



**Corby Energy Services, Inc.**

# About Us

- WBENC Certified since 2012
- Detroit-based business since 2015
- Approx. 450 Employees (mostly Michigan-based)
  - All field employees are OEW-trained (Qualified Electrical Worker)
  - Most field employees are OQ Qualified (Operator Qualification)



# Michigan Locations



2021 S. Schaefer Hwy., Detroit, MI 48217



6001 Schooner St., Belleville, MI 48111



45345 Five Mile Rd., Plymouth, MI 48170



7929 E. M-36, Whitmore Lake, MI 48169

# Current Customers

## Multi-year contracts with Michigan utilities:

### DTE Energy (Electric/Gas/Streetlighting/Major Enterprise Projects)

- Blanket contracts which include joint service and commercial feeder work with numerous utilities including CMS Energy, AT&T, Comcast, etc.

### AT&T

- Copper and fiber underground and aerial placing, repair and maintenance

### CMS Energy

- Distribution operations – new business and rehabilitation

### MDOT

- Directional drilling, lighting, communications and traffic control/signaling services

### Various cities and municipalities

- Water and sewer services
- Streetlighting
- Pipeline rehabilitation and inspection (bursting, lining, CIPP, chemical grouting, CCTV, etc.)

# Service Offerings

CES is an infrastructure solutions provider, specializing in:

## Trenchless Utility Construction

- Horizontal Directional Drilling
- Cured-in-Place-Pipe (CIPP)
- Slip Lining
- Pipe Bursting

## Traditional Excavation and Site Work

- Infrastructure Construction/Rehabilitation/Renewal

## Design/Build

- Complete EPC capabilities with our affiliated firms (includes engineering, survey, permitting, procurement, warehousing, construction)







 The Clare County Review

Worst flood in 30 years puts Isabella, Midland Counties under ...

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# Pipeline Renewal Methods

# Critical Steps to Trenchless Pipe Projects

- ▶ Define the problem in the piping system via various methods or procedures
- ▶ Select alternatives that are considered appropriate for the repair the pipes (Cost + Quality = Value)
- ▶ Determine the method of procurement?

# Trenchless Technologies

- ▶ Pipe bursting
- ▶ Cured-in-Place-Pipe
- ▶ Joint Seals
- ▶ Horizontal Directional Drilling
- ▶ Grouting / CCTV Inspection / Cleaning
- ▶ Engineering / Design Build
- ▶ Slip-lining
- ▶ Large Diameter Pipe Rehabilitation
- ▶ Excavation / Open Cut



M-188 Kettle  
Creek  
3-Sided Box  
Repair

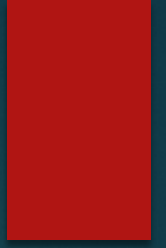


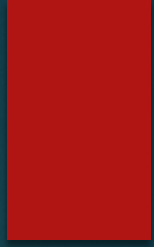


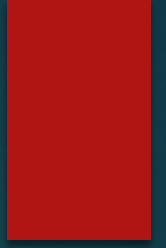








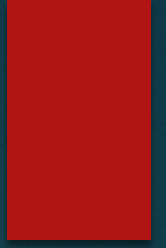
































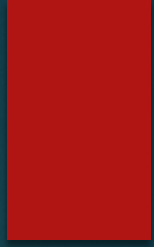


Coal Creek

M-21

Box Repair











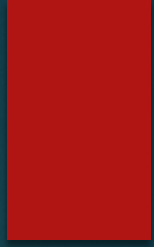


















# Joint Seals







I 447, LAMAR-S

2-11-61

45-377

IX-300

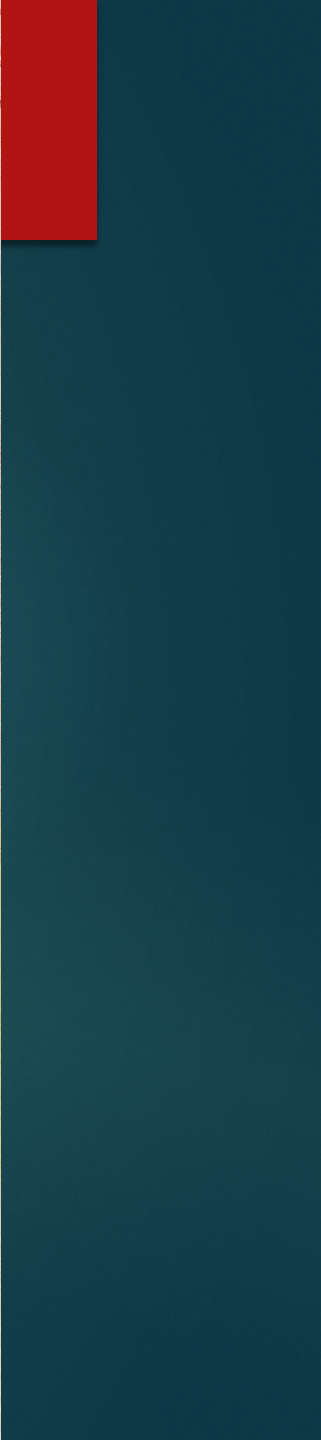
CLASS-B



BUDWEISER

14

2











A T-304L 375 X 2.00 HPA 59074 94249 A E 15'x9" Top & Bottom

A T-304L 375 X 2.00 HPA

















# Flat Bottom Arch Invert Repairs Barry County Road Commission





























# Slip-Line Case Study

## Tanner Creek 84" Culvert

- ▶ 520' Slip-line with 72" HDPE
- ▶ 60' under 1-94 mile marker 16

*BERRIEN COUNTY DRAIN COMMISSION Michigan Department of  
Transportation*

# Existing Outfall



April 30, 2024

77

# Downstream End 84" CMP Bottom Rotted Out

78

April 30,  
2024



# Up-stream – Bend in Pipe

79

April 30,  
2024



# I-94 60' Above



April 30, 2024

80



# Adding Sections of Pipe By-Pass Run Through Pipe



# Adding 50' Section of Pipe



April 30, 2024

# Aligning Pipe for Welding



April 30, 2024

# Extrusion Welding Pipes Together



# Pipe Installed - Grout Tubes



# Bulk Head Complete and Grouted Rip-Rap Installed



# Complete



# CIPP



Cured In Place Pipe

UV - Ultra Violet Cure Method

Water Cure

Steam Cure



# Cured-in-Place-Pipe

- ▶ 30-year plus history of the product
  - ▶ Most extensively used trenchless product
- ▶ 4" thru 120" diameter
- ▶ Gravity/Pressure applications
  - ▶ Mainlines and laterals
  - ▶ Manholes
  - ▶ Industrial applications
- ▶ Independently verified

# CIPP can be utilized for various pipeline concerns:

- ▶ Structural
- ▶ Environmental
- ▶ Strength Enhancement (New construction)
- ▶ Infiltration
- ▶ Pressure / Gravity Applications
- ▶ Lateral Connections
- ▶ Point Repairs

# CIPP Can Respond quickly!

- ▶ Local Wet out Operations
- ▶ In stock materials for standard sizes
- ▶ Water / Air Installations
- ▶ Most Tube Manufacturing is performed off site in Factory.



**Tube Manufacturing  
(ISO Certified)**

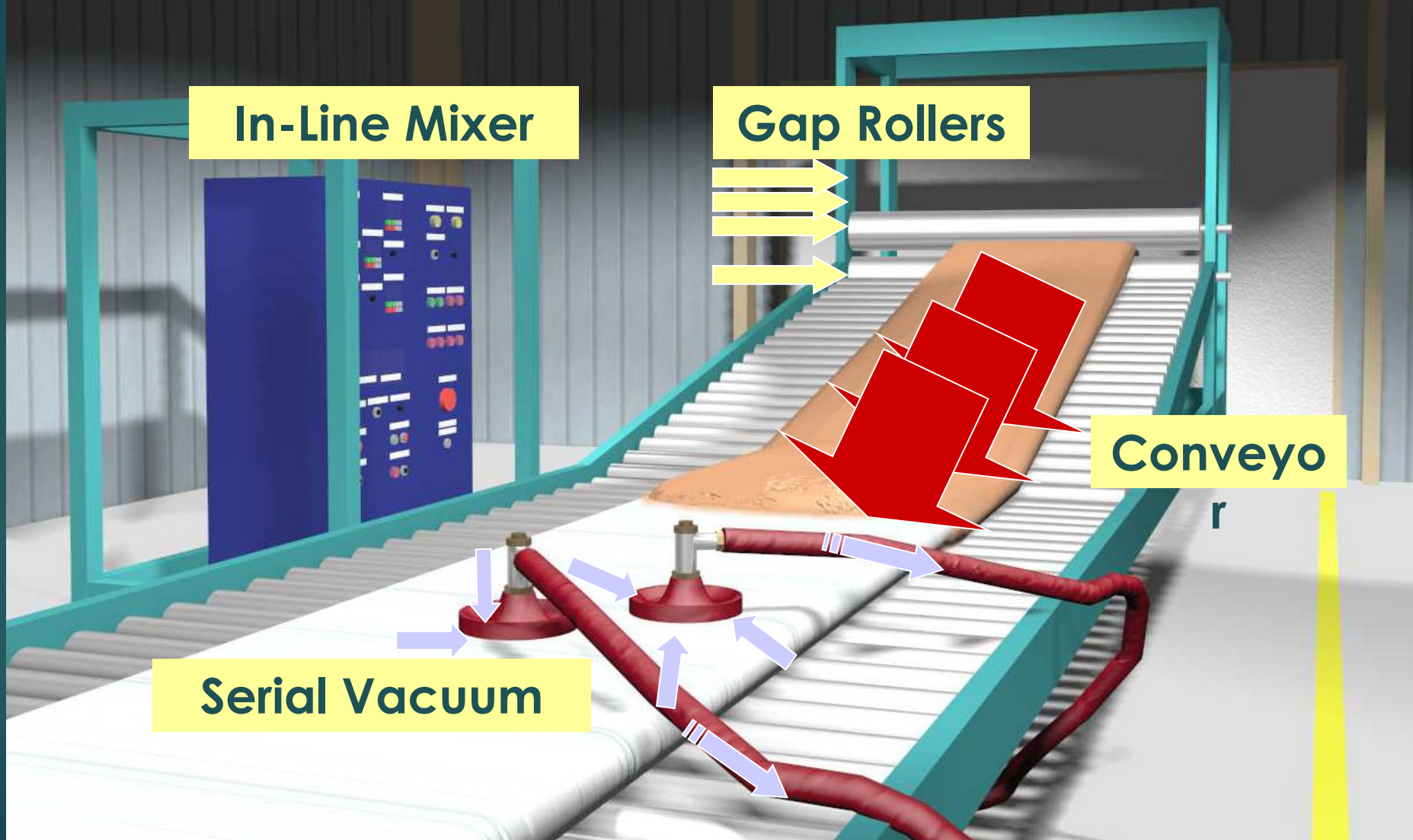
# Tube Wet Out Process

In-Line Mixer

Gap Rollers

Conveyo  
r

Serial Vacuum



# CCTV

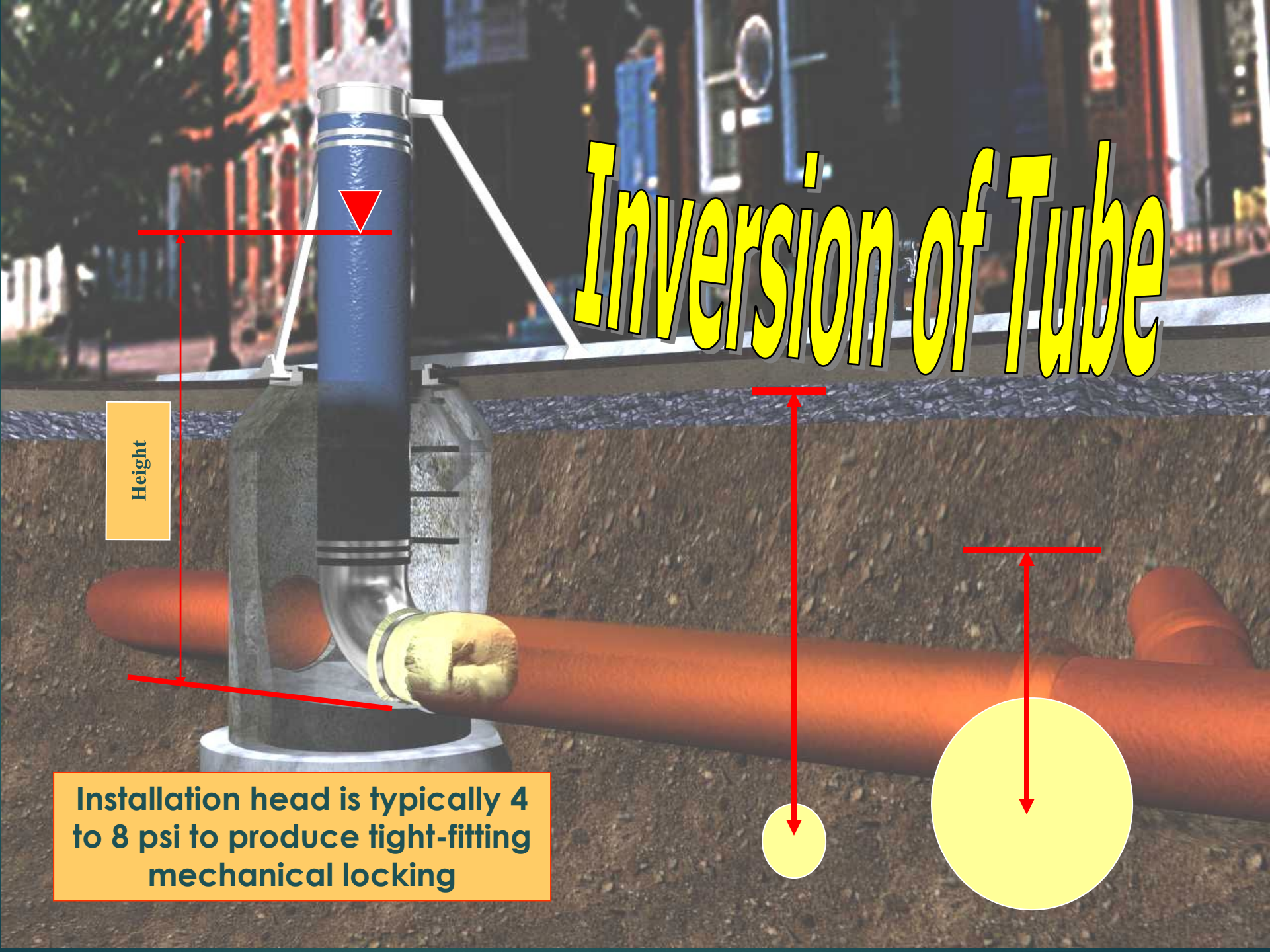


# Inversion Process

- ▶ Water / Air
- ▶ Water is most reliable
- ▶ Air can offer increased efficiencies



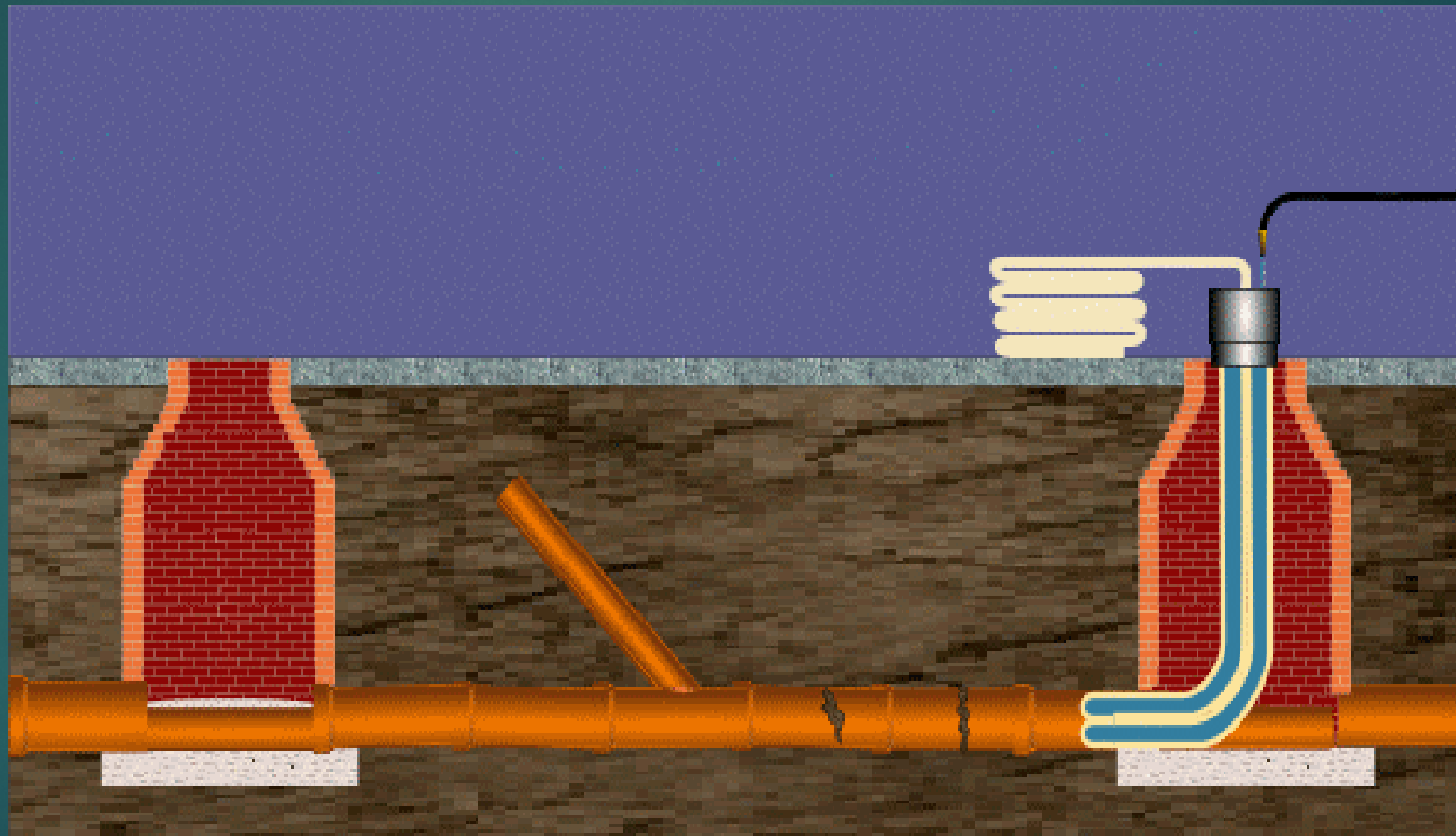
# Inversion of Tube



Installation head is typically 4 to 8 psi to produce tight-fitting mechanical locking

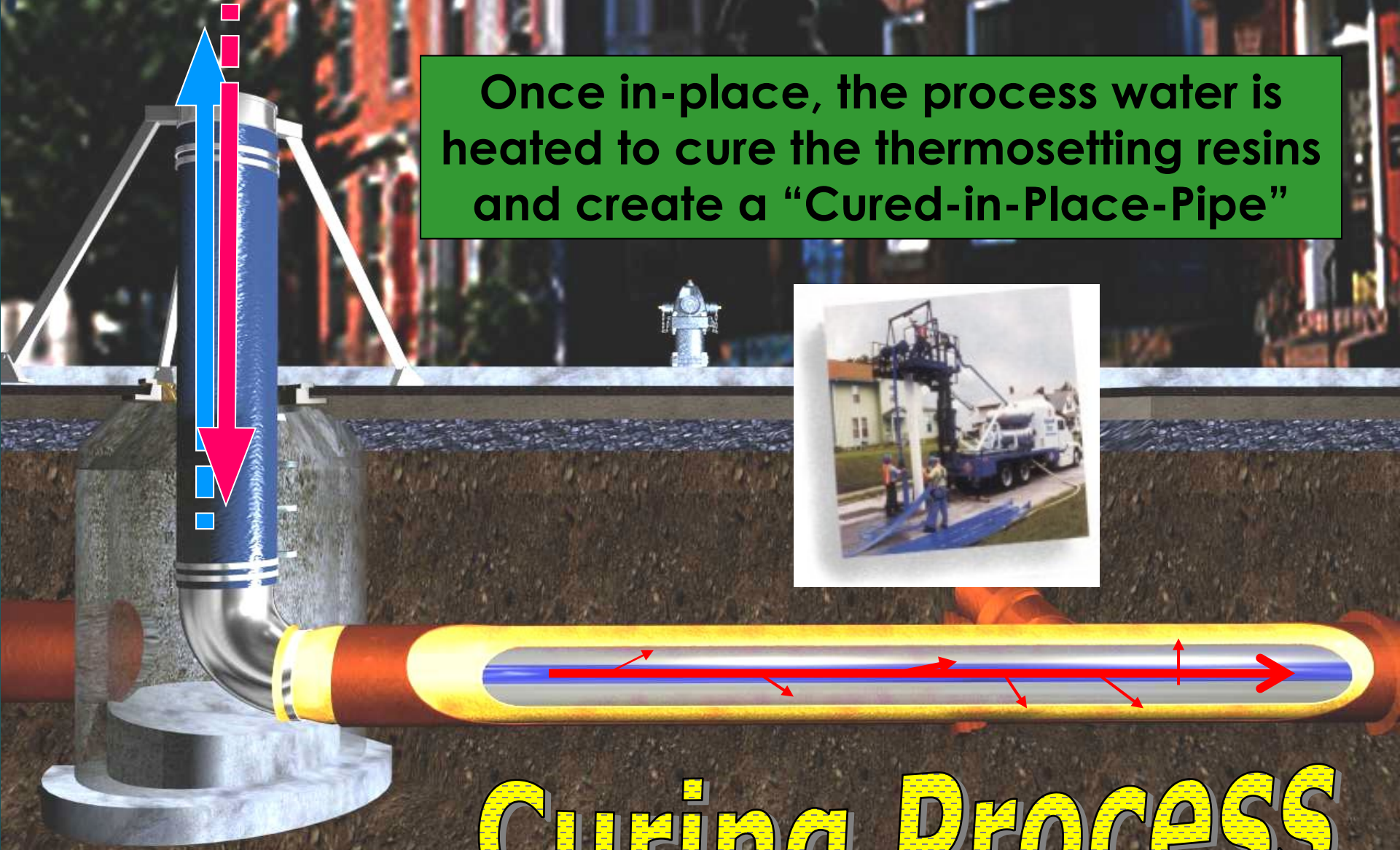


# Tube Inversion





Once in-place, the process water is heated to cure the thermosetting resins and create a "Cured-in-Place-Pipe"



# Curing Process





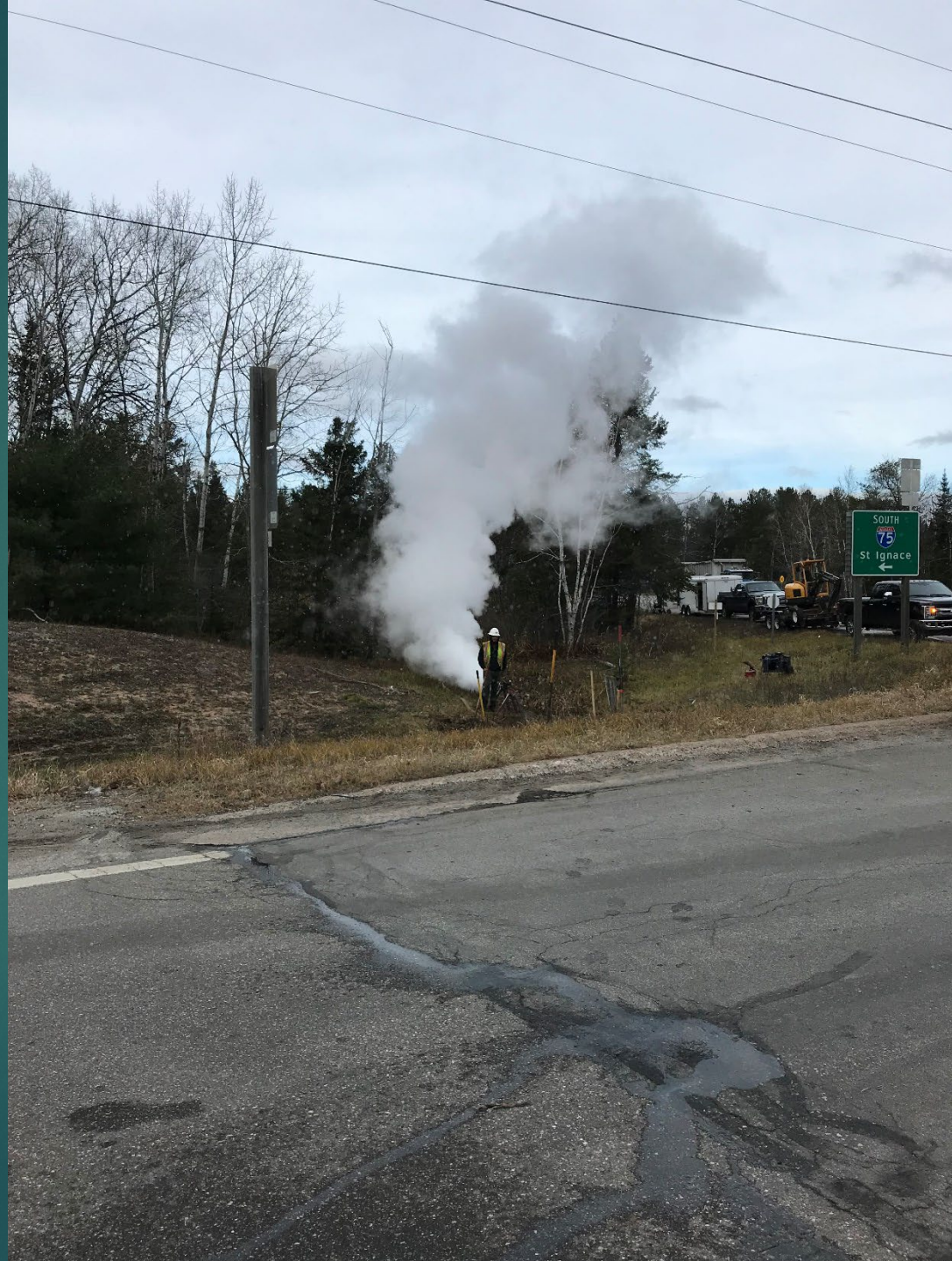


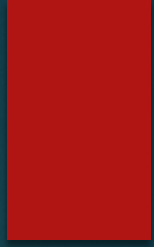












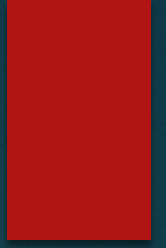






54" Elliptical  
Rehabbed with Ultraviolet













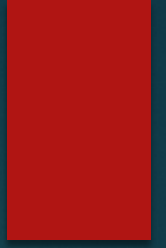








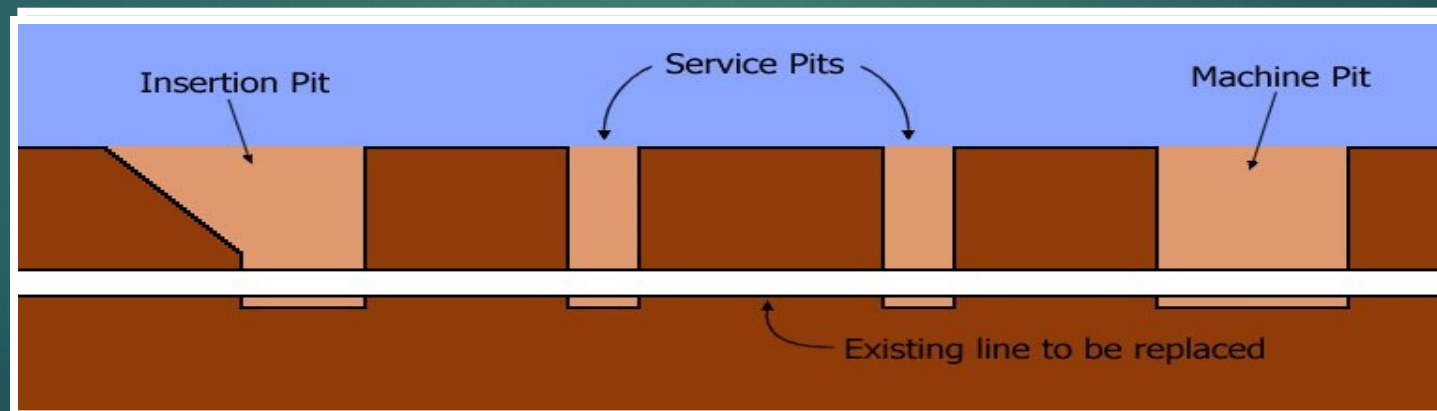
# Pipebursting





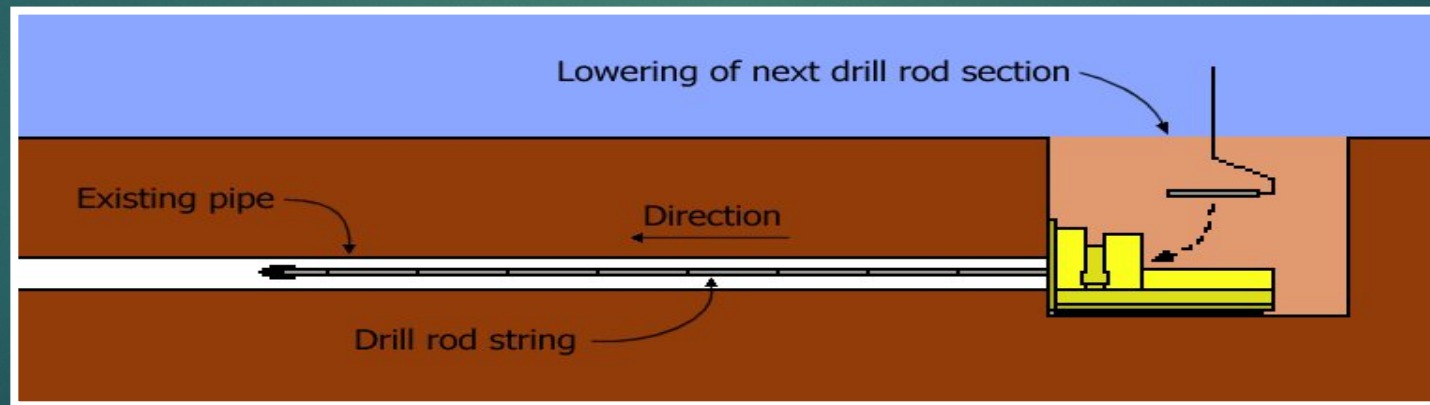
# Static Pipe Bursting Step 1

- ▶ Inspect existing sewer by CCTV
- ▶ Excavate machine and new pipe insertion pits
- ▶ Excavate service pits if required
- ▶ All pits to be properly shored and maintained dry



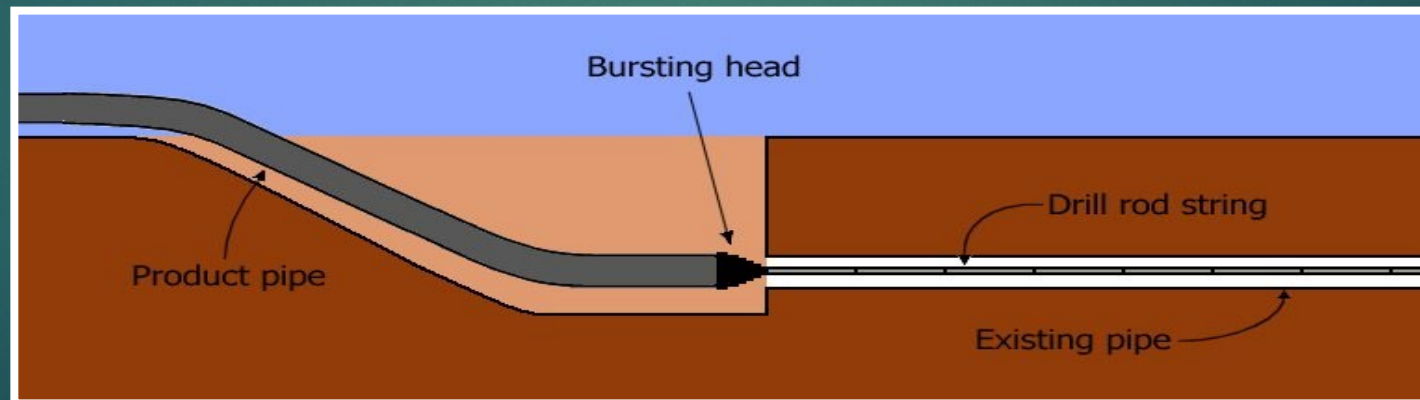
# Static Pipe Bursting Step 2

- ▶ Prepare machine pit
- ▶ Set up Static pipe bursting machine in pit
- ▶ Push rod string through host pipe (existing sewer)
- ▶ From machine pit to new pipe insertion pit



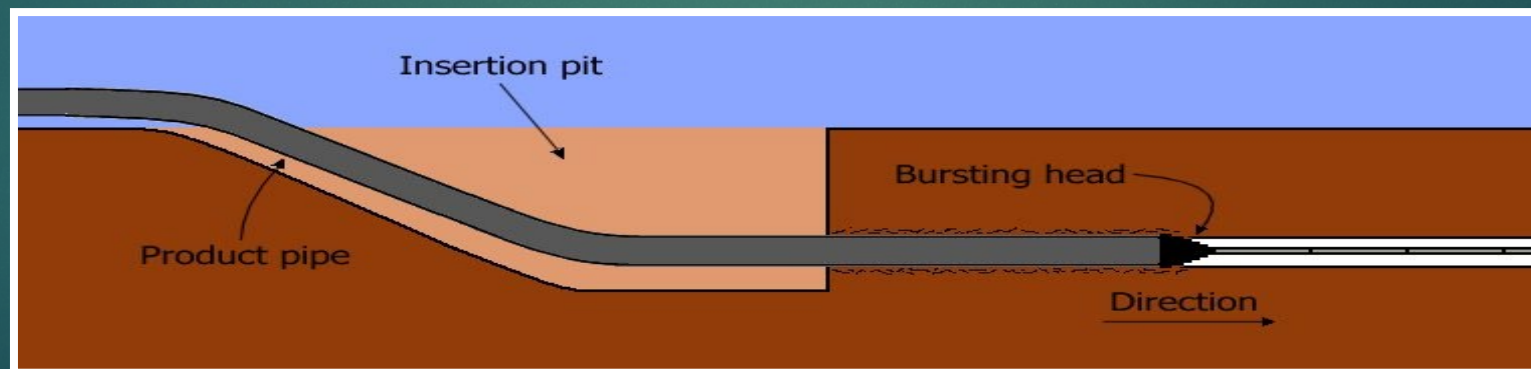
# Static Pipe Bursting Step 3

- ▶ The rod string emerges at new pipe insertion pit
- ▶ Attach pipe bursting head and new replacement pipe to
- ▶ The rod string
- ▶ In this case HDPE pipe already fused into a single
- ▶ Continuous length is shown and the set up is ready for
- ▶ The actual pull back replacement process



# Static Pipe Bursting Step 4

- ▶ Static pipe bursting machine in machine pit is
- ▶ Set up for pull back operation
- ▶ The rod string pulls the bursting head towards the
- ▶ Machine pit
- ▶ The bursting head breaks the existing sewer and
- ▶ Pushes the broken pieces into the surrounding
- ▶ Ground, away from the center and creating a new
- ▶ Tunnel
- ▶ The bursting head advances towards the machine pit
- ▶ And installs the new HDPE pipe in-place



# Case Study

## 48 in. CMP Pipe Burst

- ▶ Emergency 48 inch Collapse under Michigan Department of Transportation Highway M-106

# Sink hole on upstream side



# Pipe Collapse in shoulder



# Upstream end









# Down stream end of pipe





# Pull head fused on















# Notice gas pipeline marker for 12 high pressure steel



















