

## CONCRETE NOTES

- ALL CONCRETE IS DESIGNED IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE, ACI 318-05 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI UNLESS NOTED OTHERWISE.
- CONCRETE WORK SHALL CONFORM TO ACI 301.
- REINFORCEMENT STEEL SHALL BE DEFORMED BARS CONFORMING IN QUALITY TO THE REQUIREMENTS OF ASTM A-615, "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", GRADE 60
- ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS OTHERWISE INDICATED, SHALL BE IN ACCORDANCE WITH ACI-315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
- CONSTRUCTION TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 347.
- METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.
- REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE, A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES.
- SUBGRADE SHALL BE COMPACTED TO A SMOOTH UNIFORM SURFACE WITH A MINIMUM MODULUS OF SUBGRADE REACTION OF 200 PCI.
- CONCRETE SHALL BE MOIST CURED FOR 7 DAYS MINIMUM.
- PLACING OF CONCRETE SHALL CONFORM TO ACI 304R. HOT WEATHER CONCRETE SHALL BE PLACED PER ACI 305R. COLD WEATHER CONCRETE SHALL BE PLACED PER ACI 306R.
- ALL DIMENSIONS TO A JOINT ARE TO THE CENTERLINE OF THE JOINT.
- DIMENSIONS NOT SHOWN ARE THE SAME AS DIMENSIONS FOR IDENTICAL DETAILS SHOWN ELSEWHERE.
- BEFORE PLACING CONCRETE ON GRADE, CARE SHALL BE TAKEN THAT ALL BURIED MATERIAL BELOW GRADE IS IN PLACE.
- PIPE SLEEVES AND EMBEDDED PIPING 12" IN DIAMETER AND LARGER ARE ALWAYS SHOWN ON THE CONCRETE OUTLINE DRAWINGS. SMALLER DIAMETER PIPE SLEEVES OR PIPING MAY OR MAY NOT BE SHOWN ON THE CONCRETE OUTLINE DRAWINGS.
- ADJACENT CONCRETE PLACEMENTS SHALL BE PLACED A MINIMUM OF 7 DAYS APART.
- DRAWINGS ARE NOT TO BE SCALED FOR ESTIMATING OR ANY OTHER PURPOSE.
- ALL REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENT:

DETAIL OF REINFORCEMENT - LAP LENGTHS									
BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11	
CONCRETE DESIGN STRENGTH	5000 PSI								
GR 60	TOP BAR	2'-8"	3'-4"	4'-0"	5'-11"	6'-9"	7'-6"	8'-7"	9'-3"
	OTHER BAR	2'-1"	2'-7"	3'-1"	4'-7"	5'-3"	5'-9"	6'-7"	7'-1"

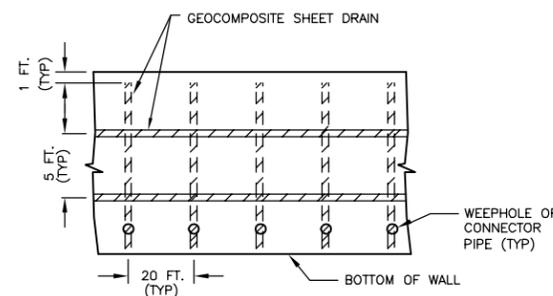
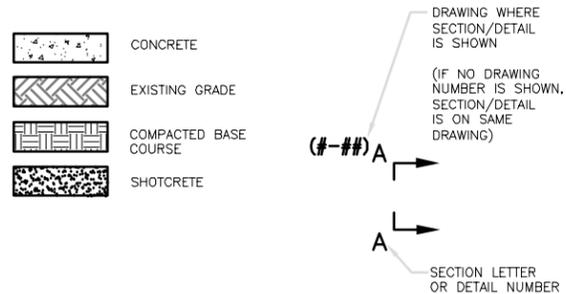
\* TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR, IN ANY SINGLE PLACEMENT. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

- WHEN SPLICING BARS OF DIFFERENT SIZE, THE LENGTH OF LAP SHALL BE GOVERNED BY THE LARGER DIAMETER BAR.
- NON-CONTACT LAP SPLICES SHALL NOT BE SPACED FARTHER APART THAN ONE-FIFTH THE REQUIRED LENGTH OF LAP OR 6 INCHES.
- SPLICES ARE TO BE MADE SO THAT THE GIVEN DISTANCES TO FACE OF CONCRETE WILL BE MAINTAINED.
- DIMENSIONS ARE TO THE CENTERLINES OF THE BARS UNLESS SHOWN OTHERWISE.
- REINFORCEMENT PARALLELING CONSTRUCTION JOINTS SHALL HAVE A MINIMUM OF 2" CLEAR COVER.
- REINFORCEMENT AT SMALL OPENINGS (MAX 1'-6") IN WALLS AND SLABS MAY BE SPREAD APART NOT MORE THAN 1 1/2 TIMES THE BAR SPACING.
- REINFORCEMENT MAY BE ADJUSTED LATERALLY TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1" BETWEEN THE REINFORCEMENT AND WATERSTOPS, ANCHOR BOLTS, FORM TIES, CONDUITS, AND OTHER EMBEDDED MATERIAL. IN HEAVILY REINFORCED AREAS RELOCATION OF THE EMBEDDED MATERIAL MUST BE CONSIDERED.
- IN NO CASE SHOULD BARS BE FIELD BENT TO GREATER THAN 6 TO 1 SLOPE.
- BARS SHOWN WITH BENDS NOT DIMENSIONED SHALL BE ASSUMED TO END WITH A STANDARD HOOK.
- THE  SYMBOL DESIGNATES THE BAR CALLOUTS ARE THE SAME SIZE AND SPACING.
- REINFORCEMENT PARALLEL TO ANCHOR BOLTS OR OTHER EMBEDDED MATERIAL SHALL BE PLACED TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1-1/3 TIMES THE MAXIMUM SIZE AGGREGATE.
- THE FIRST AND LAST BARS IN WALLS AND SLABS, STIRRUPS IN BEAMS, AND TIES IN COLUMNS ARE TO START AND END AT A MAXIMUM OF ONE HALF OF THE ADJACENT BAR SPACING.
- BARS SHOWN THUS  #8@12, INDICATE A GROUP OF THE SAME SIZE BARS EQUALLY SPACED.
- PLAIN DOWELS INDICATED ON THE DRAWINGS, ACROSS CONSTRUCTION JOINTS SHALL BE SMOOTH BARS UNIFORMLY COATED WITH A FILM OF OIL BEFORE CONCRETE PLACEMENT. VISCOSITY OF THE OIL SHALL HAVE AN SAE RATING OF NOT LESS THAN 250.
- SPLICES SHALL BE STAGGERED TO GIVE 12 INCHES CLEAR BETWEEN ENDS OF ADJACENT SPLICES, IF BARS ARE SPACED CLOSER THAN 6 INCHES OR 6 BAR DIAMETERS.

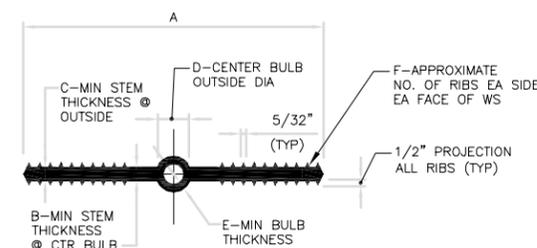
## ABBREVIATIONS/LEGEND

NOT ALL ABBREVIATIONS MAY APPLY TO THIS PROJECT  
ABBREVIATIONS FOR STRUCTURAL DRAWINGS (DRAWINGS 12 TO 14) ONLY

ADDL	ADDITIONAL	MAX	MAXIMUM
CL	CENTERLINE	MIN	MINIMUM
CJ	CONSTRUCTION JOINT	N.T.S.	NOT TO SCALE
CLR	CLEAR	OC	ON CENTER
CONC	CONCRETE	PCI	POUNDS PER CUBIC INCH
CONT	CONTINUED/ CONTINUOUS	REINF	REINFORCEMENT
CTR	CENTER	REQD	REQUIRED
DET	DETAIL	T	TOP
DWGS	DRAWINGS	T&B	TOP AND BOTTOM
DWL	DOWEL	THK	THICK
EF	EACH FACE	(TYP)	TYPICAL
EL	ELEVATION	UNO	UNLESS NOTED OTHERWISE
EXIST	EXISTING	W/	WITH
GR	GRADE	WWF	WELDED WIRE FABRIC
		WS	WATERSTOP



**1** SHOTCRETE FACING DRAINAGE DETAIL  
12 N.T.S.

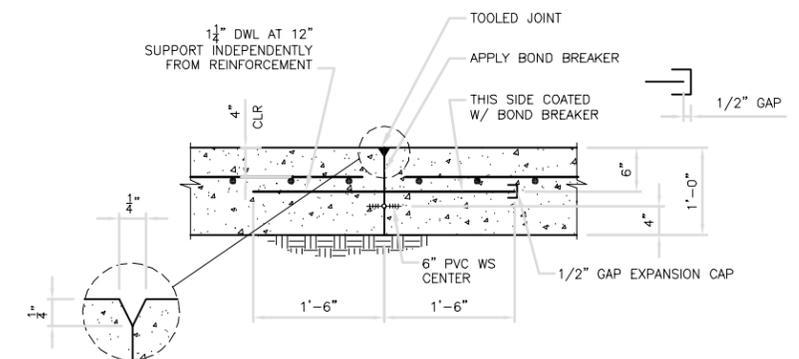
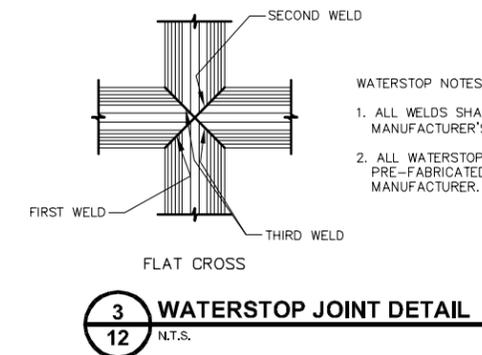


WATERSTOP NOTES:

- NON-ROUND CENTER BULBS SHALL HAVE A MIN OUTSIDE DIM OF 'D'.

SIZE	A	B	C	D	E	F
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6

**2** WATERSTOP DETAIL  
12 N.T.S.



**4** TYPICAL CONSTRUCTION JOINT (CJ)  
12 N.T.S.

REV	DATE	DES	SM&RC	ISSUED FOR DESIGN REPORT	JDE	KFM	JMJ
	10/8/08		SM&RC				
				REVISION DESCRIPTION	CADD	CHK	RW

PROJECT ENERGY FUELS RESOURCES CORPORATION  
PIÑON RIDGE PROJECT - ORE PAD DESIGN  
MONTROSE COUNTY, COLORADO

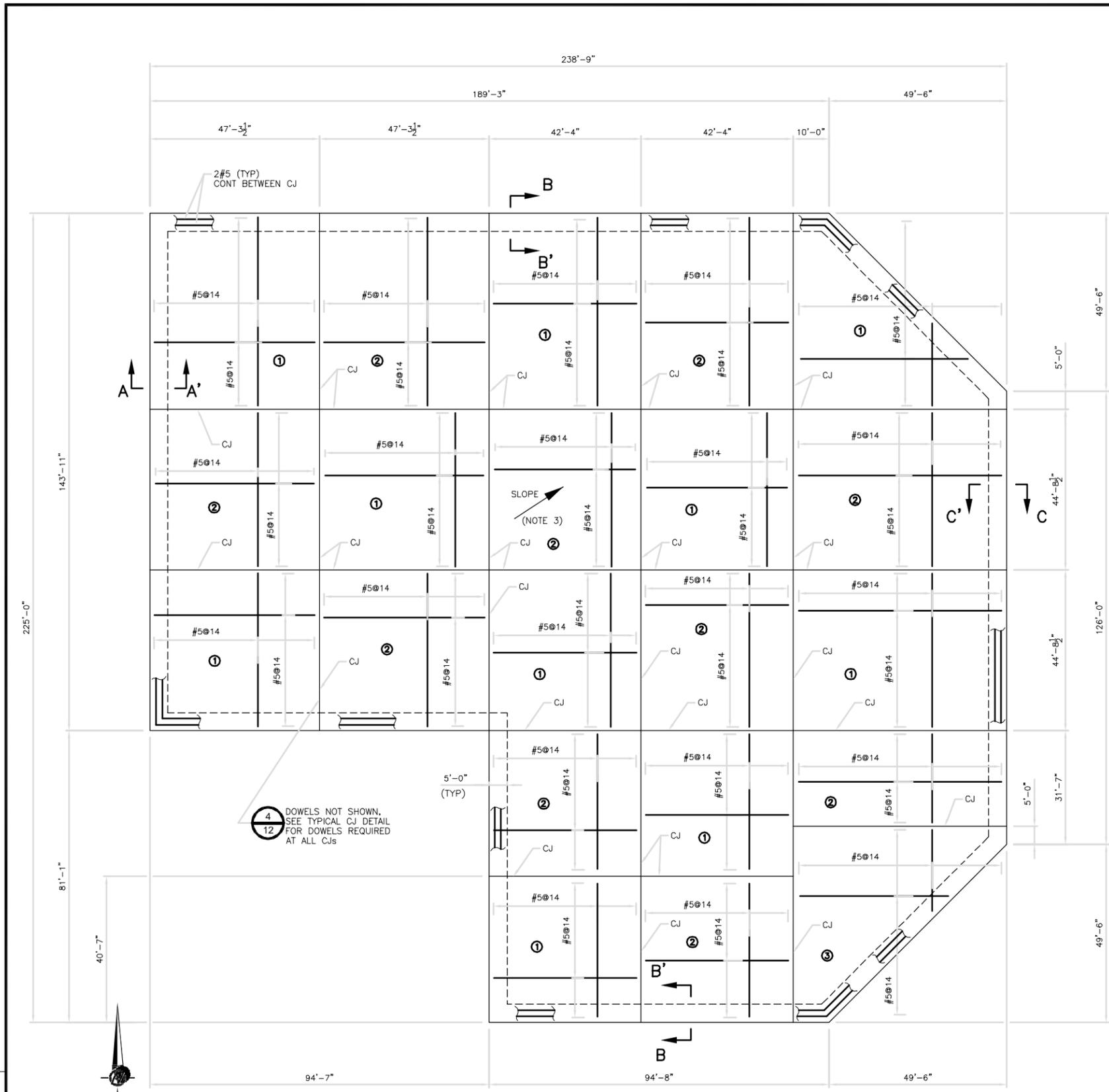
TITLE ORE PAD CONCRETE DESIGN  
(SHEET 1 OF 3)

**SM&RC**  
Structural Engineers Inc.  
215 S. Wadsworth Blvd.  
Suite 320  
Lakewood, CO 80226 ph 303.274.8656  
fax 303.484.3777  
THESE DRAWINGS ARE NOT TO BE ALTERED  
WITHOUT THE EXPRESS WRITTEN PERMISSION OF  
SM&RC STRUCTURAL ENGINEERS, INC.

**Golder Associates**  
DENVER, COLORADO

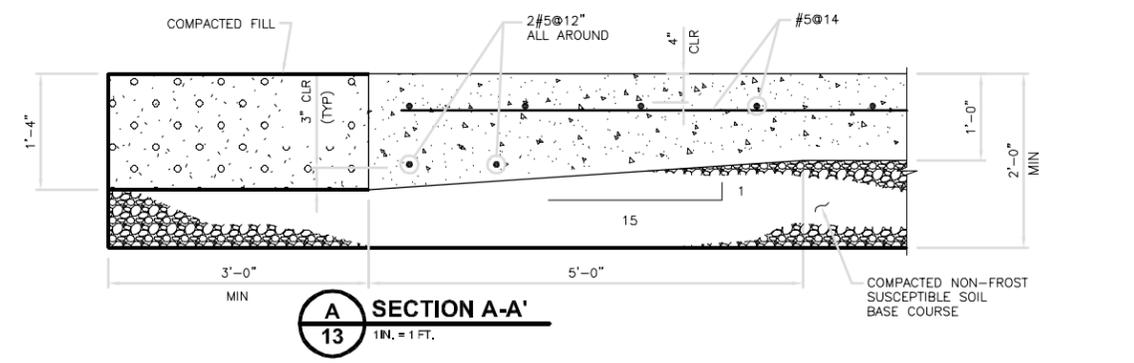
DESIGN	SM&RC	6/08	SCALE	AS SHOWN	REV.	A
CADD	JDE	6/08	DRAWING			
CHECK	KFM	6/08				
REVIEW	JMJ	6/08				

12

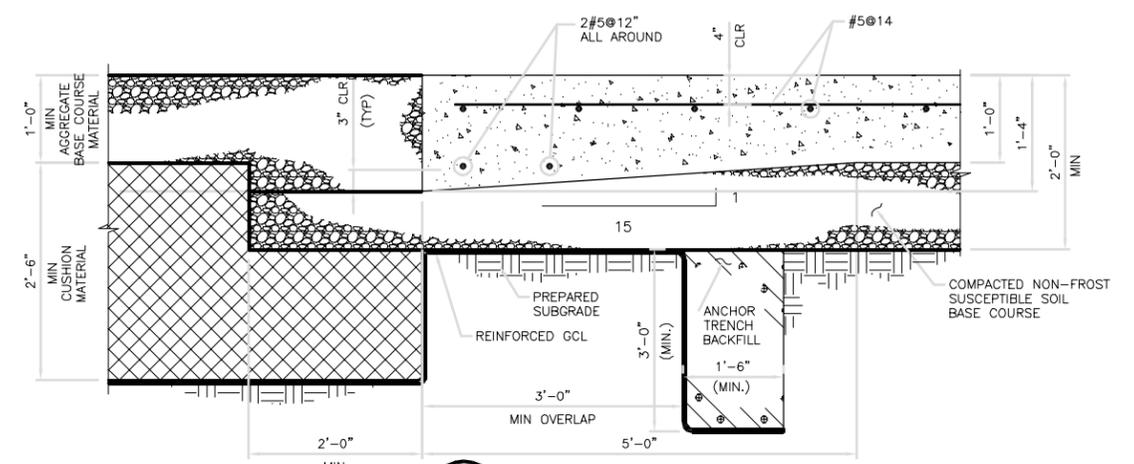


**1**  
**13** ONE-ACRE ORE PAD CONCRETE PLAN  
1/16 IN. = 1 FT.

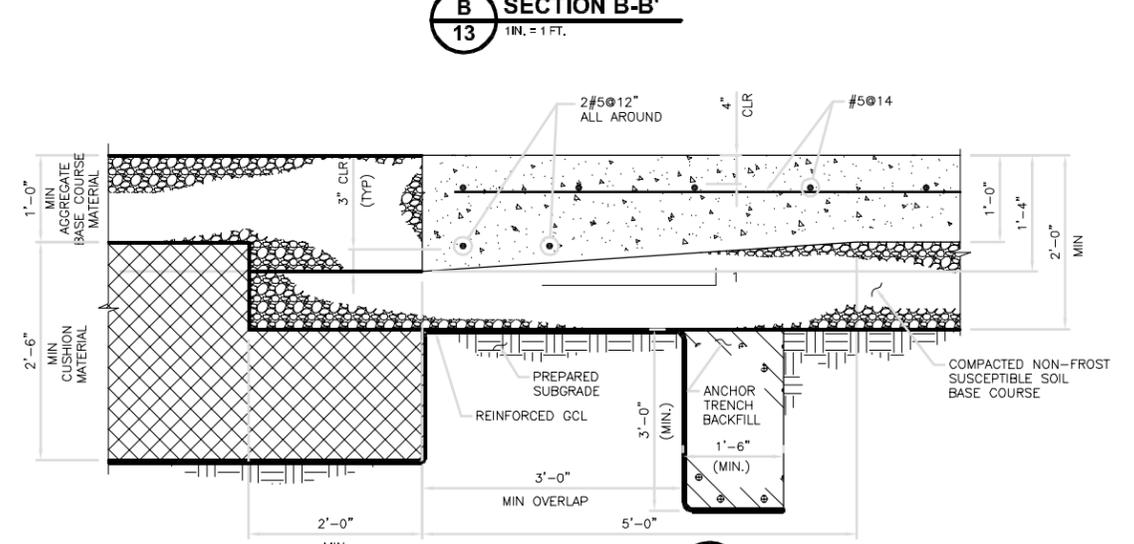
- ① FIRST PLACEMENT
- ② SECOND PLACEMENT
- ③ THIRD PLACEMENT



**A** SECTION A-A'  
**13** 1IN. = 1 FT.



**B** SECTION B-B'  
**13** 1IN. = 1 FT.



**C** SECTION C-C'  
**13** 1IN. = 1 FT.

**NOTES**

1. SEE DRAWING 12 FOR STRUCTURAL NOTES, ABBREVIATIONS AND LEGEND.
2. SEE DRAWING 2 FOR GENERAL LOCATION OF ORE PAD.
3. SEE DRAWING 3 FOR ORE PAD GRADING PLAN AND TYPICAL SECTIONS.

REV	DATE	DES	SM&RC	ISSUED FOR DESIGN REPORT	JDE	KFM	JMJ
	10/8/08			REVISION DESCRIPTION	CADD	CHK	R/W

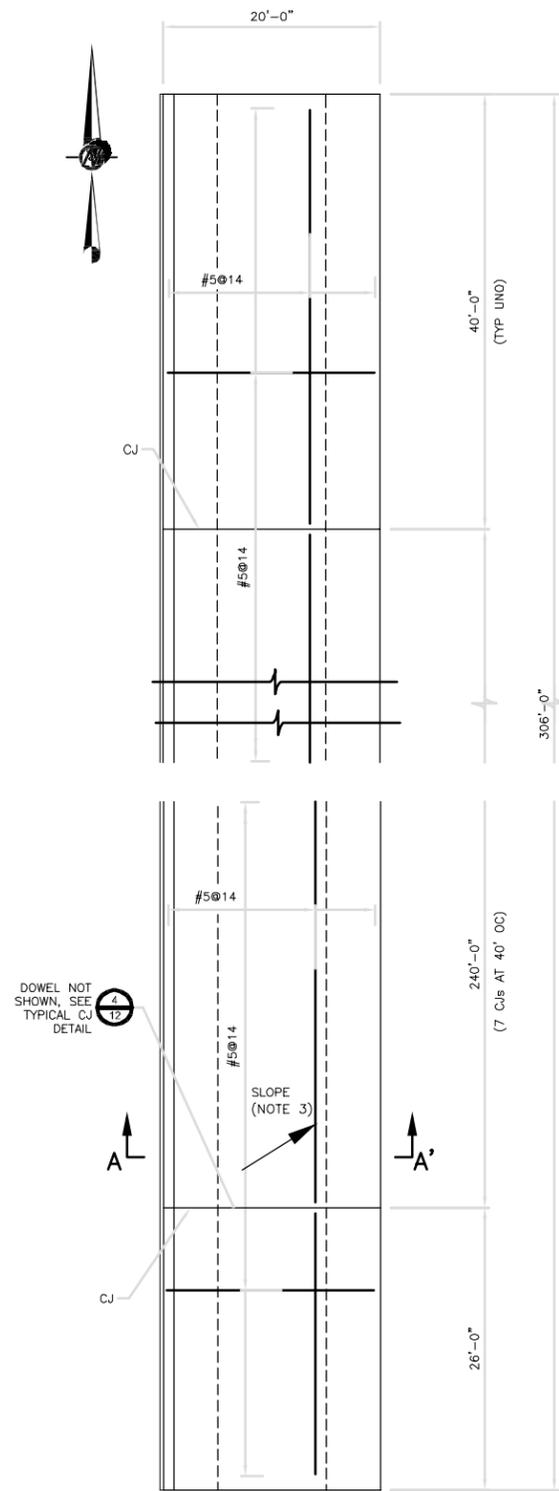
PROJECT: ENERGY FUELS RESOURCES CORPORATION  
PIÑON RIDGE PROJECT - ORE PAD DESIGN  
MONTROSE COUNTY, COLORADO

**ORE PAD CONCRETE DESIGN  
(SHEET 2 OF 3)**

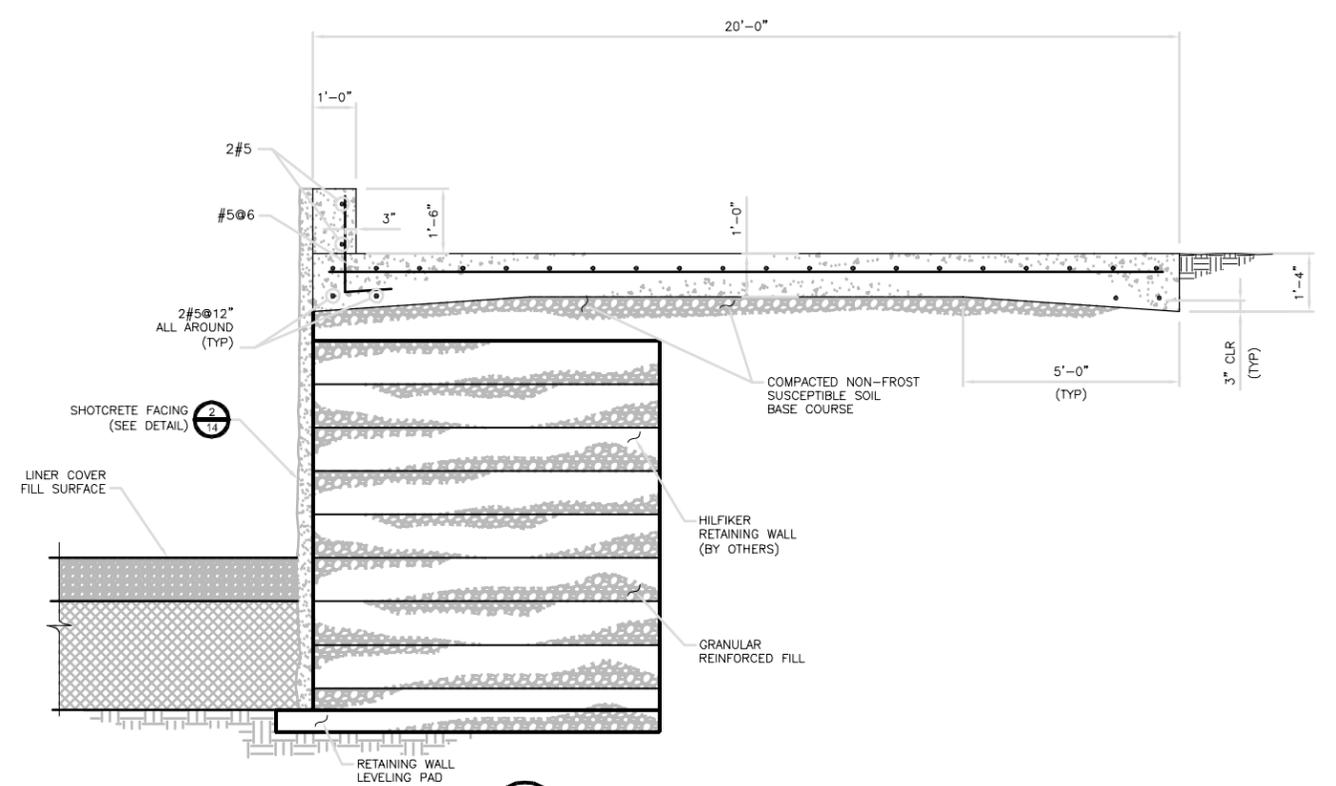
**SM&RC**  
Structural Engineers Inc.  
215 S. Wadsworth Blvd., Suite 320  
Lakewood, CO 80226 ph 303.274.0666 fax 303.484.3777  
THESE DRAWINGS ARE NOT TO BE ALTERED WITHOUT THE EXPRESS WRITTEN PERMISSION OF SM&RC STRUCTURAL ENGINEERS, INC.

PROJECT No.	073-81694	FILE No.	07381694A081
DESIGN	SM&RC 6/08	SCALE	AS SHOWN REV. A
CADD	JDE 6/08	DRAWING	13
CHECK	KFM 6/08		
REVIEW	JMJ 6/08		

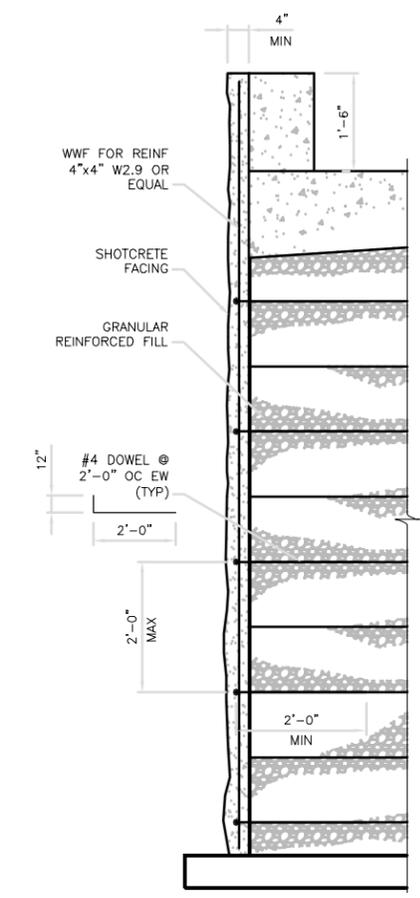
Dwg Name: N:\07\073-81694\07381694A081.dwg  
 Logon Name: JDE  
 User: JDE  
 Date: 2008-06-08 10:48:48 AM  
 Last Plot: Oct 09, 2008 16:22 By: jroberts



**1**  
**14** ORE DUMP PLATFORM PLAN  
1/8 IN. = 1 FT.



**A**  
**14** SECTION A-A'  
1/2 IN. = 1 FT.



**2**  
**14** RETAINING WALL SHOTCRETE FACING DETAIL  
3/4 IN. = 1 FT.

**NOTES**

1. SEE DRAWING 12 FOR STRUCTURAL NOTES, ABBREVIATIONS AND LEGEND.
2. SEE DRAWING 2 FOR GENERAL LOCATION OF ORE PAD.
3. SEE DRAWING 3 FOR ORE PAD GRADING PLAN AND TYPICAL SECTIONS.
4. RETAINING WALL IS SHOWN VERTICAL BUT WILL HAVE A SLIGHT INCLINATION.

**SM&RC**  
**Structural Engineers Inc.**  
215 S. Wadsworth Blvd.,  
Suite 320 ph 303.274.8856  
Lakewood, CO 80226 fax 303.484.3777  
THESE DRAWINGS ARE NOT TO BE ALTERED WITHOUT THE EXPRESS WRITTEN PERMISSION OF SM&RC STRUCTURAL ENGINEERS, INC.

REV	DATE	DES	SM&RC	ISSUED FOR DESIGN REPORT	JDE	KFM	JMJ
				REVISION DESCRIPTION	CADD	CHK	RWV
PROJECT ENERGY FUELS RESOURCES CORPORATION PIÑON RIDGE PROJECT - ORE PAD DESIGN MONTROSE COUNTY, COLORADO							
TITLE ORE PAD CONCRETE DESIGN (SHEET 3 OF 3)							
PROJECT No. 073-81894				FILE No. 07381894A082			
DESIGN	SM&RC	6/08	SCALE	AS SHOWN	REV.	A	
CADD	JDE	6/08	DRAWING				
CHECK	KFM	6/08					
REVIEW	JMJ	6/08					14



Draw Name: N:\07\073-81894\07381894A082.dwg  
 User: JDE  
 Date Updated: Oct 09, 2008 13:46  
 Last Plot: Oct 09, 2008 16:24  
 By: JRoberts