuring a double-confined O-ring gasketed joint in 8-ft segments, valued for its watertight seal properties and jacking load capacity. Although challenged by limited resources in this area to produce this specialized pipe, American was able to satisfy the project's delivery deadline in order for micro-tunneling work to commence on time.

Nada Pacific crews began microtunneling in September 2013, with a mere 1.5 ft of ground cover above the MTBM at the launch portal.

The MTBM launch shaft was located in a wetland, at the base of hillside at the eastern end of the alignment. The general contractor began site construction by creating a gravel access road and staging area in early August 2013. Nada Pacific

mobilized in the second week of September. Crews positioned the separation plant, pipe and slurry line inventory behind the launch site, with the control container and bentontie pump situated on top of the thrust block. Ground cover was a mere 1.5 ft above the MTBM at the launch portal.

Ted Miller, project engineer for Nada Pacific, reported: "Among the buried utilities near the path of the microtunneled line was a 30-in. brick sewer line and another 18-in. sewer line that both ran parallel on opposite sides of it for about half of the distance." He added that: "Swelling clay was encountered throughout the entire alignment, which increased jacking loads" and that "special attention was given to the bentonite lubrication, to ensure a successful project."

The blow counts in this region made it difficult to maintain grade yet their skilled operators managed to persevere on course. To help with thrust distribution, they inserted four evenly spaced intermediate jacking stations along the tunnel and a jacking can behind the MTBM. The average amount of cover above the tunnel was about 40 ft.

Nada Pacific crews pulled out in mid-November and reported a total of 36 working days to complete this installation. They had a crew of six; four came from Nada Pacific and two from local sources. They worked 10- to 12-hour shifts and experienced their best production day when installing 50 lf in one shift.

JOB WELL DONE

Mike Abbott, microtunneling operator for Nada Pacific, noted that the project posed no outstanding difficulties and seconded Miller's comment that "the use of bentonite on the project was key." Midway through the alignment, one of the pumps in the bentonite circulation system failed, but Abbott reported that they were able to send an operator to Akkerman headquarters to pick up a replacement and continue production the next working day.

Graham Construction has a long-standing relationship with the City of Omaha. Miller stated that he "appreciated the open dialogue and shared respect for each party's area of expertise among the owner, general contractor and engineers." This being the first time that Nada Pacific worked with Graham Construction, Miller felt that, "we were treated as a valued contributor to the process and that's always a positive way to embark on a project."

Wachal equally admired the microtunneling subcontractor's competence, stating: "The team was able to hit the exact dates that were planned five months in advance. ... This project gave me a tremendous amount of confidence in Nada Pacific's knowledge and abilities."

LAURA ANDERSON is director of marketing and communications at Akkerman Inc., Brownsville, Minnesota.

2014

NORTH AMERICAN MICROTUNNELING

ALSO INSIDE

ACHIEVEMENT AWARD

Coluccio's Rene Inosanto, MWH's Greg Raines and Contractor Ward and Burke Earn Honors

TAPPING THE UTE RESERVOIR

Nada Pacific Completes Raw Water Intake in New Mexico (pictured)

A NEW ERA IN MICROTUNNELING

INDUSTRY'S GROWTH REFLECTED IN ASCE'S "STANDARD DESIGN AND CONSTRUCTION GUIDELINES FOR MICROTUNNELING"

A SUPPLEMENT TO:

Trenchless TECHNOLOGY

TBM TUNNEL BUSINESS MAGAZINE

INDUSTRY REVIEW

THE LAUNCH SEAL WAS DESIGNED TO WITHSTAND THE ESTIMATED GROUNDWATER PRESSURE AND CONSISTED OF MULTIPLE RUBBER SEALS AND HEAVY-DUTY SLIDE PLATES. THE SEAL IS SHOWN IN THE SHAFT WITH THE AKKERMAN MT460 JACKING FRAME.

TAPPING THE UTE RESERVOIR: A MICROTUNNEL RAW WATER INTAKE IN LOGAN, NEW MEXICO

BY LAURA ANDERSON

At the end of April 2014, a 236-lf., 60-in. microtunneled raw water intake was completed when the microtunnel boring machine (MTBM) drilled through a concrete headwall and tremmie block before emerging into the Ute Reservoir.

Groundwater supplies for residents of Curry, Roosevelt and Quay counties in New Mexico have been dwindling in the past decade, a result of depleted supplies from local aquifers and an increase in well taps by a growing population. It became evident that current sources could not accommodate even sustained usage from the existing population in a few decades. To address these issues, the Eastern New Mexico Rural Water System (ENMRWS) was formed in 2010.

The ENMRWS was charged with finding a solution to provide a sustainable potable water source for many years to come. ENMRWS reviewed several options and chose the design of a lakeside intake structure from the Ute Reservoir as the best solution. Capitalizing on this water source is suspected to yield an annual delivery of 16,450 acre feet per year.

The Ute Reservoir was created in 1959 by damming the Canadian River in Logan, New Mexico. Today, the reservoir serves as a tourist's destination and is flanked mostly by seasonal properties.

Major design elements for the first phase of the project include an intake structure, intake tunnel and pump forebay shaft. Future phases of the project will add pump stations, water storage tanks, 87.5 miles of 30- to 54-in. diameter transmission lines, 94.8 miles of 8- to 36-in. lateral pipelines, and communication systems. The entire project costs are $550 million and are projected for completion by 2033. The Ute Reservoir Intake Screens, Tunnel and Pump Forebay Shaft phase of the project cost $14 million.

Nada Pacific Corp. of Caruthers, California, was subcontracted for the microtunnel portion of the project. All other facets of construction were performed by ASI Constructors Inc. of Pueblo West, Colorado. Occam Engineering is the project program manager and CH2M Hill of Albuquerque, New Mexico, is project engineer. Engineering & Construction Innovations Inc., of

Oakdale, Minnesota, a sister company to ASI, provided expertise for the specialized drill-and-blast operations. ASI Marine Services, another sister company to ASI, provided professional services, personnel and equipment for the underwater construction.

ASI mobilized to the project site in late 2012. Crews began with excavation to lower and level the ground to the shaft's top grade. The bedrock along the reservoir comprises highly saturated and fractured sandstone with an unconfined compressive strength of 10,000 psi. The 80-ft deep by 50-ft diameter forebay shaft, intended for future use as a pump station, was blasted and hollowed out in stages. After each blast, ASI lowered excavation equipment into the shaft with a 160-ton crane, spoils were transferred into a muck box and removed from the shaft via crane. Curtain grouting prevented water inflow during this process and the walls were supported with shotcrete and grouted rock anchors.

A specially designed compression ring slip form was used to mold the 18-in. thick, 4,000-psi cast-in-place walls that were installed in 11-ft increments. Next, ASI moved to drill-and-blast construction for the intake bench. A long-reach excavator, situated on a barge in the reservoir, excavated material 50 ft below the water elevation to create the intake bench. Permanent rock fall mesh was attached to the vertical rock above the intake bench by divers using 9-ft rock anchors to prevent loose rubble from falling on the equipment or intake bench. Nearly 80% of the rock fall mesh was attached underwater by the diving team.

In preparation for the MTBM's emergence into the reservoir, a tremmie concrete block was poured and anchored to the surrounding bedrock so the MTBM would have a stable location to exit the highly fractured sandstone. The perimeter of the construction area in the reservoir was outfitted with a marine safety barrier to prevent contamination.

The MTBM was launched from the forebay shaft. The launch seal was designed to withstand the estimated groundwater pressure and consisted of multiple rubber seals and heavy-duty slide plates. Prior to launch, the seal and headwall were pressure tested to 30 psi using the MTBM and slurry system. A closure piece was welded from the seal to the pipe to ensure a watertight seal and that the water pressure from the reservoir would not push the pipe back into the launch shaft after the jacking frame and pipe clamp were removed.

Sixty-in. OD Permalok pipe in 20-ft lengths with T7 joints and Powercrete J coating on the exterior was specified for the intake tunnel. The coating protects the exterior of the pipe from the abrasive sandstone during the pipe jacking process and prevents corrosion after the microtunneling is completed.

Nada used its Akkerman SL60 MTBM,

THE AKKERMAN MTBM WAS LAUNCHED FROM AN 80-FT DEEP BY 50-FT DIAMETER FOREBAY SHAFT, INTENDED FOR FUTURE USE AS A PUMP STATION.

NADA PACIFIC RECENTLY COMPLETED A 60-IN. DIAMETER, 236-LF MICROTUNNEL INTO UTE RESERVOIR IN NEW MEXICO.

MT460 jacking frame, control container and bentonite pump with a Derrick Flo Line Primer slurry separation plant for microtunneling operations. The MTBM was outfitted with a bulkhead to seal off the sensitive internal components of the MTBM from water damage when retrieved from the reservoir. The MTBM cutterhead was equipped with disc cutters, drag teeth, and picks to meet the 15,000-psi rock cutter baseline.

Nada mobilized on site on March 11, 2014. After a few minor delays, crews launched the MTBM on April 7, 2014, and had to contend with constant wind, sometimes as strong as 70 mph, during their six weeks onsite. They experienced an average production rate of 34 lf per 11-hour shift, and reported a peak installation rate of 52 lf in one shift.

Prior to launch, crews welded a bulkhead in the first pipe behind the MTBM. After retrieval of the MTBM, the bulkhead served as a watertight seal between the reservoir and the jacking shaft to allow for simultaneous work on both ends of the project. After the MTBM drilled through the headwall, the 5-ft space between the back end of the MTBM and the bulkhead was closed and pressure tested before the MTBM was removed from the pipe string. The bulkhead would later be removed by ASI when the complete intake system was ready for operation.

The MTBM was recovered at 50-ft depths by drivers who connected it to a sling, then hoisted it to the surface via crane. Nada completed its portion of the project on April 29, 2014.

ASI planned to remain onsite through November 2014. Doug Laub, general superintendent for ASI, reported that they are currently "completing construction on the concrete deck designed to receive a pump station building in a future contract." Laub furthered that, "they formed and placed the intake footing 50 ft below reservoir elevation, and erected the column support structure that will hold the high and low level intake valves and support the elevated access platform, approximately 15 ft above water elevation." The intake screens are hydro-burst actuated to keep them clean for raw water filtration before it goes into the forebay shaft. It was expected that the complete system will be in full operation in late 2014.

Laub commented on the complexities of this project noting that, "the sizeable quantity of underwater work, amount of concrete installed underwater, and technical factors made this project remarkable. The unique construction variables required careful staging and extraordinary safety considerations – factors not typically considered on a job site." Laub stated that all the crews had to be careful to maximize their time. He added, "project regulations disallowed night shift and weekend work, so each step in the timeline was constantly assessed and reassessed during the crew's daily meetings."

Laub was pleased with ASI's partnership with Nada and attributed the success of the microtunnel intake to "expertise, collaborative planning and communication."

LAURA ANDERSON IS DIRECTOR OF MARKETING FOR AKKERMAN, A PIPE JACKING AND TUNNELING EQUIPMENT MANUFACTURER HEADQUARTERED IN BROWNSDALE, MINNESOTA.

THE MTBM WAS RECOVERED AT 50-FT DEPTHS BY DRIVERS WHO CONNECTED IT TO A SLING, THEN HOISTED IT TO THE SURFACE VIA CRANE.

NADA

PACIFIC

CORPORATION

PROJECT EXECUTIVE

RESUMES

Nada Pacific Corporation
Supervisor List Overview
Updated 01/2019

Cal Terrasas, President, and General Manager
Experience: Involved in the Trenchless Industry since 1981. 37-years tunneling/pipe jacking experience with 13-years as general superintendent; 27-years microtunneling; also, trained and experienced in operating microtunneling system. Served as machine operator on the first two projects completed by Nada Pacific, total of (24) projects managed totaling 67,359LF of microtunneling. Served as the project manager and superintendent on all the projects Nada Pacific has completed listed prior to 2003. Works directly with Frank Lorenzen and Larry Tomforde on all ongoing projects since 2003 and Ted Miller since 2012.

Frank Lorenzen, Vice President of Operations
Experience: BSMD University of Wisconsin-Stout, concentration in Product Development, 1982. Involved in the Trenchless Industry since 1983. 34-years tunneling/pipe jacking experience which includes; 21-years of pipe jacking and microtunneling equipment design experience, 25 years microtunneling, 10-years field installation experience 13,500 LF in tunneling and over 50,000 LF in microtunneling through 2005. 5-years as general superintendent in microtunneling; also, trained and experienced in operating microtunneling system. Served as a Senior Project Manager and superintendent on (6) Microtunneling projects totaling 11,359 LF. Works directly with Cal Terrasas and Larry Tomforde on all ongoing projects since 2003 and Ted Miller since 2012.

Larry Tomforde, Senior Project Manager
Experience: BSBA University of Minnesota, 1978. Involved in the Trenchless Industry since 1983. 34-years tunneling/pipe jacking experience which includes; 18-years of experience in tunneling / pipe jacking equipment sales and construction, 4-years as Pipe-jacking / tunneling contractor, 10-years as project manager; 25-years microtunneling; also, trained and experienced in operating microtunneling system. Cal Osha Certified Gas Tester / Safety Representative. Served as a Senior Project Manager on (46) microtunneling projects totaling 65,914 LF. See employee project history for detailed project information.

Ted Miller, Project Management /Project Engineer
Experience: BS Construction Management Fresno State, 2012. Involved in the Trenchless Industry since 2004. 6-years tunneling/pipe jacking experience as a Laborer-Mechanic with Nada Pacific and Pacific Boring. 13-years microtunneling experience; trained and experienced in servicing and operating microtunneling system. Cal Osha Certified Gas Tester / Safety Representative. Served as Project Manager on (12) microtunneling projects totaling 14,791 LF. See employee project history for detailed project information.

Dennis Vogt, Equipment Manager
Experience: Associate Degree in Electronics from ACC, graduated 1988. Involved in the Trenchless Industry since 1987. 25-years of pipe jacking and microtunneling experience which includes 15-years field service technician and equipment fabrication experience with tunneling equipment, 8-year(s) of experience as a Manufacture Representative Equipment Service and 10-years as Equipment Manager with Nada Pacific and Pacific Boring. Cal Osha Certified Gas Tester / Safety Representative.

Tim Butow, Superintendent, Foreman and Lead Operator
Experience: Involved in the Trenchless Industry since 1993. 24-years tunneling/pipe jacking experience with 22-years microtunneling with Nada Pacific; Promoted to Project Foreman 1996. Trained and experienced in servicing and operating microtunneling system. Has worked on (53) microtunneling projects totaling 97,673 lf. Cal Osha Certified Gas Tester / Safety Representative. See employee project history for detailed project information.

Jason Shepard, Superintendent, Foreman and Lead Operator
Experience: Involved in the Trenchless Industry since 2005. 12-years underground construction/tunneling experience with 9-years microtunneling experience with Nada Pacific; He was promoted to Project Foreman in 2013. Trained and experienced in servicing and operating microtunneling system. Has worked on (12) microtunneling projects totaling 9,535 lf. Cal Osha Certified Gas Tester / Safety Representative. See employee project history for detailed project information.

NADA PACIFIC CORPORATION
EMPLOYEE RESUME

Frank Lorenzen

V.P OF Operations

Education : BS Product Development, University of Wisc. Stout (1983)

Related Experience : 1982 - 2003 with Akkerman, Inc., Manufacturer Tunneling Equipment. Design Engineer: 1982-1987; Engineering Mgr: 1987-2000; Sr. Eng New Product Development- 2000-2003.

2003 - Current: VP of Operation Nada Pacific Corporation

Microtunneling Projects with Nada Pacific Corproation

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
1	39	Alvarado Blvd Trunk Sewer Project Ph. I Union City, CA	Jul-03	May-04	7220	820	39	Polycrete
2	40	Export Pipeline Castro Valley/Lewelling Segment	Jun-03	Feb-04	7570	980	36	RCCP
		Castro Valley & San Leandro, CA			650		55	Steel Csg
3	41	Nummi Supply Pipeline Relocation Newark, CA	Aug-03	Dec-03	360	360	24	Permalok
4	43	Silicon Valley Power 230KV Transmission Line Santa Clara, CA	Nov-04	Nov-04	480	480	36	Polycrete
5	45	Alvarado Blvd Trunk Sewer Project - Ph II,	Jun-04	Jun-05	5274		24	Polycrete
		Union City, CA			1252	776	36	Polycrete
					384		21	Polycrete
					256		36	Permalok
6	48	U & S Streets Inline Storage Project Sacramento, CA	Jun-05	Jun-05	520	524	66	RCP
7	49	Upper NW Interceptor 5 & 6	Jul-05	Aug-05	528	528	48	RCP
		Sacramento, CA			516		66	RCP
8	50	Sacramento Airport Domestic Water Sacramento, CA	Aug-05	Aug-05	340	340	49	Permalok
9	52	Walnut Creek/San Ramon Valley Trans Pipeline Walnut Creek, CA	Jan-06	May-06	860	860	84	Steel Csg.
10	53	North Napa Bypass Sewer & Siphon Napa, CA	Sep-07	Oct-07	538	288	72	Permalok
11	54	Bay St. Reservoir System Transmission Imprvmt. Santa Cruz, CA	Dec-07	Dec-07	460	460	36	Permalok
12	55	Solids Dewatering Facility	Jun-07	Aug-07	294	280	36	Permalok
		Las Vegas, NV			688	280	49.5	Permalok
13	56	North San Jacinto Sewer Project – Phase 2	Jun-07	Oct-07	2202	402	24	Polycrete
		San Jacinto, CA			1304	450	27	Polycrete
14	57	Folsom South Canal Connection Project	Dec-07	Feb-08	244	244	88	Permalok
		Mokelumne River to Mokelumne Aqueducts			434	434	72	RCCP
		Clements, CA 95227						
15	58	North Outfall Sewer (W.O. SZC11307)	Mar-08	May-08	200	200	72	Hobas
		Los Angeles, CA			110	110	49.5	Permalok
16	59	Avenue 45 Los Angeles, CA	May-08	Jun-08	312	312	44.5	Permalok
17	60	FRWA Segment 3 Florin, CA	Oct-08	Jul-08	309	309	88	Permalok
18	61	FRWA Segment 1 Elk Grove, CA	Oct-07	Oct-08	2059	1050	102	Permalok
19	62	A-line Relief Interceptor, Ph. 2A Concord, CA	Jun-08	Sep-08	870	460	72	RCP
20	63	Altamont Pipeline - Livermore Reach Livermore, CA	Sep-08	Sep-08	373	373	55.5	Permalok
21	64	Folsom South Canal Connection Project Clay Station to Jack Tone Rd. Galt, CA	Dec-08	Dec-08	110	110	102	Permalok
22	65	Neilson St. Storm Drain & Sanitary Improvements Albany, CA	Oct-08	Dec-08	1380	520	30/38.75	RCP
23	66	ARP Wells to Desal Pipelines, Phase 2 Fremont, CA	Mar-09	Mar-09	290	290	36	Permalok
24	67	29th Ave Relief Sewer Oakland, CA	May-09	May-09	307	307	24	Polycrete
25	68	Newport Trunk Sewer & Force Main Huntington Beach, CA	May-09	Oct-09	1622	1376	96	Permalok

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
26	69	Secret Town Pipeline Ph. II Improvements Secret Town, CA	Oct-09	Nov-09	280	280	55.5	Permalok
27	70	J Station Elimination Port Hueneme, CA	Oct-09	Nov-09	630	320	36 / 44	Polycrete
28	71	Walton 14-inch Water Distribution Line Yuba City, CA	Jan-10	Feb-10	339	339	72	Permalok
29	72	Alameda Siphon 4 Sunol, CA	Sep-10	Nov-10	560	560	94.5/96	Permalok
30	73	Lakeshore Trunk Sewer Lake Elsinore, CA	Mar-10	Dec-10	8740	925	54/66.5"	RCP
31	74	BDPL5 - WD2541 Newark, CA	Jun-10	Jul-11	2376	1189	87.5"	Permalok
32	75	Stone Hollywood Trunk Line Los Angeles, CA	Aug-11	Sep-11	330	330	72"	Permalok
33	76	Laguna Treatment Plant Trunk Sewer Interconnect Santa Rosa, CA	Dec-11	Jan-12	465	465	48/58"	RCP
34	77	Sewer Lift Station No. 10 - Contract 2011-02 King County, WA	Jan-12	Feb-12	760	760	48/59.5"	RCP
35	78	Salinity Mgmt. Pipeline, Ph. 2A Camarillo, CA	Jun-12	Jul-12	335	335	44.5"	Permalok
36	79	Agua Fria , Toroges,& Caliente Creek Improvements Fremont, CA	Jul-12	Aug-12	511	511	78/96.5"	RCP
37	80	North Plains East Trunk Extension Proj. No. 6261 North Plains, OR	Sep-12	Oct-12	711	711	44.5"	Permalok
38	81	Hueneme Road Recycled Water Project Oxnard, CA	May-13	Jun-13	536	536	60"	Permalok
39	82	Miller Park to Pershing Sewer Separation Project Omaha, NE	Sep-13	Nov-13	1296	1296	60"	RCP
40	83	Lift Station 11B, Contract 04-2007S Covington, WA			427	427	72.0"	Permalok
41	84	Ute Reservoir Intake Screens and Tunnel Logan, NM	Mar-14	Apr-14	233	233	60.0"	Permalok
42	85	48" Force Main Reliability Project - Unit 1 Redwood City, CA	Oct-13	Jun-14	2250	900	72.0"	Permalok
43	86	Mesa Road Trunk Sewer Project Goleta, CA	Jul-14	Aug-14	1420	730	42 / 44.5	Hobas
44	87	Georgia Street Interceptor Amarillo, TX	May-15	Jul-15	2399	750	42 / 44.5	Hobas
45	88	Schwerin Street Sewer System Improvement San Francisco, CA	Aug-15	Sep-15	600	600	60"	Hobas
46	89	Industrial Road Parallel Sanitary Sewer San Carlos, CA	Dec-15	Jan-16	400	400	45.5"	Permalok
					65,914			

NADA PACIFIC CORPORATION
EMPLOYEE EXPERIENCE

Cal Terrasas — Owner / Project Manager

Experience: 34-years tunneling/pipe jacking experience with 13-years as general superintendent and 21-years microtunneling. Trained and experienced in operating microtunneling system. Served as the project manager and superintendent on all the projects Nada Pacific has completed listed prior to 2003. Work directly with Larry Tomforde on all projects since 2003.

Certifications: Cal-OSHA Safety Rep; Gas Tester

	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
1	Bristol Relief Sewer Ventura, CA	Nov-92	Dec-93	8,900	660	36	RCP
2	Francisco Boulevard Force Main San Rafael, CA	May-94	Jun-94	430	430		Permalok
3	Vicksburg Avenue - 96th Interceptor Los Angeles, CA	Mar-95	Aug-95	5,417	739	42	Hobas
4	Santa Rosa Subregional Water Reclaimation System Rohnert Park, CA	Jun-95	Jul-95	430	430		Permalok
5	Pleasant Hill Relief Interceptor Ph. III Pleasant Hill, CA	Aug-95	Nov-95	3,015	689	48	RCP
6	Peralta Boulevard Sanitary Sewer Fremont, CA	May-96	Oct-96	2,840	430	18	VCP Polycrete
7	Martinez East Side Sewer Improvements, Martinez, CA	Oct-98	Mar-99	3,147 201		24 24	VCP Pipeform
8	Lower Warren Avenue Sewer Project Fremont, CA	Oct-96	Dec-96	1,000	445		Permalok
9	Loma Santa Fe Grade Separator Solana Beach, CA	Mar-97	Apr-97	1,000	680	60	Hobas
10	Upper Fremont Boulevard Sewer Project - Phase 1 Fremont, CA	May-97	Sep-97	5,300	465	21	Polycrete
11	Blaine Avenue Relief Sewer Newark Subbasin Fremont, CA	Aug-97	Oct-97	1,976	380	36	Hobas
12	Joint Outfall "C" Unit 3B Trunk Sewer Long Beach, CA	Oct-97	Jan-98	1,356	780	60	RCP
13	South Orinda Sewer Improvements - Phase 1 Orinda, CA	Nov-97	Oct-98	6,245	640	36	RCP
14	California Drive Interceptor Sewer Project Burlingame, CA	Mar-98	Nov-98	2,250 646	540	36 51	Hobas Hobas
15	Irvington Warm Springs Pipeline Fremont, CA	Nov-98	Feb-98	275	275		Permalok
16	Martinez East Side Sewer Improvements, Martinez, CA	Oct-98	Feb-99	3,147 201		24 24	VCP Pipeform
17	Appiam Way Influent Sewers & Forcemain Santa Monica, CA	Mar-99	May-99	620	620	60/73.5	RCP
18	Stevenson Blvd Sanitary Sewer Improvement Project Fremont, CA	Mar-99	Sep-99	6,040	460	21	Polycrete
19	Upper Warren Avenue Sewer Project Fremont, CA	May-99	Aug-99	1,940	454	18	Polycrete
20	Fries Avenue Force Main Relocation Long Beach, CA	Sep-99	Oct-99	830	830	44"	Permalok
21	Redwood Street Sanitary Sewer Rerouting Project Vallejo, CA	Oct-99	Dec-99	1,287	287	18	Polycrete
22	Thompson Pump Plant Los Angeles, CA.	Jan-00	Jan-00	96	96	18	Polycrete

23	Amarillo Ave & Embarcadero Way Relief Sewer Palo Alto, CA.	Jan-00	Apr-00	2,796	554	42	Polycrete
24	Parallel Force Main Project, Milpitas, CA	Aug-00	Sep-00	532 532	532		Steel Csg
25	Newark Subbasin Upper Relief Sewer Project Newark, CA	Nov-00	Jan-01	3,480	501	21	Polycrete
26	Kaiser-Randum Land Reclaimation Project Livermore CA	Jan-01	Jan-01	400	400	36	Polycrete
27	Coastal Distribution Local Water Supply Project Watsonville, CA	Feb-01	Feb-01	91	91	36	RCCP
28	Woodside Trunk Sewer Rehabilitation Project Rocklin, CA	Feb-01	Apr-01	1224	245	36	Polycrete
29	Outfall D Manhatten Beach, CA		Jan-01	440	440	44	Permalok
30	Pleasant Hill Relief Interceptor, Phase 4, Pleasant Hill, CA	May-01	Oct-01	666 1287	666	36 30	Polycrete
31	Hollywood Main Replacement Sewer, Hollywood, CA	Jun-01	Mar-02	2877 725		30 15	Polycrete
32	Geysers Recharge Project, Healdsburg Healdsburg, CA	Aug-01	Jun-02	1110	680	60	Permalok
33	Friendly Acres Storm Drain Improvement - Phase II Redwood City, CA	Sep-01	Feb-02	590	590	66/79.5	RCP
34	Sacramento River Water Treatment & Intake Sacramento CA	Oct-01	Dec-01	700	700	72	Permalok
35	ARP Wells To Desalination Facility Supply Pipelines Newark, CA	Nov-01	Apr-02	821	420	30	Permalok
36	Marina Del Rey 24-inch Feedline Phase 1A Marina Del Rey, CA	Feb-02	May-02	528	528	36	Permalok
37	Hollywood Main Sewer Replacement Los Angeles, CA	Oct-01	Feb-02	2877 725		27 15	Polycrete VCP
38	Dominguez Gap Barrier Project, Long Beach, CA	Jul-03	Oct-03	2458	953	57/60.0	Hobas

Los Angeles County Public Works
Eddie Lyons (626) 458-3104

NADA

PACIFIC

CORPORATION

PROJECT MANAGER/ENGINEER

RESUMES

NADA PACIFIC CORPORATION
EMPLOYEE EXPERIENCE

Ted Miller — **Project Management / Project Engineer**

Education: BS Construction Management, Fresno State University

Related Experience: 6 years Laborer/Fabricator/Mechanic with Nada Pacific & Pacific Boring.

Certifications: Cal-OSHA Safety Rep; Gas Tester; 30 Hour Click Safety

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
		Laborer						
1	42	SSJID Country Water Transmission Pipeline Manteca, CA	Aug-04	Oct-04	785	440	42	Hobas
2	44	Fair Oaks/South Orangevale sewer Improvement Fair Oaks, CA	Oct-04	Mar-04	2550	570	27	Polycrete
3	45	Alvarado Blvd Trunk Sewer Project - Ph II, Union City, CA	Jun-04	Jun-05	5274		24	Polycrete
					1252	776	36	Polycrete
					384		21	Polycrete
					256		36	Permalok
4	47	Eagle Rock Interceptor Sewer	Apr-05	Feb-06	3072	610	36	Hobas
		Eagle Rock, CA				460	28	Hobas
5	51	Red Wood Trunk Sewer-Hemlock Segment Oxnard, CA	Jun-05	Nov-06	3450	1030	36	Polycrete
6	55	Solids Dewatering Facility	Jun-07	Aug-07	294	280	36	Permalok
		Las Vegas, NV			688	280	49.5	Permalok
7	59	Avenue 45 Los Angeles, CA	May-08	Jun-08	312	312	44.5	Permalok
8	60	FRWA Segment 3 Florin, CA	Oct-08	Jul-08	309	309	88	Permalok
9	61	FRWA Segment 1 Elk Grove, CA	Oct-07	Oct-08	2059	1050	102	Permalok
10	62	A-line Relief Interceptor, Ph. 2A Concord, CA	Jun-08	Sep-08	870	460	72	RCP
					21,555			
		Project Management / Project Engineer						
11	74	BDPL5 - WD2541 Newark, CA	Jun-10	Jul-11	2376	1189	87.5"	Permalok
12	78	Salinity Mgmt. Pipeline, Ph. 2A Camarillo, CA	Jun-12	Jul-12	335	335	44.5"	Permalok
13	79	Agua Fria , Toroges,& Caliente Creek Improv. Fremont, CA	Jul-12	Aug-12	511	511	78/96.5"	RCP
14	80	North Plains East Trunk Extension Proj. No. 6261 North Plains, OR	Sep-12	Oct-12	711	711	44.5"	Permalok
15	81	Hueneme Road Recycled Water Project Oxnard, CA	May-13	Jun-13	536	536	60"	Permalok
16	82	Miller Park to Pershing Sewer Separation Project Omaha, NE	Sep-13	Nov-13	1296	1296	60"	RCP
17	82	Miller Park to Pershing Sewer Separation Project Omaha, NE	Sep-13	Nov-13	1296	1296	60"	RCP
18	83	Lift Station 11B, Contract 04-2007S Covington, WA			427	427	72.0"	Permalok
19	84	Ute Reservoir Intake Screens and Tunnel Logan, NM	Mar-14	Apr-14	233	233	60.0"	Permalok
20	85	48" Force Main Reliability Improvement Project - Unit 1 Redwood City, CA	Oct-13		2250	900	72.0"	Permalok
21	86	Mesa Road Trunk Sewer Project Goleta, CA	Jul-14	Aug-14	1420	730	42 / 44.5	Hobas
22	87	Georgia Street Interceptor Amarillo, TX	May-15	Jul-15	2399	750	42 / 44.5	Hobas
22	88	Schwerin Street Sewer System Improvement San Francisco, CA	Aug-15	Sep-15	600	600	60"	Hobas
23	89	Industrial Road Parallel Sanitary Sewer San Carlos, CA	Dec-15	Jan-16	400	400	45.5"	Permalok
					14,790			

NADA PACIFIC CORPORATION
EMPLOYEE RESUME

Larry Tomforde

Senior Project Manager

Education : BS Business Administration, University of MN (1978)

Related Experience : 1980 - 1997 Sales/Marketing Director with Akkerman, Inc., manufacturer of tunneling equipment.

1989 - 1992 Pipe jacking / tunneling contractor

1999 - 2003 Construction Manager

Microtunneling Projects (started with NPC in October of 2003 as Project Manager)

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
1	39	Alvarado Blvd Trunk Sewer Project Ph. I Union City, CA	Jul-03	May-04	7220	820	39	Polycrete
2	40	Export Pipeline Castro Valley/Lewelling Segment	Jun-03	Feb-04	7570	980	36	RCCP
		Castro Valley & San Leandro, CA			650		55	Steel Csg
3	41	Nummi Supply Pipeline Relocation Newark, CA	Aug-03	Dec-03	360	360	24	Permalok
4	43	Silicon Valley Power 230KV Transmission Line Santa Clara, CA	Nov-04	Nov-04	480	480	36	Polycrete
5	45	Alvarado Blvd Trunk Sewer Project - Ph II,	Jun-04	Jun-05	5274		24	Polycrete
		Union City, CA			1252	776	36	Polycrete
					384		21	Polycrete
					256		36	Permalok
6	48	U & S Streets Inline Storage Project Sacramento, CA	Jun-05	Jun-05	520	524	66	RCP
7	49	Upper NW Interceptor 5 & 6	Jul-05	Aug-05	528	528	48	RCP
		Sacramento, CA			516		66	RCP
8	50	Sacramento Airport Domestic Water Sacramento, CA	Aug-05	Aug-05	340	340	49	Permalok
9	52	Walnut Creek/San Ramon Valley Trans Pipeline Walnut Creek, CA	Jan-06	May-06	860	860	84	Steel Csg.
10	53	North Napa Bypass Sewer & Siphon Napa, CA	Sep-07	Oct-07	538	288	72	Permalok
11	54	Bay St. Reservoir System Transmission Imprvmt. Santa Cruz, CA	Dec-07	Dec-07	460	460	36	Permalok
12	55	Solids Dewatering Facility	Jun-07	Aug-07	294	280	36	Permalok
		Las Vegas, NV			688	280	49.5	Permalok
13	56	North San Jacinto Sewer Project – Phase 2	Jun-07	Oct-07	2202	402	24	Polycrete
		San Jacinto, CA			1304	450	27	Polycrete
14	57	Folsom South Canal Connection Project	Dec-07	Feb-08	244	244	88	Permalok
		Mokelumne River to Mokelumne Aqueducts			434	434	72	RCCP
		Clements, CA 95227						
15	58	North Outfall Sewer (W.O. SZC11307)	Mar-08	May-08	200	200	72	Hobas
		Los Angeles, CA			110	110	49.5	Permalok
16	59	Avenue 45 Los Angeles, CA	May-08	Jun-08	312	312	44.5	Permalok
17	60	FRWA Segment 3 Florin, CA	Oct-08	Jul-08	309	309	88	Permalok
18	61	FRWA Segment 1 Elk Grove, CA	Oct-07	Oct-08	2059	1050	102	Permalok
19	62	A-line Relief Interceptor, Ph. 2A Concord, CA	Jun-08	Sep-08	870	460	72	RCP
20	63	Altamont Pipeline - Livermore Reach Livermore, CA	Sep-08	Sep-08	373	373	55.5	Permalok
21	64	Folsom South Canal Connection Project Clay Station to Jack Tone Rd. Galt, CA	Dec-08	Dec-08	110	110	102	Permalok
22	65	Neilson St. Storm Drain & Sanitary Improvements Albany, CA	Oct-08	Dec-08	1380	520	30/38.75	RCP

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
23	66	ARP Wells to Desal Pipelines, Phase 2 Fremont, CA	Mar-09	Mar-09	290	290	36	Permalok
24	67	29th Ave Relief Sewer Oakland, CA	May-09	May-09	307	307	24	Polycrete
25	68	Newport Trunk Sewer & Force Main Huntington Beach, CA	May-09	Oct-09	1622	1376	96	Permalok
26	69	Secret Town Pipeline Ph. II Improvements Secret Town, CA	Oct-09	Nov-09	280	280	55.5	Permalok
27	70	J Station Elimination Port Hueneme, CA	Oct-09	Nov-09	630	320	36 / 44	Polycrete
28	71	Walton 14-inch Water Distribution Line Yuba City, CA	Jan-10	Feb-10	339	339	72	Permalok
29	72	Alameda Siphon 4 Sunol, CA	Sep-10	Nov-10	560	560	94.5/96	Permalok
30	73	Lakeshore Trunk Sewer Lake Elsinore, CA	Mar-10	Dec-10	8740	925	54/66.5"	RCP
31	74	BDPL5 - WD2541 Newark, CA	Jun-10	Jul-11	2376	1189	87.5"	Permalok
32	75	Stone Hollywood Trunk Line Los Angeles, CA	Aug-11	Sep-11	330	330	72"	Permalok
33	76	Laguna Treatment Plant Trunk Sewer Interconnect Santa Rosa, CA	Dec-11	Jan-12	465	465	48/58"	RCP
34	77	Sewer Lift Station No. 10 - Contract 2011-02 King County, WA	Jan-12	Feb-12	760	760	48/59.5"	RCP
35	78	Salinity Mgmt. Pipeline, Ph. 2A Camarillo, CA	Jun-12	Jul-12	335	335	44.5"	Permalok
36	79	Agua Fria , Toroges,& Caliente Creek Improvements Fremont, CA	Jul-12	Aug-12	511	511	78/96.5"	RCP
37	80	North Plains East Trunk Extension Proj. No. 6261 North Plains, OR	Sep-12	Oct-12	711	711	44.5"	Permalok
38	81	Hueneme Road Recycled Water Project Oxnard, CA	May-13	Jun-13	536	536	60"	Permalok
39	82	Miller Park to Pershing Sewer Separation Project Omaha, NE	Sep-13	Nov-13	1296	1296	60"	RCP
40	83	Lift Station 11B, Contract 04-2007S Covington, WA			427	427	72.0"	Permalok
41	84	Ute Reservoir Intake Screens and Tunnel Logan, NM	Mar-14	Apr-14	233	233	60.0"	Permalok
42	85	48" Force Main Reliability Project - Unit 1 Redwood City, CA	Oct-13	Jun-14	2250	900	72.0"	Permalok
43	86	Mesa Road Trunk Sewer Project Goleta, CA	Jul-14	Aug-14	1420	730	42 / 44.5	Hobas
44	87	Georgia Street Interceptor Amarillo, TX	May-15	Jul-15	2399	750	42 / 44.5	Hobas
45	88	Schwerin Street Sewer System Improvement San Francisco, CA	Aug-15	Sep-15	600	600	60"	Hobas
46	89	Industrial Road Parallel Sanitary Sewer San Carlos, CA	Dec-15	Jan-16	400	400	45.5"	Permalok
					65,914			

NADA

PACIFIC

CORPORATION

PROJECT SUPERINTENDENT-FOREMAN-OPERATOR

RESUMES

NADA PACIFIC CORPORATION
EMPLOYEE MICROTUNNELING EXPERIENCE

Tim Butow **Foreman / Lead MTBM Operator**

Certifications: Cranes; OSHA Safety Rep; Gas Tester

Foreman responsibilities include equipment preparation, coordinates microtunneling activities, supervises & directs field personnel, identifies & solves problems.

MTBM Operator responsibilities include operation of the MTBM and supervises maintenance & repairs

Separation Plant Supervisor responsibilities include oversees & coordinates soil separation operation.

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
		MTBM Operator Trainee						
1	3	Vicksburg Avenue - 96th Interceptor	Mar-95	Aug-95	5,417	739	42	Hobas
2	5	Pleasant Hill Relief Interceptor	Aug-95	Nov-95	3,015	689	48	RCP
		Pleasant Hill, CA						
3	6	Peralta Boulevard Sanitary Sewer	May-96	Oct-96	2,840	430	18	VCP
		Fremont, CA						Polycrete
		Foreman & Operator						
4	8	Lower Warren Avenue Sewer Project	Oct-96	Dec-96	1,000	445		Permalok
		Fremont, CA						
5	10	Upper Fremont Boulevard Sewer Project - Phase 1	May-97	Sep-97	5,300	465	21	Polycrete
		Fremont, CA						
6	11	Blaine Avenue Relief Sewer Newark Sub basin	Aug-97	Oct-97	1,976	380	36	Hobas
		Fremont, CA						
7	12	Joint Outfall "C" Unit 3B Trunk Sewer	Oct-97	Dec-97	1,356	780	60	RCP
		Long Beach, CA						
8	13	South Orinda Sewer Improvements - Phase 1	Nov-97	Oct-98	6,245	640	36	RCP
		Orinda, CA						
9	17	Apian Way Influent Sewers & Forcemain	Mar-99	May-99	620		60	RCP
		Santa Monica, CA						
10	19	Upper Warren Avenue Sewer Project	May-99	Aug-99	1,800		18	Polycrete
		Fremont, CA						
11	22	Thompson Pump Plant	Jan-00	Jan-00	96		18	Polycrete
		Los Angeles, CA.						
12	24	Parallel Force Main Project,	Aug-00	Sep-00	532			Steel Csg
		Milpitas, CA			532			
13	25	Newark Sub basin Upper Relief Sewer Project	Nov-00	Jan-01	3,480		21	Polycrete
		Newark, CA						
14	26	Kaiser-Randum Land Reclamation Project	Jan-01	Jan-01	400		36	Polycrete
		Livermore CA						
15	27	Coastal Distribution Local Water Supply Project	Feb-01	Feb-01	91		36	RCCP
		Watsonville, CA						
16	31	Hollywood Main Replacement Sewer,	Jun-01	Mar-02	2877		30	Polycrete
		Hollywood, CA			725		15	
17	32	Geysers Recharge Project, Healdsburg Pipeline	Aug-01	Jun-02	1100		60	Permalok
		Healdsburg, CA						
18	33	Friendly Acres Storm Drain Improvement - Phase II	Sep-01	Feb-02	590		66	RCP
		Redwood City, CA						
19	36	Marina Del Rey 24-inch Feedline Phase 1A	Feb-02	May-02	528		36	Permalok
		Marina Del Rey, CA						
20	37	Hollywood Main Sewer Replacement	Oct-01	Feb-02	2877		27	Polycrete
		Los Angeles, CA			725		15	VCP
21	38	Dominguez Gap Barrier Project,	Jul-03	Oct-03	1358	953	57	Hobas
		Long Beach, CA						
22	39	Alvarado Blvd Trunk Sewer Project	Jul-03	May-04	7220	820	39	Polycrete
		Union City, CA						
23	40	Export Pipeline Castro Valley/Lewelling Segment	Jun-03	Feb-04	7570	980	36	RCCP
		Castro Valley & San Leandro, CA			650		55	Steel Csg

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
24	45	Alvarado Blvd Trunk Sewer Project - Ph II, Union City, CA	Jun-04	Jun-05	5274 1252 384 256	 776 	24 36 21 36	Polycrete Polycrete Polycrete Permalok
25	48	U & S Streets Inline Storage Project Sacramento, CA	Jun-05	Jun-05	520	524	66	RCP
26	51	Redwood Trunk Sewer - Hemlock Segment Oxnard, CA	Jun-05	Nov-05	3450	1000	36	Polycrete
27	52	Walnut Creek/San Ramon Valley Trans Pipeline Walnut Creek, CA	Jan-06	May-06	860	860	84	Steel Csg.
28	53	North Napa Bypass Sewer & Siphon Napa, CA	Sep-06	Oct-06	538	288	72	Permalok
29	54	Bay St. Reservoir System Transmission Imprvmt. Santa Cruz, CA	Dec-06	Dec-06	460	460	36	Permalok
30	55	Solids Dewatering Facility Las Vegas, NV	Jun-07	Aug-07	294 688	294 294	36 49.5	Permalok Permalok
31	56	North San Jacinto Sewer Project – Phase 2 San Jacinto, CA	Jun-07	Oct-07	2202 1304	402 450	24 27	Polycrete Polycrete
32	57	Folsom South Canal Connection Project Mokelumne River to Mokelumne Aqueducts Clements, CA 95227	Dec-07	Feb-08	244 434	244 434	88 72	Permalok RCCP
33	58	North Outfall Sewer (W.O. SZC11307) Los Angeles, CA	Mar-08	May-08	200 110	200 110	72 49.5	Hobas Permalok
34	59	Avenue 45 Los Angeles, CA	May-08	Jun-08	312	312	44.5	Permalok
35	60	FRWA Segment 3 Florin, CA	Jun-08	Jul-08	309	309	88	Permalok
36	61	FRWA Segment 1 Elk Grove, CA	Oct-07	Oct-08	2059	1050	102	Permalok
37	63	Altamont Pipeline - Livermore Reach Livermore, CA	Sep-08	Sep-08	373	373	55.5	Permalok
38	64	Folsom South Canal Connection Project Clay Station to Jack Tone Rd. Galt, CA	Dec-08	Dec-08	110	110	102	Permalok
39	68	Newport Trunk Sewer & Force Main Huntington Beach, CA	May-09	Oct-09	1622	1376	96	Permalok
40	69	Secret Town Pipeline Ph. II Improvements Secret Town, CA	Oct-09	Nov-09	280	280	55.5	Permalok
41	71	Walton 14-inch Water Distribution Line Yuba City, CA	Jan-10	Feb-10	339	339	72	Permalok
42	72	Alameda Siphon 4 Sunol, CA	Sep-10	Nov-10	560	560	94.5/96	Permalok
43	74	BDPL5 - WD2541 Newark, CA	Jun-10	Jul-11	2376	1189	87.5"	Permalok
44	76	Laguna Treatment Plant Trunk Sewer Interconnect Santa Rosa, CA	Dec-11	Jan-12	465	465	48/58"	RCP
45	77	Sewer Lift Station No. 10 - Contract 2011-02 King County, WA	Feb-12	Mar-12	760	760	48/59.5"	RCP
46	79	Agua Fria , Toroges,& Caliente Creek Improvements Fremont, CA	Jul-12	Aug-12	511	511	78/96.5"	RCP
47	80	North Plains East Trunk Extension Proj. No. 6261 North Plains, OR	Sep-12	Oct-12	711	711	44.5"	Permalok
48	83	Lift Station 11B, Contract 04-2007S Covington, WA			427	427	72.0"	Permalok
49	85	48" Force Main Reliability Improvement Project - Unit 1 Redwood City, CA	Oct-13		2250	900	72.0"	Permalok
50	86	Mesa Road Trunk Sewer Project Goleta, CA	Jul-14	Aug-14	1420	730	42 / 44.5	Hobas
51	87	Georgia Street Interceptor Amarillo, TX	May-15	Jul-15	2399	750	42 / 44.5	Hobas
52	88	Schwerin Street Sewer System Improvement San Francisco, CA	Aug-15	Sep-15	600	600	60"	Hobas
53	89	Industrial Road Parallel Sanitary Sewer San Carlos, CA	Dec-15	Jan-16	400	400	45.5"	Permalok
					97,673			

NADA PACIFIC CORPORATION
EMPLOYEE EXPERIENCE

Jason Shepard

Foreman /MTBM Operator
Separation Plant Supervisor

Certifications: Cranes; OSHA Safety Rep; Gas Tester

Foreman responsibilities include equipment preparation, coordinates microtunneling activities, supervises & directs field personnel, identifies & solves problems.

MTBM Operator responsibilities include operation of the MTBM and supervises maintenance & repairs

Separation Plant Supervisor responsibilities include oversees & coordinates soil separation operation.

	Project Ref.	Project / Location	Start Date	Compl Date	Total Footage	Longest Drive	Pipe Size	Pipe Type
		MTBM Operator						
1	62	A-line Relief Interceptor, Ph. 2A Concord, CA	Jun-08	Sep-08	870	460	72	RCP
2	63	Altamont Pipeline - Livermore Reach Livermore, CA	Sep-08	Sep-08	373	373	55.5	Permalok
3	64	Folsom South Canal Connection Project Clay Station to Jack Tone Rd. Galt, CA	Dec-08	Dec-08	110	110	102	Permalok
4	69	Secret Town Pipeline Ph. II Improvements Secret Town, CA	Oct-09	Nov-09	280	280	55.5	Permalok
5	72	Alameda Siphon 4 Sunol, CA	Sep-10	Nov-10	560	560	94.5/96	Permalok
6	74	BDPL5 - WD2541 Newark, CA	Jun-10	Jul-11	2376	1189	87.5"	Permalok
7	82	Miller Park to Pershing Sewer Separation Project Omaha, NE	Sep-13	Nov-13	1296	1296	60"	RCP
8	85	48" Force Main Reliability Improvement Project - Unit 1 Redwood City, CA	Oct-13		2250	900	72.0"	Permalok
9	86	Mesa Road Trunk Sewer Project Goleta, CA	Jul-14	Aug-14	1420	730	42 / 44.5	Hobas
10	87	Georgia Street Interceptor Amarillo, TX	May-15	Jul-15	2399	750	42 / 44.5	Hobas
11	88	Schwerin Street Sewer System Improvement San Francisco, CA	Aug-15	Sep-15	600	600	60"	Hobas
12	89	Industrial Road Parallel Sanitary Sewer San Carlos, CA	Dec-15	Jan-16	400	400	45.5"	Permalok
					9,535			

RAMONA, INC.
General Engineering Contractor

5029 Bleecker St. #200
Baldwin Park, CA 91706
Office: (626) 355-1350 Fax: (626) 355-5946

February 27, 2019

Hong Wang, PE
Senior Civil Engineer
City of Culver City
9770 Culver Blvd
Culver City, CA 90232

Reference: **Diversion Sewer Pipes to Abandon Mesmer and Overland Sewer Pump Stations (PZ-946)**

Subject: **Response to Bid Protest by GRFCO, Inc.**

Dear Hong,

We believe that the following information resolves the issues raised by GRFCO's protest in our favor, demonstrating that the protest is not well taken.

Public Contract Code section 4104 provides:

> Any officer, department, board, or commission taking bids for the construction of any public work or improvement shall provide in the specifications prepared for the work or improvement or in the general conditions under which bids will be received for the doing of the work incident to the public work or improvement that any person making a bid or offer to perform the work, shall, in his or her bid or offer, set forth:
>
> (a)(1) The name, the location of the place of business, the California contractor license number, and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater.
>
> * * *

RAMONA, INC.
General Engineering Contractor
5029 Bleecker St. #200
Baldwin Park, CA 91706
Office: (626) 355-1350 Fax: (626) 355-5946

> (b) The portion of the work that will be done by each subcontractor under this act. The prime contractor shall list only one subcontractor for each portion as is defined by the prime contractor in his or her bid.

Here's the problem: the portion of work for Bid Item 18A and 18 B covers the Construction of 30" steel Pipe Casing between the access pit at STA 45+25 and the access pit at STA 47+49.56. Different means and methods, same work between access pits is called out. This is the same portion of the work.

Public Contract Code section 4106 provides:

> If a prime contractor fails to specify a subcontractor or if a prime contractor specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of 1 percent of the prime contractor's total bid, the prime contractor agrees that he or she is fully qualified to perform that portion himself or herself, and that the prime contractor shall perform that portion himself or herself.

Had Ramona, Inc. listed two subcontractors for the Construction of 30" steel Pipe Casing between the access pit at STA 45+25 and the access pit at STA 47+49.56, then Ramona would have violated PCC section 4106 and represented that it could perform either micro-tunneling or auger boring for the Construction of 30" steel Pipe Casing between the access pit at STA 45+25 and the access pit at STA 47+49.56. This is not the case since Golden State Boring has been listed for Bid Item #18B and has verified that Golden State Boring can perform Bid Item #18A. This is clearly a question of means and methods dependent on the site configuration at the time of the work.

GRFCO protest is not well taken and should be summarily dismissed. As the court noted:

> "It certainly would amount to a disservice to the public if a losing bidder were to be permitted to comb through the bid proposal or license application of the low bidder after the fact, [and] cancel the low bid on minor technicalities, with the hope of securing acceptance of his, a higher bid. Such construction would be adverse to the best interests of the public and contrary to public policy." (*Judson Pacific-Murphy Corp. v. Durkee (1956) 144 Cal. App. 2d 377, 383)*

Sincerely,

Michael Grbavac
Ramona Inc.