CM-25 MINE PERMIT AMENDMENT

APPLICATION PERMIT No. M-1977-307

Response to Adequacy Review #4

RECEIVED
APR 15 2013
GRAND JUNCTION FIELD OFFICE
DIVISION OF
RECLAMATION MINING & SAFETY

April 2013

Prepared by Cotter Corporation (N.S.L.)

AND

O'Connor Design Group, Inc.

2350 G Road ~ Grand Junction, CO 81505 ~ (970) 241-7125

Cotter Corporation (N.S.L.) ("Cotter") submits this response to the February 28, 2013, letter from Dustin Czapla, Division of Reclamation, Mining and Safety ("DRMS"), to Glen Williams, Cotter. The DRMS's comments are in italics and Cotter's responses are in bold.

CM-25 Mine, File No. M-1977-307, Amendment (AM1) Application Adequacy Review (4)

1. *Page 1, Response la - "possible liner". The DRMS agrees this area should have a liner to collect potential leachate and prevent it from entering the underlying waste rock. Based on the drawing provided in Attachment 2, the DRMS has four concerns in addition to the unaddressed compaction and permeability specifications requested in the original Comment la:*
    a. *A six-inch liner is insufficient. The DRMS requires a minimum clay liner thickness of 12 inches.*
    b. *In order for the leachate collection system to function properly, it needs to be drained by gravity and have a lined collection pond or receptacle. Please provide drawings to indicate the expected drainage system slope and a collection pond/receptacle to separate collected leachate from the environment.*
    c. *Please explain how the clay liner will be protected from desiccation cracking that could cause the liner to leak.*
    d. *The liner needs a leak detection system to ensure the leachate collection system is functioning properly. Please provide a description and drawings for a leak detection system.*
    e. *Please provide the originally requested compaction and permeability specifications for the clay liner.*

    A new liner for the ore pad is proposed in the revised drawings included with these responses to address the original concern of possible leachate entering the waste rock pile under the pad. Attachment 1 is a schematic of the proposed ore pad liner. It consists of a 30 mil (min.) pvc geomembrane liner covered with twelve inches of native soil to provide integrity protection. Local soils that have a high clay content will be preferentially selected to

provide an additional level of protection. This type of liner should eliminate concerns regarding compaction requirements and potential cracking of a clay liner.

The liner will also address recent concerns discussed with the DRMS of fines from the ore pile migrating to the underlying waste rock pile that could result in additional reclamation costs if post-reclamation radiation surveys were to show higher values in the waste rock pile.

The liner provides a very conservative measure of protection, taking into account SPLP tests and geochemical conditions. SPLP tests were conducted on the waste rock at the CM-25 mine. On the basis of these tests, acid mine drainage from uranium mining is not an issue for concern. In addition, geochemical conditions of high alkalinity, montmorillonitic clay soils that exhibit high cation exchange capacities, and an arid environment where infiltration of precipitation is limited to the upper few centimeters of soil all provide a sound technical position that the CM-25 Mine will have no significant impact on the surrounding environment.

In response to the comment regarding a leachate collection system, the geomembrane liner and cover material should contain all potential run-off from the ore pad area. The limited time that ore is exposed on the contained ore pad should not result in significant leachate, and any precipitation falling in the ore pad area should evaporate as a result of the extremely arid environment prior to any potential leachate escaping to the environment.

2. *Page 6, Response 5 — pond reclamation. Stormwater ponds require maintenance to prevent embankment breaching and/or headcutting which leads to long-term erosion problems. In addition, the Division of Water Resources may require the release of stormwater within 72 hours if there is a call on the river. As such the DRMS requires the retention pond to be reclaimed so that stormwater is not retained unless the land owner*

intends to use and maintain the pond after mine reclamation. Please provide revised reclamation plans for the pond or documentation demonstrating the land owner intends to maintain the structure.

Revised drawings are included in Attachment 2 (sheet 5a of 6) to illustrate the ultimate removal and reclamation of a portion of the pond embankment to the level of the pond bottom, which will allow flows to pass through the system after cessation of mining activities and reduce long-term erosion potential. A low-water drain is also included for release of detained water from the pond bottom during normal operation, as requested. This drain is illustrated in portions of Attachment 3 (sheets 4 and 5 of 6).

Drawings:

3. *Pages 22, 33 — 36. Pursuant to Rule 7.3.1, certified designs and specifications for engineered elements associated with the environmental protection plan (EPP) are required. Please provide these drawings stamped and signed by the appropriate Colorado registered professional engineer.*

The drawings found on pages 22 and 33-36 have been stamped and signed by a Colorado registered professional engineer and are included as Attachment 3.

General Comment:

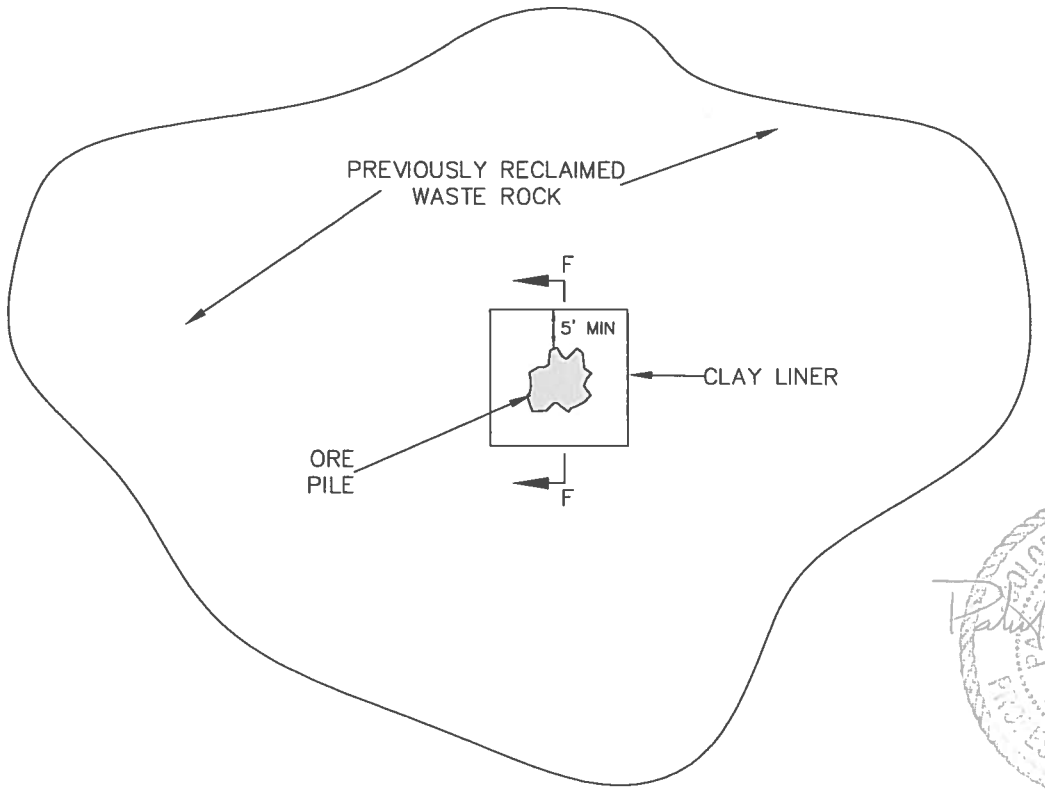
4. *The apparently electronically pasted drawings in Attachments 2, 3 and 4 are very difficult, if not in some cases impossible to read. Please provide first generation drawings in future submittals to facilitate DRMS's understanding of the intended design.*

First generation drawings of Attachments 2, 3, and 4 found in the Application Adequacy Review (2) are being submitted to the Division and are included as Attachment 3.

5. *There is a page numbering discrepancy between Attachment 2 (page 22) and Attachment 3 (page 33). The DRMS assumes pages 23 - 32 are not missing. If this is not the case, please provide pages 23-32.*

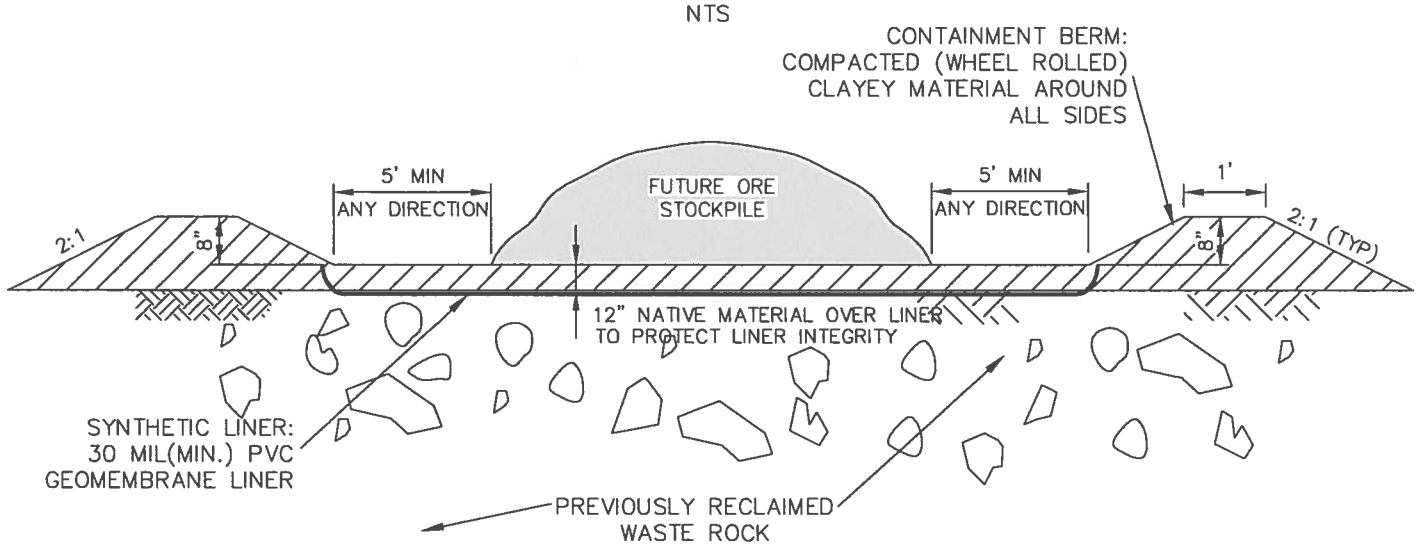
   There are no pages missing from the Application Adequacy Review (2). There was a numbering error and page 33-43 should have been numbered 23-33.

ATTACHMENT 1



TYPICAL MINE SITE PLAN (SCHEMATIC)

NTS



SECTION F-F

NTS

COTTER CORPORATION
MINE SITE CM-25
PREPARED BY:
O'CONNOR DESIGN GROUP

ATTACHMENT 2

AT CESSATION OF MINING AS A PART OF FINAL RECLAMATION: REMOVE PORTION OF POND EMBANKMENT AS SHOWN TO ALLOW COMPLETE DRAINAGE OF RETENTION POND. RECLAIM DISTURBED AREAS IN ACCORDANCE WITH SPECIFICATIONS PROVIDED FOR SITE RECLAMATION.

5740
5735
5730
5725
5720
5715
5710
5709
5711
5712
5713

D
D

5' TOP

PROPOSED RETENTION POND EMBANKMENT (SEE SECTION D–D)

PROPOSED BERM

N

0 10 20 40

SCALE: 1" = 20'
CONTOUR INTERVAL = 1 FOOT

LEGEND

5800 CONTOUR LINE

Reclaimed Waste Pile

4/14/13

REVISION ⚠ PMO DATE 12/15/2012	DRAWN BY RLC DATE 8/24/2012	O'Connor Design Group, Inc.
REVISION ⚠ PMO DATE 3/22/2013	DESIGNED BY PMO DATE 8/24/2012	2350 G Road Grand Junction, Co. 81505 Phone: (970) 241-7125 Fax: (970) 241-7852
REVISION ⚠ ____ DATE ____	CHECKED BY PMO DATE 8/24/2012	

RETENTION POND: POST-RECLAMATION CONFIGURATION
COTTER CORPORATION MINE CM-25

SHEET 5A OF 6

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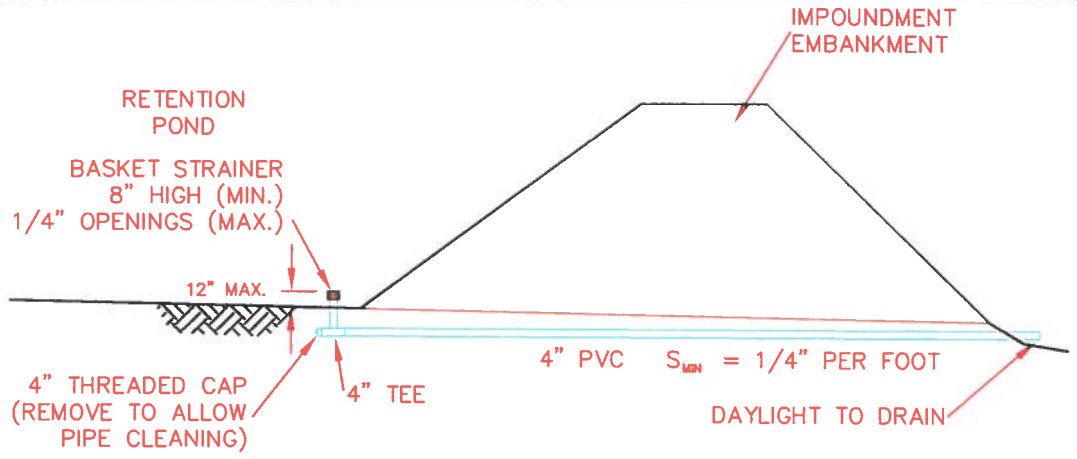
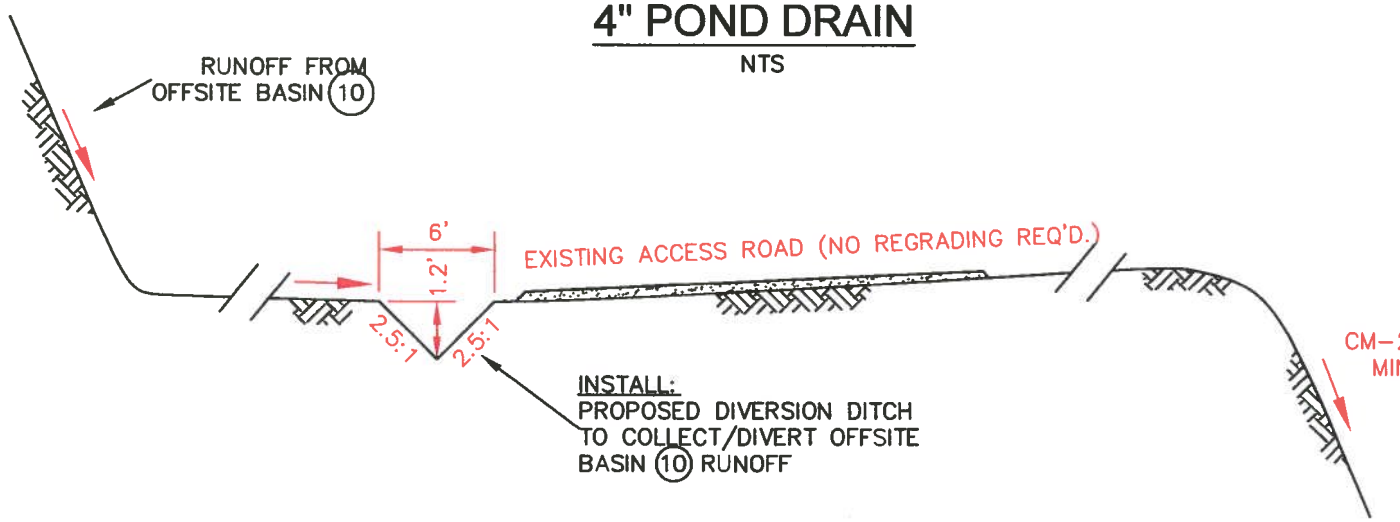
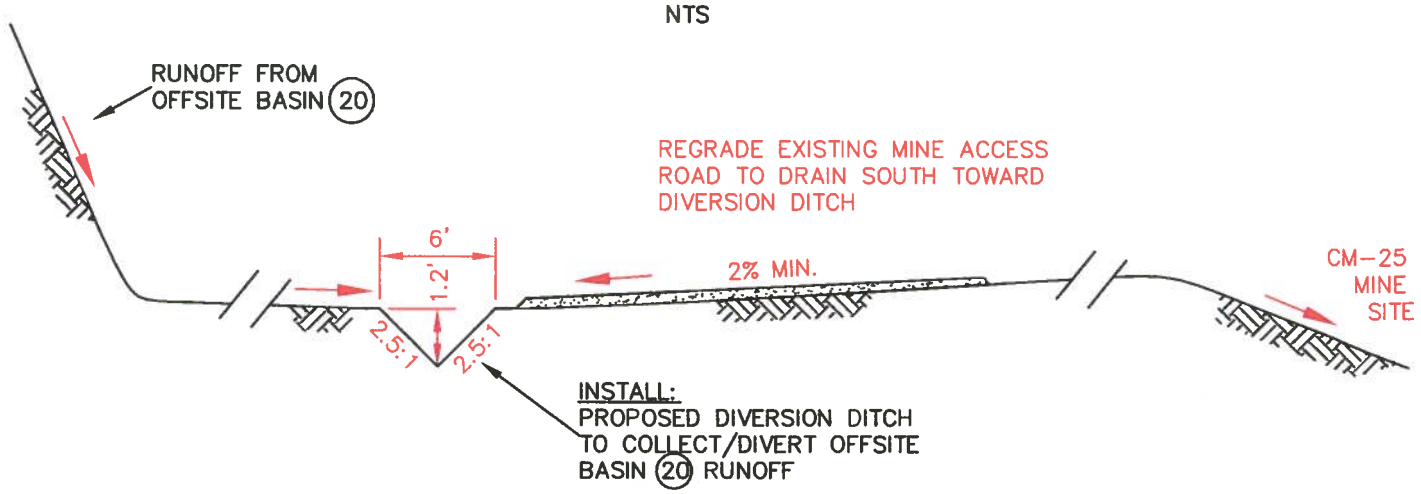
ATTACHMENT 3



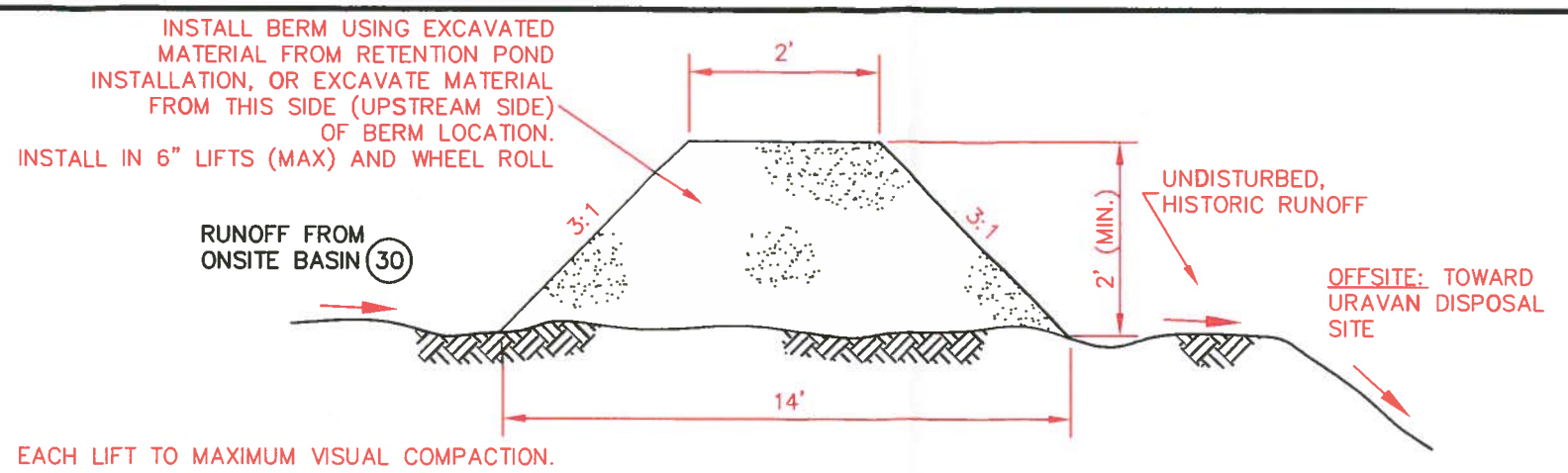
4" POND DRAIN
NTS



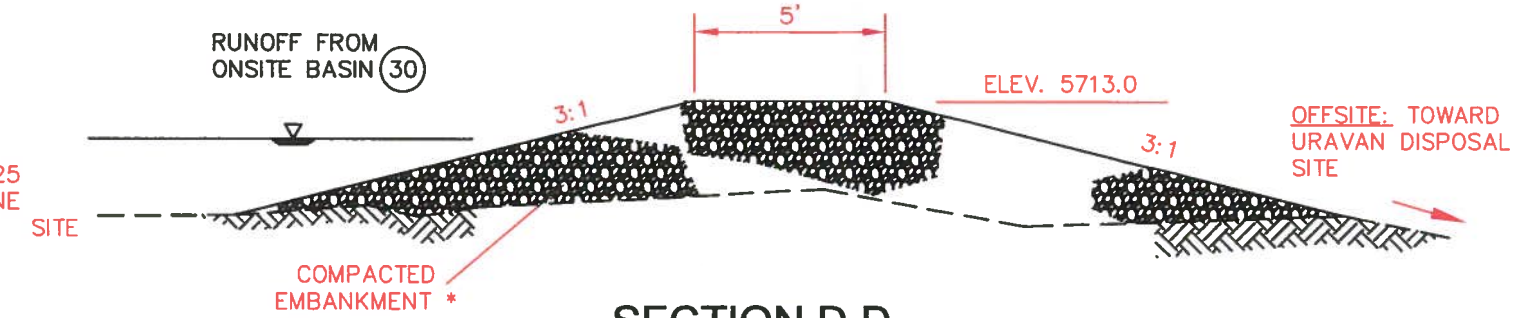
SECTION A-A
NTS



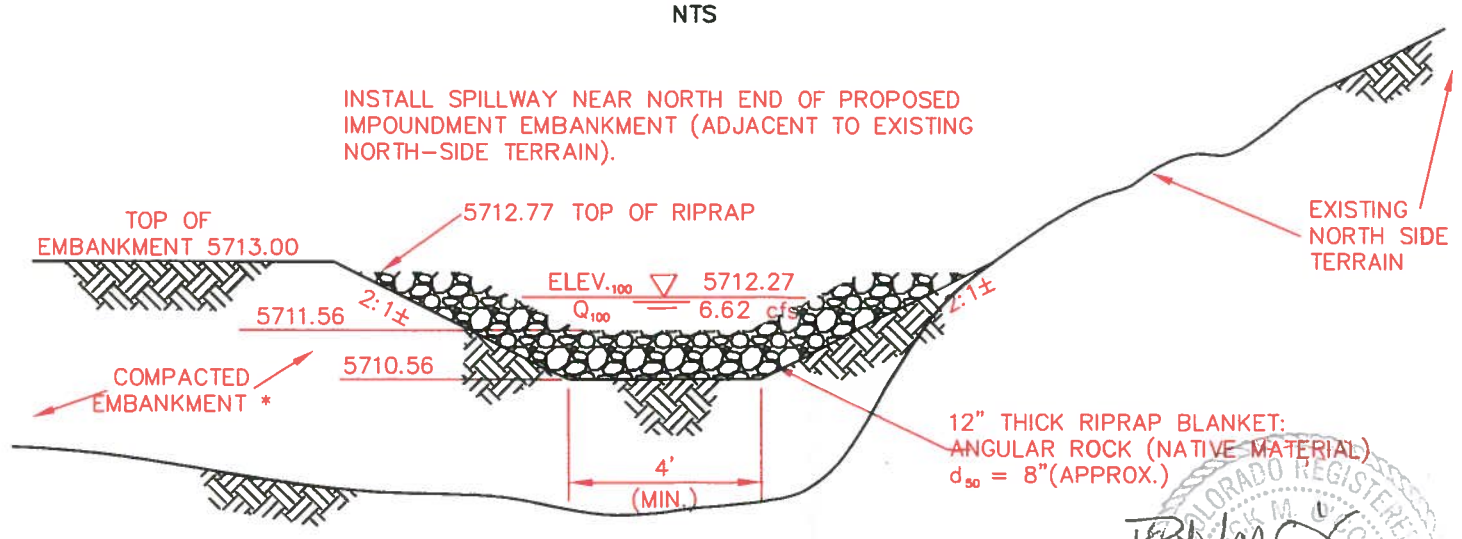
SECTION B-B
NTS



SECTION C-C
NTS



SECTION D-D
NTS



* – USE NATIVE MATERIAL FROM DETENTION POND EXCAVATION. INSTALL AS LOCATED ON PLAN IN 6" LIFTS (MAXIMUMUM). WHEEL ROLL EACH LIFT TO MAXIMUM VISUAL COMPACTION.

SECTION E-E
NTS

COLORADO REGISTERED PROFESSIONAL ENGINEER — Paul M. O'Connor — 20759 — 4/14/13

REVISION 1 PMO DATE 12/15/2012 REVISION 2 PMO DATE 3/22/2013 REVISION 3 ____ DATE ____	DRAWN BY RLC DATE 8/24/2012 DESIGNED BY PMO DATE 8/24/2012 CHECKED BY PMO DATE 8/24/2012	O'Connor Design Group, Inc. 2350 G Road Grand Junction, Co. 81505 Phone: (970) 241-7125 Fax: (970) 241-7852	DIVERSION CHANNEL AND BERM SECTIONS DRAINAGE DESIGN PLAN COTTER CORPORATION MINE CM-25

SHEET 4 OF 6

C:\Land Projects 2009\COTTER CORPORATION CM-25\dwg\CM-25DRAINAGE-sections.dwg, 4/12/2013 4:10:47 PM, Rick

5740
5735
5730
5725
5720
5715
5710
5709
5711
5712
5713

-SPILLWAY-
12" THICK RIPRAP BLANKET
NATIVE ROCK (ANGULAR)
d_{50} = 8" (APPROX.)
(SEE SECTION)

E
E

D
D

4" DRAIN
SEE DETAIL
ON SHEET 4

PROVIDE RIPRAP TO FULL
EXTENT OF DISTURBED/REGRADED
CHANNEL(1' DEPTH, MINIMUM)

5'
TOP

PROPOSED RETENTION POND
EMBANKMENT (SEE SECTION D-D)

PROPOSED BERM

N

0 10 20 40
SCALE: 1" = 20'
CONTOUR INTERVAL = 1 FOOT

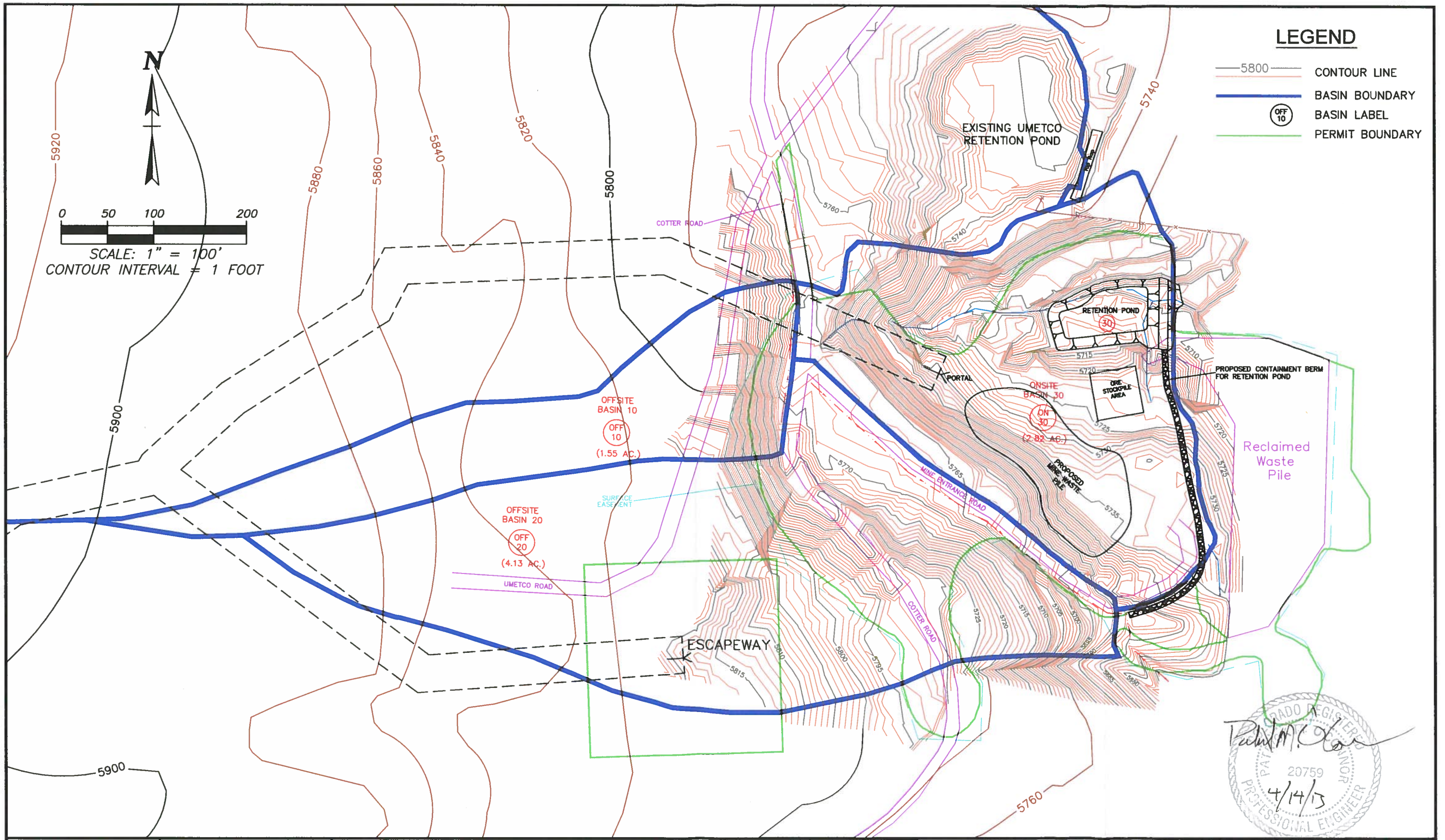
LEGEND

5800 CONTOUR LINE

Reclaimed
Waste
Pile

REVISION ⚠ PMO DATE 12/15/2012 REVISION ⚠ PMO DATE 3/22/2013 REVISION ⚠ ____ DATE ____	DRAWN BY RLC DATE 8/24/2012 DESIGNED BY PMO DATE 8/24/2012 CHECKED BY PMO DATE 8/24/2012	O'Connor Design Group, Inc. 2350 G Road Grand Junction, Co. 81505 Phone: (970) 241-7125 Fax: (970) 241-7852

RETENTION POND
DRAINAGE DESIGN PLAN
COTTER CORPORATION MINE CM-25



REVISION ⚠ RLC DATE 1/22/2013	DRAWN BY RLC DATE 8/24/2012	O'Connor Design Group, Inc.	ONSITE/OFFSITE BASINS W/SITE TOPO DRAINAGE DESIGN PLAN COTTER CORPORATION MINE CM-25
REVISION ⚠ ____ DATE ____	DESIGNED BY PMO DATE 8/24/2012	2350 G Road Grand Junction, Co. 81505 Phone: (970) 241-7125 Fax: (970) 241-7852	SHEET 2 OF 5
REVISION ⚠ ____ DATE ____	CHECKED BY PMO DATE 8/24/2012		

Patrick M. O'Connor
COLORADO REGISTERED
PATRICK M. O'CONNOR
20759
4/14/13
PROFESSIONAL ENGINEER

C:\Land Projects 2009\COTTER CORPORATION CM-25\dwg\CM-25DRAINAGE-basinsOS.dwg, 4/12/2013 2:26:04 PM, Rick

N

0 30 60 120

SCALE: 1" = 60'
CONTOUR INTERVAL = 1 FOOT

COTTER ROAD

OFFSITE BASIN 10
OFF 10
(1.55 AC.)

SURFACE EASEMENT

UMETCO ROAD

ESCAPEWAY

OFFSITE BASIN 20
OFF 20
(4.13 AC.)

BEGIN IMPROVED ROAD DITCH (SEE X-SECT. A-A)

PORTAL

MINE ENTRANCE ROAD

PROPOSED DRAINAGE SWALE ON SOUTH SIDE OF ROAD. RE-GRADE ROADWAY TO DRAIN SOUTH (SEE DETAIL-SECT. B-B)

ONSITE BASIN 30
ON 30
(2.82 AC.)

PROPOSED RETENTION POND (SEE DETAIL)

PROPOSED RETENTION POND DAM (SEE DETAIL)

ORE STOCKPILE AREA

BERM

PROPOSED MINE WASTE PILE

PROPOSED BERM (SEE SECT. C-C)

BEGIN BERM SOUTH SIDE OF ROAD EAST OF EXISTING DRAINAGE CHANNEL

DRAIN ROAD DITCH TO EXISTING DRAINAGE CHANNEL

EXISTING DRAINAGE CHANNEL TO HIEROGLYPHIC CANYON

Reclaimed Waste Pile

LEGEND

- 5800 — CONTOUR LINE
- BASIN BOUNDARY
- 10 — DESIGN POINT
- PERMIT BOUNDARY
- OFF 10 — BASIN LABEL

RUNOFF:

DESIGN POINT	Q_{10}	Q_{100}
10	0.26	1.40
20	0.14	2.38
30	1.18	3.84

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4/14/13

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REVISION 1 DATE	CHECKED BY PMO	DATE 8/24/2012	DRAINAGE IMPROVEMENTS DRAINAGE DESIGN PLAN COTTER CORPORATION MINE CM-25

SHEET 3 OF 5