No.	Date	Revision

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS
CHARLESTON, WEST VIRGINIA
EARL RAY TOMBLIN, GOVERNOR
RANDY C. HUFFMAN, CABINET SECRETARY

CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

DRAWING INDEX

DRAWING	1	COVER SHEET AND INDEX
DRAWING	2	OVERALL SITE PLAN
DRAWING	2A	COMPOSITE SITE MAP
DRAWING	3-5	EXISTING CONDITIONS
DRAWINGS	6-8	RECLAMATION PLANS
DRAWINGS	9	SOIL BORROW PLAN
DRAWINGS	10-12	CHANNEL PROFILES
DRAWINGS	13-24	BASELINE 'A' CROSS SECTIONS
DRAWINGS	25	BASELINE 'B' CROSS SECTIONS
DRAWINGS	26-28	EROSION AND SEDIMENT CONTROL PLANS
DRAWINGS	29-31	TAX MAP OVERLAYS
DRAWINGS	32-34	MISCELLANEOUS DETAILS

Crany Mine Dump
Contractor's Bid Sheet

Company Name:_____

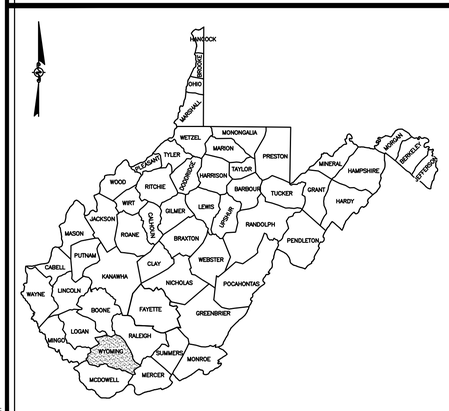
Address:_____

_____

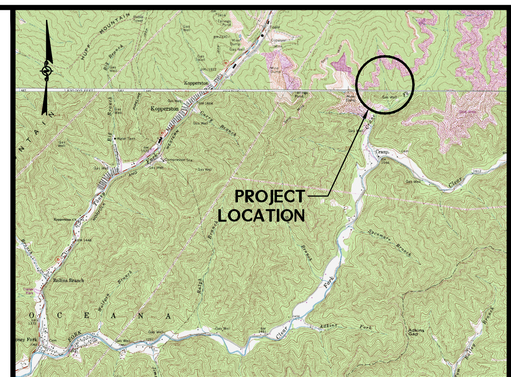
The DEP reserves the right to request additional information and supporting documentation regarding unit prices when the unit price appears to be unreasonable.

ITEM NO.	QUANTITY		DESCRIPTION	UNIT PRICE	AMOUNT
1.0	1	LS	Mobilization and Demobilization (Cannot Exceed 10% of Total Amount Bid)		$
2.0	1	LS	Construction Layout Stakes (Cannot Exceed 5% of Total Amount Bid)		$
3.0	1	LS	Quality Control (Cannot Exceed 3% of Total Amount Bid)		$
4.1	1	LS	Site Preparation (Cannot Exceed 10% of Total Amount Bid)		$
4.2	250	TN	Roadway Maintenance/Restoration Stone		$
5.1	3,100	LF	Silt Fence		$
5.2	200	LF	Super Silt Fence		$
5.3	1	EA	Stabilized Construction Entrance		$
5.4	22,250	LF	Straw Wattles		$
5.5	1	LS	Sediment Basin		$
6.0	33	AC	Revegetation		$
7.1	790	LF	Type A - 10-foot Bottom, 2-foot Deep Grouted Riprap Channel		$
7.2	935	LF	Type B - 8-foot Bottom, 2-foot Deep Grouted Riprap Channel		$
7.3	775	LF	Type C - 2-foot Deep V-Ditch Riprap Channel		$
7.4	375	LF	Type D - 3-foot Bottom, 2-foot Deep Grouted Riprap Channel		$
7.5	2,000	SY	Erosion Control Matting		$
7.6	2	EA	Drive-Through Channel		$
8.1	348,000	CY	Unclassified Excavation		$
8.2	22	AC	Soil Cover		$
10	1	LS	Utility (Gas Line Relocation)		$
11.1	400	LF	8-inch Perforated Pipe Underdrain		$
11.2	200	LF	8-inch Solid Wall Pipe		$
			TOTAL		$

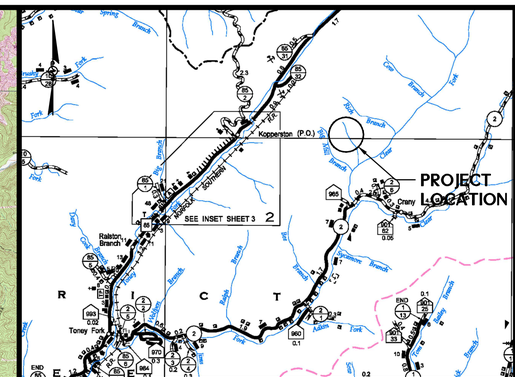
ISSUE DATE 5/10/2016



WEST VIRGINIA



LOCATION MAP
U.S.G.S. 7.5' QUADRANGLES
MATHENY & PILOT KNOB WEST VIRGINIA
SCALE: 1" = 4000'



VICINITY MAP
WV DIVISION OF HIGHWAYS
WYOMING COUNTY HIGHWAY MAP
SCALE: 1" = 1 MILES

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

STATE OF WEST VIRGINIA · JUNE 20, 1863 · MONTANI SEMPER LIBERI

west virginia
dep department of environmental protection

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9031
E-Mail Address: potesta@potesta.com

D. MARK KISER · REGISTERED · No. 10774 · STATE OF WEST VIRGINIA · PROFESSIONAL ENGINEER
5-10-16

FINAL

COVER	CAD File No.
RGL	Drawn
DMK	Checked
DMK	Approved
NOTED	Scale:
MAY 2016	Date:
101-13-0530	Project No.

POTESTA & ASSOCIATES, INC.
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POTESTA

Client: WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title: COVER SHEET AND INDEX
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

1
Drawing No.

XREF Files: desep2.jpg, DMK_SEAL_2016-5-10.jpg, MATHENY.tif, PILOT KNOB.tif, Wyoming_1_of_3.tif
IMAGE Files: desep2.jpg, DMK_SEAL_2016-5-10.jpg, MATHENY.tif, PILOT KNOB.tif, Wyoming_1_of_3.tif
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Plot Date/Time: May 09, 2016 - 2:03pm
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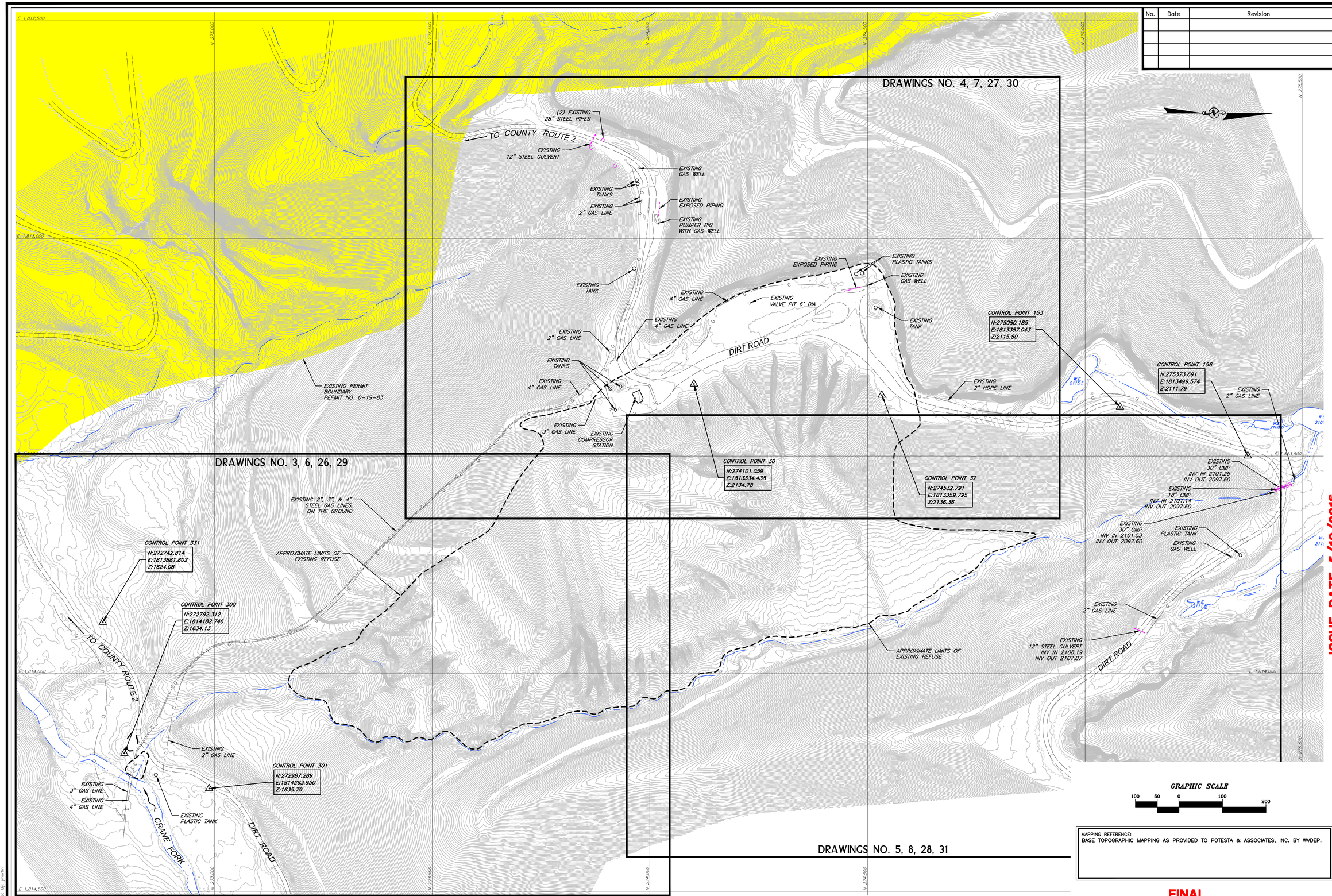

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

FINAL

ISSUE DATE 5/10/2016

No.	Date	Revision

EXISTING
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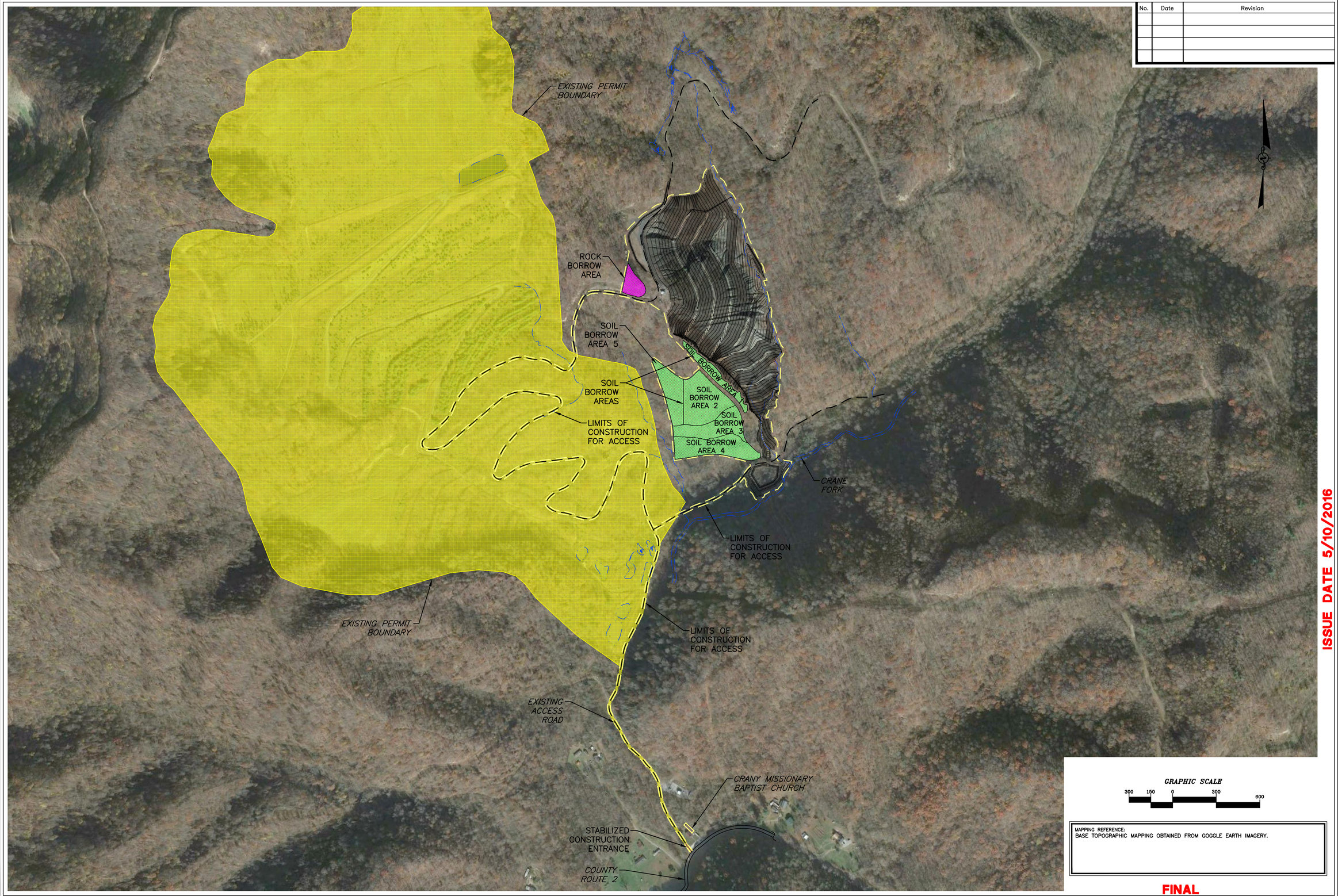
POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
OVERALL SITE PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

2
Drawing No.



MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING OBTAINED FROM GOGGLE EARTH IMAGERY.

FINAL

ISSUE DATE 5/10/2016

No.	Date	Revision

-TM_OVERLAY
CAD File No.
RGL/JM
Drawn
DMK
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DMK
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1"=300'
Scale:
MAY 2016
Date:
101-13-0530
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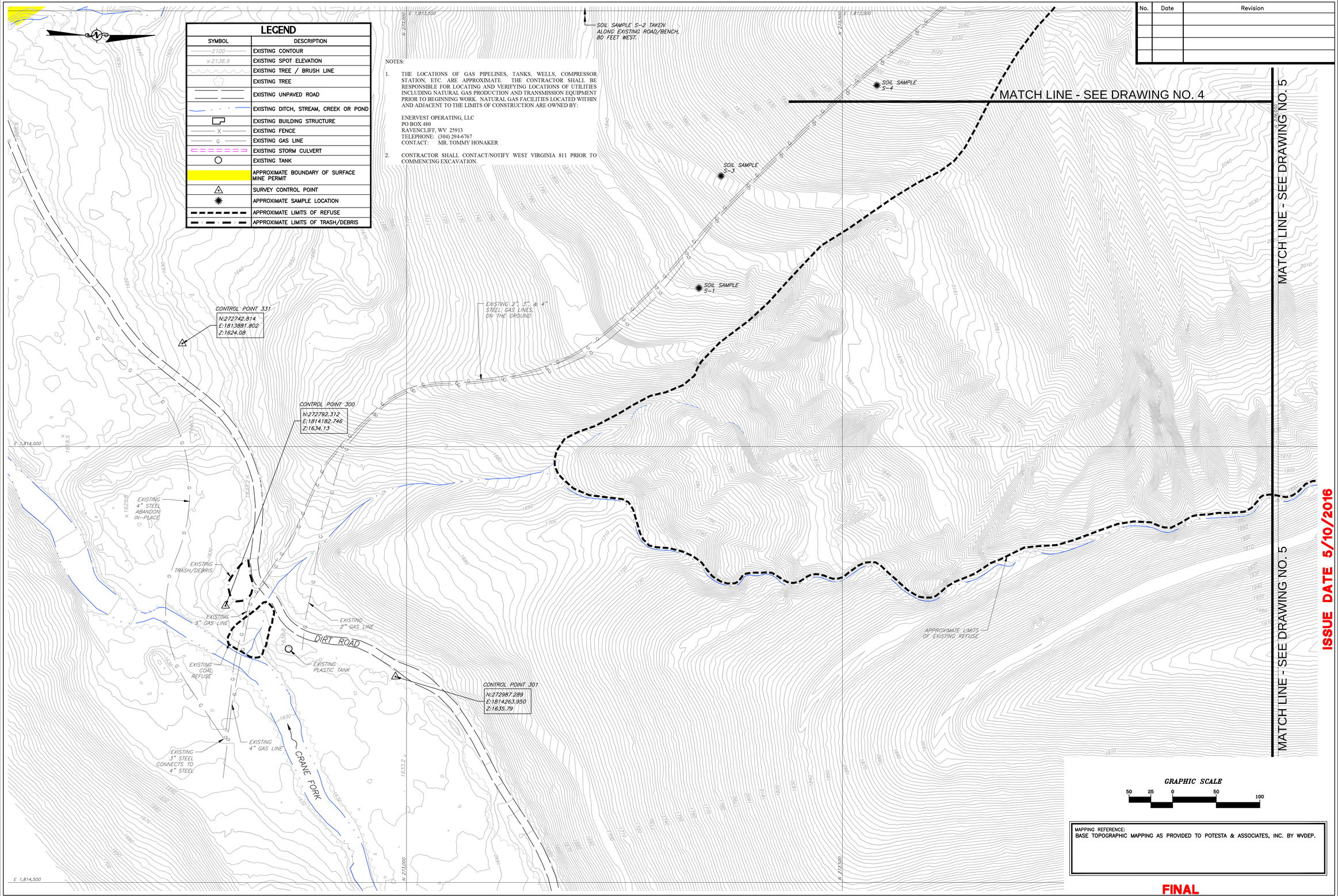
POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
COMPOSITE SITE MAP
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

2A
Drawing No.



LEGEND

SYMBOL	DESCRIPTION
2100	EXISTING CONTOUR
×2138.9	EXISTING SPOT ELEVATION
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING UNPAVED ROAD
	EXISTING DITCH, STREAM, CREEK OR POND
	EXISTING BUILDING STRUCTURE
X	EXISTING FENCE
G	EXISTING GAS LINE
	EXISTING STORM CULVERT
	EXISTING TANK
	APPROXIMATE BOUNDARY OF SURFACE MINE PERMIT
	SURVEY CONTROL POINT
	APPROXIMATE SAMPLE LOCATION
	APPROXIMATE LIMITS OF REFUSE
	APPROXIMATE LIMITS OF TRASH/DEBRIS

NOTES:

1. THE LOCATIONS OF GAS PIPELINES, TANKS, WELLS, COMPRESSOR STATION, ETC. ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING LOCATIONS OF UTILITIES INCLUDING NATURAL GAS PRODUCTION AND TRANSMISSION EQUIPMENT PRIOR TO BEGINNING WORK. NATURAL GAS FACILITIES LOCATED WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION ARE OWNED BY:

   ENERVEST OPERATING, LLC
   PO BOX 480
   RAVENCLIFF, WV 25913
   TELEPHONE: (304) 294-6767
   CONTACT: MR. TOMMY HONAKER

2. CONTRACTOR SHALL CONTACT/NOTIFY WEST VIRGINIA 811 PRIOR TO COMMENCING EXCAVATION.

No.	Date	Revision

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

FINAL

ISSUE DATE 5/10/2016

EXISTING
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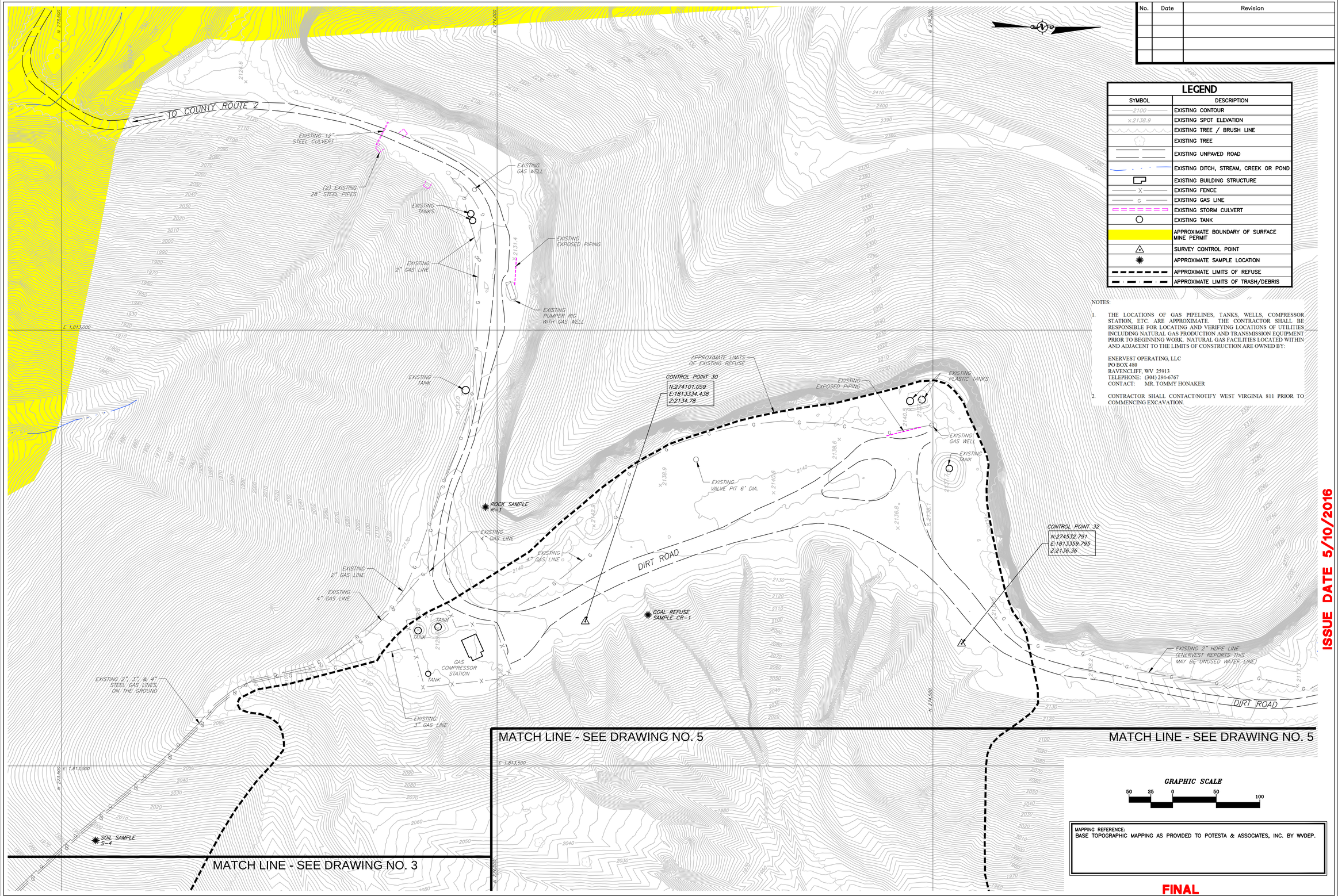
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9031
E-Mail Address: potesta@potesta.com

POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
EXISTING CONDITIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

3
Drawing No.



No.	Date	Revision

LEGEND

SYMBOL	DESCRIPTION
2100	EXISTING CONTOUR
×2138.9	EXISTING SPOT ELEVATION
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING UNPAVED ROAD
	EXISTING DITCH, STREAM, CREEK OR POND
	EXISTING BUILDING STRUCTURE
X	EXISTING FENCE
G	EXISTING GAS LINE
	EXISTING STORM CULVERT
	EXISTING TANK
	APPROXIMATE BOUNDARY OF SURFACE MINE PERMIT
	SURVEY CONTROL POINT
	APPROXIMATE SAMPLE LOCATION
	APPROXIMATE LIMITS OF REFUSE
	APPROXIMATE LIMITS OF TRASH/DEBRIS

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MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

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POTESTA

Client:
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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
EXISTING CONDITIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

4
Drawing No.

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IMAGE Files: C:\SHARE\
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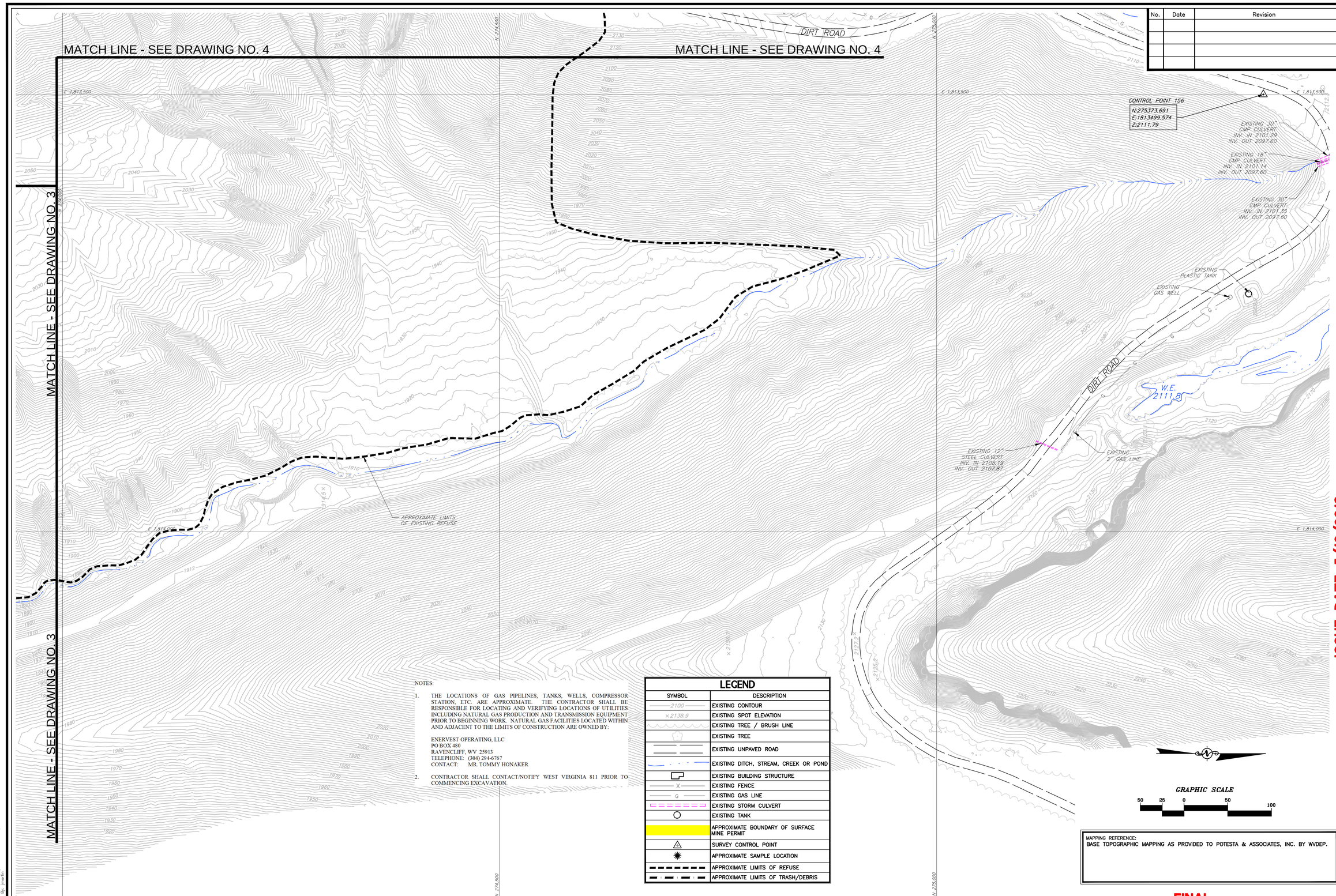
Plotted By: jmartin



No.	Date	Revision

NOTES:

1. THE LOCATIONS OF GAS PIPELINES, TANKS, WELLS, COMPRESSOR STATION, ETC. ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING LOCATIONS OF UTILITIES INCLUDING NATURAL GAS PRODUCTION AND TRANSMISSION EQUIPMENT PRIOR TO BEGINNING WORK. NATURAL GAS FACILITIES LOCATED WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION ARE OWNED BY:

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2. CONTRACTOR SHALL CONTACT/NOTIFY WEST VIRGINIA 811 PRIOR TO COMMENCING EXCAVATION.

LEGEND

SYMBOL	DESCRIPTION
2100	EXISTING CONTOUR
×2138.9	EXISTING SPOT ELEVATION
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING UNPAVED ROAD
	EXISTING DITCH, STREAM, CREEK OR POND
	EXISTING BUILDING STRUCTURE
X	EXISTING FENCE
G	EXISTING GAS LINE
	EXISTING STORM CULVERT
	EXISTING TANK
	APPROXIMATE BOUNDARY OF SURFACE MINE PERMIT
	SURVEY CONTROL POINT
	APPROXIMATE SAMPLE LOCATION
	APPROXIMATE LIMITS OF REFUSE
	APPROXIMATE LIMITS OF TRASH/DEBRIS

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

ISSUE DATE 5/10/2016

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POTESTA & ASSOCIATES, INC.
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7010 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 342-0031
E-MAIL Address: potesta@potesta.com

POTESTA

Client:
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
EXISTING CONDITIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

5
Drawing No.

XREF Files: EXIST-LEGEND GOOGLE IMAGE BW EXIST-PERMIT MAP
IMAGE Files: GEBABA.jpg
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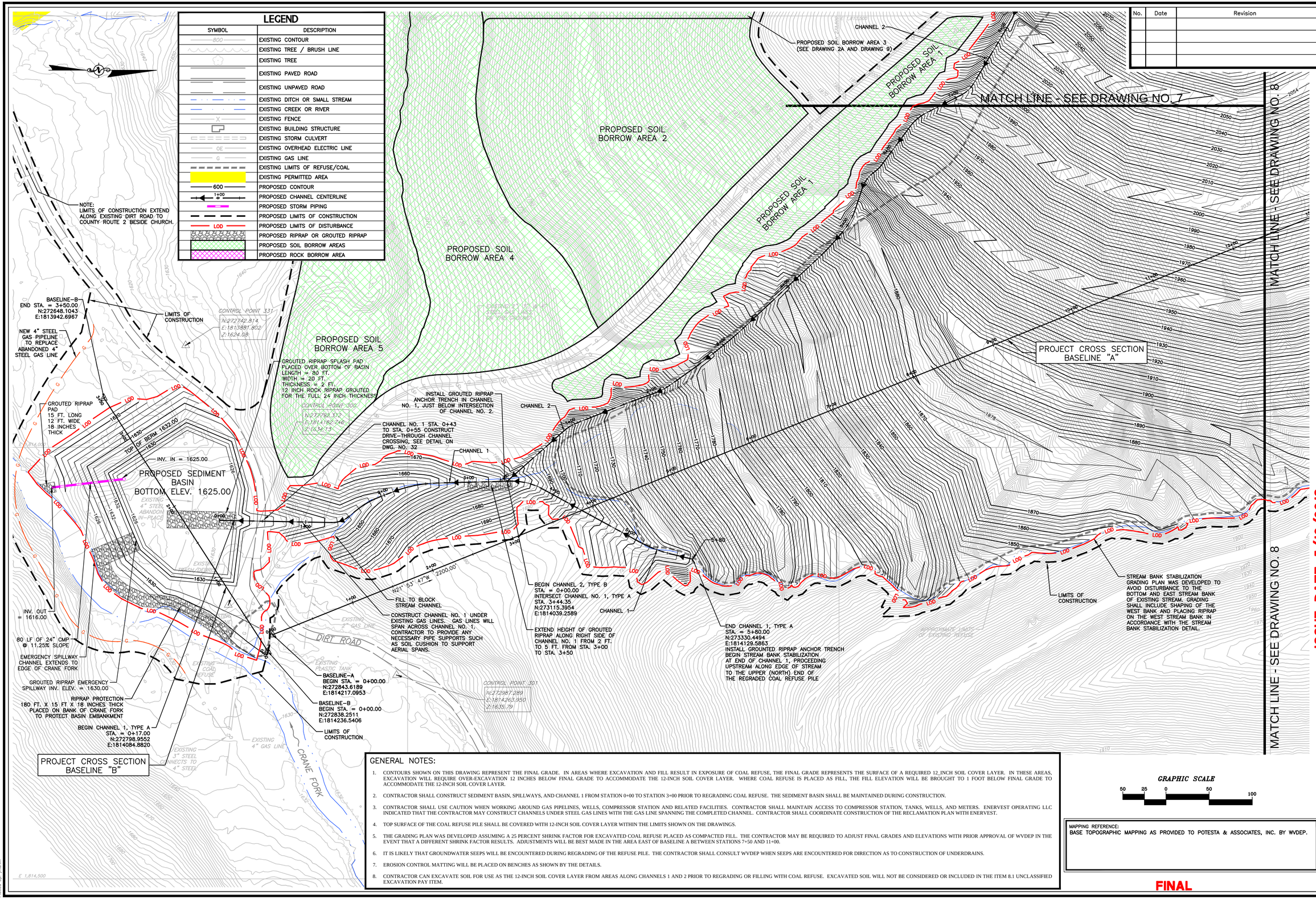
Plotted By: jmartin



No.	Date	Revision

REC PLAN
CAD File No.
RGL
Drawn
DMK
Checked
DMK
Approved
1"=100'
Scale:
MAY 2016
Date:
101-13-0530
Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7010 MacCorkle Ave. SE, Charleston, WV 25304
PH: (304) 342-1400 FAX: (304) 342-0081
E-Mail Address: potesta@potesta.com

POTESTA

Client:
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
RECLAMATION PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

6
Drawing No.

ISSUE DATE 5/10/2016

GENERAL NOTES:

1. CONTOURS SHOWN ON THIS DRAWING REPRESENT THE FINAL GRADE. IN AREAS WHERE EXCAVATION AND FILL RESULT IN EXPOSURE OF COAL REFUSE, THE FINAL GRADE REPRESENTS THE SURFACE OF A REQUIRED 12_INCH SOIL COVER LAYER. IN THESE AREAS, EXCAVATION WILL REQUIRE OVER-EXCAVATION 12 INCHES BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER. WHERE COAL REFUSE IS PLACED AS FILL, THE FILL ELEVATION WILL BE BROUGHT TO 1 FOOT BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER.
2. CONTRACTOR SHALL CONSTRUCT SEDIMENT BASIN, SPILLWAYS, AND CHANNEL 1 FROM STATION 0+00 TO STATION 3+00 PRIOR TO REGRADING COAL REFUSE. THE SEDIMENT BASIN SHALL BE MAINTAINED DURING CONSTRUCTION.
3. CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND GAS PIPELINES, WELLS, COMPRESSOR STATION AND RELATED FACILITIES. CONTRACTOR SHALL MAINTAIN ACCESS TO COMPRESSOR STATION, TANKS, WELLS, AND METERS. ENERVEST OPERATING LLC INDICATED THAT THE CONTRACTOR MAY CONSTRUCT CHANNELS UNDER STEEL GAS LINES WITH THE GAS LINE SPANNING THE COMPLETED CHANNEL. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF THE RECLAMATION PLAN WITH ENERVEST.
4. TOP SURFACE OF THE COAL REFUSE PILE SHALL BE COVERED WITH 12-INCH SOIL COVER LAYER WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
5. THE GRADING PLAN WAS DEVELOPED ASSUMING A 25 PERCENT SHRINK FACTOR FOR EXCAVATED COAL REFUSE PLACED AS COMPACTED FILL. THE CONTRACTOR MAY BE REQUIRED TO ADJUST FINAL GRADES AND ELEVATIONS WITH PRIOR APPROVAL OF WVDEP IN THE EVENT THAT A DIFFERENT SHRINK FACTOR RESULTS. ADJUSTMENTS WILL BE BEST MADE IN THE AREA EAST OF BASELINE A BETWEEN STATIONS 7+50 AND 11+00.
6. IT IS LIKELY THAT GROUNDWATER SEEPS WILL BE ENCOUNTERED DURING REGRADING OF THE REFUSE PILE. THE CONTRACTOR SHALL CONSULT WVDEP WHEN SEEPS ARE ENCOUNTERED FOR DIRECTION AS TO CONSTRUCTION OF UNDERDRAINS.
7. EROSION CONTROL MATTING WILL BE PLACED ON BENCHES AS SHOWN BY THE DETAILS.
8. CONTRACTOR CAN EXCAVATE SOIL FOR USE AS THE 12-INCH SOIL COVER LAYER FROM AREAS ALONG CHANNELS 1 AND 2 PRIOR TO REGRADING OR FILLING WITH COAL REFUSE. EXCAVATED SOIL WILL NOT BE CONSIDERED OR INCLUDED IN THE ITEM 8.1 UNCLASSIFIED EXCAVATION PAY ITEM.

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

FINAL

XREF Files: 13-0530_EXISTING EXIST-LEGEND GOOGLE IMAGE BW REC-LEGEND EXIST-PERMIT MAP SOIL-LEGEND
IMAGE Files: CEBABA30
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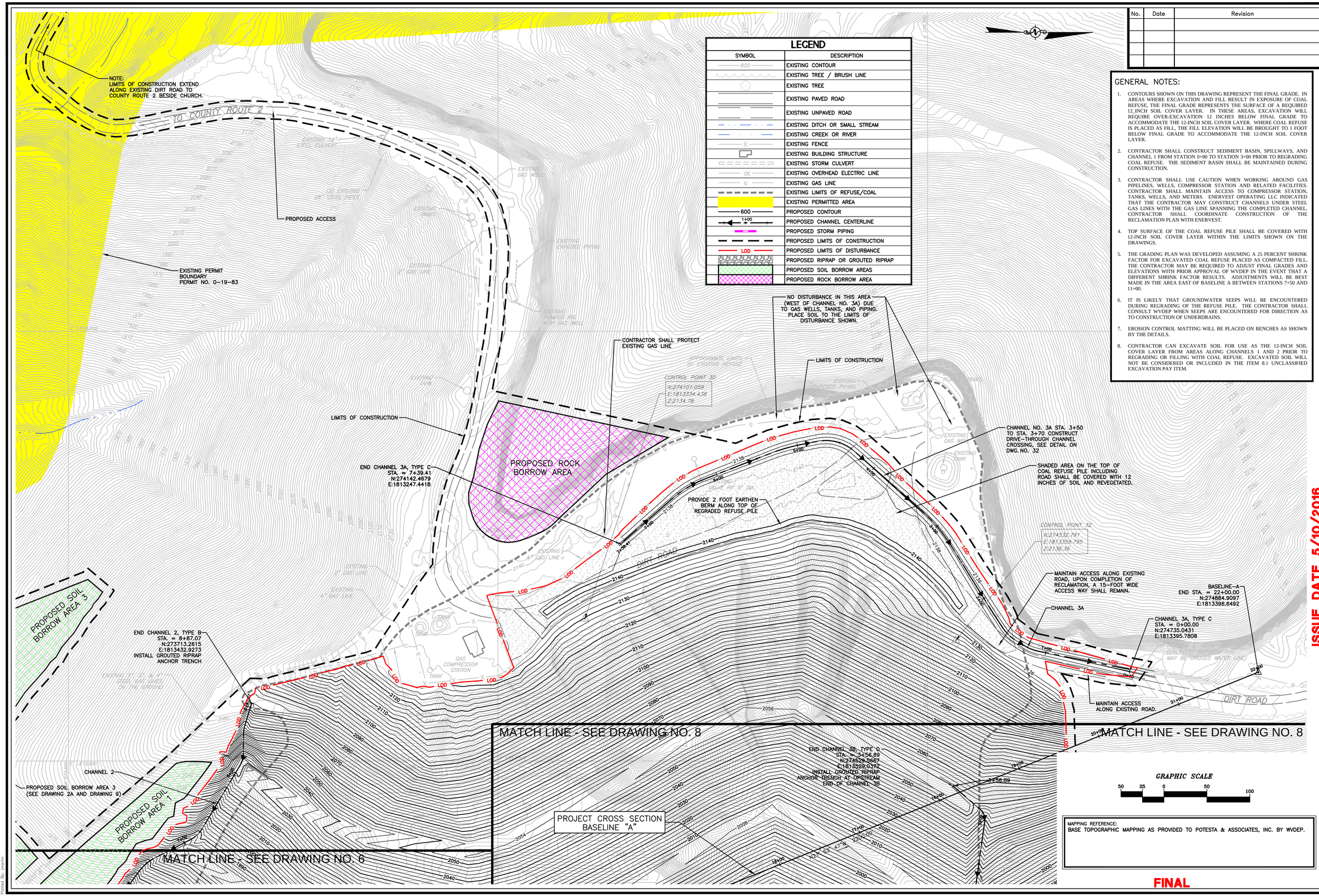

LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
600	PROPOSED CONTOUR
1+00	PROPOSED CHANNEL CENTERLINE
	PROPOSED STORM PIPING
	PROPOSED LIMITS OF CONSTRUCTION
LOD	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA

GENERAL NOTES:

1. CONTOURS SHOWN ON THIS DRAWING REPRESENT THE FINAL GRADE. IN AREAS WHERE EXCAVATION AND FILL RESULT IN EXPOSURE OF COAL REFUSE, THE FINAL GRADE REPRESENTS THE SURFACE OF A REQUIRED 12_INCH SOIL COVER LAYER. IN THESE AREAS, EXCAVATION WILL REQUIRE OVER-EXCAVATION 12 INCHES BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER. WHERE COAL REFUSE IS PLACED AS FILL, THE FILL ELEVATION WILL BE BROUGHT TO 1 FOOT BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER.
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No.	Date	Revision

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REC PLAN
CAD File No.
RGL
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DMK
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1"=100'
Scale:
MAY 2016
Date:
101-13-0530
Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
TEL: (304) 926-1400 FAX: 346-9081
E-Mail Address: potesta@potesta.com

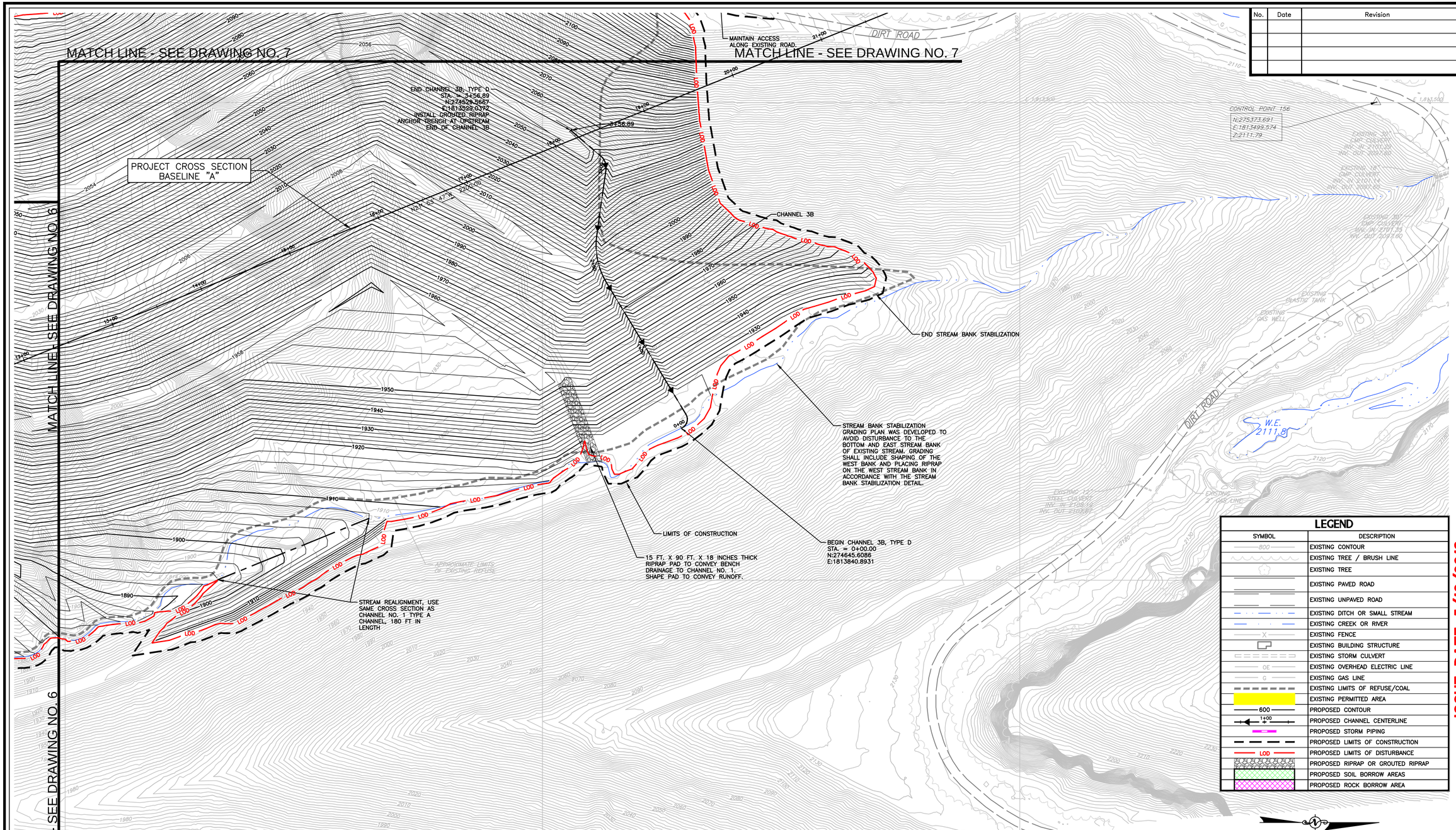
POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
RECLAMATION PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

7
Drawing No.

XREF Files: 13-0530_EXISTING EXIST-LEGEND GOOGLE IMAGE BW REC-LEGEND EXIST-PERMIT MAP SOIL-LEGEND
IMAGE Files: GE8484A.jpg
Plot Scale: 1:1 Plot Offset: (0.00,0.00)
Plot Date/Time: May 09, 2016 - 2:43pm
Plotted By: jmarlin



No.	Date	Revision

LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
600	PROPOSED CONTOUR
1+00	PROPOSED CHANNEL CENTERLINE
	PROPOSED STORM PIPING
	PROPOSED LIMITS OF CONSTRUCTION
LOD	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA

GRAPHIC SCALE

50 25 0 50 100

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

GENERAL NOTES:

1. CONTOURS SHOWN ON THIS DRAWING REPRESENT THE FINAL GRADE. IN AREAS WHERE EXCAVATION AND FILL RESULT IN EXPOSURE OF COAL REFUSE, THE FINAL GRADE REPRESENTS THE SURFACE OF A REQUIRED 12_INCH SOIL COVER LAYER. IN THESE AREAS, EXCAVATION WILL REQUIRE OVER-EXCAVATION 12 INCHES BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER. WHERE COAL REFUSE IS PLACED AS FILL, THE FILL ELEVATION WILL BE BROUGHT TO 1 FOOT BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER.
2. CONTRACTOR SHALL CONSTRUCT SEDIMENT BASIN, SPILLWAYS, AND CHANNEL 1 FROM STATION 0+00 TO STATION 3+00 PRIOR TO REGRADING COAL REFUSE. THE SEDIMENT BASIN SHALL BE MAINTAINED DURING CONSTRUCTION.
3. CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND GAS PIPELINES, WELLS, COMPRESSOR STATION AND RELATED FACILITIES. CONTRACTOR SHALL MAINTAIN ACCESS TO COMPRESSOR STATION, TANKS, WELLS, AND METERS. ENERVEST OPERATING LLC INDICATED THAT THE CONTRACTOR MAY CONSTRUCT CHANNELS UNDER STEEL GAS LINES WITH THE GAS LINE SPANNING THE COMPLETED CHANNEL. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF THE RECLAMATION PLAN WITH ENERVEST.
4. TOP SURFACE OF THE COAL REFUSE PILE SHALL BE COVERED WITH 12-INCH SOIL COVER LAYER WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
5. THE GRADING PLAN WAS DEVELOPED ASSUMING A 25 PERCENT SHRINK FACTOR FOR EXCAVATED COAL REFUSE PLACED AS COMPACTED FILL. THE CONTRACTOR MAY BE REQUIRED TO ADJUST FINAL GRADES AND ELEVATIONS WITH PRIOR APPROVAL OF WVDEP IN THE EVENT THAT A DIFFERENT SHRINK FACTOR RESULTS. ADJUSTMENTS WILL BE BEST MADE IN THE AREA EAST OF BASELINE A BETWEEN STATIONS 7+50 AND 11+00.
6. IT IS LIKELY THAT GROUNDWATER SEEPS WILL BE ENCOUNTERED DURING REGRADING OF THE REFUSE PILE. THE CONTRACTOR SHALL CONSULT WVDEP WHEN SEEPS ARE ENCOUNTERED FOR DIRECTION AS TO CONSTRUCTION OF UNDERDRAINS.
7. EROSION CONTROL MATTING WILL BE PLACED ON BENCHES AS SHOWN BY THE DETAILS.
8. CONTRACTOR CAN EXCAVATE SOIL FOR USE AS THE 12-INCH SOIL COVER LAYER FROM AREAS ALONG CHANNELS 1 AND 2 PRIOR TO REGRADING OR FILLING WITH COAL REFUSE. EXCAVATED SOIL WILL NOT BE CONSIDERED OR INCLUDED IN THE ITEM 8.1 UNCLASSIFIED EXCAVATION PAY ITEM.

FINAL

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REC PLAN
CAD File No.
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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
RECLAMATION PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

8
Drawing No.

XREF Files: 13-0530_EXISTING EXIT-LEGEND GOOGLE IMAGE BW REC-LEGEND EXIT-PERMIT MAP SOIL-LEGEND
IMAGE Files: GERBER.jpg
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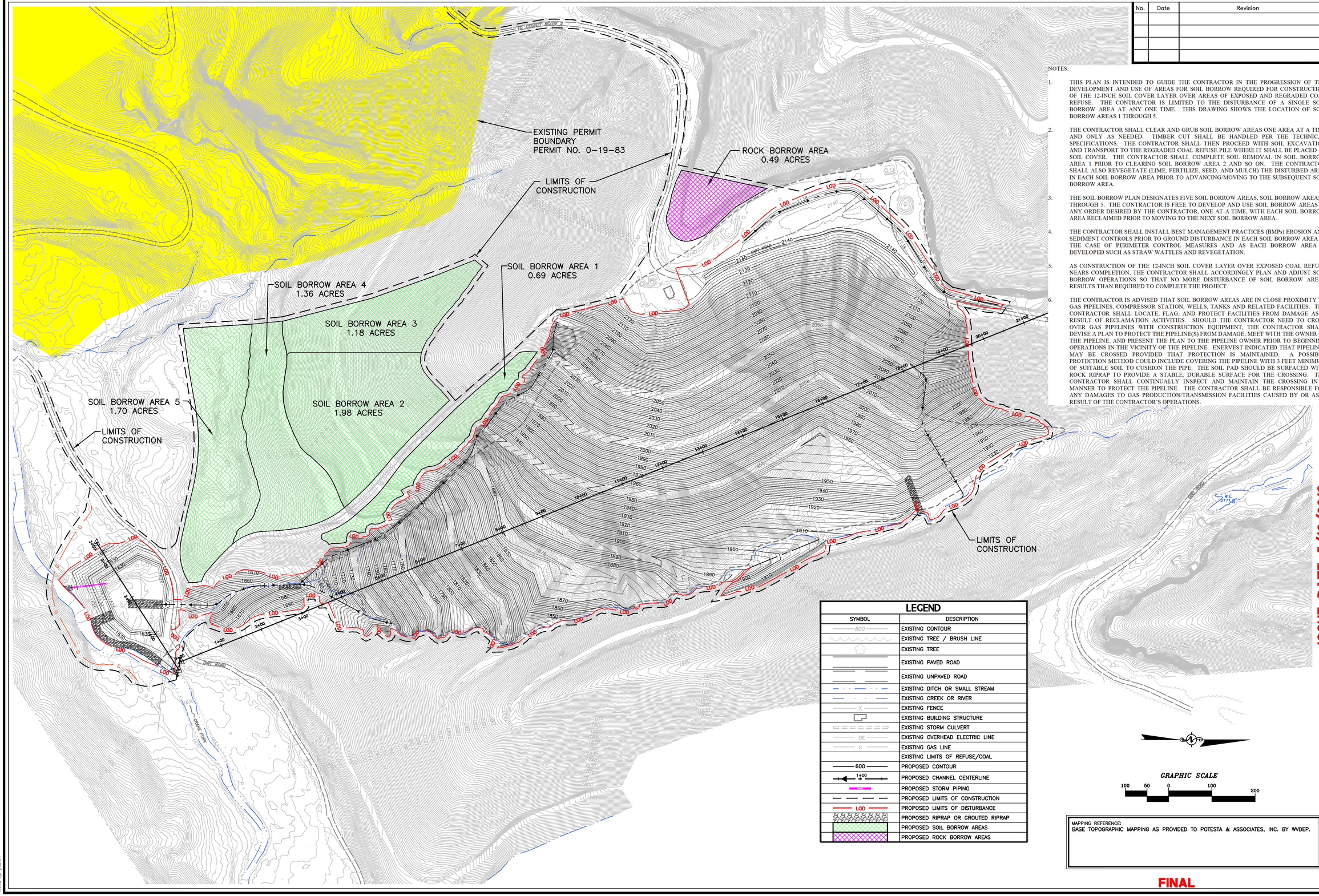
Plot Date/Time: May 09, 2016 - 2:46pm
Plotted By: jmartin



No.	Date	Revision

NOTES:

1. THIS PLAN IS INTENDED TO GUIDE THE CONTRACTOR IN THE PROGRESSION OF THE DEVELOPMENT AND USE OF AREAS FOR SOIL BORROW REQUIRED FOR CONSTRUCTION OF THE 12-INCH SOIL COVER LAYER OVER AREAS OF EXPOSED AND REGRADED COAL REFUSE. THE CONTRACTOR IS LIMITED TO THE DISTURBANCE OF A SINGLE SOIL BORROW AREA AT ANY ONE TIME. THIS DRAWING SHOWS THE LOCATION OF SOIL BORROW AREAS 1 THROUGH 5.

2. THE CONTRACTOR SHALL CLEAR AND GRUB SOIL BORROW AREAS ONE AREA AT A TIME AND ONLY AS NEEDED. TIMBER CUT SHALL BE HANDLED PER THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL THEN PROCEED WITH SOIL EXCAVATION AND TRANSPORT TO THE REGRADED COAL REFUSE PILE WHERE IT SHALL BE PLACED AS SOIL COVER. THE CONTRACTOR SHALL COMPLETE SOIL REMOVAL IN SOIL BORROW AREA 1 PRIOR TO CLEARING SOIL BORROW AREA 2 AND SO ON. THE CONTRACTOR SHALL ALSO REVEGETATE (LIME, FERTILIZE, SEED, AND MULCH) THE DISTURBED AREA IN EACH SOIL BORROW AREA PRIOR TO ADVANCING/MOVING TO THE SUBSEQUENT SOIL BORROW AREA.

3. THE SOIL BORROW PLAN DESIGNATES FIVE SOIL BORROW AREAS, SOIL BORROW AREAS 1 THROUGH 5. THE CONTRACTOR IS FREE TO DEVELOP AND USE SOIL BORROW AREAS IN ANY ORDER DESIRED BY THE CONTRACTOR, ONE AT A TIME, WITH EACH SOIL BORROW AREA RECLAIMED PRIOR TO MOVING TO THE NEXT SOIL BORROW AREA.

4. THE CONTRACTOR SHALL INSTALL BEST MANAGEMENT PRACTICES (BMPs) EROSION AND SEDIMENT CONTROLS PRIOR TO GROUND DISTURBANCE IN EACH SOIL BORROW AREA IN THE CASE OF PERIMETER CONTROL MEASURES AND AS EACH BORROW AREA IS DEVELOPED SUCH AS STRAW WATTLES AND REVEGETATION.

5. AS CONSTRUCTION OF THE 12-INCH SOIL COVER LAYER OVER EXPOSED COAL REFUSE NEARS COMPLETION, THE CONTRACTOR SHALL ACCORDINGLY PLAN AND ADJUST SOIL BORROW OPERATIONS SO THAT NO MORE DISTURBANCE OF SOIL BORROW AREAS RESULTS THAN REQUIRED TO COMPLETE THE PROJECT.

6. THE CONTRACTOR IS ADVISED THAT SOIL BORROW AREAS ARE IN CLOSE PROXIMITY TO GAS PIPELINES, COMPRESSOR STATION, WELLS, TANKS AND RELATED FACILITIES. THE CONTRACTOR SHALL LOCATE, FLAG, AND PROTECT FACILITIES FROM DAMAGE AS A RESULT OF RECLAMATION ACTIVITIES. SHOULD THE CONTRACTOR NEED TO CROSS OVER GAS PIPELINES WITH CONSTRUCTION EQUIPMENT, THE CONTRACTOR SHALL DEVISE A PLAN TO PROTECT THE PIPELINE(S) FROM DAMAGE, MEET WITH THE OWNER OF THE PIPELINE, AND PRESENT THE PLAN TO THE PIPELINE OWNER PRIOR TO BEGINNING OPERATIONS IN THE VICINITY OF THE PIPELINE. ENERVEST INDICATED THAT PIPELINES MAY BE CROSSED PROVIDED THAT PROTECTION IS MAINTAINED. A POSSIBLE PROTECTION METHOD COULD INCLUDE COVERING THE PIPELINE WITH 3 FEET MINIMUM OF SUITABLE SOIL TO CUSHION THE PIPE. THE SOIL PAD SHOULD BE SURFACED WITH ROCK RIPRAP TO PROVIDE A STABLE, DURABLE SURFACE FOR THE CROSSING. THE CONTRACTOR SHALL CONTINUALLY INSPECT AND MAINTAIN THE CROSSING IN A MANNER TO PROTECT THE PIPELINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO GAS PRODUCTION/TRANSMISSION FACILITIES CAUSED BY OR AS A RESULT OF THE CONTRACTOR'S OPERATIONS.

LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
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X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
600	PROPOSED CONTOUR
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LOD	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREAS

MAPPING REFERENCE:
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E-MAIL Address: potesta@potesta.com

POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
SOIL BORROW PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

9
Drawing No.

XREF Files: 13-0530_EXISTING EXIST-LEGEND GOOGLE IMAGE BW REC-LEGEND EXIST-PERMIT MAP SOIL-LEGEND
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Plot Date/Time: May 09, 2016 - 2:49pm
Plotted By: jmartin

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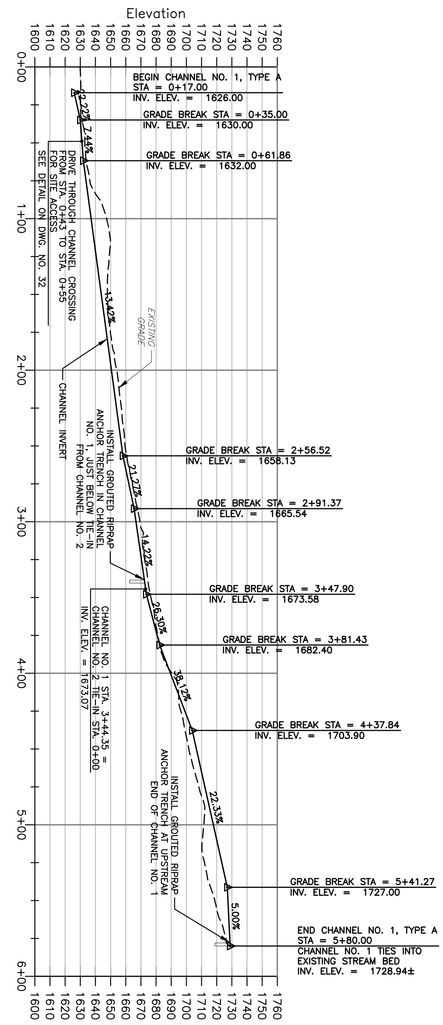

CHANNEL NO. 1 PROFILE

FINAL

HORIZONTAL: 50 25 0 50

VERTICAL: 50 25 0 50

ISSUE DATE 5/10/2016

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CAD File No.:
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E-Mail Address: potesta@potesta.com

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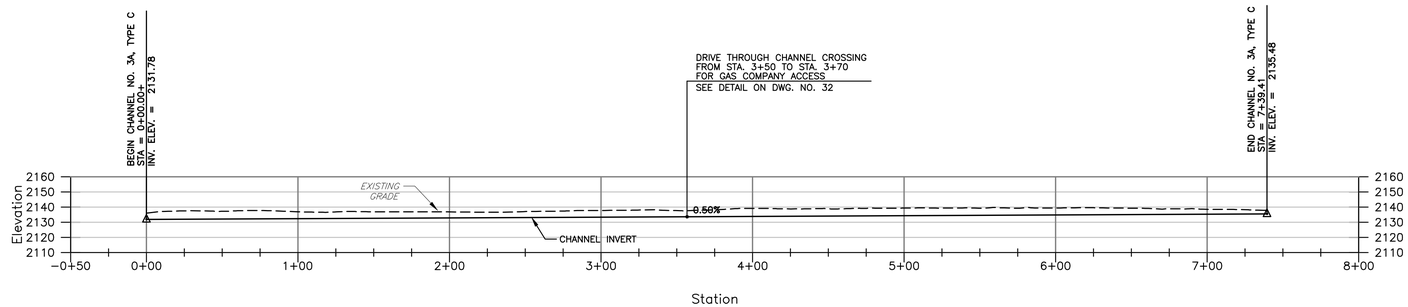
POTESTA

Title
CHANNEL PROFILES
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

Drawing No.
10



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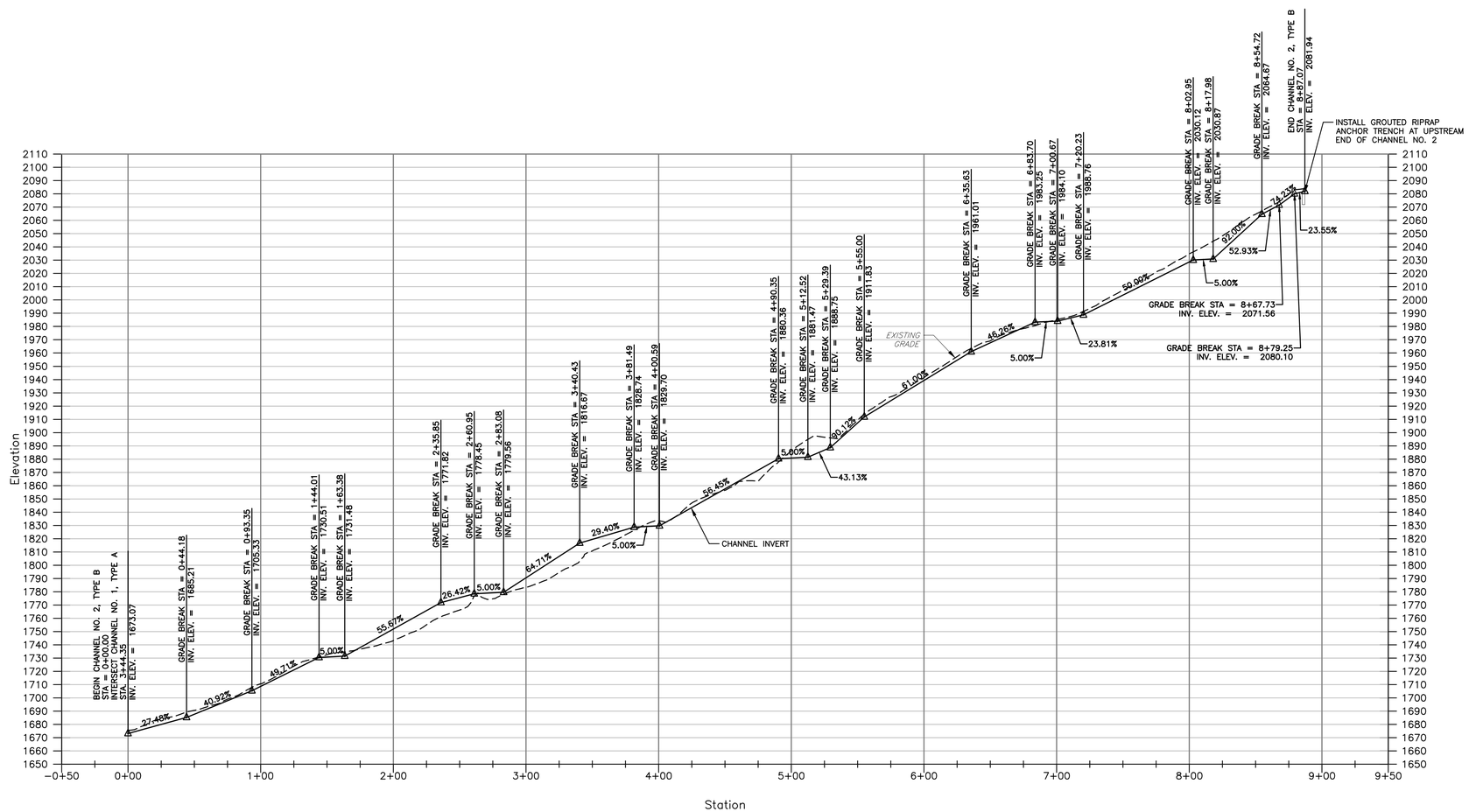

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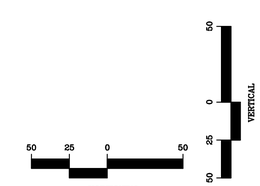

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CHANNEL PROFILES
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

11
Drawing No.

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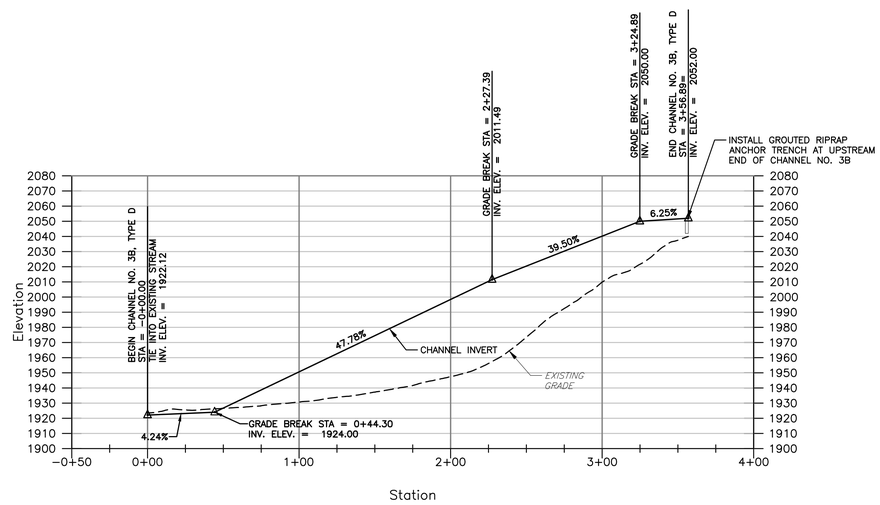
Plotted By: jmartin

No.	Date	Revision



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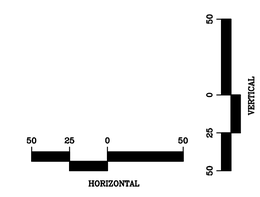

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Title
CHANNEL PROFILES
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

12
Drawing No.

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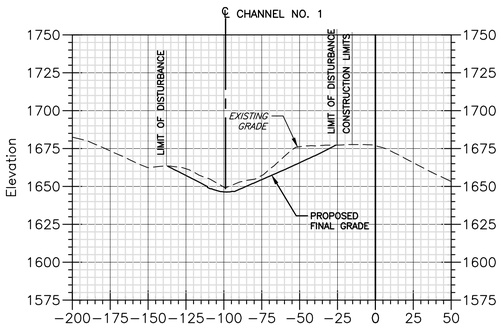
Plotted By: jmartin



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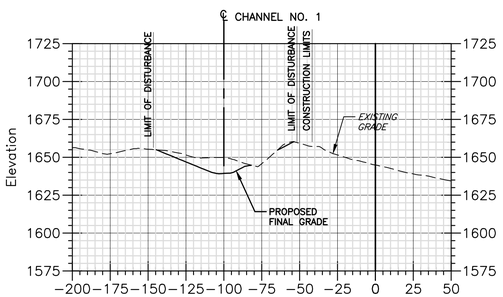

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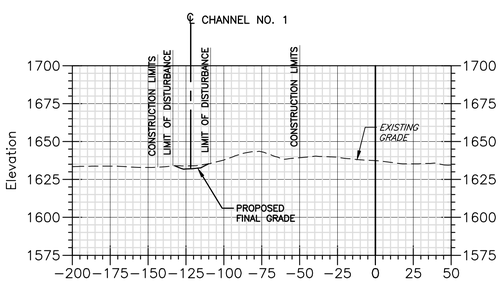

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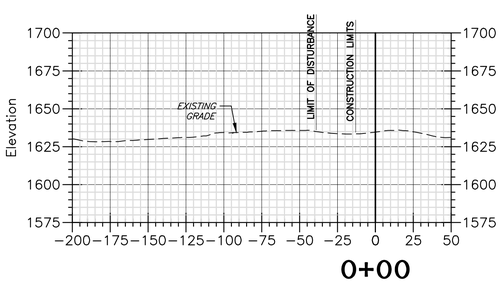

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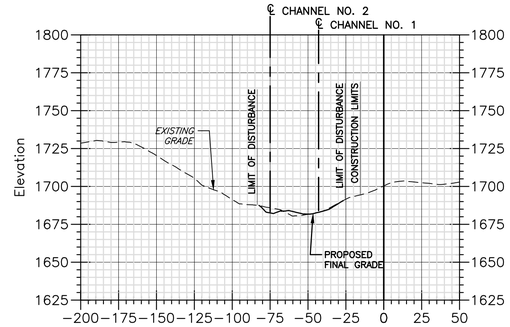

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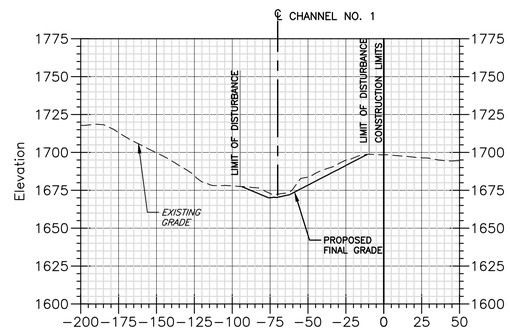

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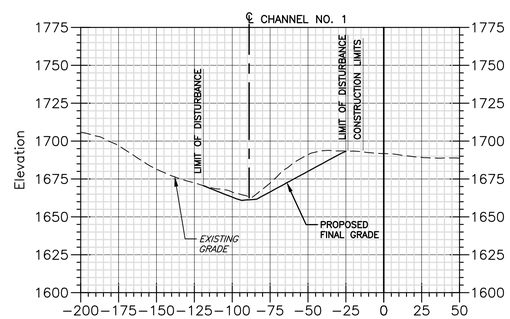

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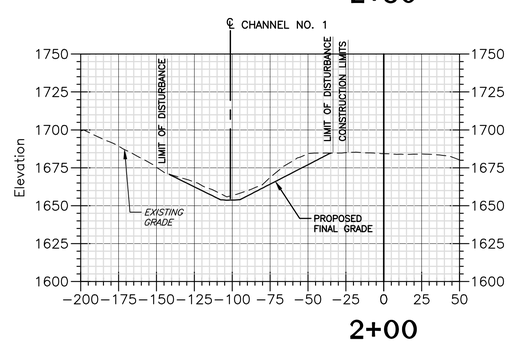

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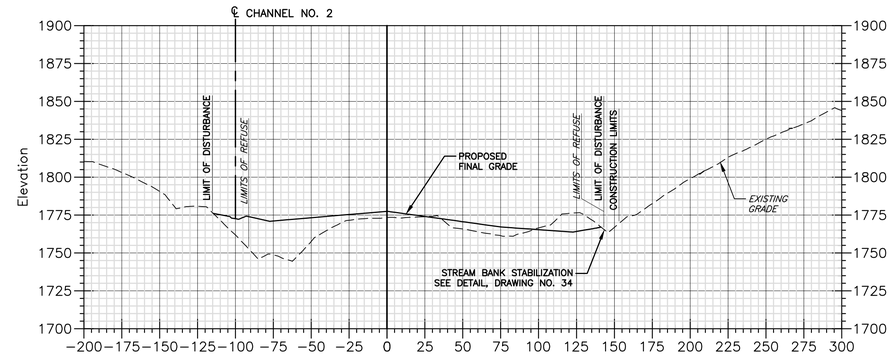

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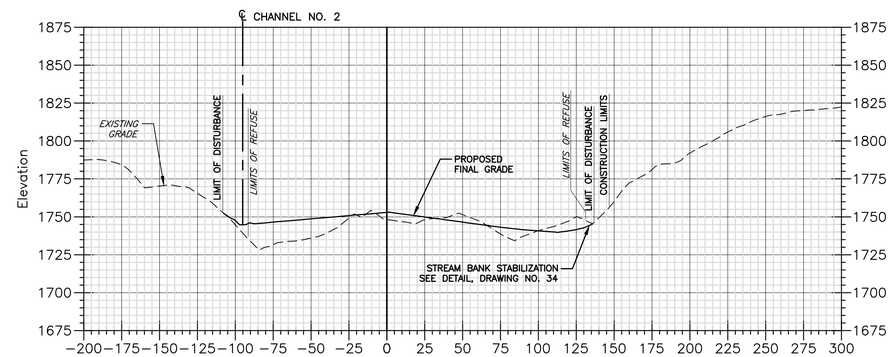

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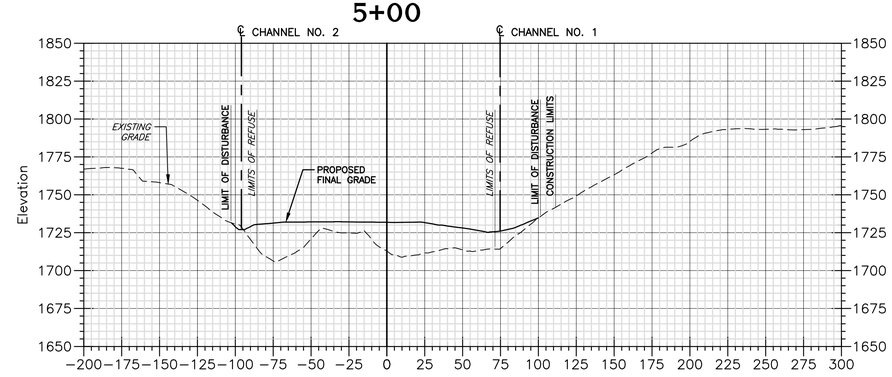

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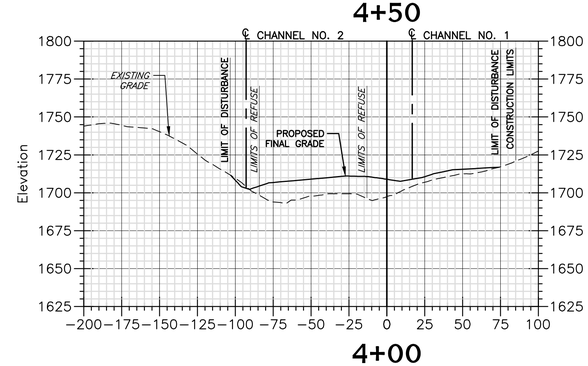


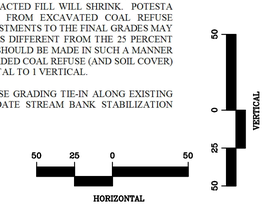
4+00

NOTES:

1. PROPOSED FINAL GRADE LINE SHOWN ON THE CROSS SECTIONS REPRESENTS THE FINAL REGRADED SURFACE. IN AREAS OF REGRADED (CUT OR FILL) COAL REFUSE, THIS FINAL GRADE LINE REPRESENTS THE SURFACE OF THE 12-INCH SOIL COVER LAYER.

2. REGRADING PLAN ASSUMES THAT COAL REFUSE EXCAVATED FROM THE MINE DUMP AND PLACED AS COMPACTED FILL WILL SHRINK. POTESTA ASSUMED A 25 PERCENT SHRINK FROM EXCAVATED COAL REFUSE PLACED AS COMPACTED FILL. ADJUSTMENTS TO THE FINAL GRADES MAY BE REQUIRED FOR SHRINK FACTORS DIFFERENT FROM THE 25 PERCENT FACTOR ASSUMED. ADJUSTMENTS SHOULD BE MADE IN SUCH A MANNER AND AT LOCATIONS SO THAT REGRADED COAL REFUSE (AND SOIL COVER) SLOPES DO NOT EXCEED 2 HORIZONTAL TO 1 VERTICAL.

3. CONTRACTOR SHALL ADJUST REFUSE GRADING TIE-IN ALONG EXISTING STREAM CHANNEL TO ACCOMMODATE STREAM BANK STABILIZATION DETAIL ON DRAWING NO. 34.



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Client:
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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

13
Drawing No.

XREF Files: GOOGLE IMAGE BW; EXIST_DRYMAT MAP
IMAGE Files: MATHEWS1.PLT; ROBSLIM.PLT; POND GRADING.tif; GE8484A.jpg
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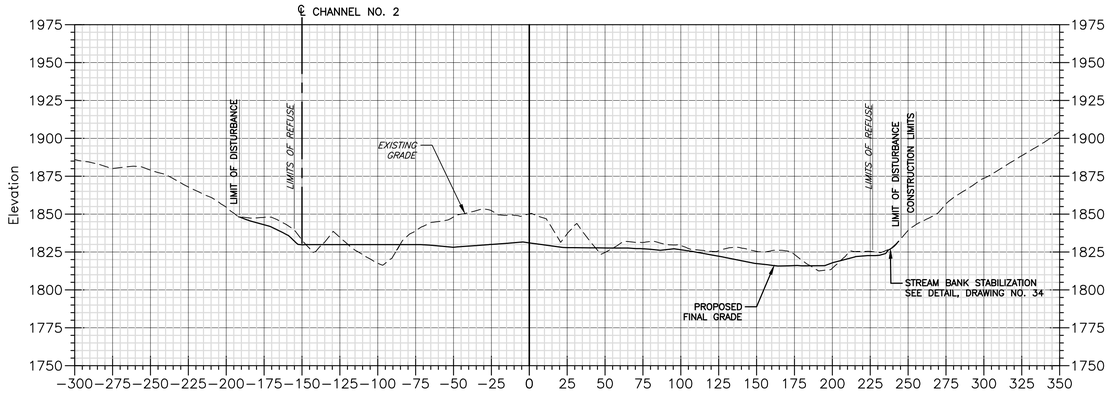
Plot Date/Time: May 09, 2016 - 3:50pm
Plotted By: jmartin



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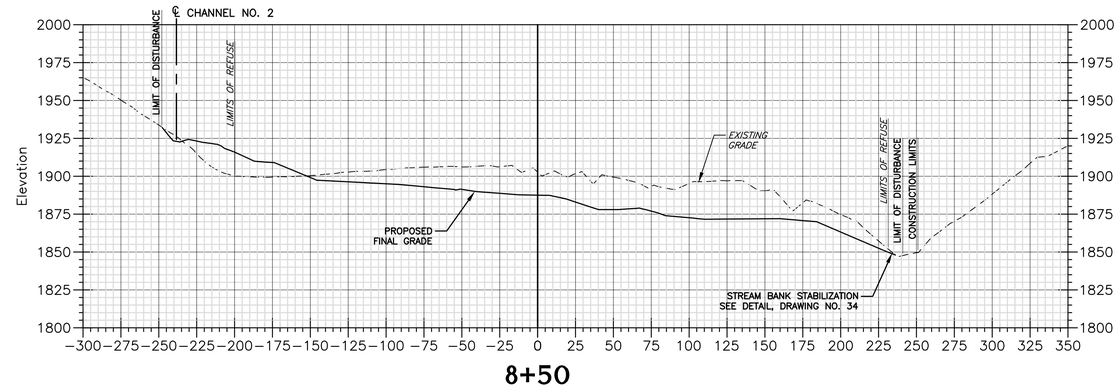

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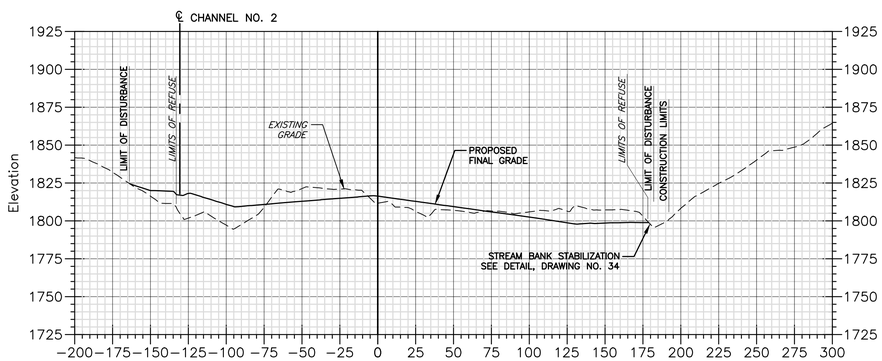

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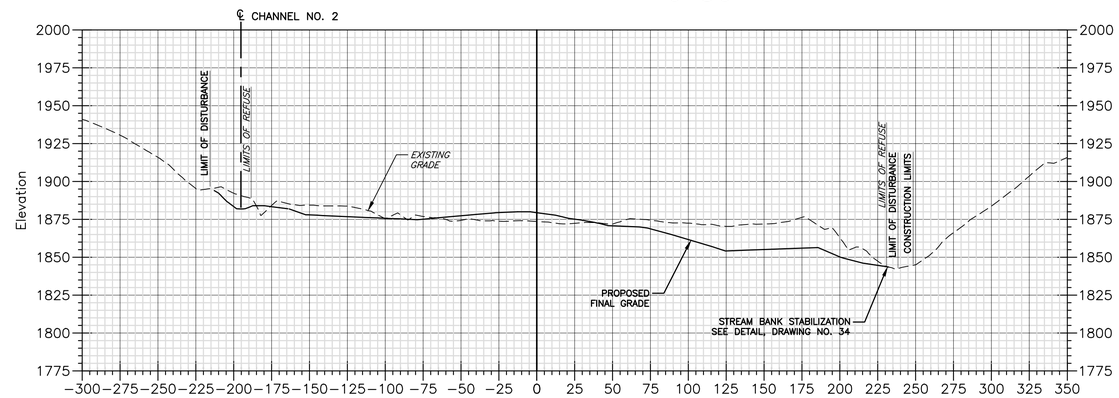

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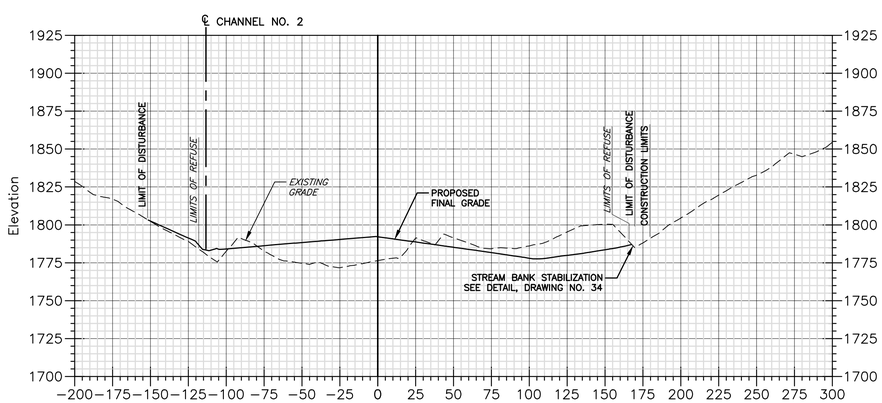

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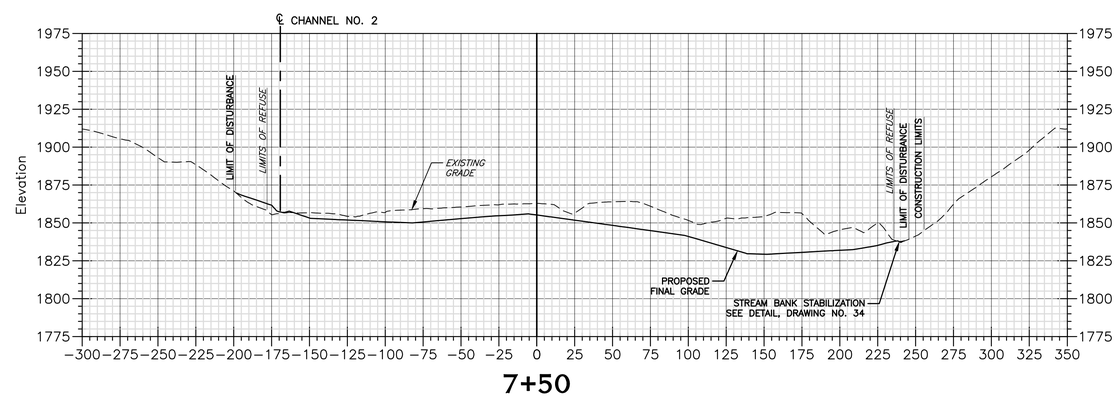

7+50

NOTES:

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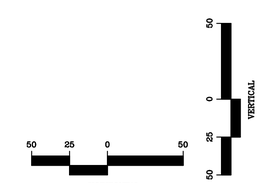


FINAL

No.	Date	Revision

DESIGN
CAD File No.
RGL
Drawn
DMK
Checked
DMK
Approved
NOTED
Scale:
MAY 2016
Date:
101-13-0530
Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7010 MacCorkle Ave. SE, Charleston, WV 25304
Phone: (304) 342-1400 Fax: (304) 342-0031
E-Mail Address: potesta@potesta.com

POTESTA

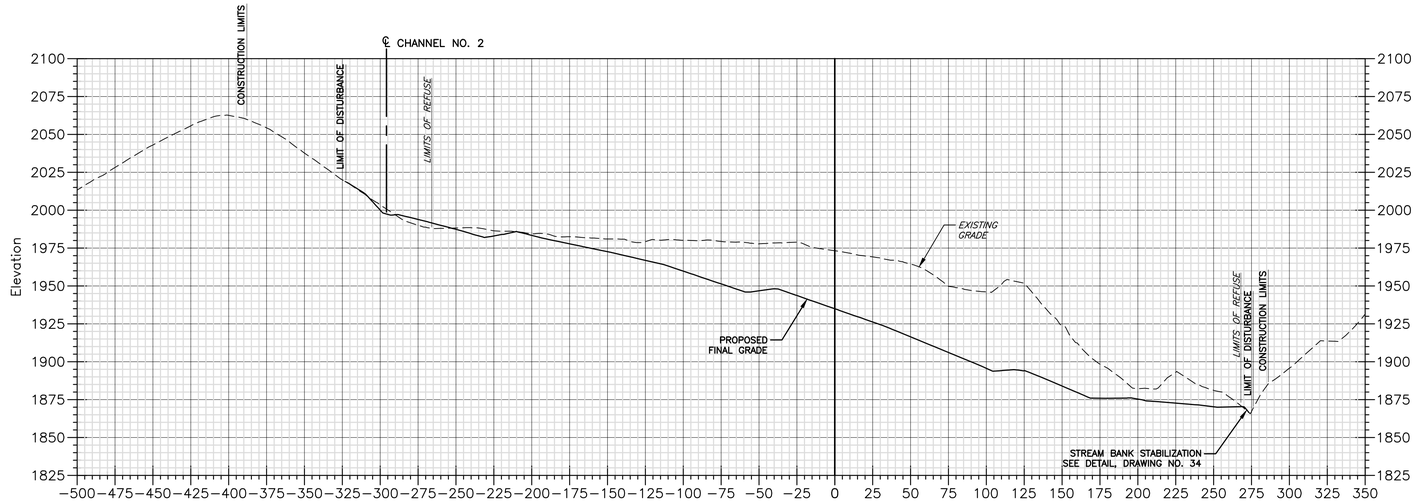
ISSUE DATE 5/10/2016

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

14
Drawing No.

XREF Files: GOOGLE IMAGE BM EXIST_PERMIT MAP
IMAGE Files: MATHEWS-PLOT KNOB.tif POND GRADING.tif CEB48b.jpg
Plot Scale: 1:1 Plot Offset: 0.00,0.00 Model -DWG To Plot: -DRAWING(13-0530_LESSON.dwg
Plot Date/Time: May 09, 2016 - 3:01pm
Plotted By: jmurphy



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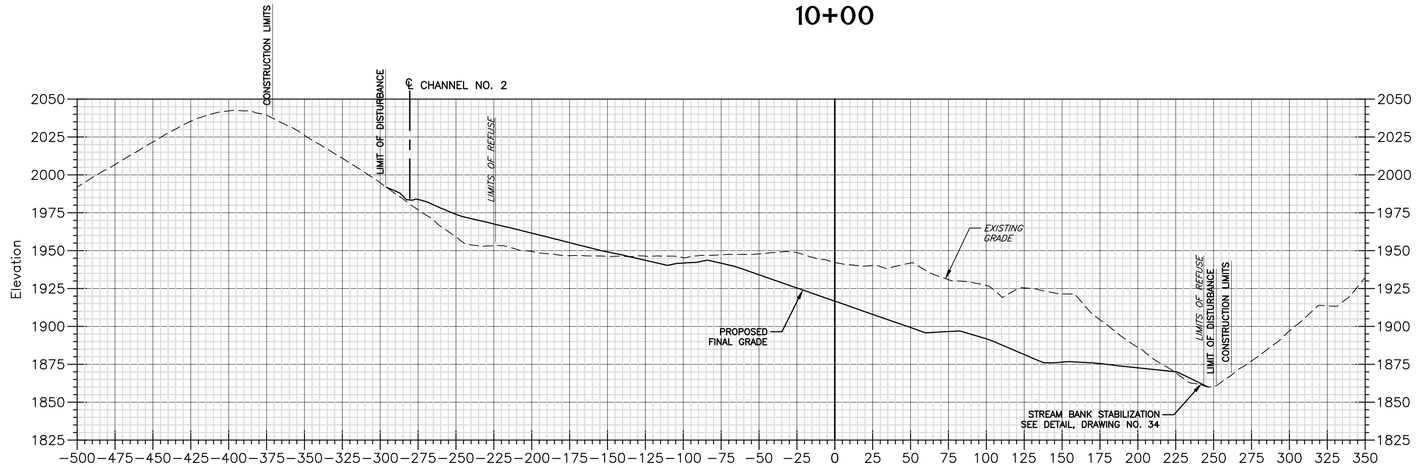

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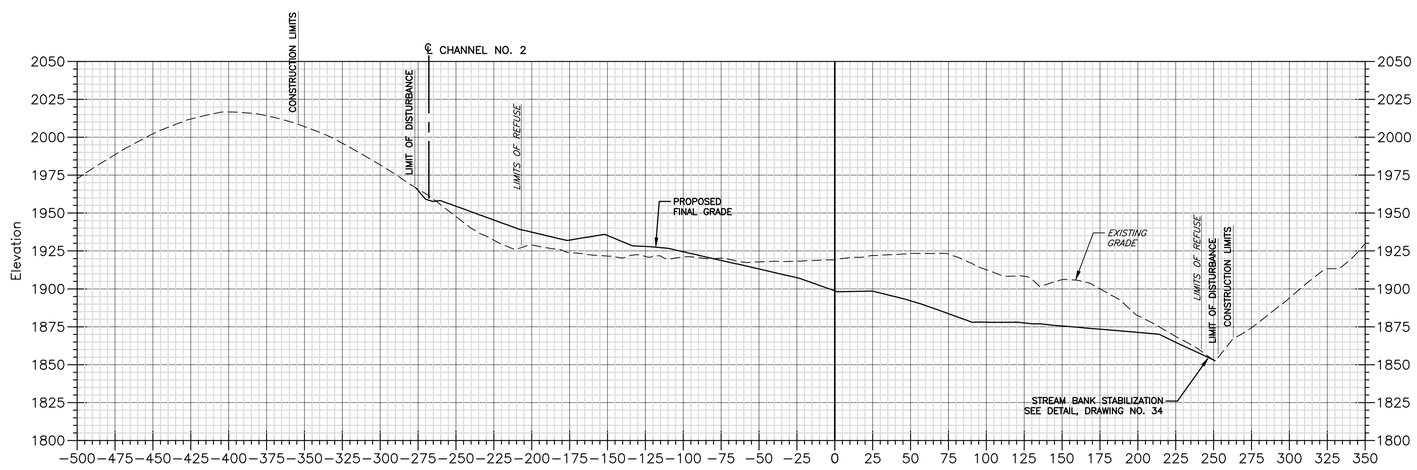

9+00

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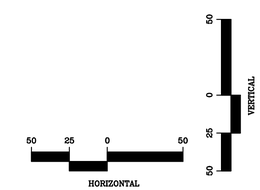

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POTESTA

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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

15
Drawing No.

XREF Files: GOOGLE IMAGE BM EXIST-PERMIT MAP
IMAGE Files: MAYNER.JPG PILOT KNOB.JPG POND GRADING.JPG CEB48A.JPG
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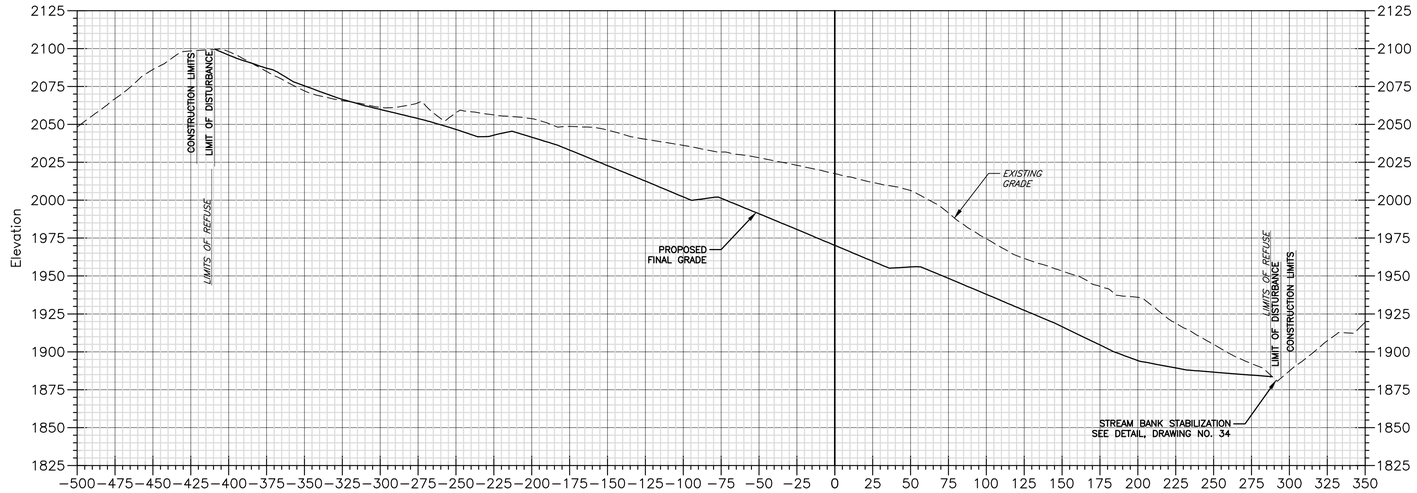
Plotted By: jmartin



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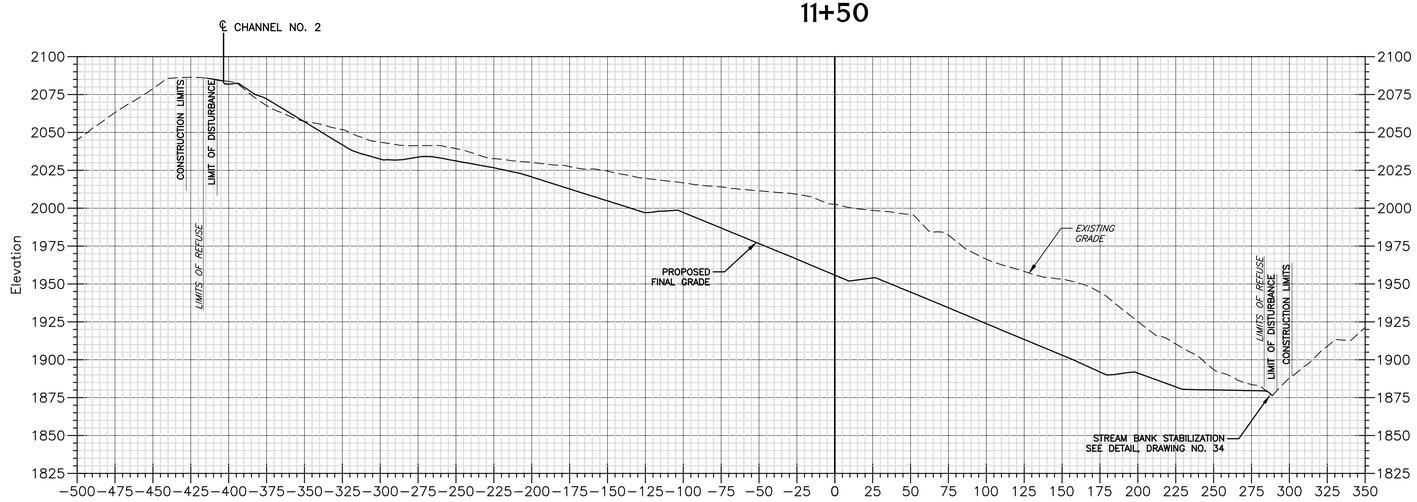

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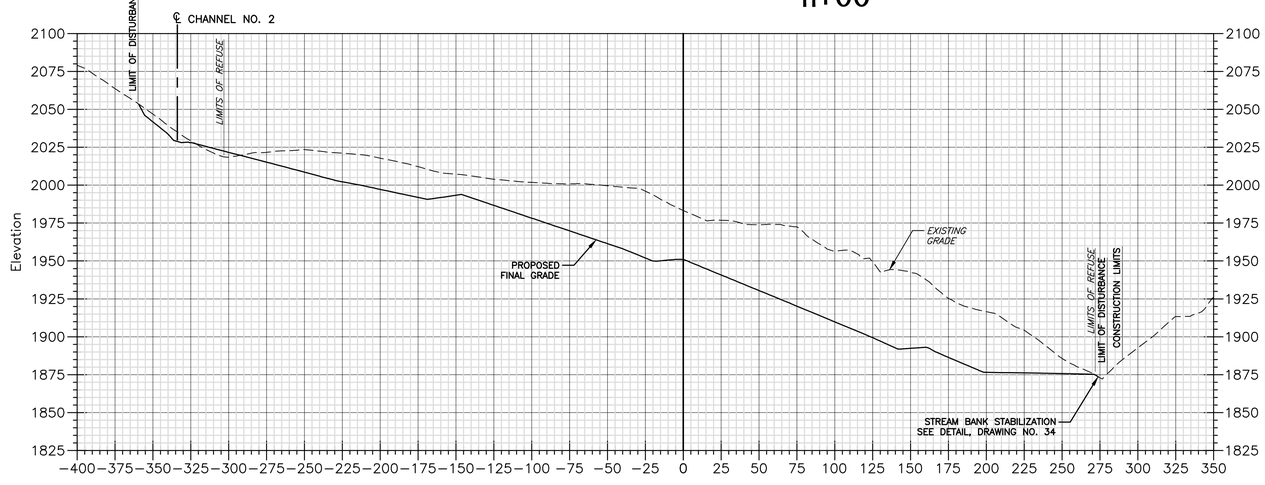

10+50

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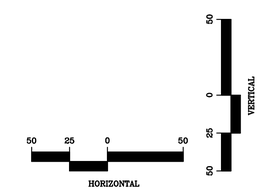

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CHARLESTON, WEST VIRGINIA 25304

Title
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

16
Drawing No.

XREF Files: GOOGLE IMAGE BW EXIST-PERMIT MAP
IMAGE Files: MATHEW'S PILOT KNOB-1ft POND GRADING.tif CEB48A.jpg
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Plot Date/Time: May 09, 2016 — 3:02pm
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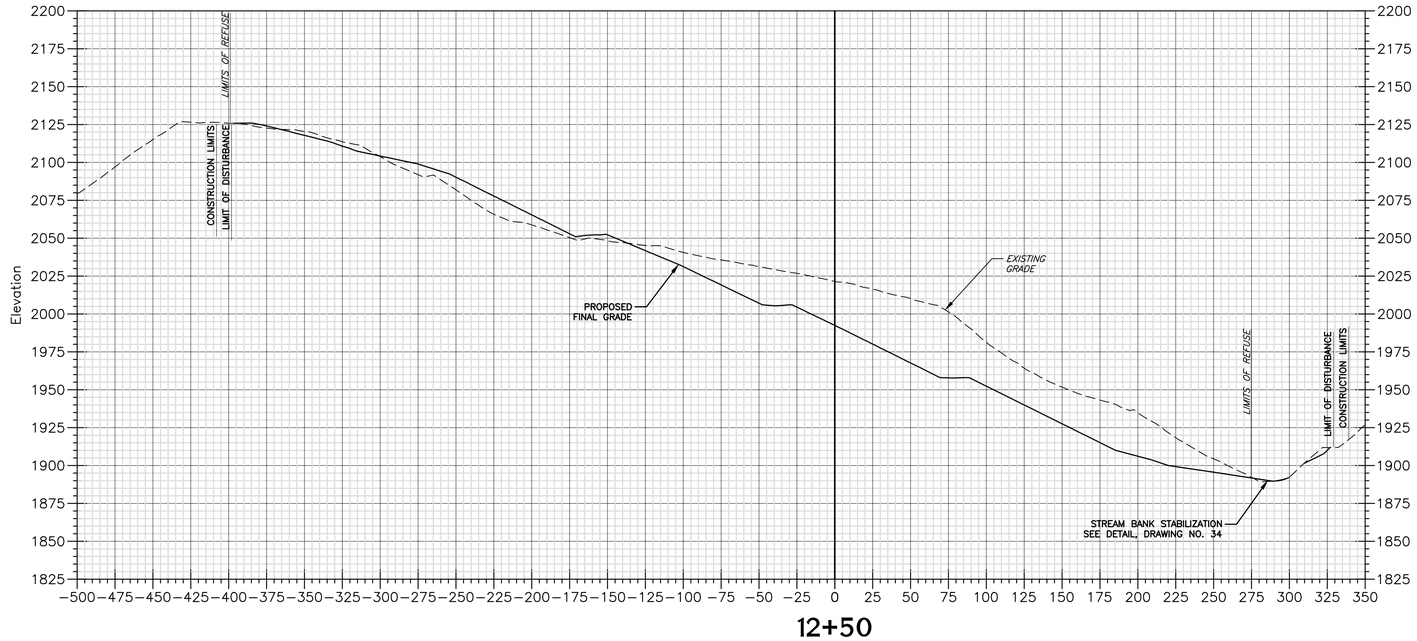

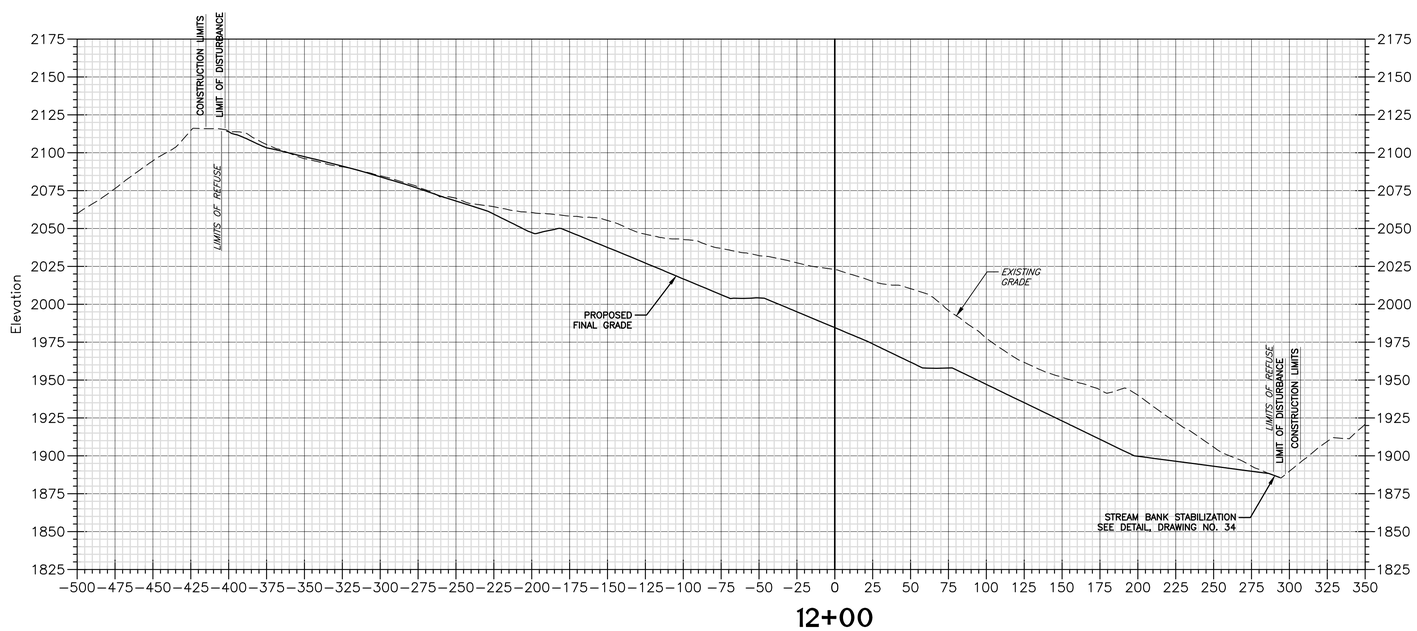

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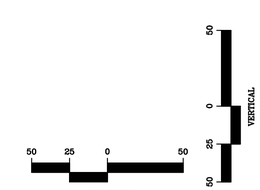

FINAL

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POTESTA & ASSOCIATES, INC.
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POTESTA

Client
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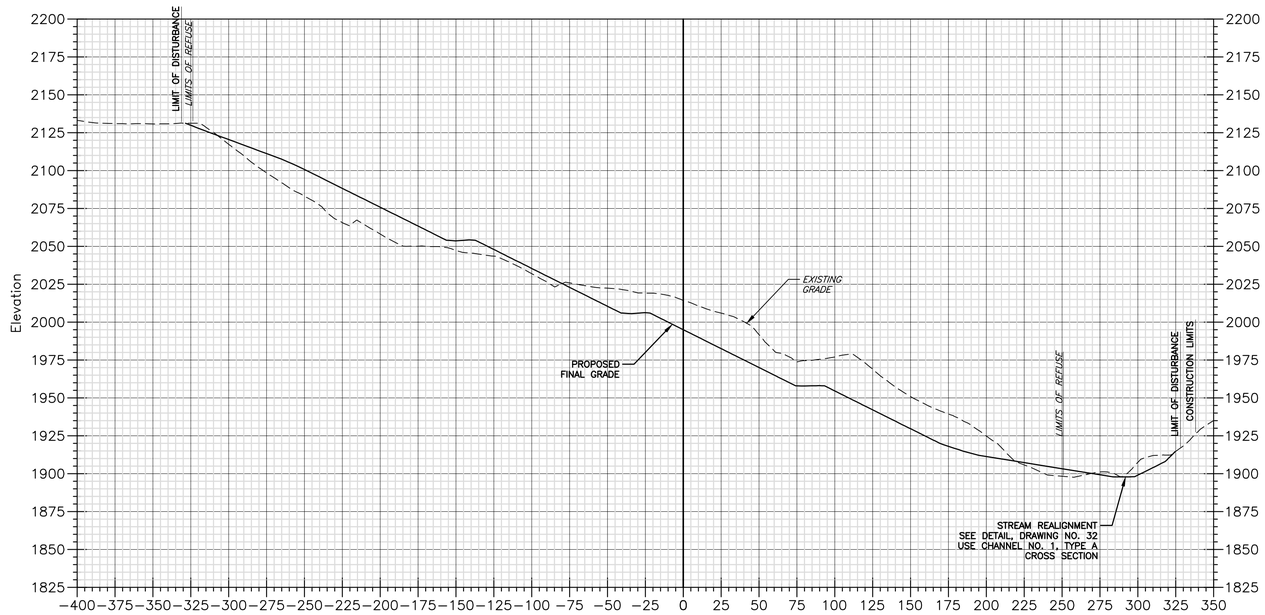
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

17
Drawing No.

XREF Files: GOOGLE IMAGE BW EXST_FORMAT MAP
IMAGE Files: MATHENY-PLOT PROBLEM POND GRADING.tif GEB48A.jpg
Plot Scale: 1=20 Plot Offset: 0.00,0.00 Plot Style: CONMTY13-0530_DESIGN.ctb
Plot Date/Time: May 09, 2016 - 3:17pm
Plotted By: psmith

No.	Date	Revision



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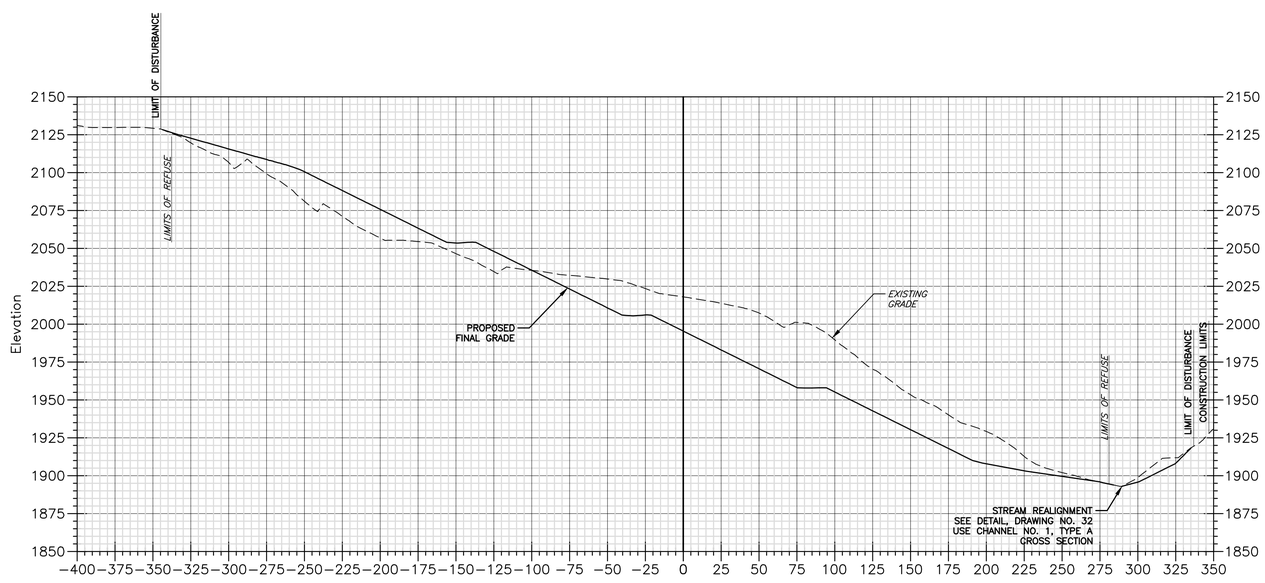

13+00

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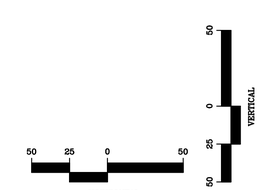

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POTESTA & ASSOCIATES, INC.
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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

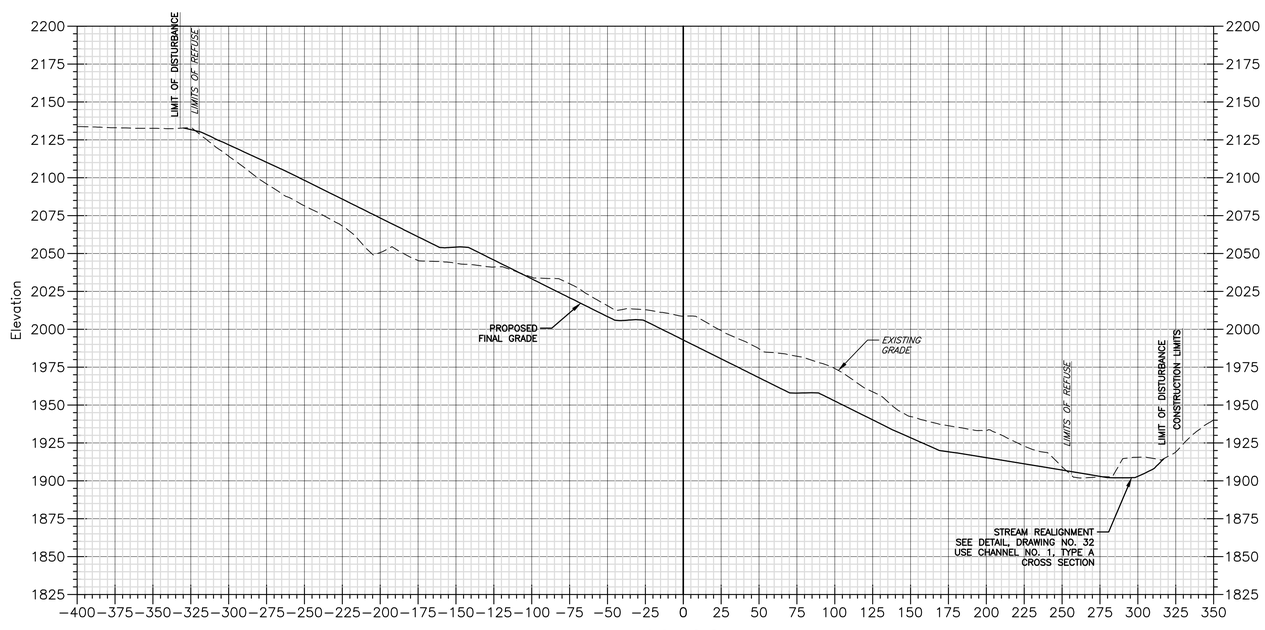
Title:
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

18
Drawing No.

XREF Files: GOOGLE IMAGE BW EXCT_PRINT MAP
IMAGE Files: MATHENY-PLOT_POND1.tif CEB48A.jpg
Plot Scale: 1=20' Plot Style: CTB-FULL-COMM(13-0530_DESIGN).ctb
Plot Date/Time: May 09, 2016 - 3:18pm
Plotted By: jmartin

No.	Date	Revision

14+50



14+00

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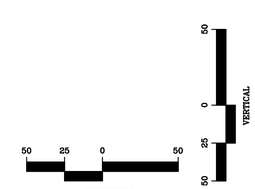

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WYOMING COUNTY, WEST VIRGINIA

19
Drawing No.

XREF Files: GOOGLE IMAGE BW EXIST-INFRMT MAP
IMAGE Files: MATHENY-PILOT POND1-F POND GRADING.tif CEB48A.jpg
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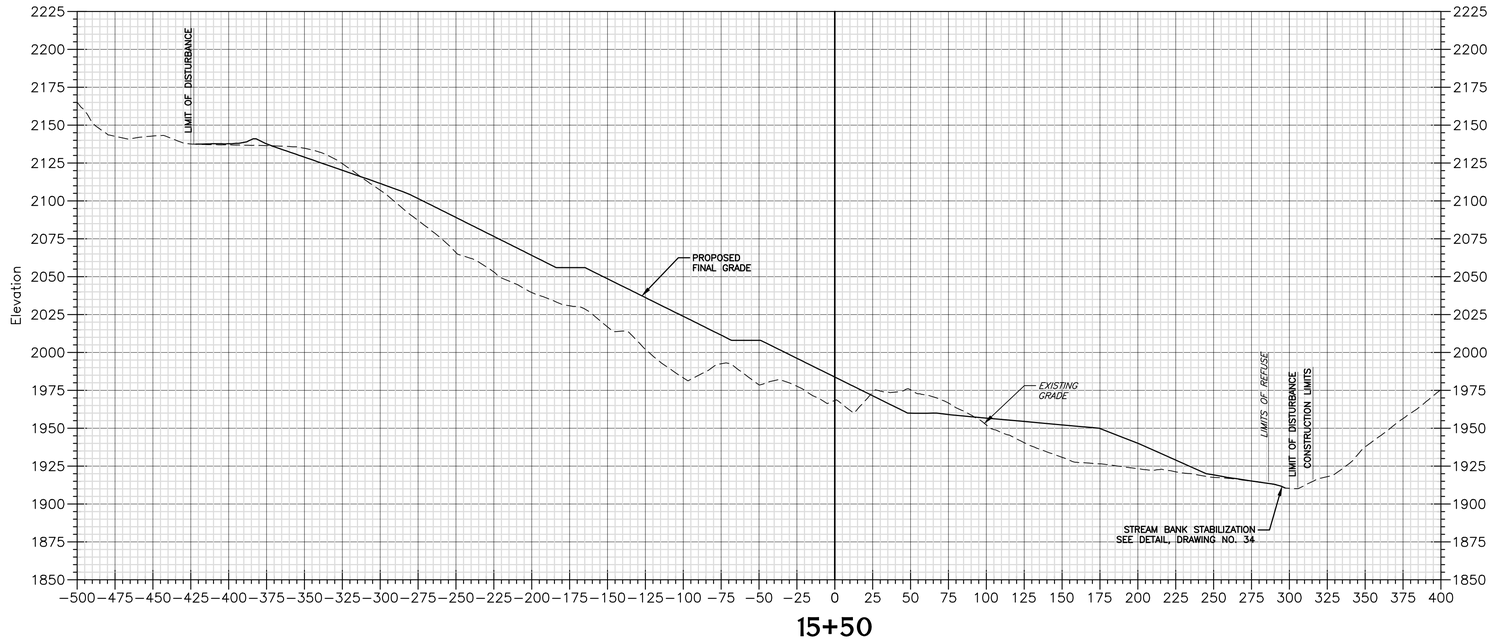
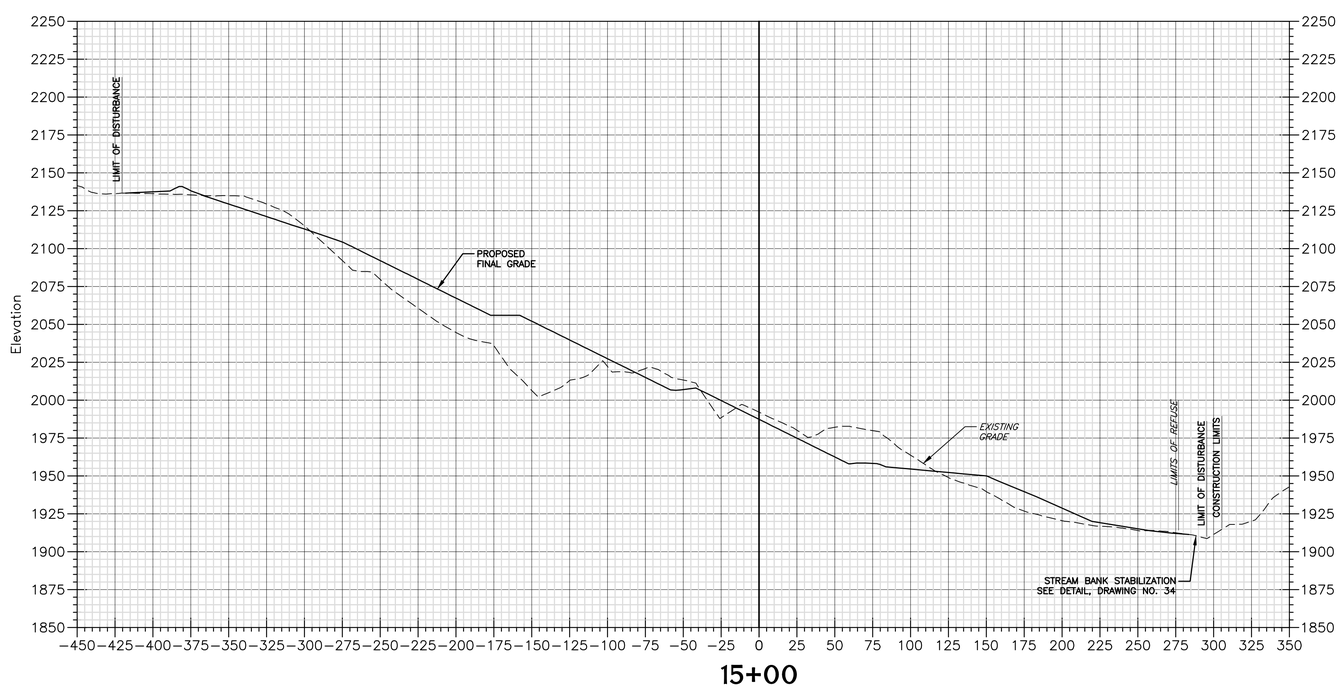
Plot Date/Time: May 09, 2016 - 3:18pm
Plotted By: pwarner

No.	Date	Revision





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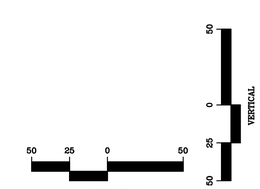

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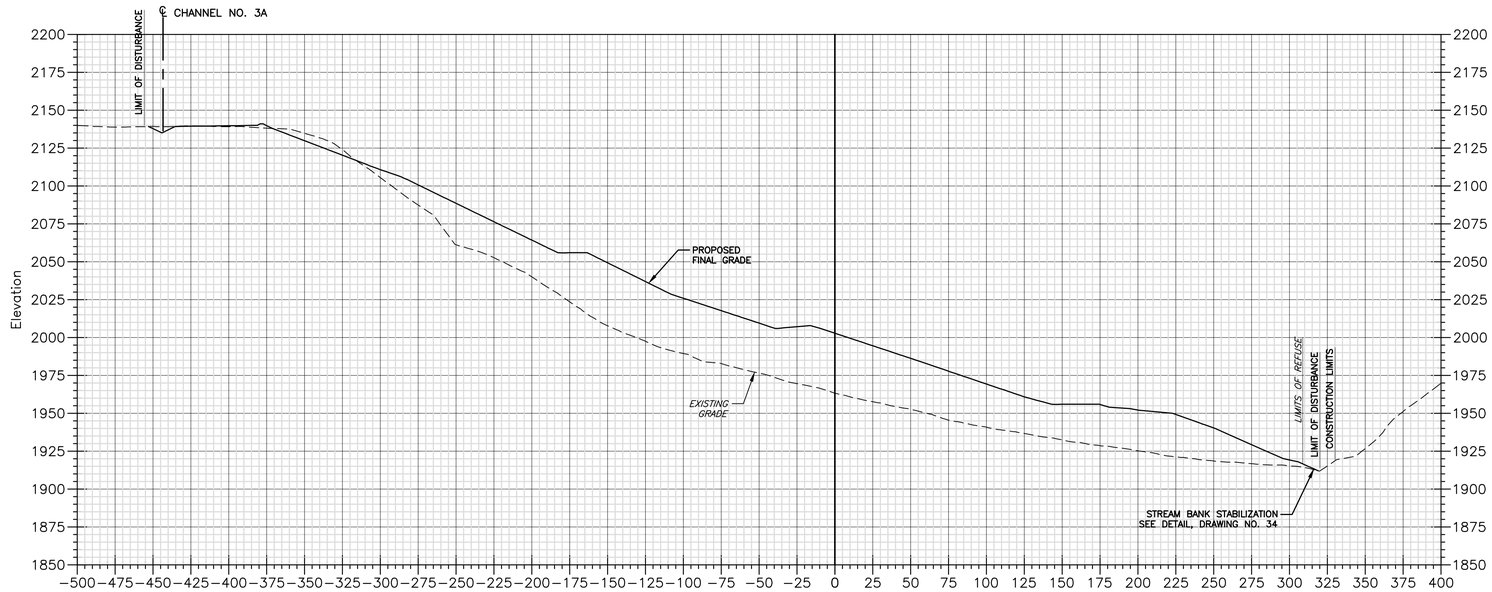
Title: BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

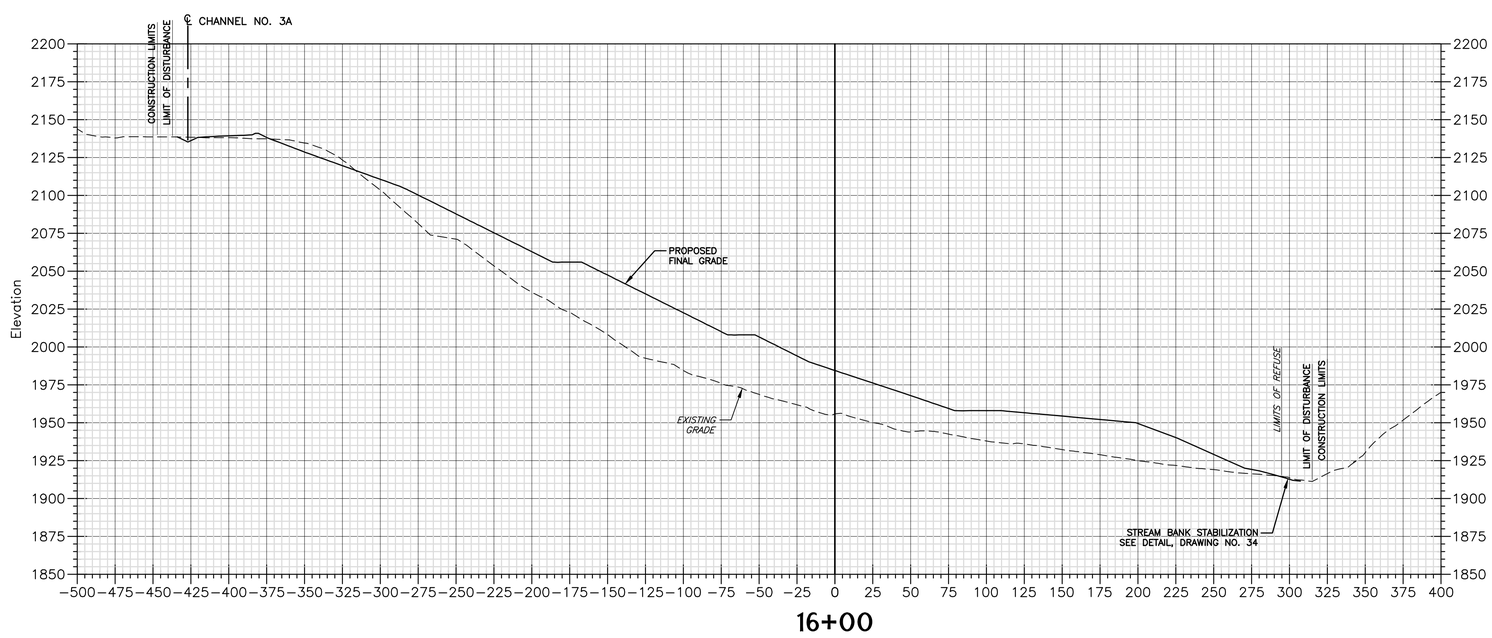
20
Drawing No.

XREF Files: GOOGLE IMAGE BW EXIST-DRYMAT MAP
IMAGE Files: MATHENY-SF PLIT PADSLM POND GRADNG1F GEB48A.jpg
Plot Scale: 1=20' Plot Offset: 0.00,0.00 -- CRANY\13-0530_DESIGN.dwg
Plot Date/Time: May 09, 2016 - 3:15pm
Plotted By: jmartin

No.	Date	Revision



16+50



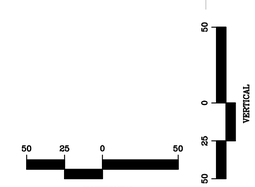
16+00

NOTES:

1. PROPOSED FINAL GRADE LINE SHOWN ON THE CROSS SECTIONS REPRESENTS THE FINAL REGRADED SURFACE. IN AREAS OF REGRADED (CUT OR FILL) COAL REFUSE, THIS FINAL GRADE LINE REPRESENTS THE SURFACE OF THE 12-INCH SOIL COVER LAYER.

2. REGRADING PLAN ASSUMES THAT COAL REFUSE EXCAVATED FROM THE MINE DUMP AND PLACED AS COMPACTED FILL WILL SHRINK. POTESTA ASSUMED A 25 PERCENT SHRINK FROM EXCAVATED COAL REFUSE PLACED AS COMPACTED FILL. ADJUSTMENTS TO THE FINAL GRADES MAY BE REQUIRED FOR SHRINK FACTORS DIFFERENT FROM THE 25 PERCENT FACTOR ASSUMED. ADJUSTMENTS SHOULD BE MADE IN SUCH A MANNER AND AT LOCATIONS SO THAT REGRADED COAL REFUSE (AND SOIL COVER) SLOPES DO NOT EXCEED 2 HORIZONTAL TO 1 VERTICAL.

3. CONTRACTOR SHALL ADJUST REFUSE GRADING TIE-IN ALONG EXISTING STREAM CHANNEL TO ACCOMMODATE STREAM BANK STABILIZATION DETAIL ON DRAWING NO. 34.



ISSUE DATE 5/10/2016

FINAL

DESIGN	CAD File No.
RGL	Drawn
DMK	Checked
DMK	Approved
NOTED	Scale:
MAY 2016	Date:
101-13-0530	Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7010 MacCorkle Ave. SE Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 343-9081
E-Mail Address: potesta@potesta.com

POTESTA

Client: WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title: BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

21
Drawing No.

XREF Files: GOOGLE IMAGE BMP EXIST-INFRMAT MAP
IMAGE Files: MATHENY-SF PLOT PONDS-SF POND GRADING-SF GEB48A.jpg
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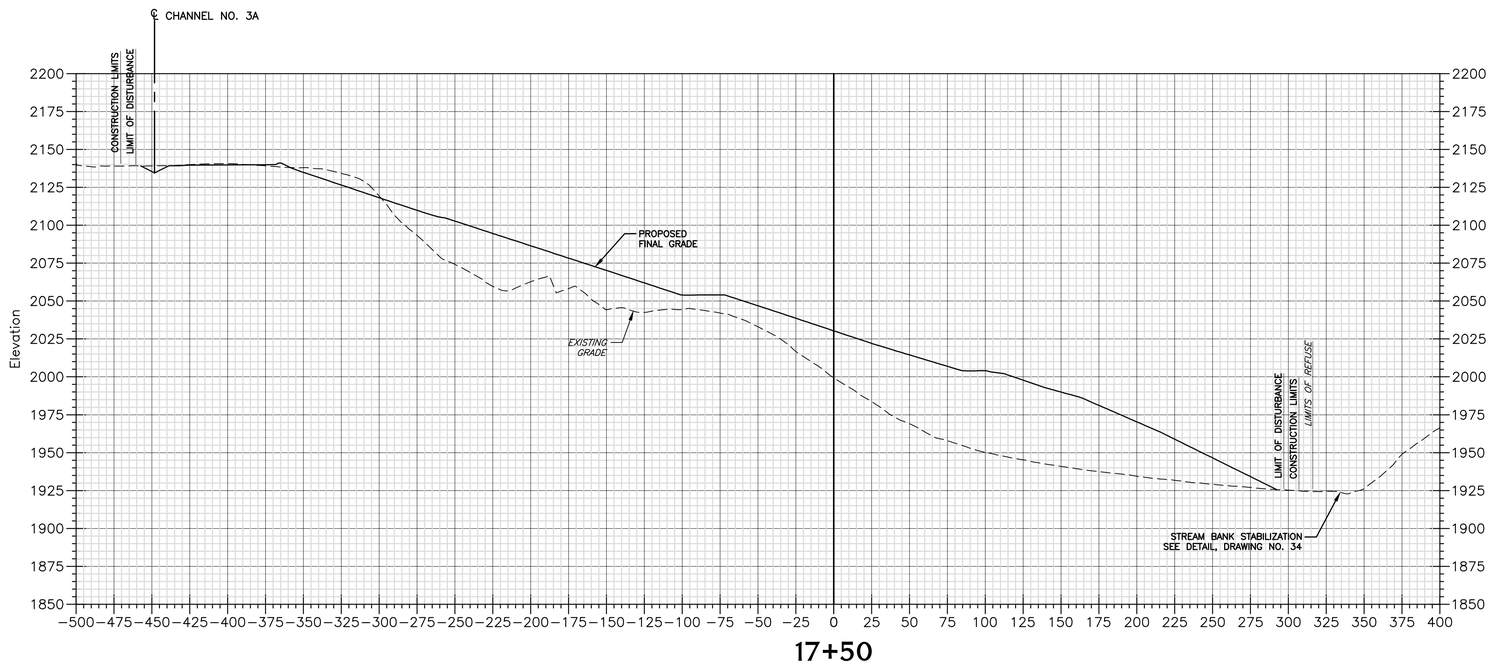
Plot Date/Time: May 09, 2016 - 3:19pm
Plotted By: pmarks

No.	Date	Revision



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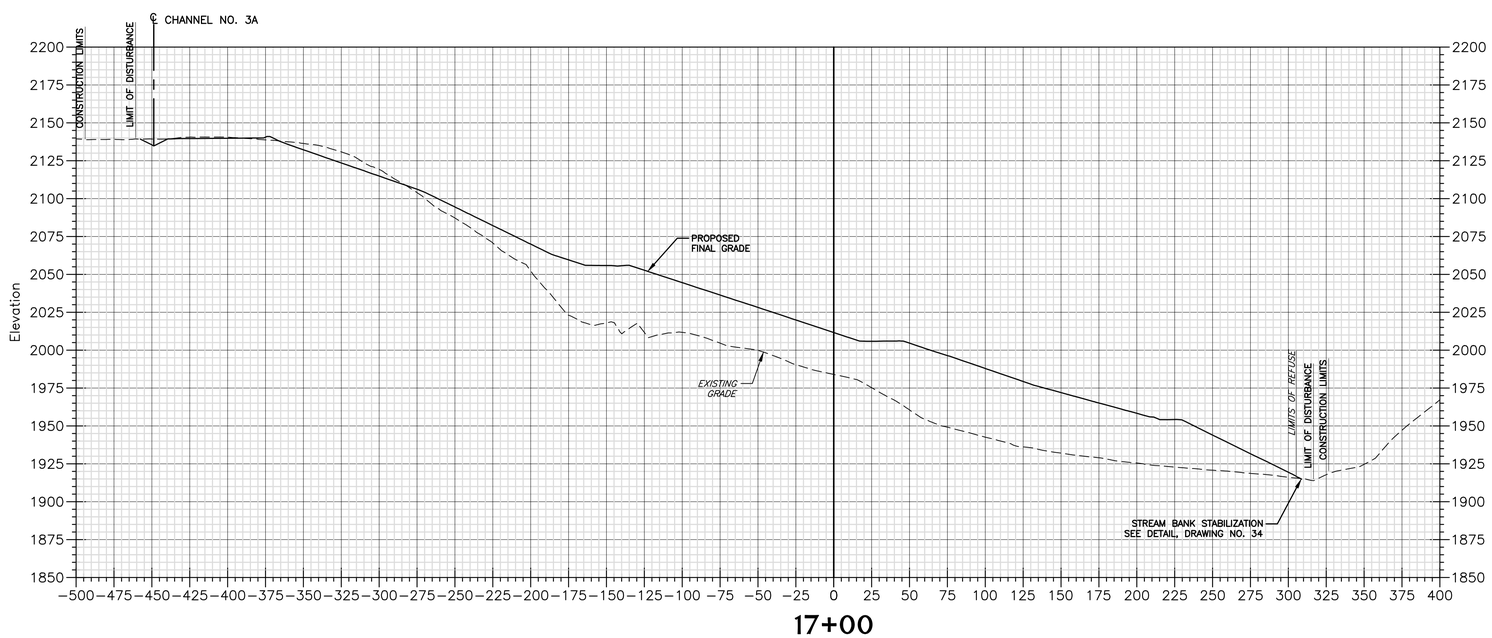

17+00

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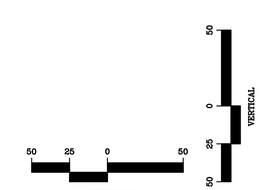

ISSUE DATE 5/10/2016

FINAL

DESIGN
CAD File No.
RGL
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Approved
NOTED
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MAY 2016
Date:
101-13-0530
Project No.

POTESTA & ASSOCIATES, INC.
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POTESTA

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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

22
Drawing No.

XREF Files: GOOGLE IMAGE BW EXIST-FRIMAT MAP
IMAGE Files: MATHENY-SI PILOT PROBS-M POND GRADING-SF GEB48A.jpg
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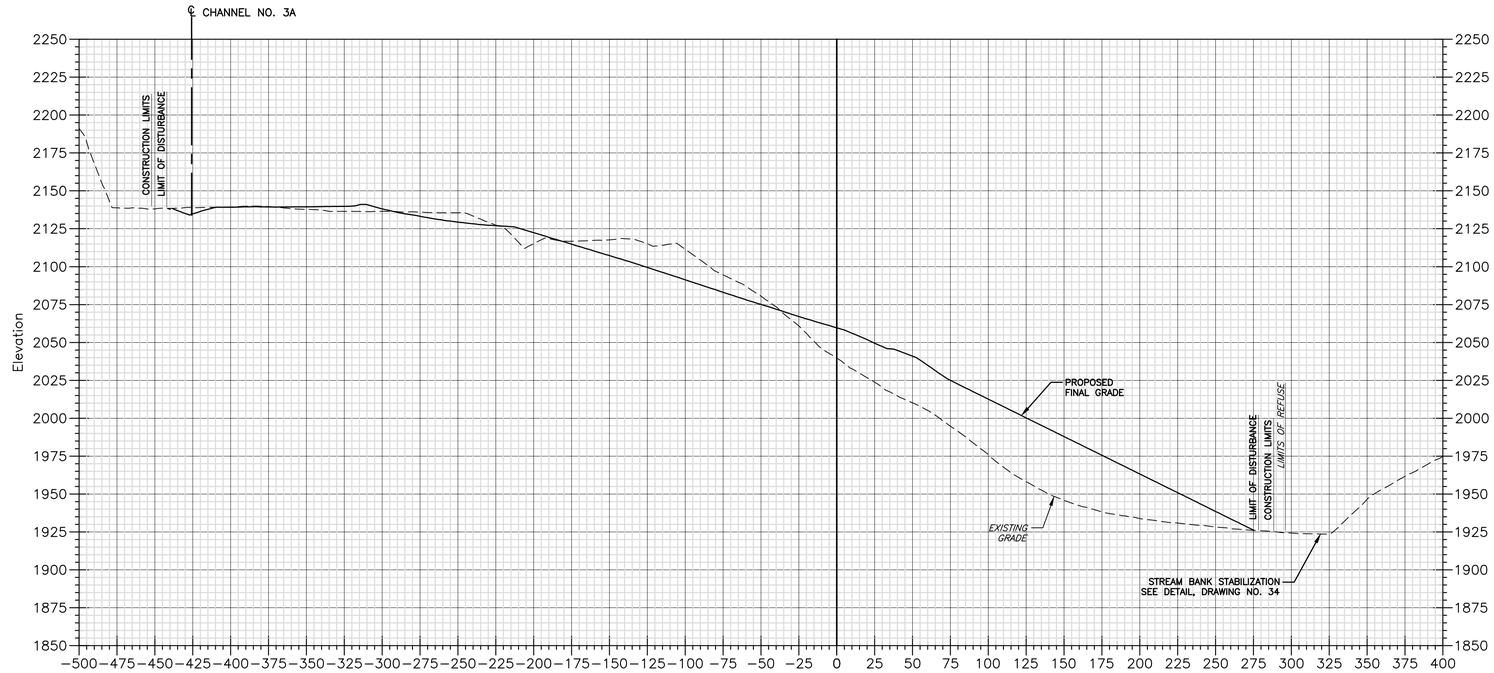
Plotted By: psmith



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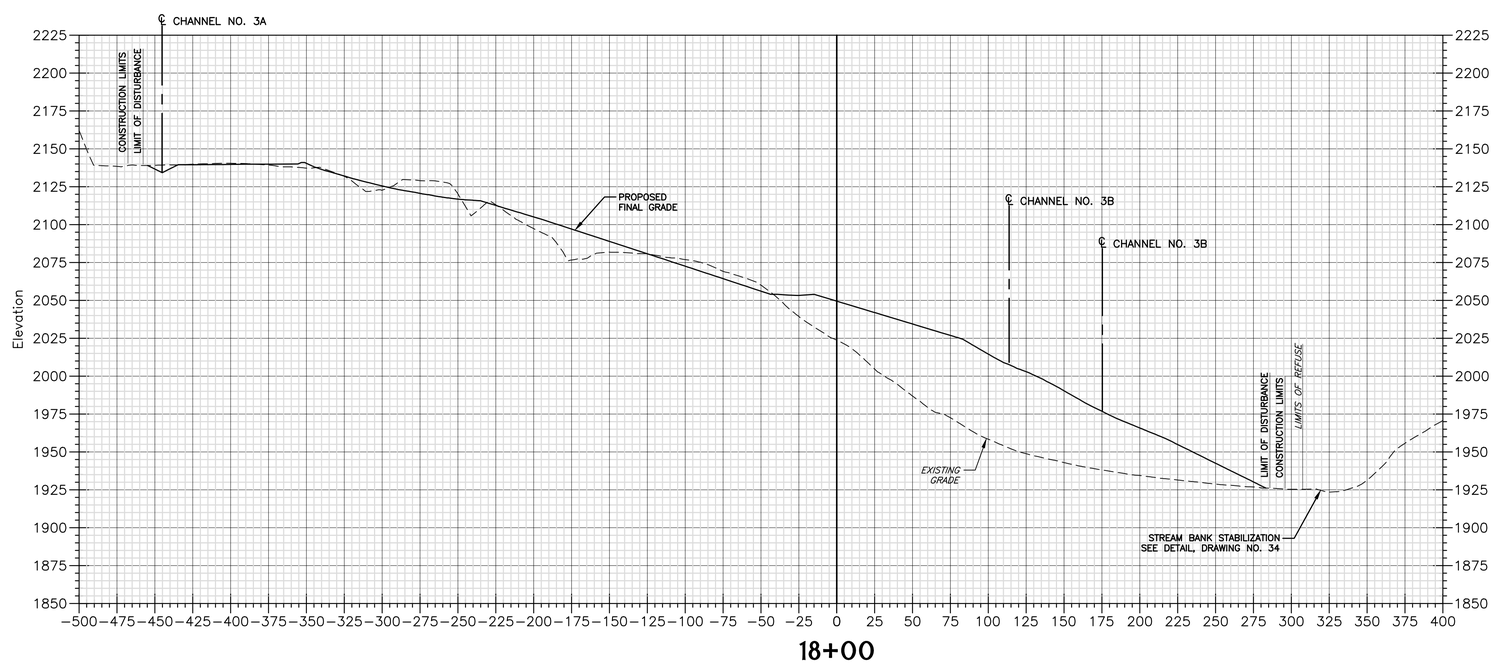

18+00

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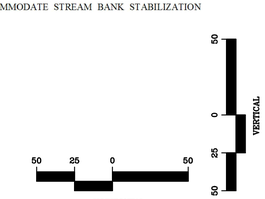

ISSUE DATE 5/10/2016

FINAL

No.	Date	Revision

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CAD File No.
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POTESTA & ASSOCIATES, INC.
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POTESTA

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601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

23
Drawing No.

XREF Files: GOOGLE IMAGE BMP EXIST_PRINMT MAP
IMAGE Files: MATHENY-SF PILOT PONDS-SF POND GRADING.tif GEB48BA.jpg
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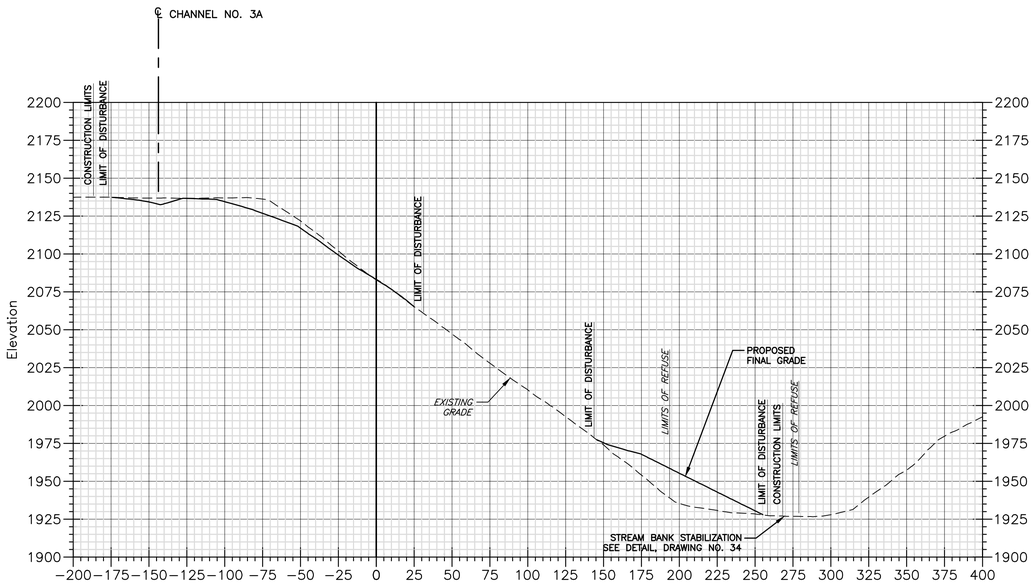
Plotted By: pwarhr

No.	Date	Revision



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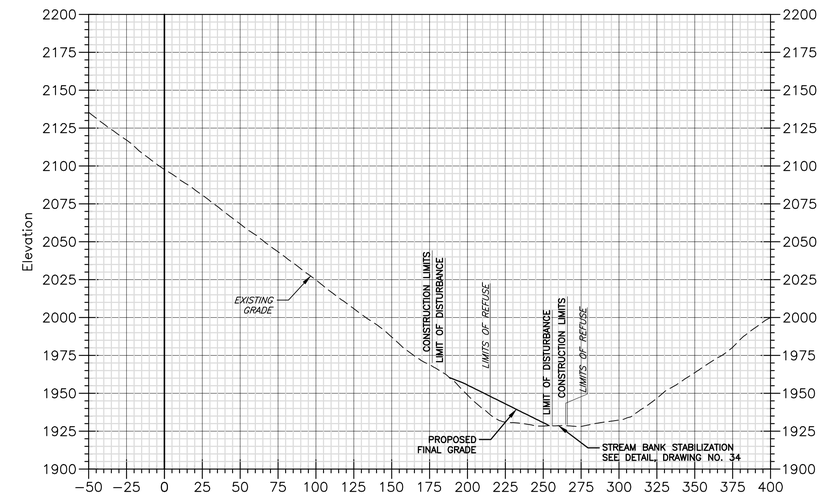

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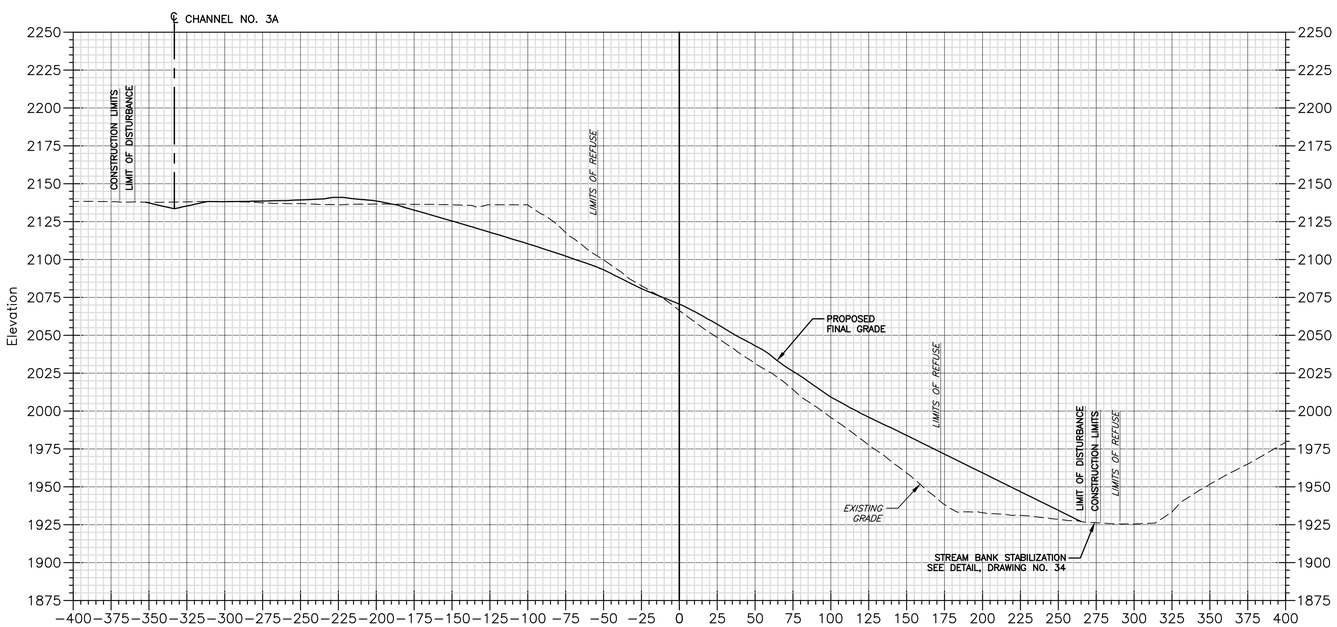

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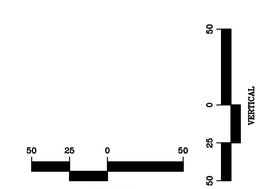

ISSUE DATE 5/10/2016

FINAL

DESIGN	CAD File No.
RGL	Drawn
DMK	Checked
DMK	Approved
NOTED	Scale:
MAY 2016	Date:
101-13-0530	Project No.

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CHARLESTON, WEST VIRGINIA 25304

Title: BASELINE "A" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

24
Drawing No.

XREF Files: GOOGLE IMAGE BMP EXIST_OFFMAT.MAP
IMAGE Files: MATHEWS1.PLT PLT2_PONDS.PLT POND GRADING.PLT GE8484A.jpg
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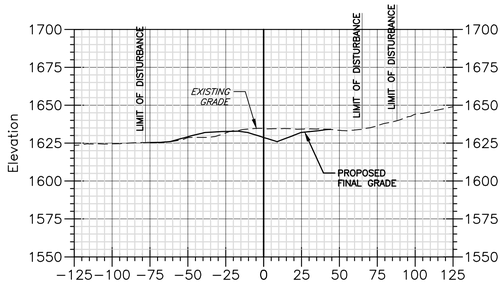
Plot By: pwater

No.	Date	Revision



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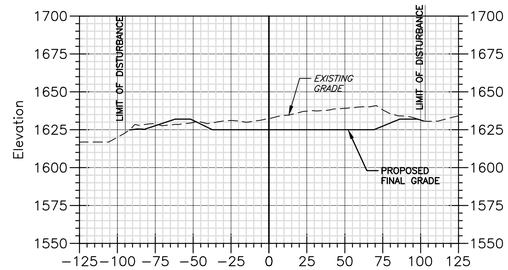

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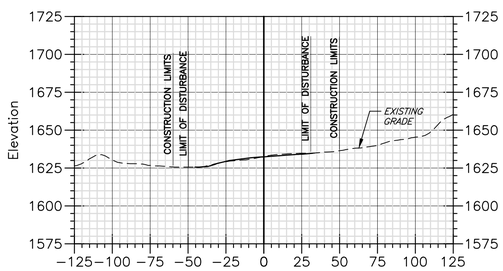

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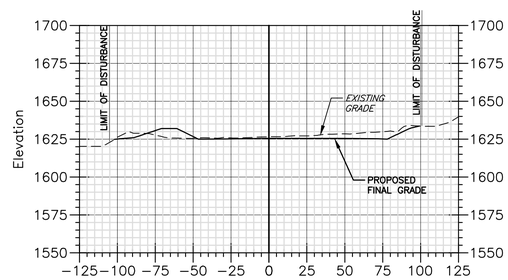

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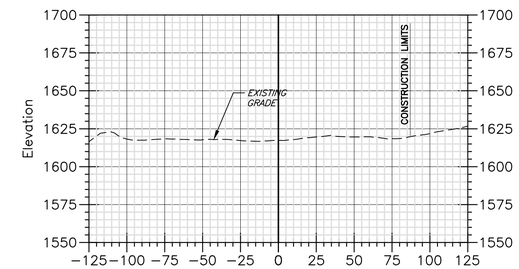

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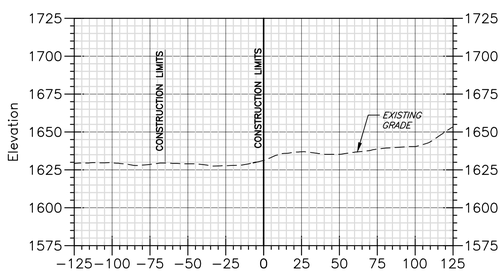

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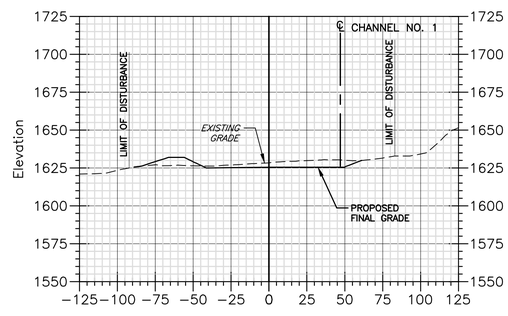

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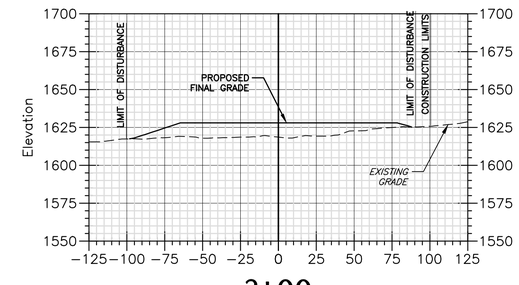

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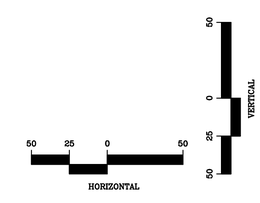

FINAL

ISSUE DATE 5/10/2016

DESIGN CAD File No.	
RGL Drawn	
DMK Checked	
DMK Approved	
NOTED Scale:	
MAY 2016 Date:	
101-13-0530 Project No.	

POTESTA & ASSOCIATES, INC.
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7010 MacCorkle Ave. SE Charleston, WV 25304
TEL: (304) 342-1400 FAX: (304) 342-0031
E-Mail Address: potesta@potesta.com

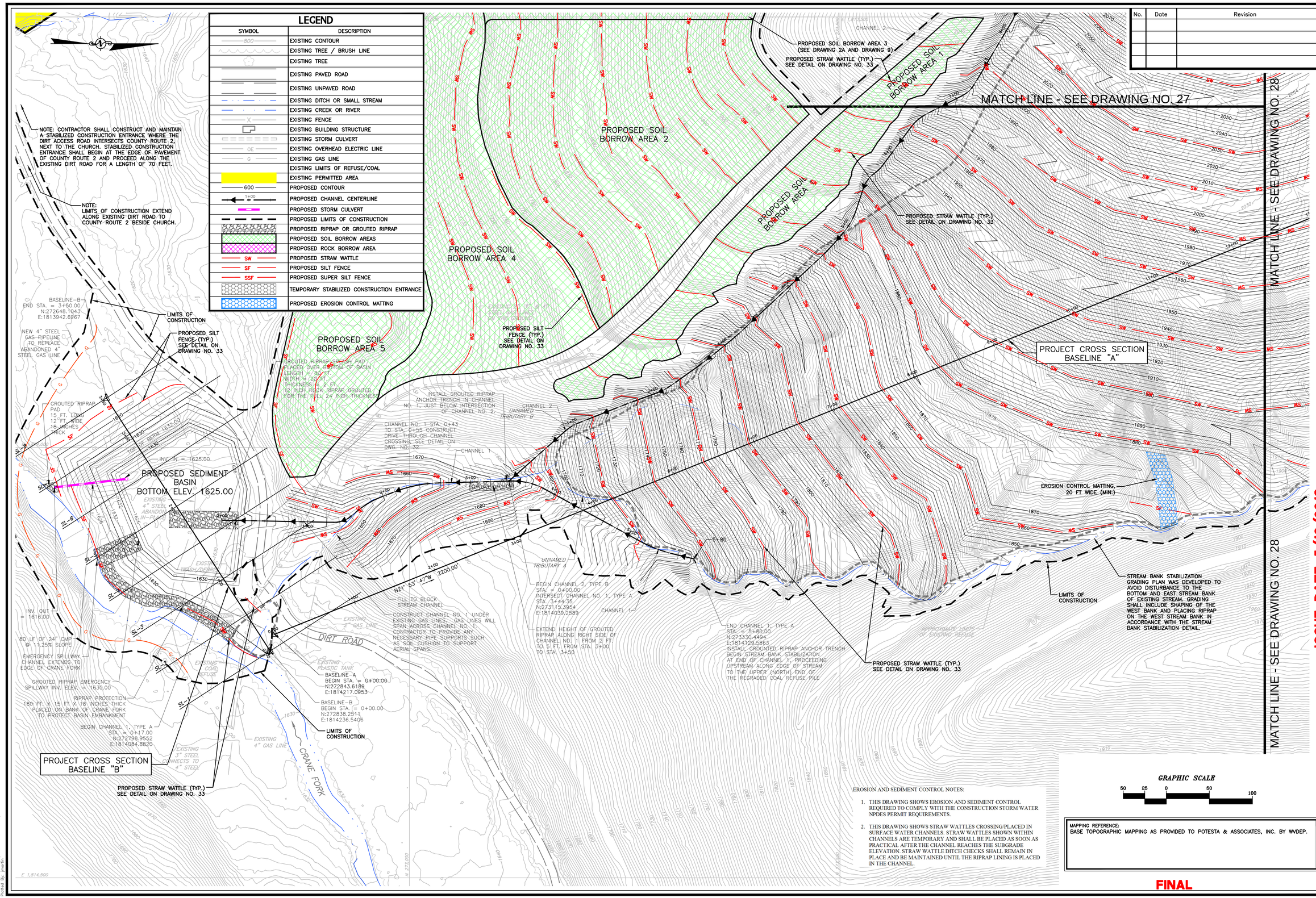
POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
BASELINE "B" CROSS SECTIONS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

25
Drawing No.

XREF Files: GOOGLE IMAGE BW EXIST-PERMIT MAP
IMAGE Files: MATHEW.jpg PLOT KINGB.jpg
Plot Scale: 1:1 Plot Date: May 09, 2016 - 3:21pm
Plot Style: Plot By: jmartin



EROSION AND SEDIMENT CONTROL NOTES:

1. THIS DRAWING SHOWS EROSION AND SEDIMENT CONTROL REQUIRED TO COMPLY WITH THE CONSTRUCTION STORM WATER NPDES PERMIT REQUIREMENTS.
2. THIS DRAWING SHOWS STRAW WATTLES CROSSING/PLACED IN SURFACE WATER CHANNELS. STRAW WATTLES SHOWN WITHIN CHANNELS ARE TEMPORARY AND SHALL BE PLACED AS SOON AS PRACTICAL AFTER THE CHANNEL REACHES THE SUBGRADE ELEVATION. STRAW WATTLE DITCH CHECKS SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE RIPRAP LINING IS PLACED IN THE CHANNEL.

No.	Date	Revision

ES_CONTROL
CAD File No.
RGL/JM
Drawn
DMK
Checked
DMK
Approved
1"=50'
Scale:
MAY 2016
Date:
101-13-0530
Project No.

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POTESTA

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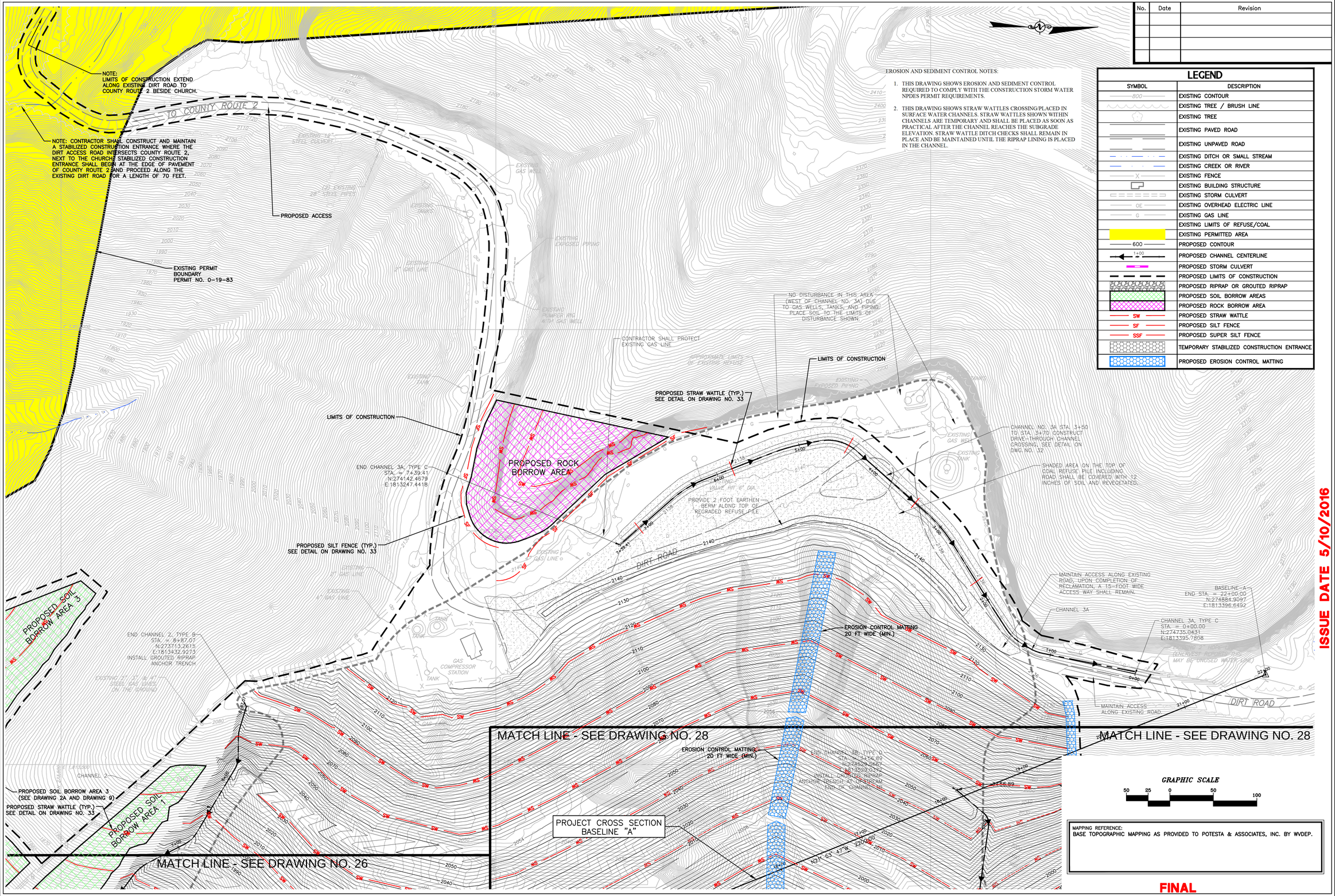
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
EROSION & SEDIMENT CONTROL PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

26
Drawing No.

XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC-LEGEND EXIST-LEGEND GOOGLE IMAGE BW EAS-LEGEND EXIST-PERMIT MAP SOIL-LEGEND
IMAGE Files: GE8484.jpg
Layout Name: 26-13-0530-EAS-CRANY\13-0530-ES_CONTROL.dwg
Plot Date/Time: May 09, 2016 - 3:33pm
Plotted By: jmartin



MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

FINAL

ISSUE DATE 5/10/2016

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No.	Date	Revision

LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
600	PROPOSED CONTOUR
1+00	PROPOSED CHANNEL CENTERLINE
	PROPOSED STORM CULVERT
	PROPOSED LIMITS OF CONSTRUCTION
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA
SW	PROPOSED STRAW WATTLE
SF	PROPOSED SILT FENCE
SSF	PROPOSED SUPER SILT FENCE
	TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED EROSION CONTROL MATTING

ES_CONTROL
CAD File No.
RGL/JM
Drawn
DMK
Checked
DMK
Approved
1"=50'
Scale:
MAY 2016
Date:
101-13-0530
Project No.

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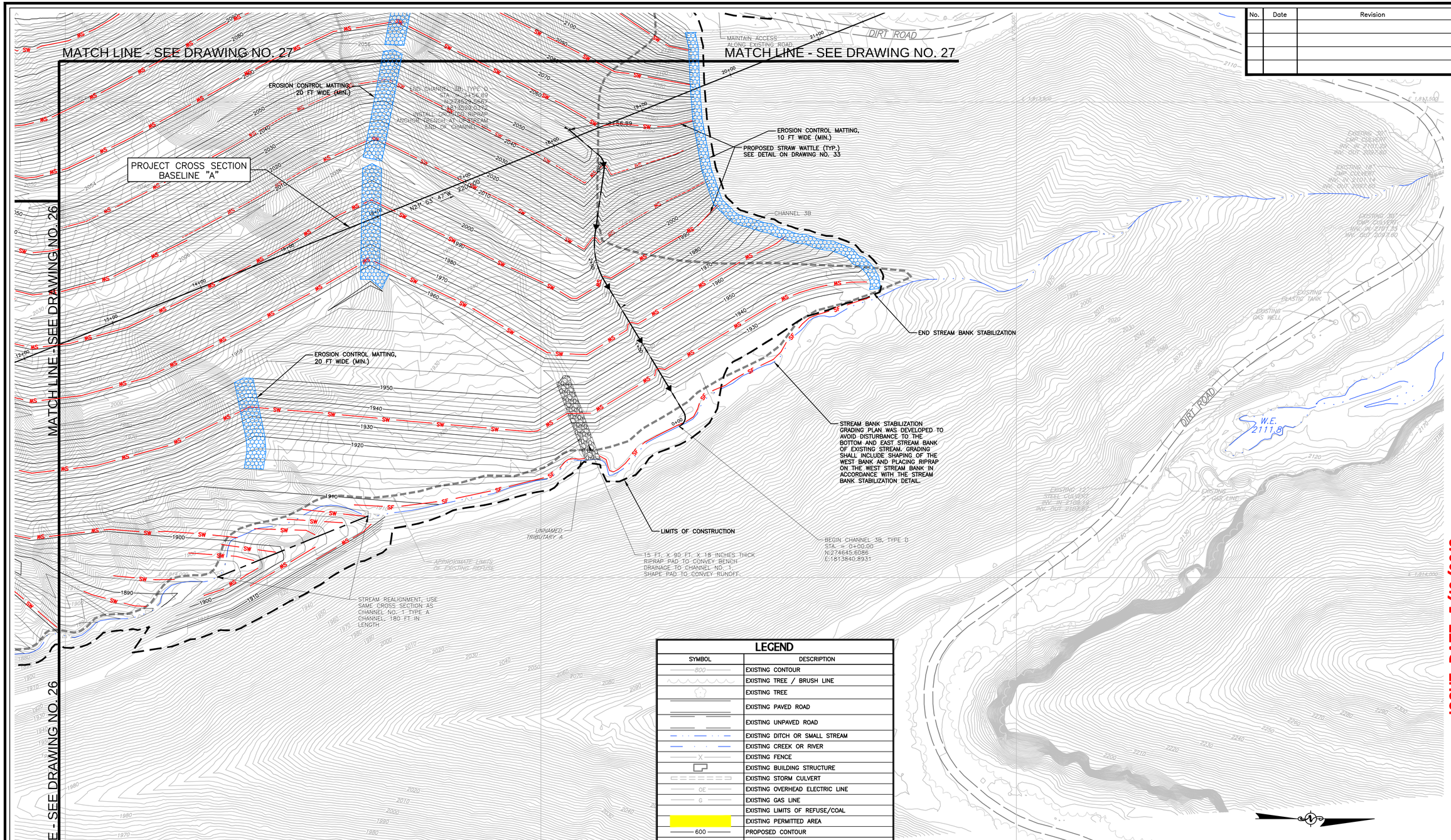
Title:
EROSION & SEDIMENT CONTROL PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

27
Drawing No.

XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC--LEGEND EXIST--LEGEND GOOGLE IMAGE BW EAS--LEGEND EXIST--PERMIT MAP SOIL--LEGEND
IMAGE Files: GE8489.jpg
Plot Date/Time: May 09, 2016 - 3:34pm
Plotted By: pmarsh



No.	Date	Revision

LEGEND

SYMBOL	DESCRIPTION
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	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
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	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
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	PROPOSED STORM CULVERT
	PROPOSED LIMITS OF CONSTRUCTION
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA
SW	PROPOSED STRAW WATTLE
SF	PROPOSED SILT FENCE
SSF	PROPOSED SUPER SILT FENCE
	TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED EROSION CONTROL MATTING

EROSION AND SEDIMENT CONTROL NOTES:

1. THIS DRAWING SHOWS EROSION AND SEDIMENT CONTROL REQUIRED TO COMPLY WITH THE CONSTRUCTION STORM WATER NPDES PERMIT REQUIREMENTS.
2. THIS DRAWING SHOWS STRAW WATTLES CROSSING/PLACED IN SURFACE WATER CHANNELS. STRAW WATTLES SHOWN WITHIN CHANNELS ARE TEMPORARY AND SHALL BE PLACED AS SOON AS PRACTICAL AFTER THE CHANNEL REACHES THE SUBGRADE ELEVATION. STRAW WATTLE DITCH CHECKS SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE RIPRAP LINING IS PLACED IN THE CHANNEL.

GRAPHIC SCALE

50 25 0 50 100

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

ISSUE DATE 5/10/2016

FINAL

ES CONTROL	CAD File No.
RGL/JM	Drawn
DMK	Checked
DMK	Approved
1"=50'	Scale:
MAY 2016	Date:
101-13-0530	Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
Phone: (304) 342-1400 FAX: (304) 342-0031
E-Mail Address: potesta@potesta.com

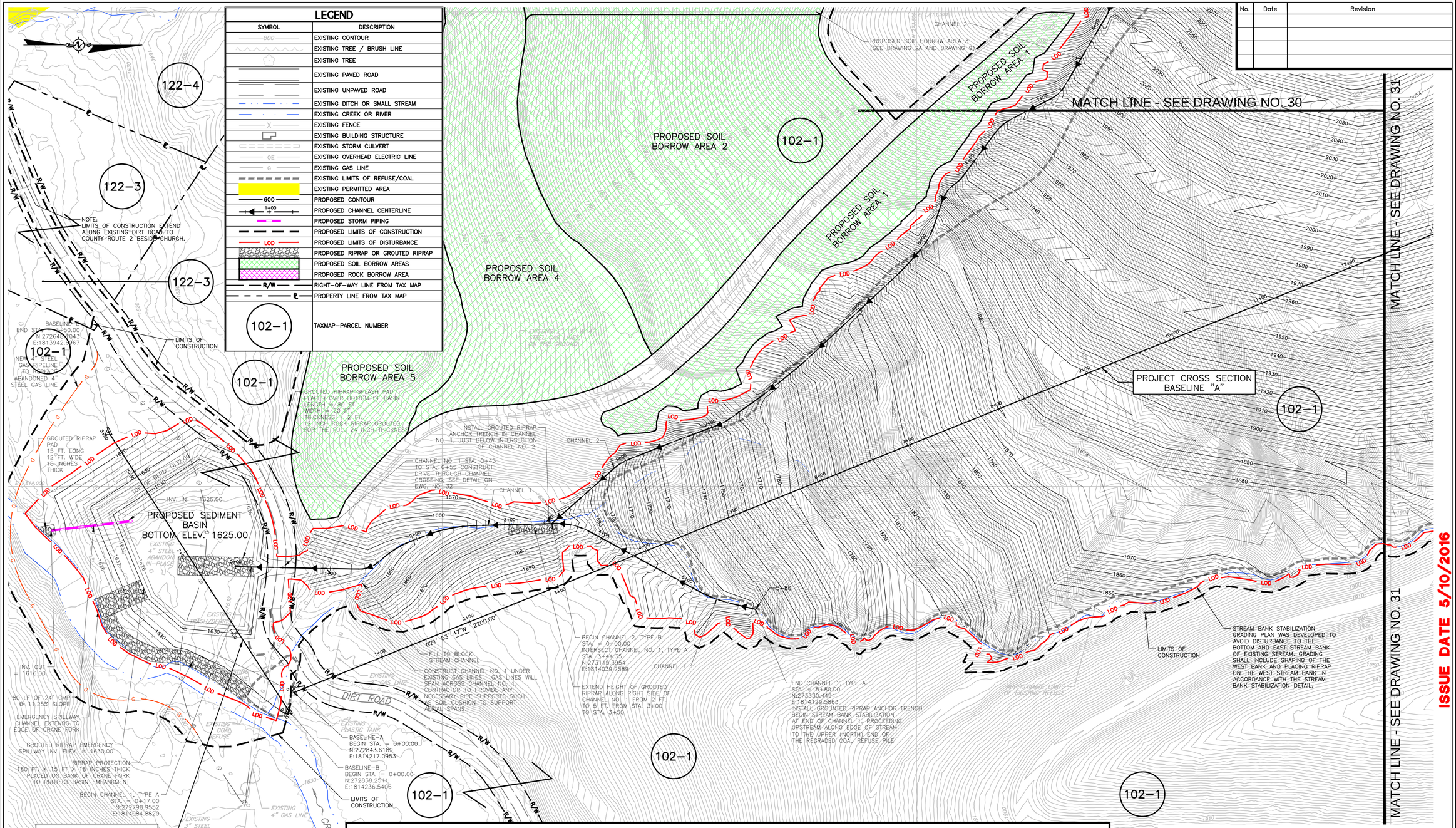
POTESTA

Client:
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
EROSION & SEDIMENT CONTROL PLAN
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

28
Drawing No.

XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC-LEGEND EXIST-LEGEND GOOGLE IMAGE BW E&S-LEGEND EXIST-PERMIT MAP SOIL-LEGEND
IMAGE Files: GE84BW.jpg
File: S:\Drawings\13-0530\101-13-0530-001-CRANY\13-0530-ES_CONTROL.dwg
Plot Date/Time: May 09, 2016 - 3:40pm
Plotted By: jmartin



LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
600	PROPOSED CONTOUR
1+00	PROPOSED CHANNEL CENTERLINE
	PROPOSED STORM PIPING
	PROPOSED LIMITS OF CONSTRUCTION
LOD	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA
R/W	RIGHT-OF-WAY LINE FROM TAX MAP
	PROPERTY LINE FROM TAX MAP
102-1	TAXMAP-PARCEL NUMBER

GENERAL NOTES:

1. CONTOURS SHOWN ON THIS DRAWING REPRESENT THE FINAL GRADE. IN AREAS WHERE EXCAVATION AND FILL RESULT IN EXPOSURE OF COAL REFUSE, THE FINAL GRADE REPRESENTS THE SURFACE OF A REQUIRED 12_INCH SOIL COVER LAYER. IN THESE AREAS, EXCAVATION WILL REQUIRE OVER-EXCAVATION 12 INCHES BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER. WHERE COAL REFUSE IS PLACED AS FILL, THE FILL ELEVATION WILL BE BROUGHT TO 1 FOOT BELOW FINAL GRADE TO ACCOMMODATE THE 12-INCH SOIL COVER LAYER.
2. CONTRACTOR SHALL CONSTRUCT SEDIMENT BASIN, SPILLWAYS, AND CHANNEL 1 FROM STATION 0+00 TO STATION 3+00 PRIOR TO REGRADING COAL REFUSE. THE SEDIMENT BASIN SHALL BE MAINTAINED DURING CONSTRUCTION.
3. CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND GAS PIPELINES, WELLS, COMPRESSOR STATION AND RELATED FACILITIES. CONTRACTOR SHALL MAINTAIN ACCESS TO COMPRESSOR STATION, TANKS, WELLS, AND METERS. ENERVEST OPERATING LLC INDICATED THAT THE CONTRACTOR MAY CONSTRUCT CHANNELS UNDER STEEL GAS LINES WITH THE GAS LINE SPANNING THE COMPLETED CHANNEL. CONTRACTOR SHALL COORDINATE CONSTRUCTION OF THE RECLAMATION PLAN WITH ENERVEST.
4. TOP SURFACE OF THE COAL REFUSE PILE SHALL BE COVERED WITH 12-INCH SOIL COVER LAYER WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
5. THE GRADING PLAN WAS DEVELOPED ASSUMING A 25 PERCENT SHRINK FACTOR FOR EXCAVATED COAL REFUSE PLACED AS COMPACTED FILL. THE CONTRACTOR MAY BE REQUIRED TO ADJUST FINAL GRADES AND ELEVATIONS WITH PRIOR APPROVAL OF WVDEP IN THE EVENT THAT A DIFFERENT SHRINK FACTOR RESULTS. ADJUSTMENTS WILL BE BEST MADE IN THE AREA EAST OF BASELINE A BETWEEN STATIONS 7+50 AND 11+00.
6. IT IS LIKELY THAT GROUNDWATER SEEPS WILL BE ENCOUNTERED DURING REGRADING OF THE REFUSE PILE. THE CONTRACTOR SHALL CONSULT WVDEP WHEN SEEPS ARE ENCOUNTERED FOR DIRECTION AS TO CONSTRUCTION OF UNDERDRAINS.
7. EROSION CONTROL MATTING WILL BE PLACED ON BENCHES AS SHOWN BY THE DETAILS.
8. CONTRACTOR CAN EXCAVATE SOIL FOR USE AS THE 12-INCH SOIL COVER LAYER FROM AREAS ALONG CHANNELS 1 AND 2 PRIOR TO REGRADING OR FILLING WITH COAL REFUSE. EXCAVATED SOIL WILL NOT BE CONSIDERED OR INCLUDED IN THE ITEM 8.1 UNCLASSIFIED EXCAVATION PAY ITEM.

TAX MAP NOTES:

1. PROPERTY LINE AND PARCEL NUMBER INFORMATION REPRESENTS AN APPROXIMATE BEST FIT ESTIMATE OF THE PROPERTY OWNERSHIP BOUNDARIES AS OBTAINED FROM TAX MAP 122, OCEANA DISTRICT 7, WYOMING COUNTY, WEST VIRGINIA.

GRAPHIC SCALE

50 25 0 50 100

MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

FINAL

ISSUE DATE 5/10/2016

No.	Date	Revision

CAD File No.	-TM_OVERLAY
Drawn	RGL
Checked	DMK
Approved	DMK
Scale:	1"=50'
Date:	MAY 2016
Project No.	101-13-0530

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
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TEL: (304) 342-1400 FAX: (304) 342-0061
E-Mail Address: potesta@potesta.com

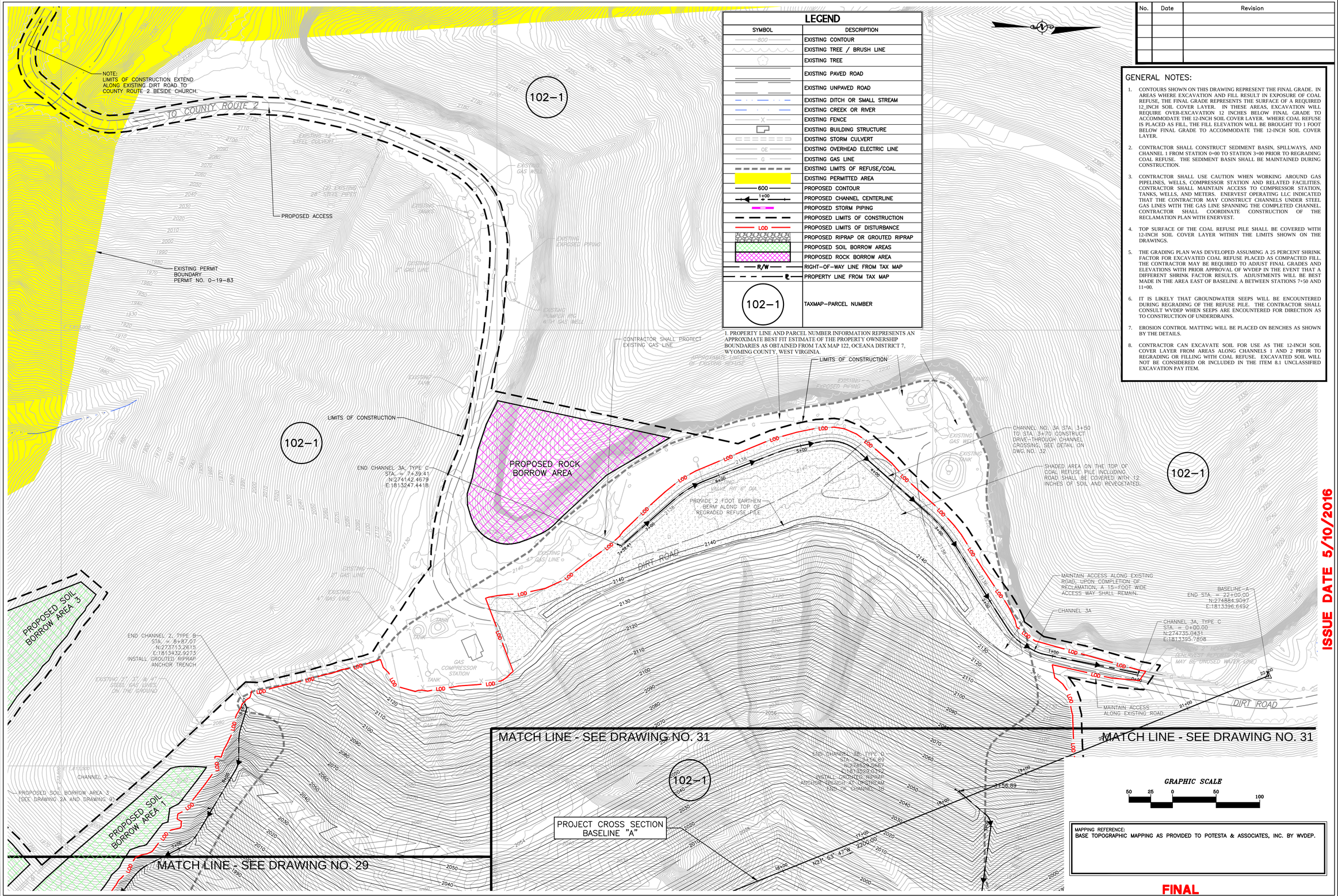
POTESTA

Client
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title
TAX MAP OVERLAY
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

29
Drawing No.

XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC-LEGEND EXIST-LEGEND GOOGLE IMAGE BW EXIST-PERMIT MAP TAXMAP-LEGEND SOIL-LEGEND
IMAGE Files: TM 122, DISTRICT 7.jpg 0684BA.jpg
Layout: 29-TAX MAP OVERLAY Plot Scale: 1:1 Plot Date/Time: May 10, 2016 - 8:15am
Plotted By: jmurphy



LEGEND

SYMBOL	DESCRIPTION
800	EXISTING CONTOUR
	EXISTING TREE / BRUSH LINE
	EXISTING TREE
	EXISTING PAVED ROAD
	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
X	EXISTING FENCE
	EXISTING BUILDING STRUCTURE
	EXISTING STORM CULVERT
OE	EXISTING OVERHEAD ELECTRIC LINE
G	EXISTING GAS LINE
	EXISTING LIMITS OF REFUSE/COAL
	EXISTING PERMITTED AREA
600	PROPOSED CONTOUR
1+00	PROPOSED CHANNEL CENTERLINE
	PROPOSED STORM PIPING
	PROPOSED LIMITS OF CONSTRUCTION
LOD	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED RIPRAP OR GROUTED RIPRAP
	PROPOSED SOIL BORROW AREAS
	PROPOSED ROCK BORROW AREA
R/W	RIGHT-OF-WAY LINE FROM TAX MAP
℄	PROPERTY LINE FROM TAX MAP
102-1	TAXMAP-PARCEL NUMBER

1. PROPERTY LINE AND PARCEL NUMBER INFORMATION REPRESENTS AN APPROXIMATE BEST FIT ESTIMATE OF THE PROPERTY OWNERSHIP BOUNDARIES AS OBTAINED FROM TAX MAP 122, OCEANA DISTRICT 7, WYOMING COUNTY, WEST VIRGINIA.

No.	Date	Revision

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MAPPING REFERENCE:
BASE TOPOGRAPHIC MAPPING AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY WVDEP.

ISSUE DATE 5/10/2016

FINAL

-TM_OVERLAY
CAD File No.
RGL
Drawn
DMK
Checked
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1"=50'
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MAY 2016
Date:
101-13-0530
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POTESTA & ASSOCIATES, INC.
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E-Mail Address: potesta@potesta.com

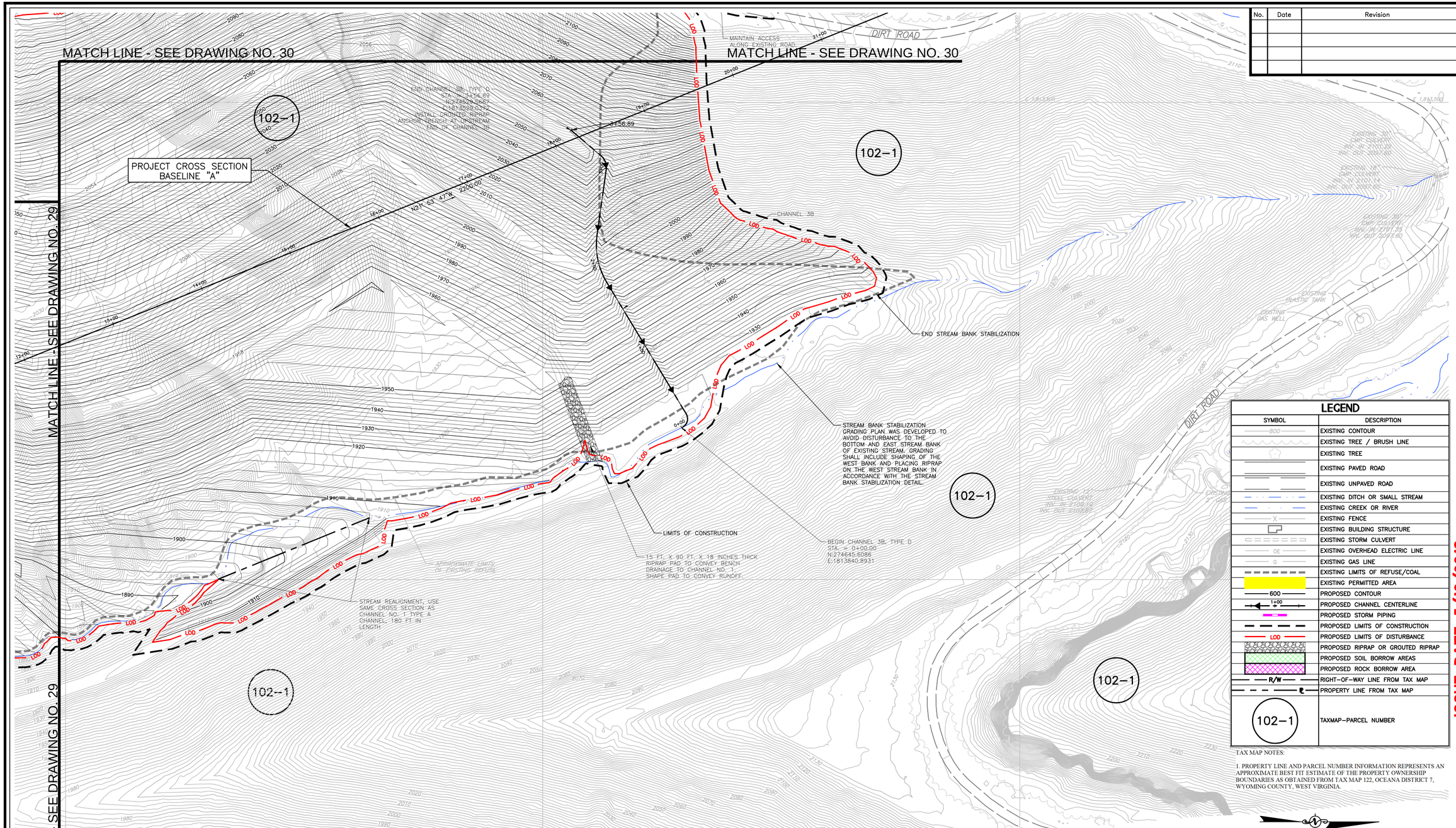
POTESTA

Client:
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

Title:
TAX MAP OVERLAY
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

30
Drawing No.

XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC-LEGEND GOOGLE IMAGE BW EXIST-LEGEND EXIST-PERMIT MAP TAXMAP-LEGEND SOIL-LEGEND
IMAGE Files: Tk 122 DISTRICT 7 (0 - 0)-SEBABA.jpg
Plot Date/Time: May 10, 2016 - 8:22am
Plotted By: pmarsh



No.	Date	Revision

LEGEND

SYMBOL	DESCRIPTION
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	EXISTING TREE / BRUSH LINE
	EXISTING TREE
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	EXISTING UNPAVED ROAD
	EXISTING DITCH OR SMALL STREAM
	EXISTING CREEK OR RIVER
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GRAPHIC SCALE

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FINAL

ISSUE DATE 5/10/2016

CAD File No.	-TM_OVERLAY
Drawn	RGL
Checked	DMK
Approved	DMK
Scale:	1"=50'
Date:	MAY 2016
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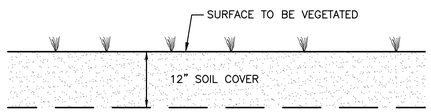
CHARLESTON, WEST VIRGINIA 25304

Title
TAX MAP OVERLAY
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

31
Drawing No.

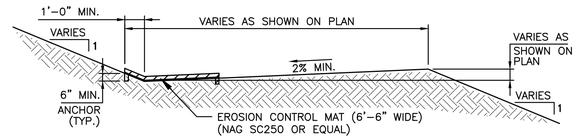
XREF Files: 13-0530_REC PLAN 13-0530_EXISTING REC-LEGEND EXIST-LEGEND GOOGLE IMAGE BW EXIST-REPRMT MAP TAXMAP-LEGEND SOIL-LEGEND
IMAGE Files: TM_122_DISTRICT_7.jpg 0038484.jpg
Plot Scale: 1:1 Plot Style: POTESTA-COMM(13-0530-TM_OVERLAY).ctb
Plot Date/Time: May 10, 2016 - 8:25am
Plotted By: jmartin

No.	Date	Revision



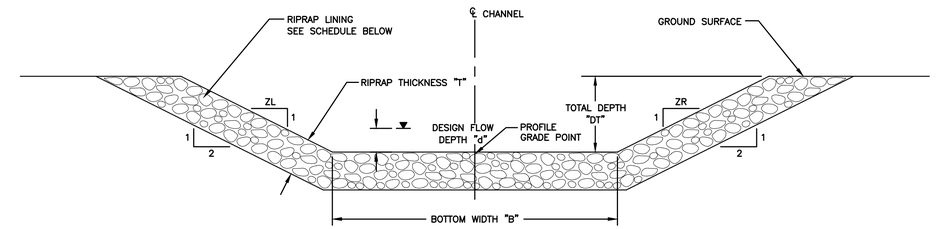
NOTES:
1. REGRADED OR BARE AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL RECEIVE A 12" SOIL COVER LAYER.
2. SOIL COVER THICKNESS UNDER CHANNELS SHALL BE 12" MIN.

SOIL COVER DETAIL
NO SCALE



SECTION

EROSION CONTROL MATTING ON BENCH
NO SCALE

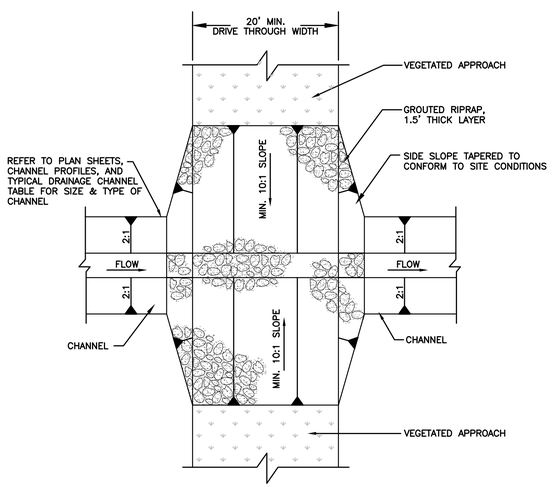


PERMANENT CHANNEL SCHEDULE

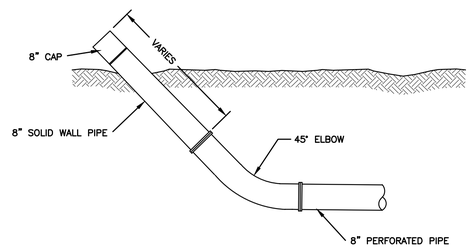
CHANNEL TYPE **	DESIGN FLOW Q(CFS)*	MIN/MAX BOTTOM SLOPE %/%	DESIGN FLOW DEPTH (FT) d*	TOTAL DEPTH (FT) DT (MIN.)	DESIGN VELOCITY (FPS) V*	BOTTOM WIDTH B (FT)	SIDE SLOPE ZL	SIDE SLOPE ZR	LINING MATERIAL	RIPRAP THICKNESS T (IN.)	RIPRAP MEAN DIAMETER (IN.) D_{50}	RIPRAP MAXIMUM DIAMETER (IN.) D_{MAX}
CHANNEL 1, TYPE A	84.36	1%/61%	1.25	2.00	19.71	10.0	2.00	2.00	GROUTED RIPRAP	18.0	10.0	12.0
CHANNEL 2, TYPE B	8.33	1%/50%	0.56	2.00	10.52	4.0	2.00	2.00	GROUTED RIPRAP	18.0	10.0	12.0
CHANNEL 3A, TYPE C	10.17	0.5%/10%	1.30	2.00	3.30	0(V-DITCH)	2.00	2.00	RIPRAP	18.0	10.0	12.0
CHANNEL 3B, TYPE D	7.05	1%/50%	0.59	2.00	7.05	3.0	2.00	2.00	GROUTED RIPRAP	18.0	10.0	12.0

* BASED ON THE DESIGN FLOWS ANTICIPATED TO BE CONVEYED BY THE CHANNEL
** CHANNEL TYPES ARE INCLUDED FOR FOR MEASUREMENT AND PAYMENT, SEE PROFILES FOR BEGINNING AND ENDING LOCATIONS OF EACH CHANNEL TYPE.

TYPICAL RIPRAP AND/OR GROUTED RIPRAP CHANNEL DETAIL
NO SCALE

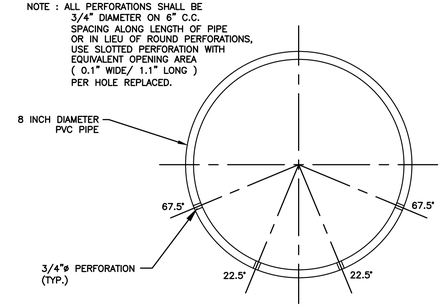


DRIVE THROUGH CHANNEL SECTION
NO SCALE



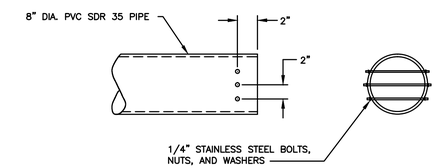
8" CLEANOUT FOR UNDERDRAIN DETAIL
NO SCALE

NOTE : ALL PERFORATIONS SHALL BE 3/4" DIAMETER ON 6" C.C. SPACING ALONG LENGTH OF PIPE OR IN LIEU OF ROUND PERFORATIONS, USE SLOTTED PERFORATION WITH EQUIVALENT OPENING AREA (0.1" WIDE/ 1.1" LONG) PER HOLE REPLACED.

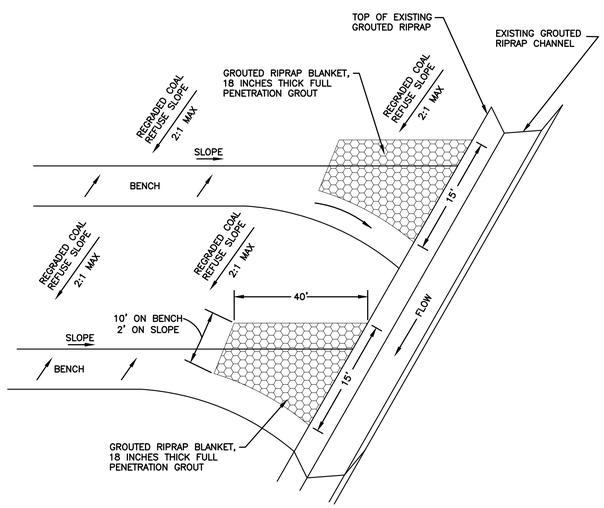


NOTE : ALL ANGLES TAKEN FROM VERTICAL.

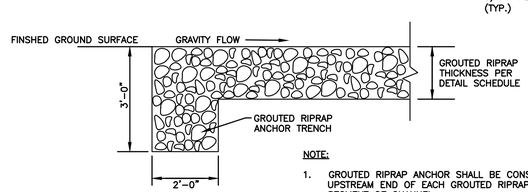
UNDERDRAIN PIPE PERFORATION DETAIL
NO SCALE



ANIMAL GUARD DETAIL
NO SCALE

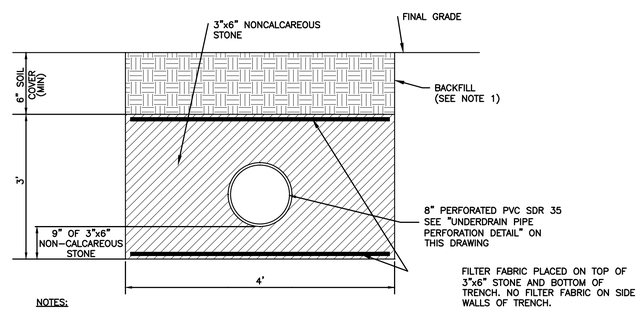


EROSION CONTROL MATTING END OF BENCH DETAIL
NO SCALE



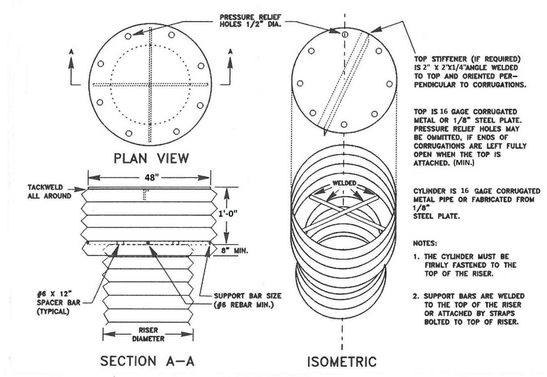
NOTE:
1. GROUTED RIPRAP ANCHOR SHALL BE CONSTRUCTED AT THE UPSTREAM END OF EACH GROUTED RIPRAP CHANNEL OR SEGMENT OF CHANNEL.

GROUTED RIPRAP ANCHOR TRENCH
NO SCALE



NOTES:
1. SUITABLE MATERIAL FROM EXCAVATION; NO DEBRIS, STICKS, TIMBER, WOOD, TRASH OR ORGANIC MATERIAL. NO PARTICLES GREATER THAN 6 INCHES. BACKFILL TO BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE BACKFILL MATERIAL ACCORDING TO ASTM D698.

8" UNDERDRAIN DETAIL
NO SCALE



TRASH RACK DETAIL
NO SCALE

FINAL

ISSUE DATE 5/10/2016

DETAILS
CAD File No.
RGL
Drawn
DMK
Checked
DMK
Approved
NOTED
Scale:
MAY 2016
Date:
101-13-0530
Project No.

POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
7012 MacCorkle Ave. SE, Charleston, WV 25304
Tel: (304) 342-1400 Fax: (304) 343-0081
E-Mail Address: potesta@potesta.com

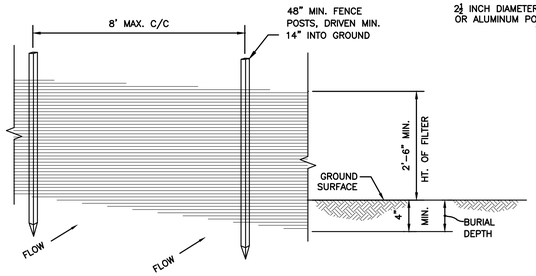
POTESTA

Client:
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET S.E.
CHARLESTON, WEST VIRGINIA 25304

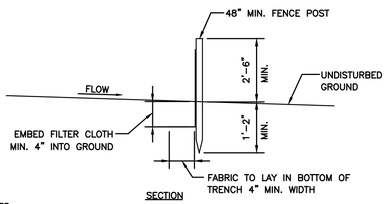
Title
MISCELLANEOUS DETAILS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

32
Drawing No.

XREF Files:
IMAGE Files:
File Name: TRASH RACK.DG
Plot Scale/Time: 1:1 May 10, 2016 - 7:53:5am
Plotted By: jmartin



PERSPECTIVE VIEW



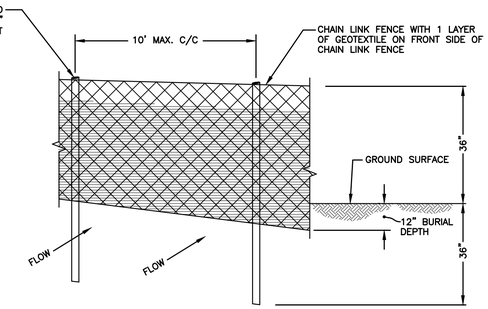
SECTION

NOTES:

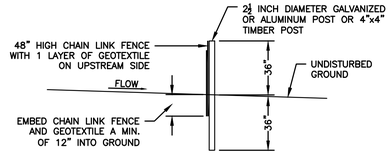
1. WHEN TWO SECTIONS OF SILT FENCE JOIN, OVERLAP ACCORDING TO MANUFACTURERS PUBLISHED RECOMMENDATIONS.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN HALF OF EXPOSED SILT FENCE IS COVERED WITH SEDIMENT.
3. POSTS SHALL BE CONSTRUCTED OF STEEL EITHER "T" OR "U" TYPE OR 1.5" HARDWOOD.
4. FILTER CLOTH SHALL BE "FILTER X", "MIRAFI 100X", "LINQ GTF 180" OR APPROVED EQUAL.
5. ALL SILT FENCE SHALL BE CHECKED AFTER ANY SIGNIFICANT RAINFALL (IN EXCESS OF 1/2"). DAMAGED SILT FENCE MUST BE REPAIRED WITHIN 24 HOURS; SOONER, IF ADDITIONAL RAINFALL IS EXPECTED.

SILT FENCE DETAIL

NO SCALE



PERSPECTIVE VIEW



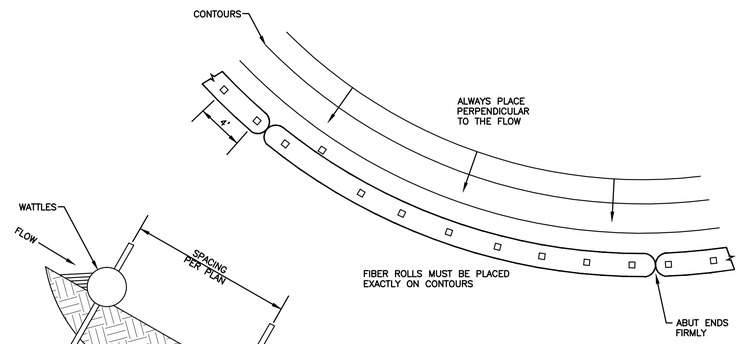
SECTION

NOTES:

1. CHAIN LINK FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE. CHECK AFTER EACH STORM AND REMOVE SEDIMENT.
5. CHAIN LINK FENCE AND GEOTEXTILE SHALL BE EMBEDDED 12 INCHES IN THE GROUND. TRENCH SHALL BE BACKFILLED.
6. FENCE POSTS DO NOT NEED SET IN CONCRETE.

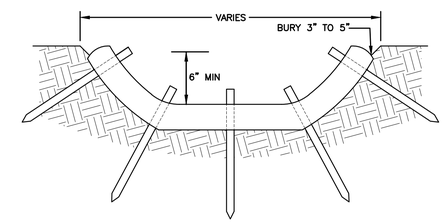
SUPER SILT FENCE DETAIL

NO SCALE



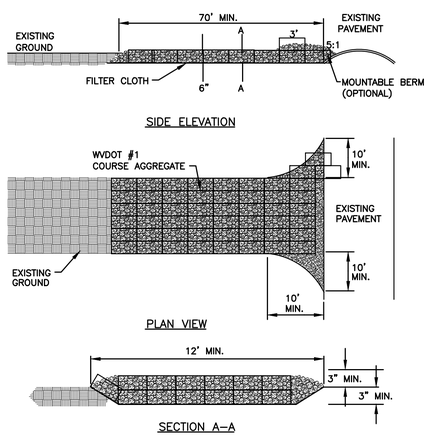
WATTLES DETAIL

NO SCALE



STRAW WATTLE DITCH CHECK

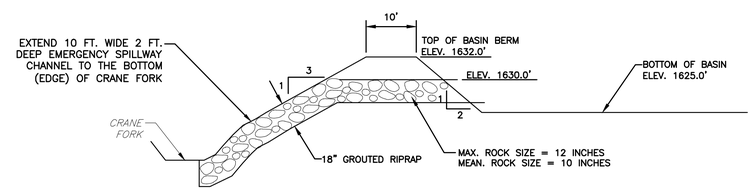
NO SCALE



NOTE:
TEMPORARY STONE CONSTRUCTION ENTRANCES TO BE INSTALLED WHERE CONSTRUCTION ACCESS ROADS ADJOIN EXISTING PAVED PUBLIC ROADWAYS.

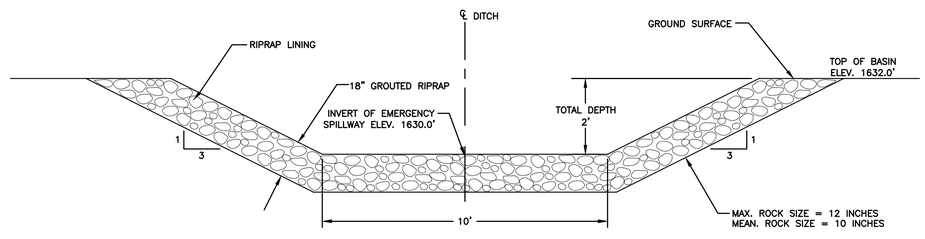
STABILIZED CONSTRUCTION ENTRANCE DETAIL

NO SCALE



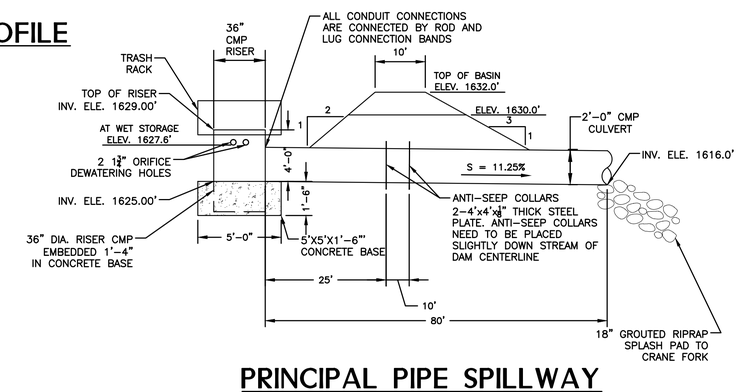
EMERGENCY SPILLWAY EXIT CHANNEL PROFILE

NO SCALE



EMERGENCY SPILLWAY CONTROL SECTION AND EXIT CHANNEL

NO SCALE



PRINCIPAL PIPE SPILLWAY

NO SCALE

SEDIMENT BASIN DETAILS

NO SCALE

FINAL

ISSUE DATE 5/10/2016

No.	Date	Revision

DETAILS
CAD File No.
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E-Mail Address: potesta@potesta.com

POTESTA

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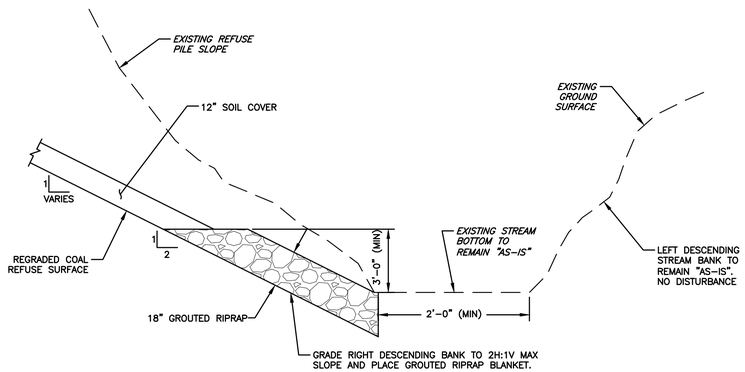
Title: MISCELLANEOUS DETAILS
CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

33
Drawing No.

XREF Files:
IMAGE Files: TRASH RACK.jpg
PLOT Scale: 1:1 Layout: 33
Plot Date/Time: May 10, 2016 - 7:54am
Plotted By: jmartin

No.	Date	Revision

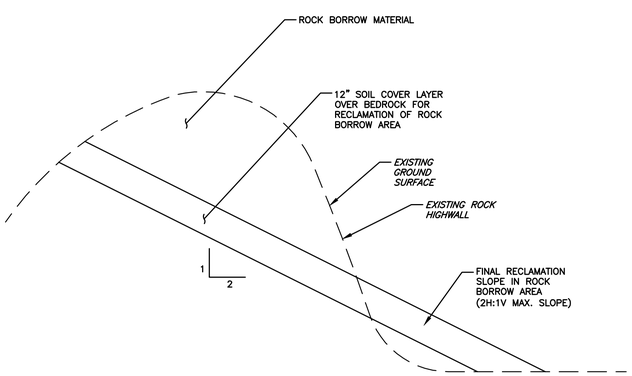


STREAM BANK STABILIZATION

NO SCALE

NOTES:

CONTRACTOR SHALL ADJUST GRADING OF THE COAL REFUSE PILE ALONG THE EXISTING STREAM TO AVOID DISTURBANCE OF EXISTING STREAM BOTTOM AND THE LEFT DESCENDING STREAM BANK. CONTRACTOR SHALL TIE-IN GRADING SUCH THAT MINIMUM BOTTOM WIDTH IS 2 FEET AND GROUTED RIPRAP BLANKET HAS A MINIMUM VERTICAL HEIGHT OF 3 FEET.

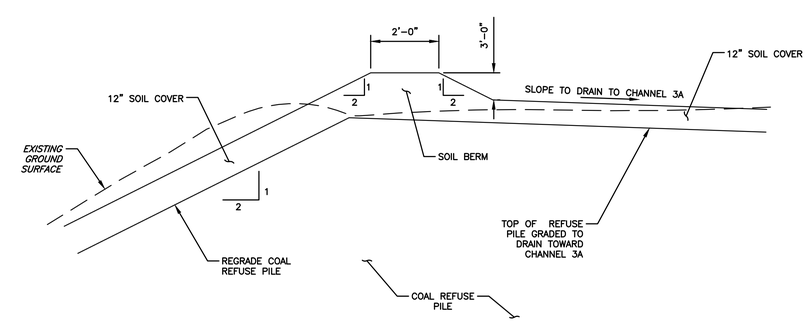


NOTES:

1. CONTRACTOR SHALL RETAIN SUFFICIENT SOIL EXCAVATED FROM ROCK BORROW AREA TO RECLAIM ROCK BORROW AREA.
2. CONTRACTOR SHALL DEVELOP ROCK CUT SEQUENCE TO FACILITATE RECLAMATION OF AREA. EXISTING HIGHWALLS SHALL BE ELIMINATED AND NO NEW HIGHWALLS SHALL RESULT FROM ROCK BORROW OPERATIONS.
3. CONTRACTOR IS CAUTIONED OF THE PRESENCE OF GAS LINES, WELLS, TANKS, AND COMPRESSOR STATION IN CLOSE PROXIMITY TO PROPOSED ROCK BORROW AREA. CONTRACTOR SHALL COORDINATE WITH ENERVEST AND USE CARE IN HIS OPERATIONS ESPECIALLY REGARDING BLASTING AND ROCK BORROW OPERATIONS TO ENSURE PROTECTION OF THESE FACILITIES.

TYPICAL SECTION RECLAMATION OF ROCK AREA

NO SCALE



TYPICAL EARTHEN BERM

NO SCALE

ISSUE DATE 5/10/2016

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Title
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CRANY MINE DUMP
WYOMING COUNTY, WEST VIRGINIA

34
Drawing No.

XREF Files:
IMAGE Files: TRASH RACK.jpg
File: 101-13-0530_DETAILS.dwg
Plot Date/Time: May 10, 2016 - 7:54am
Plotted By: pwright