Building a New Community Asset

How Trenchless VCP Delivered the Infrastructure Behind the New Ontario Sports Empire

By: Jeff Boschert, P.E., BC.PLW, F.ASCE, National Clay Pipe Institute (NCPI)

On land recently acquired by the City of Ontario, California, just off the 10 Freeway, a new civic destination is taking shape: the 190-acre Ontario Sports Empire. The sports and entertainment complex will include 20 multipurpose fields, 14 youth diamond fields, eight full-size diamonds, four football/rugby fields, and two championship fields. At its center will be ONT Field, home of the Ontario Tower Buzzers, the Los Angeles Dodgers' California League affiliate, which opened in March 2026 with seating for 6,500 fans. What those fans will never see is the sanitary sewer infrastructure installed first—threaded beneath existing roadways and utilities through a combination of open cut and trenchless methods, before a blade of grass was laid on the field.

The stadium is only the visible piece. Behind it sits a full City of Ontario Public Works Agency infrastructure program — street and utility improvements along the corridors and new streets that will carry fans, staff, and freight into the complex on event days. All of this infrastructure is designed to deliver the safety and reliability the site will need for decades. For the engineers and trenchless contractors who delivered this system — and those who will inherit it — the story of how it went in, and how it performed, is worth reading closely.



Beneath the stadium, hidden from view, is the full City of Ontario Public Works Agency infrastructure program



18-inch VCP jacking pipe installed inside a 36-inch steel casing using Horizontal Auger Boring

A PROGRAM BUILT TO SUPPORT A COMPLEX

The Ontario Sports Empire is designed to be the largest complex of its kind in the western United States, and the Ontario



Redwood skids were attached to the pipe before installation

> *The City of Ontario chooses VCP because we believe great cities are built on infrastructure that is rarely seen and must be built to last.*
>
> *- Daniel Fernandez, Utilities Supervisor, Ontario Municipal Utilities Company*

International Airport (ONT) holds the naming rights to its centerpiece stadium. It's the kind of high-visibility civic project that puts pressure on every system beneath it to perform — not just on opening day, but for decades.

The gravity sanitary sewer scope alone is substantial: approximately 13,700 linear feet of VCP and roughly 65 manholes ranging from 48 to 72 inches in diameter, serving the complex and the corridors around it. The work split into three installation methods depending on depth and surface conditions — two trenchless approaches and one open-trench approach:

- Two different trenchless installation methods — approximately 8,500 linear feet of NO-DIG VCP sewer pipe, in sizes from 12 to 21 inches, at depths from finished grade to top of pipe ranging from 11 to 43 feet.



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- Open-trench installation — approximately 5,200 linear feet of bell-and-spigot VCP, in 10-, 12-, and 21-inch diameters, at depths of 12 to 15 feet.

Ontario Municipal Utilities Company specified vitrified clay pipe for the job — a decision its Utilities Supervisor, Daniel Fernandez, ties directly to the city's long-term thinking about what gets built underground. "The City of Ontario chooses VCP because we believe great cities are built on infrastructure that is rarely seen and must be built to last."

As David Gill, Sales Engineer with pipe manufacturer Logan Clay Pipe noted, "The environmental superiority of VCP has become especially important to municipalities across the west coast. With water conservation as a possible concern, the ability to clean VCP with more efficient jetting and mechanical tools is becoming a very important consideration."

THE INSTALL: THREE METHODS, ONE STANDARD

A significant share of the work was carried out by Golden State Boring and Pipe Jacking Inc., a contractor with more than three decades of experience in trenchless installation. According to Golden State President Jeff Johnson, the crew's portion of the project used three distinct installation methods — two trenchless, one conventional — chosen by pipe diameter, drive length, and depth. NO-DIG VCP's high compressive strength was key to allowing drive lengths of up to 850 feet. Johnson confirmed that "The quality of the pipe was excellent, and the compressive strength made some of the longer runs practical. After each trenchless crossing, the pipe was air tested, with all locations passing."

Pilot Tube Method (PTM): a trenchless method of guided boring used for the smaller-diameter crossings, direct-jacking 12-inch VCP behind 16-inch temporary thrust casings on runs up to 300 feet. For part of this project, pipe lengths of 1 meter were selected to allow for smaller

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Installation Snapshot

Project	Ontario Sports Empire / ONT Field, Ontario, California
Owner	Ontario Municipal Utilities Company
Engineer of Record	Ardurra Group
Contractor	Golden State Boring and Pipe Jacking Inc.
Pipe material	Vitrified Clay Pipe (VCP)
Method 1 — Pilot Tube Method (PTM)	Trenchless guided boring, direct-jacked 12-inch VCP behind casing, runs under 300 ft
Method 2 — Steel casing installation	Trenchless; 15-, 18- & 21-inch VCP NO-DIG jacking pipe inside 36" steel casing, HAB frame with redwood skids; drives up to 850 ft
Method 3 — Open-trench installation	Conventional open-cut construction at shallower depths, bell-and-spigot VCP, 10-, 12- and 21-inch
Installation depths	15 to 43 feet
Air test results	100% pass rate on all trenchless crossings



Pipeline installations at up to 43 feet deep, with drives of up to 850 feet

jacking shafts and limit surface disruption. PTM is frequently chosen in developed areas that call for precise line and grade, utility avoidance, and a minimal surface footprint.

Installation within a steel casing: a second trenchless method, used for drives of up to 850 feet. 15-, 18-, and 21-inch VCP jacking pipe was installed inside a 36-inch steel casing using a Horizontal Auger Boring (HAB) frame. The pipe rode on redwood skids strapped to the pipe and set on the invert of the steel casing, with the skids occasionally adjusted to keep the pipe invert on grade over the length of the drive. The longer bores were driven through a center shaft where a manhole was later installed. Depths on these runs ranged from 15 to 43 feet.

Open-trench installation: conventional open-cut construction was used where the plan called for installation at shallower depths. Project Engineer Dolores Salgado, PE, Practice Director, Ardurra Group, explained, "As the engineer, one of our biggest concerns with installing gravity sewer pipe using trenchless methods is achieving the specified tolerances of the pipe inverts. On this project, the sewer depths were reason to consider trenchless construction. The contractor was successful installing the pipe to the designed elevations and satisfied the hydraulic requirements of the overall system."

WORKING THE LAND: CONSTRUCTABILITY IN AN ACTIVE CORRIDOR

Much of this program ran through land that was still in agricultural production when construction began, and that reality shaped the schedule as much as any engineering constraint did. Right-of-way acquisition included active farmland, and crews had to repair water and irrigation facilities disrupted by construction. Work coincided with harvest season in places, and accounting for lost crops was part of doing business in a working agricultural corridor. Manhole placements were adjusted mid-design to preserve tractor access for the farms still operating around the site.

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None of those constructability concerns show up in a pipe spec, but they are exactly the kind of practical issues that turn a clean design into a workable one. And these concerns are a reminder that trenchless methods earn their keep on projects like this precisely because they let crews thread infrastructure through active, sensitive corridors without shutting them down.

WHAT THIS MEANS FOR THE NEXT PROJECT

Engineers and trenchless contractors weighing pipe material on a project like this can treat the Ontario Sports Empire program as a useful data point. It involved long jacking runs, tight tolerances, and a marquee site with zero room for rework. NO-DIG Pipe's high compressive strength let the contractor push runs to 850 feet without the material becoming a limiting factor. That's worth raising early in design, while trenchless crossing lengths are still on the table.

It's also a reminder of the two audiences every underground infrastructure decision serves: the crews and engineers who have to get

Program-Wide Sewer Scope – City of Ontario Public Works Agency

Total sewer pipe	~13,700 linear feet of VCP
Manholes	~65, ranging from 48" to 72" diameter
Trenchless installation	~8,500 linear feet, 12"–21" VCP, depths 11–43 ft
Open-trench installation	~5,200 linear feet, bell-and-spigot VCP, 10-, 12- and 21-inch, depths 12–15 feet

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> *Practice Director, Ardurra Group*



Installing 12-inch diameter NO-DIG Pipe in 2M section lengths in the third step of the process

> *Successfully delivering this complex project required exceptional collaboration, communication, and coordination among City staff, contractors, consultants, and utility agencies. Every team member contributed to overcoming challenges and ensuring the project was completed on time, on target, and on budget. I am incredibly proud of the team's commitment and professionalism throughout every phase of the project.*
>
> *- Cynthia Heredia-Torres, Principal Construction Project Manager for the City of Ontario, Public Works*

the installation right the first time and the residents who will use the system for a hundred years without ever thinking about it. Ontario's utilities team framed that second audience plainly: building infrastructure that's rarely seen and built to last.

Cynthia Heredia-Torres, Principal Construction Project Manager for City of Ontario Public Works, summed this up effectively, "Successfully delivering this complex project required exceptional collaboration, communication, and coordination among City staff, contractors, consultants, and utility agencies. Every team member contributed to overcoming challenges and ensuring the project was completed on time, on target, and on budget. I am incredibly proud of the team's commitment and professionalism throughout every phase of the project."

ABOUT THE AUTHOR:



Jeff Boschert, P.E., BC.PLW, F. ASCE *is President of the National Clay Pipe Institute (NCPI). He is a leading expert in the field of pilot tube guided boring trenchless methods as well as conventional open-cut pipe installation practices. Jeff is currently serving as one of the elected members of NASTT's Board of Directors.*



Trenchless shaft: Cast-in-place maintenance hole bases with channel inverts were poured after jacking pipe installation

