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Coal Combustion Residuals Landfill
Run-on and Run-off Control System Plan

Conemaugh Generating Station
Conemaugh Station Ash/Refuse Disposal Site
New Florence, Pennsylvania

GAI Project Number: C151611.14, Task 003

October 2016
Rev. 01, September 2021
Rev. 02, October 2026

Prepared by: GAI Consultants, Inc.
Pittsburgh Office
385 East Waterfront Drive
Homestead, Pennsylvania 15120-5005

Prepared for: Conemaugh Generating Station
1442 Power Plant Road
New Florence, Pennsylvania 15944-9154

Table of Contents

Professional Engineer's Certification ii

Plan Revisions iii

1.0 Introduction 1

2.0 Run-on and Run-off Control System Plan 1
2.1 Stormwater Run-on Control 2
2.1.1 Run-on Channel and Culvert Design 2
2.2 Stormwater Run-off Control 4
2.2.1 Run-off Channel and Slope Drain Design 4
2.2.2 Surge Pond Design 7
2.3 Plan Amendment 7

3.0 References 8

Drawing 42-E-0209 Stage II Development Plan, Sheet 1 of 2
Drawing 42-E-0209 Stage II Development Plan, Sheet 2 of 2
Drawing E-728-1181 Stage III Final Pile Development Plan
Drawing E-728-1182 Stage III Pile Development Phasing Plan
Drawing 744-3157 Phase 1 Capping Bench Piping Plan

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Professional Engineer's Certification

The Run-on and Run-off Control System Plan for the Conemaugh Station Ash/Refuse Disposal Site was prepared by GAI Consultants, Inc. (GAI). The Plan was based on certain information that, other than for information GAI originally prepared, GAI has relied on but not independently verified. Therefore, this Professional Engineer's Certification is limited to the information available to GAI at the time the Plan was written. On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the Commonwealth of Pennsylvania, that the Plan has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances and at the time and in the same locale. It is my professional opinion that the Plan was prepared consistent with the requirements of Section 257.81 of the United States Environmental Protection Agency's "Disposal of Coal Combustion Residuals from Electric Utilities," published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

Adam Scheller

Adam B. Scheller, P.E.
Assistant Engineering Director



10/29/26

Plan Revisions

Revision	Date	Reason	Description	Reviewer
0	Oct. 2016		Original Document	NRG, GAI Consultants
1	Sept. 2021	Comprehensive review and as-needed revisions per CCR Rule, Section 257.81(c)(4) requirements (review of plan required every five years)	Remove GenOn/NRG, additional miscellaneous administrative changes, revised run-on and run-off control system descriptions to reflect Stage IIIA construction and current conditions	Conemaugh Station, GAI Consultants
2	Oct. 2026	Comprehensive review and as-needed revisions per CCR Rule, Section 257.81(c)(4) requirements (review of plan required every five years)	Revised run-on and run-off control system descriptions to reflect Stage II capping activities and current conditions	Conemaugh Station, GAI Consultants

1.0 Introduction

The Conemaugh Generating Station is a steam electric generating station located along the Conemaugh River in West Wheatfield Township, Indiana County, Pennsylvania (PA). The station consists of two 850-megawatt (nominal net maximum load) coal-fired units. The station commenced operation in 1970.

The Conemaugh Station Ash/Refuse Disposal Site (disposal site) is permitted under PA Department of Environmental Protection (DEP) Solid Waste Permit No. 300876 and receives Coal Combustion Residuals (CCR) generated by the Conemaugh Generating Station. The disposal site is divided into three stages: Stages I (closed), II (currently receiving waste in portions and undergoing capping activities in other portions), and III (Stage IIIA is currently active; additional areas in Stage III may be developed to receive future CCR).

Stage I is approximately 160 acres and is located in the northern-most limits of the disposal site. Stage I started receiving CCR in 1970 and was closed in 1987 with cover/topsoil and vegetated. Stage II covers approximately 120 lined acres and is located directly south of Stage I, closer to the Conemaugh Generating Station. Stage III could ultimately cover approximately 110 lined acres; approximately 25 acres of Stage III were developed in 2017-2018 as part of Construction Phase IIIA. When the ultimate development is reached, the northern side of Stage III will abut a portion of Stage II. Stage III will terminate approximately 600 feet north of the existing Ash Disposal Site Leachate Surge Pond (Surge Pond) when ultimate development is complete. The CCR placed on the disposal site consists mostly of bottom ash, fly ash, pyrites, and Flue Gas Desulfurization (FGD) by-product.

In 2023, capping activities commenced on portions of Stage II that were no longer actively receiving waste. The capping plan for Stage II consists of six phases, with one phase to be completed per year. Additionally, a seventh phase for capping of Stage IIIA is also planned to occur following capping of Stage II. Phases 1, 2, 3, and 4 were completed in 2023, 2024, 2025, and 2026, respectively. The station has elected to pause further capping activities of Stage II at this time.

2.0 Run-on and Run-off Control System Plan

This Run-on and Run-off Control System Plan (RRCSP) (§257.81) sets forth the techniques that are utilized to minimize stormwater run-on and divert and collect stormwater run-off during operation of the disposal site. The purpose of the Run-on and Run-off Control System is to limit flow of stormwater run-on from a 25-year, 24-hour storm onto the active portion of the disposal site; and to divert and collect run-off from the soil-covered and vegetated portions and the active portions of the disposal site (resulting from a 25-year, 24-hour storm) during operation. Stormwater controls at the disposal site consist of the following:

- Temporary/permanent stormwater diversion and collection channels;
- Culverts;
- Slope Drains; and
- Stormwater Equalization (Surge) Pond (existing).

All surface run-on along the perimeter of the closed Stage I area is discharged into a stormwater diversion channel that is separated from the run-off from the active areas of Stages II and III. The surface run-on along the perimeter of Stage II and the Stage III area is or will be conveyed to diversion channels that are directed to unnamed tributaries of the Conemaugh River.

Stormwater run-off from the closed (vegetated) Stage I of the disposal site is diverted. Similarly, stormwater run-off from capped areas of Stage II (corresponding to Phases 1 through 4 as explained above) and other non-active portions (soil covered and vegetated) is separated from the run-off from active areas and discharged into existing diversion stormwater channels.

Run-off is collected from the active portions of Stage II and Stage III for treatment. Treatment activities occur at the disposal site wastewater treatment plant prior to off-site discharge through a National Pollutant Discharge Elimination System (NPDES)-licensed outfall or reuse within the Station. If Stage III is developed further, the active portions of Stage III both during and following construction will be captured for treatment. All run-off from the active portion of Stage II and the Stage III area is conveyed to the existing Surge Pond that is located to the south of the disposal site for subsequent treatment.

The drawings included with this RRCSP provide information about the drainage features referenced within this Plan. Supporting calculations for each drainage feature are maintained in the Station's operating record.

2.1 Stormwater Run-on Control

Stormwater run-on to the disposal site is controlled via the installation of diversion features. Disposal site control features consist of diversion channels and culverts.

All run-on diversion channels for Stage II development are designed for the 100-year, 24-hour storm event. Temporary run-on diversion channels for Stage III development are designed for the 25-year, 24-hour storm, and permanent run-on diversion channels are designed for the 100-year, 24-hour storm event. The culverts are designed based on the design of the receiving channel. Therefore, all run-on diversion channels and culverts have been designed to meet Section 257.81 of the Federal CCR Rule.

2.1.1 Run-on Channel and Culvert Design

2.1.1.1 Existing Stage I and II Features

Refer to Drawing No. 42-E-0209 (sheets 1 and 2) for information concerning the Stage I and Stage II run-on diversion channels.

Diversion channels are located on the east and west sides of Stage II to prevent stormwater from entering the collection channels and the existing Surge Pond. Stormwater from north of the site, from revegetated Stage I, and from revegetated or capped Stage II areas is diverted through three culverts that cross underneath Clay Pike Road, which is located to the west of the landfill. A Type H channel and a Type A channel discharge to the northernmost culvert (a 6-foot by 12-foot concrete box culvert). Two separate Type A channels discharge to either a 30-inch diameter corrugated metal pipe (CMP), or a 48-inch diameter CMP.

A Type F channel and a Type H channel, located to the north of the above-mentioned culverts, divert additional run-on from the west side of the site while Type B, C, and K channels divert stormwater run-on from the east side of the site. These features discharge to the West Diversion Channel and the East Diversion Channel, respectively, and prevent run-on from entering the collection channels and the existing Surge Pond.

2.1.1.2 During Development of Stage III

The existing and proposed run-on control drainage features for the Stage III area are designed for the peak flow from either a 25-year, 24-hour storm event or a 100-year, 24-hour storm event. Each diversion channel was sized to handle the 25-year, 24-hour peak flow. The permanent drainage features were sized for a 100-year, 24-hour peak flow and compared to the design for the 25-year storm event. The deepest resulting channel flow depth was then selected. The Stage III construction was planned to take place in five intermediate phases referred to as Stages IIIA, IIIB, IIIC, IIID, and IIIE. Temporary channels and culverts designed for the intermediate phases were designed for the 25-year, 24-hour storm. Refer to Drawing 728-1182 for diversion channel layout during the intermediate phases. As noted above, construction of Stage IIIA was completed in 2018; this area has been lined and the designed channels constructed. Below is a list of the permanent and temporary features included in the Stage III development design. The intermediate phases of Stage III will be built as necessary to support Station operations.

Temporary Run-on Features

- Stage IIIA
  - Culvert 6A conveys the flow from the existing Eastern Diversion Channel to the southeast of Stage III and north of the Surge Pond – Drawing No. 728-1181.
  - Culvert 4 (downstream of permanent Type T channel) conveys run-on from the Type T channel to a temporary Type XX channel – Drawing No. 728-1182.
- Stage IIIB
  - Channel WD1 will divert run-on water from the west side of the site to the existing West Haul Road Diversion Channel – Drawing No. 728-1182.
- Stage IIIC
  - Channel WD2 (to be constructed upstream from WD1) will convey the run-on from the western perimeter of the disposal site to the existing West Haul Road Diversion Channel – Drawing No. 728-1182.

Permanent Run-on Features

- Stage IIIA
  - Type T channel diverts run-on from the east side of the site away from the working area to ultimately discharge to the existing East Diversion Channel – Drawing Nos. 728-1181 and 728-1182.
  - Type AA channel diverts run-on from the east side of the site away from the working area to ultimately discharge to the East Valley Stream – Drawing Nos. 728-1181 and 728-1182.
  - Culvert 1C conveys flow from the Type AA channel to the East Valley Stream– Drawing Nos. 728-1181 and 728-1182.
- Stage IIIC
  - Type A channel will divert run-on and run-off from soil-covered and vegetated areas from the western highpoint of the working area to the Type B channel for discharge through an existing culvert and the existing Stage II Western Diversion Channel for ultimate discharge into an unnamed tributary to the Conemaugh River – Drawing Nos. 728-1181 and 728-1182.
  - Type B channel will divert run-on and run-off from soil-covered and vegetated areas from the western side of the working area to an existing culvert and the existing Stage II Western Diversion Channel for discharge into an unnamed tributary to the Conemaugh River – Drawing Nos. 728-1181 and 728-1182.
- Stage IIID
  - Type X channel (downstream of extended permanent diversion Type T) will convey run-on from the eastern perimeter of the disposal site to Culvert 5 – Drawing Nos. 728-1181 and 728-1182.
  - Culvert 5 (downstream of Type X channel) will convey run-on from the Type X channel to the Type XX channel – Drawing Nos. 728-1181 and 728-1182.
  - Type XX channel (downstream of Culvert 5) will convey the flow from Culvert 5 to the existing Eastern Diversion Channel – Drawing Nos. 728-1181 and 728-1182.

- Stage IIIE/Final Landfill Configuration
  - Type M channel will convey run-on to the existing West Haul Road Diversion Channel – Drawing No. 728-1181.
  - Culvert 6A will be removed and replaced with Culvert 6B – Drawing No. 728-1181.

Upon Stage III closure, all slopes and benches will be vegetated, so the perimeter collection channels will be diverted into the existing diversion channels.

2.2 Stormwater Run-off Control

Stormwater run-off from capped or soil-covered and vegetated areas is diverted around the active areas of the site. All run-off will be managed by run-off controls, such as diversion or collection channels, slope drains, culverts, and the existing Surge Pond. All features are sized to accommodate the volume of water from at least a 25-year, 24-hour storm event.

2.2.1 Run-off Channel and Slope Drain Design

2.2.1.1 Existing Stage I and II Features

All run-off channels and slope drains were designed to manage the 100-year, 24-hour storm event which exceeds the amount of flow expected from the 25-year, 24-hour storm event. Refer to Drawing No. 42-E-0209 (sheets 1 and 2) for the Stage I and Stage II run-off channels.

Stormwater from north of the site and from revegetated Stage I and Stage II areas is diverted through three culverts that cross underneath Clay Pike Road, which is located to the west of the landfill. A Type H channel and a Type A channel discharge to the northernmost culvert (a 6-foot by 12-foot concrete box culvert). Two separate Type A channels discharge to either a 30-inch diameter corrugated metal pipe (CMP), or a 48-inch diameter CMP. A drainage swale was included on the revegetated top of Stage II to divert run-off from soil-covered and vegetated areas into the existing western diversion channels.

Run-off channels are located along the Stage II haul road and on the east side of Stage II. They are identified as the Haul Road Channel and East Collector, respectively, and they collect run-off from the active portion of Stage II. The East Collector receives flow from Types AA, BB, CC, R, and D collection channels. Both run-off channels extend into the Stage IIIA collector channels and discharge into the fabric-formed concrete-lined Main Collector Channel that flows into the Surge Pond. Once in the Surge Pond, the effluent is sent to the disposal site wastewater treatment plant.

Benches constructed on the completed disposal site face collect stormwater from the slopes. The benches discharge to either perimeter run-off channels or the fabric-formed slope drains. A berm is constructed at the leading edge of the active bench face to direct run-off from the active areas drains directly to nearby run-off channels.

2.2.1.2 During Development of Stage III Area

The existing and proposed run-off control drainage features for the Stage III area are designed for the peak flow from either a 25-year, 24-hour storm event or a 100-year, 24-hour storm event. Each run-off channel was sized to handle the 25-year, 24-hour peak flow. The permanent run-off features were sized for a 100-year, 24-hour peak flow and compared to the design for the 25-year storm event. The deepest resulting channel flow depth was then selected. As previously stated, the Stage III construction was planned to take place in five intermediate phases referred to as Stages IIIA, IIIB, IIIC, IIID, and IIIE. Temporary run-off channels and culverts designed for the intermediate phases were designed for the 25-year, 24-hour storm. Refer to Drawing 728-1182 for the run-off channel layout during the intermediate phases. As previously stated, construction of Stage IIIA was completed in 2018; this area has been lined and the designed channels constructed. Below is a list of the permanent and

temporary features for the Stage III development design. The intermediate phases of Stage III will be built as necessary to support Station operations.

Temporary Run-off Features

- Stage IIIA
  - Channel HR1 conveys run-off from the haul road to Culvert 1 – Drawing No. 728-1182.
  - Channel WC1 conveys run-off from the western side of the landfill to Culvert 1 and continues from the culvert to the Main Collector Channel which flows to the Surge Pond – Drawing No. 728-1182.
  - Channel WC2 conveys upstream run-off from the western side of the landfill to channel WC1 – Drawing No. 728-1182.
- Stage IIIB
  - Channel WC3 will convey run-off from the western side of development to channel WC1 – Drawing No. 728-1182.
  - Channel WC4 will convey run-off from the western side of development to channel WC3 – Drawing No. 728-1182.
- Stage IIIC
  - Channel HR2 will convey run-off from eastern side of the haul road to Channel HR1 – Drawing No. 728-1182.
  - Channel HR3 will convey run-off from the western side of the haul road to the Type Q channel – Drawing No. 728-1182.
  - Slope drain, SD2, will drain the south-western portion of the benched areas to temporary channel WC5 – Drawing No. 728-1182.
  - Channel WC5 will convey run-off from the western side of the development upstream of Channel WC3 – Drawing No. 728-1182.
- Stage IIID
  - Culvert 7-T will convey flow along the western perimeter of the development area and discharge to a dissipater basin before being discharged to the Main Collector Channel – Drawing 728-1182.
  - Channel WC7 will be placed downstream of Culvert 1 – Drawing 728-1181.

Permanent Run-off Features

- Stage IIIA
  - A Type Q channel was built along the eastern perimeter, running parallel to the Type AA run-on diversion channel for ultimate discharge to Existing Main Site Collector Channel – Drawing Nos. 728-1181 and 728-1182.
  - Type U channel was built downstream of the Type Q channel – Drawing Nos. 728-1181 and 728-1182.
  - Slope drain, SD1, conveys run-off from the eastern benched area to the Type U channel – Drawing Nos. 728-1181 and 728-1182.
- Stage IIIC
  - Type L channel will collect run-off from the high point and along the western side of the development area to Channel WC5 – Drawing Nos. 728-1181 and 728-1182.

- Slope drain SD4 will divert run-off from the uppermost western portion of the vegetated benched area to the Type B diversion channel – Drawing Nos. 728-1181 and 728-1182.
- Type A channel will divert run-on and run-off from soil-covered and vegetated areas from the western highpoint of the working area to the Type B channel for discharge through an existing culvert and the existing Stage II Western Diversion Channel for ultimate discharge into an unnamed tributary to the Conemaugh River – Drawing Nos. 728-1181 and 728-1182.
- Type B channel will divert run-on and run-off from soil-covered and vegetated areas from the western side of the working area to an existing culvert and the existing Stage II Western Diversion channel for discharge into an unnamed tributary to the Conemaugh River – Drawing Nos. 728-1181 and 728-1182.

- Stage IIID
  - Type U channel will be modified to discharge to a dissipater basin – Drawing Nos. 728-1181 and 728-1182.
  - Type W channel will be constructed south of the development area and discharge directly to the Main Collector Channel – Drawing Nos. 728-1181 and 728-1182.
  - Type NN channel will convey flow from Culvert 7-T to discharge to a dissipater basin – Drawing Nos. 728-1181 and 728-1182.
- Stage IIIE
  - Type LL channel will convey run-off from the southwestern portions of the development area to the Type N channel – Drawing No. 728-1181.
  - Type N channel will convey run-off from southern portion of development area through Culvert 2 for ultimate discharge to a dissipater basin Drawing No. 728-1181.
  - Channel HR5 will convey run-off north-west along the haul road to Channel HR4 – Drawing No728-1181.
  - Culvert 2 will convey run-off from the Type N channel to the Type NN channel – Drawing No. 728-1181.
  - Culvert 3 will convey flow across the haul road – Drawing No. 728-1181.
  - Slope Drain SD3 will drain the south-western benched area to the Type N channel – Drawing No. 728-1181.

2.2.1.3 During Stage II Capping Activities

The Stage II capping was designed to utilize existing infrastructure so that few permanent drainage features are required to be installed. Some temporary drainage features for use in managing construction stormwater during phases of the Stage II capping activities were installed and either have already been removed or will be removed upon completion of the Stage II capping activities. These temporary features function for control of construction stormwater and not for management of run-off from or run-on to the active area; as such, these temporary features are not detailed within this RRCSP.

As part of the Stage II capping activities, the only permanent drainage feature is the Phase 1/6 Slope Drain which receives runoff from the Phase 6 north drainage area. The Phase 1/6 Slope Drain was designed for the 25-year, 24-hour storm event. Another slope drain (Phase 1 Slope Drain) was replaced in-kind, so that the new feature matches the design of the former feature. The slope drain replaced in-kind is not summarized herein.

Should any additional, permanent drainage features be identified during subsequent phases of the Stage II capping, this RRCSP will be modified to include a description of these features.

2.2.2 Surge Pond Design

The existing Surge Pond is permitted by PADEP under Water Quality Management Permit No. 3284211, NPDES Permit No. PA0005011, and Bureau of Dams and Waterway Management Permit No. D32-083. The Surge Pond is designed to store the run-off from two 10-year, 24-hour storm events separated by a 24-hour dry period from the maximum drainage area of 393 acres considering the outflow to the treatment plant. The Pond's principal outlet is to the Disposal Site Treatment Plant and has a capacity to handle the peak inflow from a 100-year, 24-hour storm which meets the requirements in Section 257.81 of the CCR Rule. The existing Surge Pond was designed in accordance with applicable State and Local Erosion and Sediment Control Regulations.

2.3 Plan Amendment

The initial RRCSP can be amended (257.81(c)(2)) at any time and must be amended whenever there is a change in conditions that would substantially affect the written plan. In addition, a plan must be prepared every five years (257.81(c)(4)). Revision 2 (October 2026) of the RRCSP was created by reviewing the initial RRCSP, Revision 1 of the RRCSP, and Stage II capping documentation to update relevant portions accordingly to reflect current conditions at the disposal site. The RRCSP must be included into the facilities operating record (257.105(g)(3)).

3.0 References

GAI Consultants, Inc., Conemaugh Station Ash/Refuse Disposal Site Stage IIIA Liner Construction, October 2015.

GAI Consultants, Inc., Conemaugh Generating Station Ash/Refuse Disposal Site Run-on and Run-off Control System Plan, Revised September 2021.

GAI Consultants, Inc., Conemaugh Generating Station Ash/Refuse Disposal Site Phase 1 Capping Drawings Rev 1, April 2023.

GAI Consultants, Inc., Conemaugh Generating Station Ash/Refuse Disposal Site Phase 2 Capping Drawings, January 2024.

GAI Consultants, Inc., Conemaugh Generating Station Ash/Refuse Disposal Site Phase 3 Capping Drawings, October 2024.

GAI Consultants, Inc., Conemaugh Generating Station Ash/Refuse Disposal Site Phase 4 Capping Drawings, October 2025.

Major Permit Modification Residual Waste Permit # 300876, Stage III – Conemaugh Station Ash/Refuse Disposal Site, March 2014 (revised December 2014).

Pennsylvania Department of Environmental Protection, Residual Waste Major Permit Modification, Conemaugh Station Disposal Site, Form I Soil Erosion and Sedimentation Controls, May 1997.

United States Environmental Protection Agency (USEPA) 40 CFR Parts 257 and 261 Hazardous and Solid Waste Management Disposal System; Disposal of Coal Combustion Residual from Electric Utilities, Final Rule April 2015.

DRAWINGS

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MATCH LINE DWG. NO. 42-E-0209 SH. 2 OF 2

TYPE Z CHANNEL
TYPE Y CHANNEL
TYPE A CHANNEL
CHANNEL TYPE E
CHANNEL TYPE F
CHANNEL TYPE E
END TYPE F CHANNEL
MAIN SITE COLLECTOR CHANNEL
CHANNEL TYPE H
EAST DIVERSION CHANNEL
WEST DIVERSION CHANNEL
END TYPE G CHANNEL
TYPE R CHANNEL
TYPE C CHANNEL
END TYPE R CHANNEL
END TYPE C CHANNEL
TYPE K CHANNEL
SOIL STOCKPILE
TYPE D CHANNEL
STILLING BASIN
PROPOSED ACCESS ROAD
TYPE G CHANNEL
CONSTRUCTION STAGING AREA & MATERIAL STOCKPILES
EARTH FILL DIKE
SOIL STOCKPILE
EXISTING CULVERT TO BE UPGRADED (INSTALL 2 - PROPOSED 72" ø PIPES.)
N 391,883.24
E 1,632,665.18
(TOE OF STAGE II)
PLUG EXISTING 72" ø PIPE INSTALL 42" ø PIPE
UNSUITABLE MATERIAL STOCKPILE
Drl Pile
UPGRADE EXIST. CHANNEL FOR DETAILS SEE DWGS. 42-E-0244 & 0245.
EXISTING EQUALIZATION POND TO BE ABANDONED AND REMOVE POND EMBANKMENT REGRADED AS SHOWN ON C/L SHEET #2 ASSOC. DWGS. SEE NOTE 2.
EXISTING TREATMENT PLANT TO BE ABANDONED AND REMOVED
SEE NOTE 2
PAVED HAUL ROAD FROM GENERATING STATION
END TYPE H CHANNEL
EXISTING ROAD TO BE ABANDONED
EXISTING TREATMENT PONDS TO BE ABANDONED ALL FILLED IN
SEE NOTE 2
PROPOSED 18 ACRE-FT EQUALIZATION POND
PROPOSED WASTE TREATMENT PLANT
PROPOSED THICKENER

N 393,000
N 392,000
N 391,000
N 390,000
N 389,000
N 388,000
E 1,632,000
E 1,633,000
E 1,634,000
E 1,635,000
E 1,636,000

LEGEND

- OFF-SITE DIVERSION CHANNEL
- ON-SITE COLLECTOR CHANNEL
- HIGH POINT
- DIRECTION OF FLOW
- 1235 PROPOSED CONTOURS
- 1235 EXISTING DISPOSAL PILE CONTOURS
- STREAM OR WATER SURFACE
- TOP OF SLOPE
- TOE OF SLOPE
- EXISTING TOP OF SLOPE
- EXISTING TOE OF SLOPE
- CULVERT LOCATION
- DISPOSAL PILE INTERFACE BETWEEN STAGE I AND II AND STAGE II AND III DEVELOPMENT.
- MAIN LEACHATE COLLECTION PIPE

GENERAL NOTES:

1. STAGE I EXISTING CONTOURS TAKEN FROM PENELEC DWG. NO. 1198-A AND DWG. NO. 42-D-0066
2. SEE PENELEC TREATMENT PLANT PERMIT APPLICATION # 3284211 DATED 12/17/84 FOR ADDITIONAL TREATMENT PLANT INFORMATION.
3. SITE CONFIGURATION SHOWN IS CONCEPTUAL, AND MAY CHANGE DURING DETAILED DESIGN.
4. CHANNEL LOCATIONS ARE APPROXIMATE, AND MAY CHANGE DURING DETAILED DESIGN.

DATE OF PHOTOGRAPHY: 12/23/83
PHOTO REVISED DATE OF PHOTOGRAPHY: 10/4/84
FIELD EDITED: OCTOBER, 1984

200 0 200 400 600

JAMES EDWIN WIEGE
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA

James Edwin Wiege 7/8/85

EXHIBIT 11.12

SHEET 1 OF 2

GAI CONSULTANTS, INC.
Engineers • Geologists • Planners
Environmental Specialists
570 Beatty Rd. • Monroeville, Pa. 15146
412-856-9000

PROJ. NO. 82-134
DWG. NO. 82-134-F86

JOHNSTOWN, PENNA.
PENNSYLVANIA ELECTRIC COMPANY
GENERATION DIV. ENG'R.

STATION
CONEMAUGH STATION
DISPOSAL SITE
STAGE II DEVELOPMENT PLAN
PA. D.E.R. PERMIT DRAWING 2

DRAFTING		ENGINEER APPROVALS				APPD
MADE	CHECKED	AREA	CIVIL	ELEC.	MECH.	DEPT. HD.
DATE 12/7/84	DATE 12/7/84		DATE 7/8/85			DATE 7/8/85

SCALE	WORK ORDER	DRAWING NUMBER	REV.
1"=200'	0420-00096-501	42-E-0209 SH.1 of 2	3

FOLDER Z474 CASE 6011

REV.	DATE	REVISIONS	CHECKED	APPROVED
1	12-9-85	ADDED CHANNEL TYPES Y & Z	JHJ	DMP
2	1-23-86	REVISED TITLE	GV	JHJ
3	3-26-86	RELOCATED ACCESS ROAD TO CONSTRUCTION STAGING AREA, CHANGED SIZE OF CULVERT UNDER ACCESS ROAD, ADDED MAIN SITE COLLECTOR CHANNEL, ADDED TYPE K CHANNEL, WEST DIV. CHANNEL, ADDED 18" ø PIPE, REVISED DRAINAGE SHEET INFLOW, REVISED DRAINAGE ALONG STAGE II TOE	JHJ	DMP

4200-46

N 398,000
N 397,000
N 396,000
N 395,000
N 394,000
N 393,000
E 1630,000
E 1631,000
E 1632,000
E 1633,000
E 1634,000
E 1635,000
E 1636,000
E 1637,000

TYPE 'H' CHANNEL

STAGE I

STAGE I AND STAGE II INTERFACE

EXISTING 6'H x 12'W R. CONC. BOX CULVERT

BEGIN TYPE B DIVERSION CHANNEL

BEGIN TYPE AA COLLECTION CHANNEL

STAGE II

EAST VALLEY

TYPE A CHANNEL

TYPE A CHANNEL

END TYPE AA COLLECTION CHANNEL

TYPE BB COLLECTION CHANNEL

END TYPES B AND BB CHANNELS

TYPE CC COLLECTION CHANNEL

TYPE C DIVERSION CHANNEL

EXISTING 30"ø CMP. AND PROPOSED 48"ø CMP. CULVERTS

SLOPE DRAIN

TYPE A CHANNEL

MATCH LINE DWG. Nº 42-E-0209 SH. 1 of 2

DIVERSION CHANNEL AS BUILT BELOW THIS POINT NOV., 1989

COLLECTION CHANNEL AS BUILT BELOW THIS POINT NOV., 1989

NOTE:
FOR LEGEND AND GENERAL NOTES SEE DWG. Nº 42-E-0209 SH. 1 of 2

DATE OF PHOTOGRAPHY: 12/23/83
PHOTO REVISED DATE OF PHOTOGRAPHY: 10/4/84
FIELD EDITED: OCTOBER, 1984

200 0 200 400 600

JAMES EDWIN NIECE
ENGINEER
No. 16861
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL

James Edwin Niece 7/8/85

JOSEPH D. PHILLIPS
ENGINEER
No. 39113
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL

EXHIBIT 11.12
SHEET 2 OF 2

GAI CONSULTANTS, INC.
Engineers • Geologists • Planners
Environmental Scientists
Monroeville, Pittsburgh
Harrisburg, Philadelphia

PROJ. NO. 82-134
DWG. NO. 82-134-F87

JOHNSTOWN PENNA.
PENNSYLVANIA ELECTRIC COMPANY
GENERATION DIV. ENG'R.

STATION
CONEMAUGH STATION
DISPOSAL SITE
STAGE II DEVELOPMENT PLAN
PA. DER. PERMIT DRAWING

DRAFTING		ENGINEER APPROVALS				APP'D
MADE	CHECKED	ARCH.	CIVIL	ELEC.	MECH.	DEPT. HD.
BHP 6/18/85	ASP 7/1/85		HCP 7/3/85			JDP 7/3/85

SCALE	WORK ORDER	DRAWING NUMBER	REV.
1"=200'	0420-00066-501	42-E-0209 SH. 2 of 2	3

REVISIONS

NO.	DATE	MADE	CHECKED	APPROVED
3	7/3/85	WDP	TMC	
2	7/3/85	WDP	TMC	
1	7/3/85	WDP	TMC	

REVISED TITLE
REVISED DRAWING ACCORDINGLY
ADDED TYPE AA AND BB EAST COLLECTION CHANNELS AND DELETED TYPE B WEST DIVERSION CHANNEL
REVISED TYPE AA AND BB COLLECTION CHANNELS AND DIVERSION CHANNEL DESIGNATIONS

423116
MEN

F.B. 512 24-74 CAL. 2012

SH. E-728-1181

EXISTING CHANNEL

CHANNEL SD4 (SLOPE DRAIN)

BEGIN TYPE B CHANNEL

STAGE II AND STAGE III TOP OF PILE INTERFACE

EXISTING CHANNEL STAGE II DEVELOPMENT

EXISTING CHANNEL STAGE II DEVELOPMENT

BEGIN CHANNEL HR5

EXISTING CHANNEL

BEGIN TYPE Q CHANNEL

EXISTING CHANNEL

STAGE III PERMANENT EDGE OF LINER LOCATION SEE DETAIL 3/1185

STAGE III PERMANENT EDGE OF LINER LOCATION SEE DETAIL 5/1185

TYPE AA CHANNEL

BEGIN TYPE T CHANNEL

CULVERT 1C (SEE NOTE 2)

EXISTING CULVERT 1B (SEE NOTE 2)

EXISTING CULVERT 1A FOR EAST VALLEY STREAM

BEGIN TYPE A CHANNEL

H.P.

BEGIN TYPE L CHANNEL

CHANNEL SD1 (SLOPE DRAIN)

BEGIN CHANNEL HR4

CULVERT 3

STAGE III

BEGIN TYPE U CHANNEL

PROPOSED EAST VALLEY STREAM RELOCATION

BEGIN TYPE X CHANNEL

STAGE III PERMANENT EDGE OF LINER LOCATION SEE DETAIL 5/1185

EXISTING STOCKPILE AREA

BEGIN TYPE LL CHANNEL

EXISTING 230 KV TRANSMISSION LINE R/W

STAGE III PERMANENT EDGE OF LINER LOCATION SEE DETAIL 5/1185

CULVERT 5

CHANNEL SD3 (SLOPE DRAIN)

BEGIN TYPE XX CHANNEL

PROPOSED EAST VALLEY STREAM RELOCATION

PROPOSED STOCKPILE ACCESS ROAD

BEGIN TYPE N CHANNEL

PROPOSED REALIGNMENT OF 230 KV TRANSMISSION LINE R/W

SEE NOTE 10

DISSIPATOR BASIN U

CULVERT INLET DROP STRUCTURE SEE DETAIL 7/1189

TYPE W CHANNEL

EXISTING MAIN SITE COLLECTOR CHANNEL

TYPE M CHANNEL

DISSIPATOR BASIN NN

SEE NOTE 8

SEE NOTE 10

CULVERT 2

MW-11

MW-10

MW-9

MW-24

TYPE NN CHANNEL

CULVERT 6A SEE NOTE 10

EXISTING WEST HAUL ROAD DIVERSION CHANNEL

EXISTING EAST DIVERSION CHANNEL

EXISTING DISPOSAL SITE SURGE POND

MW-6

MW-5

EXISTING PAVED HAUL ROAD FROM STATION

MW-16

MW-15

MW-7

EXISTING WASTEWATER TREATMENT PLANT (SEE NOTE 9)

LEGEND

- EXISTING GRADE CONTOUR
- 1300 FINAL PILE CONTOUR
- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING STREAM
- EXISTING COLLECTION CHANNEL
- EXISTING DIVERSION CHANNEL
- PROPOSED COLLECTION CHANNEL
- PROPOSED DIVERSION CHANNEL
- PROPOSED COLLECTION SLOPE DRAIN
- PROPOSED DIVERSION SLOPE DRAIN
- MW-9 MONITORING WELL
- 1/1185 DETAIL IDENTIFICATION NUMBER / DRAWING NUMBER ON WHICH DETAIL IS DRAWN
- DETAIL 1/1179 DETAIL IDENTIFICATION NUMBER / DRAWING NUMBER ON WHICH DETAIL IS REFERENCED

NOTES:

1. EXISTING TOPOGRAPHY IS COMPRISED OF PHOTOGRAMMETRIC DIGITAL MAPPING PERFORMED BY SAMCO DATED MAY 3, 2007; GENON PROVIDED TOPOGRAPHY OF STAGE II PILE DEVELOPMENT ON AUGUST 13, 2013; PROPOSED EAST VALLEY STREAM ENCLOSURE AND RELOCATION CONTOURS; AND PROPOSED FINAL STAGE II PILE DEVELOPMENT CONTOURS.
2. CULVERT 1B IS AN EXISTING CULVERT THAT WILL BE REPLACED AS PART OF THE EAST VALLEY STREAM RELOCATION. CULVERT 1C WILL BE CONSTRUCTED AS PART OF THE EAST VALLEY STREAM RELOCATION AND THE TYPE AA CHANNEL WILL BE DIRECTED TO IT.
3. FINAL SITE CONFIGURATION IS PRELIMINARY AND MAY CHANGE SLIGHTLY DURING DETAILED DESIGN.
4. CHANNEL LOCATIONS ARE APPROXIMATE AND MAY CHANGE SLIGHTLY DURING DETAILED DESIGN.
5. BENCH SLOPES ARE A MINIMUM OF 1% AND A MAXIMUM OF 3%.
6. FOR CHANNEL AND CULVERT SCHEDULES, SEE DRAWING NO. E-728-1189.
7. DISSIPATER BASIN U WILL BE:
   - 19' L x 15' W x 5.5' D CONCRETE TYPE II U.S. BUREAU OF RECLAMATION BASIN OR
   - 23' L x 3' W (UPSTREAM), 19' W (DOWNSTREAM) U.S. DEPARTMENT OF TRANSPORTATION R-6 RIPRAP BASIN

   DISSIPATOR BASIN NN WILL BE:
   - 16' L x 15' W x 4.5 D CONCRETE TYPE II U.S. BUREAU OF RECLAMATION BASIN OR
   - 21' L x 5' W (UPSTREAM), 19' W (DOWNSTREAM) U.S. DEPARTMENT OF TRANSPORTATION R-6 RIPRAP BASIN
8. EXTEND UNIFORM SECTION MAT CHANNEL LINING OF TYPE M CHANNEL INTO EXISTING WEST HAUL ROAD DIVERSION CHANNEL AND PROVIDE RIPRAP PROTECTION IN THE CHANNEL DIRECTLY DOWNSTREAM.
9. SEE PENELEC TREATMENT PLANT PERMIT APPLICATION #3284211 FOR ADDITIONAL TREATMENT PLANT INFORMATION.
10. UPON STAGE III CLOSURE (TENTATIVELY SCHEDULED FOR 2041) PERIMETER COLLECTION CHANNELS WILL BE DIVERTED INTO THE EXISTING DIVERSION CHANNELS, SIMILAR TO DIVERSION CHANNELS M AND XX. CULVERT 6A WILL BE REMOVED OR REPLACED WITH CULVERT 6B.

THIS DRAWING SUPERSEDES DRAWING 42-E-0210

FOR PERMIT ONLY

SCALE: 1" = 200'

200 0 200 400

gai consultants
Pittsburgh Office
385 East Waterfront Drive
Homestead, PA 15120
412-476-2000

nrg

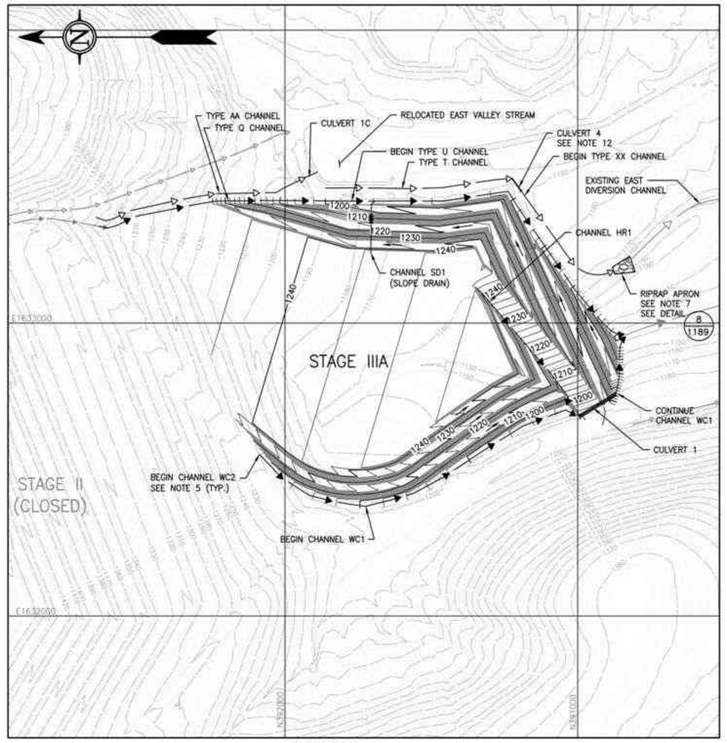
CONEMAUGH STATION
ASH / REFUSE DISPOSAL SITE

STAGE III
FINAL PILE DEVELOPMENT PLAN
RESIDUAL WASTE PERMIT DRAWING

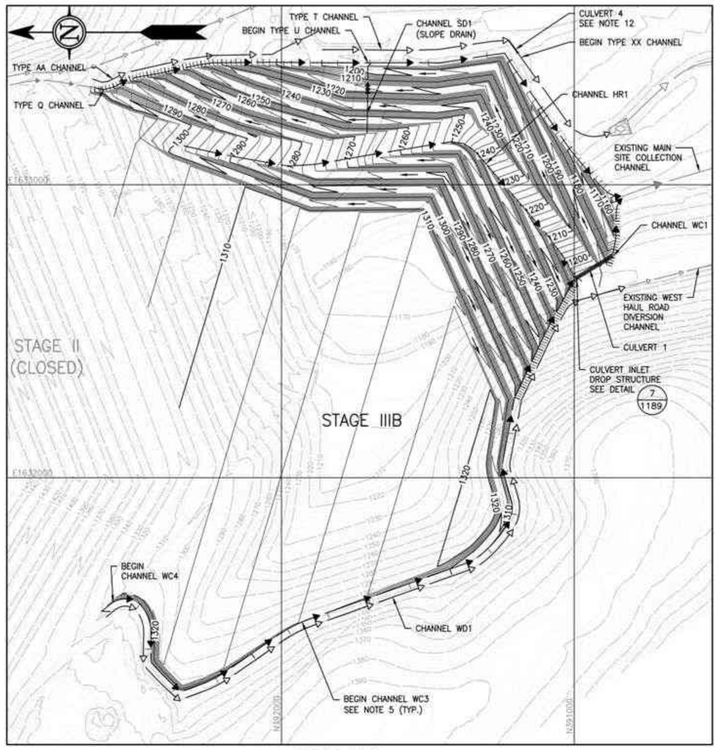
DRAWN: 3/11/2014	DMM	DRAWING NUMBER
CHECKED 3/11/2014	JFS	E-728-1181
APPROVED 3/20/2014	JMJ	SHEET: 1 OF 1
SIZE: E 34X44		REV: B
DISCIPLINE: CIVIL	SCALE: AS SHOWN	FILE: C130770-00-001-00-E-F004

NO.	DATE	REVISION	BY	CHK.	APP.
B	12/10/2014	ADDED SECTION D-D	EJM	KRH	JMJ

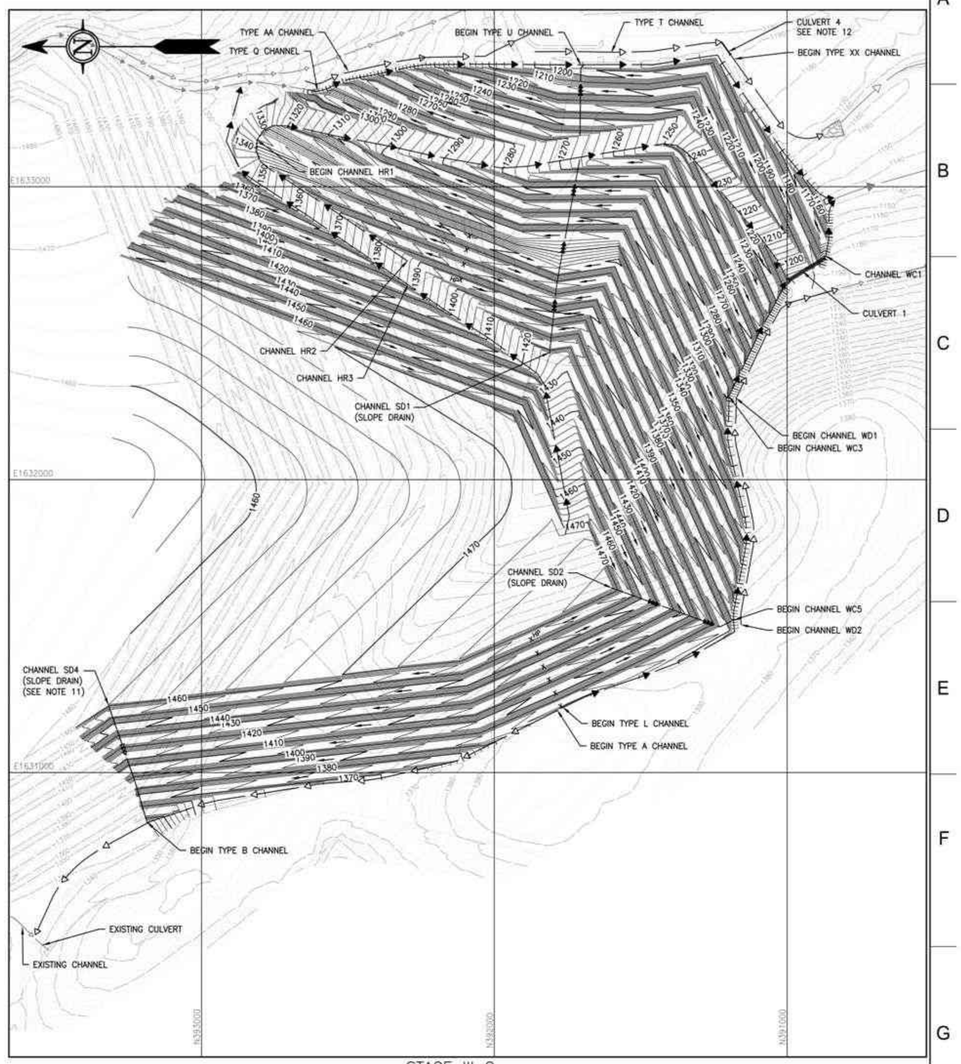
GAI CAD FILE PATH: Z:\Energy\2013\C130770.00 - Conemaugh Stage III\CAD\Production Drawings\C130770-00-001-00-E-F004.dwg PLOTTED ON: 12/8/14 PLOTTED BY: Joe Neiman PLOT FILE: NECCE.stb



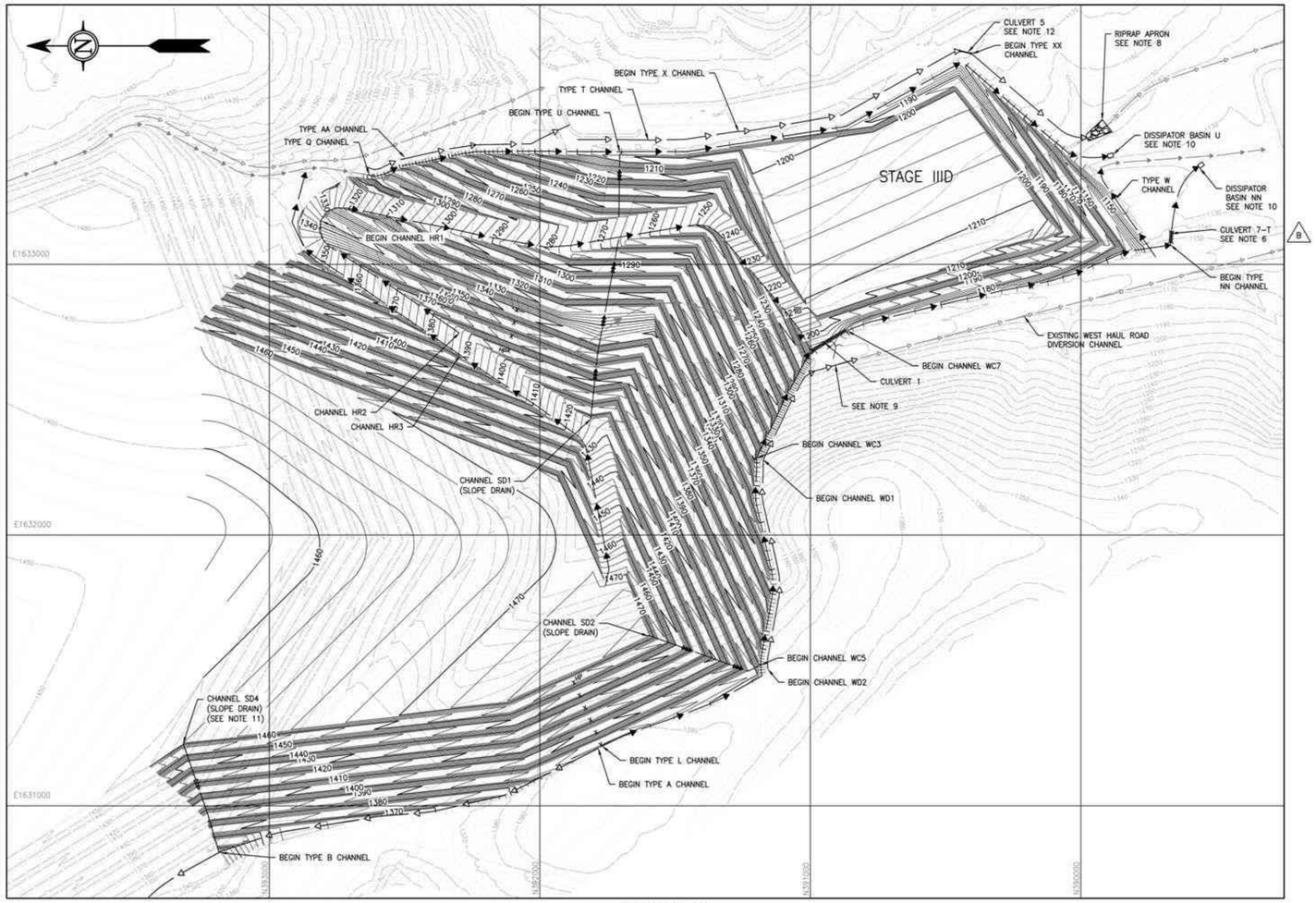
STAGE III A



STAGE III B



STAGE III C



STAGE III D

NOTES:

1. EXISTING TOPOGRAPHY IS COMPRISED OF PHOTOGRAMMETRIC DIGITAL MAPPING PERFORMED BY SAMCO DATED MAY 3, 2007; GENON PROVIDED TOPOGRAPHY OF STAGE II PILE DEVELOPMENT ON AUGUST 13, 2013; PROPOSED EAST VALLEY STREAM ENCLOSURE AND RELOCATION CONTOURS; AND PROPOSED FINAL STAGE II PILE DEVELOPMENT CONTOURS.
2. STAGING CONFIGURATION IS PRELIMINARY AND MAY CHANGE DURING DETAILED DESIGN.
3. CHANNEL LOCATIONS ARE APPROXIMATE AND MAY CHANGE DURING DETAILED DESIGN
4. BENCH SLOPES ARE A MINIMUM OF 1% AND A MAXIMUM OF 3%.
5. FOR CHANNEL AND CULVERT SCHEDULES, SEE DRAWING NO. E-728-1189.
6. FUTURE TEMPORARY CULVERT 7-T FOR STAGE IIIE LINER INSTALLATION FOR CONSTRUCTION OF TEMPORARY ACCESS ROAD. (B)
7. TEMPORARY RIPRAP APRON WILL BE USED FOR STAGE IIIA THROUGH IIIC.
8. PERMANENT RIPRAP APRON.
9. EXTEND UNIFORM SECTION MAT CHANNEL LINING OF CHANNEL WD 1 INTO EXISTING WEST HAUL ROAD DIVERSION CHANNEL AND MAINTAIN RIPRAP PROTECTION IN THE CHANNEL DIRECTLY DOWNSTREAM.
10. DISSIPATOR BASIN U WILL BE:
    - 19' L x 15' W x 5.5' D CONCRETE TYPE II U.S. BUREAU OF RECLAMATION BASIN
      OR
    - 23' L x 3' W (UPSTREAM), 19' W (DOWNSTREAM) U.S. DEPARTMENT OF TRANSPORTATION R-6 RIPRAP BASIN

    DISSIPATOR BASIN NN WILL BE:
    - 16' L x 15' W x 4.5 D CONCRETE TYPE II U.S. BUREAU OF RECLAMATION BASIN
      OR
    - 21' L x 5' W (UPSTREAM), 19' W (DOWNSTREAM) U.S. DEPARTMENT OF TRANSPORTATION R-6 RIPRAP BASIN
11. SLOPE DRAIN SD4 IS TO RECEIVE ONLY NON-CONTACT WATER FROM RECLAIMED REVEGETATED SURFACES.
12. CULVERTS 4 AND 5 ARE TO ALLOW A POTENTIAL CONNECTION OF THE PERIMETER ACCESS ROAD TO A MAINTENANCE ROAD ALONG THE WEST SIDE OF THE EAST VALLEY STREAM RELOCATION.

LEGEND

- EXISTING GRADE CONTOURS
- 1300 FINAL PILE CONTOURS
- EXISTING DIVERSION CHANNEL
- EXISTING COLLECTION CHANNEL
- PROPOSED DIVERSION CHANNEL
- PROPOSED COLLECTION CHANNEL
- SLOPE DRAIN

FOR PERMIT ONLY

SCALE: 1" = 200'
200 0 200 400

gai consultants
Pittsburgh Office
385 East Waterfront Drive
Homestead, PA 15120
412-476-2000

nrg

CONEMAUGH STATION
ASH / REFUSE DISPOSAL SITE

STAGE III
PILE DEVELOPMENT PHASING PLAN
RESIDUAL WASTE PERMIT DRAWING

DRAWN: 3/11/2014	DMM	DRAWING NUMBER
CHECKED 3/11/2014	JFS	E-728-1182
APPROVED 3/20/2014	JMJ	SHEET: 1 OF 1
SIZE: E 34X44		REV: B
DISCIPLINE: CIVIL	SCALE: AS SHOWN	FILE: C130770-00-001-00-E-F005

NO.	DATE	REVISION	BY	CHK.	APP.
B	12/10/2014	LABELED CULVERT 7-T	DMM	KMB2	JMJ

GAI CAD FILE PATH: Z:\Energy\2013\C130770.00 - Conemaugh Stage III\CAD\Production Drawings\C130770-00-001-00-E-F005.dwg PLOTTED ON: 12/9/14 PLOTTED BY: Ed Mayhood PLOT FILE: NEECEF.stb



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY LINE
- TRANSMISSION LINE RIGHT-OF-WAY
- PERMIT BOUNDARY
- PHASE 1 LIMIT OF LINER
- P-4 — 4" DIA. BENCH COLLECTION PIPE
- P-6 — 6" DIA. BENCH COLLECTION PIPE
- COLLECTION PIPE TRANSITION
- P1 — PIPE CONSTRUCTION POINT
- 5 / 3160 — DETAIL # / REFERENCE DRAWING #

BENCH PIPING CONSTRUCTION NOTES:

1. FOR 4-INCH DIAMETER BENCH PIPES, THE INSTALLED LENGTH SHALL NOT EXCEED 600 FEET ON A BENCH. AFTER 600-FEET, INSTALL 6-INCH DIAMETER PIPES FOR THE REMAINDER OF THE BENCH RUN.
2. REFER TO THE CONSTRUCTION POINT TABLES ON DRAWING 744-3159 FOR PROPOSED BENCH PIPING LOCATION POINTS.

REFERENCES:

1. HORIZONTAL CONTROL IS BY A SURVEYED TIE TO THE PENNSYLVANIA STATE COORDINATE SYSTEM, NAD 1927, SOUTH ZONE. VERTICAL CONTROL IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM.
2. EXISTING TOPOGRAPHY IS COMPILED OF PUBLICLY AVAILABLE LIDAR OBTAIN FROM PASDA DATED 2019 AND 2022, ALOR SURVEY DATA DATED 04/04/2022, AND 03-30-2023 SURVEY FROM ARROW SURVEYING, LLC.

NORTH

SCALE: 1" = 100'

100 0 100 200

gai consultants

CONEMAUGH STATION

CONEMAUGH STATION DISPOSAL SITE
PHASE 1 CAPPING
BENCH PIPING PLAN

DRAWN: 01/20/2023	JSLODOWICK	DRAWING NUMBER	
CHECKED	MCORTESE	744-3157	
APPROVED	RHARRIS	SHEET: 7 OF 15	
SIZE: 30x42		REV: 1	
DISCIPLINE: CIVIL	SCALE: AS SHOWN	FILE: 744-3157.DWG	

NO.	DATE	REVISION	BY	CHK.	APP.
1	04/03/2023	REVISED PHASE 1 EXISTING, SUBGRADE, FINAL COVER SURFACES	JDS	KRH	KRH
0	02/02/2023	ISSUED FOR CONSTRUCTION	JDS	KRH	KRH

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