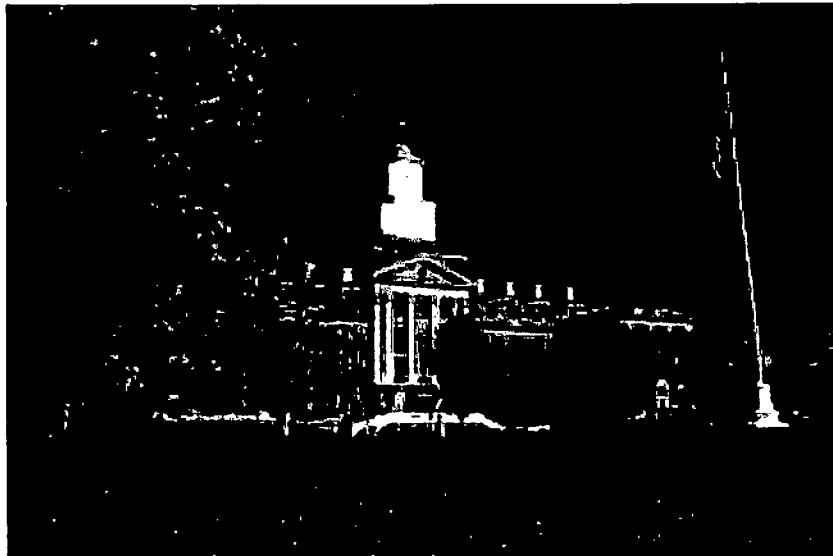


***LYONS CAMPUS OF THE
VA NEW JERSEY HEALTH CARE SYSTEM***

STORMWATER IMPROVEMENTS

VA Project 561A4-12-108

***SITE ASSESSMENT & SCHEMATIC DESIGN REPORT
100% SUBMISSION***



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Lyons NJ 07939***

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FE Project No. 11-348

November 23, 2012

TABLE OF CONTENTS

- ◆ **Site Assessment**
- ◆ **Schematic Design**
- ◆ **Construction Phasing Plan (100%)**

Appendix

- ◆ **Fema Firmette 100-year Floodplain Maps**
- ◆ **USGS Soils Location Map**
- ◆ **NJDEP Location Map**

SITE ASSESSMENT/EXISTING CONDITIONS

1. SITE

- a. **BACKGROUND** - The west side of the VA Lyons campus is experiencing flooding conditions during extreme storm events, especially in the west area of the campus. The existing stormwater system is experiencing backwater conditions. This project is tasked with improving the stormwater system to help prevent future flooding in these areas.
- b. **EXISTING SITE** - The project site consists of the west side of the VA Lyons campus, from the proposed Phase III additions to Building 135 Community Living Center (CLC), to an area West of Building 52 designated for a future salt storage location and then extending to an outlet structure near Building 141. The site mostly consists of grass fields with trees and other vegetation. The surrounding area consists of a residential neighborhood to the North and the Pleasant Valley Recreational Park to the West. The surrounding land uses, mass transit routes, utilities, zoning ordinances, easements, aircraft flight patterns, flood hazards, wetlands, topography, biological and other environmental considerations are not considered to have an impact on project development.
- c. **TRAFFIC** - Project improvements will consist of approximately 1750 feet of underground stormwater pipe and associated manholes and catch basins. These improvements will result in the excavation of exterior improvements such as roadways, curb and sidewalk. The proposed excavation and construction may cause a brief change in flow of the existing vehicular traffic conditions for those specific areas. However, since these areas are only service roads and are not heavily used, detours and limited road closures will keep the impact to vehicle, delivery and emergency traffic to a minimum.

HISTORIC - As there is previous disturbance from Building 135 construction and the Phase 1 addition, as well as current construction for other VA projects in the vicinity of proposed design, review and approval of possible disturbance of the sites under the National Register of Historic Places and Archeological Sensitive Areas shall be waived.
- c. **PARKING** - As only the site will be affected and the occupancies of the buildings will not change, the existing parking will also remain unchanged and no additional parking is proposed.
- d. **FLOODPLAIN** - The provided FEMA FIRMette maps and the USGA map indicate that the project site is outside of the 100-year floodplain. The makeup of the existing underlying soils is also documented.
- e. **STORMWATER** - Preliminary review of the stormwater system revealed reports from the site owner of inadequate attenuation of stormwater flow, resulting in reported flooding conditions in the West side of campus. The area surrounding the project building area consisted of a well groomed and maintained lawn area, with a well knitted root base. There were no obvious signs of erosion caused from excess drainage flows. Our preliminary assessment of the existing stormwater system is that there is flooding due to

STORMWATER (cont.)

large volumes of water generated during heavy storms sheet-flowing across the lawn area south of Building 135 and overwhelming the existing stormwater utility design at that location.

The U.S. EPA has jurisdiction over Federal facility construction projects where the project disturbance is greater than one acre, as is the case for this project. Consequently, our plans will follow the National Pollutant Discharge Elimination System (NPDES) guidelines for stormwater discharges related to construction. We propose a stormwater system with a new and larger stormwater extended detention pond located in the open field to the south of the existing pond. The existing pond would be reshaped and be used as a forebay for this new pond as a sediment control feature. A pipe will be extended from the new detention pond due south, picking up stormwater collected by the proposed salt storage area and the maintenance shed located to the West of building 52, and being deposited to the outlet structure located near the northwest corner of the wastewater treatment plant. The design of the proposed pond will attenuate the increase of stormwater runoff created by the proposed Phase III building additions by incorporating a multi-stage outlet structure at the discharge end of the pond, providing for storage of stormwater runoff at a controlled discharge rate for up to the 100-year storm event.

- f. NPDES - The U.S. EPA has jurisdiction over Federal facility construction projects where the project disturbance is greater than one acre, as is the case for this project. Therefore, our plans will follow the National Pollutant Discharge Elimination System (NPDES) guidelines for stormwater discharges related to construction and an NPDES Permit application and Notice of Intent (NOI) for stormwater discharges related to construction activities shall be obtained prior to the start of any land disturbance activities.
- g. NJDEP- The New Jersey Department of Environmental Protection guidelines for Construction Site Waste Control Component of the Stormwater Pollution Prevention Plan will be followed to help prevent this waste from encountering any stormwater discharge. These guidelines, as stated in the NJDEP General Stormwater Permit includes, but is not limited to the following:
 - 1. Construction sites shall have one or more designated waste collection area onsite or adjacent to the site, and an adequate number of containers (with lids or covers) for waste.
 - 2. Waste shall be collected from such containers before they overflow, and spills at such containers shall be cleaned up immediately.
 - 3. Public complexes shall ensure that dumpsters and other refuse containers that they own and operate, and that are outdoors or exposed to stormwater, are covered at all times, and shall prevent the spilling, dumping, leaking, or otherwise discharge of liquids, semi-liquids or solids from the containers [excluding permitted temporary demolition containers, litter receptacles, and containers that hold large bulky items (e.g., furniture, bound carpet and padding) only].

A Summary of Solid Waste Disposal and Diversion can be found in specification 01 74 19 Construction Waste Management and shall be completed by the contractor during construction to keep track of the collection and disposal of solid waste material generated on site. A Soil

Conservation permit is also required and shall be obtained by the contractor prior to the start of any land disturbance activities.

- h. UTILITIES - The stormwater improvements will have no impact to the existing electric, steam, water and sewer utilities. All applicable separation distances will be observed. There is no existing onsite waste disposal for the campus. All waste is collected and disposed of offsite and that will remain unchanged.

SCHEMATIC DESIGN

2. SITE

- a. The project site consists of the west side of the VA Lyons campus, from the proposed Phase III additions to Building 135 Community Living Center (CLC), passing west of Building 52 and then extending to the outlet structure located near building 141. The surrounding area consists of a residential neighborhood to the North and the Pleasant Valley Recreational Park to the West. The surrounding land uses, mass transit routes, utilities, zoning ordinances, easements, aircraft flight patterns, flood hazards, wetlands, topography, biological and other environmental considerations are not considered to have an impact on project development.
- b. The proposed stormwater alterations and additions will be implemented upon completion of Phase III of the Building 135 CLC project and will continue downstream. Portions of the proposed salt storage area on the west side of campus and the existing maintenance area near Building 52 are going to be added to the proposed design. The proposed excavation and construction may cause a brief change in flow with existing vehicular traffic conditions for those specific areas. However, since these areas are only service roads and are not heavily used, impact to vehicle, delivery and emergency traffic is expected to be minimal. The demolished portions of the site are to be restored.

As there is previous disturbance from Building 135 construction and the Phase 1 addition, as well as current construction for other VA projects in the vicinity of proposed design, review and approval of possible disturbance of the sites under the National Register of Historic Places and Archeological Sensitive Areas shall be waived.

The availability of utilities and roadways will have no effect on the project schedule.

- c. The provided FEMA FIRMette maps and the NJDEP GIS map indicate that the project site is outside the 100-year floodplain and does not contain any wetlands, respectively.
- d. U.S. EPA approved sediment and erosion control measures will be used to prevent soil erosion around the disturbed areas. Silt fencing, grass seed and mulch will be implemented as some of these measures. Rip-rap outfall protection will be used to reduce the velocity of stormwater within the pipe entering the stream, therefore reducing the chance for erosion of the stream bank.
- e. The U.S. EPA has jurisdiction over Federal facility construction projects where the project disturbance is greater than one acre, as is the case for this project. Consequently, our plans will

follow the National Pollutant Discharge Elimination System (NPDES) guidelines for stormwater discharges related to construction and an NPDES Permit application and Notice of Intent for stormwater discharges related to construction activities shall be obtained prior to the start of any land disturbance activities.

- f. The proposed stormwater management system consists of the construction of a new detention pond, approximately 100,000 cubic feet in volume. The existing pond constructed at the end of CLC Building 135 Phase III would be reshaped and be used as a forebay for this new pond as a sediment control feature. The design of the proposed pond will attenuate the increase of stormwater runoff created by the proposed Phase III building additions by incorporating a multi-stage outlet structure at the discharge end of the pond, providing for storage of stormwater runoff at a controlled discharge rate for up to the 100-year storm event.

A 24-inch Smooth Interior Corrugated Polyethylene Pipe (SICPP) will channel water from the detention pond due south towards the proposed salt storage facility and the maintenance shed near building 52, running in between these structures underneath the ground, receiving stormwater runoff generated from those facilities on the way. A curtain drain approximately 200 feet long with a grassed swale will be added to help divert runoff coming across the lawn towards building 10. The pipe will continue south towards the front of building 13, cross under the existing access road toward building 141 (wastewater plant), ultimately discharging into the existing drainage ditch via a 30-inch SICPP and concrete headwall.


Future site designs, other than the ones previously mentioned and shown on the drawings (e.g. the future salt shed), will need to consider the possible stormwater impacts they may have. Stormwater runoff generated by these projects shall include water quality and water quantity controls, as applicable, as part of the project design before entering the existing system.

REFERENCE DRAWINGS

1. WC-GI-001 Cover and Index of Drawings
2. WC-GS-001 Site Plan: Project Overview Map- West Campus Stormwater Improvements
3. WC-GS-002 Site Plan: Existing Conditions I (Existing Conditions- Aug 2012)
4. WC-GS-003 Site Plan: Existing Conditions II (Existing Conditions- Post Phase II Bldg 135 Additions)
5. WC-GS-004 Site Plan: Existing Conditions III (Existing Conditions-Post Phase III Bldg 135 Additions)
6. WC-GS-101 Site Plan: Partial Site Plan
7. WC-GS-102 Site Plan: Partial Site Plan
8. WC-GS-103 Site Plan: Partial Site Plan
9. WC-GS-901 Site Plan: Details
10. WC-GS-902 Site Plan: Details

VA LYONS – STORMWATER IMPROVEMENTS

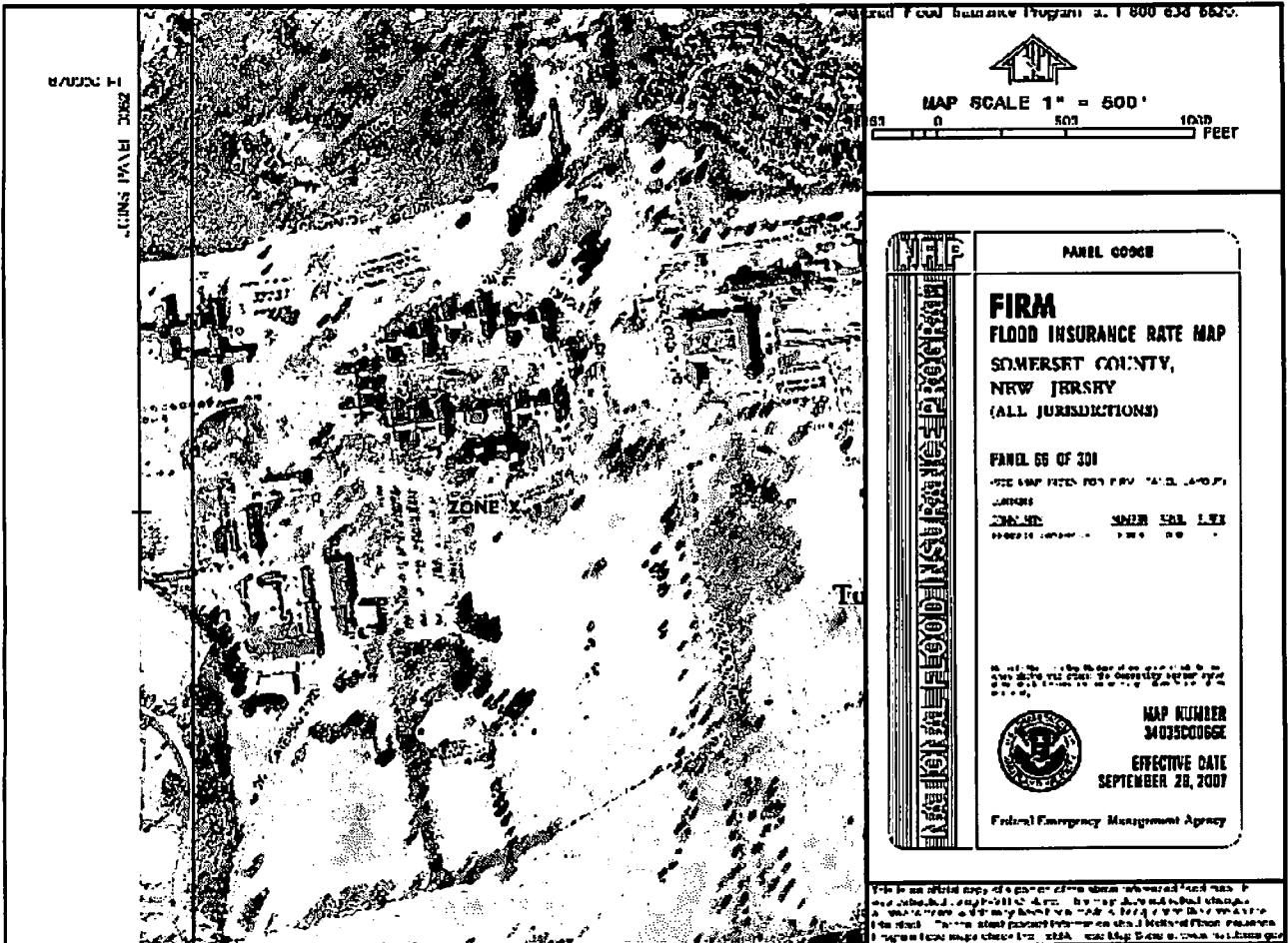
100% CONSTRUCTING PHASING PLAN

1. Site Preparation: Survey mark outs, Utility locating, equipment /staging area, erosion and sediment control, construction fence and construction signs.	6 Months 
2. Excavation of trenches and pipe, manhole and catch basin installation.	
3. Backfill and compaction	
4. Restore paved and gravel areas.	
5. Lawn restoration	

APPENDIX

FEMA Firmette

100-year Floodplain



FEMA Legend

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevation determined.
- ZONE AE** Base Flood Elevation determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. The areas of alluvial fan flooding velocities also determined.
- ZONE AR** Special Flood Hazard Area normally protected from the 1% annual chance flood by a flood control system that was subsequently derelict. Zone AE indicates that the former flood control system is being retained in provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevation determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevation determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of construction so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



OTHER AREAS

- ZONE D** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE U** Areas in which flood hazards are undetermined, but possible.



GENERAL FLOOD BOUNDARY (GENERAL FLOOD BOUNDARY)

and Flood Insurance Program at 1 800 638 6622.



MAP SCALE 1" = 500'

0 500 1000 FEET



FLOODWAY BOUNDARY (FLOODWAY BOUNDARY)

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**Soil Map—Somerset County, New Jersey
(VA Lyons Storm Water Improvements)**



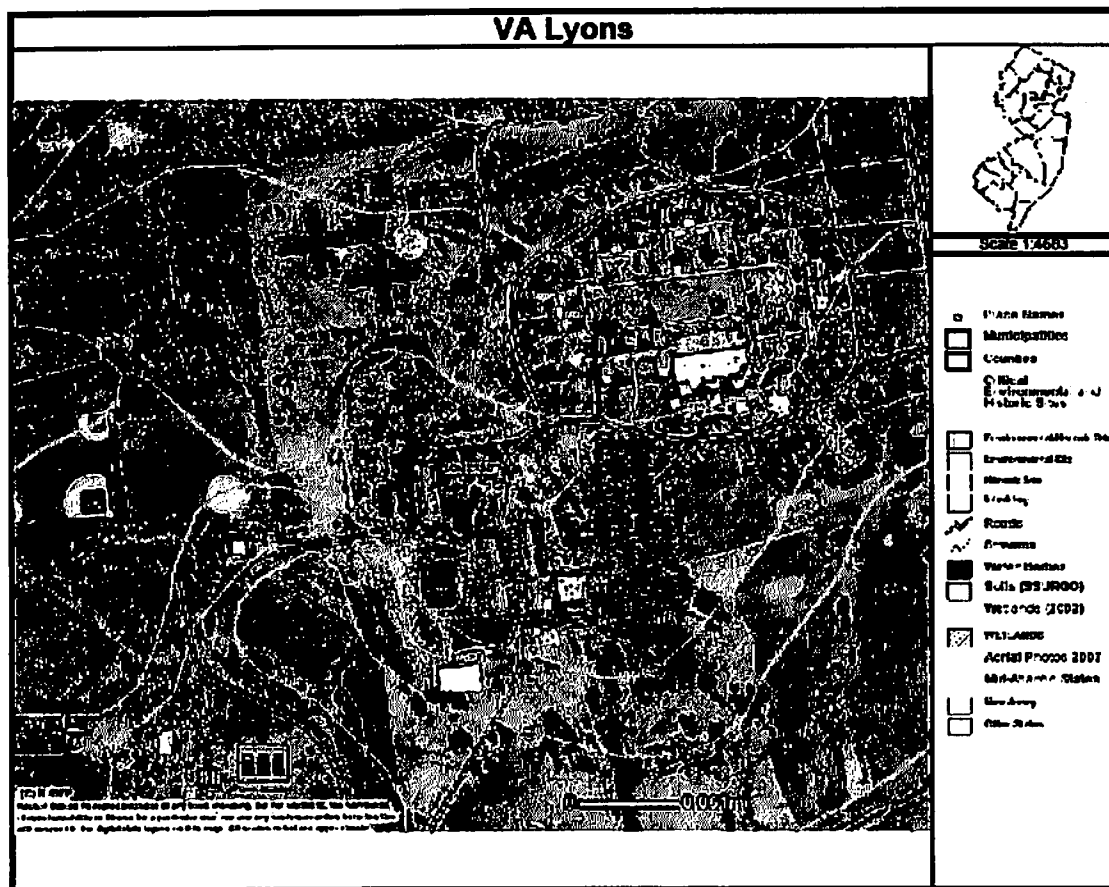
**Web Soil Survey
National Cooperative Soil Survey**

5/17/2012
Page 1 of 3

NJDEP Location Map

Map Output

Page 1 of 1



http://njgin.state.nj.us/OIT_GISTOOLS/aicServlet93?ServiceName=NJDEP&ClientVersion=4.0&Form=... 8/17/2012