J·R ENGINEERING
A Westrian Company

STORMWATER MANAGEMENT PLAN
FOR
LEWIS PALMER TRAIL

Prepared For (Applicant):

Lewis Palmer School District 38
146 N. Jefferson Street
Monument, CO 80132
(719) 757-1430
Contact: Ricky Vestal

Prepared By:

JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, Colorado 80919
(303) 267-6241
Contact: Glenn Ellis

Qualified Stormwater Manager:

To Be Determined

Contractor:

To Be Determined

March 2023

El Paso County PCD File No.:
PPR2240

ENGINEER OF RECORD:

The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.

Glenn Ellis, P.E. Date
Registered Professional Engineer
State of Colorado No. 38861
For and on behalf of JR Engineering, LLC.

REVIEW ENGINEER:

The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.

Review Engineer Date

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1. Applicant / Contact Information

Owner/Developer: Lewis Palmer School District 38
Attn: Ricky Vestal
146 N. Jefferson Street
Monument, CO 80132
(719) 757-1430

Engineer: JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, CO 80919
Attn: Glenn Ellis (303) 267-6241
gellis@jrengineering.com

SWMP Administrator: To Be Determined

Contractor: To Be Determined

2. Site Description and Location

The site is located in Monument, CO and the proposed development is comprised of a 4 foot wide trail approximately 2.5 miles long. The trail will be installed along Woodmoor Drive, Willow Park Way, below Woodmoor Lake on maintenance access paths, Lake Woodmoor Drive, through open tracts owned by the Woodmoor Improvement Association, and along Deer Creek Drive, within School District, Woodmoor Improvement Association property, or on properties where easements have been obtained. See Appendix A for a vicinity map.

The existing site is comprised of both developed and undeveloped nearly bare ground. The development of the proposed site will include implementation of BMPs, site grading, trail installation, and removal of temporary BMPs. Refer to GEC (Construction) plans in Appendix C.

Site details:

a. Estimated area to undergo disturbance: 1.34 acres
    i. No off-site grading is proposed.
b. Soil Types: Soil characteristics are comprised of various soils throughout the project limits of the trail. Soils are comprised of Pring coarse sandy loam (Group B)(31.9% of trail), Tomah-Crowfoot loamy sands (Group B)(29.7% of trail), Kettle gravelly loamy sand (Group B)(20.4% of trail), and Alamosa loam (Group D)(18.0% of trail). Group B soils exhibit a moderate infiltration rate when thoroughly wet and consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. Group D soils

exhibit a very slow infiltration rate when thoroughly wet and consist chiefly of clays that have a high shrink-swell potential, have a high water table, have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission. Refer to the soil survey mapping in Appendix B. BMP's will be installed and maintained to mitigate adverse impacts due to soil erosion.

c. Soil erosion potential and potential impacts upon discharge:
    i. Conduct land-disturbing activities in a manner that effectively reduces accelerated soil erosion and reduces sediment movement and deposition off site.
    ii. Schedule construction activities to minimize the total amount of soil exposed at any given time.
    iii. Establish temporary or permanent cover on areas that have been disturbed as soon as practical after grading is completed.
    iv. Design and construct temporary or permanent facilities to limit the flow of water to non-erosive velocities for the conveyance of water around, through or from the disturbed area.
    v. Remove sediment caused by accelerated soil erosion from surface runoff water before it leaves the site.
    vi. Stabilize disturbed areas with permanent vegetative cover and provide permanent storm water quality control measures for the post-construction condition.
d. Existing vegetation: Native meadow grasses (approximately 70% coverage), determined using aerial inspection.
e. Location and description of potential pollution sources: Potential sources of pollution include: Onsite waste management, portable toilets, onsite vehicle fueling, and outdoor storage, vehicle tracking pads, dust management, and temporary stock pile. The locations of these sources are will be determined by the contractor.
    i. Non-industrial waste sources such as worker trash and portable toilets – Clean up litter and debris from the construction site daily and worker trash receptacles will be located by entrance/exit for easy removal/replace access. All portable toilets should be kept a minimum of 50 feet from a storm drain inlet or drainage course and secured to the ground. Toilets will be cleaned regularly and inspected daily for any spills or leaks. Waste disposal bins will be reasonably maintained at regular intervals to check for leaks and overflow capacity, and will be emptied routinely to prevent overflow.
    ii. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. – oil, grease, coolants, etc. that leak onto the soil or impervious surface should be cleaned up as soon as possible and on-site personnel notified.
    iii. Vehicle, equipment maintenance, and fueling – all designated fueling and maintenance areas shall be located a minimum of 100 feet from any drainage course whenever possible. If the fueling area is located on a pervious surface, the area shall be covered with a non-pervious lining so as to prevent soil contamination by way of infiltration. Any spillage shall be

cleaned up immediately.

iv. Raw materials, intermediate products, byproducts, process residuals, Finished products, containers, and materials storage areas can be sources of pollutants such as metals, oils and grease, sediment and other contaminants. Where practical, conduct operations indoors. Where impractical, select an appropriate temporary or permanent covering to reduce exposure of materials to rainfall and runoff.

v. Vehicle tracking controls (VTC) provide stabilized construction site access where vehicles exit the site onto paved public roads. An effective vehicle tracking control helps remove sediment (mud or dirt) from vehicles, reducing tracking onto the paved surface. With aggregate vehicle tracking controls, ensure rock and debris from this area do not enter the public right-of-way. Inspect the VTC for degradation and replace aggregate or material used for a stabilized entrance/exit as needed.

vi. Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

vii. Stockpile management should be used when soils or other erodible materials are stored at the construction site. Special attention should be given to stockpiles in close proximity to natural or manmade storm systems. Soils stockpiled for an extended period (typically for more than 30 days) mulched with a temporary grass cover once the stockpile is placed (typically within 21 days). An area that will remain in an interim state for over 60 days must also be seeded. Use of mulch only or a soil binder is acceptable if the stockpile will be in place for a more limited time period (typically 30-60 days). Refer to DCM Vol 2 – Section 3.2-General principles - Basic Grading, Erosion and Stormwater Quality Requirements and General Prohibitions #16 for more information.

f. Spill prevention and pollution controls for dedicated batch plants: Not applicable for this site since there will be no dedicated batch plants.

g. Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances and vehicle tracking controls can help reduce the necessary frequency of street sweeping and vacuuming.

h. Location and description of anticipated non-stormwater components of discharge: There will be a concrete washout area (CWA) where the cleaning of concrete trucks could produce a non-stormwater discharge. Proper installation and maintenance of the CWA will not allow runoff from this area. Another potential source of non-stormwater discharge could be the irrigation of permanent seeding (PS). Irrigation will be kept at a rate so as to not create runoff.

i. Existing basin drainage patterns are generally from north to south and east to west by way of sheet flow.

j. Receiving water: Runoff from the project will be limited using the GEC BMPs.

Runoff from the site will follow the historic paths within the major basins they are in. The ultimate receiving waters are Dirty Woman Creek and Crystal Creek.

k. There are no streams that cross the project site.

3. Proposed Sequence of Major Activities

The project will follow standard construction sequences for construction, i.e., clearing and grubbing, over excavation, overlot grading, utility installation, and street paving. The contractor will be responsible for implementing and maintaining the erosion and sediment control measures described in this document and the accompanying design drawings. The contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and their proposed function at each phase of the project remains with the contractor. The order of major activities (with estimated completion dates) will be as follows:

1. Install VTC and other perimeter soil erosion control measures (Spring 2023).
2. Clear and rough grade for improvements (Spring 2023).
3. Install proposed trail (Spring/Summer 2023).
4. Place Seed and Mulch (Summer 2023).
5. Clean up and final stabilization (Summer 2023).

4. BMPs for Stormwater Pollution Prevention

See GEC (Construction) plans in Appendix C for BMP locations and detail sheets.

a. Erosion and Sediment Controls
   i. Structural BMPs:
      1. Silt fence (SF) along downstream limits of disturbed areas to filter sediment from runoff (initial, interim)
      2. Stabilized staging area (SSA) near site entrance to consolidate construction equipment in a stabilized location (initial, interim)
      3. Construction fence (CF) to identify limits of construction (LOC) where silt fence is not needed (initial, interim)
      4. Vehicle tracking control (VTC) at site entrance to prevent sediment from leaving the site via vehicle tires (initial, interim)
      5. Temporary stock pile (TSP) to consolidate materials such as topsoil in a controlled area bounded by silt fence (interim)
      6. Inlet protection (IP) around culvert entrances (interim, final)
      7. Outlet protection (OP) at culvert outlets (interim, final)
      8. Concrete washout area (CWA) to allow a controlled area for concrete trucks to be washed (initial, interim)
      9. Straw Bale Barrier (STB) to be used as check dams in swales to slow and filter sediment from runoff (initial, interim)
      10. Sediment Control Logs (SCL) to slow and filter sediment from runoff, to be placed behind sidewalks (initial, interim)
   ii. Non-structural BMPs:

1. Mulching (MU) to stabilize soils and promote seed growth (final)
2. Permanent seeding (PS) to stabilize disturbed areas (final)

b. Materials Handling and Spill Prevention
    i. General Materials Handling Practices:
        1. Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions in a secure location. To the extent practical, material storage areas should not be located near storm drain inlets and should be equipped with covers, roofs, or secondary containment as required to prevent storm water from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spilled materials cannot combine and react.
        2. Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
        3. Materials no longer required for construction shall be removed from the site as soon as possible.
        4. Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and BMPs clear and functional.
    ii. Specific Materials Handling Practices
        1. All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate storm water.
        2. All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
        3. Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants, shall be conducted under cover during wet weather and on an impervious surface to prevent release of contaminants onto the ground. Materials spilled during maintenance operations shall be cleaned up immediately and properly disposed of.
        4. Wheel wash water shall be settled and discharged onsite by infiltration.
        5. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to storm water runoff. Follow manufacturer's recommendations for application rates and procedures.
        6. pH-modifying sources shall be managed to prevent contamination of runoff and storm water collected onsite. The most common sources of pH-modifying materials are bulk cement, cement kiln dust (CKD), fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate

processes, and concrete pumping and mixer washout waters.

iii. Spill Prevention and Response Procedures

1. The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize their migration into storm water runoff and conveyance systems. If the release has impacted onsite storm water, it is critical to contain the released materials onsite and prevent their release into receiving waters.
2. Spill Response Procedures:
    a. Notify site superintendent immediately when a spill, or the threat of a spill, is observed. The superintendent shall assess the situation and determine the appropriate response.
    b. If spills represent an imminent threat of escaping onsite facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent after the situation has stabilized.
    c. The site superintendent, or his/her designee, shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
    d. Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
3. Spill kits shall be on-hand at all fueling sites. Spill kit location(s) shall be reported to the SWMP administrator.
4. Absorbent materials shall be on-hand at all fueling areas for use in containing inadvertent spills. Containers shall be on-hand at all fueling sites for disposal of used absorbents.
5. Recommended components of spill kits include the following:
    a. Oil absorbent pads (one bale)
    b. Oil absorbent booms (40 feet)
    c. 55-gallon drums (2)
    d. 9-mil plastic bags (10)
    e. Personal protective equipment including gloves and goggles
6. Concrete wash water: unless confined in a pre-defined, bermed containment area, the cleaning of concrete truck delivery chutes is prohibited at the job site.
7. Notification procedures:
    a. In the event of an accident or spill, the SWMP administrator shall be notified.
    b. Depending on the nature of the spill material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line: 887-518-5608), downstream water users, or other agencies may also need to be notified.
    c. Any spill of oil which 1) violates water quality standards, 2) produces a “sheen” on a surface water, or 3) causes a sludge or emulsion, or any hazardous substance release, or hazardous waste release which exceeds the reportable quantity, must be

reported immediately by telephone to the National Response Center Hotline at (800) 424-8802.

5. Final Stabilization and Long-Term Stormwater Management

a. Permanent seeding will be provided to achieve long-term stabilization of the site.
b. Seed Mix: Sand dropseed, or approved equal.
c. Seeding Application Rate: Drill seed 0.25" to 0.5" into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25" to 0.5" into the soil. Apply seed at the following rates:
    i. Dryland: 20-25 lbs/acre
    ii. Irrigated: 40 lbs/acre
d. Soil stabilization Practices:
    i. Mulching Application: Apply 1-1/2 tons of certified weed free hay per acre mechanically crimped into the soil in combination with an organic mulch tackifier. On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of much and mulch tackifier.
e. Soil Conditioning and Fertilization Requirements:
    i. Soil conditioner, organic amendment shall be applied to all seeded areas at 3 CY / 1000 SF.
    ii. Fertilizer shall consist of 90% fungal biomass (mycelium) and 10% potassium-magnesia with a grade of 6-1-3 or approved equal. Fertilizer shall be applied as recommended by seed supplier.
f. Final stabilization is reached when all soil-disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plan density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.
    i. The overall project does not solely rely on another entity or control measures for final stabilization or permanent water quality or detention.
g. Final Stabilization and Long-term Stormwater Quality:
    i. There is no long term water quality proposed with the site.

6. Inspection and Maintenance

a. Inspection Schedules:
    i. The contractor shall inspect BMPs once every 14 days at a minimum, and immediately (within 24 hours) after any precipitation or snowmelt event that causes surface erosion (i.e. that results in storm water running across the ground), to ensure that BMPs are maintained in effective operating condition.
    ii. The contractor will be responsible for any re-excavation of sediment and debris that collects in the basin depression required to ensure that the basin meets the design grades following construction. The storm lines shall also be cleaned and free of sediment once the site becomes stabilized.
b. Inspection Procedures:
    i. Site Inspection / Observation Items:
        1. Construction site perimeter and discharge points

2. All disturbed areas
3. Areas used for material / waste storage that are exposed to precipitation
4. Other areas having a significant potential for storm water pollution, such as demolition areas or concrete washout areas, or locations where vehicles enter or leave the site
5. Erosion and sediment control measures identified in the SWMP
6. Any other structural BMPs that may require maintenance, such as secondary containment around fuel tanks, or the conditions of spill response kits.

ii. Inspection Requirements:

1. Determine if there is any evidence of, or potential for, pollutants entering the receiving waters.
2. Review BMPs to determine if they still meet design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site.
3. Upgrade and/or revise any BMPs not operating in accordance with the SWMP and update the SWMP to reflect any revisions.
4. The SWMP should be viewed as a "living document" that is continuously being reviewed and modified as a part of the overall process of evaluating and managing storm water quality issues at the site.
5. The QSM will be sufficiently qualified for the required duties per the ECM Appendix I.5.2.A.
6. The Qualified Storm water Manager shall amend the SWMP when there is a change in design, construction, operation or maintenance of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity or when BMPs are no longer necessary and are removed.

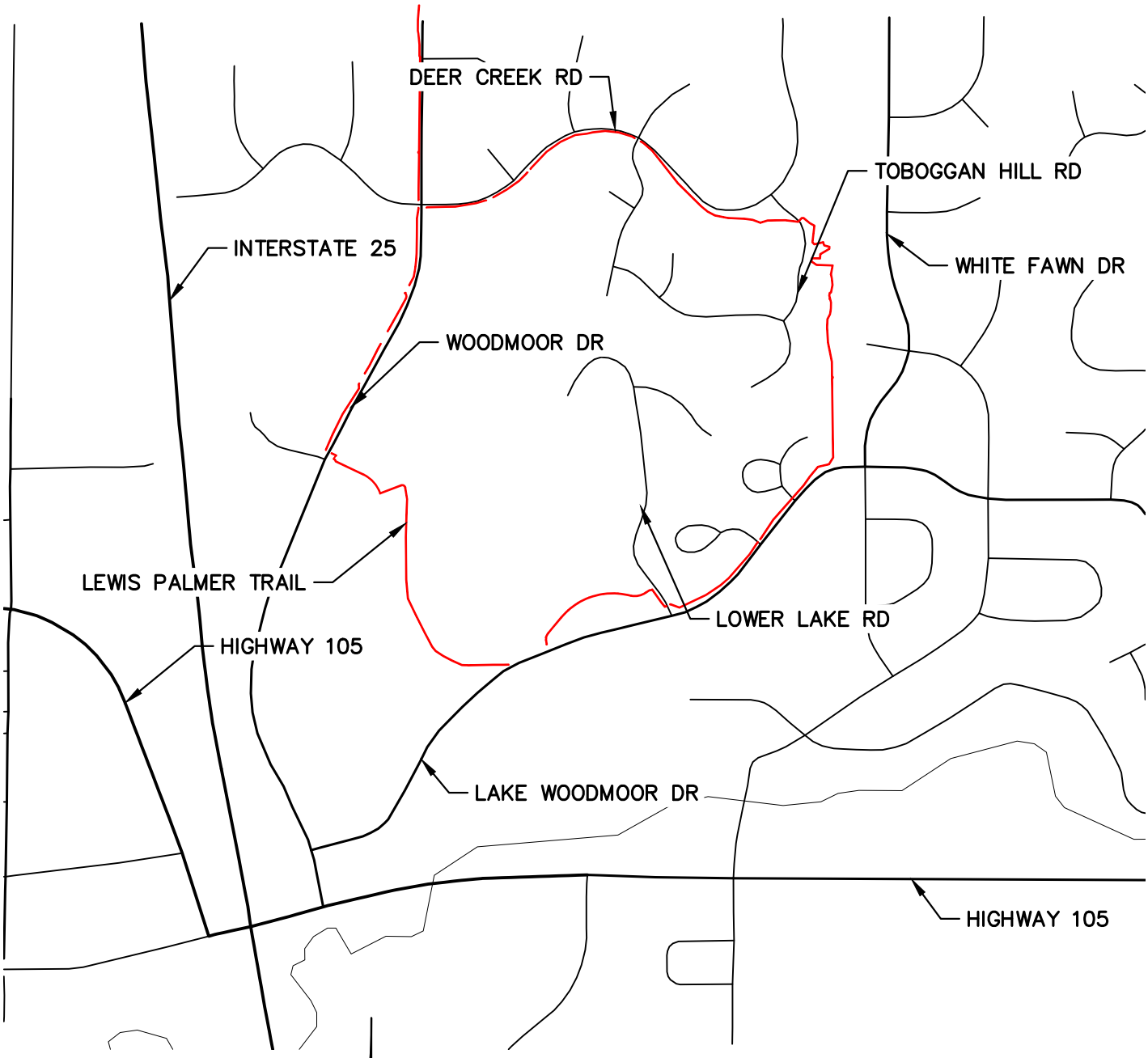
iii. BMP Maintenance / Replacement and Failed BMPs:

1. The contractor shall remove sediment that has been collected by perimeter controls, such as silt fence and inlet protection, on a regular basis to prevent failure of BMPs, and remove potential of sediment from being discharged from the site in the event of BMP failure.
2. Removed sediment must be moved to an appropriate location where it will not become an additional pollutant source, and should never be placed in ditches or streams.
3. The contractor shall update the GEC as required with any new BMPs added during the construction period.
4. The SWMP should be viewed as a "living document" that is continuously being reviewed and modified as a part of the overall process of evaluating and managing storm water quality issues at the site.

5. The Qualified Storm water Manager shall amend the SWMP when there is a change in design, construction, operation or maintenance of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity or when BMPs are no longer necessary and are removed.
6. The contractor shall address BMPs that have failed or have the potential to fail without maintenance or modifications, as soon as possible, immediately in most cases, to prevent discharge of pollutants.

iv. Record Keeping and Documenting Inspections:
1. The contractor shall maintain records of all inspection reports, including signed inspection logs, at the project site.
2. The permittee shall document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage.
3. Site inspection records shall include the following:
    a. Inspection date
    b. Name and title of personnel making the inspection
    c. Location of discharges of sediment or other pollutants from the site
    d. Location(s) of BMPs in need of maintenance
    e. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location
    f. Location(s) where additional BMPs are needed that were not in place at the time of inspection
    g. Deviations from the minimum inspection schedule

APPENDIX A – VICINITY MAP



1000 500 0 1000 2000

ORIGINAL SCALE: 1" = 1000'

VICINITY MAP
LEWIS PALMER TRAIL
JOB NO. 25203.00
11/23/22
SHEET 1 OF 1

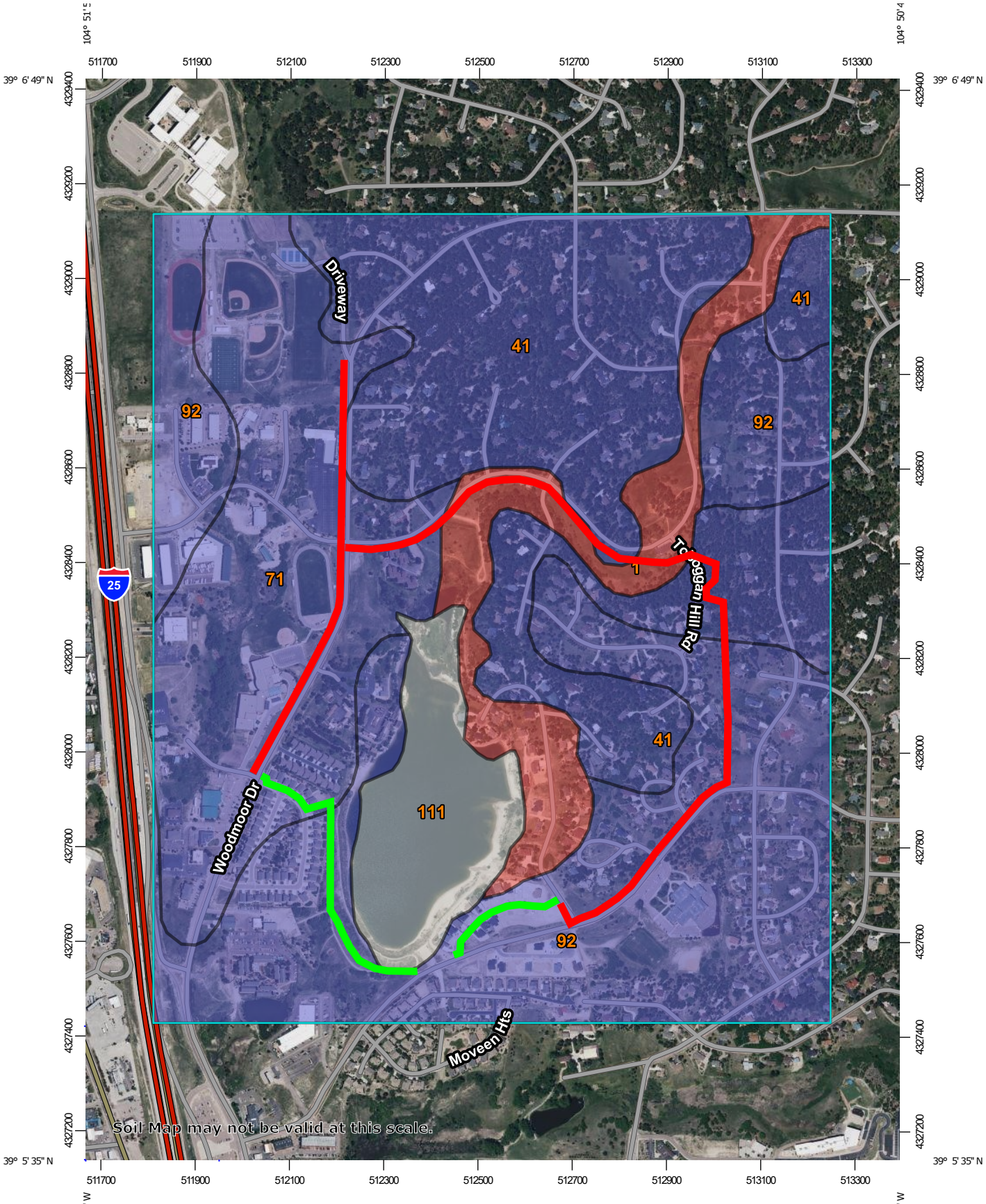
J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

APPENDIX B – SOILS MAP

TRAIL DISTURBANCE

TRAIL ON EXISTING CONCRETE OR MAINTENANCE ACCESS ROAD (NO DISTURBANCE)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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: El Paso County Area, Colorado
Survey Area Data: Version 20, Sep 2, 2022

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

Date(s) aerial images were photographed: Jun 9, 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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Alamosa loam, 1 to 3 percent slopes	D	49.5	8.1%
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	B	172.3	28.3%
71	Pring coarse sandy loam, 3 to 8 percent slopes	B	130.6	21.5%
92	Tomah-Crowfoot loamy sands, 3 to 8 percent slopes	B	216.4	35.5%
111	Water		40.0	6.6%
Totals for Area of Interest			**608.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C – GEC (CONSTRUCTION) PLANS AND DETAILS

PoDI / NHS	
PROJECT OF DIVISION INTEREST (PoDI)?	■ NO ☐ YES
NATIONAL HIGHWAY SYSTEM?	■ NO ☐ YES

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

CONSTRUCTION BID PLANS OF PROPOSED
FEDERAL AID PROJECT NO. SAR M915-009

LEWIS PALMER TRAIL

LEWIS PALMER SCHOOL DISTRICT 38

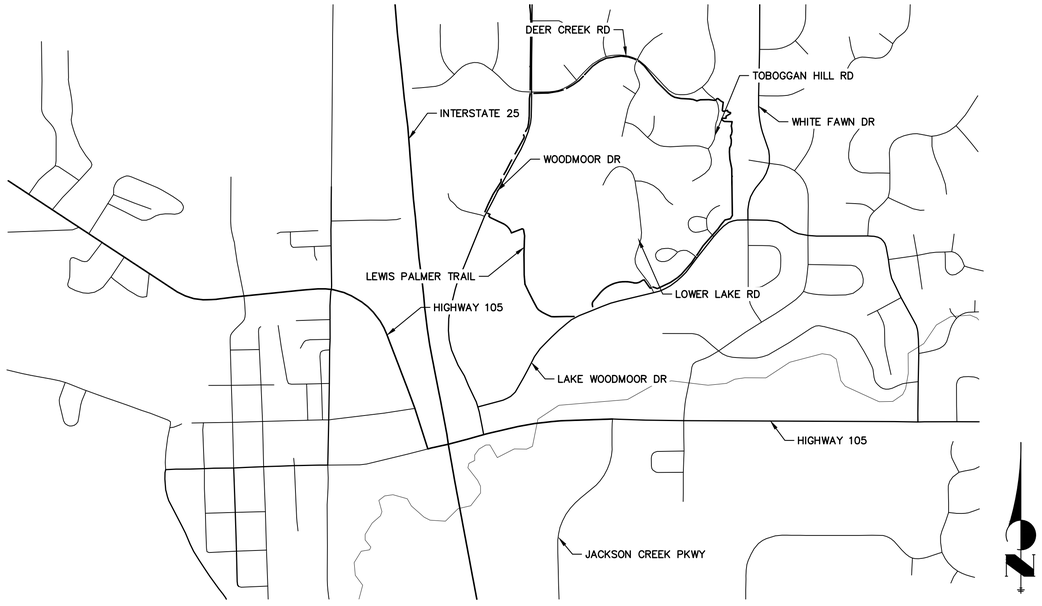
TOWN OF MONUMENT, EL PASO COUNTY, COLORADO

RELATED PROJECT:
P.E. UNDER PROJECT:
PROJECT NUMBER:
PROJECT CODE:

R.O.W. PROJECT:
TBD

TABULATION OF LENGTH & DESIGN DATA

STATION		PATH LENGTH (FT)
WOODMOOR DRIVE		
BEGIN PATH	0+00.00	
END PATH	30+99.13	3099.13
WILLOW PARK WAY & LAKE ACCESS ROAD		
BEGIN PATH	30+99.13	
END PATH	52+84.41	2185.28
LAKE WOODMOOR DRIVE		
BEGIN PATH	52+84.41	
END PATH	55+32.09	247.68
CORONADO BEACH DR		
BEGIN PATH	55+32.09	
END PATH	64+33.46	901.37
LOWER LAKE ROAD		
BEGIN PATH	64+33.46	
END PATH	66+69.77	236.31
LAKE WOODMOOR DRIVE		
BEGIN PATH	66+69.77	
END PATH	80+76.62	1406.85
WOODMOOR IMPROVEMENT (ASSOCIATION– OPEN SPACE)		
BEGIN PATH	80+76.62	
END PATH	103+00.00	2223.38
DEER CREEK ROAD		
BEGIN PATH	103+00.00	
END PATH	127+63.00	2463.00



VICINITY MAP
SCALE: 1"=1000'

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10	– NOTES
11	– SUMMARY OF APPROXIMATE QUANTITIES
12	– SURVEY TABULATIONS
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32–44	– CROSS SECTION

DESIGN DATA

WIDTH	4'
CROSS–SLOPE	5% MAX
MAXIMUM SLOPE	12.5%
PASSING ZONE	5'X5' MAX 1,000' APART
RESTING ZONES	5% MAX SLOPE

CONTACTS:

OWNER	LEWIS PALMER SCHOOL DISTRICT 38 146 N JEFFERSON STREET MONUMENT, CO 80132 ATTN: RICKY VESTAL P~(719) 757–1430
PROJECT PARTNER	WOODMOOR IMPROVEMENT ASSOCIATION 1691 WOODMOOR DR. MONUMENT, CO 80132 ATTN: P~(719) 488–2693
PROJECT PARTNER	WOODMOOR WATER AND SANITATION DISTRICT PO BOX 1407 MONUMENT, CO 80132 ATTN: P~( ) –
ENGINEER/SURVEYOR	JR ENGINEERING, LLC ATTN: GLENN ELLIS 5475 TECH CENTER DRIVE, SUITE 235 COLORADO SPRINGS, CO 80919 P~(303) 267–6241
CDOT (REGION 2)	COLORADO DEPARTMENT OF TRANSPORTATION 5615 WILLS BOULEVARD PUEBLO, CO 81008 CONTACT: JUNIOR RODRIGUEZ P~(719) 251–6980

EL PASO COUNTY STATEMENT

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JOSHUA PALMER, P.E. — DATE
COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E. — DATE
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

RICKY VESTAL — DATE

LEWIS PALMER SCHOOL DISTRICT 38
146 N. JEFFERSON STREET
MONUMENT, CO 80132

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E. — DATE
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023		Sheet Revisions			Colorado Department of Transportation
File Name:		Date:	Comments	Init.	5615 WILL BLVD. Pueblo, CO 81008 Phone: 719–546–5750
Horiz. Scale: N/A	Vert. Scale: N/A				Region 2
Unit name	Unit leader				Lewis Palmer School District 38

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As Constructed	LEWIS PALMER TRAIL COVER SHEET			Project No./Code
No Revisions:				M915–009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 1 OF 44
	Sheet Subset:	Subset Sheets:	OF	

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M STANDARD PLANS

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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARDS PLANS LIST

July 31, 2019

Revised on September 6, 2022

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE M&S STANDARD PLANS USED TO DESIGN THIS PROJECT ARE INDICATED BY A MARKED BOX ■ AND WILL BE ATTACHED TO THE PLANS. ALL THE OTHER M&S STANDARD PLANS ARE STILL ELIGIBLE FOR CONSTRUCTION IF APPROVED BY AN APPROPRIATE CDOT ENGINEER.

S STANDARD PLANS

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LEWIS PALMER TRAIL
STANDARDS PLAN LIST

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Sheet Subset:
Structure Numbers
Subset Sheets: OF

Project No./Code
M915-009/22585
2520300
Sheet Number 2 OF 44

LAYER LINETYPE LEGEND

	EXISTING	PROPOSED
PHASE LINE		
MATCH LINE		
SECTION LINE		
BOUNDARY LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
R.O.W. A LINE	A	A
CENTERLINE		
CITY LIMITS		
WIRE FENCE	X	X
CHAIN LINK FENCE	O	O
WOOD FENCE	◇	◆
MASONRY FENCE	□	■
GUARDRAIL		
CONC. BARRIER		
CABLE TV	TV	TV
ELECTRIC	E	E
FIBER OPTIC	FO	FO
GAS MAIN	G	G
IRRIGATION MAIN	IRR	IRR
OIL/PETRO. MAIN	O	O
OVERHEAD UTILITY	OHU	OHU
SANITARY SEWER	S	S
STORM DRAIN		
TELEPHONE	T	T
WATER MAIN	W	W
RAW WATER LINE	RWL	RWL
SWALE/WATERWAY FLOWLINE		
DIVERSION DITCH		
DIVERSION CHANNEL		
MAJOR DRAINAGE BASIN		
MINOR DRAINAGE BASIN		
TOP OF SLOPE		
TOE OF SLOPE		
EDGE OF WATER		
INDEX CONTOUR	6100	6100
INTERMEDIATE CONTOUR		
DEPRESSION CONT. (INDEX)	6100	6100
DEPRESSION CONT. (INTER)		
TOP OF CUTS		
TOE OF FILLS		
CUT AND FILL LINE		C/F
SILT FENCE	SF	SF
100 YEAR FLOODPLAIN	100YR	100YR
500 YEAR FLOODPLAIN	500YR	500YR
FLOODWAY	FLDWY	FLDWY
BASE FLOOD ELEVATION		
EDGE OF WETLANDS		
STONE WALL		
GRAVEL TRAIL		

UTILITIES LEGEND

	EXISTING	PROPOSED
STORM SEWER		
MANHOLE	Ⓓ	◉
STORM INLET		
AREA INLET – SQUARE	□	
AREA INLET – ROUND	○	
FLARED END SECTION	▷	
RIPRAP		
SANITARY SEWER		
LINE MARKER	Mkr San°	
SERVICE MARKER		
CLEAN–OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW	Ⓢ	
WATER LINE		
LINE MARKER	Mkr W°	
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE	Ⓦ	●
BEND		
BLOW–OFF VALVE		
WELL	○WELL	●WELL
METER		●
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW–OFF ASSEMBLY		
GAS LINE		
MARKER	Mkr G°	
SERVICE MARKER		
METER		●
VALVE		
DRY UTILITIES		
CABLE TV MARKER	Mkr TV°	
CABLE TELEVISION PEDESTAL	TV	
ELECTRIC MARKER	Mkr E°	
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL	E	
ELECTRICAL METER	E	
ELECTRICAL MANHOLE	E	
FIBER–OPTIC MARKER	Mkr FO°	
IRRIGATION PEDESTAL	I	
TELEPHONE MARKER	Mkr T°	
TELEPHONE PEDESTAL	T	

MONUMENTATION LEGEND

ALUMINUM CAP – FOUND	●AC
BRASS CAP – FOUND	●BC
BENCHMARK – FOUND	
CROSS – FOUND	+
MONUMENT – SET	○
MONUMENT – FOUND (DEFAULT)	●
MONUMENT – FOUND (ALTERNATE 1)	■
MONUMENT – FOUND (ALTERNATE 2)	
MONUMENT – FOUND (ALTERNATE 3)	▲
MONUMENT – FOUND (ALTERNATE 4)	
MONUMENT – FOUND (ALTERNATE 5)	⬟
MONUMENT – FOUND (ALTERNATE 6)	
MONUMENT – FOUND (ALTERNATE 7)	
NAIL & WASHER – FOUND	●NAIL & WASHER
PANEL – FOUND	
PK NAIL – FOUND	●PK NAIL
ROW MONUMENT – FOUND	
ROW MARKER – FOUND	⊡
SECTION CORNER – FOUND	
SECTION CORNER – SET	
QUARTER–SECTION CORNER – FOUND	
QUARTER–SECTION CORNER – SET	
SECTION CENTER – FOUND	
SECTION CENTER – FOUND	
CONTROL/TRAVERSE POINT – SET	

LANDSCAPE LEGEND

	EXISTING	PROPOSED
TREE – CONIFEROUS		
TREE – DECIDUOUS		
SHRUB/BUSH		
SHRUBS AND BUSHES		
IRRIGATION BOX		
IRRIGATION SPRINKLER		
IRRIGATION VALVE		
BOLLARD		
FLAGPOLE	FP	

STORM WATER MANAGEMENT

	KEY	SYMBOL
CHECK DAM	CD	
CONSTRUCTION ROAD STABILIZATION	CRS	
CURB SOCK INLET PROTECTION	CS	
CONCRETE WASHOUT AREA	CWA	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
DIVERSION CHANNEL, TEMPORARY	DV	
DEWATERING	DW	
EROSION CONTROL BLANKET	ECB	
INLET FILTER	IF	
INLET PROTECTION	IP	
MULCHING	MU	
OUTLET PROTECTION	OP	
PAVED FLUME	PF	
PERMENENT SEEDING	PS	
REINFORCED CONCRETE DAM	RCD	
ROUGH CUT STREET CONTROL	RCS	
SEDIMENT BASIN	SB	
SEDIMENT CONTROL LOG	SCL	
SILT FENCE	SF	
SURFACE ROUGHENING	SR	
STABILIZED STAGING AREA	SSA	
SEDIMENT TRAP	ST	
STRAW BALE BARRIER	STB	
TERRACING	TER	
TEMPORARY SEEDING	TS	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE	TSC C	
TEMPORARY STREAM CROSSING FORD TYPE	TSC F	
TEMPORARY SLOPE DRAIN	TSD	
VEHICLE TRACKING CONTROL	VTC	
VEHICLE TRACKING CONTROL WITH WASH RACK	WR	

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

DATE

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023
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LEWIS PALMER TRAIL
LEGEND

Designer: GG
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Structure Numbers
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Project No./Code
M915–009/22585
2520300
Sheet Number 3 OF 44

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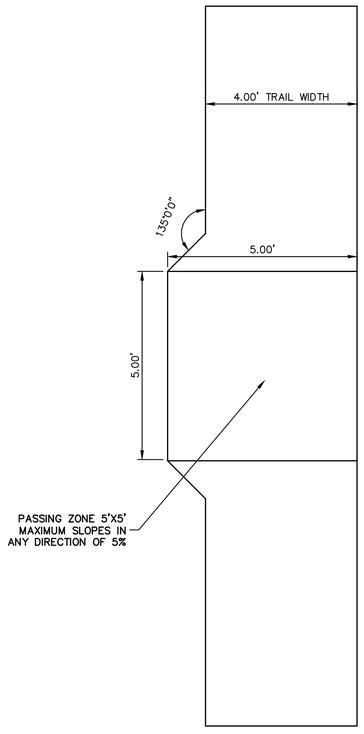
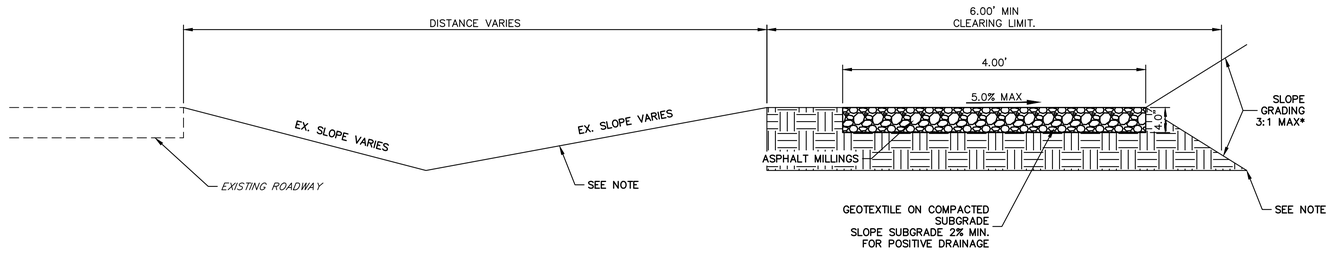


PASSING ZONE
SCALE: N.T.S.

NOTE:

PLACE SILT FENCE AT THE BASE OF THE DOWN HILL SIDE OF THE DISTURBED AREA. REFER TO COUNTY DETAILS ON SHEET 7.



* – UNLESS STATED OTHERWISE IN THE PLANS OR CROSS-SECTIONS

PROPOSED TRAIL
TYPICAL SECTION
SCALE: N.T.S.

Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

DATE

1 1 0 1 2
ORIGINAL SCALE: 1" = 1'

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As Constructed	LEWIS PALMER TRAIL TYPICAL SECTIONS			Project No./Code
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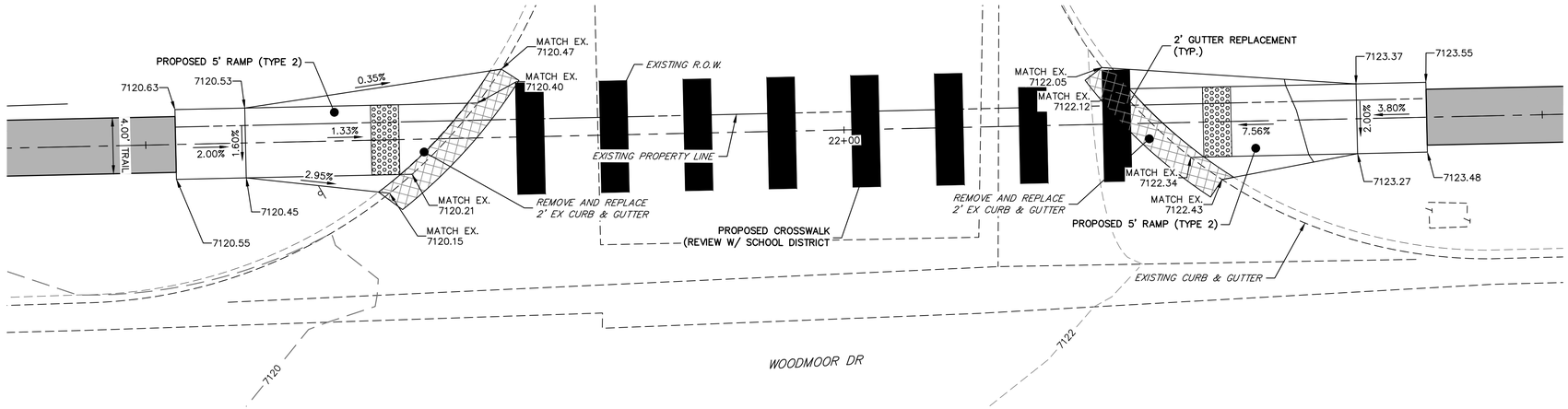
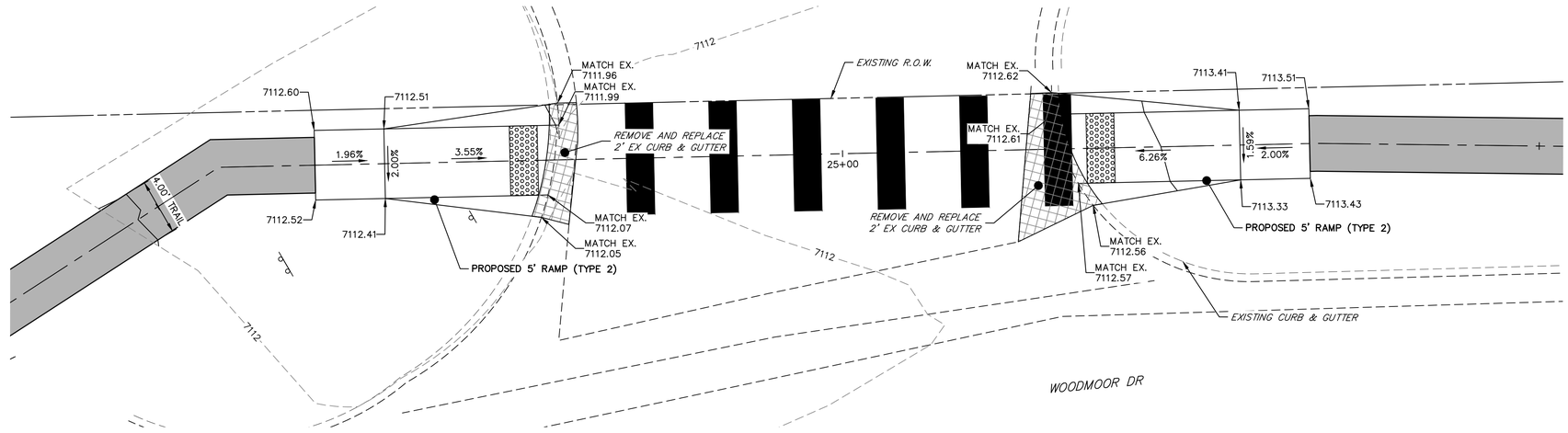
	Sheet Subset:	Subset Sheets: OF		Sheet Number 4 OF 44



RAMP DETAIL

STA: 21+48.48 TO 22+59.95



RAMP DETAIL

STA: 24+48.28 TO 25+62.62

5 3 0 5 10

ORIGINAL SCALE: 1" = 5'

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 DATE PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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Void:	Detailer: GG		Sheet Number 5 OF 44
	Sheet Subset:	Subset Sheets: OF	

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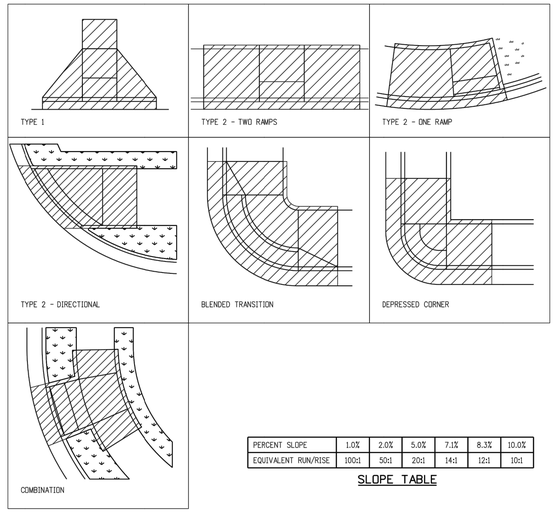
CURB RAMP GENERAL NOTES:

1. IN NEW CONSTRUCTION OR FULL-DEPTH RECONSTRUCTION, PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED PEDESTRIAN STREET CROSSING. CURB RAMPS SHALL BE CONTAINED WHOLLY WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING OR CROSSWALK THEY SERVE, OR AS SHOWN ON THE CONTRACT PLANS.
2. ALTERATIONS ARE DEFINED AS CHANGES TO AN EXISTING HIGHWAY THAT AFFECT PEDESTRIAN ACCESS, CIRCULATION, OR USE. ALTERATIONS INCLUDE, BUT ARE NOT LIMITED TO, RESURFACING, REHABILITATION, RECONSTRUCTION, CURB RAMP RETROFITS, HISTORIC RESTORATION, OR CHANGES OR REARRANGEMENT TO STRUCTURAL PARTS OR ELEMENTS OF A PEDESTRIAN FACILITY.
3. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP OR TURNING SPACE, WITHOUT RAISED OBSTACLES, THAT COULD BE MISTAKENLY TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
4. IN ALTERATIONS, WHERE AN EXISTING PHYSICAL CONSTRAINT PREVENTS PROVIDING A SEPARATE CURB RAMP FOR EACH PEDESTRIAN STREET CROSSING, A SINGLE DIAGONAL RAMP (ON THE APEX) SHALL BE PERMITTED TO SERVE BOTH PEDESTRIAN STREET CROSSINGS. THE USE OF A SINGLE DIAGONAL RAMP SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. DIAGONAL RAMPS ARE NOT ACCEPTABLE IN NEW CONSTRUCTION OR FULL-DEPTH RECONSTRUCTION.
5. DETECTABLE WARNINGS SURFACES (DWS) ARE INTENDED TO INDICATE THE BOUNDARY BETWEEN A PEDESTRIAN ROUTE AND VEHICULAR ROUTE WHERE THERE IS A FLUSH RATHER THAN CURBED CONNECTION. DWS ARE NOT INTENDED TO PROVIDE WAYFINDING. DWS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS;
   1. CURB RAMPS, BLENDED TRANSITIONS, AND DEPRESSED CORNERS AT PEDESTRIAN STREET CROSSINGS;
   2. PEDESTRIAN REFUGE ISLANDS (6 FEET IN WIDTH OR GREATER);
   3. BOARDING PLATFORMS AT TRANSIT STOPS WHERE THE EDGE OF THE PLATFORM IS NOT PROTECTED TO PEDESTRIAN CROSS TRAFFIC; AND
   4. BOARDING AREAS AT SIDEWALK OR STREET LEVEL TRANSIT STOPS WHERE THE AREA IS NOT PROTECTED TO PEDESTRIAN CROSS TRAFFIC.
6. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT GUTTER, HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. FEDERAL YELLOW COLOR IS PREFERRED, HOWEVER, OTHER COLORS MAY BE USED IF APPROVED BY THE ENGINEER.
7. IN ALTERATIONS, TO AVOID CHASING GRADE INDEFINITELY ON STEEP ROADWAYS, A CURB RAMPS LENGTH IS NOT REQUIRED TO EXCEED 15 FEET REGARDLESS OF THE RESULTING RAMP RUNNING SLOPE.
8. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE.
9. DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED ON THE CURB RAMP, OR TURNING SPACE AREAS.
10. IN NEW CONSTRUCTION, PULL BOXES, METER BOXES, MAINTENANCE HOLE COVERS, VAULT LIDS, OR SIMILAR, SHALL NOT BE CONSTRUCTED WITHIN ANY PART OF CURB RAMP OR TURNING SPACE. IN ALTERATIONS, WHERE THESE ITEMS CANNOT BE RELOCATED OUTSIDE OF THE CURB RAMP OR TURNING SPACE, THEY MUST NOT CREATE A VERTICAL DISCONTINUITY GRATER THAN 1/2 INCH. ANY VERTICAL DISCONTINUITY BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1V:2H. THE BEVEL SHALL BE APPLIED ACROSS THE ENTIRE SURFACE DISCONTINUITY.
11. CONSTRUCTION OF ANY REQUIRED PEDESTRIAN CURB SHALL BE INCLUDED IN THE BID PRICE OF THE CONCRETE CURB RAMP AND WILL NOT BE PAID FOR SEPARATELY.
12. ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH (0"-1/8"). THE JOINT BETWEEN THE ROADWAY SURFACE AND THE GUTTER PAN SHALL BE FLUSH.
13. THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS, AND AVOID PONDING IN THE FINAL CONFIGURATION.
14. FLARED SIDE SLOPES MAY EXCEED 10.0% ONLY WHERE THEY ABUT A NON-WALKABLE SURFACE, OR WHERE THE ADJACENT RAMP SURFACE IS BLOCKED TO PEDESTRIAN TRAFFIC.
15. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 13.33% THE COUNTER SLOPE OF THE GUTTER AT THE FOOT OF A RAMP, TURNING SPACE, OR BLENDED TRANSITION SHALL NOT EXCEED 5.0%.
16. GRADE BREAKS AT THE TOP AND BOTTOM OF RAMP RUNS SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. GRADE BREAKS SHALL NOT BE PERMITTED ON THE SURFACE OF THE RAMP RUN OR TURNING SPACE. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
17. A BROOM FINISH, WITH SWEEPS PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAFFIC, SHALL BE APPLIED TO ALL RAMP AND TURNING SPACE SURFACES.
18. IN ALTERATIONS, WHERE A RAMP OR TURNING SPACE MUST TIE INTO AN EXISTING GRADE THAT CANNOT BE ALTERED, THE RAMP OR TURNING SPACE MAY BE WARPED TO TRANSITION TO THE REQUIRED CROSS SLOPE. THE TRANSITION TO THE REQUIRED CROSS SLOPE SHALL BE SPREAD EVENLY OVER THE LENGTH OF THE RAMP OR TURNING SPACE TO MINIMIZE THE DEGREE OF WARPING. THE RATE OF CHANGE ON A RAMP OR TURNING SPACE SHALL NOT EXCEED 3% PER LINEAR FOOT.
19. DESIGN AND CONSTRUCT CURB RAMPS, TURNING SPACES, AND FLARE SLOPES WITH THE FLATTEST SLOPES POSSIBLE. THE SLOPES INDICATED IN THESE DETAILS SHOW THE MAXIMUM SLOPES ALLOWABLE. PREFERRED VALUES TO BE USED DURING DESIGN, LAYOUT, AND CONSTRUCTION ARE:
   - RAMP RUNNING SLOPE 7.5%
   - RAMP CROSS SLOPE 1.5%
   - TURNING SPACE RUNNING SLOPE 1.5%
   - TURNING SPACE CROSS SLOPE 1.5%
   - FLARE SLOPE 8.0-9.0%
20. WHERE SNOW REMOVAL EQUIPMENT WILL BE USED TO CLEAR THE PEDESTRIAN ACCESS ROUTE, CONSULT THE ENGINEER PRIOR TO CONSTRUCTION TO ENSURE THE WIDTH AND THICKNESS OF CURB RAMPS IS SUFFICIENT TO ACCOMODATE SUCH EQUIPMENT.
21. PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMPS ADJOIN ANY RIGID PAVEMENT, OR STRUCTURE. THE TOP OF THE JOINT FILLER MATERIAL SHALL BE FLUSH WITH ADJOINING CONCRETE SURFACES. THE EXPANSION JOINT MATERIAL SHALL EXTEND FOR THE FULL DEPTH OF THE CONCRETE SURFACE.
22. PROVIDE TIE BAR REINFORCING BETWEEN INDEPEDENTLY POURED CONCRETE CURB RAMPS OR TURNING SPACES AND CURB AND GUTTER. DRILL AND GROUT NO. 4 12 INCH LONG REINFORCEMENT BARS (EPOXY COATED) AT 18 INCHES CENTER TO CENTER MINIMUM.

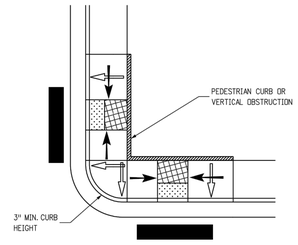
CURB RAMP PAY AREAS



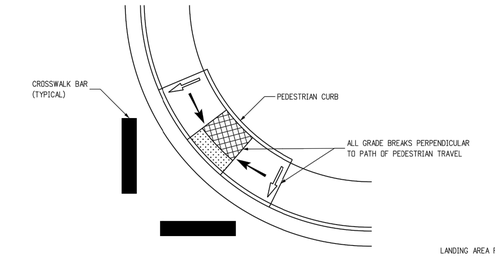
PERCENT SLOPE	1.0%	2.0%	5.0%	7.1%	8.3%	10.0%
EQUIVALENT RUN/RISE	100:1	50:1	20:1	14:1	12:1	10:1

SLOPE TABLE

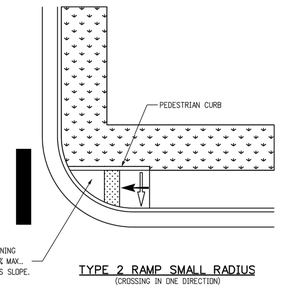
GENERAL NOTES & PAY AREAS



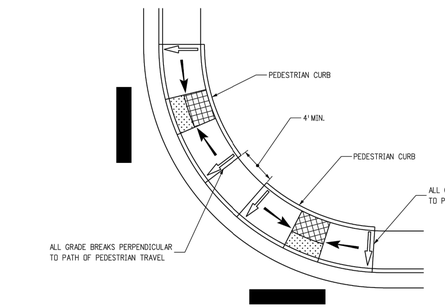
TYPE 2 RAMPS SMALL RADIUS
(3" REDUCED CURB)



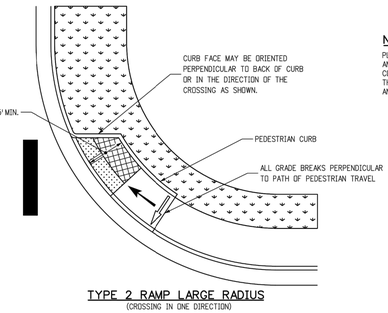
TYPE 2 RAMP (DIAGONAL)
NOT ALLOWABLE IN NEW CONSTRUCTION/FULL-DEPTH RECONSTRUCTION SEE NOTE GENERAL NOTE 4



TYPE 2 RAMP SMALL RADIUS
(CROSSING IN ONE DIRECTION)



TYPE 2 RAMPS LARGE RADIUS



TYPE 2 RAMP LARGE RADIUS
(CROSSING IN ONE DIRECTION)

NOTE

PLACEMENTS SHOWN ARE TYPICAL CONFIGURATIONS ONLY AND NOT INDICATIVE OF ALL OPTIONS. OTHER RAMP CONFIGURATIONS MAY BE ACCEPTABLE AS LONG AS THEY CONFORM TO THE CRITERIA IN THESE STANDARDS, AND ARE APPROVED BY THE ENGINEER.

TURNING SPACE (SEE NOTE 4, 5, 6 - SHEET 4)
DETECTABLE WARNING SURFACE (DWS) SEE DWS SHEETS FOR PLACEMENT DETAILS
RAMP RUNNING SLOPE
RAMP CROSS SLOPE

TYPE 2 CURB RAMPS TYPICAL CONFIGURATIONS

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Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

CURB RAMPS

STANDARD PLAN NO. M-608-1
Standard Sheet No. 1 of 10
Project Sheet Number:

Issued by the Project Development Branch: July 31, 2019

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Creation Date: 07/31/19		Date:	Comments
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CURB RAMPS

STANDARD PLAN NO. M-608-1
Standard Sheet No. 5 of 10
Project Sheet Number:

Issued by the Project Development Branch: July 31, 2019

Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC
DATE

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

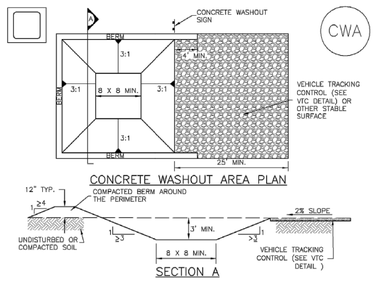
Print Date: 03/01/2023		Sheet Revisions			
File Name:		Date:	Comments	Init.	
Horiz. Scale: N/A Vert. Scale: N/A					
Unit name Unit leader					
J-R ENGINEERING A Westrian Company					

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed	LEWIS PALMER TRAIL RAMP DETAILS			Project No./Code
No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 6 OF 44
	Sheet Subset:	Subset Sheets: OF		



CWA–1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

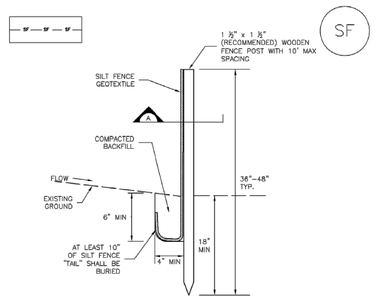
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.

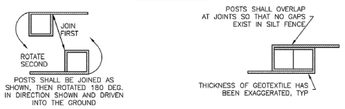
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.





SF–1. SILT FENCE

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2–5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J–HOOK." THE "J–HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

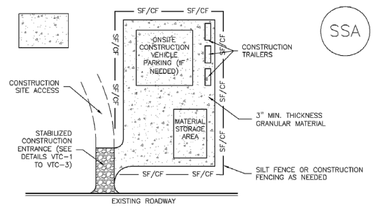
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



SSA–1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF STAGING AREA(S).
   –CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA MAINTENANCE NOTES

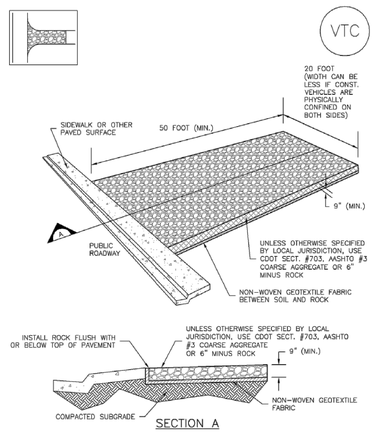
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE–ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)



VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

GEC NOTES:

1. THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF CONCRETE WASHOUT AREAS, STABILIZED STAGING AREAS, AND VEHICLE TRACKING CONTROL. THESE AREAS SHALL BE REVIEWED AND APPROVED BY THE SCHOOL DISTRICT PRIOR TO INSTALLATION.
2. INITIAL AND INTERIM TEMPORARY CONTROL MEASURES INCLUDE: CONCRETE WASHOUT AREAS, SILT FENCE, SEDIMENT CONTROL LOGS, STABILIZED STAGING AREAS, AND VEHICLE TRACKING CONTROL.
3. FINAL TEMPORARY CONTROL MEASURES INCLUDE: SEEDING AND MULCHING.
4. LIMITS OF DISTURBANCE/CONSTRUCTION SHALL BE LIMITED TO THE GRADING BOUNDARY SHOWN ON THESE PLANS. WORK OUTSIDE OF THESE AREAS IS NOT PERMITTED.
5. SILT FENCE AND SEDIMENT CONTROL LOG PLACEMENT SHALL FOLLOW THE PLANS SHOWN, BUT EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.

Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E. DATE
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023	Sheet Revisions		
File Name:	Date:	Comments	Init.
Horiz. Scale: N/A Vert. Scale: N/A			
Unit name Unit leader			
J·R ENGINEERING A Westrian Company Centennial 303–740–9393 • Colorado Springs 719–593–2593 Fort Collins 970–491–9888 • www.jrengineering.com			

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719–546–5750

Lewis Palmer School District 38

As Constructed	LEWIS PALMER TRAIL GEC DETAILS		Project No./Code
No Revisions:			M915–009/22585
Revised:	Designer: GG	Structure Numbers	2520300
Void:	Detailer: GG		
	Sheet Subset:	Subset Sheets: OF	Sheet Number 7 OF 44

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STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   –TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT–OF–WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON–WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. §703, AASHTO §3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species[a] (Common name)	Growth Season[b]	Pounds of Pure Live Seed (PLS)/acre[c]	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Winter wheat	Cool	20–35	1 - 2
7. Winter barley	Cool	20–35	1 - 2
8. Winter rye	Cool	20–35	1 - 2
9. Triticale	Cool	25–40	1 - 2

[a] Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

[b] See Table TS/PS-2 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

[c] Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses

	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
Seeding Dates	**Warm**	**Cool**	**Warm**	**Cool**
January 1–March 15			✓	✓
March 16–April 30		1,2,3	✓	✓
May 1–May 15			✓	
May 16–June 30	5			
July 1–July 15	5			
July 16–August 31				
September 1–September 30		6, 7, 8, 9		
October 1–December 31			✓	✓

Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the USDCM Volume 2 *Revegetation* Chapter and Volume 3 Mulching BMP Fact Sheet (EC-04) for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species, the annual mix needs time to mature and die before seeding the perennial mix. To increase success of the perennial mix, it should be seeded during the appropriate seeding dates the second year after the temporary annual mix was seeded. Alternatively, if this timeline is not feasible, the annual mix seed heads should be removed and then the area seeded with the perennial mix.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

Description

Photograph MU-1. An area that was recently seeded, mulched, and crimped.

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

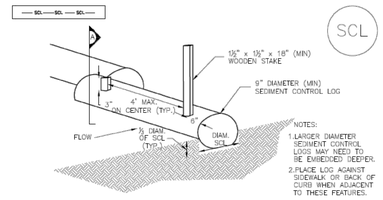
A variety of mulches can be used effectively at construction sites. Consider the following:

Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

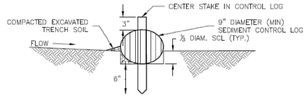
- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.
- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal

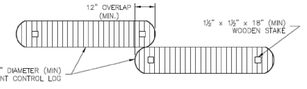
After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.



TRENCHED SEDIMENT CONTROL LOG

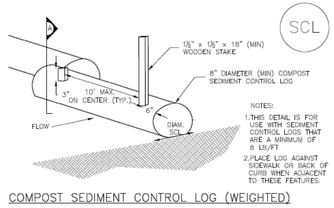


SECTION (A)
TRENCHED SEDIMENT CONTROL LOG

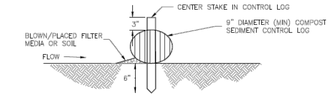


LOG JOINTS

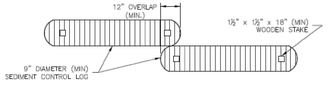
SCL–1. TRENCHED SEDIMENT CONTROL LOG



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)



SECTION (A)
COMPOST SEDIMENT CONTROL LOG



LOG JOINTS

SCL–2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

GEC NOTES:

1. THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF CONCRETE WASHOUT AREAS, STABILIZED STAGING AREAS, AND VEHICLE TRACKING CONTROL. THESE AREAS SHALL BE REVIEWED AND APPROVED BY THE SCHOOL DISTRICT PRIOR TO INSTALLATION.
2. INITIAL AND INTERIM TEMPORARY CONTROL MEASURES INCLUDE: CONCRETE WASHOUT AREAS, SILT FENCE, SEDIMENT CONTROL LOGS, STABILIZED STAGING AREAS, AND VEHICLE TRACKING CONTROL.
3. FINAL TEMPORARY CONTROL MEASURES INCLUDE: SEEDING AND MULCHING.
4. LIMITS OF DISTURBANCE/CONSTRUCTION SHALL BE LIMITED TO THE GRADING BOUNDARY SHOWN ON THESE PLANS. WORK OUTSIDE OF THESE AREAS IS NOT PERMITTED..
5. SILT FENCE AND SEDIMENT CONTROL LOG PLACEMENT SHALL FOLLOW THE PLANS SHOWN, BUT EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

DATE

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LEWIS PALMER TRAIL
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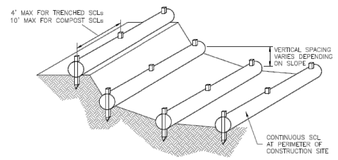

SCL-3. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.

3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ½ OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.

6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION.COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

GEC NOTES:

1. THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF CONCRETE WASHOUT AREAS, STABILIZED STAGING AREAS, AND VEHICLE TRACKING CONTROL. THESE AREAS SHALL BE REVIEWED AND APPROVED BY THE SCHOOL DISTRICT PRIOR TO INSTALLATION.
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3. FINAL TEMPORARY CONTROL MEASURES INCLUDE: SEEDING AND MULCHING.
4. LIMITS OF DISTURBANCE/CONSTRUCTION SHALL BE LIMITED TO THE GRADING BOUNDARY SHOWN ON THESE PLANS. WORK OUTSIDE OF THESE AREAS IS NOT PERMITTED.
5. SILT FENCE AND SEDIMENT CONTROL LOG PLACEMENT SHALL FOLLOW THE PLANS SHOWN, BUT EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.

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J·R ENGINEERING A Westrian Company Centennial 303-740-9393 • Colorado Springs 719-593-2593 Fort Collins 970-491-9888 • www.jrengineering.com							Sheet Subset:	Subset Sheets:	OF	

CONSTRUCTION:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2019; AND AS SUBSEQUENTLY REVISED; THE STANDARD PLANS DATED JULY 2019 AND AS SUBSEQUENTLY REVISED, AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS INCLUDED HEREIN.
2. THE EXISTING CONDITIONS INDICATED ON THESE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND FOR THE FIT OF ALL NEW CONSTRUCTION,
3. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM WATER AT ALL TIMES, AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO COST TO THE OWNER. THIS SHALL INCLUDE REMOVAL OF ANY DEBRIS CAUSED BY FLOODING.
4. LIMITS OF CONSTRUCTION SHALL BE CONFINED TO PUBLIC PROPERTY, RIGHT-OF-WAY, AND EASEMENTS.
5. REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS, IRRIGATION, OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL ASSOCIATED COSTS FOR IMPROVEMENTS REPAIR SHALL BE PAID FOR BY THE CONTRACTOR, AT NO EXPENSE TO THE SCHOOL DISTRICT.
6. THE CONTRACTOR SHALL NOTIFY THE OWNER 2 WEEKS PRIOR TO THE START OF CONSTRUCTION. A PRECONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START ON CONSTRUCTION,
7. THE CONTRACTOR SHALL HAVE: ONE (1) COPY OF THE PLANS, ONE (1) COPY OF THE CONSTRUCTION SPECIFICATIONS, ONE (1) COPY OF THE STORMWATER MANAGEMENT PLAN FOR THE PROJECT, AND ONE (1) COPY OF THE CDOT SPECIFICATIONS (2019) AT THE JOB SITE AT ALL TIMES.
8. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPES AS SHOWN ON THE PLANS AND CROSS-SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTIONS WHICH WOULD ALTER EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT CONDUCT ANY OPERATIONS OR STAGING OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THE PLANS OR THAT NOTED ABOVE.
9. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH IMPACTED UTILITIES TO ASSURE THE TIMELY RELOCATION OF THEIR FACILITIES. THIS COORDINATION SHALL INCLUDE ANTICIPATED UTILITIES AND UNFORESEEN UTILITIES.
10. HOT WEATHER AND COLD WEATHER CONCRETE OPERATION SHALL BE PERFORMED IN ACCORDANCE WITH CDOT "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" SECTION 601. THIS COST SHALL BE INCLUDED IN THE WORK.
11. THE SEVERITY OF CONCRETE EXPOSURE SHALL BE CLASS 1.
12. THE CONTRACTOR SHALL NOT PARK VEHICLES OR STORE MATERIALS IN THE CLEAR ZONE.
13. REMOVAL OF CONCRETE PAVEMENT ON THIS PROJECT SHALL BE SAWCUT PERPENDICULAR TO THE NEAREST JOINT TO A NEAT LINE AND REMOVED. COST OF SAWING TO BE INCLUDED IN THE WORK.

EARTHWORK:

1. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED.
2. PRIOR TO MOISTURE DENSITY CONTROL., THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SOFT OR DISTURBED SOILS. DEPTH OF MOISTURE – DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS: BASES OF CUTS AND FILLS – 6 INCHES.
3. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
4. COMPACTION OF SOILS, AGGREGATE BASES, AND STRUCTURAL BACKFILL SHALL BE DETERMINED BY CDOT STANDARD SPECIAL PROVISION REVISION TO 203, 206, 304, & 612 COMPACTION AND SHALL BE INCLUDED IN COST OF THE WORK.
5. DEPTH OF TOPSOIL REMOVAL SHALL BE AS DIRECTED BY THE ENGINEER. A MINIMUM OF FOUR (4) INCHES OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS NOT SURFACED. TOPSOIL TO BE USED IS SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
6. ALL BORROW MATERIAL IMPORTED FOR USE ON THIS PROJECT SHALL HAVE A MINIMUM R VALUE OF 40 FOR EMBANKMENT WHEN TESTED BY THE HVEEM STABILOMETER, AND IS SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO ITS INCORPORATION INTO THE PROJECT. ALL BORROW MATERIAL IMPORTED TO THE SITE SHALL MEET THE RESILIENT MODULUS CRITERIA IN ITS NATURAL STATE – NO MIXING SHALL BE ALLOWED.

DRAINAGE/STORM SEWER NOTES:

1. THE CONTRACTOR IS REQUIRED TO KEEP EXISTING DRAINAGE STRUCTURES FUNCTIONAL AND MAINTAIN DRAINAGE TO THOSE STRUCTURES AT ALL TIMES DURING CONSTRUCTION.

BUY AMERICA:

ALL STEEL AND IRON PRODUCTS MUST MEET BUY AMERICA REQUIREMENT PER CDOT SPECIFICATIONS SECTION 106.11. BUY AMERICA CERTIFICATIONS SHALL BE PROVIDED TO THE PROJECT ENGINEER WHEN PRODUCTS ARE DELIVERED TO THE SITE.

PERMITS:

STORMWATER CONSTRUCTION PERMIT

IT IS ANTICIPATED THAT A CDPS STORMWATER CONSTRUCTION PERMIT (SCP) WILL BE REQUIRED FOR THIS PROJECT.THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF SECTIONS 101, 107, AND 208 OF THE 2019 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EL PASO COUNTY RIGHT OF WAY PERMIT

THE CONTRACTOR SHALL OBTAIN A WORK IN RIGHT OF WAY PERMIT FROM EL PASO COUNTY PUBLIC WORKS PRIOR TO CONSTRUCTION.

EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP)

GRADING AND EROSION CONTROL STANDARD NOTES

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
28. NO SOILS REPORT HAS BEEN PROVIDED FOR THIS SITE.
29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD – PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

UTILITIES:

1. UTILITIES AS SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM SURVEY SHOTS OF SURFACE FEATURES. THE CONTRACTOR'S ATTENTION IS DIRECTED TO PARAGRAPH 105.11 OF THE STANDARD SPECIFICATION CONCERNING UTILITIES. FOR UTILITY LOCATES, THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 OR 1-800-922-1987 AT LEAST TWO (2) WORKING DAYS (NOT INCLUDING THE INITIAL DAY OF CONTACT) PRIOR TO DIGGING, GRADING OR EXCAVATING.
2. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE DRAWINGS HAVE BEEN PLOTTED FROM SURVEY SHOTS OF SURFACE FEATURES. IT IS HOWEVER THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCY. ALL CONFLICTING UTILITIES SHALL BE EXPOSED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND INSPECTION BY THE ENGINEER TO VERIFY CONFORMANCE WITH THE PLANS. RELOCATION OF EXISTING UTILITIES IS NOT A PART OF THIS CONTRACT EXCEPT AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF UTILITY RELOCATION BY UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE SCHOOL DISTRICT HARMLESS FOR DAMAGES ARISING FROM CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES.
3. THE CONTRACTOR SHALL REFERENCE THE PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL ITEMS THE CONTRACTOR SHALL ADHERE TO IN COOPERATION WITH UTILITIES.

SIGNING, STRIPING, TRAFFIC CONTROL NOTES:

1. CONSTRUCTION TRAFFIC CONTROL SHALL CONFORM THE THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND CDOT STANDARD S-630-1. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A METHOD OF HANDLING TRAFFIC (MHT) TO THE ENGINEER FOR APPROVAL FOR EACH APPLICABLE PHASE OF WORK. ALL COST FOR CONTROLLING TRAFFIC DURING CONSTRUCTION SHALL BE INCLUDED IN ITEM 630 – CONSTRUCTION TRAFFIC CONTROL (LS).
2. THE CONTRACTOR IS REPONSIBLE FOR SECURING AND DELINEATING THE SITE DURING CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE TO, AT HIS OWN EXPENSE, REPLACE ANY SIGNS THAT ARE DAMAGED OR LOST DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE TRAFFIC CONTROL, INCLUDING PEDESTRIAN TRAFFIC CONTROL, BICYCLE TRAFFIC, PARK USERS AND ON STREET PARKING. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MUTCD AND ANY CDOT STANDARDS. ALL TRAFFIC CONTROL IS TO BE APPROVED BY THE SCHOOL DISTRICT PRIOR TO INSTALLATION. COST SHALL BE INCLUDED IN PAY ITEM 630-TRAFFIC CONTROL. CONTRACTOR TO PROVIDE TRAFFIC CONTROL PLANS TO CDOT FOR APPROVAL 2 DAYS PRIOR TO CONSTRUCTION.
5. SIGNS MUST MEET CURRENT MUTCD STANDARDS FOR ROADS, AND BE HIGH INTENSITY PRISMATIC SHEETING.
6. POST AND MOUNTS – POST AND MOUNTS SHALL BE NCHRP 350 COMPLIANT.
7. POST – 12 GAUGE 1-3/4" 12' TALL PERFORATED SQUARE POSTS.

Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

38861
DATE

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023		Sheet Revisions			As Constructed
File Name:		Date:	Comments	Init.	No Revisions:
Horiz. Scale: N/A Vert. Scale: N/A					Revised:
Unit name Unit leader					Void:
J·R ENGINEERING A Westrian Company					
Centennial 303-740-9393 • Colorado Springs 719-593-2593					
Fort Collins 970-491-9888 • www.jrengineering.com					

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

LEWIS PALMER TRAIL
NOTES

Designer:	GG	Structure Numbers	
Detailer:	GG		
Sheet Subset:		Subset Sheets:	OF

Project No./Code
M915-009/22585
2520300
Sheet Number 10 OF 44

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CDOT ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
			PLAN	AS CONST.
201-00000	Clearing and Grubbing	LS	1	
202-00203	Removal of Curb and Gutter	LF	50	
203-00060	Embankment Material (Complete In Place)	CY	110	
208-00000-SPC	Erosion Control	LS	1	
208-00046	Pre-fabricated Concrete Washout Structure	EACH	1	
208-00070	Vehicle Tracking Pad	EACH	6	
210-01000	Reset Fence	LF	70	
212-00006	Seeding (Native)	ACRE	0.6	
213-00000	Mulching	ACRE	0.6	
213-00061	Mulch Tackifier	LB	300	
306-01000	Reconditioning	SY	4,150	
603-01180	18 Inch Reinforced Concrete Pipe	LF	8	
603-05018	18 Inch Reinforced Concrete End Section	EACH	2	
608-00010	Concrete Curb Ramp	SY	75	
608-00015	Detectable Warnings	SF	65	
608-01550	Place Asphalt Millings	SY	4,150	
614-00011	Sign Panel (Class I)	SF	50	
614-00214	Steel Sign Post (1.75x1.75 Inch Tubing)	LF	75	
620-00020	Sanitary Facility	EACH	1	
625-00000	Construction Surveying	LS	1	
626-00000	Mobilization	LS	1	
627-00002	Thermoplastic Pavement Marking	SF	1,650	
630-10005	Traffic Control	LS	1	
700-70010	F/A Minor Contract Revisions	FA	1	

Know what's **below.**
Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER
DATE

Print Date: 03/01/2023
File Name:
Horiz. Scale: N/A Vert. Scale: N/A
Unit name Unit leader

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed
No Revisions:
Revised:
Void:

LEWIS PALMER TRAIL
SUMMARY OF APPROXIMATE QUANTITIES

Designer: GG
Detailer: GG
Sheet Subset:
Structure Numbers
Subset Sheets: OF

Project No./Code
M915-009/22585
2520300
Sheet Number 11 OF 44

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TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

	Format *
☐ 3D Design Modeling Electronic Files	
■ Horizontal Control	PLAN SHEET
■ Vertical Control	PLAN SHEET
■ Roadway Alignment	DWG
☐ Original Terrain Data	
☐ Other:	

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- ☐ Landscaping
- ☐ Signalization
- ☐ Safety Improvement
- ☐ Asphalt Overlay
- ☐ Concrete Overlay
- ☐ Minor Widening
- ☐ Major Reconstruction
- ☐ New Roadway Construction
- ☐ Bridge Replacement
- ☐ Bridge Widening
- ☐ New Bridge
- ■ Other: PEDESTRIAN IMPROVEMENT

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- ___ ☐ A complete passing Base Line report (completed within 6 months prior to the start of the project)
- ___ ☐ An instrument calibration Certification (completed within 6 months prior to the start of the project)
- ___ ■ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- ___ ■ Verification and Maintenance of Horizontal and Vertical Control
- ___ ☐ Verify or Determine existing grades and alignments
- ___ ☐ Verify or Determine existing topography
- ___ ■ Clearing and Grubbing Limits (Section 201)
- ___ ■ Removal Limits (Section 202)
- ___ ☐ Reset Items (Section 210)
- ___ ■ Excavation and Embankment (Section 203)
  - ___ ■ Excavation
    - ___ ■ Unclassified
    - ___ ■ Stripping
    - ___ ☐ Muck
    - ___ ☐ Rock
    - ___ ☐ Borrow
    - ___ ☐ Other: _____
    - ___ ☐ Potholing
  - ___ ■ Embankment
  - ___ ■ Site Grading
  - ___ ☐ Erosion Control (Perm)
  - ___ ☐ Other: _____
  - ___ ☐ As Staked Earthwork Quantities (See General Notes)

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	Y	N	Y	N
	Y	N	Y	N
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–

Embankment	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–

- ___ ☐ Landscaping
  - ___ ☐ Top Soil (Section 207)
  - ___ ☐ Seeding (Section 212)
  - ___ ☐ Mulching (Section 213)
  - ___ ☐ Planting (Section 214)
  - ___ ☐ Herbicide (Section 217)
  - ___ ☐ Other: _____
- ___ ☐ Erosion Control (Section 208)
  - ___ ☐ Seeding (Temp)
  - ___ ☐ Silt Fence
  - ___ ☐ Erosion Bales
  - ___ ☐ Erosion Logs
  - ___ ☐ Riprap (Temp)
  - ___ ☐ Other: _____
- ___ ■ Roadway Bases
  - ___ ☐ Untreated Subgrade
  - ___ ☐ Treated Subgrade
  - ___ ■ Aggregate Base Course (Section 304)
  - ___ ☐ Reconditioning
  - ___ ☐ PMBB - Plant Mix Bituminous Base
  - ___ ☐ Other: _____

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	–	–	–	–
	–	–	–	–
	N	Y	N	N
	–	–	–	–
	–	–	–	–
	–	–	–	–

- ___ ■ Pavements
  - ___ ☐ HMA - Hot Mix Asphalt (Section 403)
  - ___ ☐ Concrete (Section 412)
  - ___ ☐ Heating & Scarifying Treatment
  - ___ ☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
  - ___ ☐ Seal Coat or Chip Seal (Section 409)
  - ___ ■ Other: ASPHALT MILLINGS

	Grid (Y/N)	Special Interval	Special Offset
Pavements	–	–	–
	–	–	–
	–	–	–
	–	–	–
	N	N	N
	–	–	–

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	–	–	–

	Left Interval	Center Interval	Right Interval
Stationing	–	–	–

- ___ ■ Roadway Elements
  - ___ ■ Curb and Gutter (Section 609)
  - ___ ☐ Drop inlets - alignment and grades (Section 604)
  - ___ ☐ Retaining Walls
  - ___ ☐ Guard Rail (Section 606)
  - ___ ☐ Sidewalk (Section 608)
  - ___ ☐ Overlay Stationing
  - ___ ☐ Other: _____
- ___ ☐ Riprap (Perm) (Section 506)
- ___ ☐ Slope and Ditch Paving (Section 507)
- ___ ☐ Minor Structures
  - ___ ☐ Structure Excavation limits (Section 206)
  - ___ ☐ Culverts (Section 603)
  - ___ ☐ Culverts w/ Headwalls and Wingwalls (Section 601)
  - ___ ☐ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ☐ Pipes (Section 603)
    - ___ ☐ Sanitary Sewer
    - ___ ☐ Storm Sewer
    - ___ ☐ Water
    - ___ ☐ Irrigation
    - ___ ☐ Miscellaneous
  - ___ ☐ Manholes (Section 604)
  - ___ ☐ Inlets (Section 604)
  - ___ ☐ Permanent Water Quality BMP (Section 208)
  - ___ ☐ Other: _____
- ___ ☐ Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
  - ___ ☐ Structure Excavation limits (Section 206)
  - ___ ☐ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
  - ___ ☐ Piling locations and cut off elevations (Section 502)
  - ___ ☐ Caisson locations and elevations (Section 503)
  - ___ ☐ Footing locations, alignment, and elevations
  - ___ ☐ Abutment/Pier locations, alignment, and elevations
  - ___ ☐ Wingwall skew angles/offsets
  - ___ ☐ Structural concrete form locations
  - ___ ☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
  - ___ ☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
  - ___ ☐ Deck grades at Girder 10th or 'n' th point locations and elevations
  - ___ ☐ Slope and Ditch Paving (Section 507)
  - ___ ☐ Other: _____
- ___ ☐ Fencing (Section 607)
  - ___ ☐ Temporary
  - ___ ☐ Permanent
  - ___ ☐ Sound Barrier
  - ___ ☐ Other: _____
- ___ ☐ Delineators (Section 612)
  - ___ ☐ Temporary
  - ___ ☐ Permanent
- ___ ■ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
  - ___ ☐ Signal pole locations and elevations
  - ___ ☐ Light pole locations and elevations
  - ___ ■ Sign locations
  - ___ ☐ Field verify sign post locations, elevations, and lengths before fabrication.
  - ___ ☐ Other: _____
- ___ ■ Pavement Marking (Section 627)
  - ___ ☐ Striping (Temp)
  - ___ ■ Striping (Perm)
  - ___ ☐ Symbols
  - ___ ☐ Other: _____
- ___ ☐ Temporary Lighting and Construction Traffic Control Devices (Section 630)
  - ___ ☐ Signal pole locations and elevations (Temp)
  - ___ ☐ Light pole locations and elevations (Temp)
  - ___ ☐ Sign Locations (Temp)
  - ___ ☐ Other: _____
- ___ ■ All Easements (Temp Staking by P.L.S. Only)
- ___ ■ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- ___ ☐ Monumentation (Section 629)
  - ___ ☐ Control
  - ___ ☐ Right of Way
  - ___ ☐ Land corners, Aliquot corners
  - ___ ☐ Easements
  - ___ ☐ Reference the specified existing monuments**: _____
  - ___ ☐ Replace the specified existing monuments**: _____
  - ___ ☐ Locate monuments. It is estimated hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 5 days prior to the Presurvey Conference - Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or 3D Design Modeling Electronic Files) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or 3D Design Modeling Electronic Files) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
    - ☐ Horizontal Control (Primary & Secondary)
    - ☐ Vertical Control (i.e. Benchmarks)
    - ☐ Property Pin Ties
    - ■ Horizontal Alignment
    - ☐ Grading
    - ☐ Slope Staking
    - ☐ Minor Structures
    - ☐ Major Structures
    - ☐ One fieldbook for each work category shown on this sheet
    - ☐ Other Fieldbook(s): _____
11. The Contractor's surveyor shall submit the following (prior to surveying on the project) to the Engineer:
    - ☐ All required Instrument Calibrations

Print Date: 03/01/2023	Sheet Revisions		
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Unit name Unit leader			

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Region 2

Lewis Palmer School District 38

As Constructed	LEWIS PALMER TRAIL SURVEY TABULATIONS			Project No./Code
No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 12 OF 44
	Sheet Subset:	Subset Sheets: OF		

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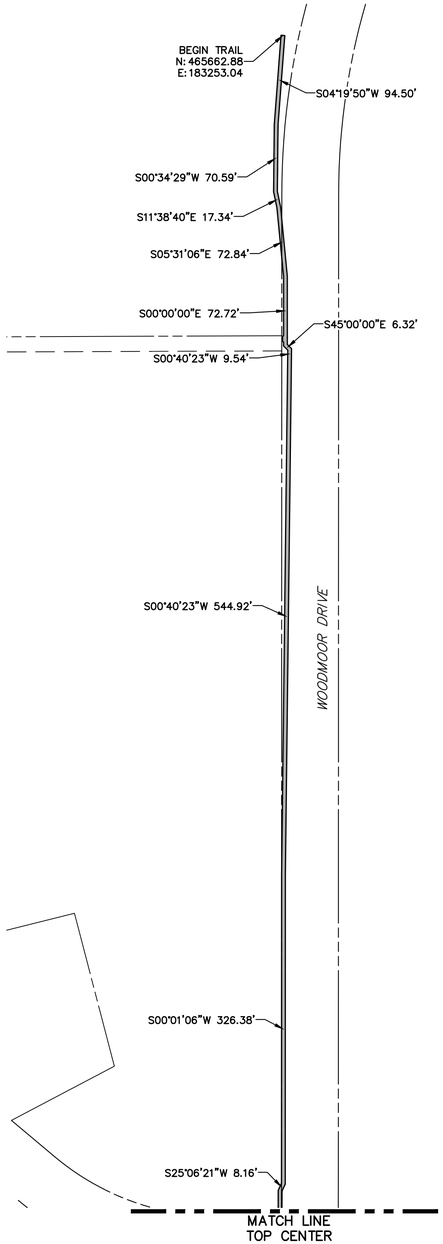

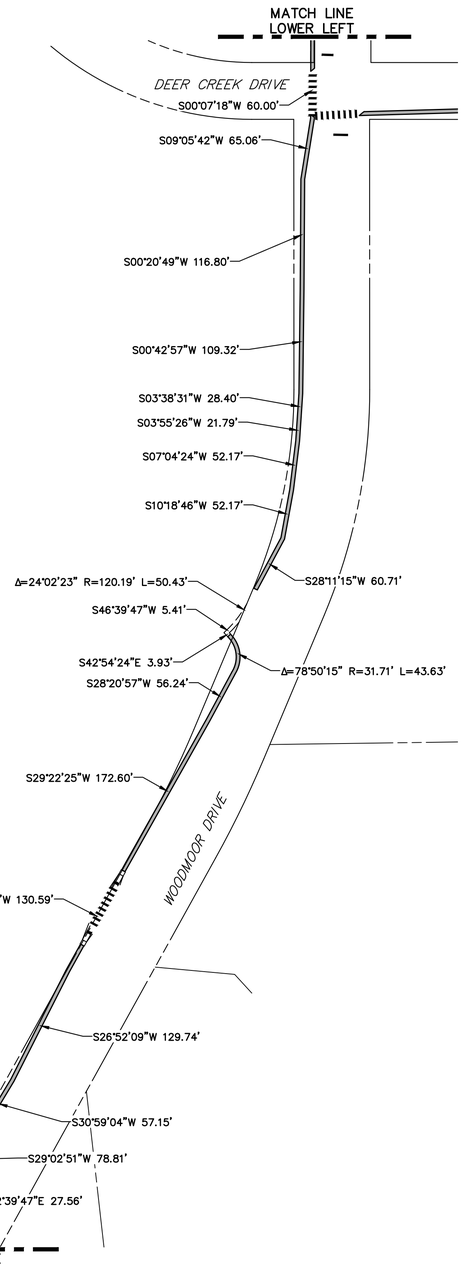

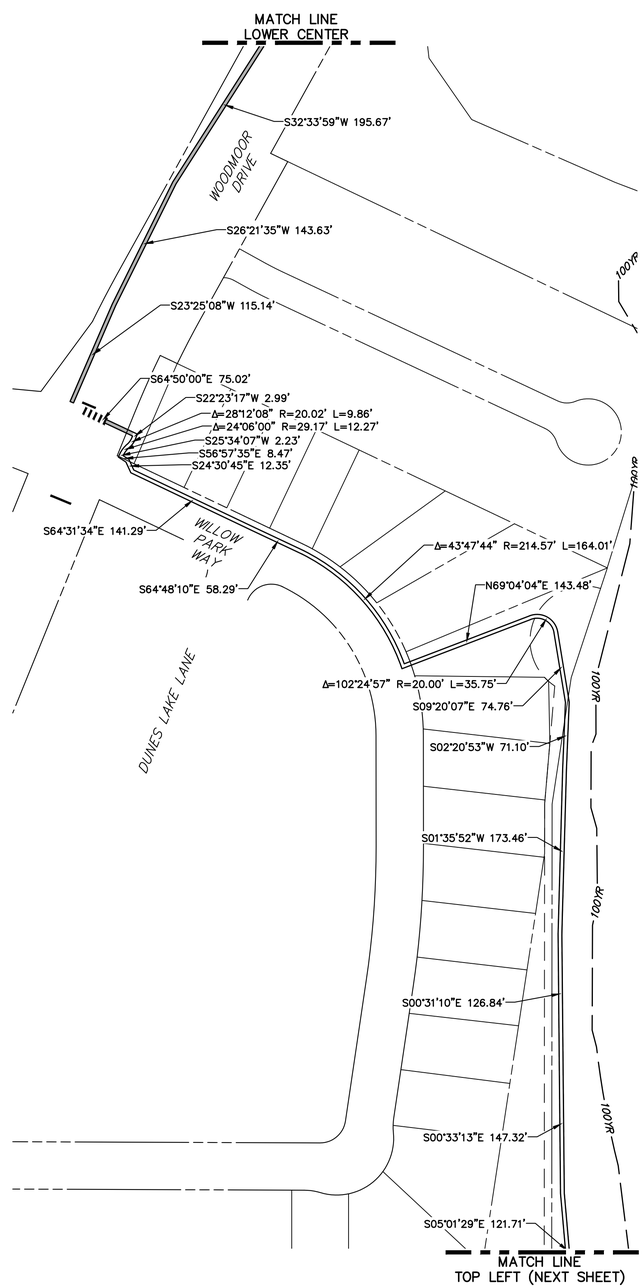

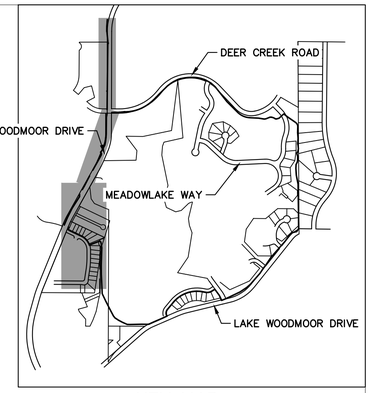

KEY MAP
SCALE: NOT TO SCALE

811 Know what's **below.** **Call** before you dig.

N

80 40 0 80 160
ORIGINAL SCALE: 1" = 80'

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Horiz. Scale: 1"=80' Vert. Scale: N/A					Region 2
Unit name Unit leader					Lewis Palmer School District 38
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As Constructed	LEWIS PALMER TRAIL HORIZONTAL CONTROL			Project No./Code
No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 13 OF 44
	Sheet Subset:	Subset Sheets:	OF	

MATCH LINE
LOWER RIGHT
PREVIOUS SHEET

S05°01'29"E 121.71'
S25°36'53"E 120.22'
S26°53'13"E 125.85'
S62°21'02"E 63.24'
S27°59'48"E 101.58'
S65°47'16"E 71.37'
S38°48'56"E 34.37'
S56°32'56"E 58.17'
S87°53'57"E 40.64'
N88°45'27"E 162.35'
S89°43'27"E 64.14'
N89°07'16"E 34.49'
N67°49'47"E 59.31'
N70°28'33"E 18.50'
N34°07'19"E 24.09'
N65°42'12"E 53.82'
N65°31'20"E 77.91'
100YR

AREA OMITTED FROM SCOPE.
AREA OF FUTURE PEDESTRIAN
BRIDGE

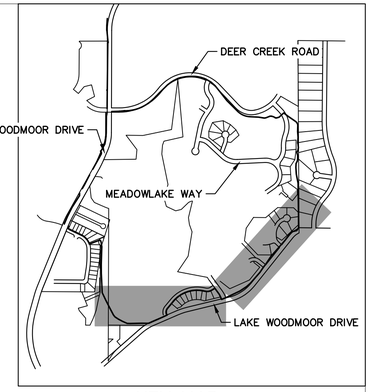
CORONADO BEACH DRIVE

Δ=46°16'02" R=122.61' L=99.01'
Δ=8°28'21" R=571.82' L=84.56'
Δ=11°35'10" R=482.96' L=97.66'
N56°46'43"E 29.59'
N85°31'02"E 12.07'
N60°40'08"E 6.01'
S37°14'31"E 23.60'
S34°49'49"E 31.84'
S36°06'11"E 28.76'
S34°01'57"E 20.86'
S38°40'32"E 32.31'
N66°18'37"E 40.24'
Δ=12°05'39" R=438.53' L=92.57'
Δ=11°45'51" R=389.27' L=79.92'
Δ=11°04'23" R=404.03' L=78.08'
Δ=7°25'18" R=502.25' L=65.06'
N39°52'25"E 44.22'
N39°40'59"E 43.17'
N39°36'56"E 40.70'
Δ=23°45'18" R=80.25' L=33.27'
N14°20'40"W 5.32'
N08°39'54"E 11.93'
N07°56'09"W 12.72'
N10°47'46"W 13.06'
N18°01'40"W 2.33'
N73°52'28"E 45.11'
N19°31'27"W 2.40'
N19°31'27"W 14.05'

LOWER LAKE ROAD

LAKE WOODMOOR DRIVE

MATCH LINE
LOWER LEFT



KEY MAP
SCALE: NOT TO SCALE

MATCH LINE
UPPER LEFT NEXT SHEET

MATCH LINE
UPPER RIGHT

S69°57'03"E 61.31'
N64°39'39"E 188.94'
N56°11'51"E 114.04'
N48°48'12"E 68.06'
N41°12'15"E 202.91'
N33°39'31"E 83.02'
N38°40'02"E 50.00'
N33°20'36"E 137.73'
N41°27'38"E 99.51'
N41°27'38"E 68.68'
N25°43'38"E 14.75'
N50°34'30"E 25.25'
N41°27'38"E 89.35'
N35°10'30"E 34.20'
N00°44'25"W 34.60'
N31°34'57"E 51.07'
N49°38'45"E 109.53'
N58°28'03"E 69.82'
N00°46'57"W 581.79'

MASTHEAD WAY
SPINNAKER TRAIL
LAKE WOODMOOR DRIVE
WHITE FAWN DRIVE

Know what's **below.**
Call before you dig.

80 40 0 80 160
ORIGINAL SCALE: 1" = 80'

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No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 14 OF 44
	Sheet Subset:	Subset Sheets:	OF	

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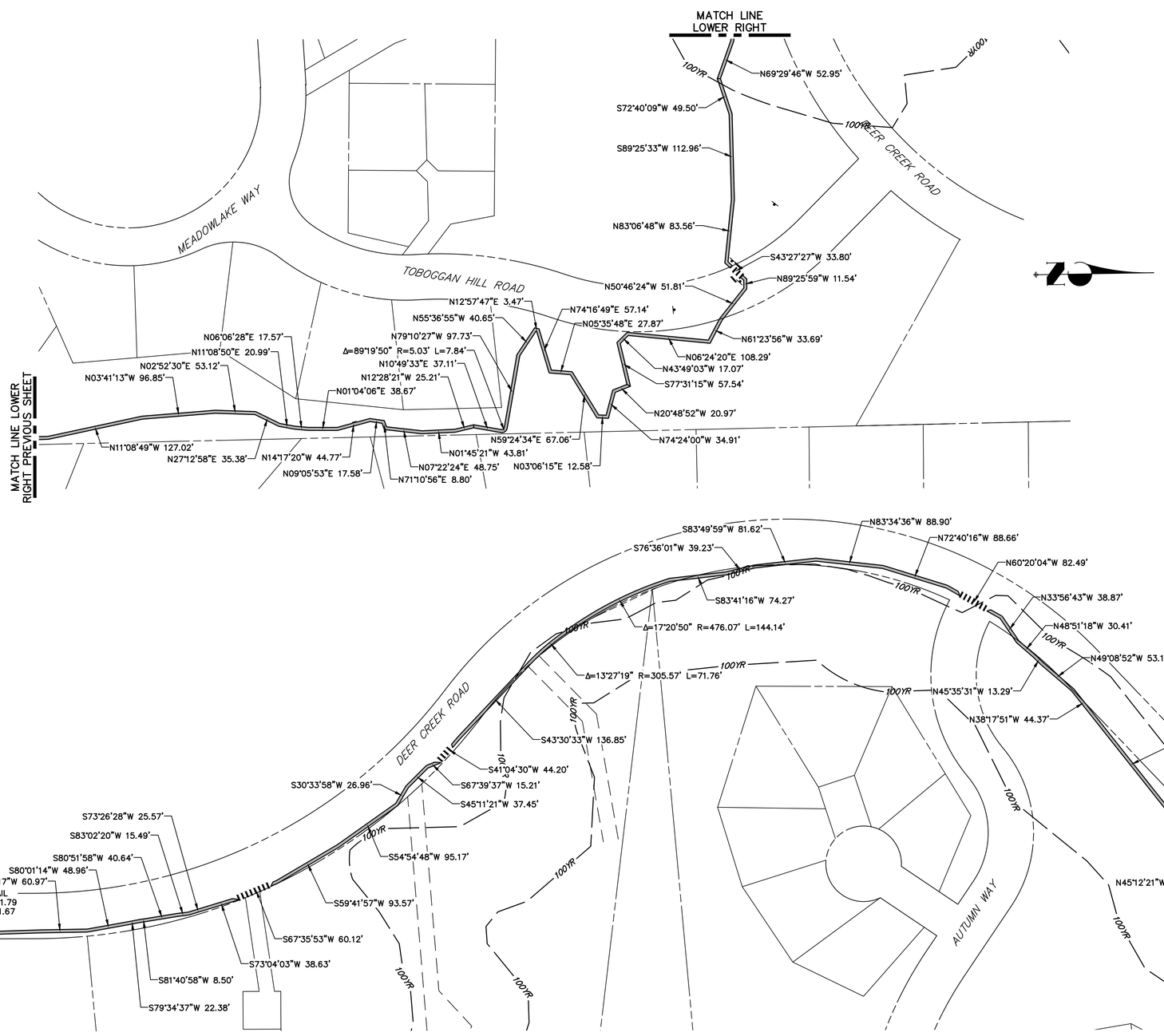

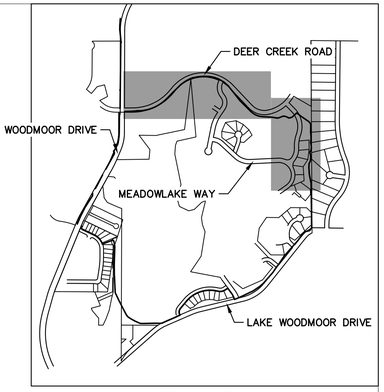

KEY MAP
SCALE: NOT TO SCALE

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Print Date: 03/01/2023		Sheet Revisions			Colorado Department of Transportation	As Constructed	LEWIS PALMER TRAIL HORIZONTAL CONTROL			Project No./Code
File Name:		Date:	Comments	Init.	5615 WILL BLVD. Pueblo, CO 81008 Phone: 719-546-5750	No Revisions:				M915-009/22585
Horiz. Scale: 1"=80' Vert. Scale: N/A					Region 2	Revised:	Designer: GG	Structure Numbers		2520300
Unit name Unit leader					Lewis Palmer School District 38	Void:	Detailer: GG			
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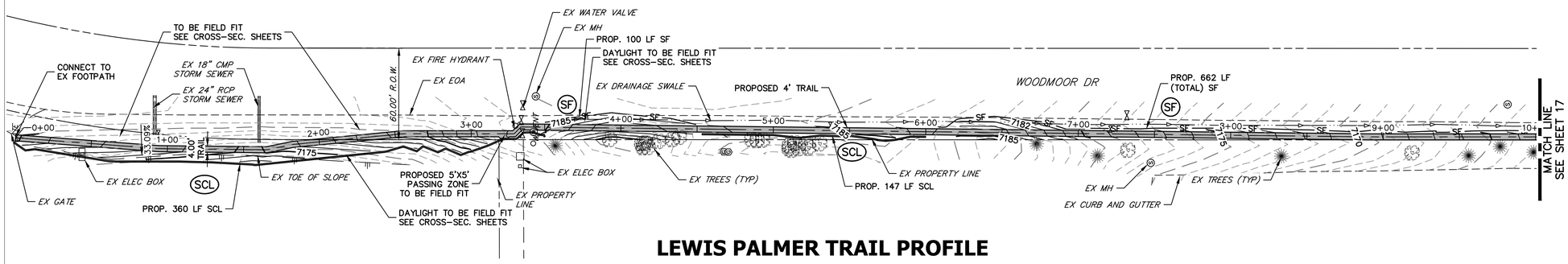
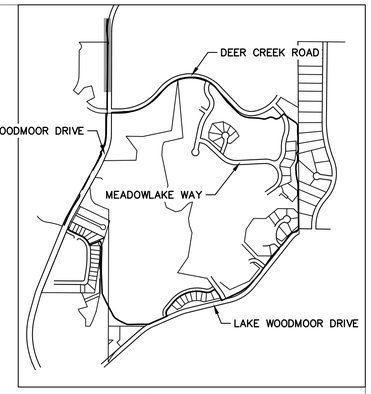
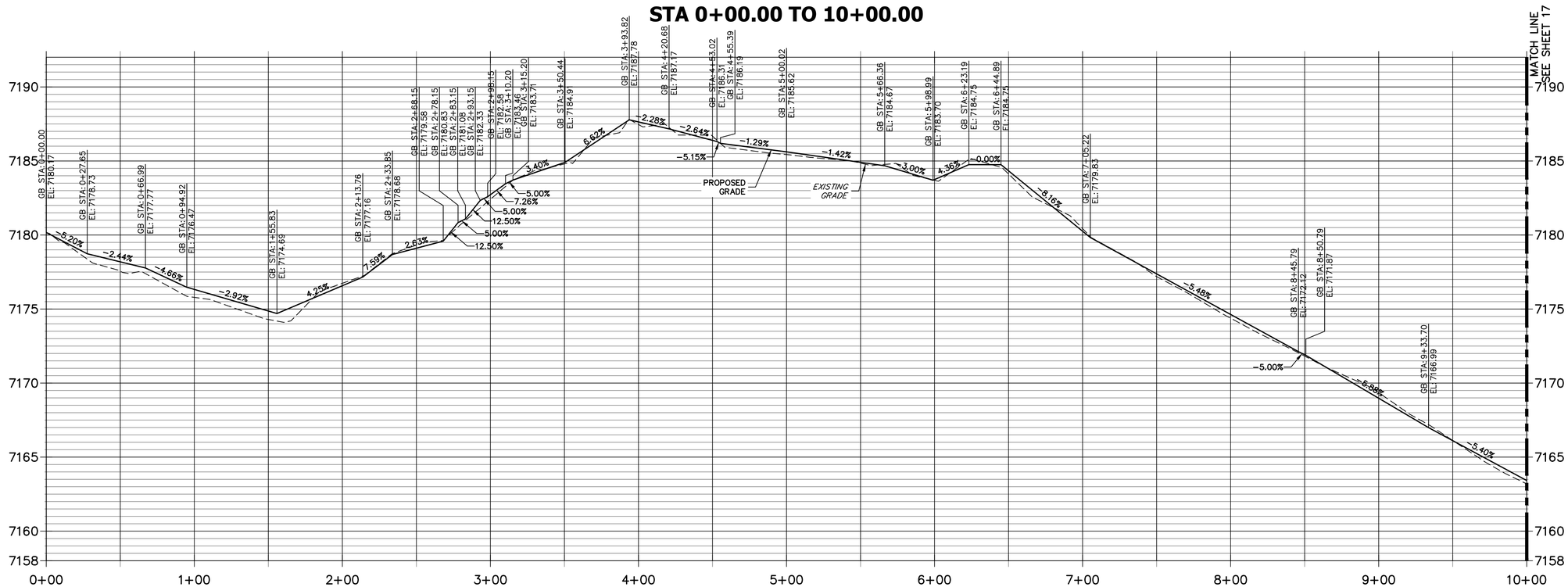




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE
STA 0+00.00 TO 10+00.00



NOTES:
1. THE SURVEY OF EXISTING CONDITIONS WAS COMPLETED IN APRIL 2021. THERE ARE A NUMBER OF LOCATIONS ALONG THE CORRIDOR THAT HAVE BEEN MODIFIED BY OTHER WORK SINCE THEN (I.E. UTILITY AND GRADING) THAT ARE NOT REPRESENTED IN THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE TRAIL ALIGNMENT AND BECOMING FAMILIAR WITH THESE LOCATIONS. IF THE CONTRACTOR DETERMINES THAT CHANGES HAVE BEEN MADE THAT IMPACT THE TRAIL DESIGN, THE SCHOOL DISTRICT AND ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION OF THE SEGMENT OF TRAIL POTENTIALLY IMPACTED.
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40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED GLENN D. ELLIS 38861 DATE PROFESSIONAL ENGINEER

Print Date: 03/01/2023	Sheet Revisions			As Constructed	Project No./Code
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Unit name Unit leader				Void:	Sheet Number 16 OF 44

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Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer:	GG	Structure Numbers	
Detailer:	GG		
Sheet Subset:		Subset Sheets:	OF

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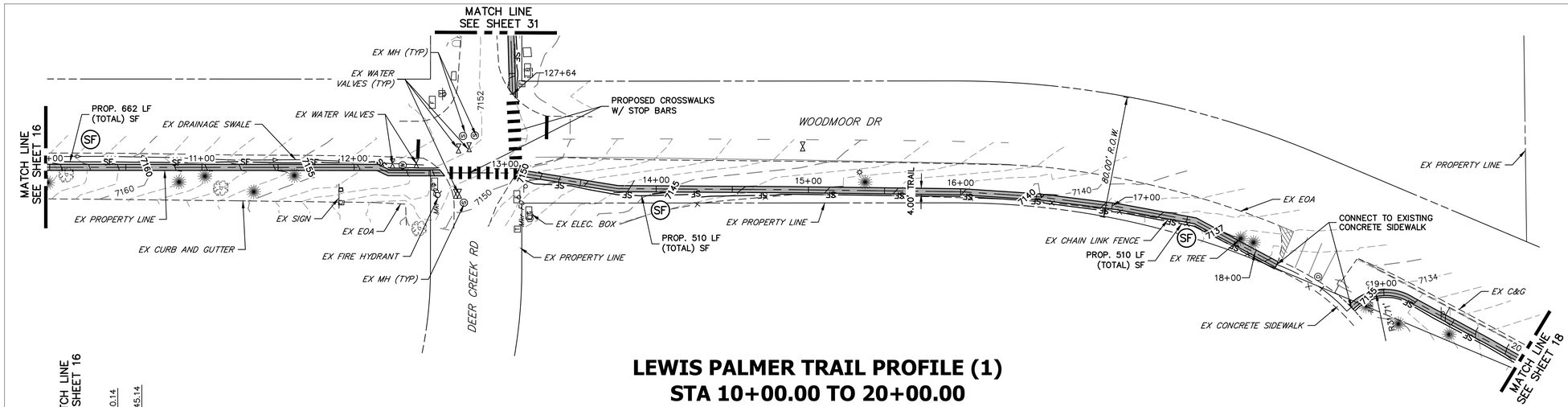
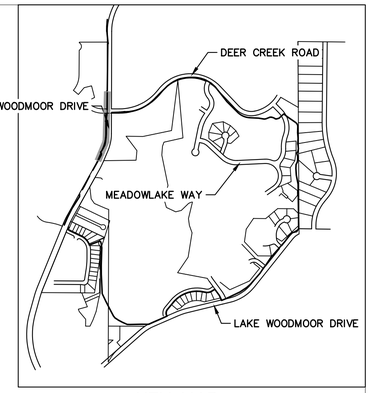
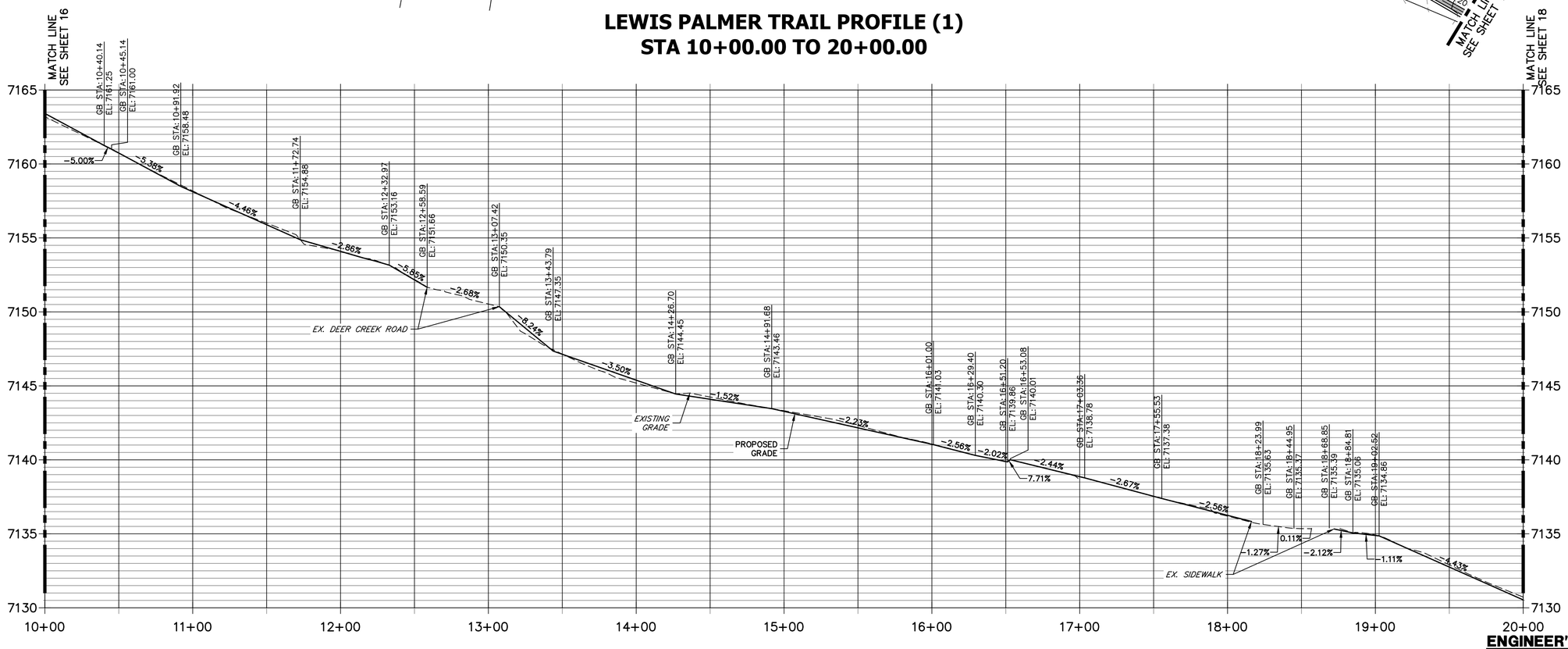




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (1)
STA 10+00.00 TO 20+00.00



NOTES:
1. THE SURVEY OF EXISTING CONDITIONS WAS COMPLETED IN APRIL 2021. THERE ARE A NUMBER OF LOCATIONS ALONG THE CORRIDOR THAT HAVE BEEN MODIFIED BY OTHER WORK SINCE THEN (I.E. UTILITY AND GRADING) THAT ARE NOT REPRESENTED IN THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE TRAIL ALIGNMENT AND BECOMING FAMILIAR WITH THESE LOCATIONS. IF THE CONTRACTOR DETERMINES THAT CHANGES HAVE BEEN MADE THAT IMPACT THE TRAIL DESIGN, THE SCHOOL DISTRICT AND ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION OF THE SEGMENT OF TRAIL POTENTIALLY IMPACTED.
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3. AT EACH STREET CROSSING, THE CONTRACTOR SHALL GRADE THE CROSSING (TRANSITION BETWEEN TRAIL AND EDGE OF ASPHALT) TO ENSURE COMPLIANCE WITH ADA. ACCEPTABLE DETECTABLE WARNING SURFACE TYPE WILL BE DETERMINED AT TIME OF CONSTRUCTION TO BEST FIT THE PROJECT SITE.

40 20 0 40 80

HORIZONTAL
ORIGINAL SCALE: 1" = 40'

VERTICAL
ORIGINAL SCALE: 1" = 4'

811 Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED PROFESSIONAL ENGINEER
GLENN D. ELLIS
38861
DATE

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023	Sheet Revisions		
File Name:	Date:	Comments	Init.
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Unit name Unit leader			
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Lewis Palmer School District 38

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Void:

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer:	GG	Structure Numbers	
Detailer:	GG		
Sheet Subset:		Subset Sheets:	OF

Project No./Code
M915-009/22585
2520300
Sheet Number 17 OF 44

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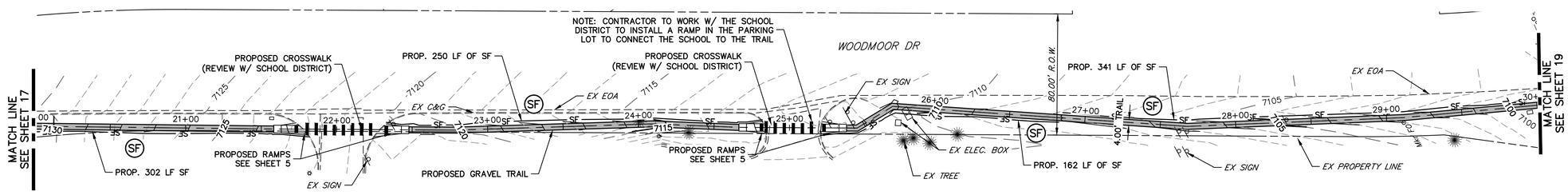
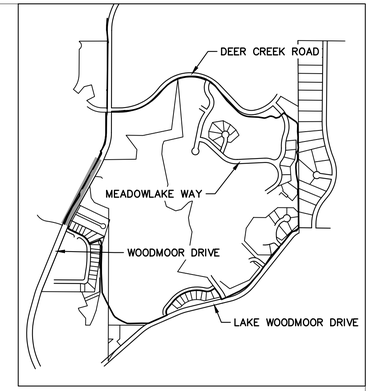
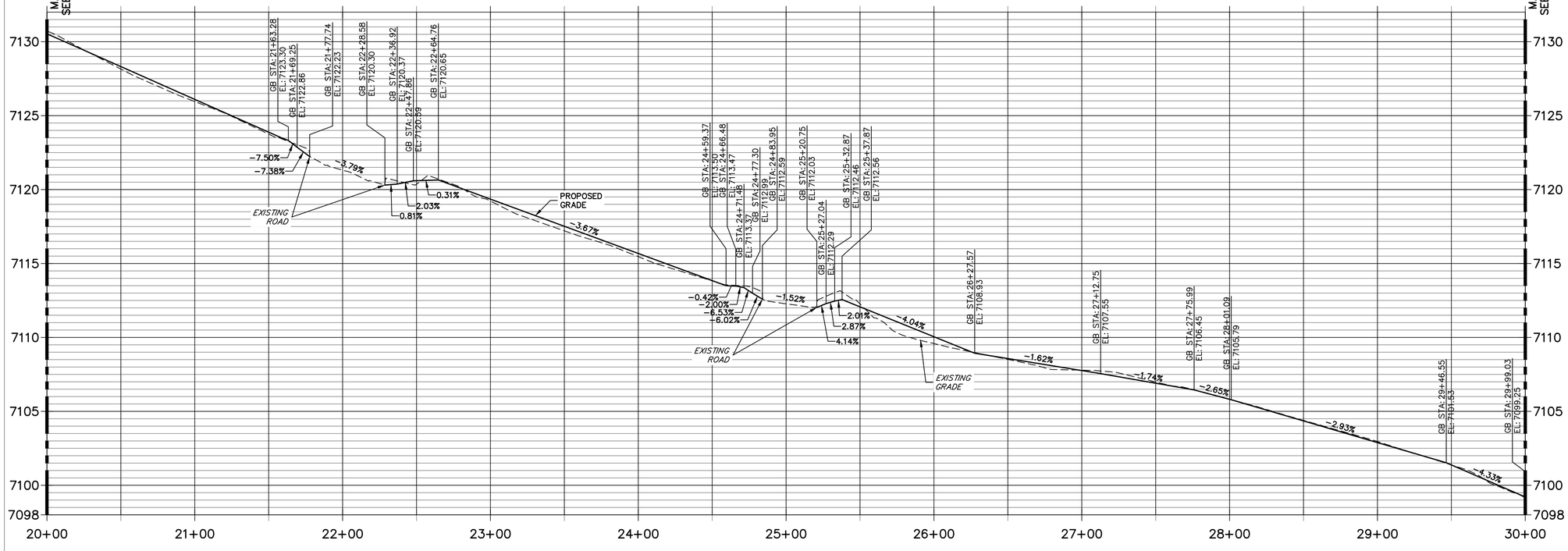




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (2)
STA 20+00.00 TO 30+00.00



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40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

Know what's **below.** **Call** before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC
DATE

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

Print Date: 03/01/2023
File Name:
Horiz. Scale: 1"=40' Vert. Scale: 1"=4'
Unit name Unit leader

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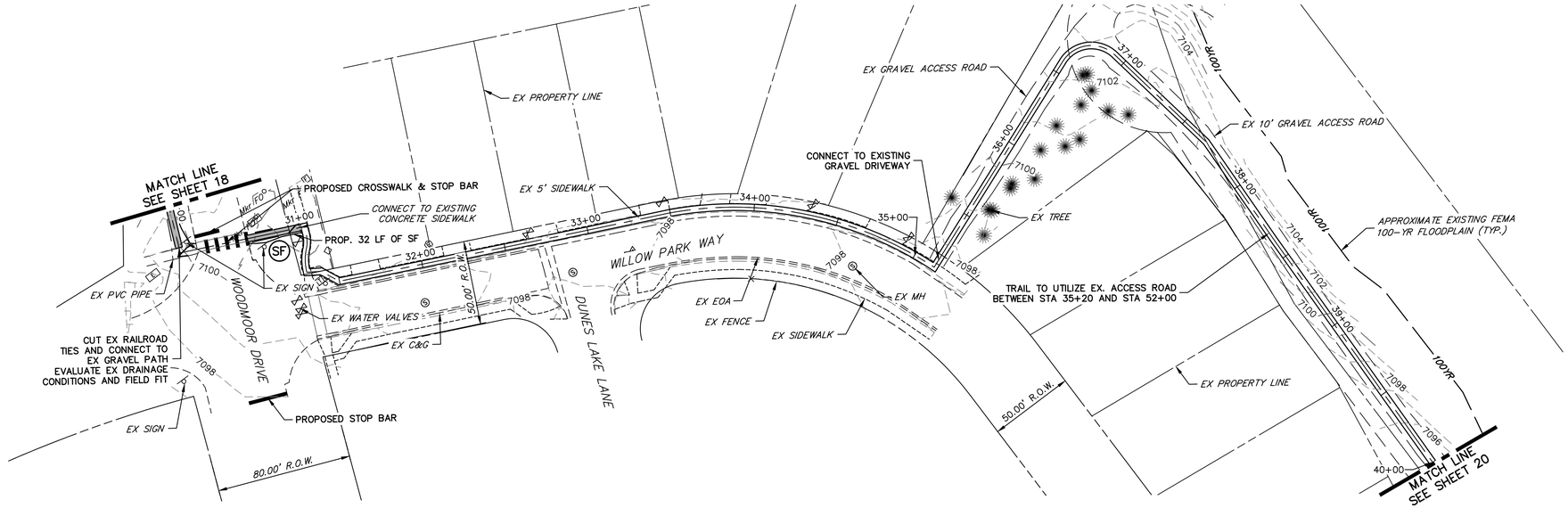
Lewis Palmer School District 38

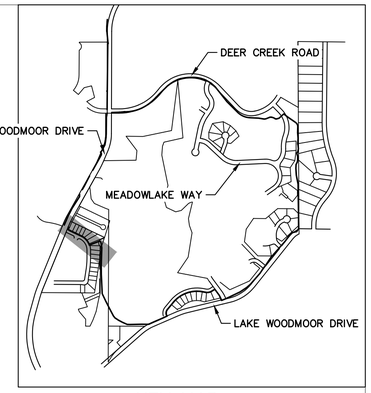
As Constructed
No Revisions:
Revised:
Void:

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer: GG
Detailer: GG
Sheet Subset:
Structure Numbers
Subset Sheets: OF

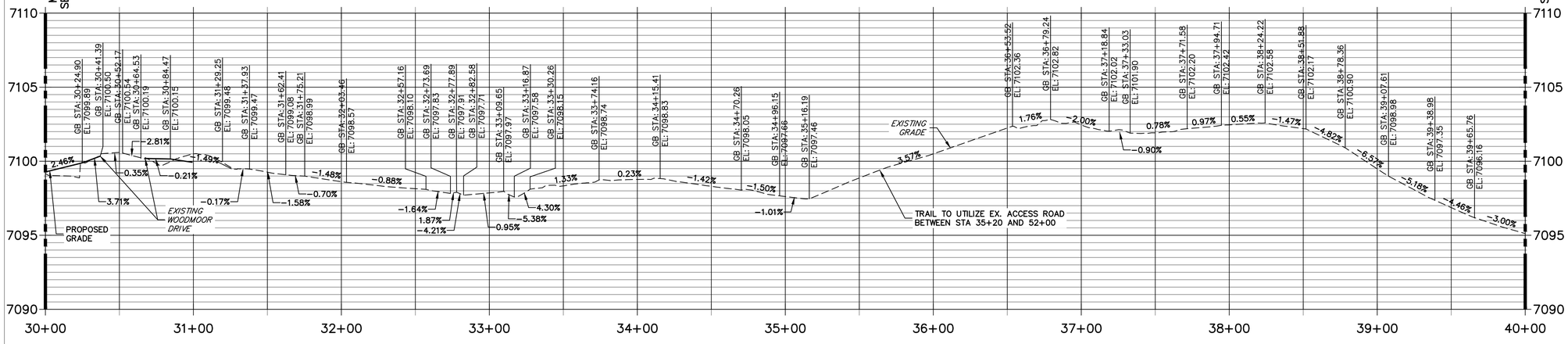
Project No./Code
M915-009/22585
2520300
Sheet Number 18 OF 44

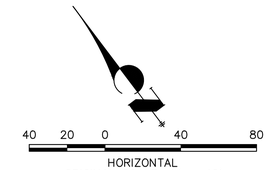




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (3)
STA 30+00.00 TO 40+00.00





HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

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811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO P.E. REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

DATE

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023		Sheet Revisions			
File Name:		Date:	Comments	Init.	
Horiz. Scale: 1"=40' Vert. Scale: 1"=4'					
Unit name Unit leader					
J·R ENGINEERING A Westrian Company					
Centennial 303-740-9393 • Colorado Springs 719-593-2593					
Fort Collins 970-491-9888 • www.jrengineering.com					

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed
No Revisions:
Revised:
Void:

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer:	GG	Structure Numbers	
Detailer:	GG		
Sheet Subset:		Subset Sheets:	OF

Project No./Code
M915-009/22585
2520300
Sheet Number 19 OF 44

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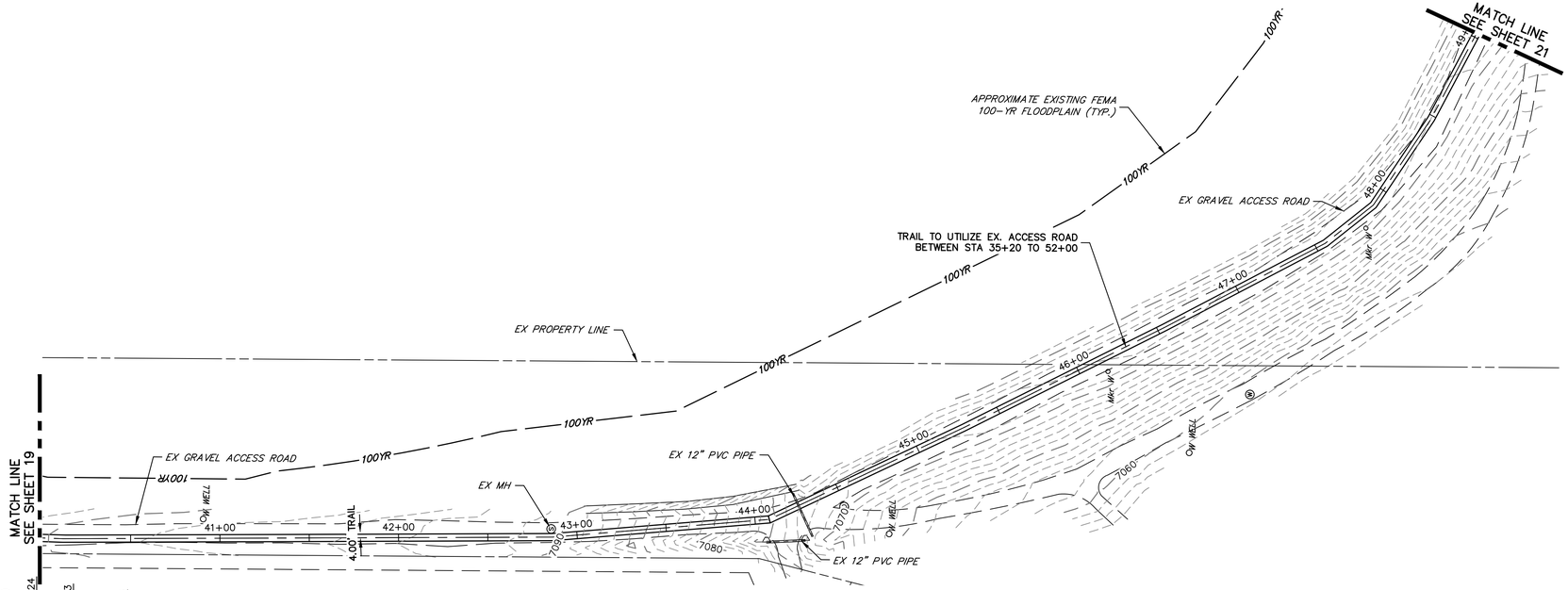
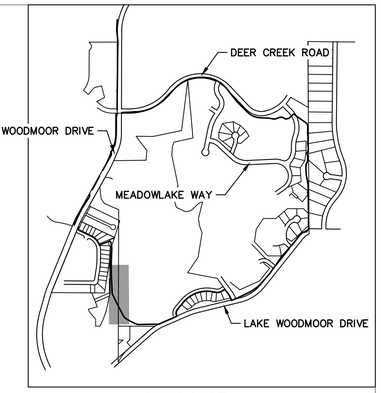
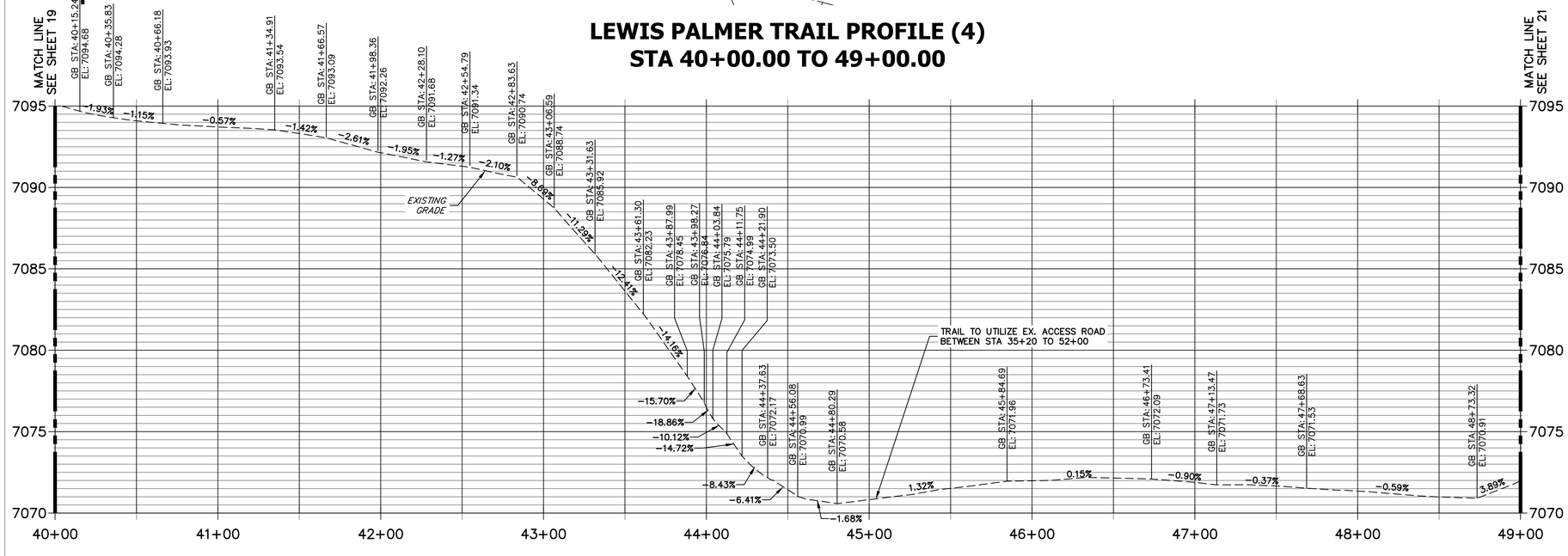




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (4)
STA 40+00.00 TO 49+00.00



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Know what's below. Call before you dig.

40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER
DATE

Print Date: 03/01/2023	Sheet Revisions		
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Unit name Unit leader			
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Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed	LEWIS PALMER TRAIL TRAIL PLAN AND PROFILE		Project No./Code
No Revisions:			M915-009/22585
Revised:	Designer: GG	Structure Numbers	2520300
Void:	Detailer: GG		Sheet Number 20 OF 44
	Sheet Subset:	Subset Sheets: OF	

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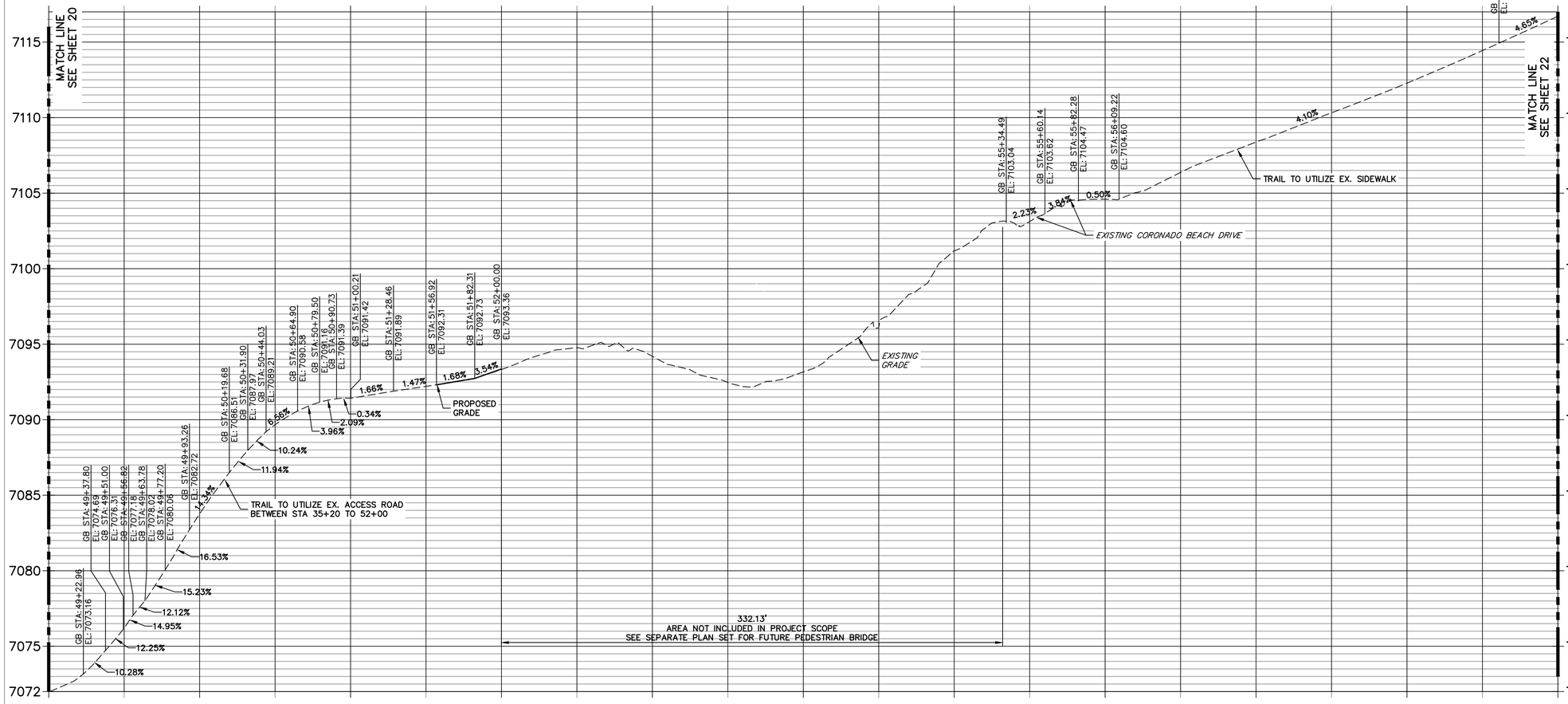
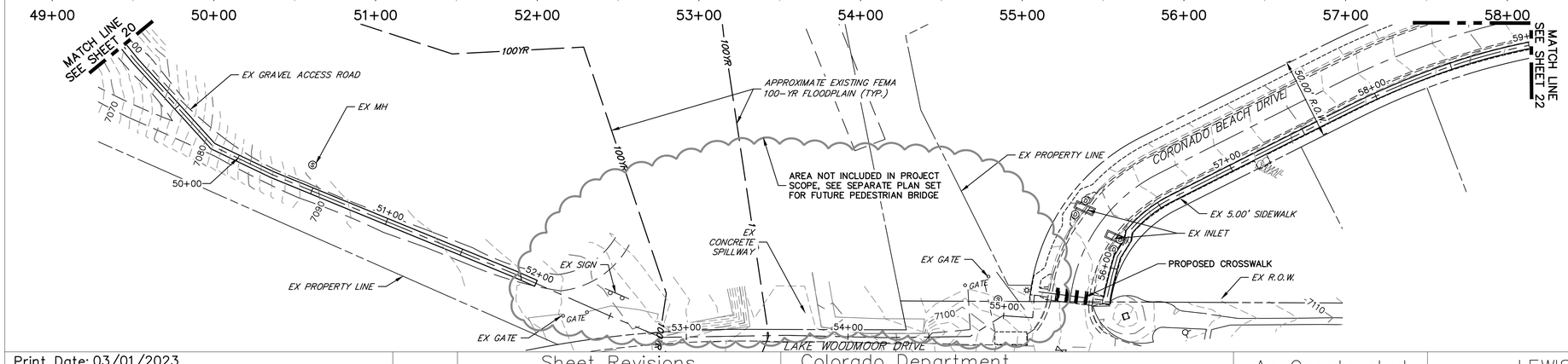
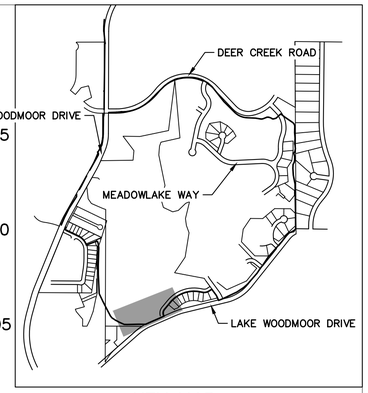
LEWIS PALMER TRAIL PROFILE (5)
STA 49+00.00 TO 59+00.00







KEY MAP
SCALE: NOT TO SCALE

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Know what's **below.**
Call before you dig.

40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC
DATE

Print Date: 03/01/2023	Sheet Revisions		
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5615 WILL BLVD.
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Lewis Palmer School District 38

As Constructed
No Revisions:
Revised:
Void:

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer:	GG	Structure Numbers	
Detailer:	GG		
Sheet Subset:		Subset Sheets:	OF

Project No./Code
M915-009/22585
2520300
Sheet Number 21 OF 44

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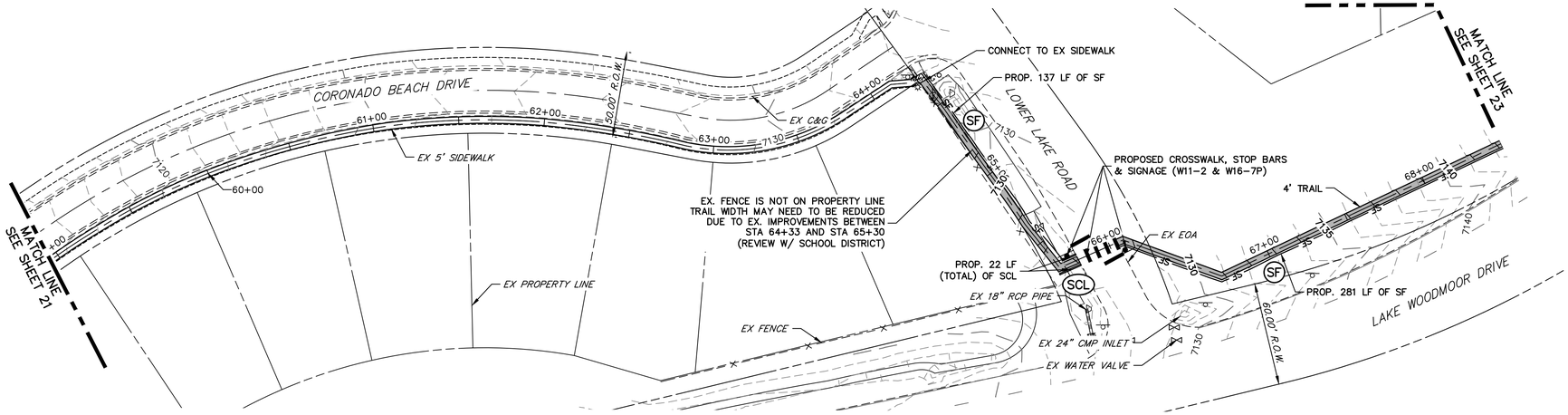
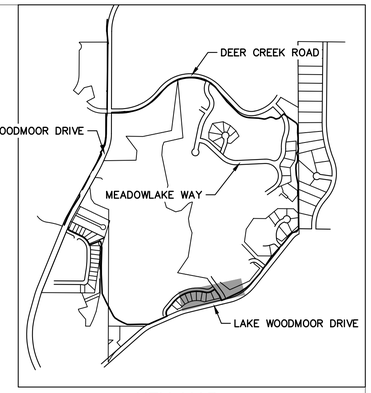
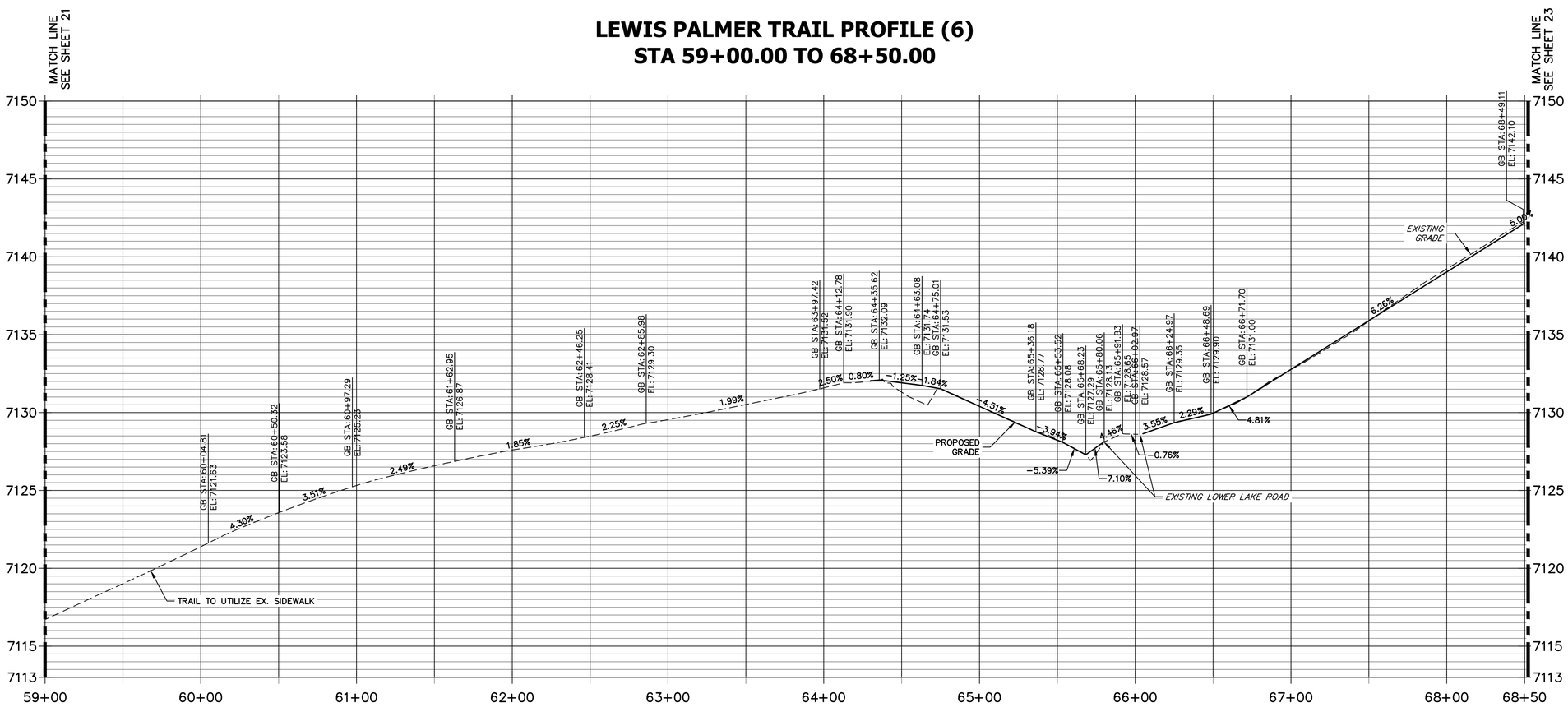




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (6)
STA 59+00.00 TO 68+50.00



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N

40 20 0 40 80

HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

38861
DATE

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023		Sheet Revisions			Colorado Department of Transportation
File Name:		Date:	Comments	Init.	5615 WILL BLVD. Pueblo, CO 81008 Phone: 719-546-5750
Horiz. Scale: 1"=40' Vert. Scale: 1"=4'					Region 2
Unit name Unit leader					Lewis Palmer School District 38
J·R ENGINEERING A Westrian Company Centennial 303-740-9393 • Colorado Springs 719-593-2593 Fort Collins 970-491-9888 • www.jrengineering.com					

As Constructed	LEWIS PALMER TRAIL TRAIL PLAN AND PROFILE		Project No./Code
No Revisions:			M915-009/22585
Revised:	Designer: GG	Structure Numbers	2520300
Void:	Detailer: GG		Sheet Number 22 OF 44
	Sheet Subset:	Subset Sheets: OF	

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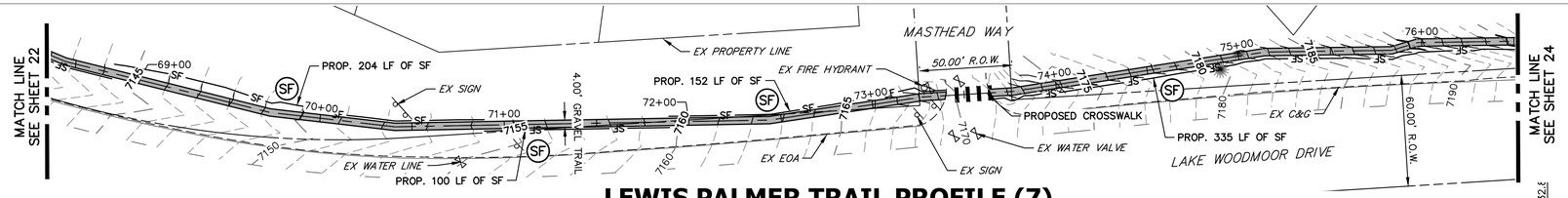
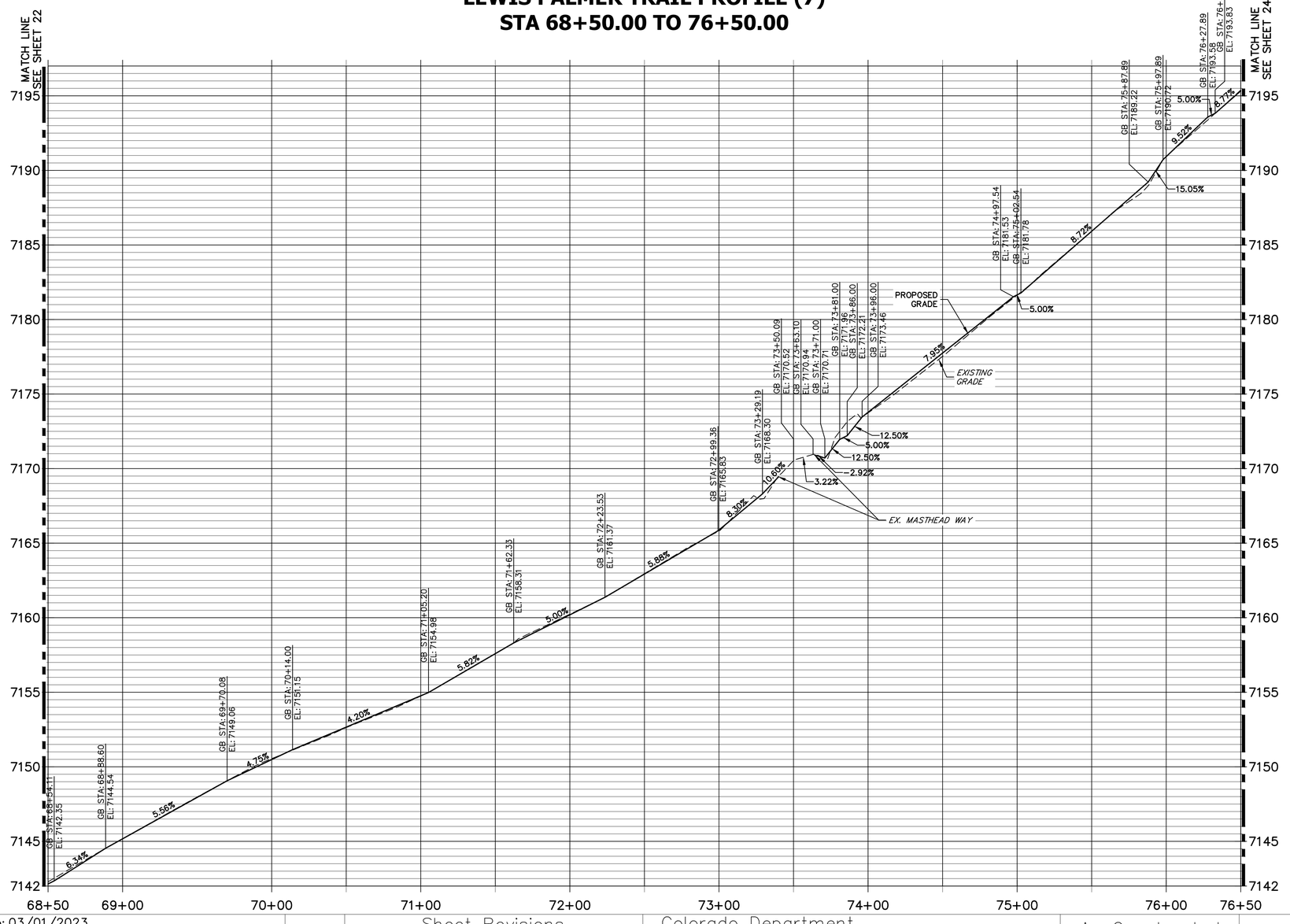
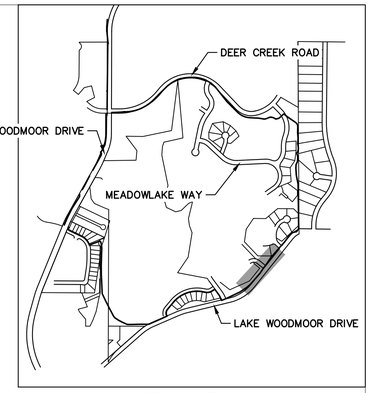


LEWIS PALMER TRAIL PROFILE (7)
STA 68+50.00 TO 76+50.00





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SCALE: NOT TO SCALE

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40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

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ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER
DATE

Print Date: 03/01/2023
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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
Region 2
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Phone: 719-546-5750

Lewis Palmer School District 38

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Void:

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer: GG
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Sheet Subset:
Structure Numbers
Subset Sheets: OF

Project No./Code
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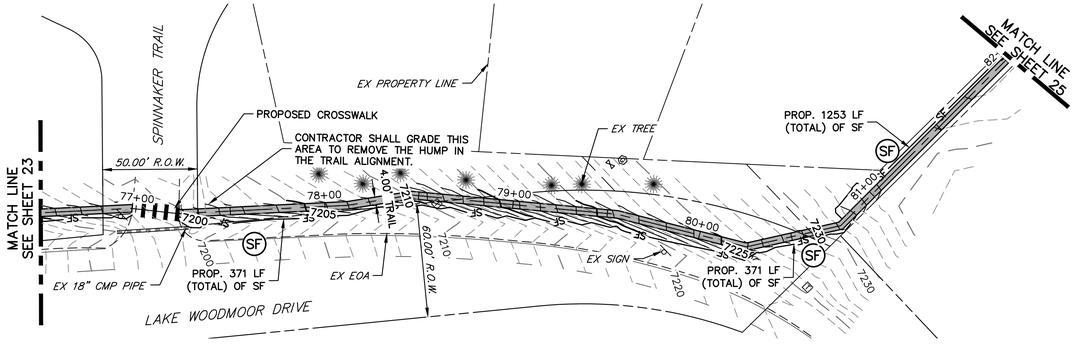
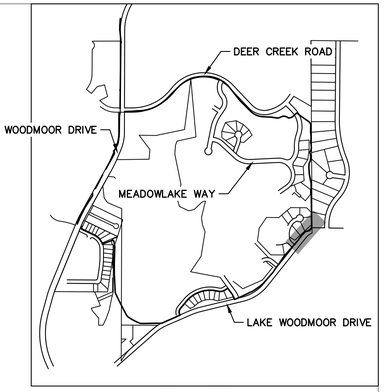
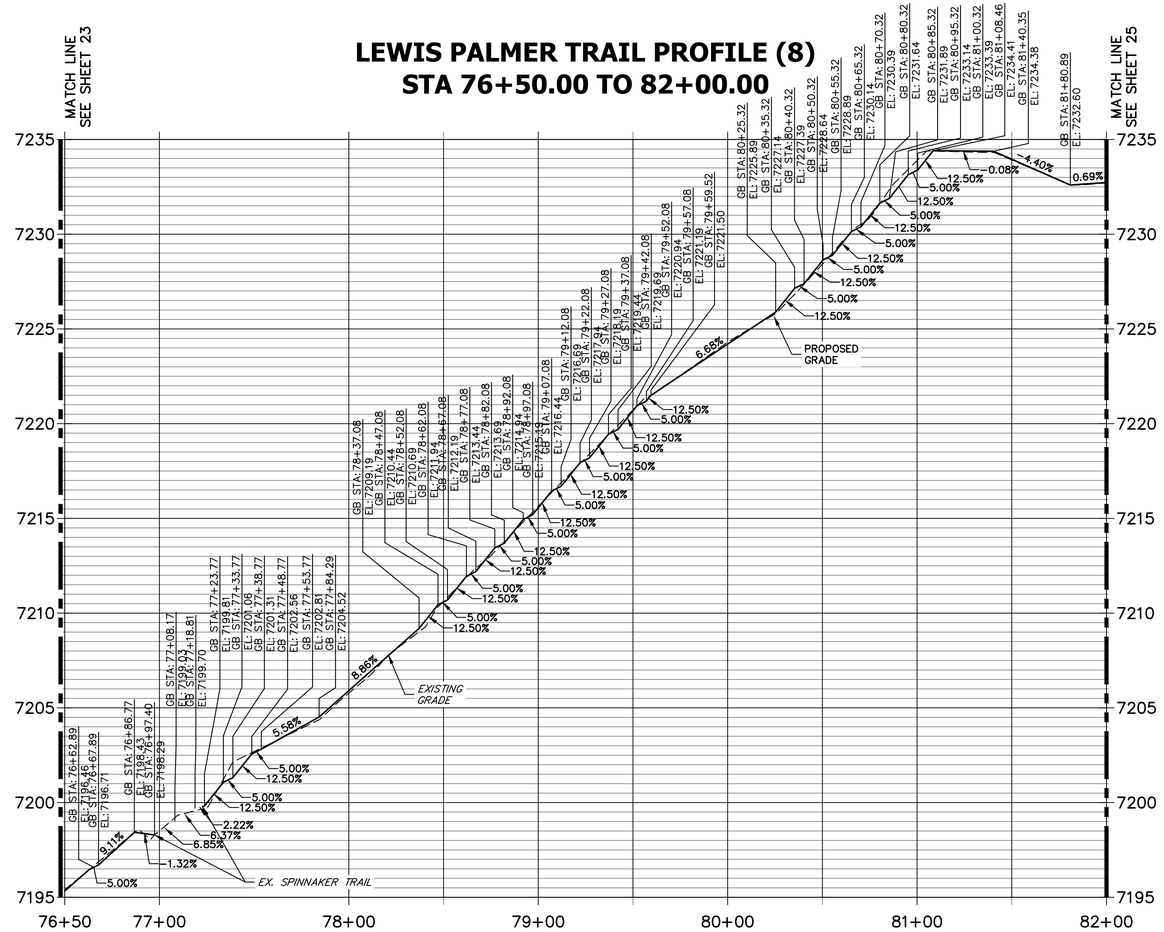
2520300
Sheet Number 23 OF 44





KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (8)
STA 76+50.00 TO 82+00.00



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40 20 0 40 80

HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

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ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

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No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
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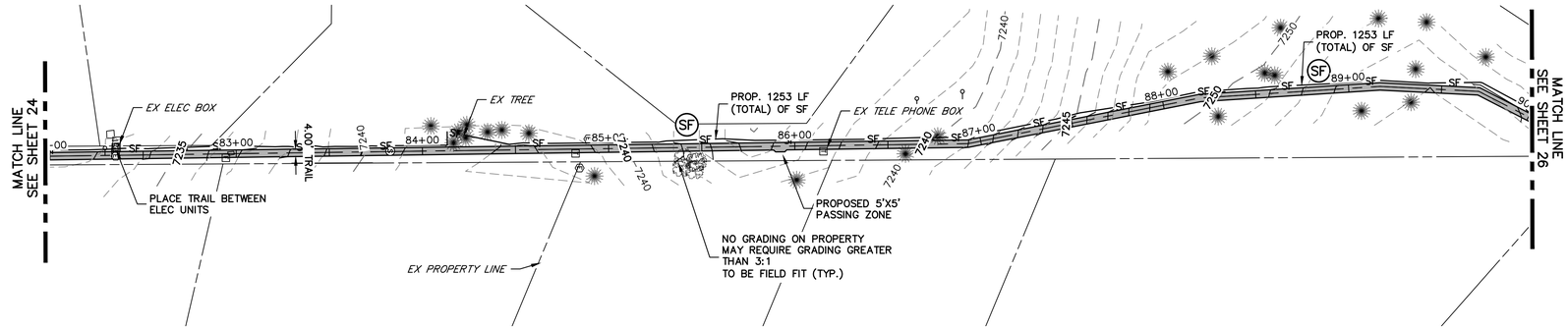
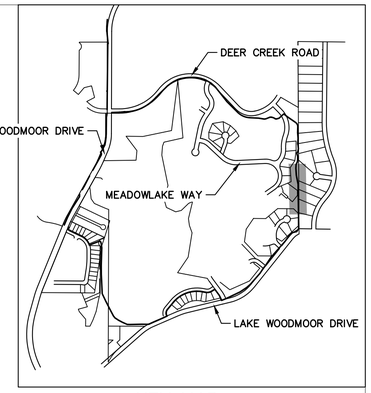
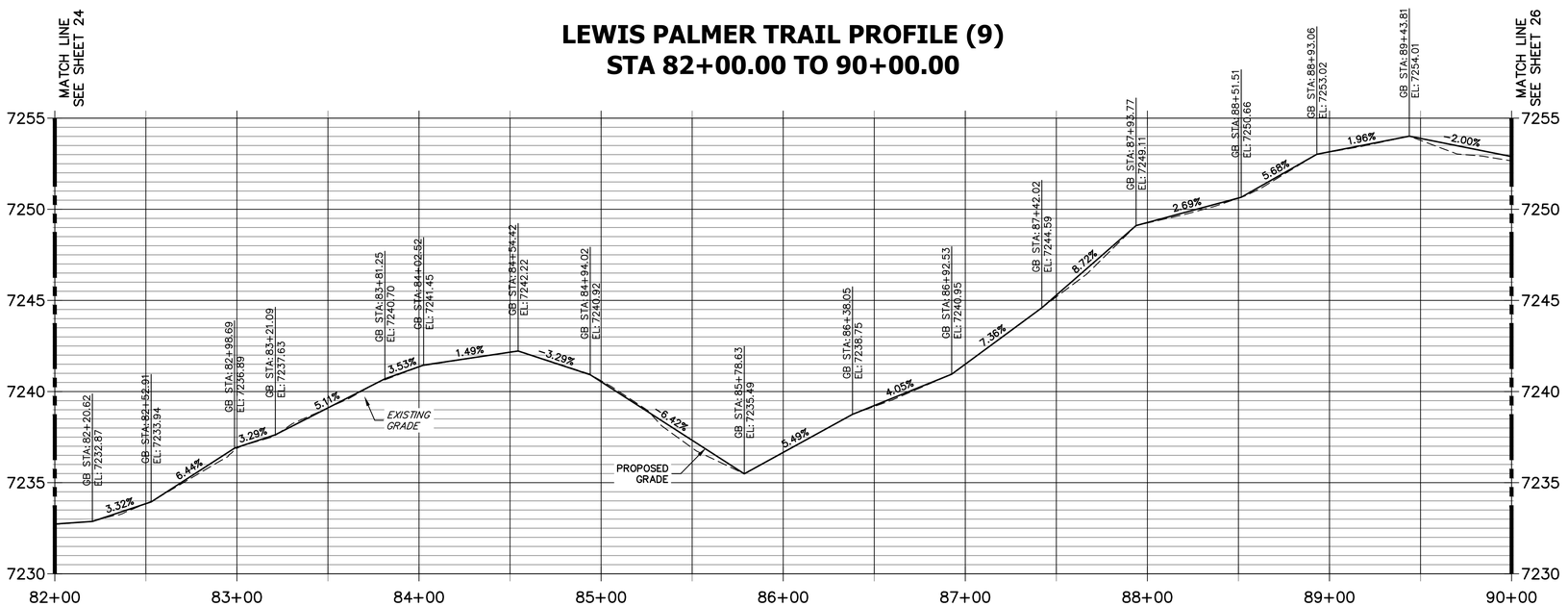




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (9)
STA 82+00.00 TO 90+00.00



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40 20 0 40 80
HORIZONTAL
ORIGINAL SCALE: 1" = 40'
VERTICAL
ORIGINAL SCALE: 1" = 4'

811 Know what's below. Call before you dig.

ENGINEER'S STATEMENT
PREPARED UNDER MY SUPERVISION

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC
DATE

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

Print Date: 03/01/2023	Sheet Revisions			As Constructed	Project No./Code
File Name:	Date:	Comments	Init.	No Revisions:	M915-009/22585
Horiz. Scale: 1"=40' Vert. Scale: 1"=4'				Revised:	2520300
Unit name Unit leader				Void:	Sheet Number 25 OF 44

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5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

LEWIS PALMER TRAIL
TRAIL PLAN AND PROFILE

Designer: GG
Detailer: GG
Sheet Subset:
Structure Numbers
Subset Sheets: OF

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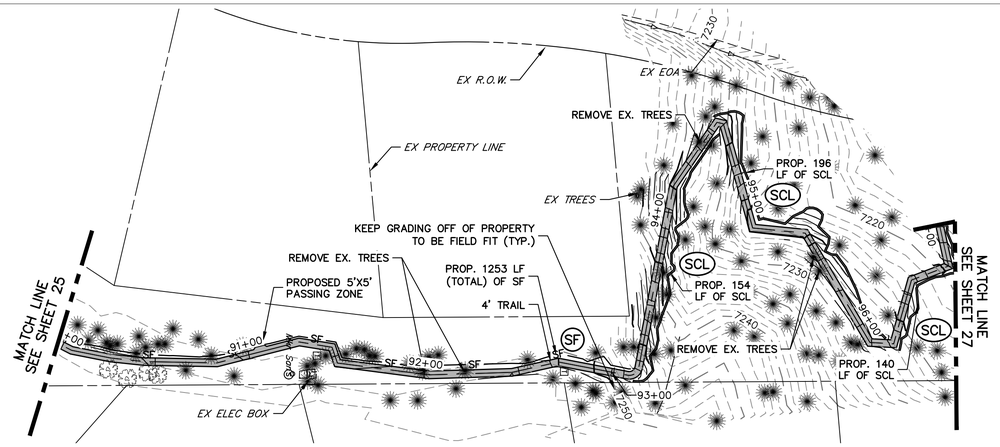
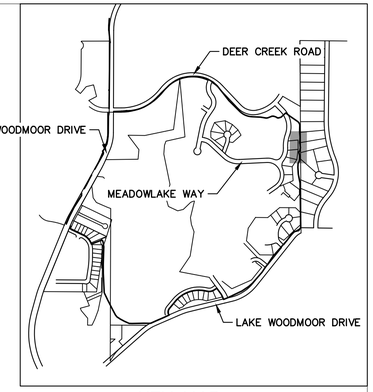
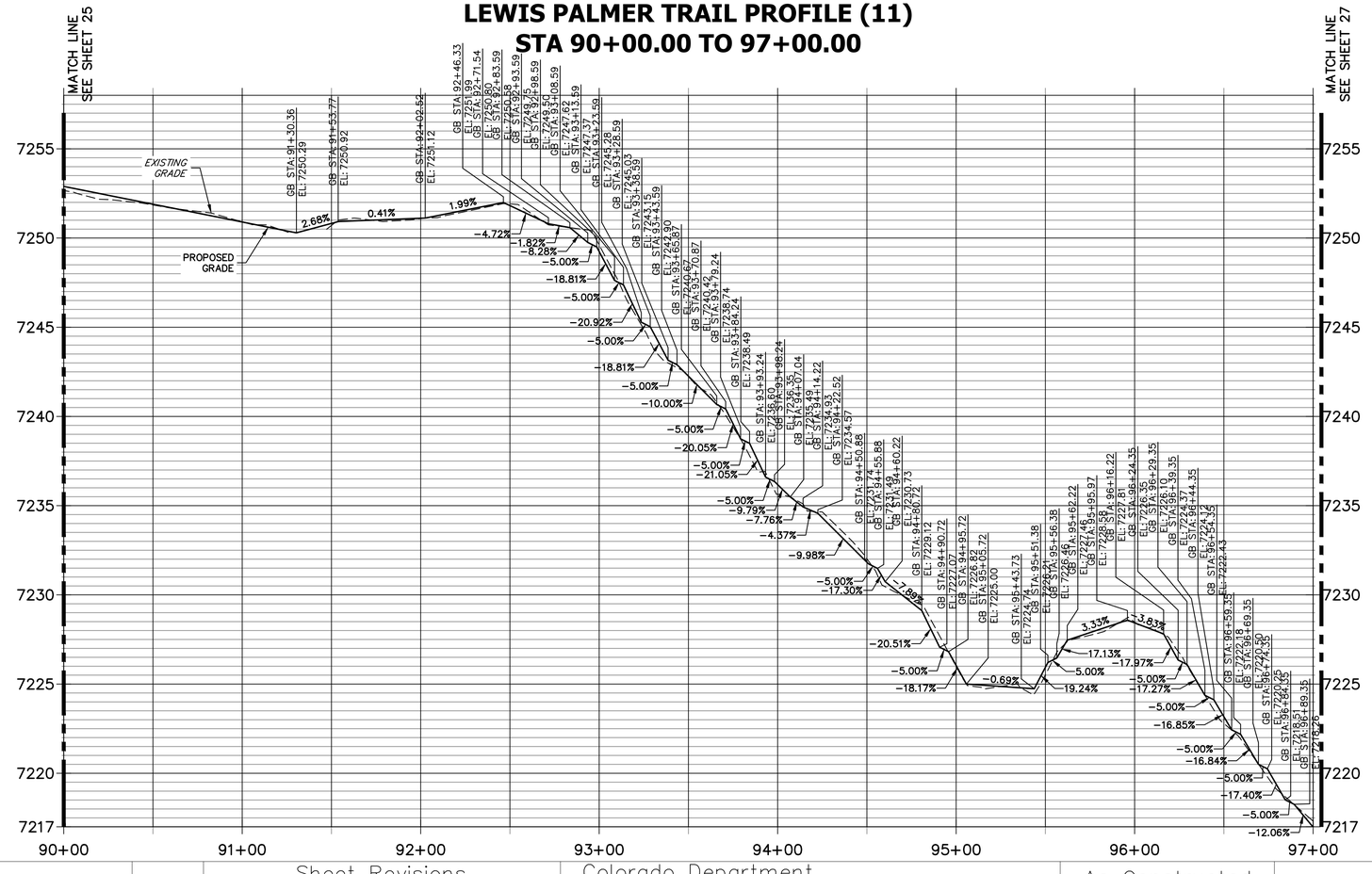




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (11)
STA 90+00.00 TO 97+00.00



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No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			
	Sheet Subset:	Subset Sheets: OF		Sheet Number 26 OF 44

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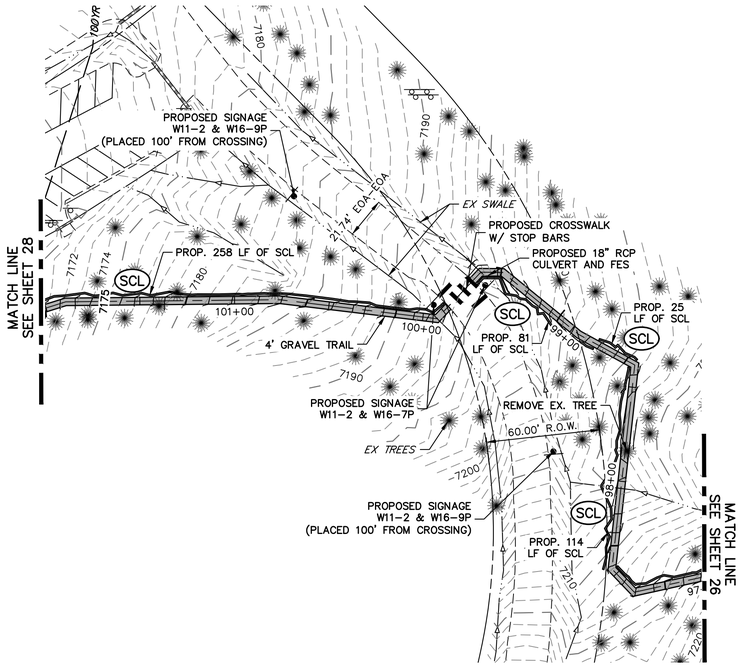
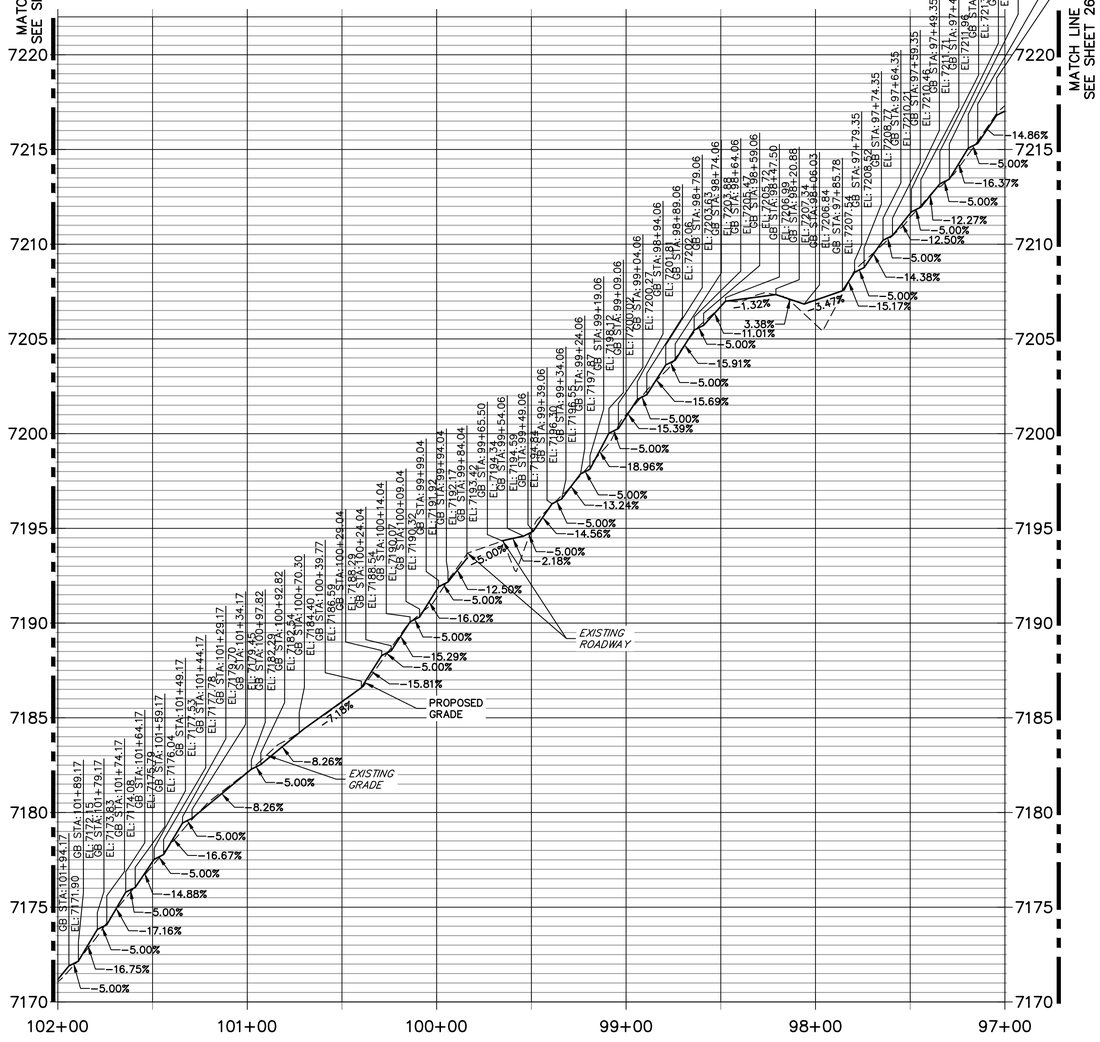
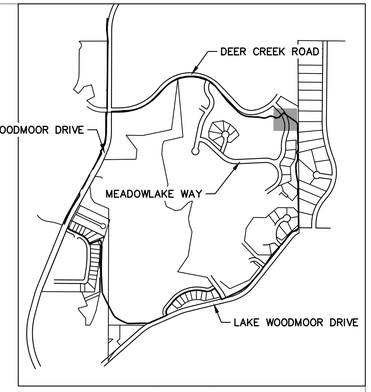


LEWIS PALMER TRAIL PROFILE (12)
STA 97+00.00 TO 102+00.00

(NOTE: PROFILE IS REVERSED DUE TO TRAIL DIRECTION CHANGE)





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Sheet Number 27 OF 44

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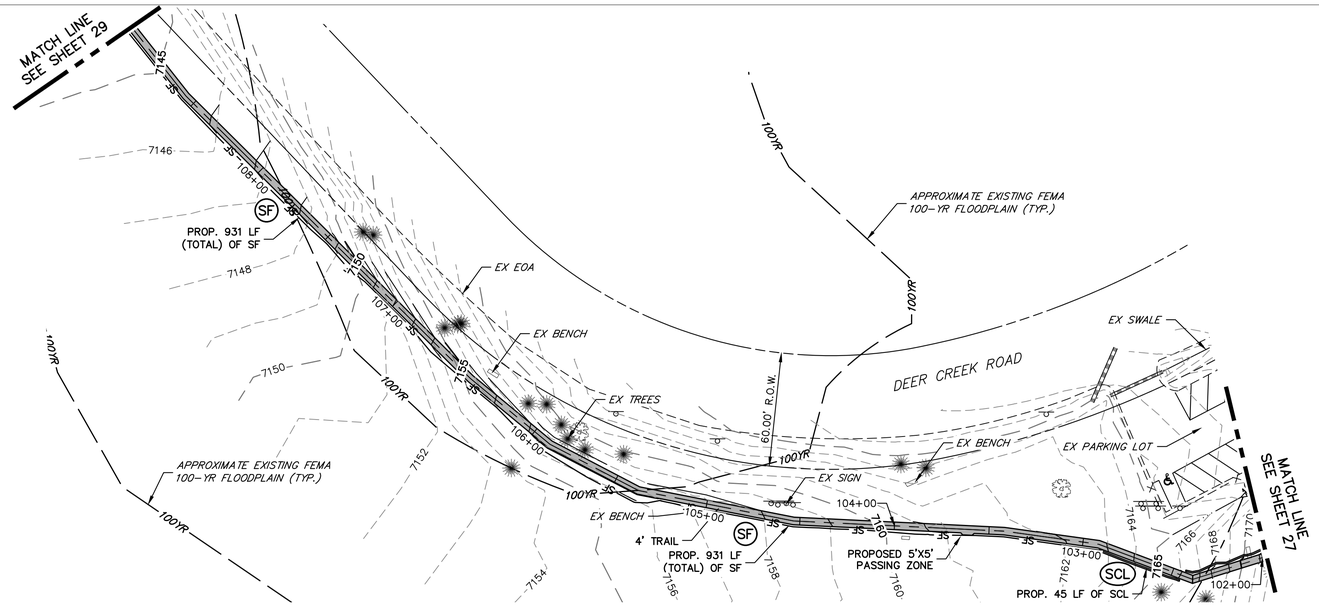
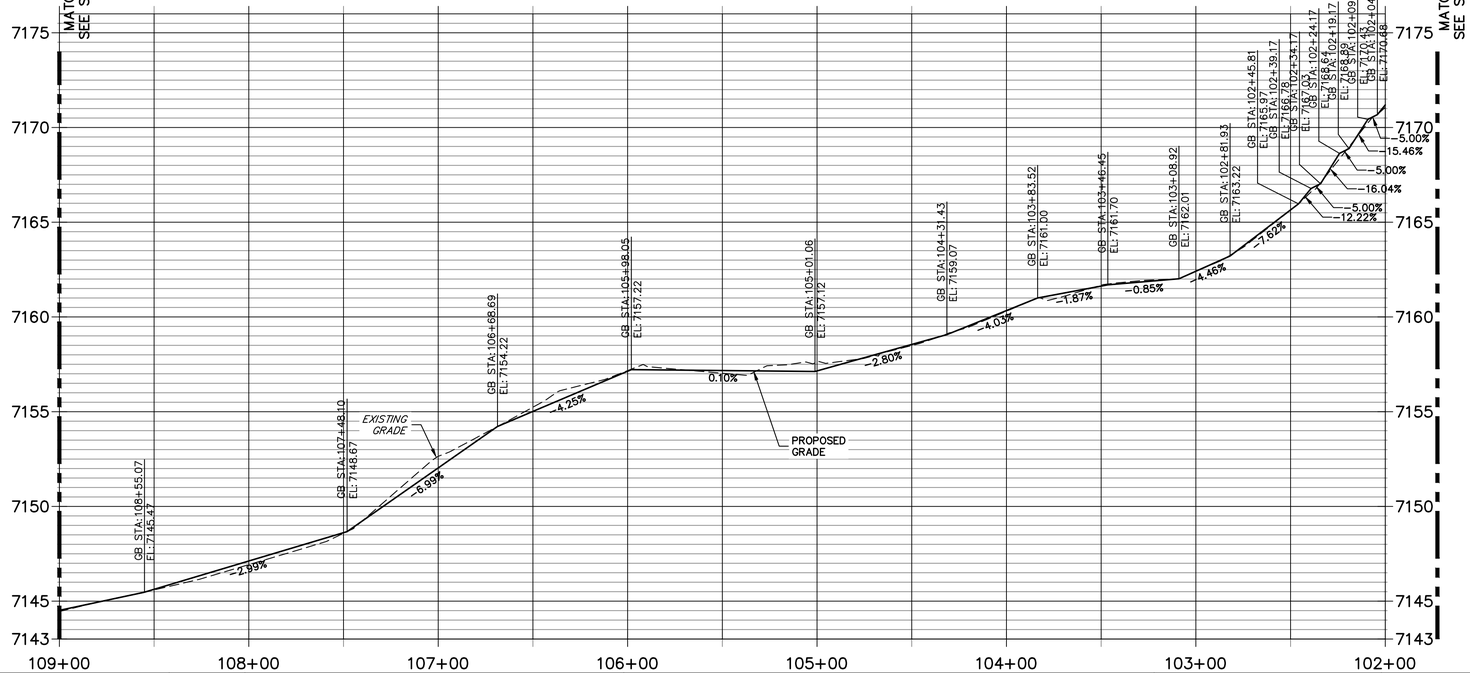
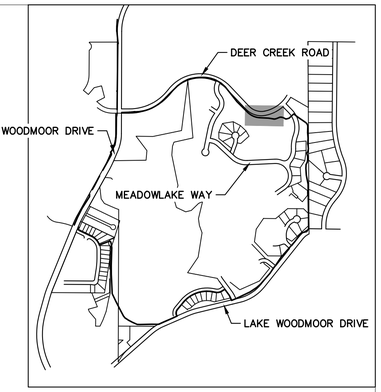


LEWIS PALMER TRAIL PROFILE (13)
STA 102+00.00 TO 109+00.00





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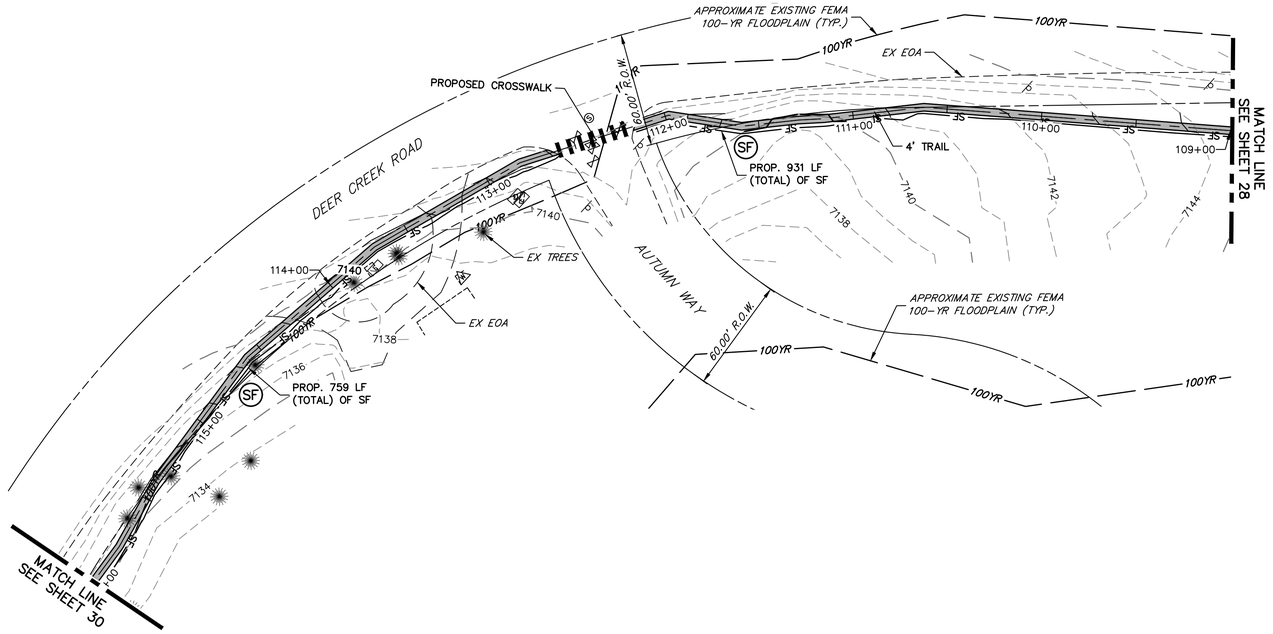
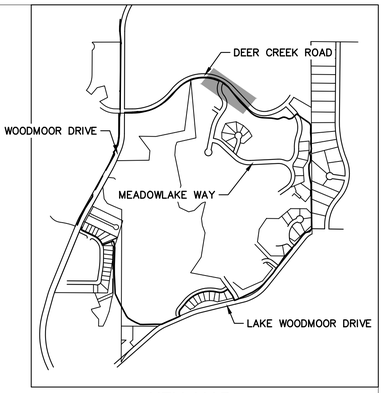
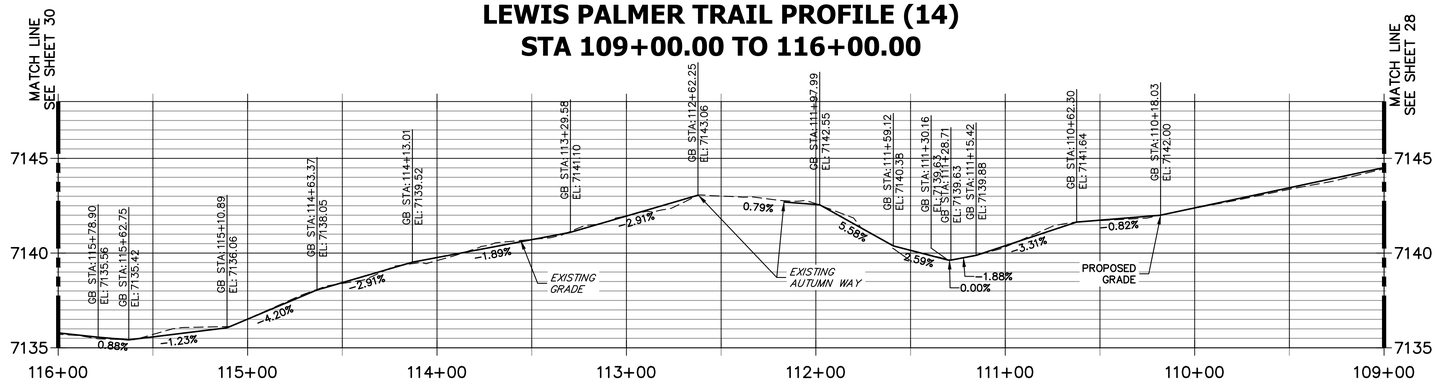




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (14)
STA 109+00.00 TO 116+00.00



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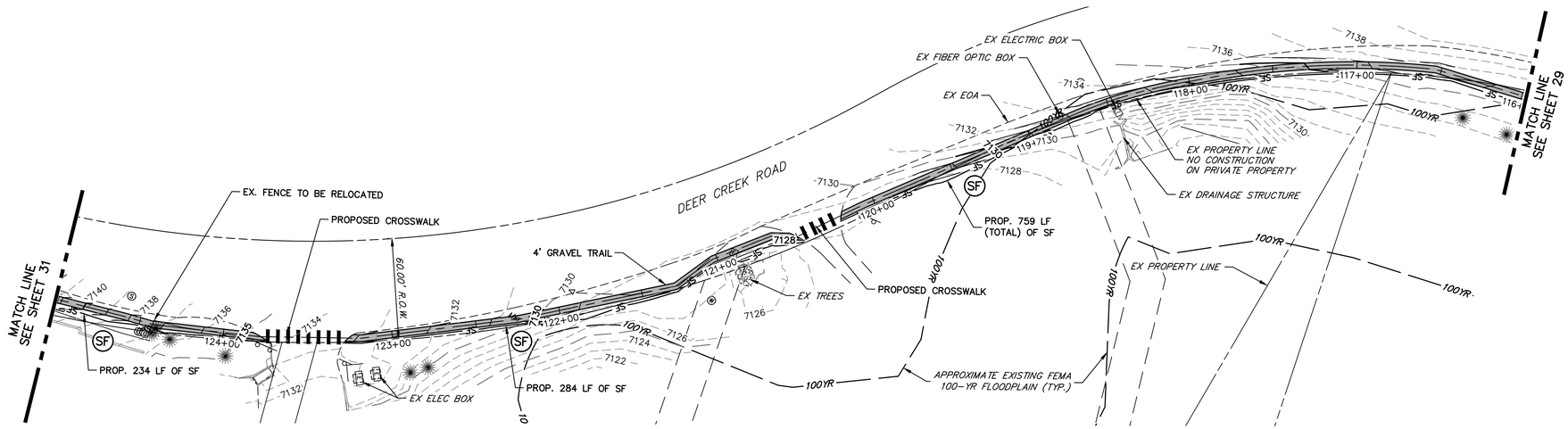
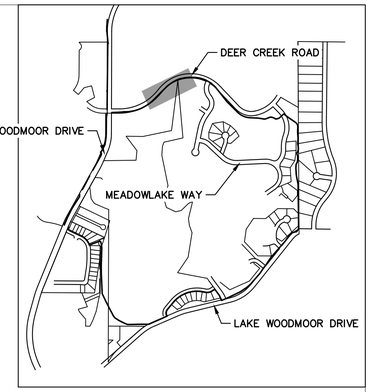
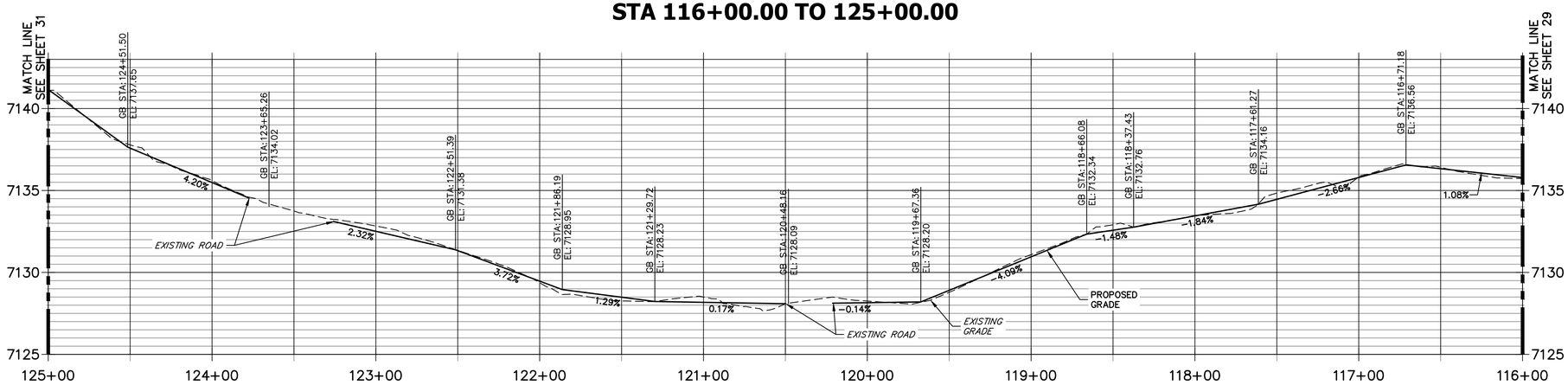




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (15)
STA 116+00.00 TO 125+00.00



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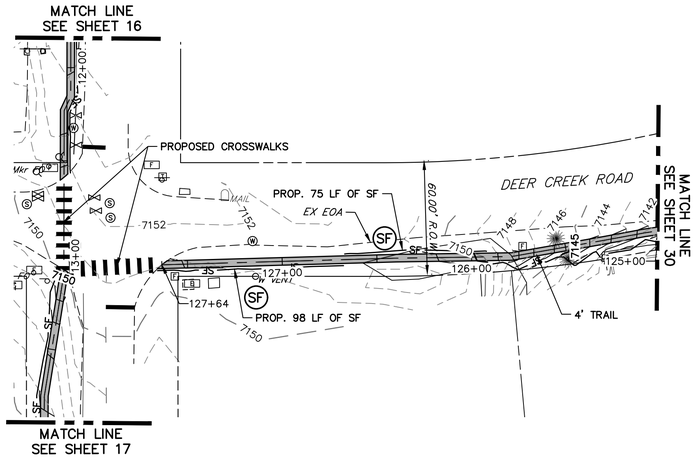
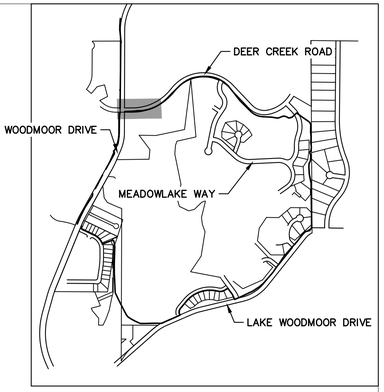
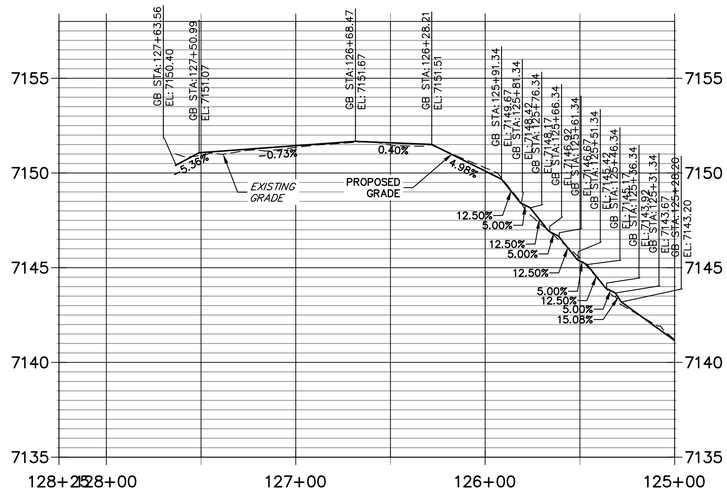
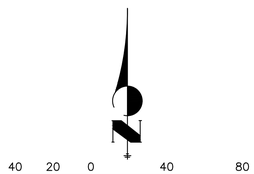




KEY MAP
SCALE: NOT TO SCALE

LEWIS PALMER TRAIL PROFILE (16)
STA 125+00.00 TO 128+25.00





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ENGINEER'S STATEMENT

PREPARED UNDER MY SUPERVISION

COLORADO REGISTERED GLENN D. ELLIS 38861 PROFESSIONAL ENGINEER

GLENN D. ELLIS, P.E. — DATE
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Print Date: 03/01/2023	Sheet Revisions		
File Name:	Date:	Comments	Init.
Horiz. Scale: 1"=40' Vert. Scale: 1"=4'			
Unit name Unit leader			
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Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed	LEWIS PALMER TRAIL TRAIL PLAN AND PROFILE			Project No./Code
No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 31 OF 44
	Sheet Subset:	Subset Sheets:	OF	

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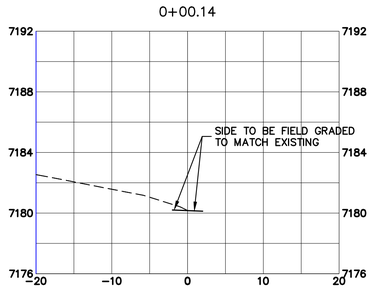

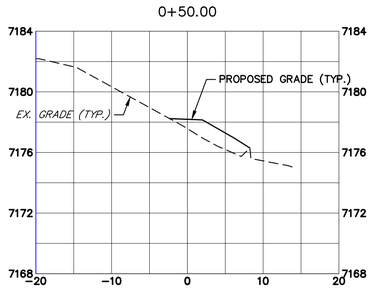

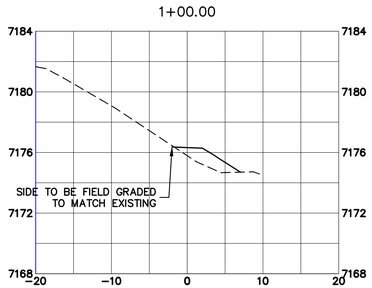

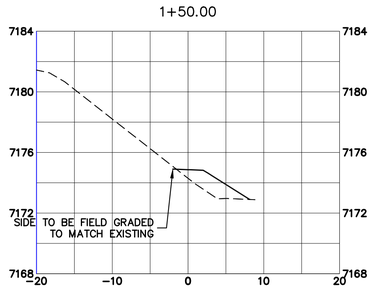

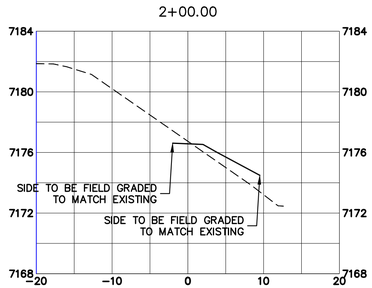

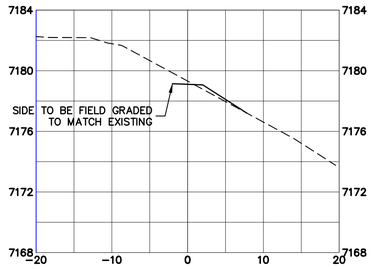

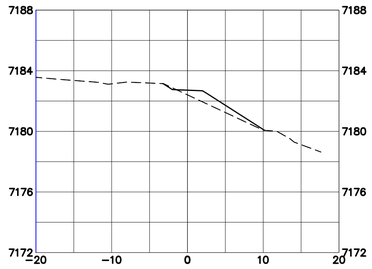

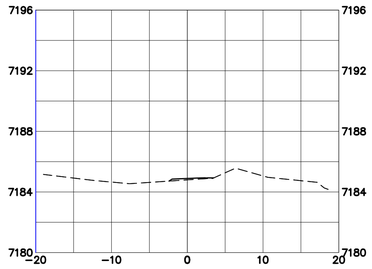

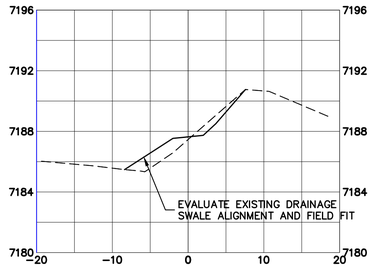

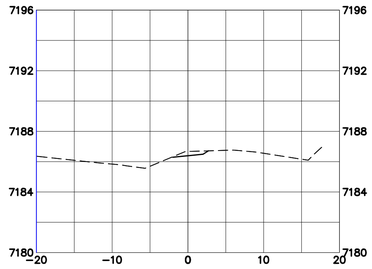

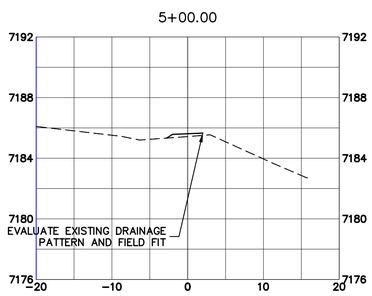

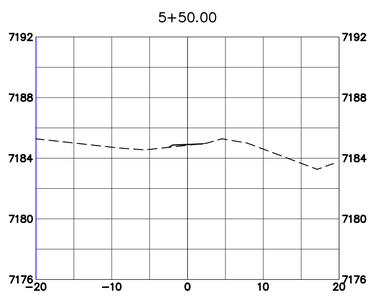

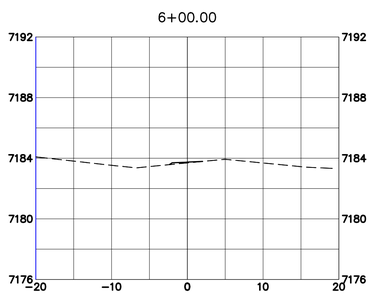

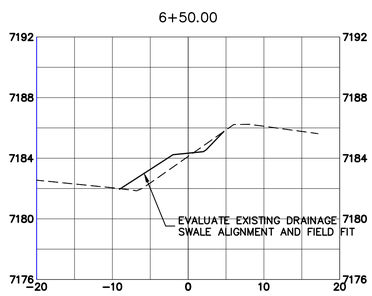

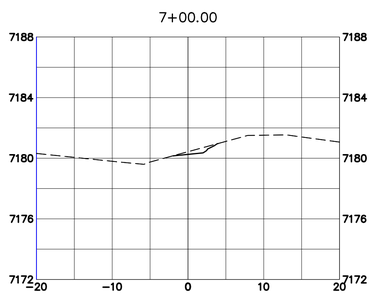

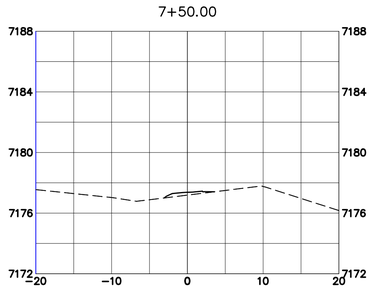

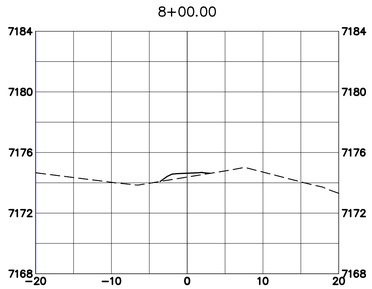

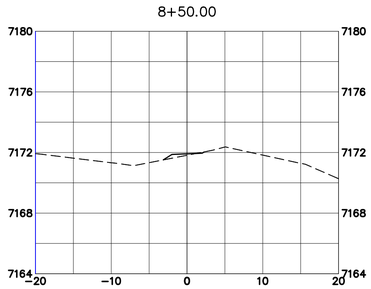

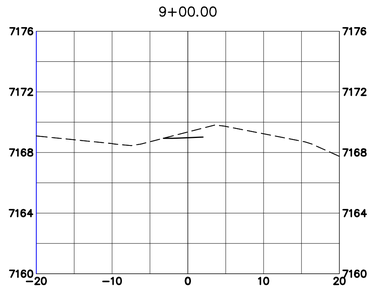

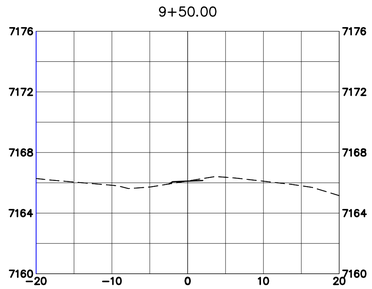

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Project No./Code
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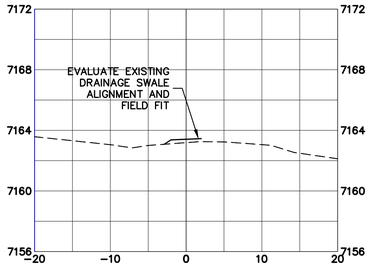

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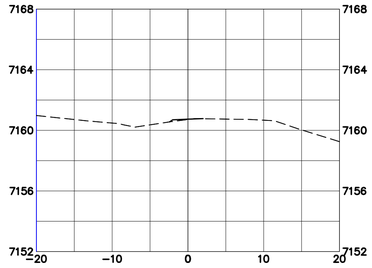

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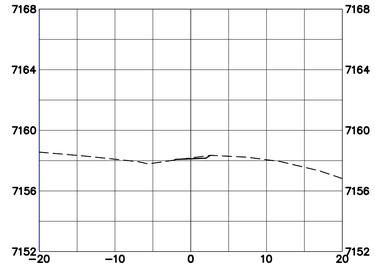

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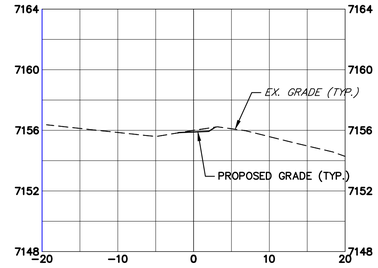

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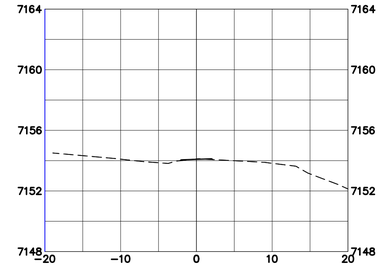

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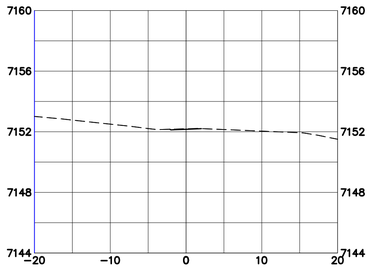

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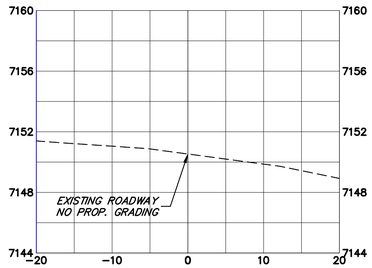

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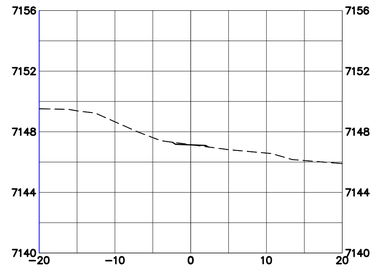

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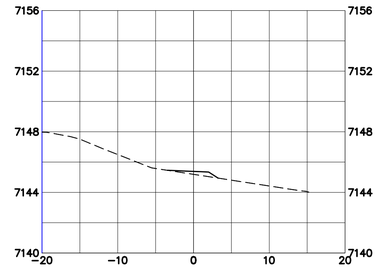

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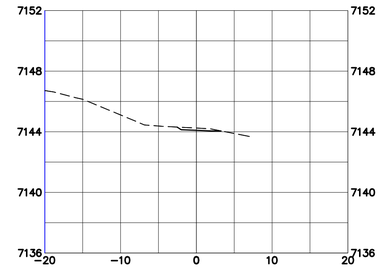

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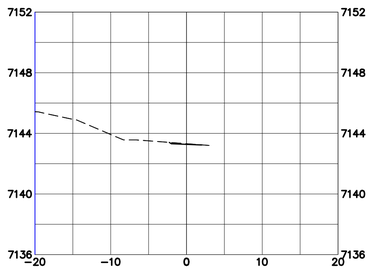

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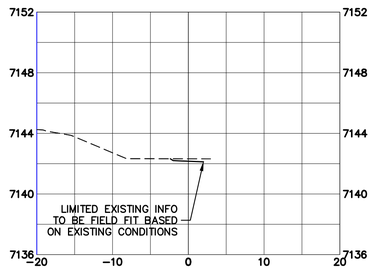

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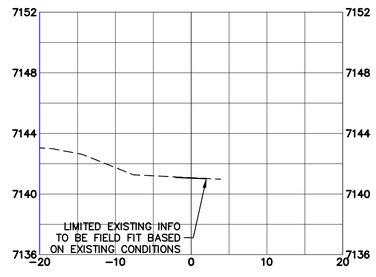

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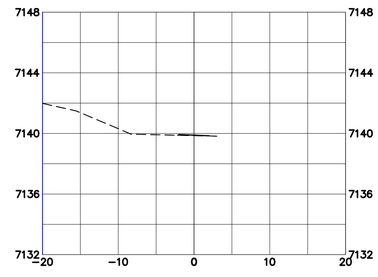

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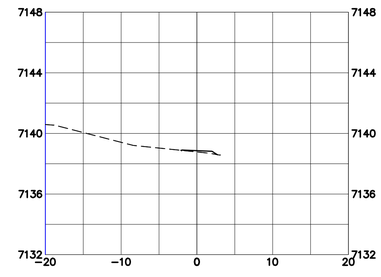

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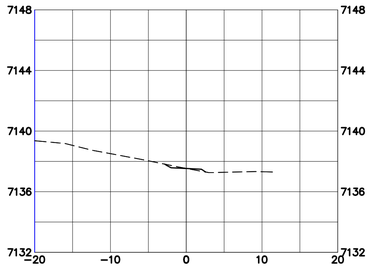

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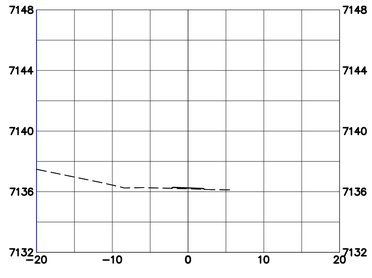

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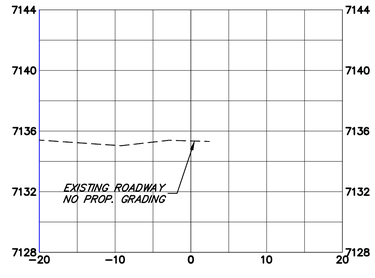

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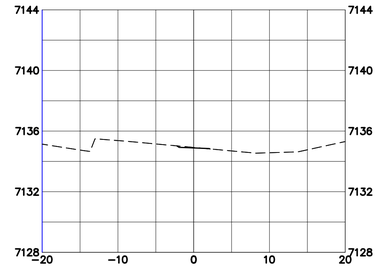

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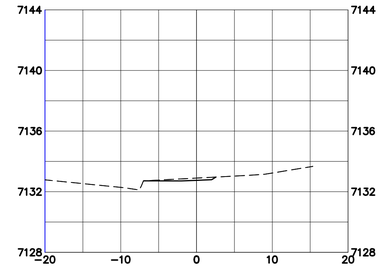

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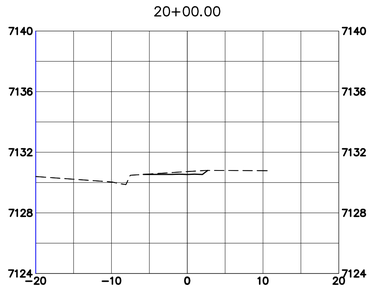

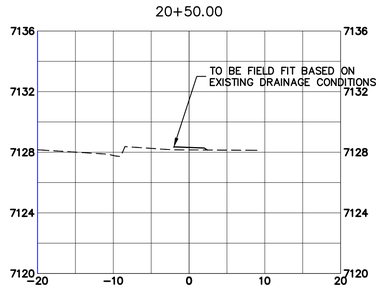

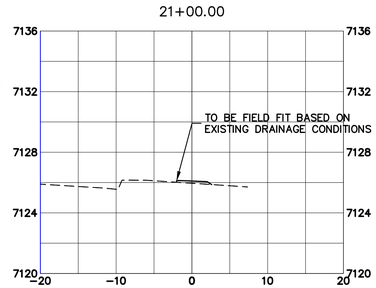

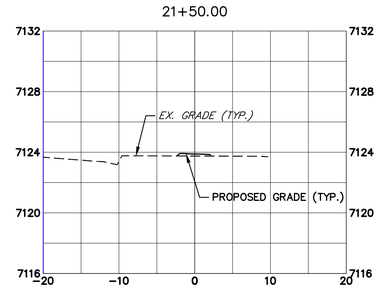

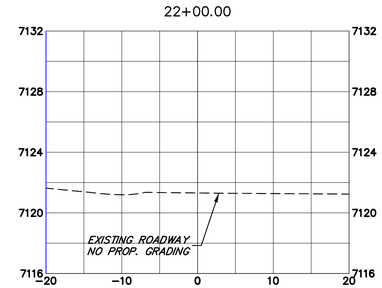

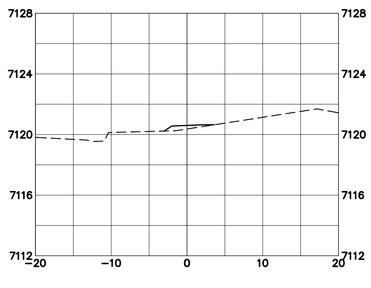

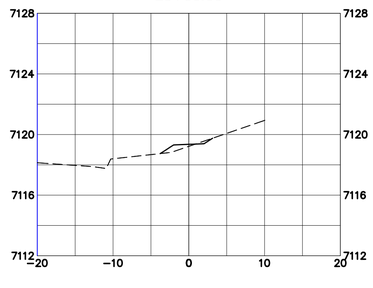

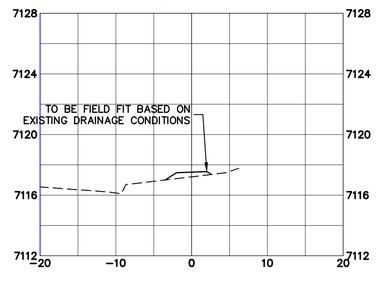

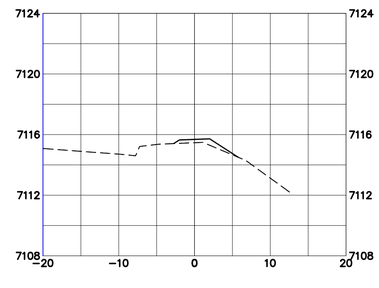

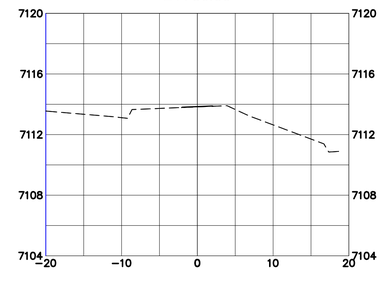

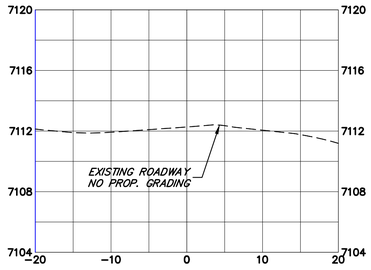

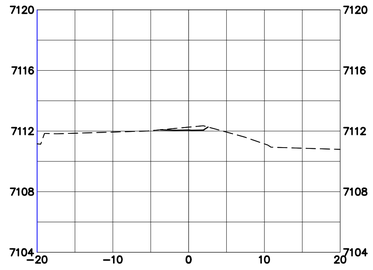

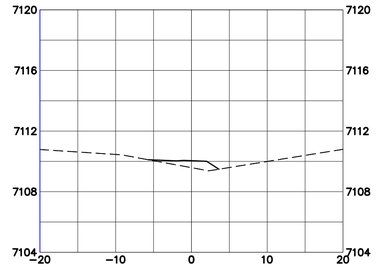

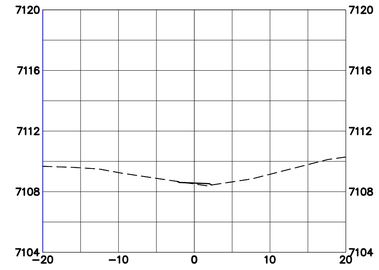

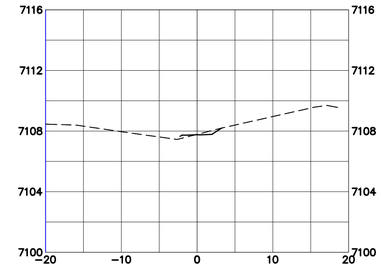

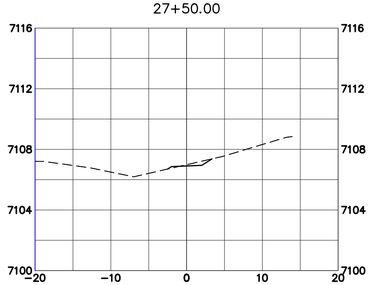

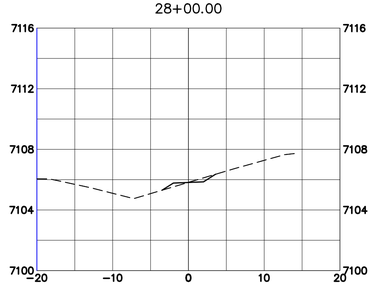

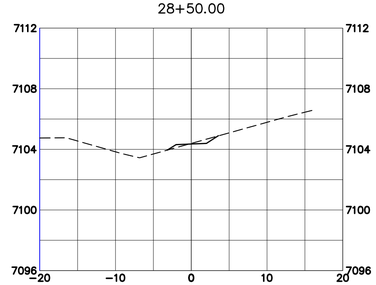

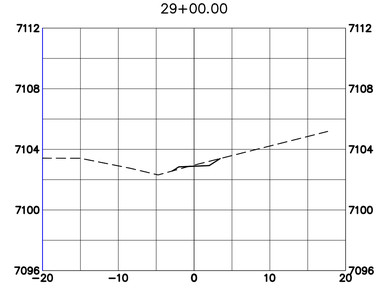

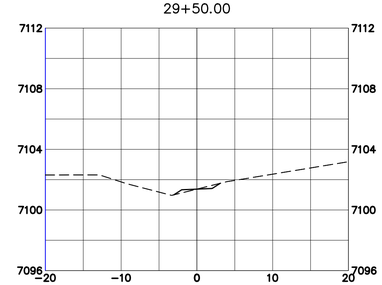

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As Constructed	LEWIS PALMER TRAIL CROSS SECTION			Project No./Code
No Revisions:				M915-009/22585
Revised:	Designer: GG	Structure Numbers		2520300
Void:	Detailer: GG			Sheet Number 34 OF 44
	Sheet Subset:	Subset Sheets:	OF	

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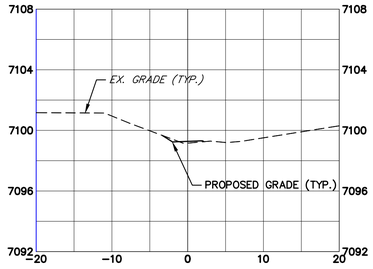

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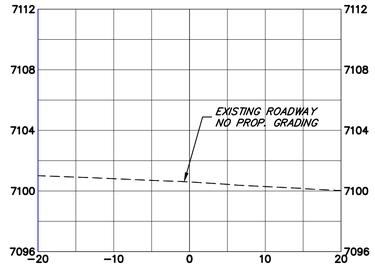

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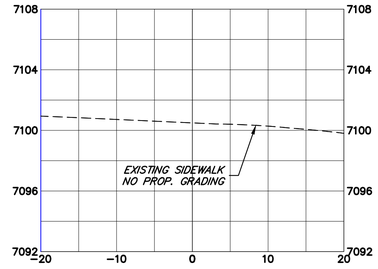

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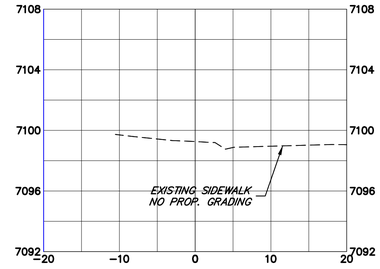

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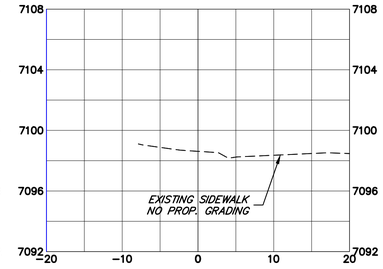

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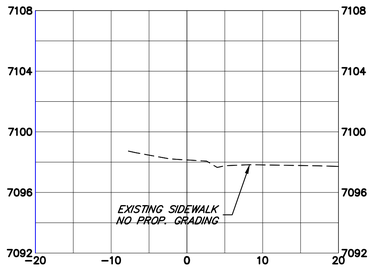

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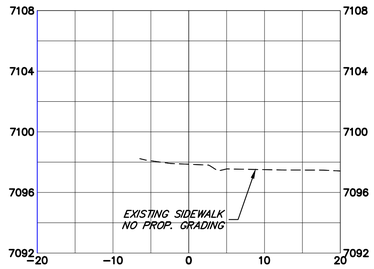

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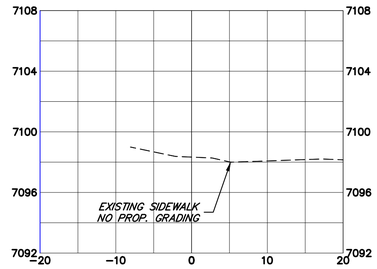

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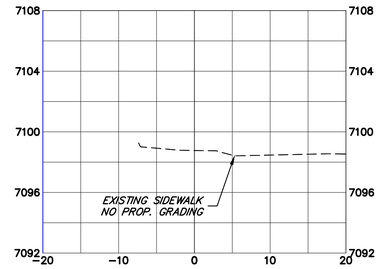

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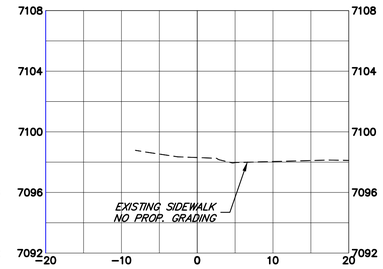

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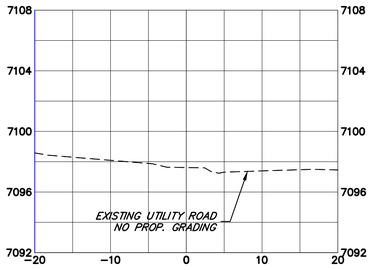

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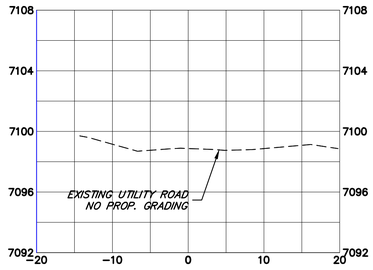

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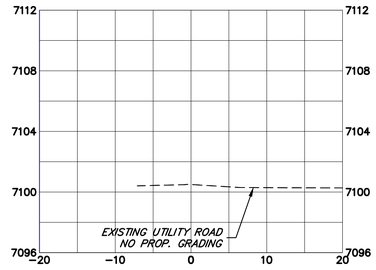

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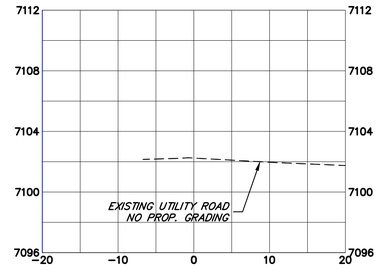

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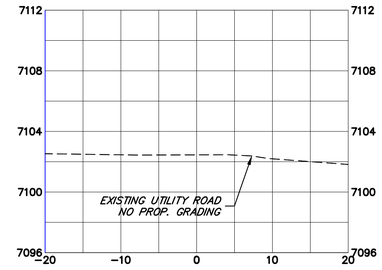

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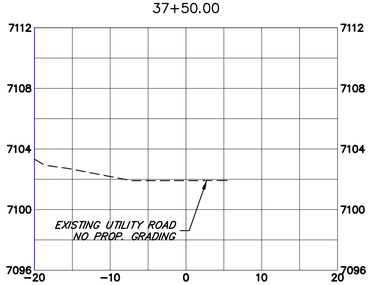

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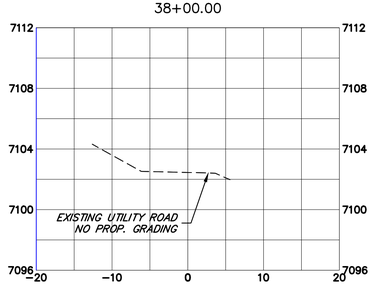

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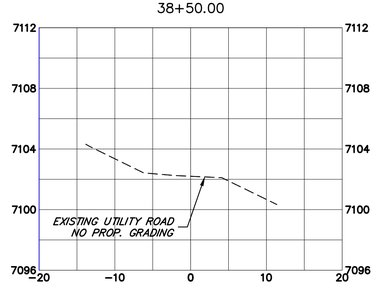

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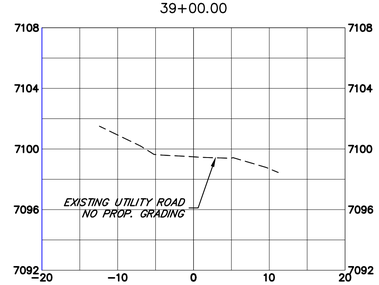

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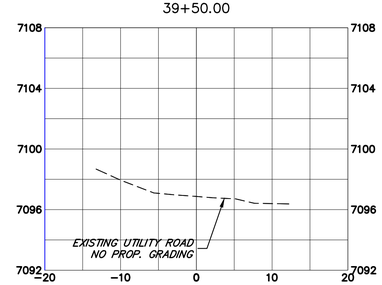

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Revised:	Designer: GG	Structure Numbers		2520300
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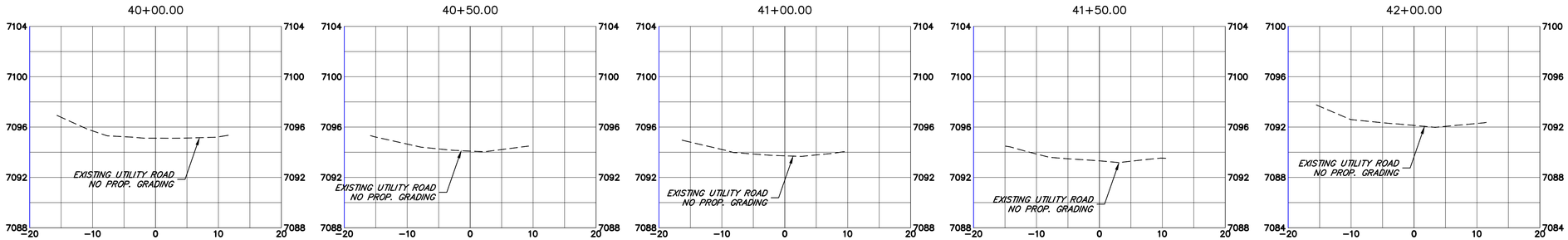

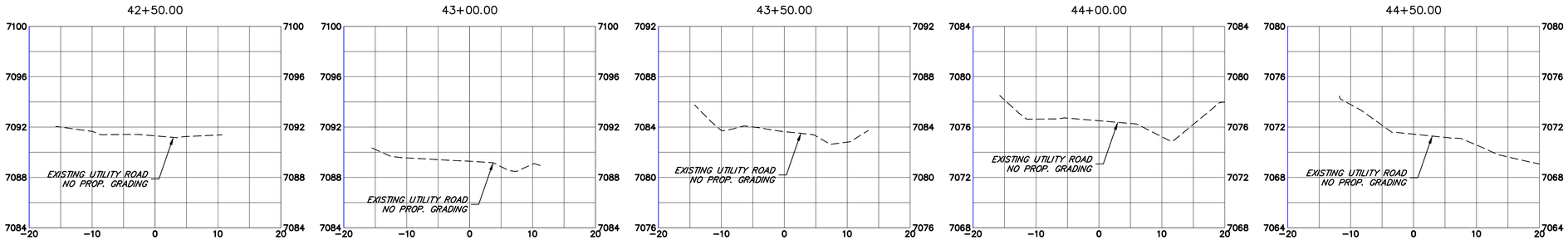

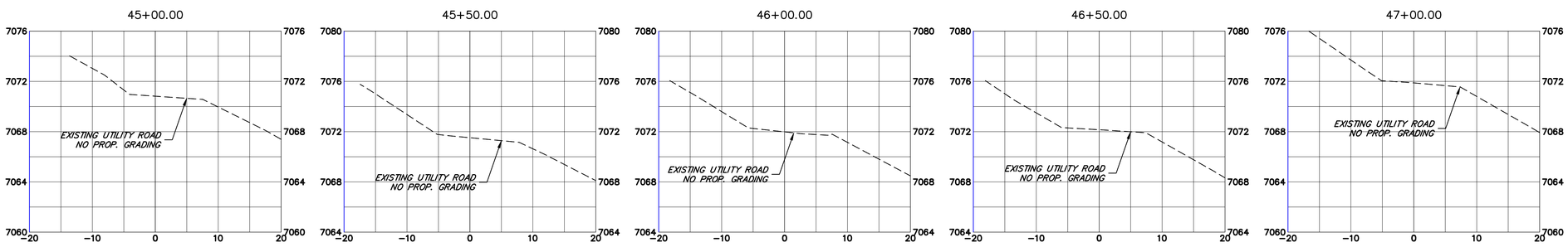

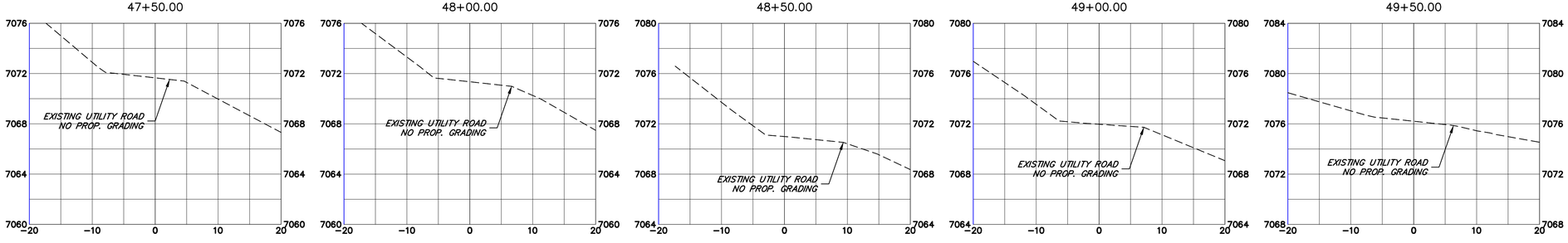

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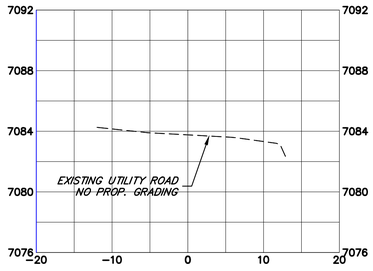

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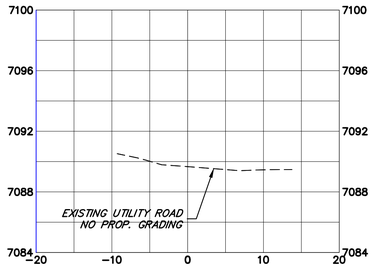

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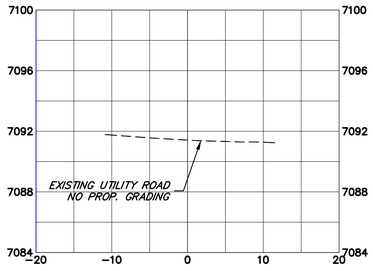

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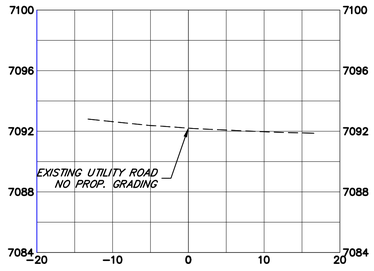

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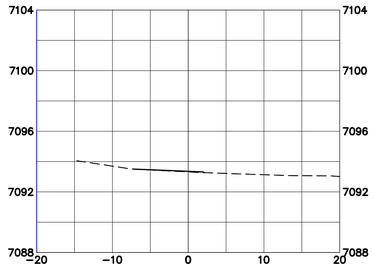

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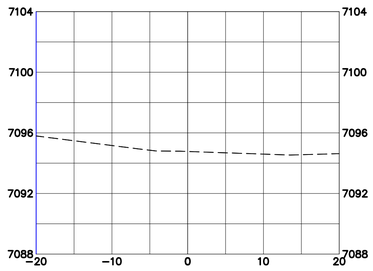

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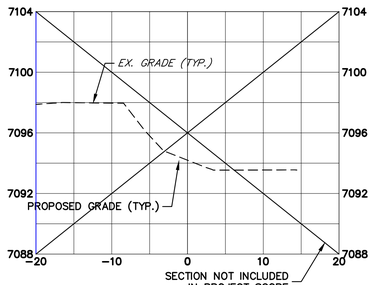

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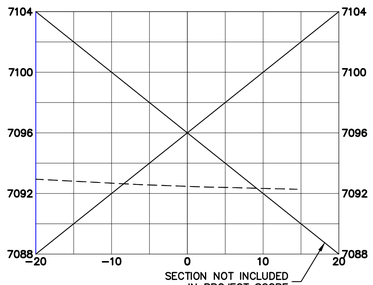

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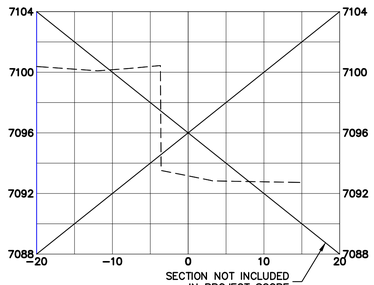

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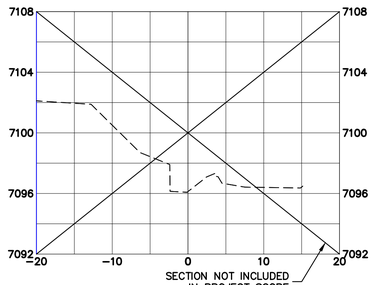

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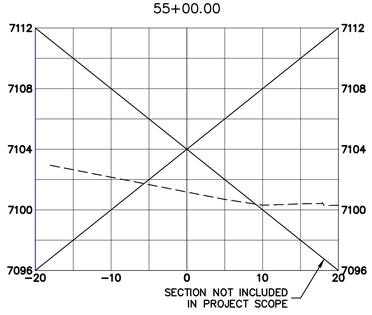

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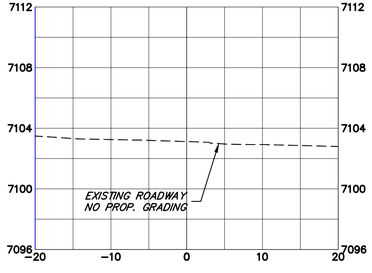

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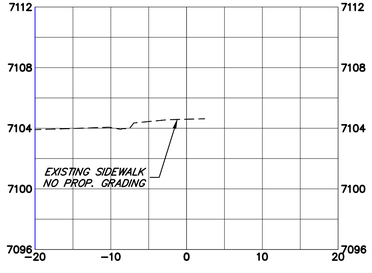

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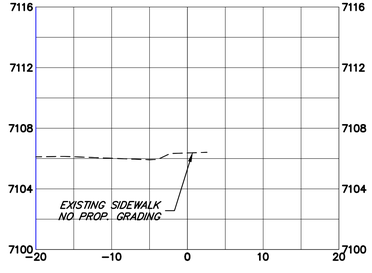

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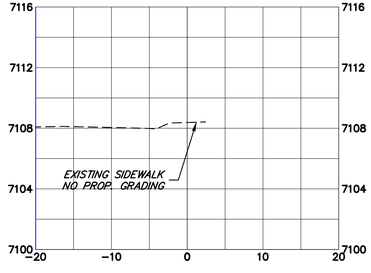

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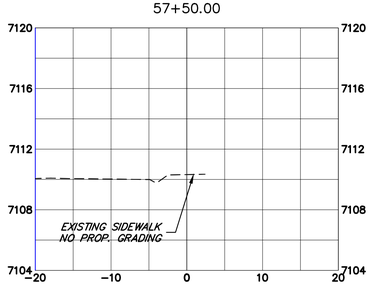

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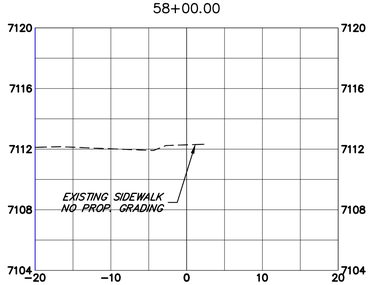

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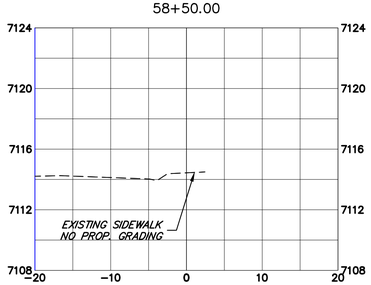

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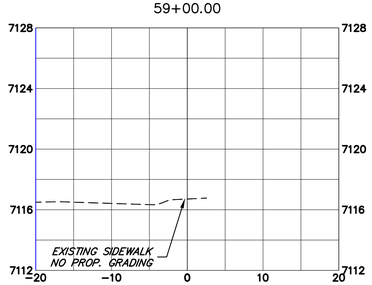

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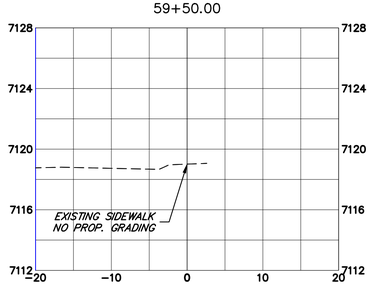

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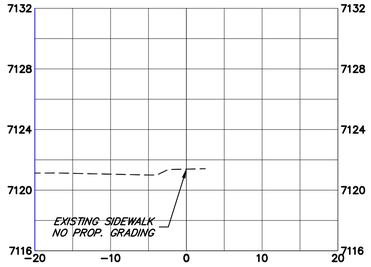

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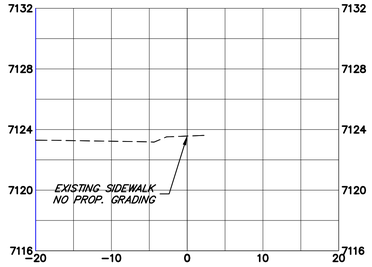

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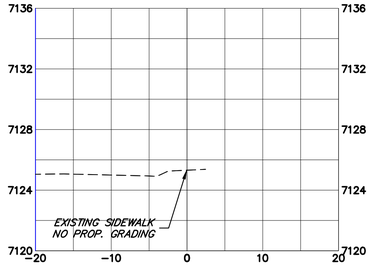

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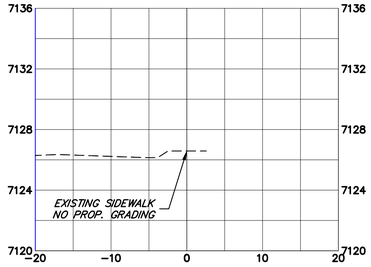

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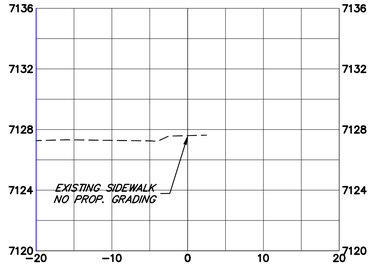

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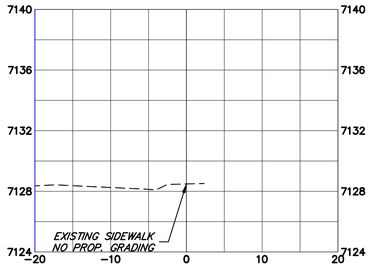

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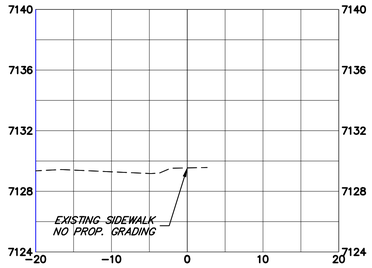

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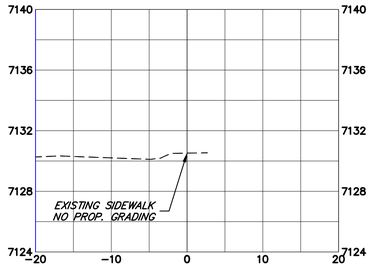

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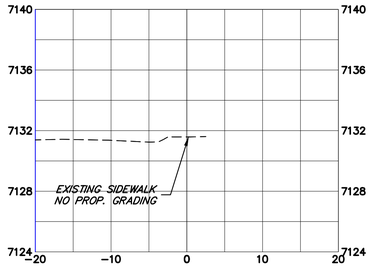

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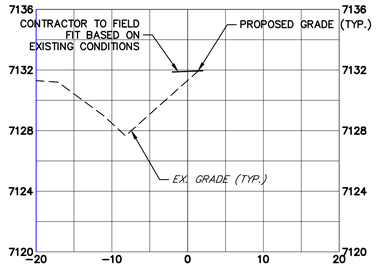

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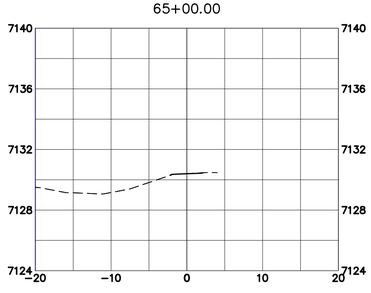

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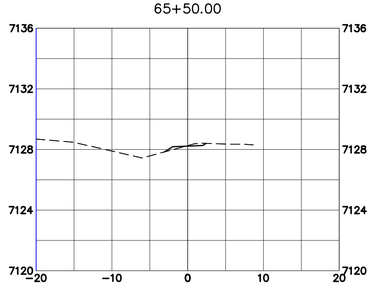

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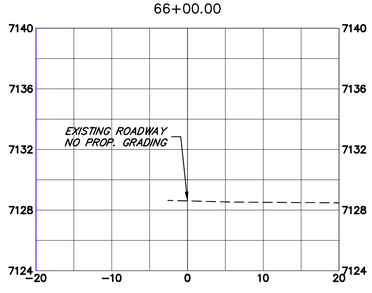

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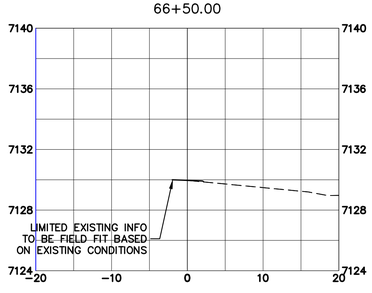

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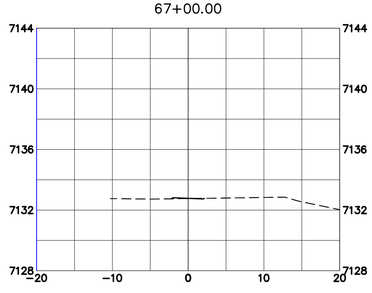

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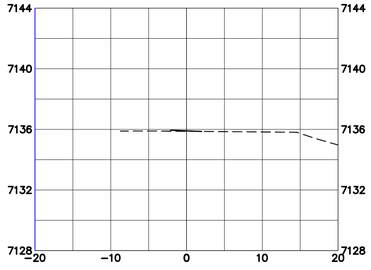

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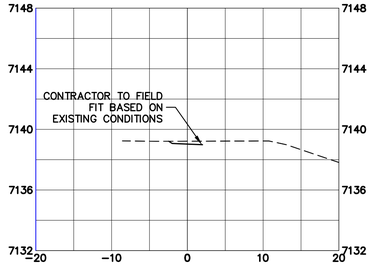

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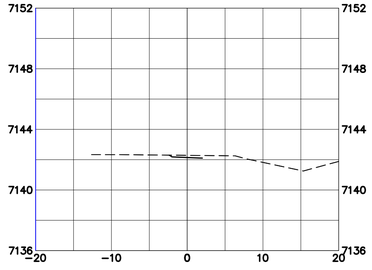

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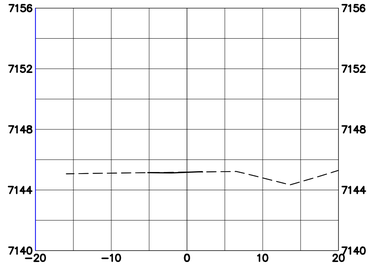

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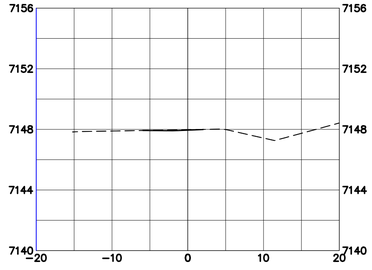

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Horiz. Scale: 1"=10' Vert. Scale: 1"=5"					5615 WILL BLVD. Pueblo, CO 81008 Phone: 719-546-5750	Revised:	Designer: GG / Structure Numbers	2520300
Unit name Unit leader					Region 2	Void:	Detailer: GG	Sheet Number 38 OF 44
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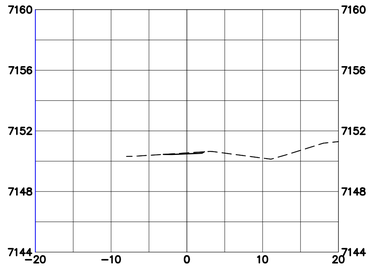

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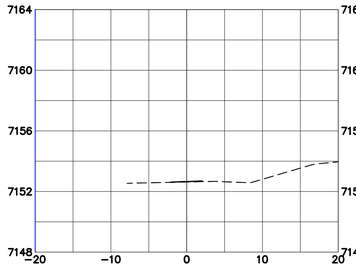

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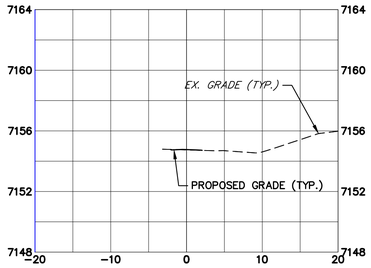

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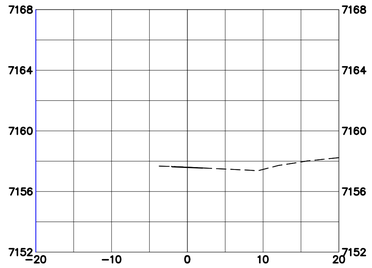

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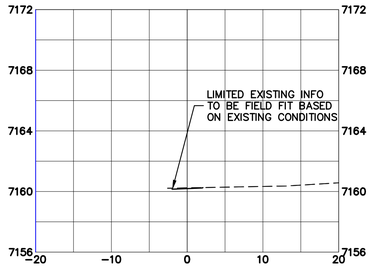

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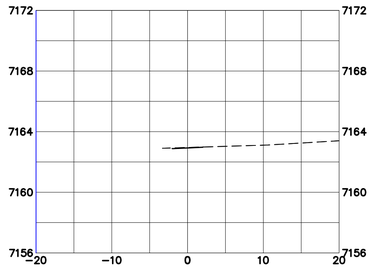

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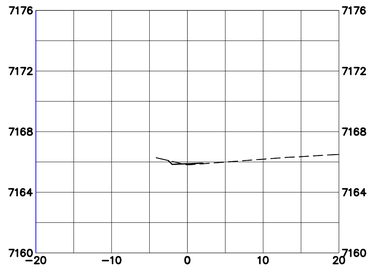

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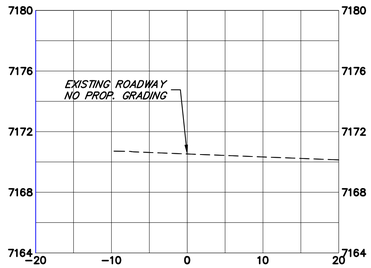

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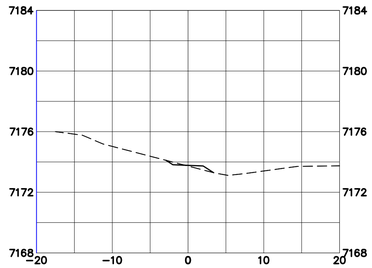

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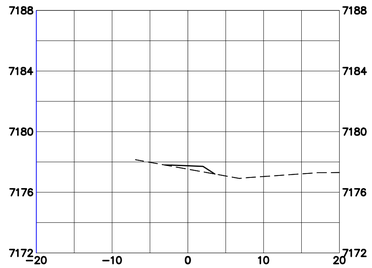

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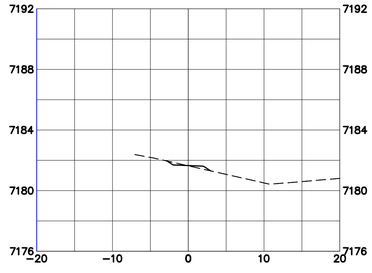

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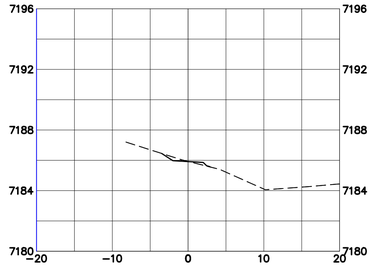

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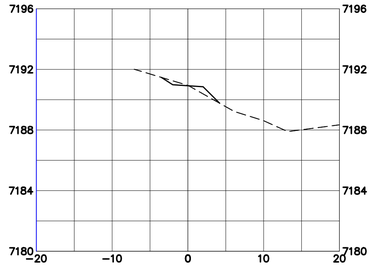

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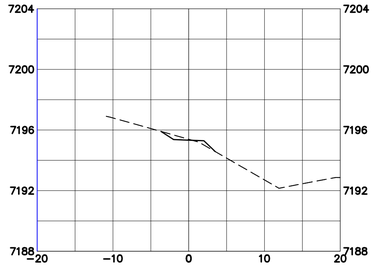

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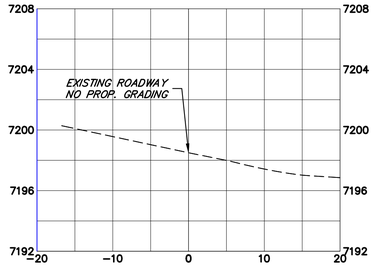

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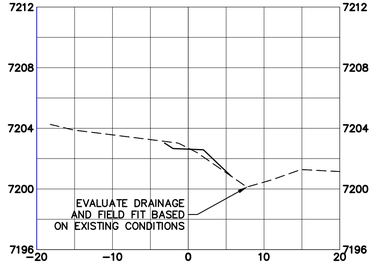

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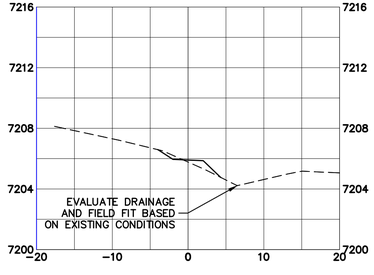

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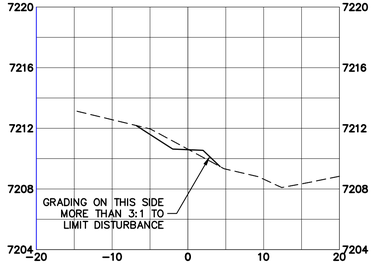

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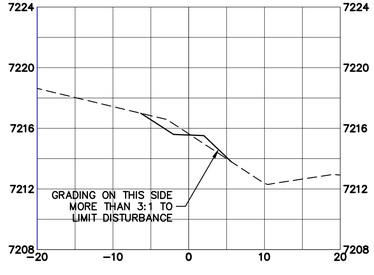

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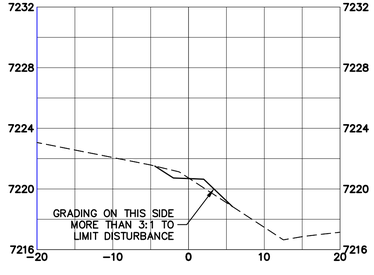

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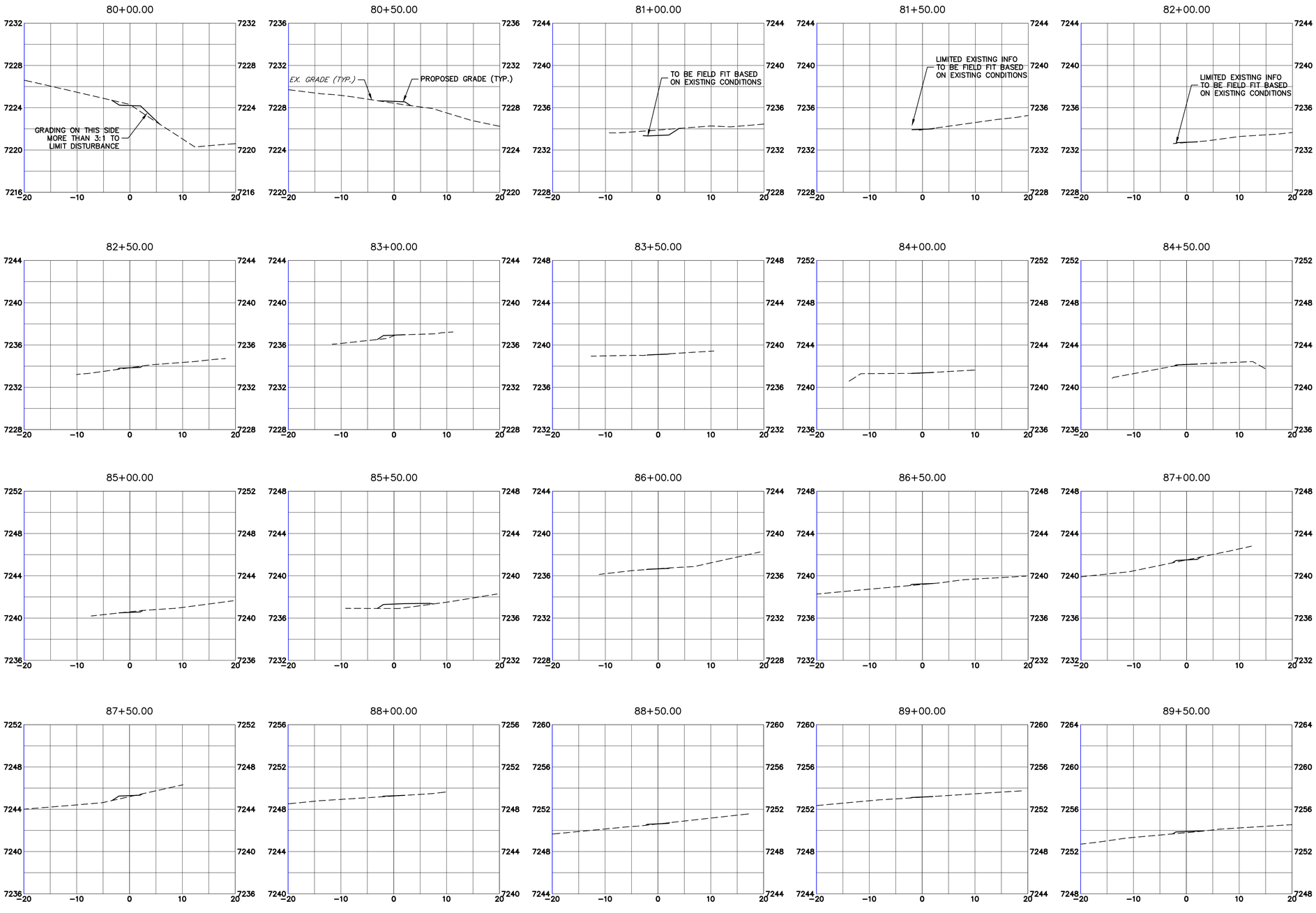

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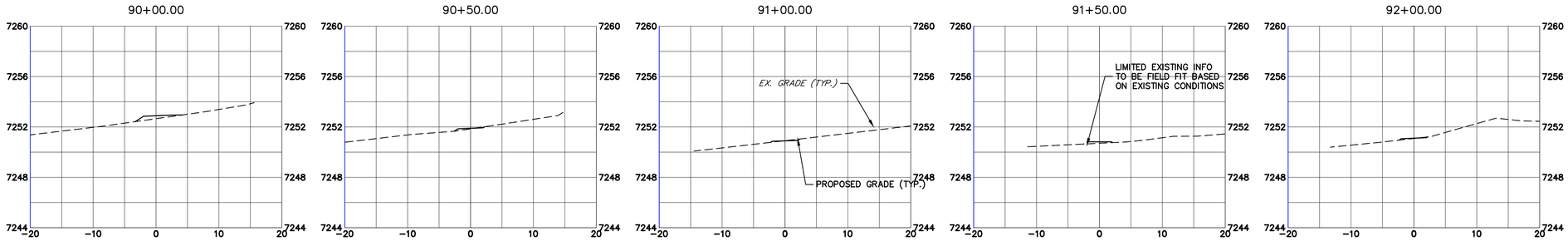

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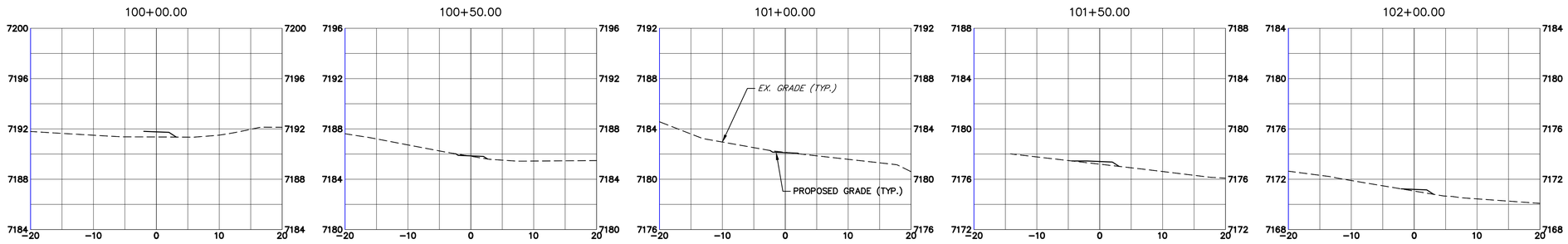

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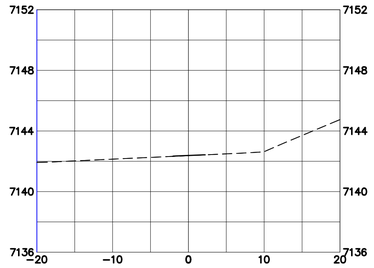

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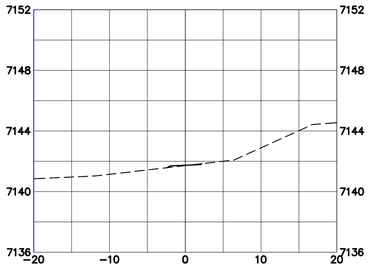

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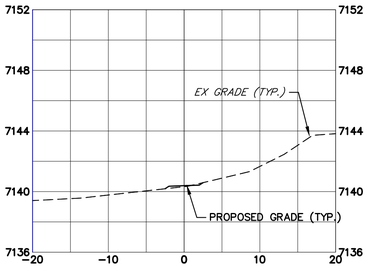

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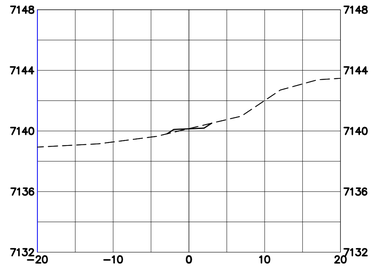

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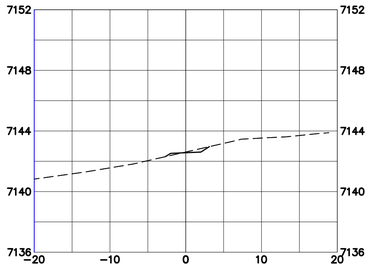

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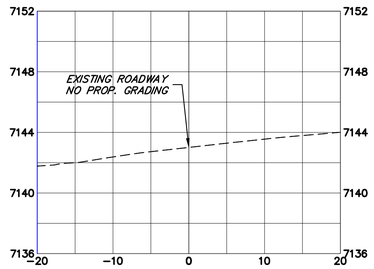

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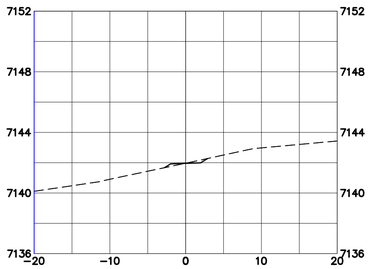

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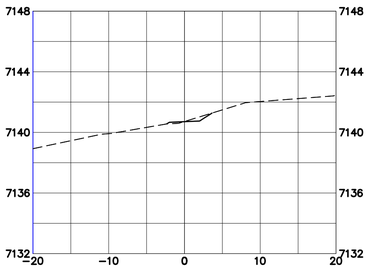

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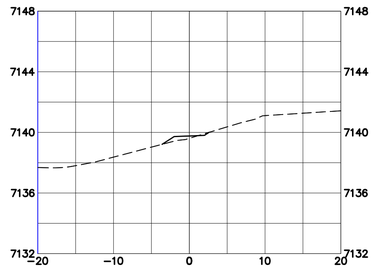

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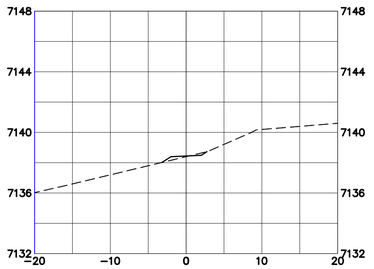

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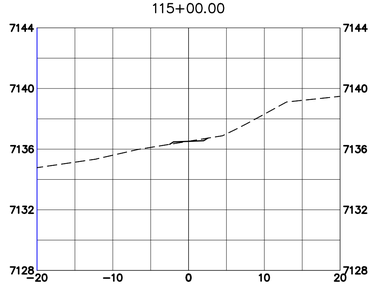

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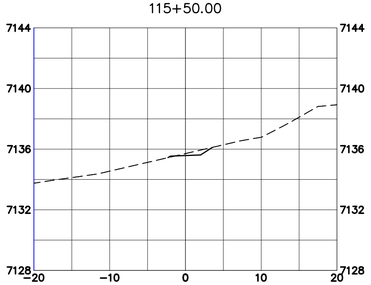

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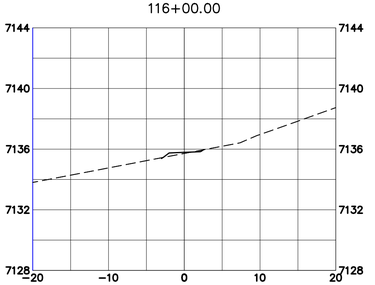

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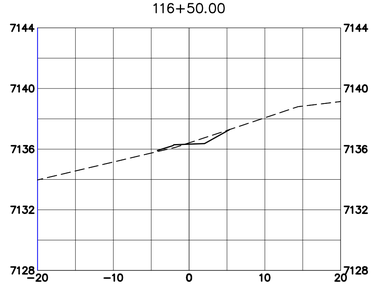

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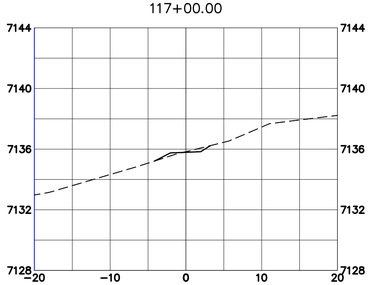

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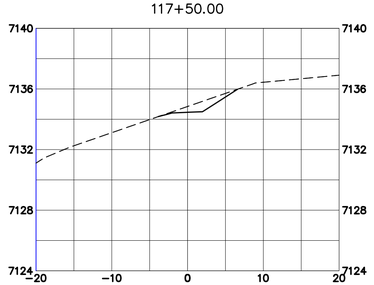

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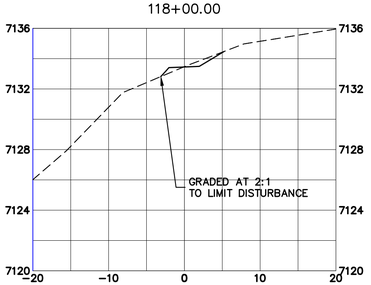

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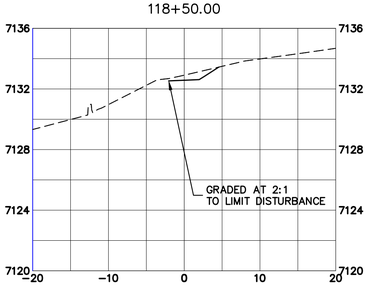

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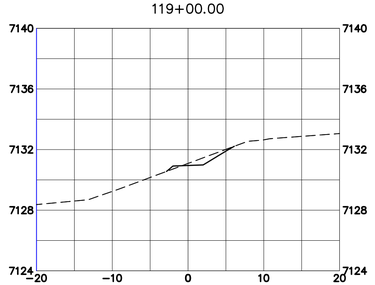

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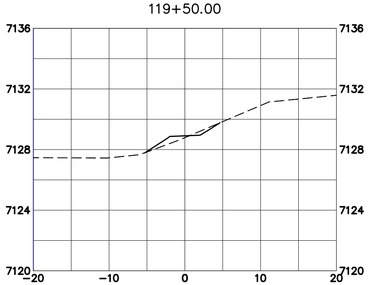

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Print Date: 03/01/2023
File Name:
Horiz. Scale: 1"=10' Vert. Scale: 1"=5'
Unit name Unit leader

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Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
Region 2
5615 WILL BLVD.
Pueblo, CO 81008
Phone: 719-546-5750

Lewis Palmer School District 38

As Constructed
No Revisions:
Revised:
Void:

LEWIS PALMER TRAIL
CROSS SECTION

Designer: GG
Detailer: GG
Sheet Subset:
Structure Numbers
Subset Sheets: OF

Project No./Code
M915-009/22585
2520300
Sheet Number 43 OF 44

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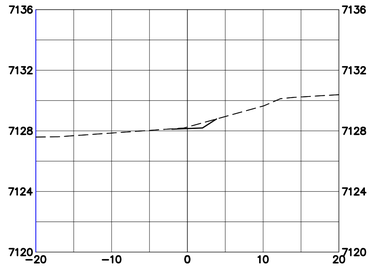

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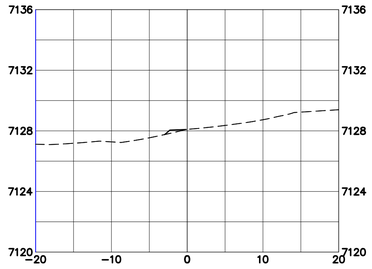

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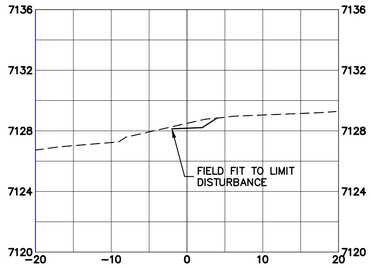

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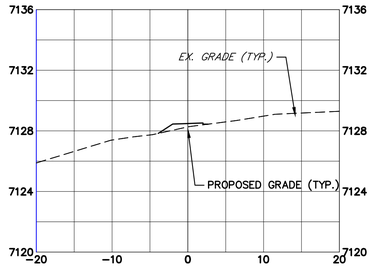

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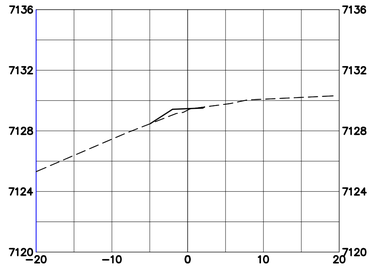

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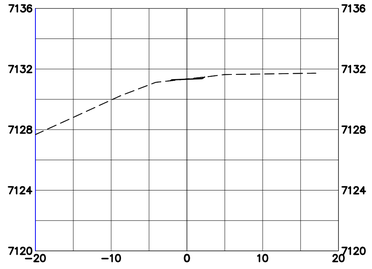

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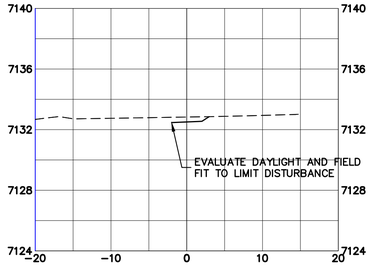

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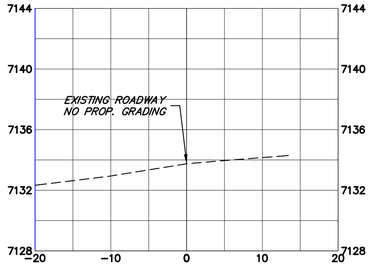

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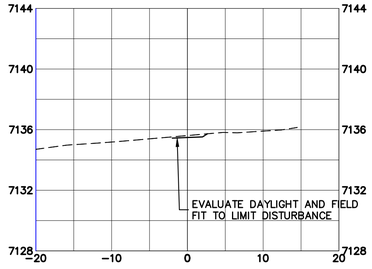

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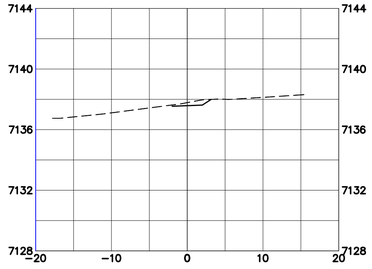

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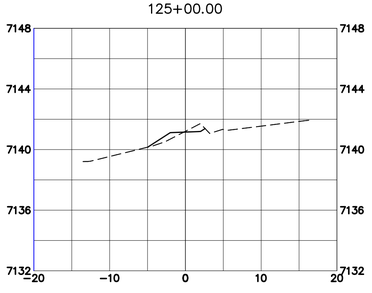

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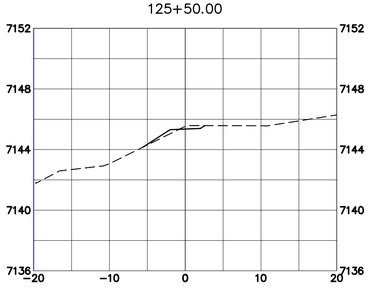

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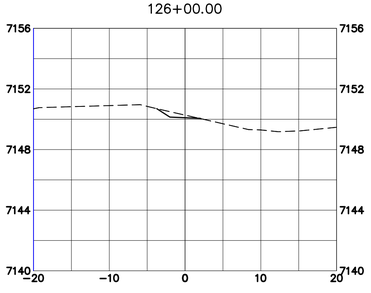

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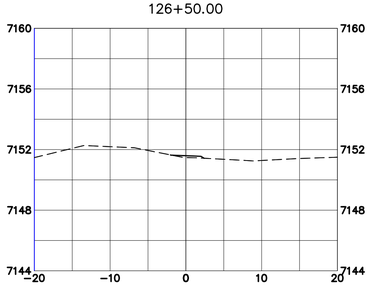

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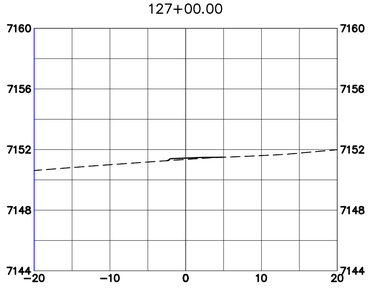

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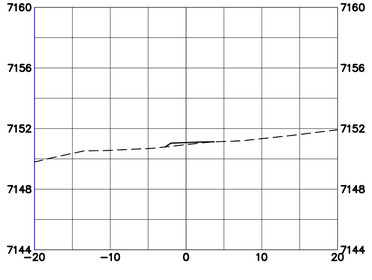

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Print Date: 03/01/2023		Sheet Revisions			Colorado Department of Transportation	As Constructed	LEWIS PALMER TRAIL CROSS SECTION	Project No./Code
File Name:		Date:	Comments	Init.		No Revisions:		M915-009/22585
Horiz. Scale: 1"=10' Vert. Scale: 1"=5'					5615 WILL BLVD. Pueblo, CO 81008 Phone: 719-546-5750	Revised:	Designer: GG / Structure Numbers	2520300
Unit name Unit leader					Lewis Palmer School District 38	Void:	Detailer: GG / Structure Numbers	Sheet Number 44 OF 44
J·R ENGINEERING A Westrian Company Centennial 303-740-9393 • Colorado Springs 719-593-2593 Fort Collins 970-491-9888 • www.jrengineering.com					Region 2		Sheet Subset: / Subset Sheets: OF	

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APPENDIX D – SWMP REPORT & GEC PLAN CHECKLIST

3275 Akers Drive
Colorado Springs, CO 80922
Phone 719-520-6460
Fax 719-520-6879
www.elpasoco.com

EL PASO COUNTY
GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number: PPR2240

Revised: October 2021

		Applicant	EPC
1. GRADING AND EROSION CONTROL PLAN (complete form using Y, N, N/A in the "Applicant" column)			
a	Vicinity map	Y	
b	Adjacent city/town/jurisdictional boundaries, subdivision names, and property parcel numbers labeled	N/A	
c	North arrow and acceptable scale (1"=20' to 1"=100')	Y	
d	Legend for all symbols used in the plan	N/A	
e	Existing and proposed property lines. Proposed subdivision boundary for subdivision projects	Y	
f	All existing structures	Y	
g	All existing utilities	Y	
h	Construction site boundaries	Y	
i	Existing vegetation (notes are acceptable in cases where there is no notable vegetation, only grasses/weeds, or site has already been stripped)	N/A	
j	FEMA 100-yr floodplain	Y	
k	Existing and proposed water courses including springs, streams, wetlands, detention ponds, stormwater quality structures, roadside ditches, irrigation ditches and other water surfaces. Show maintenance of pre-existing vegetation within 50 feet of a receiving water	Y	
l	Existing and proposed contours 2 feet or less (except for hillside)	Y	
m	Limits of disturbance delineating all anticipated areas of soil disturbance	Y	
n	Identify and protect areas outside of the construction site boundary with existing fencing, construction fencing or other methods as appropriate	N/A	
o	Off-site grading clearly shown and called out	N/A	
p	Areas of cut and fill identified	N/A	
q	Conclusions from soils/geotechnical report and geologic hazards report incorporated in grading design (slopes, embankments, materials, mitigation, etc.)	N/A	
r	Proposed slopes steeper than 3:1 with top and toe of slope delineated. Erosion control blanketing or other protective covering required	N/A	
s	Stormwater flow direction arrows	N/A	
t	Location of any dedicated asphalt / concrete batch plants	N/A	
u	Areas used for staging, storage of building materials, soils (stockpiles) or wastes. The use of construction office trailers requires PCD permitting	N/A	
v	All proposed temporary construction control measures, structural and non-structural. Temporary construction control measures shall be identified by phase of implementation to include" "initial," "interim," and "final" or shown on separate phased maps identifying each phase	Y	
w	Vehicle tracking provided at all construction entrances/exits. Construction fencing, barricades, and/or signage provided at access points not to be used for construction	Y	
x	Temporary sediment ponds provided for disturbed drainage areas greater than 1 acre	N/A	

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y	Dewatering operations to include locations of diversion, pump and discharge(s) as anticipated at time of design	N/A	
z	All proposed temporary construction control measure details. Custom or other jurisdiction's details used must meet or exceed EPC standards	Y	
aa	Any off-site stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator	N/A	
bb	Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention	N/A	
cc	Existing and proposed easements (permanent and construction) including required off-site easements	Y	
dd	Retaining walls shall not to be located in County ROW unless approved via license agreement. A building permit from Regional Building Department is required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge and must be design by P.E.	N/A	
ee	Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC	Y	
ff	Engineer's Statement (for standalone GEC Plan): This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan. _____ _____ Engineer of Record Signature Date	N/A	
gg	Engineer's Statement (for GEC Plan within Construction Drawing set): These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications. _____ _____ Engineer of Record Signature Date	Y	
hh	Owner's Statement (for standalone GEC Plan): I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan. _____ _____ Owner Signature Date	N/A	
ii	Owner's Statement (for GEC Plan within Construction Drawing set): I, the owner/developer have read and will comply with the requirements of the grading and erosion control plan and all of the requirements specified in these detailed plans and specifications. _____ _____ Owner Signature Date	Y	

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		Applicant	EPC
jj	El Paso County: County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended. In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion. _____ _____ County Engineer/ECM Administrator Date	Y	
2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS			
a	Soils report / geotechnical investigation as appropriate for grading/utilities/drainage/road construction.	N/A	
b	Use Agreement/easement between the Owner or Operator and other third party for use of all off-site grading or stormwater control measures, used by the owner or operator but not under their direct control or ownership.	N/A	
c	Floodplain Development Permit	N/A	
d	USACE 404/wetlands permit/mitigation plan	N/A	
e	FEMA CLOMR	N/A	
f	State Engineer's permit/Notice Of Intent to Construct	N/A	
g	Stormwater Management Plan (SWMP)	Y	
h	Financial Assurance Estimate (FAE) (signed)	Y	
i	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)	Y	
j	Pre-Development Site Grading Acknowledgement & Right of Access Form (signed)	N/A	
k	Conditions of Approval met?	N/A	

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Revised: October 2021

		Applicant	EPC
3. STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS			
1	Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.	Y	
2	Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.	Y	
3	A separate Stormwater Management Plan (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on-site at all times during construction and shall be kept up to date with work progress and changes in the field.	Y	
4	Once the ESQCP is approved and a “Notice to Proceed” has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.	Y	
5	Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.	Y	
6	All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.	Y	
7	Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.	Y	
8	Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.	Y	
9	All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that effect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.	Y	

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		Applicant	EPC
10	Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a waters of the state unless shown to be infeasible and specifically requested and approved.	Y	
11	Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s).	Y	
12	Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off-site.	Y	
13	Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream.	Y	
14	During dewatering operations, uncontaminated groundwater may be discharged on-site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.	Y	
15	Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.	Y	
16	Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.	Y	
17	Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.	Y	
18	Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.	Y	
19	The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.	Y	
20	The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.	Y	
21	No chemical(s) having the potential to be released in stormwater are to be stored or used on-site unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.	Y	
22	Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills on-site and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.	Y	

3275 Akers Drive
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EL PASO COUNTY
GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number: PPR2240

Revised: October 2021

		Applicant	EPC
23	No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.	Y	
24	Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.	Y	
25	All construction traffic must enter/exit the site only at approved construction access points.	Y	
26	Prior to construction the permittee shall verify the location of existing utilities.	Y	
27	A water source shall be available on-site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.	Y	
28	The soils report for this site has been prepared by **[Company Name, Date of Report]** and shall be considered a part of these plans.	N/A	
29	At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact: Colorado Department of Public Health and Environment Water Quality Control Division WQCD – Permits 4300 Cherry Creek Drive South Denver, CO 80246-1530 Attn: Permits Unit	Y	
4. APPLICANT COMMENTS			
a			
b			
c			

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		Applicant	EPC
5. CHECKLIST REVIEW CERTIFICATIONS			
a	Engineer of Record: The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. _____ _____ Engineer of Record Signature Date	Y	
b	Review Engineer: The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request. _____ _____ Review Engineer Date		

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EL PASO COUNTY
STORMWATER MANAGEMENT PLAN CHECKLIST

EPC Project Number: PPR2240

Revised: October 2021

		Applicant	EPC
1. STORMWATER MANAGEMENT PLAN (in the "Applicant" column specify the page number for each item)			
1	Applicant (owner/designated operator), SWMP Preparer, Qualified Stormwater Manager, and Contractor Information. (On cover/title sheet)	X	
2	Table of Contents	X	
3	Site description and location to include: vicinity map with nearest street/crossroads description	X	
4	Narrative description of construction activities proposed (e.g., may include clearing and grubbing, temporary stabilization, road grading, utility / storm installation, final grading, final stabilization, and removal of temporary control measures)	X	
5	Phasing plan – may require separate drawings indicating initial, interim, and final site phases for larger projects. Provide "living maps" that can be revised in the field as conditions dictate	X	
6	Proposed sequence for major activities: Provide a construction schedule of anticipated starting and completion dates for each stage of land-disturbing activity depicting conservation measures anticipated, including the expected date on which the final stabilization will be completed	X	
7	Estimates of the total site area and area to undergo disturbance; current area of disturbance must be updated on the SWMP as changes occur	X	
8	Soil erosion potential and impacts on discharge that includes a summary of the data used to determine soil erosion potential	X	
9	A description of existing vegetation at the site and percent ground cover and method used to determine ground cover	X	
10	Location and description of all potential pollution sources including but not limited to: disturbed and stored soils; vehicle tracking; management of contaminated soils; loading and unloading operations; outdoor storage of materials; vehicle and equipment maintenance and fueling; significant dust generating process; routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.; on-site waste management; concrete truck/equipment washing; dedicated asphalt, concrete batch plants and masonry mixing stations; non-industrial waste such as trash and portable toilets	X	
11	Material handling to include spill prevention and response plan and procedures	X	
12	Spill prevention and pollution controls for dedicated batch plants	X	
13	Other SW pollutant control measures to include waste disposal and off-site soil tracking	X	
14	Location and description of any anticipated allowable non-stormwater discharge (ground water, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.)	X	
15	Name(s) of ultimate receiving waters; size, type and location of stormwater outfall or storm sewer system discharge	X	
16	Description of all stream crossings located within the project area or statement that no streams cross the project area	X	

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		Applicant	EPC
17	SWMP Map to include:		
17a	construction site boundaries	N/A	
17b	flow arrows to depict stormwater flow directions	N/A	
17c	all areas of disturbance	X	
17d	areas of cut and fill	N/A	
17e	areas used for storage of building materials, soils (stockpiles) or wastes	N/A	
17f	location of any dedicated asphalt / concrete batch plants	N/A	
17g	location of all structural control measures	X	
17h	location of all non-structural control measures	X	
17i	springs, streams, wetlands and other surface waters, including areas that require maintenance of pre-existing vegetation within 50 feet of a receiving water	X	
18	Narrative description of all structural control measures to be used. Modifications to EPC standard control measures must meet or exceed County-approved details	X	
19	Description of all non-structural control measures to be used including seeding, mulching, protection of existing vegetation, site watering, sod placement, etc.	X	
20	Technical drawing details for all control measure installation and maintenance; custom or other jurisdiction's details used must meet or exceed EPC standards	X	
21	Procedure describing how the SWMP is to be revised	X	
22	Description of Final Stabilization and Long-term Stormwater Quality (describe nonstructural and structural measures to control SW pollutants after construction operations have been completed, including detention, water quality control measure etc.)	X	
23	Specification that final vegetative cover density is to be 70% of pre-disturbed levels	X	
24	Outline of permit holder inspection procedures to install, maintain, and effectively operate control measures to manage erosion and sediment	X	
25	Record keeping procedures identified to include signature on inspection logs and location of SWMP records on-site	X	
26	If this project relies on control measures owned or operated by another entity, a documented agreement must be included in the SWMP that identifies location, installation and design specifications, and maintenance requirements and responsibility of the control measure(s)	X	
	Please note: all items above must be addressed. If not applicable, explain why, simply identifying "not applicable" will not satisfy CDPHE requirement of explanation.		
2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS			
a	Grading and Erosion Control Plan (signed)	X	
b	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)	Y	

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		Applicant	EPC
3. APPLICANT COMMENTS			
a			
b			
c			
4. CHECKLIST REVIEW CERTIFICATIONS			
a	Applicant: The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans. _____ _____ Engineer of Record and/or Qualified Stormwater Manager Signature — Date	X	
b	Review Engineer: The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request. _____ _____ Review Engineer — Date		

APPENDIX E – INSPECTION REPORT TEMPLATE

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

Facility Name		Permittee	
Date of Inspection		Weather Conditions	
Permit Certification #		Disturbed Acreage	
Phase of Construction		Inspector Title	
Inspector Name			

	YES	NO
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)	☐	☐

INSPECTION FREQUENCY	
Check the box that describes the minimum inspection frequency utilized when conducting each inspection	
At least one inspection every 7 calendar days	☐
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	☐
• This is this a post-storm event inspection. Event Date: _____	☐
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	☐
• Post-storm inspections at temporarily idle sites	☐
• Inspections at completed sites/area	☐
• Winter conditions exclusion	☐

	YES	NO
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	☐	☐

INSPECTION REQUIREMENTS*
i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications
ii. Determine if there are new potential sources of pollutants
iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges
iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action
*Use the attached **Control Measures Requiring Routine Maintenance** and **Inadequate Control Measures Requiring Corrective Action** forms to document results of this assessment that trigger either maintenance or corrective actions

AREAS TO BE INSPECTED

Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?

	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions **Inadequate Control Measures Requiring Corrective Action** form
Construction site perimeter	☐	☐	
All disturbed areas	☐	☐	
Designated haul routes	☐	☐	
Material and waste storage areas exposed to precipitation	☐	☐	
Locations where stormwater has the potential to discharge offsite	☐	☐	
Locations where vehicles exit the site	☐	☐	
Other: _____	☐	☐	

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

Definition: Any control measure that is still operating in accordance with its design and the requirements of the permit, but requires maintenance to prevent a breach of the control measure. These items are not subject to the corrective action requirements as specified in Part I.B.1.c of the permit.

Are there control measures requiring maintenance?	NO	YES	
	☐	☐	If "YES" document below

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

Definition: Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. This includes control measures that have not been implemented for pollutant sources. If it is infeasible to install or repair the control measure immediately after discovering the deficiency the reason must be documented and a schedule included to return the control measure to effective operating condition as possible.

	NO	YES	
Are there inadequate control measures requiring corrective action?	☐	☐	If "YES" document below

	NO	YES	
Are there additional control measures needed that were not in place at the time of inspection?	☐	☐	If "YES" document below

Date Discovered	Location	Description of Inadequate Control Measure	Description of Corrective Action	Was deficiency corrected when discovered? YES/NO if "NO" provide reason and schedule to correct	Date Corrected

REPORTING REQUIREMENTS

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit

a. Endangerment to Health or the Environment

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

This category would primarily result from the discharge of pollutants in violation of the permit

b. Numeric Effluent Limit Violations

- o Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- o Daily maximum violations (See Part II.L.6.d of the Permit)

Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	☐	☐	If "YES" document below

Date and Time of Incident	Location	Description of Noncompliance	Description of Corrective Action	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification *

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

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 individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

"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."

Name of Qualified Stormwater Manager	Title of Qualified Stormwater Manager
Signature of Qualified Stormwater Manager	Date

Notes/Comments