Virginia Concrete Conference
Innovations in Precast Construction

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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.
Fundamental Attributes Precast
Fundamental Attributes of Precast

• Reduce User Impacts
• Reduce Costs
• Reduce Construction Time on site
• Reduce Weather Related Time Delays
Fundamental Attributes of Precast

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

- Improve Durability/Quality
- Improve Work Zone Safety
Fundamental Attributes of Precast

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- Reduce Costs
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- Improve Durability/Quality
- Improve Work Zone Safety

- Minimize Environmental Impact
- Minimize Impact to Existing Roadway Alignment
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
Minimize Environmental Impact

• Permitting
• Reduced Impact on Waterways
• ROW Take
• Reduced Construction Limits
• Reduced Utility Relocation
<table>
<thead>
<tr>
<th>Cast-In-Place</th>
<th>Precast Box Culvert</th>
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<tbody>
<tr>
<td>Excavate</td>
<td>Excavate</td>
</tr>
<tr>
<td>Prepare foundation &amp; bedding</td>
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<tr>
<td>Form floor</td>
<td>Install precast sections</td>
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<tr>
<td>Tie Reinforcing</td>
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<tr>
<td>Pour floor concrete</td>
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<td>Form walls &amp; top</td>
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<td>Pour walls &amp; top</td>
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<tr>
<td>7 day break for form removal</td>
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<tr>
<td>28 day design strength break for backfill</td>
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<tr>
<td>Backfill</td>
<td>Backfill</td>
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<tr>
<td>Prepare roadbed</td>
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</tbody>
</table>
Rectangular Vertical Structure
Round Vertical Structure
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
• 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