



South Salem Neighborhood Association

Canal Street Flood Mitigation Project

Phase II

January 19, 2016, 7:00 p.m.

Enterprise Center Conference Room
State University, Central Campus

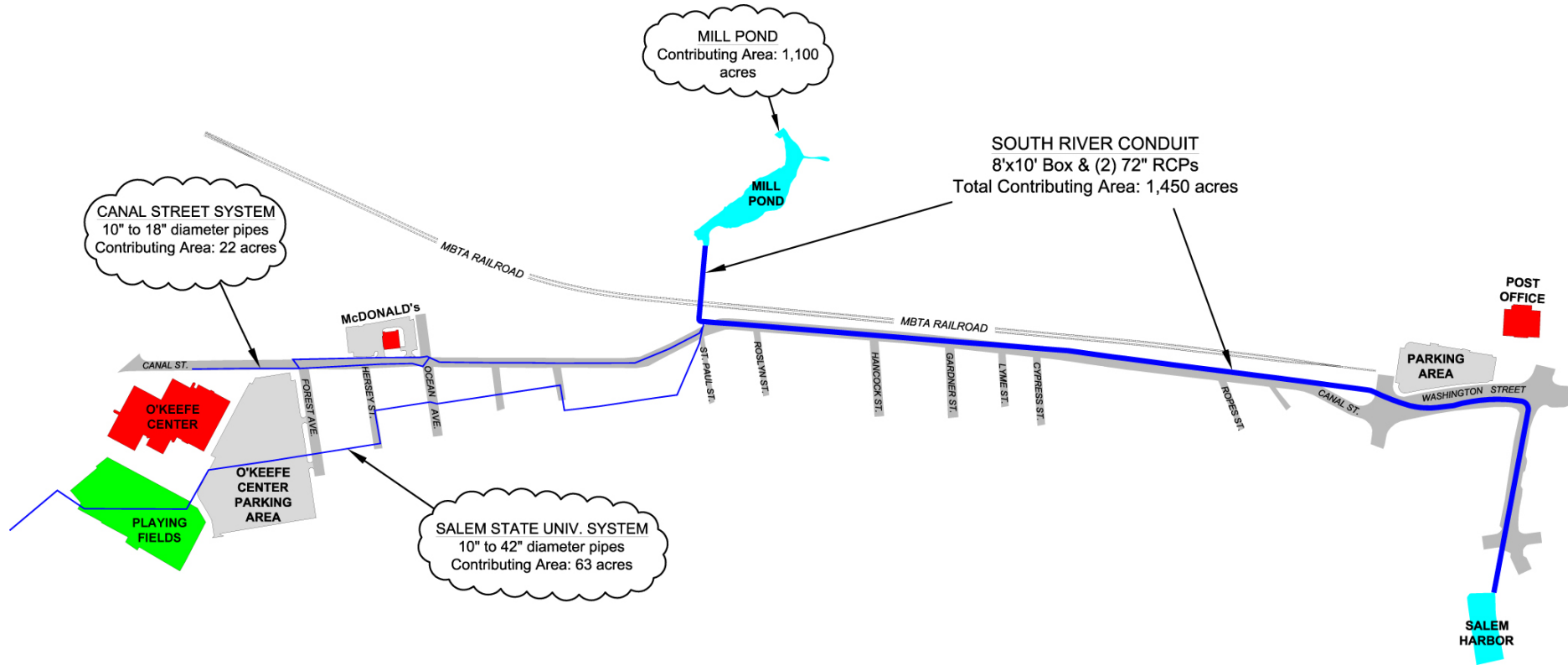
Agenda

- Introductions
- Community Relations / Communications
- Scope of Work
- Schedule/Sequence of Construction
- Construction Preview
- Questions and Answers

Community Relations/ Communications

- 2-week Construction look ahead
 - Need email addresses to distribute
- Continuation of Special Needs
 - Need Form filled out
- Helpful hints during Construction
- Engineering Department Website

Overview – Existing Infrastructure



History of Flooding

- Key Elevations for Existing Conditions
 - 14.1 100 year flood predicted
 - 13.1 10 year flood predicted
 - 9.2 Salem Harbor High Tide
 - » 8.9 *Canal Street @ McDonalds*
 - » 8.0 *O'Keefe Parking Lot*
 - 4.6 Salem Harbor Mean Tide
 - 0.0 Salem Harbor Low Tide

History of Flooding

- Flooding is heavily influenced by tidal conditions; peak flow rates in South River coincide with high tide
- Canal Street drainage systems insufficient to handle storm flows
- 23.2 acres/31 buildings impacted in 10 year event
- 30.8 acres/50 buildings impacted in 100 year event





Canal Street Flood Mitigation / Roadway Improvement Project

- Project 1 – Phase I Flood Mitigation Project
 - Comprehensive Utility Improvements in Canal St
- Project 2 – Canal Street Roadway Improvements
- Project 3 – Phase II Flood Mitigation Project
 - Drainage Improvements, Flood Storage, Harbor Outlet Improvements - Canal Street / SSU Area

Canal Street Flood Mitigation / Roadway Improvement Project

- Project 1 – Phase I Flood Mitigation Project
 - Comprehensive Utility Improvements in Canal St
 - substantially complete 2/1/14
 - Repaired and rehabilitated Sewer, Water and South River Conduit based on assessment of utilities by W&C and City.
 - Constructed the portion of the Canal Street Flood Mitigation proposed storm drain system in Canal Street (~2,100') in anticipation of upcoming Phase 3.
 - No significant drain capacity increases.

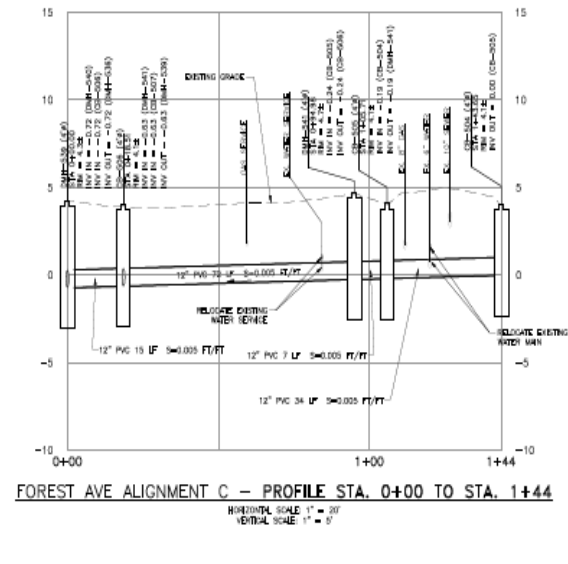
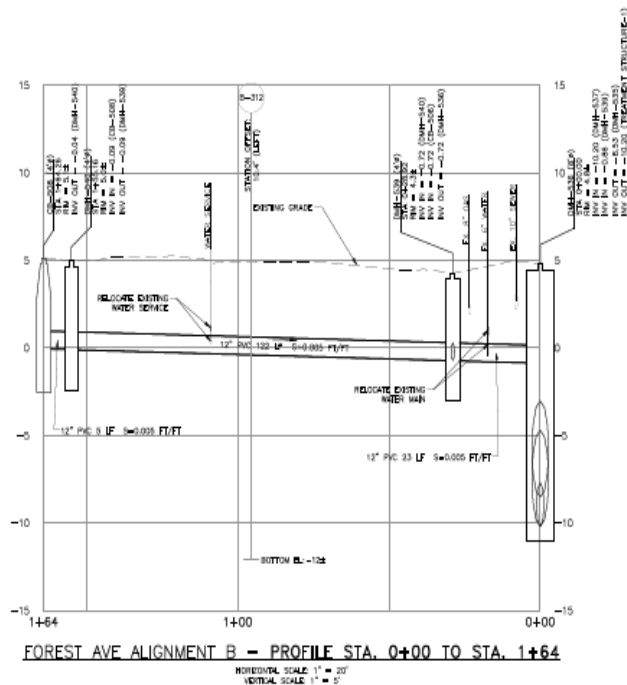
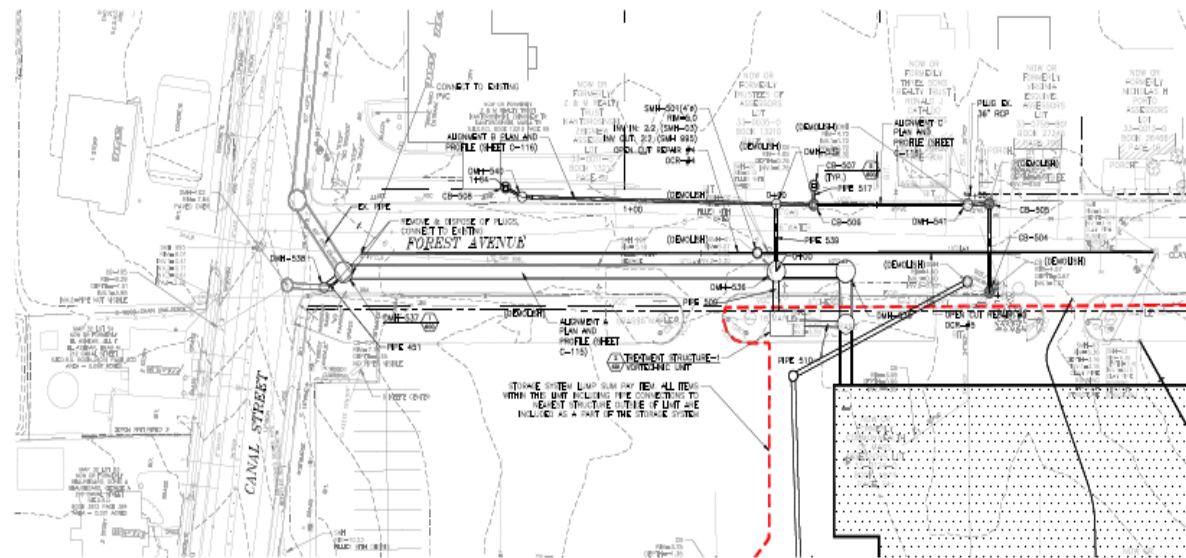
Canal Street Flood Mitigation / Roadway Improvement Project

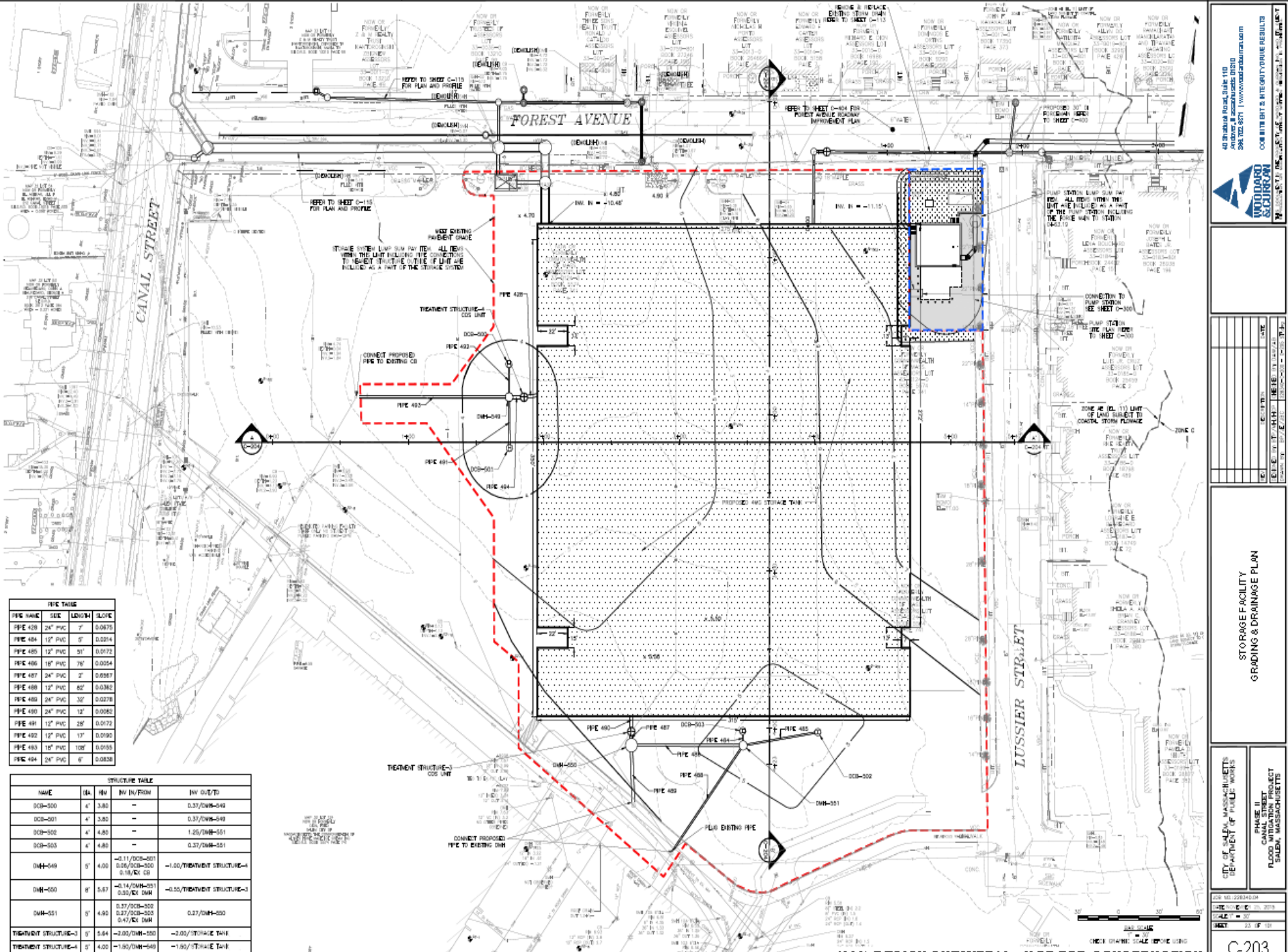
- Project 2 – Canal Street Roadway Improvements
 - Reconstruct roadway from Mills Street to Loring Ave
 - Include reconstructing intersections at either end of Canal
 - Address settlement at McDonalds
 - New pedestrian access improvements
 - Sidewalks
 - Crosswalks
 - lighting
 - Construction paid for by MassDOT
 - Start of Construction tbd, preparing for Spring 2016
 - 24 months to complete

Canal Street Flood Mitigation / Roadway Improvement Project

- Project 3 – Phase II Flood Mitigation Project
 - Drainage Improvements, Flood Storage, Harbor Outlet Improvements - Canal Street / SSU Area
 - Provide 100-year flood protection for over 30 acres and more than 50 existing buildings
 - Upper Watershed - more-effectively direct water to existing South River Conduit.
 - Lower Watershed - construct remaining portion of Canal Street Flood Mitigation Improvements:
 - Remainder of lower gravity system
 - 4.0 million gallon subsurface storage on O’Keefe Parking Lot
 - Pump station, and force main to outfall at Salem Harbor in Forest River Park
 - Construction planned to start Summer 2016
 - 24 month construction period







PPE TABLE

PPE NAME	SIZE	LENGTH	SLOPE
PPE 428	24" PVC	7'	0.0075
PPE 429	12" PVC	5'	0.0014
PPE 430	12" PVC	31'	0.0172
PPE 431	18" PVC	78'	0.0054
PPE 432	24" PVC	2'	0.0087
PPE 433	12" PVC	82'	0.0382
PPE 434	24" PVC	32'	0.0378
PPE 435	24" PVC	12'	0.0082
PPE 436	12" PVC	28'	0.0172
PPE 437	12" PVC	17'	0.0190
PPE 438	18" PVC	108'	0.0193
PPE 439	24" PVC	6'	0.0038

STRUCTURE TABLE

NAME	BA	HU	IN IN/FOOT	IN OUT/FOOT
DCR-500	4'	3.80	-	0.37/DNH-549
DCR-501	4'	3.80	-	0.37/DNH-549
DCR-502	4'	4.80	-	1.25/DNH-551
DCR-503	4'	4.80	-	0.37/DNH-551
DNH-549	5'	4.00	-0.11/DCR-501 0.06/DCR-500 0.16/DCR-502	-1.00/TREATMENT STRUCTURE-4
DNH-550	8'	5.57	-0.14/DNH-551 0.03/DCR-503	-0.55/TREATMENT STRUCTURE-3
DNH-551	5'	4.80	0.37/DCR-502 0.37/DCR-500 0.47/DCR-503	0.37/DNH-550
TREATMENT STRUCTURE-3	5'	5.54	-2.00/DNH-550	-2.00/STORAGE TANK
TREATMENT STRUCTURE-4	5'	4.00	-1.00/DNH-549	-1.00/STORAGE TANK

40 Franklin Road, Suite 110
Andover, MA 01810
978.682.0071 | www.wadsworth-scissors.com

CONSTRUCTION & INTEGRITY RESULTS

WADSWORTH
SCISSORS

DATE: 01/11/2018
TIME: 10:00 AM
BY: J. B. B. / J. B. B.

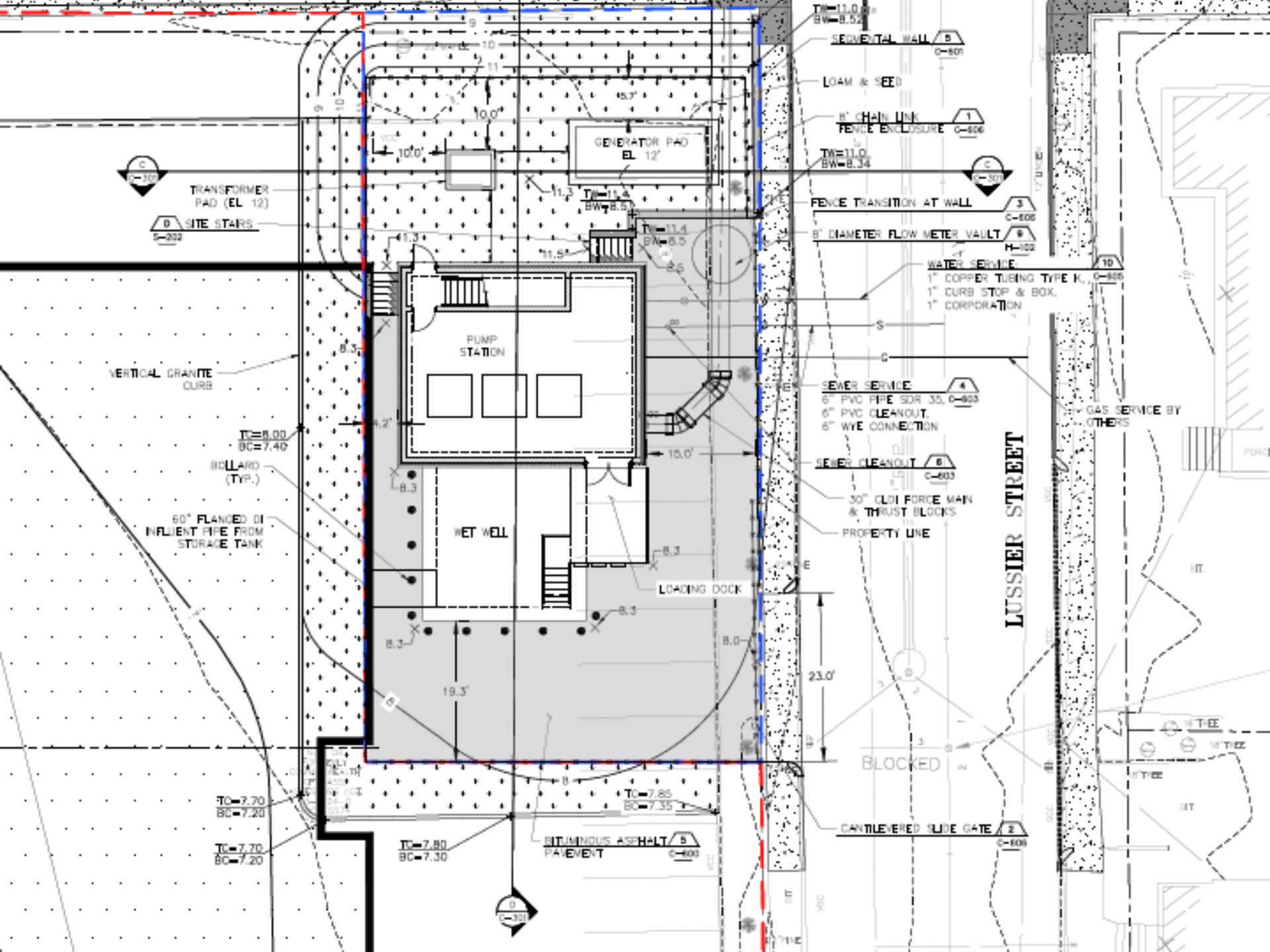
CITY OF SALEM, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

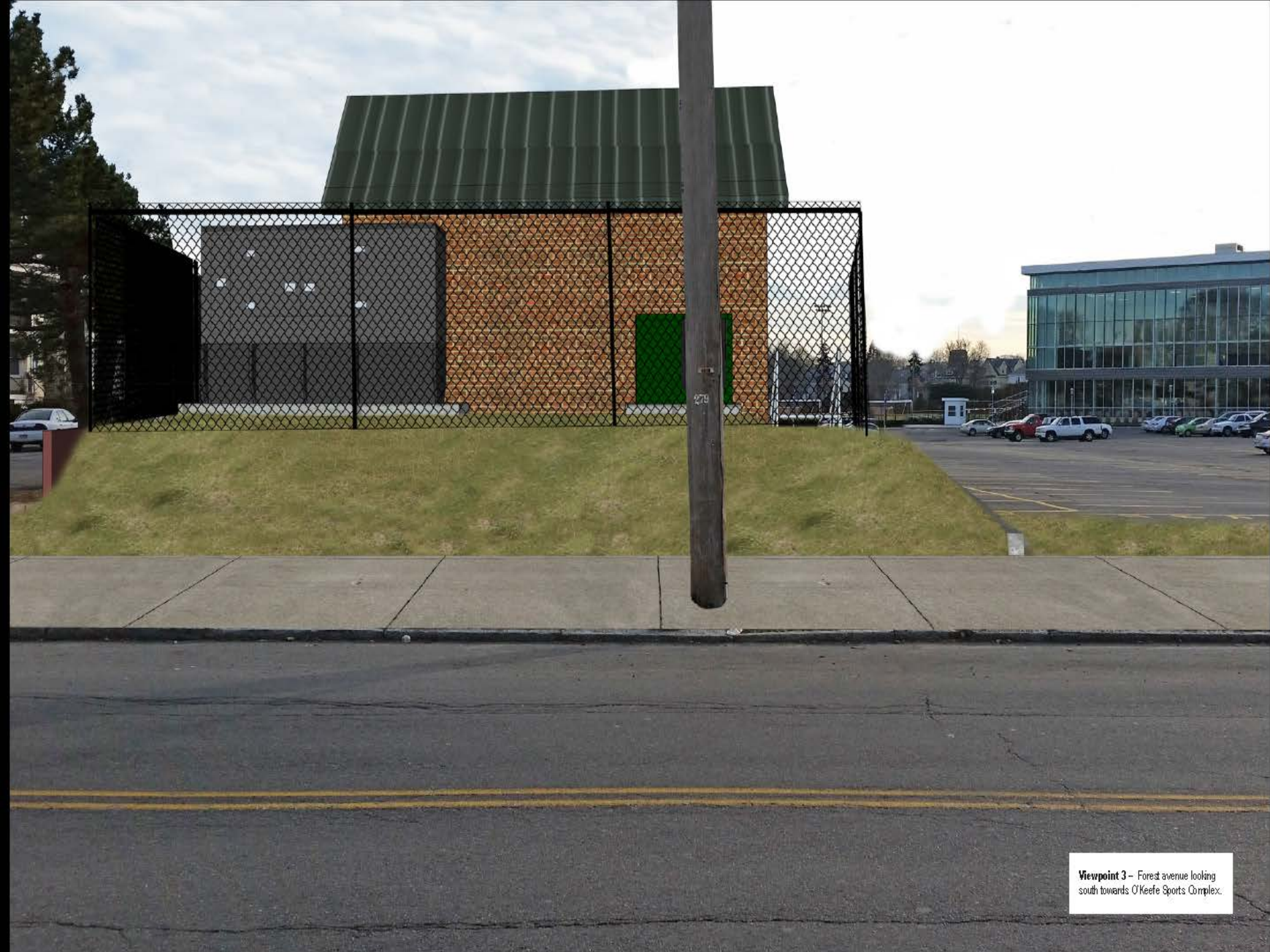
PHASE II
CANAL STREET
FLOOD DAMAGE PREVENTION
SALEM, MASSACHUSETTS

FOR NO. 2024-0104
DATE: 01/11/2018
SCALE: 1" = 20'
SHEET: 23 OF 100

C-203

100% DESIGN SUBMITTAL - NOT FOR CONSTRUCTION





Viewpoint 3 – Forest avenue looking south towards O'Keefe Sports Complex.



Viewpoint 2 – Lussier street looking northwest towards Forest avenue.



Viewpoint 4 - From across the field by
the entrance to the field



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 Andover, Massachusetts 01915
 978.682.4371 | www.woodardcurran.com

REV	DESCRIPTION	DATE

FOREST RIVER PARK RENDERING

CITY OF SALEM, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS

PHASE 1
 CANALIZATION
 FLOOD MITIGATION PROJECT
 SALEM, MASSACHUSETTS

JOB NO. 22846204
 DATE: JANUARY 2018
 SCALE: 1" = 20'
 SHEET: 1 OF 1

RENDER

C:\Users\jmc\OneDrive\Documents\22846204\Forest River Park Render.dwg, 1/15/2018, 10:48am

FOR OFFICIAL USE ONLY - NOT FOR CONSTRUCTION

Canal Street Flood Mitigation Improvement Project

- Associated Work
 - Sewer, Water and Drain upgrades
 - Surface Enhancements
 - Curb to Curb re-paving
 - New Sidewalks, Crosswalks, handi-cap ramps as needed
 - Bicycle Accommodations
 - Canal Street to Forrest River park
 - » Forest Avenue and Clifton Streets

Canal Street Flood Mitigation Improvement Project

- Schedule/Sequence of Construction
 - To be Determined when Contract is Awarded
 - Neighborhood Meeting will be held
 - To present construction team members
 - Identify who to contact with issues
 - Present Construction Schedule prepared by the Contractor

Canal Street Flood Mitigation Improvement Project

- Construction Preview
 - More than 50% of the work will occur on O'keefe Parking Lot
 - Major Civil Construction Project
 - Large Equipment
 - Dirty. Noisy, Dusty
 - Traffic Impacts
 - Work days, hours
 - Access to businesses and residents will be impacted
 - Staging Area

Canal Street Flood Mitigation Improvement Project

- Thank you for attending
- Questions and Answers