St Elizabeths West Campus - 106 Consultant Meeting
In Progress Review 07-21-09

Issues:
• Utility Integration Plan
  • Existing Tunnels
  • New Concept
• Security Fence
  • Location
  • Design Options
• Gate House 1,2 & 3
  • Access From MLK
  • Vehicle, Staff, Visitor & VIP
• Gate 4 and Warehouse
Utility Integration Plan
Existing Tunnels
Tunnel Utilities

- Chilled water piping supply and return
- Hot water piping supply and return
- Domestic water piping (coordinated with Utility provider)
- Fire Protection piping
- Electrical Utilities (coordinated with Utility provider)
- Natural gas piping
- Communications – voice and data conduits
- Security conduits
- Pedestrian circulation
Option 1- Advantages / Disadvantages

Advantages
- New main and branch utility tunnels sized to accommodate utilities for entire campus
- Efficiency of tunnel system to minimize total distance and associated pipe lengths
- Interconnected looped utility system to provide maximum reliability
- Constructible to match development phasing
- Flexibility for future utility connection to Martin Luther King Ave.
- Access to utilities for ease of maintenance
- Pedestrian circulation to buildings

Disadvantages
- Building new entire tunnel system with in campus versus reuse of existing tunnel system
- Reliability and integrity for reuse of existing tunnel system
- Limited space and flexibility to accommodate campus utilities for reuse of existing tunnels
- Pedestrian circulation difficult for reuse of existing tunnels
Option 2 - Advantages / Disadvantages

Advantages
- New main and branch utility tunnels sized to accommodate utilities for entire campus
- Efficiency of tunnel system to minimize total distance and associated pipe lengths
- Constructible to match development phasing
- Access to utilities for ease of maintenance
- Pedestrian circulation to buildings

Disadvantages
- Building new entire tunnel system with in campus versus reuse of existing tunnel system
- Smaller looped utility system providing less system reliability
- Reliability and integrity for reuse of existing tunnel system
- Limited space and flexibility to accommodate campus utilities for reuse of existing tunnels
- Pedestrian circulation difficult for reuse of existing tunnels
- Limited flexibility for future utility connection to Martin Luther King Ave.
Option 3 - Advantages / Disadvantages

Advantages

• New main and branch utility tunnels sized to accommodate utilities for entire campus
• Efficiency of tunnel system to minimize total distance and associated pipe lengths
• Interconnected looped utility system to provide maximum reliability
• Constructible to match development phasing
• Flexibility for future utility connection to Martin Luther King Ave.
• Access to utilities for ease of maintenance
• Pedestrian circulation to buildings

Disadvantages

• Building new entire tunnel system with in campus versus reuse of existing tunnel system
• Reliability and integrity for reuse of existing tunnel system
• Limited space and flexibility to accommodate campus utilities for reuse of existing tunnels
• Pedestrian circulation difficult for reuse of existing tunnels
Option 4 - Advantages / Disadvantages

Advantages
• New main and branch utility tunnels sized to accommodate utilities for entire campus
• Constructible to match development phasing
• Access to utilities for ease of maintenance
• Pedestrian circulation to buildings

Disadvantages
• Building new entire tunnel system within campus versus reuse of existing tunnel system
• Limited efficiency of tunnel system to minimize total distance and associated pipe lengths
• Smaller looped utility system providing less system reliability
• Reliability and integrity for reuse of existing tunnel system
• Limited space and flexibility to accommodate campus utilities for reuse of existing tunnels
• Pedestrian circulation difficult for reuse of existing tunnels
• Limited flexibility for future utility connection to Martin Luther King Ave.
MAIN UTILITY TUNNEL SECTION
NOT TO SCALE

BRANCH UTILITY TUNNEL SECTION
NOT TO SCALE
• Security Fence
Fortify Existing Brick Wall
Fortify Existing Stone Wall
Ameristar Invincible – Fence 2
Inner No Climb Fence – Fence 3
Property Line
Security Control Point

St. Elizabeths West Campus
Security Fences – Option 1
Fence 1 – Masonry Piers with Wrought Iron Infill
(Baseline)
30 Degree Maximum Slope

Fence 2 – Wrought Iron Fence
Fence 4 – Chain Link No-Climb Fence

OPTION 1 - FLAT

Inner Fence with No Climb Surface and Bottom Rail

NO CLIMB MESH, SEE OPTIONS ON SHEET 19
Fence 4 – Chain Link No-Climb Fence

Option 1 - SLOPED
Inner Fence with No Climb Surface and Bottom Rail
• Bollard Requirements
  • Height: Min 30” high
  • Spacing: – O/C (4’ Typical)
  • Design Resistance: K-12 (15,000lb vehicle @ 50mph)
• Option 1 – Outside Historic Wall
  1. Clear zone per DDOT – Bollard to Back face of Curb = 2’
  2. G&O Survey – Gas line 4’ behind face of curb + Overhead Electric
  3. Curb Line Placement diminishes welcoming Presence
  4. Inconsistent with historic Nature of Campus Wall
• Option 2 - Inside Historic Wall
  1. Reduces security signature identified in items 3&4 of option 1
  2. May not have as many utility conflicts
  3. Screening may allow less expensive options to Decorative Bollards
• Option 3- Retaining Wall Inside Historic Wall
  1. Eliminates need for bollards, post and cable systems.
  2. Retaining wall used in combination with an earth embankment. (minimum 8:1 slope)
Option 1 - Bollards Along MLK Avenue
Option 1 - Bollards Along MLK Avenue
Option 1 - Bollards Along MLK Avenue

- Inner Decorative No Climb Fence
- 20' Clear Zone
- Historic Fence
- Sidewalk
- Bollards
- MLK

**Typical Bollard Detail**

- Concrete footing
- Steel pipe filled with concrete
- Provide temperature and shrinkage reinforcing
- EMT Schedule 80

**Diagram Scales**

- 2'-0" MIN
Option 1 – Bollards / Planters Along MLK Avenue
Option 1 – Bollards / Planters Along MLK Avenue
Option 2 – Bollards inside historic wall
Option 2 – Bollards inside historic wall
Inner Decorative No Climb Fence
20’ Clear Zone
Bollards
Historic Fence
Sidewalk
MLK

Option 2 – Bollards inside historic wall
Option 2 – Bollards inside historic wall
Option 2 – Bollards inside historic wall
Option 2A – Post + Cable inside historic wall
Inner Decorative No Climb Fence
20' Clear Zone
Posts + Cables
Historic Fence
Sidewalk
MLK

Option 2A – Post + Cable inside historic wall
Option 2A – Post + Cable inside historic wall
Option 2A – Post + Cable inside historic wall

Bollard
(2) Cables
Turnbuckles
Grade Level

3’ x 3’ x 3’ Dead man

Cable Termination Detail
Option 2A – Post + Cable inside historic wall
Option 2B – Post + Cable inside historic wall
Option 2B – Post + Cable inside historic wall
Option 2B – Post + Cable inside historic wall
Option 2B – Post + Cable inside historic wall
• Entry Gates 1, 2, and 3 – Options 1A, 1B and 1C
Option 1A

Option 1B

Entry Gates 1, 2, and 3 - Option 1A/1B
MLK Drive

Existing Masonry Fence

Surface Parking

Green Houses to be Removed

Existing Gate House #1 to Remain

Gate 1 - Existing Conditions
LEGEND:
- Existing Wall
- Wall to be demolished
- New Wall/Fence
- No-Climb Fence
- Secondary Security Line
- Pedestrian Traffic
- Vehicular Traffic
- VIP Traffic
- Emergency Vehicles
- New Buildings
- Exist. Buildings

Gate 1 – Option 1B – VIP Entry + New Staff Entry
07-21-09
MLK Drive

Existing Masonry Fence

Existing Gate

House # 2

To Remain

Existing Building

To Be Removed

Existing Building

To Remain

Existing Building

To Be Removed

Gate 2 – Existing Conditions
MLK Drive

Existing Employee Cafeteria To Remain

Existing Tunnel to be Filled

Existing Masonry Fence

Existing Bldg To Remain

Gate 3 – Existing Conditions
• Entry Gates 1, 2, and 3 – Options 2 and 3
MLK Drive

Existing Employee Cafeteria To Be Removed
Existing Tunnel to be Filled
Existing Bldg To Remain
Existing Masonry Fence
Existing Bldg To Remain

Gate 3 – Existing Conditions
Existing Masonry Fence

Underground Staff Parking

Screening Bldg.

Shuttle Bus Stop

Screening Bldg.

Ramp to Parking

New Access Road

Shuttle Bus Stop

LEGEND:
- Existing Wall
- Wall to be demolished
- New Wall/ Fence
- No-Climb Fence
- Secondary Security Line
- Pedestrian Traffic
- Vehicular Traffic
- VIP Traffic
- Emergency Vehicles
- New Buildings
- Exist. Buildings

Gate 3 – Option 2 – Staff Parking
07-16-09
Gate 3 – Existing Conditions

- Existing Employee Cafeteria To Be Removed
- Existing Tunnel to be Filled
- Existing Bldg To Be Removed
- Existing Masonry Fence
- Existing Bldg To Remain
Space Between Existing Buildings and Garage is Minimal

20'-0" Min Space Between Existing Buildings and Garage is Minimal

20'-0" Min

5800 5500 5500 5800
ONE WAY DRIVE LANE 60 DEGREE PARKING ONE WAY DRIVE LANE

3100

23500 77'-0"

VERTICAL CIRCULATION AND MECHANICAL SHAFT BEYOND

PLANNED PEDESTRIAN TUNNEL IN CONFLICT WITH GARAGE LOCATION.

GATE 3 – PARKING GARAGE SECTION
• Gate 4
LEGEND:
- Existing Wall
- Wall to be demolished
- New Wall/ Fence
- No-Climb Fence
- Secondary Security Line
- Pedestrian Traffic
- Vehicular Traffic
- VIP Traffic
- Emergency Vehicles
- New Buildings
- Exist. Buildings

Gate 4 – Staff Entry/Temporary Visitor Entry
07-16-09
• Warehouse
Option 1

1:250

PLANT-T.S.

A

B

C

Proposed Security Fence Typical

Existing Grade

Top of Loading Dock: 9M
Bottom of Loading Dock: 7.8M

Match Existing (512.5M)

TW 10.13m

Existing Grade

Water Retention Zone

Existing Pump House

GSA

PERKINS WILL
Option 2

1:250

A

Proposed Security Fence Typical
Existing Grade
Receiving Facility (Typ.)

B

Match Existing @ 12.5M
10M
2%
4%

C

Existing Grade
Receiving Facility (Typ.)
Water Retention Zone
Road Beyond
Existing Pump House

N

GSA

PERKINS + WILL
Option 2

1:250

PLAN: N.T.S.

Match Existing Grade

Existing Grade Typical

Stormwater Retention

Security Fence (Typ.)

Proposed Access Road: 5M

Property Line

Route 295

A

B

Match Existing Grade

Receiving Facility

Security Fence (Typ.)

Proposed Access Road: 5M

Property Line

Route 295

GSA

PERKINS + WILL
END