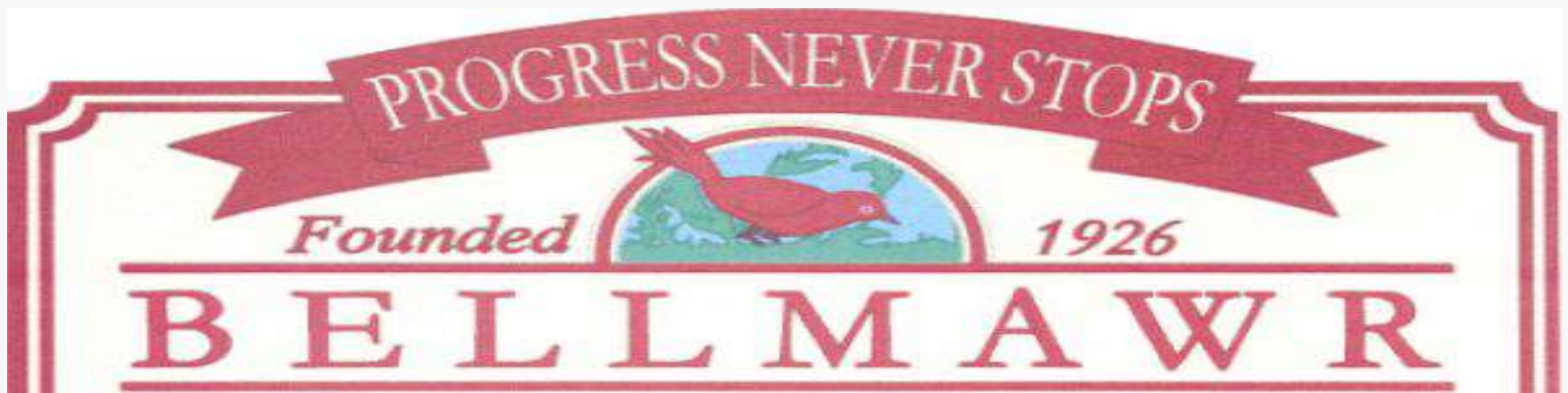
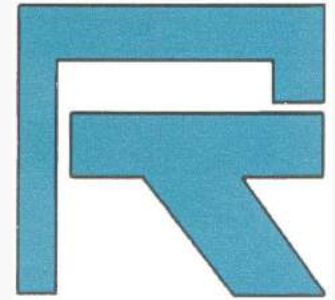


Bellmawr Waterfront Development Project Overview



OVERVIEW OF SITE REMEDIAL PROGRAM

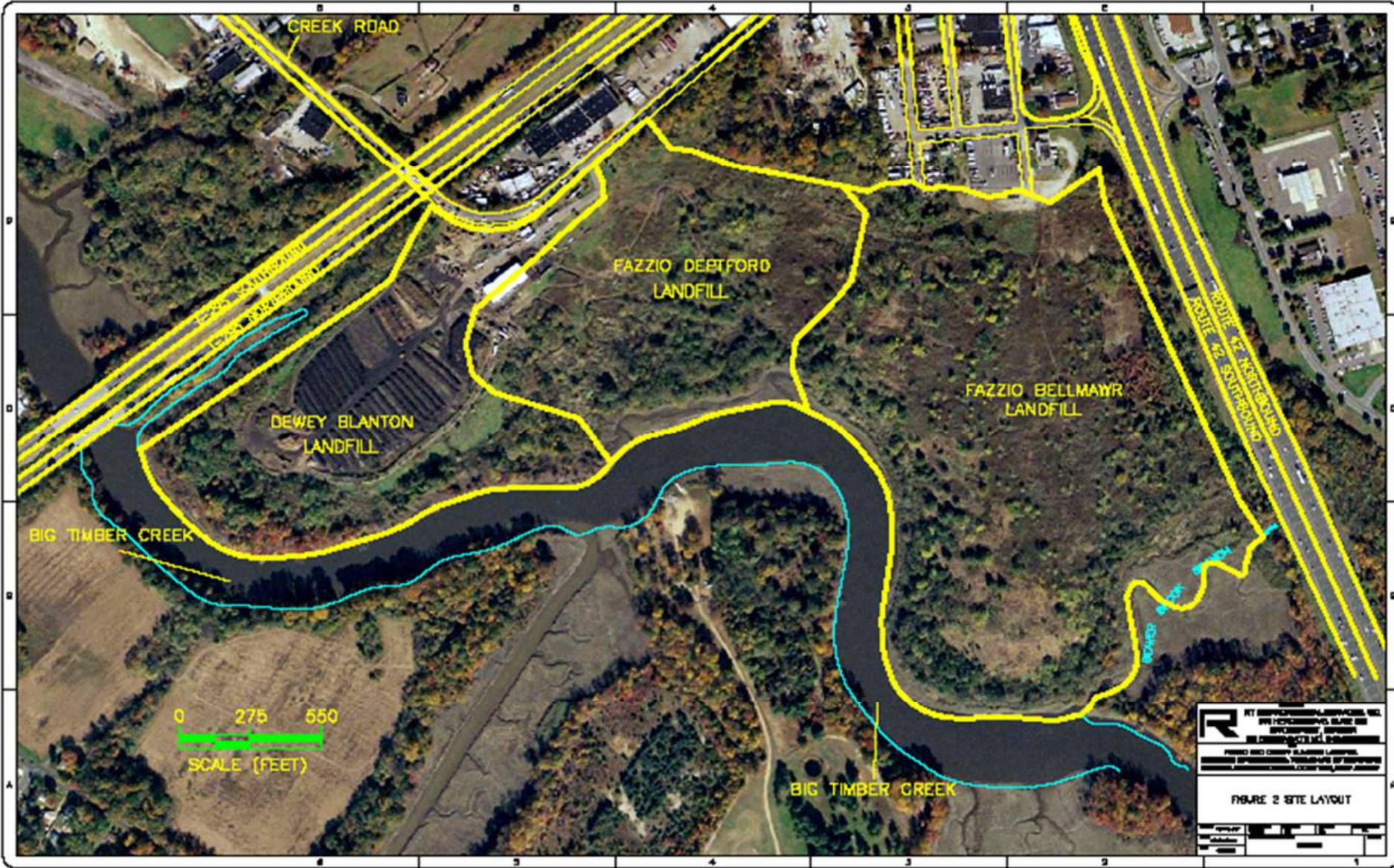
- **LANDFILL HISTORY**
- **DEP REGULATORY HISTORY**
- **CAPPING AND CLOSURE
ACTIVITIES**

Project Background

- **Bellmawr Landfill Site consists of three areas (~150 acres):**
 - **Former Dewey Blanton Landfill (Formerly the Bellmawr Compost Facility)**
 - **Fazzio Deptford Landfill**
 - **Fazzio Bellmawr Landfill**
- **Bellmawr Landfill Site is located South and West of the intersection of NJ Rt. 42 and I-295**

BWD PROJECT ELEMENTS

- **Soil Importation**
- **Capping**
- **Closure Activities**




RT SERVICES & SUPPLIES, INC.
 1000 W. HARRISBURG BLVD. SUITE 100
 HARRISBURG, PA 17110
 PHONE: 717-631-1111 FAX: 717-631-1112
 WWW.RTSERVICESANDSUPPLIES.COM

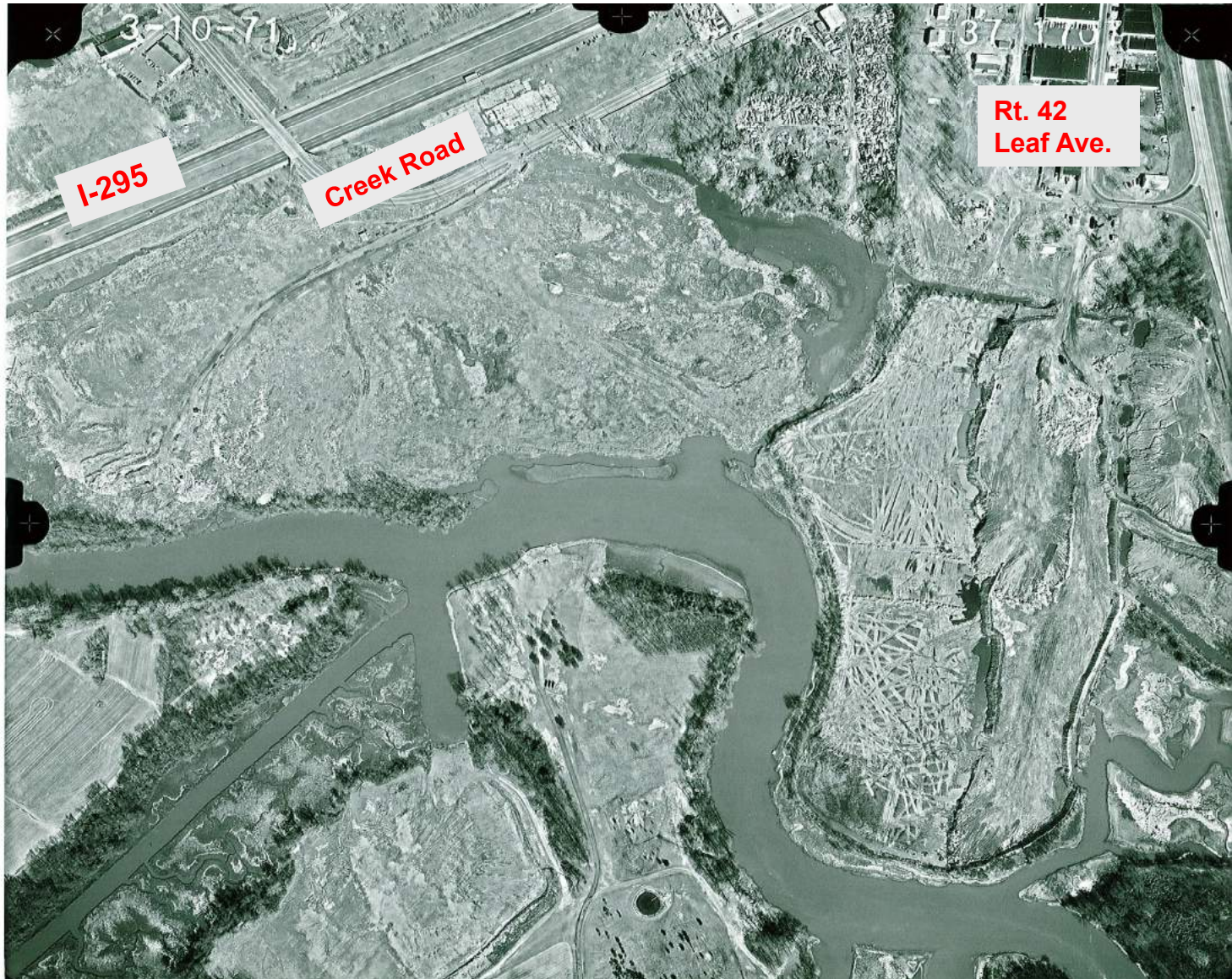
FIGURE 2 SITE LAYOUT

| Category | Scale |
|------------|-----------|
| Horizontal | 1" = 100' |
| Vertical | 1" = 100' |
| Diagonal | 1" = 100' |

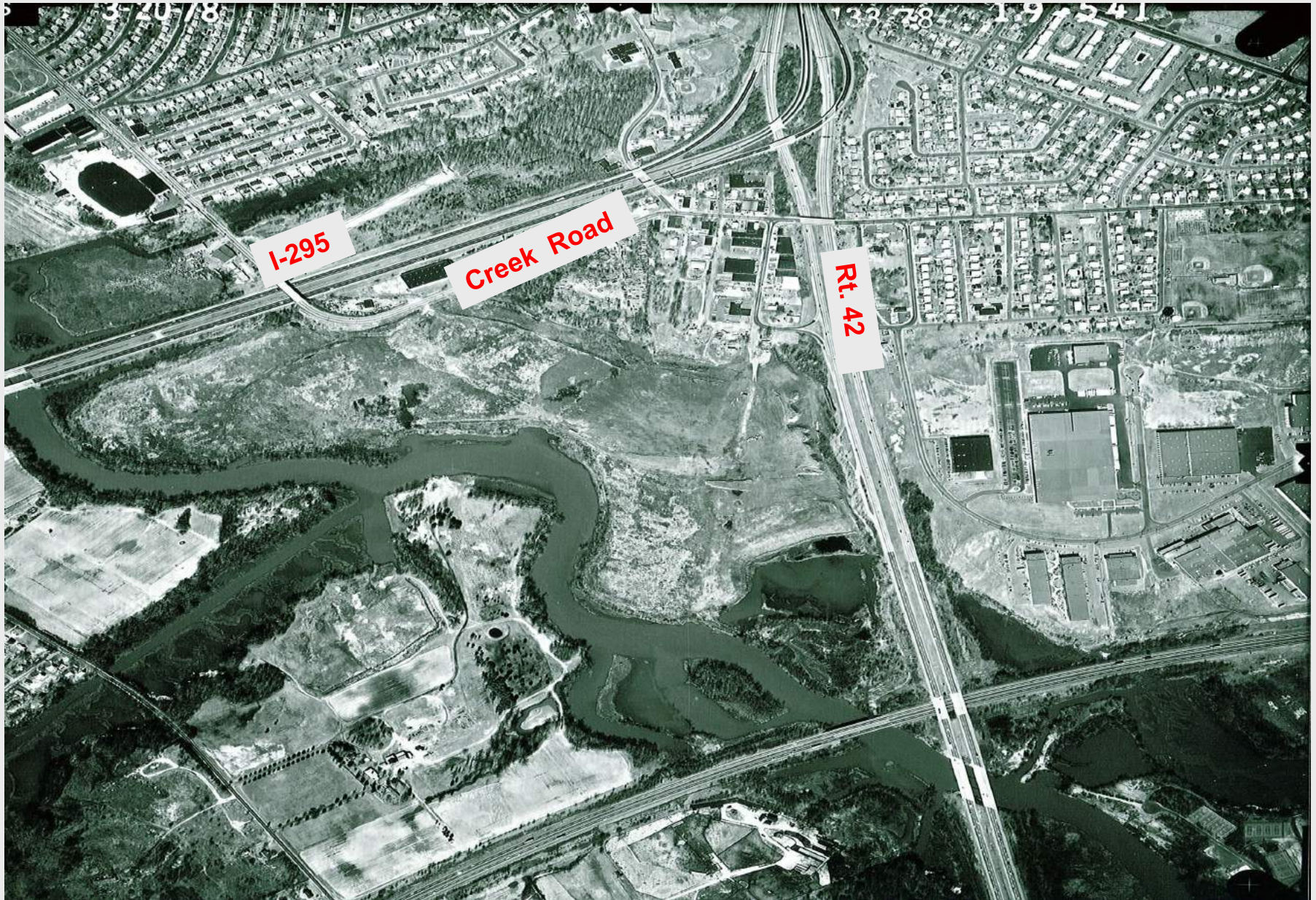
BACKGROUND

- **Bellmawr Landfill Site operated from 1960's to 1970's**
- **Bellmawr Landfill Site was closed under a Consent Decree (No approved Engineering Plan) in approximately 1976 (Amended 1981)**

Bellmawr Landfill Sites Operational in 1971



Bellmawr Landfill Sites Closed in 1978



Bellmawr Landfill Sites Photographs



- **View of the Bellmawr Landfill From Harding Avenue Toward Big Timber Creek**



- **View of the Bellmawr Landfill From Harding Ave Toward Rt. 42**



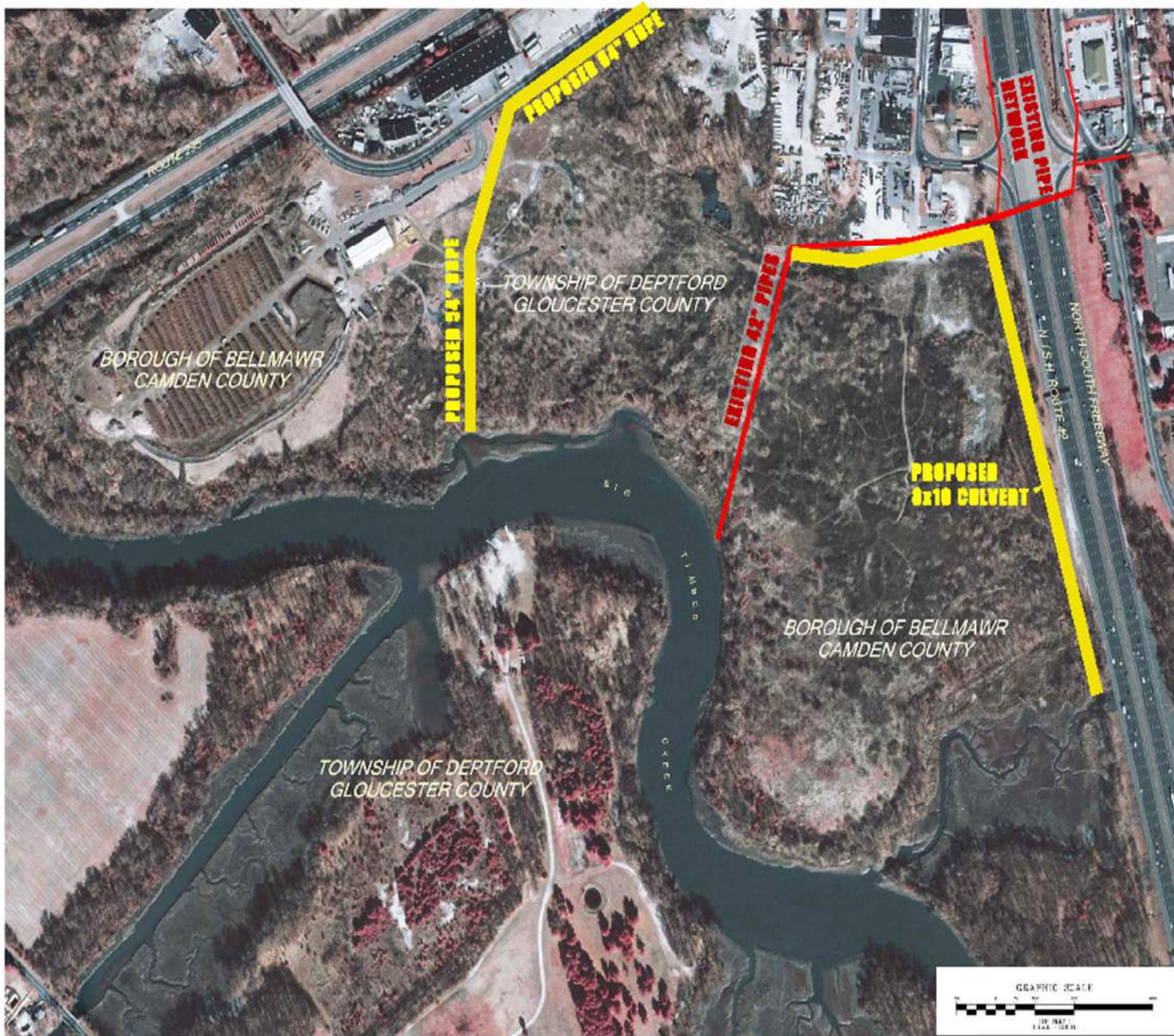
- **View of the Bellmawr Landfill From Harding Avenue Toward I-295**

Bellmawr Landfill Sites **Photographs**

- **Bellmawr Landfill Eroded Cap and Heavily Vegetated**



- **Bellmawr Landfill Heavily Vegetated**



BELLMAWR CULVERT PROJECT OVERVIEW



BELLMAWR
waterfront
REDEVELOPMENT

PLANNED BY
FRANZ & FURER

STORMWATER
PIPING EXHIBIT

**BELLMAWR WATERFRONT
TRANSIT VILLAGE**

ver. - 10.18.06

PO BOX 217
Bellmawr, NJ
08099
856.933.2204

sheet 8

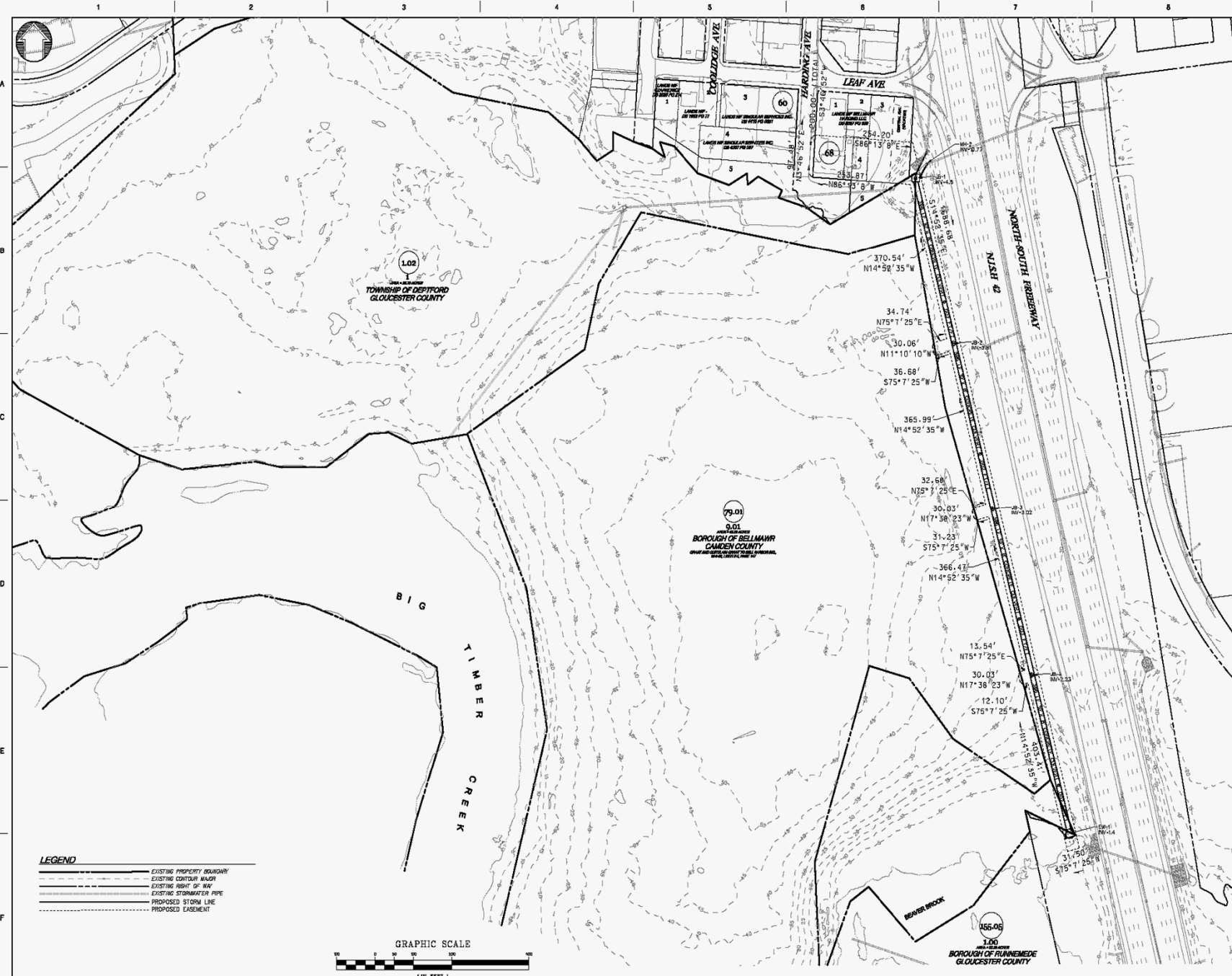


Critical Need for Run-On Control as a Result of the Site Investigation Work

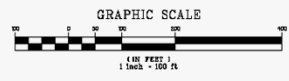
- **Unique issues affecting landfills and stormwater**
- **Stormwater effect of NJ building Rt. 295, the NJ Turnpike and Rt. 42**

Culvert Design, Layout and Best Management Practices

- **Culvert Plan**
- **Tidegate**
- **Stormwater Flows Into Culvert**
 - **State Highways**
 - **Urbanized Bellmawr Area**
 - **Site**



- LEGEND**
- EXISTING PROPERTY BOUNDARY
 - EXISTING CONDUIT MAIN
 - EXISTING RIGHT-OF-WAY
 - EXISTING STORMWATER PIPE
 - PROPOSED STORM LINE
 - PROPOSED EASEMENT



| DATE | REV | DESCRIPTION | REVISED BY |
|------|-----|-------------|------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SCALE

DRAWN BY: DANIEL PERALTA
CHECKED BY: DANIEL PERALTA
DATE: 3/7/07
PROJECT NO.: 2004-133

PROPOSED NAME: CULVERT EASEMENT PLAN

BELLMAWR WATERFRONT DEVELOPMENT

BOROUGH OF BELLMAWR, CAMDEN COUNTY, NJ

LOCATION: 100 BROADWAY, BOROUGH OF RUNNEMEDA, GLOUCESTER COUNTY

| | | | |
|-------------|----------|-------------|--------|
| PROJECT NO. | 2004-133 | DATE | 3/7/07 |
| SCALE | 1"=100' | DESIGNED BY | SR |
| SHEET NO. | 1 OF 1 | CHECKED BY | SR |

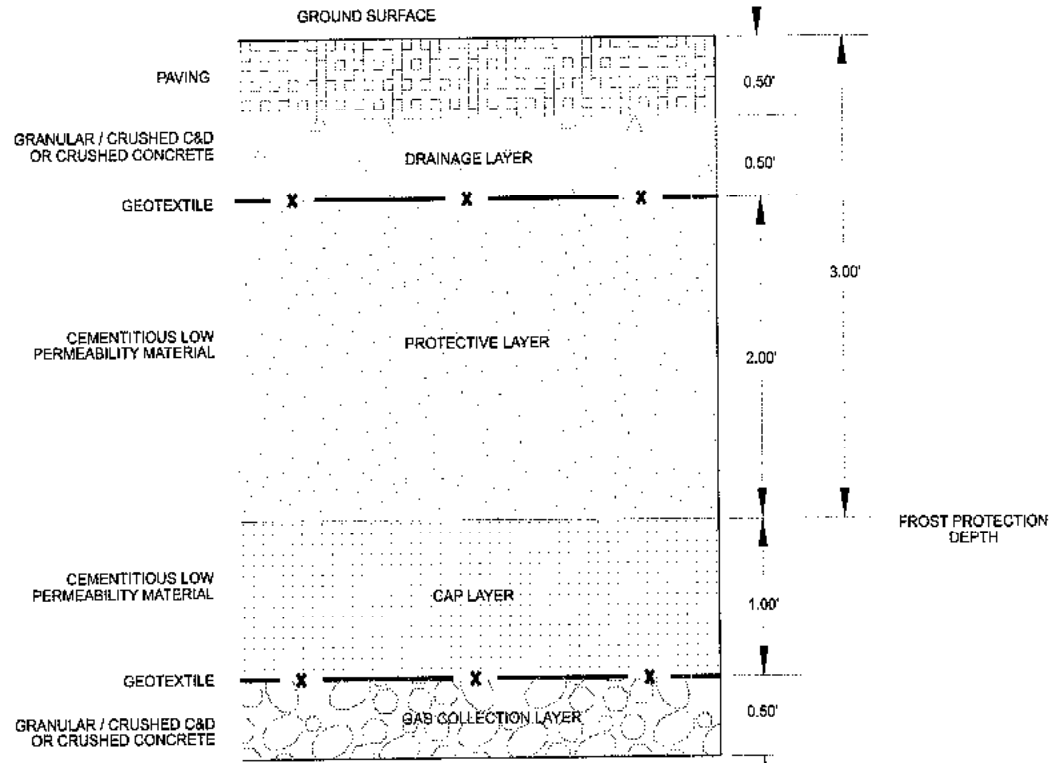
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Closure/Remediation

- **Permanent Closure of the Landfills with Buildings, Roads/Parking and Upgraded Cap**
- **No Spread of or Exacerbation of Contamination**
- **Minimize Infiltration of Water to Waste Mass**
- **No Impact on Human Health**

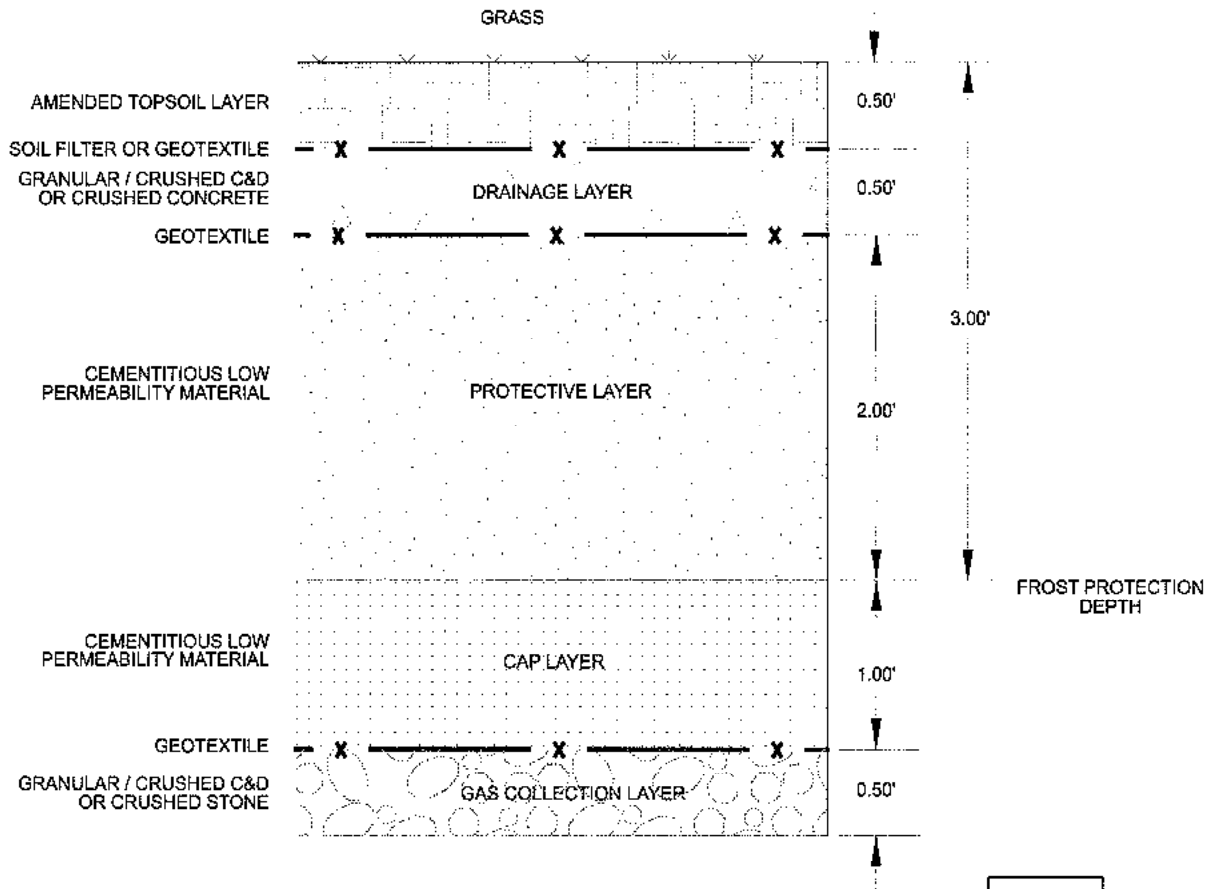
REMEDIAL PLAN

- **Use of Only DEP -Approved Material for Capping**
- **Gas Collection System/ Planned Energy Recovery**
- **Upgradient Cutoff Wall/ Underdrain**
- **I-295 Fill/ Capping & Run-On/ Run-Off Control**
- **Expanded Capping**
- **Creek Isolation Wall**



ASPHALT CAP SECTION
N.T.S.

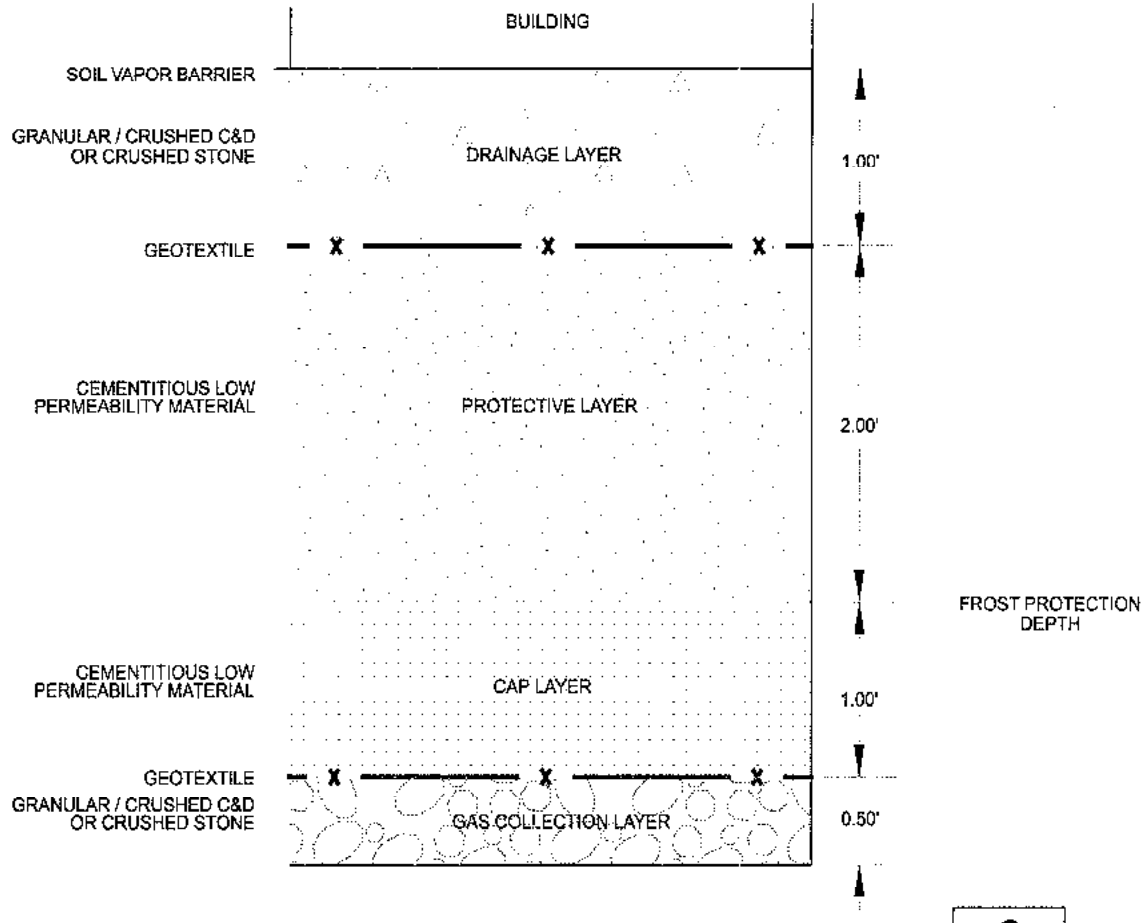
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| 47 |



TOPSOIL CAP SECTION

N.T.S.

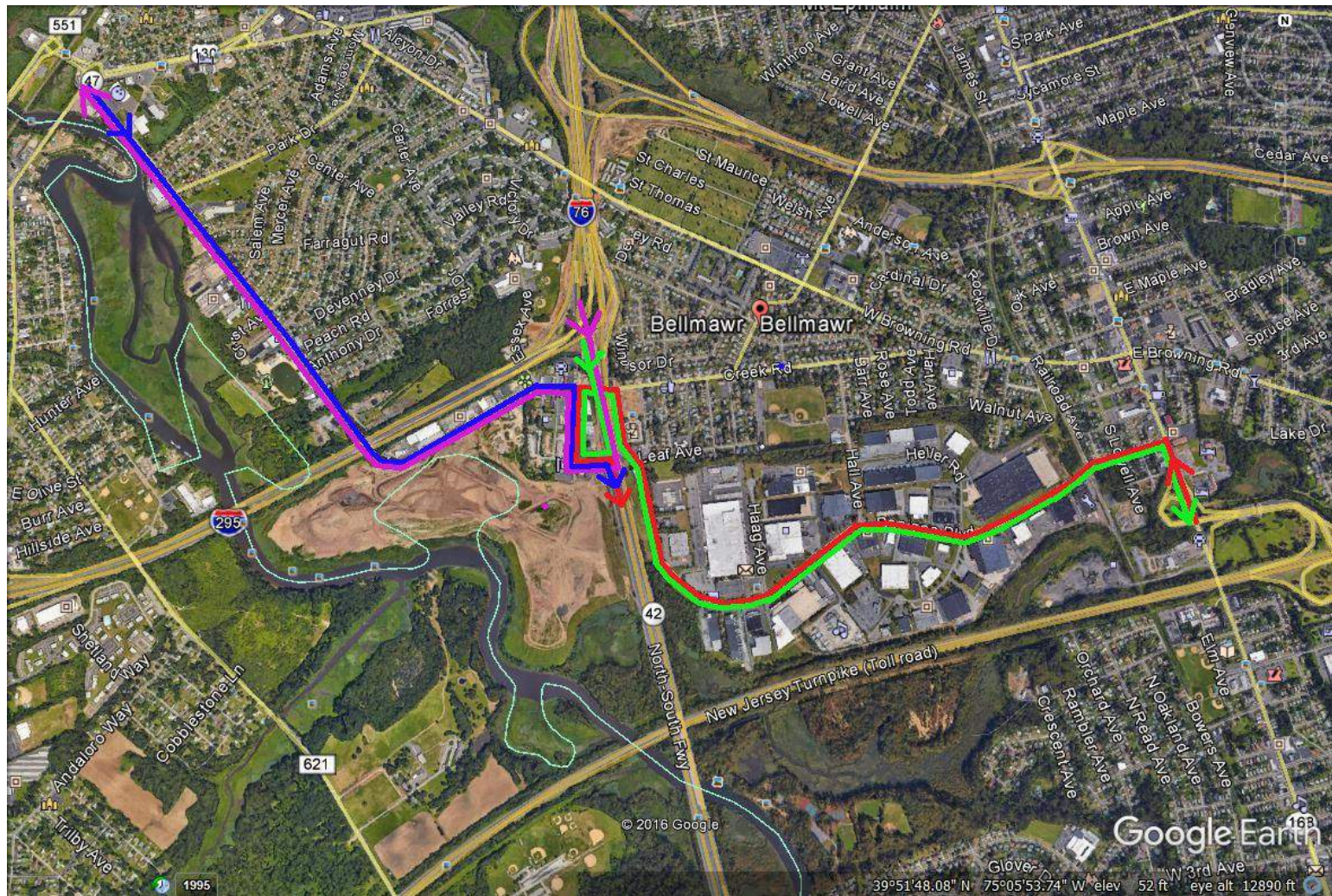
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| 47 |



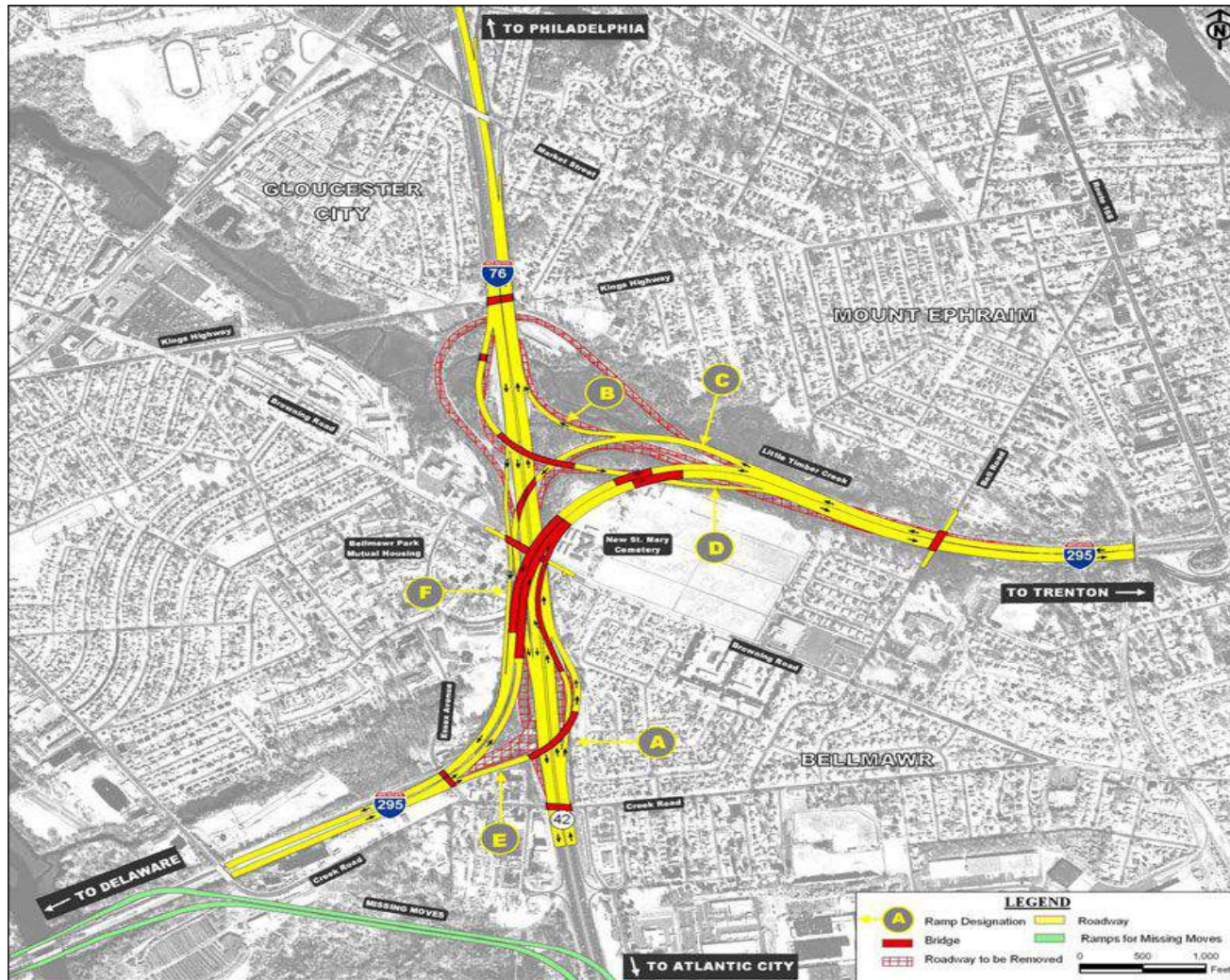
BUILDING CAP SECTION
N.T.S.

| |
|----|
| 3 |
| 47 |

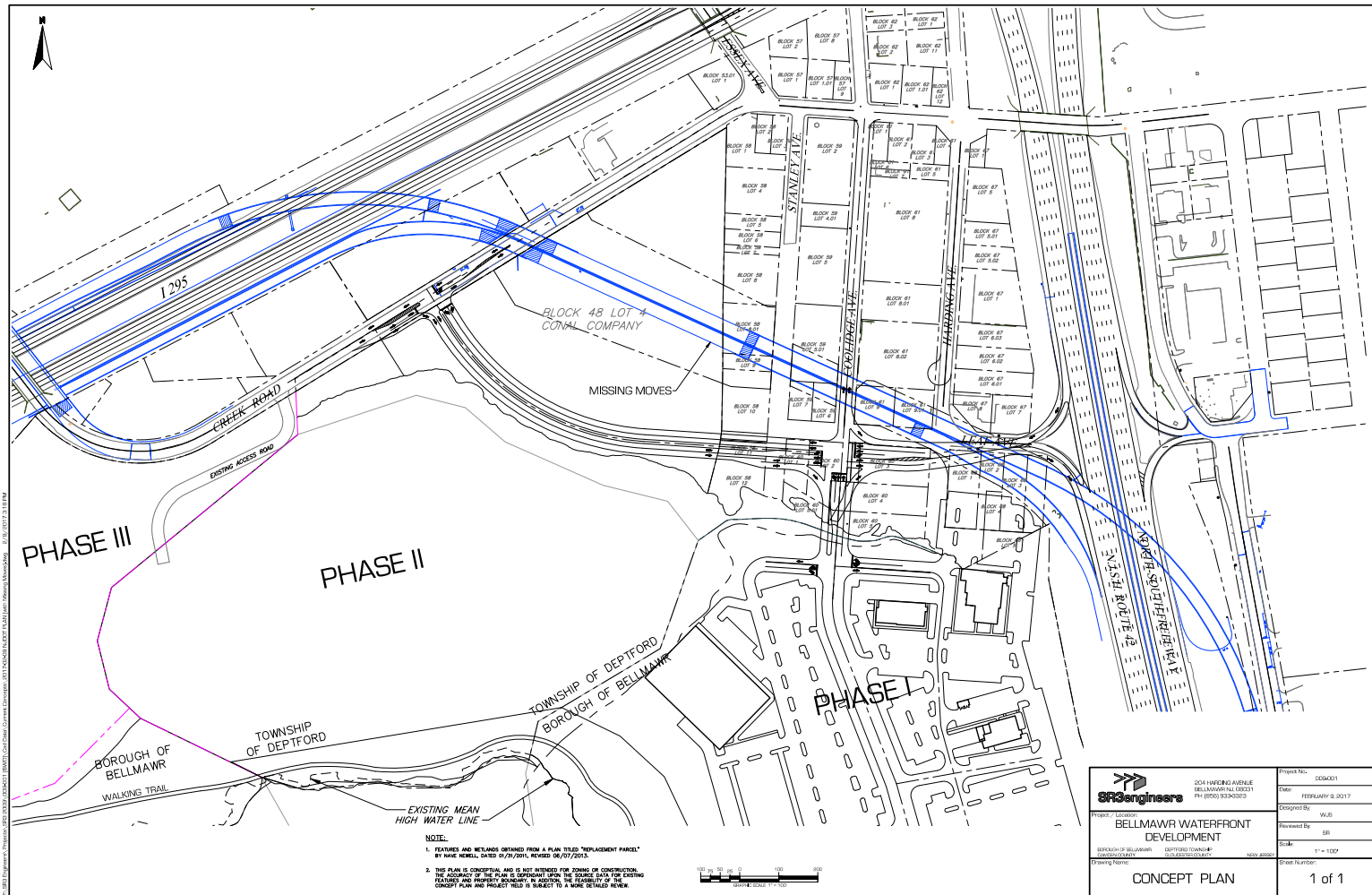
Current State Traffic Flow Through Bellmawr



DOT's "Direct Connect" and "Missing Moves" Projects



The Intelligent Alternative – the New “Creek Road to Route 42” Connector.



| | | |
|--------------------------------------|--|---------------------------|
| | 304 HAVING AVENUE BELLMAWR PA 19021 PH: (610) 934-5883 | Project No.: 0204011 |
| | Bellmawr Waterfront Development | Name: FEBRUARY 9, 2017 |
| | Design By: WLS | Reviewed By: SR |
| | Scale: 1" = 100' | Sheet Number: 1 of 1 |
| Drawing Name: CONCEPT PLAN | | |

Advantages of the New Creek Road to Route 42 Connector

- ❖ Preferred design from a traffic engineering perspective.
- ❖ Significantly safer design- less risk of “queuing” accidents.
- ❖ Improved traffic flow- with dedicated “through” lanes to and from Creek Road to Route 42.
- ❖ No forced relocation of active businesses for the Creek Road Connector (unlike the Roundabout Plan).
- ❖ The Creek Road Connector is only marginally more expensive (\$5 Million) than the flawed Roundabout (+/- \$3 Million), almost an immaterial amount in a \$1.2 Billion project.
- ❖ Creek Road Connector also provides access to Bellmawr’s redevelopment site and new Green Acres parkland - **spurring economic development and job creation.**
- ❖ Creek Road Connector ROW can be quickly and easily assembled.

Environmental Remediation- Bellmawr Acts Responsibly

- ❖ Under the leadership of the Mayor and Council of Bellmawr, with the strong support of Camden County, Deptford Township, Gloucester County, the NJDEP and Congressman Norcross, Bellmawr has led the efforts to substantially remediate three unclosed landfills, that previously were sending millions of gallons of contaminated leachate into the Big Timber Creek, a tidal creek located close to the Delaware River.
- ❖ Bellmawr's efforts have resulted in the substantial abatement of the environmental contamination, the creation of a new 22 acre waterfront park and recreation trail, and the possibility of future commercial development as well.
- ❖ The Bellmawr remediation site was designated by the State of New Jersey as a "Brownfield Development Area", or "BDA", both because of how essential it was to abate the environmental contamination, and also because of the significant potential for future economic redevelopment.

Bellmawr Landfill Remediation Project



ENVIRONMENTAL REMEDIATION
TO DATE:
As of MARCH 3, 2017

CAPPING: SOIL REUSE PROGRAM

8 Million Tons of Soil

Purpose:

- Meet NJDEP Landfill Closure Requirements
- Isolate 4.3 Million Cubic Yards of Solid Waste
- Allow Creation of Public Park Land
- Promote Commercial Redevelopment
- Inhibit Generation of Contaminated Waste Water
- Reduce Migration of Contaminants to Waterways



CAPPING: SOIL REUSE PROGRAM

8 Million Tons of Soil

Construction Completed:

- Phase I: Final Landscaped Cap 100%
- Phase II: Sideslopes Final Landscaped Cap 100%
 - Top Elevations 90%, Filled to Subgrade
 - Big Timber Creek Isolation Bulkhead 100%
- Phase III: Rt.295 Sideslopes Final Landscaped Cap100%
 - Rt. 295 Ditch Final Landscaped Cap 100%
 - Top Elevations 80%
 - Big Timber Creek 2-ft. Low Permeability Barrier 100%

COMPLETED CAP CONSTRUCTION



View: Phase I Sideslopes, Beaver Brook



View: Phase I Sideslopes, Big Timber Creek

COMPLETED CAP CONSTRUCTION



View: Phase II Sideslopes



View: Phase III Rt. 295 Sideslopes

WATER MANAGEMENT:

Stormwater (Rainfall), Groundwater (Leachate),
Surfacewater (Big Timber Creek, Beaver Brook)

Purpose:

- Meet NJDEP Site Remediation & Solid Waste Regulations
- Inhibit Infiltration of Stormwater & Off- site Groundwater into waste mass (water + waste = leachate)
- Inhibit Migration of Leachate into Surfacewater
- Prevent Erosion
- Reduce Methane Production
 - (leachate → decomposition of waste → methane as byproduct)
- Monitor Contaminant Levels
 - Measures Success of Remedial & Closure Technologies

WATER MANAGEMENT:

Stormwater (Rainfall), Groundwater (Leachate),
Surfacewater (Big Timber Creek, Beaver Brook)

Construction Completion:

- Phase I: Rt. 42 Stormwater Culvert System, 100%
- Phase I & II: Upgradient (land-side) Stormwater Pipe, 3,595 Linear Feet, connected to Culvert, 100%
- Phase I & II: Upgradient Low Permeability Cutoff Wall, 1,800 Linear Feet (inhibits off-site groundwater migration), 100%
- Phase I: Stormwater Drainage Channels: Rip Rap & Geodrain Conveyances, total 1,700 Linear Feet, from Top of Berms with Lined Swales, 100%
- Phase III: Rt. 295 Stormwater Pipe, 968 Linear Feet, 100%
- Phase III: Rt. 295 Stormwater Drainage Channels, 100%

WATER MANAGEMENT CONSTRUCTION



View: Phase I Lined Swales



View: Phase I Rip Rap Channels



View: Phase I Geodrain Conveyance

WATER MANAGEMENT CONSTRUCTION



View: Upgradient Cutoff Wall



View: Upgradient Stormwater Pipe



View: Underdrain for Cutoff Wall

WATER MANAGEMENT CONSTRUCTION



*View: Phase I Berms, Lined Swales,
South*



*View: Phase I Berms, Lined Swales,
Big Timber Creek side*

WATER MANAGEMENT:

Stormwater (Rainfall), Groundwater (Leachate),
Surfacewater (Big Timber Creek, Beaver Brook)

Measured Success: 8 Years of Monitoring & Sampling Data:

- Nearly All Stormwater & Off-site Groundwater Diverted Around Waste Mass: Prior to Remediation, 28 Million Gallons/Year of Stormwater passing through waste mass into Big Timber Creek.
- Visible Leachate Seeping and Methane Bubbling in Big Timber Creek has Completely Ceased
- Contaminants from Landfill No Longer Detected in Surfacewater
- One of the Largest Leachate Mounds found in NJ, 50 ft. Tall, reduced to <10 ft. Tall.
- Leachate Contaminants Stable or Declining
- Eliminated Need for Active Methane Extraction Flare System

WATER MANAGEMENT CONSTRUCTION:

View: Big Timber Creek, Phase I Foreground, Phase II & III Background



BELLMAWR LANDFILL REMEDIATION: 113 ACRES OF OLD LANDFILLS

Remediation Completion Summary:

- PHASE I REMEDIATION & CLOSURE
SUBSTANTIALLY COMPLETE, LSRP ISSUED
 - Remaining: Installation of Passive Methane Venting System
- PHASE II: 85% COMPLETE
 - Remaining: Construction of Final Cap System
- PHASE III: 70% COMPLETE
 - Remaining: DDC to Consolidate Pre-Cap Soils
 - Final Landscaped Cap of Sideslopes & Top Elevations
 - Stormwater Drainage Channels on Sideslopes

PHASE I REMEDIATION & CLOSURE SUBSTANTIALLY COMPLETE: View: Final Cap System

