

STORMWATER MANAGEMENT PLAN (SWMP)
for
208 CUNNINGHAM DRIVE, COLORADO SPRINGS

Prepared for:

Fountain Valley Salvation
Army Corps
208 Cunningham Drive
Colorado Springs, CO 80911

Prepared by:



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REVISION: 08/27/24
R&R Project No.: FV21181
EPC Project No. : CDR242

Qualified Stormwater Manager: TBD

Contractor: TBD

**208 CUNNINGHAM DRIVE, COLORADO SPRINGS
STORMWATER MANAGEMENT PLAN (SWMP)
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General SWMP Notes:

1. There are no existing streams, wetlands, or other surface waters within 50 feet of the construction limits.
2. There are no dedicated asphalt / concrete batch plants proposed.
3. There are no anticipated allowable non-stormwater discharges from this site (no groundwater, springs, irrigation, discharge covered by CDPHE Low Risk Guidance, etc.).

208 CUNNINGHAM DRIVE, COLORADO SPRINGS STORMWATER MANAGEMENT PLAN (SWMP)

I. QUALIFIED STORMWATER MANAGER

A. Qualified Stormwater Manager

Contractor: TBD

B. Applicant / Contact Information

Owner/Developer: Fountain Valley Salvation Army Corps
208 Cunningham Drive
Colorado Springs, CO 80911
Attn: Quiana Vargas (719)-382-1182
Quiana.vargas@usw.salvationarmy.org

Engineer: R&R Engineers – Surveyors, Inc.
1635 West 13th Avenue
Denver, CO 80204
Attn: Tim Stackhouse, P.E. (720)-399-4091
tstackhouse@rrengineers.com

II. SPILL PREVENTION AND RESPONSE PLAN

A. Spill Prevention and Response Procedures:

- 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 on-site storm water, it is critical to contain the released materials on site and prevent their release into receiving waters.
- Spill Response Procedures:
 - 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.
 - If spills represent an imminent threat of escaping on-site facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent after the situation has stabilized.
 - The site superintendent, or his designee, shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
 - Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
- Spill kits shall be on-hand at all fueling sites. Spill kit location(s) shall be reported to the SWMP Administrator.
- 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.
- Recommended components of spill kits include the following:
 - Oil absorbent pads (one bale)

- Oil absorbent booms (40 feet)
- 55-gallon drums (2)
- 9-mil plastic bags (10)
- Personal protective equipment including gloves and goggles.

B. Notification Procedures:

- In the event of an accident or spill, the SWMP Administrator shall be notified as a minimum.
- Depending on the nature of the spill material involved, the Colorado Department of Public Health and Environment (24-hour spill reporting line: 877-518-5608), downstream water users, or other agencies may also need to be notified.
- 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.

III. MATERIALS HANDLING

A. General Materials Handling Practices:

- 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 and segregated areas so that spilled materials cannot combine and react.
- Disposal of materials shall be in accordance with the manufacturer’s instructions and applicable local, state, and federal regulations.
- Materials no longer required for construction shall be removed from the site as soon as possible.

B. Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and Stormwater Control Measures (SCMs) clear and functional.

C. Specific Materials Handling Practices:

- All pollutants, including waste materials and demolition debris, that occur on-site during construction shall be handled in a way that does not contaminate storm water.
- All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored on site shall be covered and contained and protected from vandalism.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing 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.
- Wheel wash water shall be settled and discharged on site by infiltration. Wheel wash water shall not be discharged to the storm water system.
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and ad application rates that will not result in loss of chemical to storm water runoff. Follow manufacturer’s recommendations for application rates and procedures.

- pH-modifying sources shall be managed to prevent contamination of runoff and storm water collected on site. 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.

D. Equipment maintenance and fueling: Contractor shall implement appropriate spill prevention and response procedures

E. 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. The discharge of water containing waste cement to the storm drainage system is prohibited.

IV. POTENTIAL SOURCES OF POLLUTION

Potential pollutant sources will be addressed as follows:

POTENTIAL POLLUTION SOURCES

Potential Pollution Sources	Possible Site Contributions of Pollutants to Stormwater Discharges	Location
All disturbed and stored soils	Stockpiles of fill from site excavations, topsoil stockpiles.	Stockpiles
Vehicle tracking of sediments	See GEC Plans for vehicle entrance and exits. Vehicle tracking control pads will be installed and maintained at all construction access points.	VTC (per GEC Plans)
Management of contaminated soils	No contaminated soils are expected to be encountered.	N/A
Loading and unloading operations	Loading and unloading of construction materials	TBD*
Outdoor storage activities (building material, fertilizers, chemicals, etc.)	Stockpiles and equipment storage areas (no fertilizers, petroleum or chemical products will be stored on-site).	TBD*
Vehicle and equipment maintenance and fueling	Fueling will occur on-site using mobile equipment (will not be stored on-site). Equipment maintenance will occur off-site	TBD*
Significant dust or particulate-generating processes	Vehicle tracking, soil removed from excavation, stockpiles.	TBD*
Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.	All equipment maintenance will occur off-site. No fertilizers, pesticides, detergents, and/or solvents will be used or stored on-site.	TBD*
On-site waste management practices (waste piles, liquid wastes, dumpsters, etc.)	All waste will be removed from site as soon as possible, and disposed of at a permitted off-site disposal site	TBD*
Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment	Properly contained concrete washout areas may be designated and maintained within the site, based on construction phasing.	CWA
Dedicated asphalt and concrete batch plants	No dedicated asphalt or concrete batch plants are planned on-site.	N/A
Non-industrial waste sources such as worker trash and portable toilets	Worker trash will be removed from the site as soon as possible. Portable toilets will be utilized and maintained as required based on construction phasing.	TBD*

Other areas or procedures where potential spills can occur	Petroleum releases from equipment are possible.	TBD*
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* Contractor to add locations of any items not specified at this time*

V. IMPLEMENTATION OF CONTROL MEASURES

Narrative Description of Appropriate Stormwater Controls and Measures

Construction Phasing

Phase 1 – Mobilization, Clearing & Grubbing Operations

Clearing and grubbing will be completed prior to initial overlot grading activities for this site. Perimeter control measures will be installed prior to the start of construction operations. These perimeter controls will include construction and silt fencing and a vehicle tracking control pad.

Phase 2 – Earthwork, Grading, and Storm Installation

Major earthwork activities will include overlot grading, backfill, and compaction, utility construction, and rough and final grading for site improvements.

Phase 3 – Paving and Final Grading Activities

This phase will include final grading of porous landscape detention and landscape areas. Appropriate temporary SCM’s will be maintained until vegetation is re-established throughout the site.

Phase 4 – Stabilization

All disturbed areas within the project will be revegetated. The specific revegetation requirements will include the following:

- Landscape plantings – per porous landscape detention
- Native seeding – all other disturbed areas

Phase 5 – Removal of Temporary Control Measures

Temporary sediment control measures shall remain in place until vegetation has been adequately established to prevent erosion from storm runoff. Once adequate vegetation has been established, the temporary erosion control measures will be removed and disposed of off-site.

SCM’s for Stormwater Pollution Prevention (See GEC Plans):

- Phase
- Clearing and Grubbing necessary for perimeter controls
- Initiation of perimeter controls
- Remaining clearing and grubbing
- Site Grading
- Full Infiltration Retention
- Stabilization
- Removal of erosion control measures

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RR RESPONSE:
NOTED, CHANGE
MADE

- SCM
- VTC’s
- SF
- SR
- CWA / SSA
- RP
- SM

BR

RR RESPONSE:
NOTED, CHANGE
MADE

SCM’s Descriptions:

Stabilized Staging Area (SSA): A stabilized staging area will be located on the southwest corner of the site. Construction trailers, portable toilets, and material storage will occur within this staging area.

Concrete Washout Area (CWA): A concrete washout area will be located near the exit of the site by the VTC. Concrete washout areas must be designated on all sites that will generate concrete wash water or liquid concrete waste from onsite concrete mixing or concrete delivery. The CWA will receive wash water from the washing of tools and concrete mixer chutes, liquid concrete waste from dump trucks, mobile batch mixers, or pump trucks. Surface discharges of concrete washout water from construction sites are prohibited.

Construction Exit (CE) or Vehicle Tracking Control (VTC): A temporary stone construction exit with wheel wash (vehicle tracking control) will be installed at the two proposed access points to the private drives to the west and north as shown on the attached CSWMP. This will prevent mud from being carried into the surrounding roadways by construction vehicles. The area of the entrance shall be cleared of all vegetation, roots, and other material. Stone shall be placed to the specified dimensions and added as warranted during construction. As required, a water tanker shall be transported to the site to wash off tires and undercarriages of the vehicles with water, without detergent, in order to remove loose dirt and mud. The wash water will be collected and routed to a sediment trapping device for treatment prior to discharging into any surface water. If the gravel in the construction entrance is clogged with sediment, it will be removed, washed, and placed back in the wash rack. Wash-out from concrete trucks will occur at a designated location within the perimeter controls of the site.

Construction Fence (CF): A construction fence can be used to delineate the site perimeter and locations within the site where access is restricted to protect natural resources such as wetlands, waterbodies, trees, and other natural areas of the site that should not be disturbed. If natural resource protection is an objective, then the construction fencing should be used in combination with other perimeter control BMPs such as silt fence, sediment control logs or similar measures.

Surface Roughening (SR): Surface roughening can be used to provide temporary stabilization of disturbed areas, such as when revegetation cannot be immediately established due to seasonal planting limitations. Surface roughening is not a stand-alone BMP, and should be used in conjunction with other erosion and sediment controls. Surface roughening is often implemented in conjunction with grading and is typically performed using heavy construction equipment to track the surface. Be aware that tracking with heavy equipment will also compact soils, which is not desirable in areas that will be revegetated. Scarifying, tilling, or ripping are better surface roughening techniques in locations where revegetation is planned. Roughening is not effective in very sandy soils and cannot be effectively performed in rocky soil.

Silt Fence (SF): Silt Fence will be installed around the site as shown on the attached CSWMP. Silt fence will be installed along the limits of construction in order to protect adjacent areas until re-vegetation is established and the soil stabilized. The silt fence and/or super silt fence shall be checked on a routine basis for deterioration and other problems. Any fence damage or fabric deterioration shall be repaired by the end of the day. When accumulated sediment begins to bulge the fence, or reaches a depth of one half the fence height, the sediment will be removed and spread on designated upland areas of the site.

Stockpiling (SP): Silt Fence, sediment control log, or approved substitute, is to be located along the extents of the stockpile area in order to protect surrounding areas from sedimentation. Soils that will be stockpiled for more than thirty (30) days shall be protected from wind and water erosion within fourteen (14) days of stockpile construction. Stabilization and protection of the stockpile may be accomplished by any of the following: Mulching, Temporary/Permanent Revegetation Operations, Chemical Soil Stabilizer Application (requires WMD approval), or erosion control matting/Geotextiles. If stockpiles are located within 100 feet of a drainageway, additional sediment controls such as temporary dikes or silt fence shall be required.

Seeding and Mulching (SM): To provide vegetative cover on disturbed areas that have reached final grade, a

perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site.

Street Sweeping: Where sediment is transported onto a paved or public road surface, the road surface will be cleaned thoroughly at the end of each day. Sediment shall be removed by shoveling or sweeping, and transported to a sediment control disposal area. If necessary, street washing is allowed following removal of sediment in the above manner.

Proposed Sequence of Major Activities / Timing Schedule

The anticipated start and completion time period of the construction activities is from October, 2024 through December, 2024. The estimated schedule for erosion control activities is as follows:

- Install Initial SCM's: October, 2024
- Site Grading: October-November, 2024
- Seeding & Mulching: November-December, 2024
- Final Stabilization: January, 2025

Erosion and Sediment Controls:

- 1) Structural Practices / Control Measures (all structural Control Measures shall conform to ECM / DCM and MHFD standards and details):
 - a. Silt fence at toe of slope along downstream limits of disturbed areas
- 2) Non-Structural Practices:
 - Preserve existing vegetation beyond limits of work
 - Temporary seeding of areas to remain disturbed for significant periods of time
 - Permanent seeding/mulching (SM) upon completion of rough grading

Other Controls:

- Contractor shall dispose of all waste materials at a permitted off-site disposal site.
- Vehicle tracking pads will be installed at all access points to limit off-site soil tracking.
- Street Sweeping: Contractor shall perform street sweeping following storm events and as required to keep adjoining public streets clean.

Control Measure / SCM Details:

- Refer to Standard SCM Details in GEC Plans.
- Refer to additional Standard Details in MHFD Volume 3 where applicable.

RR RESPONSE:
NOTED, CHANGE
MADE

VI. SITE DESCRIPTION

A. Nature of Construction Activity

- The 208 Cunningham Drive Site is proposing a paved parking lot and a full infiltration retention pond in El Paso County, Colorado. The site is 2.04 acres and currently consists of one existing building for the Salvation Army. The site is located on Lot 4, Block 5, 1 Refill Security, Colorado Addition 4 within a portion of the Northeast Quarter of Section 11, Township 15 South, Range 66 West of the Sixth P.M., with Cunningham Drive ROW to the east, Sprout Junior High School to the west, a single-family home to both the north and south of the site. Site development activities will include site grading, asphalt paving, and associated improvements.

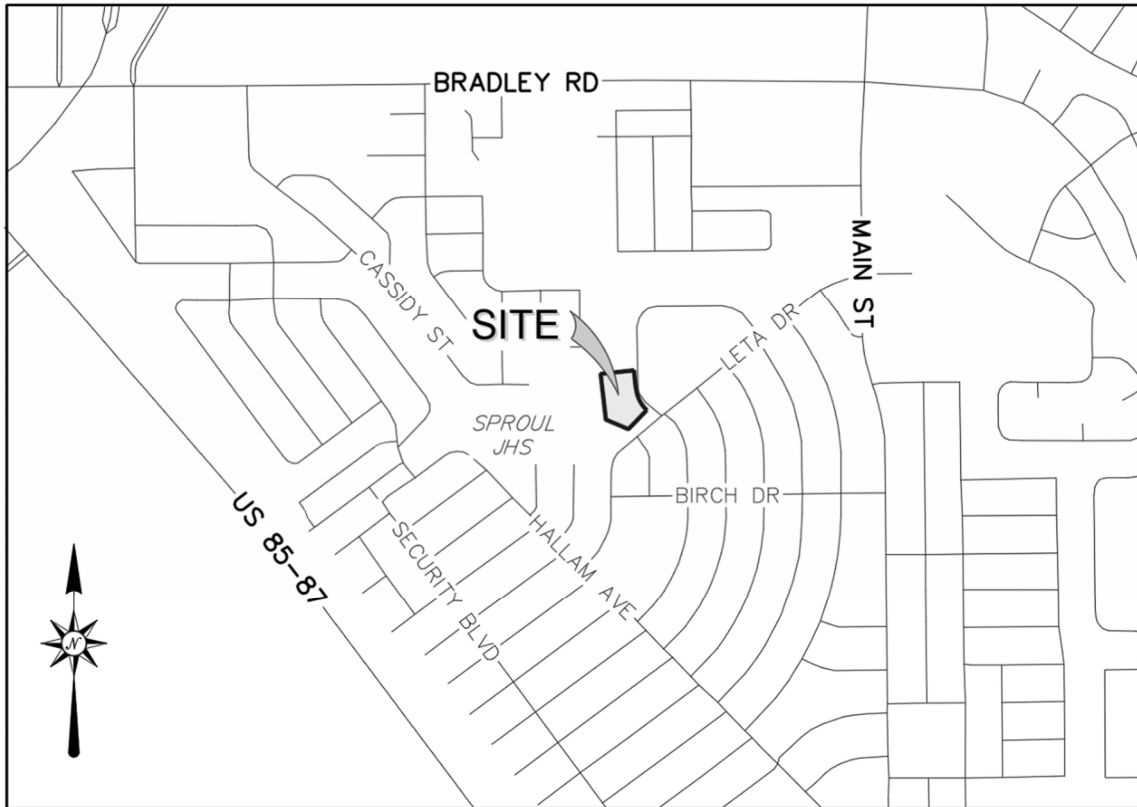
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- B. Proposed sequence of major activities:
- Mobilization / implementation of SCM's
 - Clearing and grubbing
 - Rough grading
 - Final grading
 - Parking lot paving
- C. Total site area = 2.04-acres; Projected disturbed area = 0.81-acres (approx.)
- D. Soil erosion potential and potential impacts upon discharge:
- On-site soils are comprised primarily of "Blakeland series" soils, which are characterized as well-drained loamy sand with rapid permeability, slow surface runoff rates, and moderate hazard of erosion (Hydrologic Soils Group A).
 - Potential impacts upon discharge : NA, no outfall proposed
- E. Existing vegetation on site:
- Sparse grasses and trees (approx. 55% coverage, based on site inspection)
- F. Allowable non-stormwater components of discharge: none anticipated
- G. Receiving water: The project lies within drainage basin Security FOF02800 (ultimate receiving water).
- H. Stream Crossings: There are no stream crossings located within the construction site boundary.

Comment generated due to change from last submittal:

Security drainage basin is basin, not a receiving water. State the nearest major stream, creek, river, etc.

**RR RESPONSE: NOTED,
CHANGE MADE INCLUDE
THE RECIEVING BODY OF
WATER (FOUNTAIN CREEK)**



VICINITY MAP
SCALE: 1" = 1,000'

VII. SITE MAP

- SWMP Maps are provided on the attached GEC Plans
- Qualified Stormwater Manager shall update SWMP Maps as required based on field conditions throughout the project.
- Contractor shall update and annotate the SWMP Maps to show the location of the construction trailer, stabilized staging area, CWA, and other items as these locations are determined on site.

VIII. FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

- A. Permanent seeding will be provided to achieve long-term stabilization of the site.
- B. Seed Mix: "Foothills 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:

- Dryland: 20-25 lbs/acre
- Irrigated: 40 lbs/acre

D. Soil Stabilization Practices:

- 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 Fertilizer Requirements:

- Soil conditioner, organic amendment shall be applied to all seeded areas at 3 CY / 1000 SF.
- 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. The porous landscape detention is not to be installed until the site has been fully stabilized.

G. Structural Control Measures:

- Re-Seeding and Landscaping for site stabilization
- Full infiltration retention

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RR RESPONSE: NOTED,
CHANGE MADE

H. Non-Structural Control Measures:

- Proper Housekeeping Procedures
- Proper Spill Containment Procedures

IX. INSPECTION REPORTS

A. Qualified Stormwater Manager: Designated Inspector shall be a Qualified Stormwater Manager per CDPHE criteria.

B. Inspection Frequency:

- Contractor shall inspect SCMs bi-weekly as a minimum, and immediately (within 24 hours) after any precipitation or snowmelt event that causes surface erosion (i.e. that results in stormwater running across the ground), to ensure that SCMs are maintained in effective operating condition.

C. Inspection Procedures:

Site Inspection / Observation Items:

- Construction site perimeter and discharge points (including discharges into a storm sewer system)
- All disturbed areas
- Areas used for material / waste storage that are exposed to precipitation.
- Other areas having a significant potential for stormwater pollution, such as demolition areas or concrete washout locations, or locations where vehicles enter or leave the site.
- Erosion and sediment control measures identified in the SWMP.

- Any other structural SCMs that may require maintenance, such as secondary containment around fuel tanks, or the condition of spill response kits.

D. Inspection Requirements:

- Determine if there is any evidence of, or potential for, pollutants entering the drainage system.
- Review SCMs to determine if they still meet design and operational criteria in the SWMP, and if they continue to adequately control pollutants at the site.
- Upgrade and/or revise any SCMs not operating in accordance with the SWMP and update the SWMP to reflect any revisions.

SCM Maintenance / Replacement and Failed SCMs:

- 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 SCMs, and remove potential of sediment from being discharged from the site in the event of SCM failure.
- 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.
- Contractor shall update Erosion Control Plans / SWMP Maps and SWMP Plan as required with any new SCMs added during the construction period.
- Contractor shall address SCMs 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.

E. Inspection Reports:

- Contractor shall maintain records of all inspection reports, including signed inspection logs, at the project site. SWMP records shall be located in the project trailer.
- Inspection logs shall be signed by the Qualified Stormwater Manager.
- 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.
- Site inspection records shall include the following:
 - Inspection date
 - Name and title of personnel making the inspection, along with Inspector's signature.
 - Location of discharges of sediment or other pollutants from the site.
 - Location(s) of SCMs that need to be maintained.
 - Location(s) of SCMs that failed to operate as designed or proved inadequate for a particular location.
 - Location(s) where additional SCMs are needed that were not in place at the time of inspection.
 - Deviations from the minimum inspection schedule
 - Notations regarding updates and revisions to SWMP Maps based on field conditions.

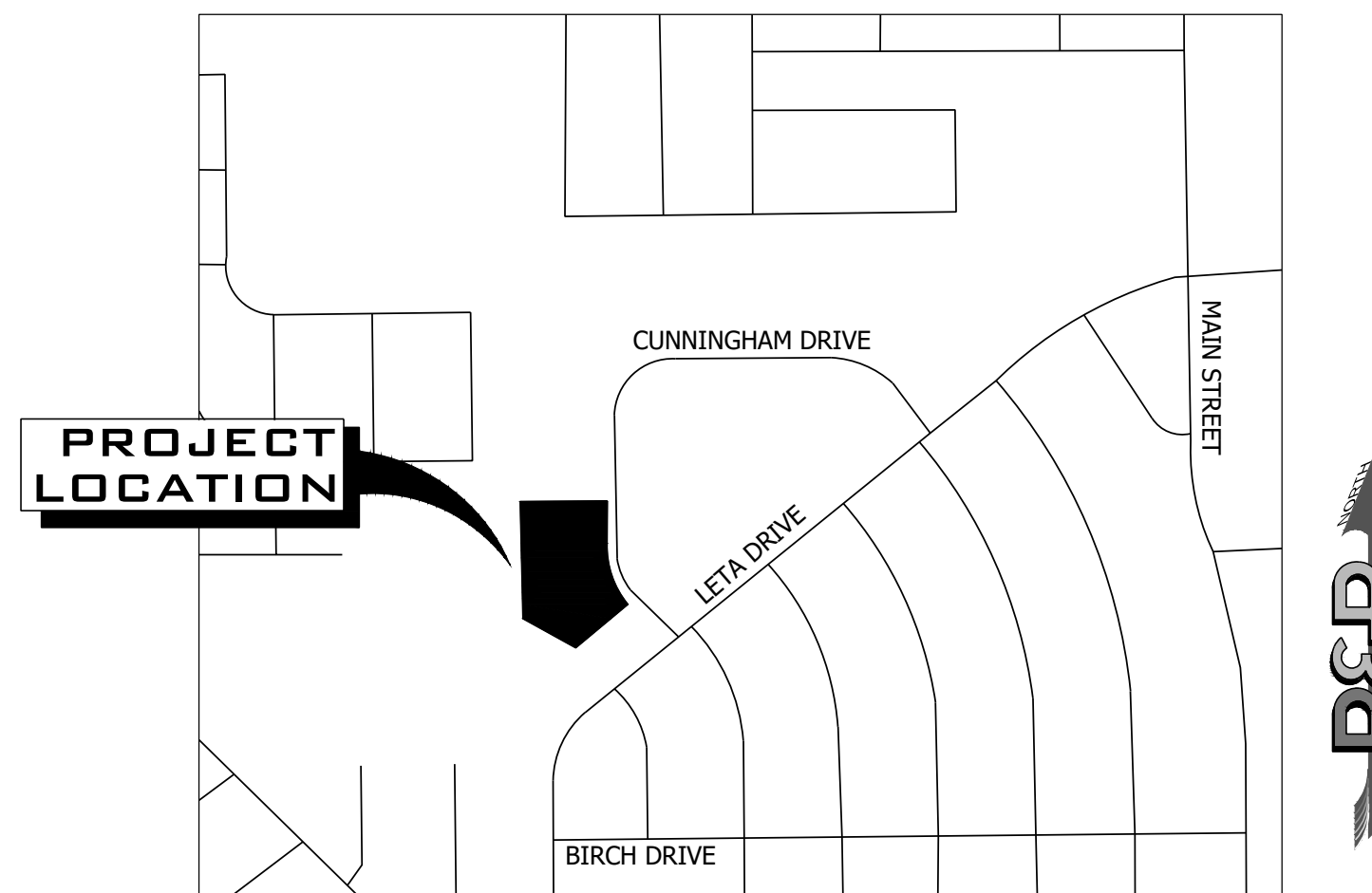
Note: This project does not rely on control measures owned or operated by another entity.

SITE DEVELOPMENT PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF
THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH
P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.



VICINITY MAP
SCALE 1" = 500'

Sheet List Table	
Sheet Number	Sheet Title
C1.0	COVER SHEET
C2.0	SITE PLAN
C3.0	GRADING AND DRAINAGE PLAN

CONTACT LIST		
OWNER	CIVIL ENGINEER	SURVEYOR
FOUNTAIN VALLEY SALVATION ARMY CORPS	R&R ENGINEERS-SURVEYORS, LLC	R&R ENGINEERS-SURVEYORS, LLC
208 CUNNINGHAM DRIVE COLORADO SPRINGS, CO 80911 (719) 382-1182	1635 WEST 13TH AVENUE, SUITE 310 DENVER, CO 80204 (303) 753-6730	1635 WEST 13TH AVENUE, SUITE 310 DENVER, CO 80204 (303) 753-6730
QUIJANA.VARGAS@USW.SALVATIONARMY. ORG	TSTACKHOUSE@RRENGINEERS.COM	KKUCHARZYK@RRENGINEERS.COM
CONTACT: QUIJANA VARGAS	CONTACT: TIM STACKHOUSE, P.E.	CONTACT: KEVIN KUCHARCZYK

PROJECT SITE INFORMATION		
	EXISTING	PROPOSED
PROPERTY TAX SCHEDULE NUMBER	6511101016	6511101016
PARCEL SIZE	2.04 AC.	2.04 AC.
TOTAL GROSS BUILDING SQUARE FOOTAGE	9,472 SF	9,472 SF
IMPERMEABLE SURFACE PERCENTAGE	21.1%	34.4%
LAND USE	RELIGIOUS INSTITUTION	RELIGIOUS INSTITUTION
ZONING	RS-5000	RS-5000
PARKING COMPUTATIONS	REQUIRED	PROVIDED
RELIGIOUS INSTITUTION - 1 SPACE PER 4 SEATS	60 SEATS*1 SPACE/4 SEATS = 15 SPACES	42 SPACES

LEGAL DESCRIPTION PER TITLE COMMITMENT
 PARCEL 1:
 LOTS 4 AND 5, BLOCK 1, REFILING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO, STATE OF COLORADO.
 PARCEL 2:
 LOT 6, BLOCK 1, REFILING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO, STATE OF COLORADO
BASIS OF BEARING
 BEARINGS ARE BASED ON THE NORTH LINE OF LOT 6, BLOCK 1 OF REFILING OF SECURITY, COLORADO ADDITION NO. 4 AS MONUMENTED AT THE WEST END BY A FOUND 3/4" BAR AND AT THE EAST END BY A NO. 4 REBAR. SAID LINE IS ASSUMED TO BEAR N89°10'20"E.
BENCHMARK
 THE BENCHMARK FOR THIS SURVEY IS A NO. 4 REBAR LOCATED ALONG THE EASTERN BOUNDARY OF THE SUBJECT PARCEL (SEE SHEET 2). THE ELEVATION WAS DERIVED FROM GPS OBSERVATIONS USING AN OPUS DERIVED SOLUTION. ELEVATION: 5801.58 FEET (NAVD 1988 DATUM)

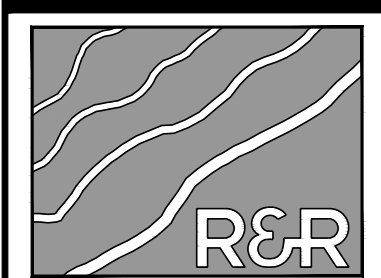
PROFESSIONAL ENGINEER CERTIFICATION

I HEREBY AFFIRM THAT THESE (PRELIMINARY/FINAL) CONSTRUCTION PLANS FOR 85 INVERNESS PLACE NORTH WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE REQUIREMENTS OF THE INFRASTRUCTURE DESIGN AND CONSTRUCTION STANDARDS AND THE STORMWATER MANAGEMENT MANUAL

TIM STACKHOUSE, P.E. DATE
 COLORADO NO. 61924

PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR
SIGNATURE

NO.	REVISION	BY	DATE
1	COUNTY COMMENTS	JLH	8/16/24



R&R ENGINEERS-SURVEYORS, INC.

1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

WWW.RRENGINEERS.COM

FOUNTAIN VALLEY SALVATION ARMY

SITE ADDRESS:
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911

PREPARED FOR:
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

SITE DEVELOPMENT PLAN	
JOB NO. FV21181	ORG. SUBM. DATE 12/22/2023
DWN: JMP	CHKD: RSD
NAME	

COVER SHEET

NO. **C1.0**

PATH: P:\V21181_208_CUNNINGHAM_DR\ENGINEERING\DRAWINGS\PLAN\SDP_V21181 - CDR.DWG, PLOT DATE: 9/17/2024 7:38:14 AM, BY: ESCA-HEIN

SITE DEVELOPMENT PLAN 208 CUNNINGHAM DRIVE

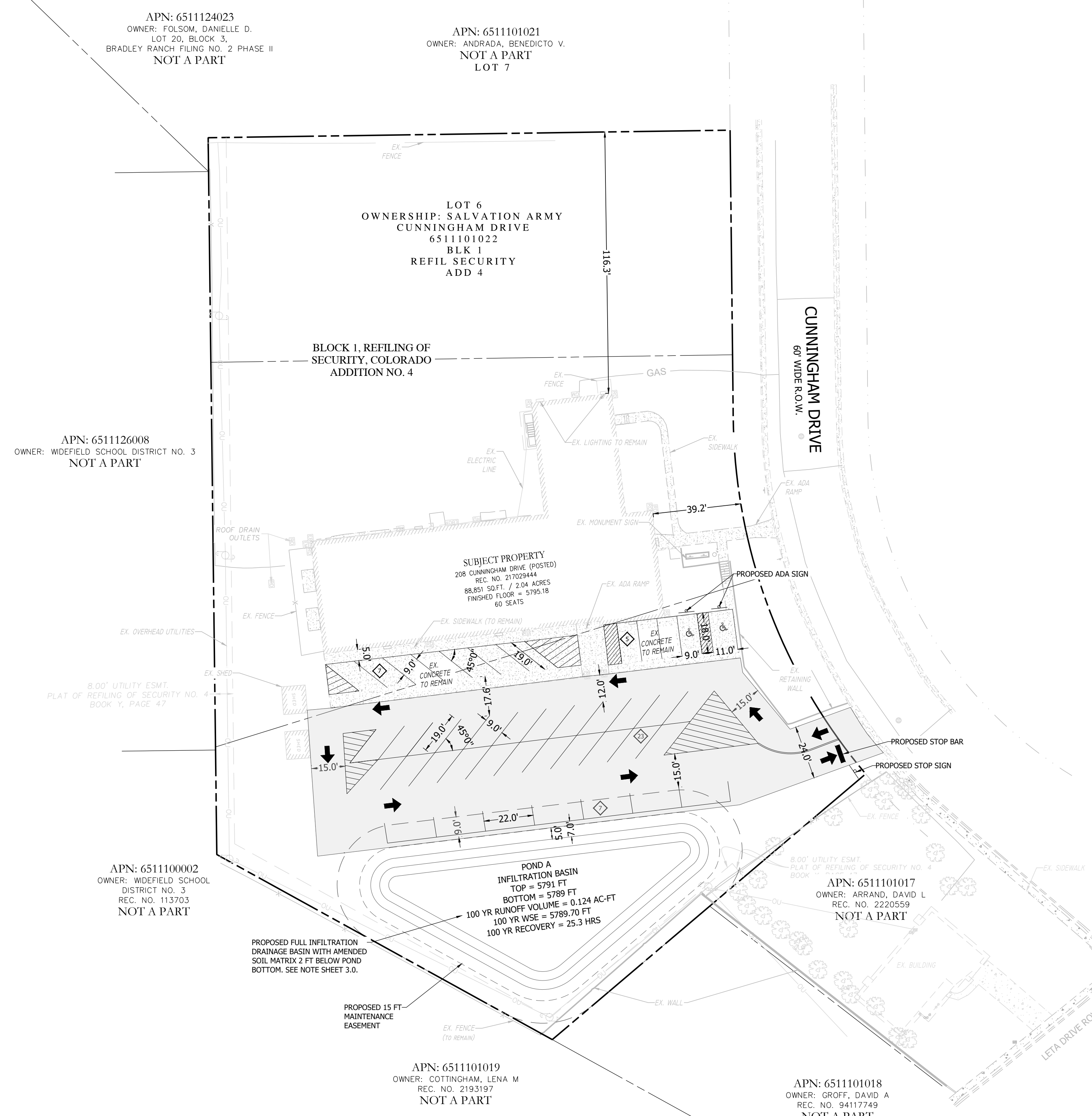
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P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



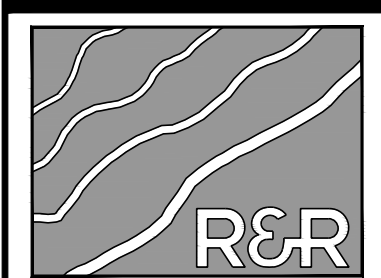
Know what's below.
Call before you dig.

MASTER LEGEND

EXISTING	DESCRIPTION	PROPOSED
	PROPERTY LINE	
	LOT LINE	
	RIGHT OF WAY	
	CENTERLINE	
	FLOOD PLAIN	
	LIMITS OF DISTURBANCE	LOD
	SWALE / STREAM FLOWLINE	
	OVERFLOW RELIEF PATH	
	FENCE LINE	
	EASEMENT	
	EDGE OF PAVEMENT	
	VERTICAL CURB AND GUTTER	
	MOUNTABLE CURB AND GUTTER	
	SPILL GUTTER	
	TRANSITION GUTTER	
	CONCRETE SIDEWALK	
	HANDICAP PARKING	
	SIGHT TRIANGLE	
	SIGN(S)	
	PARKING COUNT INDICATOR	
	MAJOR CONTOUR	5825
	MINOR CONTOUR	5822
	GRADE BREAK	
	SPOT ELEVATION	
	RIP RAP	
	TREE	
	TREE LINE	



REVISION	DATE	BY	COMMENTS
1	8/16/24	JLH	COUNTY COMMENTS



R&R ENGINEERS-SURVEYORS, INC.
1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

WWW.RRENGINEERS.COM

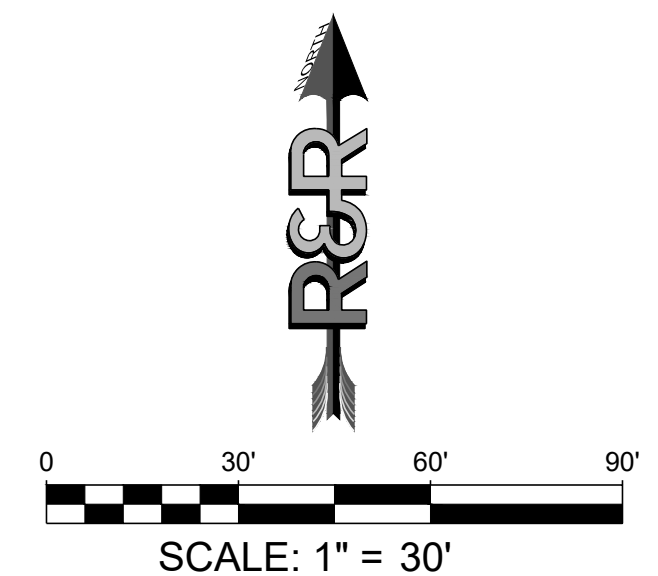
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911

FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

JOB NO.	DATE
FV21181	12/22/2023

SITE PLAN

NO. C2.0



COUNTY FILE NO. CDR242

P:\PLANS\2024\208 CUNNINGHAM DR\ENGINEERING\DRAWINGS\PLANS\CDR\20241222\181 - SITE.DWG, PLOT DATE: 9/17/2024, 7:38:19 AM, BY: JESSICA HENRY

SITE DEVELOPMENT PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.

REVISION	DATE	BY
1	8/16/24	JH



R&R ENGINEERS-SURVEYORS, INC.
1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

WWW.RRENGINEERS.COM

FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911

PREPARED FOR:
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

SITE DEVELOPMENT PLAN
JOB NO. FV21181
ORG. SUBM. DATE 12/22/2023
DWN: JMP CHKD: RSD
NAME

GRADING AND DRAINAGE PLAN

NO. C3.0

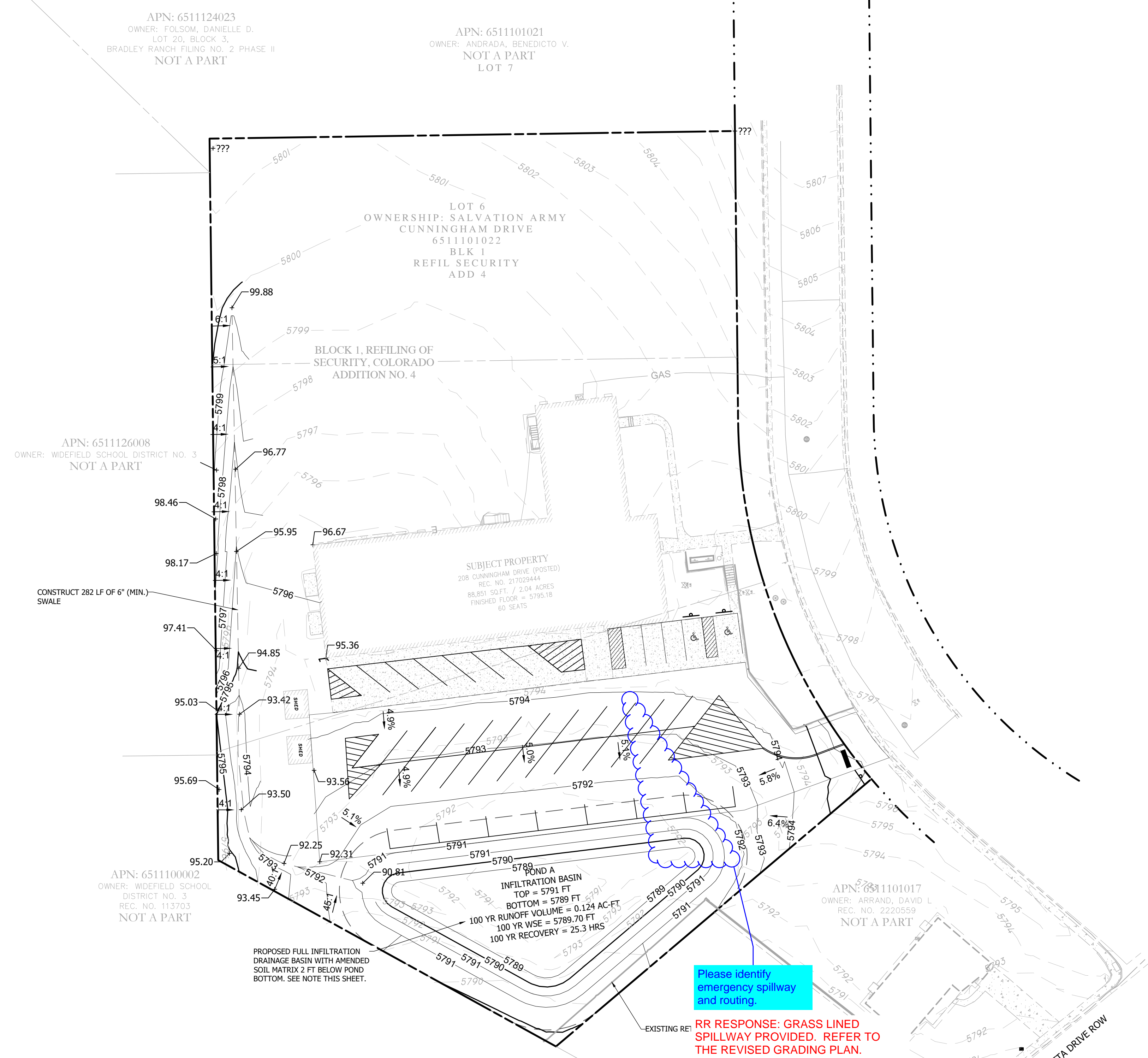
LEGEND

EXISTING	PROPOSED	
---	---	STORM SEWER PIPE
-5820-	5280	MAJOR CONTOUR
-5822-	5822	MINOR CONTOUR

Are you asking for the filter media to be imported or are you allowing them to use the existing soils if the contractor wants? Because from the drainage report, it appears that the contractor has the choice to use existing soils or to import new material. Please clarify which is true here and in the drainage report.

RR RESPONSE: NATIVE SOILS ARE NOT SUFFICIENT FOR RECOVERY. IMPORT CLEAN SANDS IS REQUIRED AND MUST BE TESTED TO MEET THE DESIGN INFILTRATION RATES FOR THE RECOVERY ANALYSIS. CONTRACTOR TO PROVIDE INFILTRATION RESULTS TO EOR PRIOR TO INSTALL. ADDITIONAL INFORMATION REGARDING DETAILS AND SPECIFICATIONS OF THE BR HAVE BEEN ADDED TO THE GEC AND THE SDP.

SOIL MATRIX AMENDMENT
CONTRACTOR REQUIRED TO REMOVE 2 FT OF NATIVE SOIL FROM THE LIMITS OF THE POND AND REPLACE WITH WELL GRADED GRAVELY SANDS. CONTRACTOR REQUIRED TO PROVIDE A GRADATION OR SIEVE ANALYSIS OF IMPORT SAND TO EOR.



APN: 6511124023
OWNER: FOLSOM, DANIELLE D.
LOT 20, BLOCK 3,
BRADLEY RANCH FILING NO. 2 PHASE II
NOT A PART

APN: 6511101021
OWNER: ANDRADA, BENEDICTO V.
LOT 7
NOT A PART

LOT 6
OWNERSHIP: SALVATION ARMY
CUNNINGHAM DRIVE
6511101022
BLK 1
REFIL SECURITY
ADD 4

BLOCK 1, REFILING OF
SECURITY, COLORADO
ADDITION NO. 4

SUBJECT PROPERTY
208 CUNNINGHAM DRIVE (POSTED)
REC. NO. 21700444
88.89 SQ. FT. / 2.04 ACRES
FINISHED FLOOR = 5795.18
60 SEATS

APN: 6511126008
OWNER: WIDEFIELD SCHOOL, DISTRICT NO. 3
NOT A PART

CONSTRUCT 282 LF OF 6" (MIN.)
SWALE

APN: 6511100002
OWNER: WIDEFIELD SCHOOL
DISTRICT NO. 3
REC. NO. 113703
NOT A PART

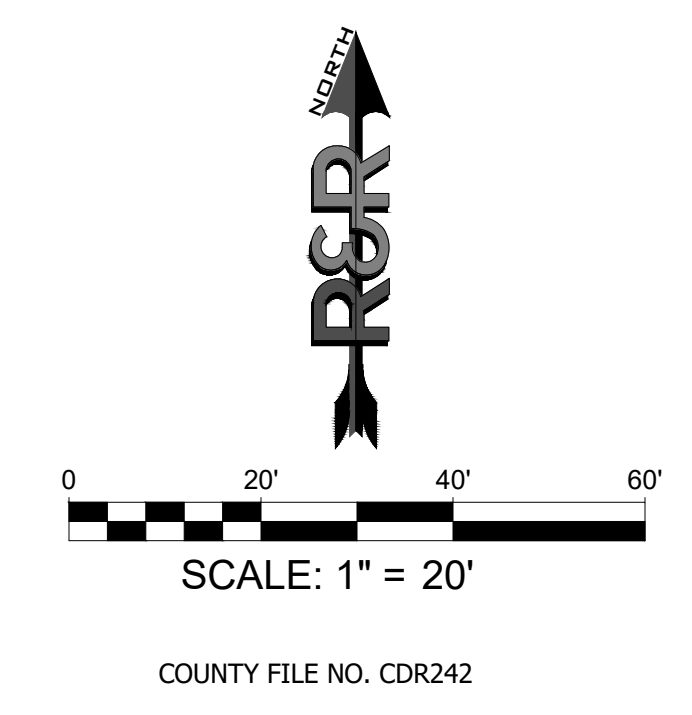
PROPOSED FULL INFILTRATION
DRAINAGE BASIN WITH AMENDED
SOIL MATRIX 2 FT BELOW POND
BOTTOM. SEE NOTE THIS SHEET.

Please identify
emergency spillway
and routing.

RR RESPONSE: GRASS LINED
SPILLWAY PROVIDED. REFER TO
THE REVISED GRADING PLAN.

APN: 6511101019
OWNER: COTTINGHAM, LENA M
REC. NO. 2193197
NOT A PART

APN: 6511101018
OWNER: GRIFF, DAVID A
REC. NO. 94117749
NOT A PART



This is not an O&M Manual. Please upload one with the next submittal. Looks like you accidentally uploaded the DMA again. My Review 1 comment is provided on the right for reference.

A duplicate copy of the detention maintenance agreement was uploaded in the O&M manual EDARP slot instead of an O&M Manual. Please provide an O&M Manual for the PLD. There is a template on the City's Stormwater website.

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

**RR RESPONSE: NOTED. AN O&M
MANUAL HAS BEEN PROVIDED IN THE
RESUBMITTAL DOCUMENTS**

/ STORMWATER QUALITY BEST M
EMENT AND EASEMENT (Agreeme
hrough THE BOARD OF COUNTY C

**RR RESPONSE:
NOTED, O&M MANUAL
UPLOADED**

OF EL PASO COUNTY, COLORADO and FOUNTAIN VALLEY CORPS -
SALVATION ARMY.

The above may occasionally be referred to herein singularly as "Party" and collectively as "Parties."

Recitals

A. WHEREAS, Developer is the owner of certain real estate (the Property or Subdivision) in El Paso County, Colorado, which Property is legally described in [Exhibit A](#) attached hereto and incorporated herein by this reference; and

B. WHEREAS, Developer desires to plat and develop on the Property a subdivision/land use to be known as 208 CUNNINGHAM DRIVE.

C. WHEREAS, the development of this Property will substantially increase the volume of water runoff and will decrease the quality of the stormwater runoff from the Property, and, therefore, it is in the best interest of public health, safety and welfare for the County to condition approval of this subdivision/land use on Developer's promise to construct adequate drainage, water runoff control facilities, and stormwater quality structural Best Management Practices ("BMPs") for the subdivision/land use; and

D. WHEREAS, Chapter 8, Section 8.4.5 of the El Paso County Land Development Code, as periodically amended, promulgated pursuant to Section 30-28-133(1), Colorado Revised Statutes (C.R.S.), requires the County to condition approval of all subdivisions on a developer's promise to so construct adequate drainage, water runoff control facilities, and BMPs in subdivisions; and

E. WHEREAS, the Drainage Criteria Manual, Volume 2, as amended by Appendix I of the El Paso County Engineering Criteria Manual (ECM), as each may be periodically amended, promulgated pursuant to the County's Colorado Discharge Permit System General Permit (MS4 Permit) as required by Phase II of the National Pollutant Discharge Elimination System (NPDES), which MS4 Permit requires that the County take measures to protect the quality of stormwater from sediment and other contaminants, requires subdividers, developers, landowners, and owners of facilities located in the County's rights-of-way or easements to provide adequate permanent stormwater quality BMPs with new development or significant redevelopment; and

F. WHEREAS, Section 2.9 of the El Paso County Drainage Criteria Manual provides for a developer's promise to maintain a subdivision's drainage facilities in the event the County does not assume such responsibility; and

G. WHEREAS, developers in El Paso County have historically chosen water runoff

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

detention basins as a means to provide adequate drainage and water runoff control in subdivisions, Private Detention Basin / Stormwater Quality BMP Maintenance Agreement – Page 2 of 8 which basins, while effective, are less expensive for developers to construct than other methods of providing drainage and water runoff control; and

H. WHEREAS, Developer desires to construct for the subdivision/land use 1 detention basin/stormwater quality BMP as the means for providing adequate drainage and stormwater runoff control and to meet requirements of the County's MS4 Permit, and to operate, clean, maintain and repair such detention basin/BMP(s); and

I. WHEREAS, Developer desires to construct the detention basin/BMP(s) on property that is or will be platted as LOT 1, as indicated on the final plat of the subdivision, and as set forth on [Exhibit B](#) attached hereto; and

J. WHEREAS, Developer shall be charged with the duties of constructing, operating, maintaining and repairing the detention basin/BMP(s) on the Property described in [Exhibit B](#); and

K. WHEREAS, it is the County's experience that subdivision developers and property owners historically have not properly cleaned and otherwise not properly maintained and repaired these detention basins/BMPs, and that these detention basins/BMPs, when not so properly cleaned, maintained, and repaired, threaten the public health, safety and welfare; and

L. WHEREAS, the County, in order to protect the public health, safety and welfare, has historically expended valuable and limited public resources to so properly clean, maintain, and repair these detention basins/BMPs when developers and property owners have failed in their responsibilities, and therefore, the County desires the means to recover its costs incurred in the event the burden falls on the County to so clean, maintain and repair the detention basin/BMP(s) serving this subdivision/land use due to the Developer/Owner's failure to meet its obligations to do the same; and

M. WHEREAS, the County conditions approval of this subdivision/land use on the Developer's promise to so construct the detention basin/BMP(s), and conditions approval on the Owner's promise to reimburse the County in the event the burden falls upon the County to so clean, maintain and/or repair the detention basin/BMP(s) serving this Subdivision; and

N. WHEREAS, the County could condition subdivision/land use approval on the Developer's promise to construct a different and more expensive drainage, water runoff control system and BMPs than those proposed herein, which more expensive system would not create the possibility of the burden of cleaning, maintenance and repair expenses falling on the County; however, the County is willing to forego such right upon the performance of Developer/Owner's promises contained herein; and

O. WHEREAS, the County, in order to secure performance of the promises contained

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

herein, conditions approval of this subdivision/land use upon the Developer's grant herein of a perpetual Easement over a portion of the Property for the purpose of allowing the County to periodically access, inspect, and, when so necessary, to clean, maintain and/or repair the detention basin/BMP(s); and

Agreement

NOW, THEREFORE, in consideration of the mutual Promises contained herein, the sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Incorporation of Recitals: The Parties incorporate the Recitals above into this Agreement.
2. Covenants Running with the Land: Developer/Owner agrees that this entire Agreement and the performance thereof shall become a covenant running with the land, which land is legally described in [Exhibit A](#) attached hereto, and that this entire Agreement and the performance thereof shall be binding upon itself, its successors and assigns.
3. Construction: Developer shall construct on that portion of the Property described in [Exhibit B](#) attached hereto and incorporated herein by this reference, 1 detention basin/BMP(s). Developer shall not commence construction of the detention basin/BMP(s) until the El Paso County Planning and Community Development Department (PCD) has approved in writing the plans and specifications for the detention basin/BMP(s) and this Agreement has been signed by all Parties and returned to the PCD. Developer shall complete construction of the detention basin/BMP(s) in substantial compliance with the County-approved plans and specifications for the detention basin/BMP(s).

Failure to meet these requirements shall be a material breach of this Agreement, and shall entitle the County to pursue any remedies available to it at law or in equity to enforce the same. Construction of the detention basin/BMP(s) shall be substantially completed within one (1) year (defined as 365 days), which one year period will commence to run on the date the approved plat of this Subdivision is recorded in the records of the El Paso County Clerk and Recorder.

In cases where a subdivision is not required, the one year period will commence to run on the date the Erosion and Stormwater Quality Control Permit (ESQCP) is issued. Rough grading of the detention basin/BMP(s) must be completed and inspected by the El Paso County Planning and Community Development Department prior to commencing road construction.

In the event construction is not substantially completed within the one (1) year period, then the County may exercise its discretion to complete the project, and shall have the right to seek reimbursement from the Developer/Owner and its successors and assigns, for its actual costs and expenses incurred in the process of completing construction. The term actual costs and expenses shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tool and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

order to enforce the Provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

4. Maintenance: The Developer/Owner agrees for itself and its successors and assigns, that it will regularly and routinely inspect, clean and maintain the detention basin/BMP(s), and otherwise keep the same in good repair, all at its own cost and expense. No trees or shrubs that will impair the structural integrity of the detention basin/BMP(s) shall be planted or allowed to grow on the detention basin/BMP(s).

5. Creation of Easement: Developer/Owner hereby grants the County a non-exclusive perpetual easement upon and across that portion of the Property described in [Exhibit B](#). The purpose of the easement is to allow the County to access, inspect, clean, repair and maintain the detention basin/BMP(s); however, the creation of the easement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

6. County's Rights and Obligations: Any time the County determines, in the sole exercise of its discretion, that the detention basin/BMP(s) is not properly cleaned, maintained and/or otherwise kept in good repair, the County shall give reasonable notice to the Developer/Owner and its successors and assigns, that the detention basin/BMP(s) needs to be cleaned, maintained and/or otherwise repaired. The notice shall provide a reasonable time to correct the problem(s). Should the responsible parties fail to correct the specified problem(s), the County may enter upon the Property to so correct the specified problem(s). Notice shall be effective to the above by the County's deposit of the same into the regular United States mail, postage pre-paid. Notwithstanding the foregoing, this Agreement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the detention basin/BMP(s).

7. Reimbursement of County's Costs / Covenant Running With the Land: The Developer/Owner agrees and covenants, for itself, its successors and assigns, that it will reimburse the County for its costs and expenses incurred in the process of completing construction of, cleaning, maintaining, and/or repairing the detention basin/BMP(s) pursuant to the provisions of this Agreement. The term "actual costs and expenses" shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tools and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney's fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

8. Contingencies of Land Use/Land Disturbance Approval: Developer/Owner's execution of this Agreement is a condition of land use/land disturbance approval. The County shall have the right, in the sole exercise of its discretion, to approve or disapprove any documentation submitted to it under the conditions of this Paragraph, including but not limited to, any separate agreement or amendment, if applicable, identifying any specific

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

maintenance responsibilities not addressed herein. The County's rejection of any documentation submitted hereunder shall mean that the appropriate condition of this Agreement has not been fulfilled.

9. Agreement Monitored by El Paso County Planning and Community Development Department and/or El Paso County Department of Public Works: Any and all actions and decisions to be made hereunder by the County shall be made by the Director of the El Paso County Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works. Accordingly, any and all documents, submissions, plan approvals, inspections, etc. shall be submitted to and shall be made by the Director of the Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works.

10. Indemnification and Hold Harmless: To the extent authorized by law, Developer/Owner agrees, for itself, its successors and assigns, that it will indemnify, defend, and hold the County harmless from any and all loss, costs, damage, injury, liability, claim, lien, demand, action and causes of action whatsoever, whether at law or in equity, arising from or related to its intentional or negligent acts, errors or omissions or that of its agents, officers, servants, employees, invitees and licensees in the construction, operation, inspection, cleaning (including analyzing and disposing of any solid or hazardous wastes as defined by State and/or Federal environmental laws and regulations), maintenance, and repair of the detention basin/BMP(s), and such obligation arising under this Paragraph shall be joint and several. Nothing in this Paragraph shall be deemed to waive or otherwise limit the defense available to the County pursuant to the Colorado Governmental Immunity Act, Sections 24-10-101, *et seq.* C.R.S., or as otherwise provided by law.

11. Severability: In the event any Court of competent jurisdiction declares any part of this Agreement to be unenforceable, such declaration shall not affect the enforceability of the remaining parts of this Agreement.

12. Third Parties: This Agreement does not and shall not be deemed to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceeding against either the County, the Developer/Owner, or their respective successors and assigns, because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

13. Solid Waste or Hazardous Materials: Should any refuse from the detention basin/BMP(s) be suspected or identified as solid waste or petroleum products, hazardous substances or hazardous materials (collectively referred to herein as "hazardous materials"), the Developer/Owner shall take all necessary and proper steps to characterize the solid waste or hazardous materials and properly dispose of it in accordance with applicable State and/or Federal environmental laws and regulations, including, but not limited to, the following: Solid Wastes Disposal Sites and Facilities Acts, §§ 30-20-100.5 – 30-20-119, C.R.S., Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities, 6 C.C.R. 1007-2, *et seq.*, Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, and Federal Solid Waste Regulations 40 CFR Ch. I. The County shall not be responsible or liable for identifying, characterizing, cleaning up, or disposing

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
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of such solid waste or hazardous materials. Notwithstanding the previous sentence, should any refuse cleaned up and disposed of by the County be determined to be solid waste or hazardous materials, the Developer/Owner, but not the County, shall be responsible and liable as the owner, generator, and/or transporter of said solid waste or hazardous materials.

14. Applicable Law and Venue: The laws, rules, and regulations of the State of Colorado and El Paso County shall be applicable in the enforcement, interpretation, and execution of this Agreement, except that Federal law may be applicable regarding solid waste or hazardous materials.

Venue shall be in the El Paso County District Court.
IN WITNESS WHEREOF, the Parties affix their signatures below.

Executed this _____ day of _____, 20____, by:
Salvation Army

By: _____
Capt. Eric Wilkerson

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by [Insert name], [Insert title(President/Manager)], [Insert Company Name]

Witness my hand and official seal.
My commission expires: _____

Notary Public
Executed this _____ day of _____, 20____, by:

BOARD OF COUNTY COMMISSIONERS
OF EL PASO COUNTY, COLORADO

By: _____
Megan Herington , Executive Director
Planning and Community Development Department
Authorized signatory pursuant to LDC

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by _____, Executive Director of El Paso County Planning and Community Development Department.

Witness my hand and official seal.
My commission expires: _____

Notary Public

**PRIVATE INFILTRATION BASIN /
STORMWATER QUALITY BEST MANAGEMENT PRACTICE
MAINTENANCE AGREEMENT AND EASEMENT**

Approved as to Content and Form:

Assistant County Attorney

Exhibit A
Exhibit B

**EXHIBIT A
LEGAL DESCRIPTION**

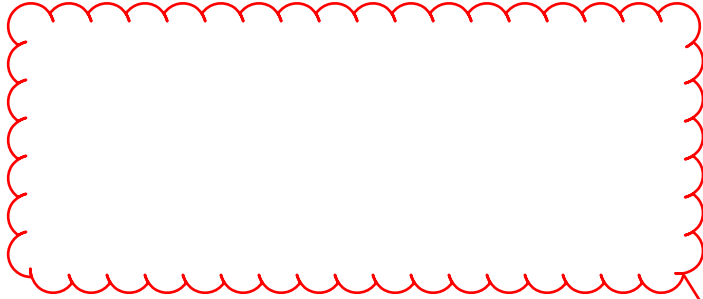
PARCEL 1:

LOTS 4 AND 5, BLOCK 1, REFILING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO,
STATE OF COLORADO.

PARCEL 2:

LOT 6, BLOCK 1, REFILING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO, STATE OF
COLORADO.

TIM STACKHOUSE, P.E.
COLORADO NO. 61924
FOR AND ON BEHALF OF:
R&R ENGINEERS-SURVEYORS, INC.



RR RESPONSE: SDP PLAN SHEET
INSERTED AS EXHIBIT B

REPLACE PAGE
WITH SDP

Unresolved comment from Review 1:
 Value inputted for "Permanent Pond/BMP (provide engineer's estimate)" should match the total value shown in the Engineer's Cost Estimate for the PBMP in the FDR. Currently no estimate provided in FDR.

Review 2 update: please clarify in the FDR what this \$12.5k represents. Is it just the cost of importing the filter media?
 Note that this total should not include grading, which is a separate line item in Section 1: "Earthwork." The cost estimate should include labor costs (as a separate line item or added into the cost of each component).

2024 Financial Assurance Estimate Form (with pre-plat construction)

please update

PROJECT INFORMATION

Date: 12/22/2023

RR RESPONSE: SEPERATE ENGINEERS ESTIMATE HAS BEEN PROVIDED FOR THE POND AND IT MATCHES THE FDR COST.

RR RESPONSE: DATE HAS BEEN MODIFIED.

RR RESPONSE: THE FDR HAS BEEN MODIFIED. THE COST OF THE BMP AND ENGINEERS ESTIMATE INCLUDE IMPORT OF CLEAN SANDS AND LABOR OF INSTALLATION. THE GRADING (EARTHWORK) OF THE POND IS PROVIDE IN FDR. ENGINEERS ESTIMATE PROVIDED IN THE BACK OF THE DRAINAGE REPORT

Quantity	Unit	Description	Rate	Amount	Subtotal	Total
1,000-5,000	min					
5,001-20,000	\$30,000 min					
20,001-50,000	\$100,000 min					
50,001-200,000	\$175,000 min					
greater than 200,000	\$500,000 min					
		Permanent Erosion Control Blanket	SY	\$ 9.00	=	\$ -
		Permanent Seeding (Incl. noxious weed mgmt.) & Mulching	AC	\$ 2,048.00	=	\$ -
1.		Permanent Pond/BMP (provide engineer's estimate)	EA	\$ 12,500.00	=	\$ -
1.		Concrete Washout Basin	EA	\$ 1,172.00	=	\$ -
		Inlet Protection	EA	\$ 217.00	=	\$ -
		Rock Check Dam	EA	\$ 651.00	=	\$ -
		Safety Fence	LF	\$ 3.00	=	\$ -
		Sediment Basin	EA	\$ 2,294.00	=	\$ -
		Sediment Trap	EA	\$ 538.00	=	\$ -
540.		Silt Fence	LF	\$ 3.00	=	\$ 1,620.00
		Slope Drain	LF	\$ 43.00	=	\$ -
		Straw Bale	EA	\$ 33.00	=	\$ -
		Straw Wattle/Rock Sock	LF	\$ 8.00	=	\$ -
45.		Surface Roughening	AC	\$ 269.00	=	\$ 121.05
		Temporary Erosion Control Blanket	SY	\$ 3.00	=	\$ -
		Temporary Seeding and Mulching	AC	\$ 1,793.00	=	\$ -
1.		Vehicle Tracking Control	EA	\$ 3,085.00	=	\$ 3,085.00
		[insert items not listed but part of construction plans]			=	\$ -
MAINTENANCE (35% of Construction BMPs)					=	\$ 1,689.
Section 1 Subtotal					=	\$ 27,202.4

Ensure pond estimate includes E-spillway and update design and FDR cost

* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)

SECTION 2 - PUBLIC IMPROVEMENTS *

Quantity	Unit	Description	Rate	Amount	Subtotal	Total
		Construction Traffic Control	LS		=	\$ -
		Aggregate Base Course (135 lbs/cf)	Tons	\$ 37.00	=	\$ -
		Aggregate Base Course (135 lbs/cf)	CY	\$ 66.00	=	\$ -
		Asphalt Pavement (3" thick)	SY	\$ 18.00	=	\$ -
		Asphalt Pavement (4" thick)	SY	\$ 25.00	=	\$ -
		Asphalt Pavement (6" thick)	SY	\$ 38.00	=	\$ -
		Asphalt Pavement (147 lbs/cf) ___" thick	Tons	\$ 114.00	=	\$ -
		Raised Median, Paved	SF	\$ 11.00	=	\$ -
		Regulatory Sign/Advisory Sign	EA	\$ 392.00	=	\$ -
		Guide/Street Name Sign	EA		=	\$ -
		Epoxy Pavement Marking	SF	\$ 17.00	=	\$ -
		Thermoplastic Pavement Marking	SF	\$ 30.00	=	\$ -
		Barricade - Type 3	EA	\$ 259.00	=	\$ -
		Delineator - Type I	EA	\$ 31.00	=	\$ -
		Curb and Gutter, Type A (6" Vertical)	LF	\$ 38.00	=	\$ -
		Curb and Gutter, Type B (Median)	LF	\$ 38.00	=	\$ -
		Curb and Gutter, Type C (Ramp)	LF	\$ 38.00	=	\$ -
		4" Sidewalk (common areas only)	SY	\$ 62.00	=	\$ -
		5" Sidewalk	SY	\$ 77.00	=	\$ -
		6" Sidewalk	SY	\$ 94.00	=	\$ -
		8" Sidewalk	SY	\$ 125.00	=	\$ -
		Pedestrian Ramp	EA	\$ 1,496.00	=	\$ -
		Cross Pan, local (8" thick, 6' wide to include return)	LF	\$ 79.00	=	\$ -
		Cross Pan, collector (9" thick, 8' wide to include return)	LF	\$ 119.00	=	\$ -
		Curb Opening with Drainage Chase	EA	\$ 1,926.00	=	\$ -
		Guardrail Type 3 (W-Beam)	LF	\$ 65.00	=	\$ -
		Guardrail Type 7 (Concrete)	LF	\$ 94.00	=	\$ -
		Guardrail End Anchorage	EA	\$ 2,731.00	=	\$ -
		Guardrail Impact Attenuator	EA	\$ 4,902.00	=	\$ -
		Sound Barrier Fence (CMU block, 6' high)	LF	\$ 102.00	=	\$ -
		Sound Barrier Fence (panels, 6' high)	LF	\$ 104.00	=	\$ -
		Electrical Conduit, Size =	LF	\$ 22.00	=	\$ -
		Traffic Signal, (provide engineer's estimate)	EA		=	\$ -

RR RESPONSE: GRASS LINED SPILLWAY PROVIDED. NO ADDITIONAL COST ADDED FOR THIS AS IT IS CONSIDERED PART OF THE GRADING/EARTHWORK OF THE POND.

PROJECT INFORMATION

Project Name: 208 Cunningham Drive

Date: 12/22/2023

PCD File No. CDR242

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction)	
						% Complete	Remaining
				=	\$ -		\$ -
<i>[insert items not listed but part of construction plans]</i>				=	\$ -		\$ -
STORM DRAIN IMPROVEMENTS							
Concrete Box Culvert (M Standard), Size (W x H)		LF		=	\$ -		\$ -
18" Reinforced Concrete Pipe		LF	\$ 82.00	=	\$ -		\$ -
24" Reinforced Concrete Pipe		LF	\$ 98.00	=	\$ -		\$ -
30" Reinforced Concrete Pipe		LF	\$ 123.00	=	\$ -		\$ -
36" Reinforced Concrete Pipe		LF	\$ 151.00	=	\$ -		\$ -
42" Reinforced Concrete Pipe		LF	\$ 201.00	=	\$ -		\$ -
48" Reinforced Concrete Pipe		LF	\$ 245.00	=	\$ -		\$ -
54" Reinforced Concrete Pipe		LF	\$ 320.00	=	\$ -		\$ -
60" Reinforced Concrete Pipe		LF	\$ 374.00	=	\$ -		\$ -
66" Reinforced Concrete Pipe		LF	\$ 433.00	=	\$ -		\$ -
72" Reinforced Concrete Pipe		LF	\$ 495.00	=	\$ -		\$ -
18" Corrugated Steel Pipe		LF	\$ 105.00	=	\$ -		\$ -
24" Corrugated Steel Pipe		LF	\$ 121.00	=	\$ -		\$ -
30" Corrugated Steel Pipe		LF	\$ 154.00	=	\$ -		\$ -
36" Corrugated Steel Pipe		LF	\$ 184.00	=	\$ -		\$ -
42" Corrugated Steel Pipe		LF	\$ 212.00	=	\$ -		\$ -
48" Corrugated Steel Pipe		LF	\$ 223.00	=	\$ -		\$ -
54" Corrugated Steel Pipe		LF	\$ 327.00	=	\$ -		\$ -
60" Corrugated Steel Pipe		LF	\$ 353.00	=	\$ -		\$ -
66" Corrugated Steel Pipe		LF	\$ 427.00	=	\$ -		\$ -
72" Corrugated Steel Pipe		LF	\$ 502.00	=	\$ -		\$ -
78" Corrugated Steel Pipe		LF	\$ 578.00	=	\$ -		\$ -
84" Corrugated Steel Pipe		LF	\$ 691.00	=	\$ -		\$ -
Flared End Section (FES) RCP Size = <small>(unit cost = 6x pipe unit cost)</small>		EA		=	\$ -		\$ -
Flared End Section (FES) CSP Size = <small>(unit cost = 6x pipe unit cost)</small>		EA		=	\$ -		\$ -
End Treatment- Headwall		EA		=	\$ -		\$ -
End Treatment- Wingwall		EA		=	\$ -		\$ -
End Treatment - Cutoff Wall		EA		=	\$ -		\$ -
Curb Inlet (Type R) L=5', Depth < 5'		EA	\$ 7,212.00	=	\$ -		\$ -
Curb Inlet (Type R) L=5', 5' ≤ Depth < 10'		EA	\$ 9,377.00	=	\$ -		\$ -
Curb Inlet (Type R) L=5', 10' ≤ Depth < 15'		EA	\$ 10,859.00	=	\$ -		\$ -
Curb Inlet (Type R) L=10', Depth < 5'		EA	\$ 9,925.00	=	\$ -		\$ -
Curb Inlet (Type R) L=10', 5' ≤ Depth < 10'		EA	\$ 10,230.00	=	\$ -		\$ -
Curb Inlet (Type R) L=10', 10' ≤ Depth < 15'		EA	\$ 12,805.00	=	\$ -		\$ -
Curb Inlet (Type R) L=15', Depth < 5'		EA	\$ 12,907.00	=	\$ -		\$ -
Curb Inlet (Type R) L=15', 5' ≤ Depth < 10'		EA	\$ 13,835.00	=	\$ -		\$ -
Curb Inlet (Type R) L=15', 10' ≤ Depth < 15'		EA	\$ 15,130.00	=	\$ -		\$ -
Curb Inlet (Type R) L=20', Depth < 5'		EA	\$ 13,755.00	=	\$ -		\$ -
Curb Inlet (Type R) L=20', 5' ≤ Depth < 10'		EA	\$ 15,181.00	=	\$ -		\$ -
Grated Inlet (Type C), Depth < 5'		EA	\$ 6,037.00	=	\$ -		\$ -
Grated Inlet (Type D), Depth < 5'		EA	\$ 7,458.00	=	\$ -		\$ -
Storm Sewer Manhole, Box Base		EA	\$ 15,130.00	=	\$ -		\$ -
Storm Sewer Manhole, Slab Base		EA	\$ 8,322.00	=	\$ -		\$ -
Geotextile (Erosion Control)		SY	\$ 9.00	=	\$ -		\$ -
Rip Rap, d50 size from 6" to 24"		Tons	\$ 104.00	=	\$ -		\$ -
Rip Rap, Grouted		Tons	\$ 124.00	=	\$ -		\$ -
Drainage Channel Construction, Size (W x H)		LF	\$ 10.00	=	\$ -		\$ -
Drainage Channel Lining, Concrete		CY	\$ 741.00	=	\$ -		\$ -
Drainage Channel Lining, Rip Rap		CY	\$ 145.00	=	\$ -		\$ -
Drainage Channel Lining, Grass		AC	\$ 1,911.00	=	\$ -		\$ -
Drainage Channel Lining, Other Stabilization				=	\$ -		\$ -
				=	\$ -		\$ -
<i>[insert items not listed but part of construction plans]</i>				=	\$ -		\$ -
Section 2 Subtotal				=	\$ -		\$ -

* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)

This can be removed from the FAE as its not common development

PROJECT INFORMATION	
Project Name: 208 Cunningham Drive	Date: 12/22/2023

RR RESPONSE: THIS SCOPE HAS BEEN REMOVED FROM THE FDR.

Description	Quantity	Units	Unit Cost					
SECTION 3 - COMMON DEVELOPMENT IMPROVEMENTS (Private or District and NOT Maintained by I								
ROADWAY IMPROVEMENTS								
Aggregate Base Course (135 lbs/cf)	90.	CY	\$ 66.00	=	\$			10.00
Asphalt Pavement (3" thick)	1600.	SY	\$ 18.00	=	\$			10.00
Stop Sign	1.	EA	\$ 475.00	=	\$	475.00		475.00
Thermoplastic Paint	1.	EA	\$ 350.00	=	\$	350.00		350.00
				=	\$			
				=	\$			
				=	\$			
				=	\$			
				=	\$			
STORM DRAIN IMPROVEMENTS (Exception: Permanent Pond/BMP shall be itemized under Section 1)								
Drainage Channel	300.	LF	\$ 10.00	=	\$	3,000.00		3,000.00
Drainage Channel Lining	.1	AC	\$ 1,911.00	=	\$	191.10		191.10
				=	\$	191.10		191.10
				=	\$			
				=	\$			
				=	\$			
				=	\$			
WATER SYSTEM IMPROVEMENTS								
Water Main Pipe (PVC), Size 8"		LF	\$ 84.00	=	\$			
Water Main Pipe (Ductile Iron), Size 8"		LF	\$ 98.00	=	\$			
Gate Valves, 8"		EA	\$ 2,418.00	=	\$			
Fire Hydrant Assembly, w/ all valves		EA	\$ 8,584.00	=	\$			
Water Service Line Installation, inc. tap and valves		EA	\$ 1,723.00	=	\$			
Fire Cistern Installation, complete		EA		=	\$			
				=	\$			
				=	\$			
<i>[insert items not listed but part of construction plans]</i>				=	\$			
SANITARY SEWER IMPROVEMENTS								
Sewer Main Pipe (PVC), Size 8"		LF	\$ 84.00	=	\$			
Sanitary Sewer Manhole, Depth < 15 feet		EA	\$ 5,708.00	=	\$			
Sanitary Service Line Installation, complete		EA	\$ 1,825.00	=	\$			
Sanitary Sewer Lift Station, complete		EA		=	\$			
				=	\$			
				=	\$			
<i>[insert items not listed but part of construction plans]</i>				=	\$			
LANDSCAPING IMPROVEMENTS (For subdivision specific condition of approval, or PUD)								
		EA		=	\$			
		EA		=	\$			
		EA		=	\$			
		EA		=	\$			
		EA		=	\$			
		EA		=	\$			
Section 3 Subtotal				=	\$	38,947.20		\$ 38,947.20

** - Section 3 is not subject to defect warranty requirements

PROJECT INFORMATION

Project Name: 208 Cunningham Drive

Date: 12/22/2023

PCD File No. CDR242

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction)	
						% Complete	Remaining
AS-BUILT PLANS (Public Improvements inc. Permanent WQCV BMPs)		EA	\$ 3,500.00	=	\$ 3,500.00		\$ 3,500.00
POND/BMP CERTIFICATION (inc. elevations and volume calculations)		LS	\$ 1,200.00	=	\$ 1,200.00		\$ 1,200.00
Total Construction Financial Assurance						\$	70,849.67
(Sum of all section subtotals plus as-builts and pond/BMP certification)							
Total Remaining Construction Financial Assurance (with Pre-Plat Construction)						\$	70,849.67
(Sum of all section totals less credit for items complete plus as-builts and pond/BMP certification)							
Total Defect Warranty Financial Assurance						\$	3,903.06
(20% of all items identified as (*). To be collateralized at time of preliminary acceptance)							

Approvals

I hereby certify that this is an accurate and complete estimate of costs for the work as shown on the Grading and Erosion Control Plan and Construction Drawings associated with the Project.

Please provide engineer stamp/sign and owner sign

RR RESPONSE:
SIGNATURES
PROVIDED.

Engineer (P.E. Seal Required)

Approved by Owner / Applicant

Date

Approved by El Paso County Engineer / ECM Administrator

Date



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Y - Satisfies criteria
N - Needs to be addressed

EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number: CDR242

Revised: October 2021

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



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number: _____

Revised: October 2021

		Applicant	EPC
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 See my comment on the VTC detail		N
aa	Any off-site stormwater control measure proposed for use by the project and not under the direct control or ownership of the Owner or Operator		N/A
bb	Existing and proposed permanent storm water management facilities, including areas proposed for stormwater infiltration or subsurface detention		Y
cc	Existing and proposed easements (permanent and construction) including required off-site easements		Y
dd	Retaining walls shall not to be located in County ROW unless approved via license agreement. A building permit from Regional Building Department is required for walls greater than or equal to 4 feet in height, series of walls, or walls supporting a surcharge and must be design by P.E.		N/A
ee	Plan certified by a Colorado Registered P.E., with EPC standard signature blocks for Engineer, Owner and EPC		Y
ff	<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>_____ Date</p> <p>Engineer of Record Signature</p>		Y
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>_____ Date</p> <p>Engineer of Record Signature</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>_____ Date</p> <p>Owner Signature</p>		Y
ii	<p>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.</p> <p>_____ Date</p> <p>Owner Signature</p>		N/A



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

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



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

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



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

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



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EL PASO COUNTY GRADING AND EROSION CONTROL PLAN CHECKLIST

EPC Project Number:

Revised: October 2021

Applicant	EPC
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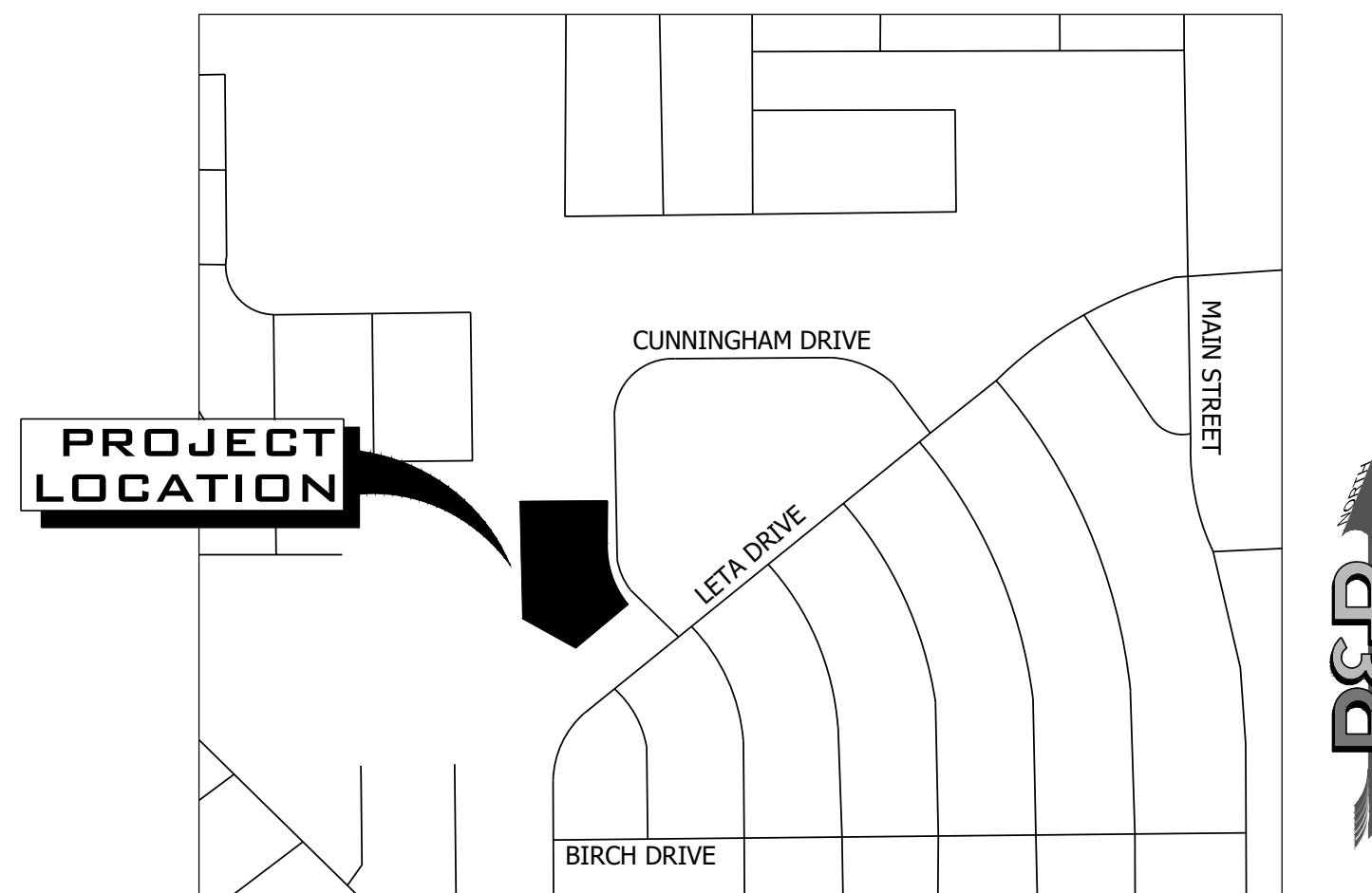
5. CHECKLIST REVIEW CERTIFICATIONS			
a	<p>Engineer of Record: The Grading and Erosion Control Plan was prepared under my direction and supervision and is complete and correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans.</p> <hr style="border: 0; border-top: 1px solid black; margin: 10px 0;"/> <p style="display: flex; justify-content: space-between;"> 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> <hr style="border: 0; border-top: 1px solid black; margin: 10px 0;"/> <p style="display: flex; justify-content: space-between;"> Review Engineer Date </p>		

GRADING AND EROSION CONTROL PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.



VICINITY MAP
SCALE 1" = 500'

Sheet List Table	
Sheet Number	Sheet Title
C1.0	COVER SHEET
C1.1	GENERAL NOTES
C2.0	INITIAL GRADING & EROSION CONTROL PLAN
C3.0	FINAL GRADING & EROSION CONTROL PLAN
C4.0	GEC DETAILS

CONTACT LIST		
OWNER	CIVIL ENGINEER	SURVEYOR
FOUNTAIN VALLEY SALVATION ARMY CORPS	R&R ENGINEERS-SURVEYORS, LLC	R&R ENGINEERS-SURVEYORS, LLC
208 CUNNINGHAM DRIVE COLORADO SPRINGS, CO 80911 (719) 382-1182	1635 WEST 13TH AVENUE, SUITE 310 DENVER, CO 80204 (303) 753-6730	1635 WEST 13TH AVENUE, SUITE 310 DENVER, CO 80204 (720) 381-2439
QUIJANA.VARGAS@USIV.SALVATIONARMY.ORG	TSTACKHOUSE@RRENGINEERS.COM	KKUCHARCZYK@RRENGINEERS.COM
CONTACT: QUIJANA VARGAS	CONTACT: TIM STACKHOUSE, P.E.	CONTACT: KEVIN KUCHARCZYK

BASIS OF BEARING
BEARINGS ARE BASED ON THE NORTH LINE OF LOT 6, BLOCK 1 OF REFLING OF SECURITY, COLORADO ADDITION NO. 4 AS MONUMENTED AT THE WEST END BY A FOUND 3/4" BAR AND AT THE EAST END BY A NO. 4 REBAR. SAID LINE IS ASSUMED TO BEAR N89°10'20"E.

BENCHMARK
THE BENCHMARK FOR THIS SURVEY IS A NO. 4 REBAR LOCATED ALONG THE EASTERN BOUNDARY OF THE SUBJECT PARCEL (SEE SHEET 2). THE ELEVATION WAS DERIVED FROM GPS OBSERVATIONS USING AN OPUS DERIVED SOLUTION. ELEVATION: 5801.58 FEET (NAVD 1988 DATUM)

LEGAL DESCRIPTION PER TITLE COMMITMENT

PARCEL 1:
LOTS 4 AND 5, BLOCK 1, REFLING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO, STATE OF COLORADO.

PARCEL 2:
LOT 6, BLOCK 1, REFLING OF SECURITY, COLORADO ADDITION NO. 4, COUNTY OF EL PASO, STATE OF COLORADO

Engineer's Statement (for standalone GEC Plan):
This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan.

Engineer of Record Signature _____ Date _____

Owner's Statement (for standalone GEC Plan):
I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan.

Owner Signature _____ Date _____

El Paso County:
County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document.

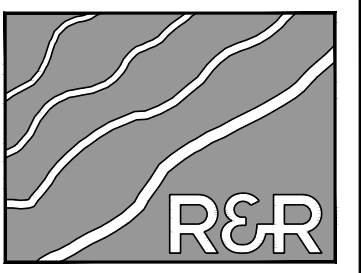
Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.

County Engineer/ECM Administrator _____ Date _____

RR RESPONSE:
NOTED, SIGNATURES
ADDED

NO.	REVISION	BY	DATE
1	COUNTY COMMENTS	JLH	9-10-24



R&R ENGINEERS-SURVEYORS, INC.

1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

WWW.RRENGINEERS.COM

FOUNTAIN VALLEY SALVATION ARMY
SITE ADDRESS: 208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911
PREPARED FOR: FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

GRADING AND EROSION CONTROL PLAN			
JOB NO.	FV21181	ORG. SUBM. DATE	12/22/2023
DWN:	JMP	CHKD:	DW
NAME:			

COVER SHEET

NO.
C1.0

GRADING AND EROSION CONTROL PLAN

208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
 LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
 Call before you dig.

EL PASO COUNTY GRADING & EROSION CONTROL STANDARD NOTES:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 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.
- 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.
- DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 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.
- 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.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- 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.
- NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 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.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY NRCS, 8/21/2021 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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

MASTER LEGEND

EXISTING	DESCRIPTION	PROPOSED
---	PROPERTY LINE	---
---	LOT LINE	---
---	RIGHT OF WAY	---
---	CENTERLINE	---
---	FLOOD PLAIN	---
---	LIMITS OF DISTURBANCE	LOD
---	SWALE / STREAM FLOWLINE	---
---	OVERFLOW RELIEF PATH	---
X	FENCE LINE	X
---	EASEMENT	---
---	EDGE OF PAVEMENT	---
---	VERTICAL CURB AND GUTTER	---
---	MOUNTABLE CURB AND GUTTER	---
---	SPILL GUTTER	---
---	TRANSITION GUTTER	---
---	CONCRETE SIDEWALK	---
---	HANDICAP PARKING	---
---	SIGHT TRIANGLE	---
---	SIGN(S)	---
---	PARKING COUNT INDICATOR	---
5825	MAJOR CONTOUR	5825
5822	MINOR CONTOUR	5822
---	GRADE BREAK	---
52 22 FG	SPOT ELEVATION	52 22 FG
5236 22 FG		5236 22 FG
---	RIP RAP	---
W	WATER LINE	W
---	WATER METER	---
---	WATER VALVE	---
---	WATER REDUCER	---
---	WATER FITTINGS	---
---	FIRE HYDRANT	---
SS	SANITARY LINE	SS
---	SANITARY MANHOLE	---
---	SANITARY CLEANOUT	---
---	STORM SEWER PIPE	---
---	STORM SEWER MANHOLE	---
---	STORM SEWER INLET	---
---	STORM SEWER FLARED END SECTION	---
---	STORM SEWER HEADWALL	---
---	UNDERGROUND ELECTRIC	---
---	OVERHEAD ELECTRIC	OHE
---	UTILITY POLE	---
---	STREET LIGHT	---
CATV	CABLE TV SERVICE	CATV
T	TELECOM SERVICE	T
FO	FIBER OPTIC SERVICE	FO
G	NATURAL GAS SERVICE	G
---	TREE	---
---	TREE LINE	---

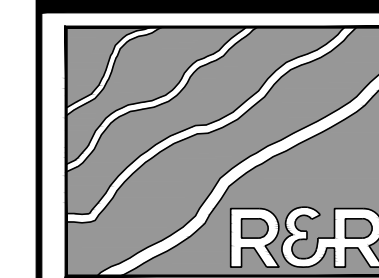
BMP LEGEND

---	CD	ROCK CHECK DAM
---	CB	COMPOST BLANKET
---	CFB	COMPOST FILTER BERM
---	CWA	CONCRETE WASHOUT AREA
---	CF	CONSTRUCTION FENCE
---	CM	CONSTRUCTION MARKERS
---	DW	DEWATERING
---	DD	DIVERSION DITCH
---	ECB	ROCK AND RIPRAP GRADATIONS
---	E	EROSION CONTROL BLANKET
---	P	INLET PROTECTION
---	PCD	REINFORCED CHECK DAM
---	FRB	REINFORCED ROCK BERM
---	RRB	RRB FOR CULVERT PROTECTION
---	SBC	SEDIMENT BASIN
---	SCL	SEDIMENT CONTROL LOG
---	ST	SEDIMENT TRAP
---	SM	SEEDING AND MULCHING
---	SF	SILT FENCE
---	SSA	STABILIZED STAGING AREA
---	SR	SURFACE ROUGHENING
---	TRC	TEMPORARY ROAD CROSSING
---	TSD	TEMPORARY SLOPE DRAIN
---	TSC	TEMPORARY STREAM CROSSING
---	TER	TERRACING
---	VTC	VEHICLE TRACKING CONTROL
---	VW	VTC WITH WHEEL WASH
---	A	A LOT EROSION CONTROL
---	B	B LOT EROSION CONTROL
---	LOC	LIMITS OF CONSTRUCTION/LIMITS OF DISTURBANCE
---	---	PROP. STORMWATER FLOW ARROWS
---	---	EX. STORMWATER FLOW ARROWS
---	---	PROP. CUT/FILL BOUNDARY
---	SP	PROP. STOCKPILE PROTECTION

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
 A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
 C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 D. CDOT M & S STANDARDS
- 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. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.
- EL PASO COUNTY DOES NOT OWN AND IS NOT RESPONSIBLE FOR THE UNDERDRAINS OR GROUNDWATER DISCHARGE SYSTEMS SHOWN ON THESE PLANS AND ASSUMES NO LIABILITY FOR WATER RIGHTS ADMINISTRATION BY APPROVING THESE PLANS. MAINTENANCE AND WATER RIGHTS ARE THE RESPONSIBILITY OF THE DEVELOPER AND PROPERTY OWNER'S.

NO.	REVISION	BY	DATE
1	COUNTY COMMENTS	JLH	9-10-24



ENGINEERS-SURVEYORS
 CON

R&R ENGINEERS-SURVEYORS, INC.
 1635 WEST 13TH AVENUE, SUITE 310
 DENVER, COLORADO 80204
 PHONE: 303-753-6730

WWW.RRENINEERS.COM

FOUNTAIN VALLEY SALVATION ARMY
 208 CUNNINGHAM DRIVE
 COLORADO SPRINGS, CO 80911
 PREPARED FOR:
 FOUNTAIN VALLEY SALVATION ARMY
 208 CUNNINGHAM DR
 COLORADO SPRINGS, CO 80911

JOB NO.	DATE
FV21181	12/22/2023
DWN: JMP	CHKD: DW

GENERAL NOTES

NO. **C1.1**

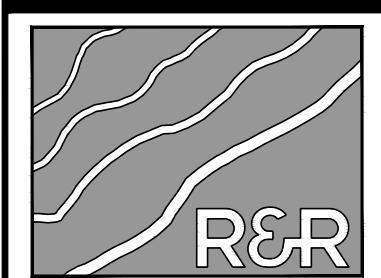
GRADING AND EROSION CONTROL PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.

REVISION	BY	DATE
COUNTY COMMENTS	JLH	9-10-24
NO. 1		



R&R ENGINEERS-SURVEYORS, INC.
1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

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FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911
PREPARED FOR: FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

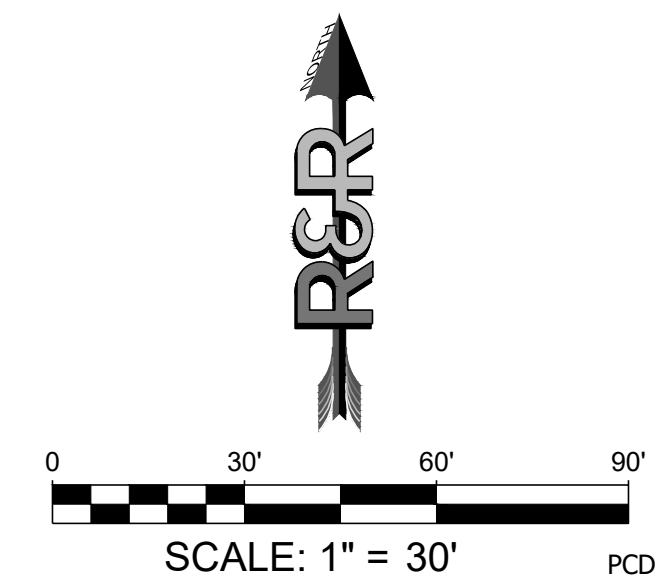
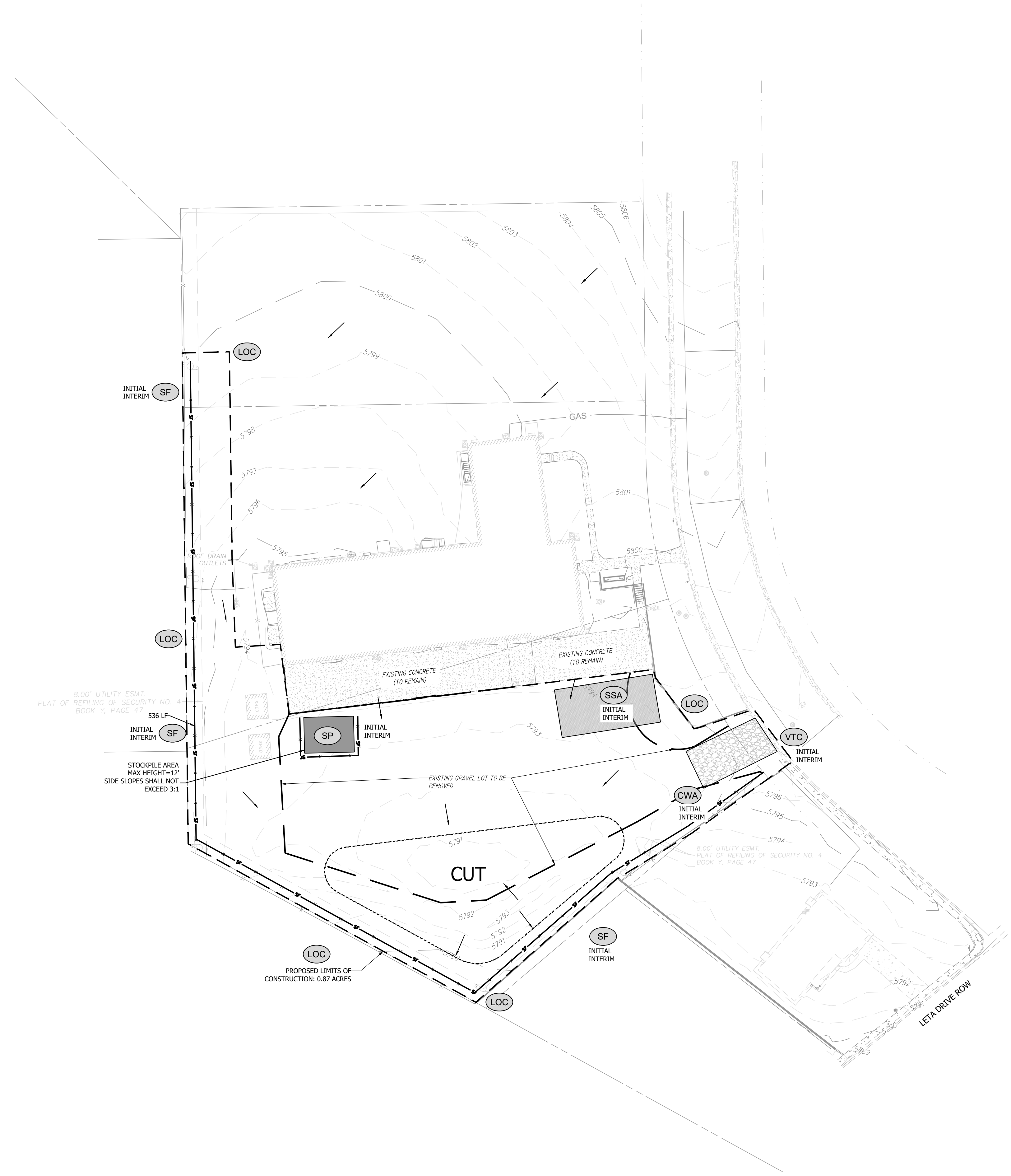
JOB NO.	FV21181
ORG. SUBM. DATE	12/22/2023
DWN:	JMP
CHKD:	DW
NAME	

INITIAL GRADING & EROSION CONTROL PLAN

NO. **C2.0**

BMP LEGEND	
	CHECK DAM
	COMPOST BLANKET
	COMPOST FILTER BERM
	CONCRETE WASHOUT AREA
	CONSTRUCTION FENCE
	CONSTRUCTION MARKERS
	DEWATERING
	DIVERSION DITCH
	EROSION CONTROL BLANKET
	INLET PROTECTION
	REINFORCED CHECK DAM
	REINFORCED ROCK BERM
	RRB FOR CULVERT PROTECTION
	SEDIMENT BASIN
	SEDIMENT CONTROL LOG
	SEDIMENT TRAP
	SEEDING AND MULCHING
	SILT FENCE
	STABILIZED STAGING AREA
	SURFACE ROUGHENING
	TEMPORARY ROAD CROSSING
	TEMPORARY SLOPE DRAIN
	TEMPORARY STREAM CROSSING
	TERRACING
	VEHICLE TRACKING CONTROL
	VTC WITH WHEEL WASH
	A LOT EROSION CONTROL
	B LOT EROSION CONTROL
	LIMITS OF CONSTRUCTION/LIMITS OF DISTURBANCE
	PROP. STORMWATER FLOW ARROWS
	EX. STORMWATER FLOW ARROWS
	PROP. CUT/FILL BOUNDARY
	PROP. STOCKPILE PROTECTION

- GEC CHECKLIST NOTES:
- EXISTING VEGETATION CONSISTS OF SPARSE NATIVE GRASS
 - MINIMAL TREES AND SHRUBS EXIST ONSITE AND ARE NOT TO BE DISTURBED
 - AREAS OF CUT/FILL: THE LIMITS OF THE INFILTRATION POND IS NOTED ON THE PLAN SHEET



P:\21181_V\21181_208_CUNNINGHAM_DR\ENGINEERING\DRAWINGS\PLAN\GEC\FV21181_GEC.DWG, PLOT DATE: 9/17/2024, 8:00:37 AM, BY: JESSICA HENRY

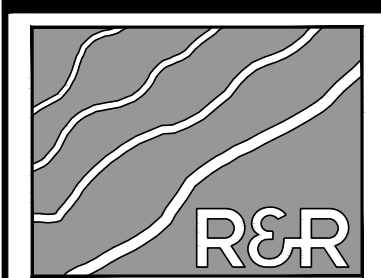
GRADING AND EROSION CONTROL PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



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9-10-24	JLH	COUNTY COMMENTS	1



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DENVER, COLORADO 80204
PHONE: 303-753-6730

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FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

GRADING AND EROSION CONTROL PLAN
JOB NO. FV21181
ORG. SUBM. DATE 12/22/2023
DWN: JMP CHD: DW
NAME
FINAL GRADING & EROSION CONTROL PLAN
NO. **C3.0**

BMP LEGEND

	CD	CHECK DAM
	CB	COMPOST BLANKET
	CFB	COMPOST FILTER BERM
	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	CM	CONSTRUCTION MARKERS
	DW	DEWATERING
	DD	DIVERSION DITCH
	ECB	EROSION CONTROL BLANKET
	P	INLET PROTECTION
	RCD	REINFORCED CHECK DAM
	RRB	REINFORCED ROCK BERM
	RRC	RRB FOR CULVERT PROTECTION
	SB	SEDIMENT BASIN
	SCL	SEDIMENT CONTROL LOG
	ST	SEDIMENT TRAP
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SSA	STABILIZED STAGING AREA
	SR	SURFACE ROUGHENING
	TRC	TEMPORARY ROAD CROSSING
	TSD	TEMPORARY SLOPE DRAIN
	TSC	TEMPORARY STREAM CROSSING
	TER	TERRACING
	VTC	VEHICLE TRACKING CONTROL
	VTC	VTC WITH WHEEL WASH
	A	A LOT EROSION CONTROL
	B	B LOT EROSION CONTROL
	LOC	LIMITS OF CONSTRUCTION/LIMITS OF DISTURBANCE
		PROP. STORMWATER FLOW ARROWS
		EX. STORMWATER FLOW ARROWS
		PROP. CUT/FILL BOUNDARY
	SP	PROP. STOCKPILE PROTECTION

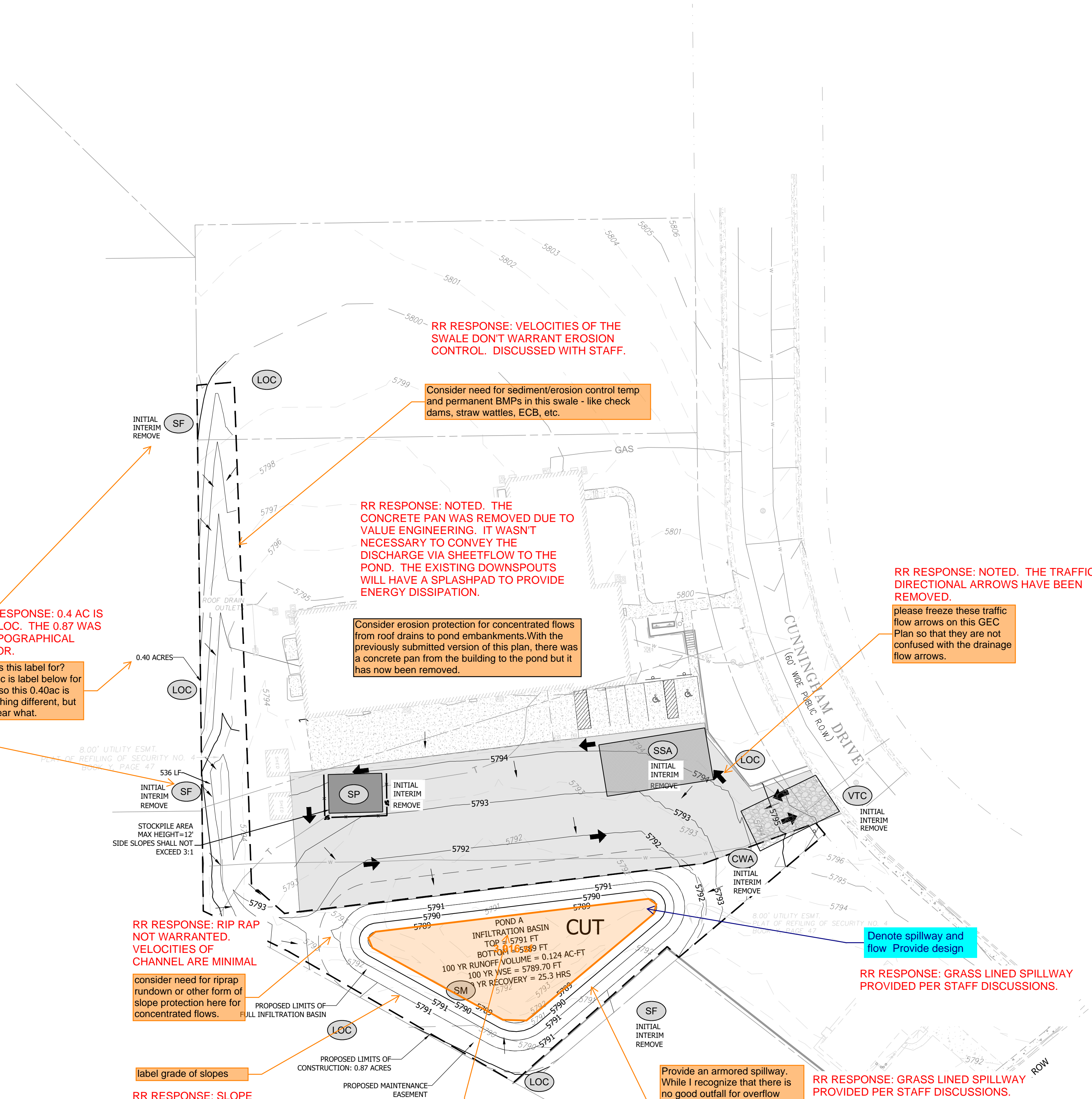


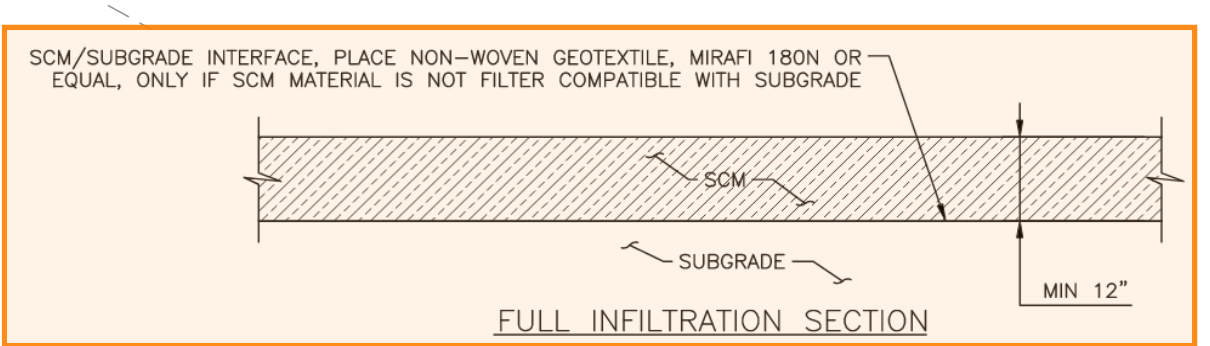
TABLE BR-3. BIORETENTION MEDIA PROPERTIES

SOIL PARAMETERS	TEST NAME	BIORETENTION MEDIA PROPERTIES
Texture/Gradation	ASTM D7928 Sedimentation (Hydrometer) Method	Particle Size Distribution: 70-80% Sand (0.05-2.0 mm diameter) 5-25% Silt (0.002-0.05 mm diameter) 5-15% Clay (<0.002 mm diameter) Notes: Sand, silt and clay percentages are by dry weight. Particle sizes are based on the USDA soil classification system. Distribution is measured after gravel > 2 mm is removed from sample. Media should have no more than 25% material > 2 mm. Equivalent sieve sizes for the upper and lower limit of sand are #10 and #240, respectively.
Organic Matter	ASTM D2974	1-5% by dry weight
pH	ASA/AASHTO	6.0 - 8.5
Salinity/Salts (EC) dS/m or mmhos/cm	Saturated Paste	<3
Nitrate Nitrogen (ppm)	ASA2 33-3	<30
Phosphorus (ppm)	Use Olsen when pH>6.2, otherwise use Mehlich-3	Olsen: <20 or Mehlich-3: <30

TABLE BR-4. NATIVE SEED MIX FOR BIORETENTION

COMMON NAME	SCIENTIFIC NAME	VARIETY	PURE LIVE SEED (PLS)	
			POUNDS/ACRE	OUNCES/ACRE
Sand bluestem	<i>Andropogon hallii</i>	Garden	3.5	
Sideoats grama	<i>Bouteloua curtipendula</i>	Butte	3	
Prairie sandreed	<i>Calamovilfa longifolia</i>	Goshen	3	
Indian ricegrass	<i>Oryzopsis hymenoides</i>	Paloma	3	
Switchgrass	<i>Panicum virgatum</i>	Blackwell	4	
Western wheatgrass	<i>Pascopyrum smithii</i>	Ariba	3	
Little bluestem	<i>Schizachyrium scoparium</i>	Patura	3	
Alkali sacaton	<i>Sporobolus airoides</i>		3	
Sand dropseed	<i>Sporobolus cryptandrus</i>		3	
Pasture sage	<i>Artemisia frigida</i>		2	
Blue aster	<i>Aster laevis</i>		4	
Blanket flower	<i>Gaillardia aristata</i>		8	
Prairie coneflower	<i>Ratibida columnifera</i>		4	
Purple Prairie Clover	<i>Dalea (Petalostemum) purpurea</i>		4	
Sub-Totals:			27.5	22
Total pounds/acre			28.9	

*Wildflower seed (optional) for a more diverse and natural look.



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GRADING AND EROSION CONTROL PLAN

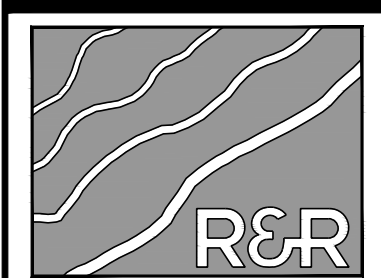
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 LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



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FOUNTAIN VALLEY SALVATION ARMY
 208 CUNNINGHAM DRIVE
 COLORADO SPRINGS, CO 80911
 PREPARED FOR:
 FOUNTAIN VALLEY SALVATION ARMY
 208 CUNNINGHAM DR
 COLORADO SPRINGS, CO 80911

GRADING AND EROSION CONTROL PLAN	
JOB NO.	FV21181
ORG. SUBM. DATE	12/22/2023
DWN:	JMP
CHKD:	DW
DETAILS	
NO.	C4.0

SILT FENCE

J-HOOK INSTALLATION

SECTION A-A

INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2'-5' AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
2. COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
3. SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
4. FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 3" APART. THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SILT FENCE INSTALLATION DEVICE.
5. INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES 1/2 OF THE DESIGN HEIGHT OF THE SILT FENCE.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-SF

CONCRETE WASHOUT AREA PLAN

SECTION A-A

INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION OF CONCRETE WASHOUT AREA.
2. LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8" BY 8".
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 3/4 THE HEIGHT OF THE CONCRETE WASH AREA.
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-CWA-1

STOCKPILE PROTECTION PLAN

STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES

1. INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRADIENT SIDE.
2. PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
3. FOR STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS INCLUDING PERIMETER CONTROL ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
3. ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-SP

SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDDED, THE UPPER 6" INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRABLE CONDITION. LESS THAN BEST STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6" TO 12" INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4" INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE, AVOID COMPACTATION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEEDED WHENEVER POSSIBLE.
3. BROADCAST SEEDING OR HYDRO-SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
4. SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLIANT DRILL OR HYDRO-SEEDING.
5. BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL.

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
 - HAY OR STRAW MULCH
 - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
 - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3" TO 4" INCHES.
 - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
3. HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
4. IF HYDRO-SEEDING IS USED, MULCHING MUST BE APPLIED AS A SEPARATE SECOND OPERATION. WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
5. EROSION CONTROL BLANKET
6. EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-SM

Unresolved comment from Review 1: Replace with EPC approved VTC detail (VT-1 and VT-2 in DCMV2, Chap 3.3) or revise to be 75ft min length.

RR RESPONSE: NOTED. DETAIL HAS BEEN MODIFIED.

AGGREGATE VEHICLE TRACKING CONTROL

SECTION A-A

INSTALLATION NOTES

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-VTC

Stabilized Staging Area (SSA) SM-6

SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION OF STAGING AREA(S).
2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH MORNING, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-SSA-1

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

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

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

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

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

STORMWATER ENTERPRISE

APPROVED: [Signature]

DATE: 10/7/19

REVISION: 8/19/2020

DRAWING NO.: 900-SS-2

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

Add spillway standard design

RR RESPONSE: GRASS LINED SPILLWAY PROVIDED. REFER TO THE GRADING PLAN FOR DETAIL

P:\11\11\21181_208_CUNNINGHAM_DR\ENGINEERING\DRAWINGS\PLAN\SSA\FV21181 - DET.DWG, PLOT DATE: 9/11/2024, 8:01:07 AM, BY: JESSICA HEVRY

**FINAL DRAINAGE REPORT
FOR
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911**

Prepared for:

Fountain Valley Salvation Army Corps
208 Cunningham Drive
Colorado Springs, CO 80911
Phone: (719) 382-1182

Prepared by:

R&R Engineers-Surveyors



1635 W. 13th Ave., Suite 310
Denver, CO 80204
Contact: Tim Stackhouse, P.E.
Phone: 720-381-2439
FV21181

June 2, 2022
Revised: August 27, 2024


PCD Filing No.: CRD242

Signature Page – Fountain Valley Salvation Army


Design Engineer’s Statement:

Provide engineer stamp/signature and owner signature

The attached drainage plan and report were prepared under my direction and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.



Tim Stackhouse, P.E. #61924




Date


RR RESPONSE:
NOTED, SIGNATURES
ADDED

Owner/Developer’s Statement:

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.



Quiana Varags, Director of Programs
The Salvation Army Fountain Valley Corps
208 Cunningham Drive, Colorado Springs, CO 80911



Date

El Paso County:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 and 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

Joshua Palmer, P.E.
County Engineer / ECM Administrator

Date

Conditions:

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1. General Location and Description 4
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 b. Description of Property 4
2. Drainage Basins and Sub-Basins 4
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 b. Existing Sub-Basin Description 4
 c. Existing Site Runoff Concerns 5
 d. Proposed Sub-Basin Description 5
3. Drainage Design Criteria 6
 a. Four Step Process 6
4. Drainage Facility Design 6

- APPENDIX A- Vicinity Map, Soils Report, and FEMA map
- APPENDIX B- Existing Routing Calculations and Drainage Map
- APPENDIX C- Proposed Routing Calculations and Drainage Map
- APPENDIX D- Hydraulic Calculations

1. General Location and Description

a. Site Location

The existing Fountain Valley Salvation Army (hereafter, the Site) is located on Lot 4, Block 5, 1 Refill Security, Colorado Addition 4 within a portion of the Northeast Quarter of Section 11, Township 15 South, Range 66 West of the Sixth P.M., City of Colorado Springs, El Paso County, Colorado (see Vicinity Map in Appendix A). The Site is located at 208 Cunningham Drive and is approximately 2.04 acres in size.

The Site is bounded by Cunningham Drive to the east, Sproul Junior Highschool to the west, and adjacent residential properties to the north and south.

b. Description of Property

The total area of the property is 2.04 acres and the total area to be disturbed is 0.83 acres. The existing Site ground coverage consists primarily of native grasses, brush, and vegetation but also includes a gravel parking lot, and a building with associated concrete walks. Under existing conditions, the majority of the Site’s stormwater runoff surface flows offsite to the south and west toward adjacent properties.

The Soil Survey of El Paso County Area, Colorado, prepared by the U.S. Department of Agriculture Soil Conservation Service, shows the Site is entirely underlain by Blakeland loamy sand – Hydrologic Group A. The existing terrain of the Site generally slopes from the north to south at grades ranging from 1% to 9%.

To the best of our knowledge, there are no existing irrigation facilities, canals, or existing storm infrastructure on and adjacent to the Site.

RR RESPONSE: NOTED,
CHANGE MADE.

Basins and Sub-Basins

a. Major Basin Description

Existing available drainage studies that impact the Site are:

- The Site is located within Zone x, which has a 1% annual chance flood hazard. No floodplain impacts.
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). El Paso County, Panel 763 Map No. 08041C0763G (December 2018).

b. Existing Sub-Basin Description

Sub-basin OS1 is 14.78 acres and comprised of existing residential homes, associated concrete driveways/sidewalks and existing landscaping/vegetation. Flows from this basin reach Design Point 1, collected via curb and gutter, and drain to Cunningham Drive

Unresolved:
Detail what
drainage basin
the property is
located in
(SECURITY
FOFO2900)
which the DPBS
is the Little
Johnson DBPS

ROW. The flows from this offsite basin bypass the site. The 5- and 100-years flows are 8.54 cfs and 24.13 cfs respectively.

Sub-basin EX1 is 2.02 acres and comprised of the Site, which includes the existing building, associated concrete driveways/sidewalks, existing landscaping/vegetation as well as a gravel lot. Flows from this basin reach Design Point 2. The 5- and 100-years flows are 0.69 cfs and 2.68 cfs respectively.

Sub-basin EX2 is 0.09 acres and comprised of Cunningham Drive ROW, which includes existing landscaping/vegetation, sidewalk, and gravel driveway. Flows from this basin reach Design Point 2. The 5- and 100-years flows are 0.02 cfs and 0.11 cfs respectively.

Sub-basin EX3 is 0.02 acres and comprised of a retaining wall and existing landscaping/vegetation. Flows from this basin reach Design Point 3 and flow offsite to Leta Drive ROW. The 5- and 100-years flows are 0.00 cfs and 0.02 cfs respectively.

c. Existing Site Runoff Concerns

The Salvation Army building has flooded twice during high volume storm events. During these same events, the south have also experienced flooding when water d... located at the downhill (southern) end of Cunningh... by the neighbor to the south on the Salvation Army property. This retaining wall was built in an easement and is blocking flow from leaving the Site. This is a major cause of the flooding on the Site and neighboring sites.

Unresolved: Explain where the flows from Leta Dr terminates to a suitable outfall. i.e Street flow to Security Creek to Fountain Creek. See page 17 of 107 of the Little Johnson DBPS <https://coloradosprings.gov/dbps>

RR RESPONSE: NOTED, CHANGE MADE

d. Proposed Sub-Basin Description

Sub-Basin C1 is 1.97 acres and comprised of the existing salvation ar existing landscaping/vegetation as well as the proposed asphalt parkin porous landscape detention. Flow will drain the full infiltration retention system. The retention system will fully recover the 100-year storm event within 72 hrs. The 5- and 100-year flows entering the infiltration basin are 1.32 cfs and 3.80 cfs respectively. No outfall proposed.

Sub-Basin OFF-1C is an offsite basin that is 0.09 acres and comprised of Cunningham ROW, which includes existing landscaping/vegetation, sidewalk and the asphalt drive aisle. Flow will drain onsite and directed to the proposed retention basin. Flow will be captured by the retention basin and fully recover within 72 hrs. The 5- and 100-year flows of basin OFF-1C are 0.02 cfs and 0.11 cfs respectively. No outfall proposed.

Sub-Basin UD-1C is an onsite undetained basin that is 0.07 acres and comprised of an existing retaining wall and existing landscaping/vegetation. Flow will drain offsite

For clarity, add "bio" in front of any instance of "retention" in this drainage report. A retention pond is completely different from a bioretention pond.

RR RESPONSE: NOTED, CHANGE MADE

undetained to Leta Drive ROW (Design Point 2). The 5- and 100-year flows of basin UD-1C are 0.02 cfs and 0.11 cfs respectively.

3. Drainage Design Criteria

a. Four Step Process

Step 1 – Employ Runoff Reduction Practices

In step 1 the applicant is asked to identify areas of the Site that can be used to reduce runoff and implement LID practices such as permeable pavement, green roofs, grass buffers, grass swales, and bioretention. To meet the requirements of step 1, the disconnection of impervious areas shall be implemented to the greatest extent possible. Runoff from the building’s roofs will flow across grassed landscaped areas before flowing into the proposed RP. Runoff from the asphalt parking lot will flow directly to the RP. The Runoff Reduction worksheet, produced by Mile High Flood District, is included in Appendix D.

Step 2 – Implement BMPs That Provide a Water Quality Capture volume with Slow Release

In step 2 the applicant is asked to treat the runoff from the Site through the capture and slow release of the WQCV. The runoff from the Site is collected by a proposed RP that will provide water quality by fully infiltrating the 100 yr storm event. The RP worksheet and calculations are included in Appendix D.

revise to: Bioretention (BR)

RR RESPONSE:
NOTED, CHANGE
MADE

Step 3 – Stabilized Drainageways

In step 3 the applicant is asked to examine the downstream drainageways to ensure channel stability. The subject site lies within the Security Drainage Basin. Adjacent drainage ways will not be disturbed by this project.

Step 4 – Implement Site Specific and Other Source Control BMPs

In step 4 the applicant is asked to examine Site specific needs such as material storage or other Site operations that will require targeted source control BMPs. A full infiltration retention facility is proposed to reduce flow, mitigate offsite sediment transport, and provide water quality onsite.

4. Drainage Facility Design

add "bio"

RR RESPONSE:
NOTED, CHANGE
MADE

A full infiltration retention pond will be proposed onsite to help with the flooding issues and combat the increase in impervious with the proposed parking lot onsite. As seen in the proposed routing spreadsheet, the 100-year combined flow at design point 1 is 0.11 cfs. The 100-year flow will be 0.11 cfs. The 100-year flow will be 0.11 cfs.

RR RESPONSE: NOTED, CHANGE MADE

RR RESPONSE:
NOTE, LANGUAGE
ADDED.

Add a discussion of existing soils, desire (or lack thereof) to import filter media, and reference infiltration calcs provided at end of this report.

Discuss spillway

Also, discuss flow path for storms exceeding 100-yr and capacity of PCM.

APPENDIX A- VICINITY MAP, SOILS REPORT, AND FEMA MAP

The below text from Section 4.0 of Chapter 4 starting on page 91 of 158 of MHFD's DCMv3, March 2024 edition, is provided for reference. Consider adding some of this guidance info into the drainage report text and/or GEC Plan notes.

RR RESPONSE: NOTED, CHANGE MADE TO THE DRAINAGE REPORT AND ADDITIONAL REQUIREMENTS ARE PROVIDED ON THE GEC PLAN.

4.1 TYPES OF FILTRATION AND INFILTRATION SYSTEMS

4.1.1 FULL INFILTRATION SYSTEMS

Full infiltration systems can be used when the measured infiltration rate is at least 1 inch per hour and the subgrade of the SCM is approximately 3 feet or more above seasonal high groundwater or bedrock. When seasonal high groundwater is within 5 feet of the subgrade, consider more detailed monitoring of groundwater conditions before selecting a full infiltration system. Measure infiltration rates at the approximate depth of the proposed infiltration surface per Section 4.2 *Subsurface Exploration*. The minimum rate of 1 inch per hour accounts for some uncertainty in subsurface conditions and potential for some limited inadvertent compaction during construction. However, infiltration rates are critical to these SCMs so take measures to avoid mixing, disturbing, and compacting soils unnecessarily in the SCM area. In some cases where the SCM has little run-on (e.g., a permeable pavement system with a low ratio of UIA:RPA), a full infiltration system may be used with lower measured infiltration rates at the discretion of the designer.

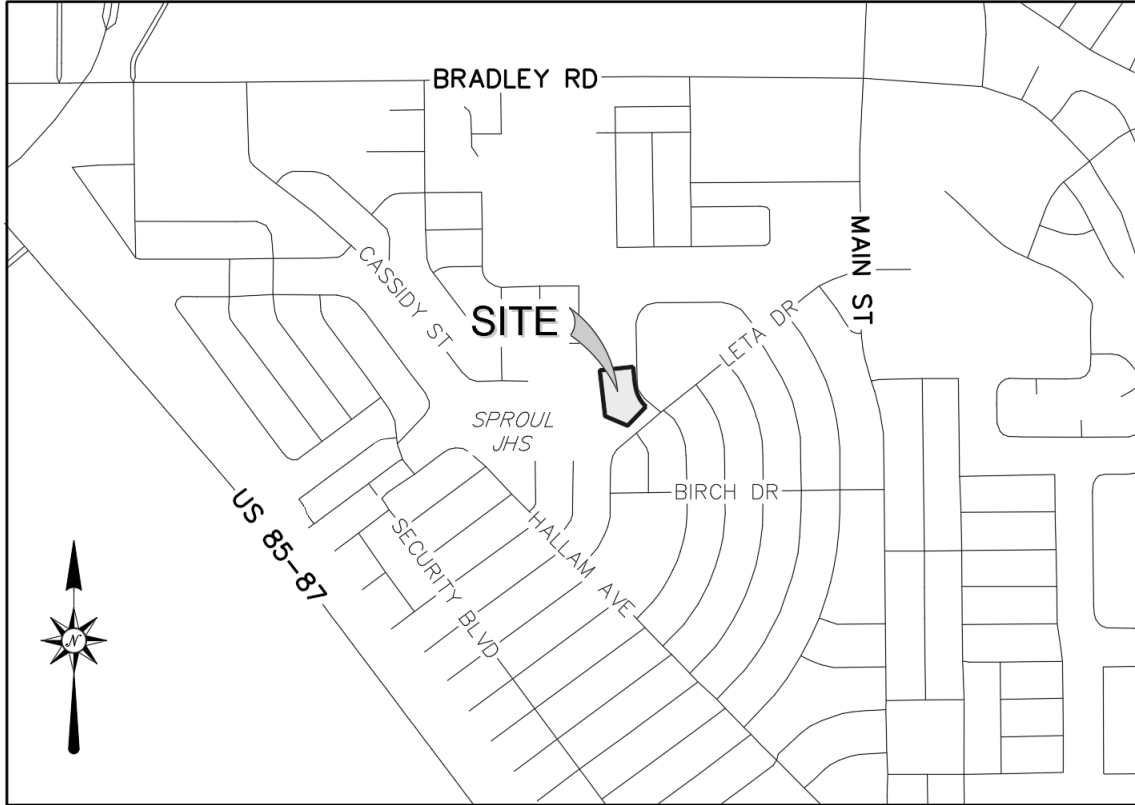
A conservative design of a full infiltration system could use the partial infiltration section with the addition of a valve or removable plate or plug at the underdrain outlet. If infiltration rates are lower than expected following construction

Note that knowing the depth to groundwater is very important for a full infiltration system. So please discuss groundwater in the drainage report text.

RR RESPONSE: NOTED, CHANGE MADE TO THE DRAINAGE REPORT.

RR RESPONSE: NOTED, CHANGE MADE TO THE DRAINAGE REPORT.

Provide summation and statement that the proposed drainage design and storm-water run-off will not cause adverse impacts to adjacent and downstream properties.



VICINITY MAP
SCALE: 1" = 1,000'



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for El Paso County Area, Colorado

Fountain Valley Salvation Army



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

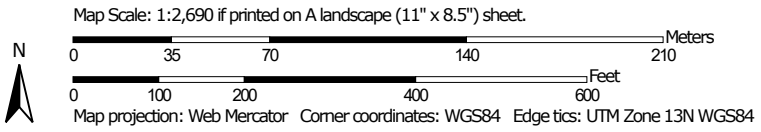
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.







MAP LEGEND



















Area of Interest (AOI)








 Area of Interest (AOI)

Soils


 Soil Survey Areas
 Soil Map Unit Polygons
 Soil Map Unit Lines
 Soil Map Unit Points

Special Point Features






 Blowout
 Borrow Pit
 Clay Spot
 Closed Depression
 Gravel Pit
 Gravelly Spot
 Landfill
 Lava Flow
 Marsh or swamp
 Mine or Quarry
 Miscellaneous Water
 Perennial Water
 Rock Outcrop
 Saline Spot
 Sandy Spot
 Severely Eroded Spot
 Sinkhole
 Slide or Slip

 Sodic Spot
 Spoil Area
 Stony Spot
 Very Stony Spot
 Wet Spot
 Other
 Special Line Features


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
 Survey Area Data: Version 19, Aug 31, 2021

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	23.3	100.0%
Totals for Area of Interest		23.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Hills, flats
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent

Custom Soil Resource Report

Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent

Landform: Depressions

Hydric soil rating: Yes

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

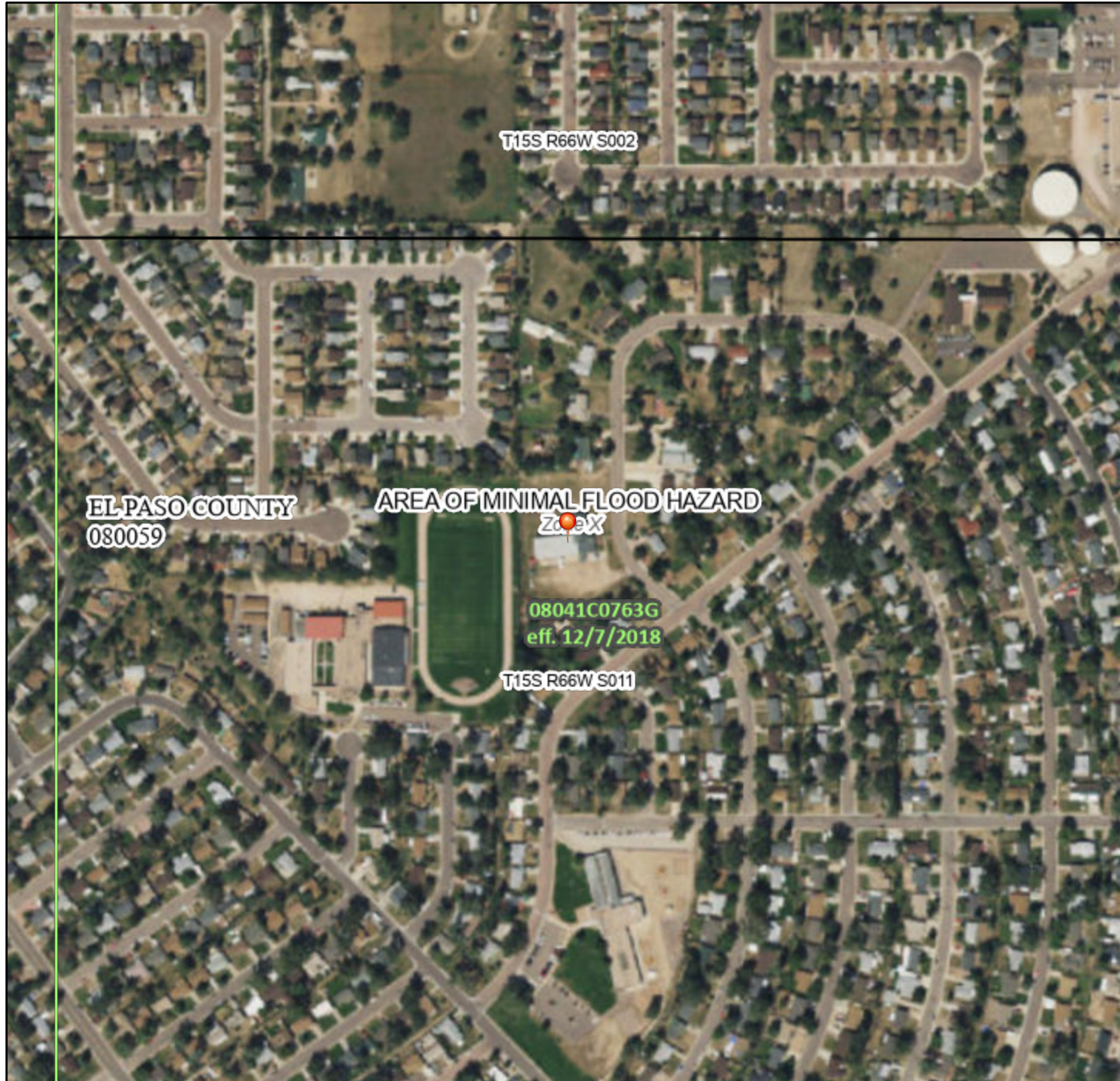
United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

National Flood Hazard Layer FIRMette



104°45'2"W 38°46'5"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/5/2021 at 4:37 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



104°44'24"W 38°45'37"N

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NINGS12
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

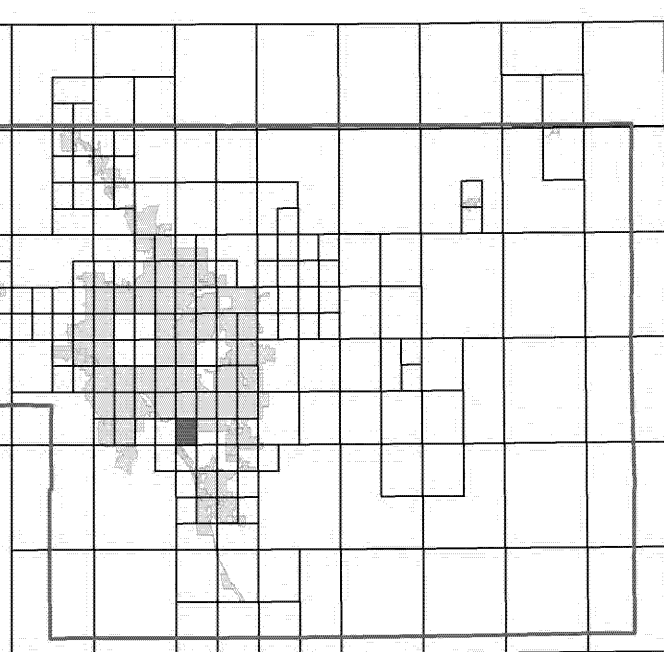
Contact **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfp>.

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

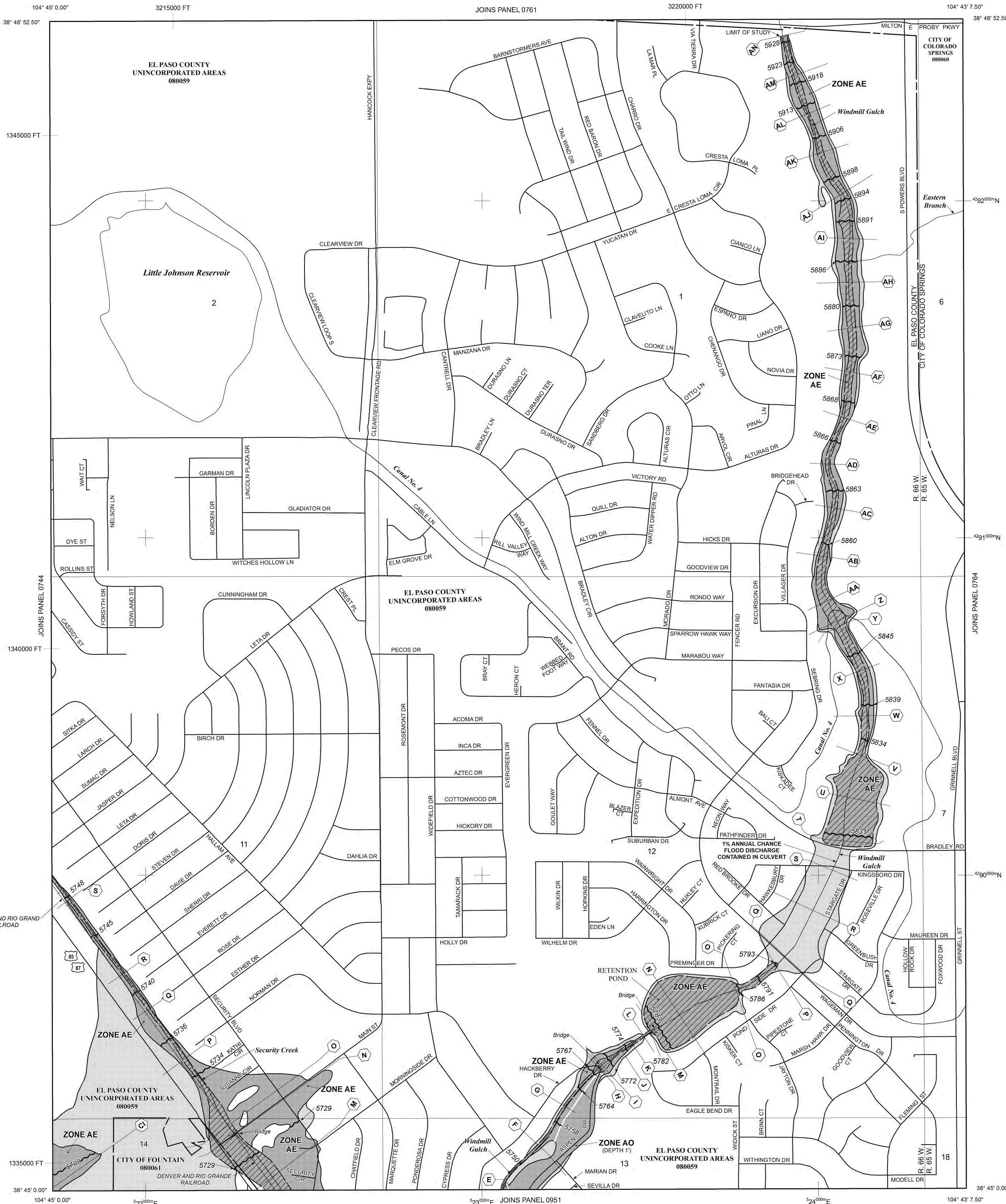
Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).



Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 65 WEST, AND TOWNSHIP 15 SOUTH, RANGE 66 WEST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently dewatered. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AV** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 Base Flood Elevation line and value; elevation in feet* (EL 987)
 Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A-A Cross section line

23-23 Transsect line

97° 07' 30.00" 32° 22' 30.00" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4726500N 1000-meter Universal Transverse Mercator grid ticks, zone 13

6000000 FT 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0902), Lambert Conformal Conic Projection

DX5510 Bench mark (see explanation in Notes to Users section of this FIRMA panel)

M1.5 River Mile

MAP REPOSITORIES Refer to Map Repository list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
 150 0 150 300 METERS



PANEL 0763G

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 763 OF 1300
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	08060	0763	G
EL PASO COUNTY	08059	0763	G
FOUNTAIN, CITY OF	08081	0763	G

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 08041C0763G

MAP REVISED DECEMBER 7, 2018

Federal Emergency Management Agency



**APPENDIX B- EXISTING ROUTING
CALCULATIONS AND DRAINAGE MAP**

SITE DEVELOPMENT PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF
THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH
P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.

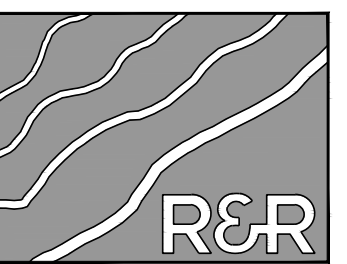


- - - - - DRAINAGE BASIN BOUNDARY
- - - - - Tc FLOW PATH

BASIN SUMMARY TABLE			
Basin	Area (acres)	5-yr (cfs)	100-yr (cfs)
OS1	14.78	8.54	24.13
EX1	2.02	0.69	2.68
EX2	0.09	0.02	0.11
EX3	0.02	0.00	0.02

DESIGN POINT SUMMARY TABLE				
Design Point	Contributing Basins	Area (acres)	5-yr (cfs)	100-yr (cfs)
1	OS1	14.78	8.54	24.13
2	EX1, EX2	2.11	0.70	2.77
3	EX3	0.09	0.02	0.02

NO.	REVISION	BY	DATE
1	COUNTY COMMENTS	JLH	8/16/24



R&R ENGINEERS-SURVEYORS, INC.

1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

WWW.RRENGINEERS.COM

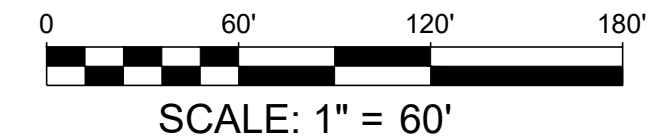
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911

PREPARED FOR:
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

SITE DEVELOPMENT PLAN
JOB NO: FV21181
ORG. SUBM. DATE: 12/22/2023
DWN: JMP | CHD: RSD

PRE DEVELOPMENT DRAINAGE MAP

NO. **1**



COUNTY FILE NO. CDR242

PATH: V:\21181_208_CUNNINGHAM_DR\ENGINEERING\DRAWINGS\PLAN\DRAINAGE\FV21181 - DRN - EX.DWG, PLOT DATE: 8/27/2024 4:08:23 PM, BY: JESSICA HEYR

EXISTING C VALUES

Designer: JMP
 Company: R&R Engineers-Surveyors
 Date: 8/27/2024
 Project: FOUNTAIN VALLEY SALVATION ARMY
 Location: EL PASO COUNTY



Global Parameters ¹	
Land Use	% Imp.
Open Space/Landscaping	2
Hardscape	100
Roof	90
Gravel	40

Summary	
Total Area (ac)	16.91
Composite Impervious	33.7%
Cells of this color are for required user-input	
Cells of this color are for optional user-input	

¹ From Table 6-3 in MHFD Volume 1
² From Table 6-4 in MHFD Volume 1

Basin Name	Area (ac)	NRCS Hydrologic Soil Group	Open Space/Landscaping		Hardscape		Roof		Gravel		% Check	Percent Imperviousness	Runoff Coefficient, C ²			
			Area (ac)	%	Area (ac)	%	Area (ac)	%	Area (ac)	%			2-yr	5-yr	10-yr	100-yr
OS1	14.78	A	9.72	65.8%	5.06	34.2%	0.00	0.0%	0.00	0.0%	100.00%	35.6%	0.22	0.23	0.24	0.39
EX1	2.02	A	1.37	67.8%	0.05	2.5%	0.22	10.8%	0.38	18.9%	100.00%	21.1%	0.11	0.12	0.13	0.27
EX2	0.09	A	0.08	88.9%	0.01	11.1%	0.00	0.0%	0.00	0.0%	100.00%	12.9%	0.06	0.06	0.07	0.21
EX3	0.02	A	0.02	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	100.00%	2.0%	0.01	0.01	0.01	0.13

TIME OF CONCENTRATION

Designer: JMP
 Company: R&R Engineers-Surveyors
 Date: 8/27/2024
 Project: FOUNTAIN VALLEY SALVATION ARMY
 Location: EL PASO COUNTY

$$t_i = \frac{0.395(1.1 - C_s)\sqrt{L_i}}{S_i^{0.33}}$$

$$\text{Computed } t_c = t_i + t_t$$

$$t_{\text{minimum}} = 5 \text{ (urban)}$$

$$t_{\text{minimum}} = 10 \text{ (non-urban)}$$

$$t_t = \frac{L_t}{60K\sqrt{S_t}} = \frac{L_t}{60V_t}$$

$$\text{Selected } t_c = \max\{t_{\text{minimum}}, \min(\text{Computed } t_c, \text{Regional } t_c)\}$$

$$\text{Regional } t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$$

Cells of this color are for required user-input



**ENGINEERS
SURVEYORS** INC

Subbasin Data				Overland (Initial) Flow Time			Channelized (Travel) Flow Time					Time of Concentration			Remarks
Basin	Area	% Impervious	C5	Overland Flow Length L _i (ft)	Overland Flow Slope S _i (ft/ft)	Overland Flow Time t _i (min)	Channelized Flow Length L _t (ft)	Channelized Flow Slope S _t (ft/ft)	NRCS Conveyance Factor K	Channelized Flow Velocity V _t (ft/sec)	Channelized Flow Time t _t (min)	Computed t _c (min)	Regional t _c (min)	Selected t _c (min)	
OS1	14.78	35.6%	0.23	100.00	0.044	9.63	1388.77	0.037	7	1.35	17.19	26.82	28.57	26.82	
EX1	2.02	21.1%	0.12	100.00	0.043	10.95	594.55	0.020	7	0.99	10.01	20.96	28.28	20.96	
EX2	0.09	12.9%	0.06	100.00	0.030	13.03	39.00	0.030	7	1.21	0.54	13.57	24.16	13.57	
EX3	0.02	2.0%	0.01	6.92	0.014	4.65			7		0.00	4.65		5.00	

Rainfall Data
FOUNTAIN VALLEY SALVATION ARMY
EL PASO COUNTY

Recurrence Interval (yrs)	1-hr Rainfall Depth (in)
2	1.19
5	1.50
10	1.75
25	2.00
50	2.25
100	2.52

**APPENDIX C- PROPOSED ROUTING
CALCULATIONS AND DRAINAGE MAP**

SITE DEVELOPMENT PLAN 208 CUNNINGHAM DRIVE

LOCATED IN LOT 4, BLOCK 5, 1 REFILL SECURITY, COLORADO ADDITION 4 WITHIN A PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., COLORADO SPRINGS, EL PASO COUNTY, STATE OF COLORADO
LOCATED AT: 208 CUNNINGHAM DR, COLORADO SPRINGS, CO 80911



Know what's below.
Call before you dig.

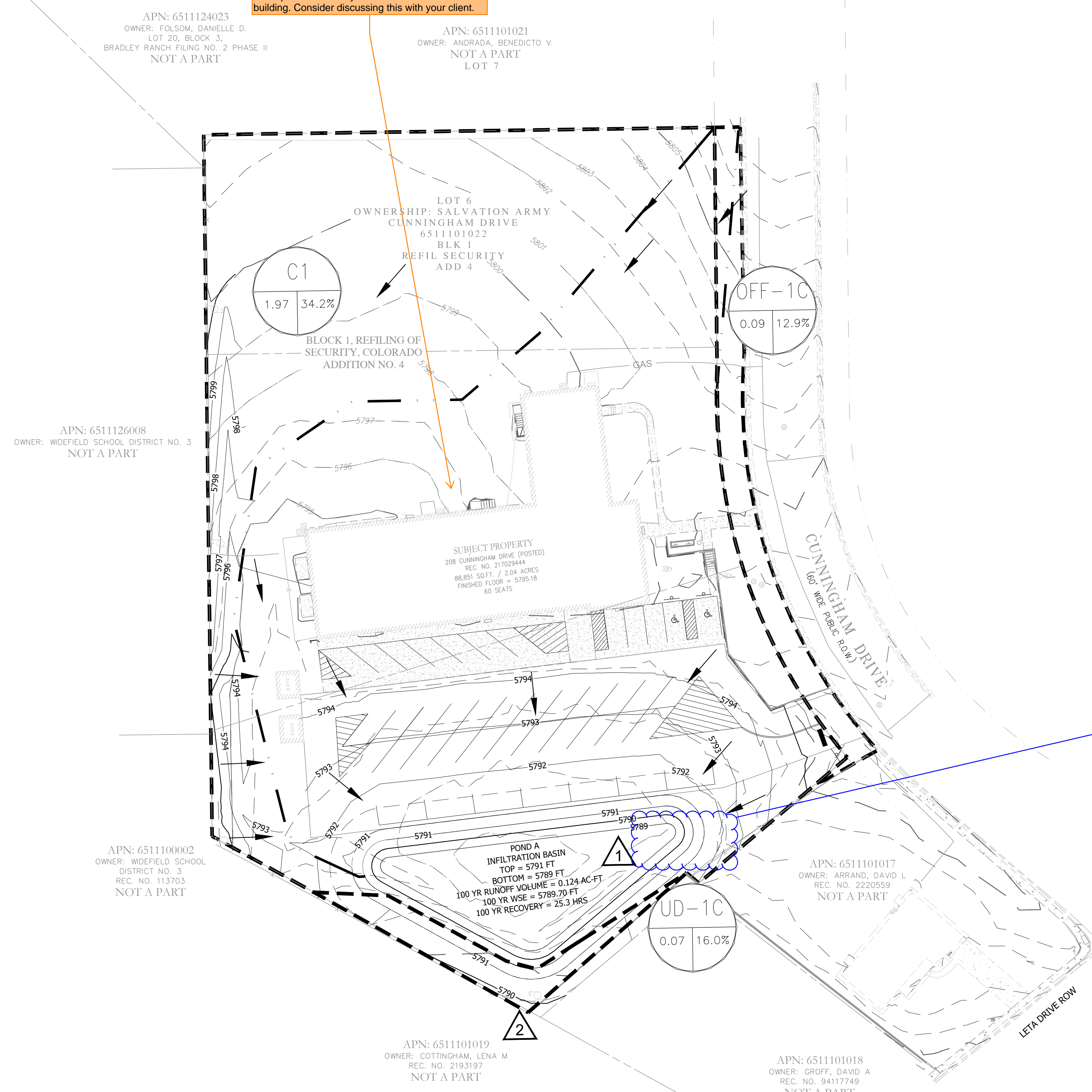
--- DRAINAGE BASIN BOUNDARY
- - - Tc FLOW PATH

Just as a note: the back of this building has flooded in the past from storms. Consider need for an east/west swale to direct more flows to the proposed swale on the western side of the building to keep the flows away from the northern side of the building. Consider discussing this with your client.

RR RESPONSE: NOTED, SWALE PROVIDED AND OWNER IS AWARE OF THE CHANGES MADE TO PROTECT THE BUILDING

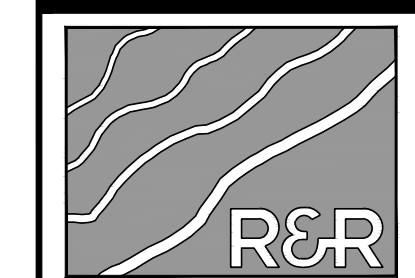
BASIN SUMMARY TABLE			
Basin	Area (acres)	5-yr (cfs)	100-yr (cfs)
C1	1.97	1.32	3.80
OFF-1C	0.09	0.02	0.11
UD-1C	0.07	0.02	0.11

DESIGN POINT SUMMARY TABLE				
Design Point	Contributing Basins	Area (acres)	5-yr (cfs)	100-yr (cfs)
1	C1, OFF-1C	2.06	1.33	3.90
2	UD-1C	0.07	0.02	0.11



Denote emergency spillway and flow routing
RR RESPONSE: GRASS LINED SPILLWAY PROVIDED PER STAFF DISCUSSION

REVISION	DATE	BY	COUNTY COMMENTS
1	8/16/24	JLH	



ENGINEERS SURVEYORS

R&R ENGINEERS-SURVEYORS, INC.
1635 WEST 13TH AVENUE, SUITE 310
DENVER, COLORADO 80204
PHONE: 303-753-6730

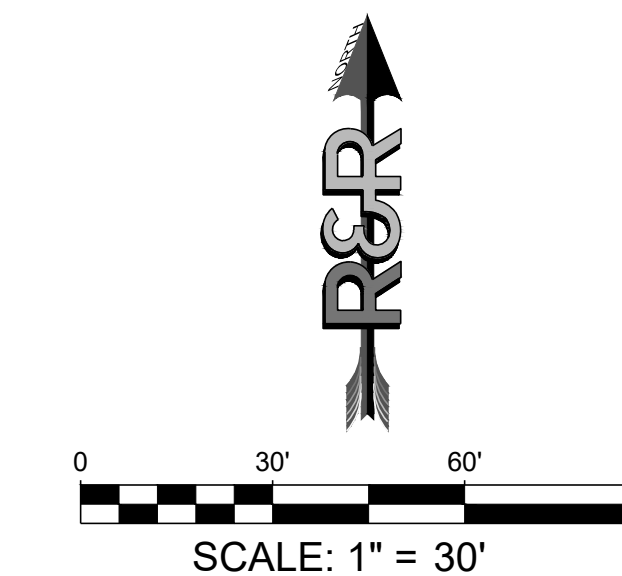
WWW.RRENGINEERS.COM

FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DRIVE
COLORADO SPRINGS, CO 80911
SITE ADDRESS:
PREPARED FOR:
FOUNTAIN VALLEY SALVATION ARMY
208 CUNNINGHAM DR
COLORADO SPRINGS, CO 80911

SITE DEVELOPMENT PLAN	
JOB NO.	FV21181
ORG. SUBM. DATE	12/22/2023
DWN:	JMP
CHKD:	RSD
NAME	

POST DEVELOPMENT DRAINAGE MAP

NO. 2



COUNTY FILE NO. CDR242

P:\11\1\21181_208_CUNNINGHAM_DR\ENGINEERING\DRAWINGS\PLAN\DRAINAGE\FV21181 - DRN - PROP.DWG. PLOT DATE: 8/16/2024 2:59:49 AM BY: JESSICA HENY

Rainfall Data
FOUNTAIN VALLEY SALVATION ARMY
EL PASO COUNTY

Recurrence Interval (yrs)	1-hr Rainfall Depth (in)
2	1.19
5	1.50
10	1.75
25	2.00
50	2.25
100	2.52

APPENDIX D- HYDRAULIC CALCULATIONS

FV1181 – 208 CUNNINGHAM SWM/INFILTRATION BASIN SUMMARY

Proposed Conditions:

- **Sub-basin OS1** is 14.78 acres and comprised of existing residential homes, associated concrete driveways/sidewalks and existing landscaping/vegetation. Flows from this basin reach Design Point 1 and drain to Cunningham Drive ROW. The 5- and 100-years flows are 8.54 cfs and 24.13 cfs respectively.
- **Sub-basin C1** is 2.02 acres and comprised of the Site, which includes the existing building, associated concrete driveways/sidewalks, existing landscaping/vegetation as well as a gravel lot. Flows from this basin reach Design Point 2 and are believed to flood the area due to a retaining wall stopping the flow from leaving the Site. The 5- and 100-years flows are 0.69 cfs and 2.68 cfs respectively.
- **Sub-basin C2** is 0.09 acres and comprised of Cunningham Drive ROW, which includes existing landscaping/vegetation, sidewalk, and gravel driveway. Flows from this basin flow onsite and reach Design Point 2 and are believed to flood the area due to a retaining wall stopping the flow from leaving the Site. The 5- and 100-years flows are 0.02 cfs and 0.11 cfs respectively.
- **Sub-basin C3** is 0.02 acres and comprised of a retaining wall and existing landscaping/vegetation. Flows from this basin reach Design Point 3 and flow offsite to Leta Drive ROW. The 5- and 100-years flows are 0.00 cfs and 0.02 cfs respectively.
- The attributes for the total contributing drainage basin area:
 - 2.04 acres
 - 100% Type A soils
 - 32.80% impervious
 - Watershed length is about 3.1% length is about 3.1%
- Results (per MHFD-Detention):
 - WQCV = 0.027 ac-ft
 - EURV = 0.069 ac-ft
 - **100-YR = 0.124 ac-ft = 5,4**
 - **This is the maximum volume of post-development runoff that needs to recover in 72 hrs**

RR RESPONSE: OVEREXCAVATION REQUIRED TO MEET RECOVERY. NATIVE SOILS ARE NOT SUFFICIENT. CHANGES MADE TO THE DRAINAGE AND INFILTRATION REPORT TO ELABORATE ON THIS REQUIREMENT

Infiltration Basin Design

- Design with existing soils:

From Kumar & Associates, Inc., measured infiltration rate is 0.56 in/hr (0.047 ft/hr).
Area of infiltration basin bottom = 3,958 sf
 $3,958 \text{ sf} \times 0.047 \text{ ft/hr} = 186 \text{ cf/hr}$ release rate into existing soils
Approximate volume of proposed infiltration basin = 12,502 CF
 $12,502 \text{ cf} / 186 \text{ cf/hr} = 68 \text{ hours}$ (100 yr volume recovers within 72 hrs)

- **Recovery is achieved within 72 hrs; no factor of safety**

- Design with 2 FT of over excavation of pond bottom and import clean sand (well graded gravelly sand):

Import sand infiltration rate must be at least 1.5 in/hr (0.125 ft/hr).
Area of infiltration basin bottom = 3,958 sf
 $3,958 \text{ sf} \times 0.125 \text{ ft/hr} = 495 \text{ cf/hr}$ release rate into imported
Approximate volume of proposed infiltration basin = 12,502 CF
 $12,502 \text{ cf} / 495 \text{ cf/hr} = 25.3 \text{ hours}$ (100 yr volume recovers within 72 hrs)

- **Recovery is achieved within 72 hrs**

So is this your reasoning for wanting to over-ex and import soil, because there's not factor of safety? If so, please explain this in the report text above. Or is this to show the infiltration rate of the subgrade below the import material?

Provide specs for an import soil with this infiltration rate. For filter media spec guidance, see Section 4.0 of Chapter 4 starting on page 91 of 158 of MHFD's DCMv3, March 2024 edition. But make sure that MHFD's soil

RR RESPONSE: NOTED, CHANGE MADE REFER TO DRAINAGE REPORT AND GEC PLAN

Technically yes, but still this exclusion does not apply because having this exclusion apply would be a reason that WQ treatment is not required for a certain area of proposed work, which isn't true for this site. Revise to "Not Applicable."

Post Construction Stormwater Management Applicability Evaluation Form

This form is to be used by the Engineer of Record to evaluate applicable construction activities to determine if the activities are eligible for an exclusion to permanent stormwater quality management requirements. Additionally Part III of the form is used to identify and document which allowable control measure design standard is used for the structure.

Part I. Project Information	
1. Project Name:	
2. El Paso County Project #:	3. ESQCP #:
4. Project Location:	Project Location in MS4 Permit Area (Y or N):
5. Project Description:	
If project is located within the El Paso County MS4 Permit Area, please provide copy of this completed form to the Stormwater Quality Coordinator for reporting purposes; and save completed form with project file.	

Part II. Exclusion Evaluation: Determine if Post-Construction Stormwater Management exclusion criteria are met. Note: Questions A thru K directly correlate to the MS4 permit Part I.E.4.a.i (A) thru (K). If Yes, to any of the following questions, then mark Not Applicable in Part III, Question 2.				
Questions	Yes	No	Not Applicable	Notes:
A. Is this project a "Pavement Management Site" as defined in Permit Part I E.4.a.i. (A)?				This exclusion applies to "roadways" only. Areas used primarily for parking or access to parking are not included.
B. Is the project "Excluded Roadway Development"?				
• Does the site add less than 1 acre of paved area per mile?			X	PAVING LIMITS < 1AC
• Does the site add 8.25 feet or less of paved width at any location to the existing roadway?				
C. Does the project increase the width of the existing roadway by less than 2 times the existing width?				For redevelopment of existing roadways, only the area of the existing roadway is excluded from post-construction requirements when the site does not increase the width by two times or more. <i>This exclusion only excludes the original roadway area it does NOT apply to entire project.</i>
D. Is the project considered an aboveground and Underground Utilities activity?				Activity can NOT permanently alter the terrain, ground cover or drainage patterns from those present prior to the activity
E. Is the project considered a "Large Lot Single-Family Site"?				Must be a single-residential lot or agricultural zoned land, ≥ 2.5 acres per dwelling and total lot impervious area < 10 percent.

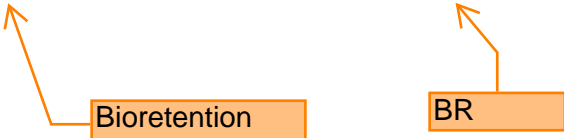
Questions (cont'd)	Yes	No	Not Applicable	Notes
F. Do Non-Residential or Non-Commercial Infiltration Conditions exist? Post-development surface conditions do not result in concentrated stormwater flow or surface water discharge during an 80 th percentile stormwater runoff event.				Exclusion does not apply to residential or commercial sites for buildings. A site specific study is required and must show: rainfall and soil conditions; allowable slopes; surface conditions; and ratios of imperviousness area to pervious area.
G. Is the project land disturbance to Undeveloped Land where undeveloped land remains undeveloped following the activity?				Project must be on land with no human made structures such as buildings or pavement.
H. Is the project a Stream Stabilization Site?				Standalone stream stabilization projects are excluded.
I. Is the project a bike or pedestrian trail?				Bike lanes for roadways are not included in this exclusion, but may qualify if part of larger roadway activity is excluded in A, B or C above.
J. Is the project Oil and Gas Exploration?				Activities and facilities associated with oil and gas exploration are excluded.
K. Is the project in a County Growth Area?				Note, El Paso County does not apply this exclusion. All Applicable Construction Activity in El Paso County must comply the Post-Construction Stormwater Management criteria.

Part III. Post Construction (Permanent) Stormwater Control Determination		
Questions	Yes	No
1. Is project an Applicable Construction Activity?		
2. Do any of the Exclusions (A-K in Part II) apply?		
<p>If the project is an Applicable Construction Activity and no Exclusions apply then Post-Construction (Permanent) Stormwater Management is required. Complete the applicable sections of Part IV below and then coordinate signatures for form and place in project file.</p> <p>If the project is not an Applicable Construction Activity, or Exclusion(s) apply then Post-Construction (Permanent) Stormwater Management is NOT required. Coordinate signatures for form and place in project file.</p>		

Part IV: Onsite PWQ Requirements, Documentation and Considerations	Yes	No
1. Check which Design Standard(s) the project will utilize. Standards align with Control Measure Requirements identified in permit Part I.E.4.a.iv.		
A. Water Quality Capture Volume (WQCV) Standard		
B. Pollutant Removal/80% Total Suspended Solids Removal (TSS)		
C. Runoff Reduction Standard		
D. Applicable Development Site Draining to a Regional WQCV Control Measure		
E. Applicable Development Site Draining to a Regional WQCV Facility		
F. Constrained Redevelopment Sites Standard		
G. Previous Permit Term Standard		
2. Will any of the project permanent stormwater control measure(s) be maintained by another MS4? If Yes, you must obtain a structure specific maintenance agreement with the other MS4 prior to advertisement.		
3. Will any of the project permanent stormwater control measures be maintained by a private entity or quasi-governmental agency (e.g. HOA or Special District, respectively)? RR RESPONSE: NOTED, TYPO ERROR. CHANGE MADE Quality Best Management Practice recorded with the El Paso County		

Why did you answer No to this? Who is going to maintain this PBMP? The property owner, correct? And they are a private entity. Per my comment on Review 1, this should be revised to "Yes"

Part V Notes (attach an additional sheet if you need more space)



Bioretention BR

RR RESPONSE: NOTED, CHANGE MADE

Project design is complete to include the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required. The engineering, drainage considerations and information used to complete these documents is complete, true, and accurate to the best of my belief and knowledge.

Signature and Stamp of Engineer of Record

Date

Post-Construction Stormwater Management Applicability Form has been reviewed and the project design, construction plans, drainage report, specifications, and maintenance and access agreements as required, have been reviewed for compliance with the Post Construction Stormwater Management process and MS4 Permit requirements.

Signature of El Paso County Project Engineer

Date