

# Virginia Concrete Conference Innovations in Precast Construction



March 1, 2019

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# Innovation

- Concrete is a Durable Material
- Concrete is Mixed according to the Need
- Concrete is Molded According to the Need
- Innovative Ideas are Crafted and Molded into useful shapes.



Mobility • Safety • Quality • Environment • Shortening Project Delivery



## Accelerated Bridge Construction

Prefabricated Bridge Elements and Systems

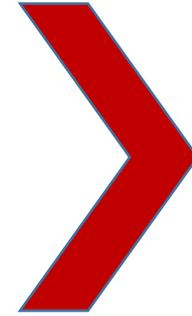


U.S. Department of Transportation  
Federal Highway Administration

# Fundamental Attributes Precast

# Fundamental Attributes of Precast

- Reduce User Impacts
- Reduce Costs
- Reduce Construction Time on site
- Reduce Weather Related Time Delays



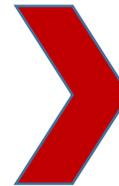
**Reduce**

# Fundamental Attributes of Precast

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Reduce

- Improve Durability/Quality
- Improve Work Zone Safety



**Improve**

# Fundamental Attributes of Precast

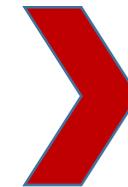
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Reduce

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Improve

- Minimize Environmental Impact
- Minimize Impact to Existing Roadway Alignment



**Minimize**

# Reduce Road User Impacts/Traffic Impacts

- Minimizes Traffic Delays
- Reduce Construction Equipment Distraction
- Minimizes Community Disruption
- Reduced Detours, Closures
- Reduced Narrow Lanes
- Shorten Project Duration



# Reduce Costs to Society

- Actual Costs
- Reduced Costs through Repetitive Use
- Shift from Dangerous to Safe Area
  
- Costs Due to Delays
- Reduce Construction Time
- Reduce Time in Construction Zone



# Reduce Onsite Construction Time

- Critical Path
- Simultaneous Construction
- Safety
- Worker Safety
- Motorists Safety



# Reduce Weather-Related Time Delays

- Wet/Cold Weather Delay
- Manufacture in Controlled Environment
- More Predictable Schedule
- Simultaneous Actions



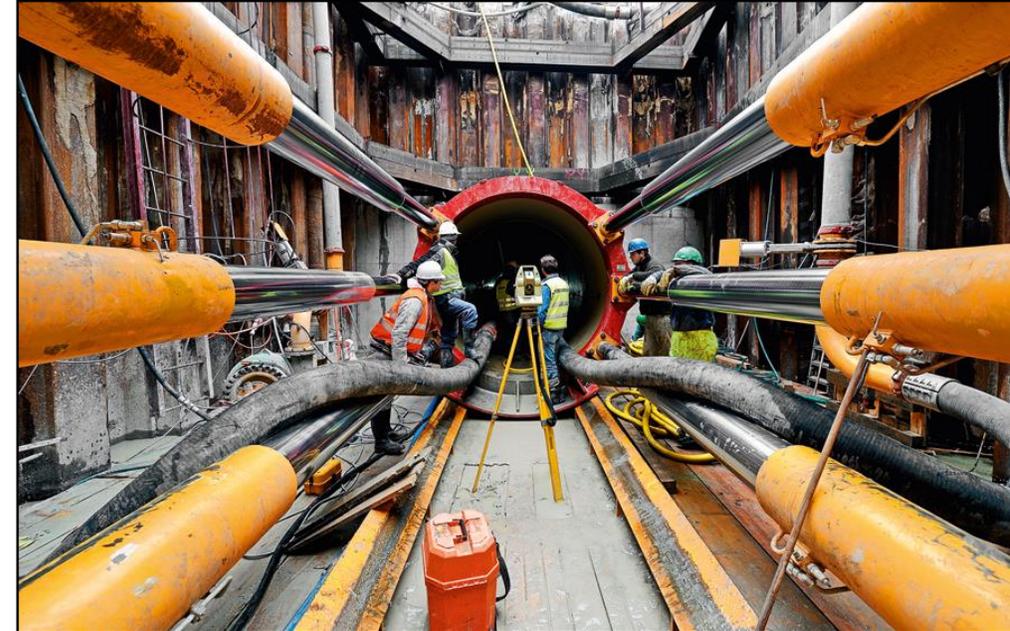
# Improve Quality

- Prefabricated in a Controlled Environment
- Temperature, Humidity, Rain and Wind
- Increased Quality Control
- Inspect Prior to Installation
- Crew Tenure
- Quality/Durability/Consistency



# Minimize Impact to Roadway Alignment

- Reduced Maintenance of Traffic
- Minimize Amount of Displacement
- Increased Safety
- Temporary Alignment
- Trenchless Installation





# Improve Work Zone Safety

- Motorist Safety
- Minimize Amount of Labor at Site
- Reduced Construction Presence
- Construction Worker Safety
- Reduced Time on Job Site
- Construction w/out Traffic













































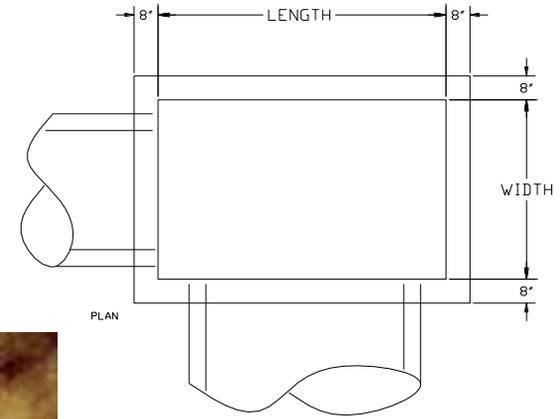






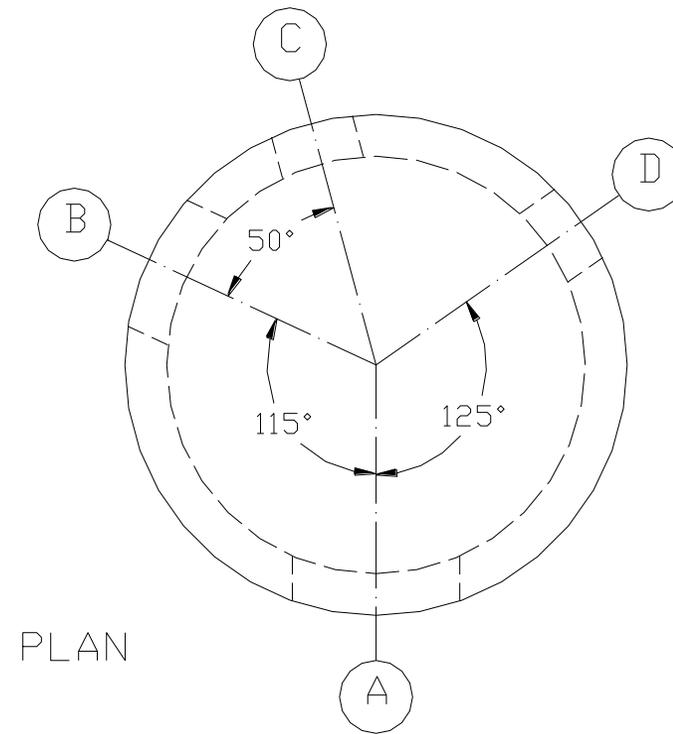
**STORM**  **PASS**®  
SMARTER STRONGER UNDERGROUND SOLUTIONS

# Rectangular Vertical Structure





# Round Vertical Structure







7/6/87  
37  
63

6-13-94  
SUBC 478 B  
VOL. 8687  
CTR. 4-4  
SHA 40 111  
S.D. 72

8.20



6-13-94  
ASBENC 478 R. 10  
DIA. 96" 87  
CTL 4-4  
DIA 48" 17 1/2"  
BASE STD 12

CCP



6-13-96  
MIDWEST 478 8 7  
WGT. 26.5  
LEN. 44  
DIA. 48  
VOL. 510



6-13-94  
MOUNTING 478 IL @  
VOL. 260 97  
LEN. 474  
WID. 48 1/2  
HGT. 510 42

SCB























Preassembled or Pre-Piped Precast







- 
- **Meter Vaults**
  - **Fire Service Vaults**
  - **Pressure Reducing Vaults**
  - **Altitude Valve Vault**
  - **Flume Vaults**
  - **Oil Water Separators**

- **Sewage Lift Stations**





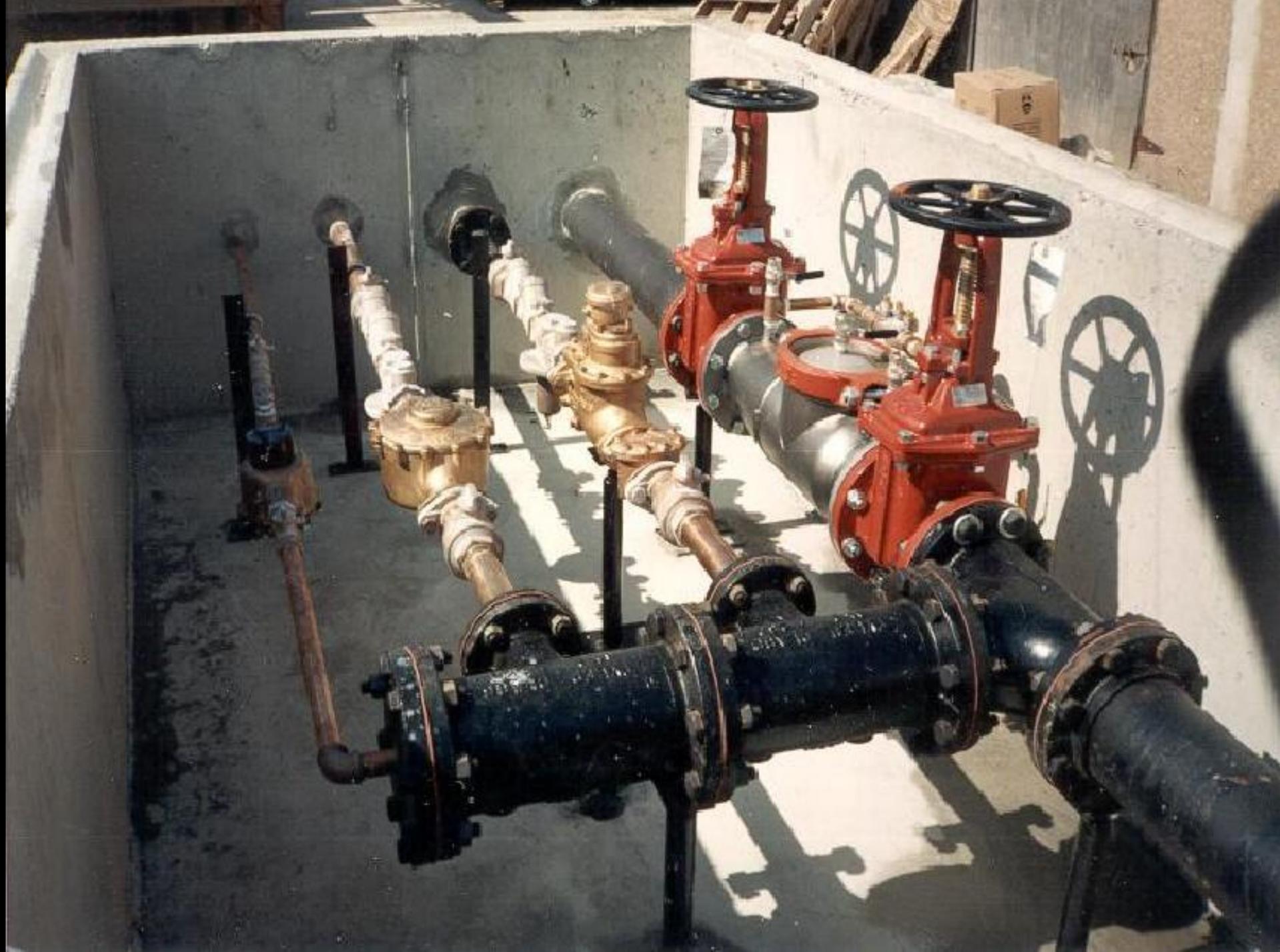
**Water Meter Vault  
and  
Custom Aluminum Hot Box**



**Water Meter Vault  
Street & Side Walk Installation**

- **Fire Service Vault**





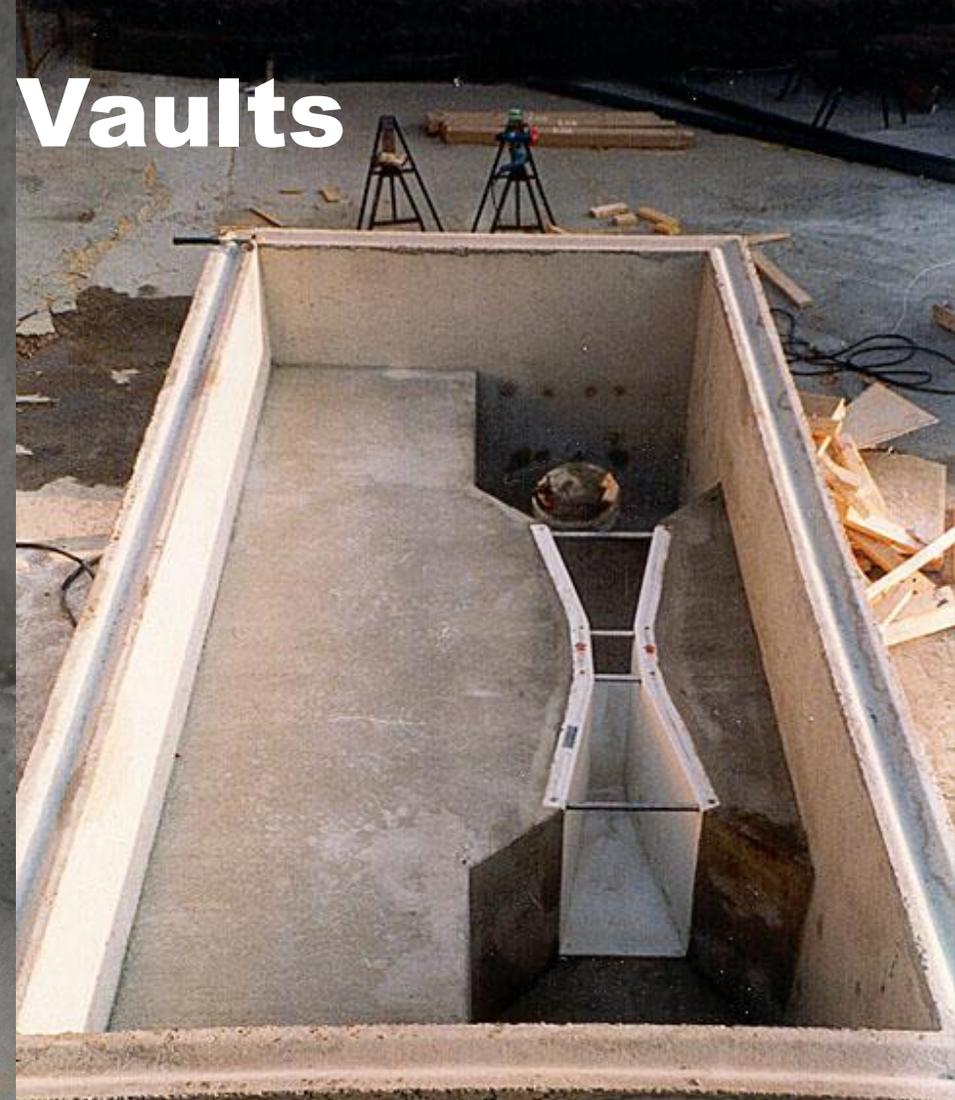
# Pressure Reducing Valve Vault



Pressure Relief Valve



- **Flume Vaults**



**Parshall Flume Vault  
Pre-Assembled  
Ready for quick Installation**

- **Oil Water Separators**

**Oil Water Separator  
Collecting Oil on the surface  
of the Unit**

**Units available from  
50GPM to 1110GPM**



- Sewage Lift Stations











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Thank You