

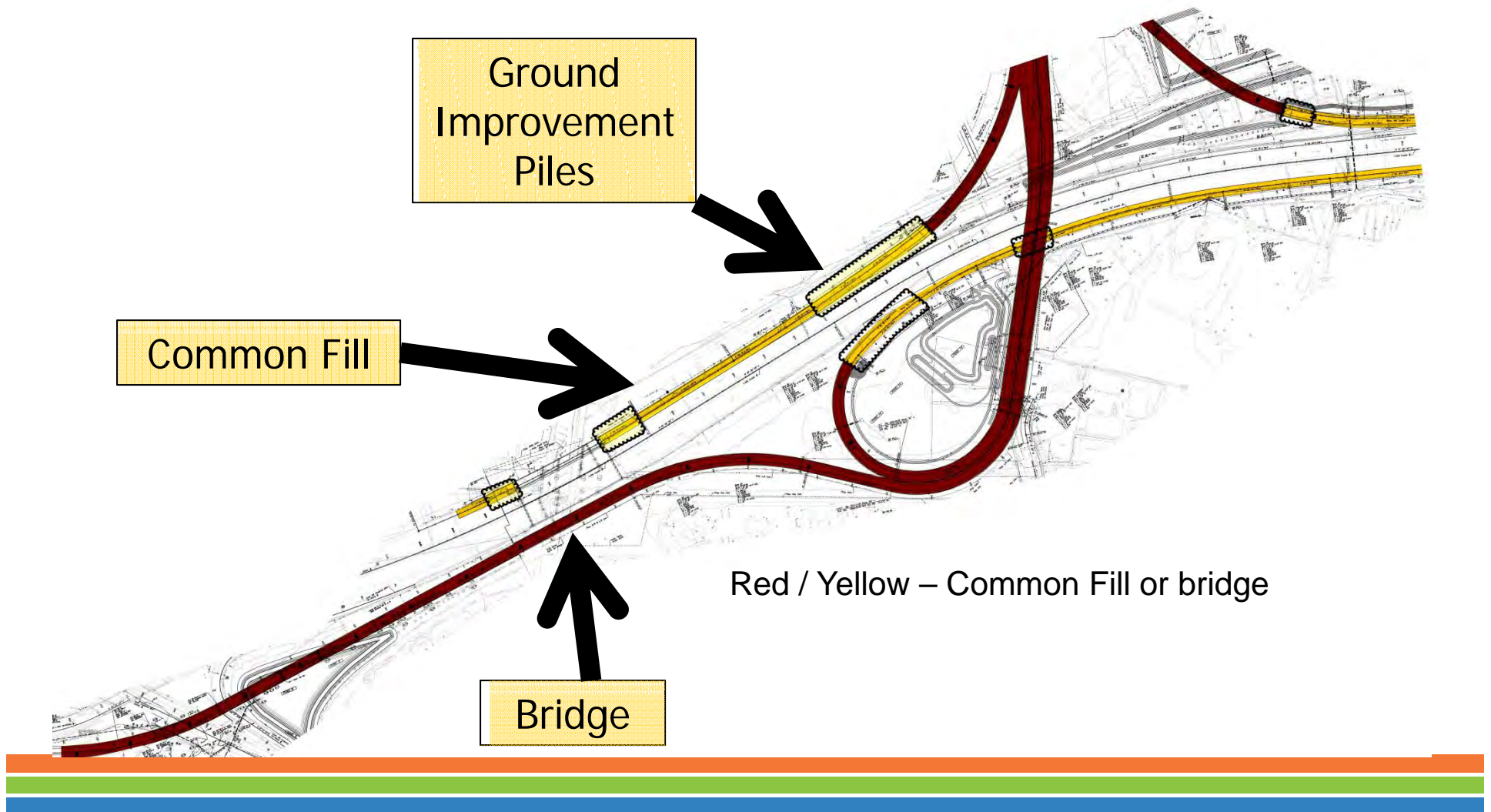
MLK Extension – Mainline US-58

■ Approach Ramps

- Surcharges
 - Incorporation of wire wall in surcharge design
- Lightweight / Geofoam Fill
 - Concern for differential settlement between new structures and existing roadways
 - Geofoam 3 #/CF vs. Lightweight Fill 60 #/CF vs. common fill 115 #/CF
 - Eliminated
 - SOE wall for piles
 - Excavation
 - Ground Improvement Piles (706 ea)
 - Bridge Piles (450 ea)
 - Bridge Decks (9%)



MLK Extension – 30% Design

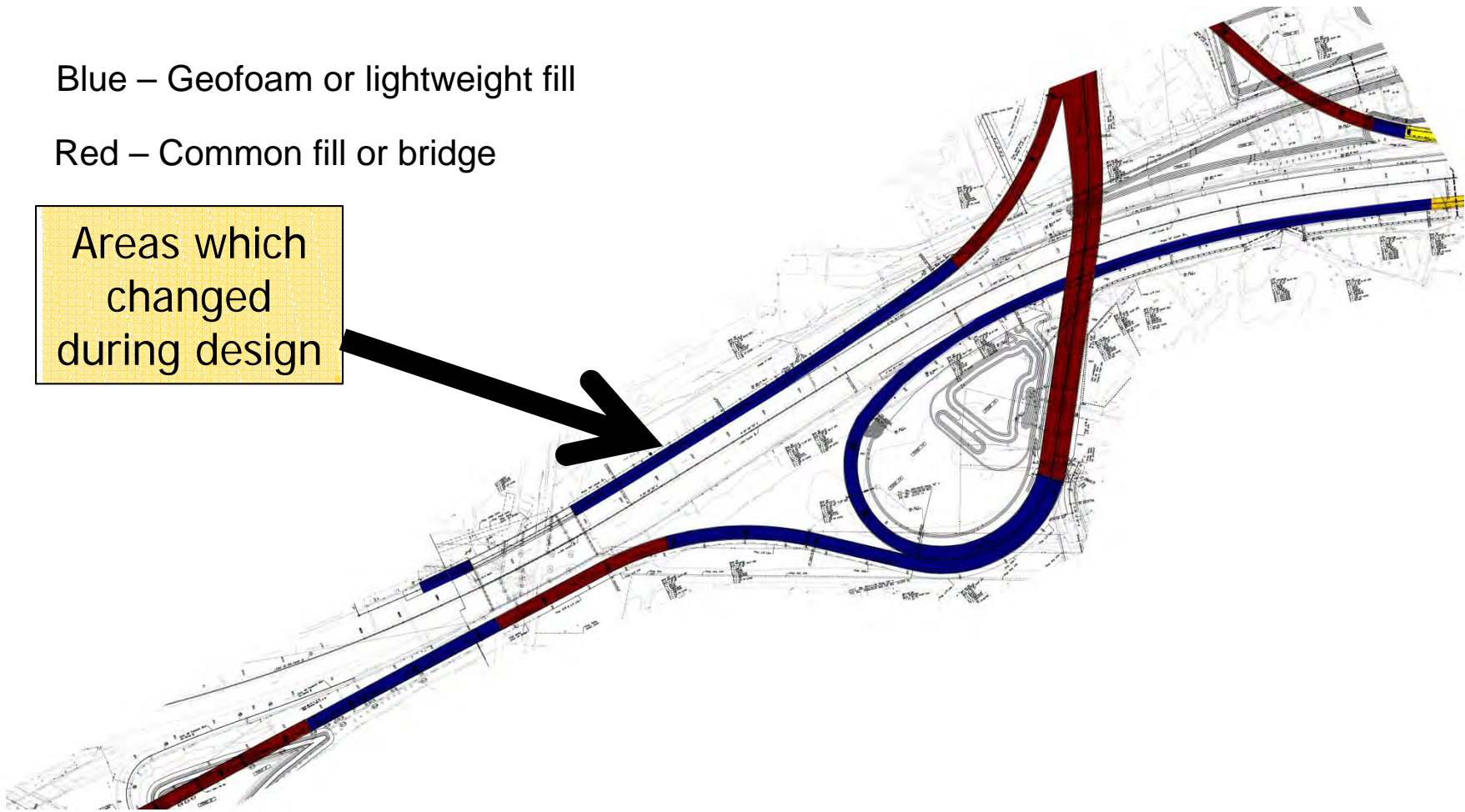


MLK Extension – RFC Plans

Blue – Geofoam or lightweight fill

Red – Common fill or bridge

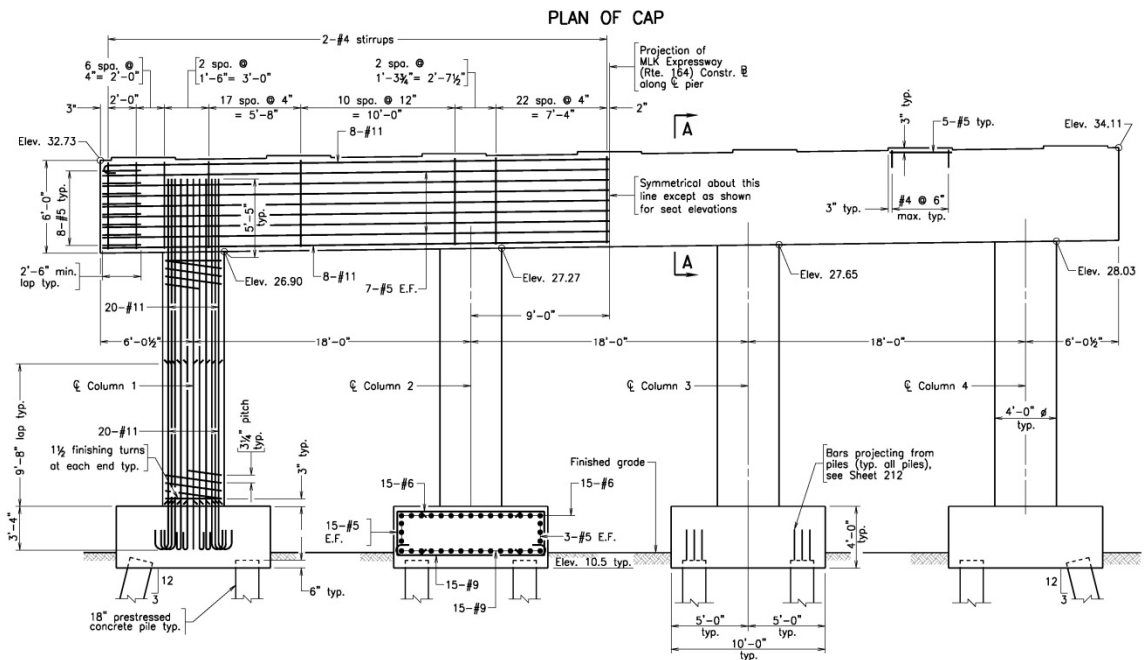
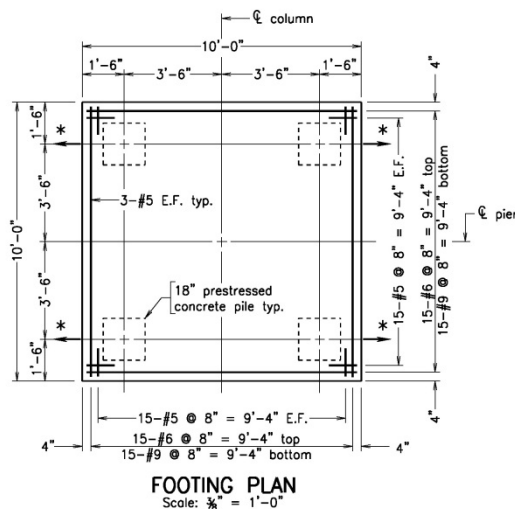
Areas which
changed
during design



MLK Extension – Mainline US-58

■ Bridge Substructure

- Founded on 18" precast piles
- Static Load Test Piles (2 ea)
- Pier Construction
- Footings, Columns, Caps



MLK Extension – Mainline US-58

■ Bridge Structures

—Girders

—Bulb Tee Girders (45", 69", 77")

—Structural Steel Girders

—Hybrid Girders –Design Exception

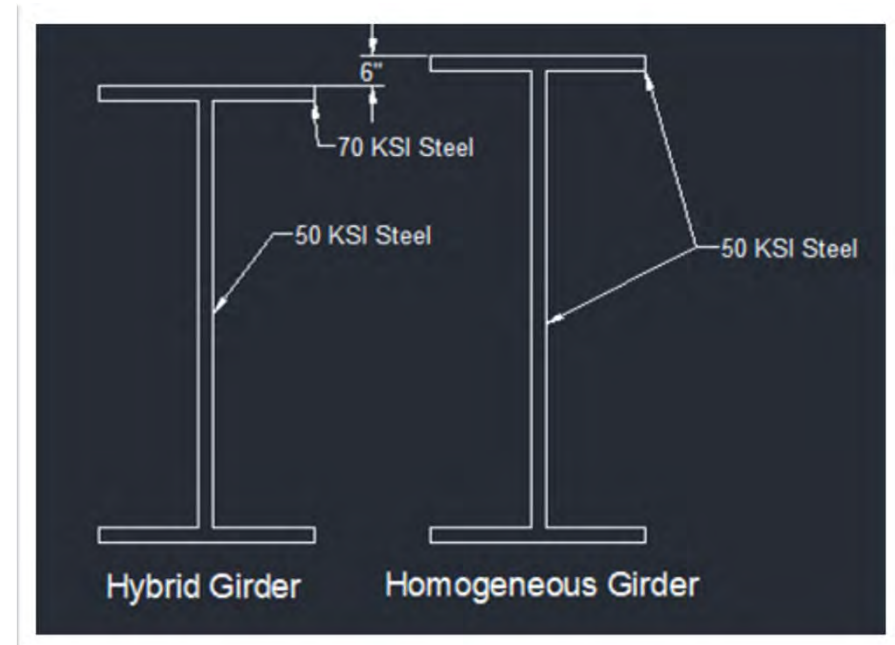
—Mainline Bridge

—50 KSI steel in Web

—70 KSI steel in flange

—Decrease in weight (-8%) and height of girder (96" to 87")

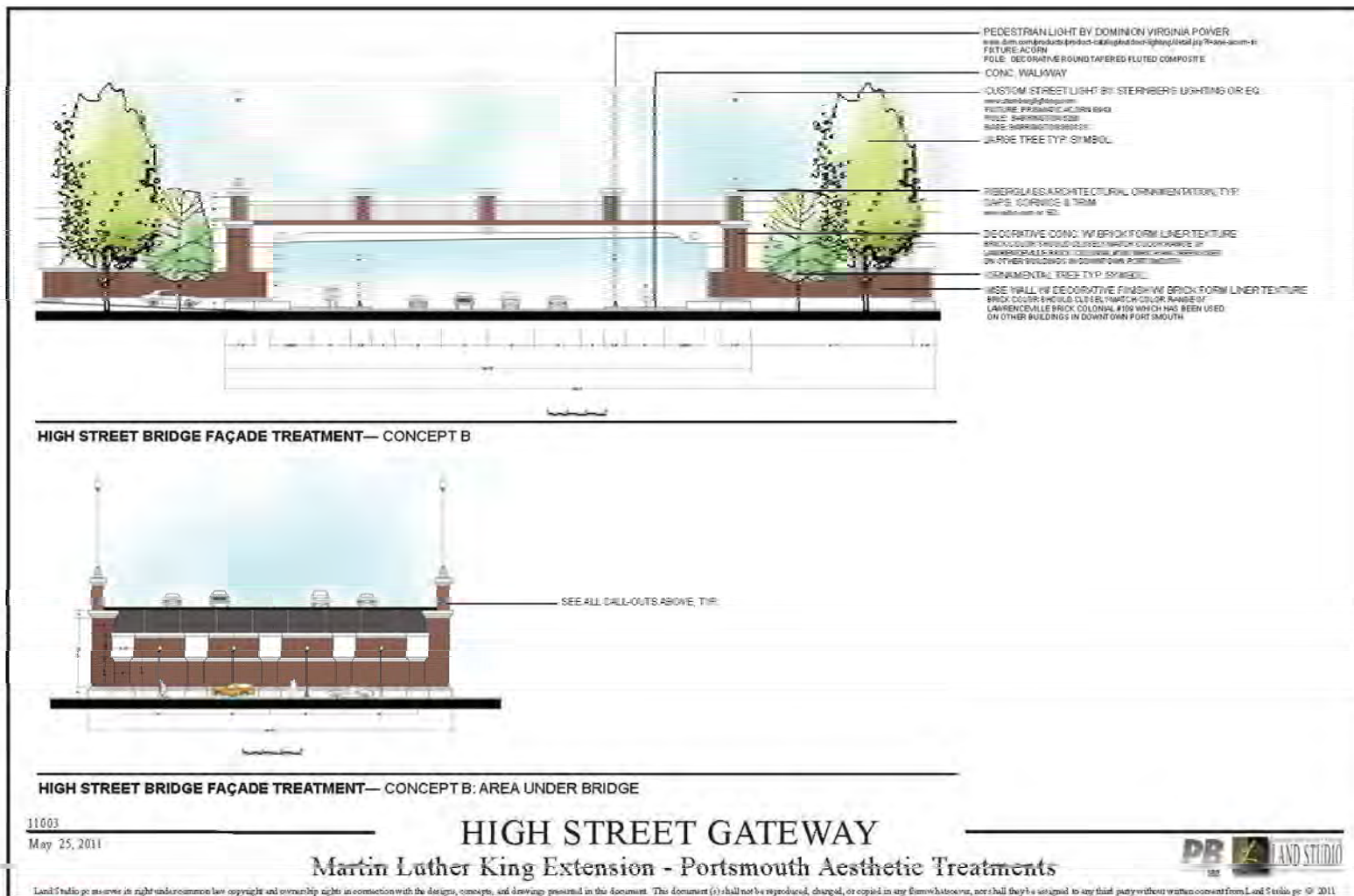
—Found that span lengths should be in excess of 200' to benefit



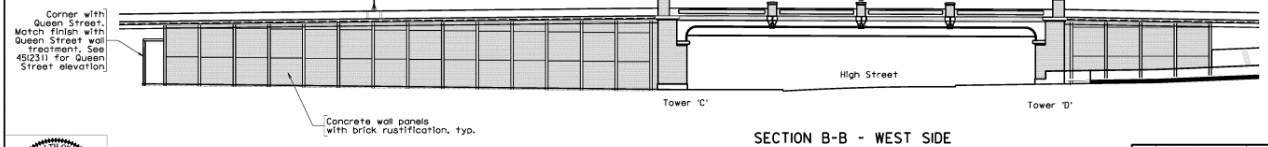
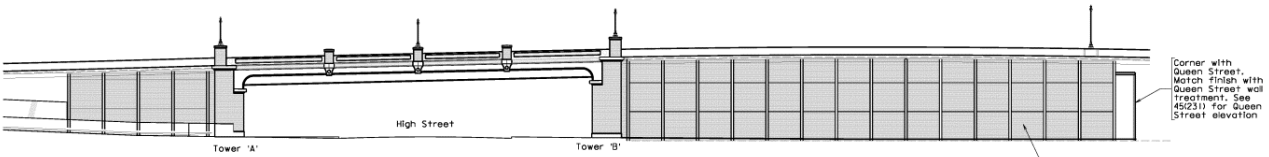
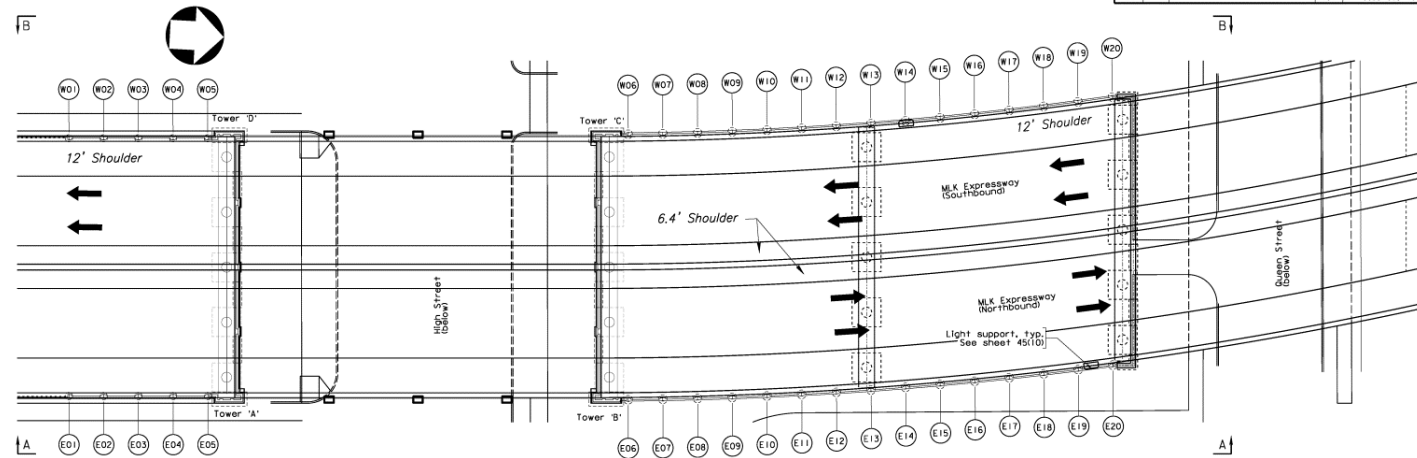
MLK Extension – Mainline US-58

■ Aesthetics

- Enhanced local finishes
- Hardscaping and Landscaping
- Pond Features
 - Retaining wall
 - Aerators
 - Fencing
 - Rip rap



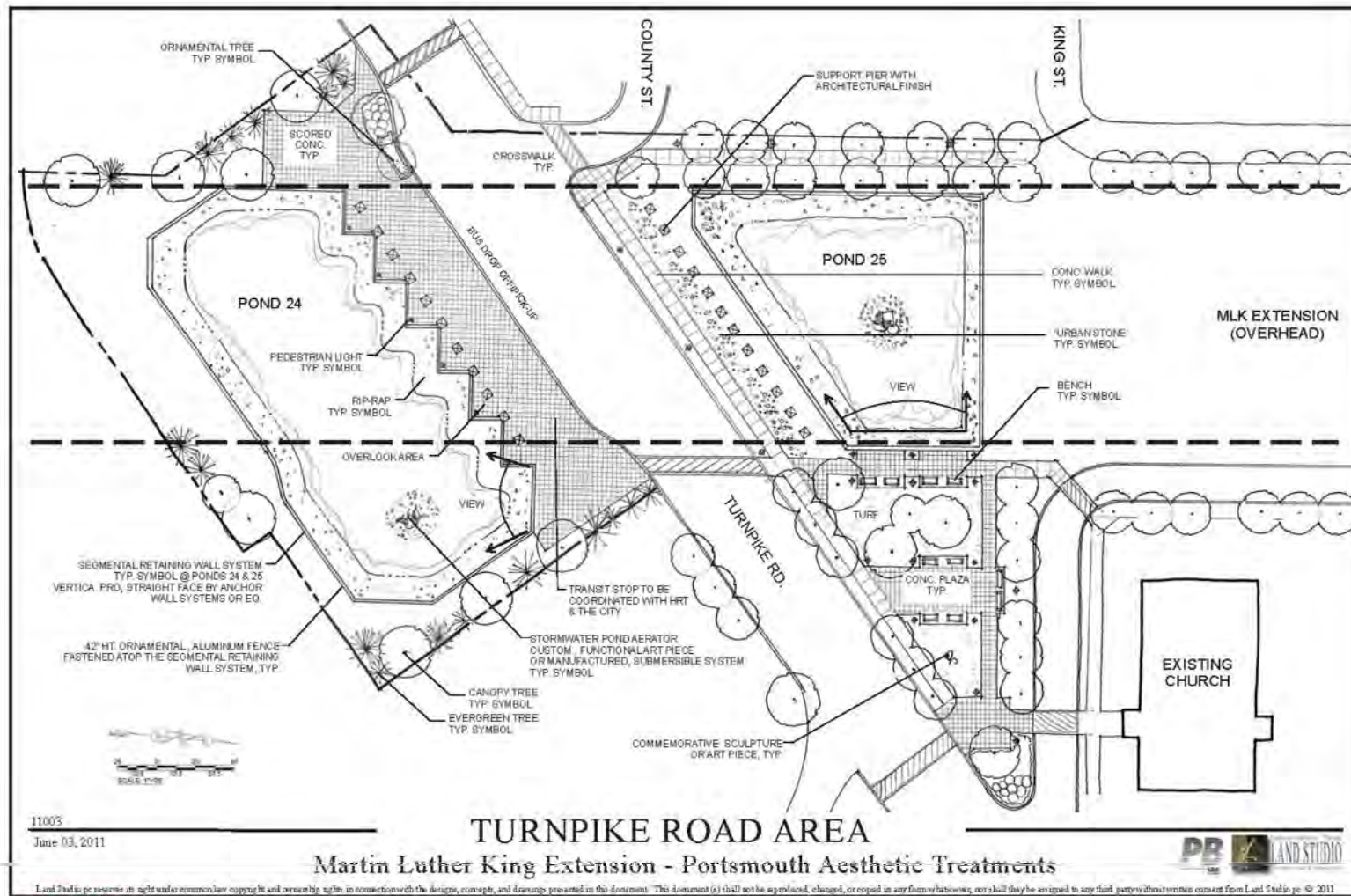
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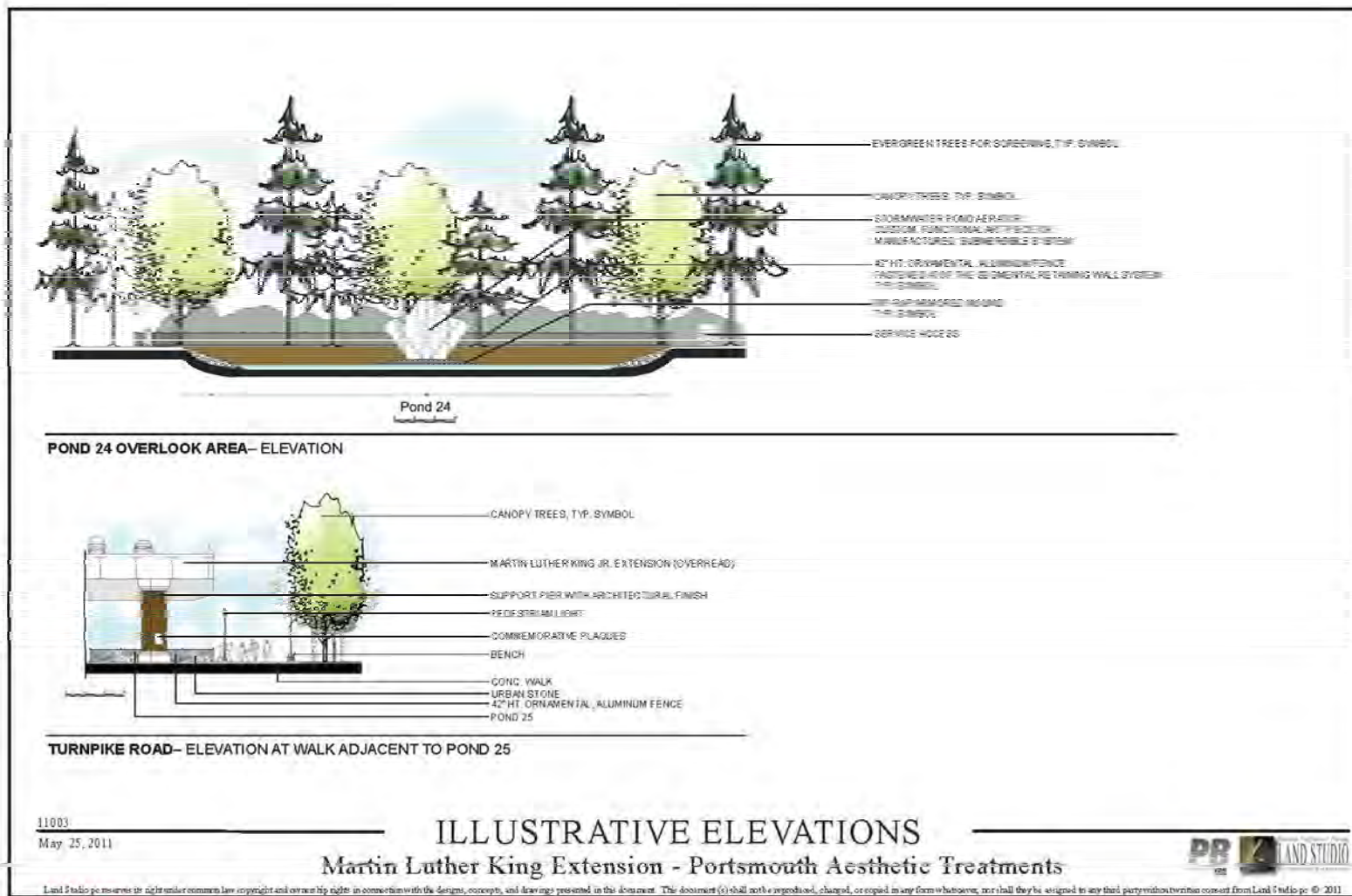


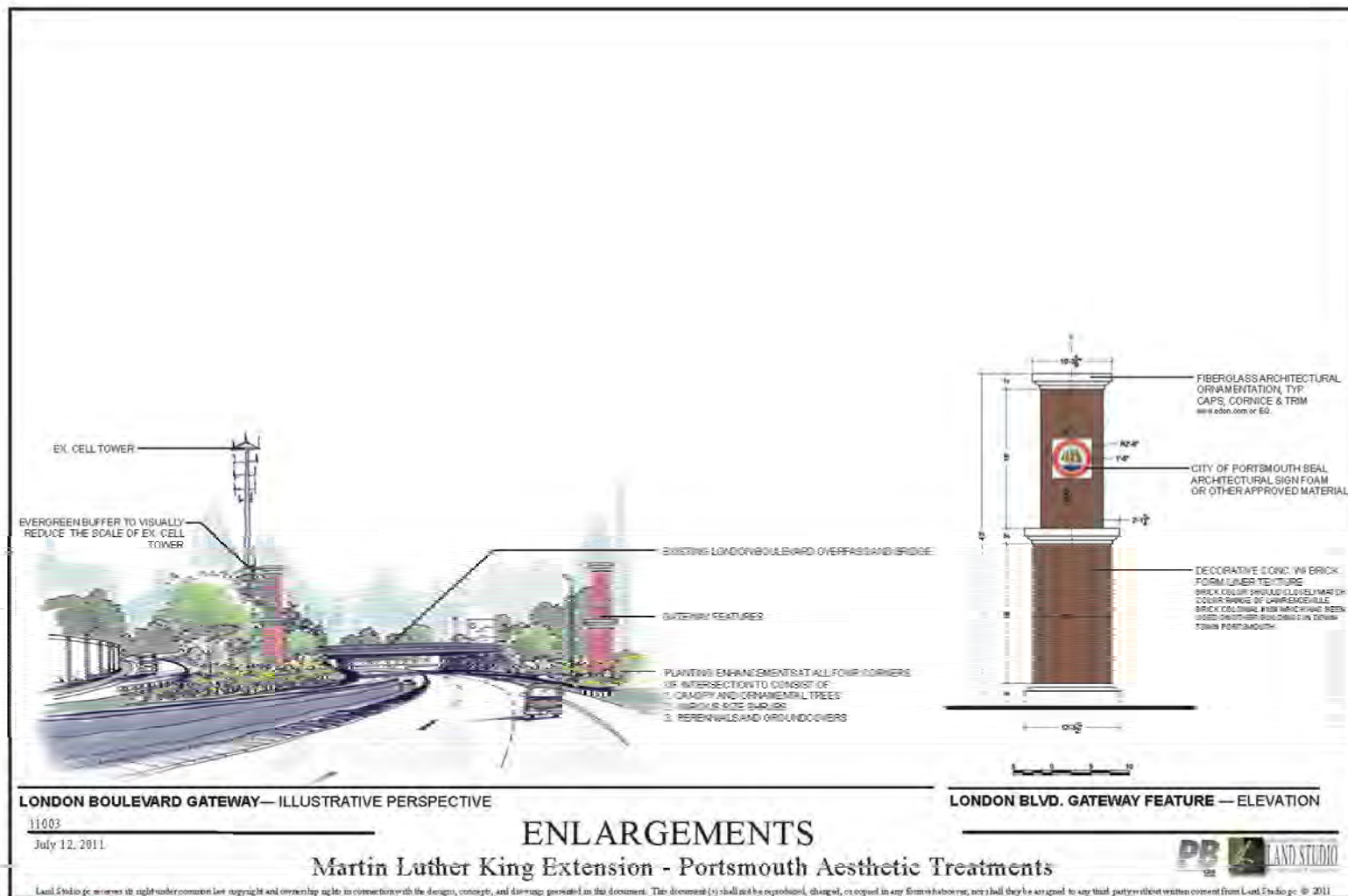
COMMONWEALTH OF VIRGINIA
FREDERICK D. WHITE
Lic. No. 61804
Professional Engineer
Frederick D. White
2013.05.31 08:14:46 -04'00'
Valley, Inc.
Alexandria, Virginia
STRUCTURAL ENGINEER

Scale: 1" = 250'-0" © 2013, Commonwealth of Virginia

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION							
ELEVATION FOR EXTERIOR WALL PANELS							
No.	Description	Date	Designed	Drawn	Checked	Plan No.	Sheet No.
	Revisions					May 2013	294-96 216 of 275







MLK Extension – Interchanges

- London Boulevard Interchange
 - Ramp A
 - Raise ramp to meet elevation of new roadway
 - Divert traffic to temporary ramp and raise existing ramp to minimize traffic disruption



MLK Extension – Interchanges

- London Boulevard Interchange
 - Ramp B
 - Reconstruct ramp
 - Complete closure of existing ramp with detour
 - Pond 30 constructed within ramp



MLK Extension – Interchanges

- London Boulevard Interchange
 - Construction of MSE Wall at both ramps to mainline
 - Design Exception required to accommodate existing substandard ramp geometry



Questions?