



90 Crystal Run Road, Suite 201 • Middletown, NY • 10941 • (877) 294-9070 • Fax: (845) 692-5894

April 4, 2013
Project: 120543

Mr. Eric K. Snyder, AICP, PP
Department of Engineering and Planning
Division of Planning
Sussex County Administrative Center
One Spring Street
Newton, NJ 07860

Re: Solid Waste Management Plan Amendment
Sussex County Municipal Utilities Authority – Solid Waste Facility

Dear Mr. Snyder:

Cornerstone Engineering Group, LLC (Cornerstone) has prepared this Application for an Amendment to the Sussex County Solid Waste Management Plan (SWMP) on behalf of Sussex County Municipal Utilities Authority (SCMUA or the Authority). The Amendment proposes the continuation of use of the Sussex County Landfill until viable, practical alternative materials management and beneficial use systems become available to the Authority. Continued landfill use will be effected through proposed vertical and horizontal expansion of the existing landfill within the Solid Waste Facility (SWF or Facility).

Landfill expansion concepts were discussed with New Jersey Department of Environmental Protection (NJDEP) staff members at a meeting held at the Authority offices on October 11, 2012. During this meeting, NJDEP staff members indicated an understanding of the expansion proposal, complimented SCMUA for their foresight in proactively developing additional landfill capacity, and saw no significant impediments to potential project development. SCMUA is currently in the process of preparing a Major Permit Modification Application for submittal to the NJDEP that proposes the vertical and horizontal expansion that will increase the landfill's solid waste disposal capacity and optimize the landfill's lifespan.

The Authority's thinking with respect to landfill expansion was presented to the Sussex County Solid Waste Advisory Council (SWAC) at their regular meeting on October 9, 2012. With SWAC's input, and at their direction, the proposed landfill expansion was further evaluated and modified regarding an expanded landfill footprint. A revised presentation of the landfill expansion was presented to SWAC at their regular meeting on November 13, 2012. At the November 2012 SWAC meeting it was voted and approved to send a recommendation letter to the Freeholders of Sussex County to pursue expansion of the existing landfill (letter attached for your reference). The County's position with regard to landfill expansion is further confirmed in a February 14, 2013 letter from Sussex County Freeholder Director Parker Space (attached). This proposed SWMP amendment is an

Mr. Eric K. Snyder
April 4, 2013
Page 2

anticipated extension of the process previously presented to SWAC and recommended to the Freeholders, and now includes a multi-staged approach to extend landfill life.

Thank you for your assistance and the efforts of the Council in achieving an expeditious review and approval of this Application.

Please do not hesitate to call me at 845-695-0208 if you have any questions or concerns regarding this Application.

Sincerely,

CORNERSTONE ENGINEERING GROUP, LLC



Mark A. Swyka, P.E.
Project Manager

Enclosure: November 21, 2012 letter from James Landrith to Phillip Crabb
 February 14, 2013 letter from Parker Space to Ronald Petillo
 April 2013 Solid Waste Management Plan Amendment Application

cc: John Hatzelis, SCMUA Administrator
 Thomas Varro, P.E., SCMUA Chief Engineer



DEPARTMENT OF ENGINEERING AND PLANNING
Division of Planning
Sussex County Administrative Center
One Spring Street
Newton, N.J. 07860
Tel. 973-579-0500
FAX 973- 579-0513
E-mail: esnyder@sussex.nj.us

Eric K. Snyder, AICP, PP
Director

County of Sussex

21 November 2012

Hon. Phillip Crabb, Director
Sussex County Board of Chosen Freeholders
One Spring Street
Newton, N.J. 07860

Dear Freeholder Director Crabb,

The Solid Waste Advisory Council (SWAC) has had the opportunity hear presentations by the Sussex County Municipal Utilities Authority (SCMUA) and its consultants with respect to expansion of the capacity of the existing landfill. At the second of the two presentations, SCMUA requested SWAC to provide the Board of Chosen Freeholders with an opinion regarding the conceptual approach laid out whereby the side slopes of the landfill could be increased, berms could be constructed and additional areas could be prepared for waste disposal.

Over the past three years, the SWAC has entertained presentations by various waste to energy companies. Unfortunately, the technology is not currently available to Sussex County due to the relatively small amount of waste generated in the County, the lack of any regulations adopted by the NJ Department of Environmental Protection and any domestic history of successful implementation.

Accordingly, the approach suggested by the SCMUA appears to be an excellent medium term approach for County waste disposal, until such time as the alternative technologies for waste to energy are domestically proven to be realistically available and the NJDEP have adopted appropriate rules for design and operation so they may be approved for operation in New Jersey.

We look forward to continued updates from SCMUA as they progress in their analysis of the landfill option.

Very truly yours,

James Landrith, Chairman

c: County Administrator
SWAC

COUNTY OF SUSSEX



Board of Chosen Freeholders

Parker Space, Director
Richard A. Ushien, Deputy Director
Phillip K. Cribb
Dennis J. Muthick
Gail Floehus

Sussex County Administrative Center
One Spring Street
Newton, NJ 07860

Elaine A. Morgan, Clerk of the Board
Tel 973.579.0210
Fax 973.383.1124
E-mail emorgan@sussexnj.us

February 14, 2013

Honorable Ronald Petillo, Chairman
Sussex County Municipal Utilities Authority
34 South Route 94
Lafayette, New Jersey 07848

Dear Chairman Petillo:

During the latter part of 2012, the Sussex Board of Chosen Freeholders received correspondence from the Sussex County Solid Waste Advisory Council (SWAC) supporting the Sussex County Municipal Utilities Authority's (SCMUA) efforts to modify the side slopes of the existing landfill to gain much needed disposal space, thereby extending the life of the facility.

On behalf of the Freeholder Board, I would like to commend the SCMUA for its due diligence in researching this method of gaining landfill volume. The Board affirms SWAC's support of moving forward with the implementation of this project and looks forward to continued collaboration in seeking cost effective, environmentally appropriate options for the disposal of Sussex County's solid waste stream.

Sincerely,

A handwritten signature in cursive script that reads "Parker Space".

Parker Space
Freeholder Director

FEB 15 2013

C: Sussex County Board of Chosen Freeholders
 Sussex County Solid Waste Advisory Council
John H. Eskilson, Sussex County Administrator

**SOLID WASTE MANAGEMENT PLAN
AMENDMENT APPLICATION
FOR THE
SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY**



90 Crystal Run Road, Suite 201, Middletown, NY 10941

Building lifetime relationships with our clients and employees.

**SOLID WASTE MANAGEMENT PLAN
AMENDMENT APPLICATION**

FOR THE

**SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY**



Prepared for

Sussex County Municipal Utilities Authority
34 South Route 94
Lafayette, New Jersey 07848

April 2013

Prepared by



90 Crystal Run Road, Suite 201
Middletown, NY 10941
845-695-0208

Project 120543

Application for Solid Waste Management Plan Amendment Certification

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that submitting false information may be grounds for denial, revocation or termination of the approval.”

Cornerstone Engineering Group, LLC



Mark A. Swyka, P.E.

Project Manager

N.J. P.E. License No. 34564

Certificate of Authorization No. 24GA28133400

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LIMITATIONS

FIGURES

1 INTRODUCTION

Cornerstone Engineering Group, LLC (Cornerstone) has prepared this Application for an Amendment to the Sussex County Solid Waste Management Plan (SWMP) on behalf of Sussex County Municipal Utilities Authority (SCMUA or the Authority). The Amendment proposes the continuation of use of the Sussex County Landfill until viable, practical alternative materials management and beneficial use systems become available to the Authority. Continued landfill use will be effected through a multi-staged approach utilizing proposed vertical and horizontal expansion of the existing landfill within the Solid Waste Facility (SWF or Facility).

Landfilling is currently a central component of the Authority's strategy for managing waste material generated within Sussex County. Landfilling is a reliable and secure technology. Alternative technologies for waste material management and beneficial reuse have been and continue to be developed. At present no alternative technology is attractive to the County. The Authority will continue to evaluate legitimate proven alternative technologies for application in Sussex County.

Landfill expansion concepts were discussed with NJDEP staff members at a meeting held at the Authority offices on October 11, 2012. During this meeting NJDEP staff members indicated an understanding of the expansion proposal, complimented SCMUA for their foresight in proactively developing additional landfill capacity, and saw no significant impediments to potential project development.

The Authority's thinking with respect to landfill expansion was presented to SWAC at their regular meeting on October 9, 2012. With SWAC input and at their direction the proposed landfill expansion was further evaluated and modified regarding an expanded landfill footprint. A revised presentation of the landfill expansion was presented to SWAC at their regular meeting on November 13, 2012. At the November 2012 SWAC meeting it was voted and approved to send a recommendation letter to the Freeholders of Sussex County to pursue expansion of the existing landfill. This proposed SWMP amendment is an anticipated extension of the process previously presented to SWAC and recommended to the Freeholders, and now includes a multi-staged approach to extend landfill life.

Based upon the 2012 Annual Topographic and Waste Volume Report the existing landfill is projected to be available for disposal through the end of 2020. Existing documentation related to the landfill, the cost of operations, and the cost of closure projects that the Authority would retain approximately \$19,000,000 in stranded debt at the time of landfill closure.

The proposed Amendment will extend the useable life of the landfill making use of existing, proven technology, is consistent with the solid waste strategy presented in the SWMP to optimize the lifespan of the current SCMUA Landfill, and is expected to relieve the Authority and ratepayers of Sussex County of the burden of stranded debt.

The proposed landfill expansion is presented as six (6) discrete stages. These stages, Stage 1 through Stage 6 (see figures attached) are to be separate and independent of each other, and will allow the facility to grow and expand as future county waste production dictates. The staged construction will also allow for transition to alternate technology at multiple points of life of the facility. The various stages are more fully described in Section 3: Project Description, of this report.

The Facility will continue to be operated by SCMUA under the duly permitted Solid Waste Facility (NJDEP SW Facility ID #1913000798), which is currently designated in the County's SWMP as the disposal site for non-hazardous waste generated in Sussex County. Inclusion of the proposed design for the capacity modification in the SWMP will complement and foster the goals of this designation and is therefore consistent with the policies for inclusion of solid waste facilities enumerated in the SWMP.

2 EXISTING FACILITY DESCRIPTION

The Sussex County Municipal Utilities Authority (SCMUA or the Authority) is responsible for the operations management of solid waste for rural Sussex County, New Jersey.

The SCMUA SWF is located near the junction of New Jersey State Routes 15 and 94, in the Township of Lafayette, County of Sussex, New Jersey. Refer to Figure 1-1 for a Site Location Map.

The Facility is permitted to accept ID 10, 13, 13C, 23, 25, 27, 27A, and 27I waste types, and Class A, Class B, Exempt Class C, and certain Class D recyclables. The sanitary landfill and associated facilities have been providing services to Sussex County residences, businesses and institutions since 1990.

2.1 Solid Waste Landfill and Ancillary Features

The Authority manages the Solid Waste Facility (SWF) consisting of the active solid waste landfill and the following facilities and ancillary features:

- Vegetative Waste Composting Facility
- Water Storage Tank and Well House
- The Resident's Convenience Disposal and Recycling Center (RC/RC)
- Wood chipping and Mulch Manufacturing
- Bulky Waste/Recycling Building
- Scale Facility
- Flare
- Landfill Gas to Energy (LFGTE) Facility
- Maintenance Building and Administrative Facilities
- Site Infrastructure (site utilities, roadways, stormwater controls, etc.)

The proposed amendment considers that all existing solid waste related and recycling services will continue to be provided at the Solid Waste Facility.

3 PROJECT DESCRIPTION

3.1 Background

SCMUA is responsible for the operations management of solid waste and materials generated within Sussex County. The central component of the management of the portion of these materials that cannot be recycled or beneficially utilized is the landfill. Based upon current projections the landfill will provide disposal capacity until the end of 2020. Absent this proposed Amendment, alternative technologies or facilities will be required to manage waste materials beyond the end of 2020. The Authority, along with SWAC, has actively reviewed potential alternative technologies and while no proven, practical, viable, affordable alternative technology is currently available, it is fully anticipated that alternative technologies will be developed in the future. The proposed landfill expansion therefore builds a mid-term bridge from current practice until such time as the appropriate alternative technologies can be implemented.

In accordance with input and guidance provided by SWAC, SCMUA has therefore prepared a Major Permit Modification Application for submittal to the New Jersey Department of Environmental Protection (NJDEP) that incorporates a vertical and horizontal expansion of the existing SCMUA landfill that will increase the landfill's solid waste disposal capacity and optimize the landfill's lifespan to meet the needs of Sussex County.

The proposed Amendment is consistent with the current SWMP which stresses that the County considers solid waste planning options to provide for continued waste disposal management, and that the SCMUA SWF is an investment in solid waste management that should be optimized. The following provides specific information related to the proposed project.

3.2 Landfill Expansion

The proposed landfill expansion will include Solid Waste Facility property not presently utilized for waste placement and landfilling activities, as well as an increase in the permitted air space over the existing landfill footprint.

As noted in this Amendment, SCMUA is seeking to maintain the integrity of, and to optimize the lifespan of, the landfill in accordance with the current SWMP by proposing this expansion of the landfill.

In keeping with the understanding that the landfill is a mid-term tool for maintaining waste disposal until such time as a proven, viable, cost-effective alternative technology becomes available, the landfill expansion will be developable in discrete stages. Individual stages of landfill expansion may or may not be developed depending upon actual future waste disposal needs. And since the landfill expansion will be constructed in stages, capital outlay(s) will be made in limited, discrete units. In future years, should an alternative solid waste management

technology be determined more suitable for managing Sussex County's solid waste disposal needs, the remaining stages of landfill expansion need not be constructed.

Six (6) proposed stages of construction and operation are presented in this Plan Amendment. As noted earlier, ultimately all the stages may or may not be required to be built. By designing and implementing the landfill expansion in stages, it allows the development costs associated with this work to be spread over the life of the facility. Therefore the Authority will not have to carry the burden of a one-time upfront bond to finance the project and may be financed in discrete increments.

The six (6) proposed stages are as follows (refer to the figures included with this Plan Amendment):

- **Stage 1:** (Figure 1A).
Construct berm wall on the north and west side of the landfill. The berm will transition from approximately 10 ft high on the north side of Cells 2B/3A/3B, to approximately 50 ft high on the south-west side of 3B. The berm will facilitate filling of waste at a 3H:1V slope on the north side of these cells.
- **Stage 2:** (Figure 1B).
Construct subgrade for new cell at the south side of 2B. Start filling new area when Cells 2B/3A/3B have been filled to grade. Final cover north side of 2B/3A/3B.
- **Stage 3:** (Figure 1C)
Construct 50 ft. berm wall at south and east side of new cell. Continue to fill new cell.
- **Stage 4:** (Figure 1D)
Construct subgrade at south side of Cell 3B. Start filling this area when filling operations are completed at Stage 2/Stage 3 area.
- **Stage 5:** (Figure 1E)
Construct extension of western 50 ft berm wall, and transition south around Stage 4. Continue to fill Stage 4 area.
- **Stage 6:** (Figure 1F)
Build subgrade between Stage 2 and Stage 4 and "connect" 50 ft berm walls between Stage 3 and Stage 5. Complete landfilling of SCMUA Landfill.

The proposed staging is sequenced to accommodate the modifications that will be necessary to the existing SWF infrastructure and public amenities. Future modifications to the facility's existing infrastructure will include the relocation of the leachate storage tanks, the Landfill Gas to Energy Facility, the stormwater drainage controls. Repositioning of the various stockpile/storage areas will be required and include the mulch and compost areas, cover soils area, and the rock storage area. The public convenience center is also to be relocated as a result of the staged construction as required.

The proposed work will be developed and constructed as additional waste disposal capacity is required. This approach allows for the most efficient, cost effective, and flexible means of solid waste management for the community of Sussex County.

The total volumes and life expectancy of the modification, as well as of each discrete stage is presented in the following sections.

3.3 Landfill Capacity (Volume)

The proposed Plan Amendment provides for an overall (ultimate) air space volume gain of approximately 5 million cubic yards for waste placement. By applying historical site density values to the anticipated volume gain, it is projected that the landfill will be ultimately capable of accepting an additional 4 million tons of waste.

3.4 Additional Life Expectancy

At the time of this Plan Amendment application, it was determined based upon the 2012 annual topographic survey and waste volume report that the existing landfill will reach permitted capacity at the end of 2020. As a result of the proposed landfill expansion, and based upon waste flow projections of annual Sussex County waste disposal, this proposed Plan Amendment allows SCMUA to accept and landfill waste up to the year 2062, an increase in life expectancy of 42 years.

Stage	Capacity	
	Volume (CY)	Years
1	432,953	3
2	928,047	7
3	481,101	4
4	489,879	4
5	680,693	5
6	2,357,543	19
Total:	5,370,216	42

4 SUMMARY OF PLAN AMENDMENT

SCMUA proposes amendment of the County Solid Waste Management Plan to include horizontal and vertical expansion of the existing solid waste landfill. The proposed amendment extends the life of the existing landfill in discrete stages into the foreseeable future and provides for mid-term waste disposal until an alternative technology is proven to be environmentally and economically practical. The proposed Plan Amendment is consistent with presentations made to SWAC in October and November 2012 and to NJDEP in October 2012.

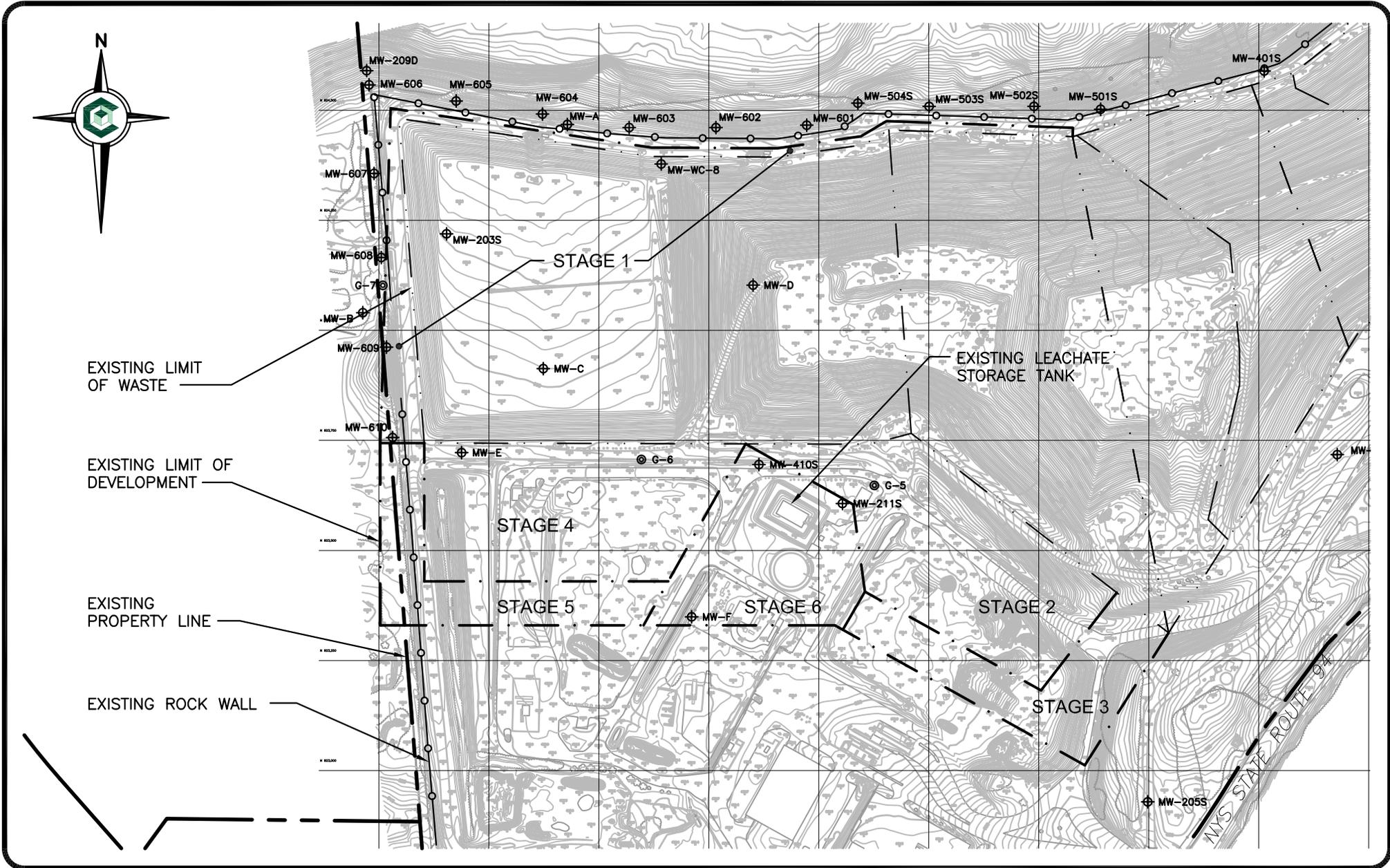
The proposed Plan Amendment is consistent with the County's SWMP by providing Sussex County with future solid waste management through optimization of the lifespan of the SCMUA landfill. The proposed plan amendment optimizes the effectiveness of the existing solid waste facility and is expected to eliminate the current prediction of stranded debt, for Closure/Post Closure Care.

LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

FIGURES

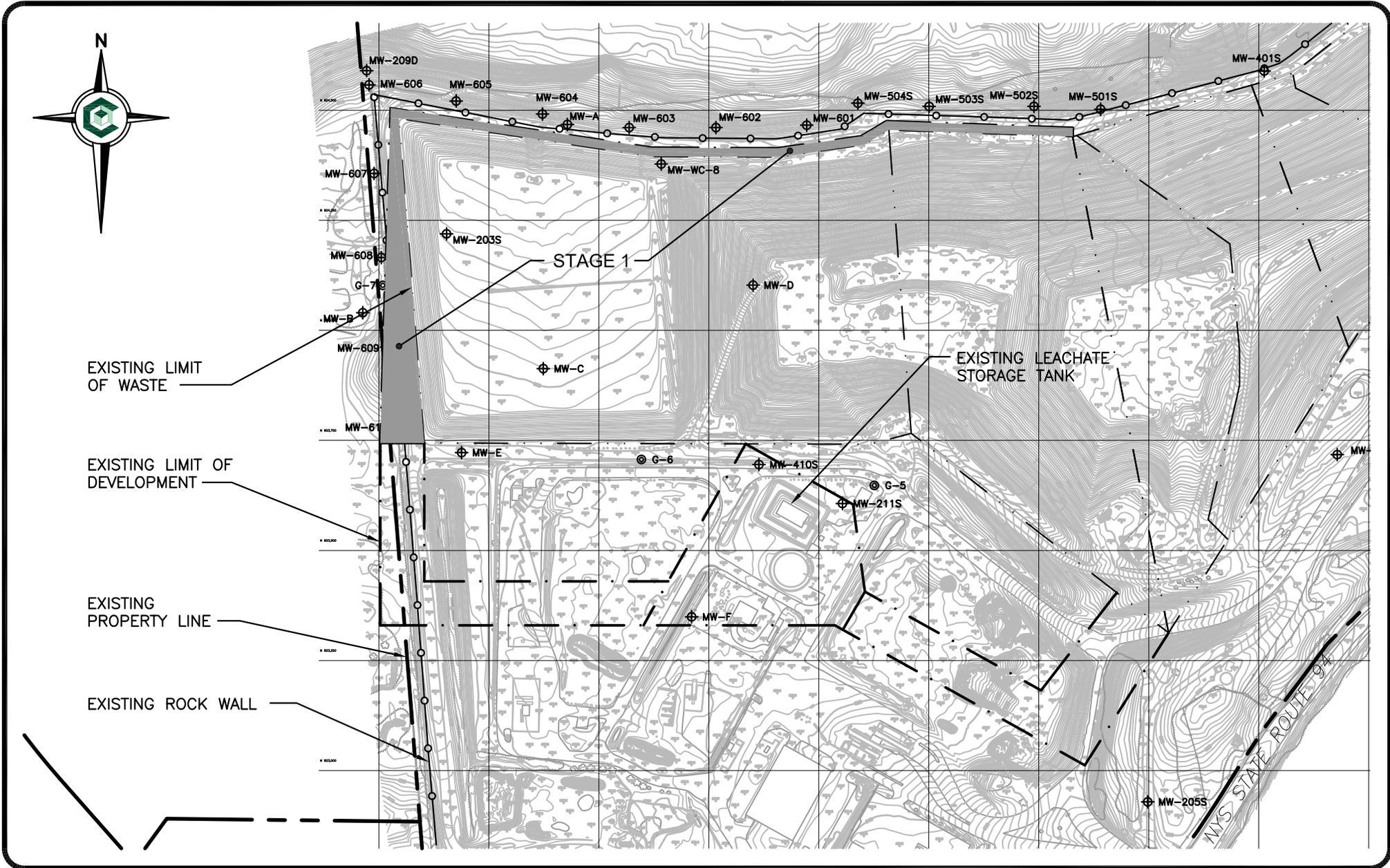


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Engineering Group, PLLC

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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGING

FIGURE NO.
1
PROJECT NO.
120543

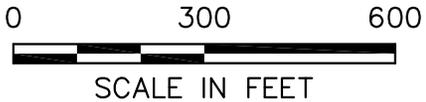
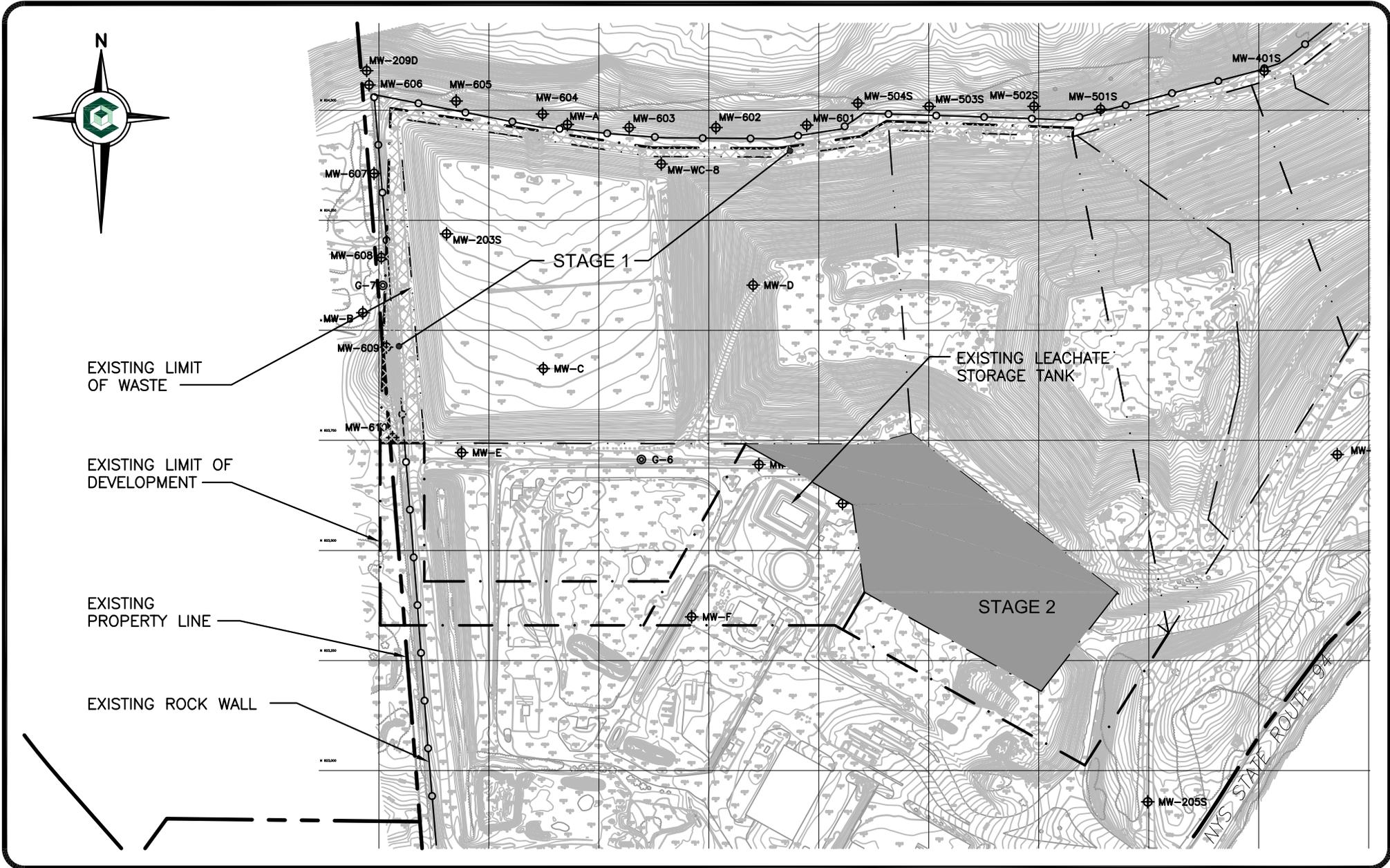


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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGE 1

FIGURE NO.
1A
PROJECT NO.
120543

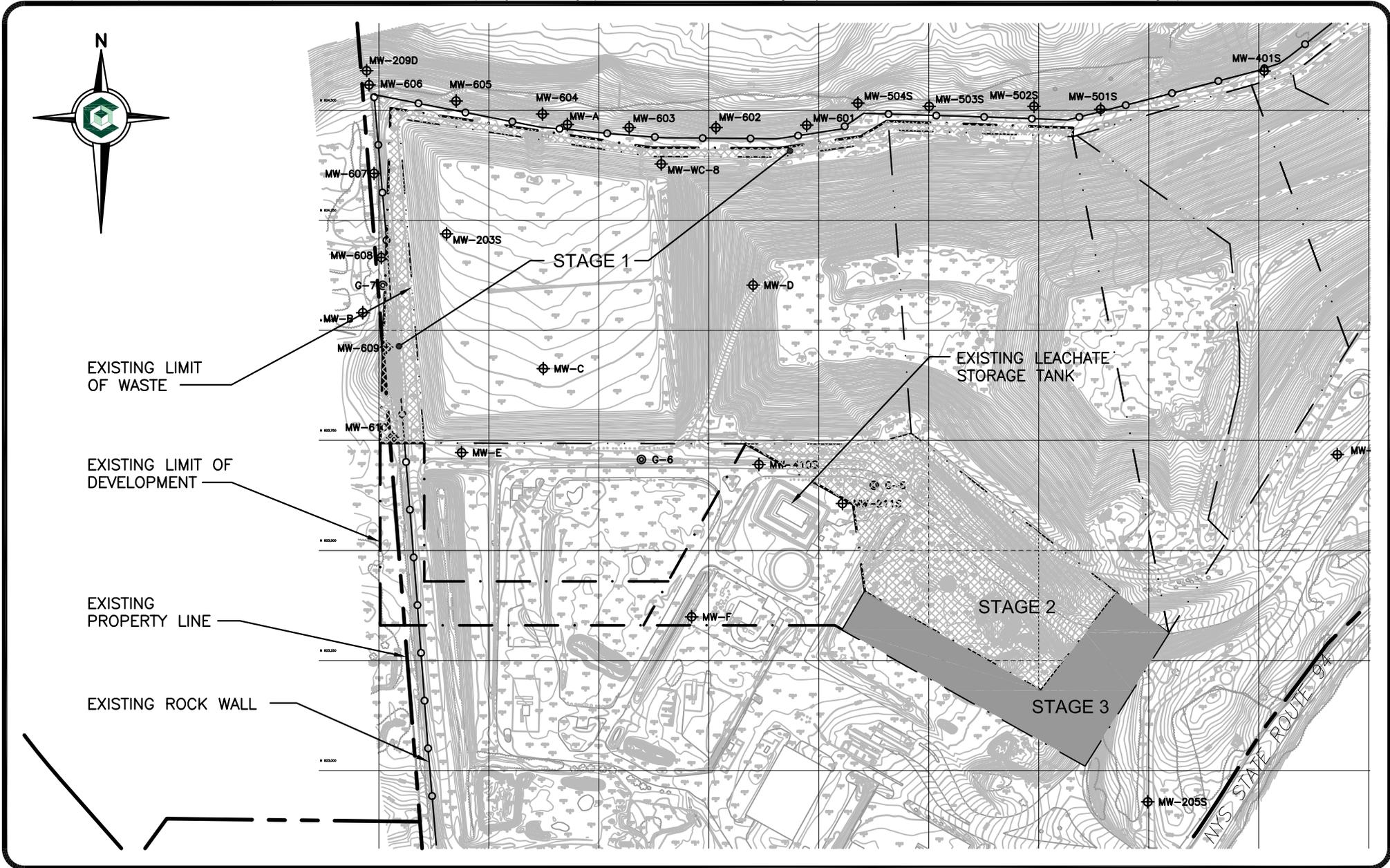


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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGE 2

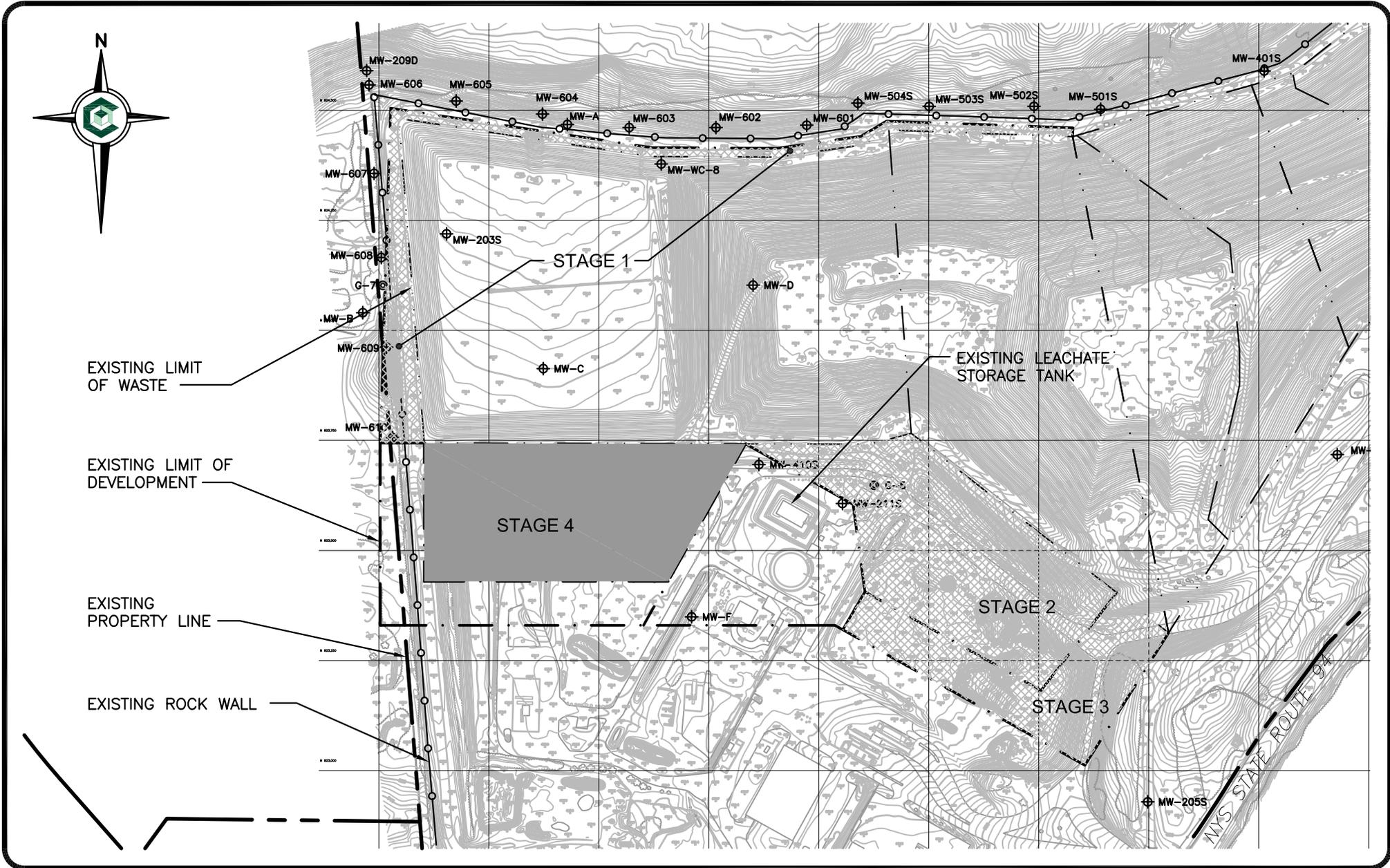
FIGURE NO.
1B
PROJECT NO.
120543



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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGE 3

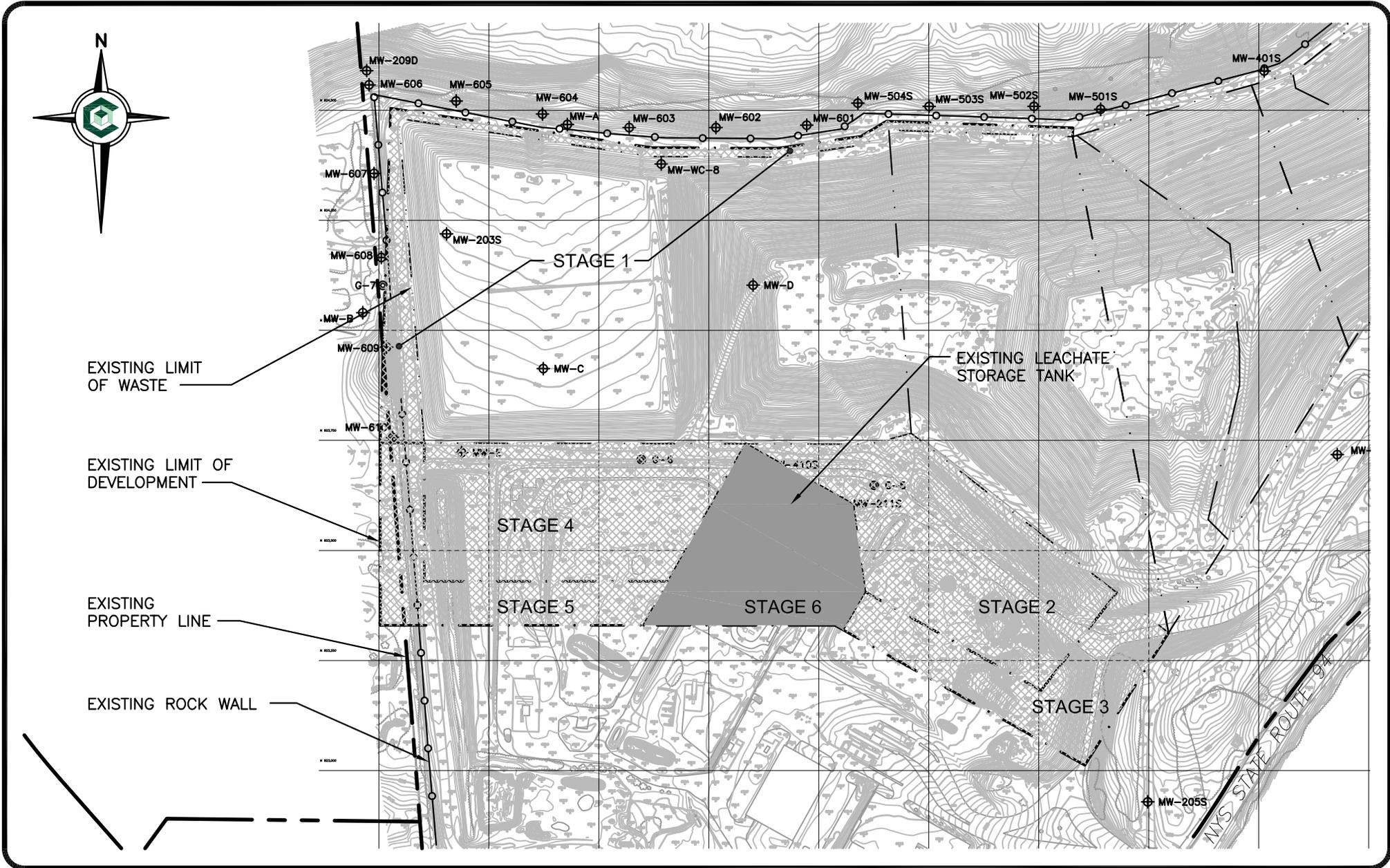
FIGURE NO.
1C
PROJECT NO.
120543



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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
 SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGE 4

FIGURE NO.
1D
 PROJECT NO.
 120543



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SUSSEX COUNTY MUNICIPAL UTILITIES AUTHORITY
SOLID WASTE FACILITY
SITE PLAN
PROPOSED LANDFILL EXPANSION STAGE 6

FIGURE NO.
1F
PROJECT NO.
120543