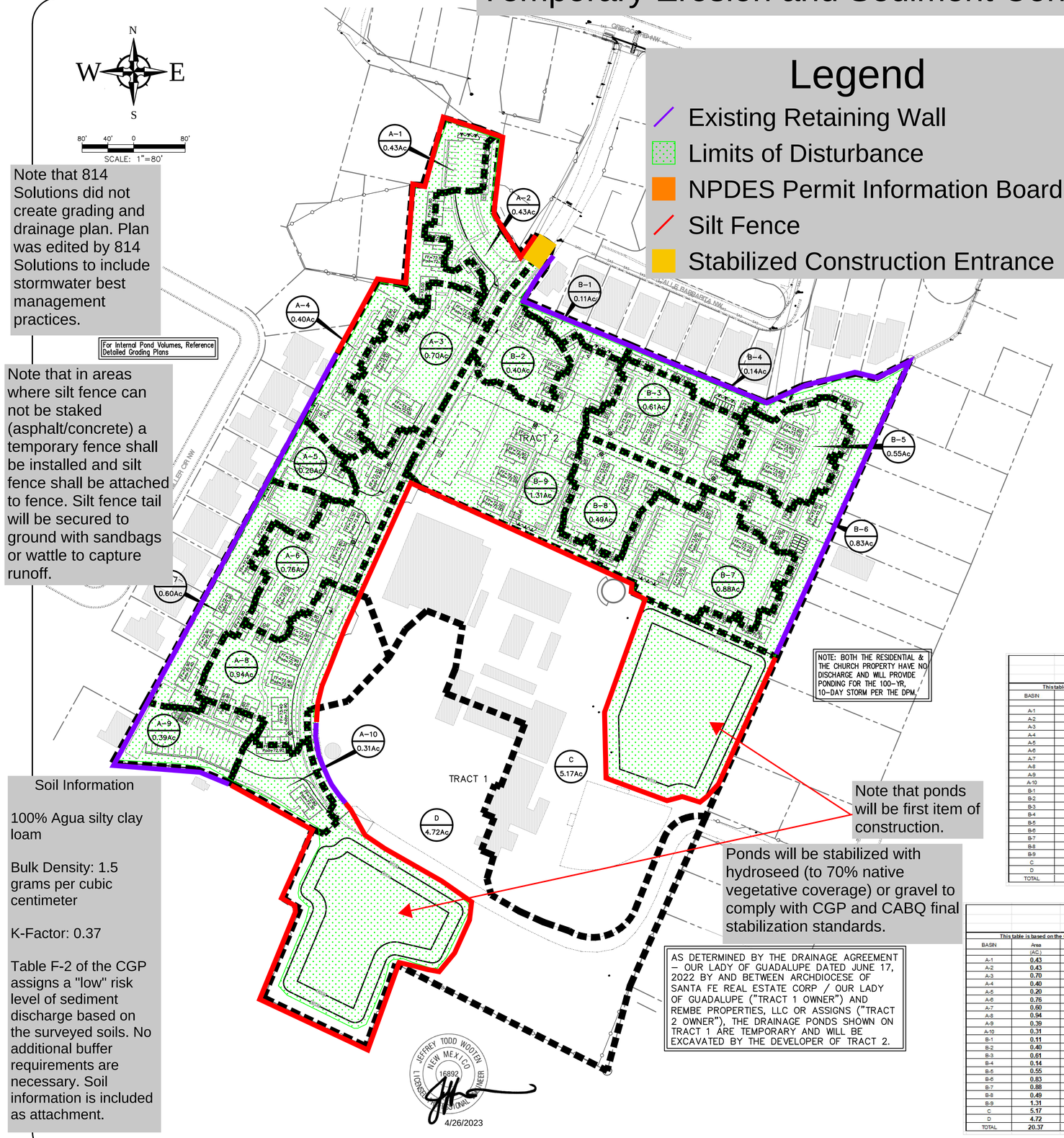
Temporary Erosion and Sediment Control Plan



Note that 814 Solutions did not create grading and drainage plan. Plan was edited by 814 Solutions to include stormwater best management practices.

For Internal Pond Volumes, Reference Detailed Grading Plans

Note that in areas where silt fence can not be staked (asphalt/concrete) a temporary fence shall be installed and silt fence shall be attached to fence. Silt fence tail will be secured to ground with sandbags or wattle to capture runoff.

Soil Information

100% Agua silty clay loam

Bulk Density: 1.5 grams per cubic centimeter

K-Factor: 0.37

Table F-2 of the CGP assigns a "low" risk level of sediment discharge based on the surveyed soils. No additional buffer requirements are necessary. Soil information is included as attachment.

LEGEND

RETENTION POND

DRAINAGE DIVIDE

FLOW ARROWS

A-1 / 1.10 — DRAINAGE AREA / ACRES

DRAINAGE MANAGEMENT PLAN

INTRODUCTION

The purpose of this submittal is to provide a final grading and drainage plan for the subject site located on Tract 2, Our Lady of Guadalupe subdivision and Tract 144-A-1, MRGCD Map No 31 in Albuquerque, NM. The overall development contains approximately 10.18 acres and is located in the southwest quadrant of Griegos Rd NW and San Ysidro St NW. The site is being developed as a Single Family Cottage Court development. The City Drainage File Number is F13-D028. It is our understanding that the 100-Yr, 10-Day storm must be retained on-site per the Valley Drainage Requirements in the DPM.

EXISTING HYDROLOGIC CONDITIONS

The site currently does not have a discharge point and drainage is retained on-site.

PROPOSED HYDROLOGIC CONDITIONS

Both the existing Our Lady of Guadalupe Church and the new Single Family Cottage Court development will retain the 100-Yr, 10-Day storm within their own properties. The locations of the new ponds serving the Cottage Court development are shown in these plans. The Drainage Calculations table show that adequate ponding is being provided to retain the 100-Yr, 10-Day runoff volume.

CONCLUSION

This final Grading and Drainage Plan conforms to the requirements of the City of Albuqueruque DPM, Chapter 6.2. With this submittal, we are requesting Grading Permit and Site Plan for Building Permit approval.

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE:
BY:
HydroTrans #

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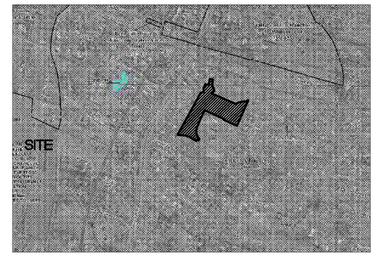
VICINITY MAP - Zone Map F-13-Z

Legal Description: Tract 2, Our Lady of Guadalupe and Tract 144A1, Cordova's Subdivision City of Albuquerque, NM. 10.19 Acres.



FIRM MAP 35001CXXXXH

Per FIRM Map 35001C0555H, dated August 16, 2012, the site is not located in the Floodplain and determined to be outside the 0.2% chance Annual Floodplain.

Existing Drainage Calculations

This table is based on the COA DPM Chapter 6.2 (A), Zone: 2

BASIN	Area (AC.)	Land Treatment Percentages (%) A	B	C	D	Weighted C	Tc (min)	I (100) (in/hr)	Q(100) (cfs/ac.)	Q(100) (CFS)	W.T.E (inches)	V(100)360 (CF)	V(100)10day (CF)	Comments
A-1	0.43	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.83	1.03	1608	1608	Retained within site
A-2	0.43	0.0	0.0	90.0	10.0	0.66	12.00	3.18	2.09	0.90	1.16	1811	2060	Retained within site
A-3	0.70	0.0	0.0	95.0	5.0	0.64	12.00	3.11	2.00	1.40	1.10	2782	2986	Retained within site
A-4	0.40	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.77	1.03	1496	1496	Retained within site
A-5	0.20	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.38	1.03	748	748	Retained within site
A-6	0.76	0.0	0.0	95.0	5.0	0.64	12.00	3.11	2.00	1.52	1.10	3021	3242	Retained within site
A-7	0.60	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	1.15	1.03	2243	2243	Retained within site
A-8	0.94	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	2.47	1.55	5289	7473	Retained within site
A-9	0.39	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.75	1.03	1458	1458	Retained within site
A-10	0.31	0.0	0.0	90.0	10.0	0.66	12.00	3.18	2.09	0.65	1.16	1305	1485	Retained within site
B-1	0.11	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.21	1.03	411	411	Retained within site
B-2	0.40	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.77	1.03	1496	1496	Retained within site
B-3	0.61	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	1.17	1.03	2281	2281	Retained within site
B-4	0.14	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.27	1.03	523	523	Retained within site
B-5	0.55	0.0	0.0	90.0	10.0	0.66	12.00	3.18	2.09	1.15	1.16	2316	2635	Retained within site
B-6	0.83	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	1.59	1.03	3103	3103	Retained within site
B-7	0.88	0.0	0.0	90.0	10.0	0.66	12.00	3.18	2.09	1.84	1.16	3706	4217	Retained within site
B-8	0.49	0.0	0.0	100.0	0.0	0.63	12.00	3.05	1.92	0.94	1.03	1832	1832	Retained within site
B-9	1.31	0.0	0.0	95.0	5.0	0.44	12.00	3.11	1.38	1.81	1.10	5207	5587	Retained within site
C	5.17	0.0	0.0	60.0	40.0	0.74	12.00	3.70	2.73	14.11	1.55	29089	41100	Retained within site
D	4.72	0.0	0.0	50.0	50.0	0.77	12.00	3.70	2.83	13.34	1.68	28784	42491	Retained within site
TOTAL	20.37									48.03		100509	130475	

Proposed Drainage Calculations

This table is based on the COA DPM Chapter 6.2 (A), Zone: 2

BASIN	Area (AC.)	Land Treatment Percentages (%) A	B	C	D	Weighted C	Tc (min)	I (100) (in/hr)	Q(100) (cfs/ac.)	Q(100) (CFS)	W.T.E (inches)	V(100)360 (CF)	Ponding Req'd V(100)10day (CF)	Ponding Provided V(provided) (CF)	Excess Ponding Vexcess (CF)	Comments
A-1	0.43	0.0	0.0	20.0	80.0	0.85	12.00	4.08	3.45	1.48	2.07	3231	5229	6000	771	Retained within site
A-2	0.43	0.0	0.0	40.0	60.0	0.79	12.00	3.82	3.03	1.30	1.81	2825	4324	6075	1751	Retained within site
A-3	0.70	0.0	0.0	30.0	70.0	0.82	12.00	3.95	3.24	2.27	1.94	4930	7775	9350	1575	Retained within site
A-4	0.40	0.0	0.0	80.0	20.0	0.68	12.00	3.31	2.26	0.91	1.29	1873	2338	3050	712	Retained within site
A-5	0.20	0.0	0.0	90.0	10.0	0.66	12.00	3.18	2.09	0.42	1.16	842	958	974	16	Retained within site
A-6	0.76	0.0	0.0	40.0	60.0	0.79	12.00	3.82	3.03	2.30	1.81	4993	7642	6875	-767	Overflows to A-7
A-7	0.60	0.0	0.0	30.0	70.0	0.82	12.00	3.95	3.24	1.94	1.94	4225	6665	7525	860	Retained within site
A-8	0.94	0.0	0.0	25.0	75.0	0.83	12.00	4.02	3.34	3.14	2.01	6841	10936	11400	464	Retained within site
A-9	0.39	0.0	0.0	80.0	20.0	0.68	12.00	3.31	2.26	0.88	1.29	1826	2279	2308	29	Retained within site
A-10	0.31	0.0	0.0	80.0	20.0	0.68	12.00	3.31	2.26	0.70	1.29	1452	1812	2400	588	Retained within site
B-1	0.11	0.0	0.0	40.0	60.0	0.79	12.00	3.82	3.03	0.33	1.81	723	1106	1635	529	Retained within site
B-2	0.40	0.0	0.0	40.0	60.0	0.79	12.00	3.82	3.03	1.21	1.81	2628	4022	4877	855	Retained within site
B-3	0.61	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	1.61	1.55	3432	4849	4890	41	Retained within site
B-4	0.14	0.0	0.0	40.0	60.0	0.79	12.00	3.82	3.03	0.42	1.81	920	1408	1675	267	Retained within site
B-5	0.55	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	1.45	1.55	3095	4372	3585	-787	Overflows to B-6
B-6	0.83	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	2.18	1.55	4670	6598	15550	8952	Retained within site
B-7	0.88	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	2.32	1.55	4951	6996	7940	944	Retained within site
B-8	0.49	0.0	0.0	60.0	40.0	0.74	12.00	3.70	2.73	1.34	1.55	2757	3895	5630	1735	Retained within site
B-9	1.31	0.0	0.0	70.0	30.0	0.71	12.00	3.82	2.72	3.56	1.42	6753	9035	9235	200	Retained within site
C	5.17	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	13.61	1.55	29089	41100	46000	4900	Retained within site
D	4.72	0.0	0.0	60.0	40.0	0.74	12.00	3.57	2.63	12.42	1.55	26557	37523	45600	8077	Retained within site
TOTAL	20.37									55.79		118614	170862	202574	31712	

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY: JW	DATE: February 2023
		DRAWN BY: RG	DATE: February 2023
		JOB NO.: 20220016	
		CHECKED BY: JW	DATE: February 2023

JEFFREY TODD WOOTEN NEW MEXICO 16892 PROFESSIONAL ENGINEER
3/15/2023

Wooten Engineering
PO Box 15814
Rio Rancho, N.M. 87174
Phone: (505) 980-3560

N W E S

Griegos Farms
Tract 2, Our lady of Guadalupe
Albuquerque, NM 87107

Drainage Management Plan

C-205

N

W E

S

60' 30' 0 60'

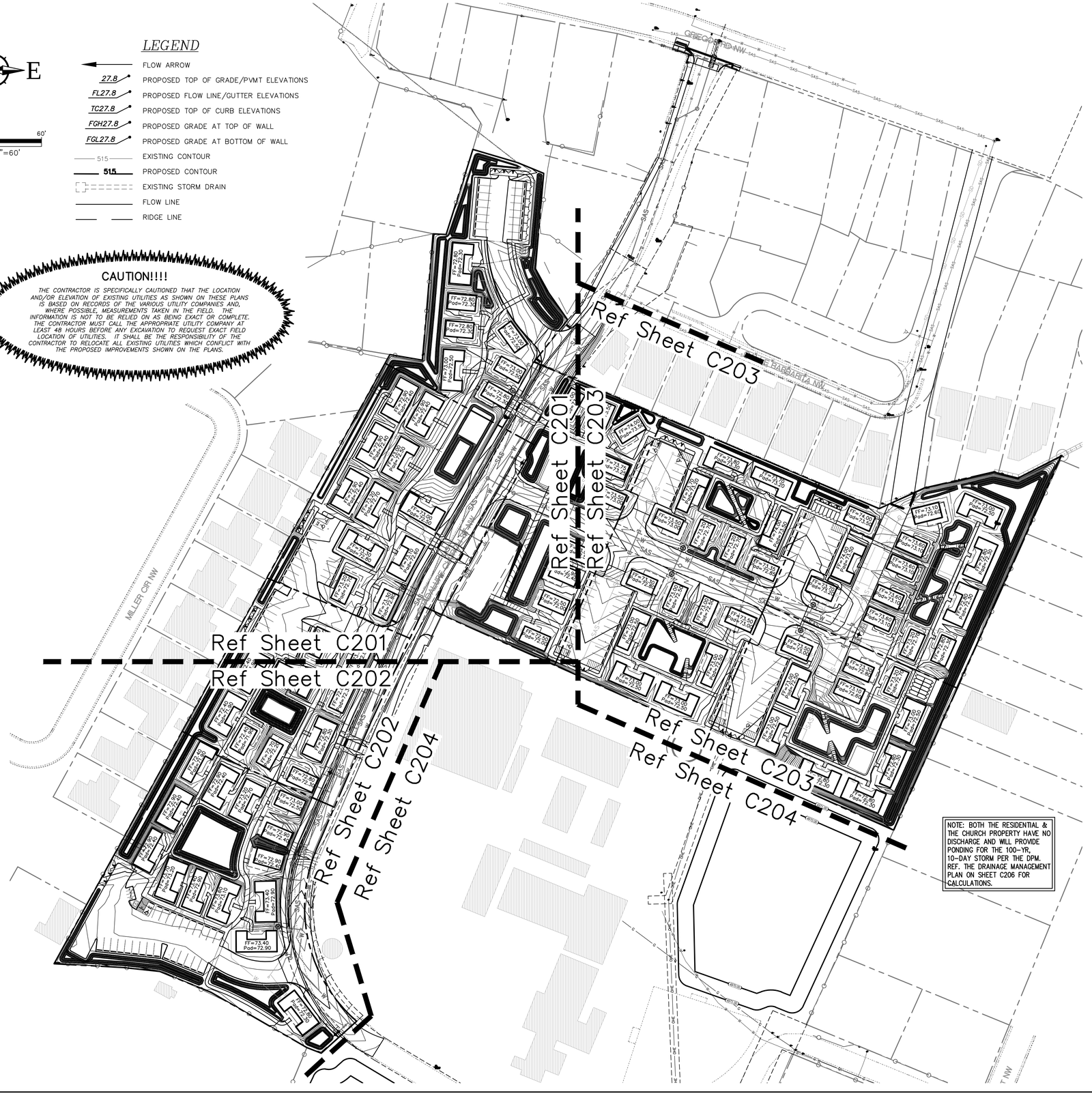
SCALE: 1"=60'

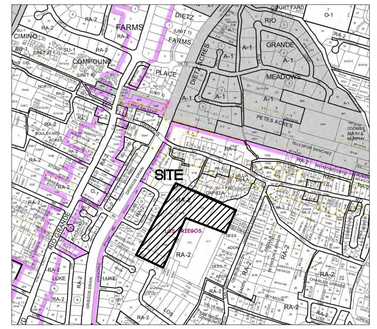
LEGEND

- FLOW ARROW
- 27.8 — PROPOSED TOP OF GRADE/PVMT ELEVATIONS
- FL27.8 — PROPOSED FLOW LINE/GUTTER ELEVATIONS
- TC27.8 — PROPOSED TOP OF CURB ELEVATIONS
- FGH27.8 — PROPOSED GRADE AT TOP OF WALL
- FGL27.8 — PROPOSED GRADE AT BOTTOM OF WALL
- 515 — EXISTING CONTOUR
- 515 — PROPOSED CONTOUR
- EXISTING STORM DRAIN
- FLOW LINE
- RIDGE LINE

CAUTION!!!!

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.





VICINITY MAP - Zone Map F-13-Z

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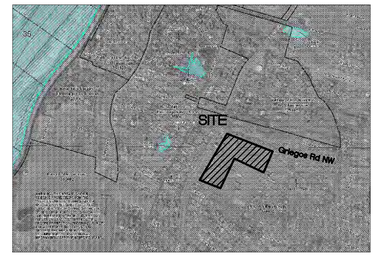

FIRM MAP 35001C0118G

Per FIRM Map 35001C0118G, dated September 26, 2008, the site is located in Zone X of the Floodplain and determined to be inside the 0.2% chance Annual Floodplain." Areas of 1% annual chance flood with average depths of less than 1 square mile; and areas protected by levees from 1% annual chance flood.

GRADING NOTES

1. *EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.*
2. *THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.*
3. *ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION," AS PROVIDED BY THE ARCHITECT OR OWNER. ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT, (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (COA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).*
4. *EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.*
5. *IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.*
6. *THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT-OF-WAY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS OR SILT FENCE AT THE PROPERTY LINES AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.*
7. *A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL OR BORROW SITE AND HAUL TO OR FROM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.*
8. *PAVING AND ROADWAY GRADES SHALL BE +/- 0.05' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/- 0.05' FROM BUILDING PLAN ELEVATION.*
9. *ALL PROPOSED CONTOURS AND SPOT ELEVATIONS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR PAVEMENT, MEDIANS, AND ISLANDS.*
10. *VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION (IF APPLICABLE) PRIOR TO BEGINNING CONSTRUCTION.*
11. *THE CONTRACTOR SHALL PROVIDE THE SWPPP DOCUMENT (IF NECESSARY) AND SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORM WATER DISCHARGE.*

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED

DATE:_____
BY:_____
Hydro/Trans #_____

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NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY: JW	DATE: February 2023
		DRAWN BY: OG	DATE: February 2023
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NEW MEXICO 16892 JEFFREY TODD WOOTEN PROFESSIONAL ENGINEER

3/15/2023

Wooten Engineering
PO Box 15814
Rio Rancho, N.M. 87174
Phone: (505) 980-3560

N W E S

Griegos Farms
Griegos Rd & Guadalupe Church St NW
Albuquerque, NM 87107

Overall Grading Plan / Index

C-200

N
W E
S

30' 15' 0 30'
SCALE: 1"=30'

LEGEND

- FLOW ARROW
- 27.8 — PROPOSED TOP OF GRADE/PVMT ELEVATIONS
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- 515 — EXISTING CONTOUR
- 515 — PROPOSED CONTOUR
- EXISTING STORM DRAIN
- FLOW LINE
- RIDGE LINE

Install 20 SY – 6" Mat
3"–6" Fractured Rip–Rap
No Landscape Fabric per
Location

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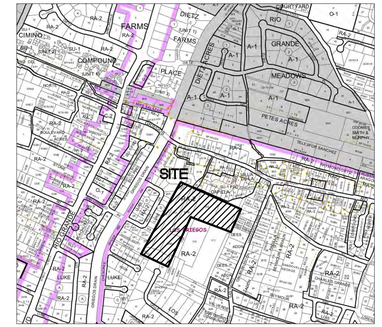
NOTE: THIS DEVELOPMENT HAS NO DISCHARGE AND WILL PROVIDE PONDING FOR THE 100-YR, 10-DAY STORM PER THE DPM.



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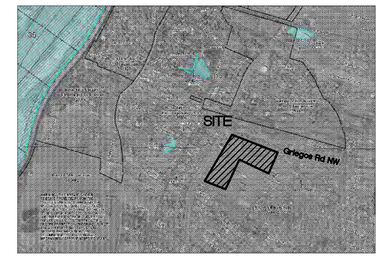

FIRM MAP 35001C0118G

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8. *PAVING AND ROADWAY GRADES SHALL BE +/– 0.05' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/– 0.05' FROM BUILDING PLAN ELEVATION.*
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		DESIGN	
		DESIGNED BY: JW	DATE: February 2023
		DRAWN BY: OG	DATE: February 2023
		JOB NO.: 20220014	
		CHECKED BY: JW	DATE: February 2023

JEFFREY TODD WOOTEN
NEW MEXICO
16892
PROFESSIONAL ENGINEER
3/15/2023

Wooten Engineering
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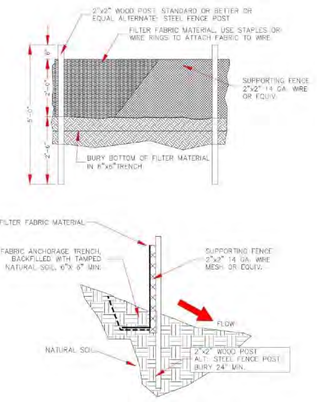
N W E S

Griegos Farms
Griegos Rd & Guadalupe Church St NW
Albuquerque, NM 87107

Grading Plan – North

C–201

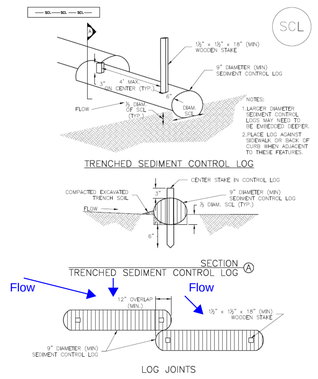


Notes:
1. Wire mesh is not required, but it is recommended as it will help prevent tearing due to increased wind speed or sediment/water load.
2. Pole spacing is not to exceed 10 feet between poles in straight-run sheet flow areas.
3. Pole spacing in a site's lower corners should be spaced approximately 6 feet apart or closer.
4. Silt fence is not created for use in high velocity situations, where flow is heavily concentrated. If concentrated flow does drain toward silt fence, then use additional BMPs to reduce the flow's velocity.
5. Silt fence fabric transition points should have posts interlocked with no gaps in the silt fence coverage.

Silt Fence

Source: City of Albuquerque Construction Site Manual 2018

Sediment Control Log (SCL) SC-2

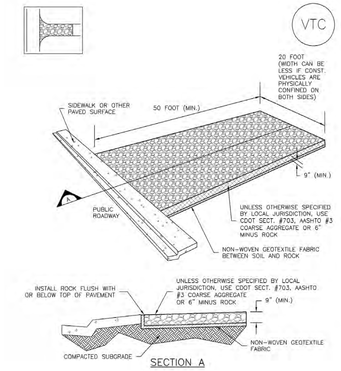


Notes:
1. It is recommended that wattles be trenched into the ground to a depth of approximately 1/3 of the diameter of the log. If trenching to this depth is not feasible or desirable, then a lesser trenching depth may be acceptable with more robust staking. Sandbags may be used on impervious surfaces.
2. Wattles that are 8 lb/ft or more do not need to be trenched.
3. Remove sediment from the upstream side of wattle when sediment accumulation is 1/2 the height of the wattle.
4. For parallel flow past the wattle joints, make sure the upstream wattle is on the interior side of the downstream wattle
5. Place wattle around stockpiles that are not being worked on or that are on impervious surfaces.

Wattle/ Filter Sock/ Sediment Control Log

Source: Urban Storm Drainage Criteria Manual Volume 3

Vehicle Tracking Control (VTC) SM-4



Notes:
1. A stabilized construction entrance/exit shall be located at all access points where vehicles access the construction site from paved right-of-ways.
2. Sediment tracked onto paved roads is to be removed throughout the day and at the end of the day by shoveling or sweeping. Sediment may not be washed down storm sewer drains.
3. Some Vehicle Tracking Controls may need a wheel wash station. When a wheel wash is available, make sure to direct wash water to a sediment trap prior to discharge from the site. Wash water may not contain soaps or chemicals, unless a separate permit is acquired.
4. A metal grate can be used in conjunction with an aggregate track-out pad. The grate should be regularly cleared of sediment, and help prevent track-out.
5. Make sure the Vehicle Tracking Control is not bypassed by the construction traffic.

Vehicle Tracking Control

Source: Urban Storm Drainage Criteria Manual Volume 3


Wash-out from curb-cutting operation.

Notes:
1. The preferred method to access a site is to cut the curb, so a ramp is not required. Placing curb cut in the same place as future entrance/exit can minimize work.

2. When cutting the curb, the cutting machine uses water, and the byproduct of the process is similar to concrete wash-out. Place byproduct in wash-out container.

Notes:
3. Laying lumber parallel to curb is an alternative, but this method is not be used on high speed (35 MPH and greater) roads due to it being a road hazard.

4. Adding cold-mix asphalt with a pipe in the gutter is acceptable, but do not extend asphalt past the gutter into the paved portion of the roadway.

5. Vehicle Tracking Controls are still needed if using a ramp over a curb.


Cold-mix asphalt ramp used for accessing the site.


Lumber laid parallel to the curb to create a ramp to access the site.

Notes:
6. Do not use dirt ramps to access sites with curbs, because the dirt can be easily washed to into storm drains.

7. WARNING! Any injury or property damage to a motorist, cyclist, or pedestrian due to the installation of a ramp is the responsibility of the contractor/property owner.

Access onto Curbed Sites

Source: City of Albuquerque Construction Site Manual 2018

Notes:
1. Regularly collect and dispose of garbage and waste material into designated collection areas.

2. Cover and maintain dumpsters and waste receptacles. Add additional dumpster or increase frequency of waste collection if overflowing conditions occur. Consider secondary containment around waste collection areas to minimize the likelihood of contaminated discharges.

3. Routinely inspect containers and equipment to ensure that it is functioning properly without leaking.

4. Promptly clean up leaks, drips, and other spills. Train employees on proper clean up and spill response procedures.

5. Store containers, drums, and bags away from direct traffic routes to reduce container damage.

6. Store materials in accordance with directions in Material Safety Data Sheets (MSDSs).

7. Store container s on pallets or similar devices to prevent corrosion of containers that results from containers coming into contact with moisture on the ground.

8. Store toxic or hazardous liquids within curbed areas or secondary containments.

9. Frequent and proper training in good housekeeping techniques reduces the likelihood that chemicals or equipment will be mishandled.

10. Segregate and provide proper disposal options for hazardous material wastes.

11. Make sure the site has a Spill Protection Plan, Spill kit, and individuals trained on the location and workings of the plan and kit.

12. Create a designated on-site fueling and maintenance area that is clean and dry, has a spill kit, and ideally in a covered area.

13. Locate toilet facilities away from storm drain inlets and waterways to prevent accidental contamination of stormwater.

14.or outdoor painting and sanding; conduct these operations in designated areas that are paved or have a secondary containment in place. Clean up and dispose of excess paint, paint chips, protective coatings, grit waste, etc.

15. Provide tie-downs or stake downs for portable toilets.

16. For vehicle and equipment washing: ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water.

17. Recycle materials whenever possible (e.g. paper, wood, concrete, oil).

Good Housekeeping

Source: Urban Storm Drainage Criteria Manual Volume 3


One-piece inlet protection BMP for an inlet with a grate and a throat.

Notes:
1. The proper inlet protection shall be used and maintained to prevent sediment and wastes from entering a stormwater drainage system and shall minimize the risk of flooding.

2. The type of inlet protection utilized shall depend on the inlet type, slope, and volume of flow.

Notes:
3. For inlets with a throat opening and a grate, the inlet shall be protected with a BMP that covers the throat and the grate.

4. For throat type of inlet protection, sediment shall not be higher than halfway up the BMP.

5. For mat type and one-piece style of BMP, more than 50% of the inlet protection must be clear of sediment and debris.


Cocoa mat used for grate and throat.


Mulch sock used for inlet protection.

Notes:
6. The inlet protection shall be able to let water drain through.

7. WARNING! Any injury or property damage to a motorist, cyclist, or pedestrian due to the installation of inlet protection is the responsibility of the contractor/property owner. Try using a mat-type inlet protection to reduce possible road hazards.

8. Make sure inlet protection is secured in place, and will not be moved by stormwater.

Inlet Protection Part 1

Source: City of Albuquerque Construction Site Manual 2018


Rock bags used for inlet protection. Photo was taken during a rain event.

Notes:
9. In residential subdivisions where there are inlets internal to the construction site, the style should change as the site is developed. When the site is mostly dirt, use a BMP that protects throat and grate. When the site has built more and less dirt is exposed, then a less restrictive style can be used to catch sediment in the gutter.

Notes:
10. Inlet protection constructed of silt fence surrounding the inlet may be used when the inlet is surrounded by stake-able dirt.

11. Inlet protection should be used for inlets/storm drains within the construction site/disturbed area, AND any inlets/storm drains outside the project area that may receive stormwater discharges from the construction site/disturbed area.

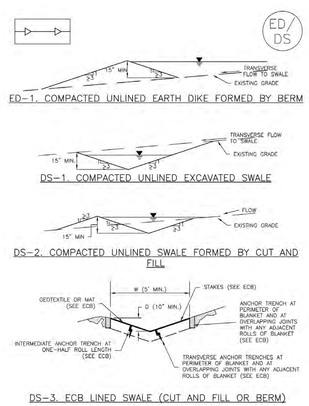

Another application of using silt fence for inlet protection.

Notes:
12. Open storm drains are considered an inlet and require protection. This also includes drains that are not actively being worked on.

Inlet Protection Part 2

Source: City of Albuquerque Construction Site Manual 2018

Earth Dikes and Drainage Swales (ED/DS) EC-10



Notes:
1. Earth dikes and drainage swales are typically used for controlling the flow path of runoff at a constructions site; sometimes by diverting water away from sensitive areas, or by conveying water to treatment BMPs (sediment traps or basins).
2. Unlined berms/dikes or swales need to be compacted, and should only be used for intercepting sheet flow runoff (not intended for diversion of concentrated flows.
3. If there is reoccuring damage, consider installing rock check dams or lining with riprap.
4. If berms/dikes or swales are not permanent, then remove berms/dikes and fill channels when upstream area is stabilized. Immediately stabilize the disturbed area after the BMP removal.

Earth Berms/ Dikes/ Drainage Swales

Source: Urban Storm Drainage Criteria Manual Volume 3


Energy dissipator for large storm drains

Notes:
1. When working in or adjacent to an arroyo or concrete channel, loose soil shall not be stockpiled or left in the low-flow area of the arroyo or channel. A berm or a similar BMP is to be constructed to diver flow into a low-flow area.
2. When working in or adjacent to an arroyo or concrete channel, pollutants (chemicals, debris, waste, etc.) shall not be left in the low-flow area of the arroyo or channel.
3. If there are active storm drains in the work zone, an energy dissipator is to be constructed at the pipe outfall to slow the velocity of the stormwater to less than 3 ft/sec at the end of the dissipater. A plunge pool constructed of large aggregate is the most common energy dissipator.
4. If there is an arroyo or channel draining into the work zone, and energy dissipator is to be constructed upstream of the confluence to slow the velocity of the stormwater to less than 3 ft/sec at the end of the dissipator. There are equations provided by the United States Bureau of Reclamation (USBR) and the Federal Highway Administration (FHWA) for sizing the energy dissipator and the aggregate.
5. If working adjacent to an arroyo or concrete channel, install BMPs to protect against or filter stormwater entering the drainage.

Arroyo and Channel Construction

Source: City of Albuquerque Construction Site Manual 2018


These roll-off wash-out containers were lowered for easier access.

Notes:
1. Designated wash-out areas shall be provided for any concrete, stucco, mortar, or paint operations. Wash-outs should be as far away as possible from waters of the U.S., stormwater inlets, or conveyances.

2. "Wash-out shall be directed to leak-proof containers or leak proof and lined pit designed so that no overflows can occur due to inadequate sizing or precipitation." -CGP 2022

Notes:
3. If the concrete/stucco/mortar is firm when it contacts the soil, then it is not considered wash-out (not wet enough to infiltrate into the soil).

4. A centralized wash-out may be effective for concrete trucks. For stucco, mortar, and paint wash-outs, a local wash-out and wash-out education has been more successful in avoiding improper wash-outs.


Mortar towers with plastic beneath as a BMP.

Notes:
5. Mortar towers shall have a plastic liner beneath them to prevent the wet mortar from contacting the soil. If wet stucco or mortar contacts the ground due to mixing, it would be a compliance issue.

6. If a wash-out occurs on bare soil, the Operator is expected to remove it same day. The wash-out material, as well as the wetted soil, are to be removed and disposed of appropriately.

Wash-outs

Source: City of Albuquerque Construction Site Manual 2018

BMP Information Sheet

JEFFREY TODD WOOTEN — NEW MEXICO — 16892 — PROFESSIONAL ENGINEER

4/26/2023

EIGHT 14 SOLUTIONS
EROSION CONTROL & ENVIRONMENTAL CONSULTING

Project Name:
Owner:
Operator:

NPDES Permit #:
Date:
Sheet:

Table F-2 Risk Levels for Sites with Average Slopes of ≤ 3 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
CNMI / Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Low	Moderate	Low	Moderate	Moderate
American Samoa	Moderate	Moderate	Moderate	Moderate	High
Massachusetts and New Hampshire	Low	Moderate	Low	Low	Moderate
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Low
Washington D.C.	Low	Moderate	Low	Low	Moderate

Table F-3 Risk Levels for Sites with Average Slopes of > 3 Percent and ≤ 6 Percent

Soil Type / Location	Clay	Silty Clay Loam or Clay-Loam	Sand	Sandy Clay Loam, Loamy Sand or Silty Clay	Loam, Silt, Sandy Loam or Silt Loam
CNMI / Guam	Moderate	Moderate	Moderate	Moderate	High
Puerto Rico	Moderate	Moderate	Moderate	Moderate	High
Virgin Islands	Moderate	Moderate	Moderate	Moderate	High
American Samoa	High	High	Moderate	High	High
Massachusetts and New Hampshire	Moderate	Moderate	Low	Moderate	High
Idaho	Low	Low	Low	Low	Low
New Mexico	Low	Low	Low	Low	Moderate
Washington D.C.	Moderate	Moderate	Moderate	Moderate	High

Map Scale: 1:2,360 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 1.50

Not rated or not available

Soil Rating Lines

= 1.50

Not rated or not available

Soil Rating Points

= 1.50

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico
Survey Area Data: Version 17, Sep 8, 2022

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

Date(s) aerial images were photographed: Oct 22, 2021—Dec 2, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Bulk Density, One-Third Bar

Map unit symbol	Map unit name	Rating (grams per cubic centimeter)	Acres in AOI	Percent of AOI
Ag	Agua silty clay loam MLRA 42	1.50	9.4	100.0%
Totals for Area of Interest			**9.4**	**100.0%**

Description

Bulk density, one-third bar, is the ovendry weight of the soil material less than 2 millimeters in size per unit volume of soil at water tension of 1/3 bar, expressed in grams per cubic centimeter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: grams per cubic centimeter

Aggregation Method: Dominant Component

Component Percent Cutoff: 50

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Map Scale: 1:2,360 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

Date(s) aerial images were photographed: Oct 22, 2021—Dec 2, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Agua silty clay loam MLRA 42	.37	9.4	100.0%
Totals for Area of Interest			**9.4**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: 50

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)