

**State of Illinois**  
**Department of Natural Resources**  
**Office of Mines and Minerals**  
**Division of Abandoned Mined Lands**

Funded by the  
**United States Department of Interior**  
**Federal Office of Surface Mining**

**Radium Mine 'Group'**  
**Reclamation Project**  
**AML-GScE-0412**  
**St. Clair County**  
**3LR**

**SCHEDULE OF DRAWINGS:**

1. Cover Sheet
  2. Summary of Quantities/General Notes/Location Map
  3. Existing and Proposed Conditions - Belle Valley C.C.
  4. Existing and Proposed Conditions - Radium Mine
  5. Existing and Proposed Conditions - Murphy Shaft
  6. Existing and Proposed Conditions - Ziska Mine
  7. Existing Conditions - Ruby Mine
  8. Proposed Conditions - Ruby Mine
  9. Erosion Control/Planting Plan - Ruby Mine
  - 10-11. Cross Sections - Radium Mine
  - 12-20. Cross Sections - Ruby Mine
  - 21-25. Detail Sheets
- IDOT Standard 602301, Inlet-Type A  
 IDOT Standard 602406, Manhole-Type A (72" Dia.)  
 IDOT Standard 604036, Grate Type 8



**Radium Mine 'Group'**  
**St. Clair County**

**NOTICE:**

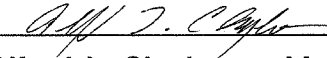
A pre-bid meeting will be held at 10:00 A.M., Thursday, January 5, 2006,  
 at the Ruby Mine site at 320 North Ruby Lane in Fairview Heights, Illinois.

Prepared By IDNR Staff

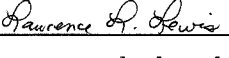
Approved for Bidding:

  
 Joe Angleton, Director  
 Office of Mines and Minerals

Approved By:

  
 Alfred L. Clayborne, Manager  
 AML Division

Approved By:

  
 Lawrence L. Lewis, P.E.  
 IL Licensed Professional Engineer  
 No. 0062-038880



Summary of Quantities

#	Item	Section	Quantities					Unit	Rates/Remarks
			Ruby Mine	Ziska Mine	Belle Valley	Radium Mine	Total		
1	Special Clearing	201	0.6	0.1	-	0.3	1	L.S.	
2	Earth Excavation	202	15,020	-	-	2,777	17,797	C.Y.	See Note on
3	Mine Refuse Excavation	202	4,469	-	-	-	4,469	C.Y.	Compaction Below
4	Porous Granular Backfill (FA-6)	IDOT 209	175	-	-	-	175	C.Y.	
5	Granular Embankment, Special(CA-6)	IDOT 210	218	-	-	-	218	Ton	
6	Geotechnical Fabric for Ground Stabilization	IDOT 210 & 216	466	-	-	125	591	S.Y.	
7	Special Excavation	214	262	35	-	360	657	C.Y.	
8	CA-6 Fill	216	51.1	65	23.4	453.7	593.2	Ton	
9	CA-7 Fill	216	41.8	-	-	59.9	101.7	Ton	
10	Class SI Concrete	216	-	-	-	4	4	C.Y.	
11	Seeding - Class 1, Lawn Mixture	IDOT 250	-	-	-	0.2	0.2	Acre	
12	Seeding - Class 6, Conservation Mixture	IDOT 250	4.7	1.5	-	4.4	10.6	Acre	
13	Nitrogen Fertilizer Nutrient	IDOT 250	1,128	360	-	1,104	2,592	Pound	See Note-This Sheet
14	Phosphorous Fertilizer Nutrient	IDOT 250	940	300	-	920	2,160	Pound	See Note-This Sheet
15	Potassium Fertilizer Nutrient	IDOT 250	2,115	675	-	2,070	4,860	Pound	See Note-This Sheet
16	Agricultural Ground Limestone	IDOT 250	47	15	-	46	108	Ton	See Note-This Sheet
17	Mulch, Method 2, Procedure 2	IDOT 251	2.0	1.5	-	4.6	8.1	Acre	2 Tons/Acre
18	Erosion Control Blanket	IDOT 251	13,157	-	-	-	13,157	S.Y.	
19	Trees - Red Maple 1 1/2" BB	IDOT 253	4	-	-	-	4	Each	Acer rubrum
20	Trees - Sugar Maple 1 1/2" BB	IDOT 253	5	-	-	-	5	Each	Acer sacchrum
21	Trees - Norway Maple 1 1/2" BB	IDOT 253	3	-	-	-	3	Each	Acer platanoides
22	Trees - Eastern Redbud 1 1/2" BB	IDOT 253	12	-	-	-	12	Each	Cersis canadensis
23	Trees - Austrian Pine 4' BB	IDOT 253	8	-	-	-	8	Each	Pinus nigra
24	Trees - Red Pine 4' BB	IDOT 253	8	-	-	-	8	Each	Pinus resinosa
25	Trees - White Pine 4' BB	IDOT 253	12	-	-	-	12	Each	Pinus strobus
26	Trees - Scarlet Oak 1 1/2" BB	IDOT 253	6	-	-	-	6	Each	Quercus coccinea
27	Trees - Bur Oak 1 1/2" BB	IDOT 253	4	-	-	-	4	Each	Quercus macrocarpa
28	Trees - Red Oak 1 1/2" BB	IDOT 253	8	-	-	-	8	Each	Quercus rubra
29	Trees - White Oak 1 1/2" BB	IDOT 253	7	-	-	-	7	Each	Quercus alba
30	Stone Riprap A-3	IDOT 281	938	-	-	47	985	S.Y.	
31	Stone Riprap A-4	IDOT 281	418	-	-	-	418	S.Y.	
32	Filter Fabric for use with Riprap	IDOT 282	418	-	-	-	418	S.Y.	
33	Aggregate Surface Course, Type B, CA-6	IDOT 402	62.7	-	-	-	62.7	Ton	
34	Controlled Low-Strength Material (CLSM)	425	-	189	1	-	190	C.Y.	
35	Removal of Existing Structures	501	0.4	0.1	0.1	0.4	1	L.S.	
36	Corrugated Structural Plate Pipe Culvert - 72" Dia.	541	119	-	-	-	119	Foot	
37	10" Diameter Slide Gate Valve (Agri Drain W10 or equivalent)	IDOT 542	-	-	-	1	1	Each	
38	HD Polyethylene Pipe Culvert, 12" Dia.	IDOT 542	-	30	-	-	30	Foot	
39	Polyvinyl Chloride (PVC) Pipe Culvert, Type 1, 10" Dia.	IDOT 542	-	-	-	192	192	Foot	
40	Polyvinyl Chloride (PVC) Pipe Elbow, 30°, 10" Dia.	IDOT 542	-	-	-	3	3	Each	
41	Polyvinyl Chloride (PVC) Pipe Elbow, 45°, 10" Dia.	IDOT 542	-	-	-	1	1	Each	
42	Polyvinyl Chloride (PVC) Pipe Wye, 45°, 10" Dia.	IDOT 542	-	-	-	1	1	Each	
43	Manhole, Type A, 72" Diameter with Cast Iron Frame & Lid (NEENAH R-6034)	IDOT 602	-	-	-	1	1	Each	
44	Inlet, Type A with Grate, Type B	IDOT 602 & IDOT 604	-	-	-	1	1	Each	
45	Mine Opening Marker	666	2	1	-	3	6	Each	
46	Mobilization (Max. 6% of Bid)	671	0.25	0.25	0.25	0.25	1	L.S.	

GENERAL NOTES

Unless otherwise noted on the plans, all disturbed areas within the construction limits will be amended with agricultural ground limestone, fertilizer nutrients, seeded and mulched at the required rates specified.

The contractor is responsible for visiting the site and familiarizing himself with the existing conditions and the proposed reclamation work prior to submitting a bid.

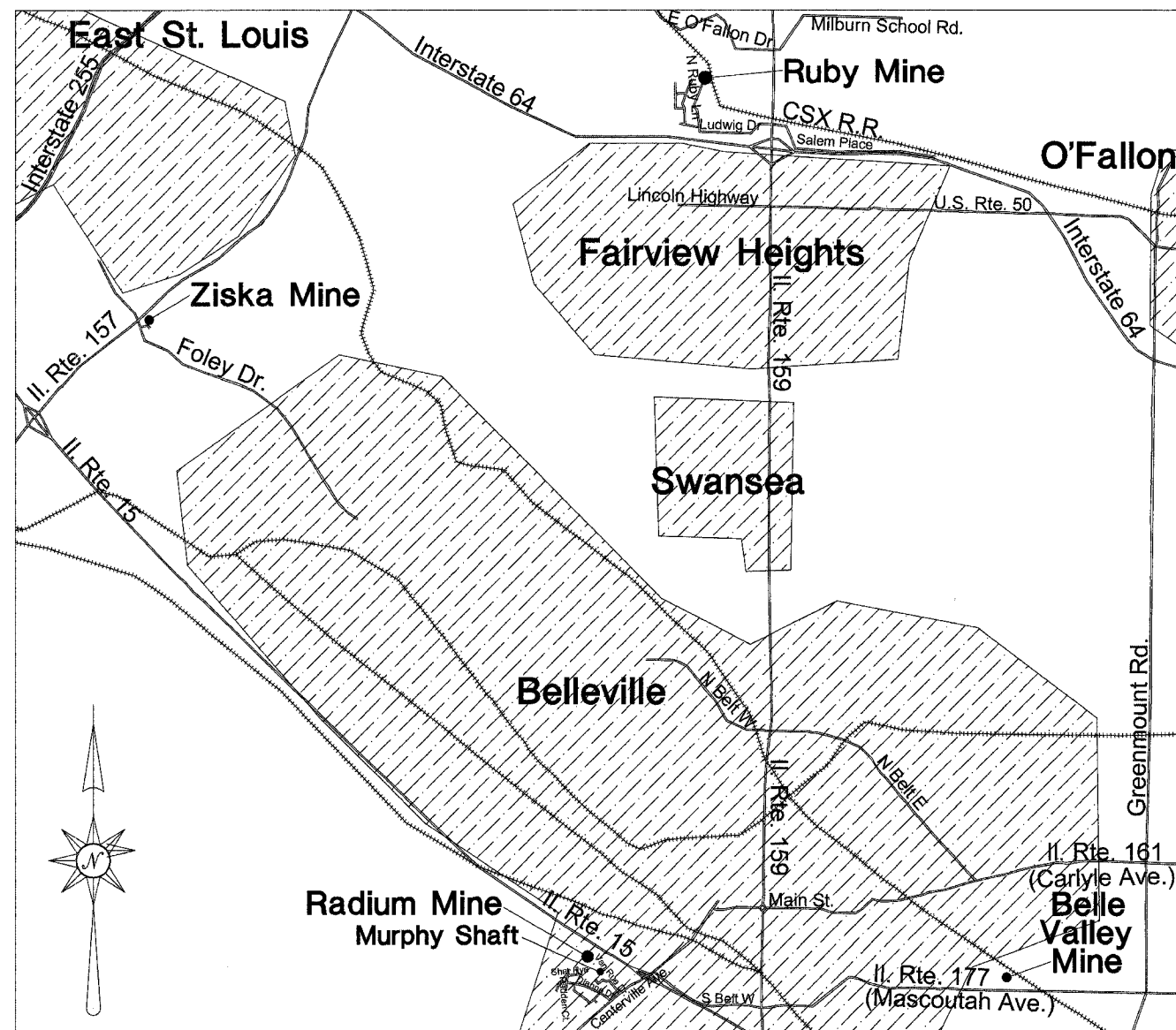
The contractor shall provide and pay for all field engineering services to execute the project as specified in the Field Engineering section of the Special Provisions.

The contractor is responsible for locating and protecting all existing utility lines.

Unless noted on the plans, all onsite access roads may be used for construction and must be maintained during construction and restored to original or better condition at the completion of work by the contractor. Access roads to the site as designated in the plans are to be maintained to the satisfaction of the engineer.

The construction limits will be staked by the contractor prior to construction. The contractor is responsible for the repair and or restitution at his own expense for all damages done to any area outside the construction limits.

Soil Compaction, in accordance with Section 205 of the Standard Specifications, will be required at the Ruby Mine Site, as directed by the engineer. Compaction will not be required for mine refuse material or for soil at the Radium Mine site but these materials shall still be required to be placed in layers not to exceed 8 inches thick when in loose condition.



Location Map

CONSTRUCTION NOTES

**BURIAL/REMOVAL OF MATERIAL**-Concrete and masonry debris designated for burial by the engineer shall be buried at least three feet below proposed final grade. Onsite organic debris and trash shall be disposed of in an engineer approved offsite landfill in accordance with Sections 201 and 501 of the Special Provisions.

**TREE REMOVAL**-Trees removed shall be disposed of onsite per Section 201 of the Special Provisions. Clearing of trees may only occur from October to March 31.

**EROSION CONTROL**-The contractor shall schedule his operations and take such precautions that may be necessary to prevent or minimize erosion. Failure to comply with this requirement shall cause the contractor to be fully responsible for repairing any eroded areas and cleaning up areas or drainage structures that have become silted in or damaged.

**AGRICULTURAL GROUND LIMESTONE**-Immediately prior to seed bed preparation, fertilizer nutrients and agricultural ground limestone shall be uniformly spread at the rates specified below.

**MULCHING**-Within 24 hours from the time seeding has been performed, the seeded area shall be given a covering of mulch at the rates specified in the plans. The mulch is to be anchored into the soil in accordance with the requirements for method 2, procedure 2 of Article 251.03 of the Standard Specifications. If Excelsior or Special Excelsior Blanket is to be used, the blanket shall be placed the same day that the areas are seeded.

**SOIL AMMENDMENTS** - Immediately prior to seedbed preparation, fertilizer nutrients and agricultural ground limestone shall be uniformly spread at the following rates:

Nitrogen Fertilizer Nutrient	120 lbs./acre
Phosphorous Fertilizer Nutrient	100 lbs./acre
Potassium Fertilizer Nutrient	250 lbs./acre
Agricultural Ground Limestone	10 tons/acre

Between August 15 and Sept. 15, 2006, a second fertilization shall be applied at the following rates:

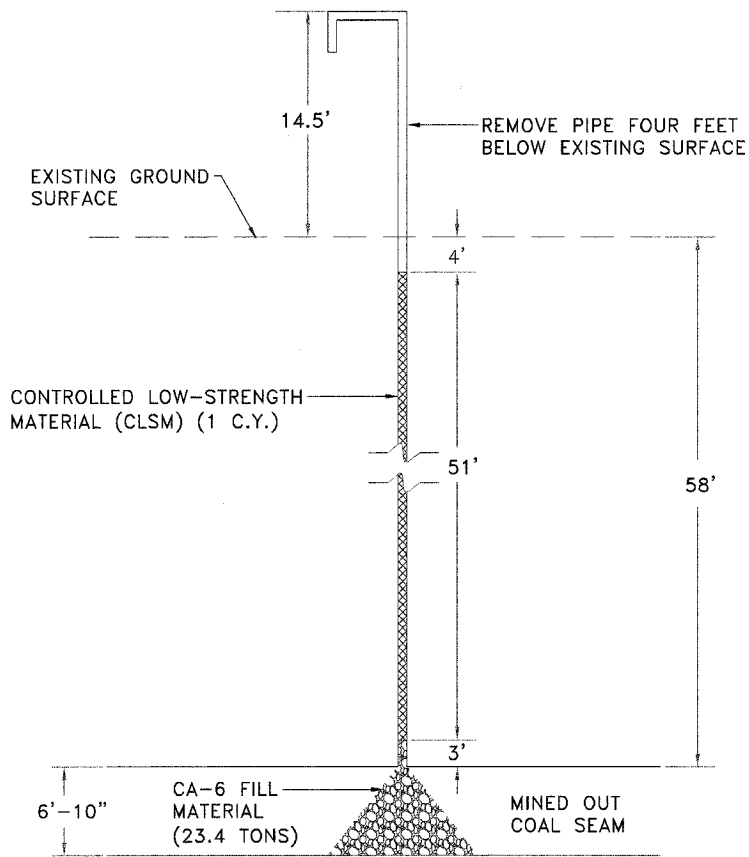
Nitrogen Fertilizer Nutrient	120 lbs./acre
Phosphorous Fertilizer Nutrient	100 lbs./acre
Potassium Fertilizer Nutrient	200 lbs./acre

State of Illinois  
Department of Natural Resources

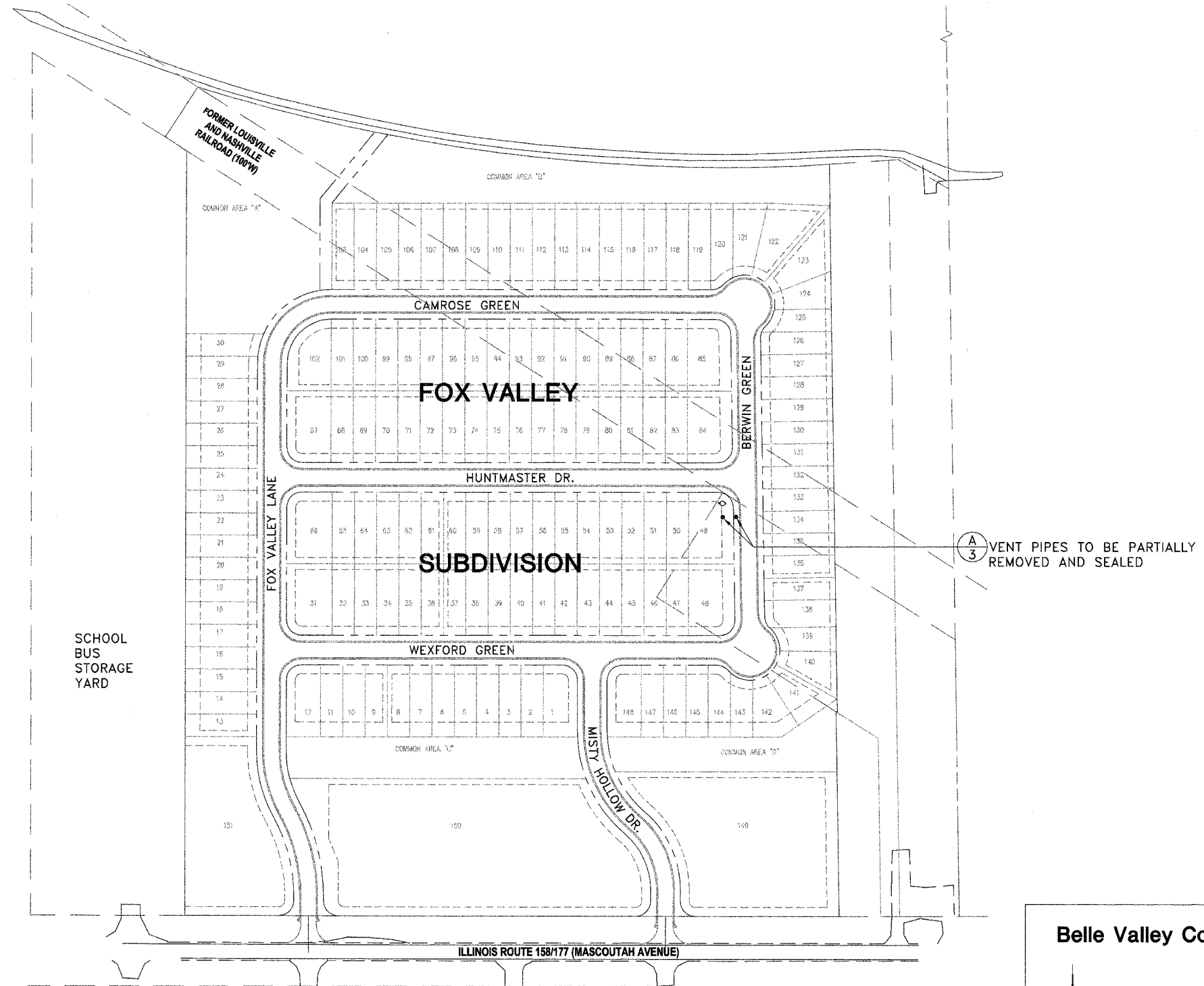
Radium Mine 'Group'  
Reclamation Project  
AML-GScE-0412  
St. Clair County

Drawn By: T.M. Date: 05/05/05  
Checked By:

Summary of Quantities/  
General Notes/Location Map  
Sheet  
2 of 25

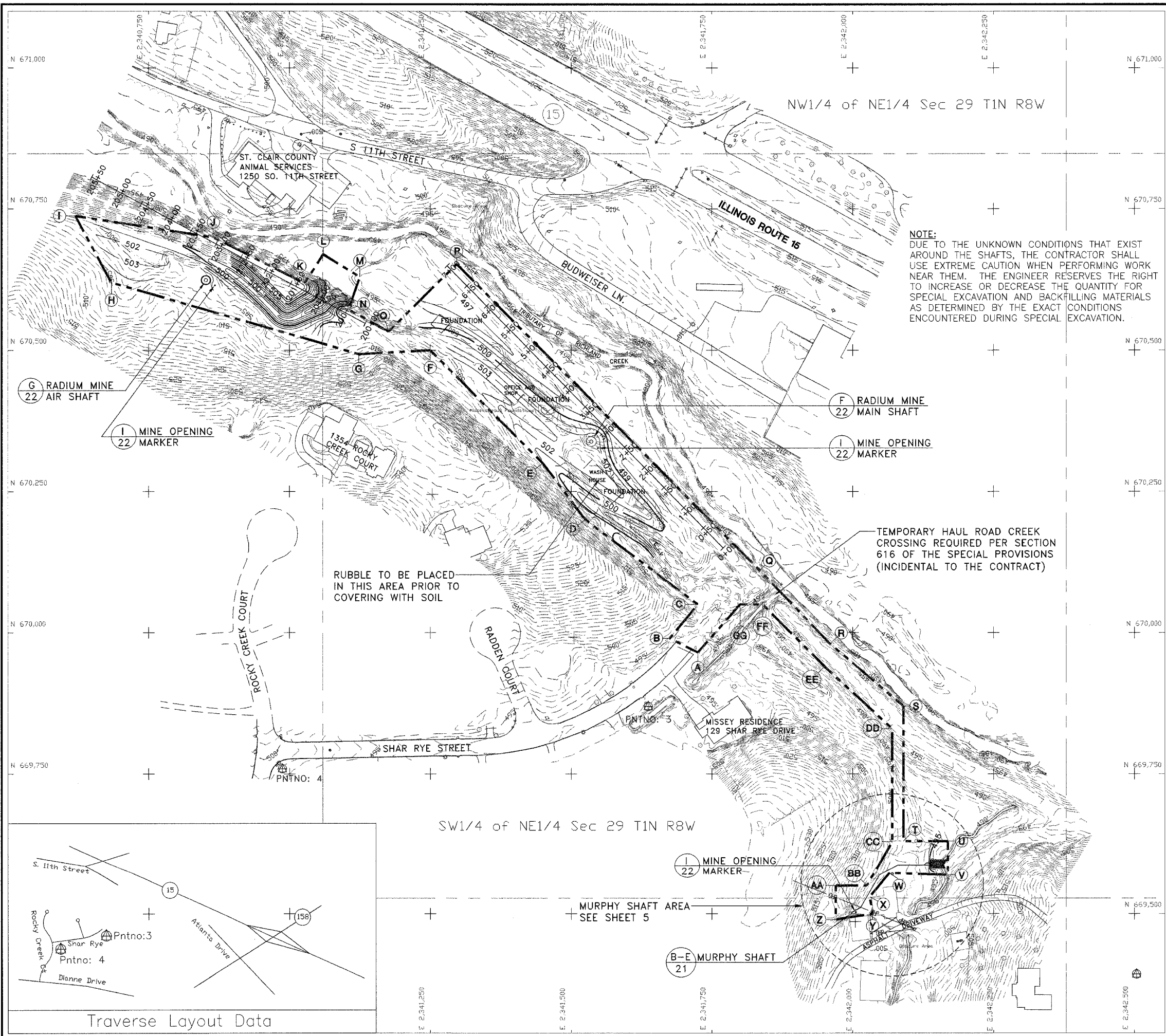


**A**  
**3** VENT SEALING DETAIL  
NOT TO SCALE



Belle Valley Coal Co.

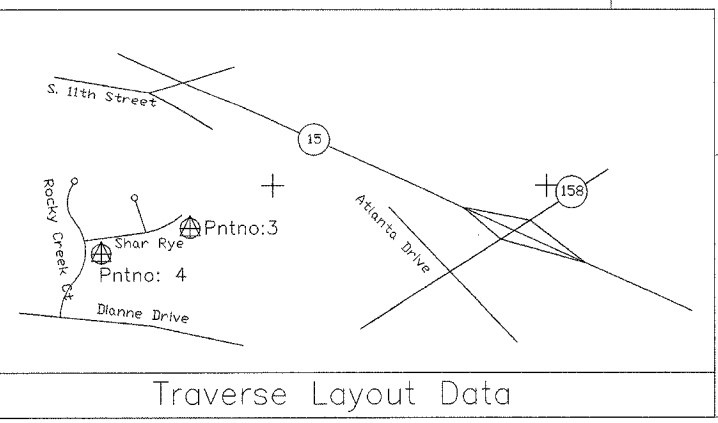
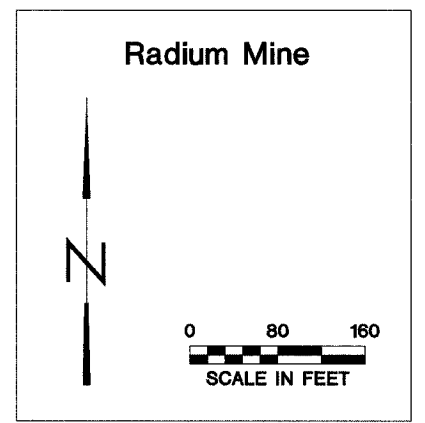


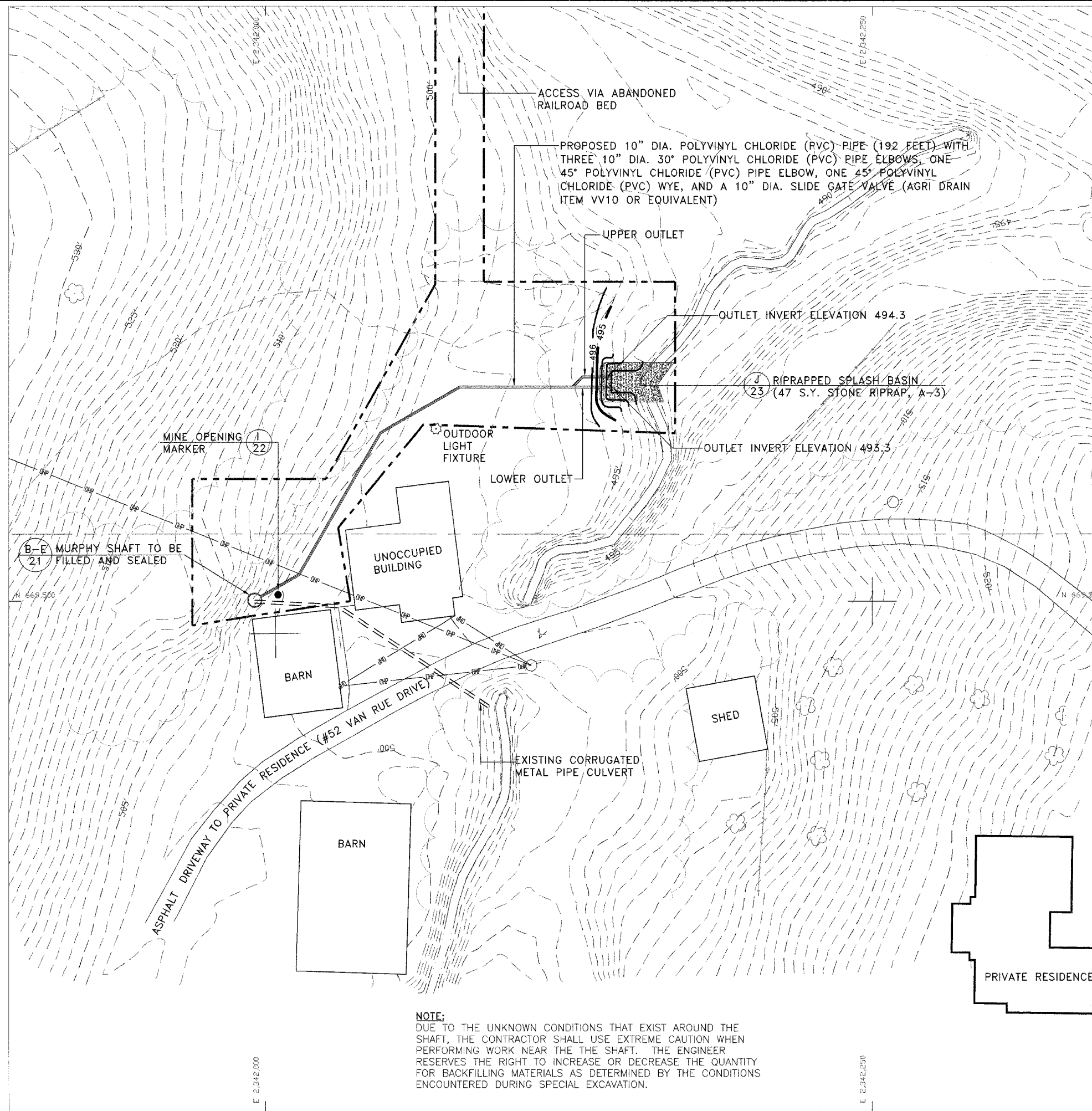


CONSTRUCTION LIMITS		
	NORTHING	EASTING
A	669,965	2,341,725
B	669,990	2,341,675
C	670,050	2,341,725
D	670,200	2,341,525
E	670,300	2,341,450
F	670,500	2,341,250
G	670,493	2,341,123
H	670,620	2,340,684
I	670,738	2,340,620
J	670,700	2,340,865
K	670,619	2,341,027
L	670,670	2,341,060
M	670,630	2,341,125
N	670,572	2,341,105
O	670,533	2,341,176
P	670,653	2,341,297
Q	670,110	2,341,835
R	669,980	2,341,960
S	669,870	2,342,090
T	669,631	2,342,090
U	669,631	2,342,169
V	669,569	2,342,169
W	669,572	2,342,065
X	669,530	2,342,030
Y	669,500	2,342,035
Z	669,490	2,341,970
AA	669,550	2,341,970
BB	669,550	2,342,025
CC	669,630	2,342,070
DD	669,830	2,342,070
EE	669,940	2,341,950
FF	670,050	2,341,840
GG	670,050	2,341,800

Symbol	Description
---500---	EXISTING CONTOUR
—500—	PROPOSED CONTOUR
---	CONSTRUCTION LIMITS
---	EDGE OF ROAD
~~~~~	TREELINE
---	EDGE OF WATER
⊕	SURVEY CONTROL POINT

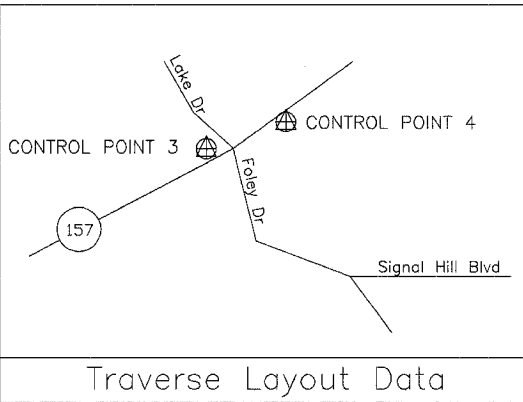
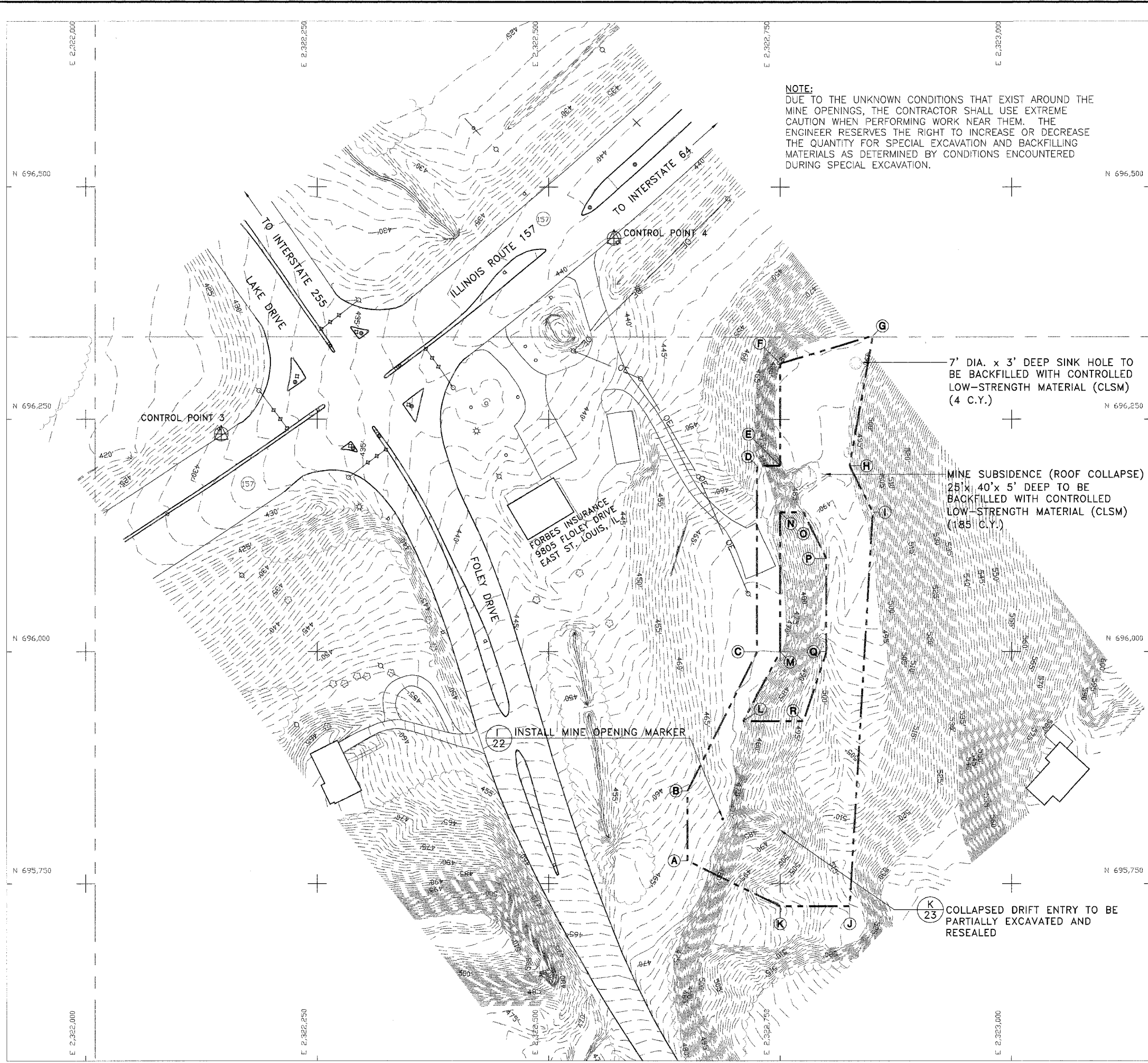
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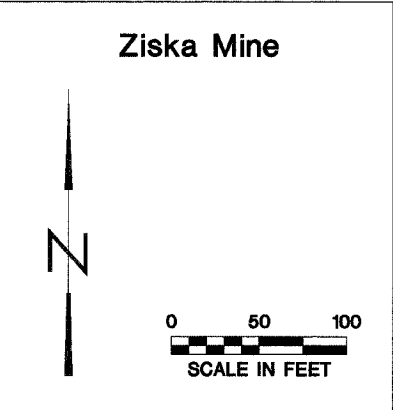
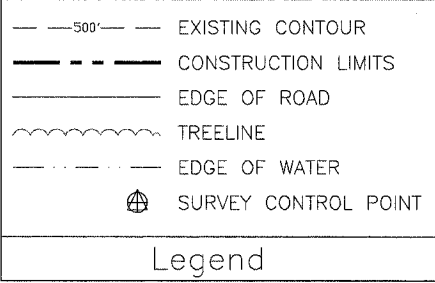


E 2,342,000

E 2,342,250



CONSTRUCTION LIMITS		
	NORTHING	EASTING
A	695,775	2,322,650
B	695,850	2,322,650
C	696,000	2,322,725
D	696,200	2,322,725
E	696,200	2,322,750
F	696,310	2,322,750
G	696,340	2,322,850
H	696,200	2,322,825
I	696,150	2,322,850
J	695,725	2,322,825
K	695,725	2,322,750
L	695,925	2,322,710
M	696,000	2,322,750
N	696,150	2,322,750
O	696,150	2,322,775
P	696,100	2,322,800
Q	696,000	2,322,800
R	695,925	2,322,775





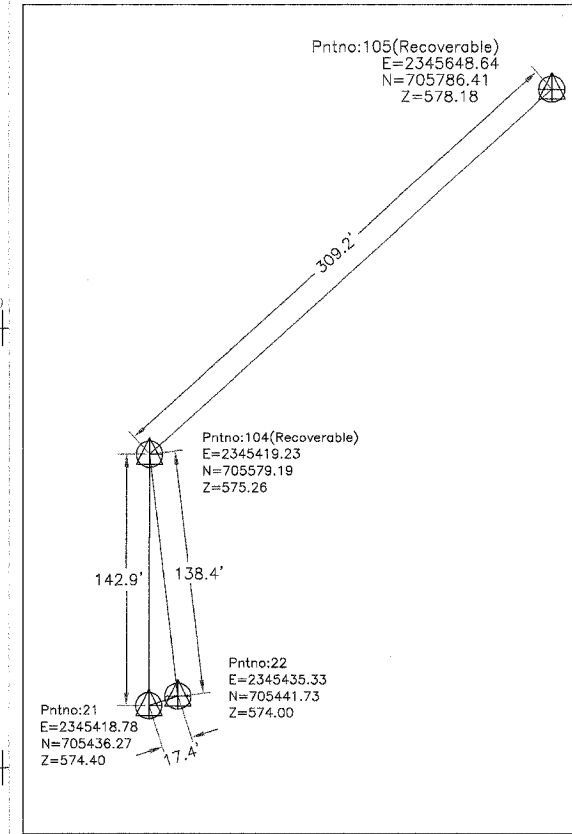
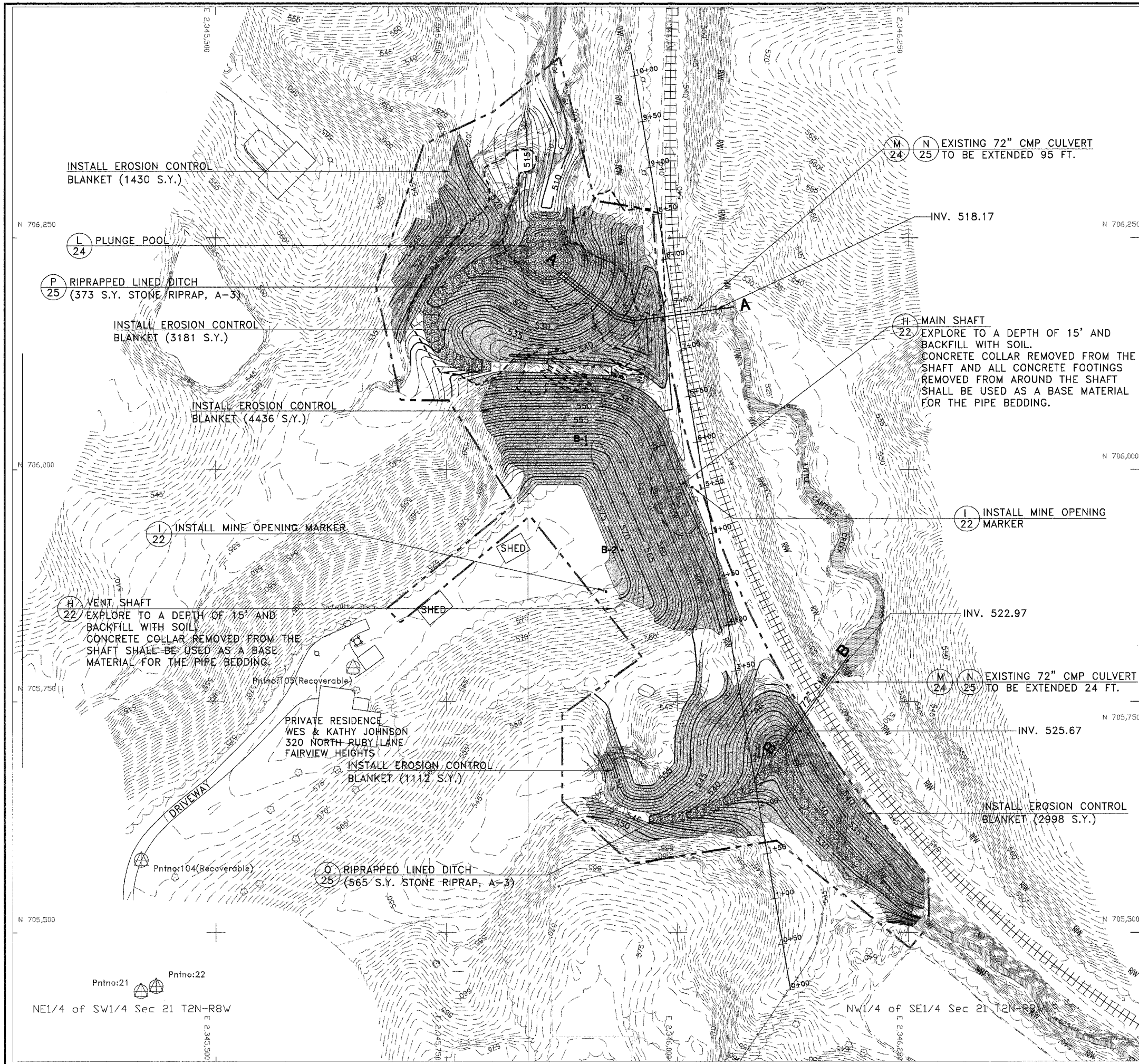
CONSTRUCTION LIMITS		
	NORTHING	EASTING
A	705,835	2,345,700
B	705,950	2,345,840
C	705,798	2,345,961
D	705,736	2,345,875
E	705,642	2,345,875
F	705,575	2,345,950
G	705,600	2,346,107
H	705,483	2,346,251
I	705,508	2,346,272
J	705,562	2,346,271
K	706,280	2,345,973
L	706,290	2,345,910
M	706,444	2,345,872
N	706,385	2,345,800
O	706,350	2,345,725
P	706,199	2,345,673
Q	706,075	2,345,700
R	706,075	2,345,750
S	705,963	2,345,823
T	705,850	2,345,685

-500'- EXISTING CONTOUR  
 - - - - - EDGE OF MINE REFUSE  
 - - - - - CONSTRUCTION LIMITS  
 - - - - - EDGE OF ROAD  
 ~~~~~ TREELINE  
 - - - - - EDGE OF WATER  
 RW RAILROAD R.O.W.  
 B-1 BORING  
 ○ SURVEY CONTROL POINT

Legend

Ruby Mine

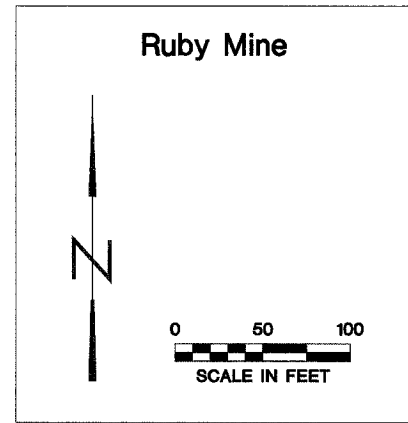
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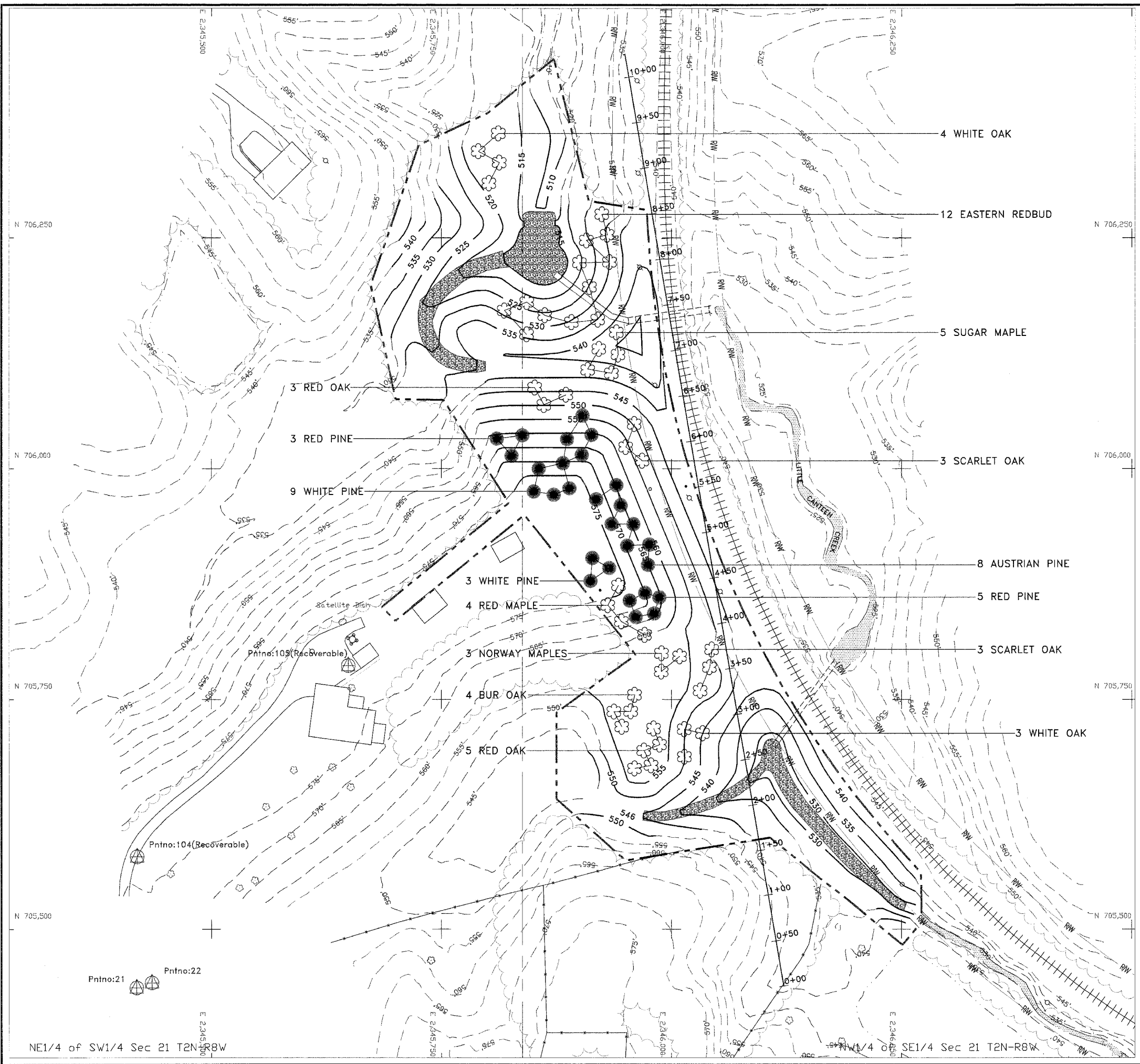
|  |                         |
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|  | PROPOSED CONTOUR        |
|  | EDGE OF MINE REFUSE     |
|  | CONSTRUCTION LIMITS     |
|  | EDGE OF ROAD            |
|  | TREELINE                |
|  | EDGE OF WATER           |
|  | RAILROAD R.O.W.         |
|  | BORING                  |
|  | SURVEY CONTROL POINT    |
|  | EROSION CONTROL BLANKET |

Legend



|             |            |       |           |
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| Drawn By:   | V.P., M-LF | Date: | 12/9/2005 |
| Checked By: |            |       |           |





Legend

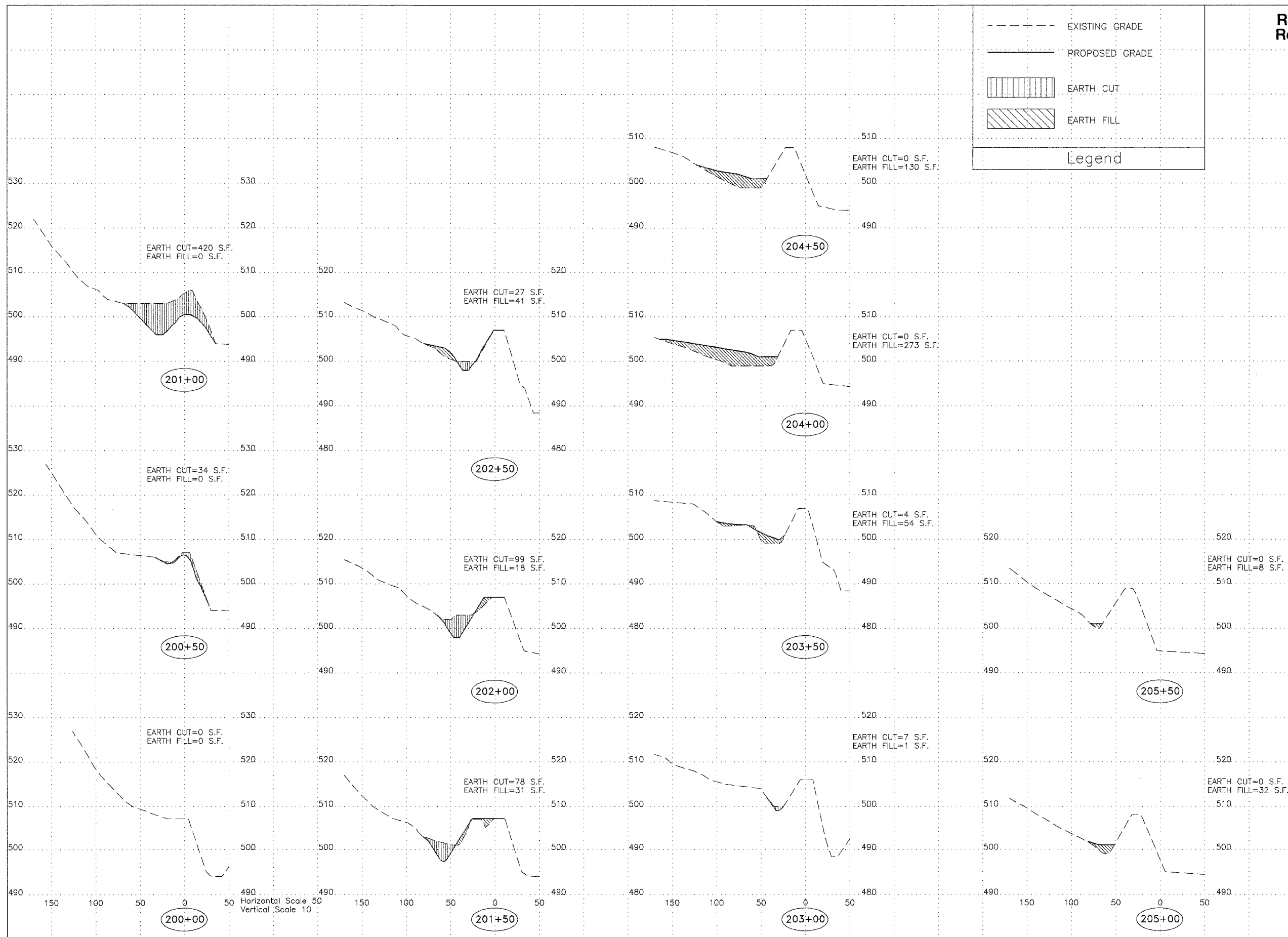
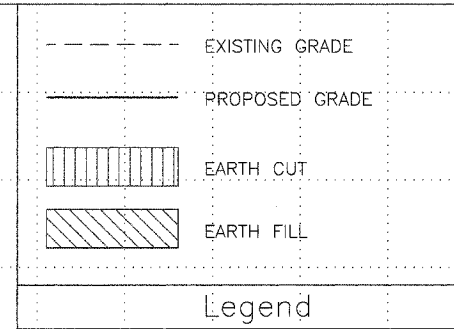
- 500' EXISTING CONTOUR
- 550' PROPOSED CONTOUR
- CONSTRUCTION LIMITS
- EDGE OF ROAD
- TREELINE
- EDGE OF WATER
- RAILROAD R.O.W.
- SURVEY CONTROL POINT

Ruby Mine

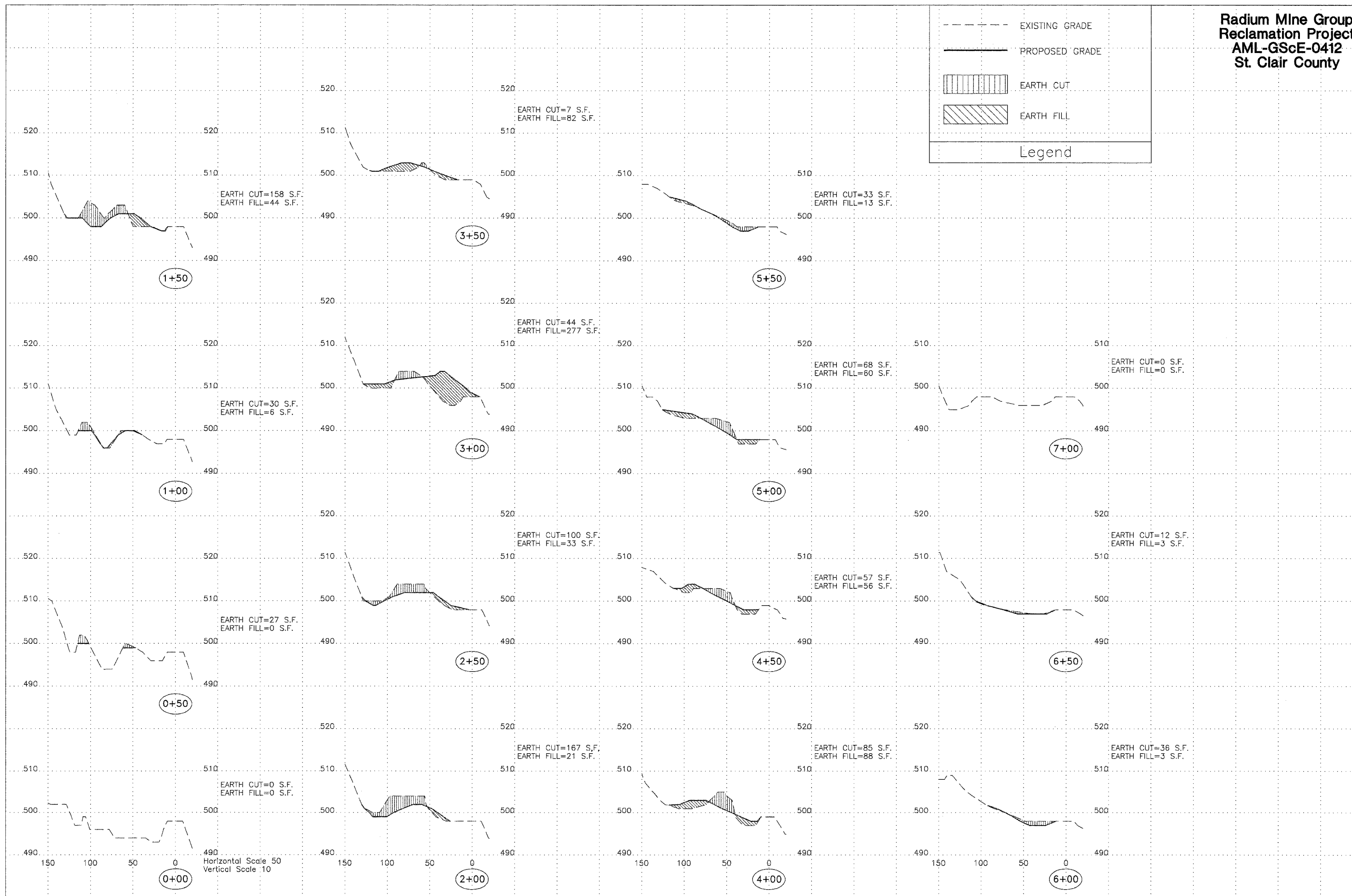
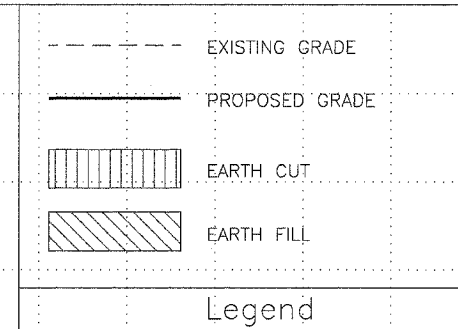
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NE1/4 of SW1/4 Sec 21 T2N-R8W

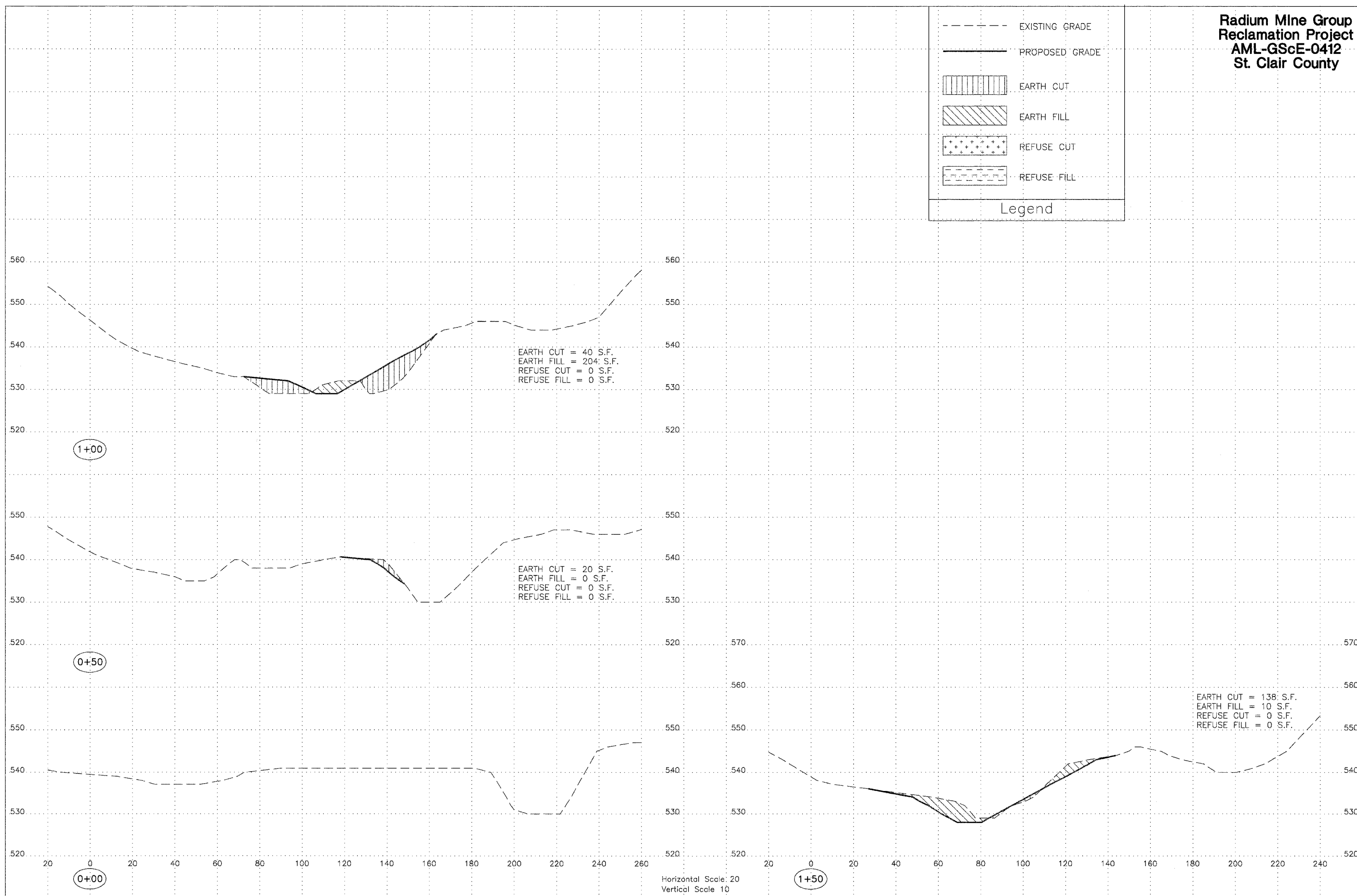
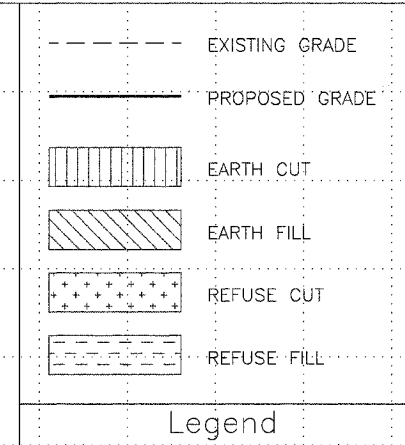
**Radium Mine Group  
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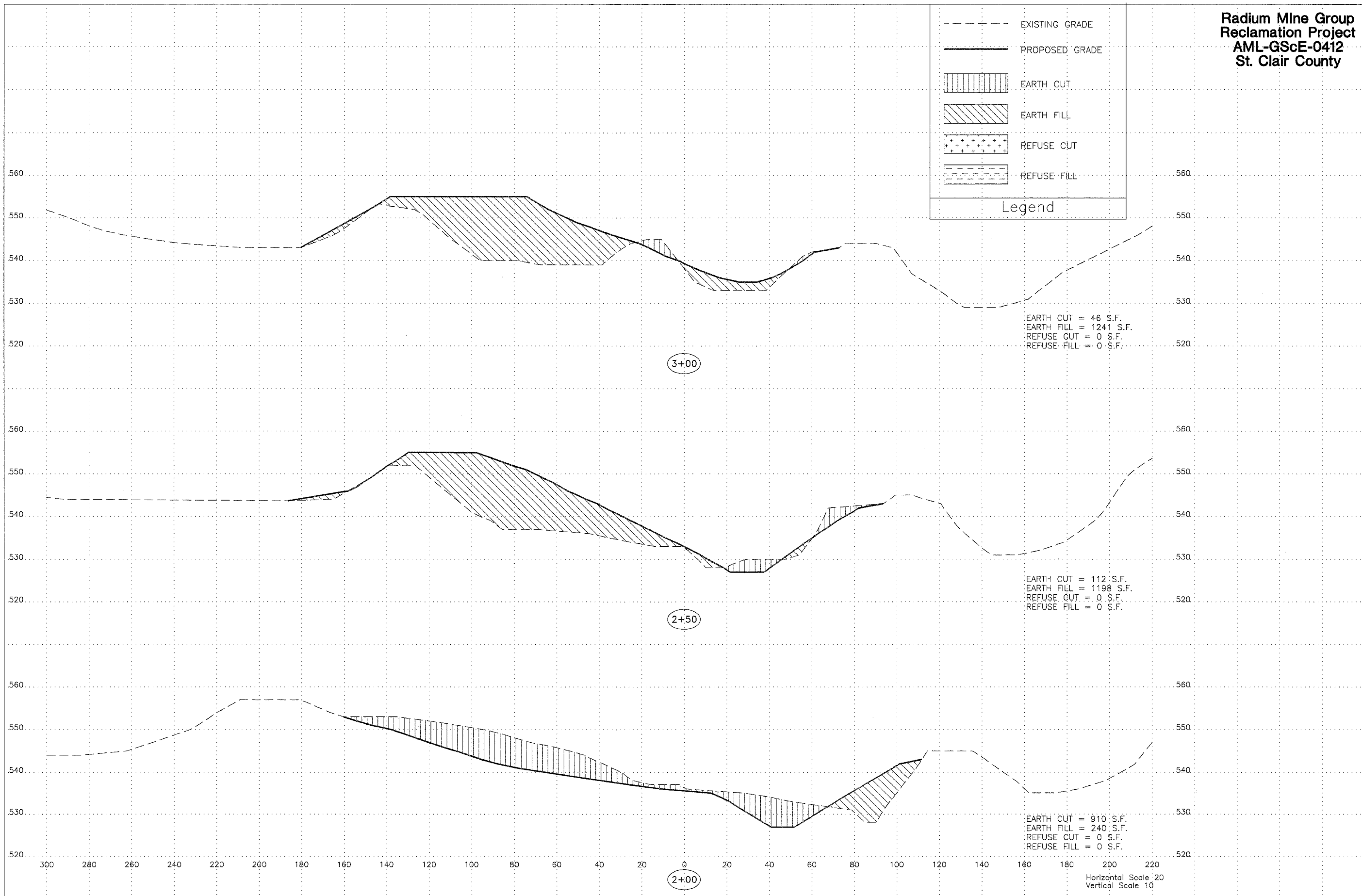
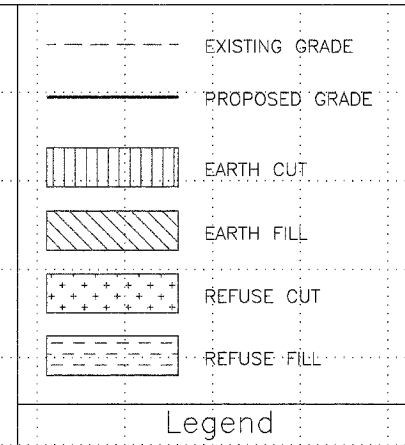


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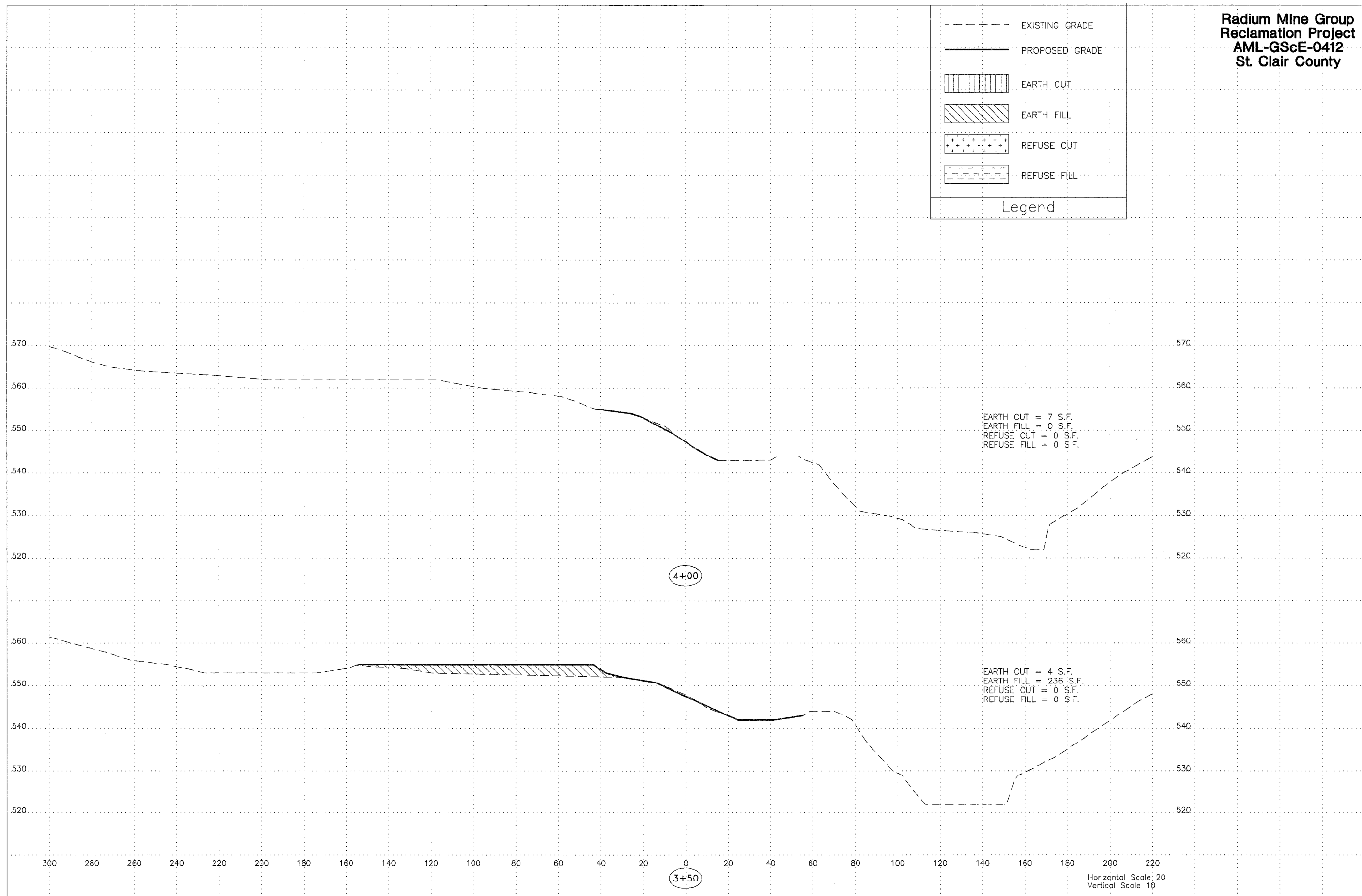
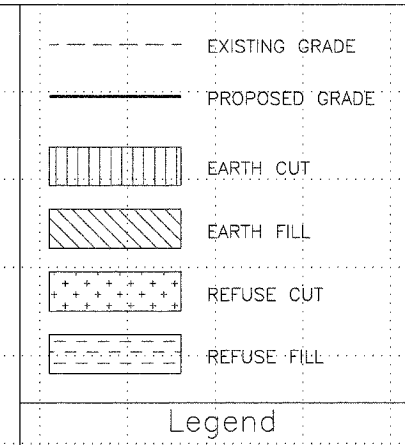


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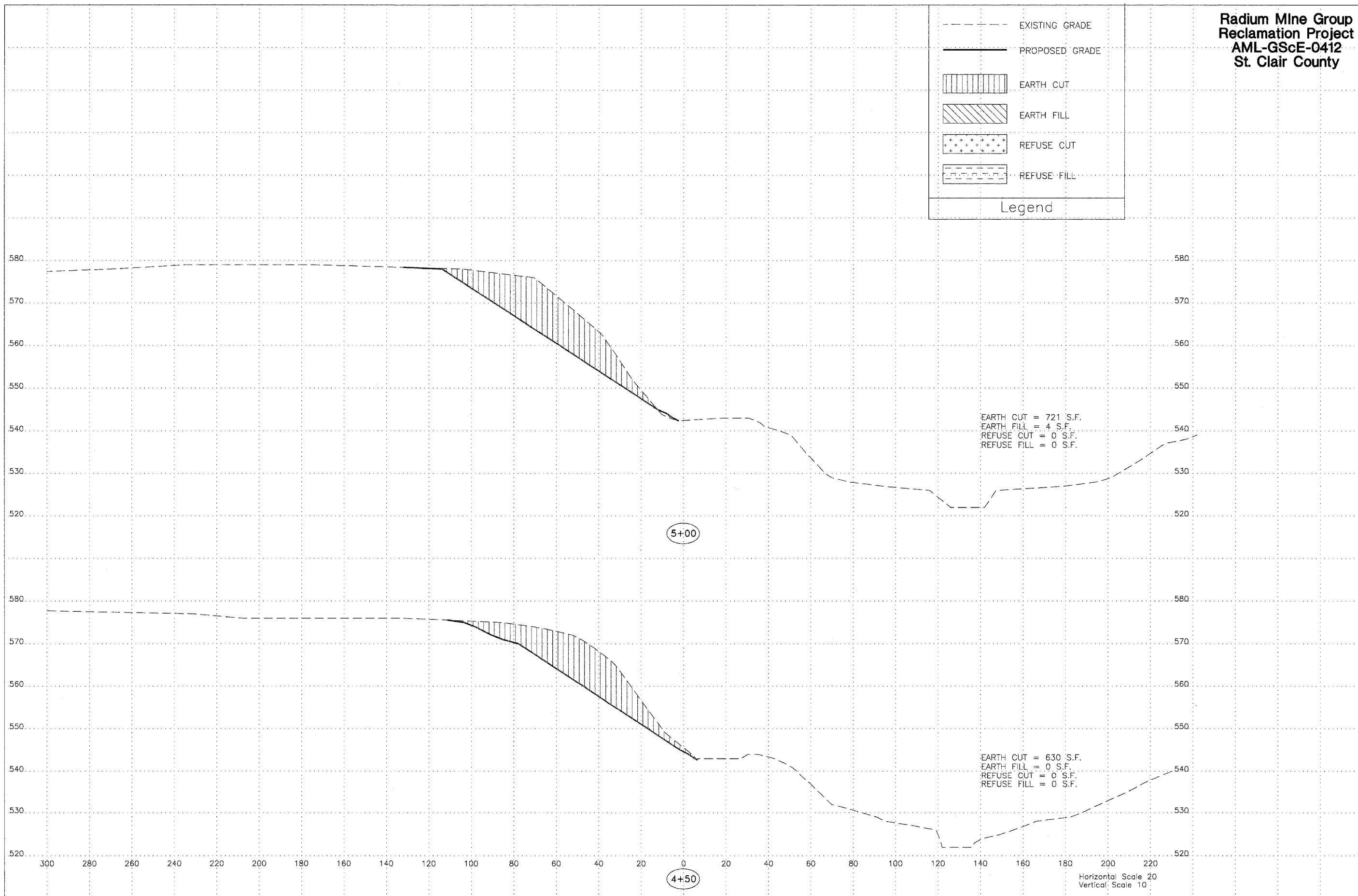
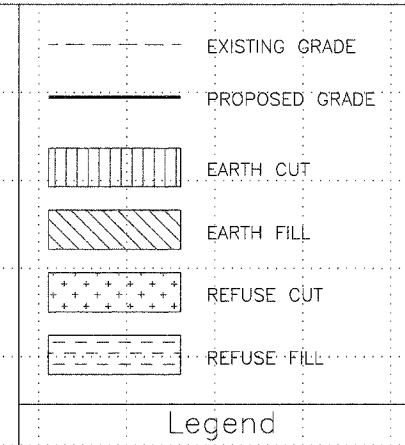


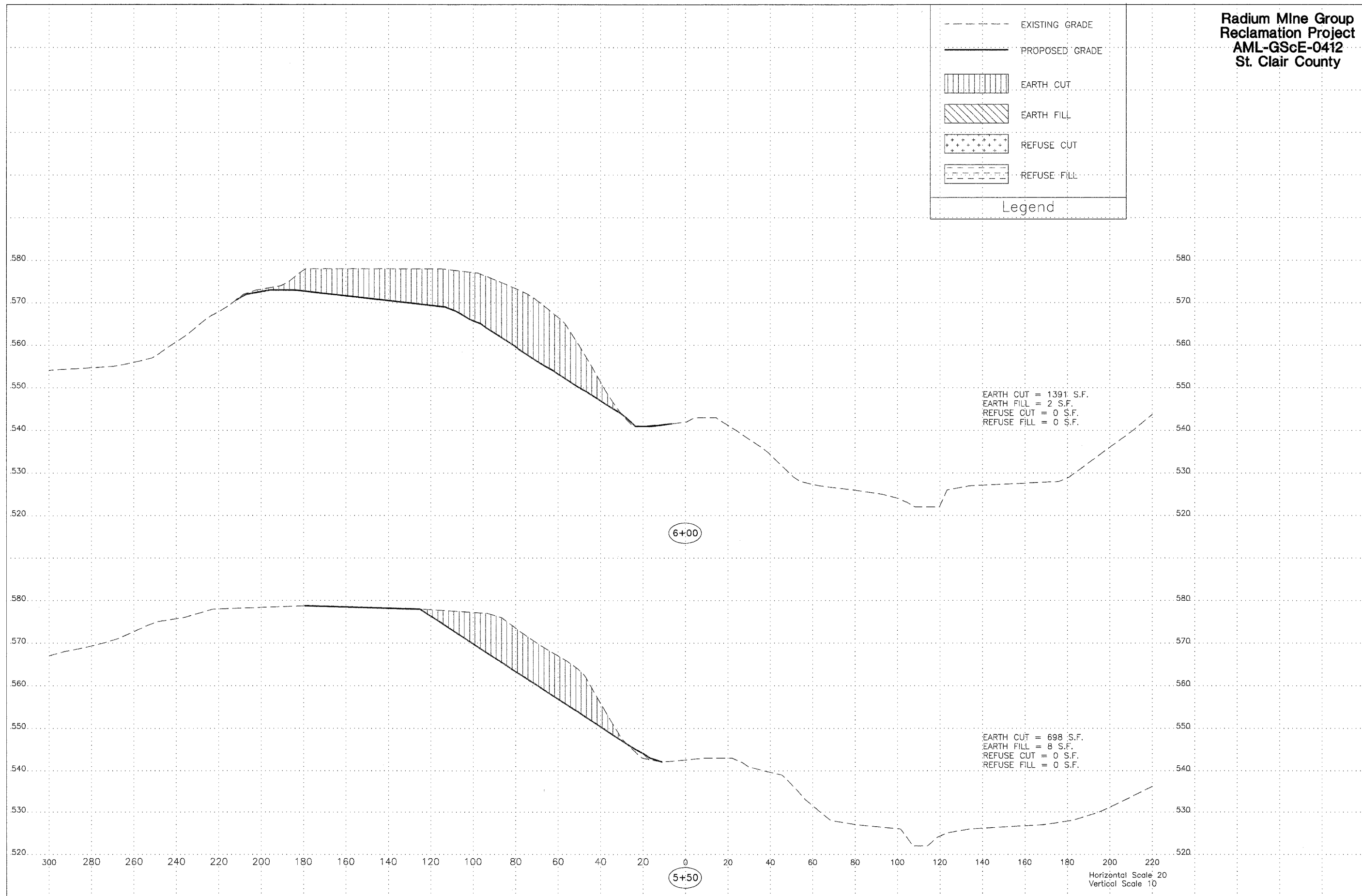
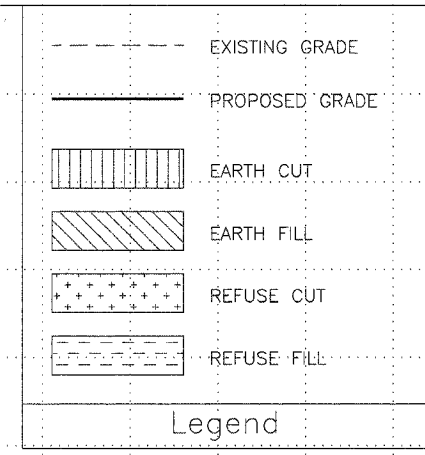


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AML-GScE-0412  
St. Clair County**



Horizontal Scale: 20  
Vertical Scale: 10





EARTH CUT = 1391 S.F.  
EARTH FILL = 2 S.F.  
REFUSE CUT = 0 S.F.  
REFUSE FILL = 0 S.F.

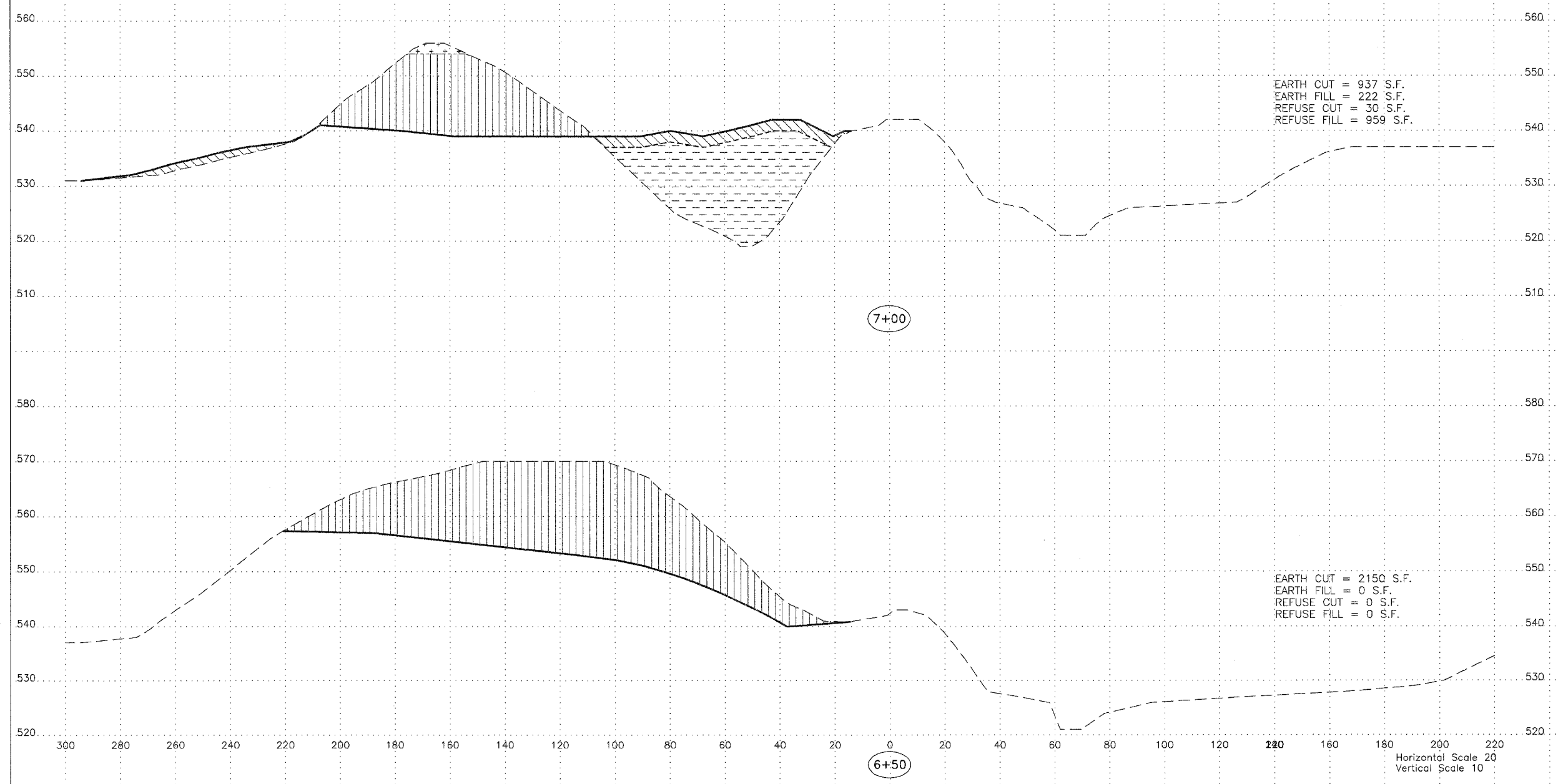
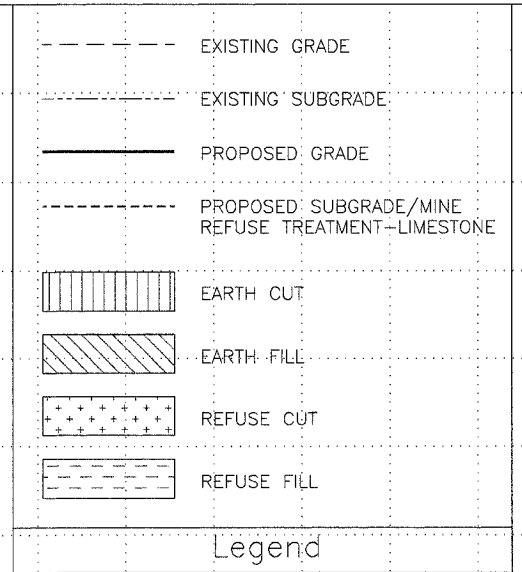
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EARTH FILL = 8 S.F.  
REFUSE CUT = 0 S.F.  
REFUSE FILL = 0 S.F.

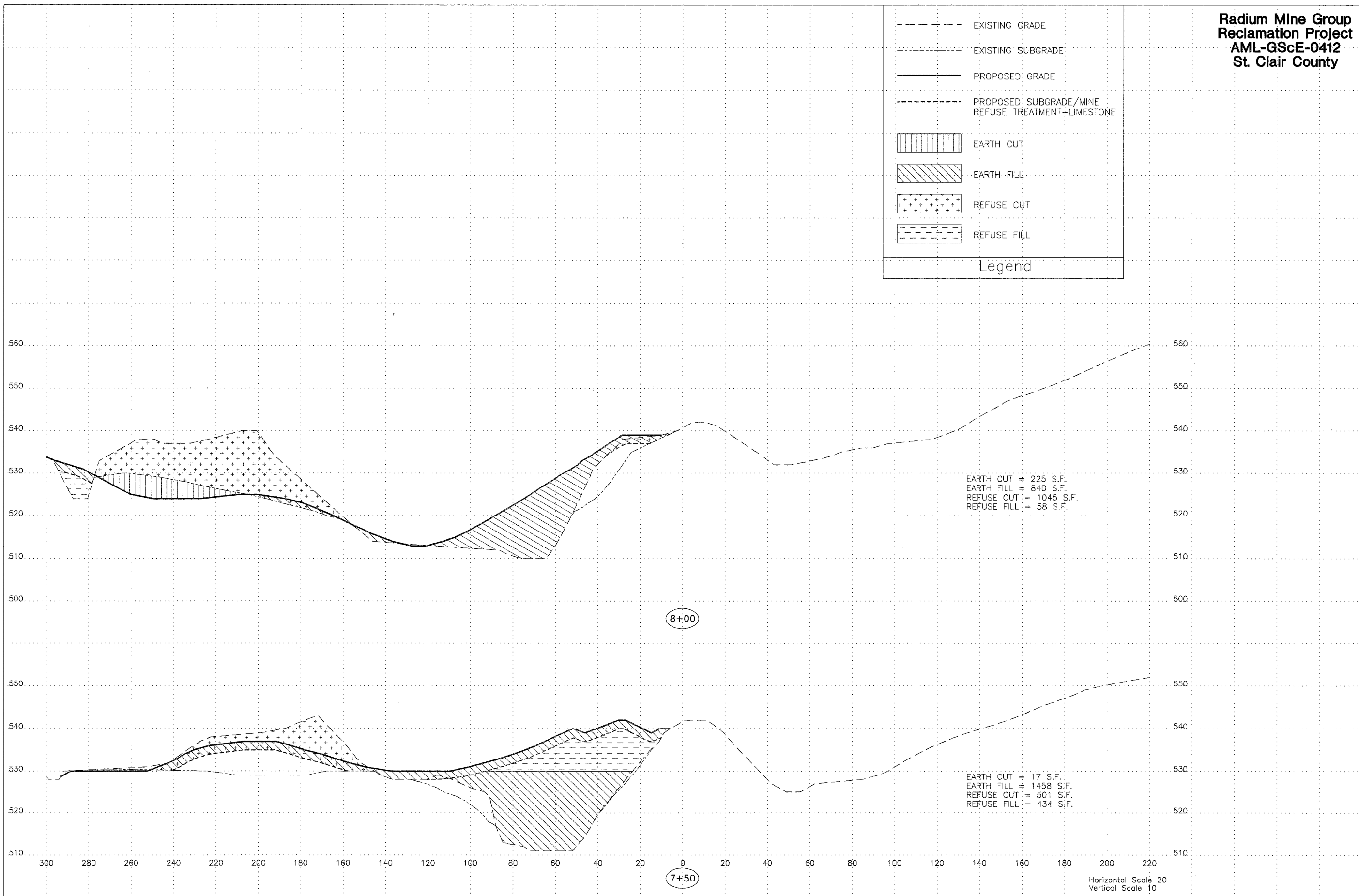
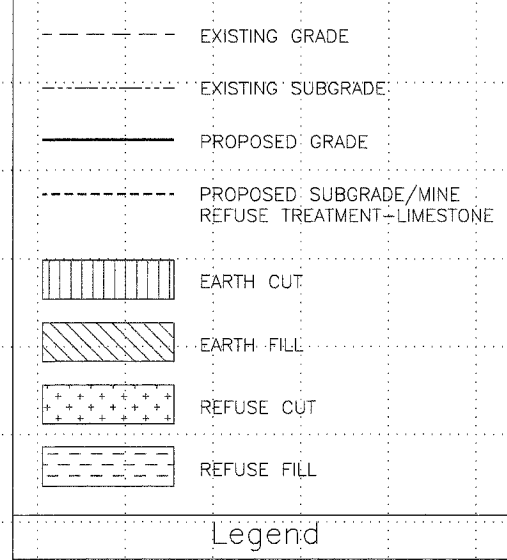
6+00

5+50

Horizontal Scale 20  
Vertical Scale 10



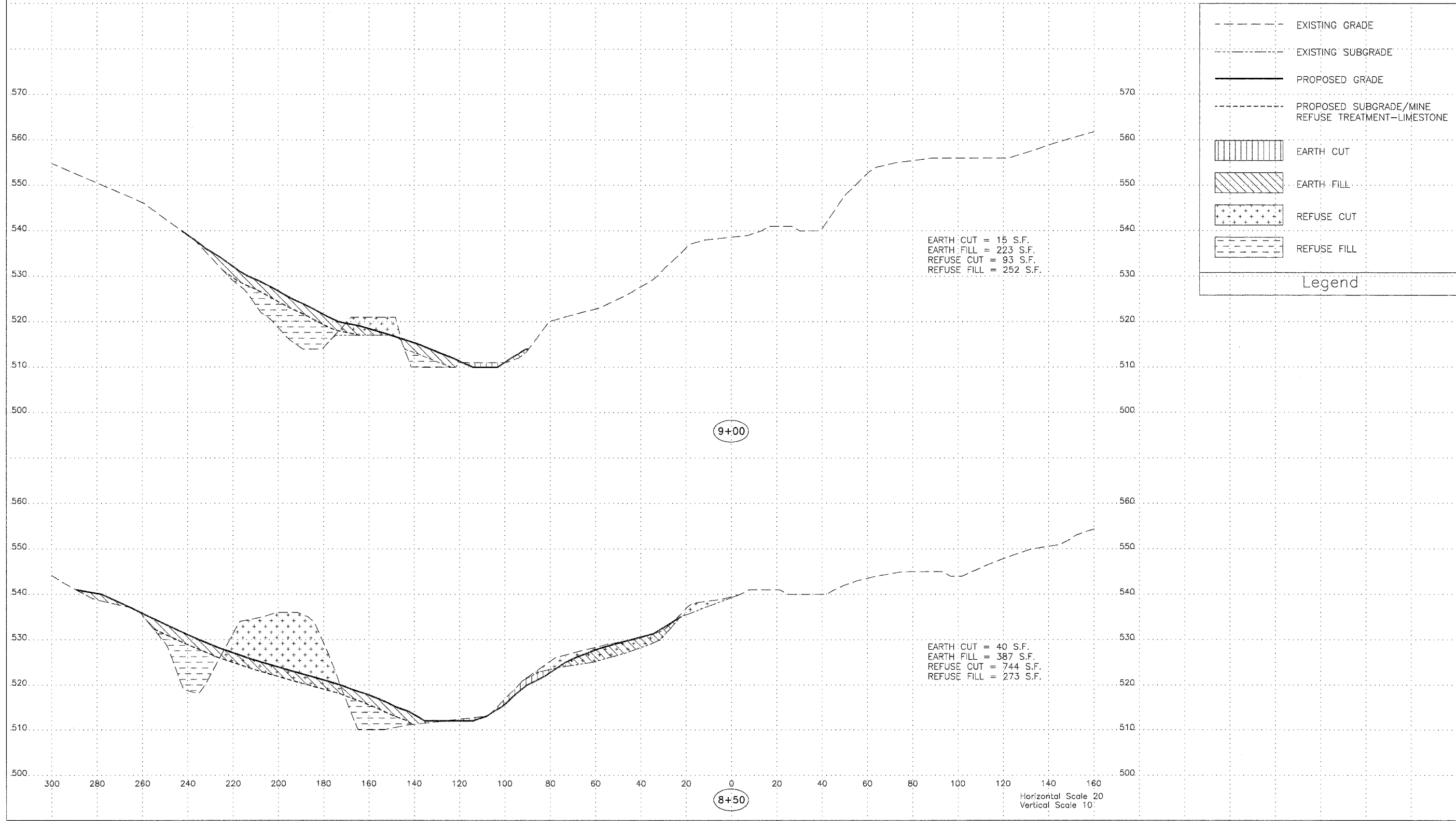




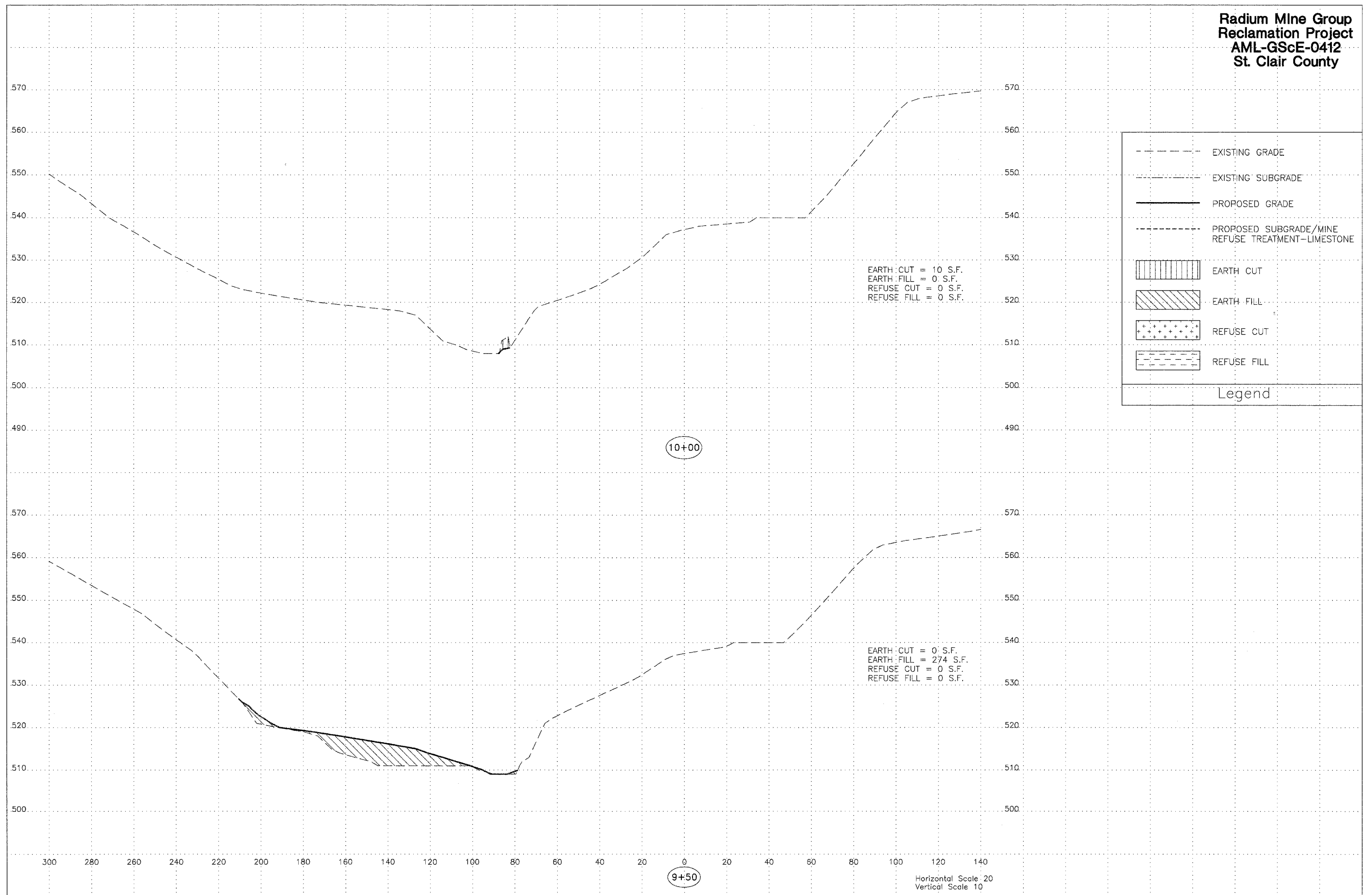
EARTH CUT = 225 S.F.  
 EARTH FILL = 840 S.F.  
 REFUSE CUT = 1045 S.F.  
 REFUSE FILL = 58 S.F.

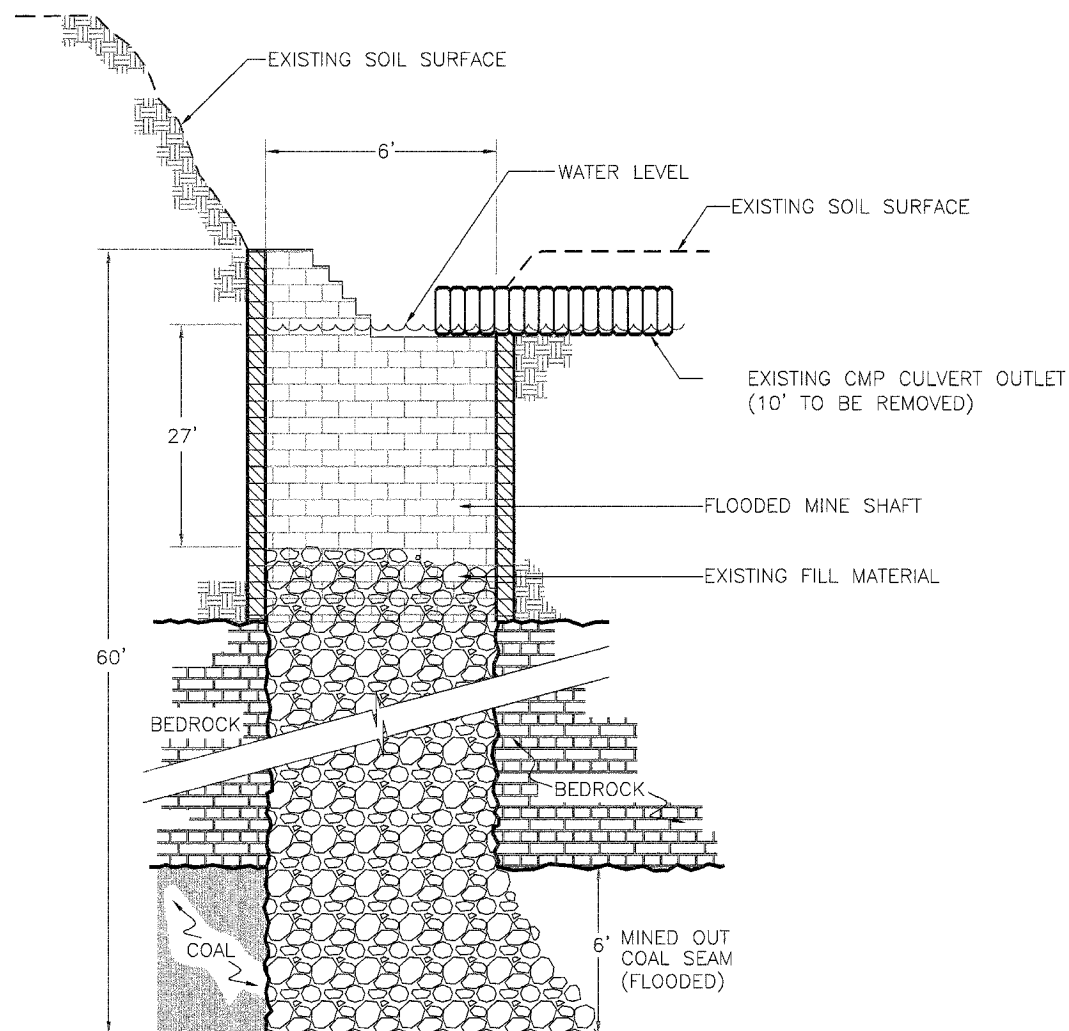
EARTH CUT = 17 S.F.  
 EARTH FILL = 1458 S.F.  
 REFUSE CUT = 501 S.F.  
 REFUSE FILL = 434 S.F.

**Radium Mine Group  
Reclamation Project  
AML-GScE-0412  
St. Clair County**

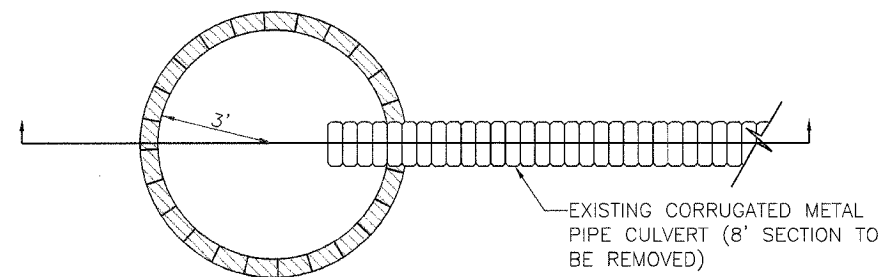


**Radium Mine Group  
Reclamation Project  
AML-GScE-0412  
St. Clair County**



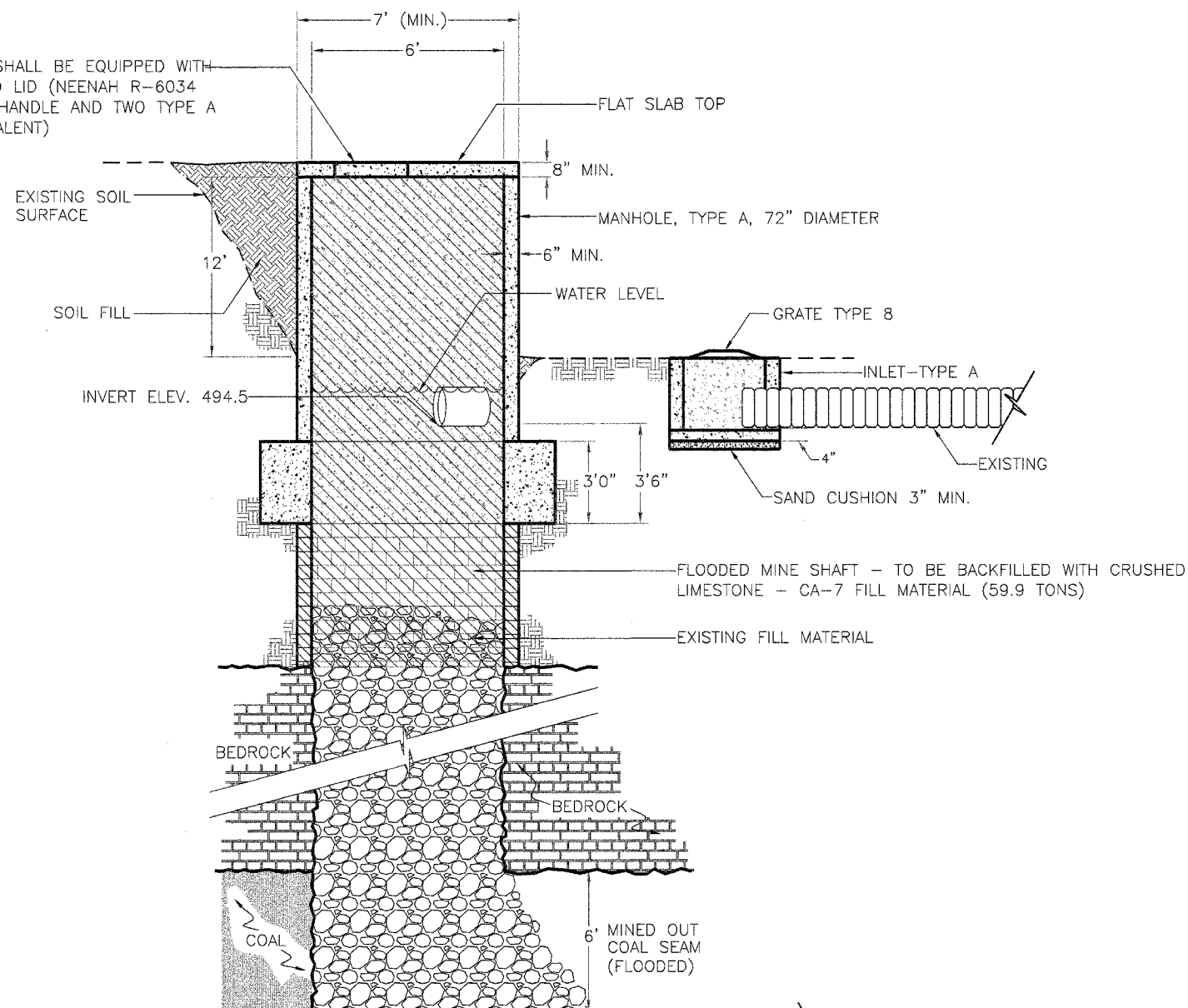


**B CROSS SECTION - EXISTING CONDITIONS**  
21 NOT TO SCALE

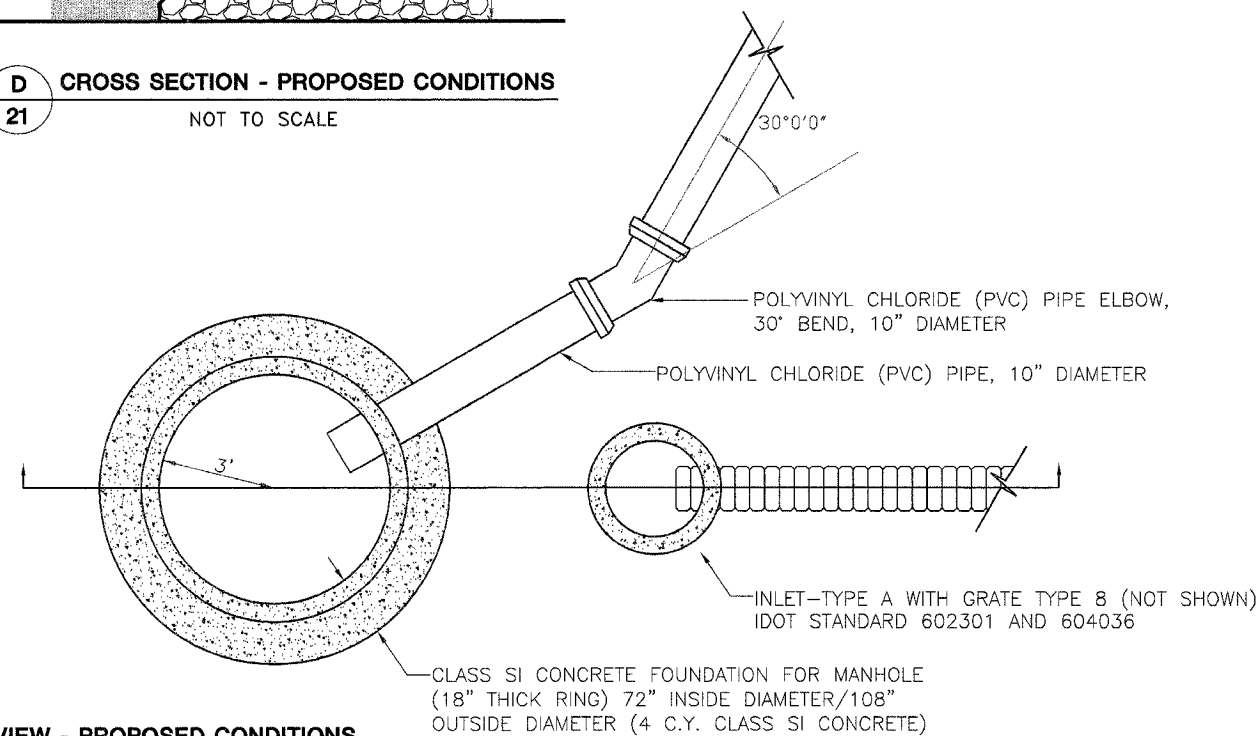


**C PLAN VIEW - EXISTING CONDITIONS**  
21 NOT TO SCALE

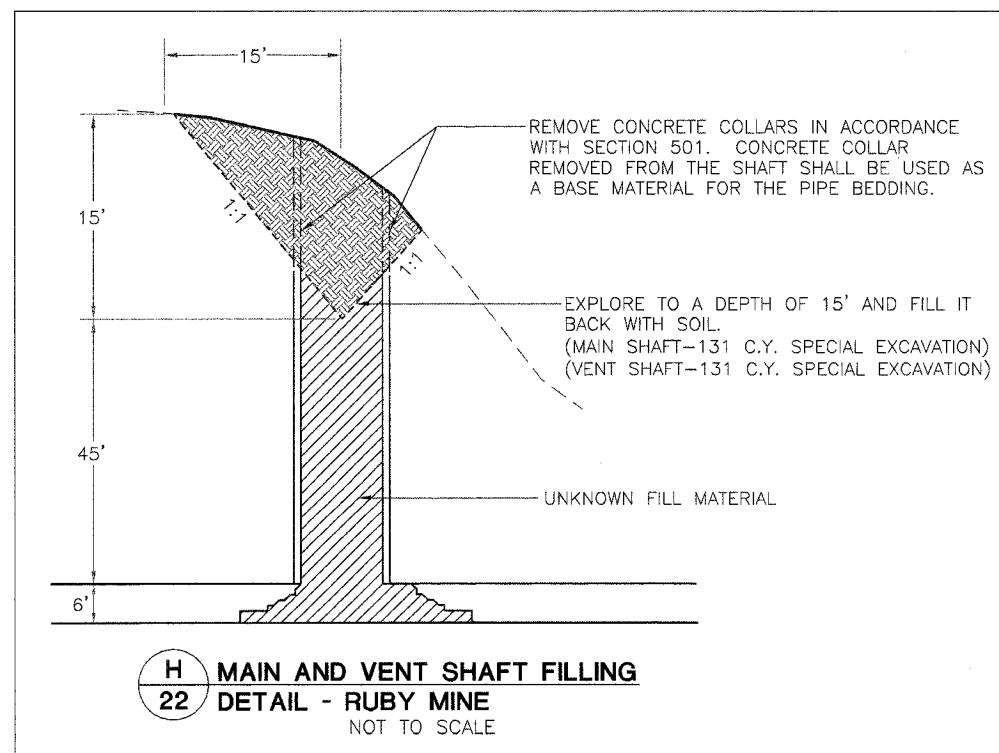
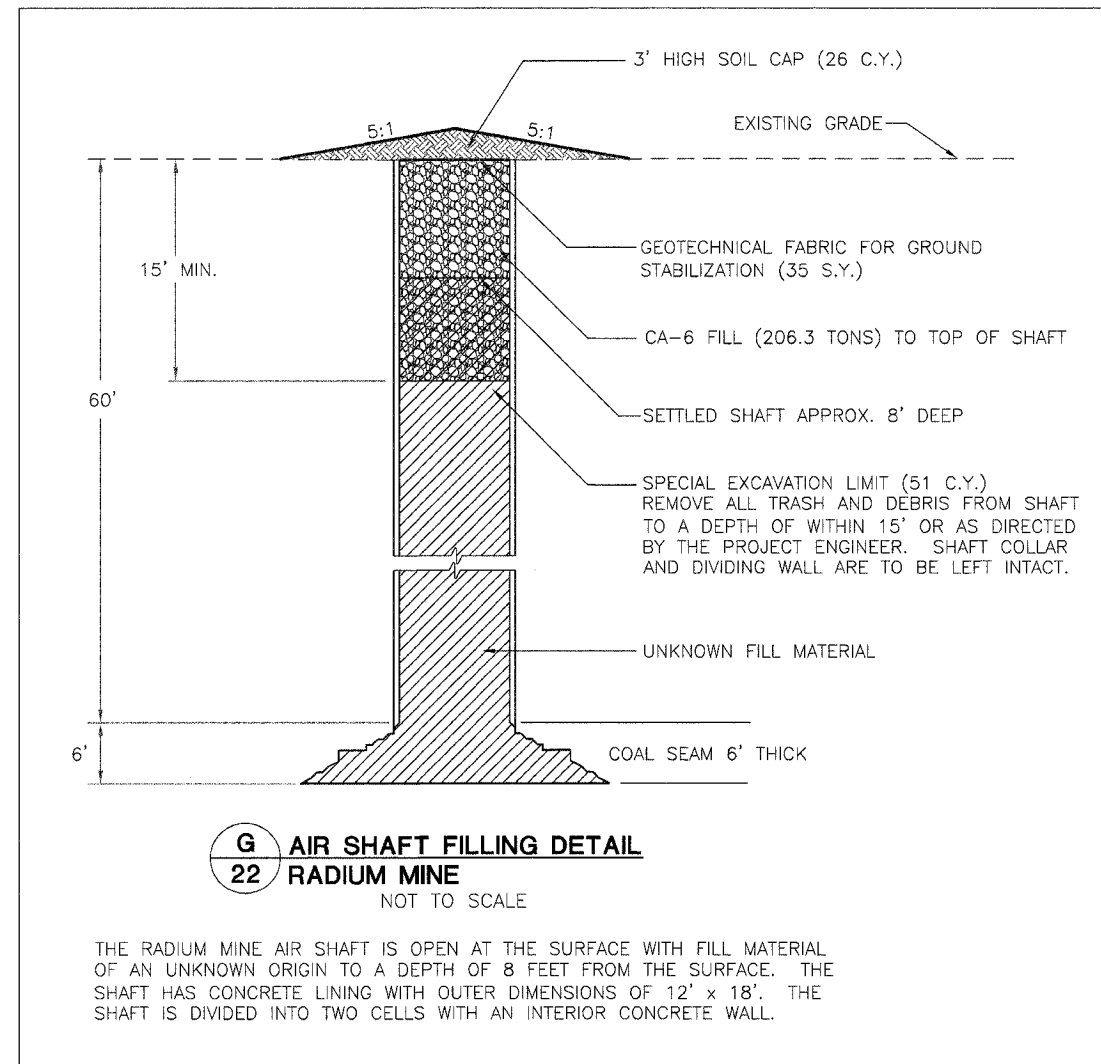
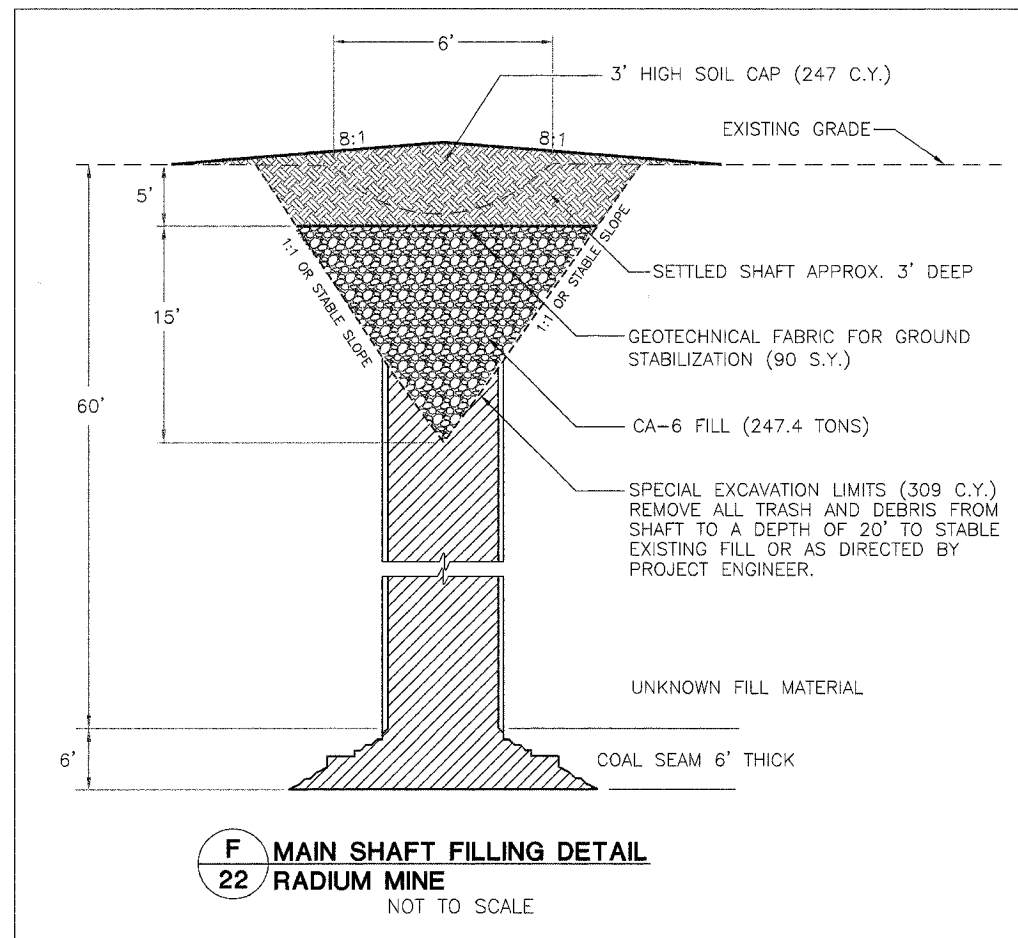
INSPECTION OPENING SHALL BE EQUIPPED WITH CAST IRON FRAME AND LID (NEENAH R-6034 WITH TYPE "C" DROP HANDLE AND TWO TYPE A TOP HASPS OR EQUIVALENT)



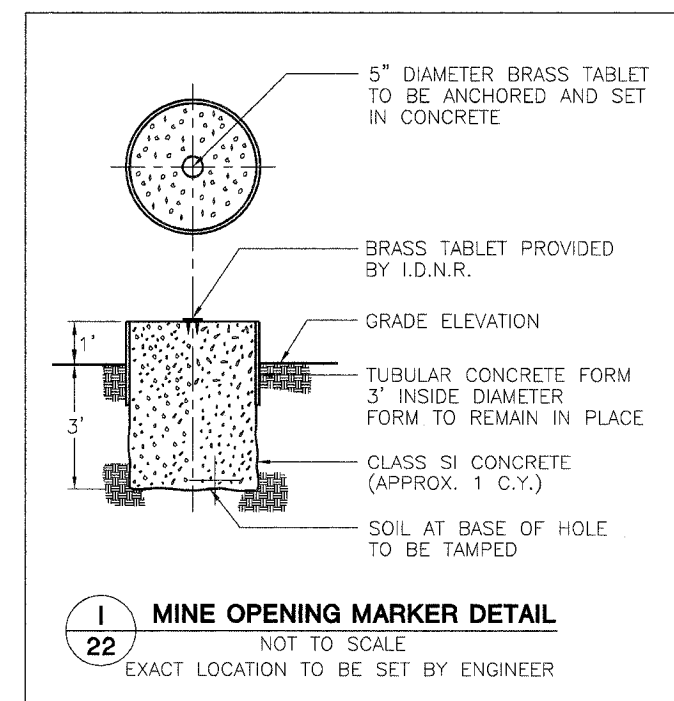
**D CROSS SECTION - PROPOSED CONDITIONS**  
21 NOT TO SCALE



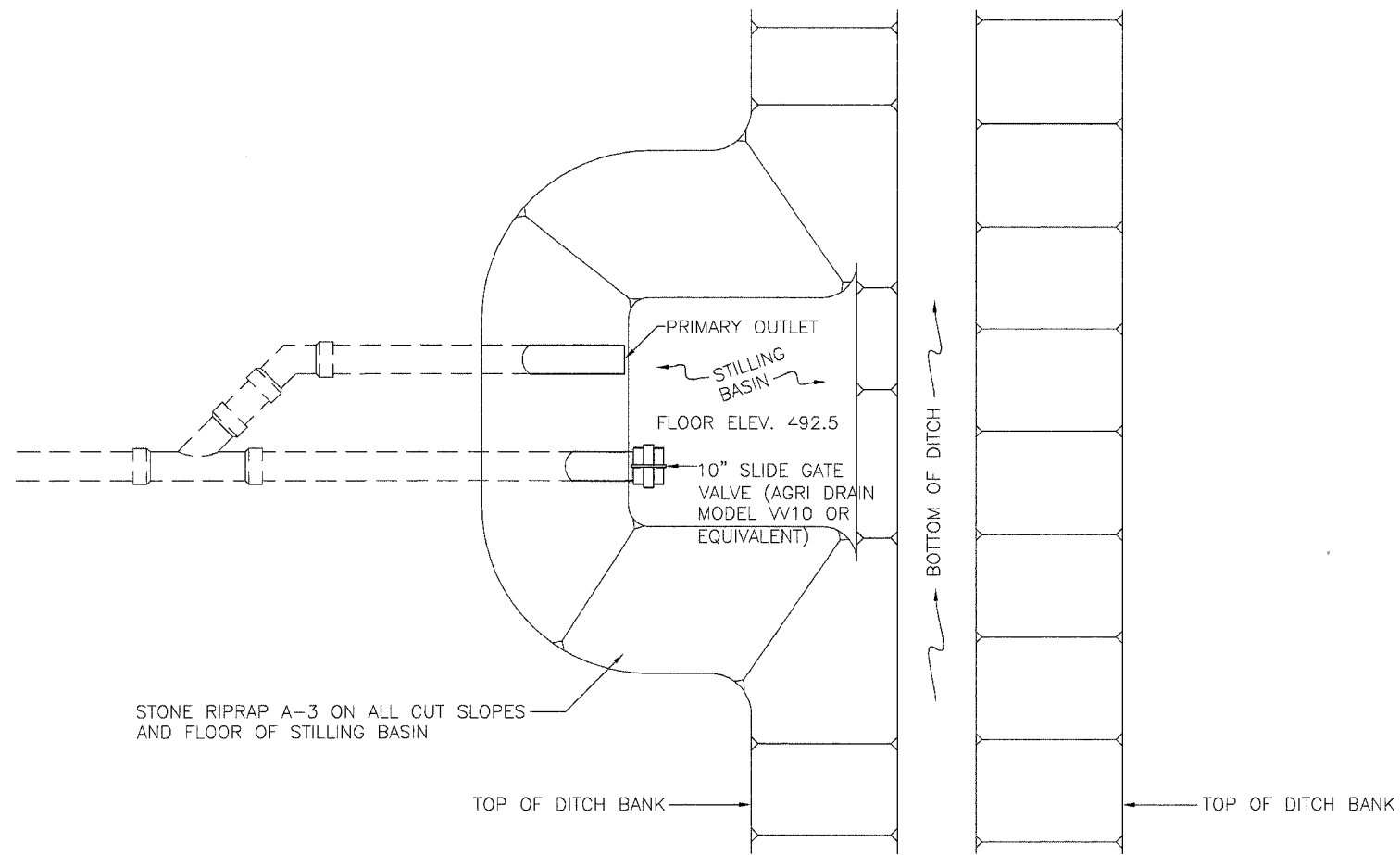
**E PLAN VIEW - PROPOSED CONDITIONS**  
21 NOT TO SCALE



**NOTE:**  
 DUE TO THE UNKNOWN CONDITIONS THAT EXIST IN AND AROUND THE SHAFTS, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN PERFORMING WORK NEAR THEM. THE ENGINEER RESERVES THE RIGHT TO INCREASE OR DECREASE THE QUANTITY FOR SPECIAL EXCAVATION AND BACKFILLING MATERIALS AS DETERMINED BY THE EXACT CONDITIONS ENCOUNTERED DURING SPECIAL EXCAVATION.



Drawn By: M-LF, V.P. Date: 12/15/2005  
 Checked By:

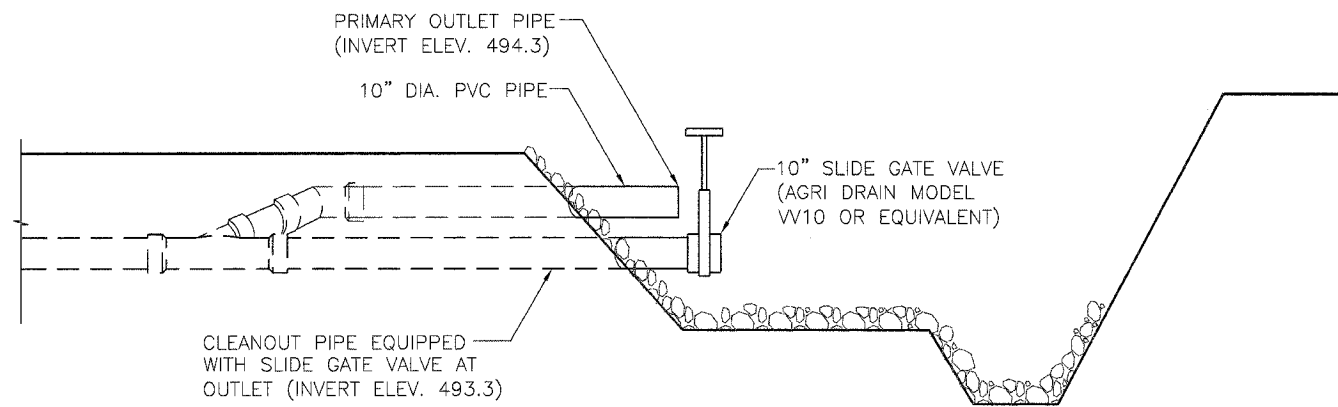


STONE RIPRAP A-3 ON ALL CUT SLOPES AND FLOOR OF STILLING BASIN

TOP OF DITCH BANK

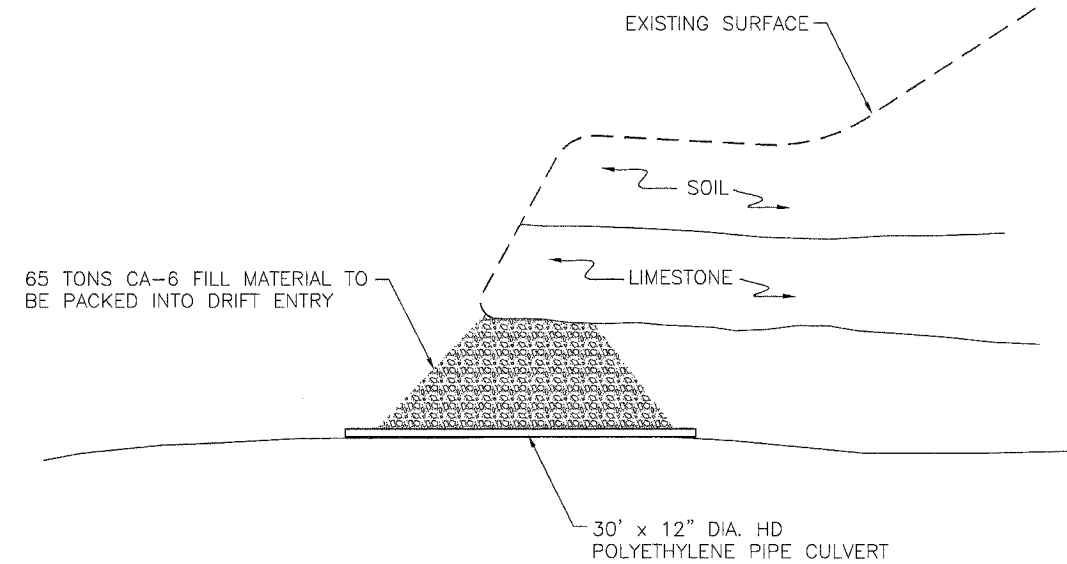
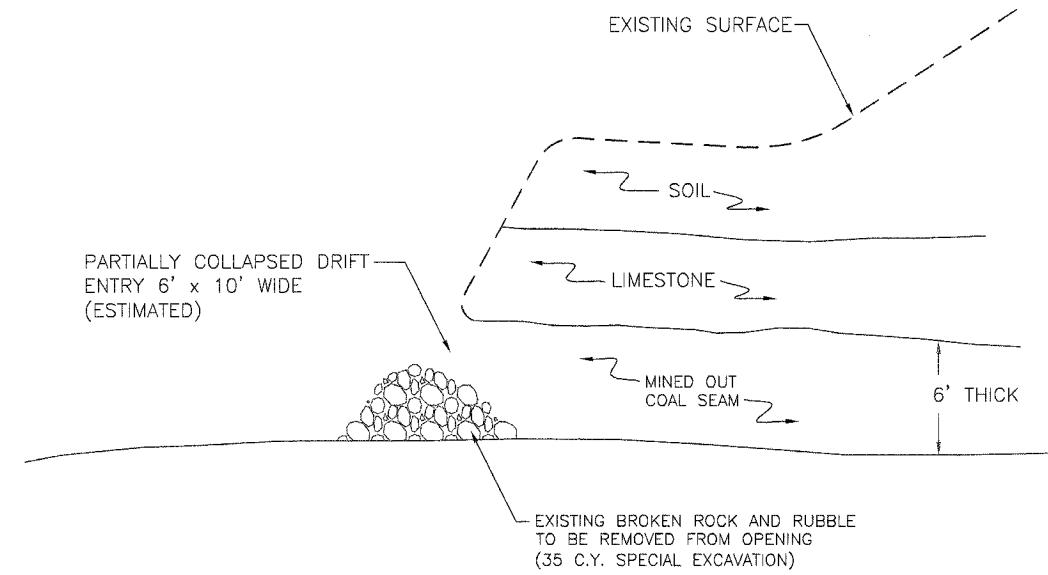
BOTTOM OF DITCH

TOP OF DITCH BANK



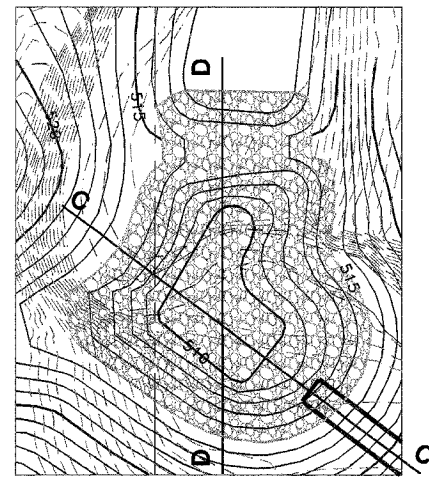
CLEANOUT PIPE EQUIPPED WITH SLIDE GATE VALVE AT OUTLET (INVERT ELEV. 493.3)

**J** RIPRAPPED SPLASH BASIN DETAIL  
**23** RADIUM MINE - MURPHY SHAFT  
 NOT TO SCALE

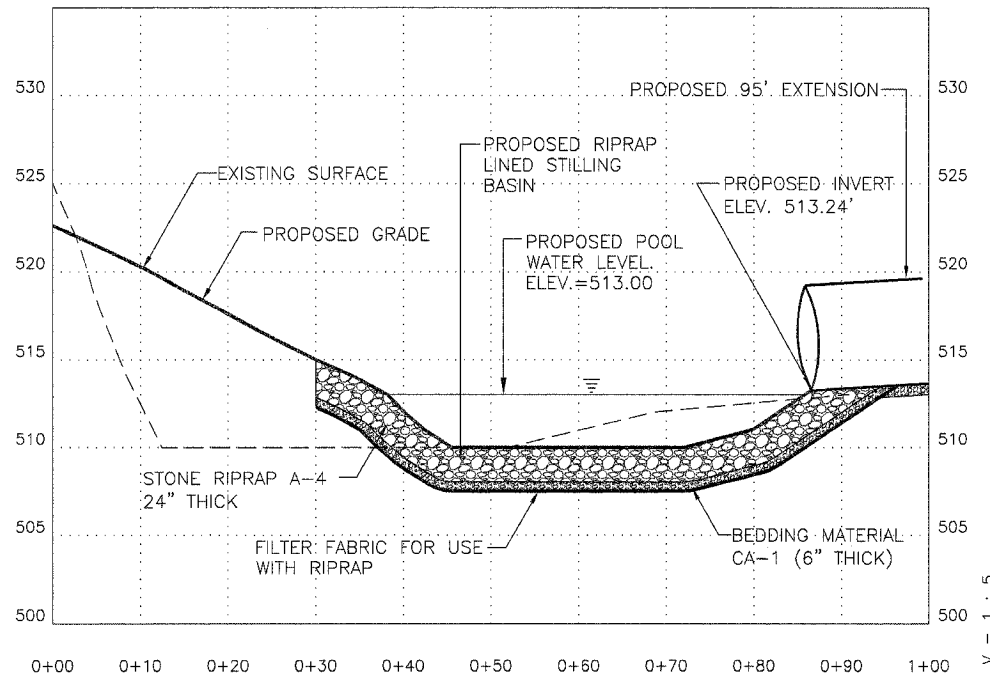


**NOTE:**  
 DUE TO THE UNKNOWN CONDITIONS THAT EXIST IN AND AROUND THE DRIFT ENTRY, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN PERFORMING WORK NEAR THE ENTRY. THE ENGINEER RESERVES THE RIGHT TO INCREASE OR DECREASE THE QUANTITY FOR SPECIAL EXCAVATION AND BACKFILLING MATERIALS AS DETERMINED BY THE EXACT CONDITIONS ENCOUNTERED DURING SPECIAL EXCAVATION,

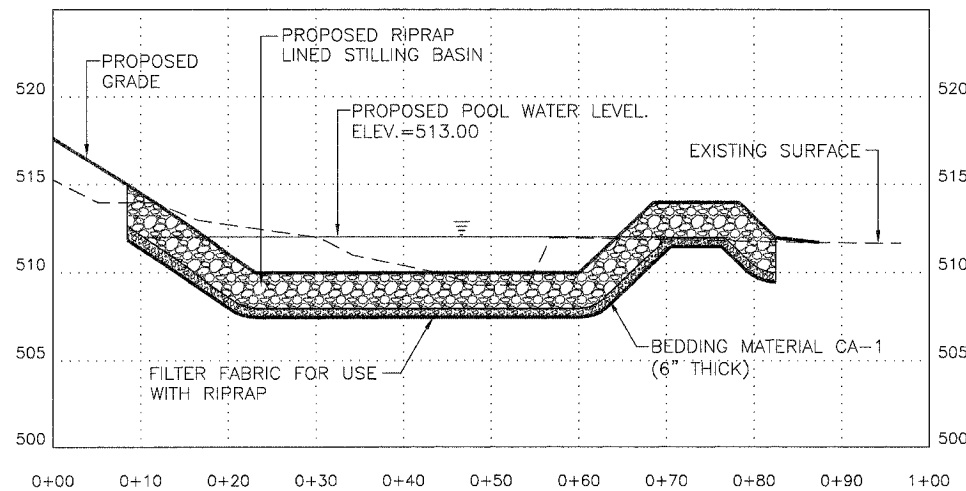
**K** DRIFT ENTRY FILLING DETAIL  
**23** ZISKA MINE  
 NOT TO SCALE



SCALE : 1"=50'

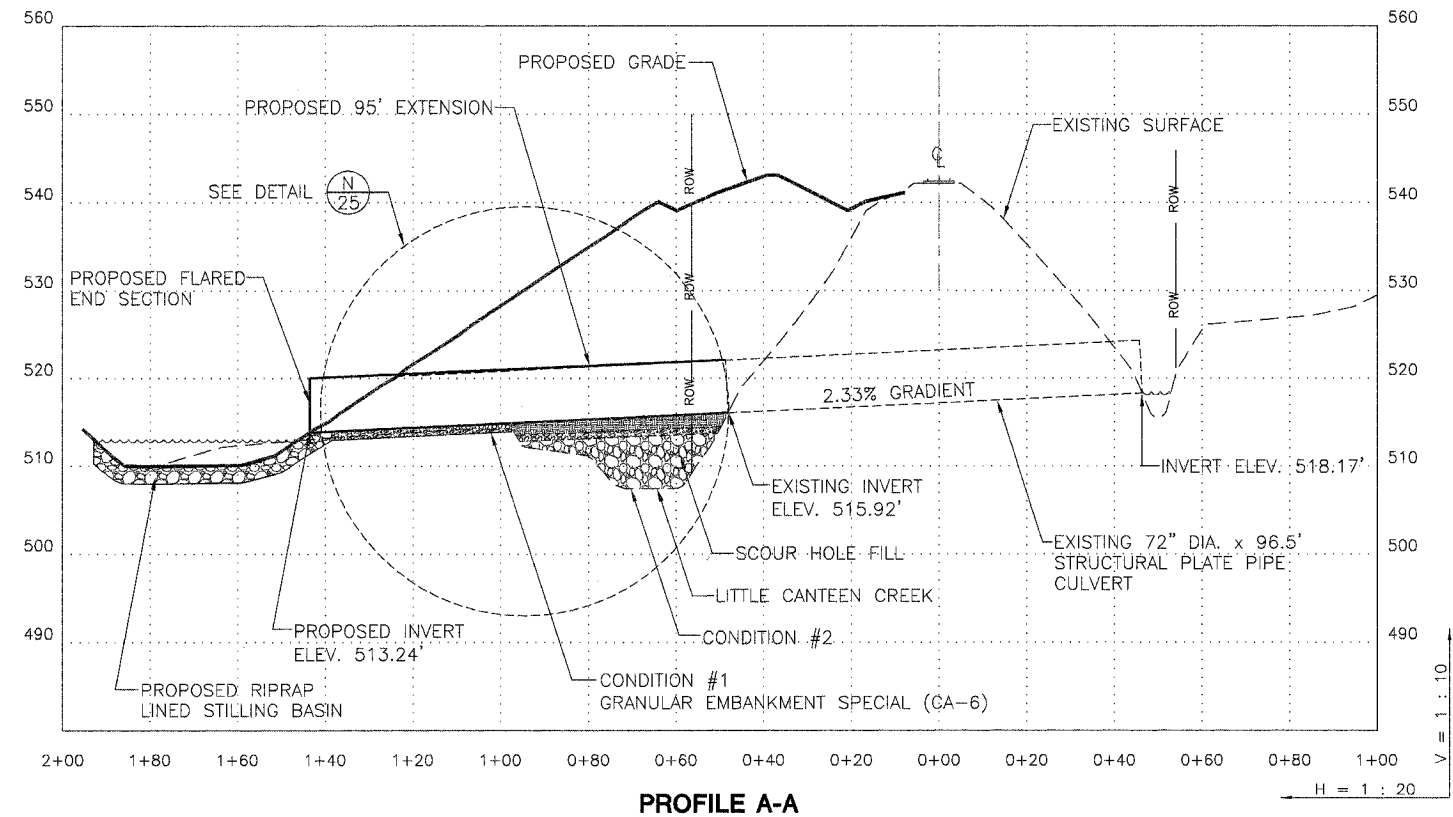


SECTION C-C

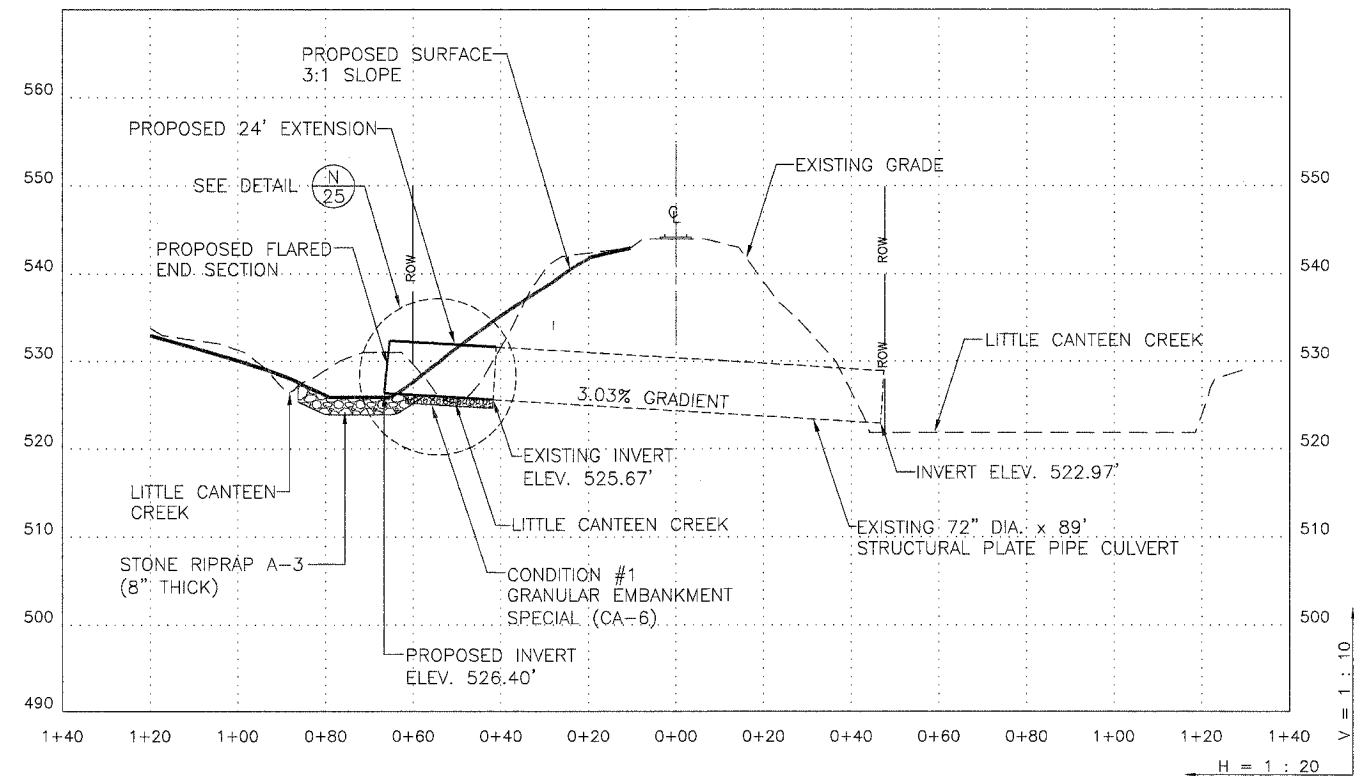


SECTION D-D

**L**  
24 PLUNGE POOL DETAIL



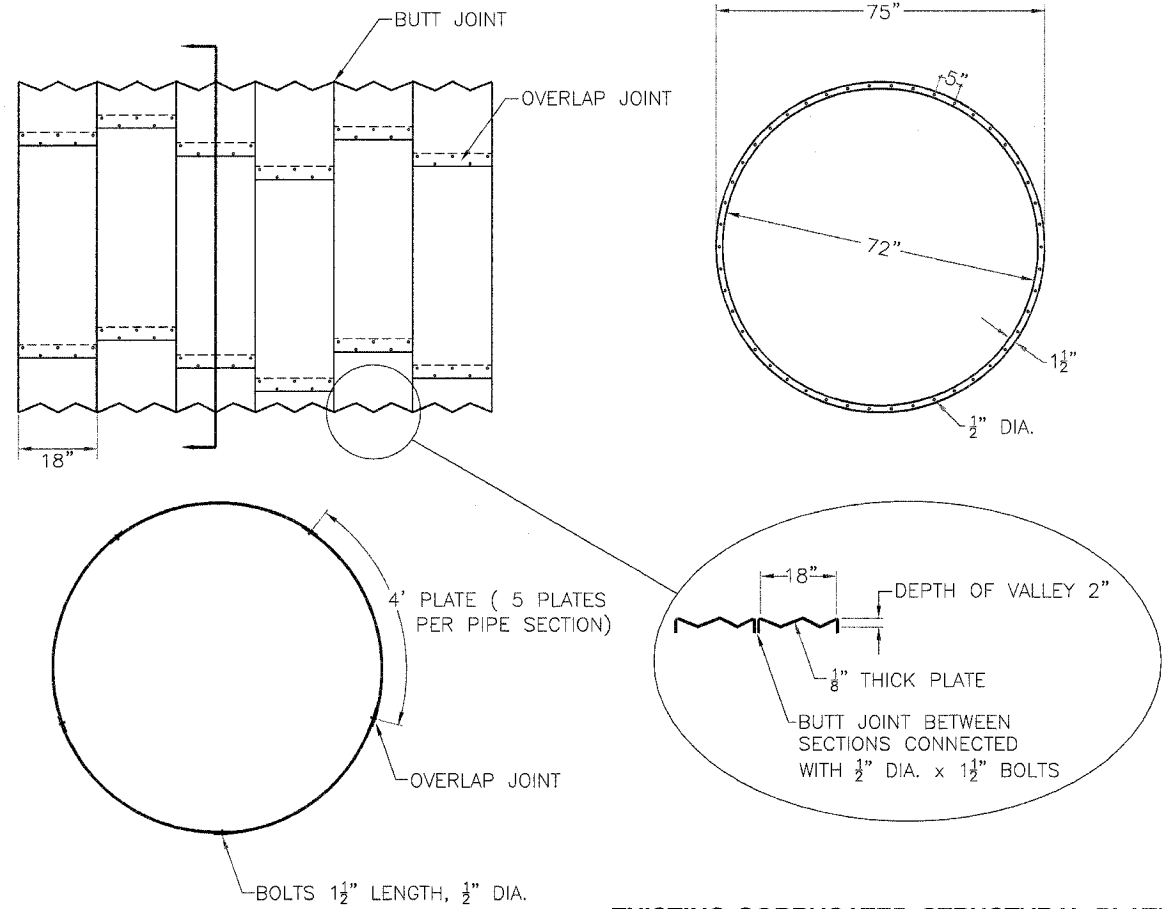
PROFILE A-A



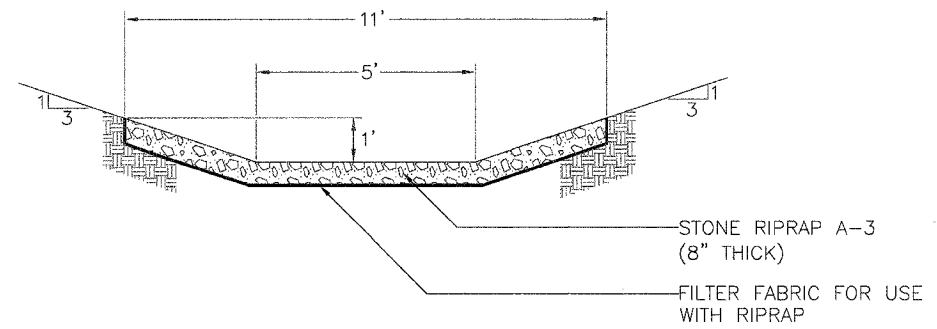
PROFILE B-B

**M**  
24 PROFILES

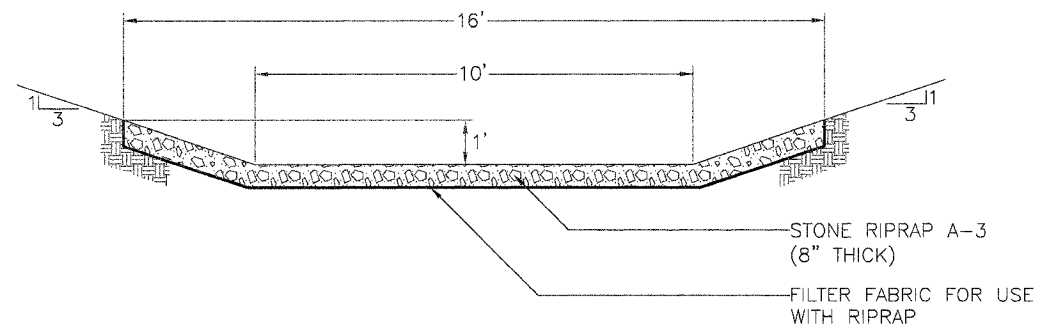




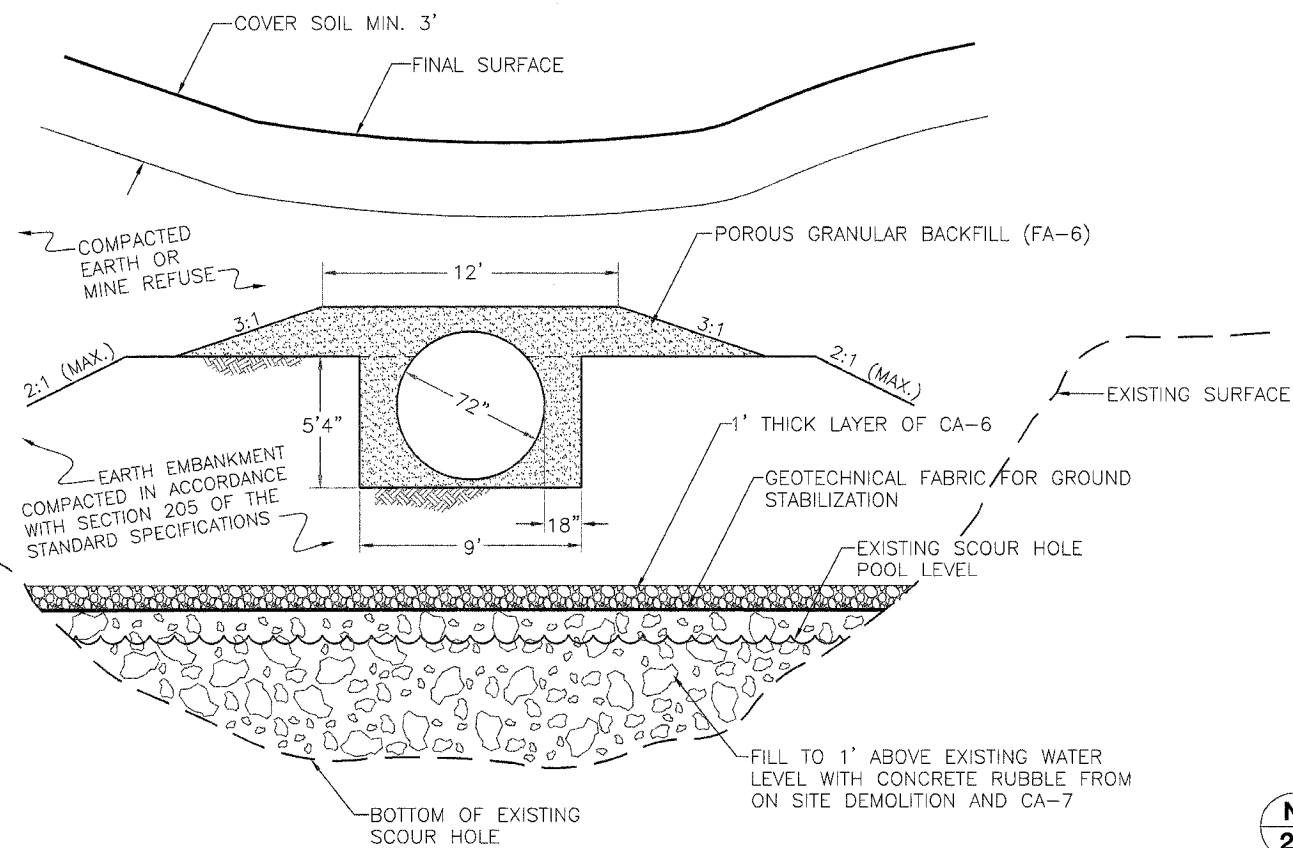
**EXISTING CORRUGATED STRUCTURAL PLATE**



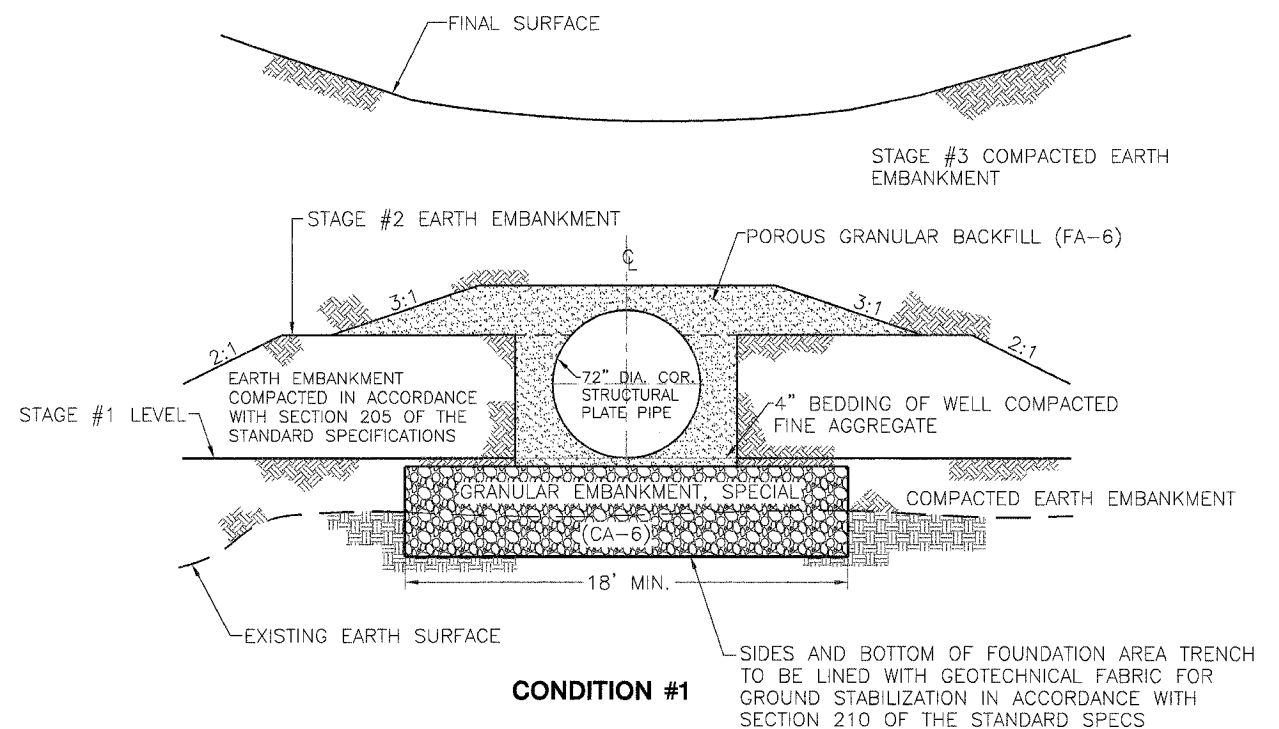
**O RIPRAP LINED DITCH DETAIL**  
**25 RUBY MINE**  
 NOT TO SCALE



**P RIPRAP LINED DITCH DETAIL**  
**25 RUBY MINE**  
 NOT TO SCALE



**CONDITION #2**



**CONDITION #1**

**N METAL CORRUGATED STRUCTURAL**  
**25 PLATE PIPE DETAILS**  
**RUBY MINE**  
 NOT TO SCALE