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Grandview Reserve Phase 2
Early Grading (Initial GEC)
Stormwater Management Plan (SWMP)

December 2024

HR Green Project No: 201662.20

El Paso County No. PUDSP236

Prepared For (Applicant/Owner):

D.R. Horton

Contact: Riley Hillen, P.E.

9555 S Kingston Ct.

Englewood, CO 80112

Prepared By:

HR Green Development, LLC

Contact: Ken Huhn, P.E.

1975 Research Parkway, Suite 230, Colorado Springs, CO 80924

khuhn@hrgreen.com

(720) 602-4965

Table of Contents

Appendices

▷ PREPARING ENGINEER:

Name: Ken Huhn, P.E.

Company: HR Green Development, LLC

Title: Sr. Project Manager

Phone Number: (720) 602-4965

Address: 1975 Research Pkwy, Suite 230 Colorado Springs 80920

▷ PERMITEE:

Name: Riley Hillen, P.E.

Company: D.R. Horton

Title: Owner/Developer

Phone Number: (303) 503-4903

Address: 9555 S. Kingston Court, Englewood, CO 80112

▷ DESIGNATOR STORMWATER MANAGER

Contact: Staci Kahl

Company: Melody Homes, Inc., a Delaware corporation

Title: Division of Regulatory Compliance

Phone Number: 303.552.6192

Address: 9555 S. Kingston Court, Suite 200, Englewood CO 80112

▷ GEC ADMINISTRATOR:

Contact: Staci Kahl

Company: Melody Homes, Inc., a Delaware corporation

Title: Division of Regulatory Compliance

Phone Number: 303.552.6192

Address: 9555 S. Kingston Court, Suite 200, Englewood CO 80112

Engineer's Statement

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.

Name: Ken Huhn, P.E. Date:

Phone Number: 720-602-4965

Seal

I. Site Location & Description

Location

The Grandview Reserve Phase 2 site is located in unincorporated El Paso County, Colorado. The Phase 2 location (referred to as the site herein) is located northwest of Grandview Reserve Filings 1-4 and Channel B, and southeast of the intersection of Eastonville Road & Rex Road.

The site lies within a tract of land within Sections 21 and 28, Township 12 South, Range 64 West of the 6th Principal Meridian, in El Paso County, State of Colorado. A Vicinity Map is included in **Appendix A**.

The site is bound by a segment of Rex Road to be developed with this project to the northeast and undeveloped land that has historically been used as ranching lands. The east of the site will be a future phase of the Grandview Reserve Subdivision. The south and west of the site is bound by Grandview Reserve Filings 1-4 and Channel B.

The Gieck Ranch Tributary #2 “Channel B” is a part of the Gieck Ranch Drainage Basin tributary to Black Squirrel Creek. The channel draining through the site is an ongoing project with an associated approved CLOMR Report, prepared by HR Green, approved November 15, 2024 (PCD File No. is CDR228, Case #24-08-0102R). A receipt of the approval is included in Appendix H. The channel will be constructed according to its CLOMR report, prior to development of this project, and the Grandview Reserve improvements will follow any requirements of that report. There is another floodplain channel to the north of Rex Road that will not be disturbed by this phase of development and studies as a future project.

The existing surrounding platted developments include the Grandview Reserve Phase 1 Filings 1-4, and the Meridian Ranch Subdivision is west of the site on the west side of Eastonville Road.

Description of Property

The site is approximately 70.67 acres with 68.61 acres of proposed residential development with associated right of way, open space tracts, public improvements, and stormwater treatment infrastructure.

The existing groundcover and topography of the site is native grasses/weeds and exposed soil on gently rolling hillside with slopes ranging from 2% to 4%.

Per a NRCS soil survey, the site is made up of Type A Columbine gravelly sandy loam. Hydrologically these soils have been treated as Type B since they will be disturbed. The NRCS soil survey is presented in **Appendix A**.

Gieck Ranch Tributary #2 (Channel B) traverses the site along its southwestern boundary and forms the southwest boundary for Phase 2. The channel is being studied in a separate project, a CLOMR report is ongoing and pending approval for this channel. Gieck Ranch Tributary #3 (Channel C) traverses the site along its northeastern boundary and forms the northeast boundary for Phase 2 along Rex Road. This channel will not be disturbed by this phase of development and will be studied at a later date.

The ultimate receiving waters for stormwater runoff and detained sediment basin discharge is Gieck Range Tributary #2, which flows southeast along the southern border of the Phase 2 property boundary.

There is no anticipated allowable non-stormwater discharge from natural springs, irrigation, or any other discharge covered by CDPHE Low Risk Guidance. Ground Water is anticipated and will be discharged to temporary sediment basins where it can be infiltrated back into the ground.

There are no known existing utilities or other encumbrances on site.

Neighboring Areas

The surrounding area to the north is a parcel of land currently zoned A35 and dedicated to grazing with an area of 186.58 acres. To the west and south of the property is Grandview Phase 1, Filings 1-4, which has a dedicated land use of single family residential. To the east is the future phase 3 of Grandview Reserve which will also be dedicated to single family residential.

Construction Activity

The proposed development is to only include the early grading activities. Early grading will include overlot grading out future building pads, the over excavation of roadways by a depth of two feet, and the installation of temporary sediment basins, two of which will serve as the property's permanent extended detention basins. No utilities or proposed roadways will be installed during this time. No grading will take place within the FEMA identified 100-year zone A floodplain, map number 08041C0553G, effective date 12/7/2018, until the appropriate CLOMR permit has been approved.

Construction will begin with setting up perimeter erosion control measures and construction fencing which will then be followed by the over excavation of roadway corridors. Temporary stabilization measures such as silt fence installation and vehicle tracking control will be installed prior to construction. Note that street sweeping may be required outside of the construction area. Stabilized staging area(s) and stockpile management area(s) are shown on the GEC plans. During construction, temporary stabilization measures such as sediments basins, earth dikes and drainage swales, check dams, and temporary erosion control blankets will be utilized to control stormwater runoff. The two proposed ponds will serve as temporary sediment basins to collect stormwater runoff and sediment during construction activities for disturbed areas. One other temporary sediment basin will capture runoff and sediment for the areas of disturbance greater than one acre that are not tributary to the larger permanent ponds. Once construction activities have been completed, all disturbed areas within the site will receive temporary seeding and mulching. Upon stabilization, temporary erosion control measures will be left in place until the next stage of construction activities are completed.

No off-site disturbance is anticipated. No concrete batch plants are anticipated. No control measures will be located outside the property line and limits of disturbance.

II. Construction Phasing

Phasing and Sequence Schedule

The proposed sequence of major construction activities and Construction Control Measures for the project as are follows:

1. Install VTC, SSA, CWA, TSB and other perimeter erosion and stormwater control measures (i.e. silt fence, construction fence etc.) (Summer 2025)
2. Clear grub and grade site for improvements. Install the initial phase control measures for perimeter control and temporary conditions stormwater diversion including silt fence, diversion ditches, check dams, and the required temporary sediment basins per Early Grading GEC and Drainage plans. (Summer 2025).
3. Landscaping, restoration, and final stabilization. Provide surface roughening (or slope tracking), erosion control blankets and install temporary seeding and mulching and ensure final stabilizations is

achieved prior to site closure is to take place as part of a future full construction phasing SWMP and is not within the scope of this report.

This project will not rely on any control measures owned or operated by another entity and all control measures for the site will be internal.

Construction Documentation

Construction drawings are provided with this document showing the Early Grading and Erosion Control plan for this project. This SWMP is intended to be a "living" document used by the SWMP Manager to document construction activities during the early grading process. See Appendix E for record log.

III. Pre-Development Conditions and Soils

Floodway

Based on FEMA Firm map 08041C0552G & 08041C0556G (eff. 12/7/2018), the site contains flood Zone A through the site which is part of the Gieck Ranch Tributary #2. See FEMA Firm Maps in **Appendix A**. This floodplain (Channel B) is being studied and revised in the Gieck Ranch Tributary # 2 CLOMR report. A copy of the current revised floodplain map is also provided in **Appendix A**. There is an additional Zone A floodplain northeast of the site (Channel C) which will not be altered with this projects improvements. The grading proposed within the Channel B floodplain will only be done once the corresponding CLOMR has been approved. **It is proposed that the early grading shown outside of the floodplain can be completed without the CLOMR approval.**

Existing Vegetation

The existing vegetative cover is 90 percent as evidenced by a field survey and aerial imagery. The existing vegetation includes native grasses and weeds, and shrubs.

Existing Drainage Patterns

Gieck Ranch Tributary #2 (Channel B) traverses the site along its southwestern boundary and forms the southwest boundary for Phase 2. The channel is being studied in a separate project, a CLOMR report is ongoing and pending approval for this channel. Gieck Ranch Tributary #3 (Channel C) traverses the site along its northeastern boundary and forms the northeast boundary for Phase 2 along Rex Road. This channel will not be disturbed by this phase of development and will be studied at a later date.

Existing Slopes

Phase 2 of Grandview Reserve generally slopes southeast with varied slopes between 1% and 6%.

Soils

According to the US Department of Agriculture Natural Resources Conservation Service Soil Survey of El Paso County, Colorado, the primary soil through site is Type A columbine gravelly sandy loam.

The existing soil type has a slight potential for erosion which can be mitigated by employing appropriate downstream construction BMPs before/during/after construction to limit potential impacts to stormwater discharges. The potential impacts are sediment discharge into the existing Gieck Ranch Tributary #3 and downstream properties.

IV. Description of Potential Pollutants

Potential sources of sediment to stormwater runoff include earth moving and concrete activities associated with grading, residential structure construction including concrete foundations and hardscape, and landscaping.

Potential pollutants and sources other than sediment to stormwater runoff include trash, debris, fueling and equipment failure. Materials of significance stored on the project site include: sediment, concrete washout, cement, trash & debris, fuels and oils.

Construction activities can produce a variety of pollutants that can potentially cause stormwater contamination. Grading activities remove rocks, vegetation and other erosion controlling surfaces and can result in the exposure of underlying soil to the elements, which can then be displaced into water sources.

Wind erosion and vehicular transport can produce sediment debris.

Potential Sources of Pollution:

1. Potential sources of pollution from construction activities include
    a. Disturbed or stored soils
    b. Vehicle tracking of sediment (Street sweeping required as needed)
    c. Loading & unloading operations
    d. Outdoor Storage activities
    e. Vehicle and Equipment Maintenance/Fueling
    f. Dust or Particulate Generating Processes
    g. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents etc.
    h. On-site waste management (waste piles, liquid wastes, dumpsters)
    i. Concrete truck/equipment washing (washing truck chute and associated fixtures)
    j. Dedicated asphalt, concrete batch plants and masonry mixing stations (not anticipated)
    k. Non-industrial waste (worker trash and portable toilets)

V. Areas and Volumes

The phase total 70.67 acres is expected to be disturbed per the Early Grading and Erosion Control Plan for over excavation of proposed lot pads and roadway corridors. The early grading will be the entirety of the construction process for this submittal with an anticipated limits of disturbance/construction of the entire 70.67 acres of the site.

Early Grading Earthwork Quantities:

Cut Quantity : 82,905 c.y.

Fill Quantity: 196,342 c.y.

Net: 113,438 c.y. Fill

The full build-out earthwork quantities cannot be quantified at this stage as each respective lot disturbance and construction will vary by architecture, layout, and plot plan.

VI. Self-Inspections

Self-inspections of the Construction Control Measures must be completed by the certified GEC Administrator. The below provides the minimum to satisfy the El Paso County self-inspection requirements. A more frequent self-inspection schedule may be required to ensure Control Measures are operating in compliance with the approved GEC plan.

1. Inspection Schedules:
    a. The GEC Administrator shall make a thorough inspection of the Control Measures:
        i. At least once every fourteen (14) calendar days.
        ii. Within 24 hours following any precipitation event (i.e. rain, snow, hail etc.) that causes surface erosion.
            - Alternatively, the GEC Administrator can perform a thorough inspection of the Control Measures once every seven (7) days and forego post-precipitation inspections.
    b. For sites where construction activities have completed and final stabilization measures installed but final stabilization has not yet been achieved, the GEC Administrator shall make a thorough inspection of the Control Measures:
        i. At least once every month
        ii. Within 72 hours following any precipitation event that causes surface erosion
2. Inspection Procedures:
    a. Site Inspection & Observation Items:
        i. Limits of disturbance perimeter and stormwater discharge points
        ii. All disturbed areas to ensure necessary Construction Control Measures are in place to control potential stormwater runoff.
        iii. Areas used for material/waste storage.
        iv. Any areas having a signification potential for storm water pollution (i.e site entrances, concrete washout areas etc.)
        v. All Construction Control Measures identified on the GEC plans.
    b. Inspection Requirements:
        i. Determine any locations, or potential locations, where pollutants and stormwater may be exiting the site/entering the receiving waters.
        ii. Evaluate Construction Control measures and determine if they are constructed in accordance with the latest revision of the approved GEC plan and operating effectively.
        iii. Provide recommendations for the need of additional Construction Control measures and the maintenance of existing measures in disrepair to ensure complication with the El Paso County Stormwater Construction Manual.
    c. Construction Control Measure Maintenance/Replacement:
        i. The GEC administrator shall ensure sediment has been removed from perimeter controls and relocated to an area without the potential for sediment to discharge from the site
        ii. The GEC administrator shall ensure diversion ditches and temporary sediment ponds have not accumulated excess sediment that impedes their functionality.
        iii. The GEC administrator shall ensure that failed Control Measures are repaired/reinstalled within three (3) calendar days, according to the El Paso County Stormwater Control

Measure details, to ensure pollutants and/or sediment do not discharge from the site. GEC details are provided in Appendix B.

d. Documentation:
    i. All Inspection logs shall be signed by the GEC administrator
    ii. Update the GEC plan to document the installation/revision of Control Measures
    iii. Identify Control Measure deficiencies and that noncompliance is resolved within three (3) calendar days.
    iv. Identify Self-Inspection schedule in most recent inspection form
    v. Complete and submit Self-Inspection forms with GEC administrator signature to El Paso County within five (5) business days of the completed inspection
    vi. Ensure Self-Inspections are available, either physically or electronically, throughout the duration of the project
    vii. Self-Inspection Repost shall contain at least the following:
        - Inspection Date
        - Name and title of the GEC Administrator performing inspection
        - Location(s) of illicit discharges of stormwater, sediment or pollutants from the site
        - Location(s) of Construction Control Measures in need of maintenance/repair
        - Location(s) of Construction Control Measures that failed to operate as designed or proved inadequate
        - Location(s) of additional Construction Control Measures not shown on the latest, approved revision of the GEC plan
        - Any deviations from the minimum inspection schedule

VII. Materials Handling

1. General Materials Handling Practices:
    a. 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 be located away from storm drain inlets and should be equipped with covers, roofs or secondary containment as required to prevent stormwater from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spill materials cannot combine and react.
    b. Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
    c. Materials no longer required for construction shall be removed from the site as soon as possible.
    d. Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and Control Measures clear and functional. Waste disposal facilities shall be checked weekly for leaks and emptied on a weekly basis (or when facility is at capacity). Appearance of leaks/overflow will be cleaned and cleared immediately.
    e. Portable toilets will be located a minimum of 10 feet from stormwater inlets and 50 feet from state waters. They will be secured at all four corners to prevent overturning and cleaned on a weekly basis. They will be inspected daily for spills.
2. Specific Materials Handling Practices:

a. All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate stormwater.
b. All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
c. Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operation, 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.
d. Wheel wash water shall be settled and discharged onsite by infiltration.
e. 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 stormwater runoff. Follow manufacturer's recommendations for application rates and procedures.
f. pH-modifying sources shall be managed to prevent contamination of runoff and stormwater 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.

VIII. Spill Prevention & Response Plan

1. The primary objective in responding to a spill is to quickly contain the material and prevent or minimize their mitigation into stormwater runoff and conveyance systems. If the release has impacted onsite stormwater, 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 once the situation has stabilized.
    c. The site superintendent 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 locations shall be reported to the GEC administrator.
4. Absorbent materials shall be on-hand at all fueling areas for use in containing advertent 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
    b. Oil absorbent booms
    c. 55-gallon drums
    d. 9-mil plastic bags
    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 GEC administrator shall be notified.
    b. Depending on the nature of the spill and material involved, the Colorado Department of Public Health and Environment, 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.

IX. Implementation of Control Measures

Stormwater control measures must be installed according to El Paso County design specifications, presented in Appendix D, and the approved Grading and Erosion Control plan this report supports. Within the context of this SWMP’s construction activities the following control measures, at a minimum, are required:

- Perimeter Silt Fence
- Vehicle Tracking Control
- Stabilized Staging Area
- Concrete Washout
- Construction Fence
- Stockpile Management
- Inlet Protection
- Culvert Inlet Protection
- Check Dams
- Erosion Control Blanket
- Surface Roughening
- Diversion Ditches (Earth Dikes & Drainage Swales)
- Temporary Sediment Basins
- Temporary Seeding & Mulching

Additional control measures may be required at the discretion of the County Stormwater Inspector.

X. Final Stabilization & Long-Term Stormwater Management Plan

1. Ensure stabilization is achieved prior to site closure. Final stabilization is to take place as a part of a future construction phasing SWMP and is not within the scope of this report.
2. Temporary seeding and mulching will be installed to provide interim stabilization prior to final landscaping installation (Refer to approved Landscape Plan). Final stabilization will be achieved at time of final landscaping. See approved landscaping plans for final stabilization details. Final stabilization is met when 70% of pre disturbance levels, not including noxious weeds, are stabilized. Final stabilization must be

achieved prior to removal of temporary stormwater control measures. Anticipated date of final stabilization is Fall 2025; however this is subject to change. Long term stormwater management will be provided in the onsite, private full spectrum detention ponds. See the Permanent Control Measure Plans for construction details of the permanent full spectrum detention pond. See below for seeding and mulching details:

a. Prior to seeding, fill any eroded rills and gullies with topsoil.
b. Ensure all areas are seeded and mulched per the County Stormwater Construction Manual.
c. Continue monthly self-inspections of final stabilization methods and the stormwater management system to ensure proper function. If repairs are needed, reseed and re-mulch as needed.
d. Control noxious weeds in a manner acceptable to the GEC inspector.
e. Seed Mix: See Appendix D for approved seed mixes.
f. Seeding Requirements:
    i. Drill seed whenever possible, seed depth must be 1/3 to ½ inch when drill-seeding. Cross drilling should be used whenever possible with the seed divided between the two operations. The second drilling should be perpendicular to the first.
    ii. When drill seeding is not possible or on slopes greater than 3:1, hydro-seeding with tackifier may be substituted at the discretion of the GEC inspector. Hydro-seeding must be lightly raked into soil. Seeding rates are presented in Appendix D.
    iii. All seeded areas must be mulched.
g. Mulching Requirements:
    i. Mulching shall be completed as soon as practical after seeding but no more than fourteen (14) days after planting. Erosion control blanket can be used in place of the below mulching methods.
    ii. Hay or straw mulch:
        1. Only certified weed-free and certified-seed free mulch may be used. Must be applied at 2 tons/acre and adequately secured.
        2. Crimping shall not be used no slopes greater than 3:1, tackifier must be used in place.
    iii. Hydraulic mulching:
        1. Allowable on steep slopes or areas with limited access
        2. If hydro-seeding is used, mulching must be applied secondly.
        3. Wood cellulose fibers mixed with water must be applied at a rate of 2,000-2,500 lbs/acre, and tackifier applied at a rate of 100 lbs/acre.

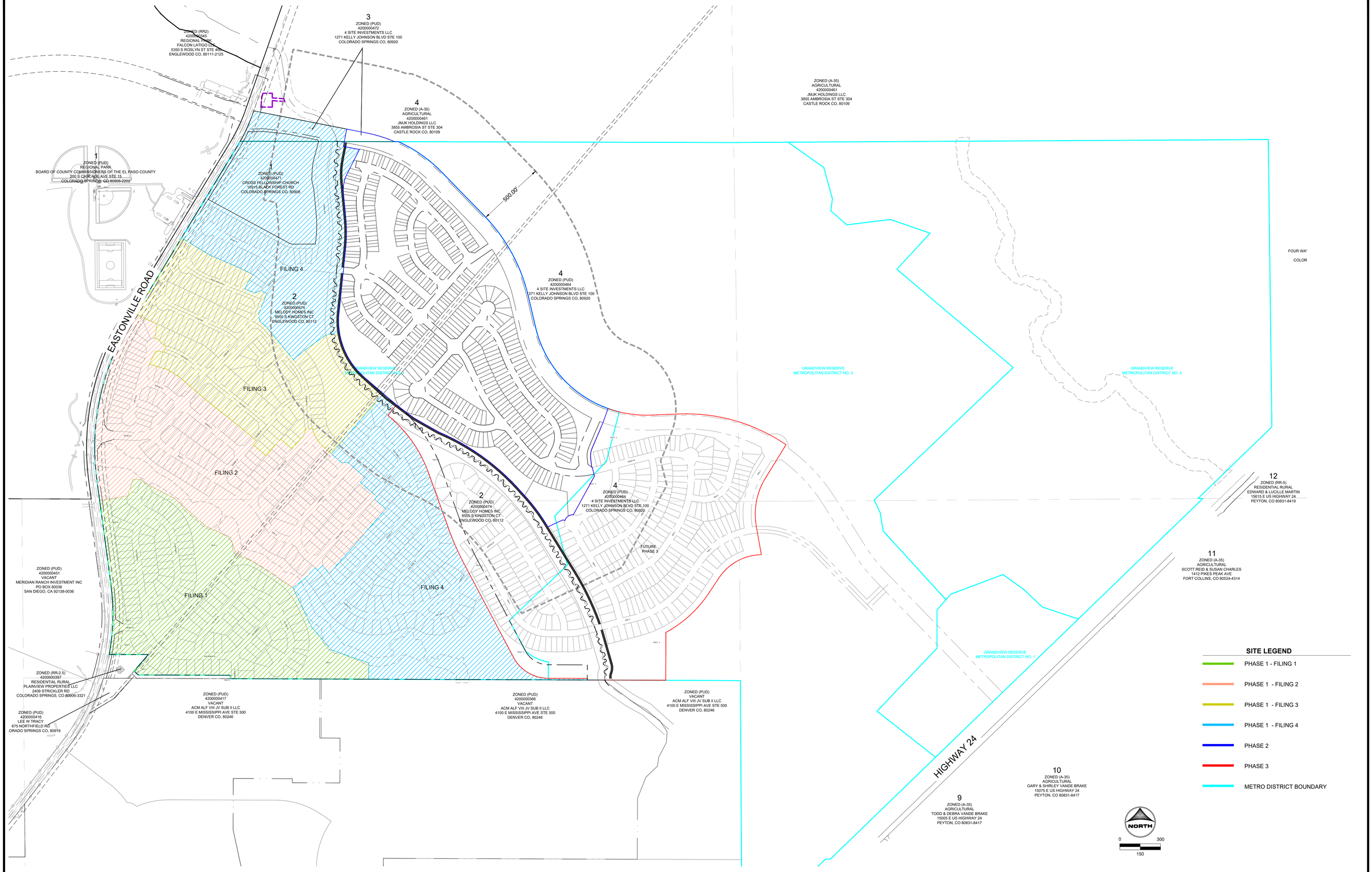
XI. References

El Paso County – Drainage Criteria Manual, latest revision October 31, 2018

El Paso County – Engineering Criteria Manual, latest revision October 14, 2020

Mile High Flood District Urban Storm Drainage Criteria Manual Volumes 1, 2, and 3; latest revisions

APPENDIX A – VICINITY MAP & NRCS SOIL SURVEY & FEMA MAP



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APPROVED:	KMH	JOB NUMBER:	201662.2
CAD DATE:	12/15/2023		
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BAR IS ONE INCH ON OFFICIAL DRAWINGS.
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NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

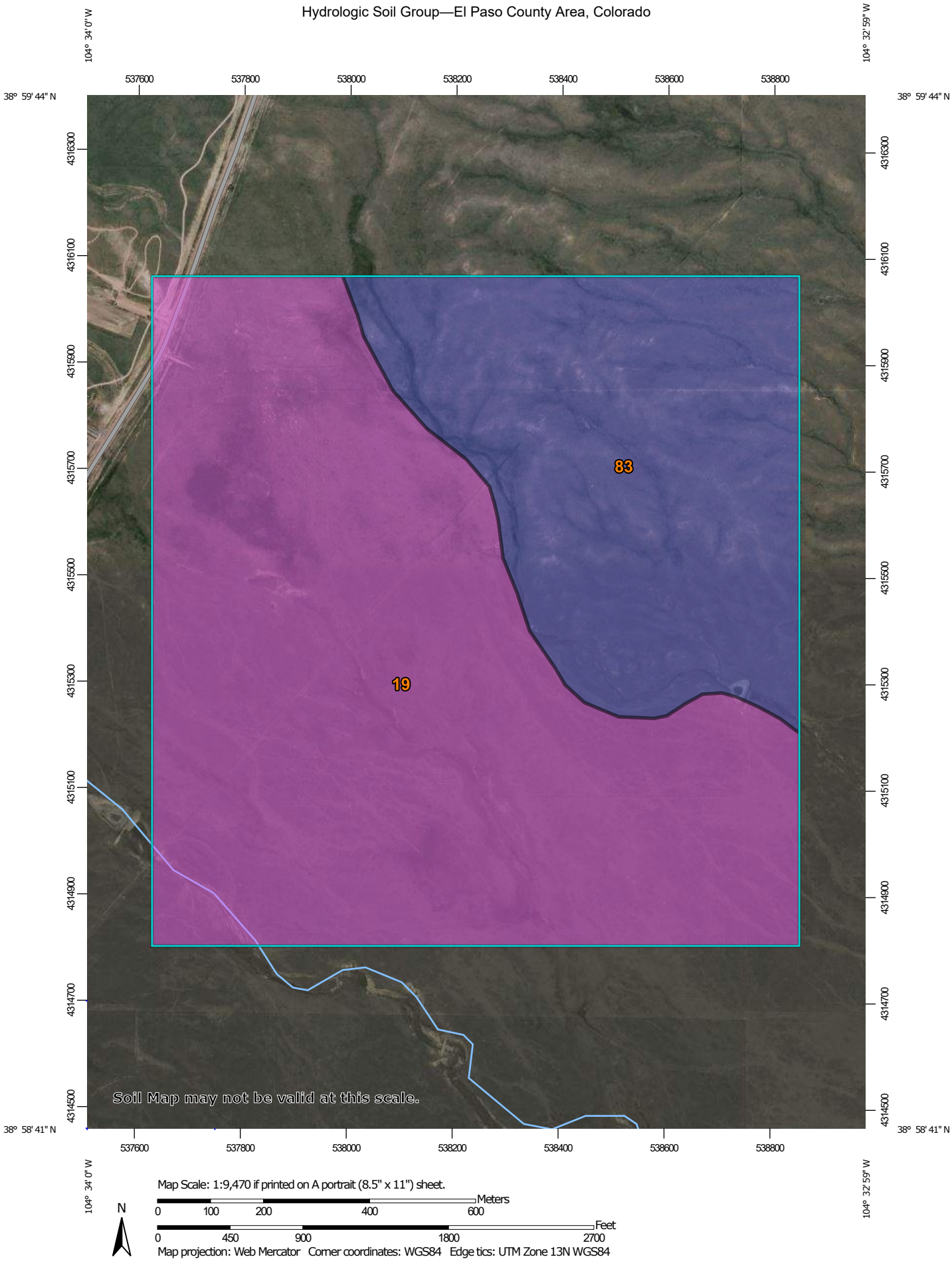
GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

GRANDVIEW PHASE 2
VICINITY MAP

SHEET
MAP

1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Soil Map may not be valid at this scale.
Map Scale: 1:9,470 if printed on A portrait (8.5" x 11") sheet.
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Meters
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Feet
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Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil 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: Sep 11, 2018—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
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	A	254.0	66.5%
83	Stapleton sandy loam, 3 to 8 percent slopes	B	127.8	33.5%
Totals for Area of Interest			**381.8**	**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.

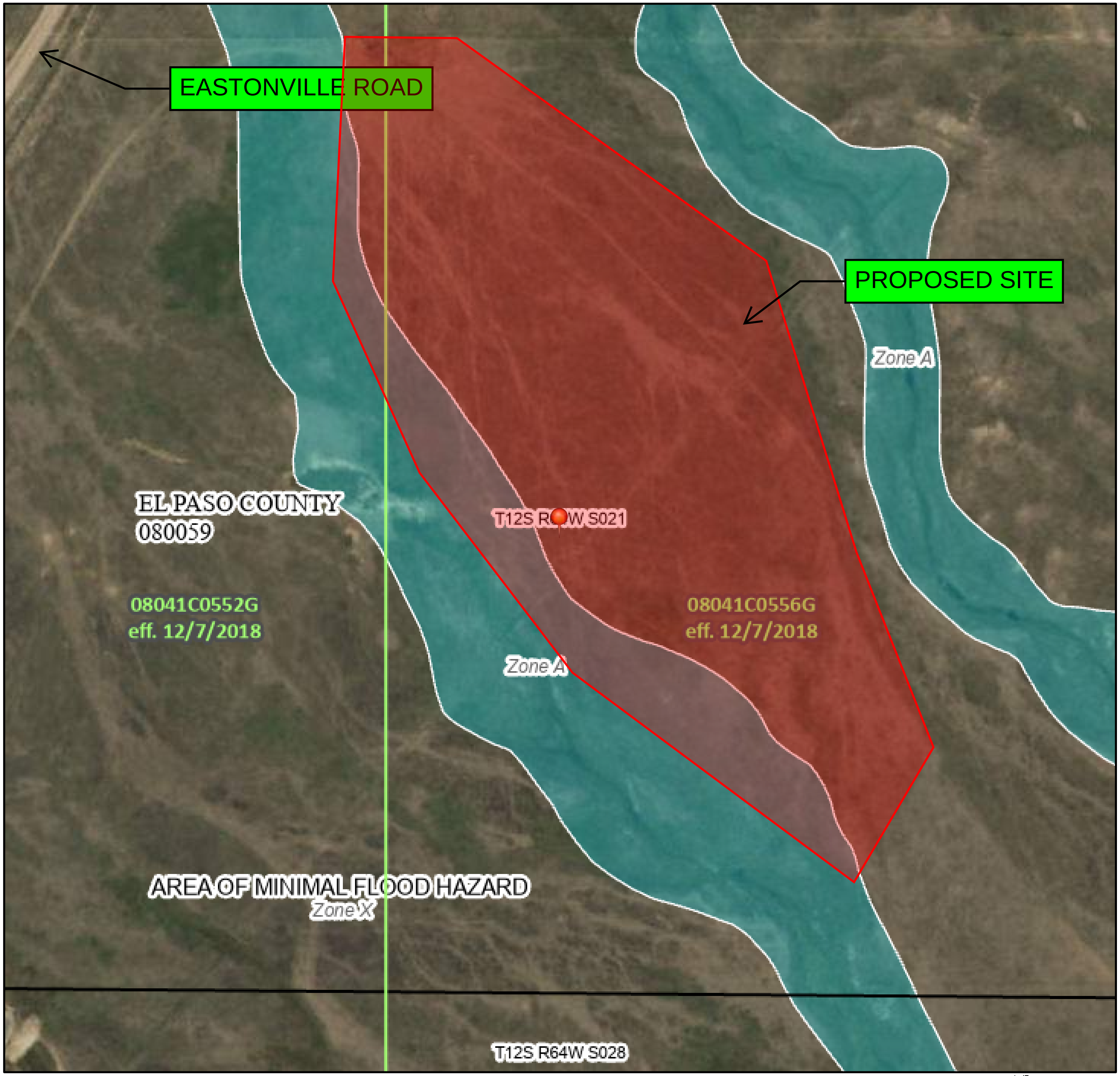
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher


EASTONVILLE ROAD
PROPOSED SITE
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EL PASO COUNTY
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08041C0556G
eff. 12/7/2018
T12S R W S021
Zone A
AREA OF MINIMAL FLOOD HAZARD
Zone X
T12S R64W S028

FEMA

APPENDIX B – GEC PLANS (SEE EARLY GEC PLANS)

LEGAL DESCRIPTION: GRANDVIEW RESERVE PHASE 2

A TRACT OF LAND BEING A PORTION SECTION 21, AND A PORTION OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS:

THE EAST LINE OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED ACCORDINGLY, "PLS 30087," AND BEING MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED ACCORDINGLY, "PLS 30087," BEING ASSUMED TO BEAR N00°52'26"W, A DISTANCE OF 5,290.17 FEET.

COMMENCING AT THE SOUTHEAST CORNER OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO;

THENCE N00°52'26"W ON THE EAST LINE OF SAID SECTION 21, A DISTANCE OF 2,645.09 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF SAID SECTION 21; THENCE N89°50'58"W, ON SAID NORTH LINE, A DISTANCE OF 2,471.06 FEET TO THE POINT OF BEGINNING; THENCE ON THE ARC OF A CURVE TO THE RIGHT WHOSE CENTER BEARS S24°25'09"W, HAVING A DELTA OF 21°22'37", A RADIUS OF 1,061.00 FEET, A DISTANCE OF 395.86 FEET TO A POINT OF TANGENT; THENCE S44°12'14"E A DISTANCE OF 446.79 FEET TO A POINT OF CURVE; THENCE ON THE ARC OF A CURVE TO THE RIGHT HAVING A DELTA OF 31°01'27", A RADIUS OF 1,261.00 FEET, A DISTANCE OF 682.80 FEET TO A PONT OF TANGENT; THENCE S13°10'46"E A DISTANCE OF 235.68 FEET TO A POINT OF CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT HAVING A DELTA OF 57°06'29", A RADIUS OF 839.00 FEET, A DISTANCE OF 836.25 FEET TO A POINT ON CURVE; THENCE S19°42'45"W A DISTANCE OF 111.00 FEET; THENCE S23°10'57"W A DISTANCE OF 204.59 FEET TO A POINT OF CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT HAVING A DELTA OF 29°56'47", A RADIUS OF 142.50 FEET A DISTANCE OF 74.48 FEET TO A POINT OF TANGENT; THENCE S06°45'50"E A DISTANCE OF 66.21 FEET; THENCE S54°32'52"E A DISTANCE OF 5.87 FEET; THENCE S14°14'45"E A DISTANCE OF 65.01 FEET; THENCE S28°43'11"W A DISTANCE OF 325.08 FEET TO A POINT ON CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT WHOSE CENTER BEARS S03°47'46"W, HAVING A DELTA OF 76°32'04", A RADIUS OF 60.00 FEET A DISTANCE OF 80.15 FEET TO A POINT ON CURVE; THENCE N72°44'18"W A DISTANCE OF 15.00 FEET; THENCE S65°27'05"W A DISTANCE OF 122.04 FEET; THENCE N31°44'28"W A DISTANCE OF 23.97 FEET TO A POINT ON CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT WHOSE CENTER BEARS S58°25'43"W, HAVING A DELTA OF 12°10'43", A RADIUS OF 1,363.49 FEET A DISTANCE OF 289.82 FEET TO A POINT ON CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT WHOSE CENTER BEARS S49°18'50"W, HAVING A DELTA OF 26°23'43", A RADIUS OF 1,668.20 FEET A DISTANCE OF 768.52 FEET TO A POINT ON CURVE; THENCE N60°22'39"W A DISTANCE OF 211.52 FEET; THENCE N53°13'21"W A DISTANCE OF 159.27 FEET TO A POINT OF CURVE SAID POINT BEING ON THE EASTERLY BOUNDARY LINE OF THE TRACT OF LAND DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NUMBER 223014483, RECORDS OF EL PASO COUNTY, COLORADO; THENCE ON SAID EASTERLY BOUNDARY LINE THE FOLLOWING NINE (9) COURSES:

1. N49°18'05"W A DISTANCE OF 309.26 FEET TO A POINT OF CURVE;
2. ON THE ARC OF A CURVE TO THE RIGHT HAVING A DELTA OF 55°09'30", A RADIUS OF 550.00 FEET, A DISTANCE OF 529.48 FEET TO A POINT OF TANGENT;
3. N05°51'25"E A DISTANCE OF 481.83 FEET TO A POINT OF CURVE;
4. ON THE ARC OF A CURVE TO THE LEFT HAVING DELTA OF 11°17'04", A RADIUS OF 1,140.00 FEET, A DISTANCE OF 224.52 FEET TO A POINT OF TANGENT;
5. N05°25'39"W A DISTANCE OF 185.30 FEET TO A POINT OF CURVE;
6. ON THE ARC OF A CURVE TO THE RIGHT HAVING A DELTA OF 32°15'55", A RADIUS OF 250.00 FEET, A DISTANCE OF 140.78 FEET TO A POINT OF TANGENT;
7. N26°50'16"E A DISTANCE OF 203.39 FEET;
8. N78°54'36"W A DISTANCE OF 120.75 FEET;
9. N11°05'24"E A DISTANCE OF 36.85 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF SAID SECTION 21;

THENCE CONTINUING N11°05'24"E A DISTANCE OF 93.15 FEET; THENCE S78°54'36"E A DISTANCE OF 146.34 FEET TO A POINT OF CURVE; THENCE ON THE ARC OF A CURVE TO THE RIGHT, HAVING A DELTA OF 11°57'41", A RADIUS OF 1,050.00 A DISTANCE OF 219.21 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF SAID SECTION 21; THENCE S89°50'58"E ON SAID NORTH LINE A DISTANCE OF 27.49 FEET TO THE POINT OF BEGINNING;

CONTAINING A CALCULATED AREA OF 2,993,622 SQUARE FEET OR 68.724 ACRES, MORE OR LESS.

FLOODPLAIN NOTES:

1. THIS PROPERTY IS LOCATED WITHIN A DESIGNED FEMA FLOODPLAIN AS DETERMINED BY THE FLOOD INSURANCE RATE MAP, COMMUNITY MAP NUMBERS '08041C0556G' AND '08041C0552G' EFFECTIVE DATE 7, 2018.
2. THE EXISTING FLOODPLAIN BOUNDARIES WILL BE REVISED VIA A LOMR MODELING THE PROPOSED IMPROVEMENTS TO ESTABLISH FLOOD ELEVATIONS AND THEN PROCESSED THROUGH TO FEMA TO ESTABLISH ZONE AE FLOODPLAIN LIMITS. NO GRADING WILL TAKE PLACE WITHIN THE EXISTING FLOODPLAIN LIMITS UNTIL THE CLOMR HAS BEEN APPROVED.
3. THOSE LOTS EITHER PARTIALLY OR ENTIRELY LOCATED WITHIN THE CURRENT FLOODPLAIN SHALL NOT BE PLATTED UNTIL THE FLOODPLAIN BOUNDARY REVISION PROCESS IS COMPLETED EFFECTIVELY REMOVING THE FLOODPLAIN LIMITS FROM THESE LOTS.
4. THE SUBMITTAL AND REVIEW OF THE FLOODPLAIN REVISION OCCUR INDEPENDENTLY OF THIS PRELIMINARY PLAN AND SHALL BE APPROVED PRIOR TO THE PLATTING OF ANY LOTS CURRENTLY LOCATED WITHIN FLOODPLAIN BOUNDARIES.
5. NO STRUCTURES OR SOLID FENCES ARE PERMITTED WITHIN THE DESIGNATED FLOODPLAIN AREA.

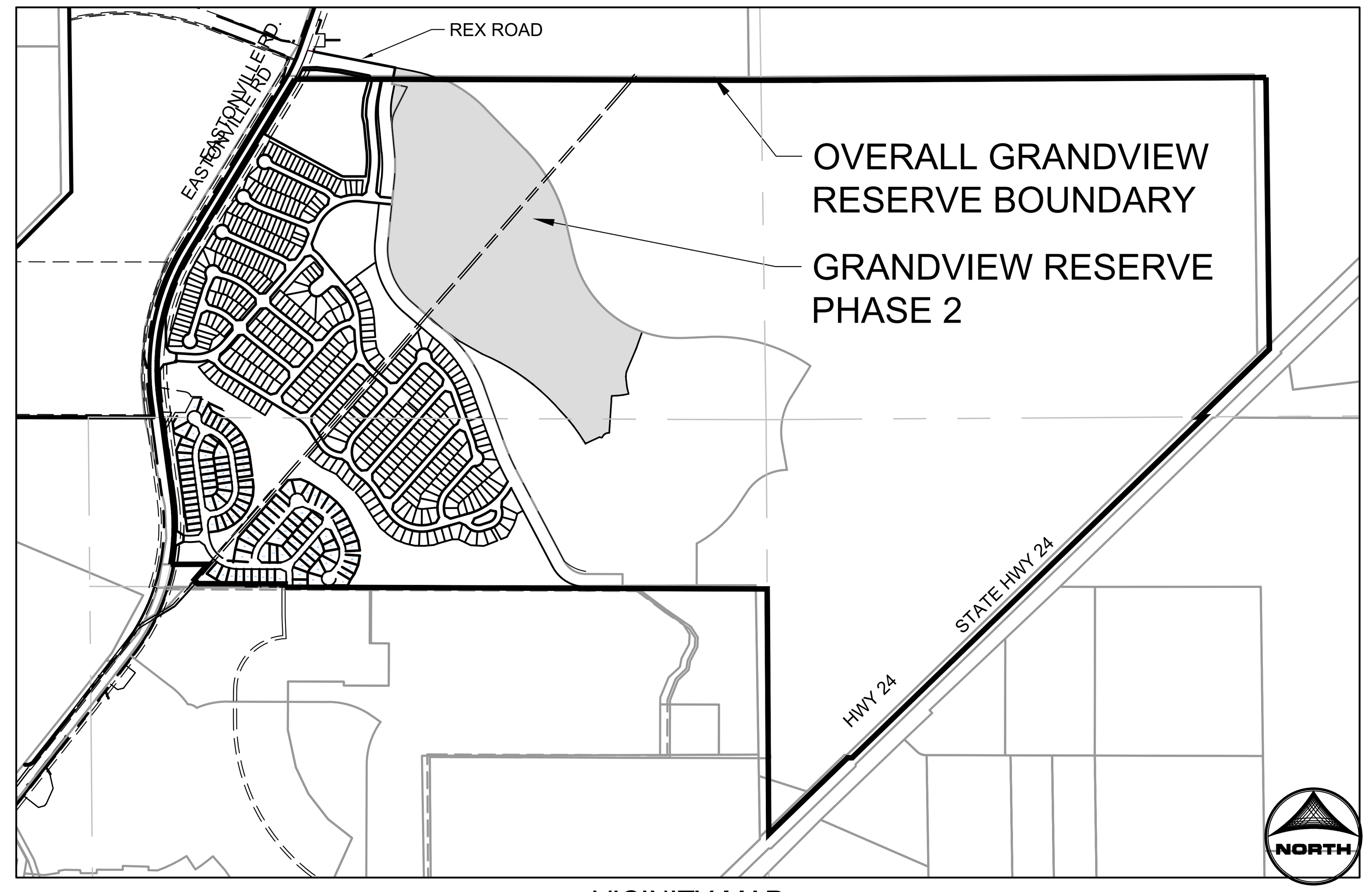
GEOTECH NOTE:

THE FOLLOWING CONCLUSIONS/RECOMMENDATIONS FROM THE SOILS REPORT ARE UTILIZED IN THE GRADING DESIGN OF THIS PLAN SET; 3:1 MAXIMUM PERMISSIBLE SLOPE, DEWATERING IS REQUIRED IF GROUNDWATER IS DISCOVERED DURING GRADING, THE PROPERTY DOES NOT FALL WITHIN A GEOLOGICAL HAZARD AREA.

DEWATERING OPERATIONS ARE TO BE AS FOLLOWS: DEWATERING OPERATIONS SHALL DISCHARGE TO TEMPORARY SEDIMENT BASINS, GROUNDWATER IS THE ONLY ALLOWABLE DISCHARGE (NO NON-STORMWATER IS TO BE DISCHARGED).

GRANDVIEW RESERVE PHASE 2
EARLY GRADING AND EROSION CONTROL PLAN

A TRACT OF LAND BEING A PORTION OF SECTION 21, AND A PORTION OF THE NORTH HALF OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 66 WEST, AND A PORTION OF SECTIONS 30 AND 31, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO



VICINITY MAP
1"=1000'

SHEET INDEX

PROJECT CONTACTS:

OWNER:
MELODY HOMES, INC., A DELAWARE CORPORATION.
9555 S. KINGSTON COURT, STE 200
ENGLEWOOD, CO 80112

DEVELOPER:
D.R. HORTON
9555 S. KINGSTON COURT
ENGLEWOOD, CO 80112
PH. 303.503.4903

PLANNER/LANDSCAPE ARCHITECT:
HR GREEN DEVELOPMENT, LLC
1975 RESEARCH PARKWAY, STE 230
COLORADO SPRINGS, CO 80920
ATTN: PHIL STUEPFERT

CIVIL ENGINEER:
HR GREEN DEVELOPMENT, LLC.
1975 RESEARCH PARKWAY, STE 230
COLORADO SPRINGS, CO 80920
ATTN: KEN HUHN

GRADING AND EROSION CONTROL 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 CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCITNG CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OF 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 THE 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 OPERATION 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 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 FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OF 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 AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES HALL 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 OF 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 ARES 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 BLANKET 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 THIS 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 PROPERLY 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 THE 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 AN EAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABEL.
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 REQUIRED ADEQUATE SECONDARY PROTECTION TO CONTAIN AL 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 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 PERMITEE 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. THE SOILS REPORT FOR THE SITE HAS BEEN PREPARED BY CTL THOMPSON AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. AT LEAST (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 CHERR CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

DEVELOPER'S/OWNER'S STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

DEVELOPER/OWNER SIGNATURE: ______________________ DATE: __________

NAME OF DEVELOPER/OWNER: ______________________ PHONE: __________

TITLE: ______________________

EMAIL: ______________________

ENGINEER'S STATEMENT

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.

KENNETH M. HUHN, P.E. DATE
KHUHN@HRGREEN.COM
COLORADO P.E. 0054022

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 DIRECTORS DISCRETION.

JOSH PALMER, P.E. DATE
COUNTY ENGINEER/ECM ADMINISTRATOR

LAND USE REVIEW FILE NO: PUDSP-23-006

GRANDVIEW RESERVE PHASE 3
EARLY GRADING & EROSION CONTROL PLAN

A TRACT OF LAND BEING A PORTION SECTIONS 21,22,27, & 28, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH/ PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO

LEGEND

	EXISTING	PROPOSED
MATCH LINE		
PHASE LINE		
SECTION LINE		
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
CHAIN LINK FENCE		
WOODEN FENCE		
ROD IRON FENCE		
GUARDRAIL		
CABLE TV	TV	TV
U.G. ELECTRIC	UE	UE
OVERHEAD ELECTRIC	OE	OE
FIBER OPTIC	FO	FO
GAS MAIN		
SANITARY SEWER	SS	
STORM DRAIN		
TELEPHONE	UT	UT
WATER MAIN	W	W
SWALE		
TRAIL		
CURB & GUTTER		
DRAINAGE BASIN		
INDEX CONTOUR		
INTER. CONTOUR		
100-YR FLOODPLAIN		
FLOODWAY		
EDGE OF WETLANDS		

DRAINAGE

	EXISTING	PROPOSED
DRAINAGE BASIN		
BASIN TAG		I.D. AREA
DESIGN POINT		

STORM SEWER

	EXISTING	PROPOSED
MANHOLE		
STORM INLET		
FLARED END SECTION		
RIPRAP		

SANITARY SEWER

CLEAN OUT	
MANHOLE	
PLUG	

WATER

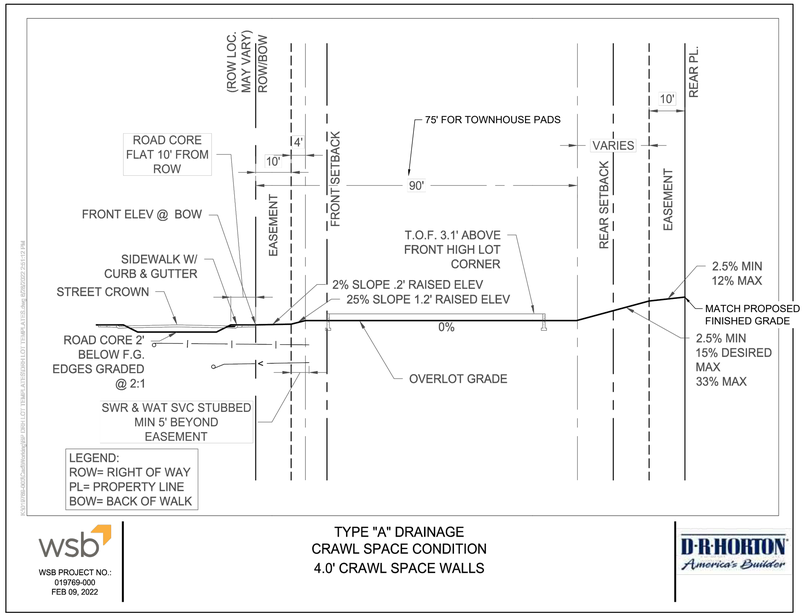
FIRE HYDRANT	
FIRE DEPT. CONNECTION	
GATE VALVE	
MANHOLE	
METER	
TEE	
REDUCER	

DRY UTILITIES

ELECTRIC METER	
ELECTRIC PEDESTAL	
ELECTRICAL CABINET	
ELECTRIC VAULT	
FIBER OPTIC PULL BOX	
FIBER OPTIC MANHOLE	
FIBER OPTIC PEDESTAL	
FIBER OPTIC SIGN	
FIBER OPTIC VAULT	
GAS METER	
GAS SIGN	
GAS VAULT	
TELEPHONE CABINET	
TELEPHONE MANHOLE	
TELEPHONE SIGNAL/MAST	
TELEPHONE SIGN	
TELEPHONE PEDESTAL	
TRANSFORMER	
LIGHT POLE	
FIBER OPTIC VAULT	

MISCELLANEOUS

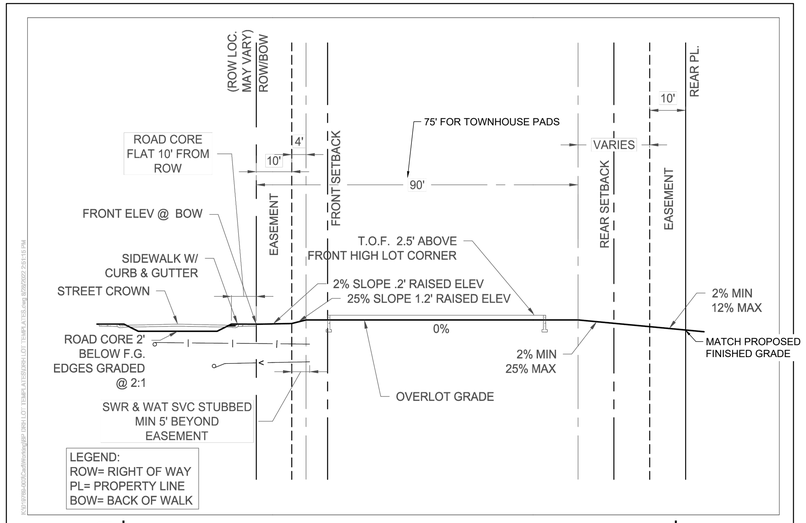
SIGN	
BOLLLARD	
ACCESSIBLE PARKING	



wsb
WSB PROJECT NO.: 019769-000
FEB 09, 2022

TYPE "A" DRAINAGE
CRAWL SPACE CONDITION
4.0' CRAWL SPACE WALLS

D·R·HORTON America's Builder



wsb
WSB PROJECT NO.: 019769-000
FEB 09, 2022

TYPE "B" DRAINAGE
CRAWL SPACE CONDITION
4.0' CRAWL SPACE WALLS

D·R·HORTON America's Builder

NOT FOR CONSTRUCTION
LAND USE REVIEW FILE NO: PUDSP-

DRAWN BY: DLH JOB DATE: 12/4/2023
APPROVED: KMH JOB NUMBER: 201662.2
CAD DATE: 7/15/2024
CAD FILE: J:\2020\201662\CAD\Dwgs\C\PUD_Phase_2_662.202\GEC_Early_Grading\Notes_EarlyGrading

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 3
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

EARLY GRADING & EROSION CONTROL PLANS
TYPICAL SECTION

SHEET TYP

GRADING & EROSION CONTROL PLAN NOTES:

1. SEE SHEETS **7-11** FOR **EL PASO COUNTY GRADING AND EROSION CONTROL DETAILS**.
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ANTICIPATED FINAL STABILIZATION: **FALL 2025**

TEMPORARY CHECK DAM SPACING PER USDCM VOL 3 DETAIL						
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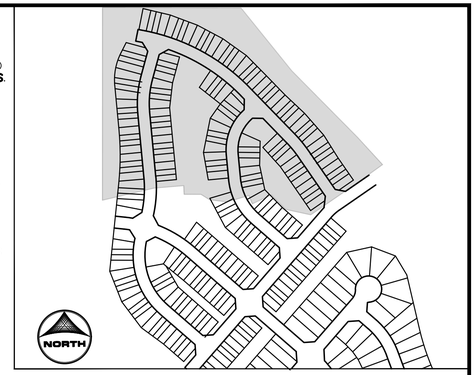
SPACING @ 1.5 CD HEIGHT	75	50	37.5	30	25	21.5



KEY MAP
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GEC LEGEND:

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EARTHWORK CALCULATIONS

NET CUT (CY)	NET FILL (CY)	TOTAL (CY)
82,502	198,962	116,460 (FILL)

LAND USE REVIEW FILE NO: PUDSP-23-006

DRAWN BY: DLH	JOB DATE: 7/15/24	BAR IS ONE INCH ON OFFICIAL DRAWINGS.	
APPROVED: KMH	JOB NUMBER: 201662.2	0 1"	
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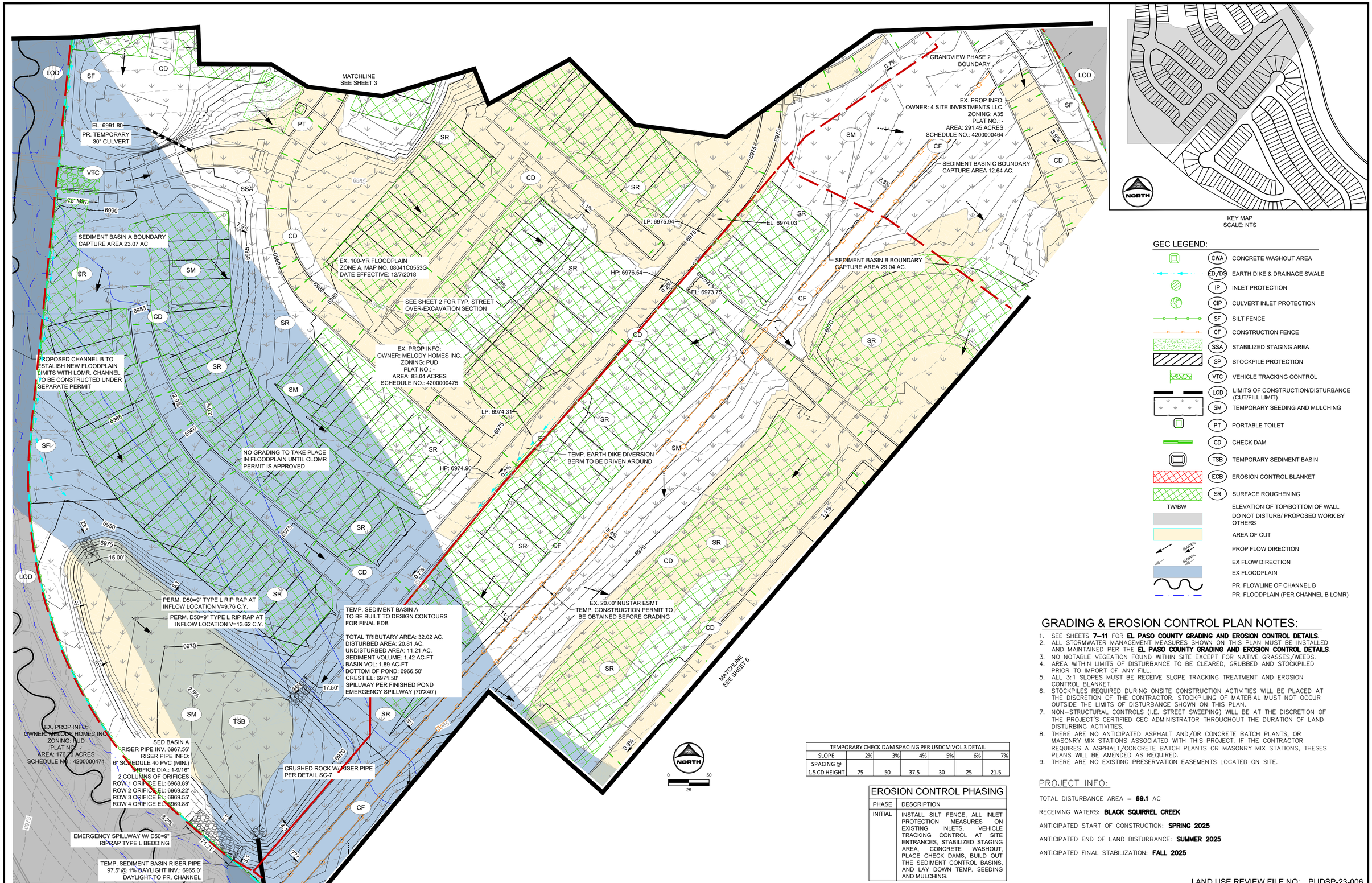
NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

EARLY GRADING & EROSION CONTROL PLANS
GEC INITIAL

SHEET GEC 3



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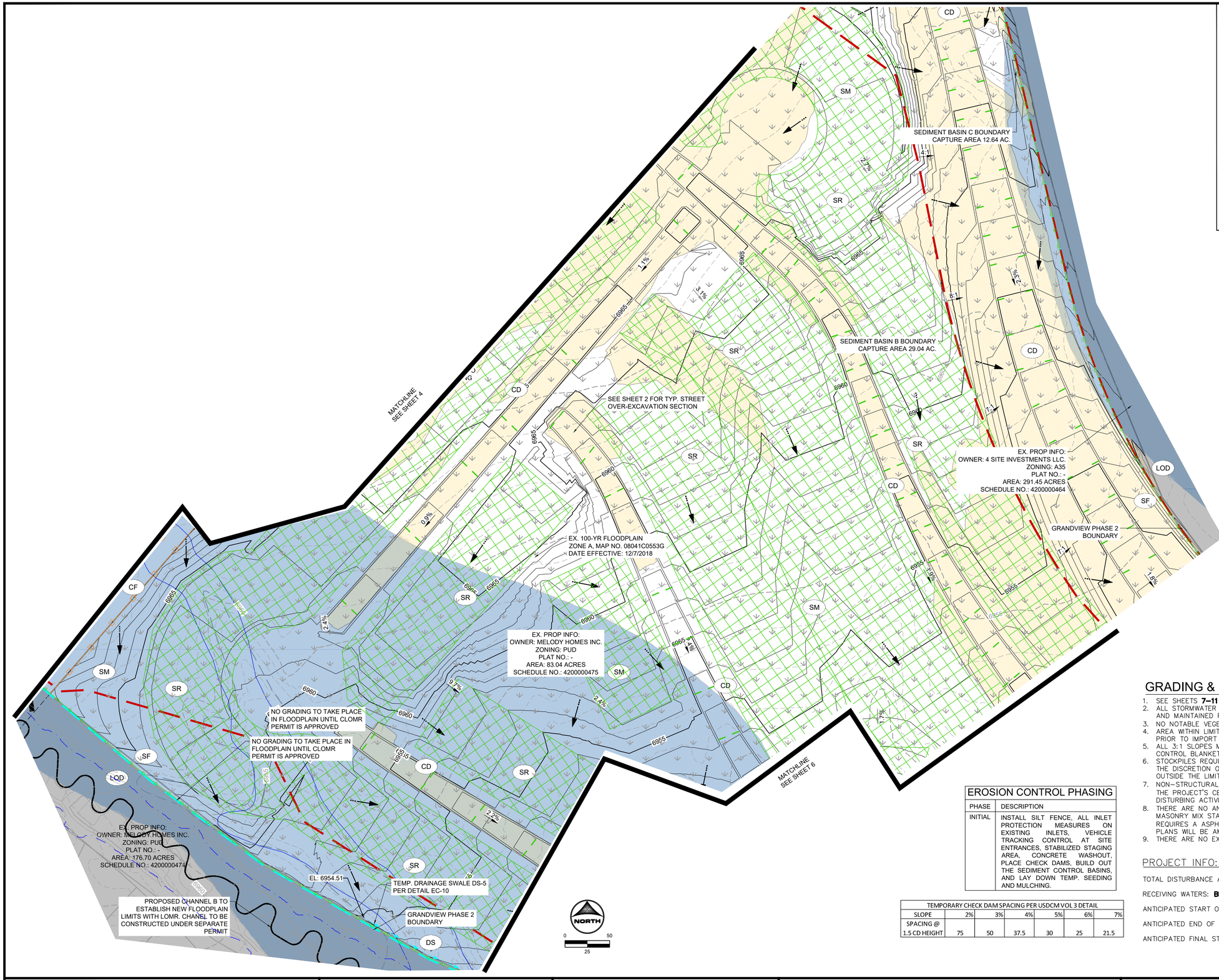
GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

EARLY GRADING & EROSION CONTROL PLANS
GEC INITIAL

SHEET
GEC
4



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GRANDVIEW RESERVE - PHASE 2
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EARLY GRADING & EROSION CONTROL PLANS
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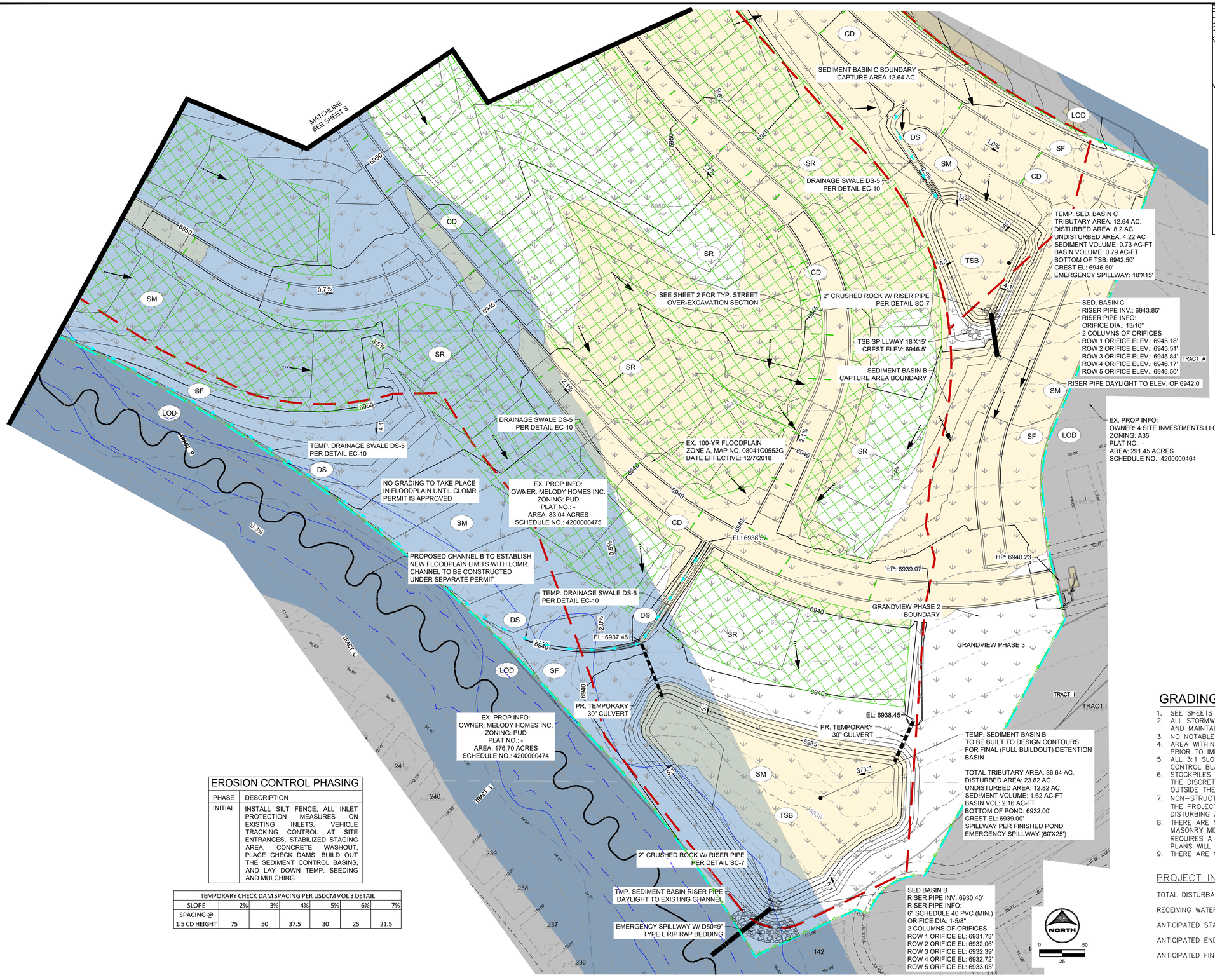
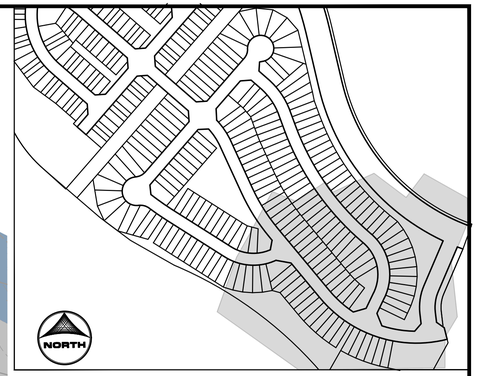
SHEET GEC 5





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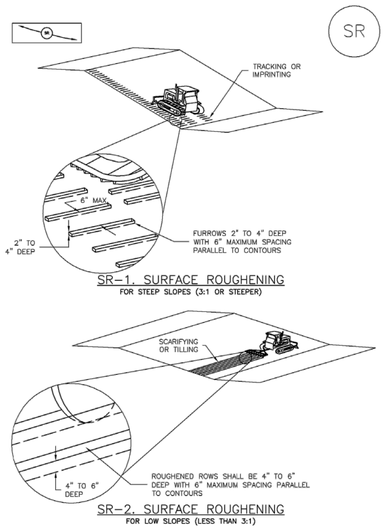
GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

EARLY GRADING & EROSION CONTROL PLANS
GEC INITIAL

SHEET GEC 6



SURFACE ROUGHENING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION(S) OF SURFACE ROUGHENING.

2. SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED RAIN EVENT.

3. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.

4. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

5. A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING 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 REPLACE UPON DISCOVERY OF THE FAILURE.

4. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.

5. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.

6. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER RILL EROSION.

(DETAILS ADAPTED FROM TOWN 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.

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

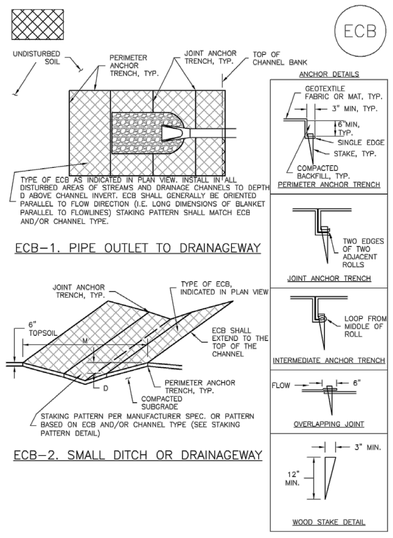
Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

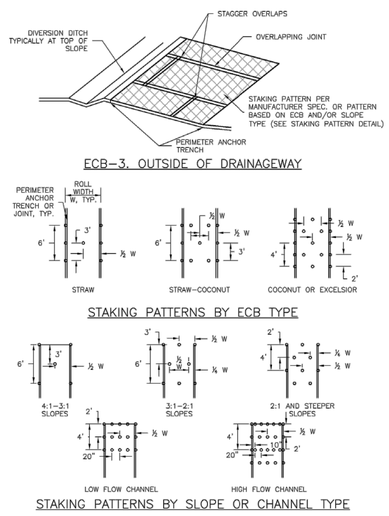
If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species, the annual mix needs time to mature and die before seeding the perennial mix. To increase success 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.





EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF ECB.
   –TYPE OF ECB (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   –AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.

2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.

4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.

5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.

6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.

7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.

8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB–1.

9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.

10. DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB–1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	–	100%	–	DOUBLE/ NATURAL
STRAW–COCONUT	30% MIN	70% MAX	–	DOUBLE/ NATURAL
COCONUT	100%	–	–	DOUBLE/ NATURAL
EXCELSIOR	–	–	100%	DOUBLE/ NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.
**ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS

EROSION CONTROL BLANKET 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. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.

5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

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 AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)

LAND USE REVIEW FILE NO. PUDSP-23-006

DRAWN BY: DLH JOB DATE: 12/11/2023
APPROVED: KMH JOB NUMBER: ----
CAD DATE: 7/15/2024
CAD FILE: J:\2020\201662\CAD\Dwgs\C\PUD_Phase_2_662.202\GEC_Early_Grading\Early_GEC_Details

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

EARLY GRADING & EROSION CONTROL PLANS
DETAILS

SHEET DT

7

MM-1 Concrete Washout Area (CWA)

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.

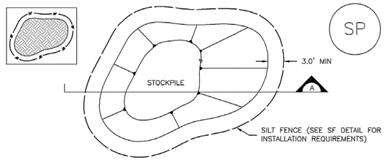
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

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.

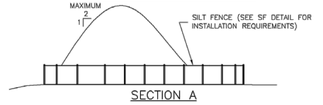
(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

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.

Stockpile Management (SP) MM-2



STOCKPILE PROTECTION PLAN



SECTION A

SP-1, STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF STOCKPILES.
   -TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). 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).

4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MM-2 Stockpile Management (SM)

STOCKPILE PROTECTION 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.

STOCKPILE PROTECTION MAINTENANCE NOTES

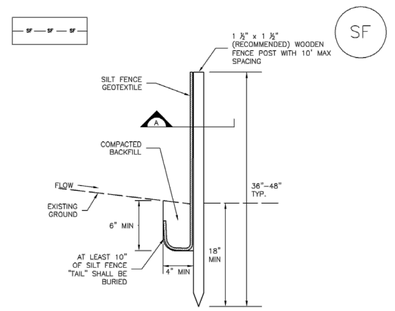
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

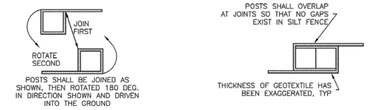
(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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.

Silt Fence (SF) SC-1



SILT FENCE



SECTION A

SF-1, SILT FENCE

SC-1 Silt Fence (SF)

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)

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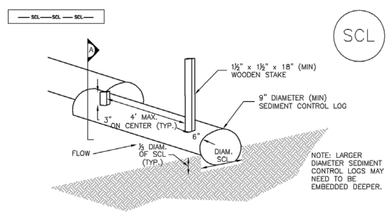
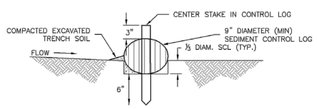
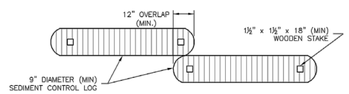
Sediment Control Log (SCL) SC-2



SEDIMENT CONTROL LOG



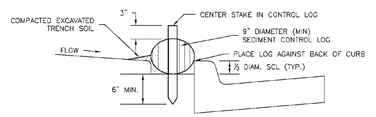
SECTION A



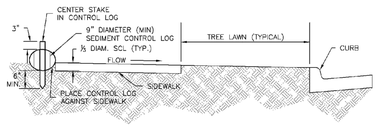
SEDIMENT CONTROL LOG JOINTS

SCL-1. SEDIMENT CONTROL LOG

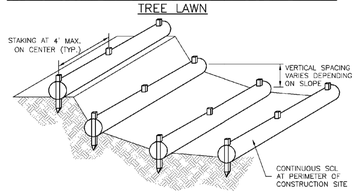
SC-2 Sediment Control Log (SCL)



SCL-2. SEDIMENT CONTROL LOG AT BACK OF CURB

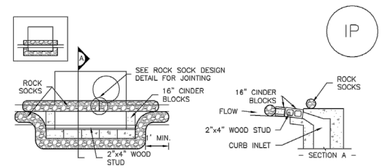


SCL-3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN



SCL-4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SC-6 Inlet Protection (IP)



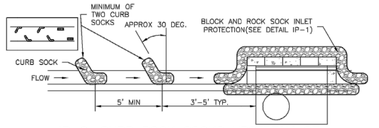
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.

3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.

2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.

3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.

4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

LAND USE REVIEW FILE NO: PUDSP-23-006

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APPROVED: KMH	JOB NUMBER: ----	0 1"	
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HRGreen
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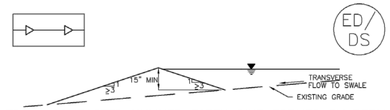
GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

EARLY GRADING & EROSION CONTROL PLANS
DETAILS

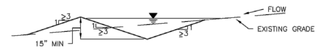
SHEET DT

8

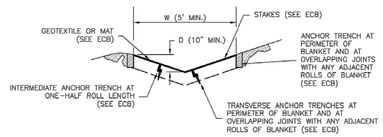


ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM

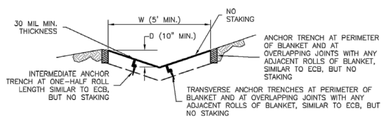
DS-1. COMPACTED UNLINED EXCAVATED SWALE



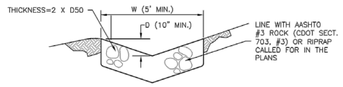
DS-2. COMPACTED UNLINED SWALE FORMED BY CUT AND FILL



DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)



DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

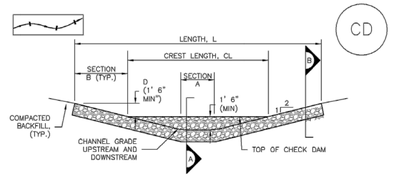
1. SEE SITE PLAN FOR:
   - LOCATION OF DIVERSION SWALE
   - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
   - LENGTH OF EACH SWALE.
   - DEPTH, D, AND WIDTH, W DIMENSIONS.
   - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.
2. SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
3. EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
4. EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.
5. SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
6. FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
7. WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

EARTH DIKE AND DRAINAGE SWALE MAINTENANCE NOTES

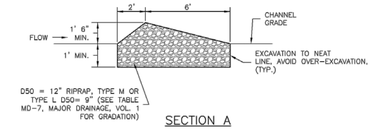
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS 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. SWALES SHALL REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION; IF APPROVED BY LOCAL JURISDICTION, SWALES MAY BE LEFT IN PLACE.
5. WHEN A SWALE IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

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

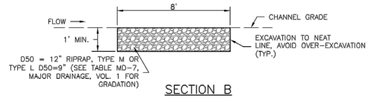
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.



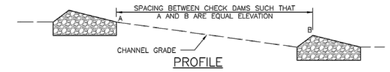
CHECK DAM ELEVATION VIEW



SECTION A



SECTION B



PROFILE

CD-1. CHECK DAM

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).
2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").
4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.
5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM 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 CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.
5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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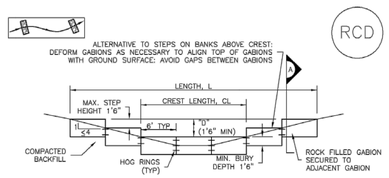
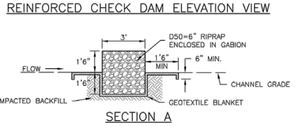


REINFORCED CHECK DAM ELEVATION VIEW



SECTION A

REINFORCED CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATIONS OF CHECK DAMS.
   –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).
2. CHECK DAMS INDICATED ON THE SWMP SHALL BE INSTALLED PRIOR TO AN UPSTREAM LAND-DISTURBING ACTIVITIES.
3. REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4½" AND A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" AT 4" SPACING OR OTHER APPROVED MEANS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT SECTION.
4. THE CHECK DAM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1' 6".
5. GEOTEXTILE BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1' 6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

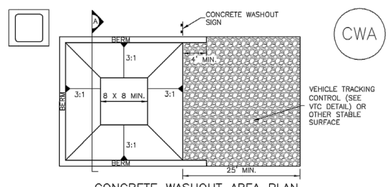
CD-2. REINFORCED CHECK DAM

REINFORCED CHECK DAM MAINTENANCE NOTES

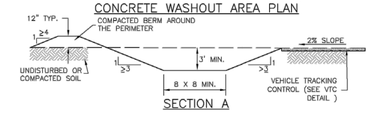
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS 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 REINFORCED CHECK DAMS SHALL BE REMOVED AS NEEDED TO MAINTAIN THE EFFECTIVENESS OF BMP, TYPICALLY WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST.
5. REPAIR OR REPLACE REINFORCED CHECK DAMS WHEN THERE ARE SIGNS OF DAMAGE SUCH AS HOLES IN THE GABION OR UNDERCUTTING.
6. REINFORCED CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
7. WHEN REINFORCED CHECK DAMS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, AND COVERED WITH A GEOTEXTILE BLANKET, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM 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.



CONCRETE WASHOUT AREA PLAN



SECTION A

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.

LAND USE REVIEW FILE NO: PUDSP-23-006

DRAWN BY: DLH JOB DATE: 12/11/2023
APPROVED: KMH JOB NUMBER: ----
CAD DATE: 7/15/2024
CAD FILE: J:\2020\201662\CAD\Dwgs\C\PUD_Phase_2_662.202\GEC_Early_Grading\Early_GEC_Details

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

EARLY GRADING & EROSION CONTROL PLANS
DETAILS

SHEET DT

9

HR GREEN Xrefs: xgl-1-arch dh01_PH2_PUD; Riprap Detail

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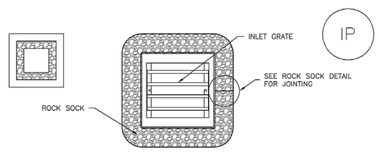
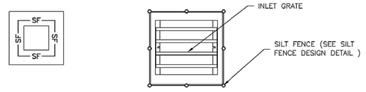


IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



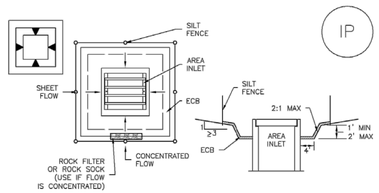
IP-4. SILT FENCE FOR SUMP INLET PROTECTION

SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



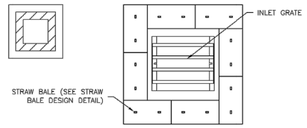
IP-5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.

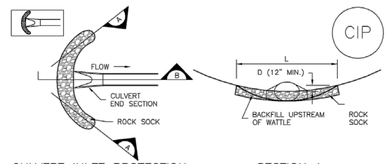


IP-6. STRAW BALE FOR SUMP INLET PROTECTION

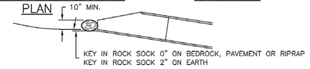
STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.



CULVERT INLET PROTECTION PLAN



SECTION A

SECTION B

CIP-1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR —LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION 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 CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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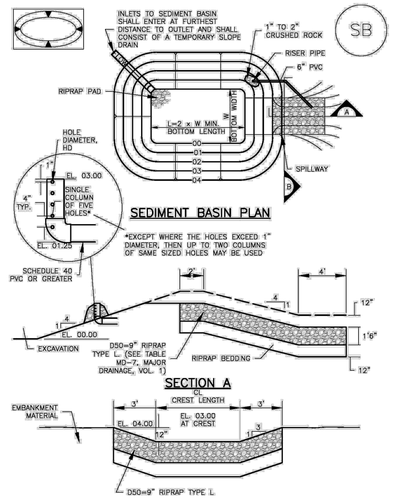


TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN			
Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillwcy Crest Length (CL), (ft)	Hole Diameter (HD), (in)
1	12 ½	2	9/32
2	21	3	1/4
3	28	5	1/2
4	33 ½	6	9/16
5	38 ½	8	7/32
6	43	9	23/32
7	47 ¼	11	25/32
8	51	12	27/32
9	55	13	3/4
10	58 ¾	15	13/16
11	61	16	31/32
12	64	18	1
13	67 ½	19	1 1/16
14	70 ½	21	1 1/8
15	73 ¼	22	1 3/16

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   —LOCATION OF SEDIMENT BASIN.
   —TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
   —FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
   —FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.

2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.

3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.

4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.

5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6. PIPE SCH 40 OR GREATER SHALL BE USED.

7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SEDIMENT BASIN 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.

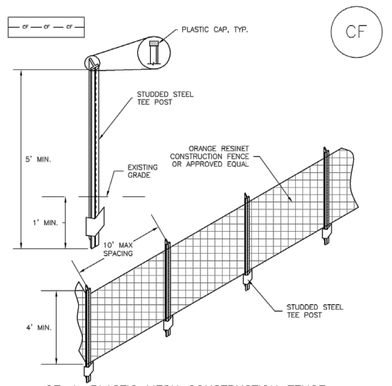
4. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).

5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.

6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

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.



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   —LOCATION OF CONSTRUCTION FENCE.

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION 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. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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.

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

LAND USE REVIEW FILE NO: PUDSP-23-006

DRAWN BY: DLH JOB DATE: 12/11/2023
APPROVED: KMH JOB NUMBER: ----
CAD DATE: 7/15/2024
CAD FILE: J:\2020\201662\CAD\Dwgs\C\PUD_Phase_2_662.202\GEC_Early_Grading\Early_GEC_Details

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

EARLY GRADING & EROSION CONTROL PLANS
DETAILS

SHEET DT

10

HR GREEN Xrefs: xg-1--arch dh01_PH2_PUD; Riprap Detail

WALTON, CHRIS, 7/15/2024 3:18 PM

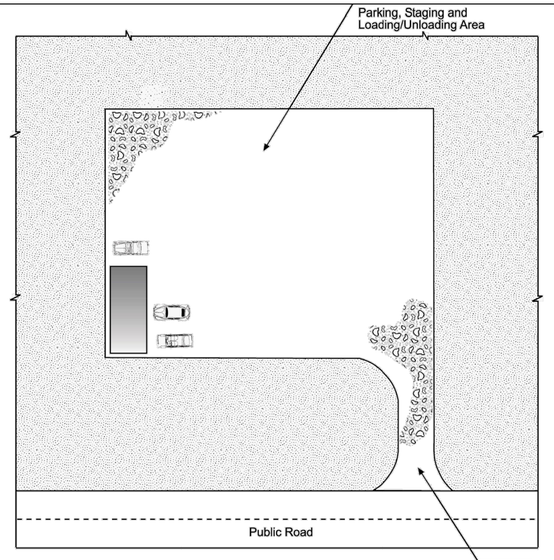
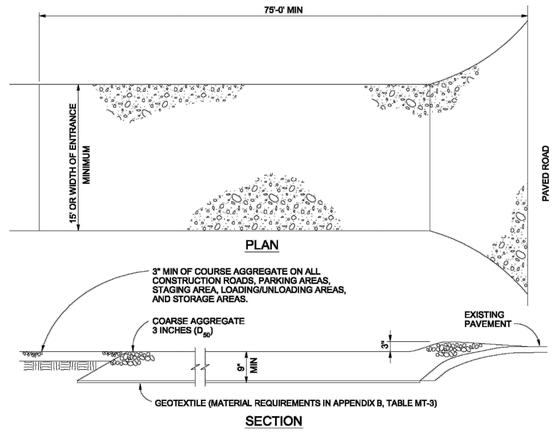


Table VT-1

	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs

Figure VT-1
Vehicle Tracking



VEHICLE TRACKING
NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.

3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.

4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.

5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.

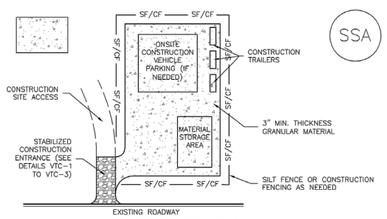
4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

Stabilized Staging Area (SSA) SM-6



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.

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

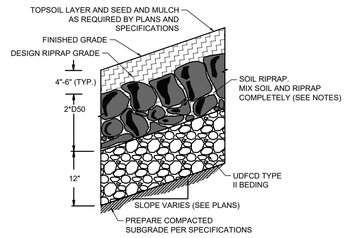
5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

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)



SOIL RIPRAP EMBANKMENT PROTECTION
WITH BEDDING TYP. SECTION
N.T.S

RIPRAP NOTES

1. SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREAS REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
2. MIX UNIFORMLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
3. PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
5. ROCK SHALL BE HARD, DURABLE, ANGULAR IN SHAPE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER.
6. NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHOULD BE LESS THAN ONE-THIRD ITS LENGTH, AND ROUNDED STONE SHOULD BE AVOIDED.
7. THE ROCK SHOULD SUSTAIN A LOSS OF NOT MORE THAN 40% AFTER 500 REVOLUTIONS IN AN ABRASION TEST (LOS ANGELES MACHINEASTM C-535-69) AND SHOULD SUSTAIN A LOSS OF NOT MORE THAN 10% AFTER 12 CYCLES OF FREEZING AND THAWING (AASHTO TEST 103 FOR LEDGE ROCK PROCEDURE A).
8. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.65 IS PREFERRED; HOWEVER, IN NO CASE SHOULD ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50.

TYPE L RIPRAP

INTERMEDIATE ROCK DIMENSION (IN .)	PERCENT PASSING (%)
15	70-100
12	50-70
9	35-50
3	2-10

*TYPE L RIPRAP D50=9".
D50=MEAN PARTICLE SIZE
(INTERMEDIATE DIMENSION) BY WEIGHT

TYPE VL RIPRAP

INTERMEDIATE ROCK DIMENSION (IN .)	PERCENT PASSING (%)
12	70-100
9	50-70
6	35-50
2	2-10

*TYPE L RIPRAP D50=6".
D50=MEAN PARTICLE SIZE
(INTERMEDIATE DIMENSION) BY WEIGHT

TYPE M RIPRAP

INTERMEDIATE ROCK DIMENSION (IN .)	PERCENT PASSING (%)
21	70-100
18	50-70
12	35-50
4	2-10

*TYPE L RIPRAP D50=12" D50=MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT

TYPE H RIPRAP

INTERMEDIATE ROCK DIMENSION (IN .)	PERCENT PASSING (%)
30	70-100
24	50-70
18	35-50
6	2-10

*TYPE L RIPRAP D50=18"
D50=MEAN PARTICLE SIZE
(INTERMEDIATE DIMENSION) BY WEIGHT

TYPE VH RIPRAP

INTERMEDIATE ROCK DIMENSION (IN .)	PERCENT PASSING (%)
41	70-100
33	50-70
24	35-50
9	2-10

*TYPE L RIPRAP D50=24"
D50=MEAN PARTICLE SIZE
(INTERMEDIATE DIMENSION) BY WEIGHT

LAND USE REVIEW FILE NO: PUDSP-23-006

DRAWN BY: DLH JOB DATE: 12/11/2023
APPROVED: KMH JOB NUMBER: ----
CAD DATE: 7/15/2024
CAD FILE: J:\2020\201662\CAD\Dwgs\C\PUD_Phase_2_662.202\GEC_Early_Grading\Early_GEC_Details

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PKWY SUITE 230
COLORADO SPRINGS CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

GRANDVIEW RESERVE - PHASE 2
D.R. HORTON
EL PASO COUNTY, CO

D·R·HORTON America's Builder

EARLY GRADING & EROSION CONTROL PLANS
DETAILS

SHEET DT 11

APPENDIX C – CALCULATIONS

SEDIMENT BASIN A - POND A
SEDIMENT BASIN STAGE-STORAGE CALCULATIONS

Elevation	Area S.F.	Area Acre	Volume Cu. Ft.	Volume Acre-Ft	Cumm Vol Cu. Ft.	Cumm Vol Acre-Ft	Proration Enter Vol. in Cu-Ft*	Proration Enter Vol. in Acre-Ft*	Elev. ft.
6966.5	0								
6967.0	592		99		99	0.002			
6968.0	11497		4,899		4,998	0.115	20,597	0.473	6,968.89
6969.0	24552		17,617		22,615	0.519			
6970.0	34874		29,562		52,177	1.198	61,792	1.419	6,970.24
6971.0	44697		39,684		91,862	2.109			
6972.0	53878		49,216		141,078	3.239			
6973.0	62472		58,122		199,200	4.573			
6974.0									
6975.0									
6976.0									
6977.0									
6978.0									
6979.0									
6980.0									
6981.0									
6982.0									
6983.0									
6984.0									
6985.0									
6986.0									
6987.0									

COLUMN 1	COLUMN 2	CENTROID EL.
ORIFICE 1-1	ORIFICE 1-2	6,968.89
ORIFICE 2-1	ORIFICE 2-2	6,969.22
ORIFICE 3-1	ORIFICE 3-2	6,969.55
ORIFICE 4-1	ORIFICE 4-2	6,969.88

SED Basin riser pipe orifice calculations				
A_0 =	area per row of orifices spaved on 4" centers (in^2)			
V=	1.4185	design volume (acre feet) *<15 ac.		
T_D=	72	time to drain the prescribed colume (hrs) (Typically 72 hours for EURV)		
H=	1.357	depth of volume (ft)		
S=	0.0001	Trickel channel slope (ft/ft) [Use 0.0001 for flat slope]		
			S=0%	
$A_{0=}$	3.6810	in^2	**3.6702**	**in^2**
Dia	2.16	in	***EXCEEDS 1", USE TWO COLUMNS @ A_0=1.86 in^2**	
	4.32	Dia=/2	**1.86 in^2 = 1-9/16 in. dia.**	
	8.65	Dia=/4		
	17.29	Dia=/8		
	34.59	Dia=/16		
	69.18	Dia=/32		

SEDIMENT VOLUME CALCULATIONS				
Disturbed area-acres	20.810	Acres		
Undisturbed area-acres	11.210	Acres		
Total Area-acres	32.020	Acres		
Sediment volume	61,792	cu-ft	1.4185	Acres-ft
Volume below lowest hole	20,597	cu-ft	0.4728	Acres-ft
Volume above lowest hole	61,792	cu-ft	1.4185	Acres-ft
Total Volume	82,369	cu-ft	1.8909	Acres-ft

Note: **Enter values in highlighted cells only.**

SEDIMENT BASIN B - POND B
SEDIMENT BASIN STAGE-STORAGE CALCULATIONS

Elevation	Area S.F.	Area Acre	Volume Cu. Ft.	Volume Acre-Ft	Cumm Vol Cu. Ft.	Cumm Vol Acre-Ft	Proration Enter Vol. in Cu-Ft*	Proration Enter Vol. in Acre-Ft*	Elev. Cu-Ft
6932.0	**0**								
6933.0	**17869**		5,961		**5,961**	**0.137**	23,575		**6,933.73**
6934.0	**30861**		24,071		**30,032**	**0.689**			
6935.0	**34515**		32,671		**62,703**	**1.439**	70,724		**6,935.22**
6936.0	**38511**		36,495		**99,198**	**2.277**			
6937.0	**42664**		40,570		**139,767**	**3.209**			
6938.0	**46975**		44,802		**184,570**	**4.237**			
6939.0	**51087**		49,017		**233,586**	**5.362**			
6940.0									
6941.0									
6942.0									
6943.0									
6944.0									
6945.0									
6946.0									
6947.0									
6948.0									
6949.0									
6950.0									
6951.0									
6952.0									
6953.0									

COLUMN 1	**COLUMN 2**	**CENTROID EL.**
ORIFICE 1-1	ORIFICE 1-2	6,933.73
ORIFICE 2-1	ORIFICE 2-2	6,934.06
ORIFICE 3-1	ORIFICE 3-2	6,934.39
ORIFICE 4-1	ORIFICE 4-2	6,934.72
ORIFICE 5-1	ORIFICE 5-2	6,935.05

SED Basin riser pipe orifice calculations				
A_0 =	area per row of orifices spaved on 4" centers (in^2)			
V=	1.6236	design volume (acre feet) *<15 ac.		
T_D=	72	time to drain the prescribed colume (hrs) (Typically 72 hours for EURV)		
H=	1.488	depth of volume (ft)		
S=	0.0001	Trickel channel slope (ft/ft) [Use 0.0001 for flat slope]		
			S=0%	
A_0 =	4.0940	in^2	**4.0819**	**in^2**
Dia	2.28	in	***EXCEEDS 1", USE TWO COLUMNS @ A_0=2.05 in^2**	
	4.56	Dia=/2	**2.05 in^2 = 1-5/8" Dia.**	
	9.12	Dia=/4		
	18.24	Dia=/8		
	36.48	Dia=/16		
	72.95	Dia=/32		

SEDIMENT VOLUME CALCULATIONS				
Disturbed area-acres	23.820	Acres		
Undisturbed area-acres	12.820	Acres		
Total Area-acres	36.640	Acres		
Sediment volume	70,724	cu-ft	1.6236	Acres-ft
Volume below lowest hole	23,575	cu-ft	0.5412	Acres-ft
Volume above lowest hole	70,724	cu-ft	1.6236	Acres-ft
Total Volume	94,275	cu-ft	2.1643	Acres-ft

Note: **Enter values in highlighted cells only.**

SEDIMENT BASIN C
SEDIMENT BASIN STAGE-STORAGE CALCULATIONS

Elevation	Area S.F.	Area Acre	Volume Cu. Ft.	Volume Acre-Ft	Cumm Vol Cu. Ft.	Cumm Vol Acre-Ft	Proration Enter Vol. in Cu-Ft*	Proration Enter Vol. in Acre-Ft*	Elev. Cu-Ft
6942.5	0								
6943.0	4181		698		698	0.016			
6944.0	7102		5,577		6,275	0.144			
6945.0	8602		7,840		14,115	0.324	15,810		6,945.18
6946.0	10225		9,402		23,517	0.540	31,620		6,946.74
6947.0	11766		10,986		34,504	0.792			
6943.5									
6944.5									
6945.5									
6946.5									
6947.5									
6948.5									
6949.5									
6950.5									
6951.5									
6952.5									
6953.5									
6954.5									
6955.5									
6956.5									
6957.5									
6958.5									

COLUMN 1	COLUMN 2	CENTROID EL.
ORIFICE 1-1	ORIFICE 1-2	6,945.18
ORIFICE 2-1	ORIFICE 2-2	6,945.51
ORIFICE 3-1	ORIFICE 3-2	6,945.84
ORIFICE 4-1	ORIFICE 4-2	6,946.17
ORIFICE 5-1	ORIFICE 5-2	6,946.50

SED Basin riser pipe orifice calculations				
A_0 =	area per row of orifices spaved on 4" centers (in^2)			
V=	0.3629	design volume (acre feet) *<15 ac.		
T_D=	72	time to drain the prescribed colume (hrs) (Typically 72 hours for EURV)		
H=	1.557	depth of volume (ft)		
S=	0.0001	Trickel channel slope (ft/ft) [Use 0.0001 for flat slope]		
			S=0%	
A_0 =	1.0301	in^2	**1.0271**	**in^2**
Dia	1.14	in	***EXCEEDS 1", USE TWO COLUMNS @ A_0=1.027 in^2**	
	2.29	Dia=/2	**Area of 0.51 in^2 = Dia. Of 0.8" =13/16"**	
	4.57	Dia=/4		
	9.15	Dia=/8		
	18.30	Dia=/16		
	36.59	Dia=/32		

SEDIMENT VOLUME CALCULATIONS				
Disturbed area-acres	8.200	Acres		
Undisturbed area-acres	4.200	Acres		
Total Area-acres	12.400	Acres		
Sediment volume	31,620	cu-ft	0.7259	Acres-ft
Volume below lowest hole	15,810	cu-ft	0.3629	Acres-ft
Volume above lowest hole	15,810	cu-ft	0.3629	Acres-ft
Total Volume	31,620	cu-ft	0.7259	Acres-ft

Note: **Enter values in highlighted cells only.**

BMP FEATURE	TOTAL TRIBUTARY AREA (AC)	DISTURBED AREA (AC)	UNDISTURBED AREA (AC)	BOTTOM SIZE (FT)	SEDIMENT VOLUME (AC-FT)	BASIN VOLUME (AC-FT)	BOTTOM ELEVATION	CREST ELEVATION	CREST, WxL (FT)	TOP OF POND ELEVATION	LOWEST ORIFICE ELEVATION	AREA OF ORIFICES (SQ IN)	# OF ORIFICE COLUMNS	DIA. OF ORIFICES	RISER PIPE INVERT	DAYLIGHT ELEVATION	OUTLET PIPE LENGTH (FT)	OUTLET PIPE SLOPE
SB-A	32.02	20.81	11.21	400' x 140'	1.42	4.57	6966.50	6971.50	60' x 40'	6973.00	6968.89	1.86	2	1-9/16"	6967.56	6964.75	65	4.3%
SB-B	36.64	23.82	12.82	115' x 260'	1.62	5.36	6932.00	6939.00	77.5' x 40'	6939.00	6933.73	2.05	2	1-5/8"	6932.40	6929.20	72	4.4%
SB-C	12.40	8.20	4.20	85' x 124'	0.73	0.79	6942.50	6946.50	18' x 15'	6947.00	6945.18	0.51	2	13/16"	6943.85	6942.00	50	3.7%

APPENDIX D – EL PASO COUNTY CONSTRUCTION CONTROL MEASURES (see GEC Plans)

APPENDIX E – SPILL PREVENTION PLAN

Spill Prevention, Control and Countermeasure (SPCC) Plan

Facility Name: _____
Address: _____
_____

Contact Name: _____
Phone: _____
Fax: _____
Email: _____

Certification: I hereby certify that I have examined the facility, and, being familiar with the provisions of 40 CFR part 112, attest that this SPCC plan has been prepared, or updated within 5 years, in accordance with good engineering practices and meets the requirements listed in 40 CFR part 112.

This plan has been certified by:

Date of certification: _____ *Engineer's Seal*

Copies of this plan are located at the facility and are available to all employees.

Location(s) of plan(s): _____

I. FACILITY INFORMATION

a. Facility Name: _____

b. Mailing Address: _____
_____

c. Physical address if different: _____
_____
_____

d. Owner Name: _____

e. Owner Address: _____
_____

f. Primary Contact Name: _____
Work Phone Number: _____
Home Phone Number: _____
Mobile Phone Number: _____

g. Secondary Contact Name:
Work Phone Number: _____
Home Phone Number: _____
Mobile Phone Number: _____

h. Date of Initial Operation: _____

II. SITE ASSESSMENT

a. Location:
Describe where facility is located. For example, "This site is located along Broad Creek about 2 miles north of its confluence with the Choptank River at Holland Point. Road access is from. . . . The site is located on Talbot County ADC map 22 (H5). Latitude is ___ and longitude is ___ ."

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

III. FACILITY DESCRIPTION

a. Acres of land: ____

b. Facilities and Equipment:
Place an X beside all that apply.

____ Garage for vehicle processing
____ Parts store
____ On-site crushcr
____Impervious crush pad for crusher
____ Impervious pad for outside vehicle processing
____ Spill kit/emergency equipment
____ Refrigerant (Freon) extractor
____ Parts washer
____ Other structures and major equipment:

Please list: _____
_____
_____
_____
_____

c. Services:
Place an X beside all that apply.

____ Dismantler/Recycler
____ Sell used parts
____ Sell vehicles for scrap
____Crushing
____ Auto body/repair shop
____ Sell used cars
____ Other services:

Please list: _____
_____
_____
_____

d. Fixed Storage:
List capacity and contents of each storage container. For example, "One 6,000 gallon above ground tank containing diesel fuel." Be sure to include diesel, gasoline, waste oil, heating oil, kerosene, paint thinner and other solvents. Also describe the construction of the containers, secondary containment for each, liquid level indicators, alarms and method of corrosion protection for each container._____

e. Non-Fixed Storage:
List capacity and contents of each storage container. For example, "One 55 gallon drum for recycled oil." Be sure to indicate what each container is used for, its condition and construction and how secondary containment is provided. _____

f. Total quantity of stored materials:
The combined quantity of the materials listed above: _____ gallons

IV. OIL SPILL HISTORY

Place an X on the appropriate line and proceed accordingly.

___ There has never been a significant spill at the above named facility.

___ There have been one or more significant spills at the above named facility. Details of such spill(s) are described below.

For each spill that occurred, supply the following information:

- Type and amount of oil spilled
- Location, date and time of spill(s)
- Watercourse affected
- Description of physical damage
- Cost of damage
- Cost of clean-up
- Cause of spill
- Action taken to prevent recurrence

V. POTENTIAL SPILL VOLUMES AND RATES

Fill in all applicable blanks. Be prepared to show the engineer documentation of flow rates. Your fuel vendor and the manufacturer of your storage and dispensing equipment should be able to provide this documentation.

Potential Event	Volume Released	Spill Rate
Complete failure of a full tank*	____ gallons	instantaneous
Partial failure of a full tank*	1 to ____ gallons	gradual to instantaneous
Tank overflow**	1 to ____ gallons	up to ____ gallons per minute
Leaking during unloading***	up to ____ gallons	up to ____ gallons per minute
Pipe failure****	up to ____ gallons	up to ____ gallons per minute
Leaking pipe or valve****	several ounces to gallons	up to ____ gallons per minute
Fueling operations****	several ounces to gallons	up to ____ gallons per minute
Oil and grease	several ounces to quarts	spotting

* Volume of largest tank
** Calculate using the rate at which fuel is dispensed from the delivery truck into your tank(s).
*** Calculate using the rate at which petroleum would be withdrawn from the tank if it should have to be emptied (*e.g.*, if it was being taken out of service).
**** Calculate based on the specifications of your equipment.

VI. SPILL PREVENTION AND CONTROL

a. Spill Prevention:
Provide specific descriptions of containment facilities and practices. Include description of items such as double-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. Also, describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

b. Spill discharge and flow:
For each potential spill source, describe where petroleum would flow in the event of a spill. For example, "The 6,000 gallon diesel tank has a pre-manufactured secondary containment system capable of holding 110 percent of the total volume of the tank" and, "A spill from engine repair would be contained inside the shop building and quickly cleaned up with oil absorbents." Incorporate site map by reference (see instructions under *Appendices*).

c. Spill response:
Identify what equipment would be deployed by whom and in what situation. Also, include phone numbers for response agencies, *e.g.*, U.S. Coast Guard, fire department, spill response contractors, etc. A copy of your spill response plan may be attached as an appendix to this SPCC plan in lieu of completing this section.

d. Security
Provide a description of how all containers are protected when the facility is not in operation or unattended. Include a description of fencing, access control, gates, locks, etc. that prevent access by unauthorized individuals.

VII. FACILITY INSPECTIONS

a. Routine Inspections

Name facilities and the frequency with which they are inspected. For example, "The fuel pumps are inspected daily. The materials storage area is inspected monthly." Describe all facility containers, piping, etc. that is to be inspected. Name the person who has responsibility to implement preventative maintenance programs, oversee on-site inspections, coordinate employee training, maintain records, update the plan as necessary, and ensure that reports are submitted to the proper authorities.

b. Annual Inspections

Include a description of annual comprehensive inspections. For example, "A site inspection is also conducted annually by appropriate responsible personnel to verify that the description of potential pollutant sources are accurate, that the map reflects current site conditions, and that the controls to reduce the pollutants identified in this plan are being implemented and are adequate. This annual inspection will be conducted above and beyond the routine inspections done focusing on designated equipment and areas where potential sources are located."

VIII. RECORD KEEPING

Describe record keeping procedures. For example, "Record keeping procedures consist of maintaining all records a minimum of three years. The following items will be kept on file: current SPCC plan, internal site reviews, training records, and documentation of any spills or maintenance conducted in regards to these sites." *Maintenance Inspection*, *Employee Training*, and *Record Keeping* logs are included in this template for your use.

IX. MAINTENANCE INSPECTIONS

Maintenance Coordinator: _____. Maintenance Coordinator responsibilities include implementation of preventative maintenance programs and oversight of on-site inspections.

Use this table to record inspections:

Facility Inspected	Date of Inspection	Name of Inspector	Result Pass/Fail	Comments

X. RECORD KEEPING OF INCIDENTAL SPILLS

Record Keeper: _____. Record Keeper responsibilities include maintaining records of incidents, updating the SPCC plan as necessary and ensuring reports are submitted to the proper authorities when necessary.

Incident No.	Type of Incident	Date of Occurrence	How it was Cleaned Up

APPENDIX F – CSWMP REPORT REVISION LOG

SWMP REPORT REVISION LOG

REVISION #	DATE	BY	COMMENTS

APPENDIX G – CERTIFICATIONS

EnviroCert International, Inc.®

certifies that

Staci Kahl

Subscribes to the Code of Ethics and Professional Conduct and has met the requirements established for the CPESC® Program as a

Certified Professional in Erosion and Sediment Control®

CPESC® Number: 14953

Certificate Date: 25-Sep-2023

Robert Anderson, EnviroCert Board President

Jim O'Tousa, EnviroCert Technical Advisory Council

The CPESC® Certification was established in 1983

CISEC, Inc.
P.O. Box 188
Parker, CO 80134
Ph: (720) 235-2783
Fax: 303-841-6383
E-mail: contactus@cisecinc.org

CISEC, Inc. Wallet Card

Name: Staci Kahl

Order Date February 2023

Below is your wallet card.

Please print this card and keep it in your wallet or your files.

CISEC, Inc.
Board of Directors
certifies that

Staci Kahl

has demonstrated satisfactory evidence of sediment and erosion control inspection skills and successfully passed the certification examination and therefore, as required by CISEC, Inc., is authorized to use the title of

Certified Inspector of Sediment and Erosion Control

3561		*February 28, 2024*
CISEC #	***CISEC, Inc. President***	***Expiration Date***

As a CISEC Registrant, I agree to the following:

- At all times, strictly abide by the CISEC, Inc. Code of Ethics,
- Perform all services in a professional manner and uphold professional standards in relating to the public, to other CISEC, Inc. registrants and to other professionals within the industry,
- Earn at least 12 CDH's each year after becoming a CISEC registrant and
- Pay CISEC, Inc. annual renewal fees.

Signature (required)

CISEC, Inc.
P.O. Box 188
Parker, CO 80134
720-235-2783
www.cisecinc.org

APPENDIX H – CLOMR APPROVALS

Federal Emergency Management Agency

Washington, D.C. 20472

November 15, 2024

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Carrie Geitner
Chair, Board of Commissioners
200 South Cascade Avenue, Suite 100
Colorado Springs, CO 80903

IN REPLY REFER TO:
Case No.: 24-08-0102R
Community Name: El Paso County, CO
Community No.: 080059

104

Dear Chair Geitner:

We are providing our comments with the enclosed Conditional Letter of Map Revision (CLOMR) on a proposed project within your community that, if constructed as proposed, could revise the effective Flood Insurance Study report and Flood Insurance Rate Map for your community.

If you have any questions regarding the floodplain management regulations for your community, the National Flood Insurance Program (NFIP) in general, or technical questions regarding this CLOMR, please contact the Director, Mitigation Division of the Federal Emergency Management Agency (FEMA) Regional Office in Denver, at (303) 235-4830, or the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at https://www.fema.gov/flood-insurance.

Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

List of Enclosures:
Conditional Letter of Map Revision Comment Document

cc: Keith Curtis, P.E., CFM
Floodplain Administrator
Pikes Peak Regional Building Department

Greg Panza
Regional Manager
HR Green

Caitlin McDaniel, P.E., CFM
Floodplain Mapping Coordinator
Colorado Water Conservation Board

Marta Blanco Castaño, GISP, CFM
Flood Mapping Program Assistant
Colorado Water Conservation Board

Kevin Houck, P.E., CFM
Chief, Watershed and Flood Protection Section
Colorado Water Conservation Board

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT

COMMUNITY INFORMATION		PROPOSED PROJECT DESCRIPTION	BASIS OF CONDITIONAL REQUEST
COMMUNITY	El Paso County Colorado (Unincorporated Areas)	CULVERT CHANNELIZATION	1D HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 080059		
IDENTIFIER	Grandview Reserve Geick Ranch Tributary 2 Improvements	APPROXIMATE LATITUDE AND LONGITUDE: 39.981, -104.556 SOURCE: USGS QUADRANGLE DATUM: NAD 83	

AFFECTED MAP PANELS			
TYPE: FIRM*	NO.: 08041C0552G	DATE: December 7, 2018	* FIRM - Flood Insurance Rate Map
TYPE: FIRM	NO.: 08041C0556G	DATE: December 7, 2018	

FLOODING SOURCES AND REACH DESCRIPTION

Geick Ranch Tributary 2 – From approximately 1,500 feet upstream of US Highway 24 to approximately 1,800 feet upstream of Eastonville Road

PROPOSED PROJECT DESCRIPTION

Flooding Source	Proposed Project	Location of Proposed Project
Geick Ranch Tributary 2	New 8' x 4' RCB Culvert	Approximately 2,800 feet upstream of US Highway 24
	New 7' x 1' RCB Culvert	Approximately 3,800 feet downstream of US Eastonville Road
	New 8' x 4' RCB Culvert	Approximately 1,700 feet downstream of Eastonville Road
	Channelization	From approximately 1,500 feet upstream of US Highway 24 to approximately 1,800 feet upstream of Eastonville Road
	New 10' x 4' RCB Culvert	Approximately 750 feet downstream of Eastonville Road

SUMMARY OF IMPACTS TO FLOOD HAZARD DATA

Flooding Source	Effective Flooding	Proposed Flooding	Increases	Decreases
Geick Ranch Tributary 2	Zone A	Zone AE	Yes	Yes
	No BFEs	BFEs	Yes	None

* BFEs - Base (1-percent-annual-chance) Flood Elevations

COMMENT

This document provides the Federal Emergency Management Agency's (FEMA's) comment regarding a request for a CLOMR for the project described above. This document is not a final determination; it only provides our comment on the proposed project in relation to the flood hazard information shown on the effective National Flood Insurance Program (NFIP) map. We reviewed the submitted data and the data used to prepare the effective flood hazard information for your community and determined that the proposed project meets the minimum floodplain management criteria of the NFIP. Your community is responsible for approving all floodplain development and for ensuring that all permits required by Federal or State/Commonwealth law have been received. State/Commonwealth, county, and community officials, based on their knowledge of local conditions and in the interest of safety, may set higher standards for construction in the Special Flood Hazard Area (SFHA), the area subject to inundation by the base flood). If the State/Commonwealth, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304. Additional Information about the NFIP is available on the FEMA website at https://www.fema.gov/flood-insurance.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

To determine the changes in flood hazards that will be caused by the proposed project, we compared the hydraulic modeling reflecting the proposed project (referred to as the proposed conditions model) to the hydraulic modeling used to prepare the Flood Insurance Study (FIS) (referred to as the effective model). If the effective model does not provide enough detail to evaluate the effects of the proposed project, an existing conditions model must be developed to provide this detail. This existing conditions model is then compared to the effective model and the proposed conditions model to differentiate the increases or decreases in flood hazards caused by more detailed modeling from the increases or decreases in flood hazards that will be caused by the proposed project.

The table below shows the changes in the BFEs:

BFE Comparison Table

Flooding Source: Dirty Woman Creek-Lake Fork		BFE Change (feet)	Location of maximum change
Existing vs. Effective	Maximum increase	N/A	N/A
	Maximum decrease	N/A	N/A
Proposed vs. Existing	Maximum increase	5.5	Approximately 1,700 downstream of Eastonville Road
	Maximum decrease	8.0	Approximately 400 feet downstream of Eastonville Road
Proposed vs. Effective	Maximum increase	N/A	N/A
	Maximum decrease	N/A	N/A

Increases due to the proposed project that exceed those permitted under Paragraphs (c)(10) or (d)(3) of Section 60.3 of the NFIP regulations must adhere to Section 65.12 of the NFIP regulations. With this request, your community has complied with all requirements of Paragraph 65.12(a) of the NFIP regulations. Compliance with Paragraph 65.12(b) also is necessary before FEMA can issue a Letter of Map Revision when a community proposes to permit encroachments into the effective regulatory floodway that will cause BFE increases in excess of those permitted under Paragraph 60.3(c)(3)

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304. Additional Information about the NFIP is available on the FEMA website at https://www.fema.gov/flood-insurance.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)

COMMUNITY INFORMATION (CONTINUED)

DATA REQUIRED FOR FOLLOW-UP LOMR

Upon completion of the project, your community must submit the data listed below and request that we make a final determination on revising the effective FIRM and FIS report. If the project is built as proposed and the data below are received, a revision to the FIRM and FIS report would be warranted.

• Detailed application and certification forms must be used for requesting final revisions to the maps. Therefore, when the map revision request for the area covered by this letter is submitted, Form 1, entitled "Overview and Concurrence Form," must be included. A copy of this form may be accessed at https://www.fema.gov/flood-maps/change-your-flood-zone/paper-application-forms/mt-2.

• The detailed application and certification forms listed below may be required if as-built conditions differ from the proposed plans. If required, please submit new forms, which may be accessed at https://www.fema.gov/flood-maps/change-your-flood-zone/paper-application-forms/mt-2, or annotated copies of the previously submitted forms showing the revised information.

Form 2, entitled “Riverine Hydrology and Hydraulics Form.” Hydraulic analyses for as-built conditions of the base flood and the regulatory floodway, must be submitted with Form 2.

Form 3, entitled “Riverine Structures Form.”

• A certified topographic work map showing the revised and effective base floodplain and floodway boundaries. Please ensure that the revised information ties in with the current effective information at the downstream and upstream ends of the revised reach.

• An annotated copy of the FIRM, at the scale of the effective FIRM, that shows the revised base floodplain boundary delineations shown on the submitted work map and how they tie into the base floodplain boundary delineations shown on the current effective FIRM at the downstream and upstream ends of the revised reach.

• As-built plans, certified by a registered Professional Engineer, of all proposed project elements.

• Documentation of the individual legal notices sent to property owners who will be affected by any widening or shifting of the base floodplain and/or any BFE increases along Geick Ranch Tributary 2.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304. Additional Information about the NFIP is available on the FEMA website at https://www.fema.gov/flood-insurance.

Patrick “Rick” F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)

COMMUNITY INFORMATION (CONTINUED)

DATA REQUIRED FOR FOLLOW-UP LOMR (continued)

• FEMA's fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps may be accessed at https://www.fema.gov/flood-maps/change-your-flood-zone/status/flood-map-related-fees. The fee at the time of the map revision submittal must be received before we can begin processing the request. Payment of this fee can be made through a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card (Visa or MasterCard only). Please either forward the payment, along with the revision application, to the following address:

Colorado Water Conservation Board
Attention: Floodplain Mapping Program Manager
1313 Sherman Street, Rm 718
Denver, CO 80203

or submit the LOMR using the Online LOMC portal at: https://hazards.fema.gov/femaportal/onlinelomc/signin

After receiving appropriate documentation to show that the project has been completed, FEMA will initiate a revision to the FIRM and FIS report. Because the flood hazard information (i.e., base flood elevations, base flood depths, SFHAs, zone designations, and/or regulatory floodways) will change as a result of the project, a 90-day appeal period will be initiated for the revision, during which community officials and interested persons may appeal the revised flood hazard information based on scientific or technical data.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on the FEMA website at https://www.fema.gov/flood-insurance.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)

COMMUNITY INFORMATION (CONTINUED)

COMMUNITY REMINDERS

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Jeanine P. Petterson
Director, Mitigation Division
Federal Emergency Management Agency, Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267
(303) 235-4830

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304. Additional Information about the NFIP is available on the FEMA website at https://www.fema.gov/flood-insurance.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency

Washington, D.C. 20472

November 15, 2024

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Carrie Geitner
Chair, Board of Commissioners
200 South Cascade Avenue, Suite 100
Colorado Springs, CO 80903

IN REPLY REFER TO:
Case No.: 24-08-0102R
Community Name: El Paso County, CO
Community No.: 080059

104

Dear Chair Geitner:

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Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

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