



**CSITS-Forterra ALCOSAN, LLC**  
9 Commercial Street, Hudson, NH 03051  
Tel: (603)-889-4163

**ALCOSAN Contract No 1797**  
**Ohio River Tunnel**

**Submittal Identification Number: Section 31-74-16 – 1.5**  
**Date: February 25, 2026**

**Qualifications:**

**CSITS-Forterra ALCOSAN, LLC** is comprised of two companies - **CSI Tunnel Systems, LLC (“CSITS”)** and **Forterra Pipe & Precast (“Forterra”)**. We have manufactured precast concrete elements for water & sewer and transportation for many years. We have an edge with access to **over 97 facilities in North America**.

**About Us**

**CSI Tunnel Systems, LLC**, has a proven and verifiable track record of performance in the manufacture of precision, bolted, gasketed segmental tunnel liners. CSITS participates in international tunnel projects, mobilizing and manufacturing precast concrete segmental tunnel liners (PCTL) in support of its contracting partners.

CSITS, along with sister company Cleco Manufacturing Inc. develop, manufacture, and supply plant systems and molds for the precast concrete industry. CSITS is vertically integrated. We design, develop and own state-of-the-art, deployable carousel and material handling systems technology that match the size and scope of a project for optimum cost effectiveness. We have the most advanced precision segment molds in the industry. We utilize world-class automation in our segment manufacturing carousels.

CSITS manufactures precision, custom designed, PCTL for permanent structural ground support in under-ground roads, railways, sewers, utility and cable tunnels and access tunnels for the pedestrian walkways. CSITS is experienced in manufacturing bolted, gasketed precision PCTL used below the water table. We have manufactured over 99 miles of PCTL for 49 projects with internal diameters varying from 9 to 39 feet.

We provide and engineer solutions for any tunnel project and will plan, design, construct, mobilize and operate manufacturing operations at a location convenient to the tunneling work. We have perfected the discipline of tunnel segment manufacturing with fully integrated QC and QA programs that track individual segments.

Our knowledge and experience provide solutions for plant manufacturing layout including construction, precision molds and segment measurement, production engineering, concrete and reinforcement technology for a 100 plus year design life and the latest technology in quality assurance.

Our production experience and management expertise combine to provide every project with the total supervision necessary to ensure that the work is successfully completed and delivered on time.

**Forterra Pipe & Precast** has grown steadily to become a leading manufacturer of water-related drainage and transmission products in the United States and eastern Canada. Forterra’s extensive suite of end-to-end products covers “the first mile to the last mile” of the water infrastructure grid, ranging from large diameter pipe that transports water to and from treatment centers and manages drainage along major transportation corridors, to smaller diameter pipe that delivers potable water to, and removes wastewater from, end users in residential and commercial settings.

Forterra, Inc. is comprised of the following business divisions: Drainage Pipe & Products, Water Pipe & Products, Structural & Specialty Products, and Stormwater Management Systems. Based in Irving, Texas, Forterra Building Products North America employs approximately 5,353 people and operates more than 93 facilities with products available throughout the U.S. and Canada.

**CSI Tunnel Systems independently or on a Joint Venture with Forterra has become an expert in the Precast Concrete Tunnel Liner manufacturing field on the following projects:**

## Projects

| #  | Status- (C - Complete / I - In Progress) | Start Year | End Year | Location         | Project Description                                                                                    | Project Size                    | Tunnel Length | TYPE  |
|----|------------------------------------------|------------|----------|------------------|--------------------------------------------------------------------------------------------------------|---------------------------------|---------------|-------|
| 1  | C                                        | 1995       | 1998     | Toronto, ON      | Rapid Transit Expansion Project for the Toronto Transit Commission, Eglinton West and Sheppard Subways | 18 feet ID x 50,068 feet        | 50,068        | SFRC  |
| 2  | C                                        | 1994       | 1996     | Boston, MA       | Massachusetts Water Resource Authority Boston Harbor Effluent Outfall Tunnel                           | 24 feet 3 inch ID x 42,000 feet | 42,000        | REBAR |
| 3  | C                                        | 2000       | 2002     | Milwaukee, WI    | West Becher Street Tunnel Project, Milwaukee, Wisconsin, a combined sewer overflow project             | 9 feet ID x 5,040 feet          | 5,040         | SFRC  |
| 4  | C                                        | 2003       | 2005     | Columbus, OH     | Big Walnut Augmentation / Rickenbacker Sanitary Interceptor Project, City of Columbus                  | 14 feet ID x 20,832 feet        | 20,832        | SFRC  |
| 5  | C                                        | 2004       | 2005     | Indianapolis, IN | Indianapolis Consolidation of CSO 034 and 035, City of Indianapolis, IN                                | 12 feet ID x 1,700 feet         | 1,700         | SFRC  |
| 6  | C                                        | 2005       | 2007     | Boston, MA       | North Dorchester Bay CSO Storage Tunnel, Contract No. 6244                                             | 17 feet ID x 10,830 feet        | 10,830        | SFRC  |
| 7  | C                                        | 2006       | 2008     | Edison, NJ       | Edison Force Main Tunnel, Contract No. 06-11-1 (EFM)                                                   | 12 feet 10 inch ID x 3,910 feet | 3,910         | SFRC  |
| 8  | C                                        | 2007       | 2009     | Seattle, WA      | King County Brightwater Conveyance System, East Contract C53060C                                       | 16 feet 8 inch ID x 14,050 feet | 14,050        | SFRC  |
| 9  | C                                        | 2008       | 2010     | Seattle, WA      | King County Brightwater Conveyance System, Central Contract C00005C06                                  | 14 feet 4 inch ID x 31,700 feet | 31,700        | SFRC  |
| 10 | C                                        | 2008       | 2010     | Seattle, WA      | King County Brightwater Conveyance System, West Contract C00007C06                                     | 13 feet 0 inch ID x 21,500 feet | 21,500        | SFRC  |
| 11 | C                                        | 2009       | 2011     | Milwaukee, WI    | Milwaukee County Grounds, Contract No. W20004C06                                                       | 17 feet ID x 2,724 feet         | 2,724         | SFRC  |

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| 12 | C                                        | 2010       | 2011     | Seattle, WA     | King County Brightwater Conveyance System, BT-3 Completion Contract, Contract C00534C10                                             | 13 foot ID x 9,900 feet           | 9,900         | SFRC  |
| 13 | C                                        | 2011       | 2011     | Sunnydale       | Sunnydale Auxiliary Sewer, Contract No. WW-487                                                                                      | 12 foot ID x 3,070 feet           | 3,070         | REBAR |
| 14 | C                                        | 2011       | 2013     | Columbus, OH    | City of Columbus, OSIS Augmentation and Relief Sewer (OARS) Phase 1, Capital Improvement Project No. 650704                         | 20 foot ID x 22,950 feet.         | 22,950        | REBAR |
| 15 | C                                        | 2011       | 2013     | New York City   | Brooklyn & Staten Island Water Siphon Tunnel                                                                                        | 10 foot 4 inch ID x 9,460 feet.   | 9,460         | REBAR |
| 16 | C                                        | 2011       | 2014     | Cleveland, OH   | Northeast Ohio Regional Sewer District Euclid Creek Tunnel                                                                          | 24 foot ID x 15,750 feet.         | 15,750        | SFRC  |
| 17 | C                                        | 2014       | 2014     | Los Angeles, CA | LA Dept of Water and Power (LADWP), Silver Lake Bypass Tunnel                                                                       | 10 foot ID x 2,960 feet           | 2,960         | SFRC  |
| 18 | C                                        | 2014       | 2015     | Seattle, WA     | Sound Transit, Northgate Link Extension Contract N125, TBM Tunnels (UW to Maple Leaf Portal)                                        | 18 foot 10 inch ID x 36,800 feet. | 36,800        | REBAR |
| 19 | C                                        | 2015       | 2016     | Washington, DC  | DC Water & Sewer Authority, First Street Tunnel Project                                                                             | 18 foot 10 inch ID x 2,700 feet.  | 2,700         | SFRC  |
| 20 | C                                        | 2015       | 2016     | Los Angeles, CA | Crenshaw/LAX Transit, 18 foot 10 inch ID x 10,470 feet                                                                              | 18 foot 10 inch ID x 10,470 feet. | 10,470        | REBAR |
| 21 | C                                        | 2016       | 2017     | Cleveland, OH   | Northeast Ohio Regional Sewer District Dugway Storage Tunnel (DST Project No. 1294)                                                 | 25 foot 0 inch ID x 14,750 feet.  | 14,750        | SFRC  |
| 22 | C                                        | 2017       | 2018     | Akron, OH       | City of Akron CSO Program, Ohio Canal Interceptor Tunnel                                                                            | 27 foot 0 inch ID x 6,220 feet.   | 6,220         | SFRC  |
| 23 | C                                        | 2017       | 2019     | Newburgh, NY    | NYCDEP Contract BT-2, Rondout – West Branch Bypass Tunnel Construction and Wawarsing Repairs Delaware Aqueduct                      | 18 foot 2 inch ID x 12,500 feet.  | 12,500        | REBAR |
| 24 | C                                        | 2018       |          | St Joseph, MO   | St. Joseph Department of Public Works & Transportation, Blacksnake Creek Stormwater Separation Improvement Project, Project #17-006 | 9 foot ID x 6,648 feet.           | 6,648         | SFRC  |
| 25 | C                                        | 2018       | 2019     | Cleveland, OH   | Northeast Ohio Regional Sewer District Doan Valley Storage Tunnel                                                                   | 18 foot ID x 10,025 feet.         | 10,025        | SFRC  |

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| 26 | C                                        | 2018       | 2020     | Hartford, CT       | The Metropolitan District, South Hartford Conveyance and Storage Tunnel                            | 18 foot ID x 21,880 feet.                                     | 21,880        | SFRC      |
| 27 | C                                        |            |          | West Babylon, NY   | Suffolk County Outfall Replacement (Bergen Point) Tunnel                                           | 10 foot ID x 14,100 feet                                      | 14,100        | SFRC      |
| 28 | C                                        | 2019       | 2020     | Cleveland, OH      | Westerly Storage Tunnel, Project 1390                                                              | 25 foot ID x 9,340 feet.                                      | 9,340         | SFRC      |
| 29 | C                                        | 2018       | 2024     | Virginia Beach, VA | Chesapeake Bay Bridge & Tunnel District, Parallel Thimble Shoal Tunnel                             | 39 foot ID x 6,435 feet.                                      | 6,435         | SFRC      |
| 30 | C                                        | 2018       | 2021     | Fort Wayne, IN     | Three Rivers Protection Tunnel, Project No.                                                        | 16 foot ID x 24,100 feet.                                     | 24,100        | SFRC      |
| 31 | C                                        | 2019       | 2021     | Toronto, ON        | Coxwell Bypass Tunnel                                                                              | 6.3 meters (20.7 foot) ID x 10,340 meters (33,925 feet).      | 33,925        | SFRC      |
| 32 | C                                        | 2019       | 2020     | Montreal, QC       | Réseau Express Métropolitain (REM) Tunnel                                                          | 6.48 meters (21.26 foot) ID, 3,074 meters (10,084 feet).      | 10,084        | SFRC, SUB |
| 33 | C                                        | 2019       | 2020     | Toronto, ON        | Ashbridges Bay Treatment Plant Outfall Project                                                     | 7 meters (23 foot) ID, 3,500 meters (11,482 feet).            | 11,482        | SFRC      |
| 34 | C                                        | 2020       | 2021     | Detroit, MI        | I-75 Modernization DBFM (Segment 3) MDOT                                                           | 14 foot 6 inch ID x 20,620 feet                               | 20,620        | SFRC      |
| 35 | C                                        | 2021       | 2022     | Seattle, WA        | City of Seattle (Seattle Public Utilities), Ship Canal Water Quality Tunnel (SCWQP-Tunnel Storage) | 18 foot 10 inch ID x 14,000 feet                              | 14,000        | SFRC      |
| 36 | C                                        | 2022       | 2024     | Toronto, ON        | Advance Tunnel for the Eglinton Crosstown West Extension                                           | 5.75 meters (18.88 foot) ID x 12.835 kilometers (42,112 feet) | 42,112        | SFRC, SUB |
| 37 | C                                        | 2022       | 2023     | Cleveland, OH      | NORSD Project 1536 Shoreline Storage Tunnel                                                        | 23 foot ID x 14,004 feet                                      | 14,004        | SFRC      |
| 38 | C                                        | 2022       | 2025     | Columbus, OH       | City of Columbus, OH, Lower Olentangy Tunnel (LOT)                                                 | 12 foot ID x 17,000 feet                                      | 17,000        | SFRC      |
| 39 | C                                        | 2023       | 2024     | Dallas, TX         | Tarrant Regional Water District Integrated Pipeline Project (PL19TUN)                              | 10 foot ID x 12,400 feet                                      | 12,400        | SFRC      |
| 40 | C                                        | 2024       | 2024     | Chicago, IL        | City of Chicago, TP-36 East-West Trunk Sewer & South Conveyance Project)                           | 14 foot 16 inch ID x 8,000 feet                               | 8,000         | SFRC      |
| 41 | C                                        | 2024       | 2025     | Akron, OH          | City of Akron, Northside Interception Tunnel (NSIT)                                                | 16 foot 6 inch ID x 6,400 feet                                | 6,400         | SFRC      |

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| 42 | C                                        | 2024       | 2025     | Akron, OH             | City of Akron, Northside Interception Tunnel (NSIT Rack 32)                | 2.94 meters ID x 653 meters (2142.39 feet)         | 2,142         | SFRC      |
| 43 | I                                        | 2022       | 2026     | Toronto, ON           | Scarborough Subway Extension Advanced Tunnel                               | 10.7 meters (35.15 foot) ID x 7.0 km (22,967 feet) | 22,967        | SFRC, SUB |
| 44 | I                                        | 2025       |          | Washington, DC        | Potomac River Tunnel                                                       | 18 foot ID x 27,345 feet                           | 27,345        | SFRC      |
| 45 | I                                        | 2025       |          | Cuyahoga Heights, OH* | NORSO, Southerly Tunnel and Consolidation Project                          | 23 foot ID x 18,132 feet                           | 18,132        | SFRC      |
| 46 | I                                        | 2026       |          | Toronto, ON           | Toronto, ON* - Ontario Line South Subway Tunnel                            | 6.05 meter ID x 9,513 meters                       | 9,513         | SFRC      |
| 47 | I                                        | 2025       |          | Toronto, ON           | Toronto, ON* - Ontario Power, Darlington New Nuclear Tunnel                | 6.05 meters x 3,308 meters                         | 3,308         | SFRC      |
| 48 | I                                        | 2026       |          | Baltimore, MD         | Baltimore, MD* - Amtrak Frederick Douglass Tunnel                          | 26 foot ID x 20,466 feet                           | 20,466        | REBAR     |
| 49 | I                                        | 2025       |          | Vaughan, ON           | Vaughan, ON* - West Vaughan Sewage Servicing Tunnel                        | 3.0 meters ID x 11,210 meters                      | 11,210        | SFRC      |
| 50 | I                                        | 2025       |          | Detroit, MI           | Detroit, MI* - Northwest Interceptor to Oakwood CSO Sewer Tunnel (NOCOSOS) | 14'-6" ID x 3,345 feet                             | 3,345         | SFRC      |
| 51 | I                                        | 2026       |          | Austin, TX            | Austin, TX* - Austin I-35 CapEx Central Drainage Tunnel                    | 22"-0" ID x 32,185 feet                            | 32,185        | SFRC      |
| 52 | I                                        |            |          | Goshen County, WY     | Goshen County, WY* - Ft. Laramie Canal Tunnels No. 1 and No. 2             | 18'-0" ID x 4,725 feet                             | 4,725         | SFRC      |

## 1a. Segment Manufacturer Personnel

### Leonard A. Worden, CEO

Mr. Worden founded CSI Tunnel Systems. ("CSITS"), in Hudson, NH as a manufacturer of precast concrete products. Mr. Worden formed a joint venture to produce segmental linings for the Boston Outfall Tunnel. The Company mobilized a mechanized facility with carousel production equipment provided by Cleco Manufacturing, a sister company of CSITS. Mr. Worden has mobilized projects and facilities to produce over 607,639 feet of segmental tunnel liners. As CEO, Mr. Worden is deeply involved in all aspects of each segmental tunnel liner project and is ultimately responsible for the financial and operational performance of each project. Involved in Every Project on List of projects above.

### Reece Armitage, VP of Quality Control and Project Coordinator (CSITS employee since 2007)

Mr. Reece Armitage is the accomplished Quality Manager and Project Manager leading production and quality control for tunnel liner production. With a degree in Mechanical Engineering, he has successfully overseen the quality of 30 tunnel projects that utilized steel fiber reinforcement since joining CSI. His expertise encompasses mix design, testing, and the evaluation of steel fiber reinforced concrete, showcasing his commitment to excellence in the field.



**Thomas P. Schulster, VP of Operations Manager (CSITS employee since 2010)**

Mr. Tom Schulster has over 30 years of experience in manufacturing precast tunnel liner segments. He is responsible for the mobilization and day-to-day production of tunnel liner segments at CSI. Mr. Schulster brings extensive plant management experience to CSI along with hands-on know how to ensure projects exceed customer expectations. He has held positions as a QC Supervisor, Plant Manager, and a precast concrete consultant.

**1b. Macedonia Ohio Segment Plant                      NPCA Certified**  
**CSI-Forterra, JV**  
**7925 Empire Parkway**  
**Macedonia, OH 44056**

**Doug McPeek, Macedonia Plant Manager (2013 to Present).** Mr. Doug McPeek has overseen the daily operations at the Macedonia plant since 2013. He has directed production personnel, oversaw shipping, and coordinated with QC personnel. Doug has experience in running the batch plant.

**Matt Burkett, Macedonia Quality Control Lead (2017 to Present).** Mr. Matt Burkett is an ACI Level 1 Field inspector, ACI Level 1 Strength inspector, and NPCA PQS Level 1. He has been involved with fiber reinforced concrete since 2017 and breaks fiber-reinforced beams on a daily basis

|                               |                |
|-------------------------------|----------------|
| Superintendent of Production: | Tom Schulster  |
| Plant Manager of Production:  | Doug McPeek    |
| Quality Control Manager:      | Reece Armitage |
| Quality Control Lead:         | Mat Burkett    |

All employees answer to the CEO Len Worden

**1c. Mold Manufacturer**  
**CLECO Manufacturing**  
**14 Park AVE.**  
**Hudson NH. 03051**  
**603-886-5472**

**David Couturier, CLECO Manager**

Mr. David Couturier has been involved in designing, fabricating, and deploying concrete product manufacturing automation for over 35 years. He has had a leadership role in providing manufacturing equipment, developing manufacturing processes, and training production staff for each of CSI's tunnel liner projects. In addition, Mr. Couturier supplies other manufacturers and contractors with concrete handling automation and precision forms.

Involved in Every Project on List of projects above

**Dennis Carr, Design Engineer**

Mr. Dennis Carr has been involved in the mold designs and shop drawings on all of projects CSI tunnel Systems has produced. He brings decades of experience to the mold manufacturing and set up for PCTL manufacturing. Mr. Carr has been instrumental in mold improvements, plant improvements, and adjusting to new technology.

Involved in Every Project on List of projects above

**1. Gasket Manufacturer**

The Gasket Manufacturer will be Seal-Able  
SEE ATTACHEMENT



**3. Segment Designer – Submitted earlier**

L-7 Services LLC.  
P.O. Box 1387  
Golden CO. 80402

**4. Test Laboratory**

CTL Engineering  
3085 Interstate Pkwy  
Brunswick, Ohio 44212

**Contact Information**

|                          |                                                                              |
|--------------------------|------------------------------------------------------------------------------|
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