

STORMWATER MANAGEMENT PLAN FOR SOLACE APARTMENTS – FILING 1

Prepared For (Applicant):

Jackson Dearborn Partners
404 S. Wells St.
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Chicago, IL 60607
(734) 216-2577
Contact: Dane Olmstead

Prepared By:

JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, Colorado 80919
(303) 267-6240
Contact: Mike Bramlett

Qualified Stormwater Manager:

Contractor:

November, 2020

JR Project No.: 2-5174.00

El Paso County PCD File No.: SF-20-032

ENGINEER OF RECORD:

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

Mike Bramlett, P.E.

Date

Registered Professional Engineer

State of Colorado No. 32314

For and on behalf of JR Engineering, LLC.

REVIEW ENGINEER:

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

Review Engineer

Date

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1. Applicant / Contact Information

Owner/Developer: Jackson Dearborn Partners
Attn: Dane Olmstead
404 S. Wells St. Suite 400
Chicago, IL 60607
(734) 216-2577

Engineer: JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, CO 80919
Attn: Mike Bramlett (303) 267-6240
mbramlett@jrengineering.com

SWMP Administrator: To Be Determined

Contractor: To Be Determined

2. Site Description and Location

Solstice Apartments Filing No. 1 is located in Section 7, Township 14 South, Range 65 West of the Sixth Principal Meridian, in the County of El Paso, State of Colorado. The site is east of N. Powers Blvd, and borders Sand Creek – Center Tributary to the east and Galley Rd to the south. Solace Apartments lies within the Sand Creek Drainage Basin. Flows from this site are ultimately tributary to Sand Creek. See Appendix A for a vicinity map.

The site is currently undeveloped grassland and encompasses approximately 29 acres. The development of the proposed site will include implementation of BMPs, site grading, utility and storm installation, roadway paving, associated residential site development, and removal of temporary BMPs. Refer to the GEC plans in Appendix C for the phasing of BMPs.

Site details:

- a. Estimated area to undergo disturbance: 29 acres
- b. Estimated 100-year runoff coefficients:
 - i. Historic: $C = 0.54$
 - ii. Developed: $C = 0.66$
- c. Soil erosion potential and potential impacts upon discharge: Site soils includes mostly Blakeland loamy sand and Ellicott loamy coarse sand. The majority of the soils are classified as Hydrologic Soils Group B (moderate runoff potential). Refer to Appendix B for a soils map. Eroded soil may adversely impact downstream drainageways. BMPs will be installed and maintained to mitigate adverse impacts due to soil erosion.

- d. Existing vegetation: Native meadow grasses (approximately 70% coverage), determined using a combination of visual field verification and aerial inspection.
- e. Location and description of potential pollution sources: Potential sources of pollution include: onsite vehicle fueling, portable toilets, temporary stock pile, and concrete washout area. The locations of these sources are shown in the GEC plans in Appendix C or will be determined by the contractor.
- f. Spill prevention and pollution controls for dedicated batch plants: Not applicable for this site since there will be no dedicated batch plants.
- g. Location and description of anticipated non-stormwater components of discharge: There will be a concrete washout area (CWA) where the cleaning of concrete trucks could produce a non-stormwater discharge. Proper installation and maintenance of the CWA will not allow runoff from this area. Another potential source of non-stormwater discharge could be the irrigation of permanent seeding (PS). Irrigation will be kept at a rate so as to not create runoff.
- h. Ultimate receiving waters: Sand Creek – Center Tributary
- i. Streams located within project area: Sand Creek – Center Tributary
- j. This project does not anticipate the use of an onsite batch plant.

3. Proposed Sequence of Major Activities

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

- 1. Install VTC and other perimeter soil erosion control measures (June 2021).
- 2. Clear and rough grade for improvements (June 2021).
- 3. Excavate and install improvements including underground piping and drainage structures (July 2021).
- 4. Fine grading (July 2021).
- 5. Install paving (August 2021).
- 6. Install landscaping (March 2022).
- 7. Clean up and final stabilization (June 2022).

4. BMPs for Stormwater Pollution Prevention

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

- a. Erosion and Sediment Controls
 - i. Structural BMPs:
 - 1. Sediment basins (SBs) to collect runoff before it enters receiving waters

2. Silt fence (SF) along downstream limits of disturbed areas to filter sediment from runoff
3. Stabilized staging area (SSA) near site entrance to consolidate construction equipment in a stabilized location
4. Construction marker (CM) to identify limits of construction (LOC)
5. Vehicle tracking control (VTC) at site entrance to prevent sediment from leaving the site via vehicle tires
6. Temporary stock pile (TSP) to consolidate materials such as topsoil in a controlled area bounded by silt fence
7. Erosion control blanket (ECB) placed on any slopes of 3:1 or greater, including the sides of sediment basins
8. Inlet protection (IP) around culvert entrances
9. Outlet protection (OP) at culvert outlets
10. Diversion ditch (DD) to convey runoff to sediment basins
11. Concrete washout area (CWA) to allow a controlled area for concrete trucks to be washed
12. Reinforced rock berm (RRB) in Sand Creek – Center Tributary
- ii. Non-structural BMPs:
 1. Mulching (MU) to stabilize soils and promote seed growth
 2. Permanent seeding (PS) to stabilize disturbed areas
- b. Materials Handling and Spill Prevention
 - i. General Materials Handling Practices:
 1. Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions in a secure location. To the extent practical, material storage areas should not be located near storm drain inlets and should be equipped with covers, roofs, or secondary containment as required to prevent storm water from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spilled materials cannot combine and react.
 2. Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
 3. Materials no longer required for construction shall be removed from the site as soon as possible.
 4. Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and BMPs clear and functional.
 - ii. Specific Materials Handling Practices
 1. All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate storm water.
 2. All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
 3. Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing

operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants, shall be conducted under cover during wet weather and on an impervious surface to prevent release of contaminants onto the ground. Materials spilled during maintenance operations shall be cleaned up immediately and properly disposed of.

4. Wheel wash water shall be settled and discharged onsite by infiltration.
5. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to storm water runoff. Follow manufacturer's recommendations for application rates and procedures.
6. pH-modifying sources shall be managed to prevent contamination of runoff and storm water collected onsite. The most common sources of pH-modifying materials are bulk cement, cement kiln dust (CKD), fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters.

iii. Spill Prevention and Response Procedures

1. The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize their migration into storm water runoff and conveyance systems. If the release has impacted onsite storm water, it is critical to contain the released materials onsite and prevent their release into receiving waters.
2. Spill Response Procedures:
 - a. Notify site superintendent immediately when a spill, or the threat of a spill, is observed. The superintendent shall assess the situation and determine the appropriate response.
 - b. If spills represent an imminent threat of escaping onsite facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent after the situation has stabilized.
 - c. The site superintendent, or his/her designee, shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
 - d. Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
3. Spill kits shall be on-hand at all fueling sites. Spill kit location(s) shall be reported to the SWMP administrator.
4. Absorbent materials shall be on-hand at all fueling areas for use in containing inadvertent spills. Containers shall be on-hand at all fueling sites for disposal of used absorbents.
5. Recommended components of spill kits include the following:

- a. Oil absorbent pads (one bale)
- b. Oil absorbent booms (40 feet)
- c. 55-gallon drums (2)
- d. 9-mil plastic bags (10)
- e. Personal protective equipment including gloves and goggles
- 6. Concrete wash water: unless confined in a pre-defined, bermed containment area, the cleaning of concrete truck delivery chutes is prohibited at the job site.
- 7. Notification procedures:
 - a. In the event of an accident or spill, the SWMP administrator shall be notified.
 - b. Depending on the nature of the spill material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line: 887-518-5608), downstream water users, or other agencies may also need to be notified.
 - c. Any spill of oil which 1) violates water quality standards, 2) produces a “sheen” on a surface water, or 3) causes a sludge or emulsion, or any hazardous substance release, or hazardous waste release which exceeds the reportable quantity, must be reported immediately by telephone to the National Response Center Hotline at (800) 424-8802.

5. Final Stabilization and Long-Term Stormwater Management

- a. Permanent seeding will be provided to achieve long-term stabilization of the site.
- b. Seed Mix: Pawnee Buttes Seed Inc. – “Low Grow native Mix” or approved equal.
- c. Seeding Application Rate: Drill seed 0.25” to 0.5” into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25” to 0.5” into the soil. Apply seed at the following rates:
 - i. Dryland: 20-25 lbs/acre
 - ii. Irrigated: 40 lbs/acre
- d. Soil stabilization Practices:
 - i. Mulching Application: Apply 1-1/2 tons of certified weed free hay per acre mechanically crimped into the soil in combination with an organic mulch tackifier. On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch tackifier.
- e. Soil Conditioning and Fertilization Requirements:
 - i. Soil conditioner, organic amendment shall be applied to all seeded areas at 3 CY / 1000 SF.
 - ii. Fertilizer shall consist of 90% fungal biomass (mycelium) and 10% potassium-magnesia with a grade of 6-1-3 or approved equal. Fertilizer shall be applied as recommended by seed supplier.
- f. Final stabilization is reached when all soil-disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed.

Once vegetative plantings are in place, permanent seeding and mulching will be placed throughout the site. Once full site stabilization has occurred, all temporary BMP's should be removed and final site cleaning performed.

- g. Final Stabilization and Long-term Stormwater Quality.
 - i. After final stabilization occurs, Stormwater Quality of site will be maintained via the use of detention ponds/water quality ponds, all flows on site will be routed to these ponds and treated before being released into the adjacent Sand Creek Channel.
 - 1. Mowing and Trimming shall occur on a regular basis in the ponds and at their spillways.
 - ii. Onsite flows will also be treated via grass swales that route flows present in open spaces to the storm sewer system which eventually outfalls to the detention ponds.

6. Inspection and Maintenance

- a. Inspection Schedules:
 - i. The contractor shall inspect BMPs once every 14 days at a minimum, and immediately (within 24 hours) after any precipitation or snowmelt event that causes surface erosion (i.e. that results in storm water running across the ground), to ensure that BMPs are maintained in effective operating condition.
- b. Inspection Procedures:
 - i. Site Inspection / Observation Items:
 - 1. Construction site perimeter and discharge points
 - 2. All disturbed areas
 - 3. Areas used for material / waste storage that are exposed to precipitation
 - 4. Other areas having a significant potential for storm water pollution, such as demolition areas or concrete washout areas, or locations where vehicles enter or leave the site
 - 5. Erosion and sediment control measures identified in the SWMP
 - 6. Any other structural BMPs that may require maintenance, such as secondary containment around fuel tanks, or the conditions of spill response kits.
 - ii. Inspection Requirements:
 - 1. Determine if there is any evidence of, or potential for, pollutants entering the receiving waters.
 - 2. Review BMPs to determine if they still meet design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site.
 - 3. Upgrade and/or revise any BMPs not operating in accordance with the SWMP and update the SWMP to reflect any revisions.
 - iii. BMP Maintenance / Replacement and Failed BMPs:
 - 1. The contractor shall remove sediment that has been collected by perimeter controls, such as silt fence and inlet protection, on a

regular basis to prevent failure of BMPs, and remove potential of sediment from being discharged from the site in the event of BMP failure.

2. Removed sediment must be moved to an appropriate location where it will not become an additional pollutant source, and should never be placed in ditches or streams.
3. The contractor shall update the GEC as required with any new BMPs added during the construction period.
4. The contractor shall address BMPs that have failed or have the potential to fail without maintenance or modifications, as soon as possible, immediately in most cases, to prevent discharge of pollutants.

iv. Record Keeping and Documenting Inspections:

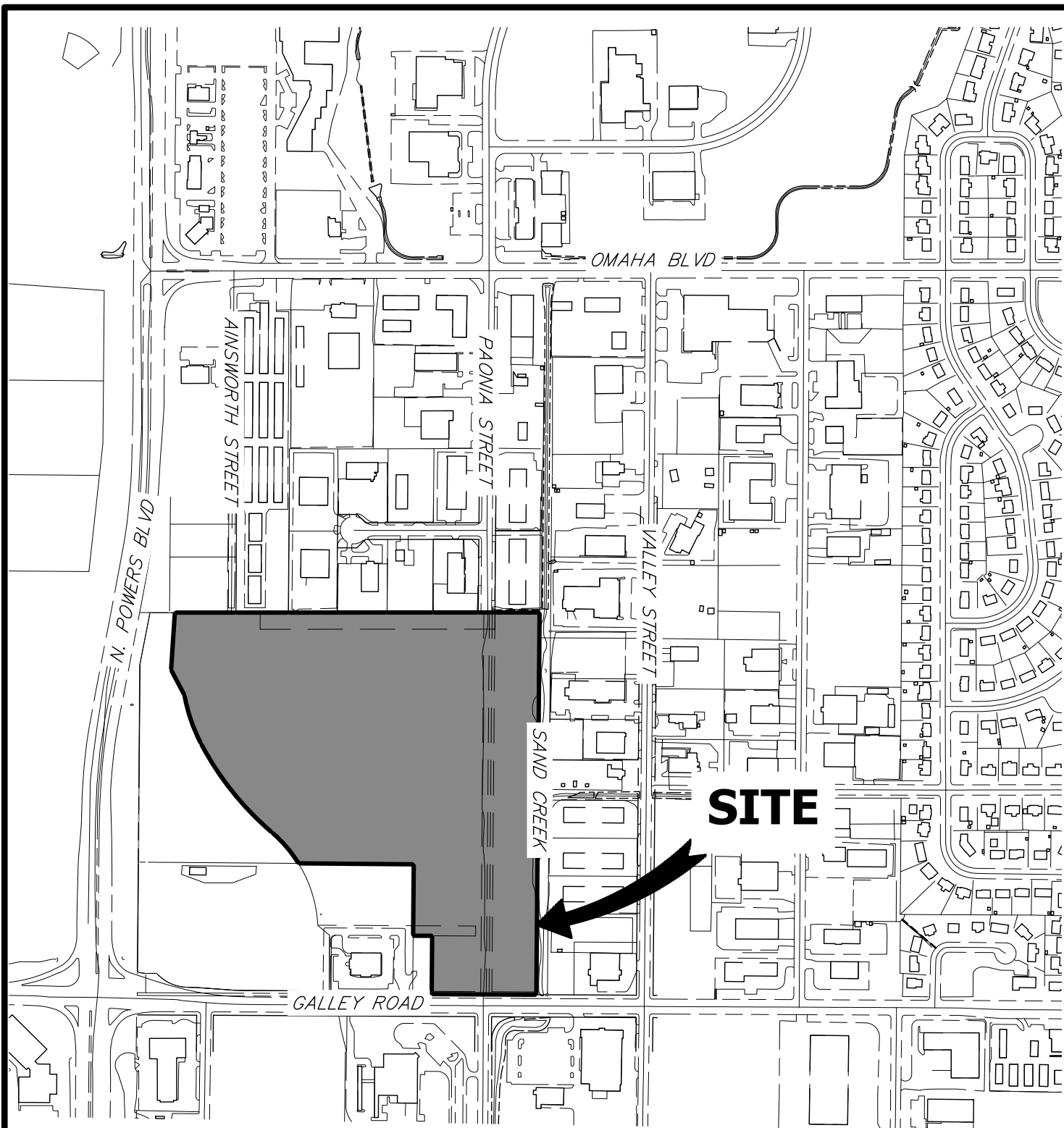
1. The contractor shall maintain records of all inspection reports, including signed inspection logs, at the project site.
2. The permittee shall document inspection results and maintain a record of the results for a period of 3 years following expiration or inactivation of permit coverage.
3. Site inspection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

7. Additional Notes

- a. Please note that this document shall be viewed as a living document that is subject to change per additional review and modifications. The document shall be modified and amended as necessary to manage changing Stormwater quality issues present on the site during is construction. The Qualified Stormwater Manager shall amend this document when there is a change is design, construction, operation or maintenance of the site that would require the use of new or revised BMPs, or if current BMPs prove ineffective in managing the site.
- b. This project does not rely on BMPs or control measure operated or owned by another entity.

APPENDIX A – VICINITY MAP

X:\2510000.all\2517400\Drawings\Blocks\Vicinity Map - Drainage.dwg, 8.5x11 Portrait, 12/17/2019 11:14:34 AM, PhillipsJ



SITE



500 250 0 500 1000



ORIGINAL SCALE: 1" = 500'

VICINITY MAP
SOLACE APARTMENTS
JOB NO. 15504.03
4/27/2018

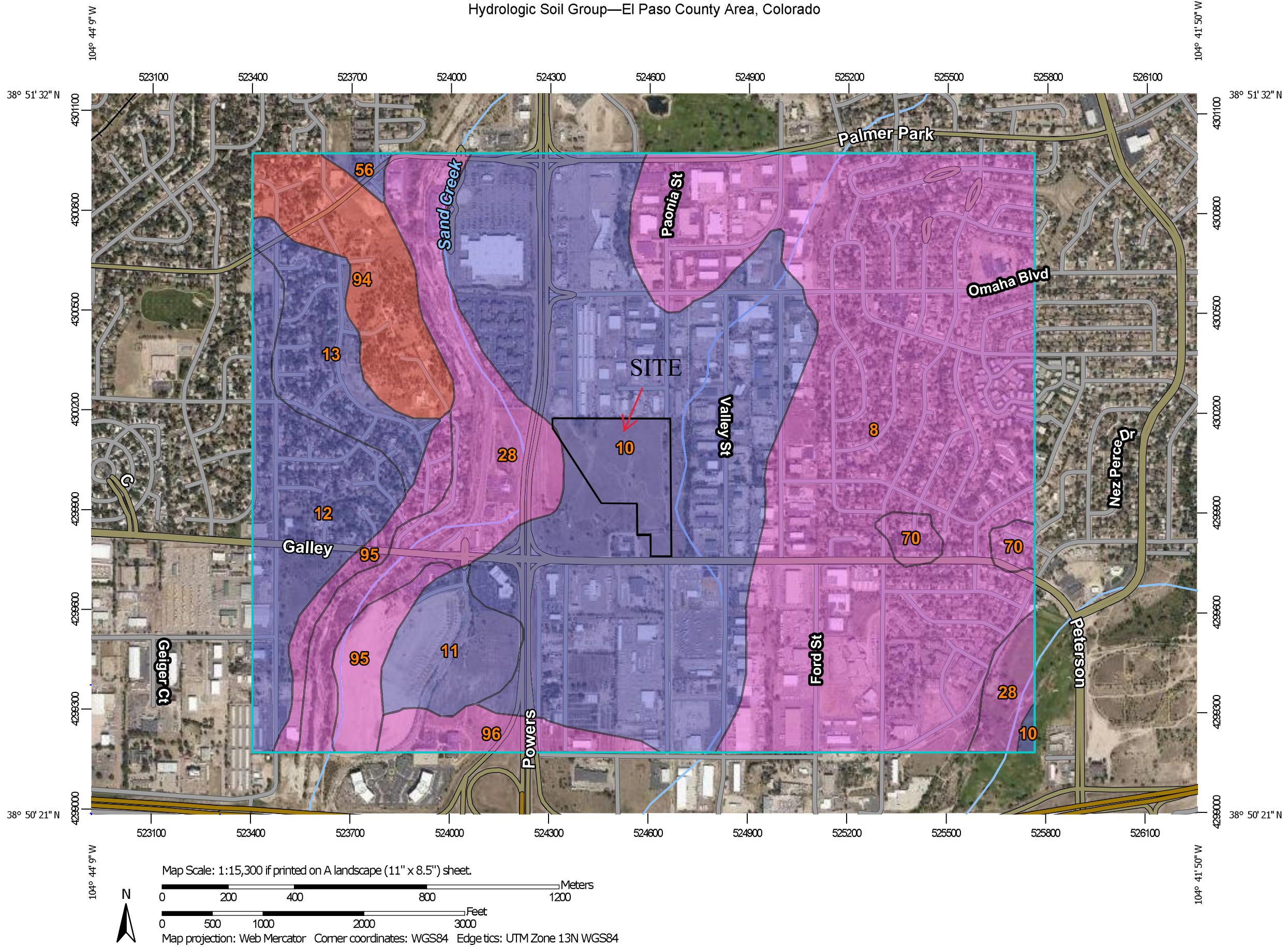


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APPENDIX B – SOILS MAP

Hydrologic Soil Group—El Paso County Area, Colorado



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/14/2020
Page 1 of 4

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.

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 17, Sep 13, 2019

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

Date(s) aerial images were photographed: Aug 19, 2018—Sep 23, 2018

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
8	Blakeland loamy sand, 1 to 9 percent slopes	A	373.7	35.4%
10	Blendon sandy loam, 0 to 3 percent slopes	B	321.4	30.5%
11	Bresser sandy loam, cool, 0 to 3 percent slopes	B	31.9	3.0%
12	Bresser sandy loam, cool, 3 to 5 percent slopes	B	69.8	6.6%
13	Bresser sandy loam, cool, 5 to 9 percent slopes	B	41.4	3.9%
28	Ellicott loamy coarse sand, 0 to 5 percent slopes	A	96.1	9.1%
56	Nelson-Tassel fine sandy loams, 3 to 18 percent slopes	B	3.7	0.3%
70	Pits, gravel	A	10.3	1.0%
94	Travessilla-Rock outcrop complex, 8 to 90 percent slopes	D	51.5	4.9%
95	Truckton loamy sand, 1 to 9 percent slopes	A	35.7	3.4%
96	Truckton sandy loam, 0 to 3 percent slopes	A	19.7	1.9%
Totals for Area of Interest			1,055.2	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C – GEC PLANS AND DETAILS

SOLACE AT CIMARRON HILLS

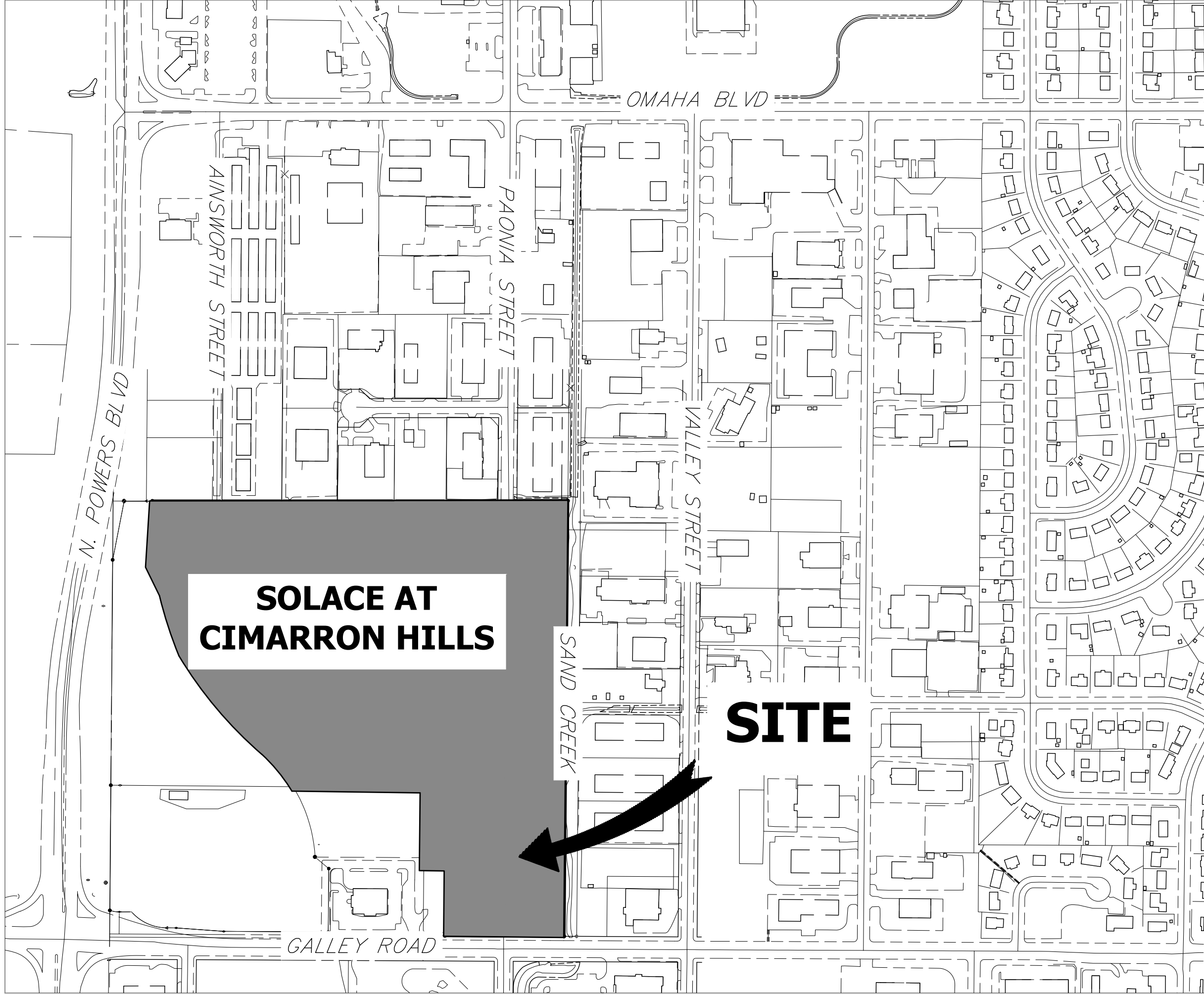
A PORTION OF SECTION 7, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE P.M.

EL PASO COUNTY, COLORADO

GRADING AND EROSION CONTROL PLANS

ABBREVIATIONS

AC	ACRE	FDP	FINAL DEVELOPMENT PLAN	PL	PROPERTY LINE
AD	ALGEBRAIC DIFFERENCE	FDR	FINAL DRAINAGE REPORT	PR	PROPOSED
AH	AHEAD	FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVATURE
ARCH	ARCHITECT	FG	FINISHED GRADE	PT	POINT OF TANGENCY
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	FH	FIRE HYDRANT	PV	PLUG VALVE
ASSY	ASSEMBLY	FL	FLOWLINE	PVC	POLYVINYL CHLORIDE
AVE	AVENUE	FIL	FILING	R	RADIUS
BB	BOX BASE	FO	FIBER OPTIC CABLE	RC	REINFORCED CONCRETE PIPE
BK	BACK	GB	GRADE BREAK	RD	ROAD
BNDY	BOUNDARY	GE	GAS EASEMENT	ROW	RIGHT OF WAY
BOP	BOTTOM OF PIPE	GIS	GEOGRAPHIC INFORMATION SYSTEM	RT	RIGHT
BOV	BLOW OFF VALVE	GL	GAS LINE	S	SOUTH
BFV	BUTTERFLY VALVE	GPS	GLOBAL POSITIONING SYSTEM	STE	STEEL
BLVD	BOULEVARD	GV	GATE VALVE	SAN	SANITARY SEWER
BW	BOTTOM OF WALL	HC	HANDICAP	SF	SQUARE FEET
C&G	CURB & GUTTER	HDC	HIGH DEFLECTION COUPLING	ST	STREET
CATV	CABLE TELEVISION	HDPE	HIGH DENSITY POLYETHYLENE	STA	STATION
CB	CATCH BASIN	HGL	HYDRAULIC GRADE LINE	STM	STORM SEWER
CBC	CONCRETE BOX CULVERT	HOA	HOME OWNERS ASSOCIATION	SY	SQUARE YARD
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	HP	HIGH POINT	SY-IN	SQUARE YARD INCH
CD	CUL-DE-SAC	I	INLET	TB	THRUST BLOCK
CFS	CUBIC FEET PER SECOND	IE	IRRIGATION EASEMENT	TBC	TOP BACK OF CURB
CL	CENTER LINE	INT	INTERSECTION	TBW	TOP BACK OF WALK
CLOMR	CONDITIONAL LETTER OF MAP REVISION	INV	INVERT	TEL	TELEPHONE
CLR	CLEAR	IRR	IRRIGATION	TOA	TOP OF ASPHALT
CMP	CORRUGATED METAL PIPE	KB	KICK (THRUST) BLOCK	TOB	TOP OF BOX
CO	CLEAN OUT	LE	LANDSCAPE EASEMENT	TOC	TOP OF CURB OR CONCRETE
CONC	CONCRETE	LF	LINEAR FEET	TOF	TOP OF FOUNDATION
CR	CIRCLE	LN	LANE	TOP	TOP OF PIPE
CSP	CORRUGATED STEEL PIPE	LOMR	LETTER OF MAP REVISION	TW	TOP OF WALL
CT	COURT	LP	LOW POINT	TY	TYPICAL
CTRB	CONCRETE THRUST REDUCER	LS	LUMP SUM	UDFCD	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
CY	CUBIC YARD	LT	LEFT	UE	UTILITY EASEMENT
DBPS	DRAINAGE BASIN PLANNING STUDY	MAX	MAXIMUM	U&DE	UTILITY & DRAINAGE EASEMENT
DE	DRAINAGE EASEMENT	MDDP	MASTER DEVELOPMENT DRAINAGE PLAN	UGE	UNDERGROUND ELECTRIC
DIA	DIAMETER	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
DIP	DUCTILE IRON PIPE	MIN	MINIMUM	VPC	VERTICAL POINT OF CURVATURE
DR	DRIVE	N	NORTH	VPI	VERTICAL POINT OF INTERSECTION
DRC	DESIGN REVIEW COMMITTEE	NRCP	NON-REINFORCED CONCRETE PIPE	VPT	VERTICAL POINT OF TANGENCY
DU	DWELLING UNITS	ODP	OFFICIAL DEVELOPMENT PLAN	VTC	VEHICLE TRACKING CONTROL
E	EAST	OHE	OVERHEAD ELECTRIC	W	WEST
EA	EACH	OHU	OVERHEAD UTILITY	WL	WATER LINE
EGL	ENERGY GRADE LINE	PC	POINT OF CURVATURE	WM	WATER MAIN
EL	ELEVATION	PCC	POINT OF COMPOUND CURVATURE	WRD	WATER RESOURCES DEPARTMENT
ELEC	ELECTRIC	PCR	POINT OF CURB RETURN	WS	WATER SURFACE
EOA	EDGE OF ASPHALT	PDP	PRELIMINARY DEVELOPMENT PLAN	WSE	WATER SURFACE ELEVATION
ESMT	EASEMENT	PE	PROFESSIONAL ENGINEER	WTR	WATER
EST	ESTIMATE	PI	POINT OF INTERSECTION	YR	YEAR
EX	EXISTING	PKWY	PARKWAY		



VICINITY MAP

SCALE: 1" = 300'

SHEET INDEX

1	COVER SHEET
2	GENERAL NOTES
3-4	INITIAL GRADING AND EROSION CONTROL PLANS
5-6	FINAL GRADING AND EROSION CONTROL PLANS
7-10	GRADING AND EROSION CONTROL DETAILS

TOTAL 10

EL PASO COUNTY STATEMENT

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

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

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

COUNTY ENGINEER/ECM ADMINISTRATOR

DATE

OWNER/DEVELOPER STATEMENT

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

DANE OLMSTEAD

DATE

JACKSON DEARBORN PARTNERS
404 S. WELLS ST.
CHICAGO, IL 60607

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 PLANS.

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING



DEVELOPER

JACKSON DEARBORN PARTNERS
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CIVIL ENGINEER

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ARCHITECT

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819 S. WABASH AVE, FIFTH FLOOR
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P~312.995.5305

GEOTECHNICAL ENGINEER

CTL THOMPSON, INC
5170 MARK DABLING BLVD
COLORADO SPRINGS, CO 80918
P~719.528.8300

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

PCD FILE #: SF-20-032

PREPARED FOR

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BY DATE

No. REVISION

1"=300'

H-SCALE

V-SCALE

N/A

DATE

03/12/21

DESIGNED BY

JRM

DRAWN BY

JRM

CHECKED BY

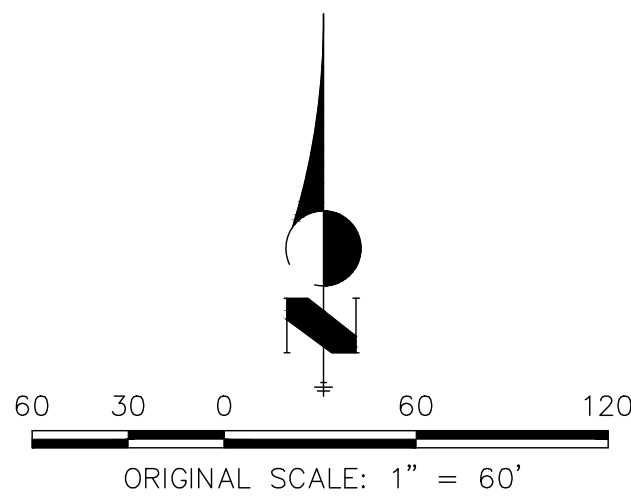
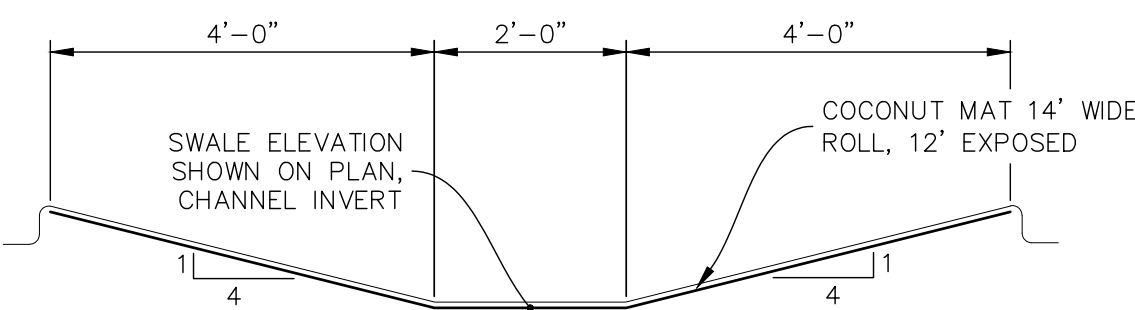
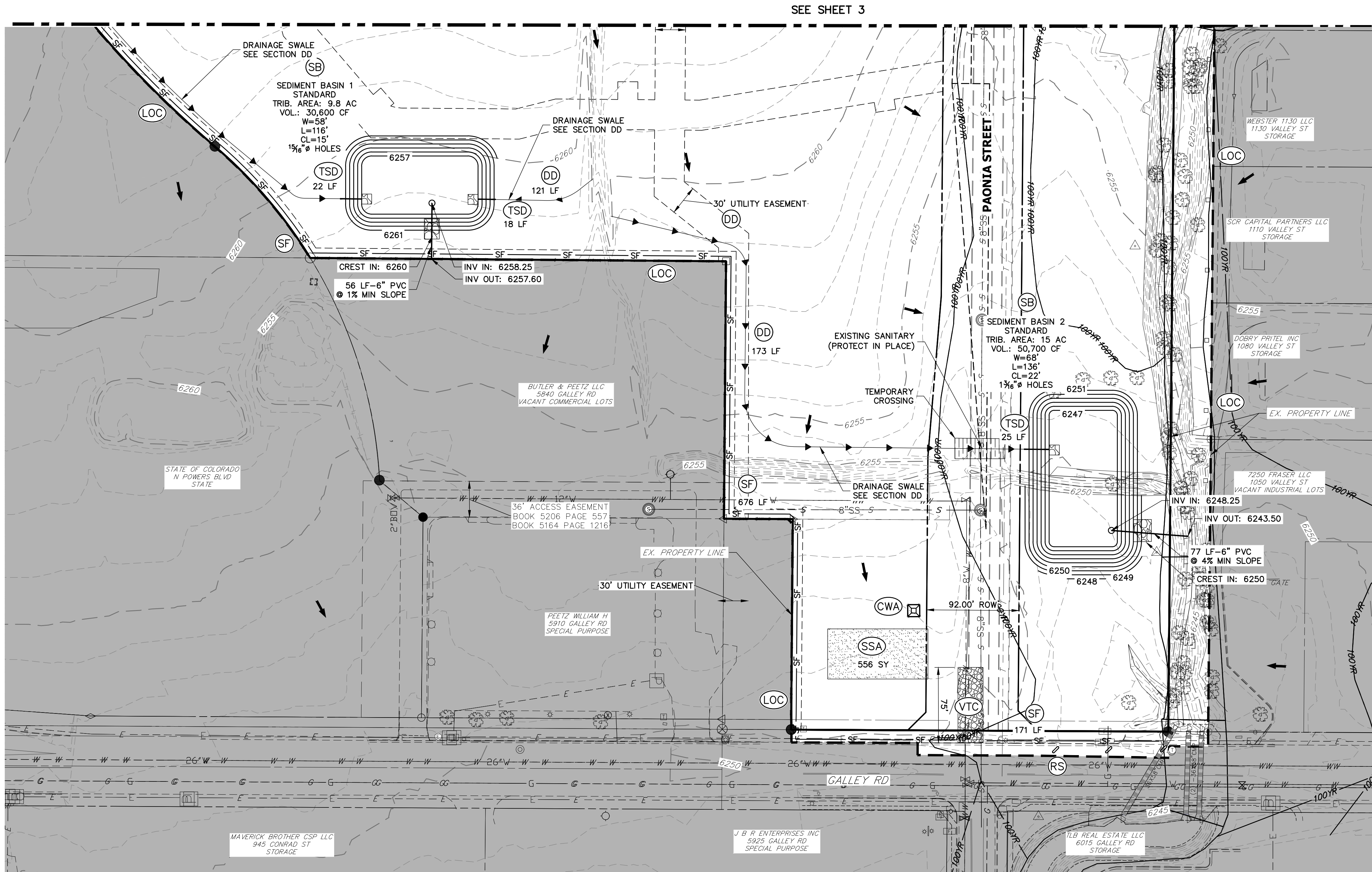
SOLACE AT CIMARRON HILLS

COVER SHEET

SHEET 1 OF 10

JOB NO. 25174.00

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NOTES

- REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) FOR A DETAILED DESCRIPTION OF THE MAINTENANCE PROGRAMS FOR EROSION CONTROL FACILITIES.
- ALL DISTURBED AREAS NOT TO BE PAVED SHALL BE PERMANENTLY SEEDED PER THE PAWNEE BUTTES SEED INC - "LOW GROW NATIVE MIX" OR APPROVED EQUAL. SEE SHEET 8 FOR SEED MIX DETAILS.
- P.I.E = PUBLIC IMPROVEMENTS EASEMENT



OWNER/DEVELOPER STATEMENT

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

DANE OLMSTEAD

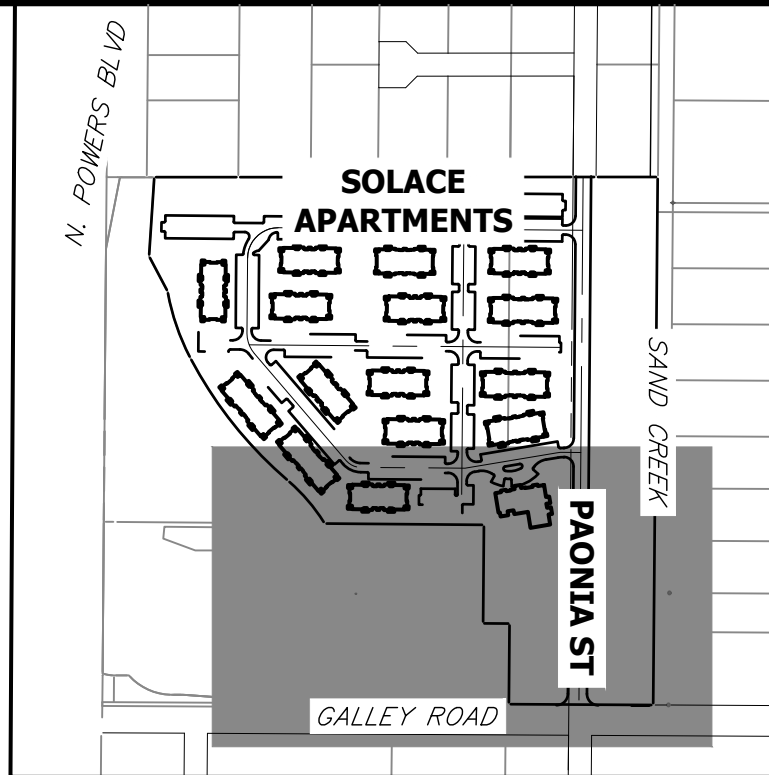
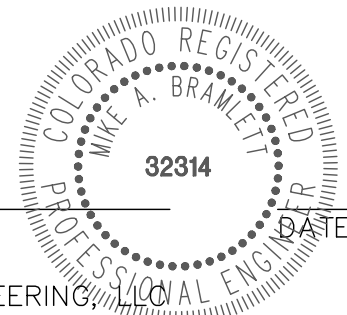
DATE

JACKSON DEARBORN PARTNERS
404 S. WELLS ST.
CHICAGO, IL 60607

ENGINEER'S STATEMENT

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MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING



KEY MAP
SCALE 1"=500'

LEGEND

SEDIMENT BASIN	SB	TOE
SILT FENCE	SF	TOP
CONSTRUCTION FENCE	CF	CF
STABILIZED STAGING AREA	SSA	
CONSTRUCTION MARKER	CM	
VEHICLE TRACKING CONTROL	VTC	
TEMPORARY STOCK PILE	TSP	
EROSION CONTROL BLANKET	ECB	
INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
DIVERSION DITCH AND DIKE, TEMPORARY	DD	
LIMITS OF CONSTRUCTION	LOC	
CONCRETE WASHOUT AREA	CWA	
SEEDING & MULCHING & SURFACE ROUGHENING	SM SR	
TEMPORARY SLOPE DRAIN	TSD	
CHECK DAM	CD	
ROCK SOCKS	RS	
STORMWATER FLOW ARROWS		
PROPERTY LINES		

BMP PHASING

- INITIAL:
- 1) INSTALL VTC
 - 2) INSTALL CWA
 - 3) ESTABLISH SSA
 - 4) INSTALL CONSTRUCTION MARKERS
 - 5) INSTALL SILT FENCE
 - 6) INSTALL SEDIMENT BASINS
 - 7) INSTALL DIVERSION DITCHES

- INTERIM:
- 1) LOCATE/INSTALL TEMPORARY STOCKPILE
 - 2) MAINTAIN ALL BMPs
 - 3) INSTALL RS
 - 4) INSTALL INLET AND OUTLET PROTECTION

- FINAL:
- 1) INSTALL MULCH AND PERMANENT SEEDING IN ALL DISTURBED AREAS
 - 2) REMOVE SILT FENCE AFTER STABILIZED

SOLACE AT CIMARRON HILLS

INITIAL GRADING AND
EROSION CONTROL PLANS

SHEET 4 OF 10

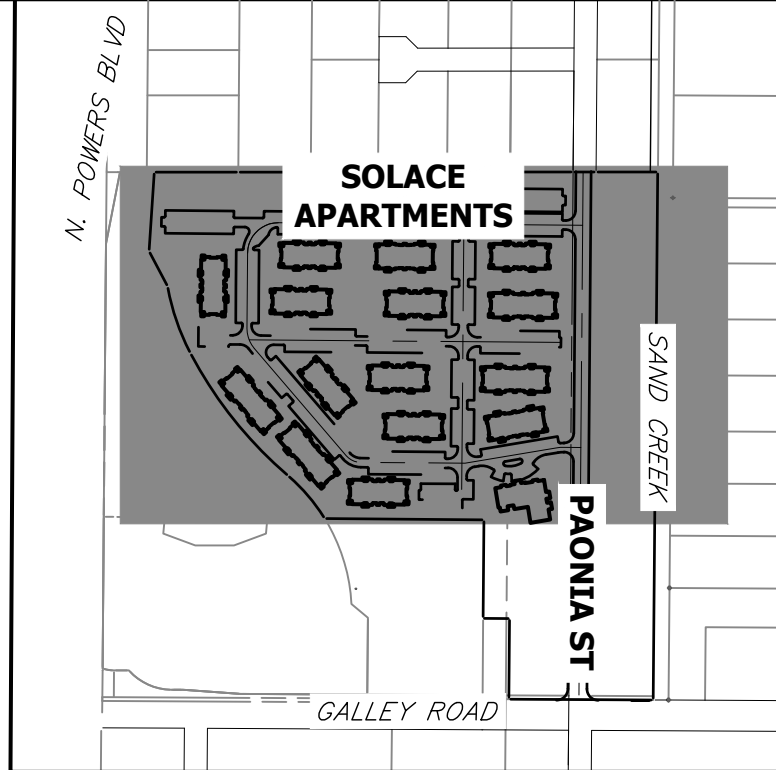
JOB NO. 25174.00

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UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.



LEGEND		
SEDIMENT BASIN	(SB)	TOE
SILT FENCE	(SF)	SF
CONSTRUCTION FENCE	(CF)	CF
STABILIZED STAGING AREA	(SSA)	
CONSTRUCTION MARKER	(CM)	
VEHICLE TRACKING CONTROL	(VTC)	
TEMPORARY STOCK PILE	(TSP)	
EROSION CONTROL BLANKET	(ECB)	
INLET PROTECTION	(IP)	
OUTLET PROTECTION	(OP)	
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)	
CUT AND FILL LINE		C/F
LIMITS OF CONSTRUCTION	(LOC)	
LIMITS OF DISTURBANCE		
CONCRETE WASHOUT AREA	(CWA)	
SEEDING & MULCHING & SURFACE ROUGHENING	(SM/SR)	
TEMPORARY SLOPE DRAIN	(TSD)	
CHECK DAM	(CD)	
ROCK SOCKS	(RS)	

- BMP PHASING**
- INITIAL PHASES**
- 1) INSTALL VTC
 - 2) INSTALL CWA
 - 3) ESTABLISH SSA
 - 4) INSTALL CONSTRUCTION MARKERS
 - 5) INSTALL SILT FENCE
 - 6) INSTALL SEDIMENT BASINS
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- NOTES**
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 3. P.I.E = PUBLIC IMPROVEMENTS EASEMENT



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DANE OLMSTEAD DATE

JACKSON DEARBORN PARTNERS
404 S. WELLS ST.
CHICAGO, IL 60607

ENGINEER'S STATEMENT

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BY	DATE	REVISION

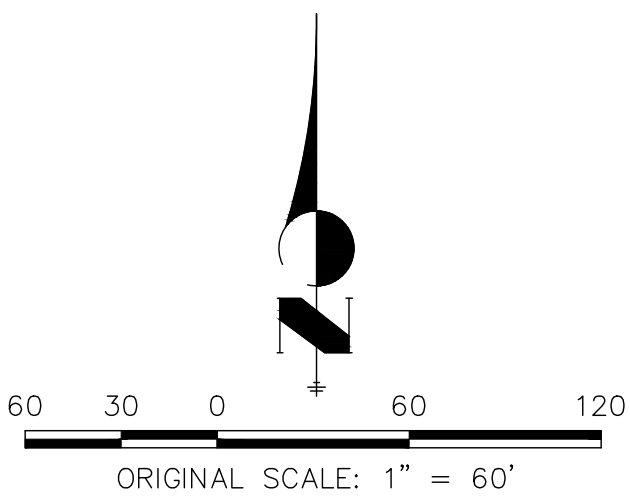
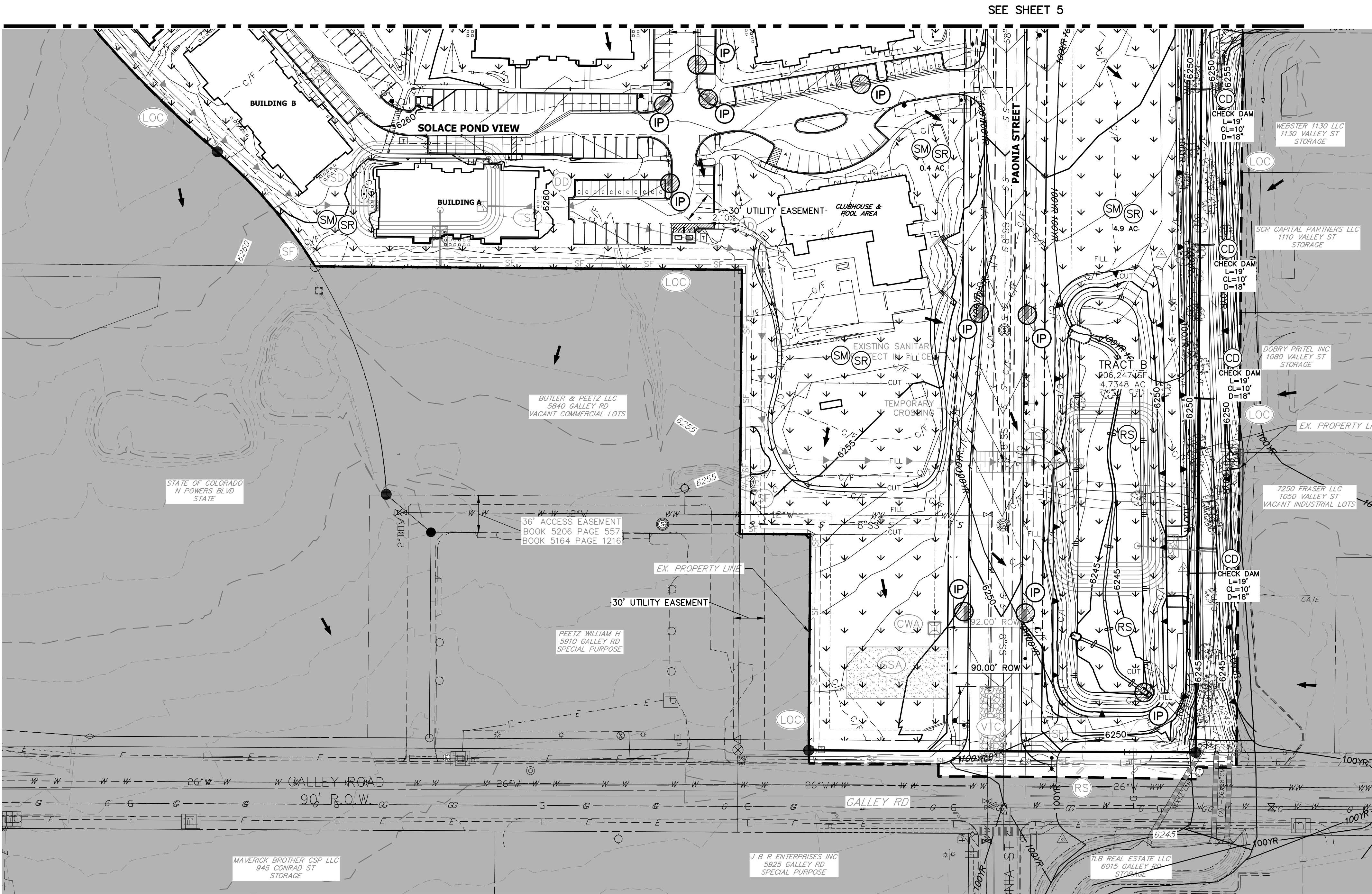
H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=60'	N/A	03/12/21	JRM	JRM	

SOLACE AT CIMARRON HILLS

FINAL GRADING AND EROSION CONTROL PLANS

SHEET 5 OF 10

JOB NO. 25174.00



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3. P.I.E = PUBLIC IMPROVEMENTS EASEMENT



Know what's below.
Call before you dig.

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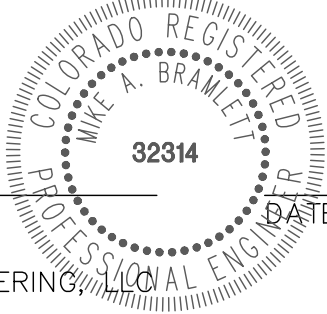
DANE OLMSTEAD

DATE

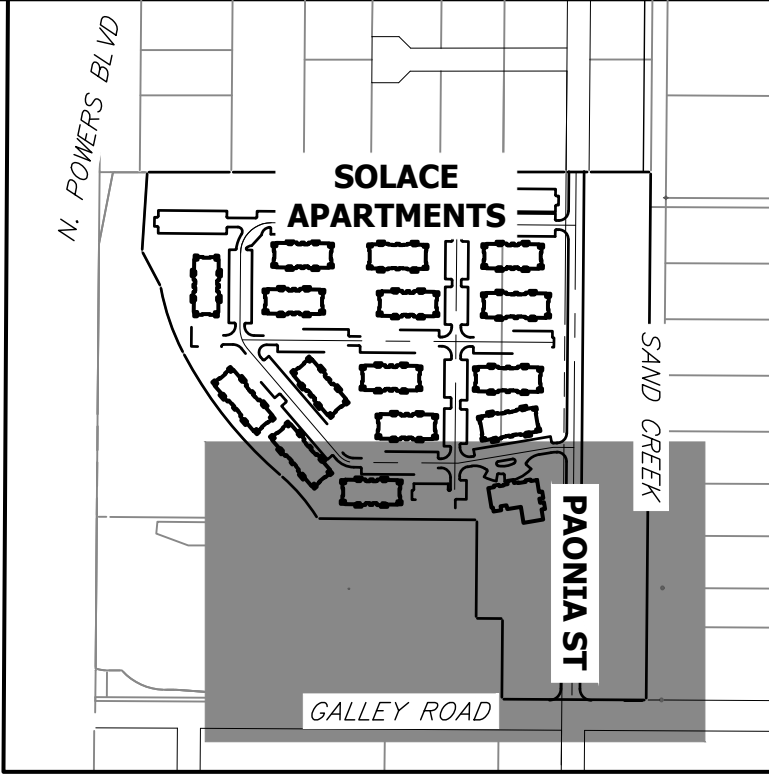
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MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING



LEGEND

SEDIMENT BASIN	(SB)	TOE
SILT FENCE	(SF)	SF
CONSTRUCTION FENCE	(CF)	CF
STABILIZED STAGING AREA	(SSA)	
CONSTRUCTION MARKER	(CM)	
VEHICLE TRACKING CONTROL	(VTC)	
TEMPORARY STOCK PILE	(TSP)	
EROSION CONTROL BLANKET	(ECB)	
INLET PROTECTION	(IP)	
OUTLET PROTECTION	(OP)	
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)	
CUT AND FILL LINE		C/F
LIMITS OF CONSTRUCTION	(LOC)	
LIMITS OF DISTURBANCE		
CONCRETE WASHOUT AREA	(CWA)	
SEEDING & MULCHING & SURFACE ROUGHENING	(SM, SR)	
TEMPORARY SLOPE DRAIN	(TSD)	
CHECK DAM	(CD)	
ROCK SOCKS	(RS)	

BMP PHASING

- STORMWATER DRAINAGE ARROWS
- INITIAL:
- 1) INSTALL PROPERTY LINES
 - 2) INSTALL CWA
 - 3) ESTABLISH SSA
 - 4) INSTALL CONSTRUCTION MARKERS
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 - 2) REMOVE SILT FENCE AFTER STABILIZED

SOLACE AT CIMARRON HILLS

FINAL GRADING AND EROSION CONTROL PLANS

SHEET 6 OF 10

JOB NO. 25174.00

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UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE, DESIGNATED BY WRITTEN AUTHORIZATION.



4. FILTER FABRIC PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED IN THE DRAINAGE AREA AS APPROVED BY THE CITY.

Figure IP-1
Filter Fabric Inlet Protection
Construction Detail and Maintenance Requirements

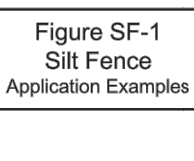
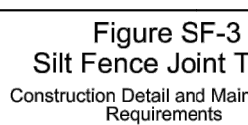


Figure SF-2
Silt Fence
Construction Detail and Maintenance Requirements



STORMWATER QUALITY BMP MANUAL

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF



RECOMMENDED ANNUAL GRASSES				
SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-50	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1	TEMPORARY SEEDING NOTES
INSTALLATION REQUIREMENTS <ol style="list-style-type: none">DISTURBED AREAS ARE TO BE SEEDDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENEED.SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAWEED, PURPLE LOOSESTRIPE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.ALL SEEDDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.	MAINTENANCE REQUIREMENTS <ol style="list-style-type: none">REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDDED AREAS TO ENSURE GROWTH.AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.SEEDDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES.

City of Colorado Springs Stormwater Quality	Figure TS-1 Temporary Seeding Construction Detail and Maintenance Requirements
--	---

The diagram shows a plan view of a construction site with a 'Construction Site Perimeter' indicated by a dashed line. A 'Temporary Swale, Typical' is shown as a curved line with arrows indicating flow direction. A 'Sediment Basin' is depicted as a semi-circular area at the end of the swale. Three specific cases are highlighted:

- Case 1:** Placed on perimeter of site. Drainage area < 1.0 AC. See Table TSW-1.
- Case 2:** Placed on perimeter of site. Drainage area > 1.0 AC. See Table TSW-1.
- Case 3:** At the top of a steep slope.

Topographic contour lines are shown with elevations of 5500, 5510, and 5520.

Table TSW-1

Temporary Swale Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK ⁽¹⁾	OK ⁽¹⁾
Area of Concentrated Flow	NO ⁽³⁾	NO ⁽²⁾

(1) Silt Fence or Straw Bale Barrier may be used as alternative to a Temporary Swale.

(2) With Temporary Swales Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

(3) Check Dam is required at concentrated flow for drainage areas > 1.0 acres.

City of Colorado Springs
Storm Water Quality

Figure TSW-1
Temporary Swale
Application Examples

CDENM153722 CS-CE/Fig TSW-19-99

3-49

	TEMPORARY SWALE NTS
INSTALLATION REQUIREMENTS <ol style="list-style-type: none">TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.SWALES WITH SLOPE > 2% SHALL BE LINED, SEE FIGURE TSW-3.SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.Z SHALL BE 3 OR GREATER.	MAINTENANCE REQUIREMENTS <ol style="list-style-type: none">CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.
City of Colorado Springs Stormwater Quality	Figure TSW-2 Temporary Swale Construction Detail and Maintenance Requirements

	SWALE LINING NTS
INSTALLATION REQUIREMENTS <ol style="list-style-type: none">REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.SWALES WITH EASILY ERODIBLE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.	MAINTENANCE REQUIREMENTS <ol style="list-style-type: none">CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.
City of Colorado Springs Stormwater Quality	Figure TSW-3 Swale Linings Construction Detail and Maintenance

CASE 2

Parking, Staging and
Loading/Unloading Area

CASE 1

Construction
Entrance

Table VT-1

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

City of Colorado Springs
Storm Water Quality

Figure VT-1
Vehicle Tracking
Application Examples

DENR\M153722.CS.CB\fig\VT-1-9-09

3-53

	VEHICLE TRACKING NTS
INSTALLATION REQUIREMENTS <ol style="list-style-type: none">ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.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.AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.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 <ol style="list-style-type: none">REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.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

EC-8

Temporary Outlet Protection (TOP)

TEMPORARY OUTLET PROTECTION PLAN

SECTION A

TABLE OP-1. TEMPORARY OUTLET PROTECTION
SIZING TABLE

PIPE DIAMETER, D _o (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L _a (FT)	RIPRAP D ₅₀ DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	10 15	4 6
18	10 20 30	10 15 23	6 9 12
24	30 40 50 60	16 26 28 30	9 9 12 16

OP-1. TEMPORARY OUTLET PROTECTION

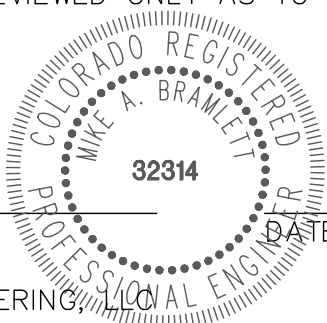
Temporary Outlet Protection (TOP)	EC-8
TEMPORARY OUTLET PROTECTION INSTALLATION NOTES <ol style="list-style-type: none">SEE PLAN VIEW FOR:<ul style="list-style-type: none">LOCATION OF OUTLET PROTECTION.DIMENSIONS OF OUTLET PROTECTION.DETAIL IS INTENDED FOR PIPES WITH SLOPE < 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.	TEMPORARY OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES <ol style="list-style-type: none">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.FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE. <p>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.</p> <p>(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)</p>

TOP-2 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 November 2010

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 TOP-3

ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT



MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
JACKSON DEARBORN PARTNERS
404 S. WELLS ST.
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BY	DATE	REVISION	No.	N/A	N/A	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SOLACE AT CIMARRON HILLS	GRADING AND EROSION CONTROL DETAILS	SHEET 8 OF 10	JOB NO. 25174.00
								03/12/21	JRM	JRM					

MM-1



CWA INSTALLATION NOTES

-
- November 2010
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3
CWA-3

SC-6



CULVERT INLET PROTECTION INSTALLATION NOTES

- CULVERT INLET PROTECTION MAINTENANCE NOTES

- | | | |
|-------------|--|------|
| August 2013 | Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 | IP-7 |
|-------------|--|------|

Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

-
- | | | |
|-------|---|---------------|
| CWA-4 | Urban Drainage and Flood Control District | November 2010 |
| | Urban Storm Drainage Criteria Manual Volume 3 | |

SM-6



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

- | | | |
|---------------|--|-------|
| November 2010 | Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 | SSA-3 |
|---------------|--|-------|

MM-2



STOCKPILE PROTECTION INSTALLATION NOTES

-
- November 2010
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3
SP-3

Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

- SSA-4 Urban Drainage and Flood Control District November 2010
 Urban Storm Drainage Criteria Manual Volume 3

Stockpile Management (SM)

STOCKPILE PROTECTION MAINTENANCE NOTES

-
- SP-4
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EC-10



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BY	DATE

H-SCALE	N/A	No.	REVISION
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SOLACE AT CIMARRON HILLS

ADING AND EROSION CONTROL DETAILS

SHEET 9 OF 10

JOB NO. 25174.00

Check Dams (CD)



CD-4
Urban Drainage and Flood Control District
November 2010

Urban Storm Drainage Criteria Manual Volume 3



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

32314

MIKE A. BRAMLETT

COLORADO REGISTERED PROFESSIONAL ENGINEER

MECHANICAL ENGINEERING

SOLACE AT CIMARRON HILLS

JOB NO. 25174.00

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APPENDIX D – SWMP Report and GEC Plan Checklists



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EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

GRADING AND EROSION CONTROL PLAN CHECKLIST

Revised: July 2019

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



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

**EL PASO COUNTY PLANNING AND
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GRADING AND EROSION CONTROL PLAN CHECKLIST

Revised: July 2019

Revised: July 2019		Applicant	PCD
ii	Owner's Statement (for GEC Plan within Construction Drawing set): I, the owner/developer have read and will comply with the requirements of the grading and erosion control plan and all of the requirements specified in these detailed plans and specifications. _____ Owner Signature Date	N/A	
jj	El Paso County (standalone GEC Plan): County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended. In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion. _____ County Engineer/ECM Administrator Date	✓	
<u>2. ADDITIONAL REPORTS/PERMITS/DOCUMENTS</u>			
a	Soils report / geotechnical investigation as appropriate for grading/utilities/drainage/road construction.	✓	
b	Use Agreement/easement between the Owner or Operator and other third party for use of all offsite grading or stormwater control measures, used by the owner or operator but not under their direct control or ownership.	N/A	
c	Floodplain Development Permit	X	
d	USACE 404/wetlands permit/mitigation plan	X	
e	FEMA CLOMR	N/A	
f	State Engineer's permit/Notice Of Intent to Construct		
g	Stormwater Management Plan (SWMP)	X	
h	Financial Assurance Estimate (FAE) (signed)	X	
i	Erosion and Stormwater Quality Control Permit (ESQCP) (signed)	X	
j	Pre-Development Site Grading Acknowledgement and Right of Access Form (signed)	X	
k	Conditions of Approval met?	X	



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EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

GRADING AND EROSION CONTROL PLAN CHECKLIST

Revised: July 2019

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



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EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

GRADING AND EROSION CONTROL PLAN CHECKLIST

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



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GRADING AND EROSION CONTROL PLAN CHECKLIST

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		Applicant	PCD
22	Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.	✓	
23	No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.	✓	
24	Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.	✓	
25	All construction traffic must enter/exit the site only at approved construction access points.	✓	
26	Prior to construction the permittee shall verify the location of existing utilities.	✓	
27	A water source shall be available on site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.	✓	
28	The soils report for this site has been prepared by _____ and shall be considered a part of these plans.	X	
29	At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact: Colorado Department of Public Health and Environment Water Quality Control Division WQCD – Permits 4300 Cherry Creek Drive South Denver, CO 80246-1530 Attn: Permits Unit	✓	



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**EL PASO COUNTY PLANNING AND
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GRADING AND EROSION CONTROL PLAN CHECKLIST

Revised: July 2019

		Applicant	PCD
4. Applicant Comments:			
a	ALL ITEMS MARKED 'N/A' ARE ITEMS THAT ARE NOT ASSOCIATED WITH THE PROJECT. ALL REQUIRED ITEMS APPLICABLE TO THIS PROJECT ARE INCLUDED IN GEC PLANS.		
b			
c			
5. Checklist Review Certifications:			
a	<p>Engineer of Record: The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans.</p> <p>_____ Engineer of Record Signature Date</p>		
b	<p>Review Engineer: The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.</p> <p>_____ Review Engineer Date</p>		



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STORMWATER MANAGEMENT PLAN CHECKLIST

Revised: July 2019

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



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STORMWATER MANAGEMENT PLAN CHECKLIST

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



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STORMWATER MANAGEMENT PLAN CHECKLIST

Revised: July 2019










		Applicant	PCD
a			
b			
c			
4. Checklist Review Certifications:			
a	<p>Engineer of Record: The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.</p> <p>_____ Engineer of Record Signature Date</p>		
b	<p>Review Engineer: The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.</p> <p>_____ Review Engineer Date</p>		

SWMP Content Checklist - Stormwater Discharges Associated with Construction Activity (COR400000)













PART I.C.2.a...

	Yes	No
i) Qualified Stormwater Manager - Does the SWMP list individual(s) by title and name who are designated as the site's qualified stormwater manager(s) responsible for implementing the SWMP in its entirety?		
ii) Spill Prevention and Response Plan - Does the SWMP have a spill prevention and response plan?		
iii) Materials Handling - Does the SWMP describe and locate all control measures implemented at the site to minimize impacts from handling significant materials that could contribute pollutants to runoff		
iv) Potential Sources of Pollution - Does the SWMP list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. This shall include, but is not limited to, the following pollutant sources:		
a) disturbed and stored soils		
b) vehicle tracking of sediments		
c) management of contaminated soils		
d) loading and unloading operations		
e) outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.)		
f) vehicle and equipment maintenance and fueling		
g) significant dust or particulate generating processes (e.g., saw cutting material, including dust)		
h) routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.		
i) on-site waste management practices (waste piles, liquid wastes, dumpsters)		
j) concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment		
k) dedicated asphalt, concrete batch plants and masonry mixing stations		
l) non-industrial waste sources such as worker trash and portable toilets		
vi) Implementation of Control Measures - Does the SWMP include design specifications that contain information on the implementation of the control measure in accordance with good engineering hydrologic and pollution control practices; including as applicable drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.		
Notes:		

SWMP Content Checklist - Stormwater Discharges Associated with Construction Activity (COR400000)

	Yes	No
vi) Site Description - Does the SWMP include a site description which includes, at a minimum, the following:		
a) the nature of the construction activity at the site		
b) the proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g.: clearing, grading, utilities, vertical, etc.)		
c) estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities		
d) a summary of any existing data used in the development of the construction site plans or SWMP that describe the soil or existing potential for soil erosion		
e) a description of the percent of existing vegetative ground cover relative to the entire site and the method for determining the percentage		
f) a description of any allowable non-stormwater discharges at the site, including those being discharged under a division low risk discharge guidance policy		
g) a description of areas receiving discharge from the site. Including a description of the immediate source receiving the discharge. If the stormwater discharge is to a municipal separate storm sewer system, the name of the entity owning that system, the location of the storm sewer discharge, and the ultimate receiving water(s)		
h) a description of all stream crossings located within the construction site boundary		
Notes:		

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	Yes	No
vii) Site Map - Does the SWMP include a site map which includes, at a minimum, the following:		
a) construction site boundaries		
b) flow arrows that depict stormwater flow directions on-site and runoff direction		
c) all areas of ground disturbance including areas of borrow and fill		
d) areas used for storage of soil		
e) locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt		
f) locations of dedicated asphalt, concrete batch plants and masonry mixing stations		
g) locations of all structural control measures		
h) locations of all non-structural control measures		
i) locations of springs, streams, wetlands and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with Part I.B.1.a.i.(d)		
j) locations of all stream crossings located within the construction site boundary		
viii) Final Stabilization and Long Term Stormwater Management - Does the SWMP describe the practices used to achieve final stabilization of all disturbed areas at the site and any planned practices to control pollutants in stormwater discharges that will occur after construction operations are completed. Including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc		

Notes:

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	Yes	No
ix) Inspection Reports - Does the SWMP include documented inspection reports in accordance with Part I.D. of the permit?		✓
a) Is the inspector a qualified stormwater manager?	✓	
b) Do the inspection records meet the minimum required inspection frequency identified on the inspection reports? <ul style="list-style-type: none"> What minimum inspection frequency is being implemented at the site? Is a reduced inspection frequency being implemented? 	✓	
c) Were the following areas inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters:	✓	
1) Construction site perimeter	✓	
2) All disturbed areas	✓	
3) Designated haul routes	✓	
4) Material and waste storage areas exposed to precipitation	✓	
5) Locations where stormwater has the potential to discharge offsite	✓	
6) Locations where vehicles exit the site	✓	
d) Do the inspection records include the following requirements:	✓	
1) Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges	✓	
2) Determine if there are new potential sources of pollutants	✓	
3) Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges	✓	
4) Identify all areas of non-compliance with the permit requirements and, if necessary, implement corrective action as described below	✓	
e) Do the inspection reports include, at a minimum, the following items:	✓	
1) The inspection date	✓	
2) Name(s) and title(s) of personnel conducting the inspection	✓	
3) Weather conditions at the time of inspection	✓	
4) Phase of construction at the time of inspection	✓	
5) Estimated acreage of disturbance at the time of inspection	✓	
6) Location(s) of discharges of sediment or other pollutants from the site	✓	
7) Location(s) of control measures requiring routine maintenance (see Section VI)	✓	
8) Location(s) and identification of inadequate control measures and requiring corrective actions (see Section VII)	✓	
9) Location(s) and identification of additional control measures are needed that were not in place at the time of inspection	✓	
10) Description of the minimum inspection frequency and any deviations from the minimum inspection schedule	✓	
11) After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain the following statement: "I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."	✓	

Notes:

APPENDIX E – Inspection Report Template

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

Facility Name		Permittee					
Date of Inspection		Weather Conditions					
Permit Certification #		Disturbed Acreage					
Phase of Construction		Inspector Title					
Inspector Name							
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO						
<input type="checkbox"/>	<input type="checkbox"/>						

INSPECTION FREQUENCY					
Check the box that describes the minimum inspection frequency utilized when conducting each inspection					
At least one inspection every 7 calendar days	<input type="checkbox"/>				
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	<input type="checkbox"/>				
<ul style="list-style-type: none"> This is this a post-storm event inspection. Event Date: _____ 	<input type="checkbox"/>				
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	<input type="checkbox"/>				
<ul style="list-style-type: none"> Post-storm inspections at temporarily idle sites 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Inspections at completed sites/area 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Winter conditions exclusion 	<input type="checkbox"/>				
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO				
<input type="checkbox"/>	<input type="checkbox"/>				

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

AREAS TO BE INSPECTED			
Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?			
	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions Inadequate Control Measures Requiring Corrective Action form
Construction site perimeter	<input type="checkbox"/>	<input type="checkbox"/>	
All disturbed areas	<input type="checkbox"/>	<input type="checkbox"/>	
Designated haul routes	<input type="checkbox"/>	<input type="checkbox"/>	
Material and waste storage areas exposed to precipitation	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where stormwater has the potential to discharge offsite	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where vehicles exit the site	<input type="checkbox"/>	<input type="checkbox"/>	
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

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

Are there control measures requiring maintenance?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

[illegible]

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

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

Are there inadequate control measures requiring corrective action?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

Are there additional control measures needed that were not in place at the time of inspection?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

[illegible]

REPORTING REQUIREMENTS

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

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit			
a. Endangerment to Health or the Environment Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit) <i>This category would primarily result from the discharge of pollutants in violation of the permit</i>			
b. Numeric Effluent Limit Violations <ul style="list-style-type: none"> ○ Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit) ○ Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit) ○ Daily maximum violations (See Part II.L.6.d of the Permit) <i>Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.</i>			

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

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

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

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

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

Name of Qualified Stormwater Manager

Title of Qualified Stormwater Manager

Signature of Qualified Stormwater Manager

Date

Notes/Comments