

BGE's Proposed Constitution Street 115 kV Switching Station Project

MD – DC Utilities Association

October 2, 2013

Cambridge, Maryland



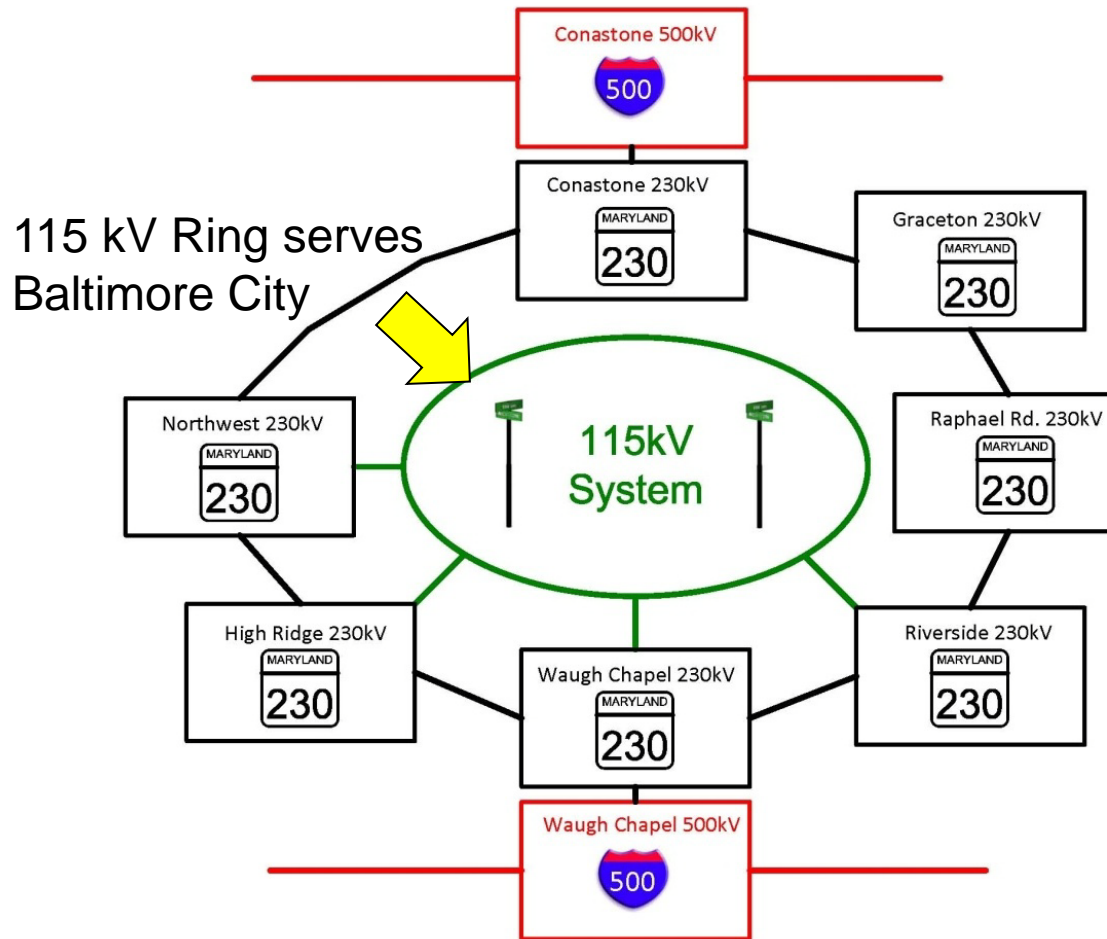
What is a Switching Station :

A switching station is an intermediate station between substations. The incoming power lines and outgoing power lines have the same level of voltage meaning there is no transformer to step down the voltage to connect the load. Switching stations are created for the purpose of controlling important parameters in a power system and control of voltage rise due to capacitive effect or voltage drop due to reactive effect or both .

Overview -

- BGE is making *significant* investment in Baltimore City to improve the reliability of its 115 kV system which serves Baltimore City Substations.
- The Constitution Street project is a key component for improving the reliability of BGE's 115 kV infrastructure serving downtown Baltimore.
- This project will interconnect with other infrastructure currently in service and satisfy NERC Planning Reliability Standards allowing BGE to continue to deliver safe and reliable electric service to downtown Baltimore and meet the long term growth needs of the City.

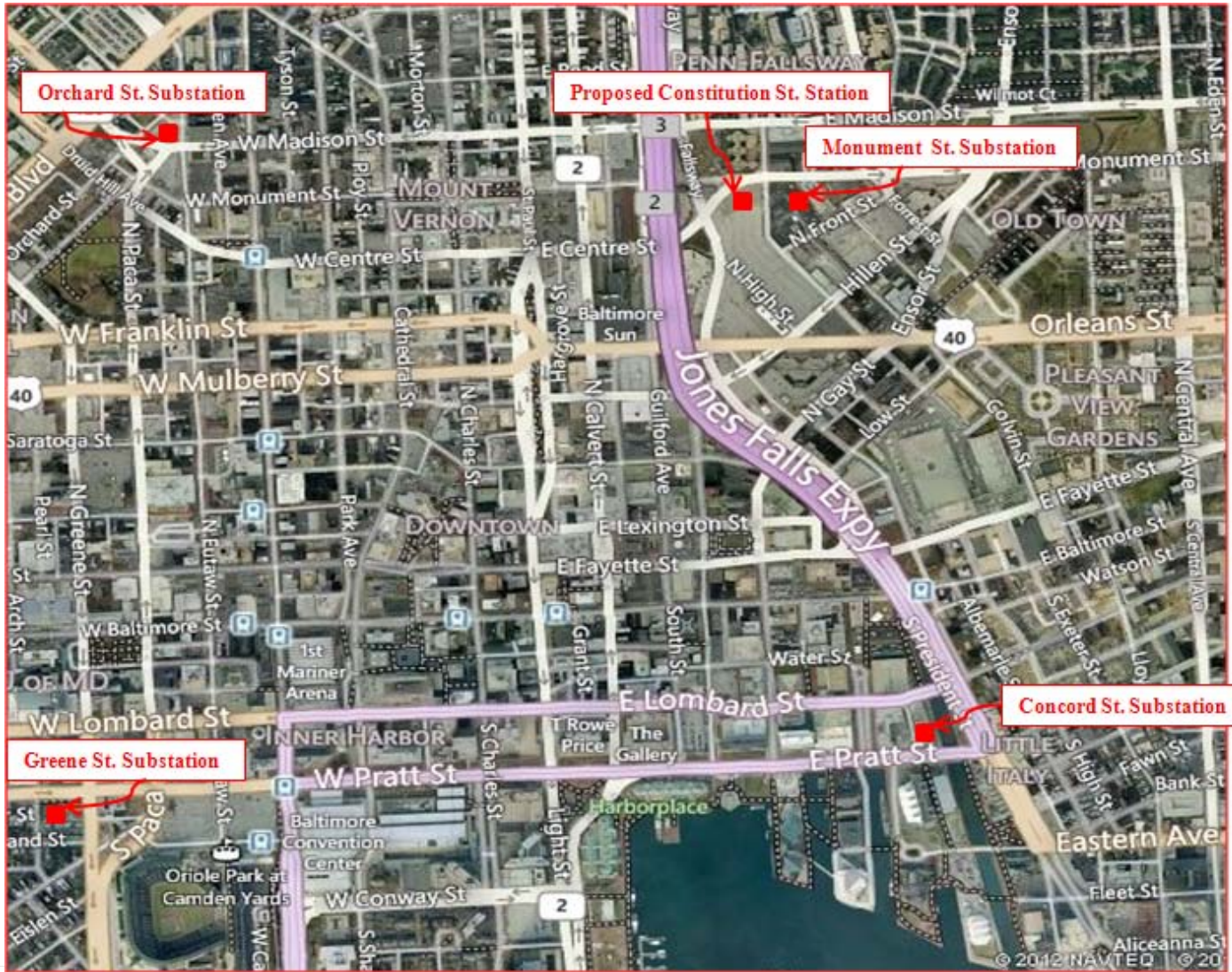
Background – BGE Transmission Supply Rings



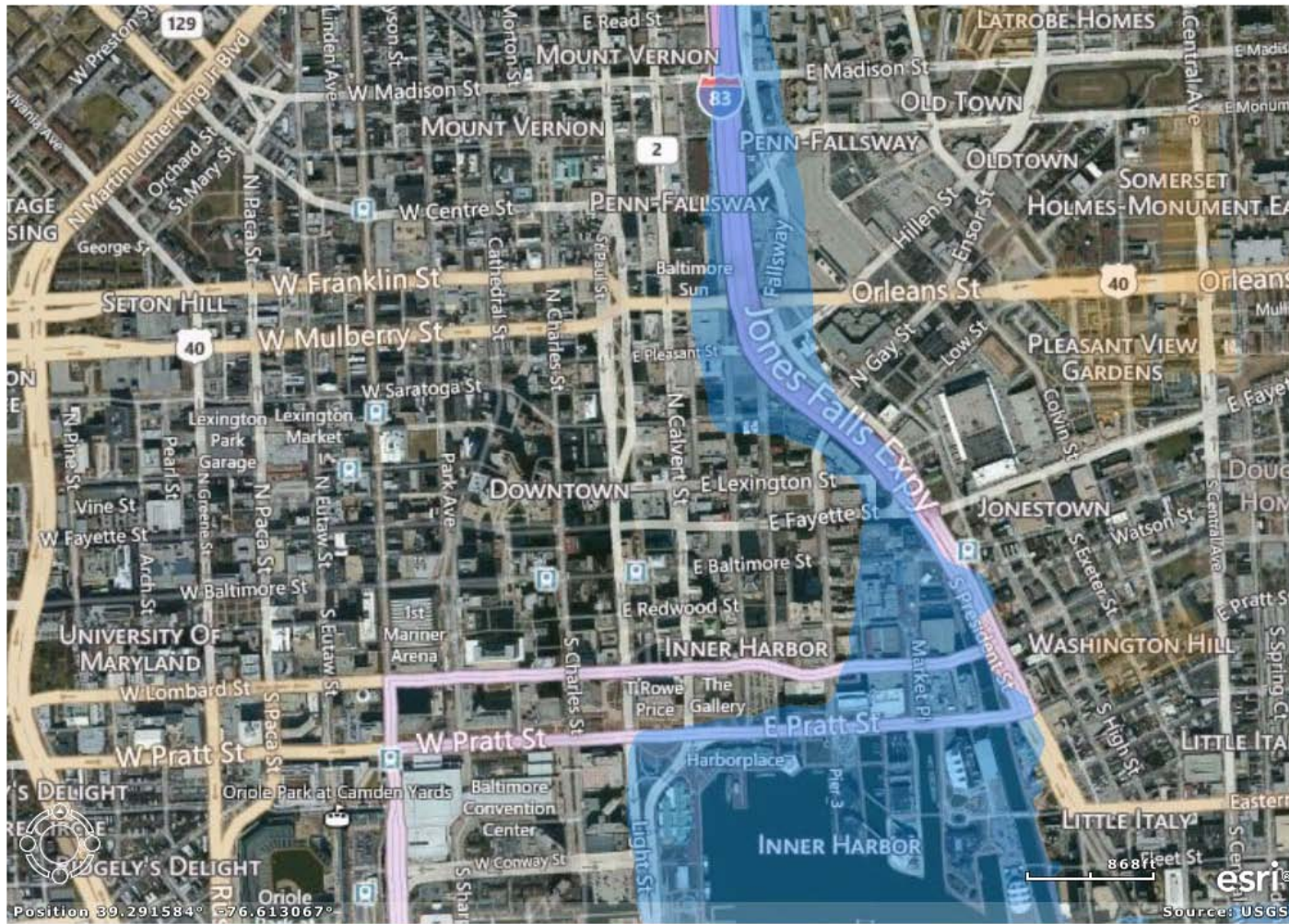
Proposed Site:

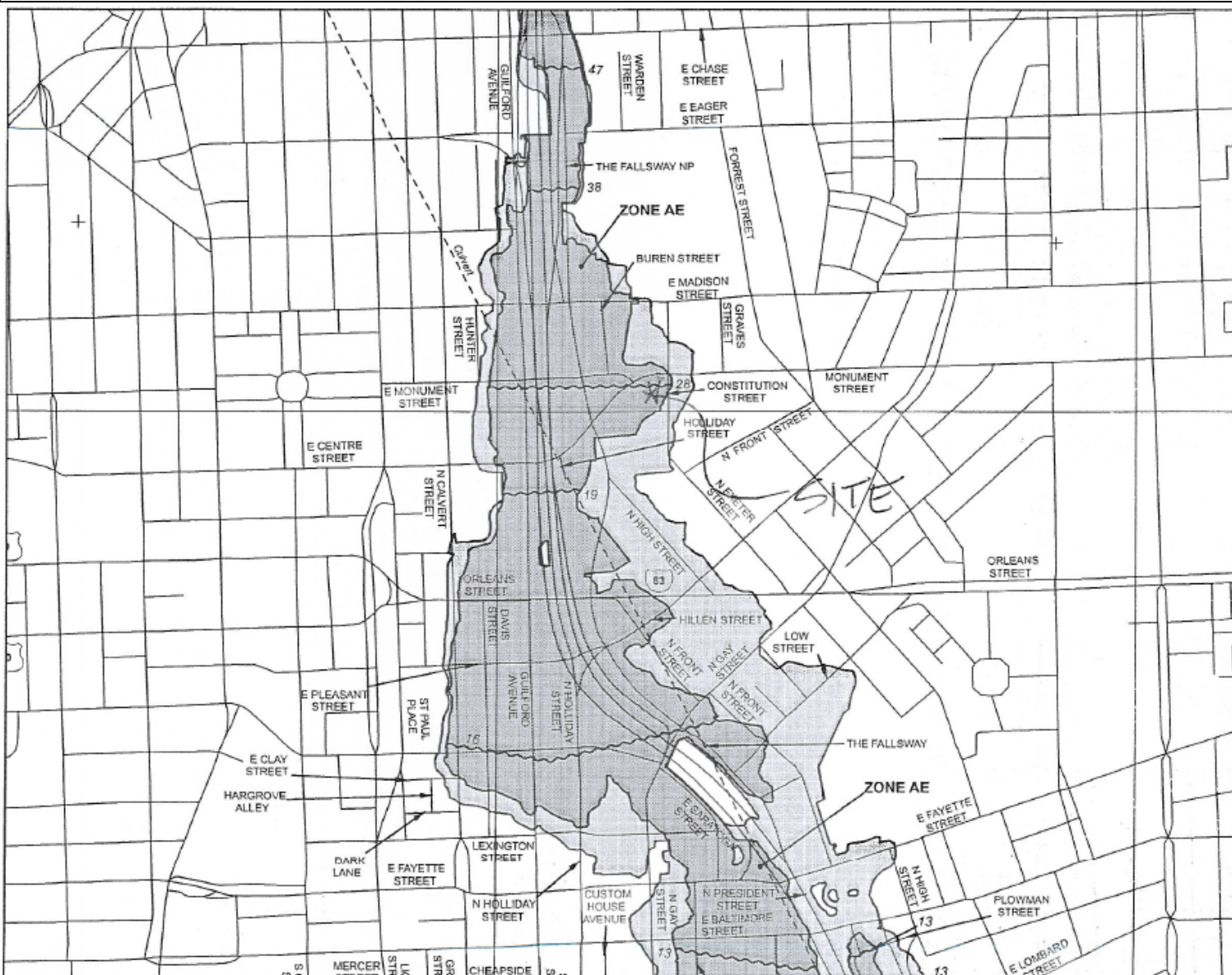
- The 1.2 acre site is partially within zone AE of a riverine floodplain but no reasonable land options exist for alternative locations.
- Site is fully paved in an urban environment and currently serves as a surface parking lot.
- The floodway is confined to a triple box culvert located beneath the roadbed of the nearby Jones Falls Expressway.
- The box culverts are undersized for the 100 year peak stormwater runoff from the upstream watershed.
- Excess runoff travels overland north to south to Baltimore's Inner Harbor.

Project Area – Downtown Baltimore City



Project Area with Floodplain Overlay





MAP SCALE 1" = 500'

250 0 500 1000
FEET
METERS

NFP
PANEL 0018E

FIRM
FLOOD INSURANCE RATE MAP
CITY OF BALTIMORE,
MARYLAND
INDEPENDENT CITY

PANEL 18 OF 37
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY BALTIMORE, CITY OF
NUMBER 2400870018E
PANEL 0018E
SHEET 1

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
2400870018E
MAP REVISED
FEBRUARY 2, 2012
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRM On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at www.mis.fema.gov

Proposed Constitution Street Switching Station Site

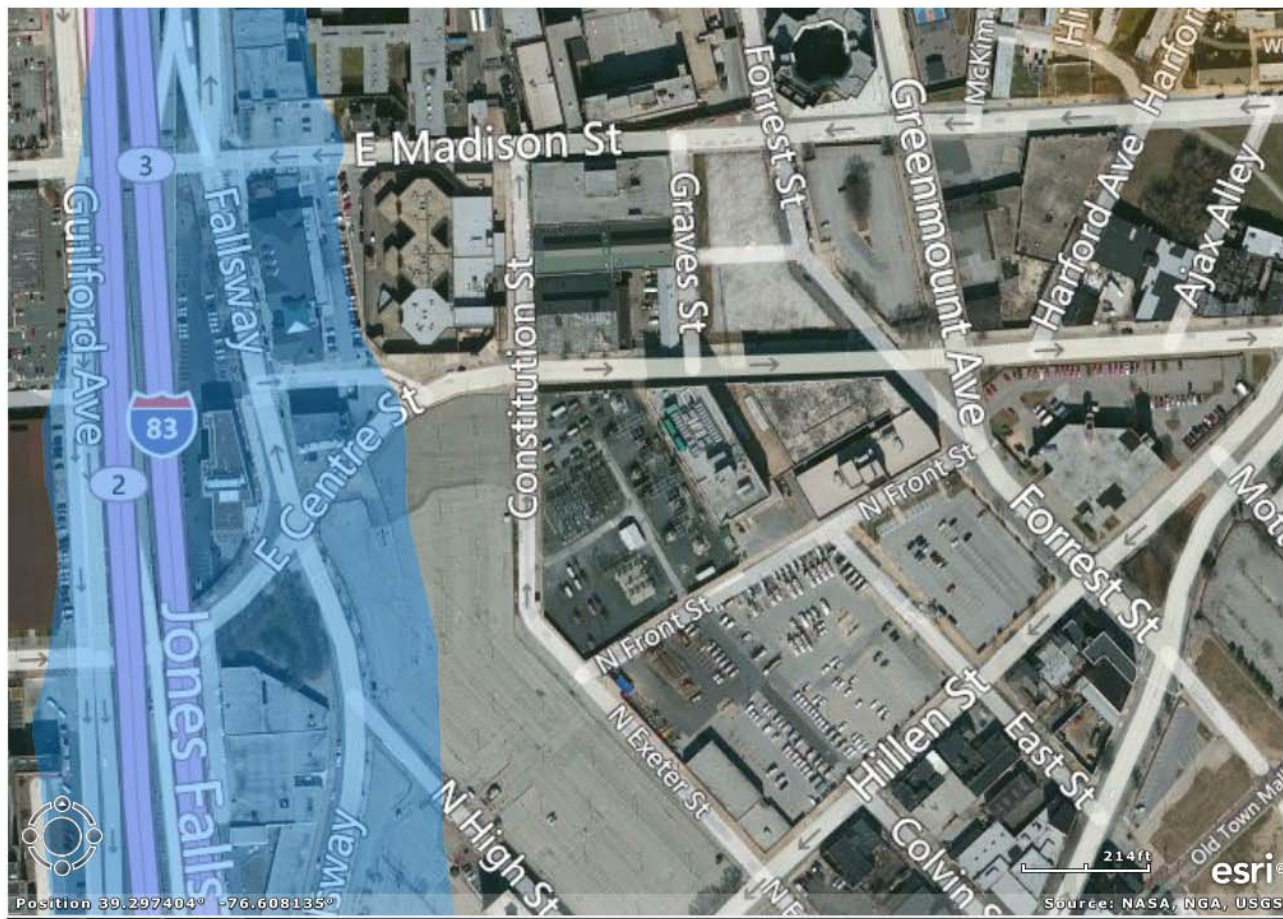
Build new 115 kV
Switching Station
(GIS) on a
portion of the
Fallsway
Properties LLC
Parking Lot

Existing Monument
Street Substation

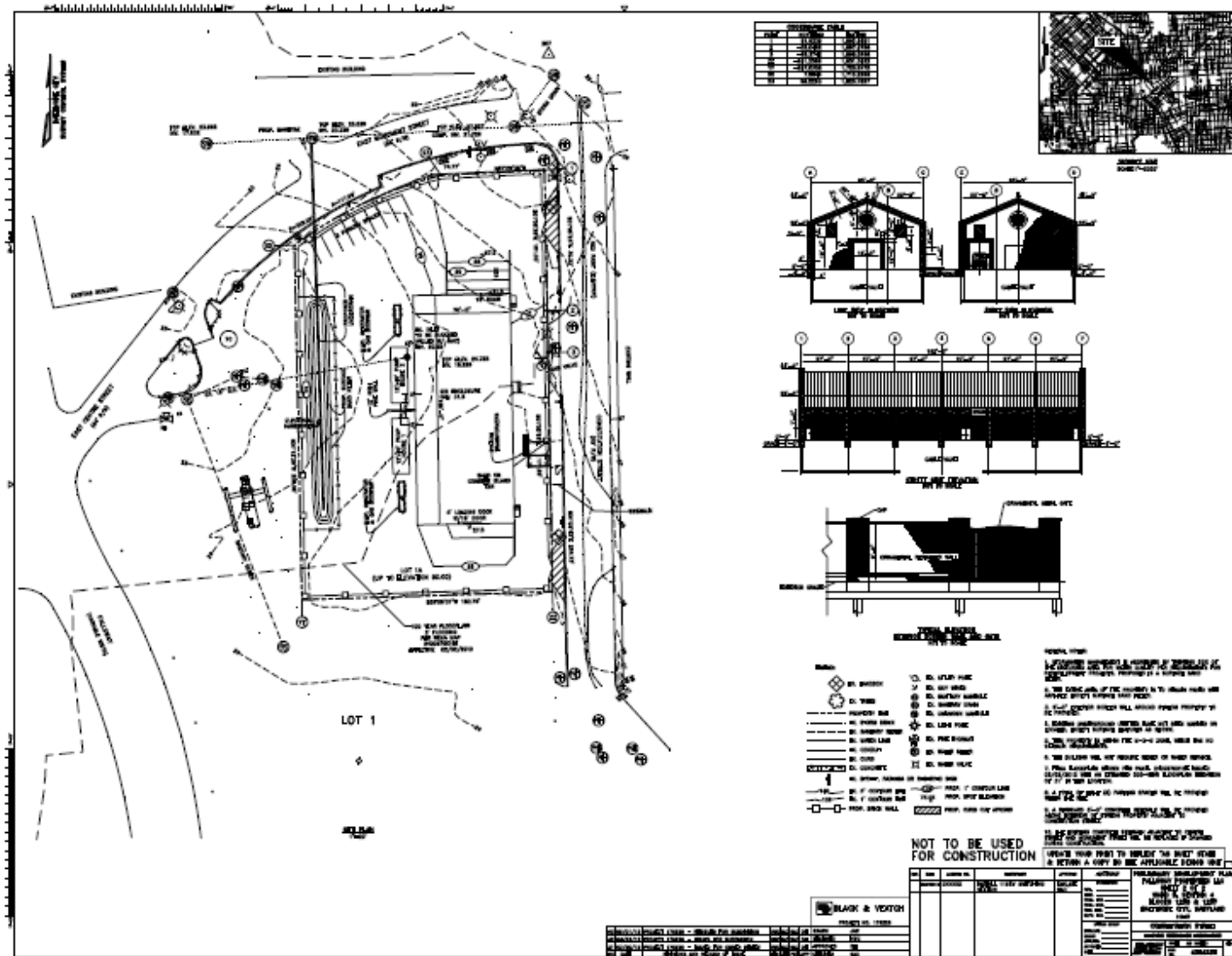
BGE Front Street
Complex &
Operations Service
Center



Proposed Constitution Street Switching Station Site with Floodplain Overlay



Proposed Constitution Street 115 kV Switching Station



Typical BGE Switching Station

Exterior wall will be modified to account for Flooding Conditions



Typical 115 kV Switching Station – High Voltage GIS Equipment



Typical 115 kV Switching Station - Control Room



Vault Area of Typical Switching Station



Challenges:

- Design and construct a facility that meets Baltimore City's rigorous hazard mitigation planning process as well as minimize flood water displacement.
- Obtain local and state permits to build "critical infrastructure" in the 100 year flood plain.

