

**STORMWATER MANAGEMENT PLAN (SWMP)**  
**FOR**  
**GRANDWOOD RANCH SUBDIVISION**

**MARCH 17, 2019**

**Prepared For:**

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## **SITE DESCRIPTION**

The Grandwood Ranch Subdivision property is located in the south half of the north half of Section 19, Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado.

The site is bordered immediately to the west by Woodmoor Summit Subdivision and Fairplay Drive. Timberview, Mills Timber, Arrowwood, and Bent Tree Subdivisions border the property to the north. The eastern boundary is bordered by Bent Tree Subdivision and to the south is Higby Road.

The site encompasses approximately 147 acres and is currently zoned RR5 (5 acre minimum lot size). This drainage report considers the entire 147 acres being rezoned to RR2.5 (2.5 acre minimum lot size) to allow for the development of 48 single family residential lots at a minimum of 2.5 Acres each. The 48 lots will comprise approximately 121 acres of the proposed development along with 18 acres of open space and 5920 feet of roadway.

Currently, the site is undeveloped and covered with native grasses sparse brush and mature coniferous trees. The existing topography of the site generally slopes toward the south with grades ranging from 2% to 30%. There is a ridge running north-south through the center of the property that concentrates the drainage of the site in 2 locations along Higby Road. Existing culverts under Higby road allow stormwater to continue flowing south. Offsite drainage sheet flows from the north onto the property, and there is concentrated flow at the north west corner of the property from Timberview Subdivision and midway along the eastern boundary from the Bent Tree Subdivision.

Construction activities will consist of clearing, grubbing, cutting and filling areas for roadways, utilities and building preparation. The total size of the land disturbing activities for the construction of the development will be approximately 23 acres.

## **SITE MAP**

A Site Map is included with this SWMP for the Grandwood Ranch Ranch project. The Site Map consists of the Grandwood Ranch Erosion Control Plan as submitted to El Paso County. The Site Map includes construction site boundaries, areas of ground surface disturbance, areas of cut and fill, areas used for storage of building materials, equipment, soil, and waste, the locations of structural and non-structural Best Management Practices, the locations of the existing water courses (if any exist), the soil type areas, existing and proposed contours, proposed structures and improvements, an explanation of the existing vegetation on the site, locations of existing water courses, locations of existing 100-year floodplains (if any exist), locations of existing and proposed utilities and a vicinity map.

## **BMP'S FOR STORMWATER POLLUTION PREVENTION**

Before any construction activities commence on the Grandwood Ranch site, Inlet Protection will be installed around all existing culvert inlets, and other drainage structure inlets that may receive runoff from the site. Additionally, inlet protection will be culvert inlets, and other drainage structure inlets installed on the site immediately after the installation of the inlet. Inlet protection reduces sediment in storm drains and culverts and reduces sediment pollution in stormwater by filtering out some of the sediment carried by runoff flowing through the inlet protection. The locations of inlet protection are identified on the Site Map.

Before any grading or other significant disturbance occurs on site and before any other construction activities commence on the site, a combination of Rock Check Dams and Straw Bale Barriers will be installed at the flowline, in front of and downstream from the planned construction activities on the site. These controls help reduce pollution of stormwater by filtering out much of the sediment carried by runoff flowing through the barrier and by facilitating deposition of sediment by slowing the runoff. The location of the Rock Check Dams and Straw Bale Barriers is identified on the Site Map.

Before any other construction activities commence on the site, Vehicle Tracking Controls (VTCs) will be installed at all site access points. VTCs help reduce the deposition of sediment, dirt, mud, and debris by vehicles exiting the site onto the streets adjacent to the site. The locations of site entrance vehicle tracking controls are identified on the Site Map.

Before any grading or other significant disturbance occurs on site, Silt Fence will be installed along any edge of an area to be disturbed where runoff would otherwise go untreated. Silt fence will be also installed along those portions of the site perimeter where potentially sediment containing runoff may flow into adjacent properties. The locations of silt fences are identified on the Site Map.

## **FINAL STABILIZATION & LONG TERM STORM WATER MANAGEMENT**

Viable vegetative cover will be established within one year of completion of construction activities on all disturbed areas not otherwise stabilized. Unless otherwise indicated on a landscape plan, revegetation will be achieved through seedbed preparation, including soil roughening, seeding, mulching, and irrigating when specified. In order to prevent or control erosion and pollution of stormwater by sediment after completion of construction activities, many of the structural BMPs will remain in place until final stabilization. BMPs that must remain in place until final stabilization shall be removed following final stabilization and the resulting disturbed areas shall be seeded and mulched.

## **OTHER STORMWATER POLLUTION CONTROLS**

All stormwater pollution control measures to be implemented on the Grandwood Ranch site are included in the above sections Best Management Practices for Stormwater Pollution Prevention and Final Stabilization and Long-Term Storm Water Management.

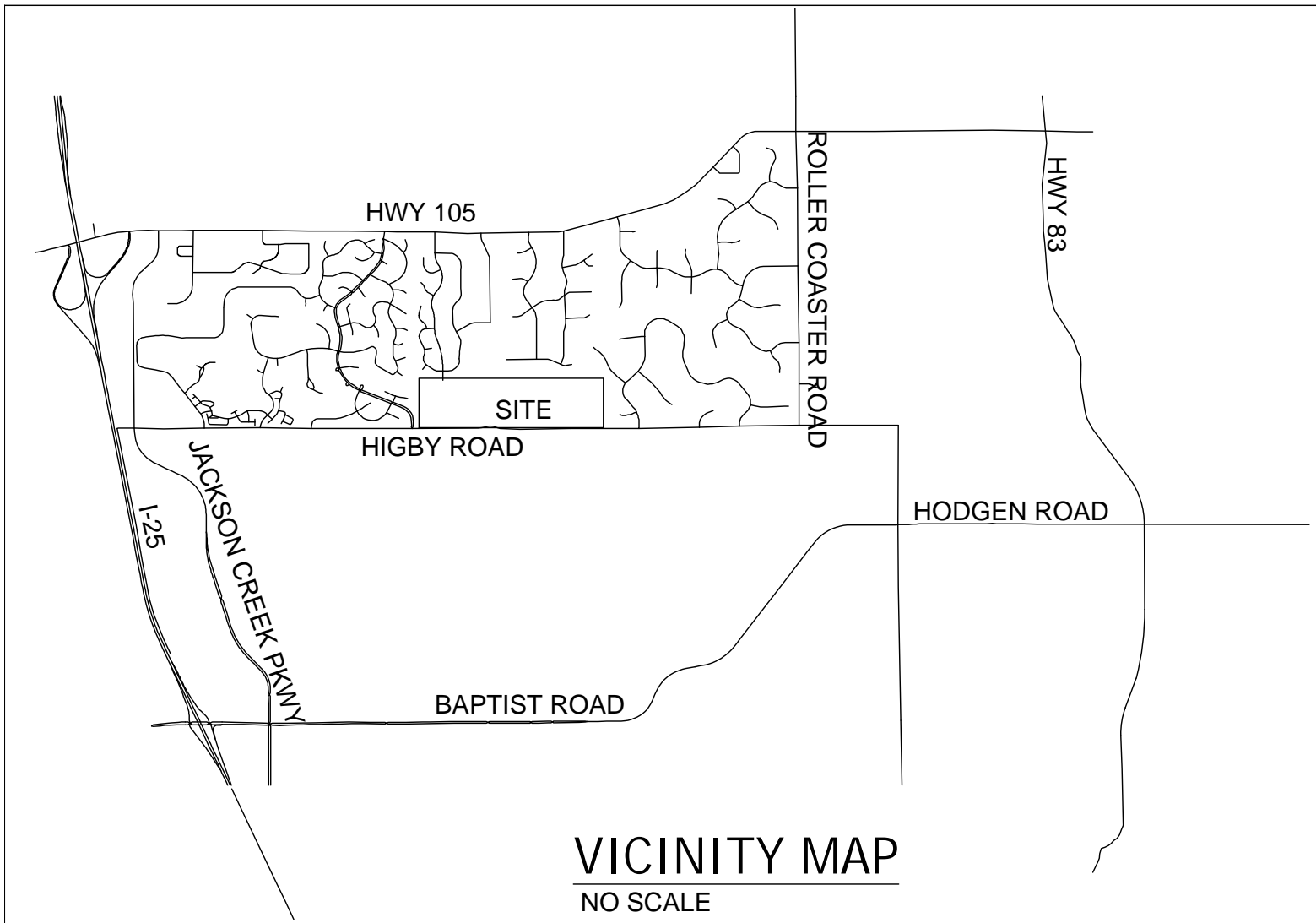
## **MAINTENANCE, INSPECTION AND REPAIR**

The primary purpose of a regular inspection is to determine if there is evidence of, or the potential for, pollutants entering the drainage system. This will be accomplished by inspection of the stormwater management being performed and documented at least every 14 days, and after any precipitation or snowmelt event that results in stormwater running across the ground. This is the minimum requirement and more frequent inspection and regular maintenance of the stormwater management system will be necessary to reduce pollutants in stormwater discharges from the construction site. A thorough inspection of the Grandwood Ranch site will be performed and documented weekly and after any precipitation or snowmelt event that results in stormwater running across the ground.

The regular inspections of the site will include observation of the construction site perimeter and all stormwater discharge points including storm drain system inlets and culverts. BMPs applied in the site perimeter or around stormwater discharge points include inlet protection, site entrance vehicle tracking controls, silt fences, straw bale barriers, and straw bale check structures.

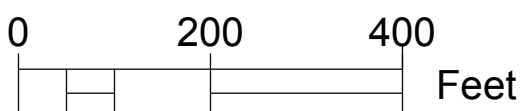
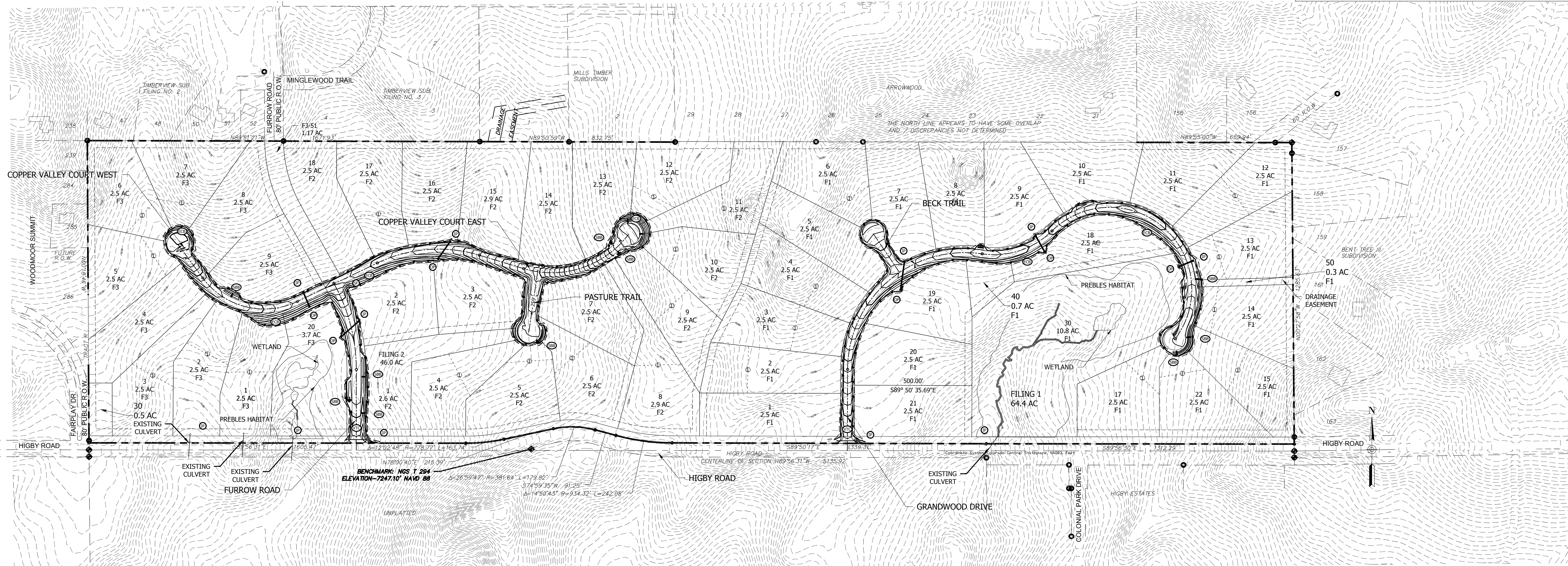
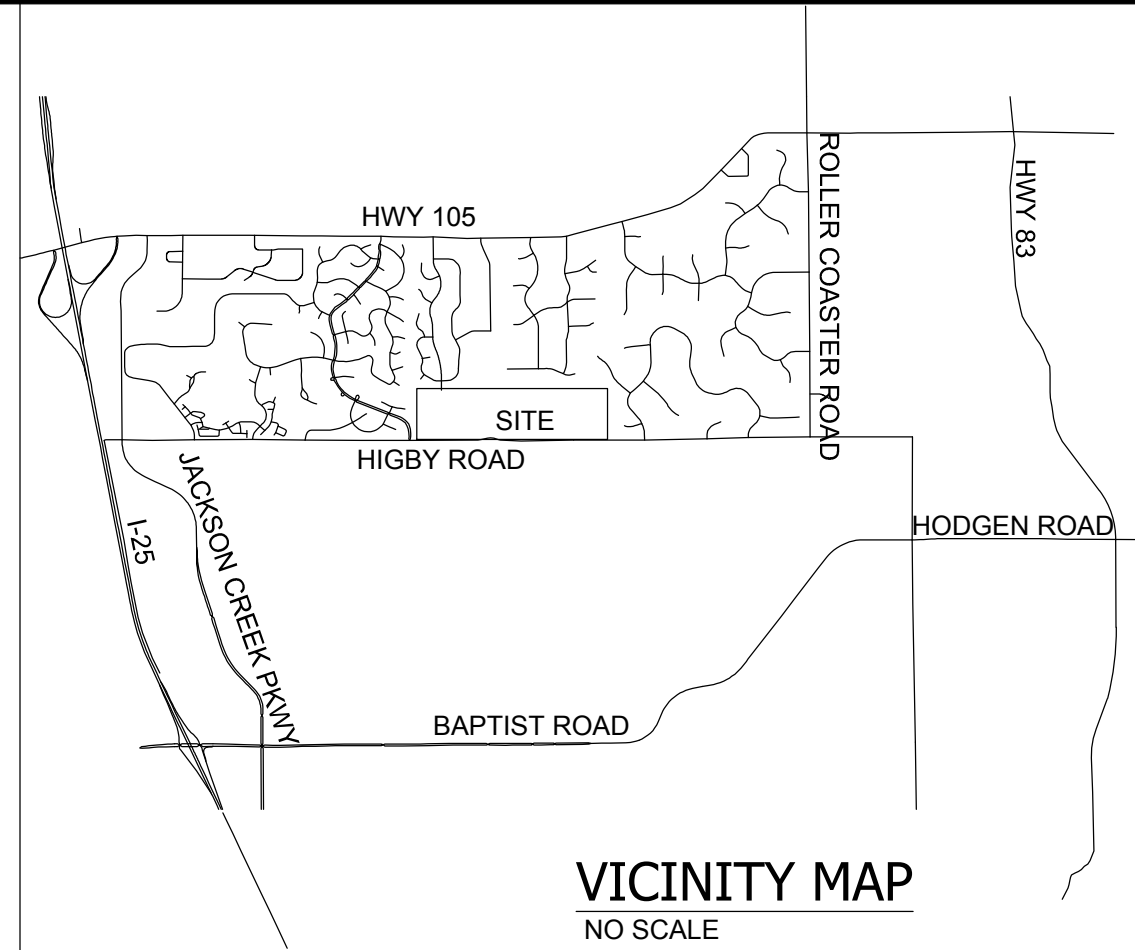
The regular inspections of the site will also include observation of all disturbed areas and all stabilized and revegetated areas to determine if erosion is happening. It will also include observation of material storage areas including waste collection areas and topsoil stockpiles for leaks and spills. Concrete washout areas will be included in the regular inspections of the site but will require additional attention when in use.

## **APPENDIX**





- (SF) SILT FENCE  
(IP) INLET PROTECTION  
(OP) OUTLET PROTECTION  
(SBB) STRAW BALES  
(VTC) VEHICLE TRACKING  
(ECB) EROSION CONTROL BLANKET  
--- SILT FENCE  
----- LIMITS OF DISTURBANCE



DRWN: CEF CHKD: RML DSGN: CEF DATE: 02/06/19

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Grandwood Ranch Subdivision  
Tax Schedule No. 61190-00-003  
Part of S2 of N2 of Sec 19, TS 11S,  
Range 66W, El Paso County, CO

GRANDWOOD RANCH  
GRADING & EROSION CONTROL

SCALE: DWG. NUMBER: C-60 REV: 0