PHASE V EXPANSION

POST - CONSTRUCTION STORMWATER MANAGEMENT PLAN

Bethlehem Landfill Company

STORMWATER MANAGEMENT FACILITY MAINTENANCE NOTES

STORMWATER FACILITY OWNERSHIP

UPON COMPLETION OF THE PROJECT, THE OWNER WILL BE RESPONSIBLE FOR PERFORMING ANY PERIODIC OR ONGOING MAINTENANCE OF PERMANENT STORMWATER MANAGEMENT FACILITIES.

PERFORMANCE REQUIREMENTS

IF FOR ANY REASON THE DESIGNED FACILITIES OR CONTROL MEASURES DO NOT PERFORM AS REQUIRED, THE CONTRACTOR AND/OR OWNER SHALL ADJUST AND/OR MODIFY THE STORMWATER FACILITIES TO MEET THE APPLICABLE PERFORMANCE STANDARDS. MODIFICATIONS TO PERMANENT STORMWATER FACILITIES SHALL BE SUBJECT TO APPROVAL BY THE TOWNSHIP. MATERIALS AND DETAILS SPECIFIED SHALL NOT BE ALTERED DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL BY LOWER SAUCON TOWNSHIP COUNCIL.

MAINTENANCE REQUIREMENTS

STORMWATER BASINS: INSPECTION AND MAINTENANCE OF STORMWATER BASINS SHALL OCCUR QUARTERLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. FACILITY BERMS SHALL BE INSPECTED FOR ANY SIGNS OF EROSION AND/OR NON-VEGETATED AREAS, POTENTIAL AREAS OF WEAKNESS, ANIMAL BURROWS, AND TAMPERING. ANY AREAS OF THE BERM FOUND TO BE INADEQUATE SHALL BE REPAIRED TO ORIGINAL DESIGN SPECIFICATIONS IMMEDIATELY. FACILITY BOTTOMS SHALL BE KEPT FREE OF UNDESIRABLE VEGETATION, SEDIMENT, AND DEBRIS, AND SHALL BE KEPT IN A CLEAN CONDITION. ANY INVASIVE OR NOXIOUS PLANTS SHALL BE PURGED ENTIRELY UPON DETECTION. FACILITY INTERIORS SHALL BE KEPT FREE OF DEBRIS, INCLUDING LITTER, LEAVES, STICKS, GRASS CLIPPINGS AND SEDIMENT. IF SEDIMENT IS REMOVED FROM THE FACILITY IT SHALL BE TAKEN TO A PERMITTED SITE WITH AN APPROVED EROSION CONTROL PLAN. DIBASIN OUTLET STRUCTURES SHALL BE KEPT FREE OF OBSTRUCTIONS AND DEBRIS INCLUDING LITTER, LEAVES, STICKS, GRASS CLIPPINGS, DEAD OR LIVE ANIMALS AND SEDIMENT.

STORMWATER PIPING AND CULVERTS: INSPECTION AND MAINTENANCE OF STORMWATER PIPING AND CULVERTS SHALL OCCUR QUARTERLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. STORMWATER PIPING AND CULVERTS SHALL BE KEPT FREE OF OBSTRUCTIONS AND DEBRIS INCLUDING LITTER, LEAVES, STICKS, GRASS CLIPPINGS, DEAD OR LIVE ANIMALS AND SEDIMENT. ANY RIPRAP APRONS AT PIPE OUTLETS SHALL BE INSPECTED TO ENSURE THAT PROPER EROSION PROTECTION IS IN PLACE. ANY EROSION MUST BE REPAIRED AND WASHED-OUT RIPRAP MUST BE REPLACED TO ORIGINAL DESIGN SPECIFICATIONS. SHOULD RIPRAP WASHOUT OR EROSION OCCUR REGULARLY, THE SITE ENGINEER SHOULD BE CONTACTED TO DETERMINE IF MORE DURABLE OUTLET PROTECTION IS NEEDED, AND TO DESIGN A MORE DURABLE OUTLET PROTECTION AS NEEDED.

STORMWATER INLETS: INSPECTION AND MAINTENANCE OF STORMWATER INLETS SHALL OCCUR QUARTERLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. STORMWATER INLETS SHALL BE KEPT FREE OF OBSTRUCTIONS AND DEBRIS INCLUDING LITTER, LEAVES, STICKS, GRASS CLIPPINGS, DEAD OR LIVE ANIMALS AND SEDIMENT.

GRASS-LINED CHANNELS AND SWALES : INSPECTION AND MAINTENANCE OF SWALES SHALL OCCUR QUARTERLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. CHANNELS AND SWALES SHALL BE MOWED REGULARLY AS NEEDED AND SHALL BE KEPT FREE OF OBSTRUCTIONS AND DEBRIS INCLUDING LITTER, LEAVES, STICKS, GRASS CLIPPINGS, DEAD OR LIVE ANIMALS AND SEDIMENT. CHANNELS SHALL BE MAINTAINED TO THE DESIGN CAPACITY AND DIMENSIONS INDICATED ON THESE PLANS.

PERMANENTLY SEEDED AREAS (NON STORMWATER): INSPECTION AND MAINTENANCE OF PERMANENTLY SEEDED AREAS SHALL OCCUR SEMI-ANNUALLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. AREAS WITH PERMANENT SEEDING MEASURES SHALL BE INSPECTED FOR SIGNS OF EROSION AND/OR AREAS WHERE VEGETATION HAS FAILED AS WELL AS ANY INVASIVE OR NOXIOUS PLANTS. ALL BARE SPOTS SHALL BE RE-SEEDED AND INVASIVE OR NOXIOUS PLANTS SHALL BE PURGED ENTIRELY.

ROCK LINED CHANNELS AND SWALES: INSPECTION AND MAINTENANCE OF ROCK LINED SWALES SHALL OCCUR QUARTERLY, AFTER EVERY MAJOR STORM EVENT, OR MORE OFTEN IF PROBLEMS ARE PRESENT. CHANNELS AND SWALES SHALL BE INSPECTED FOR ROCK STABILITY, SEDIMENT ACCUMULATION AND SCOUR HOLES THROUGHOUT THE LENGTH OF THE CHANNEL. REPAIR CHANNELS BY REPLACING ANY DISPLACED STONES AND REMOVE DEBRIS INCLUDING SEDIMENT. REPAIR ERODED AREAS WITH ROCK RIPRAP AS NEEDED.

DEFINITIONS

MAJOR STORM EVENT: A MAJOR STORM EVENT OR SIGNIFICANT STORM EVENT SHALL BE DEFINED AS A RAINFALL EVENT GREATER THAN 2-INCHES IN MAGNITUDE.

LEHIGH VALLEY PLANNING COMMISSION REVIEW

Reviewed by the Leigh Valley Planning Commission

_____ _____

DATE PLANNER

TOWNSHIP PLANNING COMMISSION RECOMENDATIONS

Recommended for approval by the Lower Saucon Township Planning Commission this

_____day of _____20____.

_____ _____

CHAIRMAN SECRETARY

TOWNSHIP COUNCIL APPROVAL AND TOWNSHIP ENGINEER REVIEW

Approved by the Lower Saucon Township Council this

_____day of _____20____.

SECRETARY COUNCIL PRESIDENT

Reviewed by:

TOWNSHIP ENGINEER

This _____ day of _____20____.

BETHLEHEM LANDFILL COMPANY BEING THE OWNER / EQUITABLE OWNER OF THE LANDS PROPOSED FOR SUBDIVISION LAND DEVELOPMENT PROVIDED HEREIN ACKNOWLEDGE THE STORMWATER MANAGEMENT SYSTEM TO BE A PERMANENT FIXTURE THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY LOWER SAUCON TOWNSHIP.

DAVID PANUCCI _____ SEPTEMBER 11, 2023

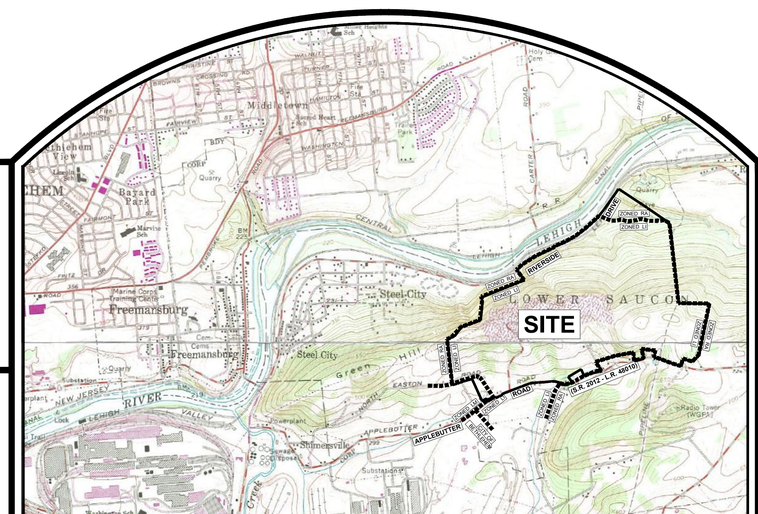
OWNER / TITLE DATE

SEPTEMBER 11, 2023

LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED UPON SURFACE EVIDENCE AND EXISTING DRAWINGS AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE BY BYERS & RUNYON SURVEYING, CONTRACTOR SHOULD CONTACT THE PA. ONE CALL SYSTEM AT (1-800-242-1776) PRIOR TO ANY EXCAVATION AS REQUIRED BY PA. ACT 38 (1991)

LOWER SAUCON TWP.

NORTHAMPTON COUNTY



LOCATION MAP | N | SCALE: 1" = 2,000'

OWNER / APPLICANT

BETHLEHEM LANDFILL COMPANY
2335 APPLEBUTTER ROAD
BETHLEHEM, PA 18015

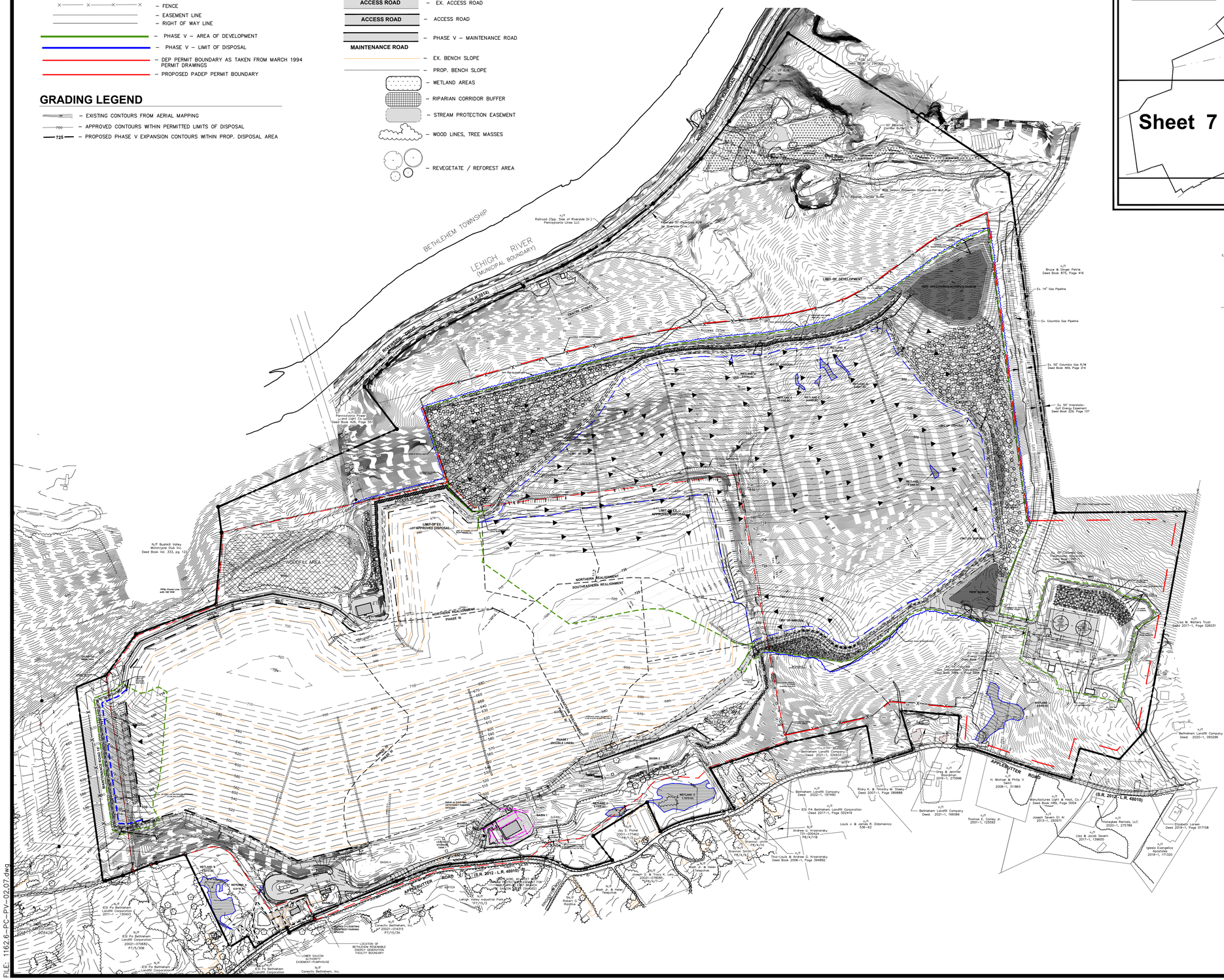
Bethlehem Landfill Company

PREPARED BY:

martin and martin, Inc.
37 South Main Street • Suite A
Chambersburg, Pennsylvania 17201
phone: (717) 264-6759

TABLE OF CONTENTS

FILE: 1162.6 1162.6-PC-PV-01.dwg



KEY / LEGEND

- LIMIT OF DISPOSAL (DOUBLE LINER)
- CELL DIVISION
- ADJOINING PROPERTY LINE
- LANDFILL PROPERTY LINE (505.1648 ACRES PER FUTURE LOT CONSOLIDATION)
- POWER LINE R/W
- OVERHEAD UTILITY POLE
- FENCE
- EASEMENT LINE
- RIGHT OF WAY LINE
- PHASE V – AREA OF DEVELOPMENT
- PHASE V – LIMIT OF DISPOSAL
- DEP PERMIT BOUNDARY AS TAKEN FROM MARCH 1994 PERMIT DRAWINGS
- PROPOSED PADEP PERMIT BOUNDARY
- PROPOSED EDGE OF WOODLANDS
- EX. LANDSCAPING
- PROPOSED PHASE V STORMWATER MANAGEMENT AREA
- ACCESS ROAD – EX. ACCESS ROAD
- ACCESS ROAD – ACCESS ROAD
- MAINTENANCE ROAD – PHASE V – MAINTENANCE ROAD
- EX. BENCH SLOPE
- PROP. BENCH SLOPE
- WETLAND AREAS
- RIPARIAN CORRIDOR BUFFER
- STREAM PROTECTION EASEMENT
- WOOD LINES, TREE MASSES
- REVEGETATE / REFOREST AREA

GRADING LEGEND

- 580 – EXISTING CONTOURS FROM AERIAL MAPPING
- 700 – APPROVED CONTOURS WITHIN PERMITTED LIMITS OF DISPOSAL
- 725 – PROPOSED PHASE V EXPANSION CONTOURS WITHIN PROP. DISPOSAL AREA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOSEPH MICHAEL McDOWELL
NO.057039E

NO.	REVISION	DATE

OVERALL POST -CONSTRUCTION
STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP.
NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company
PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6
DWN. BY: MSH/DB
DSN. BY: JM
CHK. BY: RMB
SCALE: 300' 150' 0 300' 600'
Scale: 1" = 300'

CADD FILE: 1162.6–PC–PV–02,07.dwg
DATE: 09/11/23
SCALE: 1" = 300'
DRAWING NO.
PC - 2

FILE: 1162.6–PC–PV–02,07.dwg

KEY / LEGEND

- LIMIT OF ORIGINAL LANDFILL, PHASE I AND PHASE II DISPOSAL AREAS
- LIMIT OF DISPOSAL PHASE III (DOUBLE LINER)
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- CELL DIVISION
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- LANDFILL PROPERTY LINE (423.328 ACRE CONSOLIDATED DEED)
- DEP PERMIT BOUNDARY AS TAKEN FROM MARCH 1994 PERMIT DRAWINGS
- PP&L POWER LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- BUILDING RESTRICTION LINE (B.R.L.)
- EX. OR PREVIOUSLY APPROVED CONTOURS (500)
- PROPOSED CONTOURS (630)
- OVERHEAD UTILITY POLE
- FENCE
- WETLAND AREAS
- RIPARIAN CORRIDOR BUFFER
- STREAM PROTECTION EASEMENT
- WOOD LINES, TREE MASSES
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- WOODFILL AREA
- NORTHERN REALIGNMENT – MSE BERM
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- MANHOLE (PROPOSED)
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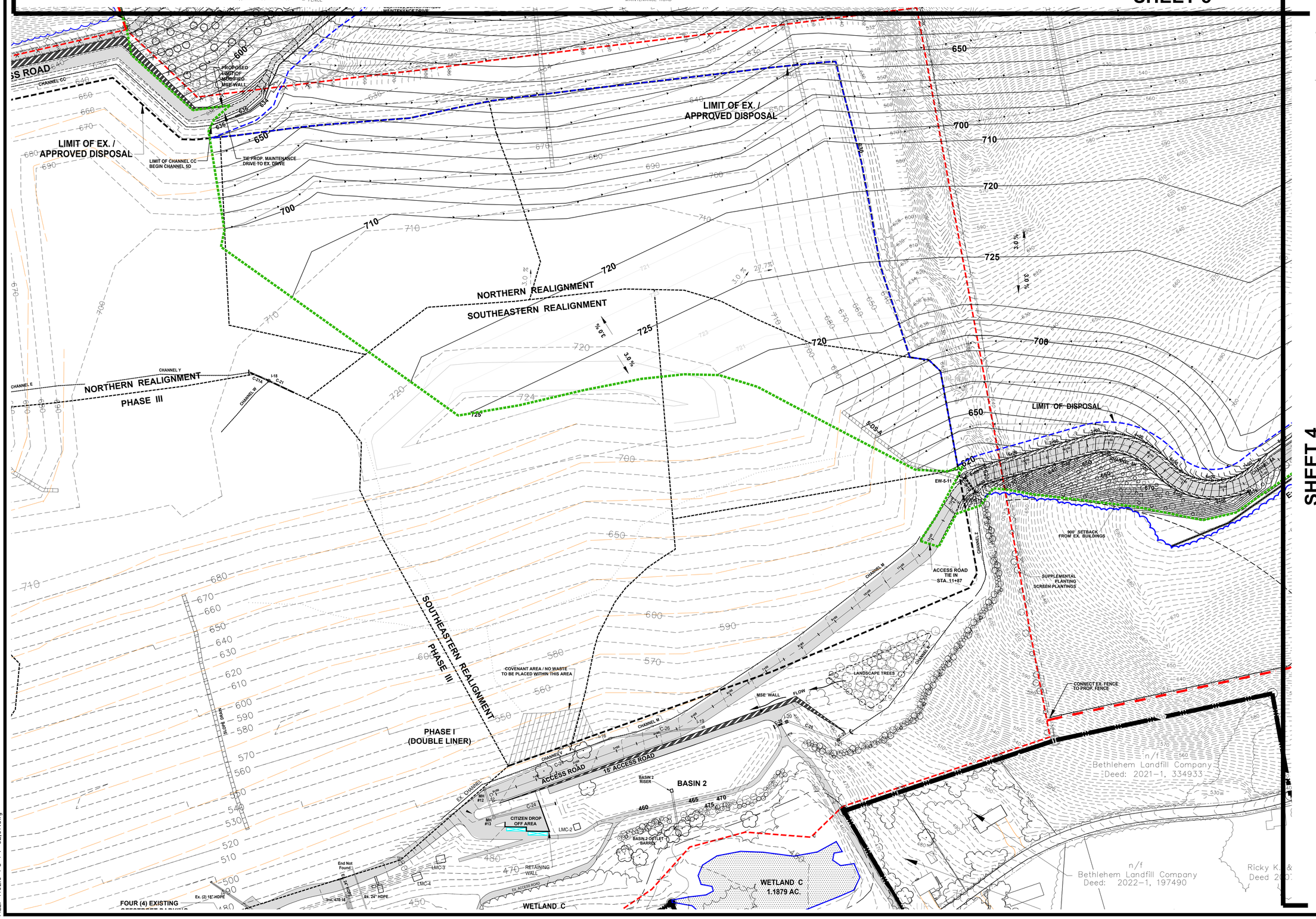
- PROPOSED EDGE OF WOODLANDS
- REVEGETATE / REFOREST AREA
- PROPOSED PHASE V STORMWATER MANAGEMENT AREA



NO.	REVISION	DATE

POST -CONSTRUCTION STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP. — NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: DB | SCALE: 50' 0 100' 200' (Scale: 1" = 100')

DSN. BY: JM | CHK. BY: RMB

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DATE: 09/11/23

SCALE: 1" = 100'

DRAWING NO. **PC - 3**

FILE: 1162.6-PC-PV-02,07.dwg

KEY / LEGEND

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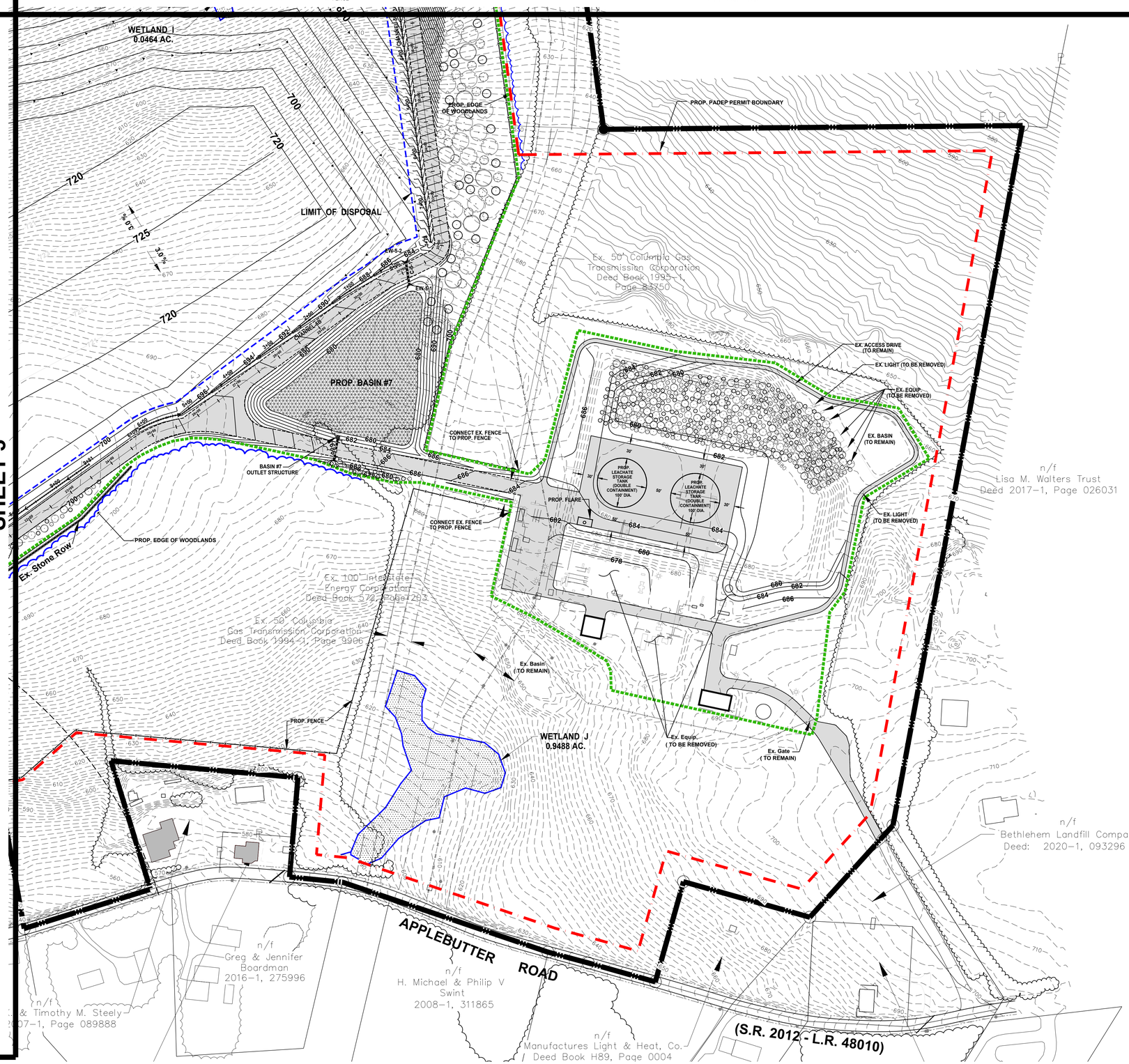
- PROPOSED PHASE V STORMWATER MANAGEMENT AREA

SHEET 6

SHEET 3



NO.	REVISION	DATE

POST -CONSTRUCTION STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: DB | DSN. BY: JM | CHK. BY: RMB | SCALE: 100' 50' 0 100' 200' Scale: 1" = 100'

CADD FILE: 1162.6-PC-PV-02,07.dwg

DATE: 09/11/23

SCALE: 1" = 100'

DRAWING NO.

PC - 4

FILE: 1162.6-PC-PV-02,07.dwg

KEY / LEGEND

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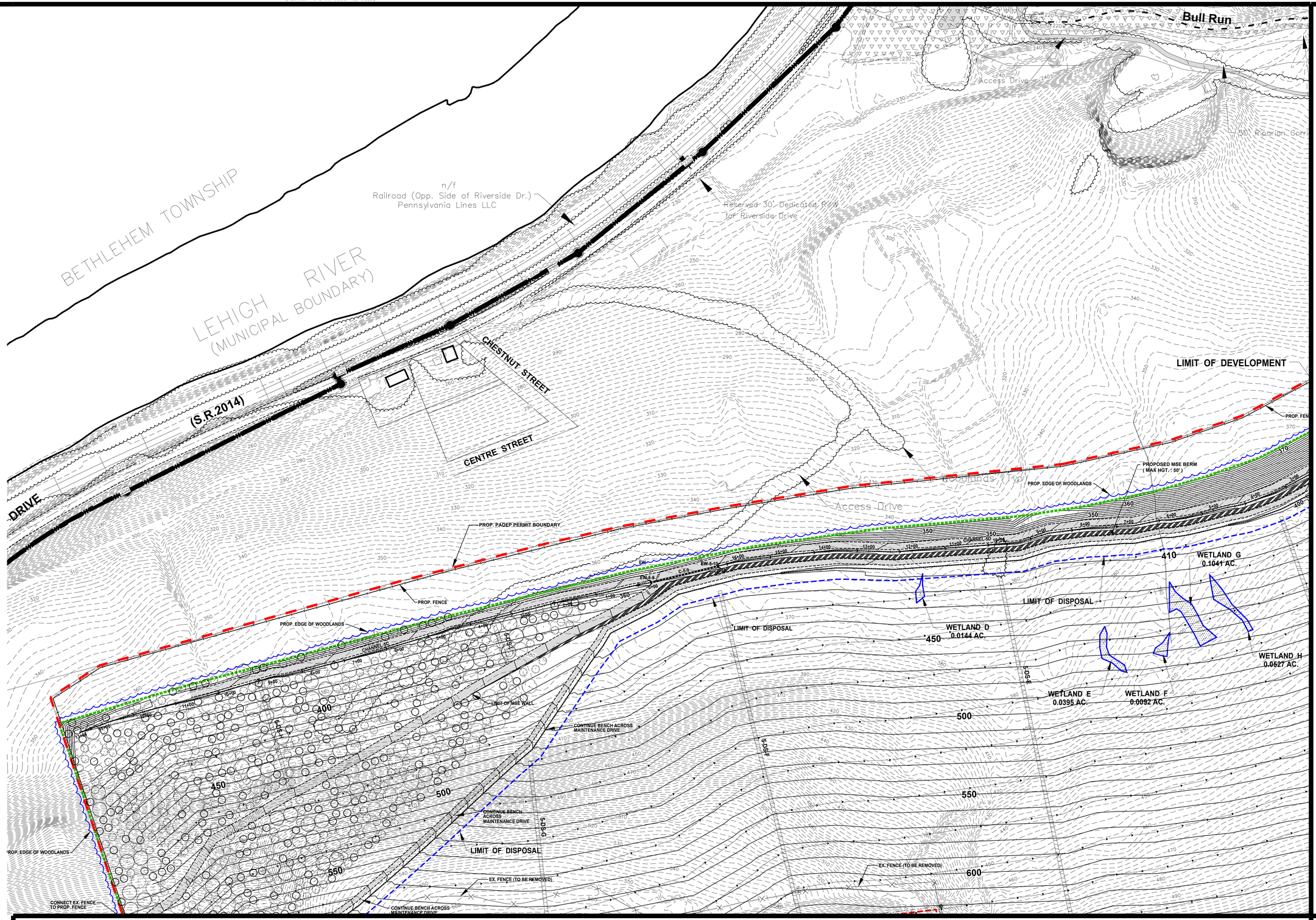

SHEET 3

SHEET 6

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER JOSEPH M. MARTIN, JR. No. 35280-E

NO.	REVISION	DATE

POST -CONSTRUCTION STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP. — NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: DB | SCALE: 1"=50' 0 100' 200' Scale: 1" = 100'
DSN. BY: JM | CHK. BY: RMB

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DATE: 09/11/23

SCALE: 1" = 100'

DRAWING NO. PC - 5

FILE: 1162.6-PC-PV-02,07.dwg

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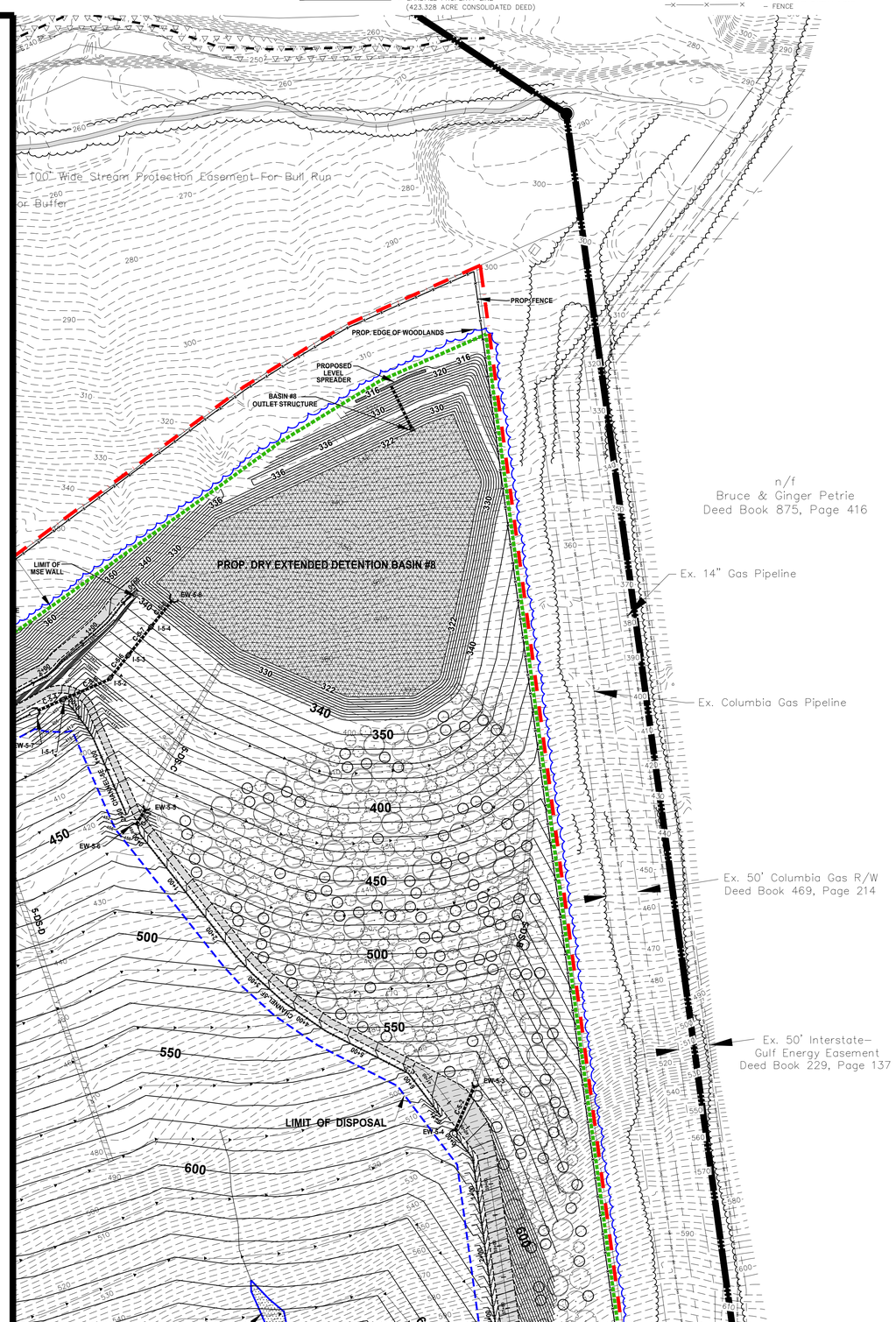
SHEET 5



SHEET4

NO.	REVISION	DATE

POST -CONSTRUCTION STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

SCALE: 1" = 100'

PROJ. NO. 1162.6 | DWN. BY: DB | CHK. BY: RMB | DSN. BY: JM

CADD FILE: 1162.6-PC-PV-02,07.dwg

DATE: 09/11/23

SCALE: 1" = 100'

DRAWING NO. PC - 6

FILE: 1162.6-PC-PV-02,07.dwg

KEY / LEGEND

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- NORTHERN REALIGNMENT– LIMIT OF DISPOSAL
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- MAINTENANCE ROAD – NORTHERN REALIGNMENT MAINTENANCE ROAD
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- PROPOSED EDGE OF WOODLANDS
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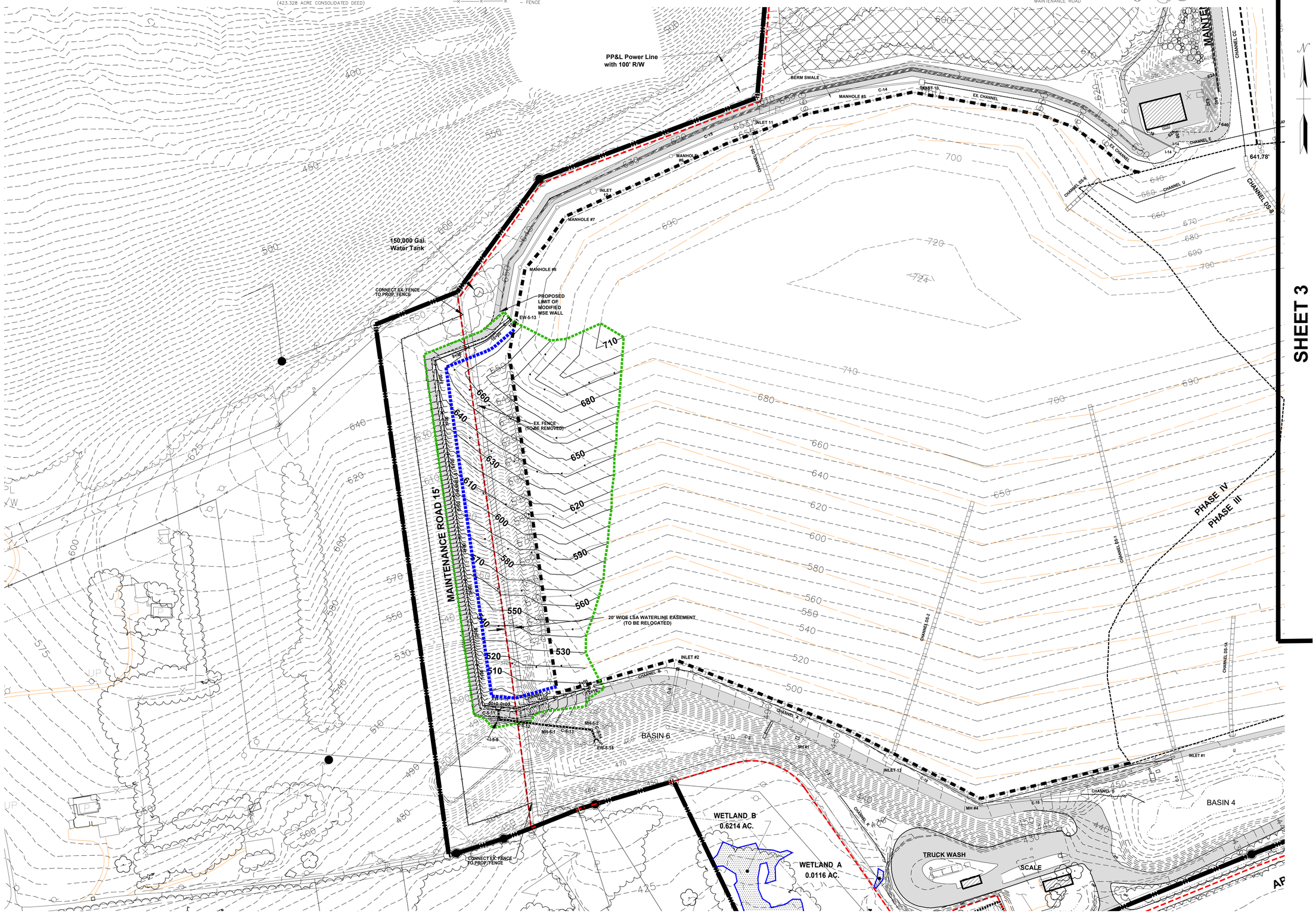


SHEET 3

NO.	REVISION	DATE

POST -CONSTRUCTION STORMWATER MANAGEMENT PLAN (1"=100')

LOWER SAUCON TWP. — NORTHAMPTON CO.

PHASE V EXPANSION
Bethlehem Landfill Company
PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

SCALE: 100' 50' 0 100' 200' Scale: 1" = 100'

PROJ. NO. 1162.6 | DWN. BY: DB | CHK. BY: RMB | DSN. BY: JM

CADD FILE: 1162.6-PC-PV-02.07.dwg

DATE: 09/11/23

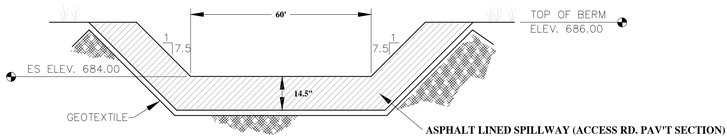
SCALE: 1" = 100'

DRAWING NO. PC - 7

FILE: 1162.6-PC-PV-02.07.dwg

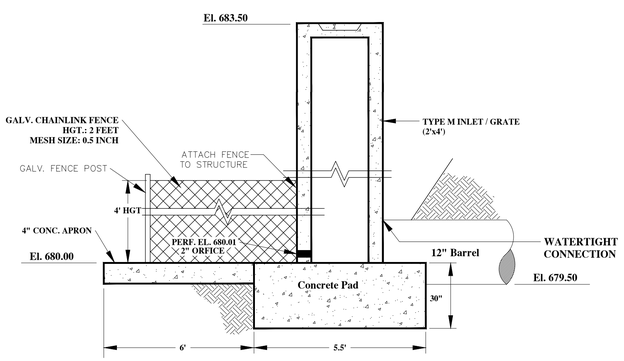
KEY / LEGEND

- EASEMENT LINE
- RIGHT OF WAY LINE
- BUILDING RESTRICTION LINE (B.R.L.)
- EX. OR PREVIOUSLY APPROVED CONTOURS
- WETLAND AREAS
- RIPARIAN CORRIDOR BUFFER
- STREAM PROTECTION EASEMENT
- PROPOSED CONTOURS
- OVERHEAD UTILITY POLE
- FENCE
- CULVERT (PROPOSED)
- WOOD LINES, TREE MASSES
- CHANNEL C (PROPOSED)
- INLET (EXISTING OR PREVIOUSLY APPROVED)
- INLET (PROPOSED)
- MANHOLE (EXISTING OR PREVIOUSLY APPROVED)
- ACCESS ROAD - PHASE V REALIGNMENT ACCESS ROAD
- MAINTENANCE ROAD - NORTHERN REALIGNMENT MAINTENANCE ROAD
- MANHOLE (PROPOSED)
- BENCH (PROPOSED)
- SLOPE DRAIN (EXISTING OR PREVIOUSLY APPROVED)
- SLOPE DRAIN (PROPOSED)
- PROPOSED EDGE OF WOODLANDS
- REVEGETATE / REFOREST AREA



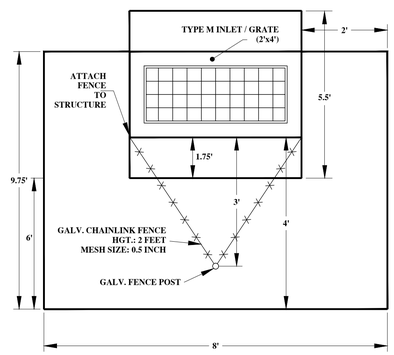
BASIN NO. 7 EMERGENCY SPILLWAY

Not to Scale



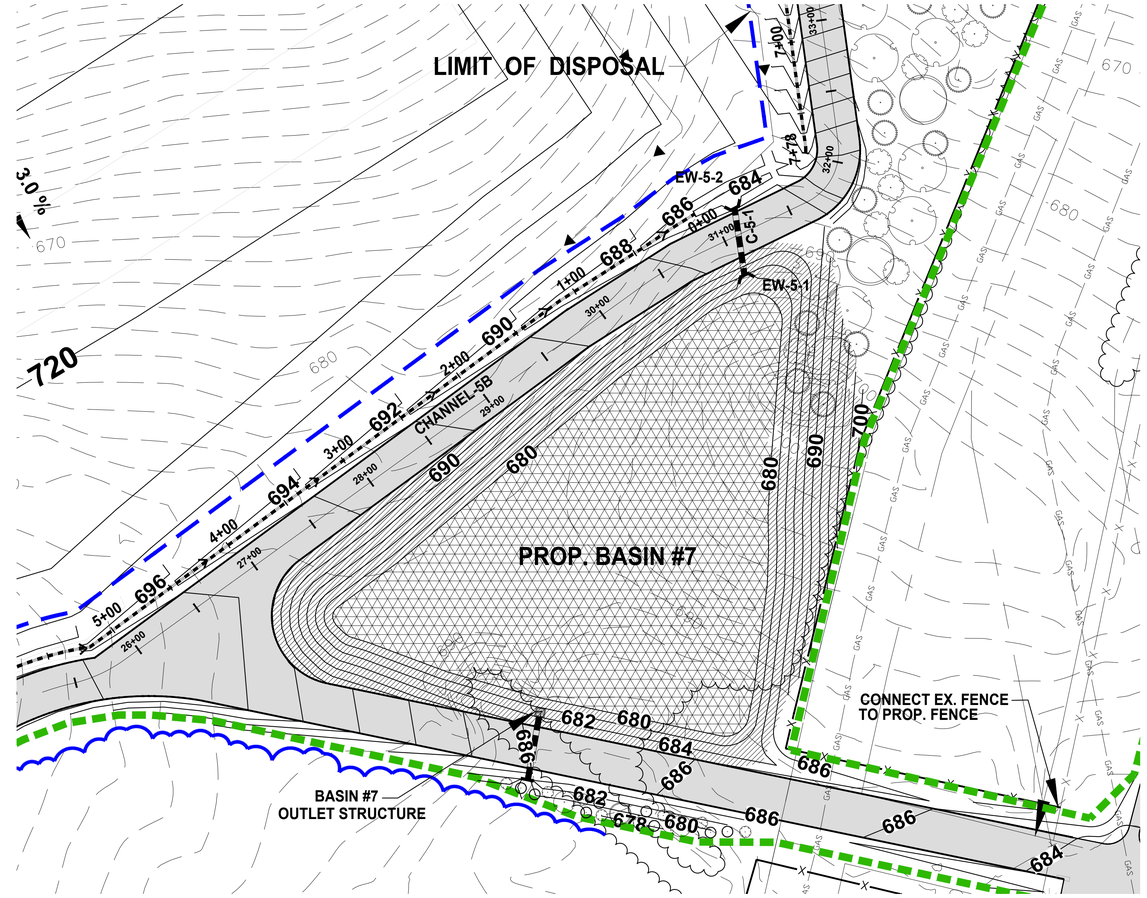
BASIN NO. 7 OUTLET STRUCTURE

Not to Scale



PLAN VIEW CONC. APRON

Not to Scale



PERMANENT DRY EXTENDED DETENTION BASIN NO.7 PLAN VIEW

SCALE: 1" = 50'

IMPROVEMENTS TO BASIN 7 SHALL BE COMPLETED AT FINAL CLOSURE.

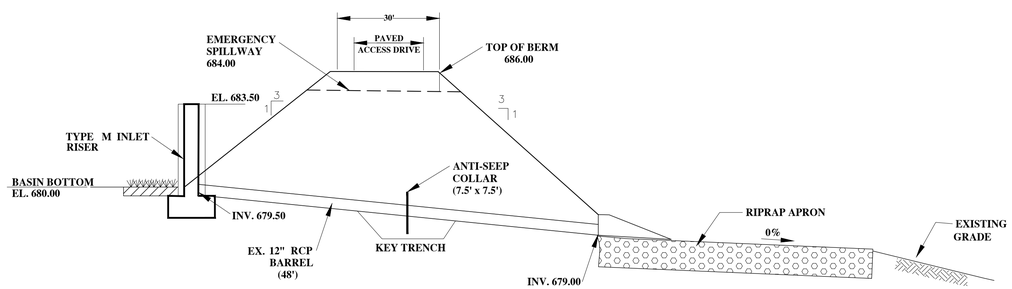
PROPOSED BASIN LANDSCAPING

- AREA TO BE REVEGETATED WITH RETENTION BASIN FLOOR SEED MIX. * 1.25 AC.
- PENNDOT FORMULA D SEED MIX. 0.86 AC.

* RETENTION BASIN FLOOR SEED MIX AS MANUFACTURED BY ERNST CONSERVATION SEEDS, CONTAINS A MIXTURE OF WET TOLLERANT NATIVE SEEDS INCLUDING BUT NOT LIMITED TO VIRGINIA WILDRYE, ALKALIGRASS, DEER TONGUE, FOX SEDGE, AND CREEPING BENTGRASS.

Elevation-Capacity Table

	Elevation	Area (ac)	Capacity (ac-ft)
Basin #7	680	1.30	0.00
	682	1.40	2.70
	684	1.50	5.60
	686	1.70	8.80
	Top Of Berm		



BASIN NO. 7 OUTLET PROFILE

Not to Scale

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
COREY M. MARTIN
NO. 075 07

NO.	REVISION	DATE

STORMWATER DETENTION BASIN 7 SECTIONS AND DETAILS

LOWER SAUCON TWP.

NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

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37 south main street suite A•
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: MSH/DB | CHK. BY: RMB | DSN. BY: JM

0' 50' 100'

CADD FILE: 1162.6-PC-PV-08.dwg

DATE: 09/11/23

SCALE: AS SHOWN

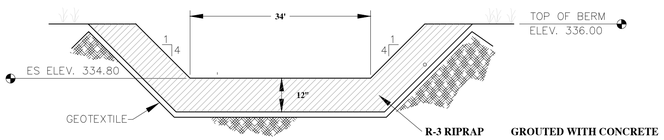
DRAWING NO.

PC - 8

FILE: 1162.6-PC-PV-08.dwg

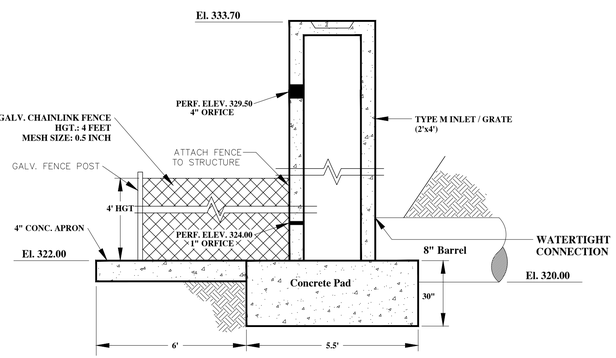
KEY / LEGEND

- EASEMENT LINE
- RIGHT OF WAY LINE
- BUILDING RESTRICTION LINE (B.R.L.)
- 500 - EX. OR PREVIOUSLY APPROVED CONTOURS
- WETLAND AREAS
- RIPARIAN CORRIDOR BUFFER
- STREAM PROTECTION EASEMENT
- 630 - PROPOSED CONTOURS
- OVERHEAD UTILITY POLE
- FENCE
- CULVERT (PROPOSED)
- WOOD LINES, TREE MASSES
- CHANNEL C (PROPOSED)
- PROPOSED LEVEL SPREADER
- INLET (EXISTING OR PREVIOUSLY APPROVED)
- INLET (PROPOSED)
- MANHOLE (EXISTING OR PREVIOUSLY APPROVED)
- ACCESS ROAD - PHASE V REALIGNMENT ACCESS ROAD
- MAINTENANCE ROAD - NORTHERN REALIGNMENT MAINTENANCE ROAD
- MANHOLE (PROPOSED)
- BENCH (PROPOSED)
- DS-5-1 - SLOPE DRAIN (EXISTING OR PREVIOUSLY APPROVED)
- SLOPE DRAIN (PROPOSED)
- PROPOSED EDGE OF WOODLANDS
- REVEGETATE / REFOREST AREA



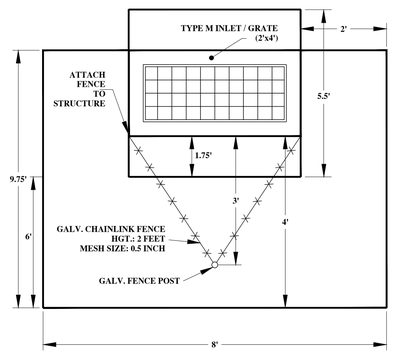
BASIN NO. 8 EMERGENCY SPILLWAY

Not to Scale



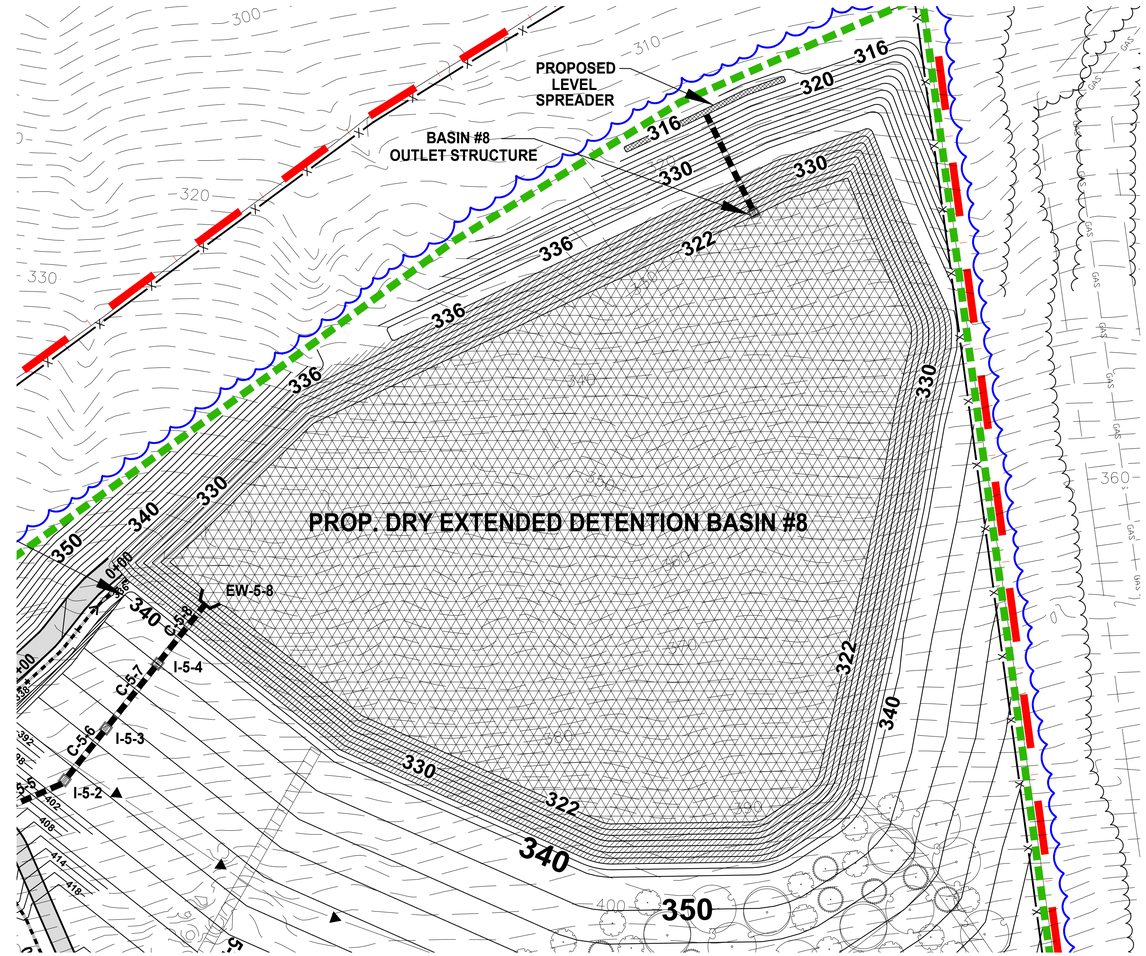
BASIN NO. 8 OUTLET STRUCTURE

Not to Scale



PLAN VIEW CONC. APRON

Not to Scale



PERMANENT DETENTION BASIN NO.8 PLAN VIEW

SCALE: 1" = 50'

IMPROVEMENTS TO BASIN 8 SHALL BE COMPLETED AT FINAL CLOSURE.

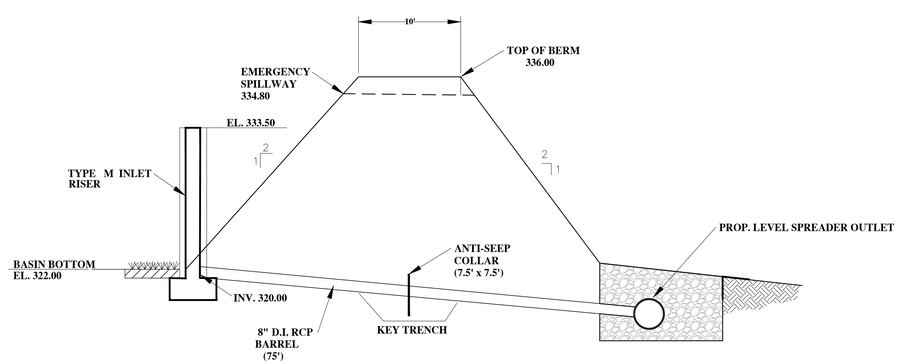
PROPOSED BASIN LANDSCAPING

- AREA TO BE REVEGETATED WITH RETENTION BASIN FLOOR SEED MIX. * 3.26 AC.
- PENNDOT FORMULA D SEED MIX. 1.03 AC.

* RETENTION BASIN FLOOR SEED MIX AS MANUFACTURED BY ERNST CONSERVATION SEEDS, CONTAINS A MIXTURE OF WET TOLLERANT NATIVE SEEDS INCLUDING BUT NOT LIMITED TO VIRGINIA WILDRYE, ALKALIGRASS, DEER TONGUE, FOX SEDGE, AND CREEPING BENTGRASS.

Elevation-Capacity Table

	Elevation	Area (ac)	Capacity (ac-ft)
Basin #8	322	3.38	0.00
	324	3.52	6.90
	326	3.66	14.08
	328	3.81	21.55
	330	3.96	29.32
	332	4.11	37.39
	334	4.26	45.76
	336	4.42	54.44
	Top Of Berm		

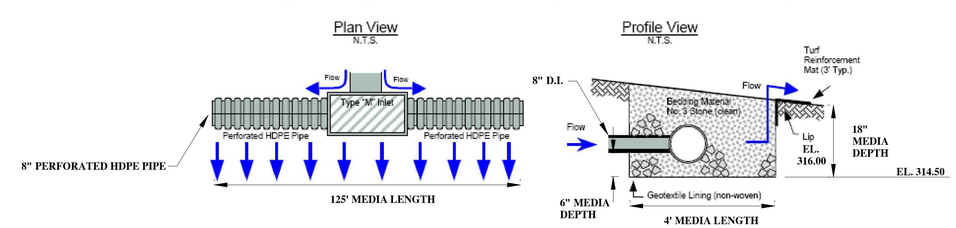


BASIN NO. 8 OUTLET PROFILE

Not to Scale

Q_25 = 0.67
0.67 CFS x 100 FT/CFS = 67 FT(MIN)
PRO. LENGTH = 125 FT

Figure G.5. Typical Orientation of Level Spreader with Subsurface Discharge



DRY EXTENDED DETENTION BASIN #8 OUTLET STRUCTURE (LEVEL SPREADER)

Not to Scale

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER COREY M. MARTIN

NO.	REVISION	DATE

STORMWATER DETENTION BASIN #8 SECTIONS AND DETAILS

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION
Bethlehem Landfill Company
PENNSYLVANIA

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chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: MSH/DB | CHK. BY: RMB | DSN. BY: JM

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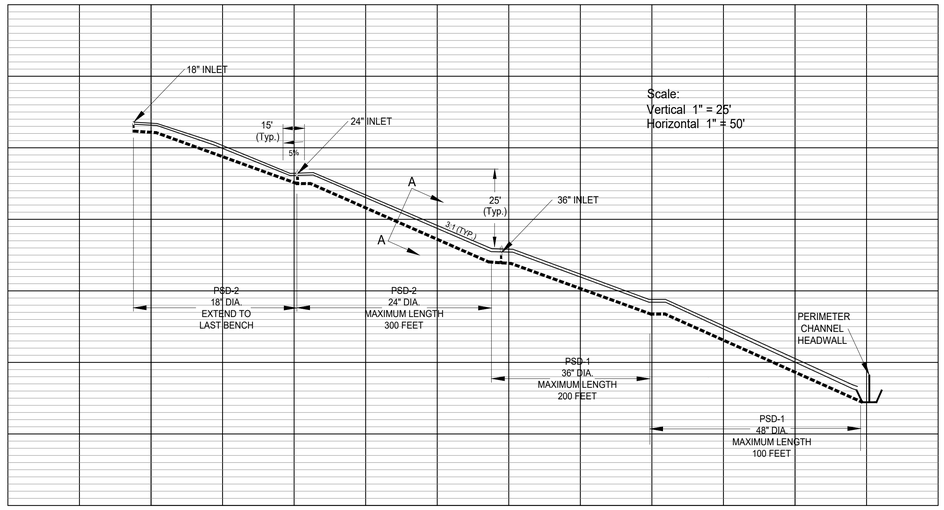
DATE: 09/11/23

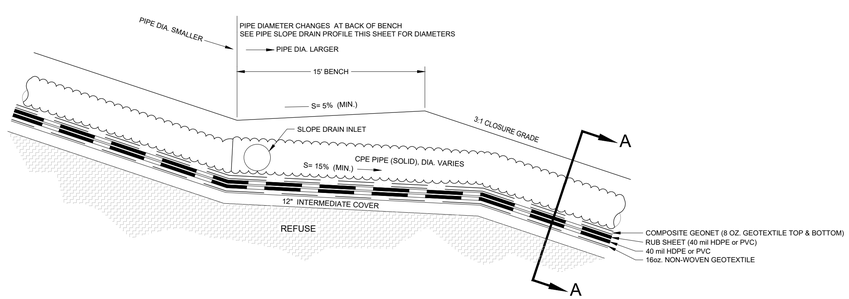
SCALE: AS SHOWN

DRAWING NO. PC - 9

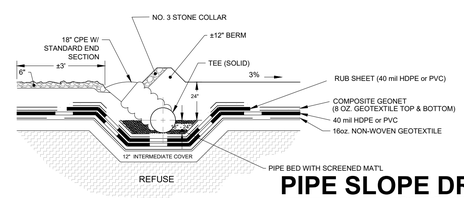
FILE: 1162.6-PC-PV-09.dwg



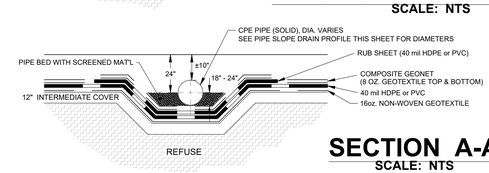
TYPICAL PIPE SLOPE DRAIN PROFILE AND SIZING



TYPICAL PIPE SLOPE DRAIN PROFILE
SCALE: NTS



PIPE SLOPE DRAIN INLET
SCALE: NTS



SECTION A-A
SCALE: NTS

ALTERNATE TO DOWNSLOPE DRAIN

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION
Bethlehem Landfill Company
PENNSYLVANIA

NO.	REVISION	DATE

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania . 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: MSH/DB
DSN. BY: JM | CHK. BY: RMB

CADD FILE: 1162.6-PC-PV-10.dwg

DATE: 09/11/23

SCALE: AS SHOWN

DRAWING NO.

PC - 10

FILE: 1162.6-PC-PV-10.dwg

SUMMARY OF CULVERT PIPES

CULVERT NO.	SIZE (IN.)	MATERIAL	LENGTH (FT.)	SLOPE (FT./FT.)	UPSTREAM INVERT (FT./MSL.)	DOWNSTREAM INVERT (FT./MSL.)	Q_{100} (CFS)	INLET STRUCTURE	OUTLET STRUCTURE	OUTLET PROTECTION	VELOCITY FLOWING FULL (FPS)
C-1	(2) 36"	CMP	39	0.023	457.00	456.10	152.6	TYPE M	TYPE D-W ENDWALL	RIPRAP	14.5
C-2	24"	CMP	13	0.109	448.6	434.48	33.9	MH #1	TYPE D ENDWALL	RIPRAP	12.9
C-3	24"	RCP	468	0.02	458.00	448.70	33.9	MH #2	MH #1	---	11.0
C-4	24"	CMP	250	0.145	494.35	458.10	22.7	TYPE M	MH #2	---	14.9
C-5	18"	CMP	30	0.110	427.00	423.70	4.5	TYPE D ENDWALL	TYPE M	---	9.9
C-5a	21"	RCP	215	0.005	424.80	423.70	8.70	TYPE M	TYPE M	---	4.6
C-6	24"	RCP	60	0.005	423.70	423.40	10.85	TYPE M	TYPE M	---	5.5
C-7	24"	RCP	80	0.005	423.40	423.00	13.00	TYPE M	TYPE D ENDWALL	RIPRAP	5.5
C-8	15"	RCP	82	0.18	495.00	480.00	3.8	M	TYPE D-W ENDWALL	RIPRAP	12.5
C-9	36"	RCP	60	0.05	506.00	503.00	52.9	2-M	TYPE D ENDWALL	RIPRAP	14.0
C-14	15"	HDPEP	416	0.016	654.75	648.25	4.1	TYPE M	INLET TYPE M	---	3.2
C-15	30"	HDPEP	396	0.01	646.93	642.97	26.9	TYPE M	INLET TYPE M	---	5.5
~~C-16~~	~~30"~~	~~HDPEP~~	~~570.6~~	~~0.01~~	~~646.87~~	~~639.11~~	~~31.6~~	~~TYPE M~~	~~TYPE D-ENDWALL~~	~~RIPRAP~~	~~5.0~~
~~C-17~~	~~48"~~	~~HDPEP~~	~~287~~	~~0.01~~	~~624.59~~	~~621.72~~	~~101.62~~	~~MH#14~~	~~MH #3~~	~~- - -~~	~~9.1~~
~~C-17~~	~~48"~~	~~HDPEP~~	~~30~~	~~0.009~~	~~623.00~~	~~622.69~~	~~101.62~~	~~TYPE D ENDWALL~~	~~MH #14~~		~~9.1~~
C-18	36"	HDPEP	230	0.033	464.52	457.06	67.4	2-TYPE M	MH 4	---	10.0
C-18	36"	HDPEP	235	0.042	456.96	447.20	67.4	MH 4	TYPE D ENDWALL	RIPRAP	12.0
C-19	18"	HDPEP	138	0.02	623.92	621.17	10.03	TYPE M	TYPE D ENDWALL	RIPRAP	5.89
~~C-22~~	~~24~~	~~HDPEP~~	~~77~~	~~0.07~~	~~633.50~~	~~628.00~~	~~32.70~~	~~TYPE M~~	~~MH #3~~		~~10.24~~
~~C-23~~	~~54~~	~~HDPEP~~	~~100~~	~~0.016~~	~~597.40~~	~~596.00~~	~~139.39~~	~~MH #11~~	~~TYPE D ENDWALL~~	~~RIPRAP~~	~~8.66~~
~~C-23~~	~~54~~	~~HDPEP~~	~~256~~	~~0.016~~	~~601.40~~	~~597.50~~	~~139.39~~	~~MH #10~~	~~MH #11~~		~~8.66~~
~~C-23~~	~~54~~	~~HDPEP~~	~~202~~	~~0.016~~	~~602.00~~	~~601.00~~	~~139.39~~	~~MH #9~~	~~MH #10~~		~~8.66~~
C-24	36"	HDPEP	314	0.019	513.50	507.60	62.13	TYPE M	MH #12	- - -	6.8
C-24	36"	HDPEP	67	0.037	496.50	494.00	62.13	MH #12	MH #13	- - -	10.8
C-24	36"	HDPEP	202	0.119	493.90	470.00	62.13	MH #13	TYPE D ENDWALL	RIPRAP	7.9
C-25	54"	HDPEP	30	0.025	471.50	470.75	142.25	TYPE M	TYPE D ENDWALL	RIPRAP	8.95
C-25	54"	HDPEP	124	0.067	480.00	471.75	142.25	TYPE M	TYPE M	---	8.95
C-25	54"	HDPEP	30	0.183	490.00	484.50	142.25	TYPE DW ENDWALL	TYPE M	---	8.95
C-26	18"	HDPEP	216	0.092	534.50	513.60	2.85	TYPE M	TYPE M	---	6.5
C-5-1	**48"**	**HDPEP**	**50**	**0.020**	**682.00**	**681.00**	**41.59**	**TYPE D ENDWALL**	**TYPE D ENDWALL**	**RIPRAP**	3.6
C-5-2	**36"**	**HDPEP**	**80**	**0.038**	**586.00**	**583.00**	**45.89**	**TYPE D ENDWALL**	**TYPE D ENDWALL**	**- - -**	6.5
C-5-3	**24"**	**HDPEP**	**30**	**0.033**	**451.00**	**450.00**	**25.26**	**TYPE D ENDWALL**	**TYPE D ENDWALL**	**- - -**	8.0
C-5-4	**58"x91"**	**RCP**	**40**	**0.050**	**392.00**	**390.00**	**252.15**	**TYPE DW ENDWALL**	**TYPE M - I-5-1**	**- - -**	8.9
C-5-5	**58"x91"**	**RCP**	**80**	**0.050**	**389.00**	**385.00**	**252.23**	**TYPE M - I-5-1**	**TYPE M - I-5-2**	**- - -**	8.9
C-5-6	**58"x91"**	**RCP**	**40**	**0.010**	**369.00**	**365.00**	**252.23**	**TYPE M - I-5-2**	**TYPE M - I-5-3**	**- - -**	8.9
C-5-7	**58"x91"**	**RCP**	**50**	**0.200**	**352.00**	**342.00**	**252.23**	**TYPE M - I-5-3**	**TYPE M - I-5-4**	**- - -**	8.9
C-5-8	**58"x91"**	**RCP**	**50**	**0.160**	**330.00**	**322.00**	**252.23**	**TYPE M - I-5-4**	**TYPE D ENDWALL**	**RIPRAP**	8.9
C-5-9	**29 x45"**	**RCP**	**160**	**0.005**	**352.80**	**352.00**	**20.94**	**TYPE DW ENDWALL**	**TYPE D ENDWALL**	**RIPRAP**	3.0
C-5-10	**34 X53"**	**RCP**	**45**	**0.044**	**614.00**	**612.00**	**36.94**	**TYPE DW ENDWALL**	**TYPE DW ENDWALL**	**RIPRAP**	3.8
C-5-11	**48"**	**HDPEP**	**20**	**0.025**	**486.00**	**485.50**	**43.13**	**TYPE D ENDWALL**	**TYPE M - I-5-5**	**- - -**	3.3
C-5-12	**48"**	**HDPEP**	**113**	**0.008**	**485.00**	**484.10**	**42.30**	**TYPE M - I-5-5**	**MH-5-1**	**- - -**	3.3
C-5-13	**48"**	**HDPEP**	**100**	**0.080**	**484.00**	**476.00**	**42.30**	**MH-5-1**	**MH-5-2**	**- - -**	3.3
C-5-14	**48"**	**HDPEP**	**25**	**0.040**	**465.00**	**464.00**	**42.30**	**MH-5-2**	**TYPE D ENDWALL**	**RIPRAP**	3.3

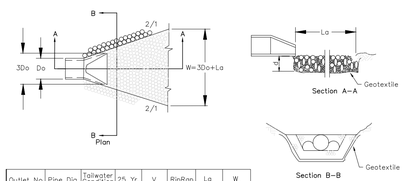
C-19 = NO MODIFICATIONS

~~C-16~~ = DELETED AS A RESULT OF PHASE V EXPANSION

C-5-14 = ADDED DATA FOR PHASE V EXPANSION

NOTES:

1. HDPE – HIGH DENSITY POLYETHYLENE PIPE, CMP – POLYMER COATED CORRUGATED METAL PIPE, RCP – REINFORCED CONCRETE PIPE
2. TYPE "D" AND "D-W" ENDWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION.
3. CHA – CHANNEL
4. PROVIDE INLET BOX AND TOP UNIT FOR STORM INLETS #1 AND #5 WITH OPENINGS TO ACCOMMODATE A DOUBLE GRATE.
5. TYPE "M" AND "D-H" INLET TOPS AND CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION
6. PRECAST MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION
7. ALL CMP SHALL BE POLYMER COATED WITH HUGGER BAND JOINTS. PIPING SHALL BE SAW CUT AT THE ENDS AS NEEDED AND NOT HAMMERED OR BROKEN
8. ALL RCP SHALL BE CLASS 3 REINFORCED CONCRETE PIPE WITH O-RING JOINTS.
9. ALL ENDWALLS SHALL BE CONSTRUCTED WITH FROST PROOFING WALL EXTENDING A MIN. OF 2 FEET BELOW FINISHED GRADE .
10. ALL INLETS AND STORMWATER MANHOLES ARE REQUIRED TO CONTAIN A DISK INDICATING A PROHIBITION AGAINST POLLUTANTS.
11. ALL STORMWATER PIPING SHALL HAVE WATERTIGHT JOINTS.



Outlet No.	Pipe Dia. Do (in)	Tailwater Condition (Min. or Max.)	25 Yr. Q (CFS)	V (FPS)	RipRap Size	La (Ft)	W (Ft)
C-1	36	MIN.	126	8.9	R-5	22	31
C-2	24	MIN.	26	8.3	R-4	15	21
C-7	24	MIN.	16.45	3.3	R-3	5	11
C-8	15	MIN.	34.26	4.8	R-3	65	15
C-9	36	MIN.	40.0	5.3	R-4	18	27
C-10	36	MIN.	61.59	8.7	R-5	21	30
TC-1	36	MIN.	34	4.8	R-3	6	15
C-16	30	MIN.	31.0	5.5	R-4	16	*
C-18	36	MIN.	67.4	12.0	R-5	24	*
C-19	18	MIN.	10.0	5.9	R-4	10	*
C-21A	24	MIN.	23.7	7.5	R-4	14	x
~~C-22~~	~~24~~	~~MIN.~~	~~126.47~~	~~9.6~~	~~R-5~~	~~28~~	~~42~~
C-24	36	MIN.	39.9	7.9	R-5	20	29
C-25	54	MIN.	142.3**	9.0	R-6	28	42
C-26	15	MIN.	5.15	6.5	R-3	8	x
C-5-1	**48**	**MAX.**	**41.59****	**3.31**	**R-3**	**18**	**20**
C-5-8	**58x91**	**MAX.**	**252.23****	**8.90**	**R-4**	**26**	**29**
C-5-9	**29x45**	**MAX.**	**48.27****	**3.72**	**R-5**	**18**	**20**
C-5-10	**34x53**	**MIN.**	**36.94****	**3.80**	**R-5**	**22**	**33**
C-5-14	**48**	**MAX.**	**42.30****	**3.30**	**R-3**	**18**	**20**

C-1 = NO MODIFICATIONS

~~C-22~~ = DELETED AS A RESULT OF PHASE V EXPANSION

C-5-14 = ADDED DATA FOR PHASE V EXPANSION

* – WIDTH TO CONFORM TO THE DOWNSTREAM STRUCTURE
** – 100 YEAR STORM Q

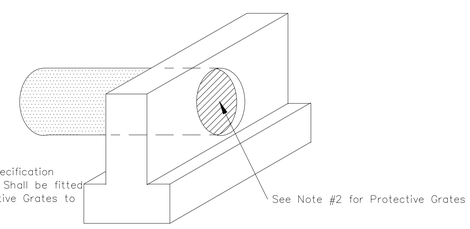
Do = 1.5 Times The Maximum Stone Diameter But No Less Than 6 Inches

ROCK OUTLET PROTECTION

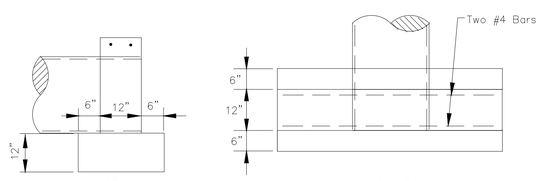
NO SCALE

PIPE "D"	"L"
21" & LESS	5'-0"
24" & 27"	7'-0"
30" & 33"	9'-0"

NOTES:
1. Meets Penn Dot RC-31 Specification
2. Upstream Endwall Opening Shall be fitted with Slanted Durable Protective Grates to prevent Unauthorized Entry.



ISOMETRIC VIEW



SIDE ELEV. TOP VIEW

PRECAST ENDWALL TYPE "D"

NOT TO SCALE

LANDFILL INLET SCHEDULE

INLET NO.	TOP OF GRATE ELEV.	INLET ELEV. IN	INLET ELEV. OUT	INLET TYPE	PIPE DIA.	DOWNSTREAM STRUCTURE
#1	461.10	---	457.00	M (3)	(2) 36"	BASIN #4
#2	499.50	---	495.00	M	15"	BASIN #6
#3	511.00	---	506.00	2-M	36"	BASIN #6
#6	428.80	---	424.80	M	24"	INLET #7
#7	428.80	---	423.70	M	24"	INLET #8
#8	428.80	---	423.40	M	24"	BASIN #3
#9	590.00	---	580.90	D-H	24"	INLET #5
#10	657.50	---	654.75	TYPE M	15"	#11
#11	651.00	648.25	646.93	TYPE M	30"	#12
#12	652.50	642.97	642.87	TYPE M	30"	CHANNEL C
#13	469.79	---	464.52	2-TYPE M	36"	CHANNEL S
#14	625.42	---	623.92	TYPE M	18"	SED TRAP A
~~#15~~	~~525.00~~	~~---~~	~~522.00~~	~~TYPE M~~	~~24"~~	~~MH #3~~
#16	521.25	513.60	513.50	TYPE M	36"	MH #13
#18	661.40	654.17	654.07	TYPE M	24"	CHANNEL Y
#19	539.75	- - -	534.50	TYPE M	18"	I-16
#20	479.00	471.75	471.50	TYPE M	48"	BASIN #2
#21	490.00	484.50	480.00	TYPE M	48"	I-20
#5-1	**398.00**	**390.00**	**389.00**	**TYPE M**	**58x91"**	**INLET 5-2**
#5-2	**396.00**	**385.00**	**369.00**	**TYPE M**	**58x91"**	**INLET 5-3**
#5-3	**372.00**	**365.00**	**352.00**	**TYPE M**	**58x91"**	**INLET 5-4**
#5-4	**350.00**	**342.00**	**330.00**	**TYPE M**	**58x91"**	**BASIN #8**
MH #1	465.00	448.70	448.60	PRECAST MH	24"	OUTLET
MH #2	470.00	458.10	458.00	PRECAST MH	24"	MH #1
~~MH #3~~	~~521.00~~	~~520.05~~	~~521.05, 521.75~~	~~PRECAST MH~~	~~2-15"/48"~~	~~MH #16~~
MH #4	462.23	457.06	456.96	PRECAST MH	30"	BASIN 4
MH #5	659.50	651.69	651.62	PRECAST MH	30"	CHANNEL C
MH #6	654.50	644.97	644.93	PRECAST MH	30"	CHANNEL C
MH #7	653.44	641.98	641.94	PRECAST MH	30"	CHANNEL C
MH #8	654.02	640.31	640.27	PRECAST MH	30"	CHANNEL C
MH #9	650.94	638.22	638.18	PRECAST MH	30"	CHANNEL C
MH#10	609.25	603.50	603.40	PRECAST MH	48"	MH #11
MH#11	604.50	599.00	598.90	PRECAST MH	48"	CHANNEL N
MH#12	511.00	507.60	496.50	PRECAST MH	36"	MH#13
MH#13	513.00	494.00	493.90	PRECAST MH	36"	BASIN 2
~~MH#14~~	~~525.00~~	~~521.05~~	~~521.05~~	~~PRECAST MH~~	~~48"~~	~~CHANNEL N~~
MH#5-1	**506.00**	**484.10**	**484.00**	**PRECAST MH**	**48"**	**MH-5-2**
MH#5-2	**482.00**	**476.00**	**465.00**	**PRECAST MH**	**48"**	**BASIN #6**

#16 = NO MODIFICATIONS

~~MH#14~~ = DELETED AS A RESULT OF PHASE V EXPANSION

#5-4 = ADDED DATA FOR PHASE V EXPANSION

NOTES:

1. TYPE "M" AND "D-H" INLET TOPS AND CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION
2. PRECAST MANHOLES AND INLETS TO BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION
3. ALL STORMWATER PIPING SHALL HAVE WATERTIGHT JOINTS.
4. ALL INLETS AND STORMWATER MANHOLES ARE REQUIRED TO CONTAIN A DISK INDICATING A PROHIBITION AGAINST POLLUTANTS.

ALTERNATE TO DOWNSLOPE DRAIN

NO.	REVISION	DATE

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania 17201
phone: (717) 264-6759

PROJ. NO. 1162.6 | DWN. BY: MSH/DB | DSN. BY: JM | CHK. BY: RMB

CADD FILE: 1162.6-PC-PV-11.dwg

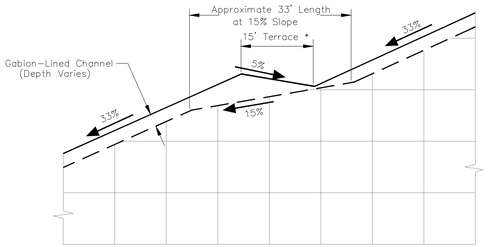
DATE: 09/11/23

SCALE: AS SHOWN

DRAWING NO.

PC - 11

FILE: 1162.6-PC-PV-11.dwg

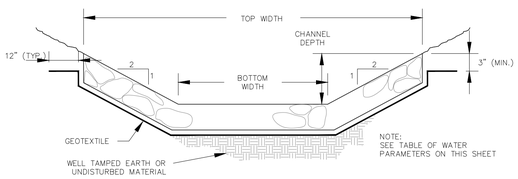


BENCH SECTION A-A

Not to Scale

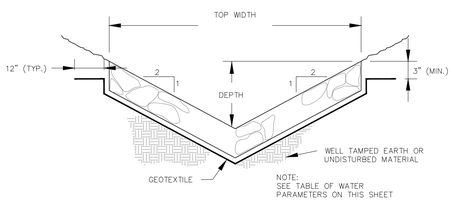
WATERWAY RIPRAP DIMENSION TABLE

NSA NO.	d_{50}	THICKNESS
R-3	3"	9"
R-4	6"	18"
R-5	9"	27"
R-6	12"	36"
R-7	15"	45"



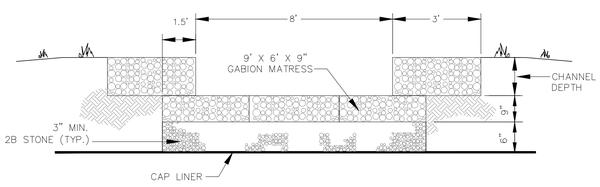
TYPICAL TRAPEZOIDAL RIPRAP CHANNEL

NO SCALE



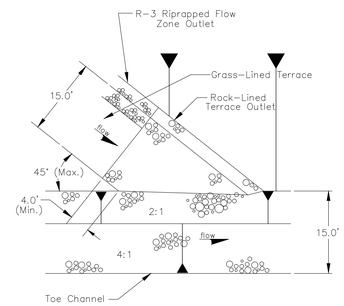
TYPICAL TRIANGULAR RIPRAP SWALE

NO SCALE



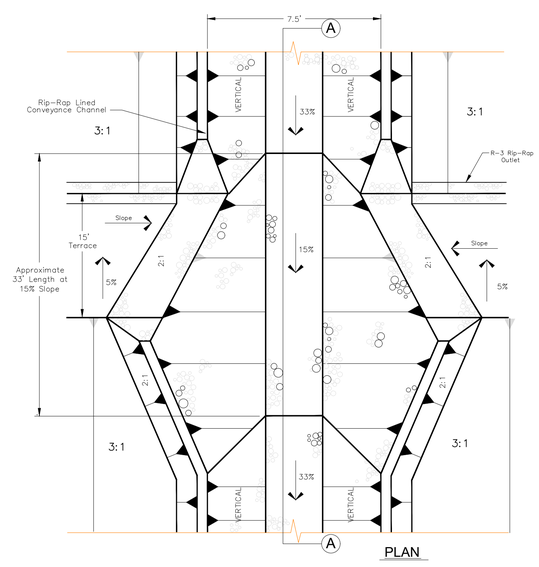
TYPICAL GABION SLOPEDRAIN DETAIL

NO SCALE



LANDFILL BENCH / CHANNEL CONNECTION

Not to Scale



PLAN

DOWNSLOPE / TERRACE INTERFACE

Not to Scale

SUMMARY HYDRAULIC DESIGN OF PERMANENT / TEMPORARY WATERWAYS

CHANNEL NO.	CHANNEL STATION	AVG. SLOPE (FT./FT.)	TYPE	SIDE SLOPES (H:V)	BOTTOM WIDTH (FT)	CHANNEL DEPTH (FT)	TOP WIDTH (FT)	Q100 (CFS)	DEPTH D100 (FT)	VELOCITY V100 (FT/SEC)	MAX. ALLOWABLE VELOCITY (FT/SEC)	PROTECTIVE LINING
A (1)	0+00-8+20	0.05	TRAPE	2:1	4.0	2.0	12.0	10	0.4	5.3	6.5	R-3
A (1)	8+20-12+50	0.02	TRAPE	2:1	4.0	2.0	12.0	10	0.51	3.9	4.5	R-3
B (1)	0+00-3+00	0.05	TRAPE	2:1	4.0	2.0	12.0	3.8	0.36	2.3	4.0	GRASS
~~C (1)~~	~~0+00-5+50~~	~~0.29~~	~~TRAPE~~	~~2:1~~	~~6.0~~	~~2.0~~	~~13.1~~	~~52.8~~	~~0.79~~	~~9.0~~	~~11.5~~	~~R-5~~
~~C (1)~~	~~5+50-7+00~~	~~0.05~~	~~TRAPE~~	~~2:1~~	~~6.0~~	~~2.0~~	~~13.1~~	~~52.8~~	~~1.01~~	~~6.5~~	~~6.5~~	~~R-3~~
E (1)	0+00-4+50	0.015	TRAPE	2:1	4.0	3.0	16.00	10.3	1.81	5.7	6.5	R-3
G (1)	0+00-1+20	0.029	V	2:1	---	2.0	8.0	1.24	0.65	1.5	4.0	GRASS
H (1)	0+00-2+50	0.01	V	2:1	---	2.0	8.0	2.98	1.05	1.34	4.0	GRASS
K (1)	0+00-1+90	0.04	TRAPE	2:1	4.0	2.0	12.0	33.9	0.95	6.1	6.5	R-3
M (1)	0+00-0+63	0.040	TRI	2:1	---	3.0	9.5	15.5	2.31	4.52	6.5	R-3
M (1)	0+63-1+90	0.118	TRI	2:1	---	3.0	9.5	15.5	2.08	6.58	6.5	R-3
M (1)	1+90-2+97	0.047	TRI	2:1	---	3.0	9.5	15.5	2.31	4.52	6.5	R-3
M (1)	2+97-8+54	0.074	TRI	2:1	---	3.0	9.5	15.5	2.31	4.52	6.5	R-3
M (1)	8+54-9+64	0.023	TRI	2:1	---	3.0	9.5	15.5	2.31	4.52	6.5	R-3
N (1)	0+00-3+91	0.243	TRAPE	2:1	2.0	3.0	13.3	134.55	1.83	13.02	15.0	R-7
N (1)	3+91-4+24	0.167	TRAPE	2:1	2.0	3.0	13.3	134.55	1.79	13.43	15.0	R-7
S (1)	0+00-BASIN 4	2	TRAP	2:1	8.0	2.5	16.8	67.4	1.53	5.4	6.5	R-3
BERM SWALE (1)	ALL	ALL	TRI	3:1	0.0	1.7	10.0	3.4	.67	4.56	6.5	R-3
U	0+00-6+00	0.030	TRI	3:1	0	1.90	15.0	14	0.9	4.6	6.5	R-3
V (1)	0+00-1+25	0.008	TRI	2:1	---	2.0	8.0	1.81	0.60	2.53	6.5	R-3
V (1)	1+25-2+85	0.03	TRI	2:1	---	2.0	8.0	1.81	0.60	2.53	6.5	R-3
V (1)	2+85-3+10	0.10	TRI	2:1	---	2.0	8.0	1.81	0.60	2.53	6.5	R-3
Z (1)	0+00-0+56	0.054	TRI	2:1	---	2.0	7.5	3.24	0.65	3.50	6.5	R-3
Z (1)	0+56-3+16	0.015	TRI	2:1	---	2.0	7.5	3.24	0.76	2.78	6.5	R-3
Z (1)	3+16-4+16	0.095	TRAP	2:1	0.10	2.0	7.5	3.24	0.57	4.54	6.5	R-3
~~AA~~	~~0+00-2+30~~	~~0.044~~	~~TRI~~	~~2:1~~	~~0~~	~~1.3~~	~~7.5~~	~~3.07~~	~~0.66~~	~~2.10~~	~~6.5~~	~~R-3~~
~~BB~~	~~0+00-14+11~~	~~0.005~~	~~TRAP~~	~~2:1~~	~~2.0~~	~~3.6~~	~~17.3~~	~~96.32~~	~~2.62~~	~~4.99~~	~~6.5~~	~~R-3~~
CC	0+00-19+40	0.005	TRAP	2:1	2.0	3.2	14.9	58.26	2.21	4.09	6.5	R-3
5-A	**0+00 - 7+50**	**0.100**	**TRAP**	**2:1**	**4.0**	**2.0**	**12.0**	**18.92**	**0.57**	**6.42**	**6.5**	**R-3**
5-A	**7+50 - 9+81**	**0.040**	**TRAP**	**2:1**	**6.0**	**2.0**	**14.0**	**18.92**	**0.99**	**2.40**	**6.5**	**R-3**
5-B	**0+00 - 6+09**	**0.021**	**TRAP**	**2:1**	**4.0**	**2.0**	**12.0**	**17.08**	**0.86**	**3.45**	**4.0**	**GRASS**
5-C	**0+00 - 13+56**	**0.024**	**TRAP**	**2:1**	**6.0**	**2.5**	**16.0**	**48.27**	**1.08**	**5.45**	**6.5**	**R-3**
5-D	**0+00 - 10+50**	**0.015**	**TRAP**	**2:1**	**10.0**	**3.5**	**24.0**	**249.81**	**2.53**	**6.56**	**9.0**	**R-4**
5-D	**10+50 - 16+48**	**0.150**	**TRAP**	**2:1**	**10.0**	**2.5**	**20.0**	**119.99**	**1.09**	**9.06**	**11.5**	**R-5**
5-E	**0+00 - 2+00**	**0.250**	**TRAP**	**2:1**	**4.0**	**2.0**	**12.0**	**4.74**	**0.24**	**4.51**	**6.5**	**R-3**
5-F	**0+00 - 6+71**	**0.200**	**TRAP**	**2:1**	**4.0**	**2.0**	**12.0**	**25.26**	**0.65**	**7.35**	**9.0**	**R-4**
5-G	**0+00 - 7+78**	**0.110**	**TRAP**	**2:1**	**4.0**	**2.0**	**12.0**	**36.13**	**0.89**	**7.07**	**9.0**	**R-4**
5-H	**0+00 - 6+76**	**0.106**	**TRI**	**2:1**	**---**	**2.0**	**8.0**	**5.00**	**0.68**	**5.36**	**6.5**	**R-3**
5-I	**0+00 - 8+50**	**0.180**	**TRAP**	**2:1**	**6.0**	**2.0**	**16.0**	**41.07**	**0.71**	**7.80**	**9.0**	**R-4**
5-I	**8+50 - 10+51**	**0.040**	**TRAP**	**2:1**	**6.0**	**2.0**	**16.0**	**41.07**	**0.89**	**5.97**	**6.5**	**R-3**
5-J	**0+00 - 2+16**	**0.100**	**TRAP**	**2:1**	**6.0**	**2.0**	**16.0**	**2.28**	**0.14**	**2.65**	**4.0**	**GRASS**
DIV#1 (1)	0+00-3+50	4.0	V	2:1	---	3.0	12.0	12.38*	1.71*	4.34*	5.0	GRASS
DS-1A	0+00-2+83	0.26	RECT.	---	8.0	2.0	8.0	72.5*	0.9*	10.1*	14.5	GABION
DS-1*(1)	0+00-8+28	0.28	RECT.	---	8.0	2.0	8.0	72.5*	0.9*	10.1*	14.5	GABION
DS-2*(1)	0+00-6+17	0.28	RECT.	---	8.0	2.0	8.0	44.0*	0.62*	8.8*	14.5	GABION
DS-3*(1)	0+00-1+59	0.28	RECT.	---	6	1.5	6.0	20.4*	0.5	6.86	14.5	GABION
DS-4	---	0.42	RECT.	---	8	2.4	8.0	152.6	1.4	13.8	14.5	GABION
DS-5*	0+00-1+06	0.26	RECT.	---	6	1.5	6.0	20.4*	0.5	6.86	14.5	GABION
DS-6(1)	0+00-6+25	0.28	RECT.	---	8.00	2.0	8.00	43.96	0.62	8.84	14.5	GABION
~~DS-7(1)~~	~~0+00-2+43~~	~~0.28~~	~~RECT.~~	~~---~~	~~8.00~~	~~2.0~~	~~8.00~~	~~33.76~~	~~0.59~~	~~7.13~~	~~14.5~~	~~GABION~~
DS-8	0+00-3+09	0.28	RECT.	---	8.0	2.0	8.0	44.22	0.62	8.86	14.5	GABION
~~DS-9~~	~~0+00-11+44~~	~~0.28~~	~~RECT.~~	~~---~~	~~8.0~~	~~2.0~~	~~8.0~~	~~28.30~~	~~0.48~~	~~8.01~~	~~14.5~~	~~GABION~~
5-DS-A	**0+00 - 6+50**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-B	**0+00 - 14+39**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-C	**0+00 - 5+61**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-D	**0+00 - 13+88**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-E	**0+00 - 20+90**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-F	**0+00 - 19+86**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-G	**0+00 - 14+53**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-H	**0+00 - 5+22**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**
5-DS-I	**0+00 - 2+20**	**0.28**	**RECT.**	**---**	**8.0**	**2.0**	**8.0**	**44.20**	**0.62**	**8.86**	**14.5**	**GABION**

~~DS-7(1)~~ = DELETED AS A RESULT OF PHASE V EXPANSION

5-DS-E = ADDED DATA FOR PHASE V EXPANSION

V = EXISTING CHANNEL (NO CHANGE)

NOTES:

1. CHANNEL IS NOT PART OF OVERALL CONVEYANCE SYSTEM THUS Q, DEPTH AND VELOCITY ARE BASED ON THE 25 YEAR/ 24 HOUR STORM EVENT
2. SLOPE DRAIN DESIGNED TO CONVEY MAX. Q100 OF 44.2 CFS.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER JOSEPH M. MARTIN

NO.	REVISION	DATE

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

martin and martin incorporated
37 south main street • suite A
chambersburg, pennsylvania 17201
phone: (717) 264-6759

SCALE: AS SHOWN

PROJ. NO. 1162.6 | DWN. BY: MSH/DB | DSN. BY: JM | CHK. BY: RMB

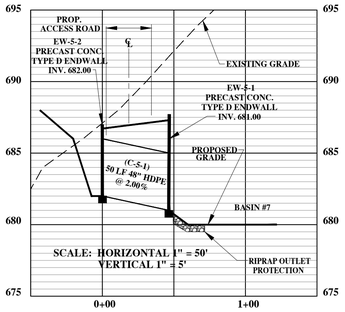
CADD FILE: 1162.6-PC-PV-12.dwg

DATE: 09/11/23

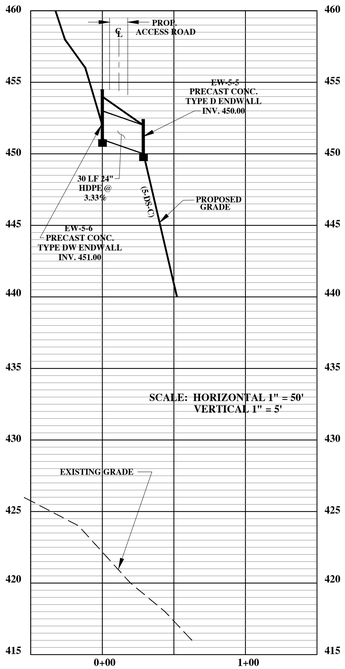
SCALE: AS SHOWN

DRAWING NO.

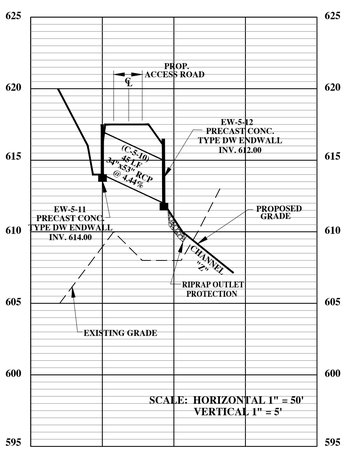
PC - 12



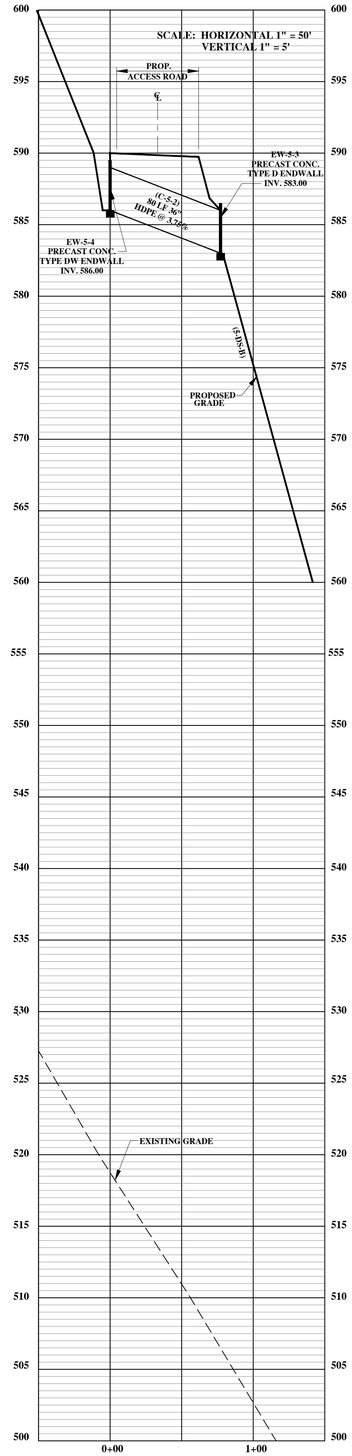
C-5-1 PROFILE



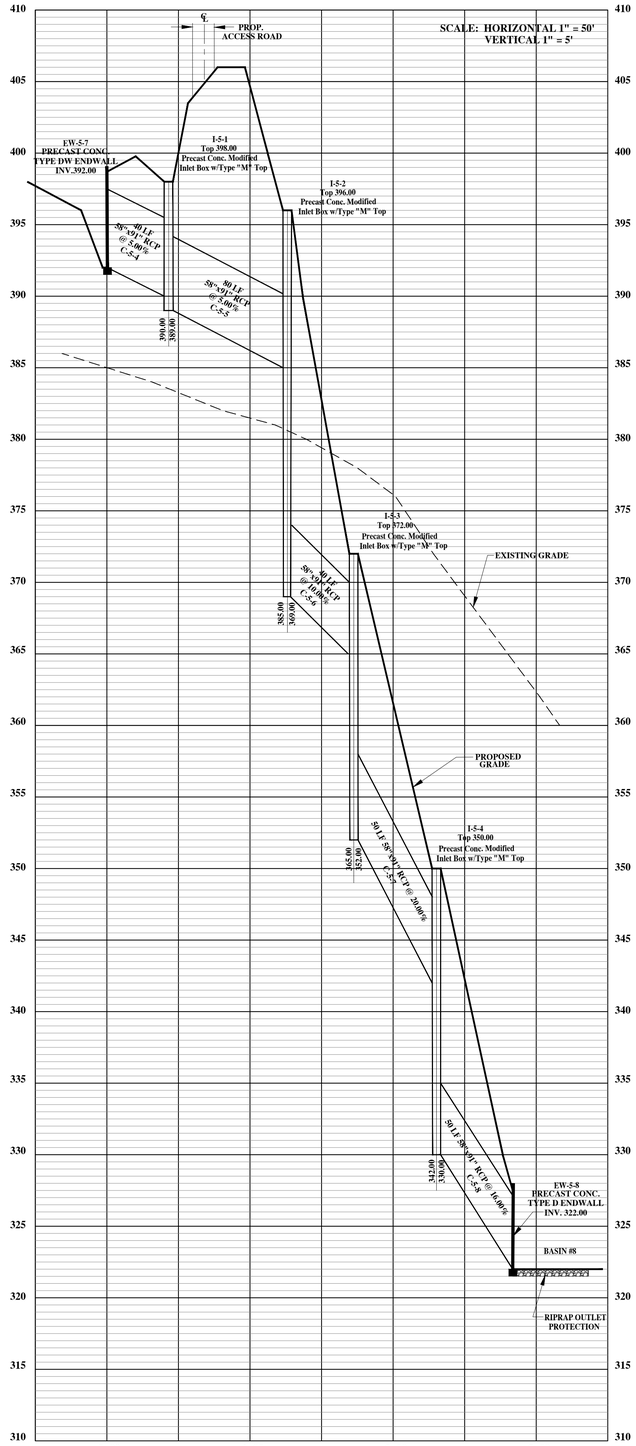
C-5-3 PROFILE



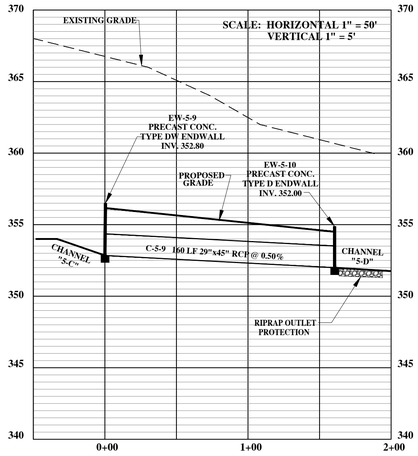
C-5-10 PROFILE



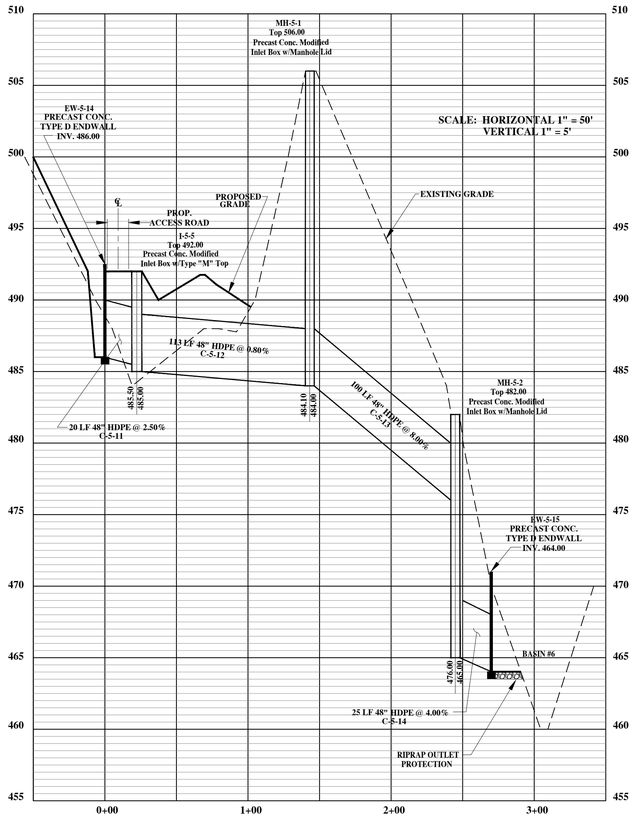
C-5-2 PROFILE



C-5-4 TO C-5-8 PROFILE



C-5-9 PROFILE



C-5-11 TO C-5-14 PROFILE

POST CONSTRUCTION STORMWATER PRIOFILES

LOWER SAUCON TWP. NORTHAMPTON CO.

PHASE V EXPANSION

Bethlehem Landfill Company

PENNSYLVANIA

NO.	REVISION	DATE

martin and martin incorporated
37 south main street suite A•
chambersburg, pennsylvania . 17201
phone: (717) 264-0759

PROJ. NO. 1162.6 | DWN. BY: MSH/DIB
DSN. BY: JM | CHK. BY: RMB

CADD FILE: 1162.6-PC-13.dwg

DATE: 09/11/23

SCALE: AS SHOWN

DRAWING NO.

PC - 13

FILE: 1162.6-PC-PV-13.dwg