PA WASTE, LLC

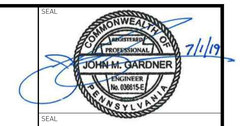
BOGGS TOWNSHIP
CLEARFIELD COUNTY, PENNSYLVANIA

MUNICIPAL SOLID WASTE LANDFILL
PHASE II PERMIT APPLICATION
CAMP HOPE RUN LANDFILL

PERMIT NO. 101719

FEBRUARY 2018
REVISED JUNE 2019

SEAL



SEAL

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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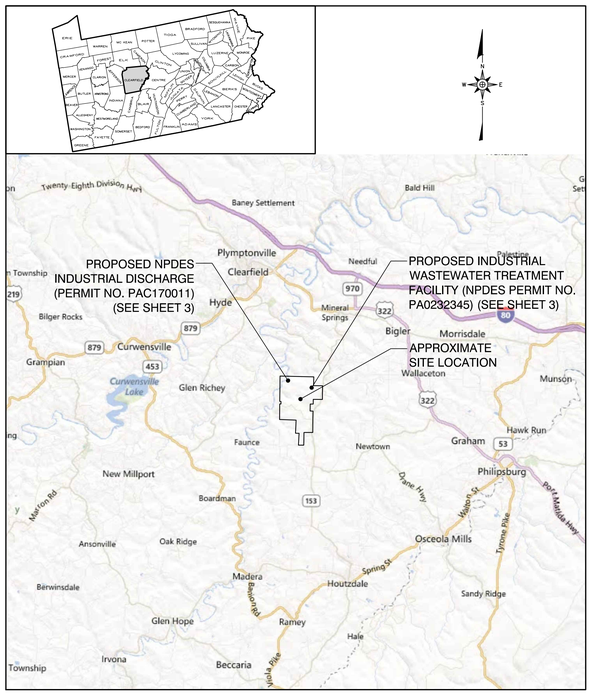
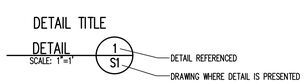


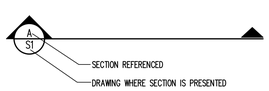
SITE LOCATION MAP
NOT TO SCALE

SHEET NO.	DRAWING NO.	DRAWING TITLE	
1	--	TITLE-COVER SHEET	1 2
2	S1	EXISTING SITE CONDITIONS	1 2
3	S2	PROPOSED DEVELOPMENT PLAN	1 2
4A	S3A	SUBBASE PLAN	1 2
4B	S3B	HANDLING PLAN	1 2
5A	S4A	TOP OF SUBBASE GRADING+LEACHATE DETECTION PIPING PLAN	1 2
5B	S4B	TOP OF PROTECTIVE COVER GRADING+LEACHATE COLLECTION PIPING PLAN	1 2
5C	S4C	LEACHATE COLLECTION/DETECTION PIPING PLAN (ENLARGEMENT)	1
5D	S4D	LEACHATE COLLECTION DETECTION PIPING PLAN (ENLARGEMENT)	1
6	S5	PHASE S2-1	1
7	S6	PHASE S2-2	1
8	S7	PHASE S2-3	1
9	S8	PHASE S2-4	1
10	S9	PHASE S2-5	1
11	S10	PHASE S2-6	1
12	S11	PHASE S3-1	1
13	S12	PHASE S3-2	1
14	S13	PHASE S3-3	1
15	S14	PHASE S3-4	1
16	S15	FINAL COVER GRADING AND DRAINAGE PLAN	1
17	X1	CROSS SECTION A-A & B-B	1 2
18	X2	CROSS SECTION C-C & D-D	1 2
19	X3	CROSS SECTION E-E	1 2
20	X4	CROSS SECTION F-F	1 2
21	X5	CROSS SECTION G-G	1 2
22	X6	CROSS SECTION H-H	1 2
23	X7	CROSS SECTION J-J	1 2
24	X8	CROSS SECTION K-K	1 2
25	X9	CROSS SECTION L-L & M-M	1 2
26	X10	PERIMETER SECTIONS (SHEET 1 OF 2)	1
27	X11	PERIMETER SECTIONS (SHEET 2 OF 2)	1
28	L1	LINER SYSTEM DETAILS	1 2
29	LC1	LEACHATE COLLECTION AND DETECTION SYSTEM DETAILS (SHEET 1 OF 3)	1
30	LC2	LEACHATE COLLECTION AND DETECTION SYSTEM DETAILS (SHEET 2 OF 3)	1 2
31	LC3	LEACHATE COLLECTION AND DETECTION SYSTEM DETAILS (SHEET 3 OF 3)	1
32	PH1	LEACHATE RISER PUMP HOUSE DETAILS	1
33	LCS1	LEACHATE CONVEYANCE AND STORAGE PLAN	1
34	LCS2	LEACHATE CONVEYANCE PLAN AND PROFILE (SHEET 1 OF 3)	1
35	LCS3	LEACHATE CONVEYANCE PLAN AND PROFILE (SHEET 2 OF 3)	1
36	LCS4	LEACHATE CONVEYANCE PLAN AND PROFILE (SHEET 3 OF 3)	1
37	LCS5	LEACHATE CONVEYANCE DETAILS	1 2
38	LCS6	LEACHATE STORAGE PLAN AND SECTION	1
39	LCS7	LEACHATE STORAGE DETAILS (SHEET 1 OF 2)	
40	LCS8	LEACHATE STORAGE DETAILS (SHEET 2 OF 2)	1
41	SP1	STOCKPILE S1 GRADING & DRAINAGE PLAN	1 2
42	SP2	STOCKPILE S2 GRADING & DRAINAGE PLAN	1 2
43	EC1	STORMWATER MANAGEMENT PLAN	1
44	EC2	SEDIMENTATION BASIN 100 PLAN SECTIONS AND DETAILS	1
45	EC3	SEDIMENTATION BASIN 200 PLAN SECTIONS AND DETAILS	1
46	EC4	SEDIMENTATION BASIN 300 PLAN SECTIONS AND DETAILS	1
47	EC5	SEDIMENTATION BASIN 600 PLAN SECTIONS AND DETAILS	1
48	EC6	SEDIMENTATION BASIN 800 PLAN SECTIONS AND DETAILS	1
49	EC7	SEDIMENTATION BASIN 900 PLAN SECTIONS AND DETAILS	1
50	EC8	SEDIMENTATION BASIN 1400 PLAN SECTIONS AND DETAILS	1
51	EC9	STORMWATER MANAGEMENT DETAILS (SHEET 1 OF 3)	1
52	EC10	STORMWATER MANAGEMENT DETAILS (SHEET 2 OF 3)	1
53	EC11	STORMWATER MANAGEMENT DETAILS (SHEET 3 OF 3)	1
54	LFG1	LANDFILL GAS MANAGEMENT PLAN	1
55	LFG2	LANDFILL GAS MANAGEMENT DETAILS (SHEET 1 OF 2)	1
56	LFG3	LANDFILL GAS MANAGEMENT DETAILS (SHEET 2 OF 2)	1
57	FC1	FINAL COVER DETAILS	1
58	MD1	MISCELLANEOUS LANDFILL DETAILS	1
59	E1	ENTRANCE FACILITIES PLAN AND PROFILE	1
60	A1	AMD TREATMENT FACILITY PLAN AND DETAILS	1

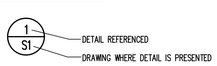
STANDARD DETAIL LABEL AND CALLOUT



STANDARD SECTION LOCATION CALLOUT (SHEET AND DETAIL)



STANDARD DETAIL CALLOUT



SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

NOTE:
1. THESE DRAWINGS ACCOMPANY AND ARE PART OF A PHASE 2 SOLID WASTE PERMIT APPLICATION TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION PREPARED BY SMITH GARDNER, INC. (FORMERLY G.N. RICHARDSON & ASSOCIATES, INC.).

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KAUFFMANN NORTH STRIP MINE AREA (RECLAIMED)

APPALACHIAN LAND CORP. RAILROAD RIGHT-OF-WAY

APPROXIMATE PROPERTY LINE

FACILITY BOUNDARY

PROPERTY OWNED BY CAMP RATTLESNAKE INC.

PENNSYLVANIA ELECTRIC COMPANY OVERHEAD ELECTRIC LINE AND RIGHT-OF-WAY

EXISTING SOIL STOCKPILE (SEE NOTE 10)

EXISTING ACCESS ROADS (TYP.) (SEE NOTE 10)

FORMER AHCC STRIP MINE (RECLAIMED)

UNMINED AREA

UNMINED AREA

UNMINED AREA

(NEAREST) EXISTING RESIDENCES

FORMER SURFACE COAL MINE AREA

FOREST LAWN LANDFILL (INACTIVE, CLOSED) (FORMER SURFACE COAL MINE)

FORMER AMD DISCHARGE AREA (NO LONGER ACTIVE)

APPROXIMATE EXISTING ALD

EXISTING (RECLAIMED) HIGHWALL (NORTH)

EXISTING WEATHER STATION (LOCATION APPROXIMATE)

FORMER KAUFFMAN SOUTH (AHCC) STRIP MINE AREA (RECLAIMED)

FORMER AL HAMILTON COAL COMPANY (AHCC) MINE ENTRANCE ROAD

EXISTING (RECLAIMED) HIGHWALL (SOUTH)

FORMER MINE ENTRY

EXISTING TREATMENT BASIN (TYP.) (SEE NOTE 10)

EXISTING SEDIMENTATION BASIN (TYP.) (SEE NOTE 10)

EXISTING AMD DISCHARGE AND TREATMENT AREA

APPROXIMATE EXISTING ALD

FORMER JOHN A. THOMPSON SURFACE (COAL) MINE

FORMER CLAY MINE AREA (SEE NOTE 2)

FORMER THOMPSON CLAY MINE

16"ø COLUMBIA GAS TRANSMISSION COMPANY NATURAL GAS PIPELINE AND RIGHT-OF-WAY

PA ROUTE 153

CLEARFIELD CREEK

SANDBURN RUN

SANBOURN RUN

CAMP HOPE RUN

LOWER KITTANNING CROP

BENCHMARK TABLE

DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM-1	277972.14	1793521.81	1768.45	CONCRETE MONUMENT – TO BE ESTABLISHED
BM-2	281698.55	1786161.24	1717.10	CONCRETE MONUMENT – TO BE ESTABLISHED
BM-3	278270.18	1788945.24	1628.00	CONCRETE MONUMENT – TO BE ESTABLISHED
BM-4	281382.38	1790180.22	1662.00	CONCRETE MONUMENT – TO BE ESTABLISHED

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LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- PROPERTY LINE
- FACILITY BOUNDARY
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- EXISTING OVERHEAD POWER TRANSMISSION LINE
- EXISTING GAS LINE
- RIGHT OF WAY
- W2 — KAUFFMAN MINE BOREHOLE LOCATION (SEE NOTE 13)
- CH-2 — KAUFFMAN MINE COREHOLE LOCATION (SEE NOTE 13)
- 1A — MACROINVERTEBRATE SAMPLING LOCATION
- W22A — MONITORING WELL INSTALLED AS PART OF THE SURFACE MINE ACTIVITIES
- NW-6B — MONITORING WELL INSTALLED AS PART OF THE LANDFILL PERMIT APPLICATION INVESTIGATION
- S2, S3 — INVESTIGATIVE WELLS (APRIL 2014, MEISER & EARL)
- BM-1 — BENCHMARK – TO BE ESTABLISHED
- S2 — SEDIMENT BASIN FROM FORMER MINING OPERATIONS
- TB — TREATMENT BASIN FROM FORMER MINING OPERATIONS
- EXISTING ACCESS PATH
- STREAM
- COAL CROPS
- GEOLOGIC FAULT LINE (INFERRED)
- GEOLOGIC FAULT LINE (APPROXIMATE)
- AREA OF FORMER STRIP MINE DISTUBANCE
- DELINEATED WETLAND (SEE REFERENCE 5)

0 400' 800' 1200'

NOTES:

1. THE LOWER KITTANNING CROP LINE IN THE STRIP MINE AREA IS APPROXIMATED AS GROUND SURFACE HAS BEEN MODIFIED BY MINING.
2. THE AREA SHOWN IS A FORMER MERCER CLAY STRIP MINE AREA. THERE IS AN ASSOCIATED FORMER DEEP MINE AREA WITH AN ENTRY LOCATED AT THE NORTHERN END OF THE STRIP MINE AREA. REFER TO ATTACHMENT 11-1 FOR ADDITIONAL DETAILS OF THIS MINING.
3. LIMITS OF THE FORMER STRIP MINE ARE APPROXIMATE.
4. THE COORDINATE SYSTEM SHOWN IS THE PENNSYLVANIA STATE PLANE GRID SYSTEM, NORTH ZONE, NAD 83.
5. ELEVATIONS REFERENCE MEAN SEA LEVEL PER NATIONAL GEODETIC VERTICAL DATUM OF 1929.
6. NATURAL GAS PIPELINE AND OVERHEAD POWERLINE LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
7. SURVEY INFORMATION FOR THE PROPERTY LINE, GAS AND POWER TRANSMISSION LINES, RIGHT-OF-WAYS, AND STATE ROUTE 153 PROVIDED BY PAUL C. RIZZO AND ASSOCIATES, INC., FROM SURVEYS CONDUCTED.
8. THE HIGH TENSION (OVERHEAD) POWERLINE INCLUDES A 200-FOOT EASEMENT.
9. ALL OF THE PROPERTY WITHIN THE LIMITS OF THE PROPOSED SITE IS CURRENTLY OWNED BY PA WASTE, LLC., EXCPET AS NOTED.
10. THESE FEATURES WERE ABANDONED FROM PRIOR SURFACE MINING OPERATIONS AT THE SITE.
11. PREVIOUS MINING HIGHWALL LOCATIONS ARE APPROXIMATE.
12. COAL CROP LINES PROVIDED BY MEISER & EARL, INC.
13. THE PLAN LOCATION OF BOREHOLES ASSOCIATED WITH THE FORMER KAUFFMAN MINE PERMIT/OPERATION WERE TRANSFERRED TO THESE DRAWINGS BY USING THE TOPOGRAPHY (USGS GLEN RICHEY QUADRANGLE, DATED 1993) DEPICTED ON A DIGITALLY-SCANNED "IMAGE" OF THE KAUFFMAN MINE PERMIT APPLICATION DRAWING (REFERENCE NO. 4) WHICH WAS 'OVERLAIN', TO THE BEST DEGREE POSSIBLE, WITH AN ELECTRONIC GEO-REFERENCED IMAGE OF THE USGS GLEN RICHEY TOPOGRAPHIC MAP USING CONTOURS AND TOPOGRAPHIC SURFACE FEATURES (I.E. STREAMS, UTILITY LINES, ETC.) THAT WERE COMMON TO BOTH MAPS. DIGITAL LOCATIONS WERE THEN CREATED FOR SELECTED BOREHOLES FROM KAUFFMAN EXHIBIT 6.2 IN PENNSYLVANIA STATE PLAIN COORDINATES, NAD 83 AND BROUGHT INTO THE GEO-REFERENCED IMAGE. THE NEW LOCATIONS WERE THEN COMPARED WITH KAUFFMAN EXHIBIT 6.2 USING A LIGHT TABLE, AND WITH SOME MINOR ADJUSTMENTS, THE 'BEST FIT' LOCATIONS FOR THESE POINTS WERE THEN MADE THAT COULD BE GEO-REFERENCED TO THE SITE COORDINATE SYSTEM.

REFERENCES:

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. EDMUNDS, W.E., 1968. GEOLOGY AND MINERAL RESOURCES OF THE NORTHERN HALF OF THE HOUTZDALE 15-MINUTE QUADRANGLE, PENNSYLVANIA. ATLAS 85AB, PA GEOLOGIC SURVEY, 150P.
4. AL HAMILTON CONTRACTING COMPANY, KAUFFMAN OPERATION: EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP, REVISED JUNE 1999.
5. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JOHN M. GARDNER — ENGINEER — No. 038015-E — 7/1/19

SEAL

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18 PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19 PADEP COMMENTS

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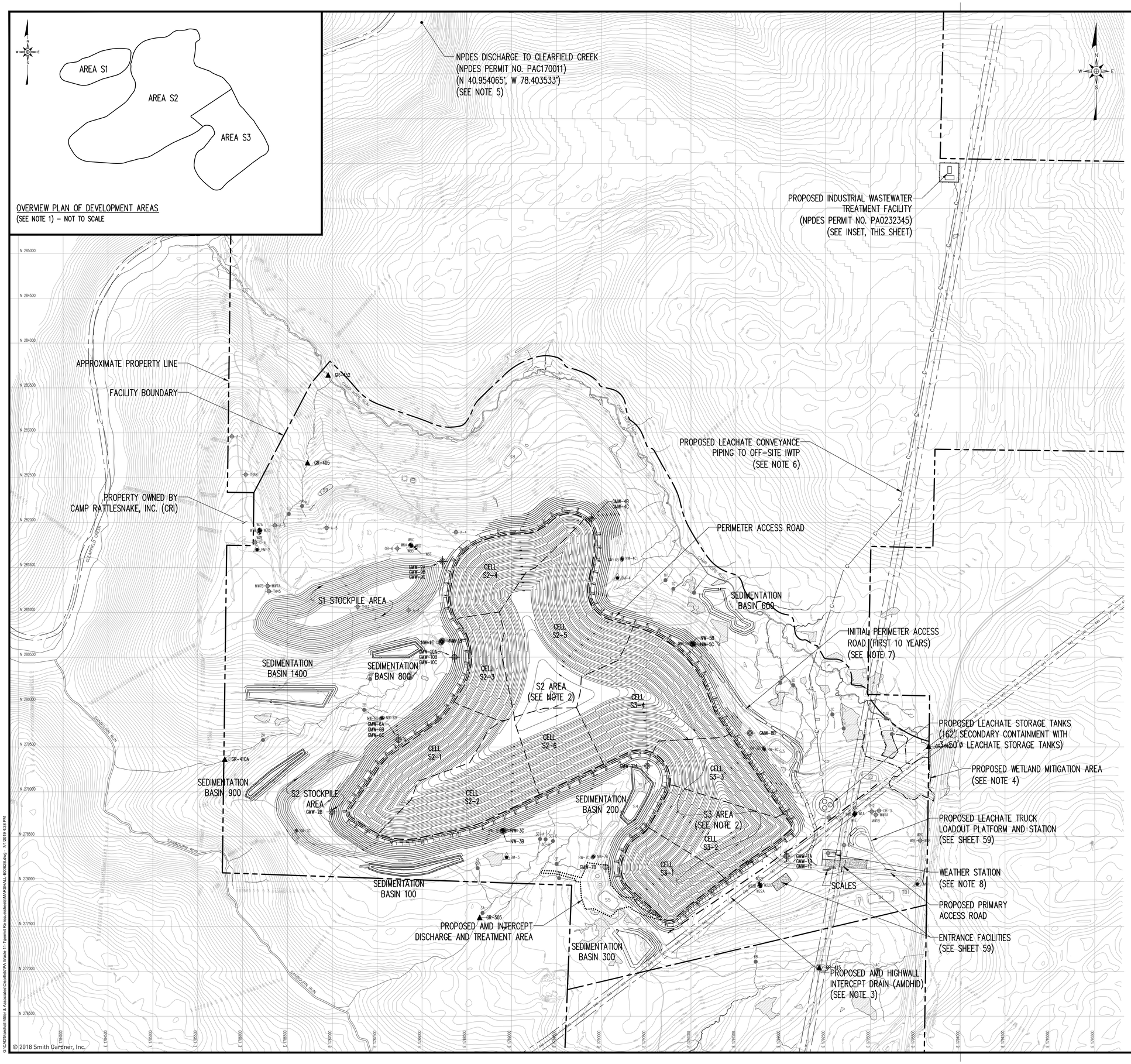
PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

EXISTING SITE CONDITIONS

DESIGNED: J.M.G.	PROJ.NO. CODE: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0057A	
SHEET NUMBER: 2	DRAWING NUMBER: S1



LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- PROPOSED CONTOUR (5' INTERVAL)
- PROPERTY LINE
- FACILITY BOUNDARY (BONDED AREA)
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- PROPOSED CELL BOUNDARY
- EXISTING OVERHEAD POWER TRANSMISSION LINE
- EXISTING GAS LINE
- RIGHT OF WAY
- AMD HIGHWALL INTERCEPT DRAIN
- LEACHATE CONVEYANCE PIPING
- W2 — KAUFFMAN MINE BOREHOLE LOCATION
- 1A — MACROINVERTEBRATE SAMPLING LOCATION
- W22A — MONITORING WELL INSTALLED AS PART OF THE SURFACE MINE ACTIVITIES
- NW-6B — MONITORING WELL INSTALLED AS PART OF THE LANDFILL PERMIT APPLICATION INVESTIGATION
- BM-1 — BENCHMARK – TO BE ESTABLISHED
- GMW-1 — PROPOSED NEW GROUNDWATER MONITORING WELL CLUSTER A=UPPER (KITTANNING) SYSTEM B=MIDDLE (CLARION) SYSTEM C=LOWER (HOMEWOOD) SYSTEM
- GR-410A — SURFACE WATER MONITORING POINT PROPOSED FOR MONITORING NETWORK
- S2 — SEDIMENT BASIN FROM FORMER MINING OPERATIONS
- TB — TREATMENT BASIN FROM FORMER MINING OPERATIONS
- STREAM
- EXISTING ACCESS PATH
- DELINEATED WETLAND (SEE REFERENCE 4)
- AMD TREATMENT AREA
- WETLAND MITIGATION AREA

NOTES:

1. THE PROPOSED DEVELOPMENT AREA IS DIVIDED INTO THREE PRIMARY AREAS AS A FUNCTION OF THEIR EXISTING CONDITIONS AND PROPOSED USE. AREA S1 IS CURRENTLY UNDEVELOPED WITH ONLY LIMITED PRIOR SURFACE MINING AND IS INTENDED FOR PERMANENT SOIL/ROCK STOCKPILING; AREA S2 IS UNDEVELOPED AND IS PLANNED FOR WASTE DISPOSAL CONSTRUCTION/OPERATION AND SOIL/ROCK STOCKPILING; AND AREA S3 IS PRESENTLY A RECLAIMED SURFACE MINED AREA PLANNED FOR WASTE DISPOSAL CONSTRUCTION/OPERATION.
2. THE PHASE S3 AREA IS A PREVIOUSLY SURFACE MINED AREA (LOWER KITTANNING COAL) THAT WAS RECLAIMED TO ITS CURRENT CONDITION AS APPROXIMATE ORIGINAL CONTOUR. THE PHASE S2 AREA HAS HAD NO PRIOR SURFACE MINING. THE S1 AREA HAS HAD ONLY LIMITED PREVIOUS SURFACE MINING AS SHOWN ON SHEET 2.
3. THE ACTUAL AMD HIGHWALL INTERCEPT DRAIN LOCATION WILL VARY AS A FUNCTION OF THE ACTUAL TOE-OF-HIGHWALL LOCATION ENCOUNTERED IN THE FIELD AT THE TIME OF THE WORK.
4. AT THE TIME OF THIS APPLICATION THESE AREAS ARE PROPOSED FOR MITIGATION OF DIRECT AND SECONDARY WETLAND IMPACTS. THE ACTUAL, FINAL MITIGATION APPROVED BY BOTH DEP AND THE ARMY CORPS OF ENGINEERS MAY VARY FROM WHAT IS SHOWN HERE.
5. THE WASTEWATER TREATMENT DISCHARGE IS BEING SEPARATELY PERMITTED THROUGH AN NPDES PROCESS WITH DEP, CLEAN WATER PROGRAM (DRAFT PERMIT ISSUED 5/31/13).
6. THE DISTURBANCE ASSOCIATED WITH THIS PROPOSED CONVEYANCE SYSTEM IS BEING SEPARATELY PERMITTED THROUGH A CHAPTER 102 AND CHAPTER 105 PROCESS WITH DEP, WATERWAYS AND WETLANDS PROGRAM AND THE ARMY CORPS OF ENGINEERS.
7. THIS ACCESS ROAD WILL BE USED AS NEEDED WHILE FORMER MINE SPOIL IN THE S3 AREA IS RE-EXCAVATED AND THE PERIMETER BERMS ARE CONSTRUCTED.
8. WEATHER STATION TO BE PLACED ON OR BESIDE OFFICE BUILDING.

REFERENCES:

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. AL HAMILTON CONTRACTING COMPANY, KAUFFMAN OPERATION: EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP, REVISED JUNE 1999.
4. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

0 400' 800' 1200'

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

PROPOSED DEVELOPMENT PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0062B	
SHEET NUMBER: 3	DRAWING NUMBER: S2

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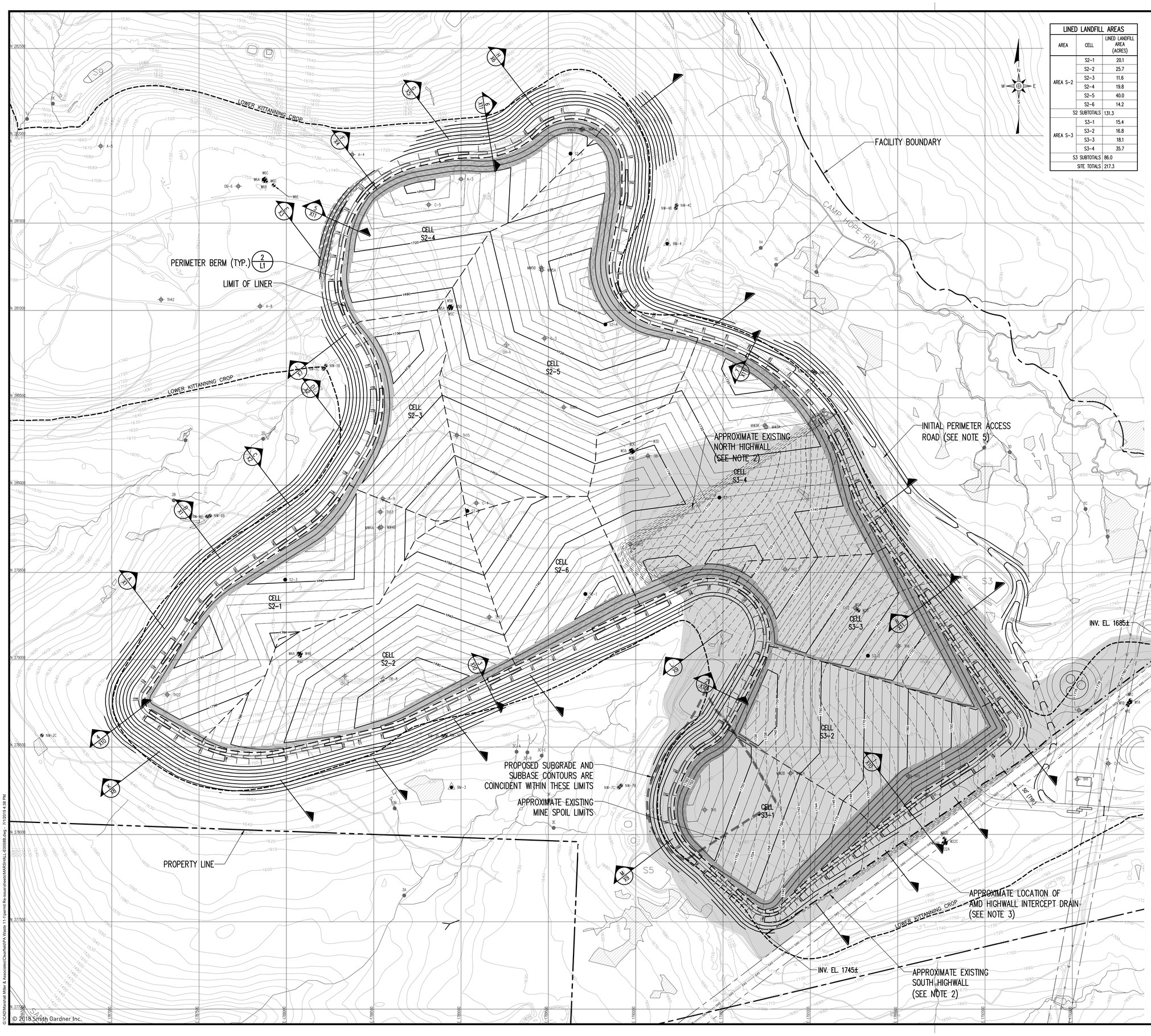

LINED LANDFILL AREAS		
AREA	CELL	LINED LANDFILL AREA (ACRES)
AREA S-2	S2-1	20.1
	S2-2	25.7
	S2-3	11.6
	S2-4	19.8
	S2-5	40.0
	S2-6	14.2
S2 SUBTOTALS		131.3
AREA S-3	S3-1	15.4
	S3-2	16.8
	S3-3	18.1
	S3-4	35.7
S3 SUBTOTALS		86.0
SITE TOTALS		217.3

LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- 1710 PROPOSED SUBBASE CONTOUR (SEE NOTE 4) (10' INTERVAL)
- PROPOSED SUBBASE CONTOUR (SEE NOTE 4) (2' INTERVAL)
- 1710 PROPOSED SUBGRADE CONTOUR (S3 AREA) (10' INTERVAL)
- PROPOSED SUBGRADE CONTOUR (S3 AREA) (2' INTERVAL)
- PROPOSED CELL BOUNDARY
- APPROXIMATE PROPERTY LINE
- FACILITY BOUNDARY
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- OE EXISTING OVERHEAD POWER TRANSMISSION LINE
- GAS EXISTING GAS LINE
- RIGHT OF WAY
- AMD HIGHWALL INTERCEPT DRAIN
- W2 KAUFFMAN MINE BOREHOLE LOCATION
- CH-2 KAUFFMAN MINE COREHOLE LOCATION
- 1A MACROINVERTEBRATE SAMPLING LOCATION
- W22A MONITORING WELL INSTALLED AS PART OF THE SURFACE MINE ACTIVITIES
- NW-6B NEW MONITORING WELL INSTALLED AS PART OF THE LANDFILL PERMIT APPLICATION INVESTIGATION
- S2, S3 INVESTIGATIVE WELLS (APRIL 2014, M&E)
- BM-1 BENCHMARK – TO BE ESTABLISHED
- S2 SEDIMENT BASIN FROM FORMER MINING OPERATIONS
- TB TREATMENT BASIN FROM FORMER MINING OPERATIONS
- EXISTING ACCESS PATH
- STREAM
- LOWER KITTANNING CROP
- AREA OF FORMER (COAL) SURFACE MINE DISTURBANCE (SEE NOTE 2)
- DELINEATED WETLAND (SEE REFERENCE 4)

NOTES

1. SUBBASE IN THE S3 AREA IS INTENDED TO EXTEND DOWN TO BUT NOT BELOW THE PREVIOUSLY MINED LOWER KITTANNING COAL FLOOR (SUBGRADE), HOWEVER MOST AREAS ARE TO BE RECEIVE STRUCTURAL FILL TO REACH SUBBASE GRADES.
2. THE LIMITS OF THE FORMER SURFACE (COAL) MINE ARE APPROXIMATE. SIMILARLY, THE EXISTING HIGHWALL LOCATIONS SHOWN ARE BASED ON MINING RECORDS AND MAY VARY FROM THAT SHOWN HERE. THE ACTUAL LOCATIONS WILL BE DETERMINED IN THE FIELD AT THE TIME OF THE WORK.
3. THE ACTUAL AMD HIGHWALL INTERCEPT DRAIN LOCATION WILL VARY AS A FUNCTION OF THE ACTUAL TOE-OF-HIGHWALL LOCATION ENCOUNTERED IN THE FIELD.
4. SUBBASE CONTOURS REPRESENT THE BOTTOM OF THE LINER SYSTEM (BOTTOM OF SUBBASE LAYER) WITHIN THE LINED WASTE AREA. OUTSIDE OF THE LINED AREA, SUBBASE REPRESENTS FINAL GRADING OF STRUCTURAL FILL AREAS.
5. THE LOCATION OF THIS TEMPORARY ACCESS ROAD MAY VARY ACROSS THE S3 AREA AS MATERIAL IN THIS AREA IS RE-EXCAVATED.
6. WELLS, BOREHOLES, ETC. WILL BE ABANDONED IN ACCORDANCE WITH PROCEDURES PRESENTED IN FORM 6 AS CELL AREAS ARE DEVELOPED.

REFERENCES:

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. AL HAMILTON CONTRACTING COMPANY, KAUFFMAN OPERATION: EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP, REVISED JUNE 1999.
4. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 039615-E
7/1/19

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18 PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19 PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

SUBBASE PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0058B	
SHEET NUMBER: 4A	DRAWING NUMBER: S3A

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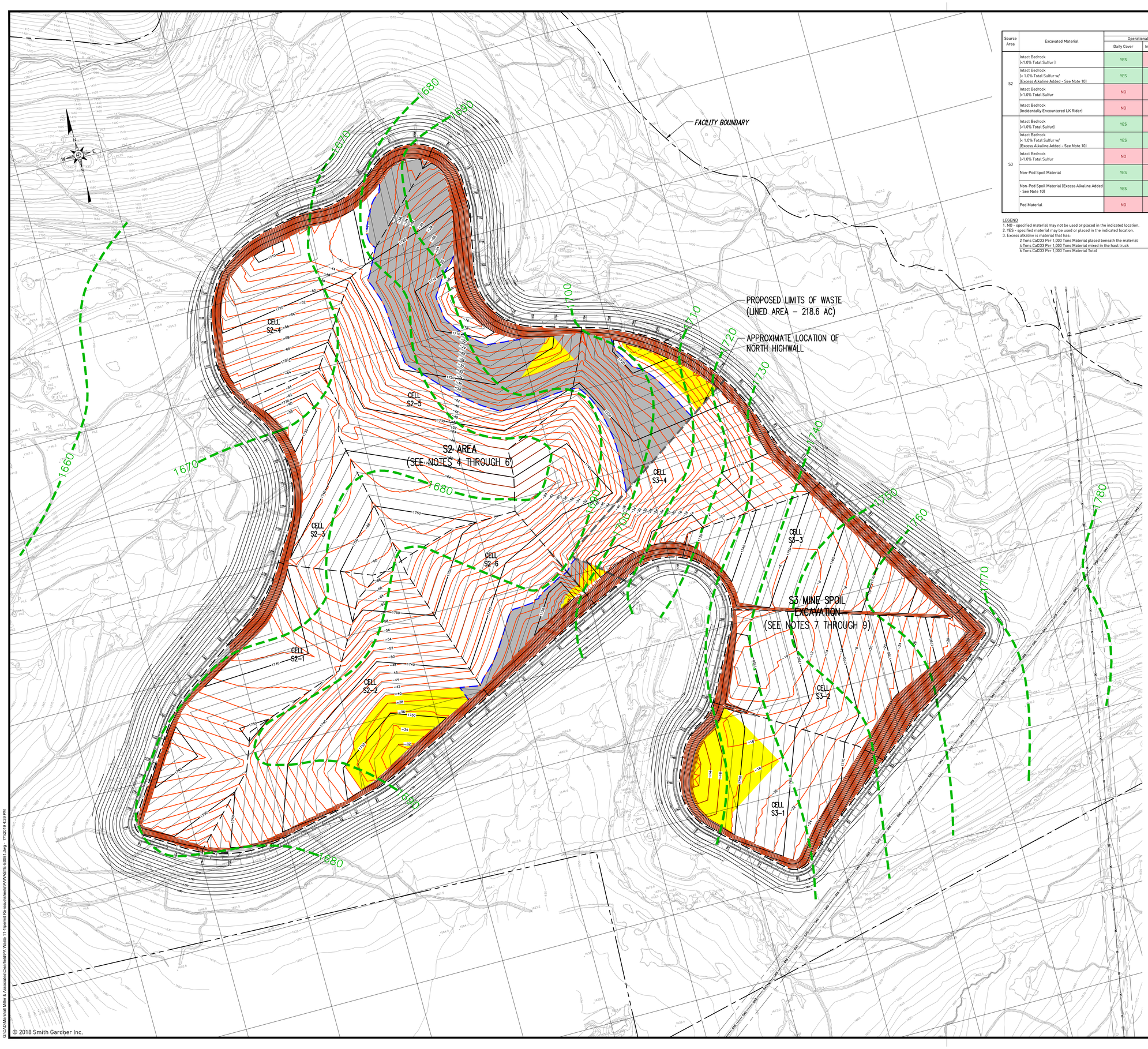

SUMMARY HANDLING PLAN FOR EXCAVATED MATERIAL

Source Area	Excavated Material	Material Uses and Placement Location							
		Operational Soils		Structural Fill			Stockpile		Waste
		Daily Cover	Intermediate Cover	Exposed	Under Lined Areas	Under Lined Areas w/o 5' of LK or GW	S1	S2	
S2	Intact Bedrock (<1.0% Total Sulfur)	YES	NO	NO	YES	NO	NO	NO	NO
	Intact Bedrock (< 1.0% Total Sulfur w/ (Excess Alkaline Added - See Note 10)	YES	YES	YES	YES	YES	NO	YES	NO
	Intact Bedrock (>1.0% Total Sulfur	NO	NO	NO	NO	NO	NO	NO	YES
	Intact Bedrock (Incidentally Encountered LK Rider)	NO	NO	NO	NO	NO	NO	NO	YES
S3	Intact Bedrock (<1.0% Total Sulfur)	YES	NO	NO	YES	NO	NO	NO	NO
	Intact Bedrock (< 1.0% Total Sulfur w/ (Excess Alkaline Added - See Note 10)	YES	YES	YES	YES	YES	YES	NO	NO
	Intact Bedrock (>1.0% Total Sulfur	NO	NO	NO	NO	NO	NO	NO	YES
	Non-Pod Spoil Material	YES	NO	NO	YES	NO	NO	NO	NO
	Non-Pod Spoil Material (Excess Alkaline Added - See Note 10)	YES	YES	YES	YES	YES	YES	NO	NO
	Pod Material	NO	NO	NO	NO	NO	NO	NO	YES

LEGEND
1. NO - specified material may not be used or placed in the indicated location.
2. YES - specified material may be used or placed in the indicated location.
3. Excess alkaline is material that has:
   2 Tons $CaCO_3$ Per 1,000 Tons Material placed beneath the material
   4 Tons $CaCO_3$ Per 1,000 Tons Material mixed in the haul truck
   6 Tons $CaCO_3$ Per 1,000 Tons Material Total

LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- 1832 SUBBASE CONTOUR (10' INTERVAL)
- SUBBASE CONTOUR (2' INTERVAL)
- 30 ISOPACH LINES (2' INTERVAL) (SEE NOTE 3)
- PROPERTY LINE
- FACILITY BOUNDARY
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- OE OE EXISTING OVERHEAD POWER TRANSMISSION LINE
- GAS GAS GAS EXISTING GAS LINE
- RIGHT OF WAY
- PROPOSED LIMIT OF WASTE (LINED AREA)
- 1680 STRUCTURAL CONTOUR BASE OF LOWER KITTANNING COAL
- TOTAL SULFUR >1.0% (SEE NOTE 4)
- POTENTIAL LK< LIMITS (SEE NOTE 5)

NOTES

1. HOLES A-4 AND A-8 ARE (APPROXIMATELY) 230 AND 430 FEET, RESPECTIVELY OUTSIDE THE WASTE DISPOSAL BOUNDARY.
2. LK: LOWER KITTANNING COAL.
3. THE ISOPACH LINES REPRESENT THE DISTANCE BETWEEN THE SUBBASE CONTOURS AND THE STRUCTURAL CONTOUR BASE OF THE LOWER KITTANNING COAL. A NEGATIVE VALUE REPRESENTS DEPTH BELOW SUBBASE.
4. HIGH SULFUR ZONES (TOTAL SULFUR > 1%) WILL BE ENCOUNTERED DURING SUBGRADE EXCAVATION WITHIN THE S2 AND S3 AREA. THESE ZONES ARE VISUALLY CHARACTERIZED BY THEIR GRAY-BLACK/BLACK SHALE APPEARANCE. WHEN ENCOUNTERED THESE MATERIALS SHALL BE EXCAVATED AND DISPOSED OF AS 'WASTE'; WHEN THE HIGH SULFUR ZONE IS PLACED, IT WILL BE COVERED DAILY ALONG WITH MSW WASTE.
5. DURING S2 AREA EXCAVATION, THE LOWER KITTANNING RIDER (LKr) MAY BE ENCOUNTERED WITHIN THE HORIZONTAL LIMITS IDENTIFIED FROM 20 TO 40 FEET ABOVE THE BASE OF THE LOWER KITTANNING (SEE SHEET 4B). THE LKr IS VISUALLY CHARACTERIZED AS A COAL WITH CARBONACEOUS SHALE INTERMIXED WITH BLACK SHALE ABOVE AND BELOW THE LKr, WHICH COULD BE UP TO 2-FEET-THICK. WHEN ENCOUNTERED THESE MATERIALS SHALL BE EXCAVATED AND DISPOSED IN THE LANDFILL AS A 'WASTE'.
6. ALL OTHER S2 AND S3 INTACT ROCK EXCAVATION (TOTAL SULFUR < 1%) SHALL BE EXCAVATED AND USED AS STRUCTURAL FILL, OPERATIONAL COVER OR STOCKPILED IN ACCORDANCE WITH THE MATERIAL HANDLING PLAN TABLE ON THIS SHEET.
7. DURING EXCAVATION OF S3 MINE SPOIL, PREVIOUSLY SPECIAL HANDLED MATERIAL PLACED IN S3 WILL BE ENCOUNTERED. SULFUR-BEARING MATERIAL IN S3 INCLUDES THE CONSTRUCTED PODS AS WELL AS THE LK BOTTOM SPLIT AND UNDERLYING BINDERS/SHALES CORRESPONDING TO THE OLD STRIP MINE PIT FLOOR. THESE MATERIALS ARE VISUALLY CHARACTERIZED BY THEIR HIGH CONTRAST IN COLOR, LAYERED CONSTRUCTION FEATURES OF THE PODS, AND THEIR LINEAR NATURE. THEY WILL BE VISUALLY IDENTIFIABLE BY THEIR DARK GRAY OR BLACK COLOR.
8. ONCE PODS ARE IDENTIFIED, THE BOTTOM OF THE EXCAVATION WILL STEP UP TO 2' ABOVE THE POD AND THE NON-POD MATERIAL WILL BE STRIPPED. ONCE THE POD EXTENTS ARE IDENTIFIED, THE POD WILL BE EXCAVATED AND DISPOSED WITHIN THE LANDFILL AS A 'WASTE'. WHEN THE POD MATERIAL IS PLACED, IT WILL BE COVERED DAILY ALONG WITH MSW WASTE.
9. ALL OTHER MINE SPOIL SHALL BE EXCAVATED AND USED AS STRUCTURAL FILL, OPERATIONAL COVER OR STOCKPILED IN ACCORDANCE WITH THE MATERIAL HANDLING PLAN TABLE ON THIS SHEET.
10. ALKALINE STOCKPILES SHALL BE MAINTAINED WITHIN THE ACTIVE CONSTRUCTION LIMITS, ACTIVE S3 MINE SPOIL EXCAVATION, STOCKPILE S1 OR STOCKPILE S2, AS NEEDED TO TREAT INTACT BEDROCK AND/OR NON-POD SPOIL MATERIAL. ALKALINE STORAGE WITHIN THE CELL CONSTRUCTION LIMITS SHALL BE CONTAINED WITHIN THE CONSTRUCTION LIMITS AND WITHIN THE WATERSHED LIMITS OF ONE OF THE SEDIMENTATION BASINS. ALKALINE STORAGE WITHIN THE S3 MINE SPOIL AREA SHALL BE CONTAINED WITHIN THE EXCAVATION LIMITS UPGRADIENT OF CONTACT WATER MANAGEMENT BERMS AND CONTACT WATER PUMP STATIONS SHOWN IN THE PHASING PLANS, SUCH THAT STORMWATER RUNOFF CAN BE COLLECTED AND CONVEYED TO THE AMD TREATMENT AREA. ALKALINE STORAGE DETAILS SPECIFIC TO THE STOCKPILE S1 AND S2 ARE PROVIDED ON DRAWINGS SP1 AND SP2.

REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. PUBLICATION TITLED, "COAL MINE DRAINAGE PREDICTION AND POLLUTION PREVENTION IN PENNSYLVANIA", PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OCTOBER 1998, CHAPTER 11, INTERPRETATION OF ACID-BASE ACCOUNTING.

0 200' 400' 600'

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL JOHN M. GARDNER ENGINEER No. 038015-E 7/1/19

SEAL

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

HANDLING PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: PAWASTE-E0081	
SHEET NUMBER: 4B	DRAWING NUMBER: S3B

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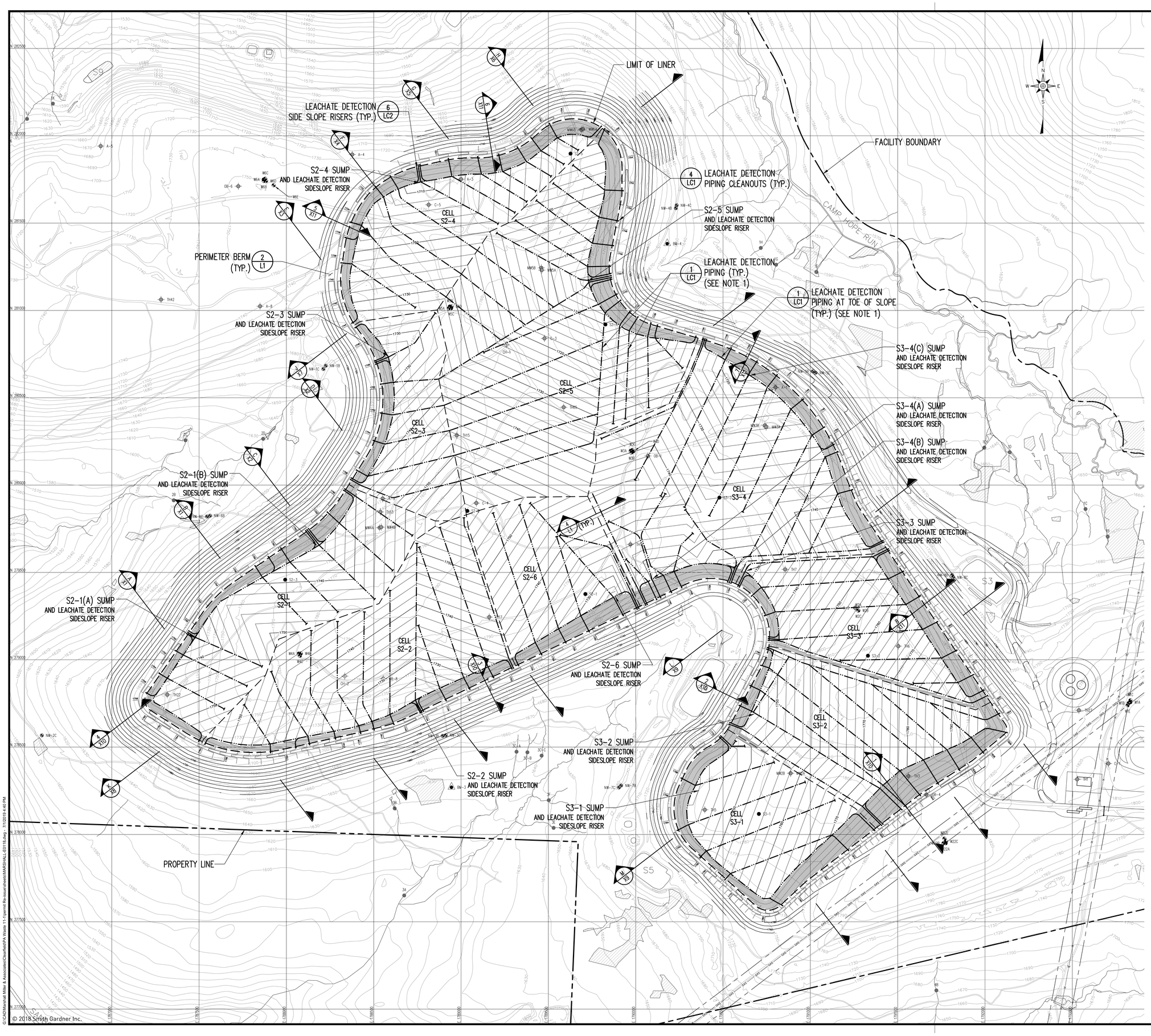

LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- 1710 PROPOSED TOP OF SUBBASE CONTOUR (10' INTERVAL)
- PROPOSED TOP OF SUBBASE CONTOUR (2' INTERVAL) (SHOWN ONLY IN BASE AREAS FOR CLARITY)
- PROPOSED CELL BOUNDARY
- APPROXIMATE PROPERTY LINE
- FACILITY BOUNDARY
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- LEACHATE DETECTION PIPING (PERFORATED)
- LEACHATE DETECTION PIPING (SOLID) WITH CLEANOUT ACCESS
- OE OE EXISTING OVERHEAD POWER TRANSMISSION LINE
- GAS GAS GAS EXISTING GAS LINE
- RIGHT OF WAY
- W2 KAUFFMAN MINE FORMER BOREHOLE LOCATION
- CH-2 KAUFFMAN MINE COREHOLE LOCATION
- 1A MACROINVERTEBRATE SAMPLING LOCATION
- W22A MONITORING WELL INSTALLED AS PART OF THE SURFACE MINE ACTIVITIES
- NW-6B NEW MONITORING WELL INSTALLED AS PART OF THE LANDFILL PERMIT APPLICATION INVESTIGATION
- S2, S3 INVESTIGATIVE WELLS (APRIL 2014, M&E)
- BM-1 BENCHMARK – TO BE ESTABLISHED
- S2 SEDIMENT BASIN FROM FORMER MINING OPERATIONS
- TB TREATMENT BASIN FROM FORMER MINING OPERATIONS
- STREAM
- DELINEATED WETLAND (SEE REFERENCE 4)

NOTES

1. SWEEPS AND FIELD BENDS (WITH RADII OF AT LEAST 22 DIAMETERS, OR ABOUT 15 FEET FOR 8" LCS PIPE AND 11 FEET FOR 6" LDS PIPING) RATHER THAN MOLDED ELBOWS OR PREFABRICATED FITTINGS WILL BE USED AND 90-DEGREE BENDS IN ALL LEACHATE PIPES WILL NOT BE ALLOWED.
2. REFER TO SHEETS 5C AND 5D FOR 1"=100' PLANS OF THE LEACHATE DETECTION AND COLLECTION PIPING.

REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
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3. AL HAMILTON CONTRACTING COMPANY, KAUFFMAN OPERATION: EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP, REVISED JUNE 1999.
4. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

0 200' 400' 600'

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 038015-E
7/1/19

SEAL

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		PADEP COMMENTS
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		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

TOP OF SUBBASE GRADING AND LEACHATE DETECTION PIPING PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0118	
SHEET NUMBER: 5A	DRAWING NUMBER: S4A

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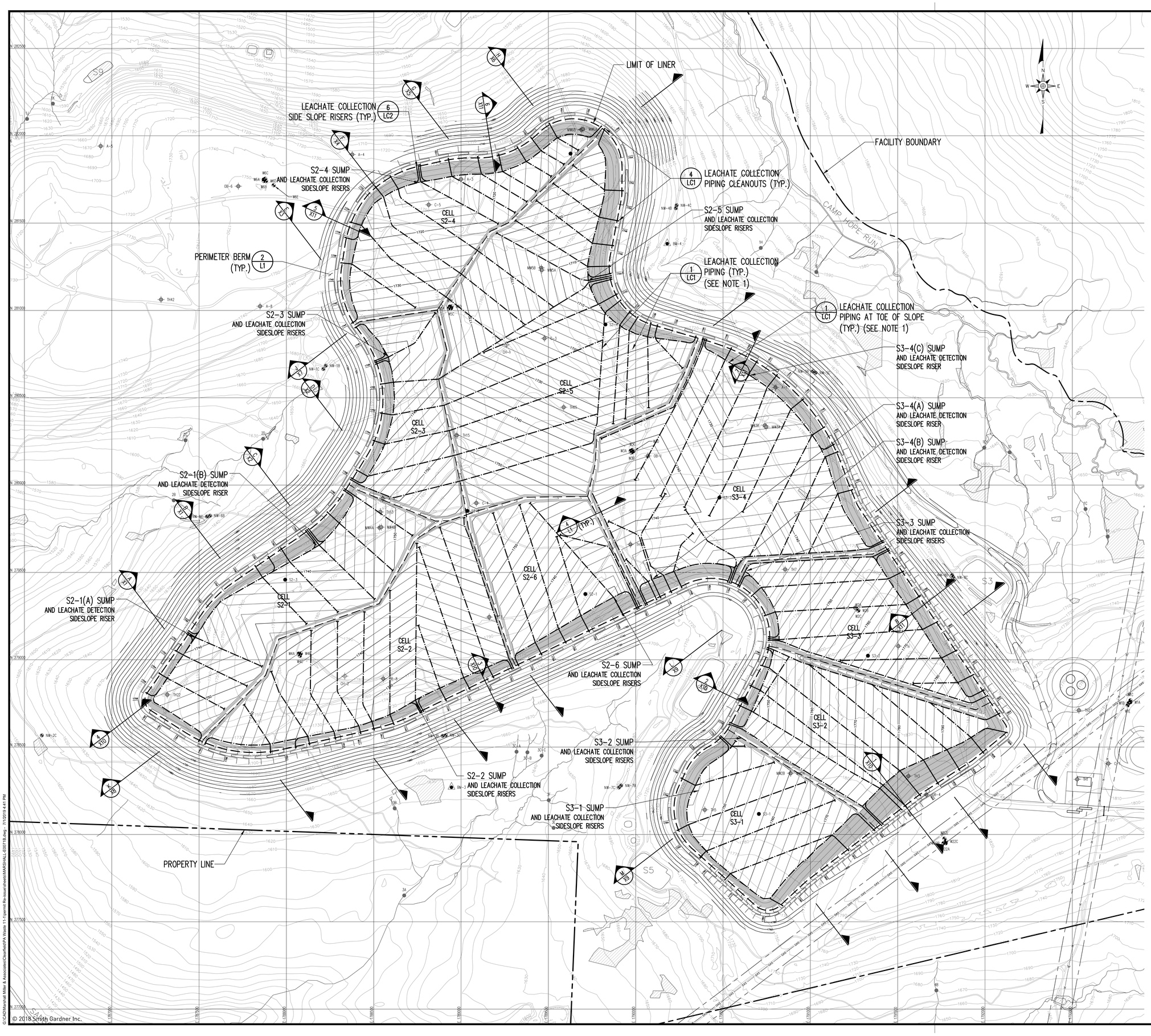

LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- 1710 PROPOSED TOP OF PROTECTIVE COVER CONTOUR (10' INTERVAL)
- PROPOSED TOP OF PROTECTIVE COVER CONTOUR (2' INTERVAL) (SHOWN ONLY IN BASE AREAS FOR CLARITY)
- PROPOSED CELL BOUNDARY
- APPROXIMATE PROPERTY LINE
- FACILITY BOUNDARY
- FACILITY LIMIT COINCIDENT WITH PROPERTY LINE
- LEACHATE COLLECTION PIPING (PERFORATED)
- LEACHATE COLLECTION PIPING (SOLID) WITH CLEANOUT ACCESS
- OX — OX EXISTING OVERHEAD POWER TRANSMISSION LINE
- GAS — GAS — GAS EXISTING GAS LINE
- RIGHT OF WAY
- W2 KAUFFMAN MINE FORMER BOREHOLE LOCATION
- CH-2 KAUFFMAN MINE COREHOLE LOCATION
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- S2, S3 INVESTIGATIVE WELLS (APRIL 2014, M&E)
- BM-1 BENCHMARK – TO BE ESTABLISHED
- S2 SEDIMENT BASIN FROM FORMER MINING OPERATIONS
- TB TREATMENT BASIN FROM FORMER MINING OPERATIONS
- STREAM
- DELINEATED WETLAND (SEE REFERENCE 4)

NOTES

1. SWEEPS AND FIELD BENDS (WITH RADII OF AT LEAST 22 DIAMETERS, OR ABOUT 15 FEET FOR 8" LCS PIPE AND 11 FEET FOR 6" LDS PIPING) RATHER THAN WOLDED ELBOWS OR PREFABRICATED FITTINGS WILL BE USED AND 90-DEGREE BENDS IN ALL LEACHATE PIPES WILL NOT BE ALLOWED.
2. REFER TO SHEETS 5C AND 5D FOR 1"=100' PLANS OF THE LEACHATE DETECTION AND COLLECTION PIPING.

REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
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3. AL HAMILTON CONTRACTING COMPANY, KAUFFMAN OPERATION: EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP, REVISED JUNE 1999.
4. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

0 200' 400' 600'

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL:

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REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 036615-E
7/1/19

REV.	DATE	DESCRIPTION
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		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

TOP OF PROTECTIVE COVER GRADING AND LEACHATE COLLECTION PIPING PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0071B	
SHEET NUMBER: 5B	DRAWING NUMBER: S4B

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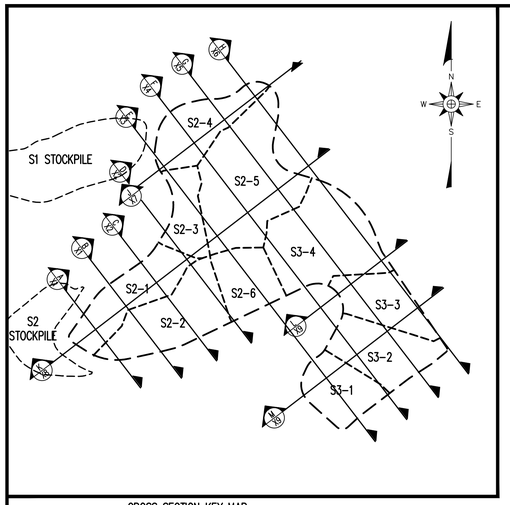
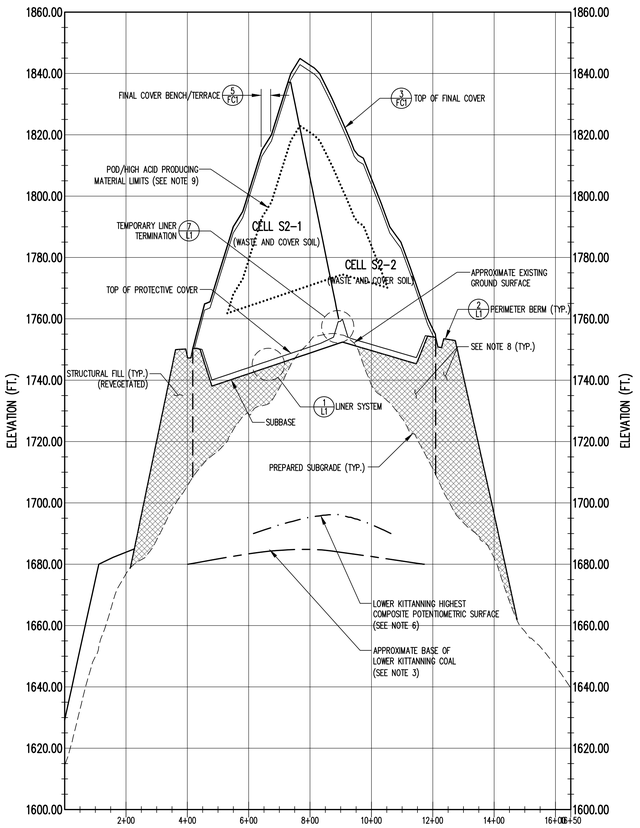
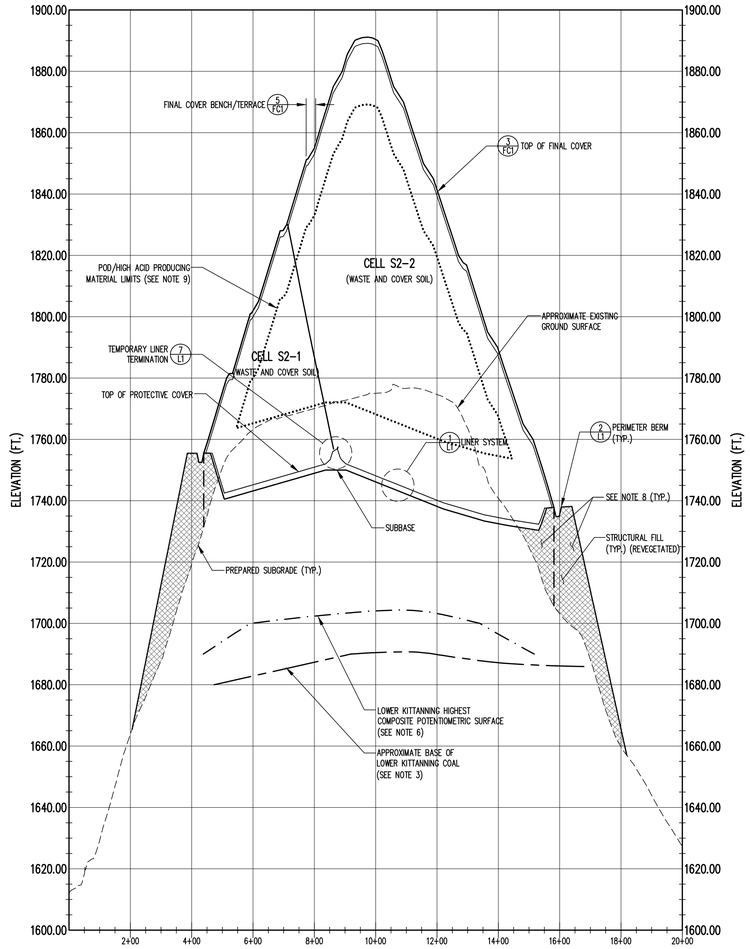


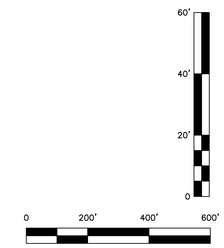
CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION A–A
SECTION A / X1
AS SHOWN



SECTION B–B
SECTION B / X1
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

NOTES

1. FINAL COVER SLOPES AND BENCHES SHOWN ON THE CROSS SECTION MAY BE DISTORTED BECAUSE THE SECTION IS GENERALLY NOT NORMAL TO THE LANDFILL SLOPES.
2. REFER TO SHEET 4, S3 FOR SUBBASE AND SUBGRADE CONTOURS.
3. REFER TO FORM 6 OF THE ACCOMPANYING PERMIT APPLICATION FOR DETAILS REGARDING THE LOWER KITTANNING COAL SEAM.
4. REFER TO FORM 11 REGARDING THE MINING AND MINERAL ASPECTS OF THE PROPOSED DEVELOPMENT.
5. INTERMEDIATE SLOPES VARY UP TO 2H:1V (MAX).
6. REFER TO FORM 7 FOR DETAILS REGARDING GROUNDWATER LEVELS.
7. INTERMEDIATE SLOPE LOCATIONS MAY VARY IN THE EVENT THAT CELLS ARE CONSTRUCTED IN PHASES WITH SUBCELLS.
8. STRUCTURAL FILL PLACED BENEATH LINED/CAPPED AREAS MAY BE FROM EITHER THE S2 OR S3 IN-TACT ROCK EXCAVATION OR THE S3 OVERBURDEN (I.E. NON-POD) MATERIAL AND DOES NOT REQUIRE ALKALINE ADDITION, WITH THE EXCEPTION OF MATERIAL PLACED WITHIN 5' OF THE LOWER KITTANNING POTENTIOMETRIC SURFACE. MATERIAL PLACED WITHIN THIS ZONE AND MATERIAL PLACED OUTSIDE THE LINED AREA SHALL BE TREATED WITH ALKALINE MATERIAL AT A RATE OF 6 TONS ALKALINE/1,000 TONS OF EXCAVATED MATERIAL.
9. HIGH SULFUR MATERIAL (SULFUR > 1%) FROM THE S2 AND S3 EXCAVATION AND "POD" MATERIAL FROM THE S3 MINE SPOIL EXCAVATION SHALL BE DISPOSED WITHIN THE LANDFILL AS WASTE. THIS MATERIAL SHALL NOT BE PLACED WITHIN 20' OF THE PROTECTIVE COVER OR 20' OF THE FINAL COVER.

REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. THE LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE REFERENCES EXHIBIT 7–1.1 (MEISER + EARL).
3. THE BASE OF THE LOWER KITTANNING COAL REFERENCE EXHIBIT 6–1.10 (MEISER + EARL).

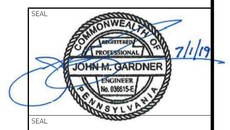
PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL



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REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION A-A & B-B

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0073A	
SHEET NUMBER: 17	DRAWING NUMBER: X1

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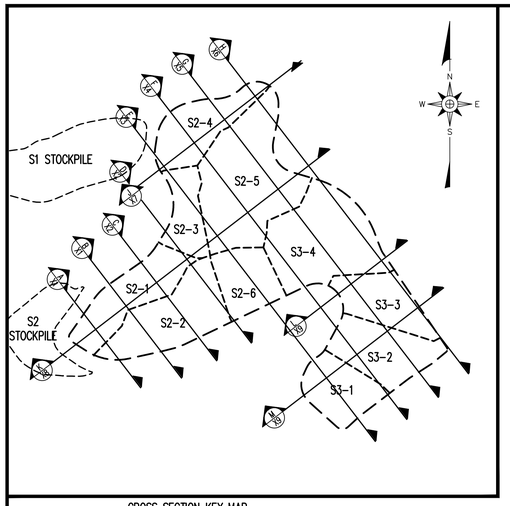
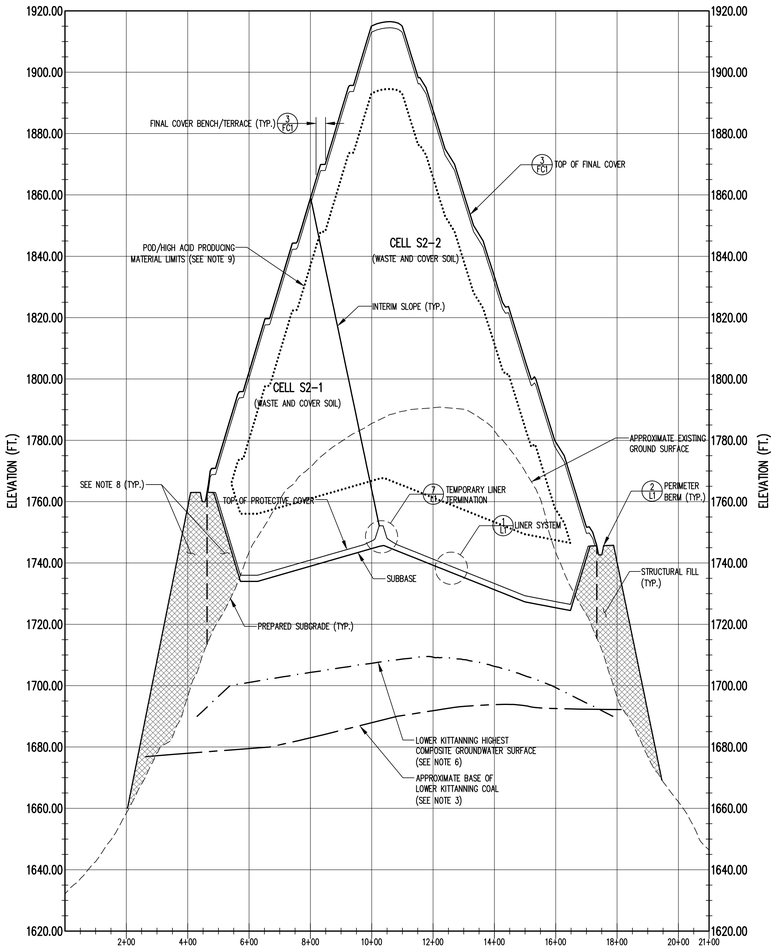
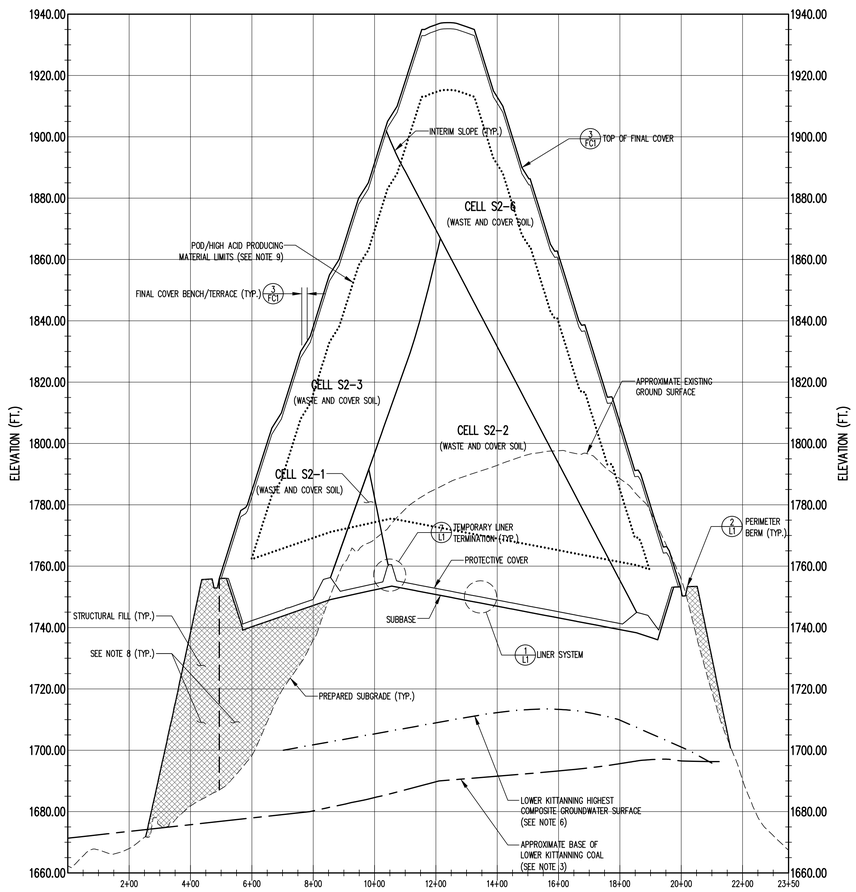


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION C–C
SECTION C/X2 AS SHOWN



SECTION D–D
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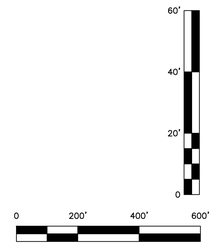

LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

NOTES

1. FINAL COVER SLOPES AND BENCHES SHOWN ON THE CROSS SECTION MAY BE DISTORTED BECAUSE THE SECTION IS GENERALLY NOT NORMAL TO THE LANDFILL SLOPES.
2. REFER TO SHEET 4, S3 FOR SUBBASE AND SUBGRADE CONTOURS.
3. REFER TO FORM 6 OF THE ACCOMPANYING PERMIT APPLICATION FOR DETAILS REGARDING THE LOWER KITTANNING COAL SEAM.
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6. REFER TO FORM 7 FOR DETAILS REGARDING GROUNDWATER LEVELS.
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8. STRUCTURAL FILL PLACED BENEATH LINED/CAPPED AREAS MAY BE FROM EITHER THE S2 OR S3 IN-TACT ROCK EXCAVATION OR THE S3 OVERBURDEN (I.E. NON-POD) MATERIAL AND DOES NOT REQUIRE ALKALINE ADDITION, WITH THE EXCEPTION OF MATERIAL PLACED WITHIN 5' OF THE LOWER KITTANNING POTENTIOMETRIC SURFACE. MATERIAL PLACED WITHIN THIS ZONE AND MATERIAL PLACED OUTSIDE THE LINED AREA SHALL BE TREATED WITH ALKALINE MATERIAL AT A RATE OF 6 TONS ALKALINE/1,000 TONS OF EXCAVATED MATERIAL.
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REFERENCES

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3. THE BASE OF THE LOWER KITTANNING COAL REFERENCE EXHIBIT 6–1.10 (MEISER + EARL).

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN M. GARDNER
ENGINEER
No. 038015-E
7/1/19

SEAL

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION C-C & D-D

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0074A	
SHEET NUMBER: 18	DRAWING NUMBER: X2

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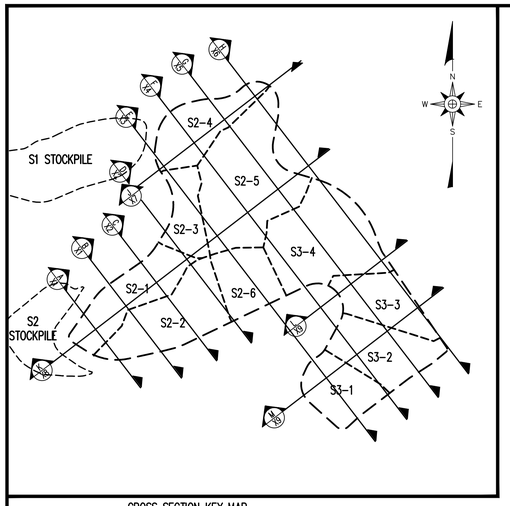
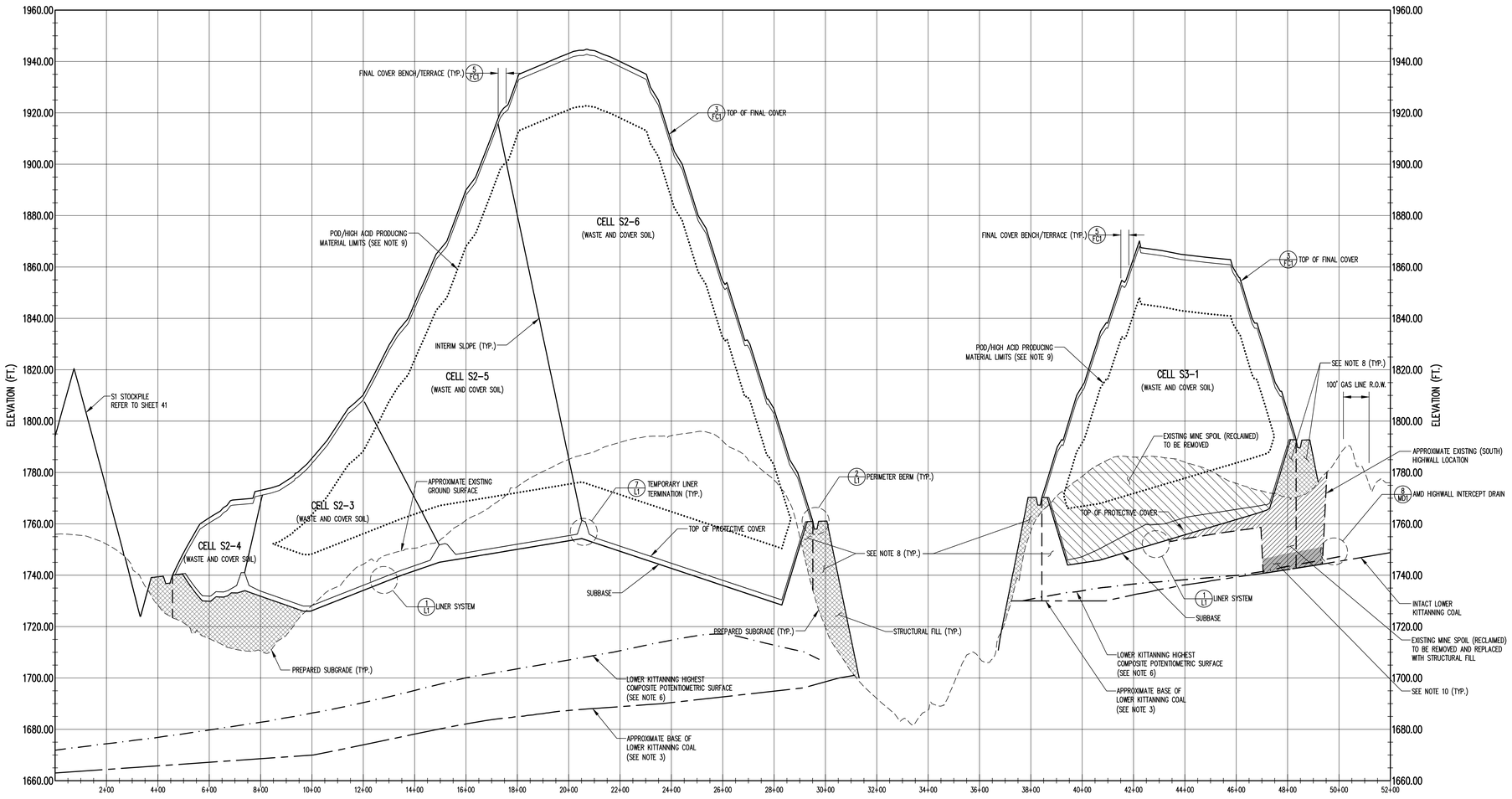
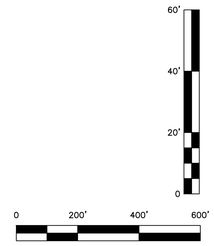


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION E-E
SECTION E/X3
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

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PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

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REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION E-E

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0075A	
SHEET NUMBER: 19	DRAWING NUMBER: X3

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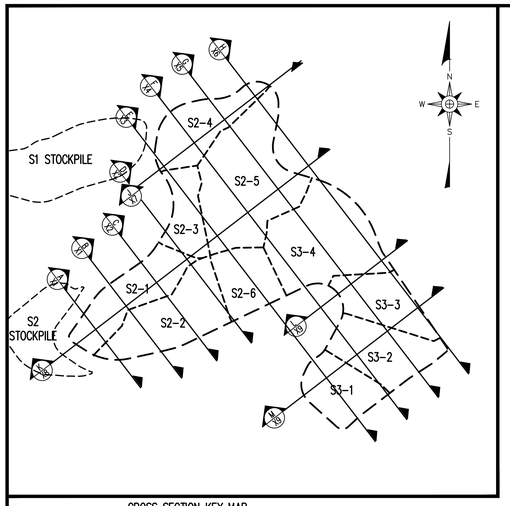
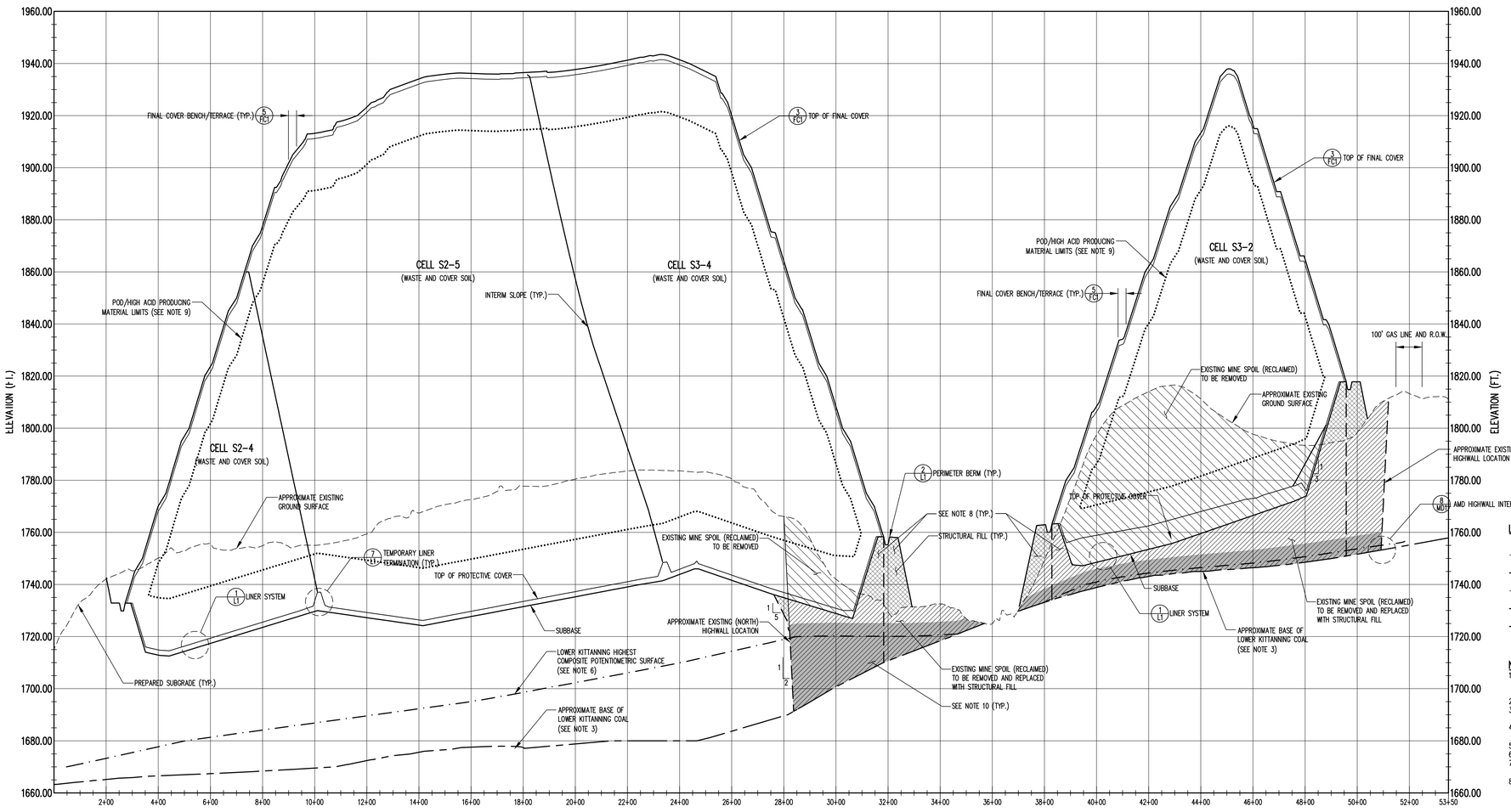
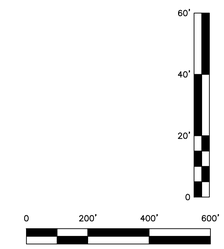


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION F-F
SECTION F/X4
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

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CLEARFIELD COUNTY, PA

PREPARED BY:

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ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN M. GARDNER
ENGINEER
No. 038015-E
7/1/19

SEAL

REV.	DATE	DESCRIPTION
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		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION F-F

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0076A	
SHEET NUMBER: 20	DRAWING NUMBER: X4

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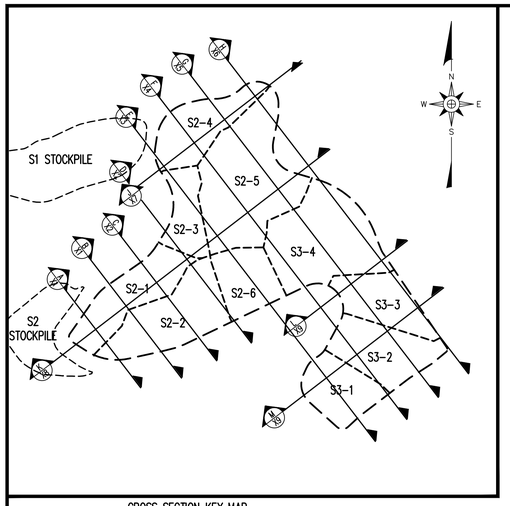
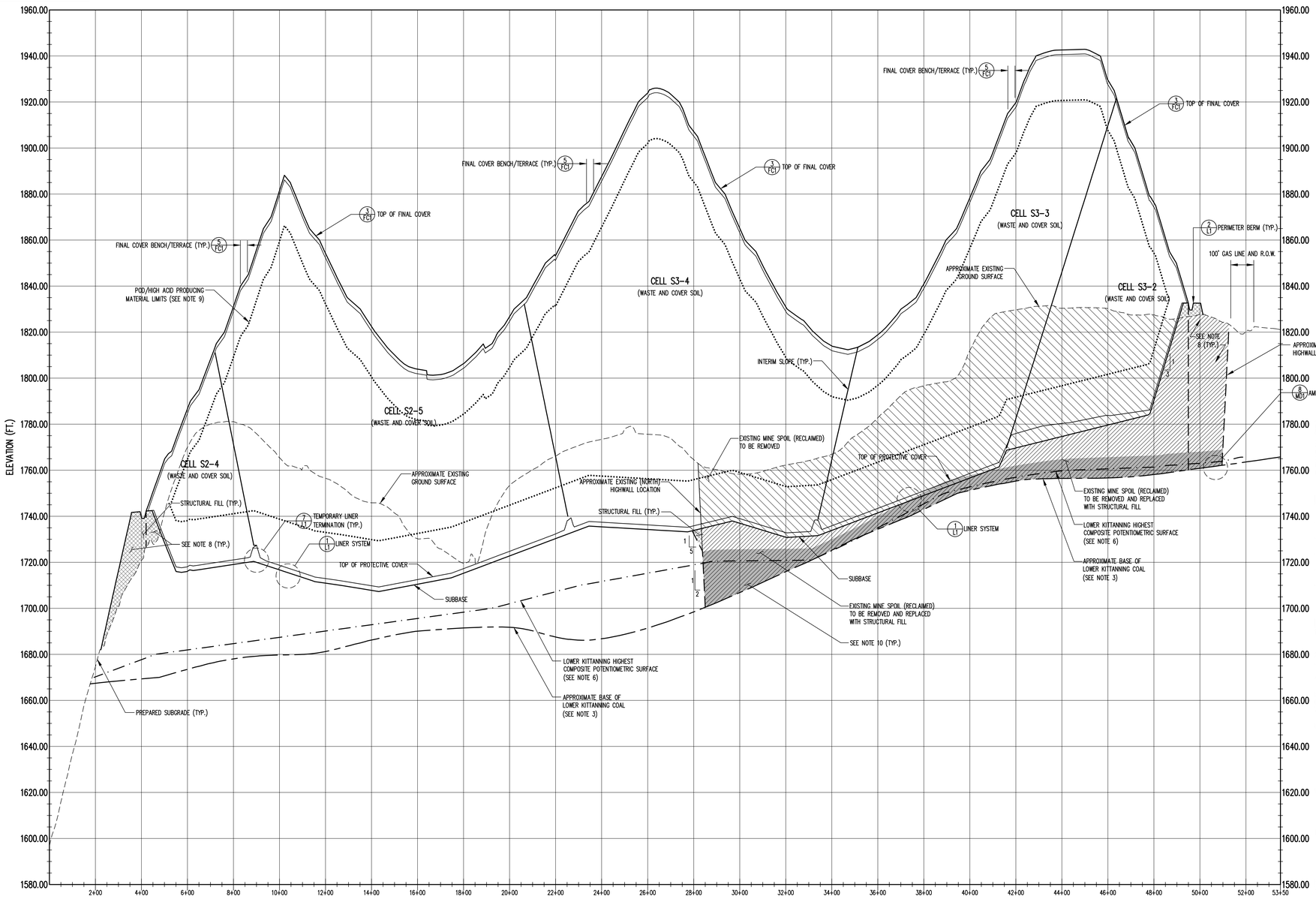
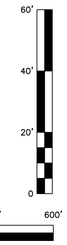


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION G-G

SECTION G/X5
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
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PREPARED FOR:

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SEAL

COMMONWEALTH OF PENNSYLVANIA
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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION G-G

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0077A	
SHEET NUMBER: 21	DRAWING NUMBER: X5

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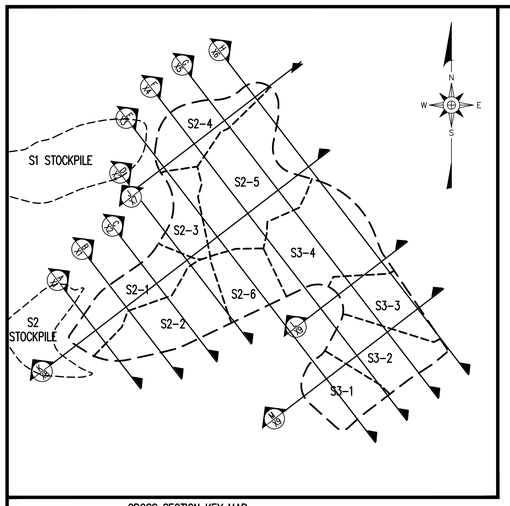
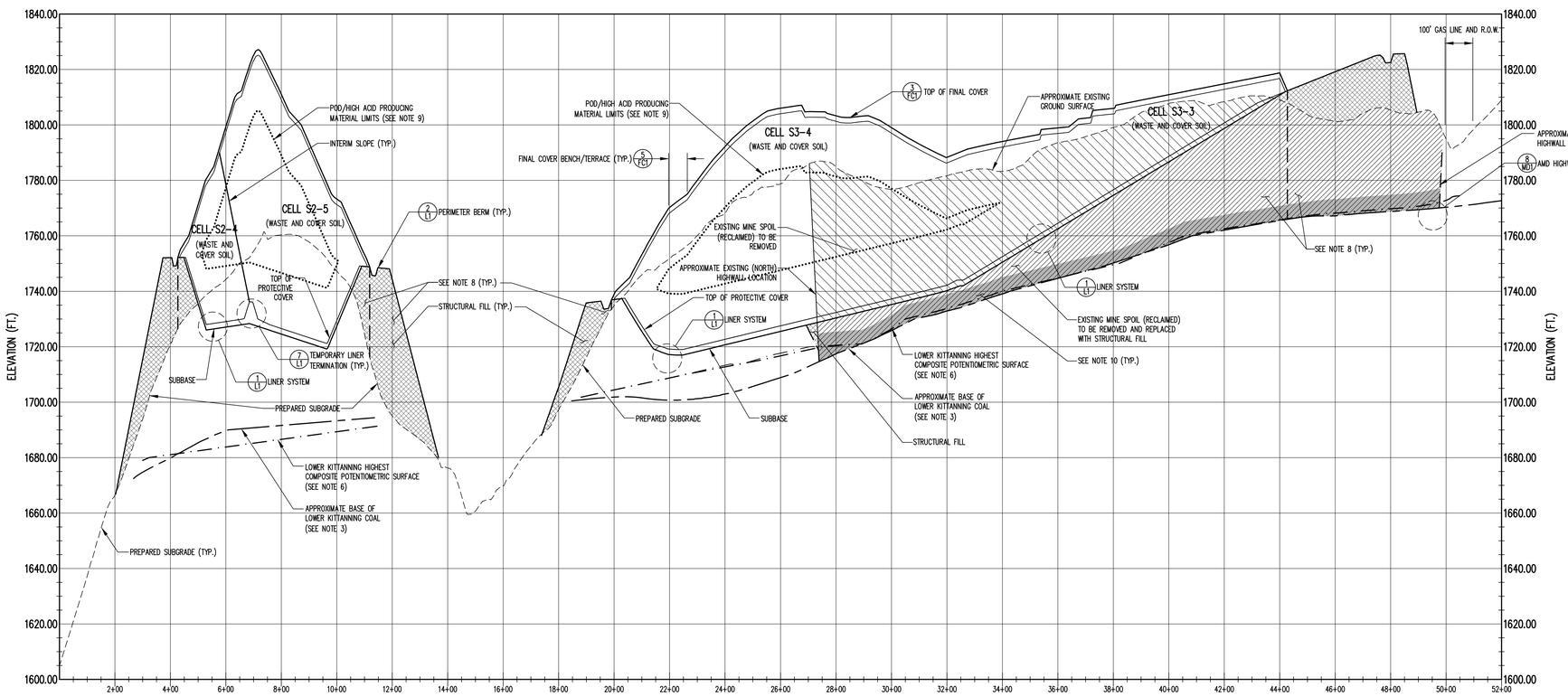
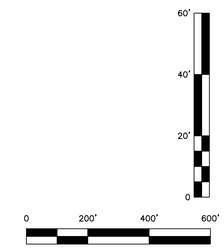


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION H–H

SECTION H / X6
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
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- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

NOTES

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2. REFER TO SHEET 4, S3 FOR SUBBASE AND SUBGRADE CONTOURS.
3. REFER TO FORM 6 OF THE ACCOMPANYING PERMIT APPLICATION FOR DETAILS REGARDING THE LOWER KITTANNING COAL SEAM.
4. REFER TO FORM 11 REGARDING THE MINING AND MINERAL ASPECTS OF THE PROPOSED DEVELOPMENT.
5. INTERMEDIATE SLOPES VARY UP TO 2H:1V (MAX).
6. REFER TO FORM 7 FOR DETAILS REGARDING GROUNDWATER LEVELS.
7. INTERMEDIATE SLOPE LOCATIONS MAY VARY IN THE EVENT THAT CELLS ARE CONSTRUCTED IN PHASES WITH SUBCELLS.
8. STRUCTURAL FILL PLACED BENEATH LINED/CAPPED AREAS MAY BE FROM EITHER THE S2 OR S3 IN–TACT ROCK EXCAVATION OR THE S3 OVERBURDEN (I.E. NON–POD) MATERIAL AND DOES NOT REQUIRE ALKALINE ADDITION, WITH THE EXCEPTION OF MATERIAL PLACED WITHIN 5' OF THE LOWER KITTANNING POTENTIOMETRIC SURFACE. MATERIAL PLACED WITHIN THIS ZONE AND MATERIAL PLACED OUTSIDE THE LINED AREA SHALL BE TREATED WITH ALKALINE MATERIAL AT A RATE OF 6 TONS ALKALINE/1,000 TONS OF EXCAVATED MATERIAL.
9. HIGH SULFUR MATERIAL (SULFUR > 1%) FROM THE S2 AND S3 EXCAVATION AND "POD" MATERIAL FROM THE S3 MINE SPOIL EXCAVATION SHALL BE DISPOSED WITHIN THE LANDFILL AS WASTE. THIS MATERIAL SHALL NOT BE PLACED WITHIN 20' OF THE PROTECTIVE COVER OR 20' OF THE FINAL COVER.
10. STRUCTURAL FILL WITHIN 5' OF THE LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE SHALL BE TREATED WITH ALKALINE (6 TONS ALKALINE/1,000 TONS EXCAVATED MATERIAL).

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3. THE BASE OF THE LOWER KITTANNING COAL REFERENCE EXHIBIT 6–1.10 (MEISER + EARL).

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

SEAL

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 038015-E
7/1/19

SEAL

REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18
		PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19
		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION H-H

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0078A	
SHEET NUMBER: 22	DRAWING NUMBER: X6

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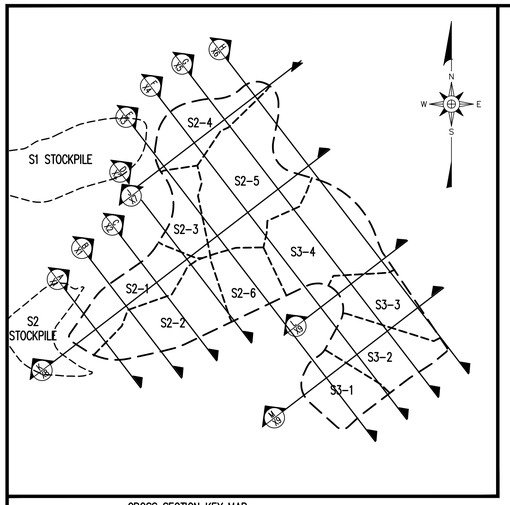
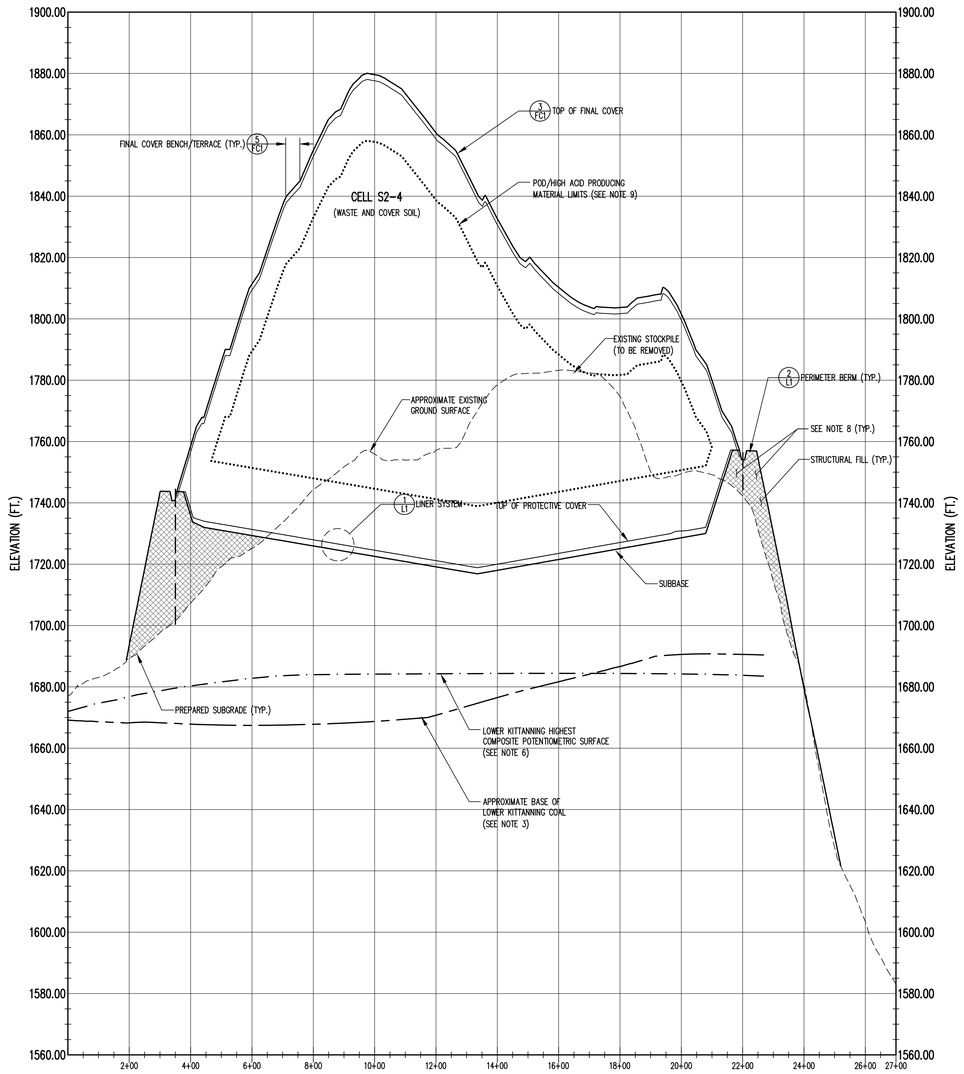
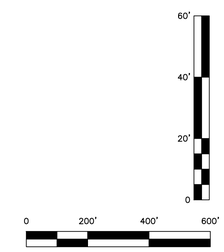


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION J–J

SECTION J / X7
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
- LOWER KITTANNING HIGHEST COMPOSITE POTENTIOMETRIC SURFACE (MAY–JULY 2014)

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION J-J

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0079A	
SHEET NUMBER: 23	DRAWING NUMBER: X7

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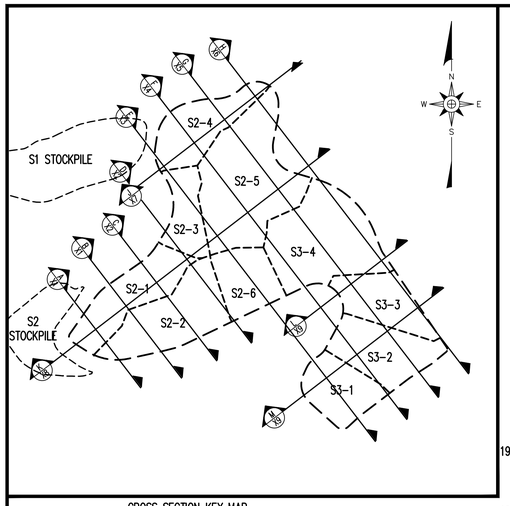
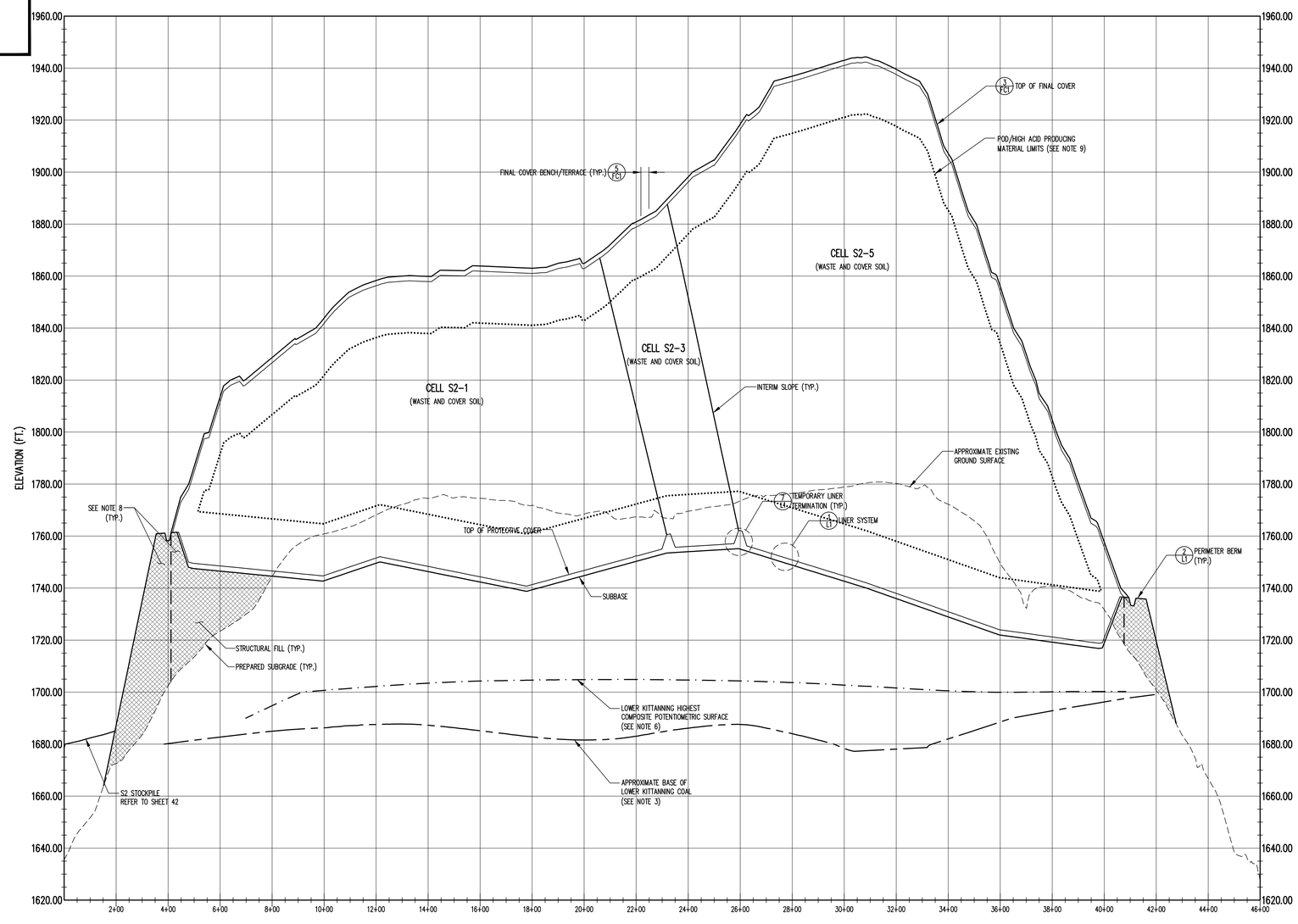
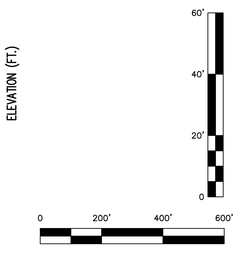


CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION K–K

SECTION K / X8
AS SHOWN



LEGEND

- EXISTING GROUND (SEE REFERENCE 1)
- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
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REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 076615-E
7/1/19

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION K-K

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0080A	
SHEET NUMBER: 24	DRAWING NUMBER: X8

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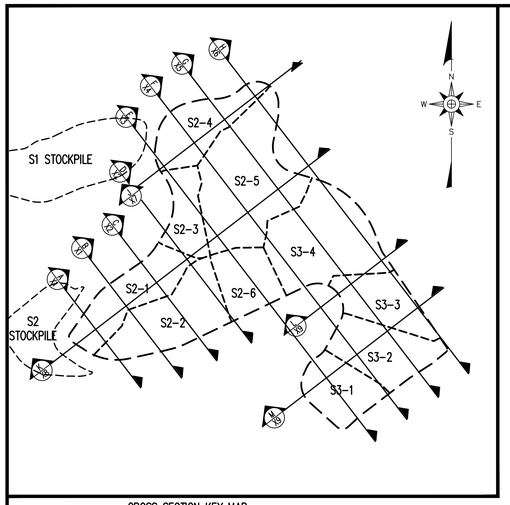
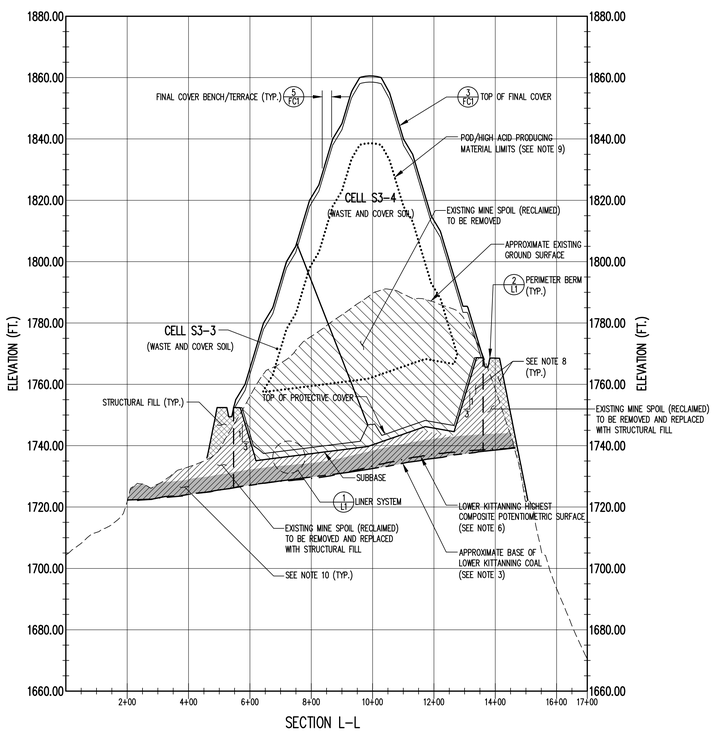
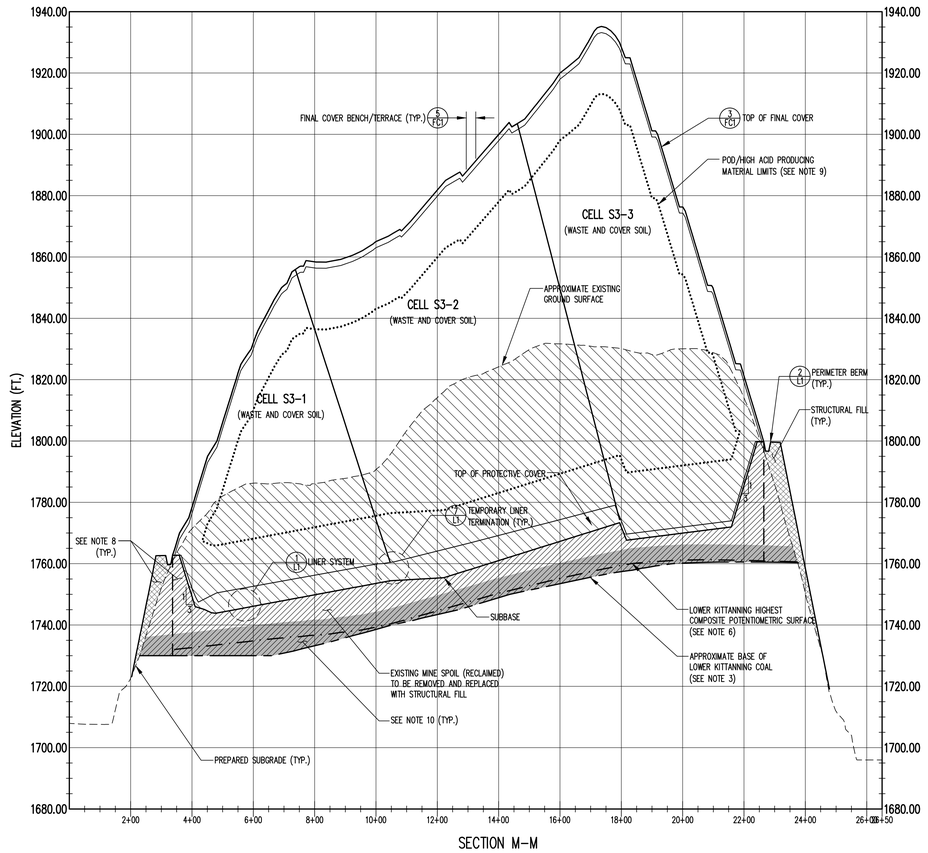


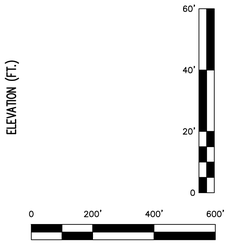
CROSS SECTION KEY MAP
SCALE 1"= 800'



SECTION L-L
SECTION L/X9
AS SHOWN



SECTION M-M
SECTION M/X9
AS SHOWN



LEGEND

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- PROPOSED GRADE
- INTERIM SLOPE
- LOWER KITTANNING COAL
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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

CROSS SECTION L-L & M-M

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 14-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0081A	
SHEET NUMBER: 25	DRAWING NUMBER: X9

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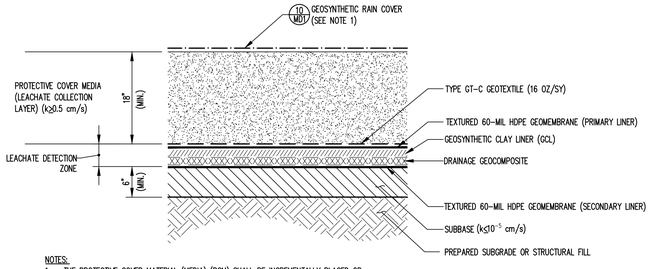
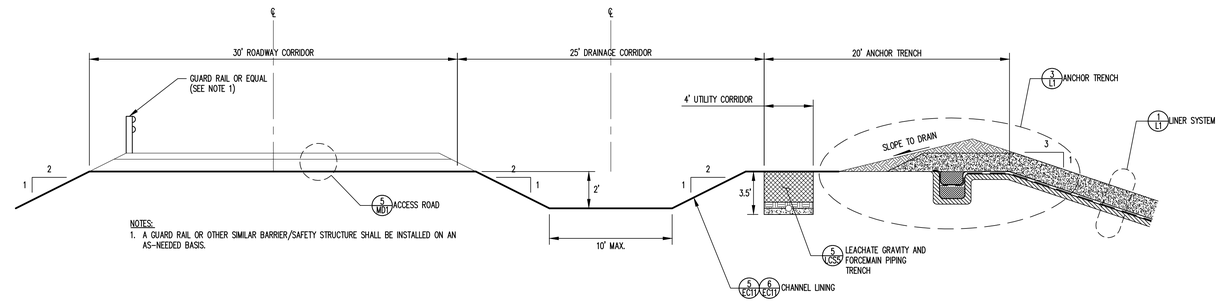


NOTES:
1. THE PROTECTIVE COVER MATERIAL (MEDIA) (PCM) SHALL BE INCREMENTALLY PLACED OR COVERED WITH A GEOSYNTHETIC RAIN COVER (GRC). IF INCREMENTALLY PLACED, THE TYPE GT-C GEOTEXTILE SHALL BE PROTECTED BY A 12 OZ/SY NW GT-C (SACRIFICIAL) WHICH IS REMOVED PRIOR TO PCM AND WASTE PLACEMENT.

TYPICAL LINER SYSTEM–BASE AND SIDE SLOPES

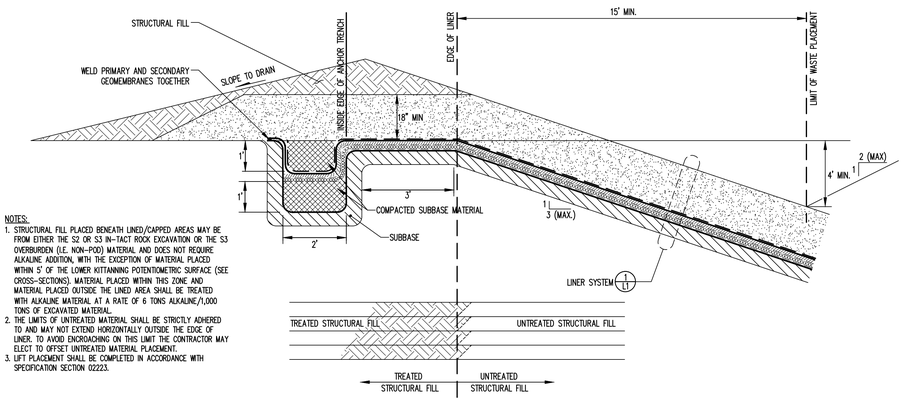
DETAIL 1/L1
NOT TO SCALE



NOTES:
1. A GUARD RAIL OR OTHER SIMILAR BARRIER/SAFETY STRUCTURE SHALL BE INSTALLED ON AN AS-NEEDED BASIS.

PERIMETER BERM CROSS-SECTION (TYP.)

DETAIL 2/L1
NOT TO SCALE



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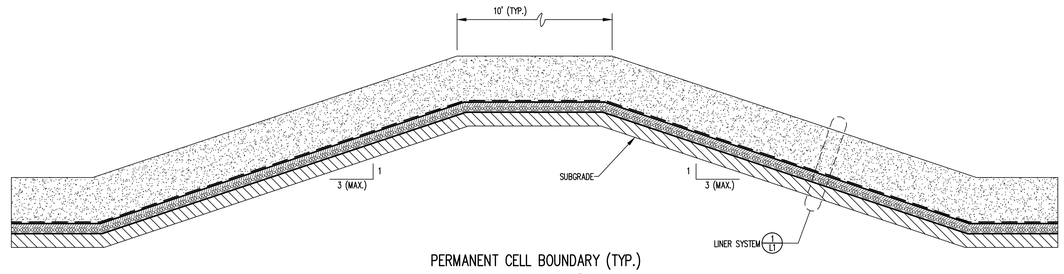
2. THE LIMITS OF UNTREATED MATERIAL SHALL BE STRICTLY ADHERED TO AND MAY NOT EXTEND HORIZONTALLY OUTSIDE THE EDGE OF LINER. TO AVOID ENCROACHING ON THIS LIMIT THE CONTRACTOR MAY ELECT TO OFFSET UNTREATED MATERIAL PLACEMENT.
3. LIFT PLACEMENT SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATION SECTION 02223.

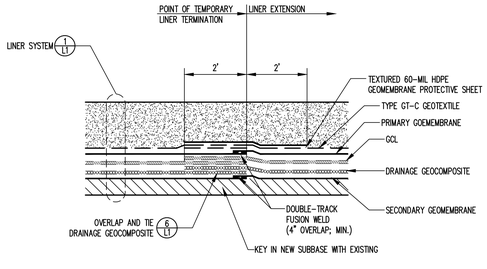
ANCHOR TRENCH

DETAIL 3/L1
NOT TO SCALE



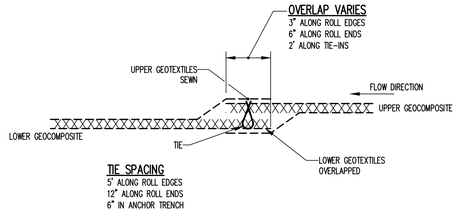
PERMANENT CELL BOUNDARY (TYP.)

DETAIL 4/L1
NOT TO SCALE



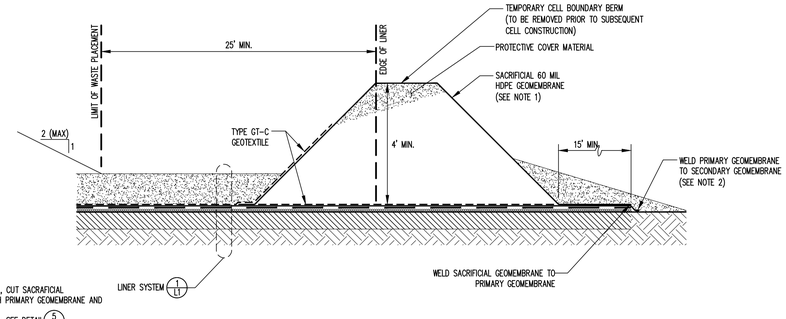
TYPICAL LINER TIE-IN

DETAIL 5/L1
NOT TO SCALE



DRAINAGE GEOCOMPOSITE FIELD LAP JOINT

DETAIL 6/L1
NOT TO SCALE



NOTES:
1. WHEN EXTENDING LINER SYSTEM, CUT SACRAFICIAL GEOMEMBRANE NEAR WELD WITH PRIMARY GEOMEMBRANE AND REMOVE.
2. WHEN EXTENDING LINER SYSTEM, SEE DETAIL 5/L1.

TEMPORARY LINER TERMINATION (TYP.)

DETAIL 7/L1
NOT TO SCALE

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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REGISTERED PROFESSIONAL
JOHN M. GARDNER
ENGINEER
No. 036615-E
7/1/19

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

LINER SYSTEM DETAILS

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0044A	
SHEET NUMBER: 28	DRAWING NUMBER: L1

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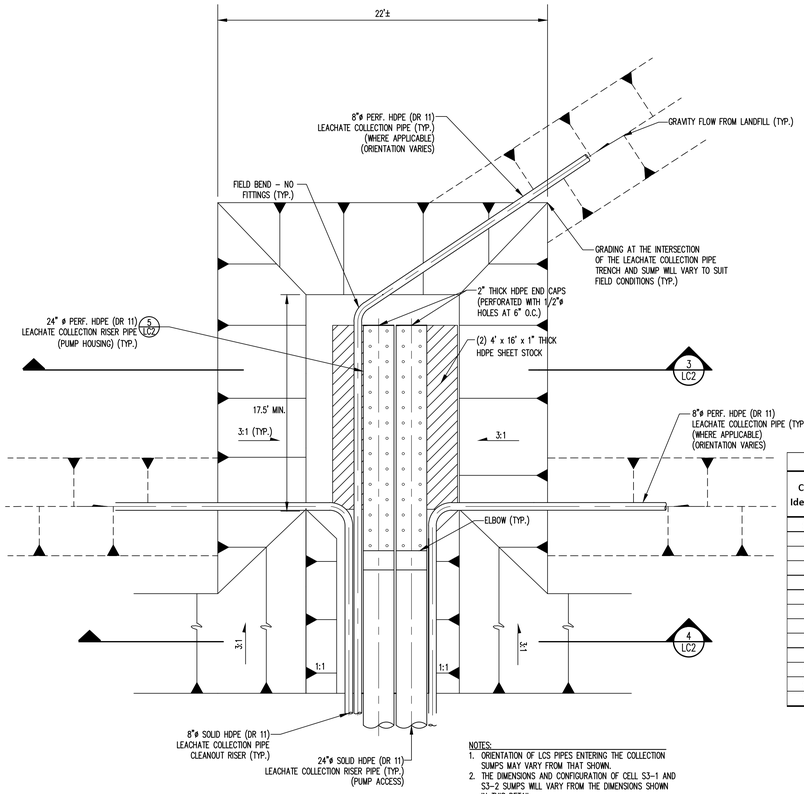
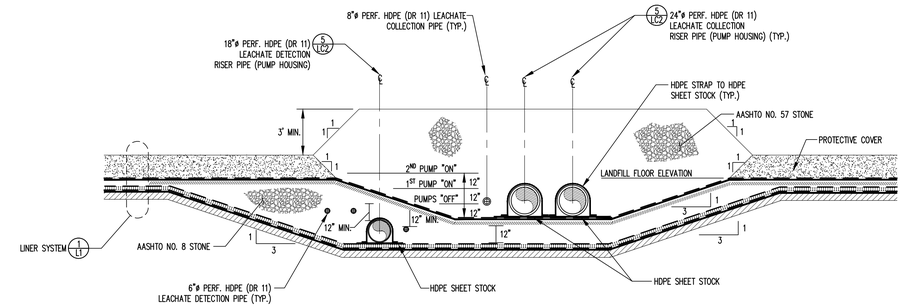


NOTES:
1. ORIENTATION OF LCS PIPES ENTERING THE COLLECTION SUMPS MAY VARY FROM THAT SHOWN.
2. THE DIMENSIONS AND CONFIGURATION OF CELL S3-1 AND S3-2 SUMPS WILL VARY FROM THE DIMENSIONS SHOWN IN THIS DETAIL.

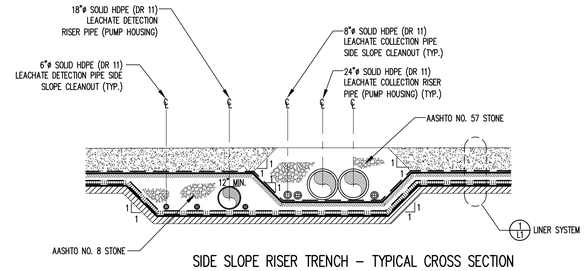
COLLECTION SUMP – TYPICAL PLAN VIEW

DETAIL 1/LC2 NOT TO SCALE



SUMP – TYPICAL CROSS SECTION

DETAIL 3/LC2 NOT TO SCALE

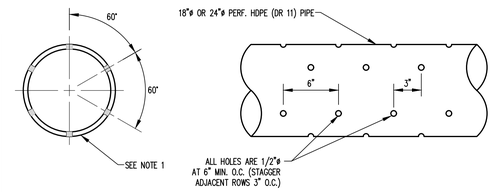


SIDE SLOPE RISER TRENCH – TYPICAL CROSS SECTION

DETAIL 4/LC2 NOT TO SCALE

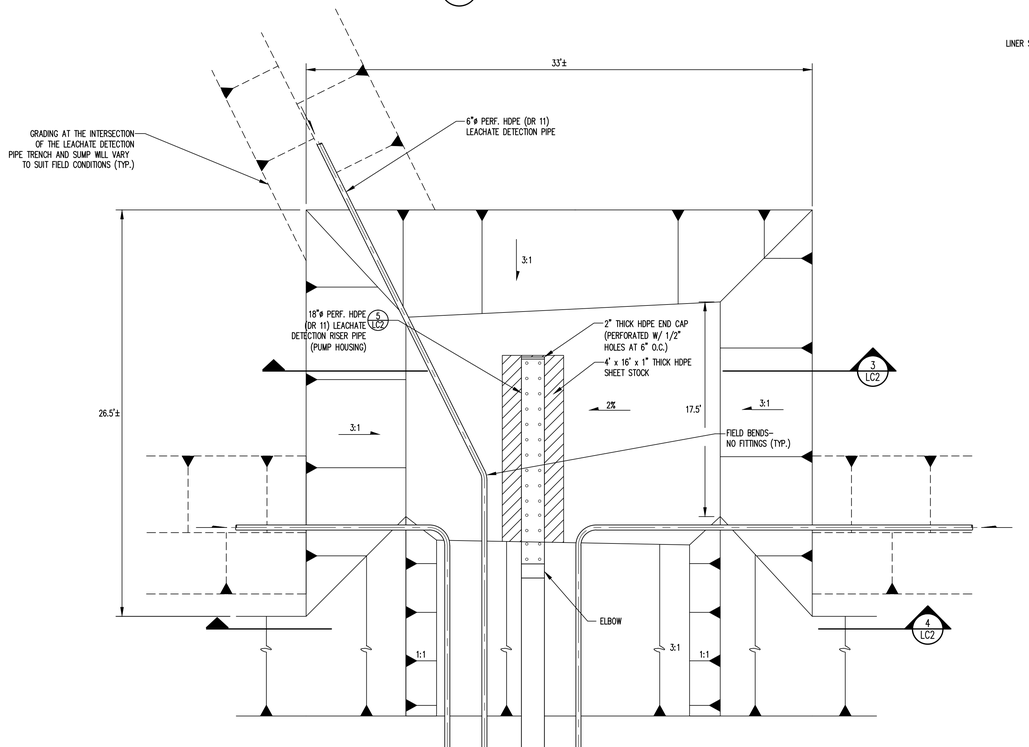
LEACHATE DETECTION AND COLLECTION SUMP ELEVATIONS

Cell Sump Identification	Leachate Detection Sump Floor (ft)	Leachate Collection Sump Floor (ft)	Landfill Floor (ft)	Leachate Collection Pumps "OFF" (ft)	1st Leachate Collection Pump "ON" (ft)	2nd Leachate Collection Pump "ON" (ft)	Leachate Collection Sump "ALARM" (ft)	Leachate Detection Pumps "OFF" (ft)	Leachate Detection Pumps "ON" (ft)
S2-1 (A)	1731.0	1732.0	1736.0	1733.0	1734.0	1735.0	1736.0	1731.5	1732.0
S2-1 (B)	1727.8	1728.8	1732.8	1729.8	1730.8	1731.8	1732.8	1728.3	1728.8
S2-2	1715.6	1716.6	1720.6	1717.6	1718.6	1719.6	1720.6	1716.1	1716.6
S2-3	1730.5	1731.5	1735.5	1732.5	1733.5	1734.5	1735.5	1731.0	1731.5
S2-4	1703.1	1704.1	1708.1	1705.1	1706.1	1707.1	1708.1	1703.6	1704.1
S2-5	1697.9	1698.9	1702.9	1699.9	1700.9	1701.9	1702.9	1698.4	1698.9
S2-6	1721.2	1722.2	1726.2	1723.2	1724.2	1725.2	1726.2	1721.7	1722.2
S3-1	1737.0	1738.0	1742.0	1739.0	1740.0	1741.0	1742.0	1737.5	1738.0
S3-2	1739.3	1740.3	1744.3	1741.3	1742.3	1743.3	1744.3	1739.8	1740.3
S3-3	1723.0	1724.0	1728.0	1725.0	1726.0	1727.0	1728.0	1723.5	1724.0
S3-4 (A)	1723.8	1724.8	1728.8	1725.8	1726.8	1727.8	1728.8	1724.3	1724.8
S3-4 (B)	1718.0	1719.0	1723.0	1720.0	1721.0	1722.0	1723.0	1718.5	1719.0
S3-4 (C)	1709.7	1710.7	1714.7	1711.7	1712.7	1713.7	1714.7	1710.2	1710.7



RISER PIPE PERFORATIONS (PUMP HOUSING)

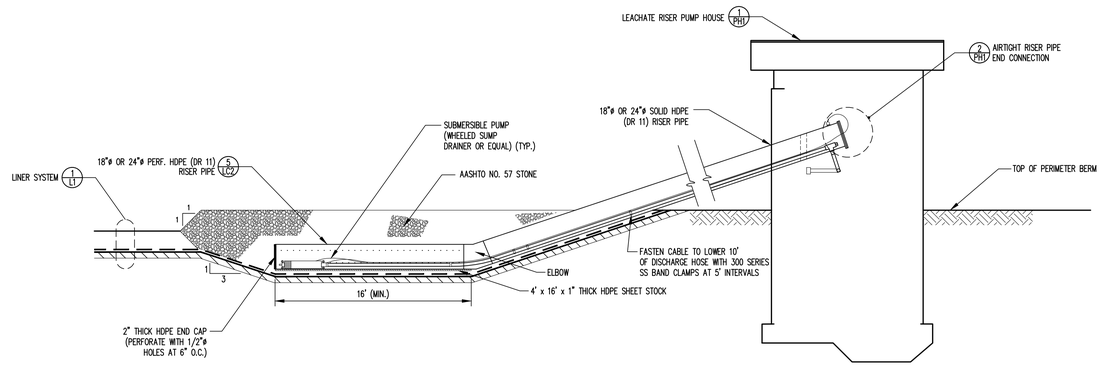
DETAIL 5/LC2 NOT TO SCALE



NOTES:
1. ORIENTATION OF LDS PIPES ENTERING THE DETECTION SUMPS MAY VARY FROM THAT SHOWN.
2. THE DIMENSIONS AND CONFIGURATION OF CELL S3-1 AND S3-2 SUMPS WILL VARY FROM THE DIMENSIONS SHOWN IN THIS DETAIL.

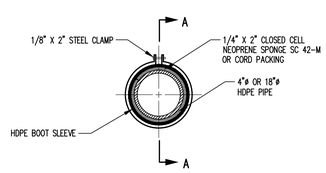
DETECTION SUMP – TYPICAL PLAN VIEW

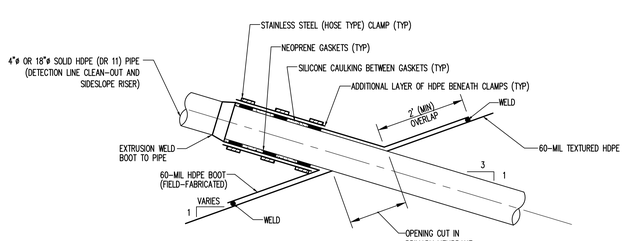
DETAIL 2/LC2 NOT TO SCALE



SECTION THROUGH LEACHATE DETECTION OR COLLECTION SIDE SLOPE RISER

DETAIL 6/LC2 NOT TO SCALE





SECTION A–A

PRIMARY LINER PIPE BOOT (TYP.)

DETAIL 7/LC2 NOT TO SCALE

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PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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JOHN M. GARDNER
ENGINEER
No. 038015-E
7/1/19

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

LEACHATE COLLECTION AND DETECTION SYSTEM DETAILS (SHEET 2 OF 3)

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0047A	
SHEET NUMBER: 30	DRAWING NUMBER: LC2

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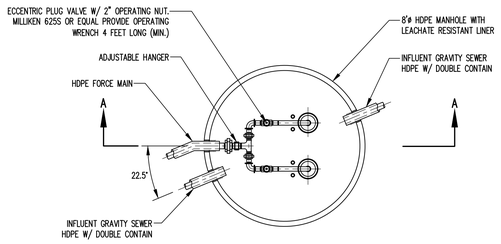
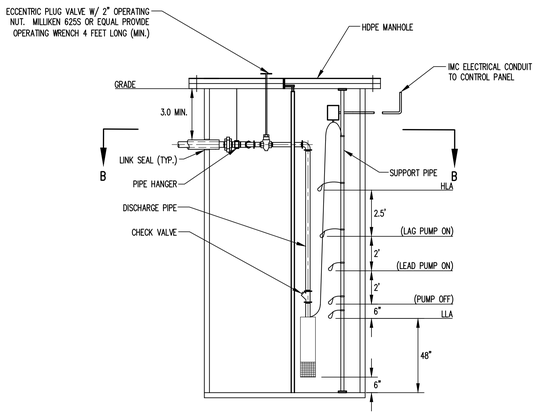


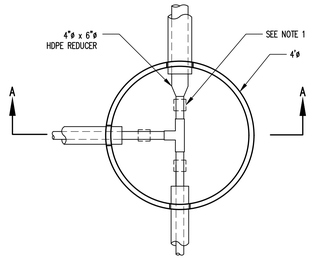
SECTION B-B



SECTION A-A

PUMPING STATION

DETAIL 1 LCS5
NOT TO SCALE



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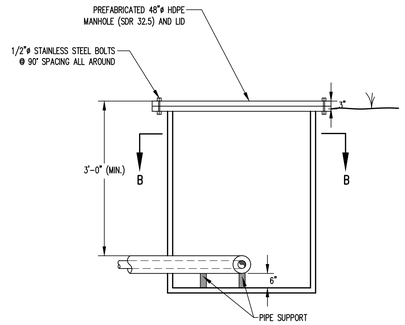
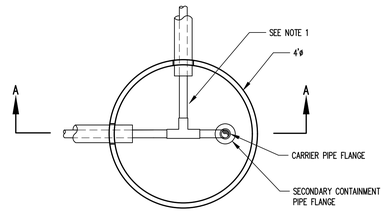


SECTION A-A

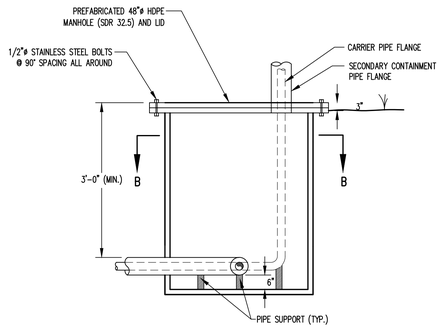
NOTES:
1. INSTALL VALVES AS INDICATED ON PROCESS FLOW DIAGRAM.
2. MANHOLE ORIENTATION AS REQUIRED TO MAKE CONNECTIONS SHOWN ON SHEETS 34 THROUGH 36 AND 38.

FORCEMAIN JUNCTION MANHOLE

DETAIL 3 LCS5
NOT TO SCALE



SECTION B-B

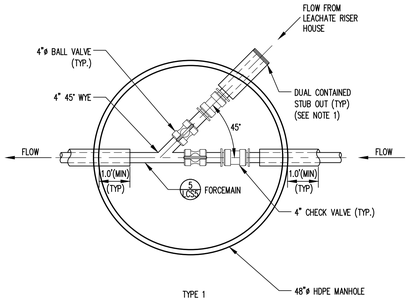


SECTION A-A

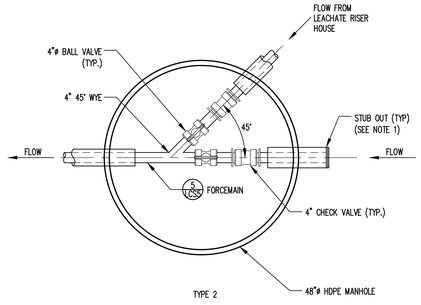
NOTES:
1. MANHOLES MH-T-2 AND MH-T-3.

TRANSITION MANHOLE

DETAIL 4 LCS5
NOT TO SCALE



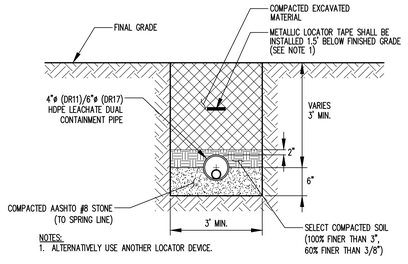
TYPE 1



TYPE 2

LEACHATE RISER HOUSE JUNCTION MANHOLE

DETAIL 2 LCS5
NOT TO SCALE



NOTES:
1. ALTERNATIVELY USE ANOTHER LOCATOR DEVICE.

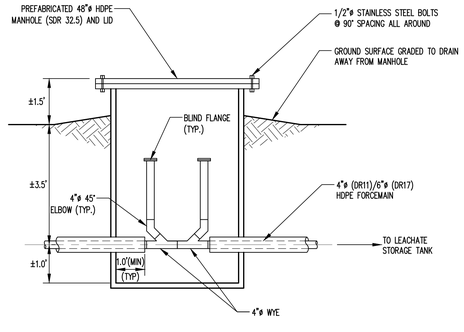
LEACHATE FORCEMAIN PIPING TRENCH

DETAIL 5 LCS5
NOT TO SCALE

LEACHATE CONVEYANCE NOTES:
1. ALL STUB OUTS FROM MANHOLES SHALL BE DUAL CONTAINED (FACTORY INSTALLED), AND EXTEND A MINIMUM OF 1' EITHER SIDE OF THE MANHOLE WALL.
2. LEACHATE FORCEMAIN SHALL BE CONSTRUCTED IN A MANNER WHICH ALLOWS HYDROSTATIC TESTING OF THE ENTIRE LEACHATE FORCEMAIN AS DESCRIBED IN SPECIFICATIONS 02607 AND 02614.

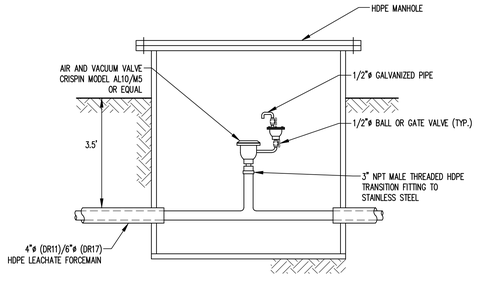
MANHOLE SCHEDULE

ID	TYPE
MH-S2-1A	1
MH-S2-1B	1
MH-S2-2	2
MH-S2-3	1
MH-S2-4	1
MH-S2-5	1
MH-S3-4C	1
MH-S3-1	2
MH-S3-2	2
MH-S3-3	2
MH-S3-4B	2



CLEANOUT MANHOLE

DETAIL 6 LCS5
NOT TO SCALE



AIR AND VACUUM VALVE ASSEMBLY

DETAIL 7 LCS5
NOT TO SCALE

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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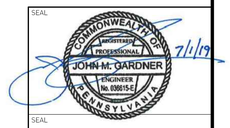

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

LEACHATE CONVEYANCE DETAILS

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE:
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0045A	
SHEET NUMBER: 37	DRAWING NUMBER: LCS5

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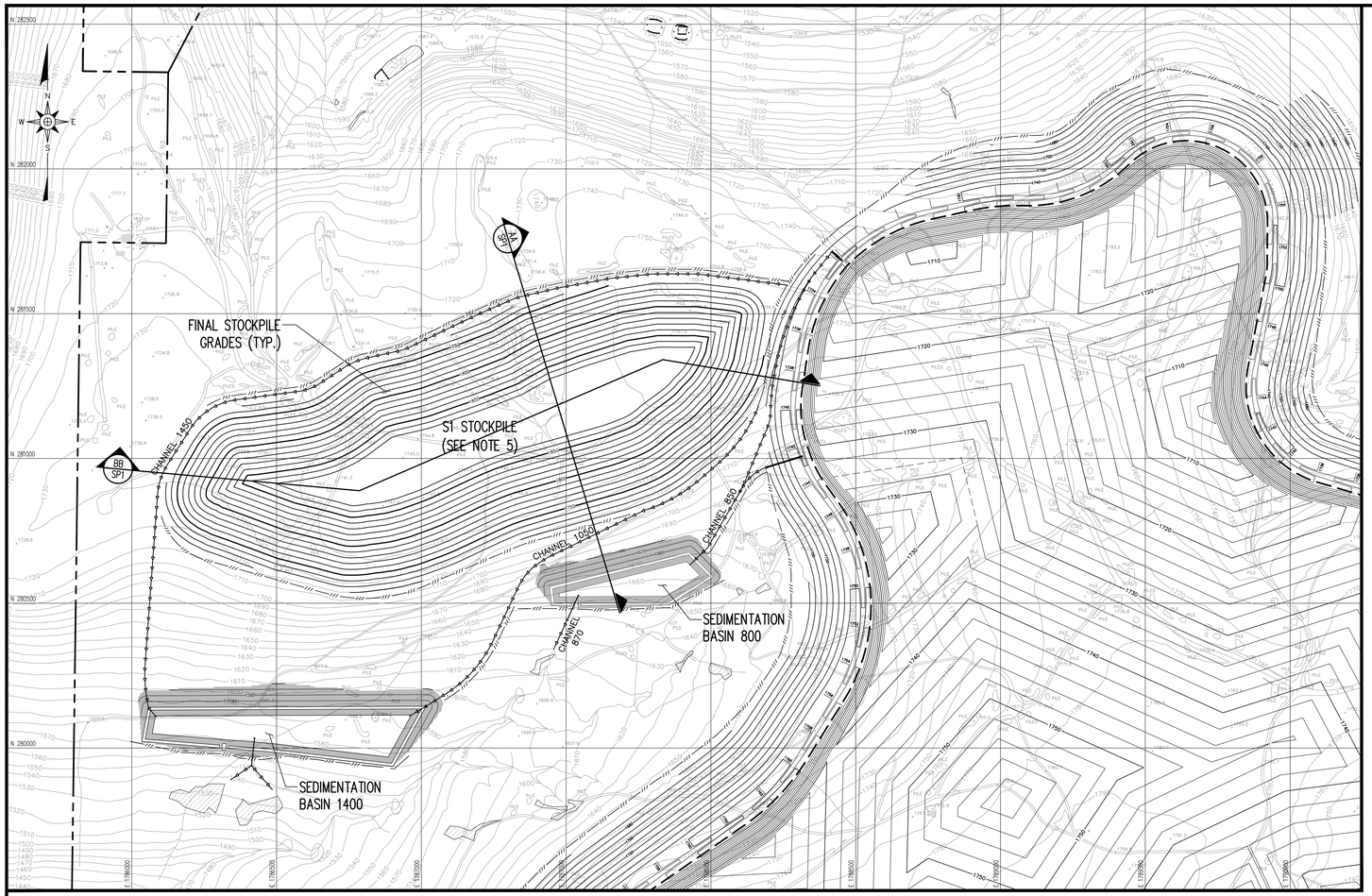


PLAN – S1 STOCKPILE

0 200' 400' 600'

ON SITE MATERIALS HANDLING ALKALINE ADDITION			
PLACEMENT OF MATERIAL	S3 AREA – NON POD SPOIL MATERIAL (SEE NOTE 8)		
		DISTRIBUTION EQUIVALENT	
	TOTAL APPLICATION	BENEATH MATERIAL	PLACED ON MATERIAL IN HAUL TRUCK
PERMANENT STOCKPILES S1 (>12" FRAGMENTS)	6T/1000T	2T/1000T	4T/1000T

DEFINITIONS:
T = TON
6T/1000T = 6 TONS OF CaCO3 EQUIVALENT ALKALINE MATERIAL PER 1000 TONS OF EXCAVATED (SPOIL) MATERIAL.

LEGEND

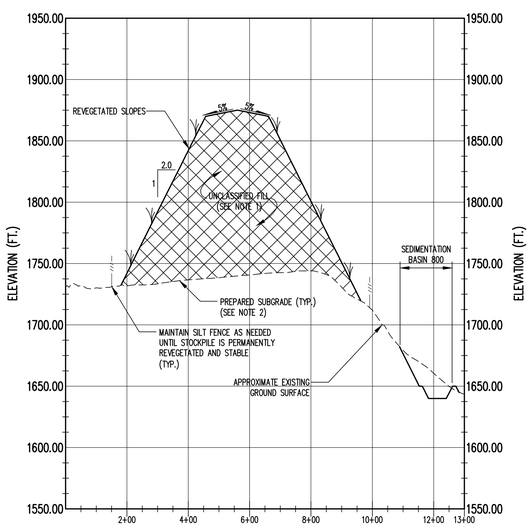
- EXISTING GROUND CONTOUR (10' INTERVAL)
- 710 PROPOSED SUBBASE CONTOUR (10' INTERVAL)
- PROPOSED SUBBASE CONTOUR (2' INTERVAL)
- PROPERTY LINE
- SILT FENCE
- DELINEATED WETLAND (SEE REFERENCE 3)

NOTES

1. THE S1 STOCKPILE IS INTENDED TO STORE PRIMARILY OVERSIZED ROCK MATERIAL EXCAVATED FROM THE S3 AREA. THE STOCKPILE SHALL BE PLACED AS FILL WHICH WILL REQUIRE CONTROLLED COMPACTION TO ENSURE LONG TERM STABILITY.
2. THE SUBGRADE SHALL BE PREPARED PRIOR TO PLACEMENT OF STOCKPILE MATERIAL INCLUDING BUT NOT LIMITED TO, CLEARING, STRIPPING, AND GRUBBING, REMOVAL OF UNSUITABLE/UNSTABLE MATERIAL; MANAGING SURFACE/GROUND WATER; AND "KEYING" FILL INTO THE EXISTING SLOPE AT LEAST A FULL DOZER BLADE WIDTH FOR LONG TERM STABILITY.
3. SLOPES SHOWN IN THE CROSS-SECTIONS MAY NOT MATCH THE STATED SLOPE SINCE THE CROSS-SECTIONS ARE NOT LOCATED PERPENDICULAR (NORMAL) TO THE SLOPE CONTOURS.
4. THE GRADES SHOWN FOR THE STOCKPILE REPRESENT FINAL (SLOPE) CONDITIONS. OPERATIONALLY, THE STOCKPILES WILL BE CONSTRUCTED INCREMENTALLY OVER THE LIFE OF THE LANDFILL AND AT TIMES MAY VARY IN ELEVATION FROM THAT SHOWN, BUT WILL NOT BE LARGER IN FOOTPRINT AREA.
5. THE ACTUAL STOCKPILE CONFIGURATION MAY VARY FROM THAT DEPICTED HERE, BASED ON THE ACTUAL QUANTITY OF SURPLUS MATERIAL GENERATED BY THE PROPOSED DEVELOPMENT.
6. MATERIAL PLACED IN THIS STOCKPILE WILL FIRST BE TREATED WITH ALKALINE MATERIAL PER THE ON-SITE MATERIALS HANDLING ALKALINE ADDITION TABLE.
7. THE RUNOFF FROM THE STOCKPILE WILL BE MONITORED FOR QUALITY. IF NECESSARY THE RUNOFF WILL BE COLLECTED AND TREATED PRIOR TO DISCHARGE.
8. ALKALINE REQUIRED TO TREAT STOCKPILED S3 NON POD MINE SPOIL SHALL BE STORED AS NEEDED WITHIN THE S1 STOCKPILE AREA IN THE SEDIMENTATION BASIN 1400 WATERSHED. IT IS ESTIMATED THAT A ONE-MONTH SUPPLY OF ALKALINE, NEEDED TO TREAT NON POD MINE SPOIL, MAY BE MAINTAINED WITHIN AN APPROXIMATE 70 BY 60 AREA, WHICH CAN BE EASILY MANAGED WITHIN THE STOCKPILE AREA.

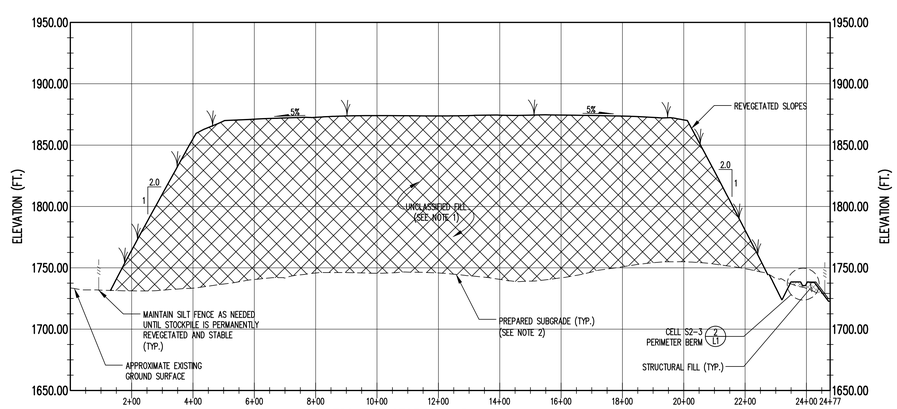
REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.



S1 STOCKPILE SECTION A–A

SECTION AA SP1
NOT TO SCALE



S1 STOCKPILE SECTION B–B

SECTION BB SP1
NOT TO SCALE

0 50' 100' 150'

0 200' 400' 600'

PREPARED FOR:

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CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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REGISTERED PROFESSIONAL ENGINEER
JOHN M. GARDNER
No. 038015-E
7/1/19

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		PADEP COMMENTS
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		PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL
PERMIT DRAWINGS

DRAWING TITLE:

STOCKPILE S1 GRADING & DRAINAGE PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 14-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0090A	
SHEET NUMBER: 41	DRAWING NUMBER: SP1

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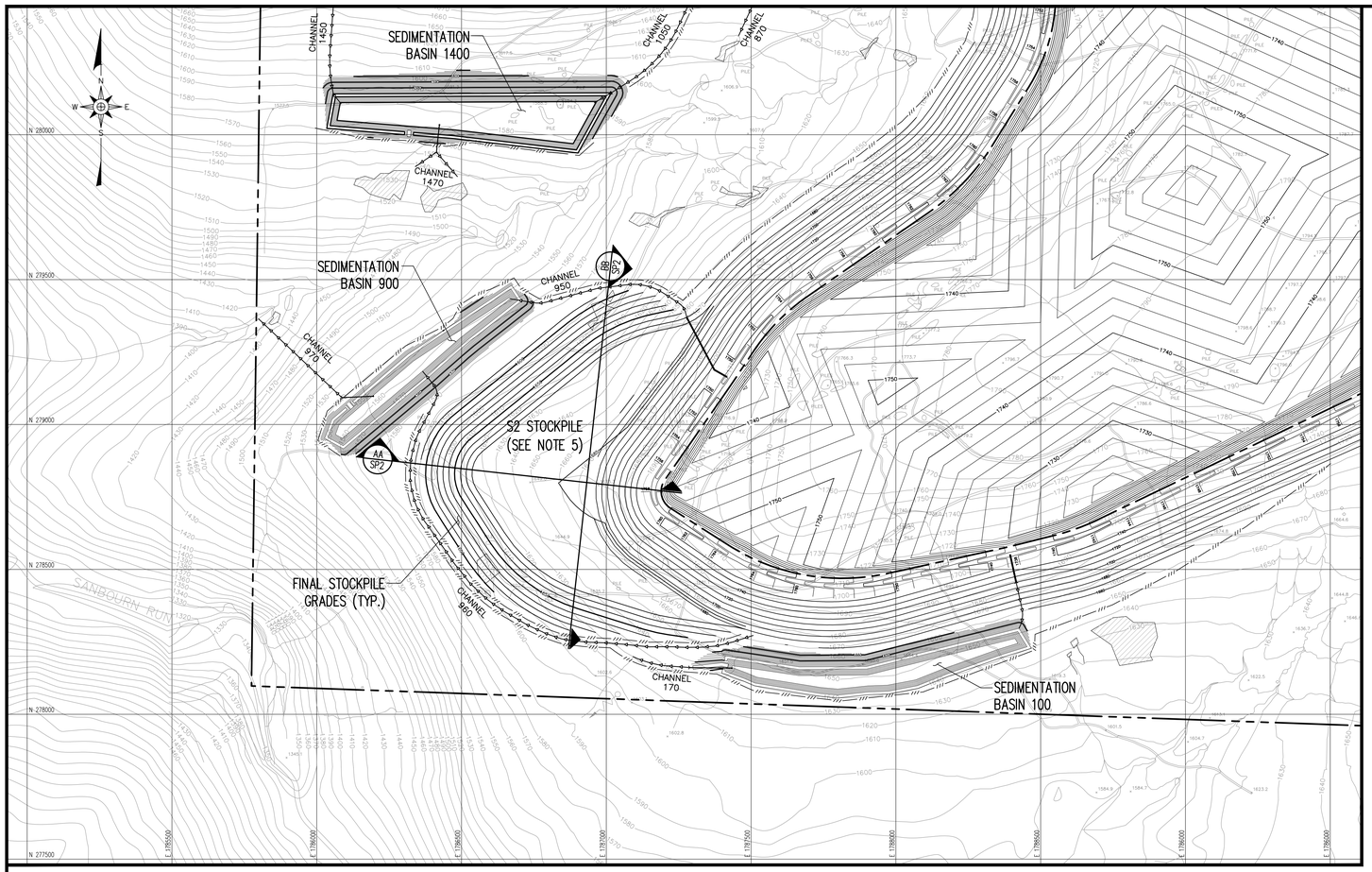
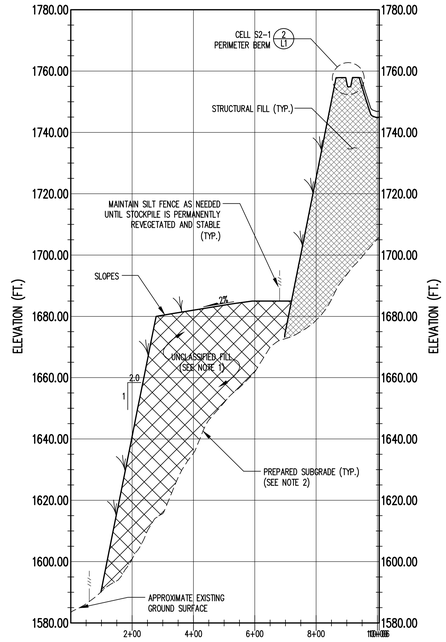


PLAN – S2 STOCKPILE

0 200' 400' 600'



S2 STOCKPILE SECTION A–A

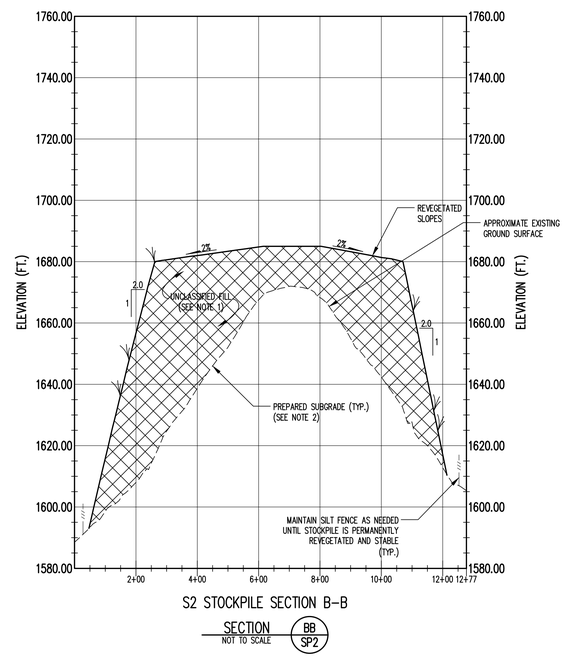
SECTION AA SP2
NOT TO SCALE

LEGEND

- EXISTING GROUND CONTOUR (10' INTERVAL)
- 710 PROPOSED SUBBASE CONTOUR (10' INTERVAL)
- PROPOSED SUBBASE CONTOUR (2' INTERVAL)
- PROPERTY LINE
- SILT FENCE
- DELINEATED WETLAND (SEE REFERENCE 4)

ON SITE MATERIALS HANDLING ALKALINE ADDITION			
PLACEMENT OF MATERIAL	S2 AREA – INTACT ROCK (SEE NOTE 8)		
		DISTRIBUTION EQUIVALENT	
	TOTAL APPLICATION	BENEATH MATERIAL	PLACED ON MATERIAL IN HAUL TRUCK
PERMANENT STOCKPILES S2 (>12" FRAGMENTS)	6T/1000T	2T/1000T	4T/1000T

DEFINITIONS:
T = TON
6T/1000T = 6 TONS OF CaCO3 EQUIVALENT ALKALINE MATERIAL PER 1000 TONS OF EXCAVATED (SPOIL) MATERIAL.



S2 STOCKPILE SECTION B–B

SECTION BB SP2
NOT TO SCALE

150' 100' 50' 0

0 200' 400' 600'

NOTES

1. THE S2 STOCKPILE IS INTENDED TO STORE PRIMARILY OVERSIZED ROCK MATERIAL EXCAVATED FROM THE S2 AREA. THE STOCKPILE SHALL BE PLACED AS FILL WHICH WILL REQUIRE CONTROLLED COMPACTION TO ENSURE LONG TERM STABILITY.
2. THE SUBGRADE SHALL BE PREPARED PRIOR TO PLACEMENT OF STOCKPILE MATERIAL INCLUDING BUT NOT LIMITED TO, CLEARING, STRIPPING, AND GRUBBING, REMOVAL OF UNSUITABLE/UNSTABLE MATERIAL; MANAGING SURFACE/GROUND WATER; AND "KEYING" FILL INTO THE EXISTING SLOPE AT LEAST A FULL DOZER BLADE WIDTH FOR LONG TERM STABILITY.
3. SLOPES SHOWN IN THE CROSS-SECTIONS MAY NOT MATCH THE STATED SLOPE SINCE THE CROSS-SECTIONS ARE NOT LOCATED PERPENDICULAR (NORMAL) TO THE SLOPE CONTOURS.
4. THE GRADES SHOWN FOR THE STOCKPILE REPRESENT FINAL (SLOPE) CONDITIONS. OPERATIONALLY, THE STOCKPILES WILL BE CONSTRUCTED INCREMENTALLY OVER THE LIFE OF THE LANDFILL AND AT TIMES MAY VARY IN ELEVATION FROM THAT SHOWN, BUT WILL NOT BE LARGER IN FOOTPRINT AREA.
5. THE ACTUAL STOCKPILE CONFIGURATION MAY VARY FROM THAT DEPICTED HERE, BASED ON THE ACTUAL QUANTITY OF SURPLUS MATERIAL GENERATED BY THE PROPOSED DEVELOPMENT.
6. MATERIAL PLACED IN THIS STOCKPILE WILL FIRST BE TREATED WITH ALKALINE MATERIAL PER THE ON-SITE MATERIALS HANDLING ALKALINE ADDITION TABLE.
7. THE RUNOFF FROM THE STOCKPILE WILL BE MONITORED FOR QUALITY. IF NECESSARY THE RUNOFF WILL BE COLLECTED AND TREATED PRIOR TO DISCHARGE.
8. ALKALINE REQUIRED TO TREAT STOCKPILED INTACT S2 ROCK EXCAVATION MATERIALS SHALL BE STORED AS NEEDED WITHIN THE S2 STOCKPILE AREA IN THE SEDIMENTATION BASIN 900 WATERSHED. IT IS ESTIMATED THAT A ONE-MONTH SUPPLY OF ALKALINE, NEEDED TO TREAT S2 EXCAVATION MATERIALS, MAY BE MAINTAINED WITHIN AN APPROXIMATE 130 BY 110 AREA, WHICH CAN BE EASILY MANAGED WITHIN THE STOCKPILE AREA.

REFERENCES

1. DIGITAL TOPOGRAPHY FOR THE SITE WAS COMPILED FROM AERIAL PHOTOGRAPHY OBTAINED ON DECEMBER 20, 2004, BY MAPMAKER PHOTOGRAMMETRIC SERVICES, ST. ALBANS, VERMONT.
2. TOPOGRAPHY AUGMENTED WITH TOPOGRAPHIC AND CULTURAL INFORMATION FROM U.S.G.S. 7.5 MINUTE GLEN RICHEY (1993) AND WALLACETON (1993) PA TOPOGRAPHIC QUADRANGLE MAPS.
3. WETLANDS DELINEATED AND/OR CONFIRMED BY ERIC MCCLEARY, ECOLOGIST (STANTEC) IN 2018 AND REVIEWED BY THE ARMY CORPS OF ENGINEERS.

PREPARED FOR:

PA WASTE, LLC
CLEARFIELD COUNTY, PA

PREPARED BY:

SMITH+ GARDNER
ENGINEERS
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN M. GARDNER
ENGINEER
No. 038015-E
7/1/19

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REV.	DATE	DESCRIPTION
1	3/19	RESPONSE TO 11/26/18 PADEP COMMENTS
2	6/19	RESPONSE TO 06/04/19 PADEP COMMENTS

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PROJECT TITLE:

CAMP HOPE RUN LANDFILL PERMIT DRAWINGS

DRAWING TITLE:

STOCKPILE S2 GRADING & DRAINAGE PLAN

DESIGNED: J.M.G.	PROJECT NO: PAWASTE 16-1
DRAWN: C.T.J.	SCALE: AS SHOWN
APPROVED:	DATE: FEB. 2018
FILENAME: MARSHALL-E0091A	
SHEET NUMBER: 42	DRAWING NUMBER: SP2

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