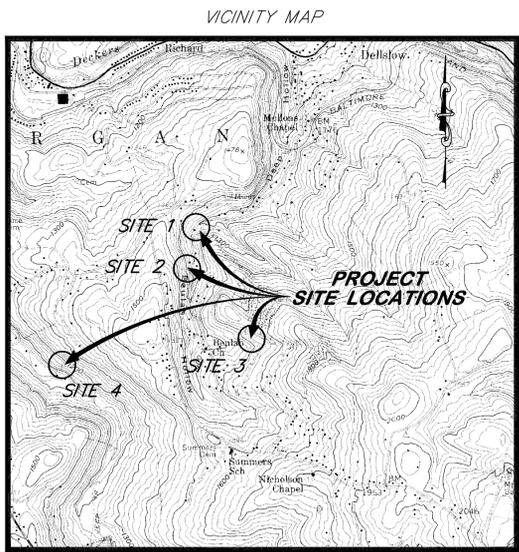


west virginia department of environmental protection

EARL RAY TOMBLIN, GOVERNOR RANDY C. HUFFMAN, CABINET SECRETARY
OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

BEULAH CHAPEL PORTALS

NEAR MORGANTOWN
 MONONGALIA COUNTY, WEST VIRGINIA



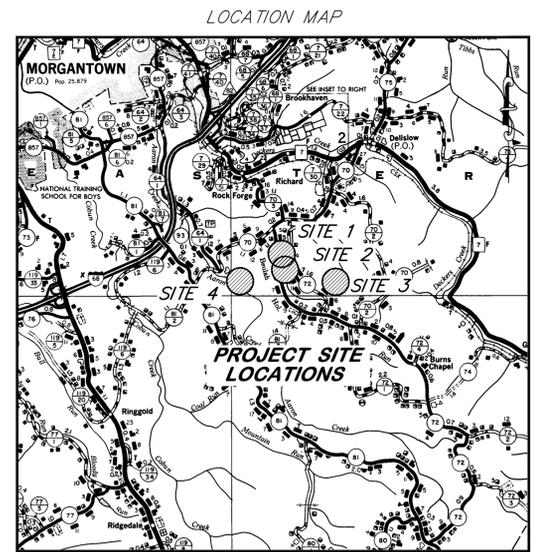
USGS 7.5' QUAD (MORGANTOWN SOUTH)

INDEX TO SHEETS	
SHEET NO.	DESCRIPTION
2	SITE 1 - EXISTING CONDITIONS AND TAX MAP OVERLAY
3	SITES 2 AND 4 - EXISTING CONDITIONS AND TAX MAP OVERLAY
4	SITE 3 - EXISTING CONDITIONS AND TAX MAP OVERLAY
5	SITE 1 - RECLAMATION PLAN
6	SITES 2 AND 4 - RECLAMATION PLAN
7	SITE 3 - RECLAMATION PLAN
8	SITE 1 - SEDIMENT CONTROL PLAN
9	SITE 3 - SEDIMENT CONTROL PLAN
10	SITE 1 - BASELINE PROFILE AND CROSS SECTIONS
11	SITE 3 - BASELINE "A" CROSS SECTIONS
12	SITE 3 - BASELINE "B" CROSS SECTIONS
13	TYPICAL DETAILS (1)
14	TYPICAL DETAILS (2)
15	SEDIMENT CONTROL DETAILS

BID SCHEDULE		
ITEM NO.	DESCRIPTION	QUANTITY
1.0	MOBILIZATION AND DEMOBILIZATION (LIMITED TO 10% OF TOTAL BID)	LS
2.0	CONSTRUCTION LAYOUT (LIMITED TO 5% OF TOTAL BID)	LS
3.0	QUALITY CONTROL (LIMITED TO 3% OF TOTAL BID)	LS
4.1	SITE PREPARATION (LIMITED TO 10% OF TOTAL BID)	LS
4.2	ACCESS ROAD STONE	160 TONS
4.3	GRAVEL DRIVE REHABILITATION	50 TONS
4.4	PERMANENT FENCING	160 LF
4.5	12" FARM GATE	1 EA.
5.1	SILT FENCE SEDIMENT CONTROL	950 LF
5.2	STRAW WATTLE EROSION CONTROL	610 LF
5.3	STABILIZED CONSTRUCTION ENTRANCE (70 LF x 12' WIDTH) (3)	75 TONS
5.4	ROCK CHECK DAM	3 EA.
6.0	REVEGETATION	2.2 AC.
7.1	SPLASH PAD	4 EA.
7.2	18" HDPE CULVERT PIPE	50 LF
7.3	8' GRASS LINED CHANNEL W/TYPE I CURLLEX (CHANNEL "A")	50 LF
7.4	4' GRASS LINED CHANNEL W/TYPE I CURLLEX (CHANNEL "C")	125 LF
7.5	6' RIPRAP CHANNEL (CHANNELS "B", "D" AND "E")	340 LF
7.6	RIPRAP ROAD CROSSING	1 EA.
7.7	ROAD DITCH CLEANING	LS
8.1	UNCLASSIFIED EXCAVATION	2660 CY
8.2	3'- 6" ROCK FILL (INCLUDES DRY MINE SEAL #6)	90 TON
9.1	BAT GATE MINE SEAL #3, 4, 5, & 7 (36" HDPE W/STONE BACKFILL)	4 EA.
9.2	BAT GATE MINE SEAL #9, 10, 11, & 12 (36" HDPE W/FOAM BACKFILL)	4 EA.
9.3	HDPE BAT GATE PIPE WITH BAT GATE ATTACHED	180 LF
9.4	SODA ASH BRIQUETTES (50 LB BAG)	15 EA.
11.1	4' x 4' UNDERDRAIN (12" PVC SDR-35)	100 LF
11.2	UNDERDRAIN CONVEYANCE PIPE (12" PVC SDR-35)	20 LF



APPROVED
 12/8/2014
 DATE



COUNTY HIGHWAY MAP, 1" = 1 MI.

NOTES:
 1.) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL PERMIT REQUIREMENTS.
 2.) CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND VERIFICATION OF ANY AND ALL UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS.
 3.) ALL AREAS AFFECTED BY ACCESS AND/OR CONSTRUCTION SHALL BE REGRADED, SEEDED AND MULCHED UPON COMPLETION OF PROJECT.
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PROPERTY LINE AND ROAD NUMBER INFORMATION REPRESENTS AN APPROXIMATE BEST FIT ESTIMATE OF PROPERTY LINE BOUNDARIES AS OBTAINED FROM COUNTY TAX MAPS ACQUIRED THROUGH THE WEST VIRGINIA STATE TAX DEPARTMENT IN CHARLESTON, WV. PROPERTY LINES SET OUT AND DESIGNATED WITHIN THESE CONSTRUCTION PLANS DO NOT REPRESENT A TRUE AND ACCURATE BOUNDARY SURVEY.

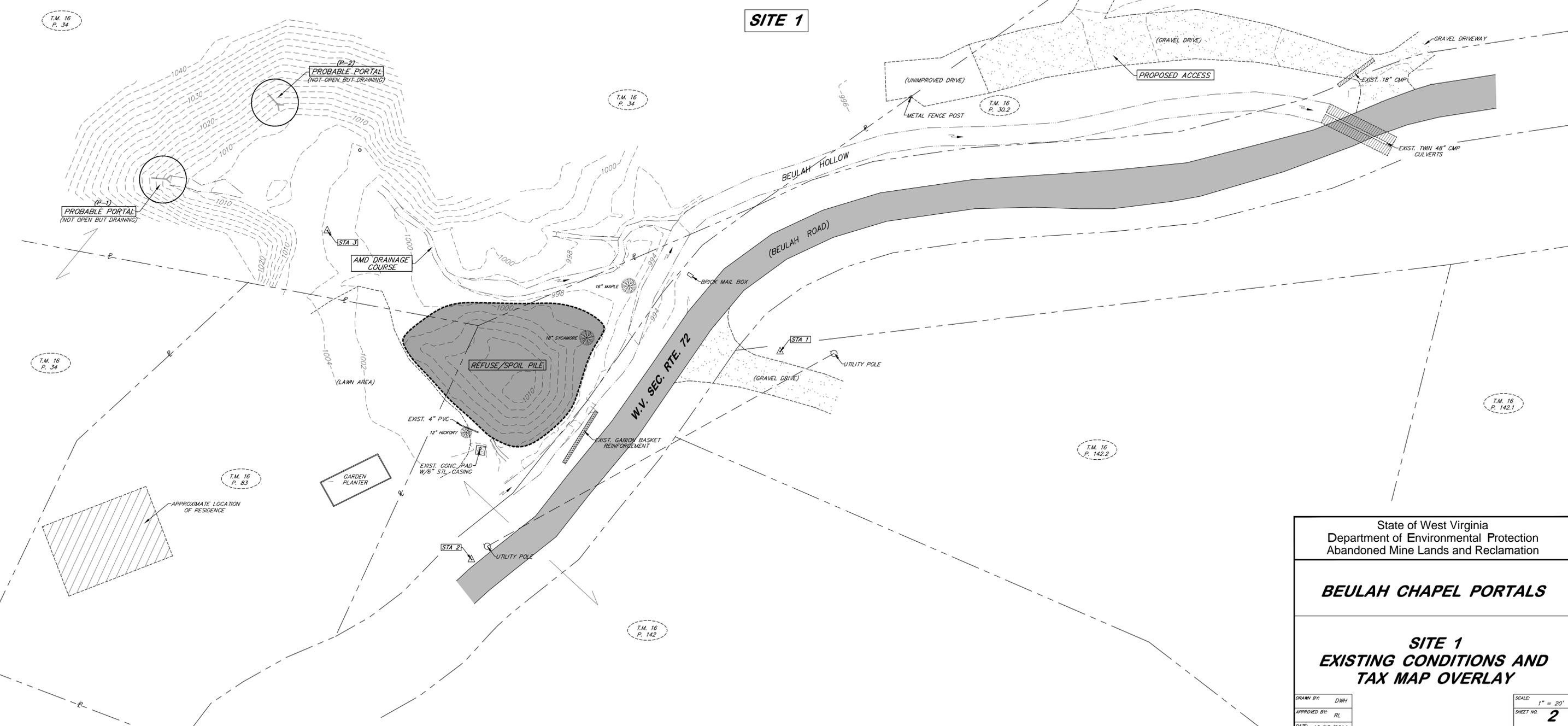
SURVEY CONTROL				
NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10000.0000	10000.0000	1000.00	NAIL/RIBBON
STA 2	9849.2698	10054.8489	1008.62	NAIL/RIBBON
STA 3	9822.6463	9902.7452	1003.64	NAIL/RIBBON

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)



LEGEND

- APPROX. PROPERTY LINE
- EXIST. DRAIN OR WATER COURSE
- EXISTING UTILITY LINE
- DIRECTION OF FLOW
- TAX MAP AND PARCEL NO.
- EXISTING UTILITY OR LIGHT POLE
- EXISTING OR PROBABLE MINE OPENING
- EXISTING SURVEY CONTROL
- EXISTING CULVERT OR PIPE



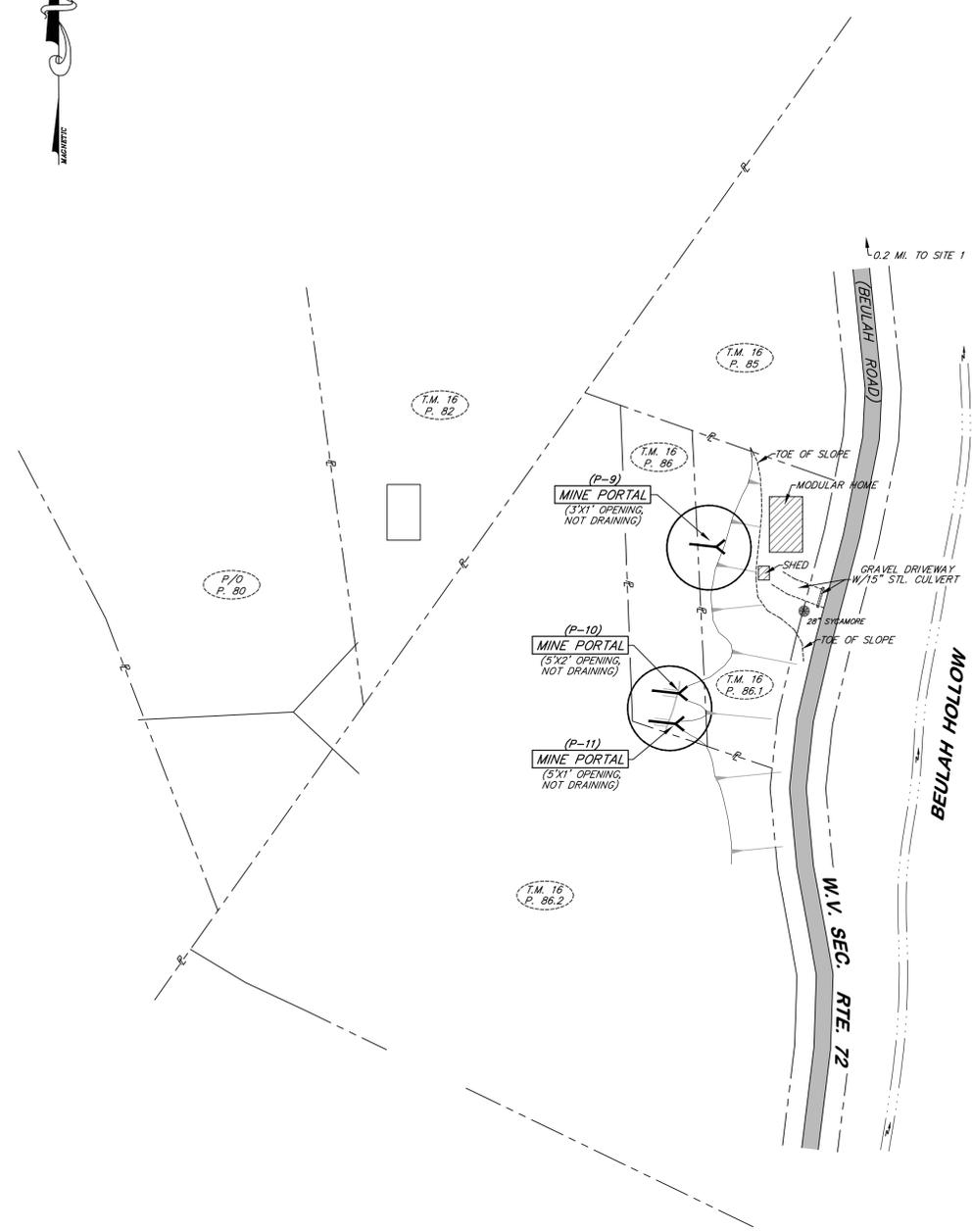
State of West Virginia
 Department of Environmental Protection
 Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

**SITE 1
 EXISTING CONDITIONS AND
 TAX MAP OVERLAY**

DRAWN BY: DWH
 APPROVED BY: RL
 DATE: 10/15/2014

SCALE: 1" = 20'
 SHEET NO. **2**
 OF 15

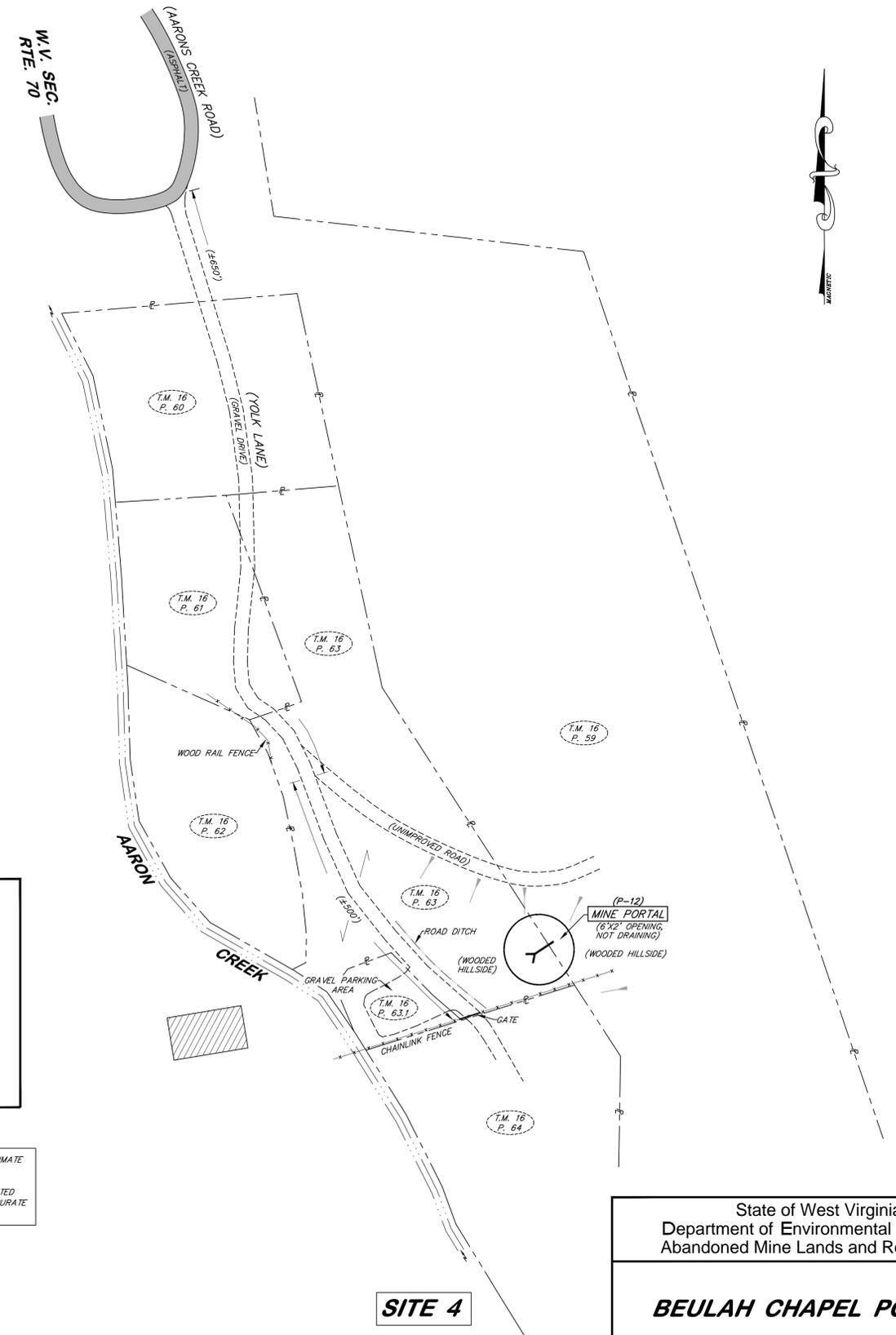


SITE 2

LEGEND	
	APPROX. PROPERTY LINE
	EXIST. DRAIN OR WATER COURSE
	EXISTING UTILITY LINE
	DIRECTION OF FLOW
	TAX MAP AND PARCEL NO.
	EXISTING UTILITY OR LIGHT POLE
	EXISTING OR PROBABLE MINE OPENING
	EXISTING SURVEY CONTROL
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- NOTES:
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 - 5.) NO FIELD SURVEYING OR MAPPING WAS CONDUCTED ON SITES 2 OR 4. THEREFORE, NO SURVEY INFORMATION IS INCLUDED OR REQUIRED FOR EITHER OF THESE SITES.



SITE 4

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

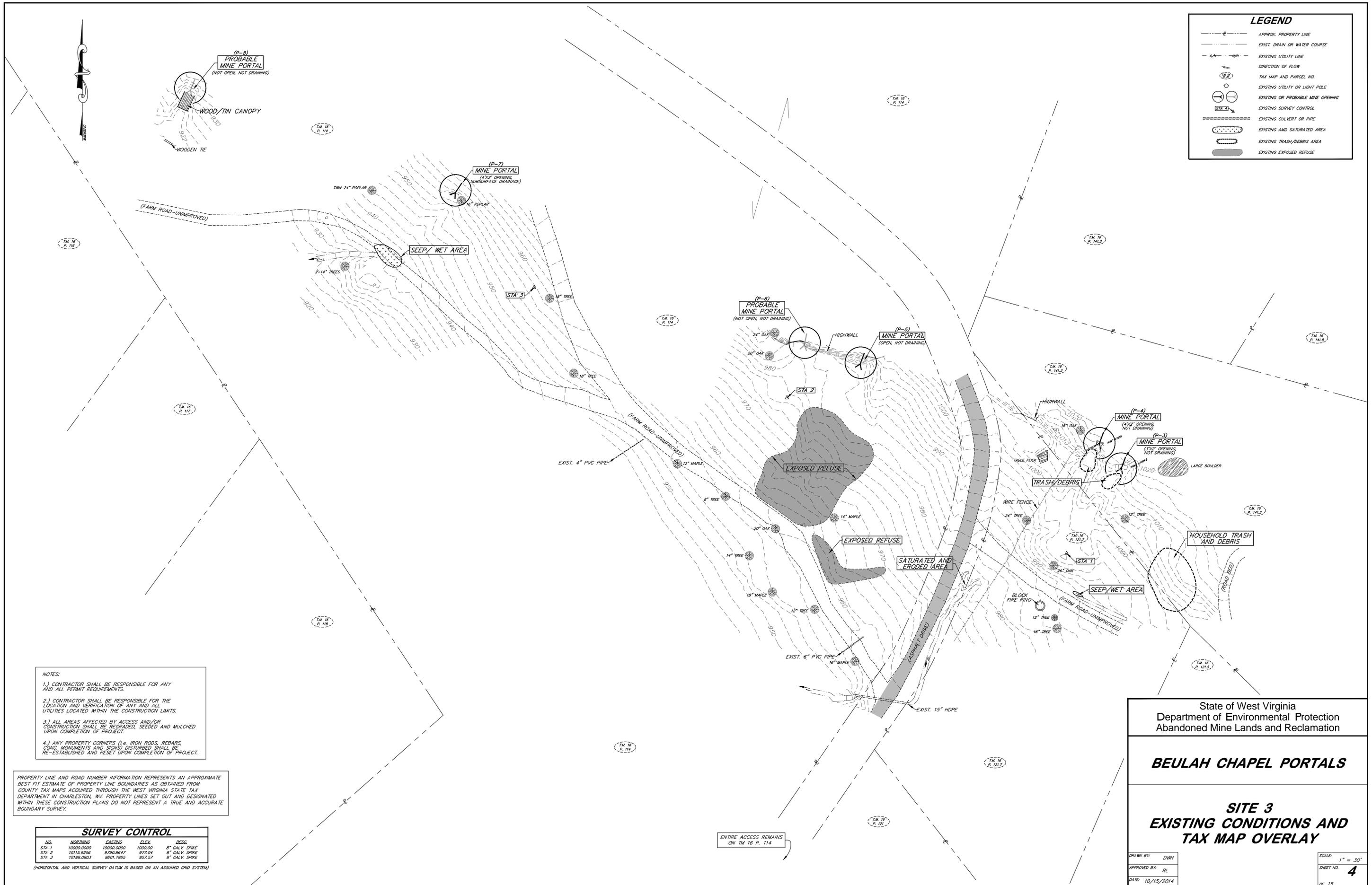
BEULAH CHAPEL PORTALS

**SITES 2 AND 4
EXISTING CONDITIONS AND
TAX MAP OVERLAY**

DRAWN BY: DWH	SCALE: NOT TO SCALE
APPROVED BY: RL	SHEET NO. 3
DATE: 10/15/2014	OF 15

LEGEND

- APPROX. PROPERTY LINE
- EXIST. DRAIN OR WATER COURSE
- EXISTING UTILITY LINE
- DIRECTION OF FLOW
- TAX MAP AND PARCEL NO.
- EXISTING UTILITY OR LIGHT POLE
- EXISTING OR PROBABLE MINE OPENING
- EXISTING SURVEY CONTROL
- EXISTING CULVERT OR PIPE
- EXISTING AND SATURATED AREA
- EXISTING TRASH/DEBRIS AREA
- EXISTING EXPOSED REFUSE



- NOTES:**
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SURVEY CONTROL

NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10000.0000	10000.0000	1000.00	8" GALV. SPIKE
STA 2	10115.9256	9790.8647	977.04	8" GALV. SPIKE
STA 3	10198.0803	9601.7965	957.57	8" GALV. SPIKE

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)

ENTIRE ACCESS REMAINS ON TM 16 P. 114

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

**SITE 3
EXISTING CONDITIONS AND
TAX MAP OVERLAY**

DRAWN BY: DWH	SCALE: 1" = 30'
APPROVED BY: RL	SHEET NO. 4
DATE: 10/15/2014	OF 15

NOTES:
 1.) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL PERMIT REQUIREMENTS.
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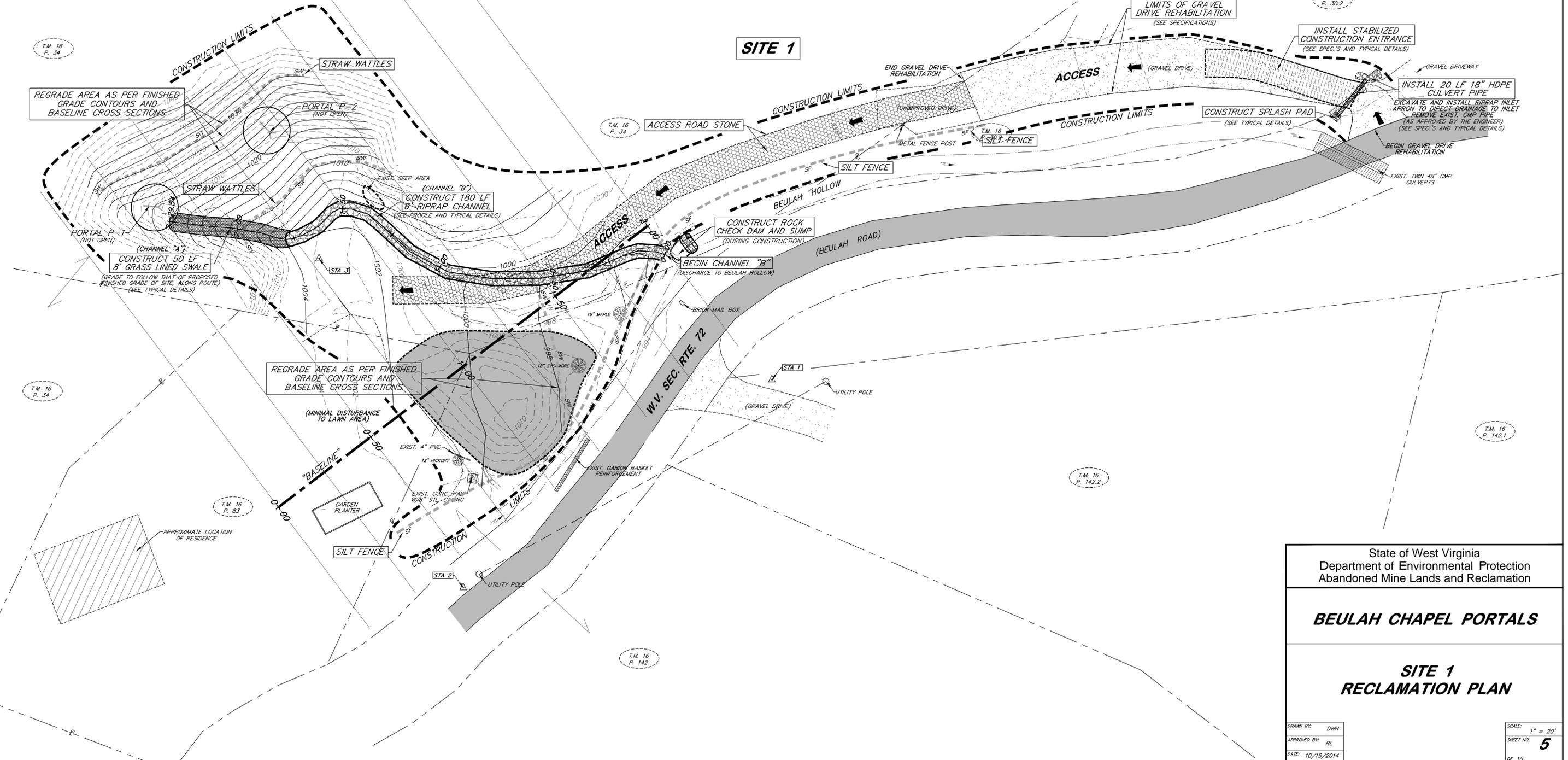
SURVEY CONTROL				
NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10000.0000	10000.0000	1000.00	NAIL/RIBBON
STA 2	9849.2699	10054.8489	1008.62	NAIL/RIBBON
STA 3	9822.6463	9902.7452	1003.64	NAIL/RIBBON

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)



LEGEND

	APPROX. PROPERTY LINE		PROPOSED CONSTRUCTION LIMITS
	EXIST. DRAIN OR WATER COURSE		PROPOSED CONVEYANCE PIPE
	EXISTING UTILITY LINE		PROPOSED 8' GRASS LINED SWALE
	DIRECTION OF FLOW		FINISHED GRADE CONTOUR
	TAX MAP AND PARCEL NO.		LIMITS OF GRAVEL DRIVE REHABILITATION
	EXISTING UTILITY OR LIGHT POLE		PROPOSED CONSTRUCTION ENTRANCE
	EXISTING OR PROBABLE MINE OPENING		PROPOSED CULVERT OR PIPE
	EXISTING EXPOSED REFUSE		SURVEY BASELINE
	EXISTING SURVEY CONTROL		PROPOSED SILT FENCE SEDIMENT CONTROL
	EXISTING CULVERT OR PIPE		PROPOSED STRAW WATTLES EROSION CONTROL
			PROPOSED SPLASH PAD



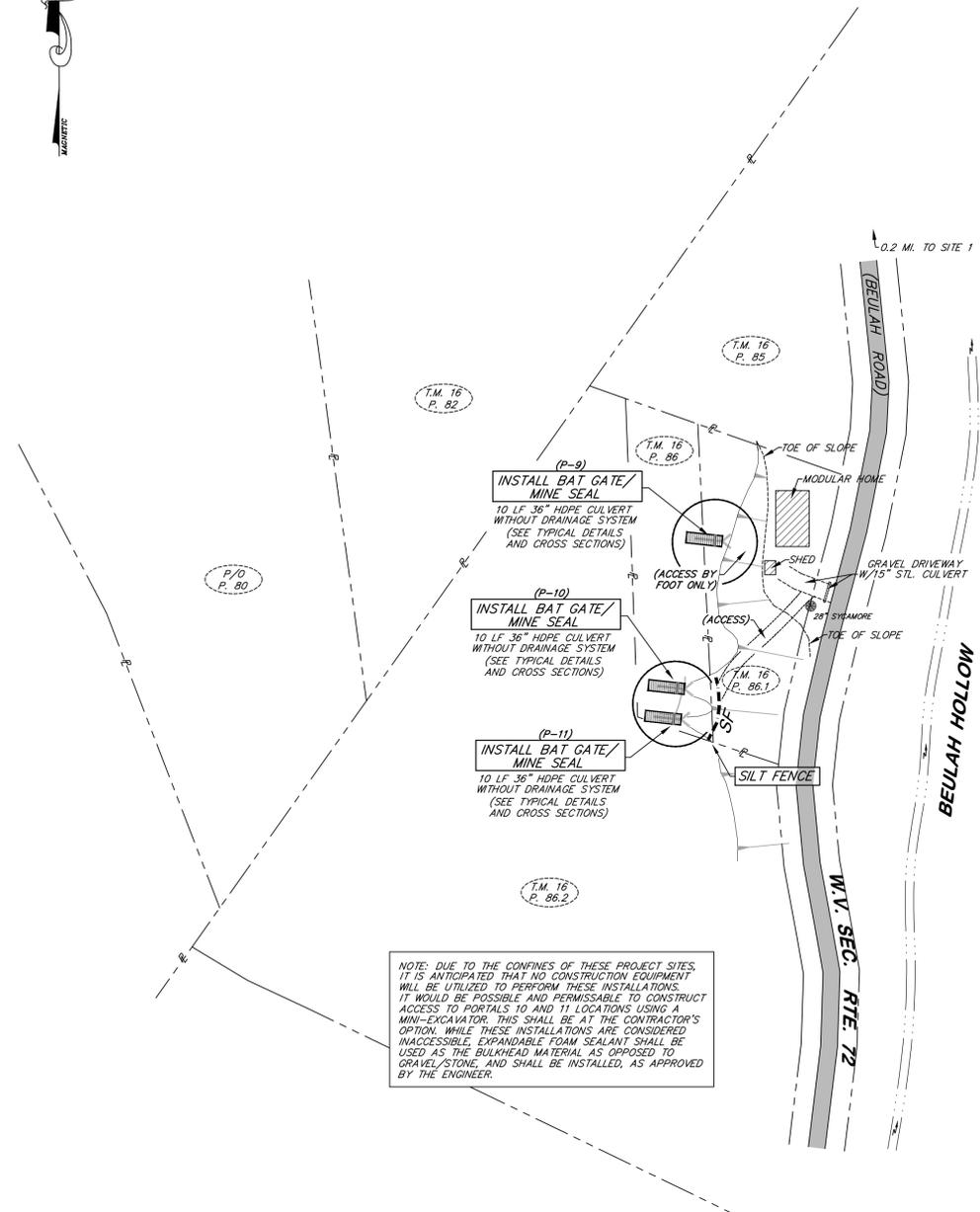
State of West Virginia
 Department of Environmental Protection
 Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

SITE 1 RECLAMATION PLAN

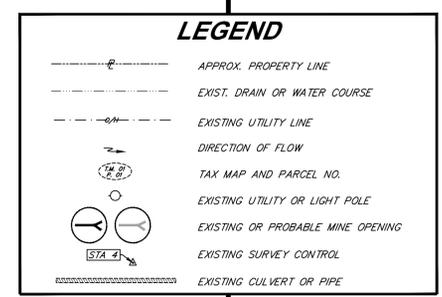
DRAWN BY: DWH
 APPROVED BY: RL
 DATE: 10/15/2014

SCALE: 1" = 20'
 SHEET NO. 5
 OF 15



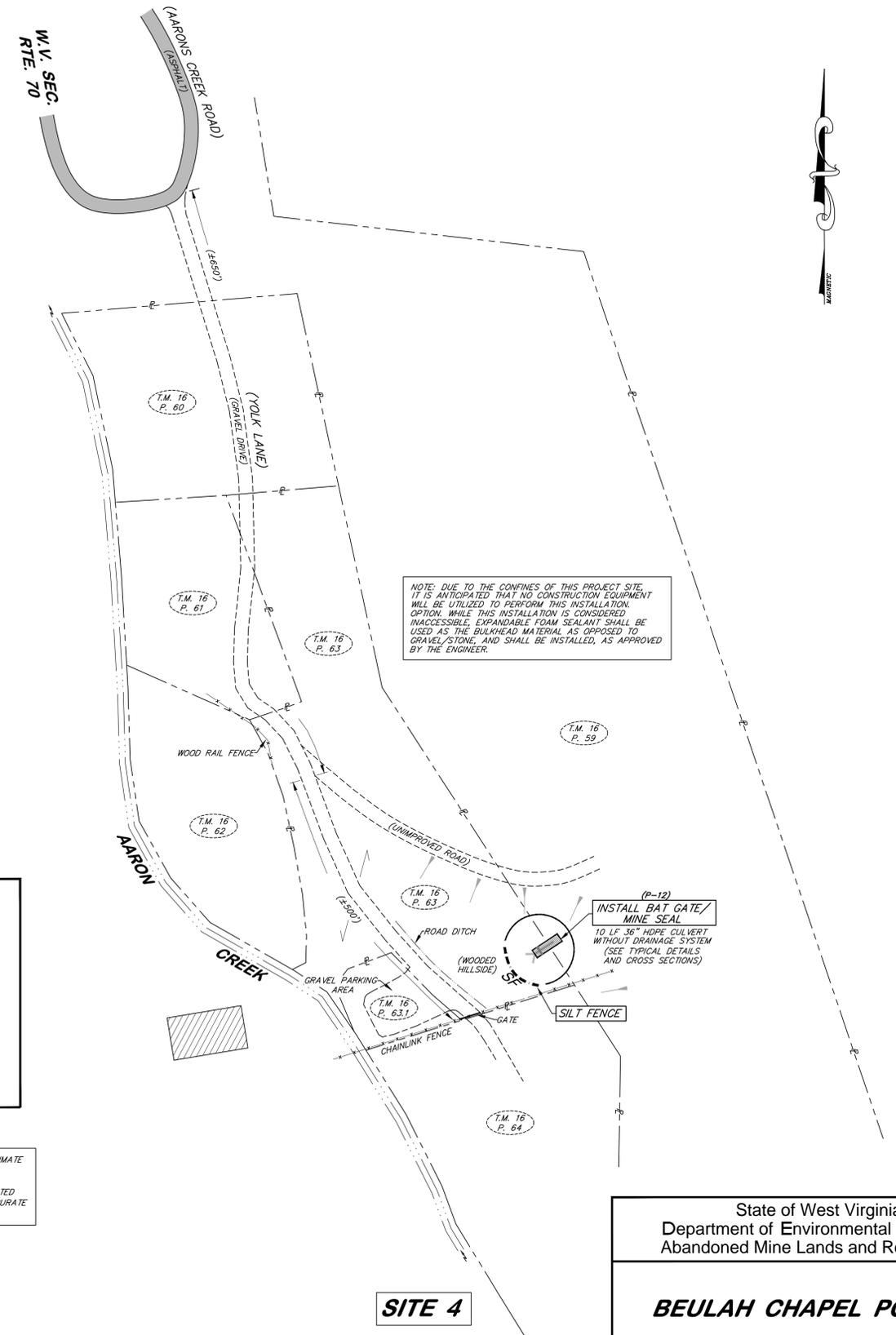
NOTE: DUE TO THE CONFINES OF THESE PROJECT SITES, IT IS ANTICIPATED THAT NO CONSTRUCTION EQUIPMENT WILL BE UTILIZED TO PERFORM THESE INSTALLATIONS. IT WOULD BE POSSIBLE AND PERMISSIBLE TO CONSTRUCT ACCESS TO PORTALS 10 AND 11 LOCATIONS USING A MINI-EXCAVATOR. THIS SHALL BE AT THE CONTRACTOR'S OPTION. WHILE THESE INSTALLATIONS ARE CONSIDERED INACCESSIBLE, EXPANDABLE FOAM SEALANT SHALL BE USED AS THE BULKHEAD MATERIAL AS OPPOSED TO GRAVEL/STONE, AND SHALL BE INSTALLED, AS APPROVED BY THE ENGINEER.

SITE 2



PROPERTY LINE AND ROAD NUMBER INFORMATION REPRESENTS AN APPROXIMATE BEST FIT ESTIMATE OF PROPERTY LINE BOUNDARIES AS OBTAINED FROM COUNTY TAX MAPS ACQUIRED THROUGH THE WEST VIRGINIA STATE TAX DEPARTMENT IN CHARLESTON, WV. PROPERTY LINES SET OUT AND DESIGNATED WITHIN THESE CONSTRUCTION PLANS DO NOT REPRESENT A TRUE AND ACCURATE BOUNDARY SURVEY.

- NOTES:
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 - 5.) NO FIELD SURVEYING OR MAPPING WAS CONDUCTED ON SITES 2 OR 4. THEREFORE, NO SURVEY INFORMATION IS INCLUDED OR REQUIRED FOR EITHER OF THESE SITES.



NOTE: DUE TO THE CONFINES OF THIS PROJECT SITE, IT IS ANTICIPATED THAT NO CONSTRUCTION EQUIPMENT WILL BE UTILIZED TO PERFORM THIS INSTALLATION. OPTION WHILE THIS INSTALLATION IS CONSIDERED INACCESSIBLE, EXPANDABLE FOAM SEALANT SHALL BE USED AS THE BULKHEAD MATERIAL AS OPPOSED TO GRAVEL/STONE, AND SHALL BE INSTALLED, AS APPROVED BY THE ENGINEER.

SITE 4

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

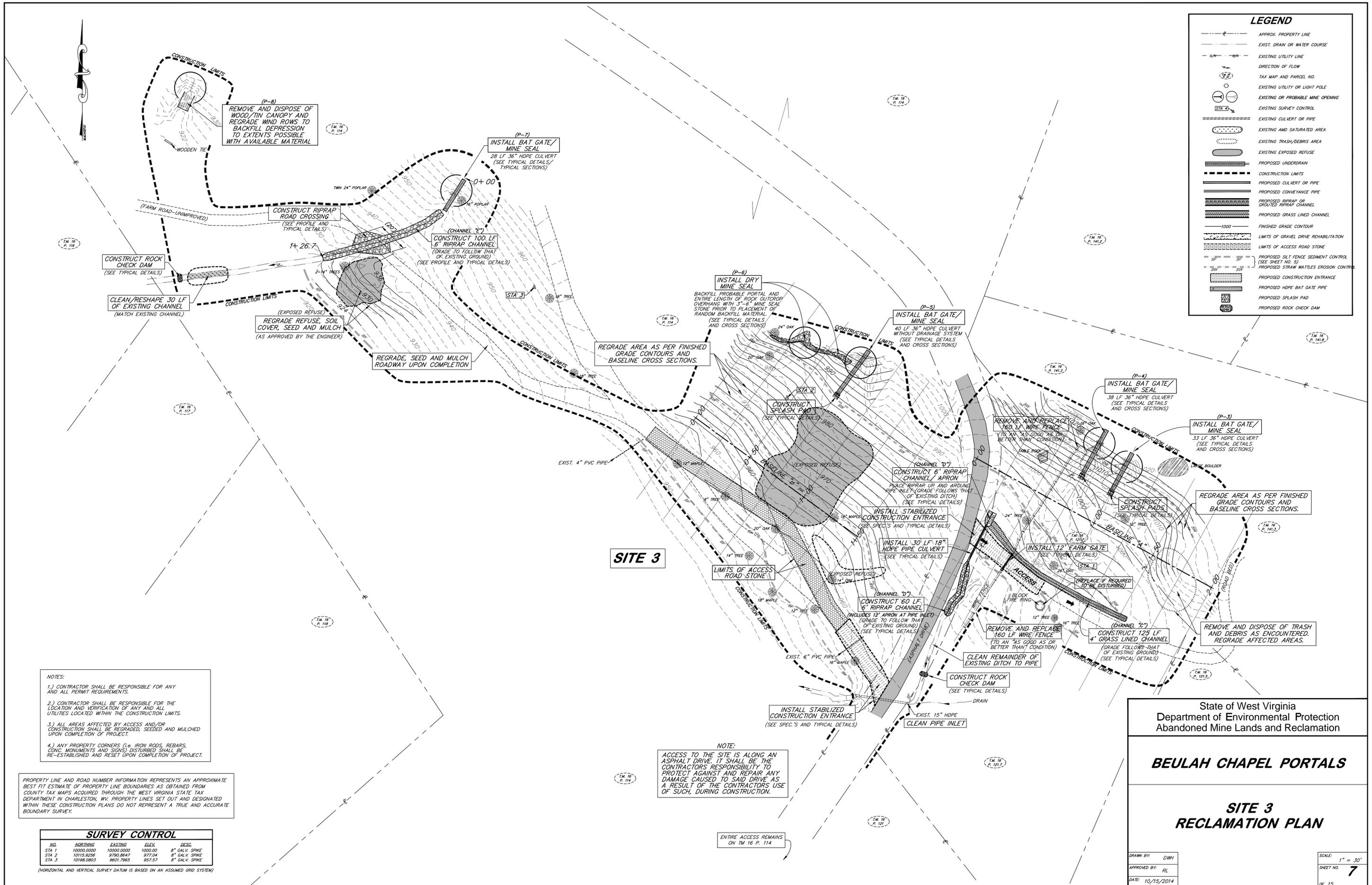
BEULAH CHAPEL PORTALS

**SITES 2 AND 4
RECLAMATION AND SEDIMENT
CONTROL PLANS**

DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: NOT TO SCALE
SHEET NO. **6**
OF 15

LEGEND	
	APPROX. PROPERTY LINE
	EXIST. DRAIN OR WATER COURSE
	EXISTING UTILITY LINE
	DIRECTION OF FLOW
	TAX MAP AND PARCEL NO.
	EXISTING UTILITY OR LIGHT POLE
	EXISTING OR PROBABLE MINE OPENING
	EXISTING SURVEY CONTROL
	EXISTING CULVERT OR PIPE
	EXISTING AND SATURATED AREA
	EXISTING TRASH/DEBRIS AREA
	EXISTING EXPOSED REFUSE
	PROPOSED UNDERDRAIN
	CONSTRUCTION LIMITS
	PROPOSED CULVERT OR PIPE
	PROPOSED CONVEYANCE PIPE
	PROPOSED RIPRAP OR GROUDED RIPRAP CHANNEL
	PROPOSED GRASS LINED CHANNEL
	FINISHED GRADE CONTOUR
	LIMITS OF GRAVEL DRIVE REHABILITATION
	LIMITS OF ACCESS ROAD STONE
	PROPOSED SILT FENCE SEDIMENT CONTROL (SEE SHEET NO. 5)
	PROPOSED STRAW WATTLES EROSION CONTROL
	PROPOSED CONSTRUCTION ENTRANCE
	PROPOSED HOPE BAT GATE PIPE
	PROPOSED SPLASH PAD
	PROPOSED ROCK CHECK DAM



- NOTES:
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SURVEY CONTROL				
NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10000.0000	10000.0000	1000.00	8" GALV. SPIKE
STA 2	10115.9256	9790.8647	977.04	8" GALV. SPIKE
STA 3	10198.0803	9601.7965	957.57	8" GALV. SPIKE

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)

NOTE:
ACCESS TO THE SITE IS ALONG AN ASPHALT DRIVE IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT AGAINST AND REPAIR ANY DAMAGE CAUSED TO SAID DRIVE AS A RESULT OF THE CONTRACTORS USE OF SUCH, DURING CONSTRUCTION.

ENTIRE ACCESS REMAINS ON TM 16 P. 114

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

SITE 3 RECLAMATION PLAN

DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: 1" = 30'
SHEET NO. 7
OF 15

NOTES:
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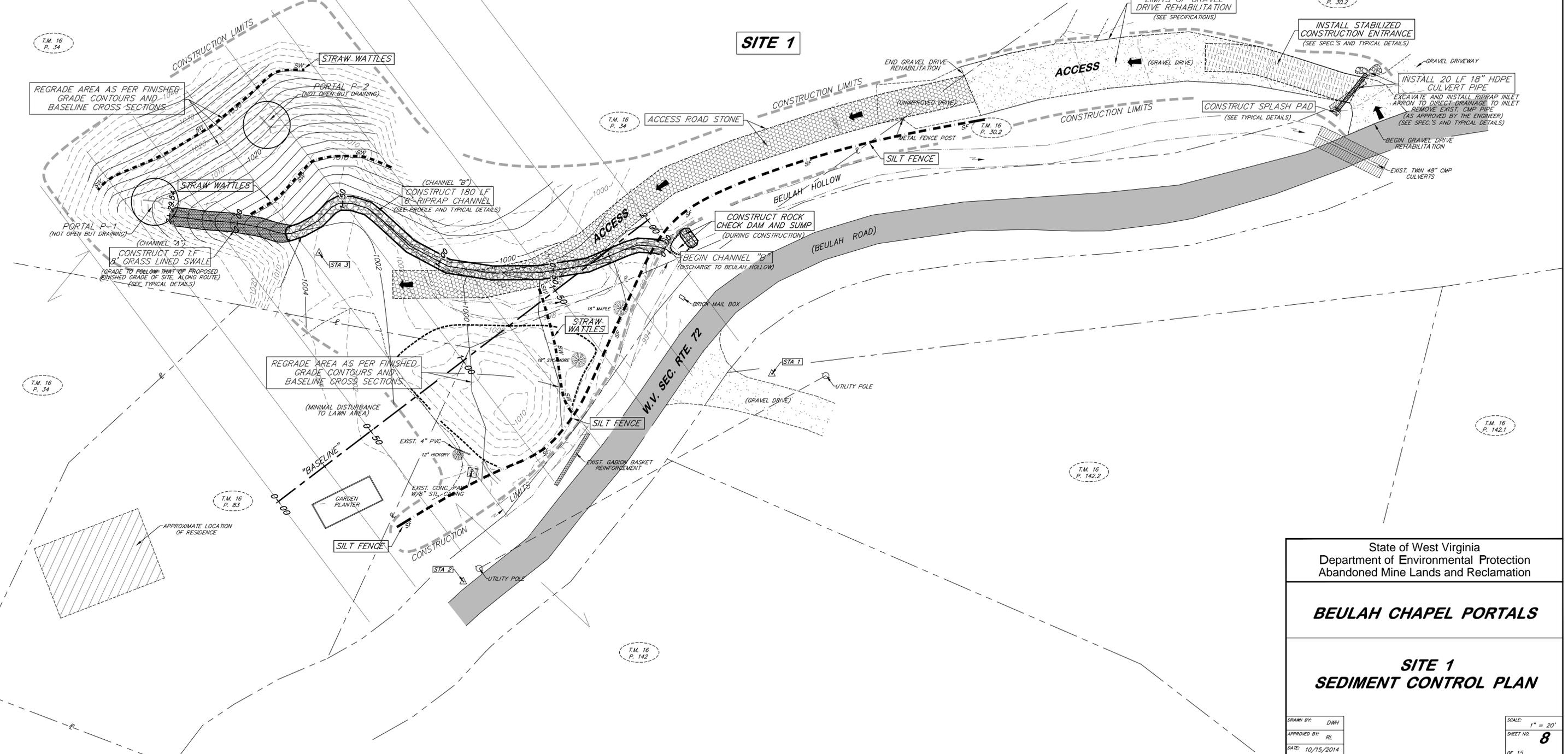
SURVEY CONTROL				
NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10000.0000	10000.0000	1000.00	NAIL/RIBBON
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STA 3	9822.6463	9902.7452	1003.64	NAIL/RIBBON

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)



LEGEND

	APPROX. PROPERTY LINE		PROPOSED CONSTRUCTION LIMITS
	EXIST. DRAIN OR WATER COURSE		PROPOSED CONVEYANCE PIPE
	EXISTING UTILITY LINE		PROPOSED 8" GRASS LINED SWALE
	DIRECTION OF FLOW		FINISHED GRADE CONTOUR
	TAX MAP AND PARCEL NO.		LIMITS OF GRAVEL DRIVE REHABILITATION
	EXISTING UTILITY OR LIGHT POLE		PROPOSED CONSTRUCTION ENTRANCE
	EXISTING OR PROBABLE MINE OPENING		PROPOSED CULVERT OR PIPE
	EXISTING OR PROBABLE MINE OPENING		SURVEY BASELINE
	EXISTING SURVEY CONTROL		PROPOSED SILT FENCE SEDIMENT CONTROL
	EXISTING CULVERT OR PIPE		PROPOSED STRAW WATTLES EROSION CONTROL
			PROPOSED SPLASH PAD



State of West Virginia
 Department of Environmental Protection
 Abandoned Mine Lands and Reclamation

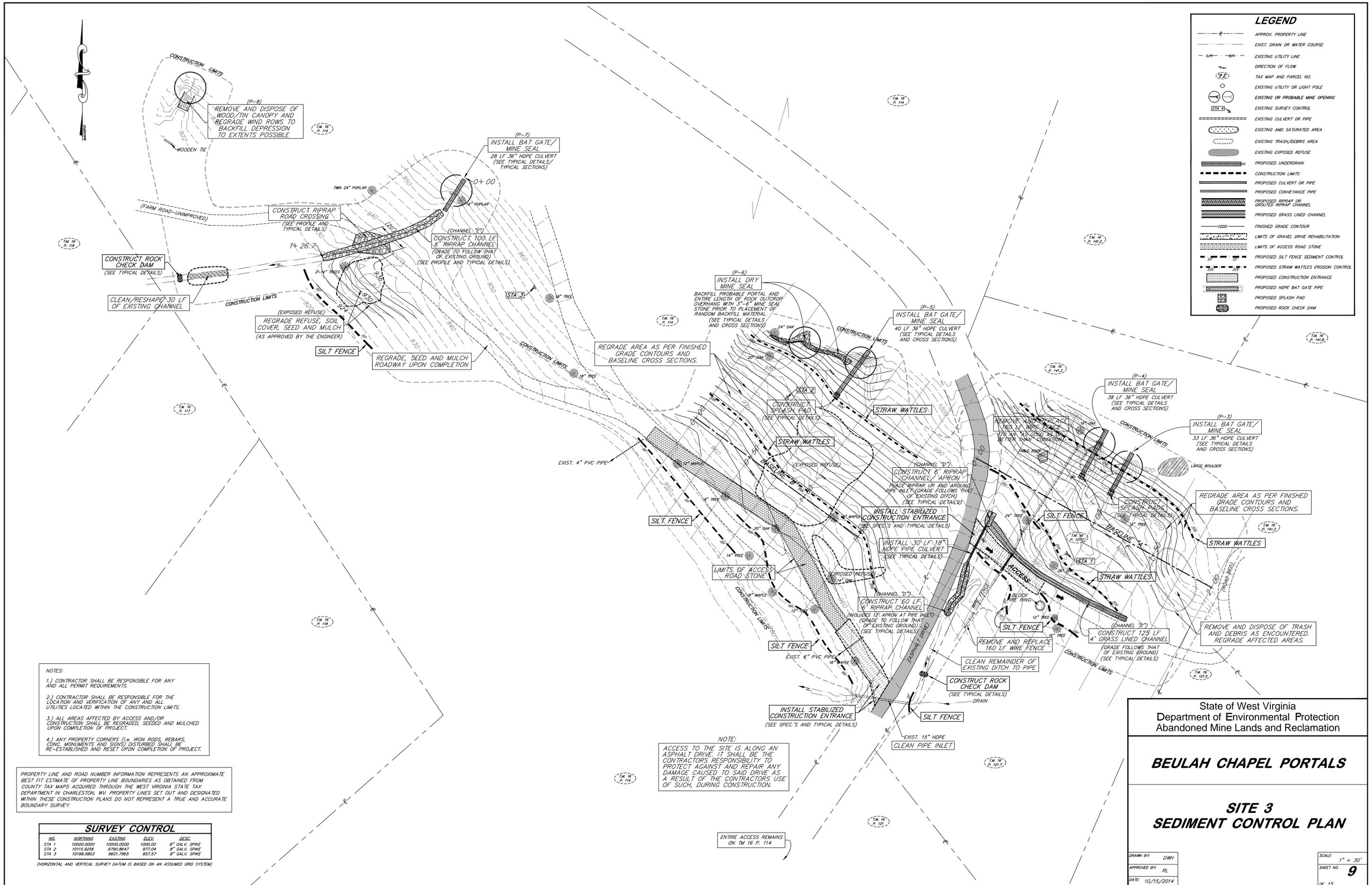
BEULAH CHAPEL PORTALS

SITE 1 SEDIMENT CONTROL PLAN

DRAWN BY: DWH
 APPROVED BY: RL
 DATE: 10/15/2014

SCALE: 1" = 20'
 SHEET NO. **8**
 OF 15

LEGEND	
	APPROX. PROPERTY LINE
	EXIST. DRAIN OR WATER COURSE
	EXISTING UTILITY LINE
	DIRECTION OF FLOW
	TAX MAP AND PARCEL NO.
	EXISTING UTILITY OR LIGHT POLE
	EXISTING OR PROBABLE MINE OPENING
	EXISTING SURVEY CONTROL
	EXISTING CULVERT OR PIPE
	EXISTING AND SATURATED AREA
	EXISTING TRASH/DEBRIS AREA
	EXISTING EXPOSED REFUSE
	PROPOSED UNDERDRAIN
	CONSTRUCTION LIMITS
	PROPOSED CULVERT OR PIPE
	PROPOSED CONVEYANCE PIPE
	PROPOSED RIPRAP OR GROUDED RIPRAP CHANNEL
	PROPOSED GRASS LINED CHANNEL
	FINISHED GRADE CONTOUR
	LIMITS OF GRAVEL DRIVE REHABILITATION
	LIMITS OF ACCESS ROAD STONE
	PROPOSED SILT FENCE SEDIMENT CONTROL
	PROPOSED STRAW WATTLES EROSION CONTROL
	PROPOSED CONSTRUCTION ENTRANCE
	PROPOSED HOOP BAT GATE PIPE
	PROPOSED SPLASH PAD
	PROPOSED ROCK CHECK DAM



- NOTES:
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SURVEY CONTROL				
NO.	NORTHING	EASTING	ELEV.	DESC.
STA 1	10090.0000	10000.0000	1000.00	8" GALV. SPIKE
STA 2	10115.9256	9790.8647	977.04	8" GALV. SPIKE
STA 3	10198.0803	9601.7965	957.57	8" GALV. SPIKE

(HORIZONTAL AND VERTICAL SURVEY DATUM IS BASED ON AN ASSUMED GRID SYSTEM)

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ACCESS TO THE SITE IS ALONG AN ASPHALT DRIVE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT AGAINST AND REPAIR ANY DAMAGE CAUSED TO SAID DRIVE AS A RESULT OF THE CONTRACTORS USE OF SUCH, DURING CONSTRUCTION.

ENTIRE ACCESS REMAINS ON TM 16 P. 114

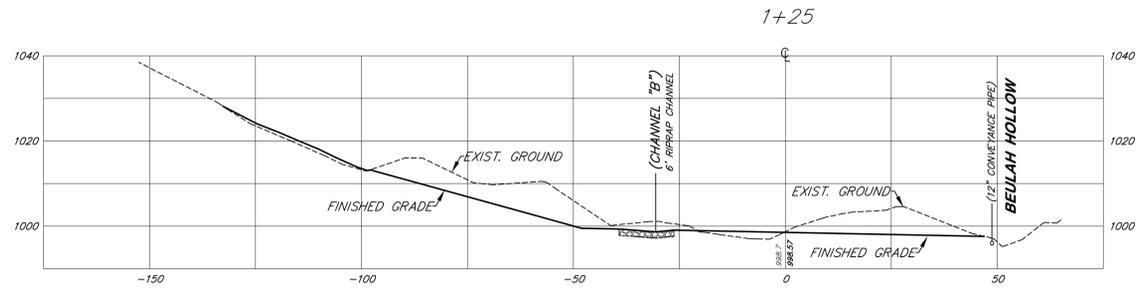
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

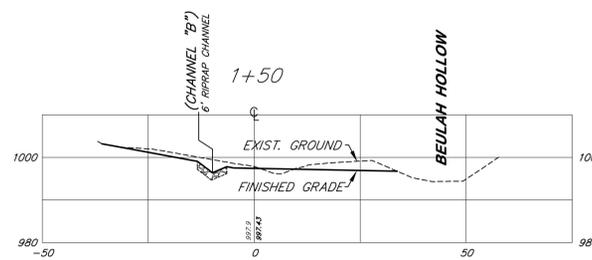
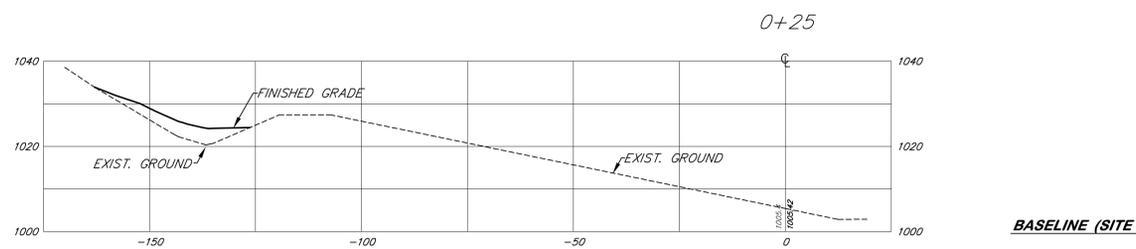
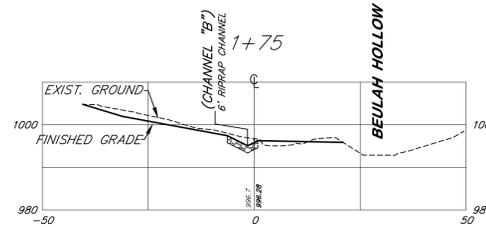
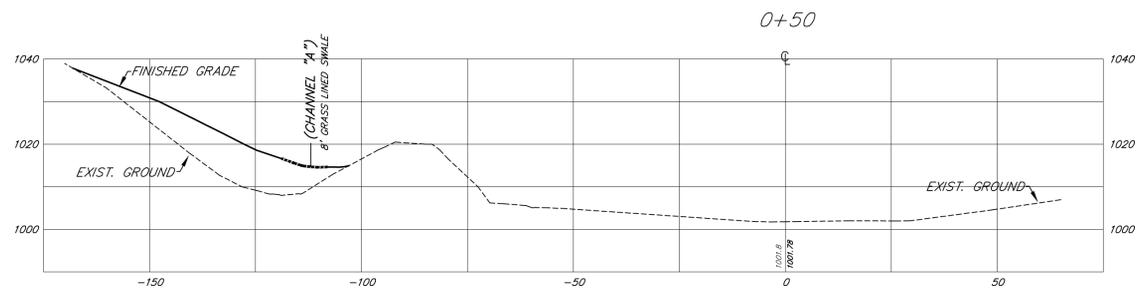
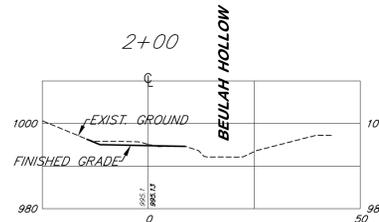
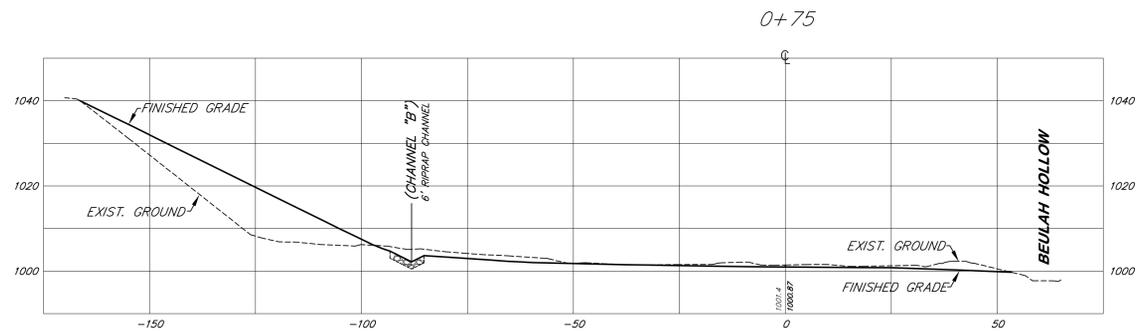
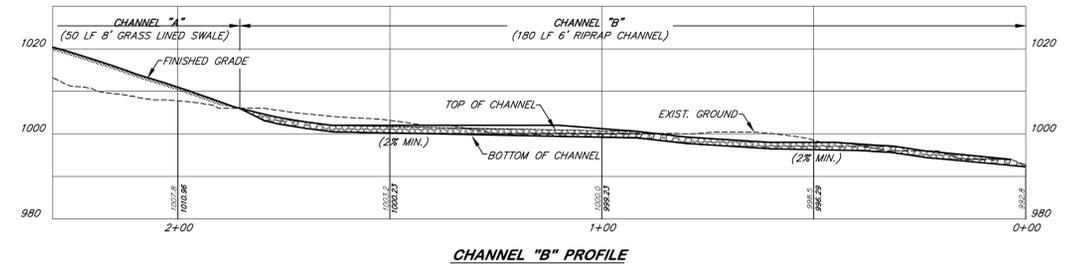
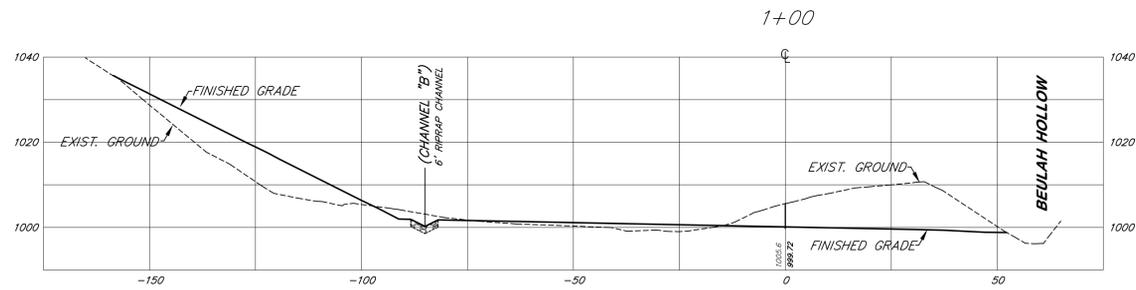
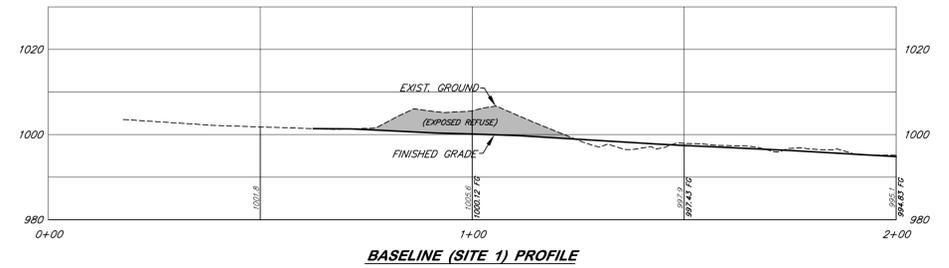
SITE 3 SEDIMENT CONTROL PLAN

DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: 1" = 30'
SHEET NO. 9
OF 15



NOTE: NO BORINGS WERE PERFORMED AT THIS SITE. COAL PAVEMENT ELEVATIONS ARE ASSUMED AND SHALL BE DETERMINED BY THE CONTRACTOR DURING EXCAVATION. CHANNEL "B" SHALL BE CONSTRUCTED AS NEAR TO PAVEMENT ELEVATION AS PRACTICAL TO INTERCEPT RUNOFF FROM THE COAL PAVEMENT, AS APPROVED BY THE ENGINEER.



BASELINE (SITE 1) CROSS SECTIONS

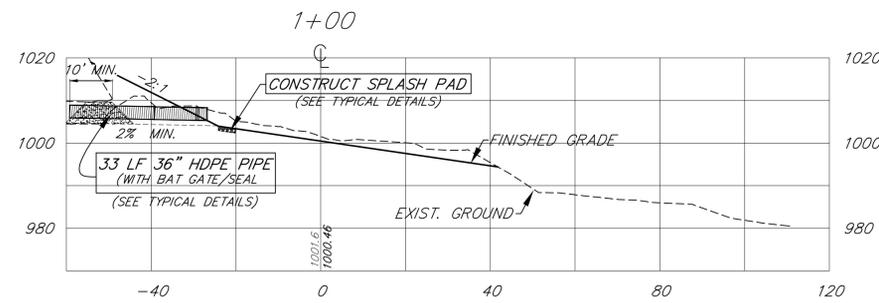
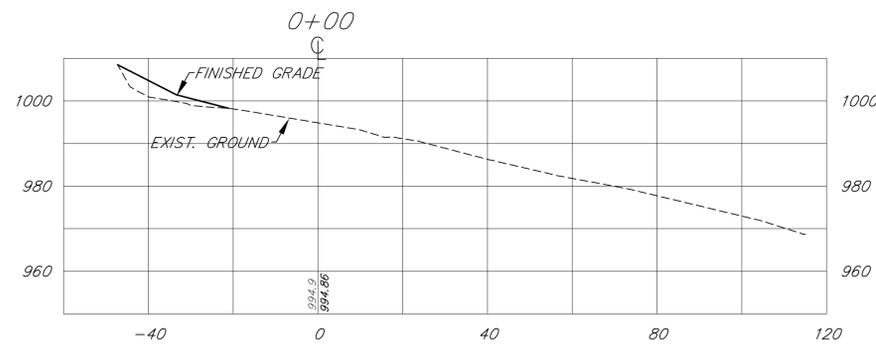
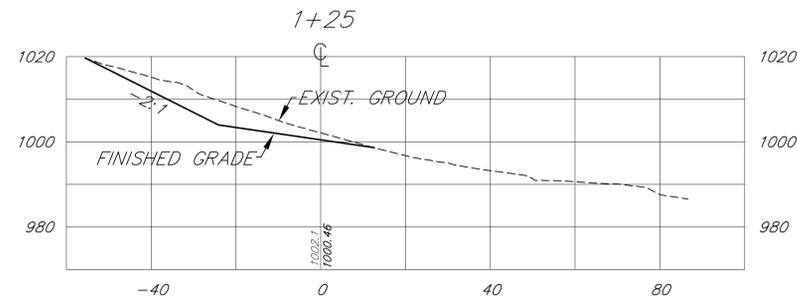
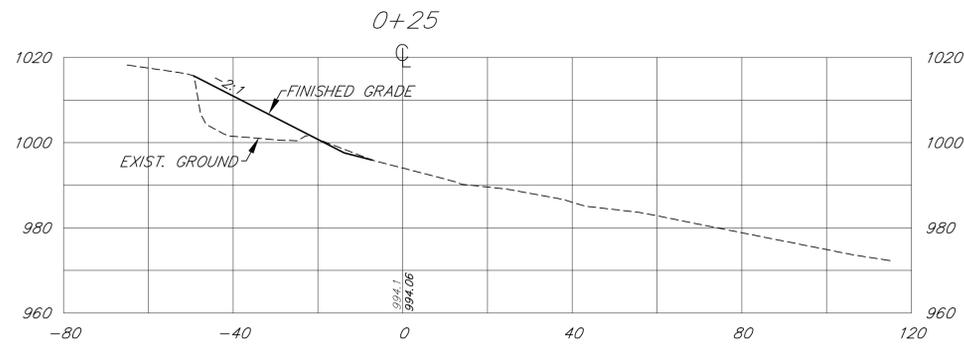
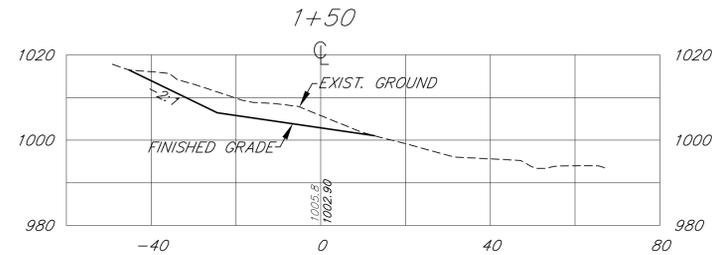
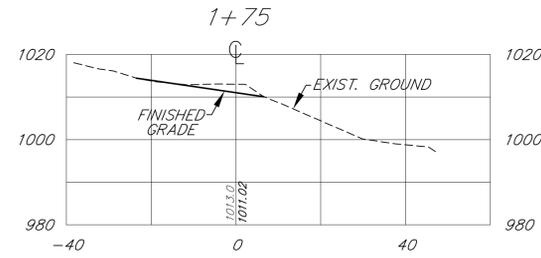
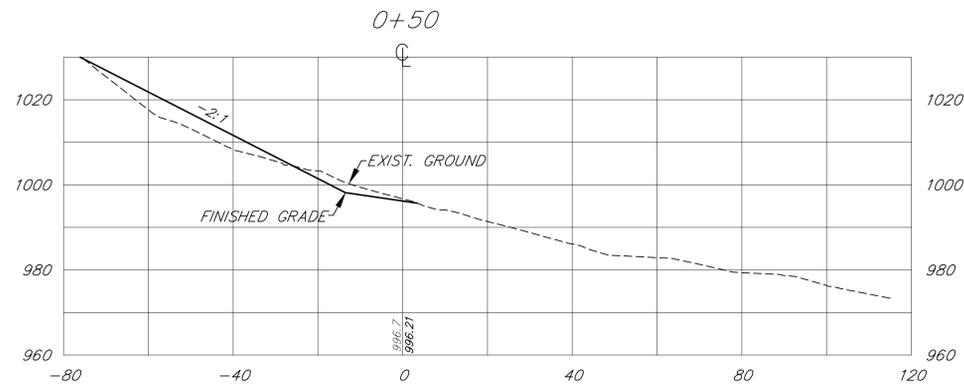
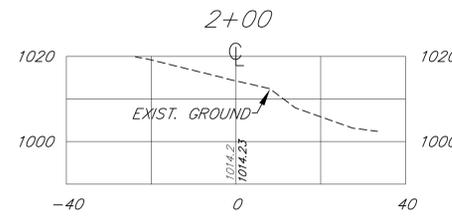
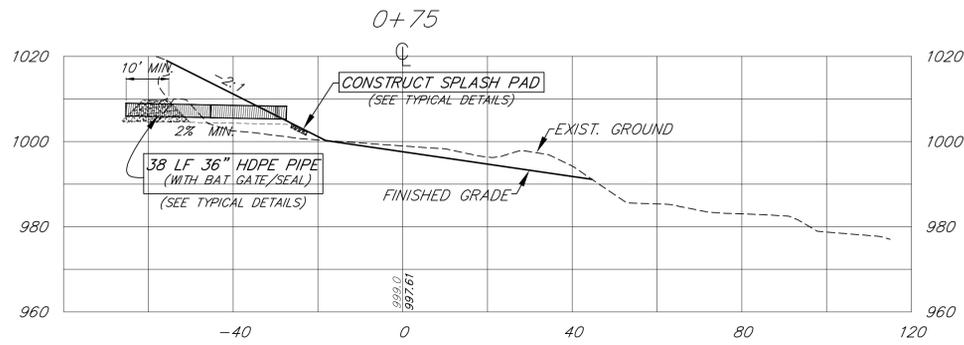
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

**SITE 1
BASELINE PROFILE,
CROSS SECTIONS AND
CHANNEL "B" PROFILE**

DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: 1" = 20'
SHEET NO. **10**
OF 15



NOTE: NO BORINGS WERE PERFORMED AT THIS SITE. COAL PAVEMENT ELEVATIONS ARE APPROXIMATE AND SHALL BE DETERMINED BY THE CONTRACTOR DURING EXCAVATION FOR THE BAT GATES. IT IS ANTICIPATED THAT ADJUSTMENTS TO THE HDPE BAT GATE PIPE ELEVATIONS MAY BE REQUIRED TO FIT FIELD CONDITIONS, AS APPROVED BY THE ENGINEER.

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

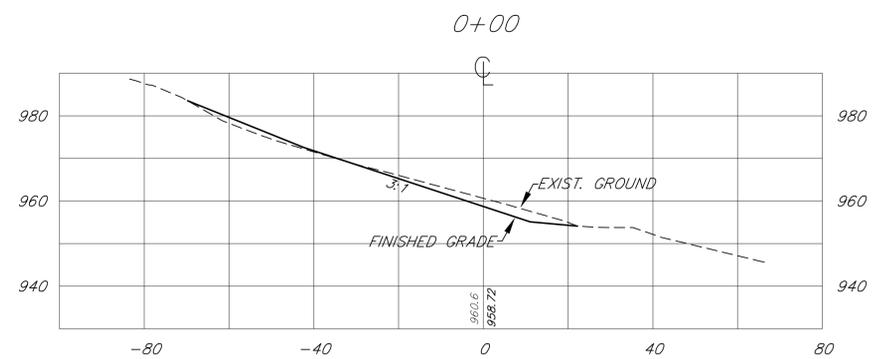
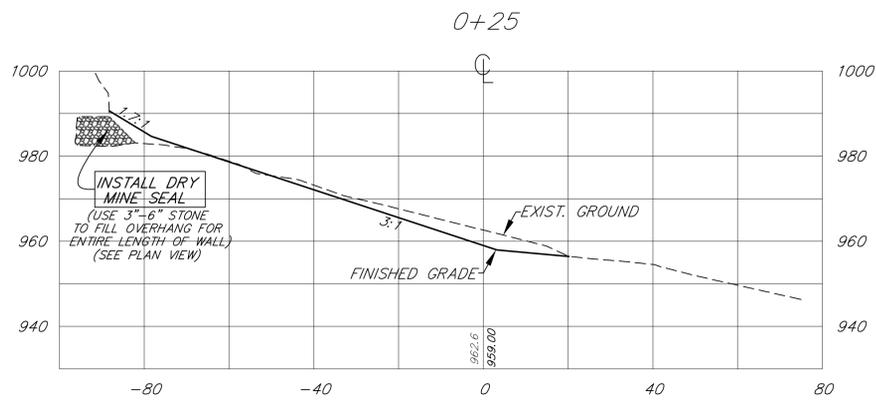
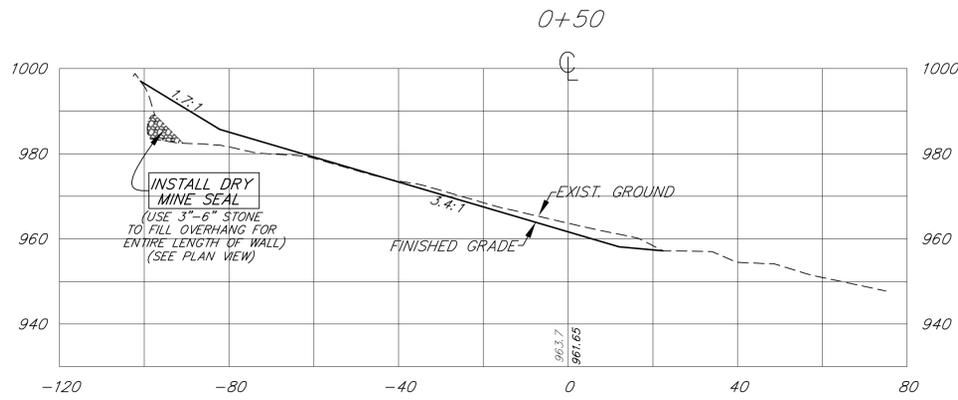
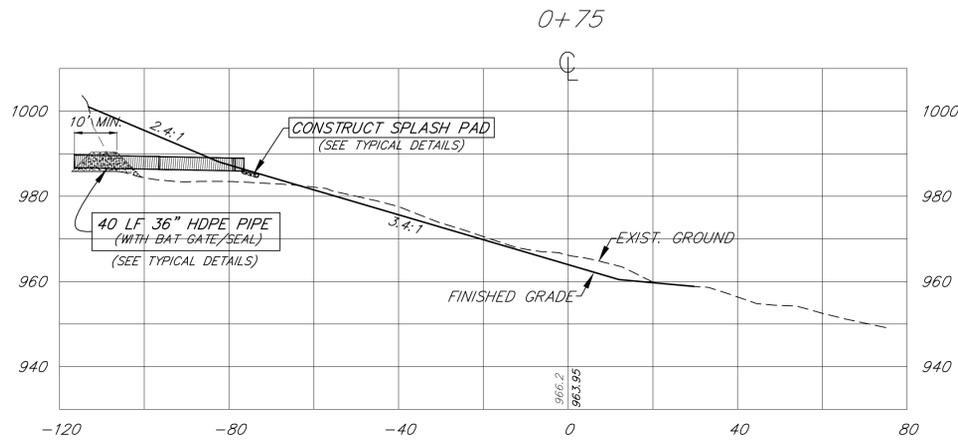
BEULAH CHAPEL PORTALS

**SITE 3
BASELINE "A"
CROSS SECTIONS**

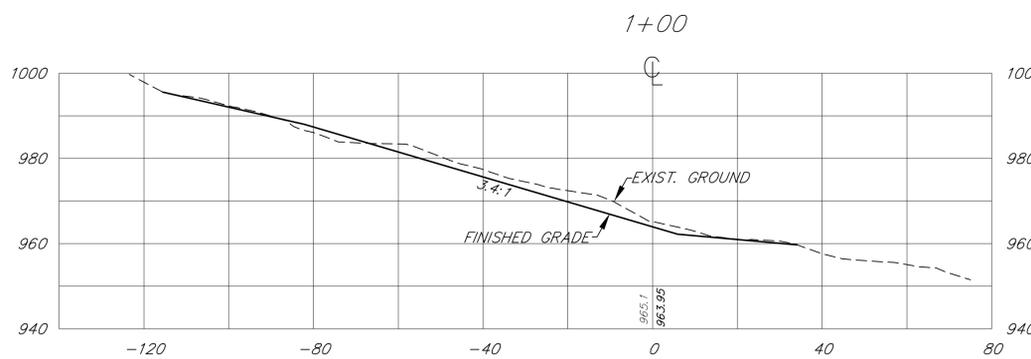
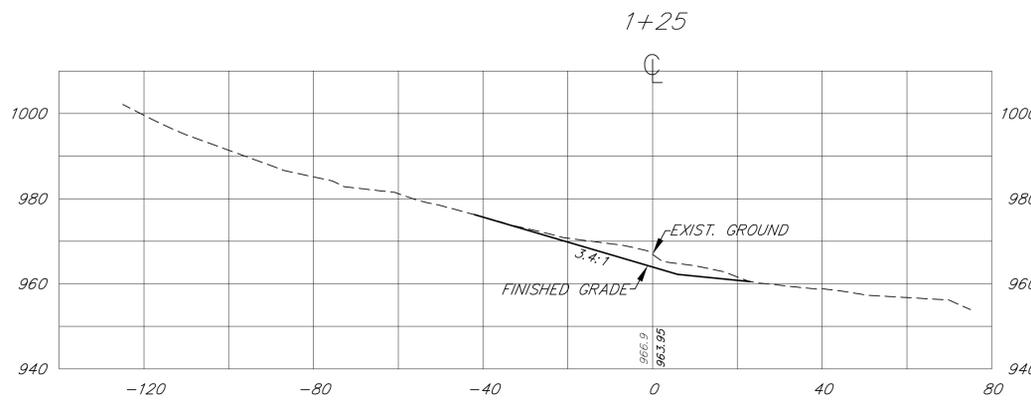
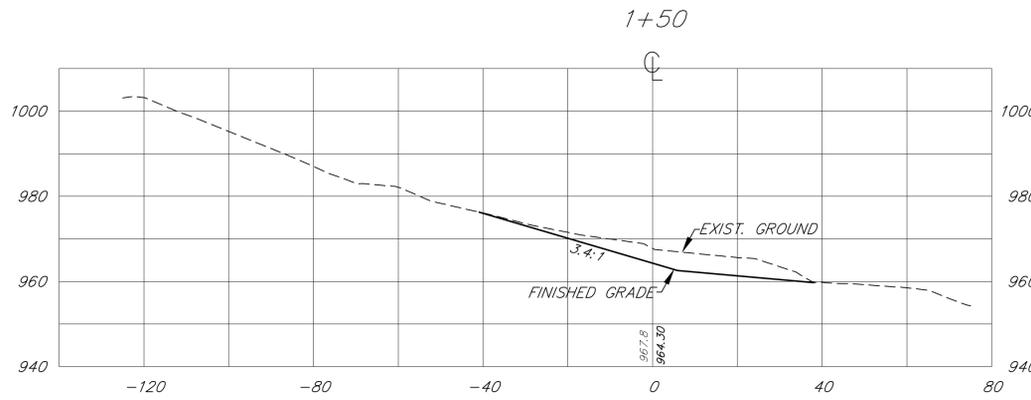
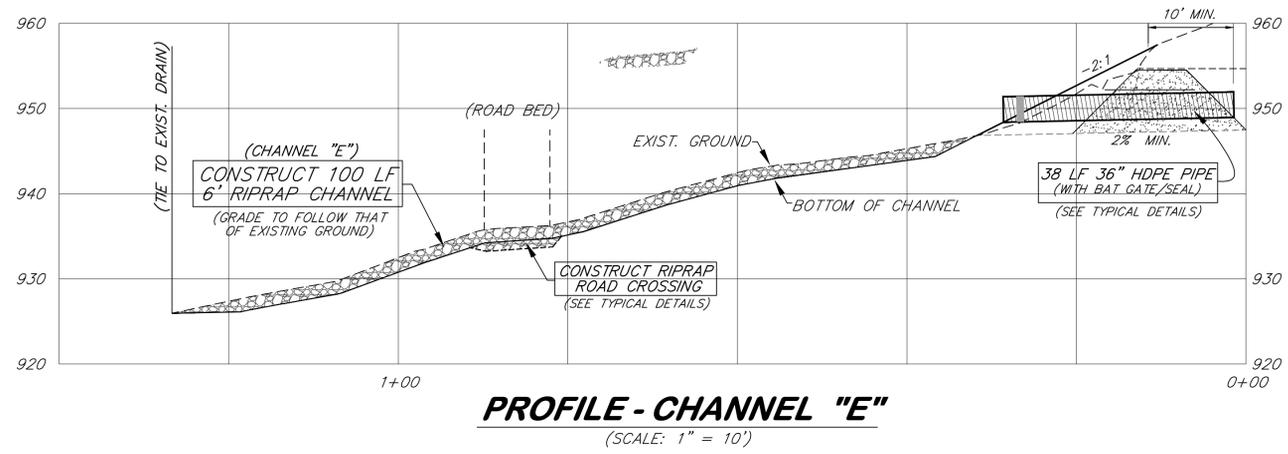
DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: 1" = 20'
SHEET NO. **11**
OF 15

BASELINE "A" (SITE 3) CROSS SECTIONS



BASELINE "B" (SITE 3) CROSS SECTIONS



NOTE: NO BORINGS WERE PERFORMED AT THIS SITE. COAL PAVEMENT ELEVATIONS ARE APPROXIMATE AND SHALL BE DETERMINED BY THE CONTRACTOR DURING EXCAVATION FOR THE BAT GATES. IT IS ANTICIPATED THAT ADJUSTMENTS TO THE HDPE BAT GATE PIPE ELEVATIONS MAY BE REQUIRED TO FIT FIELD CONDITIONS, AS APPROVED BY THE ENGINEER.

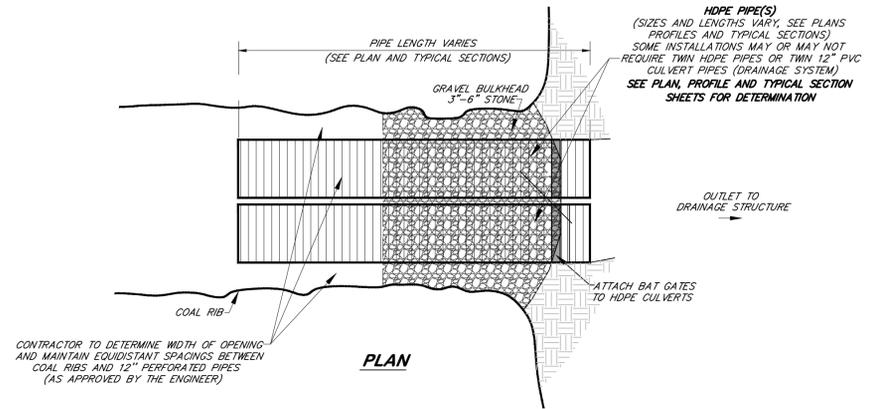
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

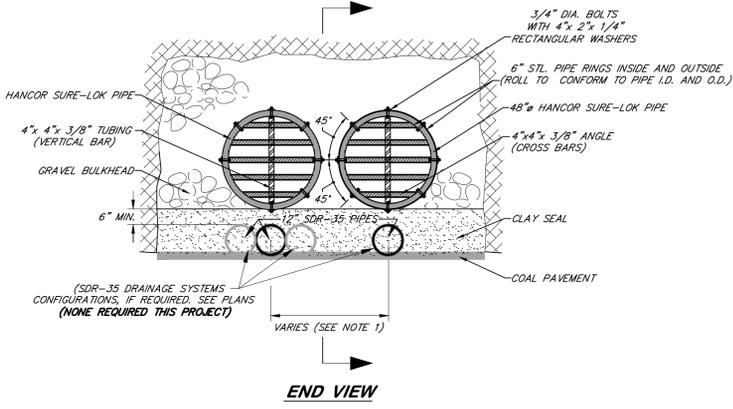
**SITE 3
BASELINE "B"
CROSS SECTIONS**

DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

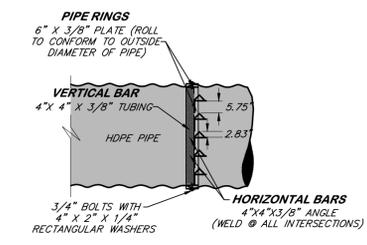
SCALE: 1" = 20'
(UNLESS NOTED)
SHEET NO. **12**
OF 15



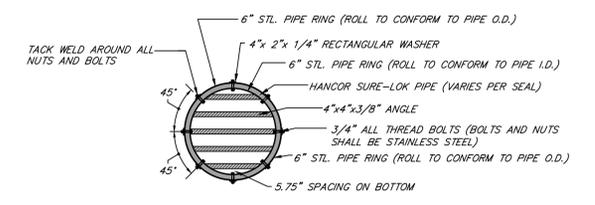
TYPICAL CONSTRUCTION DETAILS



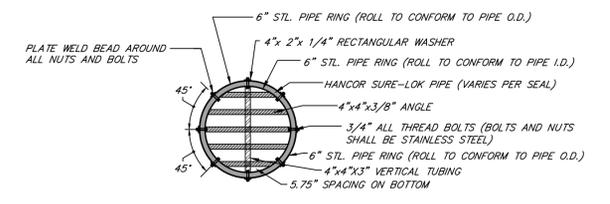
END VIEW



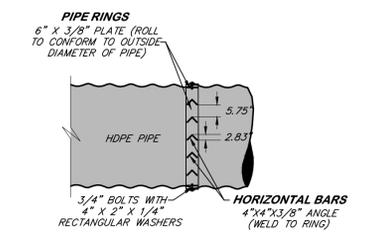
PIPE RING SECTION (WITH VERTICAL BAR(S))



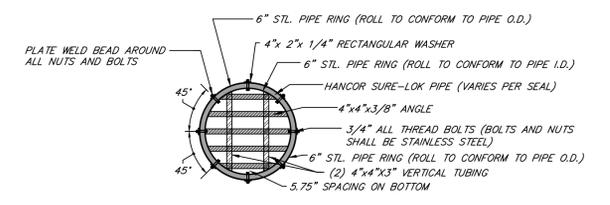
GATE DETAIL (CULVERT 36"-42" DIA) (ALL BAT GATE INSTALLATIONS FOR THIS PROJECT)



GATE DETAIL (CULVERT 48"-60")



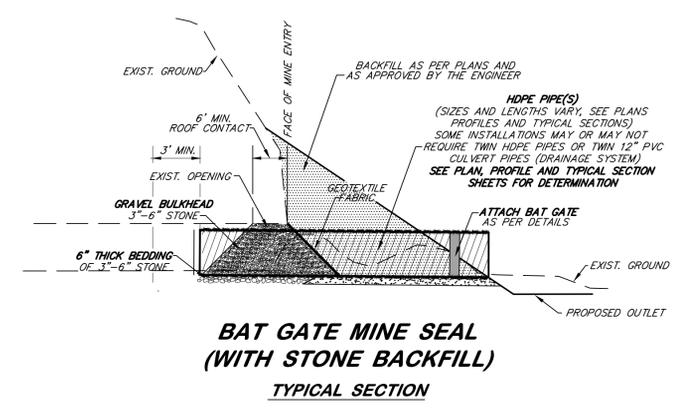
PIPE RING SECTION (WITHOUT VERTICAL BARS)



GATE DETAIL (CULVERT GREATER THAN 60" DIA)

BAT GATE DETAIL

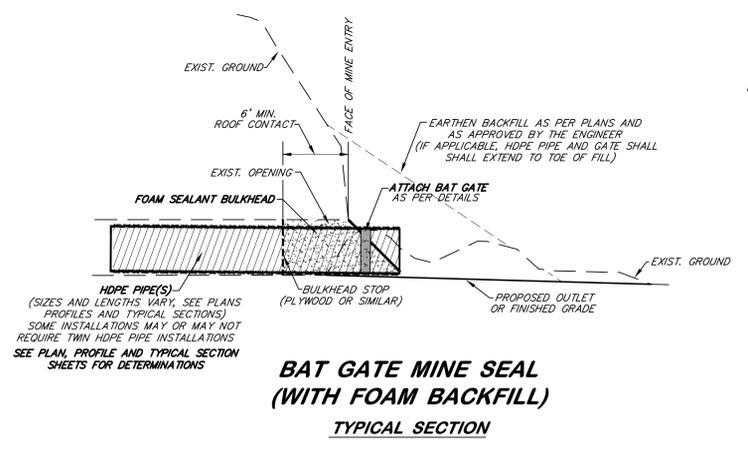
NOTE: ALL BAT GATE ATTACHMENTS ARE PRE-FABRICATED HDPE PLASTIC, AS DETAILED IN THE SPECIFICATIONS



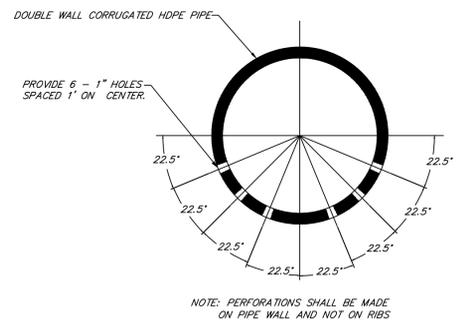
BAT GATE MINE SEAL (WITH STONE BACKFILL) TYPICAL SECTION

CLAY SEAL IS PROJECTED TO BE CONSTRUCTED FROM TOE OF BACKFILL AT END OF CULVERT TO FACE OF MINE ENTRY WITH STONE BEDDING BEING PLACED FROM MINE ENTRY FACE TO END OF CULVERT WITHIN PORTAL.

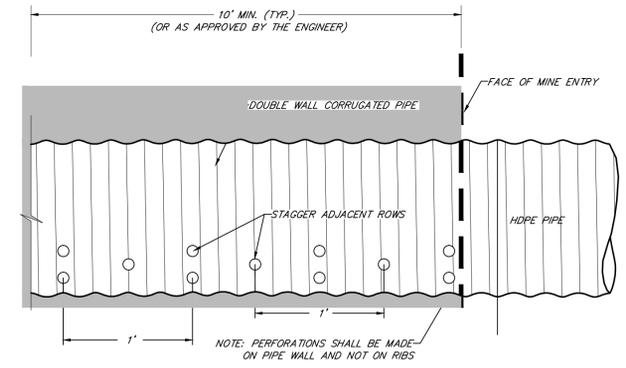
- NOTE 1- BAT GATE MINE SEALS #3, 4, 5 & 7 SHALL BE BACKFILLED WITH 3" STONE AND THE HDPE PIPE SHALL BE PERFORATED PER THE DETAIL SHOWN.
 BAT GATE MINE SEALS #9, 10, 11 & 12 SHALL BE BACKFILLED WITH FOAM SEALANT AND NO PERFORATIONS SHALL BE REQUIRED FOR THE HDPE PIPE.
- NOTE 2- HORIZONTAL BAR SPACINGS OF GATES ARE NOT TO BE ALTERED. AN ADDITIONAL HORIZONTAL "PLAT" BAR MAY BE REQUIRED TO MAINTAIN SPACINGS THROUGHOUT ENTIRE HEIGHT OF CULVERT. THESE MODIFICATIONS ARE TO BE APPROVED BY THE ENGINEER PRIOR TO BEING PERFORMED.
- NOTE 3- THERE ARE NO TWIN HDPE PIPE INSTALLATIONS REQUIRED FOR THIS PROJECT. THERE ARE REQUIREMENTS FOR THE DRAINAGE SYSTEM TO BE INSTALLED BENEATH THE HDPE PIPE AT CERTAIN LOCATIONS. (SEE PLAN SHEET AND TYPICAL SECTIONS)
- NOTE 4- WHERE AN HDPE PIPE IS INSTALLED WITHOUT A 12" SDR DRAINAGE SYSTEM, THE HDPE PIPE SHALL BE PERFORATED AS PER THE DETAIL SHOWN AND THE NO.1 STONE BEDDING SHALL EXTEND FOR THE ENTIRE LENGTH OF THE HDPE PIPE.
- NOTE 5- WHERE AN HDPE PIPE IS INSTALLED WITH A 12" SDR DRAINAGE SYSTEM, THE HDPE PIPE SHALL NOT REQUIRE PERFORATIONS AND MAY BE INSTALLED ON EITHER A POSITIVE OR NEGATIVE GRADE, AS FIELD CONDITIONS WARRANT.
- NOTE 6- WHERE A PROPOSED BAT GATE PIPE INSTALLATION IS SHOWN OR INDICATED AS BEING "INACCESSIBLE" BY CONSTRUCTION EQUIPMENT, IT IS DETERMINED THAT THE INSTALLATION WILL NOT REQUIRE A TYPICAL "STONE OR GRAVEL" BULKHEAD, AND WILL INSTEAD UTILIZE A FOAM SEALANT BULKHEAD. WHEN UTILIZING SAID MATERIAL, A BACKSTOP OR BARRIER SHALL BE PUT INTO PLACE TO PREVENT FOAM SEALANT FROM EXPANDING INTO THE MINE OPENING AS OPPOSED TO SEALING THE AREA BETWEEN THE PIPE AND THE MINE RIBS AND TOP. CUT AND SHAPED PLYWOOD, PRESSED WOOD/NAIVE ROCK SHALE, ETC. SHALL BE ACCEPTABLE MATERIALS FOR USE AS A BARRIER STOP, AS APPROVED BY THE ENGINEER.



BAT GATE MINE SEAL (WITH FOAM BACKFILL) TYPICAL SECTION



PERFORATION DETAIL



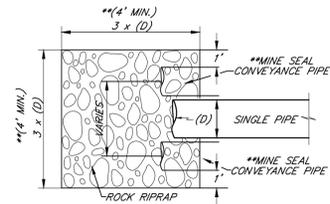
State of West Virginia
 Department of Environmental Protection
 Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

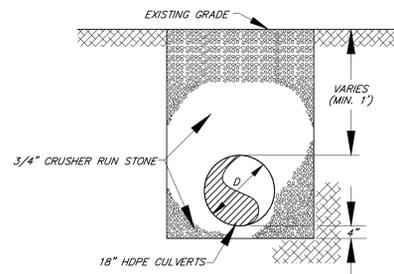
TYPICAL DETAILS (1)

DRAWN BY: DWH	SCALE: NONE
APPROVED BY: RL	SHEET NO. 13
DATE: 10/15/2014	OF 15

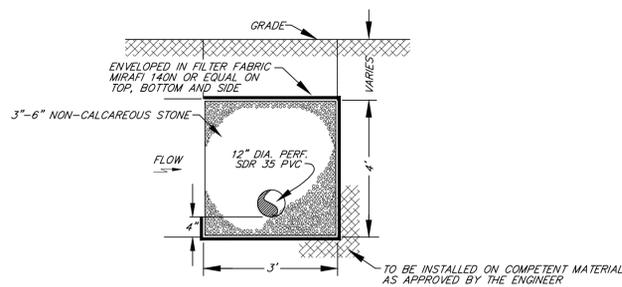
NOTE: WHEN INSTALLING FOR USE WITH BAT GATE PIPE ONLY, MIN. SIZE SHALL BE 1" MIN. BEYOND SIDEWALLS OF PIPE AND A MIN. OF 4' IN LENGTH



SPLASH PAD DETAIL

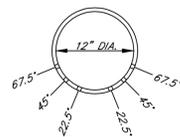


**ROAD CULVERT / PIPE TRENCH
TYPICAL SECTION**

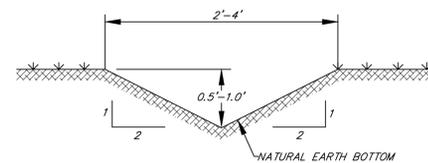


UNDERDRAIN DETAIL

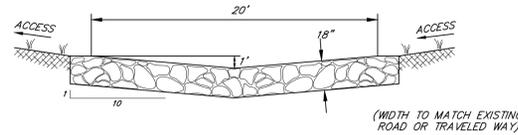
(ALL PIPE PERFORATIONS TO BE 1" DIA. ON 12" C-C ALONG LENGTH OF PIPE)



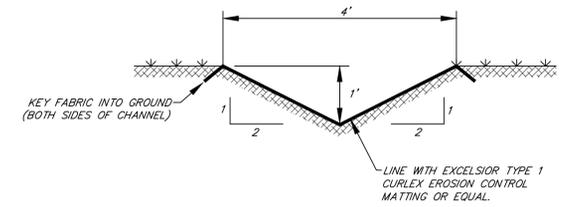
**PIPE PERFORATIONS
DETAIL**



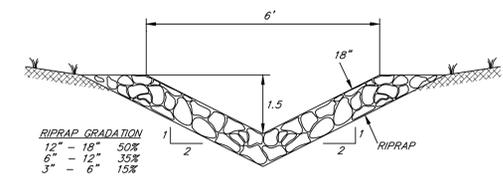
ROAD DITCH CLEANING



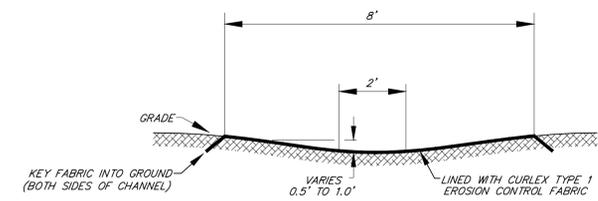
RIPRAP ROAD CROSSING



**4' GRASS LINED CHANNEL
(CHANNEL "C")**



**6' RIPRAP CHANNEL
(CHANNELS "B", "D" AND "E")**



**8' GRASS LINED SWALE
(CHANNEL "A")**

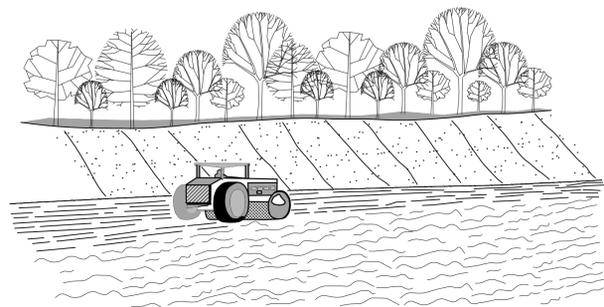
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

TYPICAL DETAILS (2)

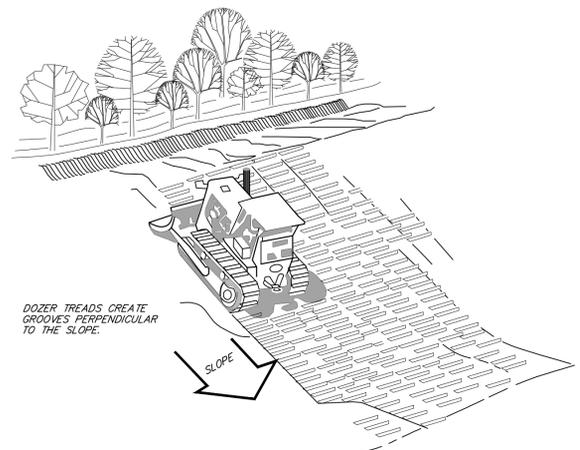
DRAWN BY: DWH
APPROVED BY: RL
DATE: 10/15/2014

SCALE: NOT TO SCALE
SHEET NO. **14**
OF 15



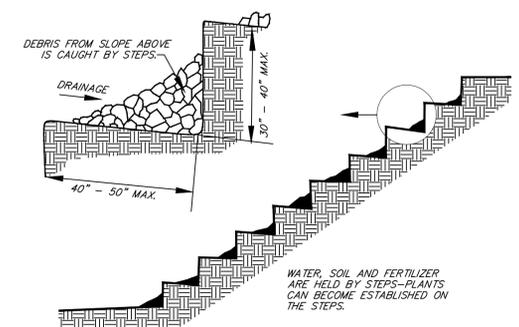
EACH LIFT OF THE FILL IS COMPACTED, BUT THE OUTER FACE OF THE SLOPE IS ALLOWED TO REMAIN LOOSE SO THAT THE ROCKS, CLODS, ETC. REACH THE NATURAL ANGLE OF REPOSE.

FILL SLOPE TREATMENT



DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE.

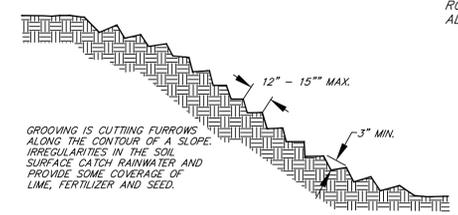
TRACKING



DEBRIS FROM SLOPE ABOVE IS CAUGHT BY STEPS.
DRAINAGE
30" - 40" MAX.
40" - 50" MAX.

WATER, SOIL AND FERTILIZER ARE HELD BY STEPS-PLANTS CAN BECOME ESTABLISHED ON THE STEPS.

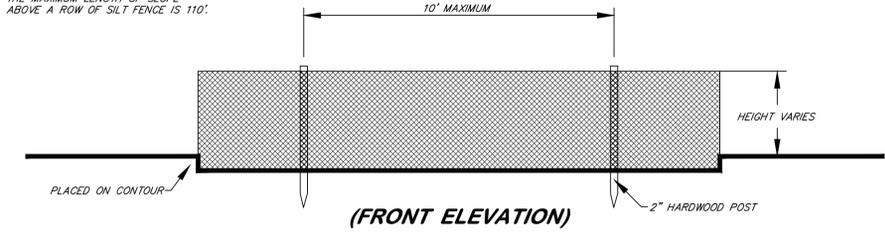
STAIR STEPPING CUT SLOPES



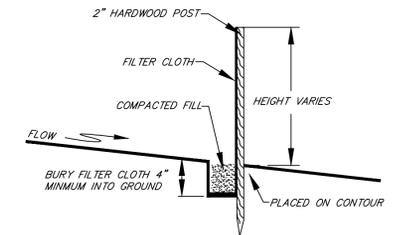
GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CAUGHT RAINWATER AND PROVIDE SOME COVERAGE OF LIME, FERTILIZER AND SEED.

GROOVING SLOPES

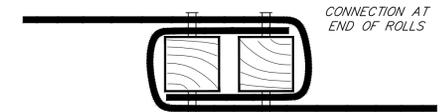
NOTE: THE MAXIMUM LENGTH OF SLOPE ABOVE A ROW OF SILT FENCE IS 110'.



(FRONT ELEVATION)



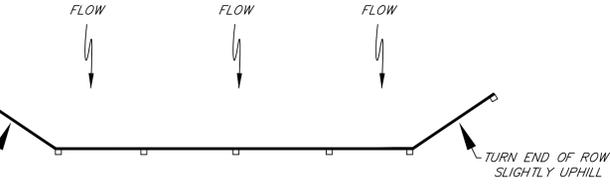
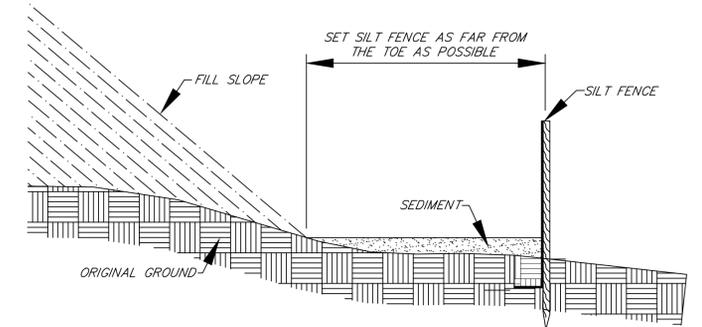
(SIDE ELEVATION)



(TOP VIEW)

SILT FENCE

(FIG. 3.27.2)



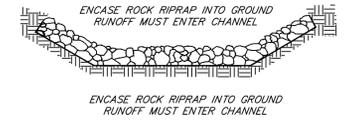
PLACEMENT OF SILT FENCE

(FIG. 3.27.1)

RIPRAP DIVERSION

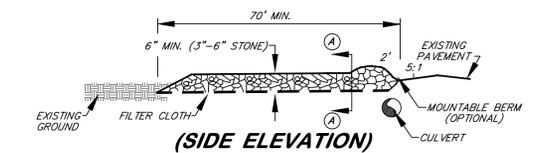
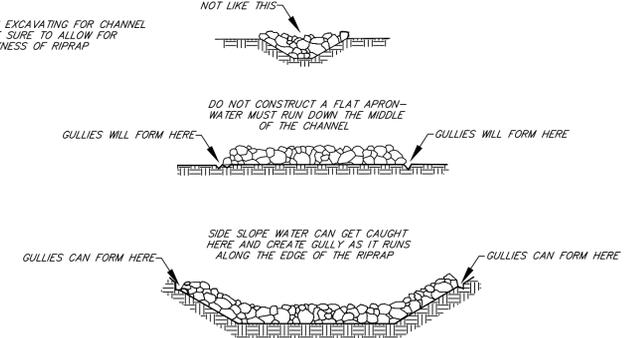
(FIG. 3.15.3)

USE A WIDE RANGE OF STONE SIZES DO NOT USE TOO BIG OF STONE

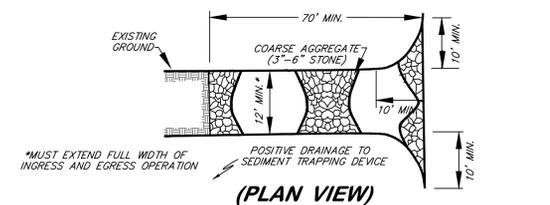


ENCASE ROCK RIPRAP INTO GROUND RUNOFF MUST ENTER CHANNEL

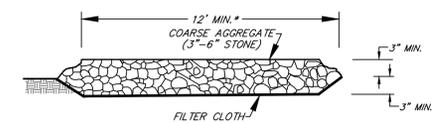
COMMON PROBLEMS



(SIDE ELEVATION)



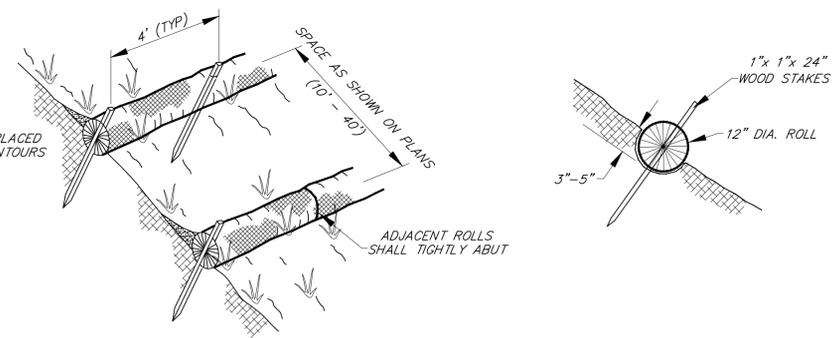
(PLAN VIEW)



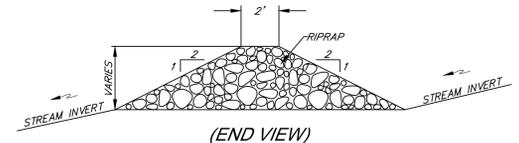
(SECTION A-A)

STONE CONSTRUCTION ENTRANCE

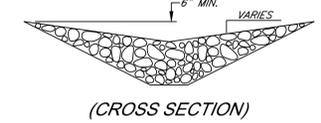
(FIG. 3.02.1)



12\"/>



(END VIEW)



(CROSS SECTION)

IN-STREAM ROCK CHECK DAM

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BEULAH CHAPEL PORTALS

**SEDIMENT CONTROL
TYPICAL DETAILS**

DRAWN BY: DWH	SCALE: NOT TO SCALE
APPROVED BY: RL	SHEET NO. 15
DATE: 10/15/2014	OF 15