Sunnyside Cogeneration Associates

P.O. Box 10, East Carbon, Utah 84520 • (801) 888-4476 • Fax (801) 888-2538

August 7, 2017

Daron Haddock
Division of Oil Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84116

RE: Sunnyside Refuse and Slurry C/007/0035
Permit Amendment – East Access Road - W

Dear Mr. Haddock,

SCA is submitting the enclosed permit amendment package to update road classifications and bring permit documents in line with current road conditions. Changes are as follows:

Road W is a proposed primary haul road towards the east or southeast portion of the permit area. It is intended to allow access for offsite activities to cross through the permit area. Grading and regular maintenance will occur during periods of operations on this road. This road is proposed to cross through a future disturbed area (reclamation borrow area) which has already been included in the bond, hence no new reclamation area needs to be added to the bond.

Road L was a previously permitted Pit Road at the top of the south bank of the old East Slurry Cell. With the excavation of refuse material from that area, the road is no longer there. It has been removed from the permit drawings enclosed.

If you have any questions regarding this submittal, please contact me or Rusty Netz at 435-888-4476.

Sincerely,

Gerald Hascall
Agent for
Sunnyside Cogeneration Associates

cc: Rusty Netz
Plant Files
Scott Carlson

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: SUNNYSIDE COGENERATION ASSOCIATES
Mine: SUNNYSIDE REFUSE & SLURRY **Permit Number:** C/007/035
Title: East Haul Road - W

Description, Include reason for application and timing required to implement:
Proposed Haul Road W to the east. Remove Pit Road L. Other Minor Adjustments / updates

Instructions: If you answer yes to any of the first eight questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: 0.00 ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☒ Yes ☐ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?
☐ Yes ☒ No 24. Does the application include confidential information and is it clearly marked and separated in the plan?

Please attach three (3) review copies of the application. If the mine is on or adjacent to Forest Service land please submit four (4) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Gerald Hascall (Print Name) | Plant Manager (Position) | Aug 7, 2017 (Date) | Signature (Right-click above choose certify then have notary sign below)

Subscribed and sworn to before me this 7 day of August, 2017

Notary Public: Amber Nichols, state of Utah.

My commission Expires: May 15, 2021
Commission Number: 694843
Address: #1 Powerplant Road
City: Sunnyside State: Ut Zip: 84539

AMBER NICHOLS
Notary Public – State of Utah
Comm. No. 694843
My Commission Expires on
May 15, 2021

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised December 10, 2007)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: SUNNYSIDE COGENERATION ASSOCIATES
Mine: SUNNYSIDE REFUSE & SLURRY **Permit Number:** C/007/035
Title: East Haul Road - W

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

Add	Replace	Remove	DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☒ Replace	☐ Remove	Drawing 5-2
☐ Add	☒ Replace	☐ Remove	Drawing 5-2C
☐ Add	☒ Replace	☐ Remove	Drawing 5-2G
☐ Add	☒ Replace	☐ Remove	Drawing 5-2H
☐ Add	☒ Replace	☐ Remove	Drawing 7-1
☐ Add	☒ Replace	☐ Remove	Permit Text - Appendix 5-7 Roads
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining

Form DOGM - C2 (Revised December 10, 2007)

APPENDIX 5-7
ROAD DESCRIPTIONS

ROAD DESCRIPTIONS

TRANSPORTATION FACILITIES

The roads within the SCA Permit Area are used for a variety of purposes. These include hauling of refuse material, general access around the site, and various non-mining uses.

Presently, there are various roads within the permit area which connect to roads outside the permit area and provide a continuity of those outside uses. The discussion in this appendix related to roads within the permit area pertains only to mine uses within the permit. No additional information is included related to outside uses.

The following section includes descriptions of the transportation facilities within the SCA Permit Area, including the general location and most common uses of each road. All of the roads have a letter name (A, B, C, etc.) and a traditional name acquired throughout the past decades of operation. Road names match the designations shown on Plate 5-2.

A. Tonka Road is located in the north east portion of the permit area and provides access to/from properties east of the SCA Permit Area

B. Upper Old Coarse Refuse Road is located in the south east portion of the permit area and provides access for inspection and monitoring

E. Lower Haul Road is located in the central portion of the permit area and runs generally along the northerly edge of the Coarse Refuse Pile. This road provides access for haul trucks to the refuse pile. The eastern portion of this road also provides access for other haul traffic that needs to cross through the permit area to offsite facilities.

F. Railroad Access Road is located in the northeast portion of the permit area and provides access to this portion of the permit area

G. Excess Spoil Disposal Area #2 Road is located in the northeast portion of the permit area and provides access to the Excess Spoil Disposal Area #2.

J. New Haul Access Road is located in the north central portion of the permit area and is heavily used for the haul trucks to deliver refuse to the processing area.

K. Borrow Area Pond South Access Road is located in the southeast portion of the permit area and provides access to/from properties to the south and east of the SCA Permit Area.

~~L. East Slurry Cell South Access Road is located in the southeast portion of the permit area and provides access to / along the top of the south bank of the former East Slurry Cell. It is on the Coarse Refuse Pile and may be removed at some point as part of the refuse excavation process.~~

M. Coarse Refuse Seep Access Road is located in the west portion of the permit area. It provides access for inspection and monitoring.

N. Coarse Refuse Toe Pond Access Road is located in the west portion of the permit area. It provides access for inspection and monitoring.

P. Rail Cut Pond West Access Road is located in the south west portion of the permit area. It provides access for inspection and monitoring.

Q. Old Coarse Refuse Road Sediment Pond Access Road is located in the south east portion of the permit area. It provides access for inspection and monitoring.
R. Lower Old Coarse Refuse Road is located in the west portion of the permit area. It provides access for inspection and monitoring.
S. West Pasture Access Road is located in the north central portion of the permit area and provides access to / from adjacent facilities north of the permit area. This road is used regularly for trucks crossing through the permit area to reach facilities on the other side of the permit area.
U. North Pasture Pond Access Road is located adjacent to the Pasture Pond on the north and west sides. It is used for access to and maintenance of the pond.
W. East Access Road is located in the southeast portion of the permit area and provides access for other haul traffic that needs to cross through the permit area to/from offsite facilities to the east of the SCA Permit Area

Plate 5-2 provides a description of the physical properties of each road. Please refer to Plate 5-2 for the following information pertaining to each individual road: Name, Type of Use, Road Plan & Profile drawing reference, Maximum Grade, Average Width, and Approximate Length.

STRUCTURAL STABILITY OF EMBANKMENTS

The structural stability of roads within the SCA Permit Area is largely determined by the stability of the roadside embankments. This section provides calculations to determine the stability of these embankments and their factor of safety. Calculations are based on methods presented in Hoek and Bray's Rock Slope Engineering.

Most of the roads within the permit area fall within a common ranges of characteristics and embankment slopes. For simplification, these stability calculations will focus on the worst case scenario within the range and group all roads within the range together.

Soils

Information concerning soil types is included in the permit in Appendix 2-9 (the ACZ Soil Borrow Material Report); the SCS Soils Survey of Carbon Area; and Plate 2-1 (Soil Identification Map). The soils in the area are a Strych soil type ranging from very stony loam to a Gerst-Strych-Badland complex. These soil units are described in detail in the SCS Soil Survey for the Carbon Area. The soil type for each area was used to determine the cohesion strength, friction angle, and the density of the material. It should be recognized that values for cohesion strength were estimated based on existing information for the soil type in the designated area. In areas where the soil type was not apparent, a mixture of Strych dry stony loam and Gerst-Strych-Badland soil was assumed and an average value for the quantities listed below was employed for the purposes of determining structural stability.

Assumptions and Method

The "Circular Failure Method" from Rock Slope Engineering was used to determine the factor of safety for the road embankments. Using this method, the following assumptions were made:

- Soil type ranges from SM-SC to GM-GC
- Friction Angle **F** ranges from 31° for SM-SC to > 31° and >34° for GM and GC soils.
- Density **g** values range between 90 to 100 pcf.
- Groundwater conditions are generally fully drained, but to be conservative, we will use Chart 2 representing a surface water source at a distance of 8 x the slope height.
- The soil is may not be compacted. Values for cohesion strength were estimated based on upper and lower limits for each soil type. Generally cohesion strength is between 450 and 600 lb/sqft for soils and estimated at 300 lb/sqft for refuse.

Most of the roads and embankments in the permit area are such that they have very minor slopes. For simplicity in calculations, we have grouped all roads at or less than the following characteristics into a single classification.

Typical Characteristics:
Embankment Height H = 30 feet
Embankment Slope 2H:1V = Q = 26.5°
Friction Angle **F** = 31°
Density **g** = 100 pcf
Groundwater Chart 2 at 8x slope distance or more away
Cohesion strength c = 450 lb/sqft

For these typical roads, the calculation values indicate the following:

$$\frac{c}{(\mathbf{g}\ H\ \mathrm{Tan}\ \mathbf{F})} = \frac{450}{100 \times 30 \times \mathrm{Tan}31} = 0.26$$

Chart 2 indicates for s 26.5° slope that the (Tan **F** / F) value =0.27
This gives a **Factor of Safety F = 2.2**

Roads with smaller or gentler embankment slopes have a higher factor of safety.

Other roads with steeper or higher embankments are calculated separately below.

Road K – Height H = 50 ft, SlopeQ = 45°, Cohesion c=450, Factor of Safety = 1.3
Road F – Height H = 16 ft, SlopeQ = 33°, Cohesion c=300, Factor of Safety = 2.2
~~Road L – Height H = 40 ft, SlopeQ = 38°, Cohesion c=300, Factor of Safety = 1.4~~

Road embankments within the permit area appear to have an adequate Factor of Safety against circular failure.

300 0 300 600

SCALE OF FEET

ROAD SUMMARY

ROAD DESIGNATION	ROAD NAME	ROAD TYPE (SEE LEGEND)	PLAN & PROFILE PLATE #	MAX. GRADE (%)	AVERAGE WIDTH (FEET)	APPROX. LENGTH (FEET)
A	Tonka Road	A	Plate 5-2C	0.4	31	535
B	Upper Old Coarse Refuse Road	A	Plate 5-2H	5.6	12	2500
E	Lower Haul Road	PR	Plate 5-2C	9.7	24	4250
F	Railroad Access Road	A	Plate 5-2D	1.4	13	1370
G	Excess Spoil Disposal Area #2	PT	Plate 5-2D	8.3	23	1160
J	New Haul Access Road	PR	Plate 5-3	3.0	25	1065
K	Borrow Area Pond South Access Road	PR	Plate 5-2G	8.4	17	150
M	Coarse Refuse Seep Access Road	A	Plate 5-2J	8.5	13	560
N	Coarse Refuse Toe Pond Access Road	A	Plate 5-2J	20.0	11	535
P	Railcut Pond West Access Road	A	Plate 5-2J	2.2	15	840
Q	Old Coarse Refuse Road Sediment Pond Access Road	A	Plate 5-2G	13.0	11	150
R	Lower Old Coarse Refuse Road	A	Plate 5-2J	35.0	15	2950
S	West Pasture Access Road	PR	Plate 5-2K	3.0	30	540
U	North-West Pasture Access Road	A	Plate 5-2K	5.6	24	425
W	East Access Road	PR	Plate 5-2G	7.7	24	740

NOTE:

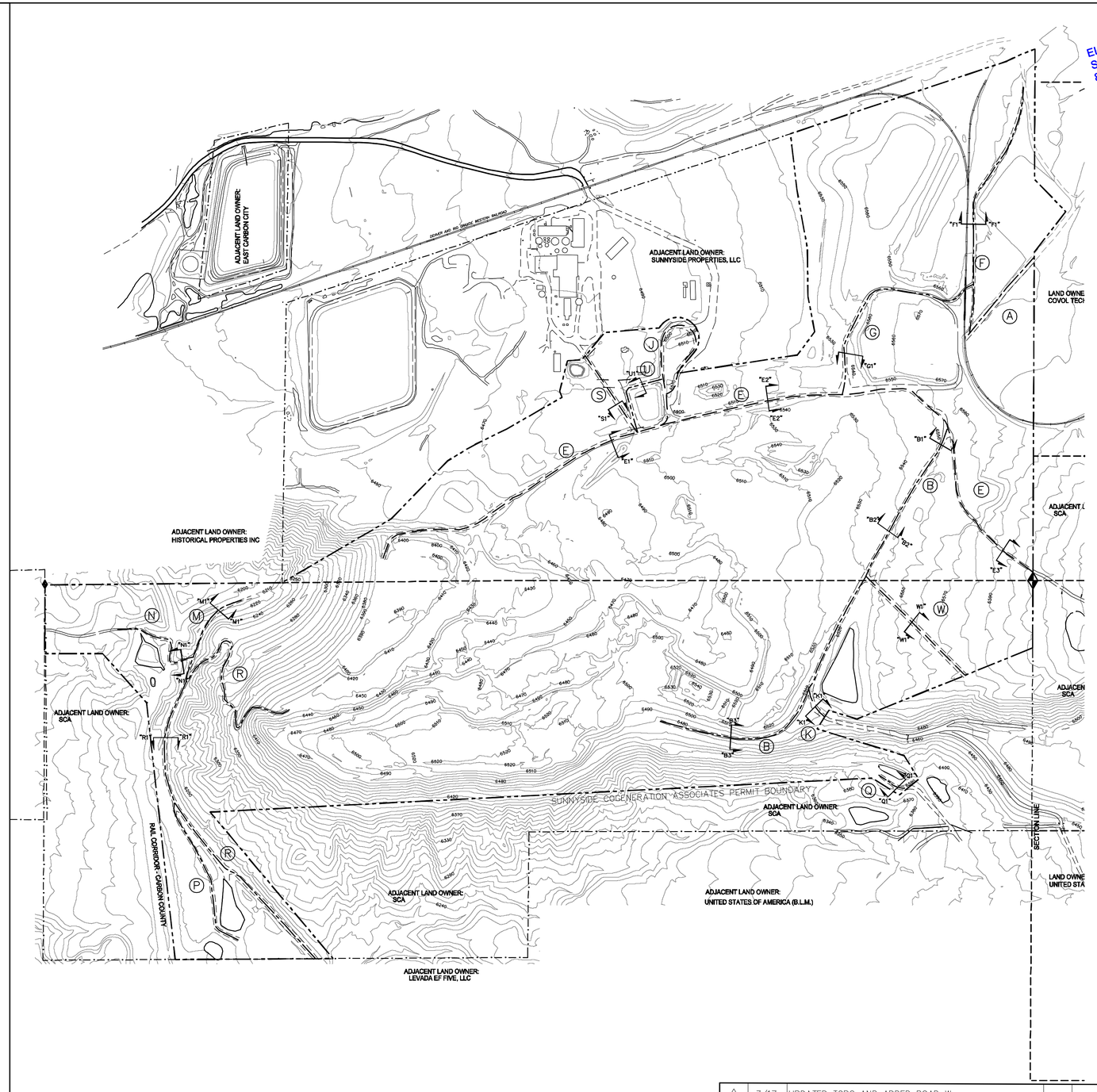
SEE PLAN AND PROFILE SHEETS FOR STATIONING

LEGEND

- PRIMARY ROADS (PR)
- ANCILLARY ROADS (A)
- PIT ROADS (PT)
- PERMIT BOUNDARY

NOTE: ROAD TYPES ARE REFLECTED IN CENTERLINE LINETYPES ON THIS DRAWING.

ALL ROADS WITHIN THE REFUSE PILE AREA AND EXCESS SPOIL DISPOSAL AREAS ARE PIT ROADS AND WILL ADJUST AS REQUIRED THROUGHOUT THE OPERATIONAL PERIOD. FOR SIMPLICITY, THESE ROAD HAVE NOT BEEN SHOWN ON THIS DRAWING.



REV	DATE	DESCRIPTION	BY	APP'D
7	7/17	UPDATED TOPO AND ADDED ROAD W	AH	
6	12/16	ADD ROAD U	AH	
5	8/16	SHORTEN ROAD B AND EXTEND ROAD E REMOVE RD T	AH	
4	1/16	ROAD RECLAMATION UPDATES	AH	
3	7/15	WEST PASTURE AND REFUSE PILE ACCESS ROADS	AH	
2	11/10	BOUNDARY AND TOPO UPDATE	AH	

PROFESSIONAL ENGINEER LICENSED No. 187727 S. SCOTT CARLSON STATE OF UTAH

Electronically signed by S. Scott Carlson 8-7-17

DATE 09-28-94 | SCALE 1" = 300' | PROJECT NO. -

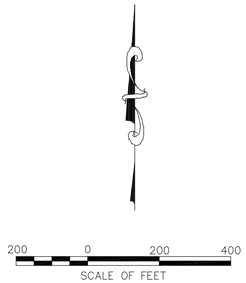
Sunnyside Cogeneration Associates
ROAD CLASSIFICATION MAP

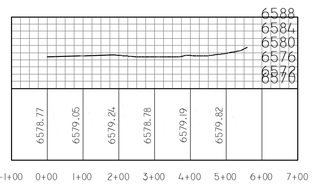
TWIN PEAKS Engineering & Land Surveying
2264 NORTH 1450 EAST LEHI, UTAH 84043
(801) 450-3511, (801) 439-0700 FAX

DESIGNED AH | DRAWN AH | CHECKED SSC

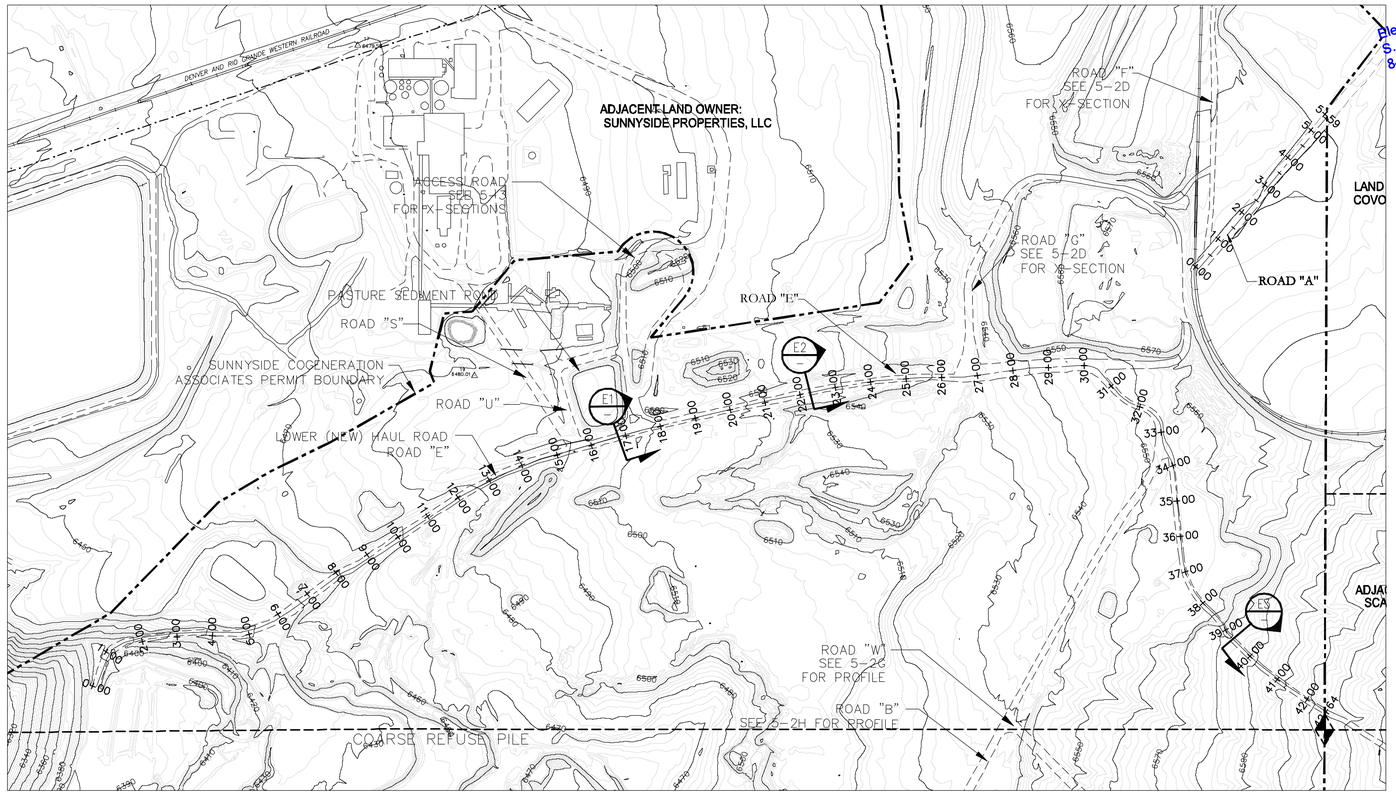
SHEET 5-2

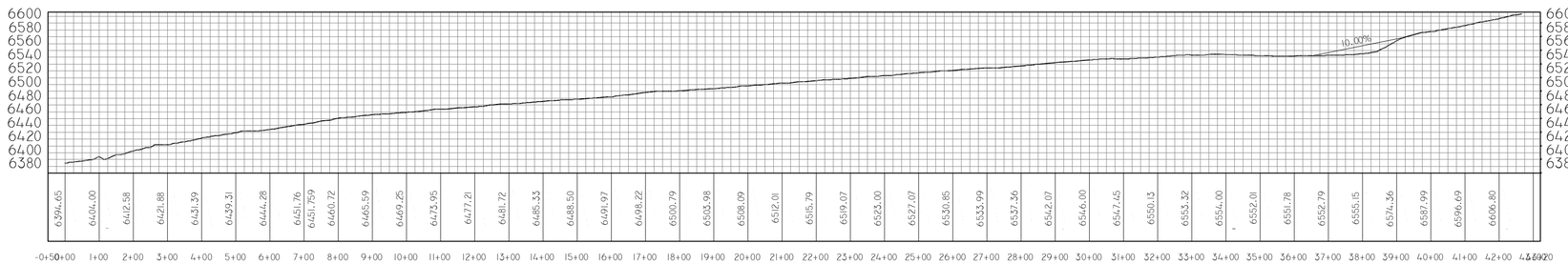
PLOTTED DATE: Thursday, 03 August 2017 - 4:47pm



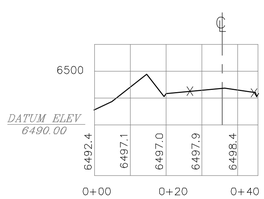


TONKA ROAD (ROAD "A") - PROFILE





LOWER HAUL ROAD (ROAD "E") - PROFILE



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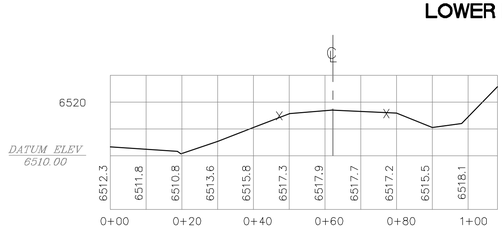

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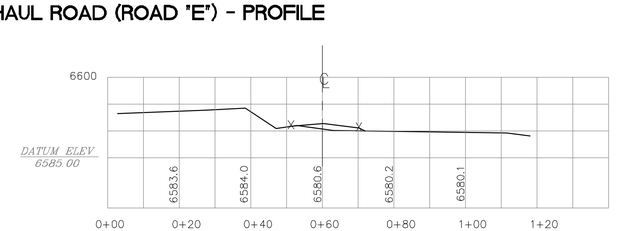


E3 SECTION (ROAD "E")

NOTE:
1. ALL SECTIONS ARE NON-TYPICAL, AND MAY VARY FROM THAT SHOWN.
2. X = ROAD LIMITS ON CROSS-SECTIONS.

REV	DATE	DESCRIPTION	BY	APP'D
7	8/17	UPDATE TOPO AND ADD ROAD W	AH	
6	7/16	EXTEND ROAD E	AH	
5	11/10	BOUNDARY AND TOPO UPDATES	AH	
4	9/02	2002 PERMIT RENEWAL	PAM	
3	9/97	PERMIT RENEWAL-UPDATE	CAC	
2	2/94	REVISED BOUNDARY	AH	

PROFESSIONAL ENGINEER
LICENSED
No. 187727
S. SCOTT CARLSON
STATE OF UTAH
Electronically signed by S. Scott Carlson 8-7-17

03-94
SCALE | PROJECT NO.

Sunnyside Cogeneration Associates
ROAD PLAN AND PROFILE
ROADS "A" & "E"

TWIN PEAKS
Engineering & Land Surveying
2264 NORTH 1450 EAST LEHI, UTAH 84043
(801) 450-3511, (801) 439-0700 FAX

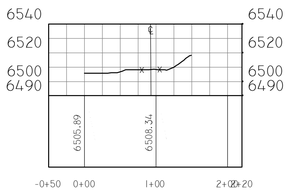
DESIGNED AH | DRAWN AH | CHECKED SSC

SHEET

5-2C

PLOTTED DATE: Thursday, 03 August 2017 4:33pm

NOTE:
1. ALL SECTIONS ARE NON-TYPICAL, AND MAY VARY FROM THAT SHOWN.
2. X = ROAD LIMITS ON CROSS-SECTIONS.



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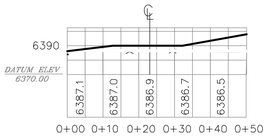

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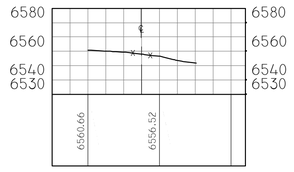
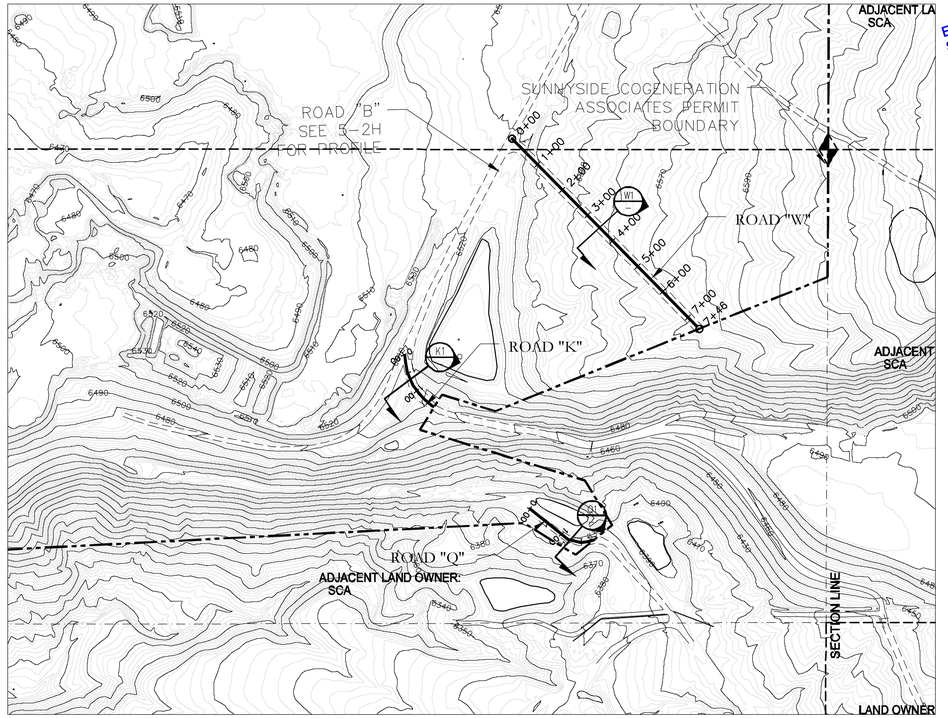
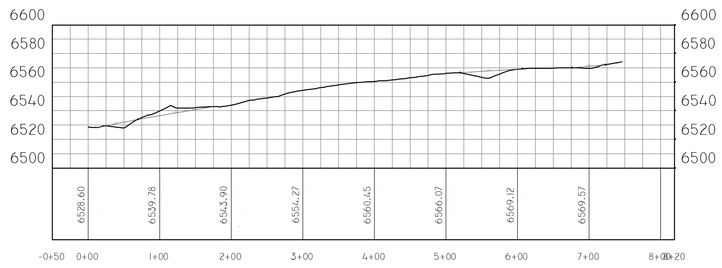
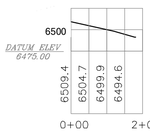


W1 – SECTION (ROAD "W")

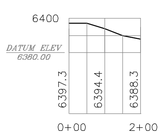




EAST ACCESS ROAD (ROAD W) - PROFILE



BORROW AREA POND SOUTH ACCESS ROAD (ROAD K) - PROFILE



OLD COARSE REFUSE ROAD (ROAD Q) - PROFILE

REV	DATE	DESCRIPTION	BY	APP'D
6	8/17	UPDATE BNDRY AND TOPO, REMOVE ROAD L ADD ROAD W	AH	
5	11/10	BOUNDARY AND TOPO UPDATES	AH	
4	9/02	2002 PERMIT RENEWAL	PAM	
3	9/97	PERMIT RENEWAL-UPDATE	CAC	
2	2/94	CHANGE IN ROAD B & SECTIONS	AH	
1				

UTAH PROFESSIONAL ENGINEER
No. 187727
S. SCOTT CARLSON
STATE OF UTAH
Electronically signed by S. Scott Carlson 8-7-17

SCALE 3-94
PROJECT NO. –

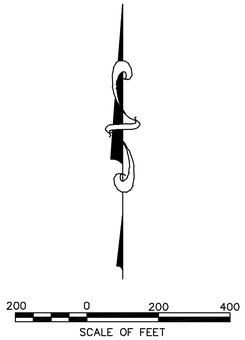
Sunnyside Cogeneration Associates
PLAN AND PROFILES
ROADS "K", "Q" & "W"

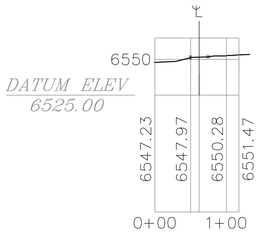
TWIN PEAKS
Engineering & Land Surveying
2264 NORTH 1450 EAST LEHI, UTAH 84043
(801) 450-3511, (801) 439-0700 FAX

DESIGNED AH
DRAWN AH
CHECKED SSC

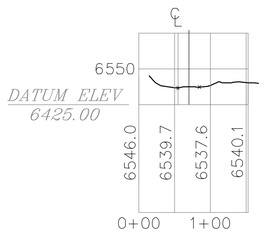
SHEET 5-2G

PLOTTED DATE: Thursday, 03 August 2017 - 2:20pm

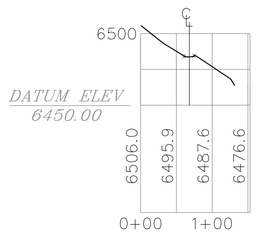




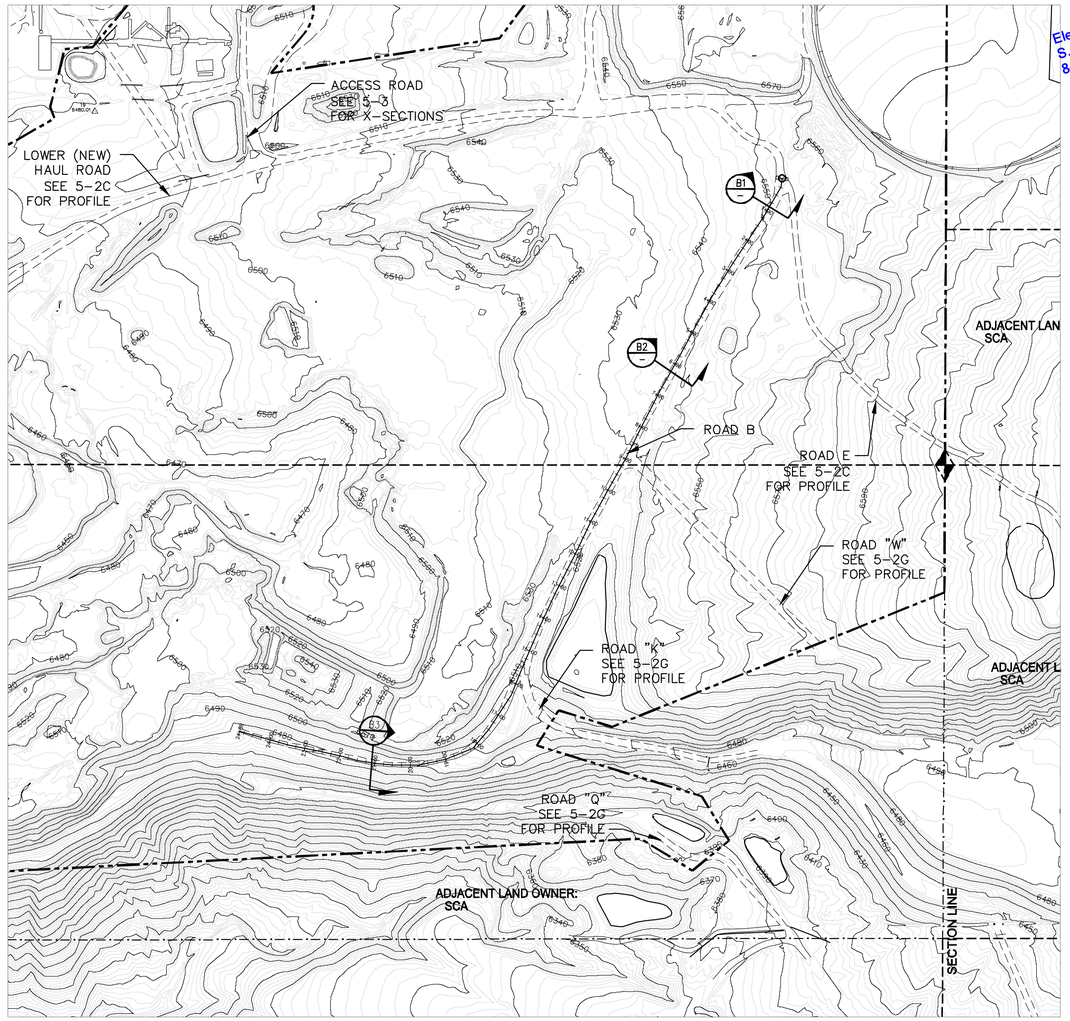
B1 – SECTION (ROAD "B")

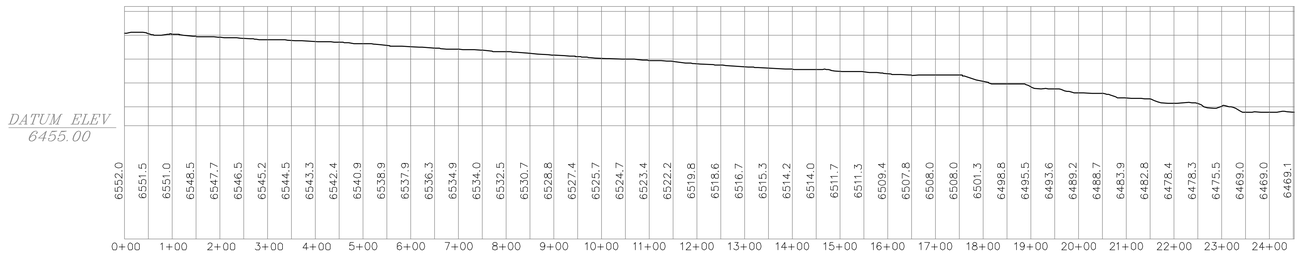


B2 – SECTION (ROAD "B")



B3 – SECTION (ROAD "B")





UPPER OLD COARSE REFUSE ROAD (ROAD B) - PROFILE

NOTE:
1. ALL SECTIONS ARE NON-TYPICAL, AND MAY VARY FROM THAT SHOWN.
2. X ON CROSS-SECTION = ROAD LIMITS.

REV	DATE	DESCRIPTION	BY	APP'D
7	8/17	UPDATED TOPO AND BOUNDARY	AH	
6	7/16	SHORTENED ROAD B	AH	
5	11/10	BOUNDARY AND TOPO UPDATES	AH	
4	9/02	2002 PERMIT RENEWAL	PAM	
3	9/97	PERMIT RENEWAL-UPDATE	CAC	
2	9/94	CHANGE IN ROAD-B & SECTIONS	AJZ	

PROFESSIONAL ENGINEER
LICENSED
No. 187727
S. SCOTT CARLSON
STATE OF UTAH
Electronically signed by S. Scott Carlson 8-7-17

9-28-98
SCALE
PROJECT NO. —

Sunnyside Cogeneration Associates
PLAN AND PROFILE
ROAD "B"

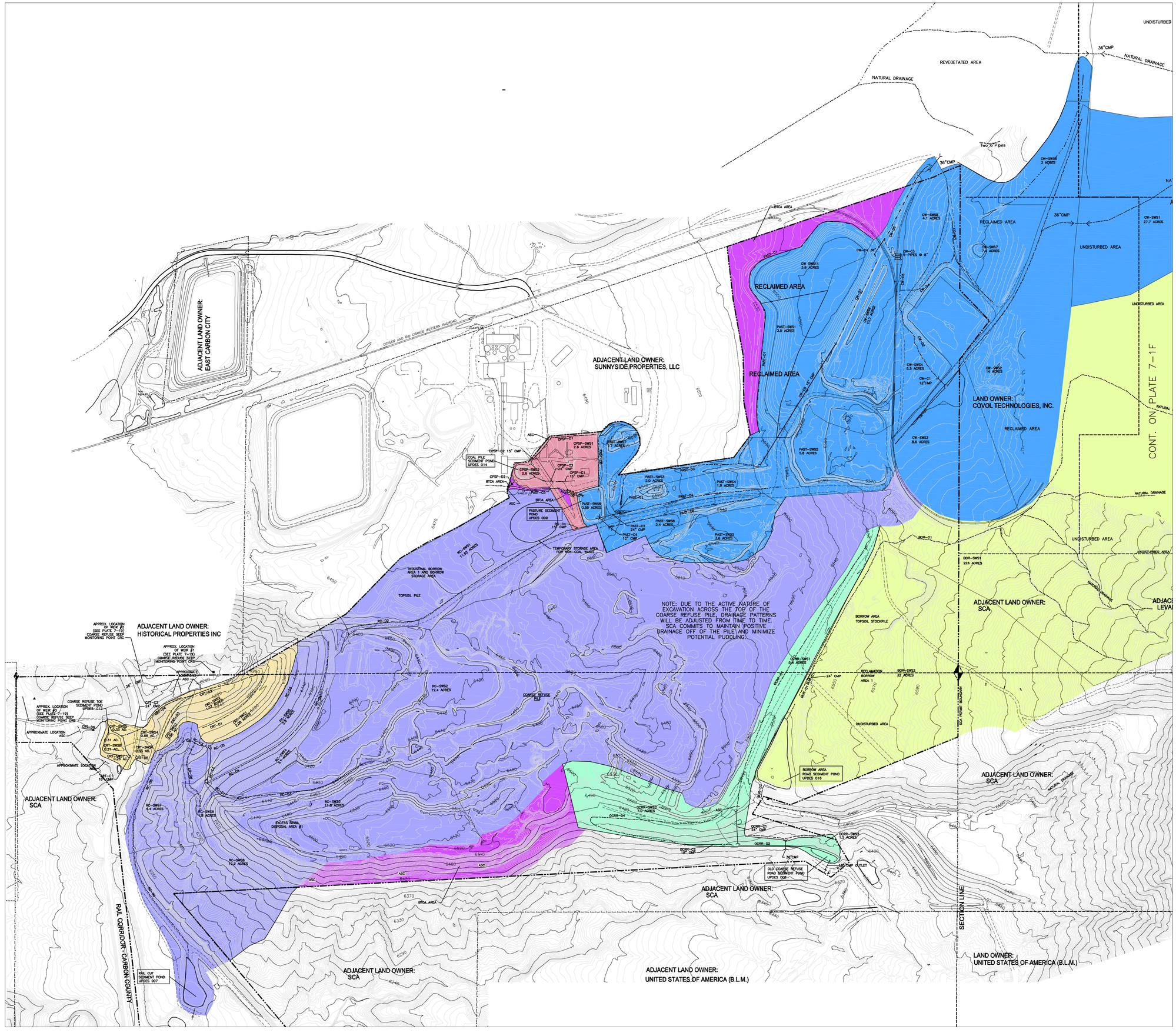
TWIN PEAKS
Engineering & Land Surveying
2264 NORTH 1450 EAST LEHI, UTAH 84043
(801) 450-3511, (801) 439-0700 FAX

DESIGNED AH
DRAWN AH
CHECKED SSC

SHEET

5-2H

PLOTTED DATE: Wednesday, 02 August 2017 - 9:18am



Sunnyside Cogeneration Asso
HYDROLOGIC INDEX MAP

DATE:
PLOT DATE:
SCALE:
PROJECT NUMBER: –

DESIGNED AH
DRAFTED AH
CHECKED SSC

TWIN PEAKS
Engineering & Land Surveying
2264 NORTH 1450 EAST LEHI, UTAH 84043
(801) 450-3511, (801) 439-0700 FAX

PROFESSIONAL ENGINEER
No. 187727
S. SCOTT CARLSON
STATE OF UTAH
Electronically signed by S. Scott Carlson 8-7-17

7/17	UPDATED TOPO AND ADDED ROAD W	AH	
10/16	POST CONSTRUCTION UPDATE FOR ROAD S	AH	
1/16	EXCESS SPOIL DISPOSAL AREA RECLAMATION UPDATE	AH	
7/15	REMOVED CULVERTS IN PASTURE POND DRAINAGE AREA	AH	
11/10	BOUNDARY UPDATE	AH	
8/10	UPDATE SITE AND TOPO	AH	
5/08	MOVE PASTURE POND CULVERT-C1	SSC	
5/07	UPDATE PASTURE POND	AH	APP'D

SHEET

7-1

PLOTTED DATE: Thursday, 09 August 2017 - 9:43am