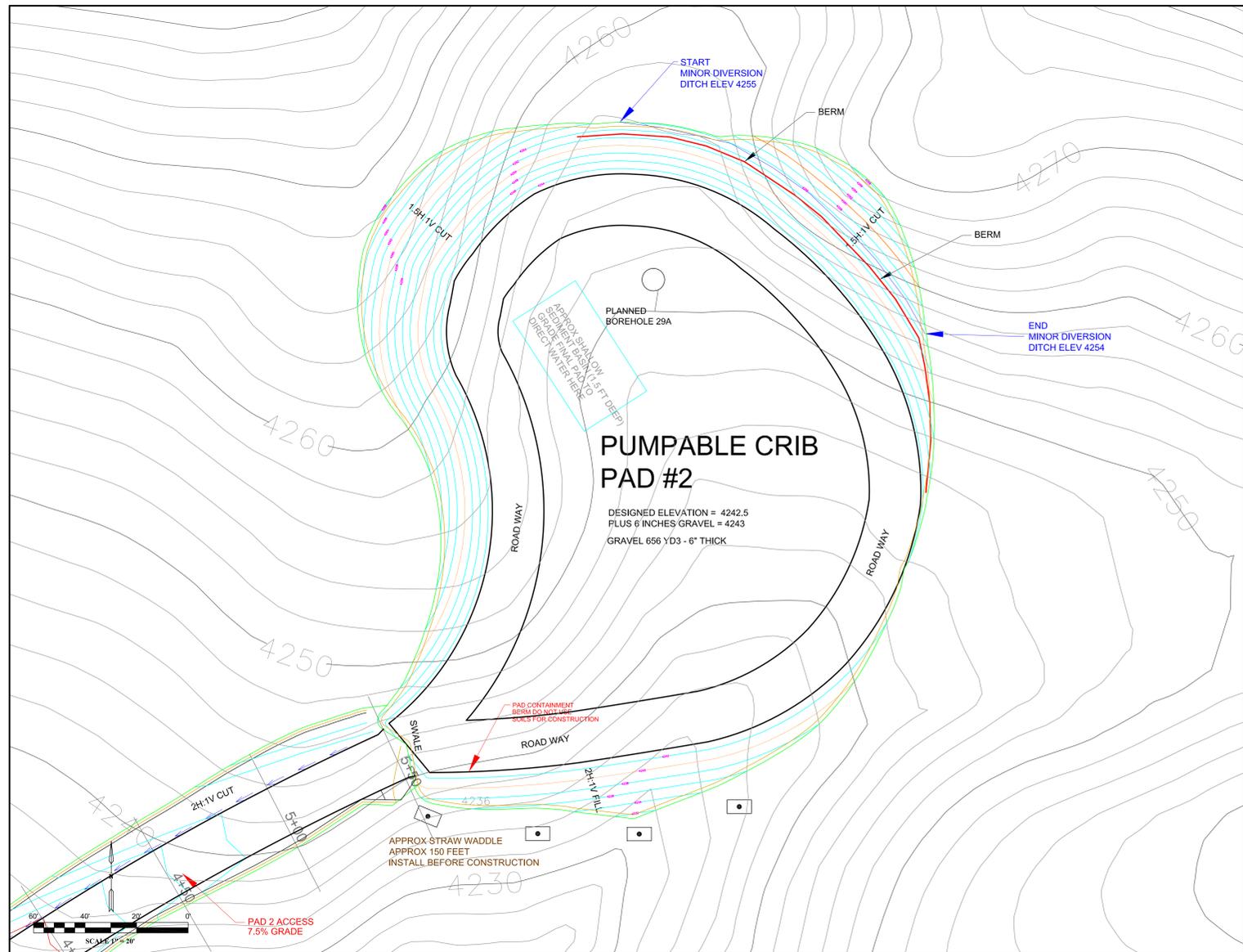


ESTIMATED PAD 2 ACCESS TOPSOIL SALVAGE
 Volumes by Triangulation (Prisms) Thu Oct 27 17:22:34 2011
 Existing Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2 MERGE PAD 2 DESIGN.in
 Final Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2 minus 1 ft.in
 Total inclusion area: 21,722.8 S.F., 0.50 Acres
 Average Cut Depth: 1.00 feet
 Export Volume: 804.5 C.Y.

ESTIMATED PAD 2 ACCESS SUBSOIL SALVAGE
 Volumes by Triangulation (Prisms) Thu Oct 27 17:23:03 2011
 Existing Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2 minus 1 ft.in
 Final Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2 minus 2 ft.in
 Total inclusion area: 20,641.6 S.F., 0.47 Acres
 Average Cut Depth: 1.00 feet
 Export Volume: 764.5 C.Y.

ESTIMATED PAD 2 ACCESS DIRTWORK AFTER SOILS SALVAGE
 Volumes by Triangulation (Prisms) Thu Oct 27 17:31:05 2011
 Existing Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2 minus 2 ft.in
 Final Surface: J:\AutoCAD\Special Projects\PUMP CRIB PAD 2 & 17 DRAINAGE PUMP CRIB PAD 2\SURFACES\PUMP 2 ACCESS DESIGN.in
 Cut volume: 13,928.9 C.F., 515.88 C.Y.
 Fill volume: 25,854.1 C.F., 957.56 C.Y.
 Total inclusion area: 19,675.0 S.F., 0.45 Acres
 Average Cut Depth: 1.72 feet
 Average Fill Depth: 2.00 feet
 Cut to Fill ratio: 0.54
 Import Volume: 441.7 C.Y. (IMPORT APPROX 7 INCHES OF GRAVEL OR SCORIA FOR ACCESS)



ESTIMATED PAD 2 TOPSOIL SALVAGE
 Volumes by Triangulation (Prisms) Wed May 09 15:56:09 2012
 Existing Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\PRE CONSTRUCTION PAD 2.in
 Final Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\ARCHIVES\PRE CONSTRUCTION PAD 2 minus 1 ft.in
 Total inclusion area: 48,808.6 S.F., 1.12 Acres
 Average Cut Depth: 1.00 feet
 Export Volume: 1,809.6 C.Y.

ESTIMATED PAD 2 SUBSOIL SALVAGE
 Volumes by Triangulation (Prisms) Wed May 09 15:57:05 2012
 Existing Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\ARCHIVES\PRE CONSTRUCTION PAD 2 minus 1 ft.in
 Final Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\ARCHIVES\PRE CONSTRUCTION PAD 2 minus 2 ft.in
 Total inclusion area: 47,594.2 S.F., 1.09 Acres
 Average Cut Depth: 1.00 feet
 Export Volume: 1,762.7 C.Y.

ESTIMATED PAD 2 DIRTWORK AFTER SOILS SALVAGE
 Volumes by Triangulation (Prisms) Wed May 09 15:58:25 2012
 Existing Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\ARCHIVES\PRE CONSTRUCTION PAD 2 minus 2 ft.in
 Final Surface: J:\SURFACE PROJECTS\PUMP CRIB PAD 2 & 17 DRAINAGE RD\PUMP CRIB PAD 2\SURFACES\PAD MERGED.in
 Cut volume: 126,899.6 C.F., 4,699.99 C.Y.
 Fill volume: 54,434.9 C.F., 3,016.11 C.Y.
 Total inclusion area: 33,910.6 S.F., 0.78 Acres
 Average Cut Depth: 5.98 feet
 Average Fill Depth: 4.30 feet
 Cut to Fill ratio: 1.55
 Export Volume: 1,683.9 C.Y.

- DIRTWORK VOLUMES**
- NOTES:**
- See MAP 308-4 for general location of pad
 - Most of the sediment control features need to be installed prior to construction
 - Do not begin any pad construction until soils excavation has been validated
 - Strip all available topsoil up to a maximum of 1 foot deep
 - Strip all available subsoil up to a maximum of 2 feet deep
 - DO NOT disturb anything outside the topsoil stripping perimeter shown
 - Existing contours from June 2009 Fugro Horizons
 - PMT will be original Topography
 - All soils salvage will be placed in Pumpable Crib Pad #1 Stockpiles

LEGEND

	2' Design Contour
	10' Existing Contour
	2' Existing Contour
	Approximate Berm
	Approximate Sediment Control
	Tree

PAD DESIGN
 T6NR27E NW¼ OF SECTION 29

REV.	DATE	BY	DESCRIPTION
2	9/6/12	S.T.E.	APPROVED PERMIT UPDATE
1	5/9/12	S.T.E.	UPDATE TO PUMPABLE CRIB PAD #2
0	10/31/11	D.R.W.	PREPARED FOR PERMIT SUBMITTAL

CERTIFICATION PURSUANT TO §17-24-301(b)

BULL MOUNTAINS MINE NO. 1
Permit C1993017

MUSSELSHELL AND YELLOWSTONE COUNTIES
 September 6, 2012

MAP 308-8
PUMPABLE CRIB PAD 2 & ACCESS DESIGN

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THE PLANS AND DRAWINGS FOR EACH ROAD, ACCESS ROAD, COVERED RAILROAD ADJACENT AND LOW WATER CROSSING OF PERMANENT AND INTERMITTENT STREAMS SHOWN THEREON (1) AND (2) ARE PREPARED BY OR UNDER THE DIRECTION OF, AND CERTIFIED BY ME, A QUALIFIED LICENSED PROFESSIONAL ENGINEER WITH EXPERIENCE IN THE DESIGN AND CONSTRUCTION OF SUCH FACILITIES AND THAT THE DESIGN MEETS THE PERFORMANCE STANDARDS OF ARM 17-24-601, 17-24-602, 17-24-603, 17-24-605, AND CURRENT PRUDENT ENGINEERING PRACTICES.