CARBON STORAGE SOLUTIONS
FRONT RANGE #1 WELL SITE PROJECT

TOPSOIL PROTECTION PLAN

SECTION 26, TOWNSHIP 6 NORTH, RANGE 67 WEST, 6TH P.M.
WELD COUNTY, COLORADO

Prepared For:
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I. INTRODUCTION

This topsoil protection plan is being prepared for the Carbon Storage Solutions' Front Range #1 Well Site project. The project consists of the development of infrastructure to support the drilling and testing of 1 stratigraphic well located in Weld County. The purpose of this report is to provide an overview of topsoil protection in order to demonstrate the Commission's Rules to support the drilling and testing of 1 stratigraphic well in a manner that is protective of and minimizes adverse impacts to public health, safety, welfare, the environment and wildlife resources (COGCC Rule 1002.c.) in addition to the COGCC form 2A.

II. LOCATION AND EXISTING CONDITIONS

The proposed Front Range #1 well site is located on the west side of Great Western Dr. approximately 0.7 mile south of the intersection with Eastman Park Dr. The Front Range 1 well site is planned to be located in the Northwest 1/4 of the Southeast 1/4 of Section 26, Township 6 North, Range 67 West, 6th P.M. The Front Range 1 well site is planned to drill stratigraphic test 1 well from the site. The existing zoning is Heavy Industrial.

III. CLASSIFICATION OF SOILS

To determine anticipated site characteristics for the project site, Geographic Information System (GIS) data from the Natural Resource Conservation Service (NRCS) was utilized. A desktop review of the proposed project area includes the presence of two soil map units. The proposed project area consists of the following: 99.6% Kim Loam (1% to 3% slopes), and 0.4% Nunn Clay Loam (0% to 1% slopes). The NCRS soil maps can be found in Appendix A.

- Map Unit Symbol 32 - The Kim Loam (1% to 3% slopes) soils map unit shows the drainage class is well drained, runoff class is very low. The frequency of flooding or ponding is none.

- Map Unit Symbol 41 - The Nunn Clay Loam (0% to 1% slopes) soils map unit shows the drainage class is well drained, runoff class is medium. The frequency of flooding or ponding is none.

IV. TOPSOIL MANAGEMENT AND PROTECTION

Topsoil protection considerations will be applied to the storage of topsoil to ensure erosion and sediment transportation are minimized, in addition to ensuring that potential contamination and compaction is also mitigated per COGCC Regulation (304.c.). Based on field observations the soils adjacent to the well pad disturbance area appear to provide suitable topsoil to a minimum depth of 6 inches.

Topsoil will be protected from erosion and weed invasion. Topsoil will be stockpiled in separate piles from other soil horizons on stable slopes and will be positioned to minimize exposure to wind and water erosion. Methods to maintain microbial activity may include avoiding the topsoil stockpile, applying straw mulch to provide nutrients and maintain moisture, avoiding the use of pesticides on the stockpile and watering the stockpile at regular intervals. Seeding will occur when earthwork operations are complete with a seed mixture that complies with COGCC 1000 series Rules for interim and final reclamation.

V. TOPSOIL TEST PIT LOCATIONS

Test pits locations were selected to provide potential variability in soil types based on desktop review via aerial imagery and field verification. Soil samples were collected via soil pits to a depth of approximately 72 inches. Soil test pit locations are identified in Appendix B – Test Pit Location Map, as well as the locations provided in Table 1 – Test Pit Summary.

Table 1 – Test Pit Summary

Location	Test Pit 1	Test Pit 2
Latitude	40°27'17.24"N	40°27'18.84"N
Longitude	104°51'36.57"W	104°51'33.63"W
LAYER A		
Depth	0-3 inches	0-3 inches
Thickness	3 inches	3 inches
Munsell Color - 10YR	6\2	5\4
Soil Classification	Sandy Clay	Clay Loam
LAYER B		
Depth	3-10 inches	3-11 inches
Thickness	7 inches	8 inches
Munsell Color - 10YR	3\4	4\4
Soil Classification	Clay	Clay
LAYER C		
Depth	10 inches +	11 inches +
Thickness	Undetermined	Undetermined
Munsell Color - 10YR	4\6	4\6
Soil Classification	Silty Clay	Silty Clay

VI. CONSTRUCTION

Based on the size of the proposed disturbance and the indicated depths from the web soil survey for this location, 2,360 cubic yards of salvaged topsoil will be stored within the eastern disturbance boundary. This well location site was designed to eliminate the need for additional soils stockpiles, so only the savaged topsoil will be stored near the site. CSS will implement the Best Management Practices (BMPs) as identified in Section VII to ensure that the topsoil is managed and protected in a manner that complies with COGCC Rule 1002.c

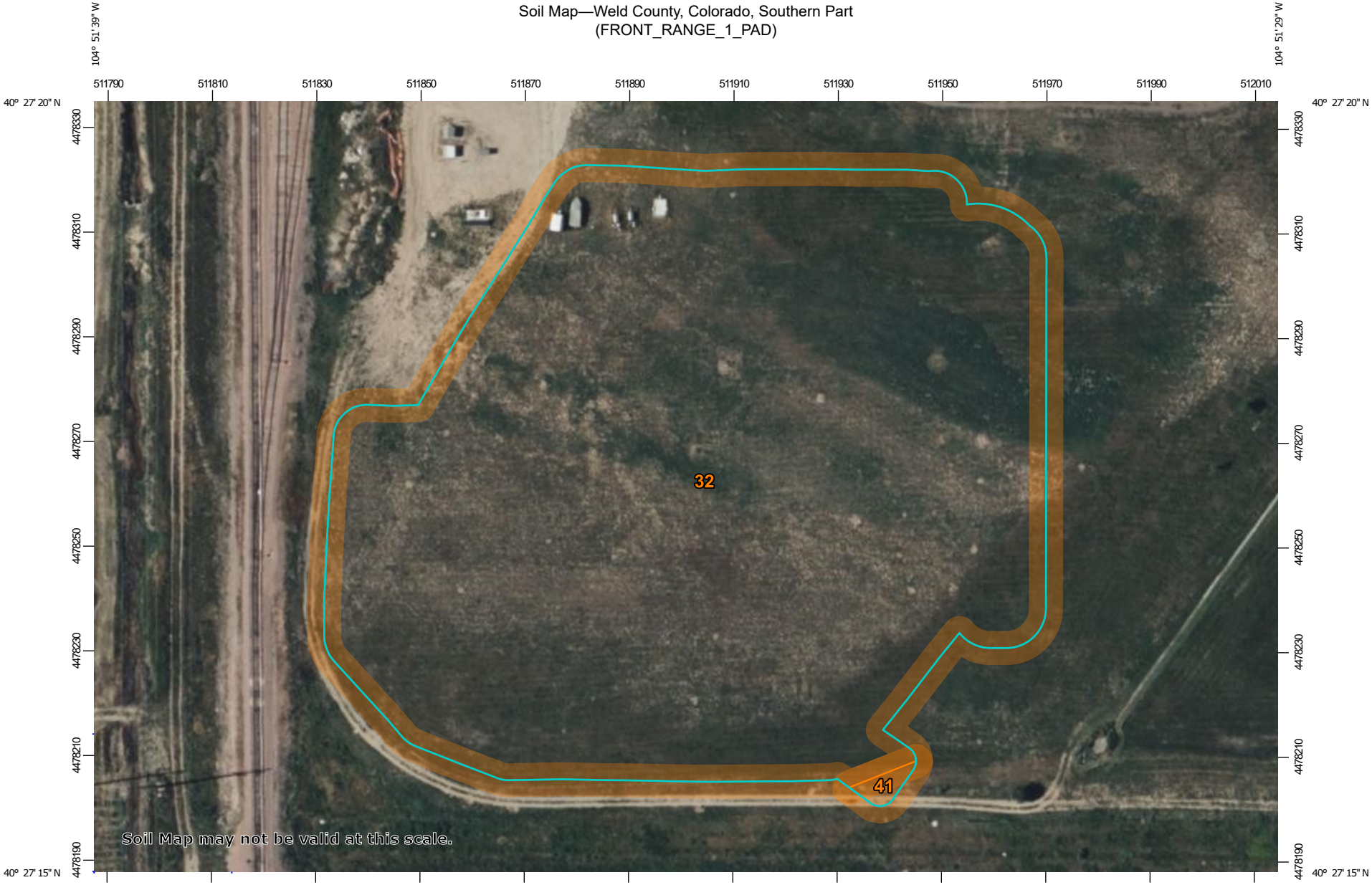
VII. BEST MANAGEMENT PRACTICES

- CSS would implement a site-specific SWMP. Key control measures from that document are included here:
  - All available topsoil would be removed from the well pad areas and stockpiled/stored adjacent to the well
  - All available topsoil would be removed from the well pad areas and stockpiled/stored adjacent to the well pad in order to retain indigenous seed bank and soil microbes that are fundamental to site restoration. Salvaged topsoil would be stabilized using methods outlined in CSS Stormwater BMP manual.
  - BMPs such as coconut blankets, straw mulch, or straw waddles, sediment basins, and swales would be used to prevent excess erosion of soils from disturbed areas. These structures would be installed during construction and left in place and maintained for the life of the project or until the disturbed slopes have been revegetated and stabilized.
  - The site would be inspected bi-weekly by a third-party contractor for BMP integrity and current installation. Any deficiencies noted would be brought to the attention of the operator and addressed in a timely manner.
  - CSS would limit construction activities during wet periods to avoid excess disturbance of areas surrounding operations.
- CSS would cross-rip all areas compacted by drilling, coring and bore logging operations which are no longer needed following completion of such operations. Ripping would be undertaken to a depth of eighteen (18) inches unless and to the extent bed rock is encountered at a shallower depth.
- CSS would regrade cut and fill areas awaiting reclamation to match pre-existing contours to the nearest extent possible to provide long term erosion control and site stability.
- CSS would grade the topsoil stockpile to ensure that all surfaces can be stabilized safely and effectively.
- CSS would stabilize and maintain areas needed for subsequent drilling operations to minimize dust and erosion to the extent possible.
- CSS would implement a Spill Prevention, Control, and Countermeasure plan to protect soil from potential spills.
- CSS would place a sign on each topsoil stockpile designating and preserving that material for reclamation purposes throughout the lifetime of the location.

VIII. APPENDIX

APPENDIX A – NCRS SOILS MAPS

Soil Map—Weld County, Colorado, Southern Part
(FRONT_RANGE_1_PAD)



Map Scale: 1:1,040 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 8, 2021—Jun 12, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
32	Kim loam, 1 to 3 percent slopes	3.4	99.6%
41	Nunn clay loam, 0 to 1 percent slopes	0.0	0.4%
Totals for Area of Interest		**3.4**	**100.0%**

Weld County, Colorado, Southern Part

32—Kim loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 362b
Elevation: 4,900 to 5,250 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 125 to 150 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Kim and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kim

Setting

Landform: Alluvial fans, plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed eolian deposits derived from sedimentary rock

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 40 inches: loam
H3 - 40 to 60 inches: fine sandy loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Minor Components

Otero

Percent of map unit: 10 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

Weld County, Colorado, Southern Part

41—Nunn clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tlng
Elevation: 4,100 to 5,700 feet
Mean annual precipitation: 14 to 15 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 152 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nunn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nunn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Pleistocene aged alluvium and/or eolian deposits

Typical profile

Ap - 0 to 6 inches: clay loam
Bt1 - 6 to 10 inches: clay loam
Bt2 - 10 to 26 inches: clay loam
Btk - 26 to 31 inches: clay loam
Bk1 - 31 to 47 inches: loam
Bk2 - 47 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 7 percent
Maximum salinity: Nonsaline (0.1 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 0.5
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R067BY042CO - Clayey Plains
Hydric soil rating: No

Minor Components

Heldt

Percent of map unit: 10 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY042CO - Clayey Plains
Hydric soil rating: No

Wages

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY002CO - Loamy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

APPENDIX B – TEST PIT LOCATION MAP

LEGEND:

- LOCATION
- WORKING PAD SURFACE
- PROPOSED ACCESS ROAD
- TEST PIT

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

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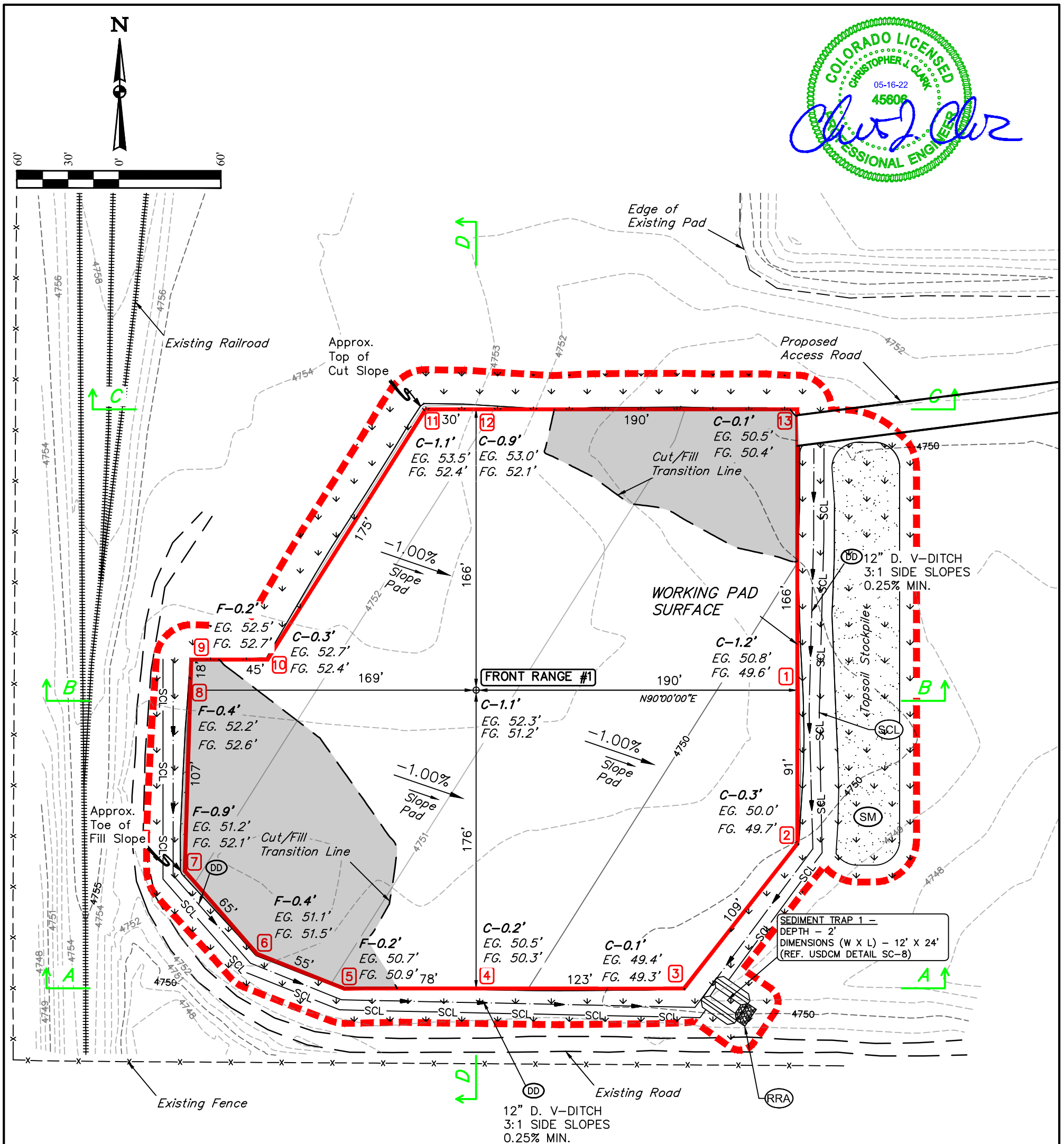
CARBON STORAGE SOLUTIONS

FRONT RANGE #1
1557' FSL 2320' FEL
NW 1/4 SE 1/4, SECTION 26, T6N, R67W, 6th P.M.
WELD COUNTY, COLORADO

SURVEYED BY	J.C.	04-08-22	SCALE
DRAWN BY	P.M.	06-15-22	1" : 200'

TOPSOIL TEST PITS

APPENDIX C – CONSTRUCTION LAYOUT – PLAN VIEW



LEGEND

- 6 — WELL PAD CORNER STAKE
- F–0.4' — DESIGN "C" CUT OR "F" FILL AT CORNER STAKE
- EG–51.1' — EXISTING GROUND ELEV. AT CORNER STAKE (TRUNCATED LESS 4,700 FEET)
- FG–51.5' — FINISHED GROUND ELEV. AT CORNER STAKE (TRUNCATED LESS 4,700 FEET)
- DD — DIVERSION DITCH
- ST — SEDIMENT TRAP
- SCL — SEDIMENT CONTROL LOG
- RRA — RIP RAP APRON
- SM — SEEDING AND MULCHING

- EXISTING RAILROAD
- EXISTING ROAD
- -X— — —X— — — EXISTING FENCE
- - OHP — — OHP — — EXISTING POWER LINE
- -0000'- — — — EXISTING MAJOR CONTOUR
- -0000'- — — — EXISTING MINOR CONTOUR
- -0000'— PROPOSED MAJOR CONTOUR
- -0000'— PROPOSED MINOR CONTOUR
- WORKING PAD SURFACE
- OIL & GAS LOCATION

REV: 1 05-16-22 K.C. (CO. NAME & WELL NAME CHANGE)

NOTES:

- Contours shown at 1' intervals.
- Cut/Fill slopes 3:1 (Typ.).
- Overall working pad surface = 359' x 342'

UINTAH ENGINEERING & LAND SURVEYING

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CARBON STORAGE SOLUTIONS

FRONT RANGE #1
1557' FSL 2320' FEL
NW 1/4 SE 1/4, SECTION 26, T6N, R67W, 6th P.M.
WELD COUNTY, COLORADO

SURVEYED BY	JARED.CHRISTOPHER	04-08-22	SCALE
DRAWN BY	K.C.	04-12-22	1" = 60'

CONSTRUCTION LAYOUT - PLAN VIEW