

Inspections Plus Inc.

Erosion Control Plan

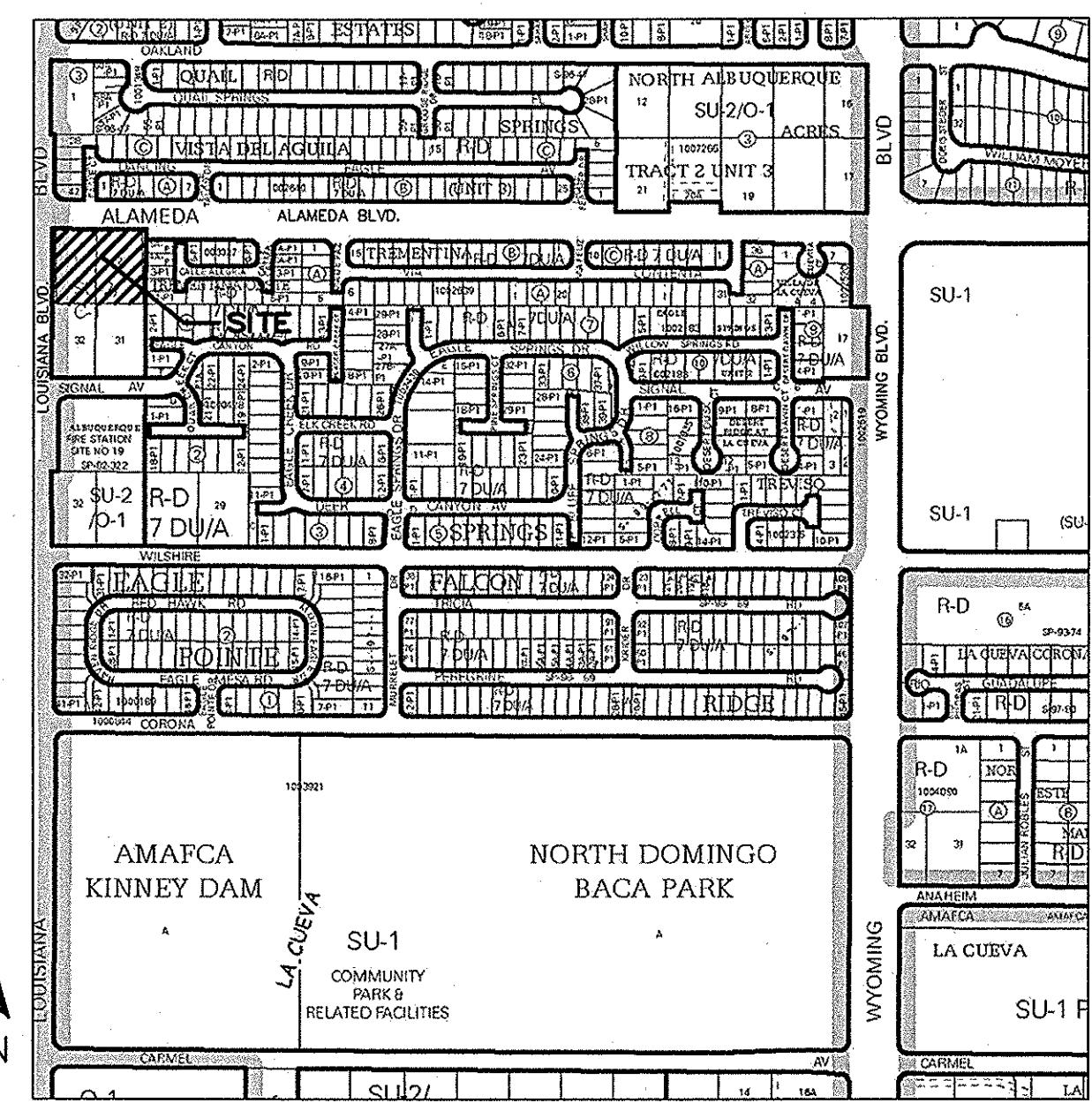
Standard Details



Project: _____
Date: _____

Sheet No. _____

Stabilized Construction Entrance	Silt Fence	Reinforced Silt Fence	Earth Dike
Definition A temporary barrier of Geotextile Class "F" used to intercept sediment laden runoff from small drainage areas. Purpose The purpose of silt fence is to reduce runoff where velocity and allow the deposition of transported sediments to occur. Loads imposed by ultraviolet light on the stability of the fabric will dictate the maximum period that the silt fence may last.	Definition A temporary barrier of Geotextile Class "F" over wire reinforcement used to intercept sediment laden runoff from small drainage areas. Purpose The purpose of silt fence is to reduce runoff where velocity and allow the deposition of transported sediments to occur. Loads imposed by ultraviolet light on the stability of the fabric will dictate the maximum period that the silt fence may last.	Definition A temporary barrier of Geotextile Class "F" over wire reinforcement used to intercept sediment laden runoff from small drainage areas. Purpose The purpose of silt fence is to reduce runoff where velocity and allow the deposition of transported sediments to occur. Loads imposed by ultraviolet light on the stability of the fabric will dictate the maximum period that the silt fence may last.	Definition A temporary barrier or ridge of soil, compacted, stabilized, and located at such a height above the ground surface that it will not move during the intended location.
Conditions where the Practice Applies Silt fence is limited to intercepting sheet runoff from limited distances according to slope. It is not to be used for velocity reduction to prevent gravity settling of sediment. Design Criteria Wood or Steel posts may be used in certain instances. Silt fence should be placed as close to the contour as possible. No section of fence should exceed a grade of 5 percent for a distance more than 50 feet. Widths of the potential fabric come together, the ends shall be overlapped, folded, and staked to prevent infiltration bypass. 1/2" X 1/2" minimum square posts, or 1 1/2" diameter diameter round post. The width of the fabric should be used. Silt fence must be staked to the ground. Where the ends of the geotextile fabric come together, the ends shall be overlapped, folded, and staked to prevent infiltration bypass. The length of the flow contributing to silt fence shall conform to the following limitations.	Conditions where the Practice Applies Silt fence is limited to intercepting sheet runoff from limited distances according to slope. It provides velocity and sediment trapping device to prevent gravity settling of sediment. Design Criteria Steel posts should be used. Silt fence should be placed as close to the contour as possible. No section of fence should exceed a grade of 5 percent for a distance more than 50 feet. Widths of the geotextile fabric come together, the ends shall be overlapped, folded, and staked to prevent infiltration bypass. The length of the flow contributing to silt fence shall conform to the following limitations.	Conditions where the Practice Applies Silt fence is limited to intercepting sheet runoff from limited distances according to slope. It provides velocity and sediment trapping device to prevent gravity settling of sediment. Design Criteria Steel posts should be used. Silt fence should be placed as close to the contour as possible. No section of fence should exceed a grade of 5 percent for a distance more than 50 feet. Widths of the geotextile fabric come together, the ends shall be overlapped, folded, and staked to prevent infiltration bypass. The length of the flow contributing to silt fence shall conform to the following limitations.	Conditions where the Practice Applies An temporary item or ridge of soil, compacted, stabilized, and located at such a height above the ground surface that it will not move during the intended location.
Concrete Washout Area	Curb Storm Drain Inlet Filter	Curb Storm Drain Inlet Protection	Below Grade Cut
Definition A temporary protected storm drain inlet.	Definition Storm drain inlet protection is used to filter sediment before it enters the storm drain system.	Definition Storm drain inlet protection is a secondary sediment control device and is not to be used in place of a sediment trapping device unless approved by the appropriate agency authority.	Definition A temporary sediment trap formed by excavation behind the curb.
Purpose Storm drain inlet protection is used to filter sediment before it enters the storm drain system.	Purpose The purpose is to intercept sediment laden runoff from the lot during construction and retain sediment on the lot.	Purpose The purpose is to intercept sediment laden runoff from the lot during construction and retain sediment on the lot.	Purpose The purpose is to intercept sediment laden runoff from the lot during construction and retain sediment on the lot.
Conditions where the Practice Applies Storm drain inlet protection is a secondary sediment control device and is not to be used in place of a sediment trapping device unless approved by the appropriate agency authority.	Conditions where the Practice Applies Storm drain inlet protection is a secondary sediment control device and is not to be used in place of a sediment trapping device unless approved by the appropriate agency authority.	Conditions where the Practice Applies Storm drain inlet protection is to be used when the drainage area to be inlet is disturbed and the following conditions prevail:	Conditions where the Practice Applies A curb cut is installed when discharge from the lot runs over the curb.
Design Criteria Storm drain inlet protection can be used when the drainage area to be inlet is disturbed and the following conditions prevail:	Design Criteria Storm drain inlet protection can be used when the drainage area to be inlet is disturbed and the following conditions prevail:	Design Criteria Storm drain inlet protection is to be used when the drainage area to be inlet is disturbed and the following conditions prevail:	Design Criteria 1. Cut back soil from behind curb 3-4" deep to form a temporary sediment trap. 2. Installing the sediment will form a two stage sediment trap that will be more effective.
Temporary Swale	Erosion Control Blanket	Fiber Rolls	Stone Check Dam
Definition A temporary swale is a temporary, excavated drainage way constructed and located to convey runoff to a desired location.	Definition Application of a protective layer of grass, other plant residue, stone, or synthetic materials to the soil surface.	Definition Fiber rolls are used for erosion control, sediment control, and stormwater runoff control.	Definition Stone check dams are stone weirs in stream, swales and ditches.
Purpose The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a designated outlet or to intercept sediment laden water and divert it to a temporary trapway.	Purpose To protect the soil surface from the forces of wind and water and overland flow.	Purpose Fiber rolls allow water to pass through while increasing runoff velocity, increasing infiltration rates, and trapping sediments. Also known as erosion logs or wicks, they can provide temporary erosion control and biological soil stabilization.	Purpose Stone check dams are stone weirs in stream, swales and ditches.
Conditions where the Practice Applies Temporary swale are to be used:	Conditions where the Practice Applies Materials used for erosion control planting, such as straw, wood chips, shredded bark, have been found to be the most effective material. Materials containing wood and grass seeds which may compete with establishing vegetation should not be used. Also determine if the soil has the ability to support the weight of the swale, making it necessary to modify fertilization rates or add fertilizer to the soil.	Conditions where the Practice Applies A variety of erosion control blankets have been developed to recent soil erosion, particularly for short term areas such as waterways and channels. Various types of setting materials are also available to under control areas.	Conditions where the Practice Applies 1. Sediment collected behind BMP's shall be removed when sediment reaches one-half the height of the barrier.
Design Criteria The design for engineering design shall be the 3-year, 24-hour duration event. N.C.C. criteria, a minimum of 10' wide will cover conditions to prevail in the contributing drainage area over the life of the site. Manning's Equation shall be used to determine each sites flow characteristics associated with the development. The Manning's roughness coefficient to be used is 0.025 for the entire site. The maximum flow depth for the 3-year, 24-hour event is 1' (Dike A) and up to 1 foot (Dike B) and 0.038 for flow depths between 1 and 2 feet (Dike B). See sections. Allowable flow channel velocities shall be less than 4 ft/s for sand and match, less than 6 ft/s for stabilization matting or sod, and less than 8 ft/s for 4'-7" stone.	Design Criteria The primary application of erosion control blanket is to stabilize soil surface, reduce soil loss, and reduce infiltration rates. The primary application of fiber rolls is to stabilize soil surface, reduce soil loss, and reduce infiltration rates.	Design Criteria • Applicable when flow does not exceed 1 cfs and on slopes of less than 1H:V. • Fiber rolls are to be used at the base of slopes in place of loose sediment barriers such as silt fences. • Synthetic materials • Natural materials • Synthetic materials • Natural materials • Synthetic materials • Natural materials	EROSION CONTROL NOTES 1) All perimeter BMP measures for sediment control shall be installed before any earth disturbing activity. If it's not practical to install BMP's due to thick vegetation then the contractor shall grub a perimeter line and install BMP's immediately thereafter. 2) All erosion control installations shall meet the storm water management standards and manufacturers guidelines. 3) Sediment collected behind BMP's shall be removed when sediment reaches one-half the height of the barrier. 4) BMP's shall be inspected and maintained per NPDES regulations e.g. at a minimum once every two weeks or weekly when discharges may reach an impaired waterway and after a rain event where it rains .25" in a 24 hr period. 5) BMP maintenance shall begin within 24 hours of noting the needed repairs. 6) Construction site entrance - The contractor shall place a stabilized construction track-out at each egress location. 7) Street sweeping - The contractor shall sweep the off site sediment tracking onto public right-of-ways if it is more than a stain. 8) Disturbed portions of the site that are inactive for more than 14 days must be temporarily stabilized with tackifiers if construction activity resume after 21 days or reseeded if construction activity will not resume after 21 days. 9) All areas not covered by impervious material or landscaping shall be reseeded with native grasses. 10) The contractor shall institute good housekeeping by keeping loose packaging trash and construction debris in approved solid waste containers. 11) The contractor shall control dust generated from earth work activity. 12) Temporary BMP's shall be removed following permanent stabilization. 13) All subcontractors shall be made aware of SWPPP requirements.



Thompson Engineering Consultants, Inc.
tacm@juno.com
P.O. BOX 65700
ALBUQUERQUE, NM 87193
PHONE: (505) 271-2199
FAX: (505) 830-5246

DATE:
HORZ. SCALE:
VERT. SCALE:



VICINITY MAP C-19-Z

DRAINAGE PLAN:

LEGAL DESCRIPTION: LOTS 1 AND 2, BLOCK 4, NAA TRACT 2, UNIT 3

SITE AREA: 1.2932 ACRES

FLOOD HAZARD STATEMENT: F.E.M.A. FLOODWAY BOUNDARY AND FLOODWAY MAP DATED AUGUST 16, 2012 (PANEL NO. 35001C0137H) INDICATES A FLOOD HAZARD ZONE A WITH A 1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN THE POND.

LOCATION AND DESCRIPTION: THE LOTS ARE LOCATED ON THE SOUTHEAST CORNER OF ALAMEDA BOULEVARD AND LOUISIANA BOULEVARD. THERE IS CURRENTLY A RETENTION POND ON THE SITE.

EXISTING DRAINAGE CONDITIONS:

THE DRAINAGE ANALYSIS FOR THIS SITE IS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL SECTION 22.2, HYDROLOGY. THE PROPERTY IS LOCATED IN ZONE 3. THE 100-YEAR, 6-HOUR STORM IS 2.60 INCHES.

THE SITE CURRENTLY DRAINS FROM EAST TO WEST TO THE EXISTING RETENTION POND THAT WAS CONSTRUCTED TO RETAIN RUNOFF FROM SUBDIVISIONS TO THE EAST AND NORTH. CURRENTLY THERE ARE NO OFFSITE FLOWS REACHING THE SITE.

DEVELOPED DRAINAGE CONDITIONS:

THE PURPOSE OF THIS GRADING PLAN IS TO FILL IN THE RETENTION POND NOW THAT THE ALAMEDA STORM DRAIN SYSTEM HAS BEEN CONSTRUCTED TO CONVEY THE RUNOFF TO THE WEST TO THE SAN PEDRO STORM DRAIN. THEREFORE THE RETENTION POND THAT USED TO RETAIN THIS RUNOFF IS NO LONGER NEEDED. THE SITE WILL NOT BE DEVELOPED AT THIS TIME, BUT IT COULD BE DEVELOPED IN THE NEAR FUTURE.

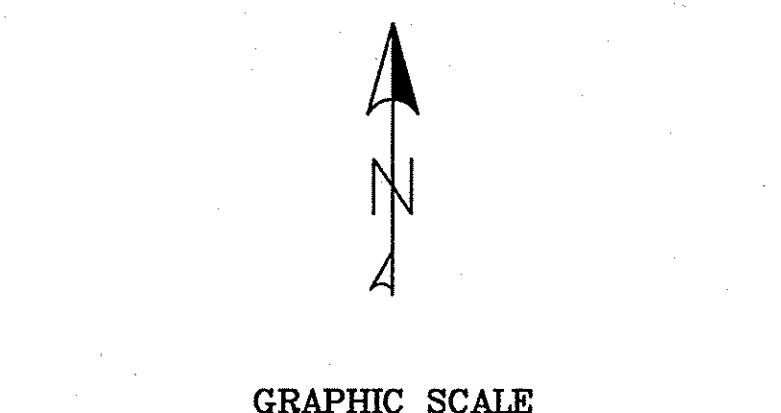
THE SITE HAS BEEN DIVIDED INTO TWO DRAINAGE BASINS THAT COINCIDE WITH THE LOT LINES. RUNOFF FROM OFFSITE BASIN A (LOT 1) WILL DRAIN FROM EAST TO WEST TO LOUISIANA BOULEVARD TO BE COLLECTED IN THE STORM DRAIN SYSTEM IN LOUISIANA. WHEREAS, RUNOFF FROM BASIN B (LOT 2) WILL DRAIN FROM SOUTHEAST TO NORTHWEST DRAINING TO ALAMEDA BOULEVARD TO BE COLLECTED IN THE ALAMEDA STORM DRAIN SYSTEM. A ONE-FOOT HIGH EARTHEN BERM WILL BE CONSTRUCTED ALONG THE WESTERN BOUNDARY OF BASIN B TO DIVERT THE RUNOFF TO ALAMEDA. A TOTAL OF 4.46 CFS WILL DISCHARGE TO LOUISIANA AND ALAMEDA, WHICH IS LESS THAN THE 5.20 CFS IS ALLOWABLE TO BE DISCHARGED TO BE COLLECTED BY THE ALAMEDA STORM DRAIN SYSTEM ACCORDING TO THE ALAMEDA BOULEVARD DRAINAGE PLAN.

SEDIMENT YIELD FROM THE TWO DRAINAGE BASINS FROM A 100-YEAR STORM WAS CALCULATED FOLLOWING THE MODIFIED UNIVERSAL SOIL LOSS EQUATION (MUSLE) AS SHOWN IN THE AMAPCA SEDIMENT AND EROSION DESIGN GUIDE. THE EQUATION INCLUDES PARAMETERS FOR THE RUNOFF ENERGY FACTOR (RW), SOIL ERODIBILITY FACTOR (K), TOPOGRAPHIC FACTOR (LS), COVER AND MANAGEMENT FACTOR (C), AND EROSION CONTROL FACTOR (P). FOR BOTH BASINS K = 0.15 FOR LOAMY COARSE SAND, LS = 0.92 FOR A SLOPE OF 3%, C = 0.24 ASSUMING 20% GROUND COVER, AND P = 1.0 FOR NO TERRACING. RW INVOLVES THE AREA AND RUNOFF VOLUME FROM EACH BASIN. FOR BASIN A RW = 39.7 AND FOR BASIN B RW = 61.0. SO THE VOLUME OF SEDIMENT RUNOFF DURING A 100-YEAR STORM FOR BASIN A IS 22 CF AND FOR BASIN B IS 34 CF. A SEDIMENT POND WITH A VOLUME OF 22 CF IS SHOWN IN THE SOUTHWEST CORNER OF BASIN A. A SEDIMENT POND WITH A VOLUME OF 34 CF IS SHOWN IN THE NORTHWEST CORNER OF BASIN B.

LEGEND

- 73.00 • SPOT ELEVATIONS
- EXIST. MAJOR CONTOURS
- EXIST. MINOR CONTOURS
- FLOW DIRECTION
- PROPOSED EASEMENT
- BOUNDARY
- PROPOSED EARTHEN BERM
- PROPOSED BASIN BOUNDARY
- DRAINAGE BASIN NUMBER

NOTE:
ONCE GRADING IS COMPLETE ALL DISTURBED AREAS WILL BE SEDED.



LOTS 1 AND 2		BLOCK 4, TRACT 2 UNIT 3		NORTH ALBUQUERQUE ACRES		GRADING AND DRAINEAGE PLAN	
DEPARTMENT	SIGN-OFF	DATE					
WASTEWATER MGMT. DIV.							
WATER SERVICES							
SUBDIVISION ENG.							
STREETS							
TRAFFIC							
FOR CITY/COUNTY USE ONLY							

CITY/COUNTY REVIEW	
DEPARTMENT	SIGN-OFF
WASTEWATER MGMT. DIV.	
WATER SERVICES	
SUBDIVISION ENG.	
STREETS	
TRAFFIC	
SHEET No.	

1 OF 1

100-YEAR HYDROLOGIC CALCULATIONS											
BASIN #	AREA (acre)	LAND TREATMENT				WEIGHTED E (in.)	100-YEAR PRECIPITATION				
		A (%)	B (%)	C (%)	D (%)		V (6-hr) (acre-ft)	V (6-hr) (cu-ft)	V(24-hr) (acre-ft)	V(24-hr) (cu-ft)	Q (cfs)
BASIN A	0.5232	100.00	0.00	0.00	0.00	0.66	0.03	1,253	0.03	1,253	0.98
BASIN B	0.7700	100.00	0.00	0.00	0.00	0.66	0.04	1,845	0.04	1,845	1.44
TOTAL RUNOFF	1.29					0.07	3,098	0.07	3,098	2.42	
EXISTING CONDITIONS											
BASIN A	0.5232	0.00	0.00	100.00	0.00	1.29	0.06	2,450	0.06	2,450	1.81
BASIN B	0.7700	0.00	0.00	100.00	0.00	1.29	0.08	3,606	0.08	3,606	2.66
TOTAL RUNOFF	1.29					0.14	6,056	0.14	6,056	4.46	
EXCESS PRECIP.	0.66	0.92	1.29	2.36	E (in.)						
PEAK DISCHARGE	1.87	2.6	3.45	5.02	Q (cfs)						
ZONE = 3											
WEIGHTED E (in.) = (E/A)%A + (E/B)%B + (E/C)%C + (E/D)%D											P (in.) = 2.60
V (cu-ft) = (WEIGHTED E)(AREA)/12											P (in.) = 3.10
V (cu-ft) = V (cu-ft) * P / 12											P (in.) = 4.90
Q (cfs) = (Q/in)(A/in) + (Q/in)(A/in) + (Q/in)(A/in) + (Q/in)(A/in)											

