Carbon Storage Solutions

Front Range #1 – Stratigraphic Test Well

COGCC Site Specific Stormwater Management Plan

Rule. 304.c.(15) and 1002.f.

Overview

This plan was drafted in accordance with COGCC Rule 304.c.(15), requiring a site-specific stormwater management plan consistent with the requirements of COGCC Rule 1002.f., and is meant to accompany the COGCC Form 2A submission for Carbon Storage Solution's (CSS) Front Range Pad. Guidance, direction, and comments from the COGCC staff were taken into account during the creation of this plan.

All information and conditions represented herein are estimated and intended as a preliminary plan. This site-specific SWMP is intended to be a living document that will change and be updated routinely as field conditions change. Actual placement of BMP's etc. may deviate from the preliminary plan based on actual conditions discovered in the field and updates will be made accordingly.

Background

Front Range Energy (FRE) is a local Windsor, Colorado owned manufacturer of fuel ethanol and other high value co-products. FRE is proud to produce a renewable fuel, which displaces foreign sources of energy while enhancing our national security, cleans up tailpipe emissions, creates American and Colorado jobs, and supports our local, regional, and national economies.

To meet decarbonization targets and to continue to produce clean burning biofuels, FRE created CSS --a wholly owned subsidiary of FRE-- to manage carbon dioxide emissions from the facility. To that end, CSS seeks to develop a project that will capture the CO_2 emissions derived from the ethanol fermentation process and sequester the CO_2 proximal to the FRE facility, creating a net-negative transportation fuel. As part of the Project feasibility, CSS will need to drill and test a single stratigraphic test well to examine the feasibility of the subsurface formations for the geologic storage of carbon dioxide.

Site Description

The Front Range #1 pad will be located in Township 6 North, Range 67 West, Section 26 which is in the vicinity of the ethanol plant on property owned by FRE (see map). The FRE facility is located within the Kodak industrial park.

Upon gaining all approvals, CSS and their contractors will create a well pad location and access way on FRE property. A drilling rig will be brought to location to drill to a depth of approximately 9,500 feet below the land surface. The well will be drilled and managed according to all rules and regulations set forth by the Colorado Oil and Gas Conservation Commission. During the drilling operations, rock, water, and geophysical well logs will be collected from the wellbore to determine the overall project feasibility of geologic sequestration at the site. The data collection plan follows the guidance and best practices defined by the Environmental Protection Agency for carbon storage feasibility assessment. Once testing is complete the

well will be cased, and temporarily suspended according to COGCC regulations, while the CO_2 storage assessment is completed.

The surrounding area is comprised primarily of industrial sites including the Haliburton Sand Facility to the south, rail lines border the western and northern edge that service the Kodak industrial park area. The east and southeast of the site are comprised of agricultural areas. The proposed location is not within a disproportionately impacted community and the nearest residential building unit is greater than 2,000 feet from the edge of the pad.

General

The finished grade elevation of the Front Range #1 Pad will be 4,752 feet above mean sea level. Total area of disturbance is planned to be 3.371 acres. CSS plans to reclaim 2.279 acres, leaving 1.092 acres for the working pad surface. Construction of the location is anticipated to take approximately two weeks. Initial drilling will include one well and is anticipated to be completed within one month.

Nature of Construction

The subject project consists of building a location for drilling a stratigraphic test well that will be used to determine the feasibility of future carbon sequestration projects. After initial construction, the Front Range #1 test well will be drilled and cased. The well will not be produced, but instead be used for formation testing purposes. Once testing is completed CSS will make further decisions on how to proceed with one of two possible outcomes. The well will be converted to EPA Class VI injection status and then the disturbance area will be reduced, and the pad pulled back. The second situation is that the well is not suitable for conversion to EPA class VI and will be utilized as a monitoring well, after this decision is made the disturbance area will be reduced and the pad pulled back. Once all EPA Class VI injection activity is completed the well will be abandoned and the location will be reclaimed back to pre-disturbance conditions.

The following outlines the typical sequence of construction activities. Some activities will partially overlap or occur simultaneously, but commonly occur in the following order.

Access Road

The subject project will utilize the existing access point into the FRE ethanol facility, and then create an additional access from the edge of the FRE ethanol facility to the location.

Location Construction

To begin construction, the location will be cleared and stripped of topsoil. Topsoil is stored onsite for future use in reclamation of the disturbance areas. Cut and fill, grading, and compaction activities are conducted as necessary to prepare the location as designed. The working/driving surface areas may be armored with crushed rock or road base when necessary, to prevent rutting and erosion. No permanent facilities are anticipated to be placed on the location.

Drilling and Completion

Once the location construction is completed, a drilling rig will mobilize to the site and begin drilling the anticipated test well. The anticipated timing of the rig mobilization will depend on the current market availability but is anticipated for Q4 of this year. Drilling activities are expected to take place over approximately two weeks.

In support of the drilling rig, portable offices, storage containers, and chemical storage are sometimes moved onsite. No dining and living/sleeping facilities are anticipated due to the limited scope of the project and the proximity to Windsor. Light-duty and heavy-duty vehicle traffic becomes prominent at this phase.

Once drilling is complete, the drill rig is mobilized offsite and a completions rig and the associated equipment and personnel arrive onsite. Completions will consist of setting tubing and packers, perforating, and further testing. No hydraulic fracturing or flowback activities will occur. The testing procedures may require a formation injectivity test to help determine in-situ formation properties that passive testing cannot accurately gauge.

Disturbance Reduction (Pad Pull-Back)

Once all drilling and completion activities are completed, the pad size will be reduced to ±1.092 acres to minimize the long-term disturbance during the post testing phase. Enough working area must remain to ensure a safe working environment for continued work by CSS employees, and periodic work over operations, etc. All areas needed for ongoing operations will be stabilized for the long-term life of the interim pad. The remainder of the pad is recontoured to pre-existing conditions and topsoil is reapplied. These areas will be seeded/mulched and monitored until final stabilization and interim reclamation are achieved.

Abandonment / Final Reclamation

It is anticipated that this test well will be converted to an EPA Class VI injection well or become a monitoring well for an EPA Class VI injection well in the vicinity. In the event that the well is not utilized for either of these activities or is no longer needed as part of the EPA Class VI specified program, the well will be plugged and abandoned and the location will be recontoured and reclaimed to pre-disturbance conditions and/or in accordance with the surface owner's wishes.

Rock surfacing on the pad and access roads will be removed for beneficial re-use or offsite disposal. Topsoil will be respread following recontouring and decompaction to pre-disturbance conditions. All culverts, cattle guards, or other extractable structural BMPs will be removed and either reused at new construction sites, recycled as scrap, or disposed of as solid waste.

Once the location is recontoured, topsoil is reapplied across the location in preparation for seeding. Appropriate seed mixtures are determined based on surface owner requirements, pre-existing site conditions and terrain characteristics.

Supplemental Site Information

Distance to Water / Receiving Water

There are no public water system intakes located within a mile of the proposed Front Range #1 Location. As such, no impacts to public system water intakes are anticipated. Construction of Front Range # 1 Location could potentially impact water resources within the ½-mile radius CIAA due to the potential for erosion and sedimentation during construction and drilling. Soils compacted on existing roads, new access roads, and well pads contribute to slightly greater runoff than undisturbed sites. Increased erosion and subsequent increased sedimentation of intermittent streams and ephemeral drainages within the CIAA is possible, especially during construction and other surface disturbing activities.

The nearest receiving waterbody is a National Wetland Inventory (NWI) riverine (R) located approximately 183 feet to the west of the Front Range #1 pad. The feature is characterized as perennial ditch subject to

mechanical excavation (R4SBCx), consistent with the mapped NWI classifications. No permanent chemical storage is proposed at all.

The potential for sediment yield, stormwater runoff, or a spill release reaching the perennial ditch to the west is substantially low given the topography of the proposed test well location and because there are existing train tracks that run immediately west of the location. The train tracks serve as a runoff barrier that would prevent stormwater runoff or an accidental spill from reaching the ditch. In addition, the proposed test well site is located within the footprint of the existing fuel ethanol plant. The ground surface of the plant is graded such that any stormwater runoff drains to the east and southeast into FRE's existing trickle channel that leads to a stormwater detention pond southeast of the proposed test well. This trickle channel and detention pond were constructed at the request of the Town of Windsor with the intended purposes of stormwater capture and emergency spill response use for the fuel ethanol plant. Therefore, in the unlikely event of a spill during drilling of the test well there would be no impact to the NHD/NWI mapped feature to the west, as any spill that is not cleaned up immediately would drain to the trickle channel to the east and mitigated there.

Soils and Erosion Risk

The CIAA for soils is a ½-mile radius around the Location. Construction of the Front Range #1 Location would result in the disturbance of approximately 3.72 acres of soils; the breakdown of soil disturbance by well pad and access road is summarized in Table 1:

Table 1
Soils Impacted

Project Feature	Soil Type	Acreage Disturbed
Front Range # 1 Pad	Nunn clay loam, 0 to 1 percent slopes	0.01
	Kim loam, 1 to 3 percent slopes	3.37
Access Road	Kim loam, 1 to 3 percent slopes	0.33

Disturbance Estimates

Construction associated with the Front Range #1 Location would result in an initial disturbance of about 3.70 acres and long-term disturbance of 2.72 acres. Initial and long-term disturbance by project feature is summarized in Table 2. Residual disturbance includes acreage that would remain disturbed for the life of the project (LOP), plus the time required to successfully reestablish vegetation (those acres not subject to interim reclamation). Site reclamation would be initiated for portions of the well pad not required for the testing of the well within six months of completion, weather permitting.

Table 2
Surface Disturbance

	#/Miles	Initial Location (acres)	Long-Term (Working Pad Surface) (acres)
Front Range #1 Well Pad	1 well pad	3.37	2.39
New Access Road	0.090 miles	0.33	0.33
Location Total[1]	**--**	**3.70**	**2.72**

[1] Total acreage estimates are based on Geographic Information System (GIS) software calculations and match what is presented in the Form 2A Plat package. These totals may not equal the total summation when using mathematic equation due to rounding,

removal of overlapping development and minute boundary discrepancies. GIS-based calculations are considered more accurate than estimates calculated using simple addition and therefore will be used throughout this document.

Pre-Disturbance Land Use and Vegetation

The pre-disturbance land use at the subject location is industrial use. Nearly the entire future disturbance is currently a run-off for the Front Range Energy stormwater detention pond. The future disturbance area has very sparse annual vegetation that has grown up scattered about the area.

Identifiable vegetation onsite was nearly entirely undesirable and included Canada thistle, Field bindweed, Cheatgrass, Common dandelion, and Curly dock.

Vegetation Density (CDPHE): a vegetation density was not calculated because the existing/pre-disturbance land use at the subject location is industrial use and consists of an open disturbance laydown or storage yard with no meaningful or measurable amounts of desirable vegetation. The vegetation density metric is normally used to assess CDPHE final stabilization.

Vegetation Coverage (COGCC): The pre-disturbance vegetation coverage was not calculated because the existing/pre-disturbance land use at the subject location is industrial use and consists of an open disturbance laydown or storage yard with no meaningful or measurable amounts of desirable vegetation. The pre- disturbance desirable coverage metric is normally used to help determine COGCC interim reclamation completion and final reclamation in the future.

Site Specific Initial Construction Layout Drawing

This site is being permitted for a stratigraphic test well and is being explicitly designed to not have any Oil and Gas activities or Oil and Gas production, as such our construction drawings do not include such items. Please reference Attachment A.

Site Specific Interim Reclamation and Production Areas Construction Layout Drawing

This site is being permitted for a stratigraphic test well and is being explicitly designed to not have any Oil and Gas activities or Oil and Gas production, as such our construction drawings do not include such items. Please reference Attachment B.

Potential Sources of Pollution

This section considers potential pollutant sources generated by the construction process. A table of potential pollutant sources by phase of construction is included in Appendix B.

Disturbed and Stored Soils

The construction process will expose topsoil and sub-soils to wind and water erosion which can become pollutants to stormwater and waters of the State. The process of removing topsoil, cut and fill, grading and compaction operations will greatly decrease infiltration rates and increase runoff potential. Increased erosion and sediment movement by stormwater and wind will occur once existing vegetation is disturbed, especially along cut and fill slopes and large areas of disturbance.

Topsoil will be stockpiled onsite for later use in the reclamation process. Subsoils may also be stockpiled and stored depending on the cut and fill designs. Stockpiled soils are susceptible to erosion/sediment movement and can become a pollutant to stormwater and waters of the State. All stockpiled soils will be shown on the site-specific maps/diagrams along with appropriate BMPs.

When possible, existing vegetation will be preserved in place to minimize the disturbance footprint and prevent erosion using natural controls.

Stormwater runoff from all disturbed areas and soil storage areas for which permanent or temporary stabilization is not implemented, must flow to at least one control measure to minimize sediment in the discharge. This may be accomplished through filtering, settling, or straining. The control measure must be selected, designed, installed, and adequately sized in accordance with good engineering, hydrologic and pollution control practices. The control measure(s) must contain or filter flows in order to prevent the bypass of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (i.e., sheet or concentrated flow).

Vehicle Tracking Controls

Offsite sediment tracking by vehicles is a potential pollutant source to stormwater and waters of the State. To address offsite sediment tracking, access roads shall be properly built to specifications and surfaced with rock/road base. Also, the working area on pads will sometimes be surfaced with rock/road base to limit the potential for vehicles to track mud offsite.

The Front Range #1 Pad will utilize a vehicle track pad/construction entrance where the access road meets the Front Range Energy ethanol facility, which will assist in removing mud and sediment from vehicles leaving the site.

Staff and contractor training will also reduce the likelihood of offsite sediment tracking by limiting the areas of operations during muddy conditions. If offsite sediment tracking onto adjacent paved roads is identified during inspections, street sweeping will be implemented as necessary and where practicable.

Management of Contaminated Soils

If contaminated soils are excavated at the Front Range #1 location, BMPs will be implemented to protect stormwater from contacting or becoming polluted by contaminated soils. Stockpiles of contaminated soil will be placed inside berms or containers, place on a liner and/or removed from the site and disposed of as soon as practicable at a location certified to handle such material.

Loading and Unloading

Loading and unloading operations of various materials can occur during any phase of construction, with the majority of events occurring during drilling and completions. Well drilling and completion surfactants, friction reducers, dilute hydrochloric acid, potassium chloride solutions, drilling mud, and other fluids/materials can be transported or unloaded directly into the well or to onsite tanks. Dry drilling mud components are contained in packaging and are stacked on pallets, which are unloaded using a forklift and stored in designated areas. Chemical loading and unloading will be conducted by onsite personnel and/or third-party contractors.

Outdoor Storage Activities

Outdoor storage is a potential pollutant source primarily during drilling and completion phases. Chemicals used in drilling and completion phases are stored in designated material storage areas and in staging areas. Dry and liquid materials are typically stored in original containers until ready for use. Dry materials are kept wrapped, covered, or otherwise protected from contact with stormwater. Liquid materials are kept in sealed impermeable containers including bottles, buckets, drums, and tanks. Secondary containment will be implemented under/around dry and liquid materials.

Storage areas shall be kept clean and organized to reduce the risk of polluting stormwater and facilitating identification of leaks and spills.

Diesel fuel, propane, gasoline, oil, hydraulic fluids, and solvents may be stored onsite. Materials of these types will be properly labeled and stored in temporary enclosures or containment areas surrounded by berms to avoid contact with stormwater. Dry chemicals, including dry drilling mud and similar materials, may be stored onsite. These materials will be properly labeled and stored off the ground surface or on ground protection to avoid impact from adverse weather conditions.

Vehicle and Equipment Maintenance and Fueling

Routine vehicle and equipment maintenance and fueling operations shall be conducted offsite when possible. If required onsite, operations shall be conducted a safe distance from streams, wetlands, or other conveyances to waters of the State. All maintenance and fueling operations shall be continually monitored by the personnel conducting the operations to prevent or minimize leaks or spills. Maintenance and fueling operations typically occur during the facility construction, drilling and completions phases.

Dust or Particles

Dust/particulates are a potential pollutant source generated by earthmoving equipment during facility construction, vehicular traffic on graveled access roads, and during high wind events at sites with un-stabilized soils. Dust/particulates potential as a pollutant increases during hot and dry times of the year. All dirt/gravel roads and areas of disturbed soil shall be watered as often as necessary to mitigate dust/particulates as a pollutant. The Construction Foreman (construction phase), Company Man (drilling/completion phases), or CSS EHS personnel (testing phase) shall be responsible for determining when onsite conditions warrant applying dust suppression BMPs.

Dust suppression is typically achieved by applying freshwater. CSS staff will obtain any local, county or state required permits as applicable.

Routine Maintenance

Maintenance involving fertilizers, pesticides, detergents, fuels, solvents, and oils may periodically be conducted on location. Maintenance associated with detergents, fuels, solvents, and oils during each phase is possible, but predominantly occurs during the drilling and completions phases to support the drill rig and ancillary equipment.

There exists the potential for one off applications of fertilizers and/or herbicides to a location primarily during the testing phase. An example would be where reclamation success has not been achieved due to a soil limiting factor or where undesirable vegetation has become established.

Herbicides shall only be applied by trained personnel under the direct supervision of a licensed pesticide applicator.

Fertilizers will only be applied by experienced applicators. Fertilizers used for soil augmentation, hydro mulching, etc. will not be stored onsite and only brought onsite at the time of intended application. The amount of fertilizer brought onsite will vary by location and will be based on the application rate required and the size of the facility. Fertilizers will be stored in sealed containers, inside enclosed trailers or as otherwise protected to prevent contact with stormwater. Personnel applying the fertilizer will be responsible for monitoring leaks and spills. In the event of a leak or spill, applicator personnel shall notify CSS EHS staff as soon as possible

Onsite Waste Management Practices

Non-hazardous wastes generated during each operational phase will be collected in appropriate receptacles and periodically transported to licensed disposal or recycling facilities. Storage receptacles shall be designed to prevent contact of stormwater to stored wastes. Storage receptacles shall be routinely emptied on a schedule deemed appropriate by the Construction Supervisor, Company Man, or EHS personnel depending on the phase.

If hazardous wastes are generated, the storage, transport, and disposal shall meet all applicable local, state and federal regulations.

Hazardous and non-hazardous wastes will only be disposed of offsite. The dumping, burying or littering of wastes on the location are strictly prohibited. Proper training and enforcement for staff and contractors will ensure compliance with this plan and the protection of waters of the State.

Non-Industrial Waste Sources

The disposal of trash and litter on location or along the associated access roads is strictly prohibited except in designated receptacles. All trash and litter found on location or along access roads shall be cleaned up when found provided it is non-hazardous. Proper training of staff and contractors will mitigate the potential for trash and litter on locations.

Portable toilets and/or living facilities with sanitary waste systems will typically be onsite during the construction, drilling, and completions phases. Portable toilets may be stored on location throughout the various operational phases. All portable toilets shall be staked, anchored or trailer mounted to prevent accidental tipping.

The routine cleaning and maintenance of these sanitary waste systems is handled by contractors on a schedule dictated by the volume of use.

Implementation of Control Measures

Structural Practices for Erosion and Sediment Control

Structural practices are those that require physical construction, installation, or manipulation. This includes structural features of a facility or access road designed to prevent erosion or control sediment movement. Structural erosion and sediment controls focus on two different processes although some of the BMPS can be applicable to both.

Erosion Control: Erosion control is the preferred method for protecting stormwater quality from degradation by sediment. Erosion control focuses on preventing soil from moving from its original/current location. Successful implementation of erosion control BMPs can prevent the need for sediment control BMPs. Erosion control BMPs will be implemented at each phase of construction, with site specific circumstances driving the selection of BMP type and installation location.

Structural erosion controls include, but are not limited to, the following (*indicates planned use at Front Range #1 Pad):

- Earthen dike/berm*
- Ditch/drainage swale*
- Check dam
- Culvert* with armored inlet / outlet
- Surface roughening*
- Erosion control blanket / rolled product
- Hydro mulch / seeding*
- Mulching*
- Rip-rap
- Surface armor*
- Slope drain
- Slope grade / terracing
- Wind fence / walls

Sediment Control: Sediment control BMPs are designed to retain sediment onsite and prevent degradation of stormwater quality. Sediment controls focus on settling or capturing suspended soil in stormwater before stormwater leaves the location. Sediment control BMPs will be implemented at each phase of construction, with site- specific circumstances driving the selection of BMP type and installation location.

Structural sediment control BMPs include, but are not limited to, the following (*indicates planned use at Front Range #1 Pad):

- Check Dam*
- Surface roughening*
- Sediment trap / basin*
- Sediment log / sock / wattle*
- Silt fence / s-fence
- Straw Bale*
- Vehicle track pad / cattle guard*

Non-Structural Practice for Erosion and Sediment Control

Non-Structural practices are those which are not physical, but instead consist of rules, practices, or procedures acquired through policy, planning, or training.

Erosion Control: Non-structural erosion controls include, but are not limited to, the following (*indicates planned use at Front Range #1 Pad):

- Minimize disturbance footprint
- Minimize soil compaction in reclaimed area
- Preserving vegetation
- Protecting sensitive habitats
- Proper site selection
- Re-vegetation
- Wind erosion / dust control

Sediment Control: Non-structural sediment controls include, but are not limited to, the following (*indicates planned use at the Front Range #1 pad).

- Preserving vegetation
- Proper site selection
- Routine inspections
- Street sweeping
- Vegetative buffer

Good Housekeeping: Good housekeeping practices must be implemented to prevent storm water contamination with solid and liquid wastes generated in the construction process. Good housekeeping practices include but are not limited to employee and contactor training, designating material storage/staging areas, having standard policies and procedures regarding materials handling and waste management, implementing spill prevention procedures, developing spill response and cleanup procedures, and having equipment and vehicle fueling and maintenance policies and procedures.

- Training
  - Is key to ensuring all employees and contractors understand the importance of good housekeeping and the protection of storm water from pollutant sources.
  - Ensures all employees and contractors understand the requirements of the storm water plan and associated BMPs
  - Ensures all employees and contractors are prepared to identify and respond to an uncontrolled pollutant source
  - Facilitates discussion between the owner/construction manager and their employees and contractors

- Material Handling and Storage/Staging
  - Retain all Safety Data Sheets (SDS) in an accessible location for all stored materials, chemicals, and hydrocarbons
  - Do not remove original manufacturer labels
  - Keep stored materials, chemicals, and hydrocarbons in original containers or properly designated containers
  - Keep bagged and boxed materials on pallets or similar elevated storage area (do not place directly on ground)
  - Provide appropriately sized secondary containment or storage containers for applicable materials, chemicals, and hydrocarbons
  - Clearly designate delivery and storage areas
  - Routinely inspect storage for damaged, leaking, or improperly stored materials, chemicals, or hydrocarbons
  - Storage sheds/containers must be leak free
  - Minimize storage of materials, chemicals, and hydrocarbons on location (limit to anticipated need in a timely manner)
  - Keep well organized and leave adequate room between stored products to facilitate inspection, cleanup, or emergency response actions

- Waste Management
  - Provide designated containers for trash disposal and recycling (if applicable)
  - Ensure all waste containers are covered to prevent storm water contact or wind movement
  - Segregate wastes by type for proper disposal

- Ensure all employees and contractors working on location are routinely cleaning the construction site of trash
- Locate waste collection containers near waste sources or at the construction entrance
- Routinely empty waste containers to prevent overfilling

- Hazardous Materials and Waste
  - If applicable, designate hazardous waste collection area(s)
  - Provide adequately sized secondary containment for all hazardous waste storage
  - Properly label and handle all hazardous wastes
  - Follow company specific waste management guidelines

- Sanitary and Septic Waste
  - Provide onsite toilet facilities while construction is ongoing
  - Locate toilet facilities in convenient locations but away from waterways, wetlands, or other sensitive areas
  - All portable toilets must be staked, tied, or otherwise secured to prevent tipping
  - Routinely dispose of sanitary and septic waste in accordance with state or local regulations.

- Equipment/Vehicle Fueling and Maintenance
  - Minimize the fueling and maintenance of equipment and vehicles on the construction site
  - Only minor unscheduled maintenance should be conducted on location, provided it can be done while protecting storm water
  - Routine and major maintenance should be conducted off location
  - Keep spill kits/materials on location near on-site fueling and maintenance areas
  - Routinely inspect vehicles and equipment for leaks
  - All chemical and fuel transfer operations shall be continuously monitored to minimize the risk of spills
  - Use absorbent pads, drip pans, or other fluid control measures when drips or spills are possible

- Equipment/Vehicle Washing
  - Minimize on-site vehicle and equipment washing
  - Use off-site dedicated washing facilities when possible
  - Keep wash water on location and treat with applicable BMPs
  - Do not allow wash water to discharge off the construction location

- Spill Prevention and Response Plan
  - Develop a written spill prevention and response plan (may incorporate SPCC plan(s))
  - Identify employees and/or contractors responsible for spill prevention and response
  - All employees and contractors shall adhere to company specific environmental, health, and safety plans, rules, and programs
  - Prioritize employee, contractor, and public safety followed by stopping the source of a spill and containing on-site
  - Keep an ample supply of spill cleanup materials and equipment near storage, loading/unloading, and refueling areas
  - Adhere to all federal, state, and local rules and regulations for response, cleanup, reporting, and disposal

Preventative Maintenance: Preventative maintenance of pipes, pumps, storage tanks, and stormwater management devices to ensure equipment and structures are in good condition and will not pollute stormwater. This includes replacing worn gaskets and valves before leaks occur and removing trash and residue from overflowing containers and receptacles

Routine Inspections: Routine inspections ensure equipment, machinery, vehicles, and storage tanks are not leaking. CSS employees and contract personnel perform routine visual inspection of the site.

Inspections

Inspection Frequency

Active Construction Inspection: site inspections shall start within 7 calendar days of the commencement of construction activities at a new site. Inspections will then be conducted either, at least every 7 calendar days, or at least every 14 calendar days and after precipitation and melting-events that cause surface erosion.

Non-Cropland Sites – Inactive/30-Day Inspections: at sites that are not located in cropland, once all ground disturbing activities have been completed and the location has been pulled-back and has been seeded/mulched (or is awaiting seeding/mulch), and all final stabilization measures have been implemented, the inspection frequency will be reduced to the 30-day/inactive frequency. Inspections will proceed until the site has met CDPHE final stabilization criteria, at which point it will move into the COGC post-construction stormwater program.

Post-Construction Locations: when a location moves into the COGCC post-construction stormwater program, the location will be assessed against the COGCC Tier 1 criteria to determine COGCC Tier 1 exemption applicability. If the location is not Tier 1-exempted, annual post-construction stormwater inspections will be conducted until final reclamation, or until conditions change to allow a transition to being Tier 1-exempted.

Inspection Scope

At a minimum, the following will be inspected for adequate protection of stormwater and compliance.

- Construction site perimeter
- All disturbed areas
- Designated haul routes
- Material and waste storage areas.
- Discharge and potential discharge locations
- Vehicle access locations
- All BMPs.

Inspection requirements:

- Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
- Determine if there are new potential sources of pollutants.
- Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.
- Identify all areas of non-compliance with the permit requirements and, if necessary, implement corrective action(s) in accordance with the general permit.

At a minimum, the following information is recorded with each inspection:

- Inspection date
- Names and titles of personnel conducting the inspection
- Inspector needs to be a Qualified Stormwater Manager
- Weather
- Phase of construction
- Estimate acreage of disturbance
- Location(s) and identification of control measures requiring routine maintenance
- Location(s) and identification of discharges of sediment or other pollutants from the site
- Location(s) and identification of inadequate control measures
- Location(s) and identification of additional control measures needed that were not in place at the time of inspection
- Description of corrective action(s) for previous three items above, dates corrective action(s) were completed, including requisite changes to the SWMP, as necessary
- Description of minimum inspection frequency
- Deviations from inspection schedule
- After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain the following statement, to be signed by the Qualified Stormwater Manager (QSM):

> *"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."*

Site Map

Site specific maps/diagrams are generated for each facility and include the following information at a minimum:

- Construction site boundaries
- Flow arrows that depict stormwater flow directions onsite and runoff direction
- All areas of ground disturbance including cut and fill
- Areas used for storage of soil
- Locations of all waste accumulation
- Locations of dedicated asphalt, concrete batch plants (if applicable)
- Locations of all structural control measures
- Locations of all non-structural control measures
- Locations of springs, streams, wetlands, and other state waters, including areas that requires pre-existing vegetation to be maintained within 50 feet of a receiving water, where determined feasible
- Locations of all stream crossings located within the construction site boundary
- Locations where alternative temporary stabilization schedules apply

Maintenance Procedures for BMPs

The operator is responsible for implementing control measures (BMPs) and performing routine maintenance, as needed, to in ensure BMPs are in effective operating condition. BMPs requiring maintenance are identified in inspection reports and are addressed in the field as soon as practicable.

Training Requirements

The CDPHE general permit does not indicate any specific training or certifications required to manage a stormwater program/project or conduct inspections. The permit does, however, indicate that the person designated as responsible for implementing the SWMP, and the persons responsible for conducting inspections, need to meet the definition of a Qualified Stormwater Manager (QSM). A QSM is defined as an individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of the permit.

Reporting and Recordkeeping Requirements

Copies of documentation required by the CDPHE general permit, including records of all data used to complete the application for permit coverage, must be retained for at least three years from the date that permit coverage expires or is terminated.

Summary of Best Management Practices (BMPs)

The following is a list of minimization and mitigation BMPs related to CSS's stormwater management plan and approach at the Front Range #1 Pad:

- Ditch/drainage swale: a ditch or drainage swale is a drainage with a parabolic, trapezoidal, or V-shaped cross-section and may include a dike/berm on the lower side that is constructed across the slope. The purpose of a ditch is to prevent off-site storm water runoff (run-on) from entering a disturbed area, to prevent sediment laden storm runoff from leaving the construction site or disturbed area, to prevent flows from eroding slopes, and to direct sediment laden flows to a trapping device.
- Earth dike/berm: an earth dike (berm) is a temporary or permanent ridge of compacted soil located at the top or base of a sloping disturbed area to intercept and divert surface runoff away from areas not yet stabilized. It can also be installed around a pollutant source to prevent storm water and pollutants from leaving the location. Berms will typically be constructed from compactable subsoils which are sufficiently impermeable to retain water. Berms may be combined with lined or unlined drainage swales/ditches to divert storm water to additional sediment control BMPs prior to discharge from a site.
- Culvert: culverts are a means of subsurface storm water conveyance where surface transport is not feasible. Culverts are most often used to convey water under a roadway without impeding use of the road.

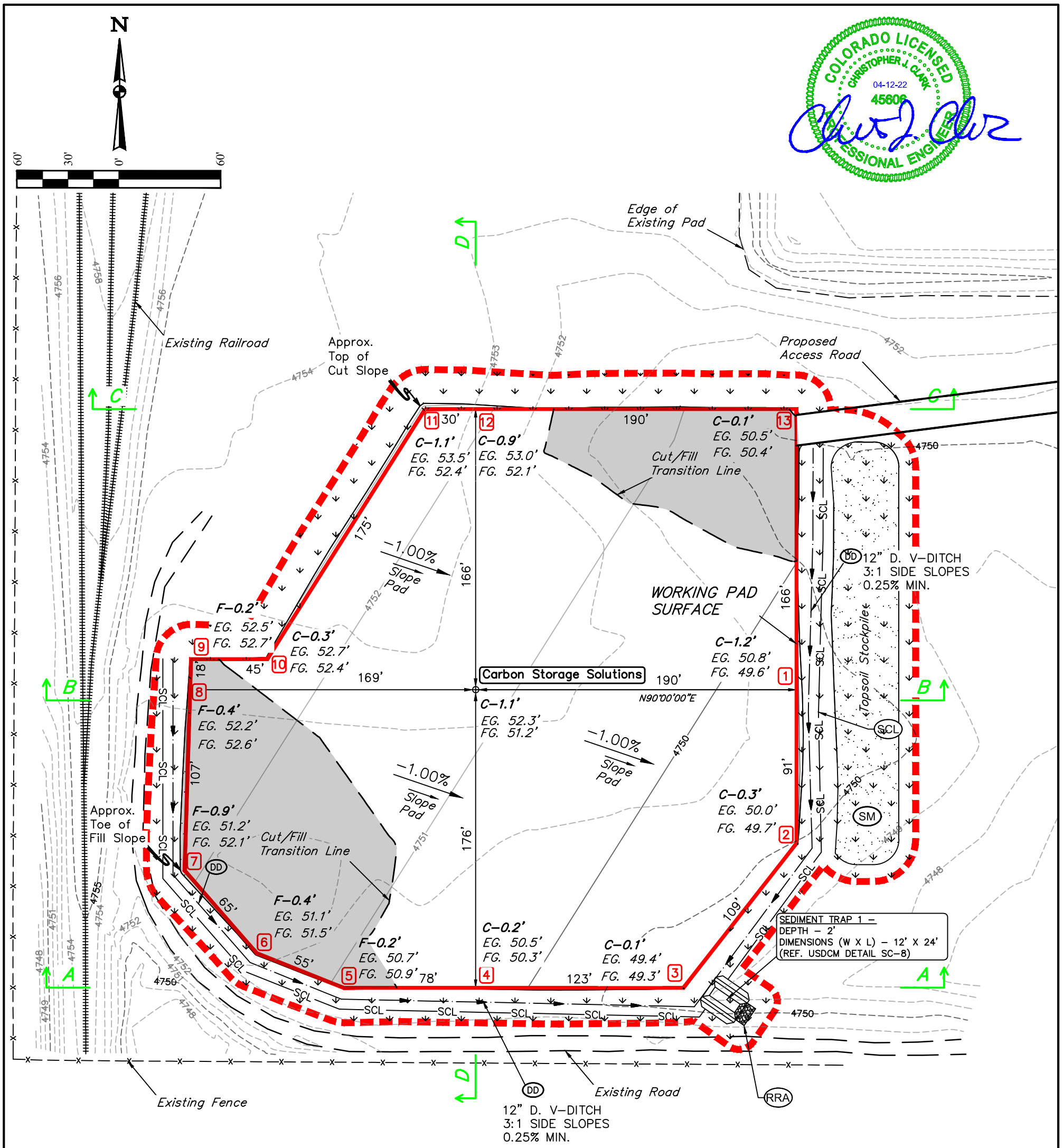
- Surface roughening: surface roughening is a temporary stabilization method designed to minimize erosion by reducing runoff velocity, decreasing wind exposure, increasing infiltration, and to a minor extent, trapping sediment. Surface roughening is typically installed on steep slopes and implemented using tracked equipment or equipment capable of scarifying or tilling exposed soils to create variations in the surface.
- Seeding: seeding, to establish perennial vegetative cover following construction, is the best long-term stabilization control for areas not stabilized with other permanent controls (pavement, concrete, road base, etc.). Establishing perennial vegetation stabilizes the soil, reduces wind and water erosion, minimizes sheet flow, increases infiltration, and reduces overall runoff volumes. Seeding can be used to establish temporary stabilization when dirt moving activities have ceased and will not resume for an extended period of time (30 days or longer), or as a final stabilization technique as part of the reclamation plan for a site.
- Mulching: mulching is a temporary erosion control used to stabilize exposed soils while waiting for vegetation to establish. Mulch protects soils from rain impacts and wind erosion, increases infiltration, and helps regulate soil temperatures. Typically, agricultural straw or hay is mechanically applied and crimped in, or wood splinters/fibers are surface applied by hand or machinery. Tackifiers may be sprayed over the applied mulch to enhance stabilization.
- Surface armor: surface armor is a combination of various materials (e.g., clay, concrete, dirt, rock, etc.) used to stabilize a surface on location where erosion could occur. The armor reduces erosion caused by runoff and/or raindrop impact and provides a stable working surface for various construction related activities. Surface armor is often utilized throughout the life of a location and can be incorporated on access roads, tank battery locations, and well head locations.
- Sediment trap: sediment traps are temporary sediment control BMPs constructed by excavating a depression or by placing an earthen berm across a low area or drainage swale. Sediment traps slow and temporarily detain sediment laden runoff. The reduction in velocity (energy) allows sediment to fall out of suspension and collect in the sediment trap before the runoff is discharged into a stabilized area.
- Vehicle track pad: vehicle tracking control (tracking pad) is a temporary stabilized entrance to the construction location that helps minimize off-site tracking of sediment onto public roads. Tracking pads help remove sediment from vehicles by providing a stabilized area where sediment can be tracked, shaken, and/or washed off before leaving the location.
- Street sweeping: street sweeping is a sediment removal BMP and may be required in order to collect and remove sediment tracked offsite by vehicles leaving the construction site. Sediment tracked offsite onto local and county roads should be removed upon discovery via streetsweeper or other sediment removal methods.
- Good housekeeping practices: good housekeeping practices must be implemented in order to prevent storm water contamination with solid and liquid wastes generated in the construction process. Good housekeeping practices include but are not limited to employee and contactor training, designating material storage/staging areas, having standard policies and procedures regarding materials handling and waste management, implementing spill prevention procedures, developing spill response and cleanup procedures, and having equipment and vehicle fueling and maintenance policies and procedures.

- Stockpile management: stockpile management is the protection of stockpiled erodible materials through structural and nonstructural practices.
- Topsoil salvage: the salvage and proper handling of topsoil is one of the keys to reclamation success. Topsoil is vital for the revegetation of disturbed areas following final grading. Topsoil salvage measures include the following direct and indirect protection:
    - 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.
    - Stormwater BMPs 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.
    - 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.

- Wind erosion/dust control: wind erosion/dust control is a group of best management practices designed to temporarily prevent sediment or other stockpiled materials from becoming suspended in the air during construction activities or windy conditions. These BMPs are typically implemented for areas of exposed soil from grading activities and on construction roadways to control vehicle generated dust.
- Riprap: riprap is a layer of loose stone installed to stabilize and protect the underlying soils from erosion or movement. When properly sized and installed, riprap can be resistant to high velocity concentrated flows.
- Routine inspections: CSS, and/or third-party contractors, conduct a number of routine and regularly scheduled inspections, including but not limited to, stormwater inspections, SPCC (spill prevention, control, and countermeasure) inspections, LDAR (leak detection and repair) and OGI (optical gas imaging) inspections, and AVO (audio, visual, olfactory) inspections, which help to ensure the facility, construction, and all associated equipment are in good working order, regularly maintained, and free of issue, which greatly decreases the probability of a negative stormwater event or discharge from the site.
- Training: employee training on spill prevention, stormwater, and associated practices and procedures is essential to ensuring that everyone has the knowledge needed to follow appropriate steps and be able to minimize potential impacts resulting from stormwater related incidents.

Attachment A:

Site Specific Initial Construction Layout Drawing



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- — 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

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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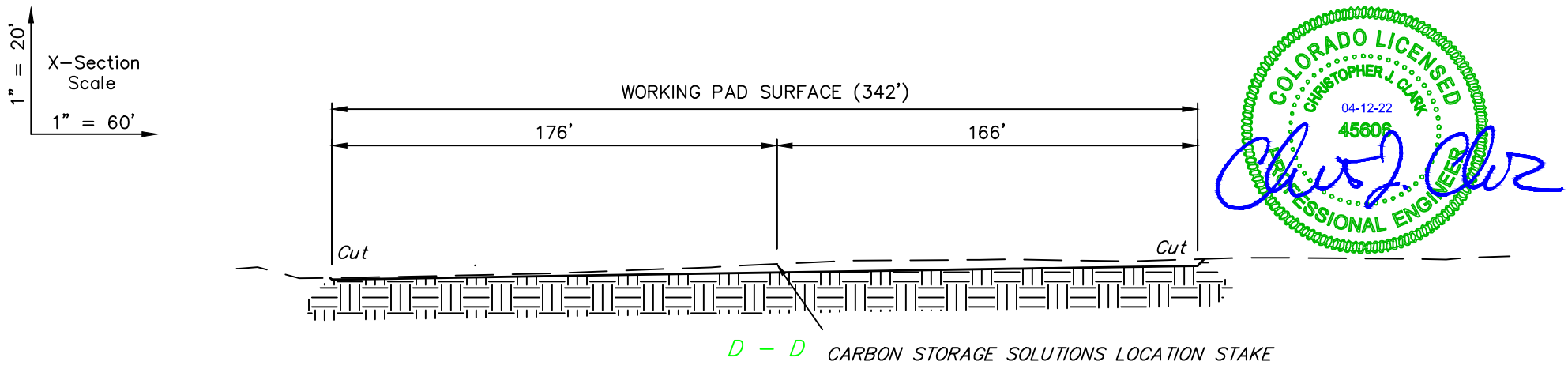
Vernal, UT 84078 * (435) 789-1017

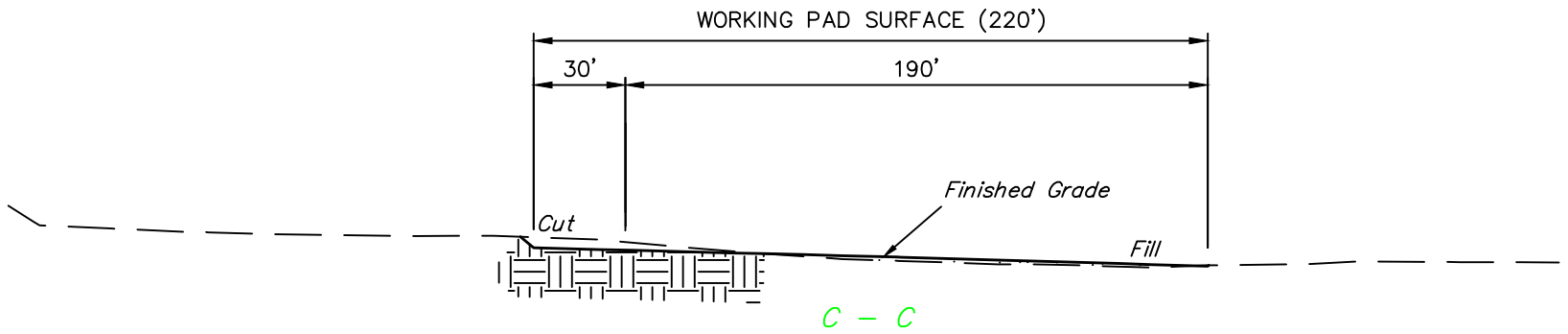
SUMMIT ENERGY SERVICES

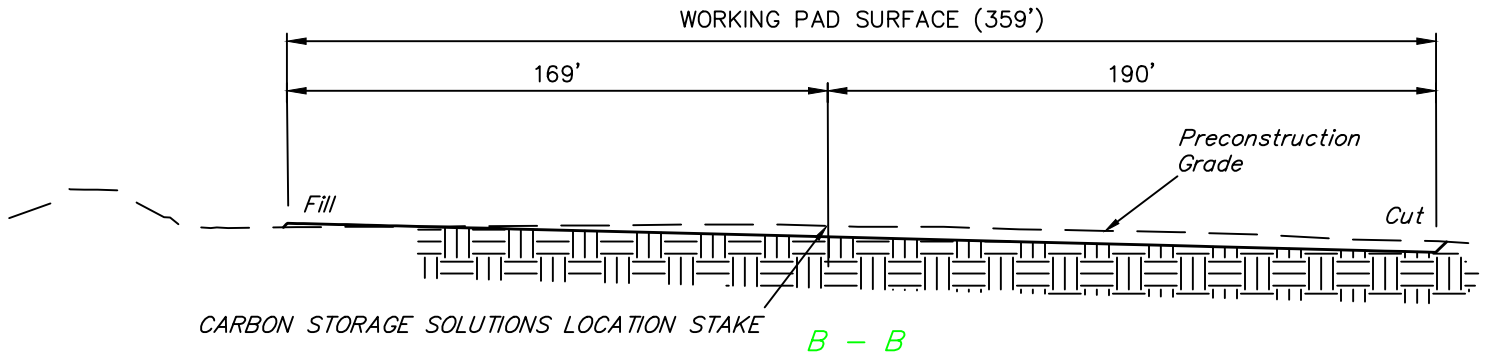
CARBON STORAGE SOLUTIONS
1557' FSL 2320' FEL
NW 1/4 SE 1/4, SECTION 26, T6N, R67W, 6th P.M.
WELD COUNTY, COLORADO

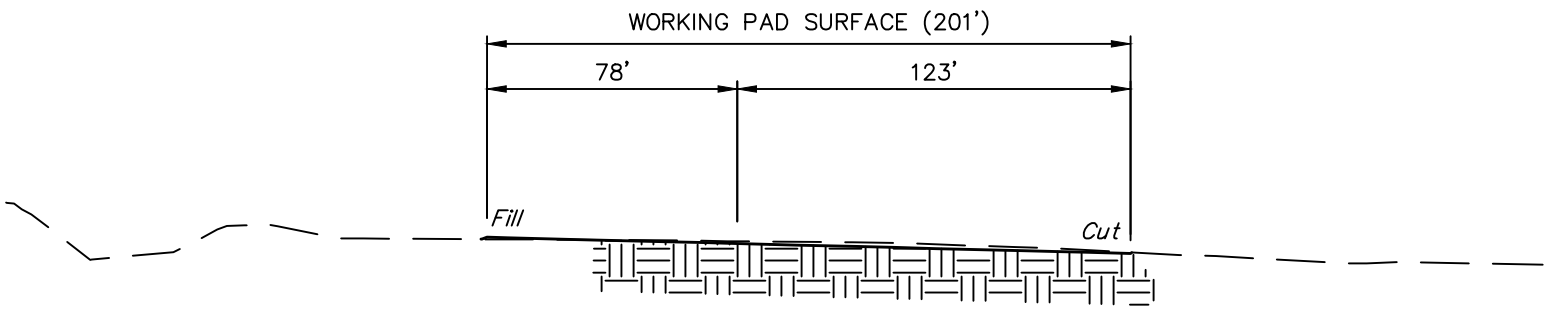
SURVEYED BY	JARED.CHRISTOPHER	04-08-22	SCALE
DRAWN BY	K.C.	04-12-22	1" = 60'

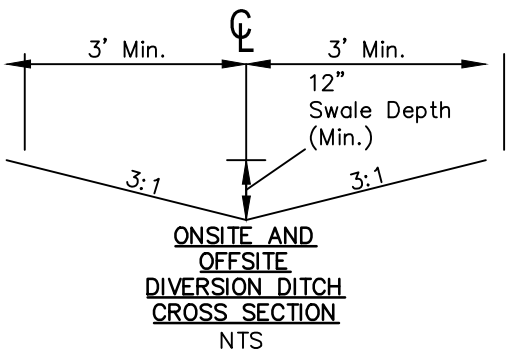
CONSTRUCTION LAYOUT - PLAN VIEW











ONSITE AND OFFSITE DIVERSION DITCH CROSS SECTION
NTS

APPROXIMATE EARTHWORK QUANTITIES	
(6") TOPSOIL STRIPPING	2,360 Cu. Yds.
REMAINING LOCATION	1,170 Cu. Yds.
TOTAL CUT	**3,530 Cu. Yds.**
FILL	**1,170 Cu. Yds.**
EXCESS MATERIAL	2,360 Cu. Yds.
TOPSOIL	2,360 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	**0 Cu. Yds.**

APPROXIMATE SURFACE DISTURBANCE AREAS	
	ACRES
WORKING PAD SURFACE DISTURBANCE	±2.394
CONSTRUCTION DISTURBANCE	±0.977
TOTAL OIL & GAS LOCATION	±3.371'

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	**ACRES**
TOTAL OIL & GAS LOCATION	NA	±3.371
30' WIDE ACCESS ROAD R-O-W DISTURBANCE	±473'	±0.326
TOTAL SURFACE USE AREA		±3.697

NOTES:

- Fill quantity includes 10% for compaction.
- Calculations based on 6" of topsoil stripping.
- Cut/Fill slopes 3:1 (Typ.).

COLORADO LICENSED
CHRISTOPHER J. CLARK
04-12-22
45606
PROFESSIONAL ENGINEER

UINTAH ENGINEERING & LAND SURVEYING

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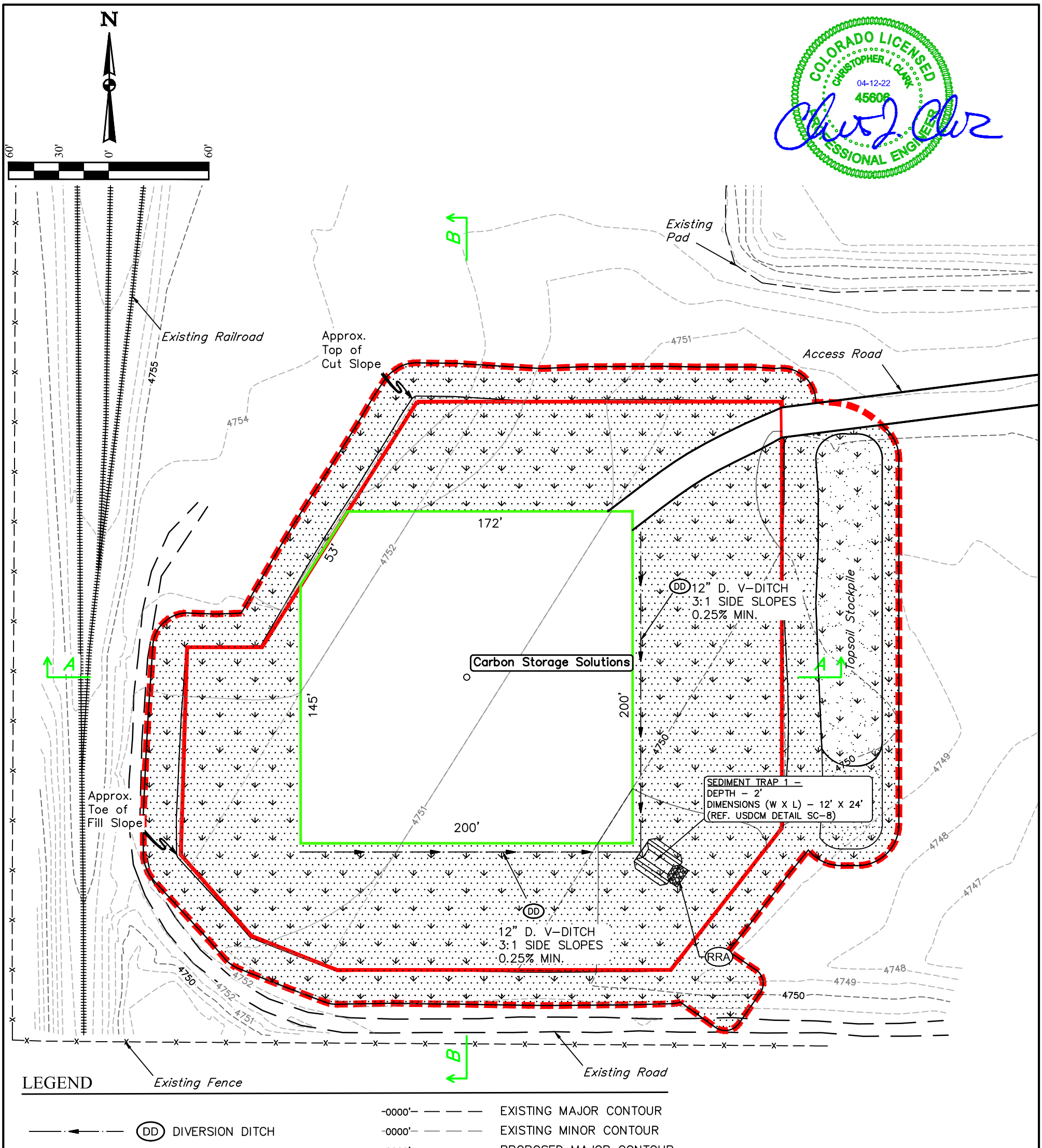
WELD COUNTY, COLORADO

SURVEYED BY	JARED CHRISTOPHER	04-08-22	**SCALE**
DRAWN BY	K.C.	04-12-22	AS SHOWN

CONSTRUCTION LAYOUT - CROSS SECTIONS

Attachment B:

Site Specific Interim Reclamation and Production Areas Construction Layout Drawing



APPROXIMATE UN-RECLAIMED ACREAGE = ±1.092 ACRES
APPROXIMATE RECLAIMED ACREAGE = ±2.279 ACRES
TOTAL ACREAGE = ±3.371 ACRES

NOTES:

- Contours shown at 1' intervals.
- Overall working pad surface = 359' x 342'

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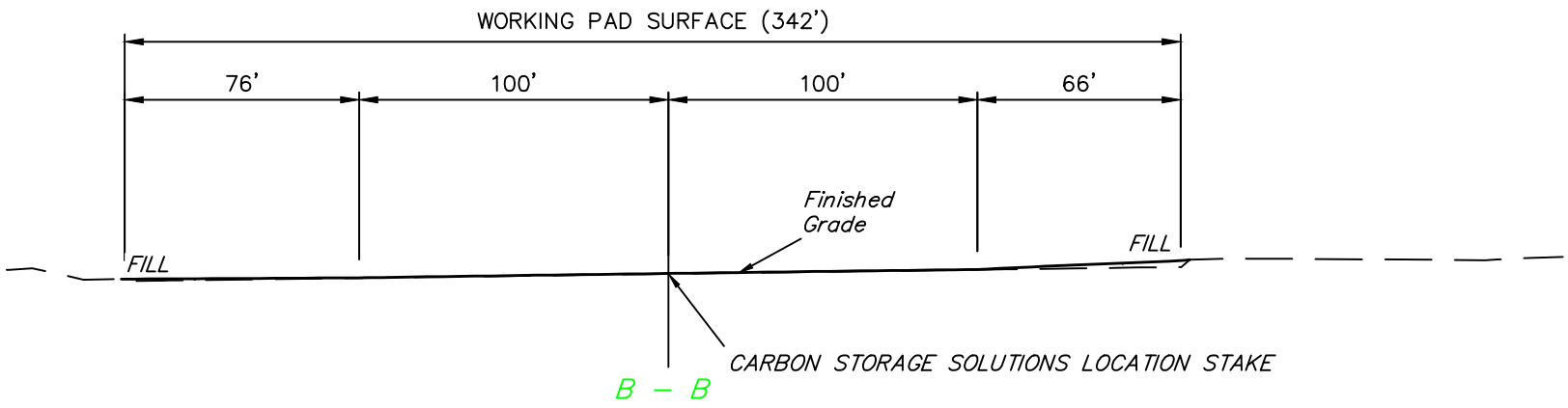
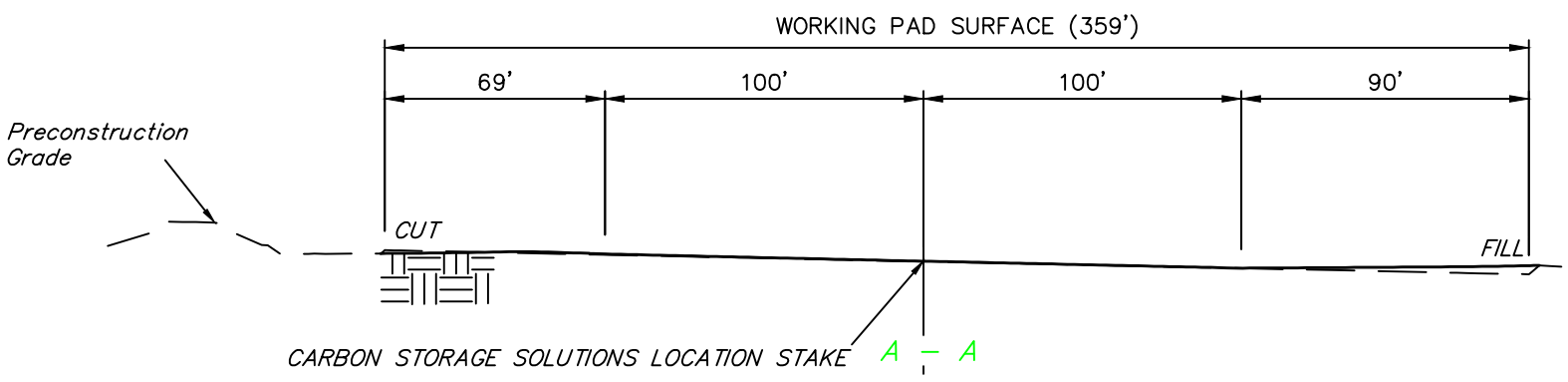
WELD COUNTY, COLORADO

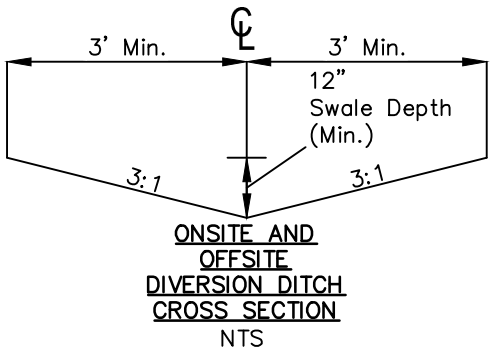
SURVEYED BY	JARED CHRISTOPHER	04-08-22	SCALE
DRAWN BY	K.C.	04-12-22	1" = 60'

INTERIM RECLAMATION - PLAN VIEW

1" = 40'
X-Section Scale
1" = 60'







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INTERIM RECLAMATION - CROSS SECTIONS