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**TECHNICAL INFORMATION REPORT
FOR**

**STODDARD INDUSTRIES
ARLINGTON AIRPORT
IN
CITY OF ARLINGTON, WA.**

SITE ADDRESS:
18650 NE 59TH DRIVE
ARLINGTON, WA. 98223
TAX ID: 31052200200101

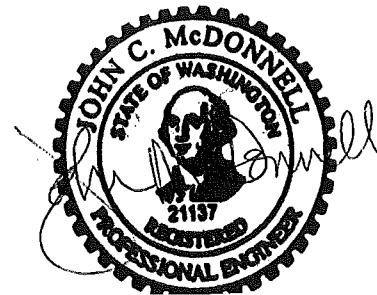
DATE: 4/7/2014
REVISED: 6/19/2014

LEGAL DESCRIPTION:

TRACT 12, ARLINGTON AERONAUTICAL PARK
COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF
SECTION 22, TOWNSHIP 31 NORTH, RANGE 5 EAST OF THE WILLAMETTE
MERIDIAN; THENCE SOUTH 04°30'38" EAST, ALONG THE EAST LINE OF SAID
NORTHWEST QUARTER FOR 20.01 FEET; THENCE SOUTH 87°38'21" WEST FOR 420.11
FEET TO A POINT WHICH BEARS NORTH 87°38'21" EAST A DISTANCE OF 878.52 FEET
FROM THE CENTERLINE OF AIRPORT RUNWAY NO. 15-33, THE TRUE POINT OF
BEGINNING; THENCE SOUTH 04°11'43" EAST, PARALLEL WITH SAID RUNWAY
CENTERLINE FOR 200.00 FEET; THENCE NORTH 87°38'21" EAST FOR 215.00 FEET;
THENCE NORTH 04°11'43" WEST, PARALLEL WITH SAID RUNWAY CENTERLINE FOR
200.00 FEET; THENCE SOUTH 87°38'21" WEST FOR 215.00 FEET TO THE TRUE POINT
OF BEGINNING.

PREPARED BY:
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1. PROJECT OVERVIEW-

Stoddard International, LLC, is a contract manufacturer specializing in composite manufacturing and tooling, manufacturing interior aircraft components for installation on a multitude of aircraft. Stoddard Industries occupies an existing metal building on leased property at the Arlington Airport at 18660 58th Avenue in Arlington, WA. in Sec. 22, Twn 31, Rge 5E. The existing metal building measures 19,870 SF on a flat lot bordered by a 14,500 SF lawn area on the north side. Parking is now provided in a gravel lot southwest of the existing structure and along the west frontage of the main building.

Existing street access is obtained from a local access road to the west which connects to 188th Street NE. 188th borders the north edge of the site area. The property is flat with cross slopes of less than 0.5%. Unpaved lawn areas are lower than surrounding street surfaces. The proposed development area is the lawn with some paved driveway on the east end that will house the proposed building addition.

This proposal will add a metal building expansion of 5,780 SF to the north side of the existing structure and will expand available parking with 15 new stalls (2,400 SF) Access to these paved stalls will be taken directly from 188th. The proposed project building area is 14,500 SF of lawn. This area is reported to contain an operating drainfield in deep medium sand soils. The drainfield will be abandoned as a result of this project and a new sewer connection will be developed to the sewer main located east of the site. The existing 19,800 SF building has a ridgeline crown in the middle with 9,900 SF flowing to the north area and 9,900 SF flowing to drywells on the south. The north portion will affect the proposed project development.

2. **PRELIMINARY CONDITIONS SUMMARY**

This proposal will remove some existing concrete paving off the NE wall of the building. New parking will be developed along the edge of 188th Street NE. The new building addition will be added to the north wall of the existing structure. Drainage will be directed into large drywells in deep high quality sands. Polluting surfaces shall be directed to a trench designed to filter through selected loamy soil type prior to discharge into the ground water according to the requirements of the 2005 DOE Manual.

3. **2005 DOE STORMWATER MANAGEMENT MANUAL COMPLIANCE**

A site drainage analysis for this project under the 2005 DOE Stormwater

Management Manual will require:

1. A determination of the site drainage and water quality requirements is based upon Flow Charts 2.2 and 2.3 of the **SWMM, 2005**. (See following pages).
2. Since the project exceeds DOE thresholds, the manual requires a final stormwater release to match 50% of 2-year through the 50-year undeveloped flow based upon the Continuous Time Series Model developed by DOE, respectively. The Western Washington Hydraulic Model (WWHM2012) will provide a Continuous Time series model developed specifically to meet the DOE requirements.
3. As determined by the analysis of Flow Charts 2.2 and 2.3 of the **SWMM, 2005**, the site is determined to be responsible for Minimum Requirements #1 through #10.

3. 2005 DOE STORMWATER MANUAL COMPLIANCE (CONT.)

DOE Manual Compliance has been accomplished as follows:

Minimum Requirement #1: Prepare Stormwater Site Plans

See Plans Submitted with Project Application and this Report

Minimum Requirement #2: Construct Stormwater Prevention Plan

See SWPPP provided in the Appendix, provided as a supporting document. Land development activity will affect 14,500 SF of property or 0.33 AC. The property owner will not be required to file a Notice of Intent (NOI) for a General Construction Stormwater permit from the Washington DOE. This project must be permitted by the City of Arlington before land disturbance can occur.

Minimum Requirement #3: Source Control of Pollution for Development & Redevelopment

No known pollution-generating activities as described in Volume IV, Chapters 3 and 4 will be performed on-site during construction or are proposed for the site operation except as indicated below: On-site Pollution risk will be limited to the construction period for this project. After Construction, the 15-parking stalls constructed by the Development Plan, will represent a modest pollution risk. Pollution will be controlled by appropriate techniques recognized in SWPPP Element #9.

Minimum Requirement #4: Preservation of Natural Drainage Systems & Outfalls

The natural slope of the project site is virtually zero. There are some formal storm drains along the access roads surrounding the property but the airport relies upon exceptional sandy soil and infiltration techniques to eliminate the stormwater flows. No surface flows across property boundaries are anticipated from this project. All runoff generated by the proposed surfaces will be recharged into the ground up to the 100-year design event.

Minimum Requirement #5: On-site Stormwater Management

On-site Stormwater Management BMP's will be employed in this project to re-infiltrate storm runoff into the ground within the property limits. Infiltration will occur in conventional infiltration structures or pervious pavements.

Minimum Requirement #6: Runoff Treatment

An on-site treatment trench is proposed to treat runoff from the proposed 15 new parking stalls planned for this project.

3. 2005 DOE STORMWATER MANUAL COMPLIANCE (CONT.)

Minimum Requirement #7: Flow Control

An on-site infiltration trench is proposed to infiltrate 100% of increased runoff from the proposed new parking stalls and rooftop planned for this project.

Minimum Requirement #8: Wetlands Protection

No wetlands or critical areas have been identified within the project boundaries, so the development has no impact to Critical Areas.

Minimum Requirement #9: Basin/Watershed Planning

This Project does not impact the basin or watershed.

Minimum Requirement #10: Operation & Maintenance

In the Appendix, this Report provides the conventional Operation & Maintenance procedures needed to manage the conveyance systems, the infiltration trench, the water quality trench and the general cleaning provisions of the site. Similar procedures are described in the King County Stormwater Manual and the DOE 2005 manual are widely accepted in both King & Snohomish County.

4. OFFSITE ANALYSIS

Upstream Analysis

The site and surrounding areas are flat with cross slopes of less than 2%. There are no streams in close proximity to the proposed development area. Offsite contributing flows are limited to the half-street contributions from the peripheral paved access roads which are readily absorbed along the edges of the roadways. Offsite contributions are not expected to affect the function of the onsite infiltration system.

Downstream Analysis

The Site and surrounding property are essentially flat for a long distance in every direction with slopes of less than 2% over very sandy soils, there is no downstream channel flow. Furthermore, the Site will be graded so that all onsite flows will be directed through the infiltration structures. No downstream impacts are anticipated on this project.

5. RETENTION / DETENTION/ INFILTRATION REQUIREMENTS

A. Existing Conditions

Site Area

Project Area = 15,400 SF (0.3535 AC)
 Ex. Tributary rooftop = 9,900 SF (0.2273 AC)
 Development Area = 25,300 SF (0.5808 AC)

Existing Lawn Pervious Area = 0.3329 AC (assume forested)
 Existing Impervious = 0.2273 AC (assumed forested)

B. Developed Conditions

Proposed Conditions:

New Parking Site Area = 2,408 SF (0.0553 AC)
 Road Paving Area = 801 SF (0.0184 AC)
 New Rooftop Area = 5,775 SF (0.1326 AC)
 Ex. North Roof Area = 9,900 SF (0.2273 AC)
 New Impervious = 18,884 SF (0.4335 AC)
 Proposed Pervious = 6,416 SF (0.1473 AC)

C. “Original” WWHM Infiltration Model Input:

Undeveloped:		Developed:	
A/B IMP	= 0.00 Assumed	IMP	= 0.4335 AC
A/B Forest	= <u>0.5808 AC</u>	<u>Landscape</u>	= <u>0.1473 AC</u>
Sub-Total	= 0.5808 AC	Total	= 0.5808 AC

D. WWHM Water Quality Infiltration Model Input:

Undeveloped:		Developed:	
A/B IMP	= 0.00 Assumed	IMP	= 0.737 AC
A/B Forest	= <u>0.0737 AC</u>	<u>Landscape</u>	= <u>0.00 AC</u>
Sub-Total	= 0.0737 AC	Total	= 0.0737 AC

D. SOIL CONDITIONS

Soil type surrounding the property on nearby sites has been identified by nearby geotechnical reports as Lynnwood Loamy sand (0-24") underlain by gravelly medium sand (25" – 132'+). The subgrade material has been identified as clean sandy gravel and gravelly sand. Assessment has been made of several prior projects including Arlington Flight Services, Universal Aerospace Company and others. Soil logs for projects in close proximity to Stoddard are provided in the Appendices. Soil on the airport has been established to be a 2-foot layer of loamy sand underlain by a thick layer of tan gravelly medium sand to 11-feet or more. No water, mottling or hardpan has been observed on any of the surrounding soil logs taken.

A percolation rate of 20 IN/HR for the medium sand in question with a SF=2 has been consistently used on surrounding projects. This methodology was taken from the DOE 2005 Storm Water Management Manual, Table 3.7 in Section 3.3.6 of Volume III. This same criteria has been provided for the following recent airport projects adjacent to or in the near proximity to this site:

1. Arlington Flight Services
2. Universal Aerospace Company (2012),
3. City of Arlington Taxi-way Project (2004)
4. Abbatate, (2009)

(Ref: Cascade Engineering Soils data provide as public information for City records.)

“Separation between the bottom of these constructed facilities and ground water elevation was evaluated, using the City of Arlington well log. Constructed dry wells are typically found to be about 8-feet deep. The City has recorded a typical groundwater elevation of 47' feet below the ground surface providing an estimated 39' of separation.” Quoted from the Drainage report for Universal Aerospace Co, Dated August 20, 2012 by Cascade Surveying & Engineering.

Conclusion:

Because this project lacks grain sizing analysis on Site soils, a Safety Factor is used for the infiltration trench sizing, resulting in an applied percolation rate of 5 in/ hour.

5. FLOW CONTROL & RUNOFF TREATMENT

On-site stormwater management by infiltration using a proposed water quality treatment trench with infiltration for the proposed paved surfaces and a conventional infiltration trench for the rooftop runoff according to a detail acceptable to the City of Arlington. The infiltration rate cited in the surrounding projects of 20 in/hour will be relied upon but the *Safety Factor will be increased to 4 in this case for the rooftop infiltration trench*. An actual rate of 5"/Hour is, thereby, selected as an assumed long term infiltration rate for these facilities. A DOE rate of 0.5 inches/hour was arbitrarily selected by direction from BHC Consultants based upon a DOE Table 3.7. The 0.5 Inches per hour is a rate applied to Loamy Sand based upon USDA soil texture analysis. This value is extremely conservative for this site and results in a very large, very deep Water Quality Trench for a very small Parking Lot surface.

Paved surfaces will be collected into CB's and the flows directed to the upper end of the Water Quality infiltration swale. The bottom of the WQ Swale will be 30-foot in length x 12.5 Feet wide x 7.0 feet deep, lined with two feet of loamy sand topped with now 5-feet of washed gravel. The top & sides of the gravel will be covered with Mirafi 140 Filter fabric to screen out the fine particles settling through the soil column. Backfill of 2-feet of top cover minus the pavement width will be the native medium sand available on site and compacted to 95%. The WQ trench is to be constructed down into the subgrade and sized to discharge all flow through the bottom where the loamy sand is intended to provide the required Cation Exchange Capacity required by DOE. Void space of the washed gravel is assumed at 0.4 and for the loamy sand, void space is assumed to be 0.33.

New rooftop addition area, plus the northerly half of the existing building rooftop, will be directed into the second manhole in the structure and into an 82-foot infiltration trench with a 6.5-foot bottom width. The infiltration area will be filled with 1-1/2" washed gravel 5-feet thick. Void space of the material is assumed at 0.4. Trench operating depth will be 5-feet.

NOTE: It will be the Owner's Responsibility to register these drywells as Underground Injection Wells with the Department of Ecology.

6. POC#1, WWHM 2012 STANDARD COMPLIANCE

Main Drywell Sizing Data.

Site Assumed Un-developed Flow Rate Peaks of WWHM Flood Time series for the assumed Forested Conditions.

1.	50-year Return Period	Q50	=	0.008036 CFS
2.	25-Year Return Period	Q25	=	0.005953 CFS
3.	10-Year Return Period	Q10	=	0.002319 CFS
4.	2-Year Return Period	Q2	=	0.000667 CFS

Developed Flow Rates Directed to the Infiltration Basin:

Peaks of WWHM 2012 Time series for the Rooftop Developed Conditions.
The required standard of WWHM2012 is satisfied in this design.

1.	50-year Return Period	Qd50	=	0.02446 CFS
2.	25-Year Return Period	QD25	=	0.021274 CFS
3.	10-Year Return Period	QD10	=	0.017339 CFS
4.	2-Year Return Period	QD2	=	0.010625 CFS

Infiltration Release Flow Rate:

Peaks of WWHM 2012 Time series for the Rooftop Developed Conditions.
The required standard of WWHM2012 is satisfied in this design. 100% of surface flows are captured in this Drywell.

1.	50-year Return Period	Qd50	=	0.0 CFS
2.	25-Year Return Period	QD25	=	0.0 CFS
3.	10-Year Return Period	QD10	=	0.0 CFS
4.	2-Year Return Period	QD2	=	0.0 CFS

Hydrographs document 100% discharge to the sub-grade per the storm event.
Surface flows are zero in all scenarios.

Water Quality Drywell Sizing Data.

Site Assumed Un-developed Flow Rate Peaks of WWHM Flood Time series for the assumed Forested Conditions.

1.	50-year Return Period	Q50	=	0.00076 CFS
2.	25-Year Return Period	Q25	=	0.000514 CFS
3.	10-Year Return Period	Q10	=	0.000294 CFS
4.	2-Year Return Period	Q2	=	0.000085 CFS

Infiltration Release Flow Rate:

Peaks of WWHM 2012 Time series for the Paved PGIS at Developed Conditions. The required standard of WWHM2012 is satisfied in this design.

1.	50-year Return Period	Qd50	=	0.05315 CFS
2.	25-Year Return Period	QD25	=	0.04113 CFS
3.	10-Year Return Period	QD10	=	0.037515 CFS
4.	2-Year Return Period	QD2	=	0.023153 CFS

Hydrographs document 100% discharge to the sub-grade per the storm event. Surface flows are zero in all scenarios.

Structure Infiltration Rate Estimates as :

10-FT X 5-FT X 0.000579 FPS (@ PR=0.5IN/HR) = 0.029 CFS

INFILTRATION@ 0.029 CFS >> DEV 2-YEAR RUNOFF, 0.021CFS
PER WWHM2012

THEREFORE:
WATER QUALITY CELL IS ADEQUATE AT 10' X 5' X 5'DEEP

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LIST OF APPENDICES

- **VICINITY MAP**

- **INFILTRATION VAULT SIZING CALCULATIONS
PER DOE WWHM 2012.
DEVELOPED BASIN AREAS**

- **WATER QUALITY INFILTRATION SIZING CALCULATIONS
PER DOE WWHM 2012**

- **SITE PHOTOS AND MAPS**

- **SOIL LOGS**

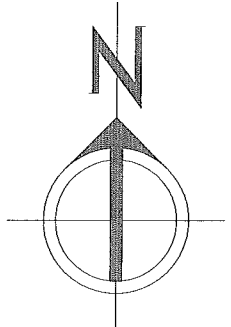
- **OPERATIONS & MAINTENANCE SCHEDULE**

- **USGS SOIL TYPE REPORT.**

- **CONSTRUCTION PLAN REVIEW & INSPECTION FEE
WORKSHEET.**

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□ **VICINITY MAP**



Residential Area

47 AVE NE

188 ST NE

ARLINGTON FLY-IN OFFICE

SEATTLE POWERCHUTES

195 TH NE
59th AVE NE
58th DR NE
PARA-PHERNALIA
192 ST NE

MATA
A.I.R.
FUEL (SELF SERVE)
GOLD AERO
WRANGELL

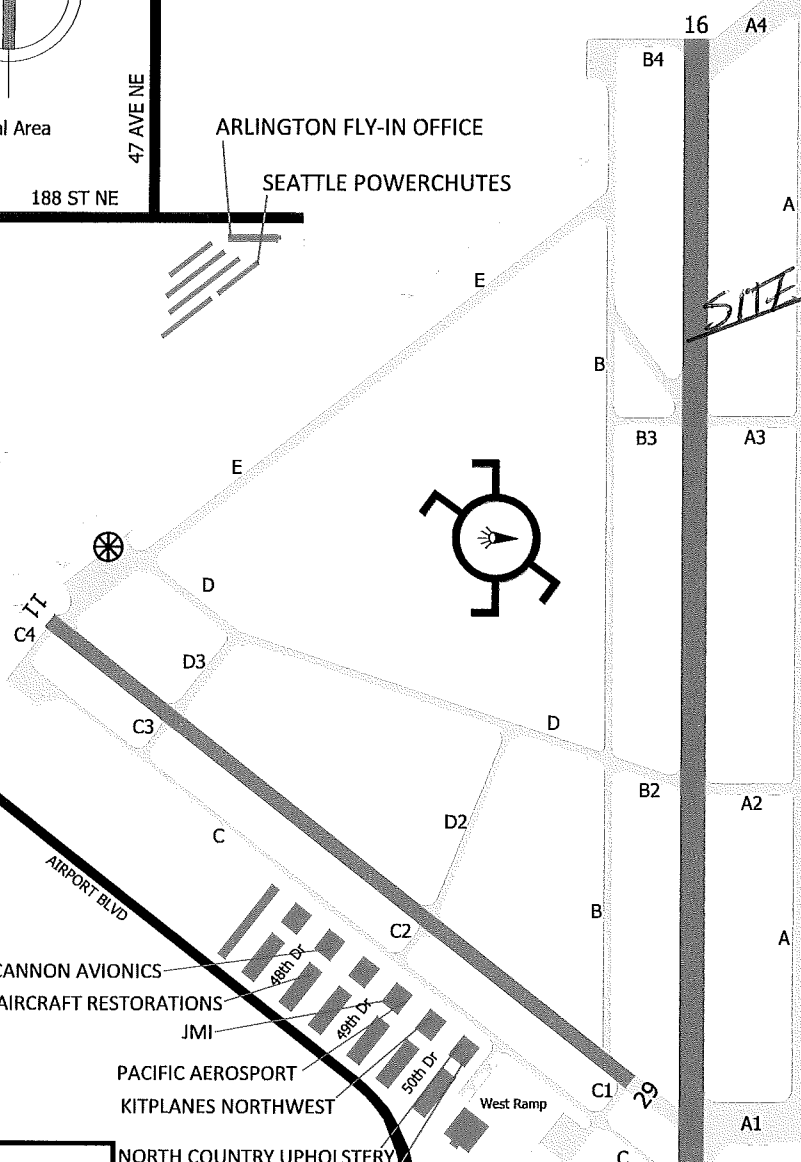
188 ST NE
59 AVE NE
ARLINGTON
FLIGHT SERVICES

AVIATION COVERS
GLASAIR

WILD BLUE
AVIATION
RESTAURANT
NASA

AIRPORT OFFICE
WSDOT AVIATION
ABBATARE

AIRCORE AVIATION



AIRPORT BLVD

43 AVE NE

CANNON AVIONICS
MORGAN AIRCRAFT RESTORATIONS
JMI
PACIFIC AEROSPORT
KITPLANES NORTHWEST

NORTH COUNTRY UPHOLSTERY
ARLINGTON JET SERVICES

51 AVE NE

172 ST NE / SR 531

59 AVE NE

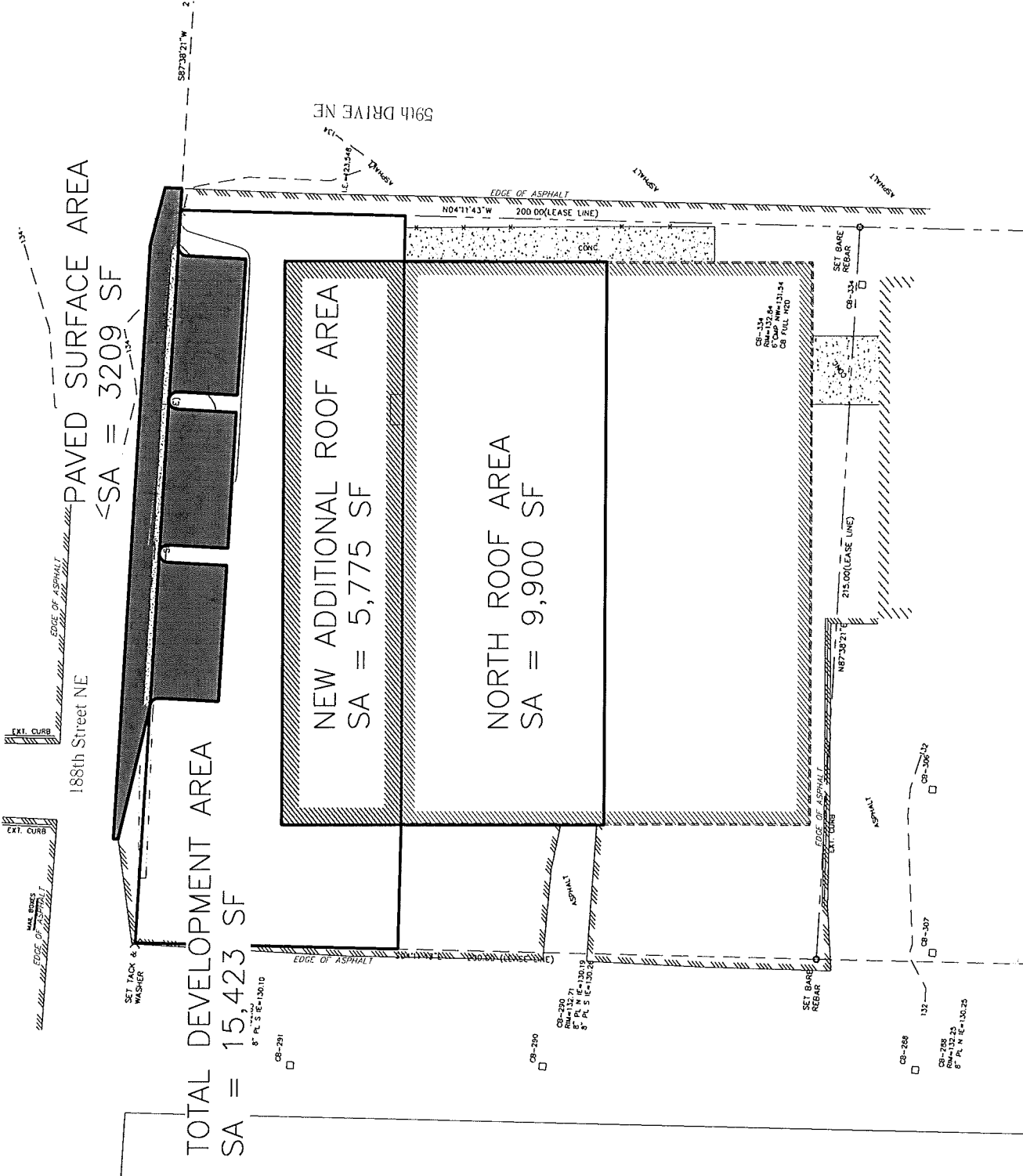
ROMIO'S PIZZA & PASTA

BUZZ INN STEAKHOUSE
QUALITY INN

- RUNWAY
- TAXIWAY
- RAMPS
- WINDSOCK
- WASH RACK
- BEACON
- COMPASS ROSE

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□ INFILTRATION VAULT SIZING CALCULATIONS
□
PER
DOE WWHM 2012



PAVED SURFACE AREA
 $SA \approx 3209 SF$

NEW ADDITIONAL ROOF AREA
 $SA = 5,775 SF$

NORTH ROOF AREA
 $SA = 9,900 SF$

TOTAL DEVELOPMENT AREA
 $SA = 15,423 SF$

188th Street NE

59th Drive NE

CAT. CURB
 MAL. REINFC
 EDGE OF ASPHALT

EDGE OF ASPHALT

SET JACK WASHER

8" P.C. 5' L=130.10

CR-291

CR-290
 RM=132.71
 8" P.C. 5' L=130.19
 8" P.C. 5' L=130.58

CR-290

SET BARE REBAR

CR-288

CR-288
 RM=132.25
 8" P.C. 5' L=130.25

CR-134
 RM=132.84
 8" P.C. 5' L=131.34
 CR P.C. 5' L=130

SET BARE REBAR

CR-134

CR-306/10

CR-307

CR-307

N04°11'43"W 200.00(LEASE LINE)

N87°38'21"W 215.00(LEASE LINE)

S87°38'21"W

WWHM2012
PROJECT REPORT

General Model Information

Project Name: STODDARD DRYWELL
Site Name:
Site Address:
City:
Report Date: 6/20/2014
Gage: Everett
Data Start: 1948/10/01 00:00
Data End: 2009/09/30 00:00
Timestep: Hourly
Precip Scale: 1.20
Version: 2013/10/17

POC Thresholds

Low Flow Threshold for POC1: 50 Percent of the 2 Year
High Flow Threshold for POC1: 50 Year

Landuse Basin Data
Predeveloped Land Use

Basin 1	
Bypass:	No
GroundWater:	No
Pervious Land Use	Acres
A B, Forest, Flat	0.5808
Pervious Total	0.5808
Impervious Land Use	Acres
Impervious Total	0
Basin Total	0.5808

Element Flows To:		
Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass: No

GroundWater: No

Pervious Land Use Acres
A B, Lawn, Flat 0.1473

Pervious Total 0.1473

Impervious Land Use Acres
ROADS FLAT 0.3598
PARKING FLAT 0.0737

Impervious Total 0.4335

Basin Total 0.5808

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 1	Gravel Trench Bed 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Gravel Trench Bed 1

Bottom Length: 82.00 ft.
 Bottom Width: 6.50 ft.
 Trench bottom slope 1: 0.01 To 1
 Trench Left side slope 0: 0 To 1
 Trench right side slope 2: 0 To 1
 Material thickness of first layer: 5
 Pour Space of material for first layer: 0.4
 Material thickness of second layer: 0
 Pour Space of material for second layer: 0
 Material thickness of third layer: 0
 Pour Space of material for third layer: 0
 Infiltration On
 Infiltration rate: 20
 Infiltration safety factor: 0.5
 Wetted surface area On

 Discharge Structure
 Riser Height: 5 ft.
 Riser Diameter: 12 in.
 Element Flows To:
 Outlet 1 Outlet 2

Gravel Trench Bed Hydraulic Table

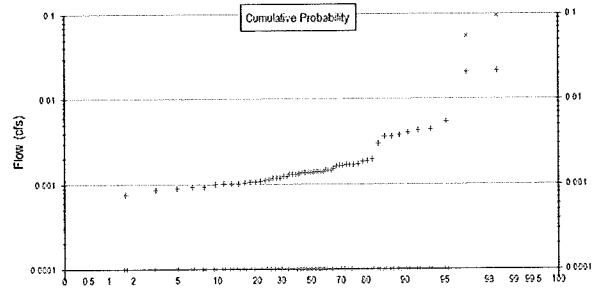
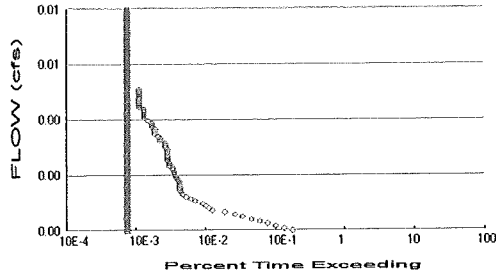
Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.012	0.000	0.000	0.000
0.0556	0.012	0.000	0.000	0.123
0.1111	0.012	0.000	0.000	0.123
0.1667	0.012	0.000	0.000	0.123
0.2222	0.012	0.001	0.000	0.123
0.2778	0.012	0.001	0.000	0.123
0.3333	0.012	0.001	0.000	0.123
0.3889	0.012	0.001	0.000	0.123
0.4444	0.012	0.002	0.000	0.123
0.5000	0.012	0.002	0.000	0.123
0.5556	0.012	0.002	0.000	0.123
0.6111	0.012	0.003	0.000	0.123
0.6667	0.012	0.003	0.000	0.123
0.7222	0.012	0.003	0.000	0.123
0.7778	0.012	0.003	0.000	0.123
0.8333	0.012	0.004	0.000	0.123
0.8889	0.012	0.004	0.000	0.123
0.9444	0.012	0.004	0.000	0.123
1.0000	0.012	0.004	0.000	0.123
1.0556	0.012	0.005	0.000	0.123
1.1111	0.012	0.005	0.000	0.123
1.1667	0.012	0.005	0.000	0.123
1.2222	0.012	0.006	0.000	0.123
1.2778	0.012	0.006	0.000	0.123
1.3333	0.012	0.006	0.000	0.123
1.3889	0.012	0.006	0.000	0.123
1.4444	0.012	0.007	0.000	0.123
1.5000	0.012	0.007	0.000	0.123
1.5556	0.012	0.007	0.000	0.123

1.6111	0.012	0.007	0.000	0.123
1.6667	0.012	0.008	0.000	0.123
1.7222	0.012	0.008	0.000	0.123
1.7778	0.012	0.008	0.000	0.123
1.8333	0.012	0.009	0.000	0.123
1.8889	0.012	0.009	0.000	0.123
1.9444	0.012	0.009	0.000	0.123
2.0000	0.012	0.009	0.000	0.123
2.0556	0.012	0.010	0.000	0.123
2.1111	0.012	0.010	0.000	0.123
2.1667	0.012	0.010	0.000	0.123
2.2222	0.012	0.010	0.000	0.123
2.2778	0.012	0.011	0.000	0.123
2.3333	0.012	0.011	0.000	0.123
2.3889	0.012	0.011	0.000	0.123
2.4444	0.012	0.012	0.000	0.123
2.5000	0.012	0.012	0.000	0.123
2.5556	0.012	0.012	0.000	0.123
2.6111	0.012	0.012	0.000	0.123
2.6667	0.012	0.013	0.000	0.123
2.7222	0.012	0.013	0.000	0.123
2.7778	0.012	0.013	0.000	0.123
2.8333	0.012	0.013	0.000	0.123
2.8889	0.012	0.014	0.000	0.123
2.9444	0.012	0.014	0.000	0.123
3.0000	0.012	0.014	0.000	0.123
3.0556	0.012	0.015	0.000	0.123
3.1111	0.012	0.015	0.000	0.123
3.1667	0.012	0.015	0.000	0.123
3.2222	0.012	0.015	0.000	0.123
3.2778	0.012	0.016	0.000	0.123
3.3333	0.012	0.016	0.000	0.123
3.3889	0.012	0.016	0.000	0.123
3.4444	0.012	0.016	0.000	0.123
3.5000	0.012	0.017	0.000	0.123
3.5556	0.012	0.017	0.000	0.123
3.6111	0.012	0.017	0.000	0.123
3.6667	0.012	0.018	0.000	0.123
3.7222	0.012	0.018	0.000	0.123
3.7778	0.012	0.018	0.000	0.123
3.8333	0.012	0.018	0.000	0.123
3.8889	0.012	0.019	0.000	0.123
3.9444	0.012	0.019	0.000	0.123
4.0000	0.012	0.019	0.000	0.123
4.0556	0.012	0.019	0.000	0.123
4.1111	0.012	0.020	0.000	0.123
4.1667	0.012	0.020	0.000	0.123
4.2222	0.012	0.020	0.000	0.123
4.2778	0.012	0.020	0.000	0.123
4.3333	0.012	0.021	0.000	0.123
4.3889	0.012	0.021	0.000	0.123
4.4444	0.012	0.021	0.000	0.123
4.5000	0.012	0.022	0.000	0.123
4.5556	0.012	0.022	0.000	0.123
4.6111	0.012	0.022	0.000	0.123
4.6667	0.012	0.022	0.000	0.123
4.7222	0.012	0.023	0.000	0.123
4.7778	0.012	0.023	0.000	0.123

4.8333	0.012	0.023	0.000	0.123
4.8889	0.012	0.023	0.000	0.123
4.9444	0.012	0.024	0.000	0.123
5.0000	0.012	0.024	0.000	0.123

Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 0.5808
 Total Impervious Area: 0

Mitigated Landuse Totals for POC #1

Total Pervious Area: 0.1473
 Total Impervious Area: 0.4335

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.001488
5 year	0.002697
10 year	0.003879
25 year	0.005953
50 year	0.008037
100 year	0.010696

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0
5 year	0
10 year	0
25 year	0
50 year	0
100 year	0

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.001	0.000
1950	0.002	0.000
1951	0.001	0.000
1952	0.001	0.000
1953	0.001	0.000
1954	0.004	0.000
1955	0.004	0.000
1956	0.001	0.000
1957	0.001	0.000
1958	0.001	0.055

1959	0.002	0.000
1960	0.001	0.000
1961	0.004	0.095
1962	0.001	0.000
1963	0.001	0.000
1964	0.003	0.000
1965	0.001	0.000
1966	0.001	0.000
1967	0.001	0.000
1968	0.001	0.000
1969	0.001	0.000
1970	0.001	0.000
1971	0.004	0.000
1972	0.001	0.000
1973	0.001	0.000
1974	0.002	0.000
1975	0.002	0.000
1976	0.001	0.000
1977	0.001	0.000
1978	0.001	0.000
1979	0.002	0.000
1980	0.002	0.000
1981	0.001	0.000
1982	0.002	0.000
1983	0.002	0.000
1984	0.001	0.000
1985	0.001	0.000
1986	0.004	0.000
1987	0.004	0.000
1988	0.001	0.000
1989	0.001	0.000
1990	0.002	0.000
1991	0.001	0.000
1992	0.001	0.000
1993	0.001	0.000
1994	0.001	0.000
1995	0.002	0.000
1996	0.005	0.000
1997	0.022	0.000
1998	0.001	0.000
1999	0.001	0.000
2000	0.001	0.000
2001	0.001	0.000
2002	0.001	0.000
2003	0.001	0.000
2004	0.001	0.000
2005	0.001	0.000
2006	0.021	0.000
2007	0.001	0.000
2008	0.002	0.000
2009	0.001	0.000

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0215	0.0954
2	0.0209	0.0549
3	0.0054	0.0000

4	0.0044	0.0000
5	0.0043	0.0000
6	0.0041	0.0000
7	0.0038	0.0000
8	0.0037	0.0000
9	0.0037	0.0000
10	0.0030	0.0000
11	0.0020	0.0000
12	0.0019	0.0000
13	0.0018	0.0000
14	0.0017	0.0000
15	0.0017	0.0000
16	0.0017	0.0000
17	0.0017	0.0000
18	0.0017	0.0000
19	0.0016	0.0000
20	0.0016	0.0000
21	0.0015	0.0000
22	0.0015	0.0000
23	0.0015	0.0000
24	0.0015	0.0000
25	0.0014	0.0000
26	0.0014	0.0000
27	0.0014	0.0000
28	0.0014	0.0000
29	0.0014	0.0000
30	0.0014	0.0000
31	0.0014	0.0000
32	0.0014	0.0000
33	0.0014	0.0000
34	0.0014	0.0000
35	0.0014	0.0000
36	0.0013	0.0000
37	0.0013	0.0000
38	0.0013	0.0000
39	0.0013	0.0000
40	0.0013	0.0000
41	0.0012	0.0000
42	0.0012	0.0000
43	0.0012	0.0000
44	0.0012	0.0000
45	0.0012	0.0000
46	0.0011	0.0000
47	0.0011	0.0000
48	0.0011	0.0000
49	0.0011	0.0000
50	0.0011	0.0000
51	0.0010	0.0000
52	0.0010	0.0000
53	0.0010	0.0000
54	0.0010	0.0000
55	0.0010	0.0000
56	0.0009	0.0000
57	0.0009	0.0000
58	0.0009	0.0000
59	0.0009	0.0000
60	0.0008	0.0000
61	0.0007	0.0000

Duration Flows
The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0007	947	4	0	Pass
0.0008	728	4	0	Pass
0.0009	551	4	0	Pass
0.0010	418	4	0	Pass
0.0010	321	4	1	Pass
0.0011	245	4	1	Pass
0.0012	182	4	2	Pass
0.0013	142	4	2	Pass
0.0013	101	4	3	Pass
0.0014	67	4	5	Pass
0.0015	60	4	6	Pass
0.0016	55	4	7	Pass
0.0016	49	4	8	Pass
0.0017	38	4	10	Pass
0.0018	33	4	12	Pass
0.0018	28	4	14	Pass
0.0019	25	4	16	Pass
0.0020	24	4	16	Pass
0.0021	23	4	17	Pass
0.0021	23	4	17	Pass
0.0022	23	4	17	Pass
0.0023	23	4	17	Pass
0.0024	22	4	18	Pass
0.0024	21	4	19	Pass
0.0025	20	4	20	Pass
0.0026	19	4	21	Pass
0.0027	19	4	21	Pass
0.0027	18	4	22	Pass
0.0028	18	4	22	Pass
0.0029	16	4	25	Pass
0.0030	16	4	25	Pass
0.0030	15	4	26	Pass
0.0031	15	4	26	Pass
0.0032	15	4	26	Pass
0.0032	15	4	26	Pass
0.0033	15	4	26	Pass
0.0034	15	4	26	Pass
0.0035	14	4	28	Pass
0.0035	14	4	28	Pass
0.0036	14	4	28	Pass
0.0037	12	4	33	Pass
0.0038	12	4	33	Pass
0.0038	11	4	36	Pass
0.0039	10	4	40	Pass
0.0040	10	4	40	Pass
0.0041	10	4	40	Pass
0.0041	9	4	44	Pass
0.0042	9	4	44	Pass
0.0043	9	4	44	Pass
0.0044	8	4	50	Pass
0.0044	7	4	57	Pass
0.0045	7	4	57	Pass
0.0046	7	4	57	Pass

0.0046	7	4	57	Pass
0.0047	7	4	57	Pass
0.0048	6	4	66	Pass
0.0049	6	4	66	Pass
0.0049	6	4	66	Pass
0.0050	6	4	66	Pass
0.0051	6	4	66	Pass
0.0052	6	4	66	Pass
0.0052	6	4	66	Pass
0.0053	6	4	66	Pass
0.0054	6	4	66	Pass
0.0055	4	4	100	Pass
0.0055	4	4	100	Pass
0.0056	4	4	100	Pass
0.0057	4	4	100	Pass
0.0058	4	4	100	Pass
0.0058	4	4	100	Pass
0.0059	4	4	100	Pass
0.0060	4	4	100	Pass
0.0060	4	4	100	Pass
0.0061	4	4	100	Pass
0.0062	4	4	100	Pass
0.0063	4	4	100	Pass
0.0063	4	4	100	Pass
0.0064	4	4	100	Pass
0.0065	4	4	100	Pass
0.0066	4	4	100	Pass
0.0066	4	4	100	Pass
0.0067	4	4	100	Pass
0.0068	4	4	100	Pass
0.0069	4	4	100	Pass
0.0069	4	4	100	Pass
0.0070	4	4	100	Pass
0.0071	4	4	100	Pass
0.0072	4	4	100	Pass
0.0072	4	4	100	Pass
0.0073	4	4	100	Pass
0.0074	4	4	100	Pass
0.0074	4	4	100	Pass
0.0075	4	4	100	Pass
0.0076	4	4	100	Pass
0.0077	4	4	100	Pass
0.0077	4	4	100	Pass
0.0078	4	4	100	Pass
0.0079	4	4	100	Pass
0.0080	4	4	100	Pass
0.0080	4	4	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Gravel Trench Bed 1 POC	<input type="checkbox"/>	76.66			<input type="checkbox"/>	99.76			
Total Volume Infiltrated		76.66	0.00	0.00		99.76	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

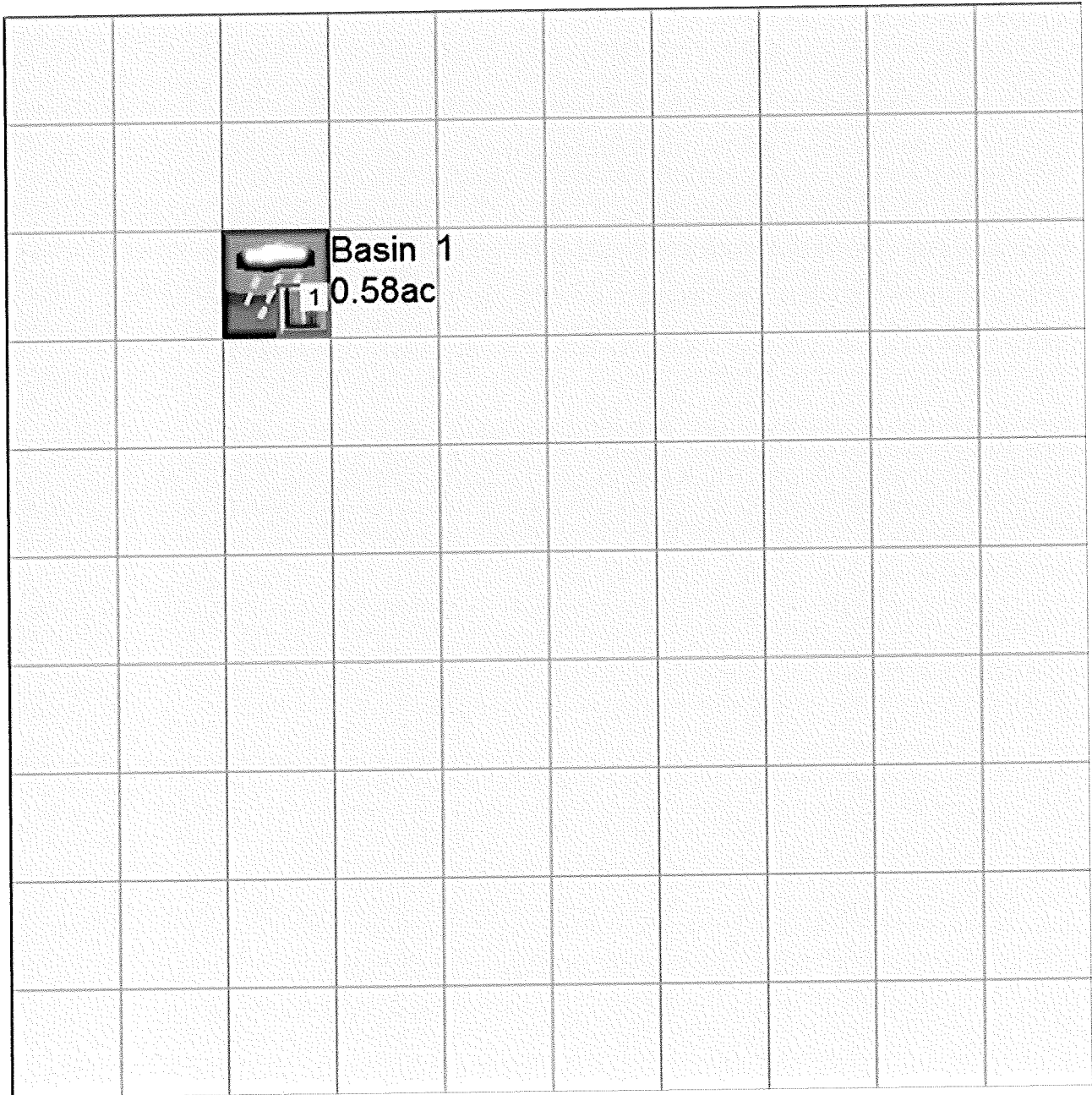
PERLND Changes

No PERLND changes have been made.

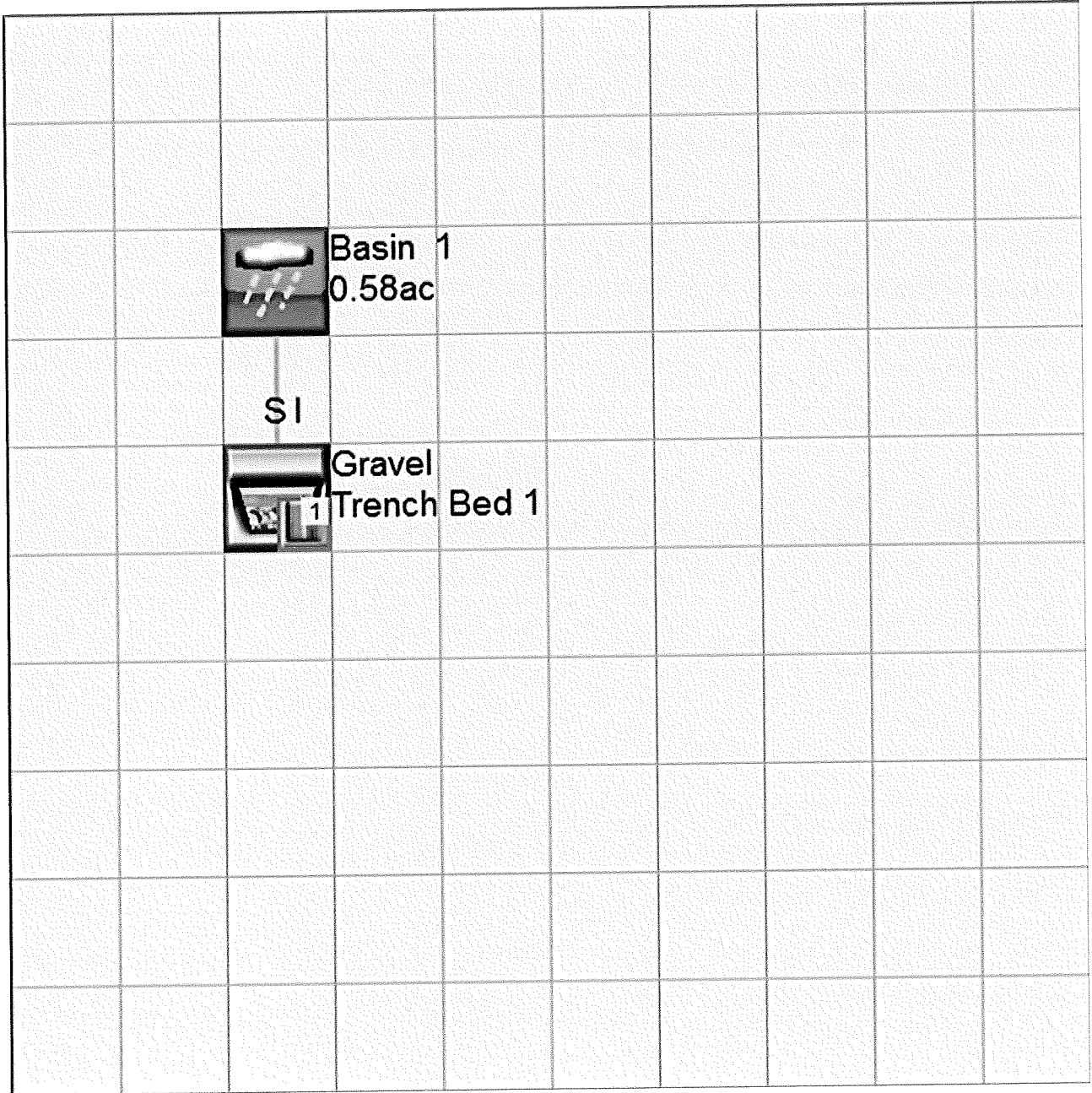
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



WWHM2012
PROJECT REPORT

Project Name: STODDARD_WQ SIZE_2YR
Site Name: Stoddard Industry
Site Address: 18660 58th Ave NE
City : Arlington
Report Date: 6/20/2014
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.20
Version : 2013/10/17

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1WQ
Bypass: No

Ground Water: No

<u>Pervious Land Use</u>	<u>Acres</u>
A B, Forest, Flat	.0737

Pervious Total	0.0737
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<u>Impervious Land Use</u>	<u>Acres</u>
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Impervious Total	0
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Basin Total	0.0737
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Element Flows To:

Surface	Interflow	Groundwater
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MITIGATED LAND USE

Name : Basin 1
Bypass: No

Ground Water: No

<u>Pervious Land Use</u>	<u>Acres</u>
--------------------------	--------------

Pervious Total	0
<u>Impervious Land Use</u>	<u>Acres</u>
PARKING FLAT	0.0737
Impervious Total	0.0737
Basin Total	0.0737

Element Flows To:

Surface	Interflow	Groundwater
Stoddard WQ Trench Bed	Stoddard WQ Trench Bed	

Name : Stoddard WQ Trench Bed 1
 Bottom Length: 10.00 ft.
 Bottom Width: 5.00 ft.
 Trench bottom slope 1: 0.01 To 1
 Trench Left side slope 0: 1 To 1
 Trench right side slope 2: 1 To 1
 Material thickness of first layer: 3
 Pour Space of material for first layer: 0.4
 Material thickness of second layer: 2
 Pour Space of material for second layer: 0.33
 Material thickness of third layer: 0
 Pour Space of material for third layer: 0
 Infiltration On
 Infiltration rate: 20
 Infiltration safety factor: 0.025
Discharge Structure
 Riser Height: 4.5 ft.
 Riser Diameter: 6 in.

WATER QUALITY STANDARD COMPLIANCE

INFILTRATION BED FLOW THROUGH THE BOTTOM:

10-FT X 5-FT X 0.000579 FPS @ PR=0.5IN/HR) = 0.029 CFS

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.021084
5 year	0.02795

INFILTRATION RATE, 0.029 CFS PER WWHM4 >> DEVELOPED 2-YEAR RUNOFF, 0.021CFS

THEREFORE:

WATER QUALITY CELL IS ADEQUATE AT 10' X 5' X 5'DEEP

Element Flows To:

Outlet 1

Outlet 2

Gravel Trench Bed Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.000000	0.001148	0.000000	0.000000	0.000000
0.055556	0.001173	0.000026	0.000000	0.000579
0.111111	0.001199	0.000052	0.000000	0.000579
0.166667	0.001225	0.000079	0.000000	0.000579
0.222222	0.001250	0.000107	0.000000	0.000579
0.277778	0.001276	0.000135	0.000000	0.000579
0.333333	0.001302	0.000163	0.000000	0.000579
0.388889	0.001327	0.000193	0.000000	0.000579
0.444444	0.001353	0.000222	0.000000	0.000579
0.500000	0.001379	0.000253	0.000000	0.000579
0.555556	0.001404	0.000284	0.000000	0.000579
0.611111	0.001430	0.000315	0.000000	0.000579
0.666667	0.001456	0.000347	0.000000	0.000579
0.722222	0.001482	0.000380	0.000000	0.000579
0.777778	0.001507	0.000413	0.000000	0.000579
0.833333	0.001533	0.000447	0.000000	0.000579
0.888889	0.001559	0.000481	0.000000	0.000579
0.944444	0.001584	0.000516	0.000000	0.000579
1.000000	0.001610	0.000552	0.000000	0.000579
1.055556	0.001636	0.000588	0.000000	0.000579
1.111111	0.001662	0.000624	0.000000	0.000579
1.166667	0.001687	0.000661	0.000000	0.000579
1.222222	0.001713	0.000699	0.000000	0.000579
1.277778	0.001739	0.000738	0.000000	0.000579
1.333333	0.001765	0.000777	0.000000	0.000579
1.388889	0.001790	0.000816	0.000000	0.000579
1.444444	0.001816	0.000856	0.000000	0.000579
1.500000	0.001842	0.000897	0.000000	0.000579
1.555556	0.001868	0.000938	0.000000	0.000579
1.611111	0.001894	0.000980	0.000000	0.000579
1.666667	0.001919	0.001022	0.000000	0.000579
1.722222	0.001945	0.001065	0.000000	0.000579
1.777778	0.001971	0.001109	0.000000	0.000579
1.833333	0.001997	0.001153	0.000000	0.000579
1.888889	0.002023	0.001197	0.000000	0.000579
1.944444	0.002049	0.001243	0.000000	0.000579
2.000000	0.002074	0.001288	0.000000	0.000579
2.055556	0.002100	0.001335	0.000000	0.000579
2.111111	0.002126	0.001382	0.000000	0.000579
2.166667	0.002152	0.001429	0.000000	0.000579
2.222222	0.002178	0.001477	0.000000	0.000579
2.277778	0.002204	0.001526	0.000000	0.000579
2.333333	0.002230	0.001575	0.000000	0.000579
2.388889	0.002255	0.001625	0.000000	0.000579
2.444444	0.002281	0.001676	0.000000	0.000579
2.500000	0.002307	0.001727	0.000000	0.000579
2.555556	0.002333	0.001778	0.000000	0.000579

2.611111	0.002359	0.001830	0.000000	0.000579
2.666667	0.002385	0.001883	0.000000	0.000579
2.722222	0.002411	0.001936	0.000000	0.000579
2.777778	0.002437	0.001990	0.000000	0.000579
2.833333	0.002463	0.002045	0.000000	0.000579
2.888889	0.002489	0.002100	0.000000	0.000579
2.944444	0.002514	0.002155	0.000000	0.000579
3.000000	0.002540	0.002211	0.000000	0.000579
3.055556	0.002566	0.002258	0.000000	0.000579
3.111111	0.002592	0.002305	0.000000	0.000579
3.166667	0.002618	0.002353	0.000000	0.000579
3.222222	0.002644	0.002401	0.000000	0.000579
3.277778	0.002670	0.002450	0.000000	0.000579
3.333333	0.002696	0.002499	0.000000	0.000579
3.388889	0.002722	0.002549	0.000000	0.000579
3.444444	0.002748	0.002599	0.000000	0.000579
3.500000	0.002774	0.002650	0.000000	0.000579
3.555556	0.002800	0.002701	0.000000	0.000579
3.611111	0.002826	0.002752	0.000000	0.000579
3.666667	0.002852	0.002804	0.000000	0.000579
3.722222	0.002878	0.002857	0.000000	0.000579
3.777778	0.002904	0.002910	0.000000	0.000579
3.833333	0.002930	0.002963	0.000000	0.000579
3.888889	0.002956	0.003017	0.000000	0.000579
3.944444	0.002982	0.003072	0.000000	0.000579
4.000000	0.003008	0.003127	0.000000	0.000579
4.055556	0.003034	0.003182	0.000000	0.000579
4.111111	0.003060	0.003238	0.000000	0.000579
4.166667	0.003086	0.003294	0.000000	0.000579
4.222222	0.003112	0.003351	0.000000	0.000579
4.277778	0.003139	0.003409	0.000000	0.000579
4.333333	0.003165	0.003466	0.000000	0.000579
4.388889	0.003191	0.003525	0.000000	0.000579
4.444444	0.003217	0.003583	0.000000	0.000579
4.500000	0.003243	0.003642	0.000000	0.000579
4.555556	0.003269	0.003702	0.063764	0.000579
4.611111	0.003295	0.003762	0.180352	0.000579
4.666667	0.003321	0.003823	0.331328	0.000579
4.722222	0.003347	0.003884	0.510112	0.000579
4.777778	0.003373	0.003946	0.712903	0.000579
4.833333	0.003400	0.004008	0.937136	0.000579
4.888889	0.003426	0.004070	1.180926	0.000579
4.944444	0.003452	0.004133	1.442815	0.000579
5.000000	0.003478	0.004197	1.721628	0.000579
4.777778	0.003142	0.003534	0.712903	0.000463
4.833333	0.003168	0.003592	0.937136	0.000463
4.888889	0.003194	0.003650	1.180926	0.000463
4.944444	0.003220	0.003709	1.442815	0.000463
5.000000	0.003246	0.003768	1.721628	0.000463

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
 Total Pervious Area:0.0737
 Total Impervious Area:0

Mitigated Landuse Totals for POC #1
 Total Pervious Area:0
 Total Impervious Area:0.0737

Flow Frequency Return Periods for Predeveloped. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.000189
5 year	0.000342
10 year	0.000492
25 year	0.000755
50 year	0.00102
100 year	0.001357

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.021084
5 year	0.02795
10 year	0.032691
25 year	0.038914
50 year	0.043726
100 year	0.048691

Stream Protection Duration

Annual Peaks for Predeveloped and Mitigated. POC #1

<u>Year</u>	<u>Predeveloped</u>	<u>Mitigated</u>
1949	0.000	0.015
1950	0.000	0.035
1951	0.000	0.021
1952	0.000	0.019
1953	0.000	0.017
1954	0.001	0.028
1955	0.000	0.027
1956	0.000	0.014
1957	0.000	0.024
1958	0.000	0.044
1959	0.000	0.020
1960	0.000	0.017
1961	0.000	0.038
1962	0.000	0.024
1963	0.000	0.023
1964	0.000	0.018
1965	0.000	0.012
1966	0.000	0.013
1967	0.000	0.029

1968	0.000	0.032
1969	0.000	0.033
1970	0.000	0.019
1971	0.000	0.024
1972	0.000	0.045
1973	0.000	0.020
1974	0.000	0.027
1975	0.000	0.024
1976	0.000	0.022
1977	0.000	0.018
1978	0.000	0.015
1979	0.000	0.038
1980	0.000	0.015
1981	0.000	0.020
1982	0.000	0.019
1983	0.000	0.022
1984	0.000	0.021
1985	0.000	0.025
1986	0.001	0.021
1987	0.001	0.028
1988	0.000	0.015
1989	0.000	0.017
1990	0.000	0.013
1991	0.000	0.017
1992	0.000	0.018
1993	0.000	0.018
1994	0.000	0.012
1995	0.000	0.020
1996	0.001	0.020
1997	0.003	0.030
1998	0.000	0.029
1999	0.000	0.016
2000	0.000	0.015
2001	0.000	0.020
2002	0.000	0.012
2003	0.000	0.016
2004	0.000	0.043
2005	0.000	0.021
2006	0.003	0.023
2007	0.000	0.027
2008	0.000	0.026
2009	0.000	0.022

Stream Protection Duration

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0027	0.0448
2	0.0026	0.0440
3	0.0007	0.0429
4	0.0006	0.0385
5	0.0005	0.0376
6	0.0005	0.0346
7	0.0005	0.0330
8	0.0005	0.0325
9	0.0005	0.0301
10	0.0004	0.0288

11	0.0002	0.0286
12	0.0002	0.0284
13	0.0002	0.0281
14	0.0002	0.0275
15	0.0002	0.0271
16	0.0002	0.0267
17	0.0002	0.0255
18	0.0002	0.0251
19	0.0002	0.0242
20	0.0002	0.0242
21	0.0002	0.0238
22	0.0002	0.0235
23	0.0002	0.0233
24	0.0002	0.0225
25	0.0002	0.0224
26	0.0002	0.0221
27	0.0002	0.0216
28	0.0002	0.0213
29	0.0002	0.0212
30	0.0002	0.0212
31	0.0002	0.0207
32	0.0002	0.0203
33	0.0002	0.0201
34	0.0002	0.0200
35	0.0002	0.0197
36	0.0002	0.0196
37	0.0002	0.0195
38	0.0002	0.0192
39	0.0002	0.0187
40	0.0002	0.0187
41	0.0002	0.0183
42	0.0002	0.0182
43	0.0002	0.0181
44	0.0001	0.0175
45	0.0001	0.0174
46	0.0001	0.0174
47	0.0001	0.0171
48	0.0001	0.0167
49	0.0001	0.0165
50	0.0001	0.0163
51	0.0001	0.0155
52	0.0001	0.0154
53	0.0001	0.0153
54	0.0001	0.0152
55	0.0001	0.0148
56	0.0001	0.0142
57	0.0001	0.0133
58	0.0001	0.0125
59	0.0001	0.0124
60	0.0001	0.0124
61	0.0001	0.0122

Stream Protection Duration
POC #1

Facility FAILED duration standard for 1+ flows.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0001	960	18207	1896	Fail
0.0001	740	18122	2448	Fail
0.0001	551	18036	3273	Fail
0.0001	425	17977	4229	Fail
0.0001	330	17918	5429	Fail
0.0001	246	17828	7247	Fail
0.0002	185	17753	9596	Fail
0.0002	146	17683	12111	Fail
0.0002	101	17592	17417	Fail
0.0002	72	17517	24329	Fail
0.0002	63	17432	27669	Fail
0.0002	56	17362	31003	Fail
0.0002	51	17282	33886	Fail
0.0002	37	17218	46535	Fail
0.0002	33	17154	51981	Fail
0.0002	28	17106	61092	Fail
0.0002	25	17047	68188	Fail
0.0003	24	16983	70762	Fail
0.0003	23	16924	73582	Fail
0.0003	23	16849	73256	Fail
0.0003	23	16790	73000	Fail
0.0003	23	16731	72743	Fail
0.0003	22	16667	75759	Fail
0.0003	21	16608	79085	Fail
0.0003	20	16550	82750	Fail
0.0003	19	16491	86794	Fail
0.0003	19	16432	86484	Fail
0.0003	18	16368	90933	Fail
0.0004	18	16304	90577	Fail
0.0004	16	16266	101662	Fail
0.0004	16	16202	101262	Fail
0.0004	15	16116	107440	Fail
0.0004	15	16047	106980	Fail
0.0004	15	15977	106513	Fail
0.0004	15	15870	105800	Fail
0.0004	15	15790	105266	Fail
0.0004	15	15710	104733	Fail
0.0004	14	15459	110421	Fail
0.0004	14	15341	109578	Fail
0.0005	14	15202	108585	Fail
0.0005	12	15100	125833	Fail
0.0005	12	15042	125350	Fail
0.0005	11	14935	135772	Fail
0.0005	10	14871	148710	Fail
0.0005	10	14822	148220	Fail
0.0005	10	14758	147580	Fail
0.0005	9	14694	163266	Fail
0.0005	9	14641	162677	Fail
0.0005	9	14582	162022	Fail
0.0006	8	14539	181737	Fail
0.0006	8	14507	181337	Fail

0.0006	7	14459	206557	Fail
0.0006	7	14405	205785	Fail
0.0006	7	14352	205028	Fail
0.0006	7	14309	204414	Fail
0.0006	6	14261	237683	Fail
0.0006	6	14213	236883	Fail
0.0006	6	14154	235900	Fail
0.0006	6	14111	235183	Fail
0.0006	6	14063	234383	Fail
0.0007	6	14010	233500	Fail
0.0007	6	13967	232783	Fail
0.0007	6	13908	231800	Fail
0.0007	6	13849	230816	Fail
0.0007	4	13801	345025	Fail
0.0007	4	13742	343550	Fail
0.0007	4	13700	342500	Fail
0.0007	4	13657	341425	Fail
0.0007	4	13603	340075	Fail
0.0007	4	13571	339275	Fail
0.0007	4	13534	338350	Fail
0.0008	4	13496	337400	Fail
0.0008	4	13459	336475	Fail
0.0008	4	13427	335675	Fail
0.0008	4	13384	334600	Fail
0.0008	4	13363	334075	Fail
0.0008	4	13320	333000	Fail
0.0008	4	13293	332325	Fail
0.0008	4	13256	331400	Fail
0.0008	4	13213	330325	Fail
0.0008	4	13181	329525	Fail
0.0009	4	13154	328850	Fail
0.0009	4	13117	327925	Fail
0.0009	4	13090	327250	Fail
0.0009	4	13053	326325	Fail
0.0009	4	13026	325650	Fail
0.0009	4	12999	324975	Fail
0.0009	4	12962	324050	Fail
0.0009	4	12919	322975	Fail
0.0009	4	12897	322425	Fail
0.0009	4	12849	321225	Fail
0.0009	4	12812	320300	Fail
0.0010	4	12774	319350	Fail
0.0010	4	12742	318550	Fail
0.0010	4	12700	317500	Fail
0.0010	4	12673	316825	Fail
0.0010	4	12630	315750	Fail
0.0010	4	12603	315075	Fail
0.0010	4	12571	314275	Fail
0.0010	4	12534	313350	Fail

The development has an increase in flow durations from 1/2 Predeveloped 2 year flow to the 2 year flow or more than a 10% increase from the 2 year to the 50 year flow.

The development has an increase in flow durations for more than 50% of the flows for the range of the duration analysis.

Water Quality BMP Flow and Volume for POC #1
On-line facility volume: 0.0211 acre-feet
On-line facility target flow: 0.0173 cfs.

Perlnd and Implnd Changes

No changes have been made.

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LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Stoddard WQ Trench Bed 1	<input type="checkbox"/>	13.00			<input type="checkbox"/>	99.91			
Total Volume Infiltrated		13.00	0.00	0.00		99.91	0.00	0%	No Treat Credit
Compliance with LID Standard 8% of 2-yr to 50-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

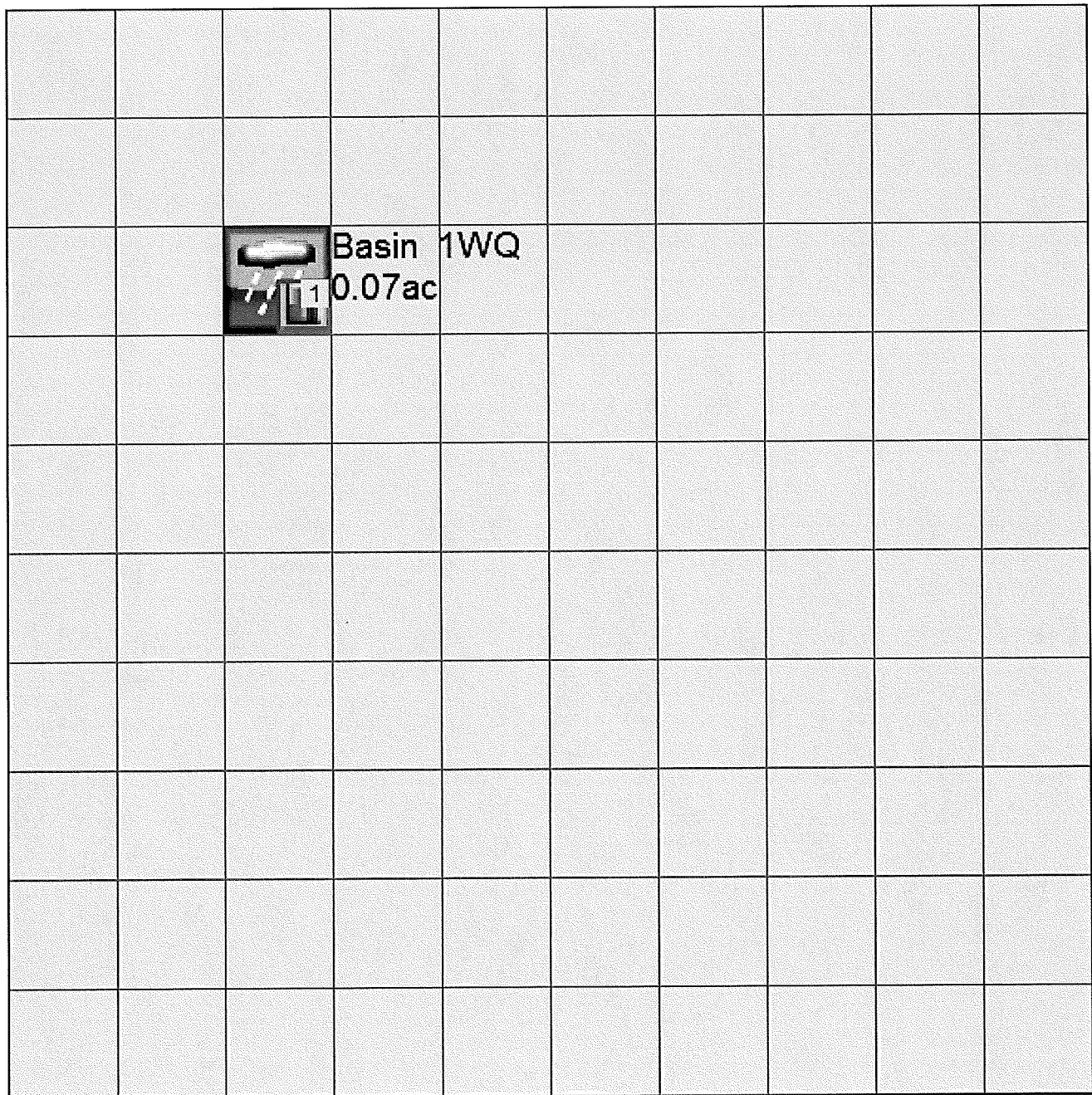
PERLND Changes

No PERLND changes have been made.

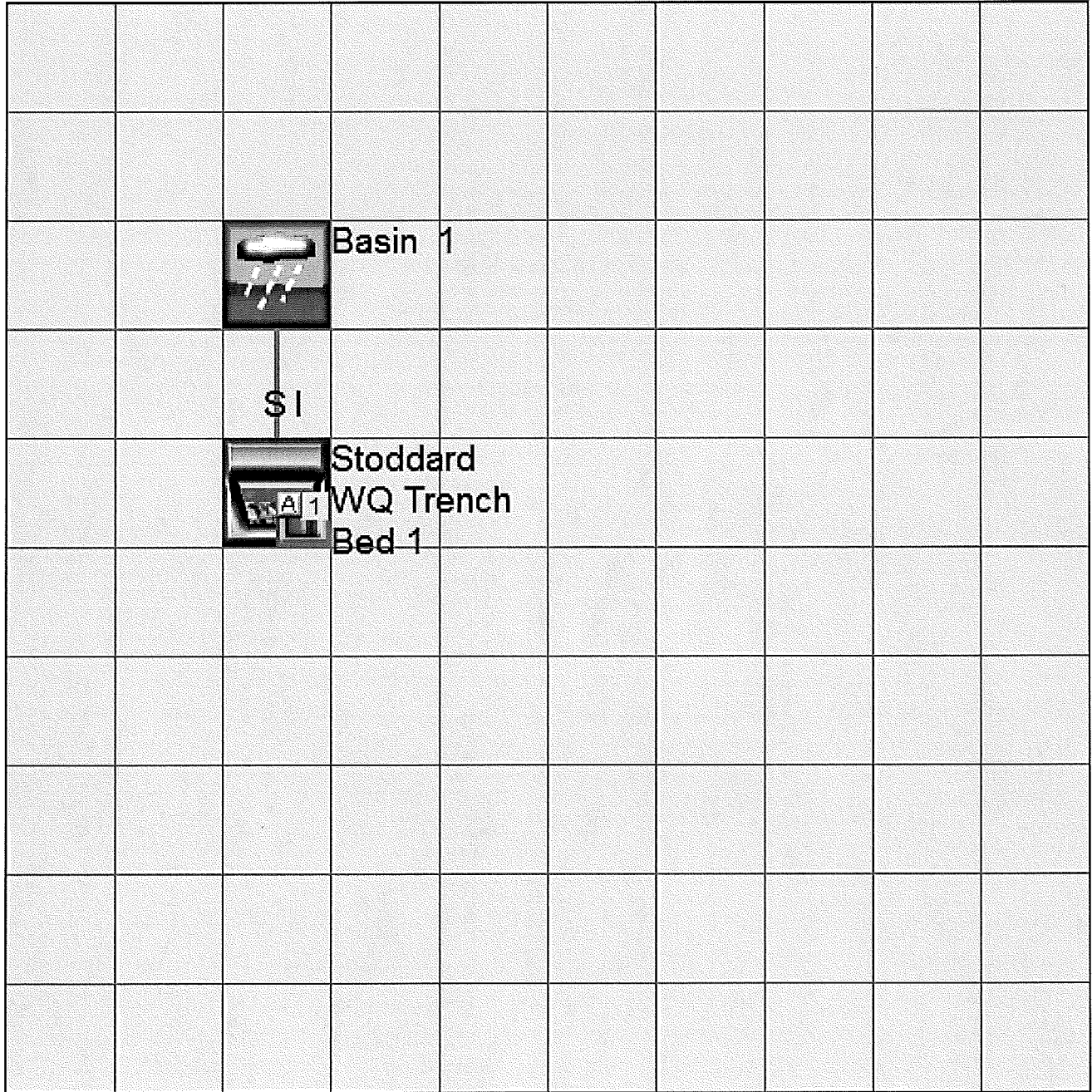
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped HSPF Message File

Mitigated HSPF Message File

Disclaimer

Legal Notice

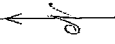
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6/18/2014
Stoddard International
Building Expansion

□ **SITE PHOTOS AND MAPS**



- City Limits
- Urban Growth Area
- Private Roads
- Rail line
- APD Subdivisions
- APD Safety Zones

- (A)
- (B)
- (C)
- (D)

Land Use

- SR = Suburban Residential
- RLMD = Low to Moderate Density Residential
- RMD = Moderate Density Residential
- RHD = High Density Residential
- OTRD = Old Town Residential District
- NC = Neighborhood Commercial
- OTBD - 1 = Old Town Business District 1
- OTBD - 2 = Old Town Business District 2
- OTBD - 3 = Old Town Business District 3
- GC = General Commercial
- HC = Highway Commercial
- BP = Business Park
- LI = Light Industrial
- GI = General Industrial
- PSP = Public/Semi-Public
- MS = Medical Services
- AF = Aviation Flightline
- Future Planning Area
- Coordinated Water Service Area
- Contract Rezone
- TDR Overlay Zone
- MPN = Master Planned Neighborhood Overlay Zone

THIS IS A COPY OF THE OFFICIAL LAND USE MAP OF THE CITY OF ARLINGTON, WHICH WAS ADOPTED AS PART OF THE COMPREHENSIVE PLAN BY THE CITY COUNCIL ON 8 DECEMBER 2005 PURSUANT TO ORDINANCE NO. 1975.

Barbara Tolbert
Barbara Tolbert
Mayor

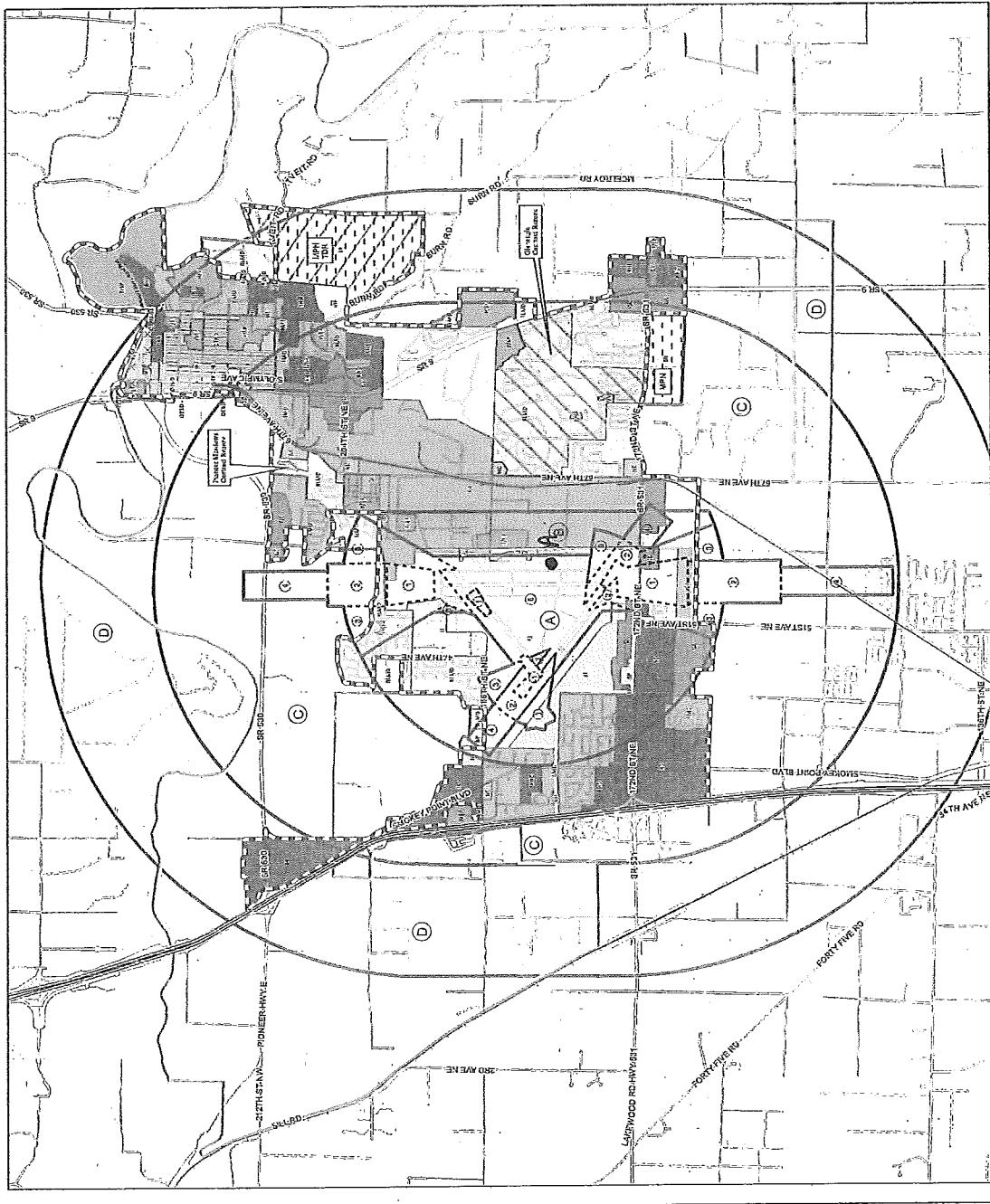
Kathie Barfield
Kathie Barfield
City Clerk

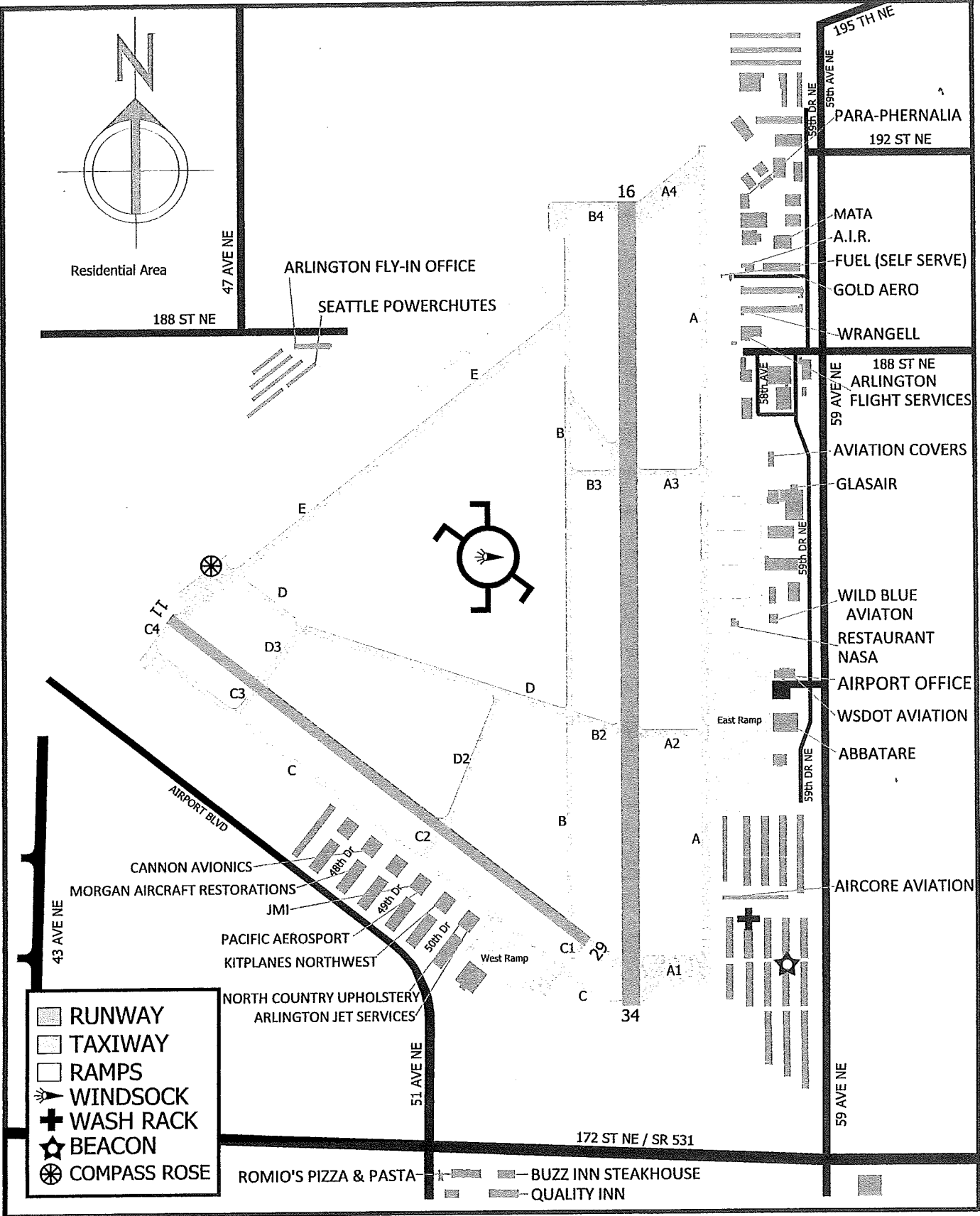
**City of Arlington
Land Use Map**

Scale: 1 inch = 3,500 feet

File: LandUse_11x17_13.mxd Date: 08/29/2013

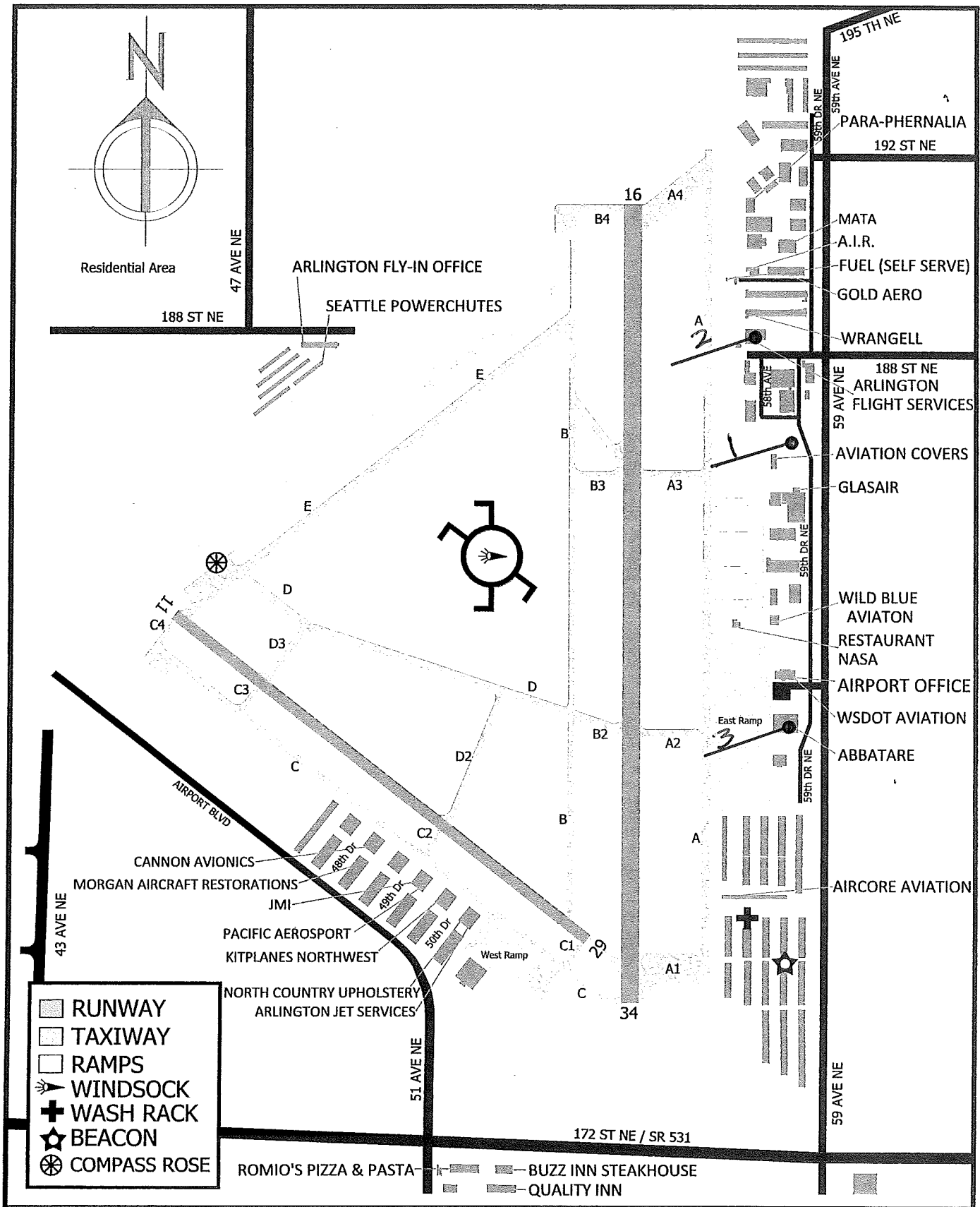
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The City of Arlington is not liable for any loss of property. The City of Arlington is not liable for any loss of life. The City of Arlington is not liable for any loss of limb. The City of Arlington is not liable for any loss of sight. The City of Arlington is not liable for any loss of hearing. The City of Arlington is not liable for any loss of speech. The City of Arlington is not liable for any loss of memory. The City of Arlington is not liable for any loss of consciousness. The City of Arlington is not liable for any loss of reason. The City of Arlington is not liable for any loss of judgment. The City of Arlington is not liable for any loss of self-control. The City of Arlington is not liable for any loss of freedom. The City of Arlington is not liable for any loss of justice. The City of Arlington is not liable for any loss of peace. The City of Arlington is not liable for any loss of order. The City of Arlington is not liable for any loss of good will. 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The City of Arlington is not liable for any loss of sisterly love. The City of Arlington is not liable for any loss of parental love. The City of Arlington is not liable for any loss of marital love. The City of Arlington is not liable for any loss of family love. The City of Arlington is not liable for any loss of community love. The City of Arlington is not liable for any loss of national love. The City of Arlington is not liable for any loss of world love. The City of Arlington is not liable for any loss of universal love. The City of Arlington is not liable for any loss of God's love. The City of Arlington is not liable for any loss of Jesus' love. The City of Arlington is not liable for any loss of the Holy Spirit's love. The City of Arlington is not liable for any loss of eternal life. The City of Arlington is not liable for any loss of heaven. The City of Arlington is not liable for any loss of paradise. The City of Arlington is not liable for any loss of glory. 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6/18/2014
Stoddard International
Building Expansion

□ **SOIL LOGS**



CASCADE SURVEYING & ENGINEERING, INC.

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(360) 435-5551 • fax: (360) 435-4012



SURVEYORS
ENGINEERS
PLANNERS

SOIL LOGS Abbatore #18566 4/27/2009

Soil Log 1

0'-2.5' Brown loamy sand
2.5'-5'+ Tan gravelly, medium sand
No H2O or Hard pan
Roots @ 2.5'

Soil Log 2

0'-2' Brown loamy sand
2'-3' Tan loamy gravelly medium sand
3'-9'+ Tan gravelly medium sand
No H2O or Hard pan
Roots @ 2.5'

Soil Log 3

0'-1' Brown loamy sand
1'-3' Tan loamy sand
3'-11' Tan gravelly medium sand

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www.cascadesurveying.com



SURVEYORS
ENGINEERS
PLANNERS

Universal Aerospace Co., Inc.

Project # 19425 June 6, 2012

SOIL LOG 1	0-24" 24-60" 60-120"+	Red brown loamy sand Gray gravelly medium sand Gray medium sand No H ² O
SOIL LOG 2	0-18" 18-36" 36-120"+	Red brown loamy sand Tan gray gravelly medium sand Gray gravelly medium sand No H ² O
SOIL LOG 3	0-12" 12-48" 48-84" 84-125"+	Topsoil (loamy sand) Tan gravelly medium sand Tan gray gravelly medium sand Gray medium sand No H ² O

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SURVEYORS
ENGINEERS
PLANNERS

City of Arlington Taxi-way

Project # 15538 July 7, 2004

SOIL LOG 1

0-2'
2-4'
4-12'

Brown Sandy Loam
Tan Gravelly Medium Sand
Gray Gravelly Medium Sand

6/18/2014
Stoddard International
Building Expansion

OPERATIONS & MAINTENANCE

Maintenance Plan for Privately Maintained Drainage Facilities

Drainage System Inspection Schedule:

The drainage system should be monitored periodically. For the first year after completion of construction, the system should be monitored after every large storm event (> 1-in in 24-hrs), and, during the period Oct. 1- Mar. 31 inspections should be conducted monthly. From April 1-Sept. 30, the facility should be monitored on a quarterly basis. Once the performance characteristics of the facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicate that a more frequent schedule is required.

		MAINTENANCE COMPONENT	
		CATCH BASIN	
GENERAL	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
	TRASH & DEBRIS	TRASH OR DEBRIS WHICH IS LOCATED IMMEDIATELY IN FRONT OF THE CATCH BASIN OPENING OR IS BLOCKING INLETTING CAPACITY OF THE BASIN BY MORE THAN 10%. TRASH OR DEBRIS IN THE BASIN THAT EXCEEDS 60% OF THE SUMP DEPTH AS MEASURED FROM THE BOTTOM OF BASIN TO INVERT OF THE LOWEST PIPE INTO OR OUT OF THE BASIN, BUT IN NO CASE LESS THAN A MINIMUM OF SIX INCHES CLEARANCE FROM THE DEBRIS SURFACE TO THE INVERT OF THE LOWEST PIPE. TRASH OR DEBRIS IN ANY INLET OR OUTLET PIPE BLOCKING MORE THAN 1/3 OF ITS HEIGHT. DEAD ANIMALS OR VEGETATION THAT COULD GENERATE ODORS THAT COULD CAUSE COMPLAINTS OR DANGEROUS GASES (E.G., METHANE).	NO TRASH OR DEBRIS LOCATED IMMEDIATELY IN FRONT OF CATCH BASIN OR ON GRATE OPENING. NO TRASH OR DEBRIS IN THE CATCH BASIN. INLET AND OUTLET PIPES FREE OF TRASH OR DEBRIS. NO DEAD ANIMALS OR VEGETATION PRESENT WITHIN THE CATCH BASIN.
	SEDIMENT	SEDIMENT (IN THE BASIN) THAT EXCEEDS 60% OF THE SUMP DEPTH AS MEASURED FROM THE BOTTOM OF BASIN TO INVERT OF THE LOWEST PIPE INTO OR OUT OF THE BASIN, BUT IN NO CASE LESS THAN A MINIMUM OF 6 INCHES CLEARANCE FROM THE SEDIMENT SURFACE OF THE INVERT OF THE LOWEST PIPE.	NO SEDIMENT IN THE CATCH BASIN
	STRUCTURE DAMAGE TO FRAME AND OR TOP SLAB	TOP SLAB HAS HOLES LARGER THAN 2 SQUARE INCHES OR CRACKS WIDER THAN 1/4 INCH (INTENT IS TO MAKE SURE NO MATERIAL IS RUNNING INTO BASIN).	TOP SLAB IS FREE OF HOLES AND CRACKS
		FRAME NOT SITTING FLUSH ON TOP SLAB, I.E., SEPARATION OF MORE THAN 3/4 INCH OF THE FRAME FROM THE TOP SLAB. FRAME NOT SECURELY ATTACHED.	FRAME IS SITTING FLUSH ON THE RISER RINGS OR TOP SLAB AND FIRMLY ATTACHED.

	FRACTURES OR CRACKS IN BASIN WALLS / BOTTOM	MAINTENANCE PERSON JUDGES THAT STRUCTURE IS UNSOUND.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS
		GROUT FILLET HAS SEPARATED OR CRACKED WIDER THAN 1/2 INCH AND LONGER THAN 1 FOOT AT THE JOINT OF ANY INLET/OUTLET PIPE OR ANY EVIDENCE OF SOIL PARTICLES ENTERING CATCH BASIN THROUGH CRACKS.	PIPE IS REGROUTED AND SECURE AT THE BASE OF THE WALL
	SETTLEMENT / MISALIGNMENT	IF FAILURE OF BASIN HAS CREATED A SAFETY, FUNCTION, OR DESIGN PROBLEM.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS.
	VEGETATION	VEGETATION GROWING ACROSS AND BLOCKING MORE THAN 10% OF THE BASIN OPENING.	NO VEGETATION BLOCKING OPENING TO BASIN.
		VEGETATION GROWING IN INLET/OUTLET PIPE JOINTS THAT IS MORE THAN SIX INCHES TALL AND LESS THAN SIX INCHES APART	NO VEGETATION OR ROOT GROWTH PRESENT.
CONTAMINATION AND POLLUTION	ANY EVIDENCE OF OIL, GASOLINE, OR OTHER CONTAMINANTS OR POLLUTANTS. (COORDINATE REMOVAL/CLEANUP WITH LOCAL WATER QUALITY RESPONSE AGENCY).	NO CONTAMINANTS OR POLLUTANTS PRESENT. (COORDINATION WITH HEALTH DEPARTMENT).	
CATCH BASIN COVER	COVER NOT IN PLACE	COVER IS MISSING OR ONLY PARTIALLY IN PLACE. ANY OPEN CATCH BASIN REQUIRES MAINTENANCE.	CATCH BASIN COVER IS CLOSED.
	LOCKING MECHANISM NOT WORKING.	MECHANISM CANNOT BE OPENED BY ONE MAINTENANCE PERSON WITH PROPER TOOLS. BOLTS INTO FRAME HAVE LESS THAN 1/2 INCH OF THREAD.	MECHANISM OPENS WITH PROPER TOOLS.
	COVER DIFFICULT TO REMOVE	ONE MAINTENANCE PERSON CANNOT REMOVE LID AFTER APPLYING NORMAL LIFTING PRESSURE. (INTENT IS KEEP COVER FROM SEALING OFF ACCESS TO MAINTENANCE.)	COVER CAN BE REMOVED BY ONE MAINTENANCE PERSON.
LADDER	LADDER RUNGS UNSAFE	LADDER IS UNSAFE DUE TO MISSING RUNGS, NOT SECURELY ATTACHED TO BASIN WALL, MISALIGNMENT, RUST, CRACKS, OR SHARP EDGES.	LADDER MEETS DESIGN STANDARDS AND ALLOWS MAINTENANCE PERSON SAFE ACCESS.
METAL GRATES (IF APPLICABLE)	GRATE OPENING UNSAFE	GRATE WITH OPENING WIDER THAN 7/8 INCH.	GRATE OPENING MEETS DESIGN STANDARDS.
	TRASH AND DEBRIS	TRASH AND DEBRIS THAT IS BLOCKING MORE THAN 20% OF GRATE SURFACE INLETING CAPACITY.	GRATE FREE OF TRASH AND DEBRIS.
	DAMAGED OR MISSING.	GRATE MISSING OR BROKEN MEMBER(S) OF THE GRATE.	GRATE IS IN PLACE AND MEETS DESIGN STANDARDS.

MAINTENANCE COMPONENT			
CONVEYANCE SYSTEM (PIPES & DITCHES)			
GENERAL	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
PIPES	SEDIMENT & DEBRIS	ACCUMULATED SEDIMENT THAT EXCEEDS 20% OF THE DIAMETER OF THE PIPE.	PIPE CLEANED OF ALL SEDIMENT AND DEBRIS.

	VEGETATION	VEGETATION THAT REDUCES FREE MOVEMENT OF WATER THROUGH PIPES.	ALL VEGETATION REMOVED SO WATER FLOWS FREELY THROUGH PIPES.
	DAMAGED	PROTECTIVE COATING IS DAMAGED; RUST IS CAUSING MORE THAN 50% DETERIORATION TO ANY PART OF PIPE.	PIPE REPAIRED OR REPLACED.
		ANY DENT THAT DECREASES THE CROSS SECTION AREA OF PIPE BY MORE THAN 20%.	PIPE REPAIRED OR REPLACED.
	TRASH & DEBRIS	TRASH AND DEBRIS EXCEEDS 1 CUBIC FOOT PER 1,000 SQUARE FEET OF DITCH AND SLOPES.	TRASH AND DEBRIS CLEARED FROM DITCHES.
OPEN DITCHES	SEDIMENT	ACCUMULATED SEDIMENT THAT EXCEEDS 20% OF THE DESIGN DEPTH.	DITCH CLEANED/ FLUSHED OF ALL SEDIMENT AND DEBRIS SO THAT IT MATCHES DESIGN.
	VEGETATION	VEGETATION THAT REDUCES FREE MOVEMENT OF WATER THROUGH DITCHES.	WATER FLOWS FREELY THROUGH DITCHES.
	EROSION DAMAGE TO SLOPES	SEE "PONDS" STANDARD NO. 1	SEE "PONDS" STANDARD NO. 1
	ROCK LINING OUT OF PLACE OR MISSING (IF APPLICABLE)	MAINTENANCE PERSON CAN SEE NATIVE SOIL BENEATH THE ROCK LINING.	REPLACE ROCKS TO DESIGN STANDARD.
CATCH BASINS		SEE "CATCH BASINS" STANDARD NO. 5	SEE "CATCH BASINS" STANDARD NO. 5
DEBRIS BARRIER E.G. TRASH RACK		SEE "DEBRIS BARRIERS" STANDARD NO. 6	

MAINTENANCE COMPONENT			
GROUNDS (LANDSCAPING)			
GENERAL	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
	WEEDS (NONPOISONOUS)	WEEDS GROWING IN MORE THAN 20% OF THE LAND-SCAPED AREA (TREES AND SHRUBS ONLY).	WEEDS PRESENT IN LESS THAN 5% OF THE LANDSCAPED AREA.
	SAFETY HAZARD	ANY PRESENCE OF POISON IVY OR OTHER POISONOUS VEGETATION.	NO POISONOUS VEGETATION PRESENT IN A LANDSCAPED AREA.
	TRASH OR LITTER	PAPER, CAN, BOTTLES, TOTALING MORE THAN 1 CUBIC FOOT WITHIN A LANDSCAPED AREA (TREES AND SHRUBS ONLY) OF 1,000 SQUARE FEET.	AREA CLEAR OF LITTER.
	DAMAGE	LIMBS OR PARTS OF TREES OR SHRUBS THAT ARE SPLIT OR BROKEN WHICH AFFECT MORE THAN 25% OF THE TOTAL FOLIAGE OF THE TREE OR SHRUB.	TREES AND SHRUBS WITH LESS THAN 5% OF THE TOTAL FOLIAGE WITH SPLIT OR BROKEN LIMBS.
	TREES & SHRUBS	TREES OR SHRUBS THAT HAVE BEEN BLOWN DOWN OR KNOCKED OVER.	TREE OR SHRUB IN PLACE FREE OF INJURY.

	TREES OR SHRUBS WHICH ARE NOT ADEQUATELY SUPPORTED OR ARE LEANING OVER, CAUSING EXPOSURE OF THE ROOTS.	TREE OR SHRUB IN PLACE AND ADEQUATELY SUPPORTED; REMOVE ANY DEAD OR DISEASED TREES.
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MAINTENANCE COMPONENT			
ACCESS ROADS (EASEMENTS)			
GENERAL	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
	TRASH AND DEBRIS	TRASH AND DEBRIS EXCEEDS 1 CUBIC FOOT PER 1,000 FEET, I.E., TRASH AND DEBRIS WOULD FILL UP ONE STANDARD SIZE GARBAGE CAN.	TRASH AND DEBRIS CLEARED FROM SITE.
	BLOCKED ROADWAY	DEBRIS WHICH COULD DAMAGE VEHICLE TIRES (GLASS OR METAL).	ROADWAY FREE OF DEBRIS WHICH COULD DAMAGE TIRES.
		ANY OBSTRUCTIONS WHICH REDUCE CLEARANCE ABOVE ROAD SURFACE TO LESS THAN 14 FEET.	ROADWAY OVERHEAD CLEAR TO 14 FEET HIGH.
		ANY OBSTRUCTIONS RESTRICTING THE ACCESS TO A 10 TO 12 FOOT WIDTH FOR A DISTANCE OF MORE THAN 12 FEET OR ANY POINT RESTRICTING ACCESS TO LESS THAN A 10 FOOT WIDTH.	OBSTRUCTION REMOVED TO ALLOW AT LEAST A 12 FOOT ACCESS.
ROAD SURFACE	SETTLEMENT, POTHOLES, MUSH SPOTS, RUTS	WHEN ANY SURFACE DEFECT EXCEEDS 6 INCHES IN DEPTH AND 6 SQUARE FEET IN AREA. IN GENERAL, ANY SURFACE DEFECT WHICH HINDERS OR PREVENTS MAINTENANCE ACCESS.	ROAD SURFACE UNIFORMLY SMOOTH WITH NO EVIDENCE OF SETTLEMENT, POTHOLES, MUSH SPOTS, OR RUTS.
	VEGETATION IN ROAD SURFACE	WEEDS GROWING IN THE ROAD SURFACE THAT ARE MORE THAN 6 INCHES TALL AND LESS THAN 6 INCHES APART WITHIN A 400 SQUARE FOOT AREA.	ROAD SURFACE FREE OF WEEDS TALLER THAN 2 INCHES.
	EROSION DAMAGE	EROSION WITHIN 1 FOOT OF THE ROADWAY MORE THAN 8 INCHES WIDE AND 6 INCHES DEEP.	SHOULDER FREE OF EROSION AND MATCHING THE SURROUNDING ROAD.

MAINTENANCE COMPONENT	DEFECT	CONDITIONS WHEN MAINTENANCE IS NEEDED	RESULTS EXPECTED WHEN MAINTENANCE IS PERFORMED
INFILTRATION TRENCH			
CATCH BASIN	SEDIMENT	A PERCOLATION TEST PIT OR TEST OF FACILITY INDICATES FACILITY IS ONLY WORKING AT 90% OF ITS DESIGNED CAPABILITIES. IF TWO INCHES OR MORE SEDIMENT IS PRESENT, REMOVE.	SEDIMENT IS REMOVED AND/OR FACILITY IS CLEANED SO THAT INFILTRATION SYSTEM WORKS ACCORDING TO DESIGN.
	COVER NOT IN PLACE	COVER IS MISSING OR ONLY PARTIALLY IN PLACE. ANY OPEN MANHOLE REQUIRED MAINTENANCE.	MANHOLE IS CLOSED.
	TRASH & DEBRIS (INCLUDES SEDIMENT)	TRASH OR DEBRIS OF MORE THAN 1/2 CUBIC FOOT WHICH IS LOCATED IMMEDIATELY IN FRONT OF THE CATCH BASIN OPENING OR IS BLOCKING CAPACITY OF BASIN BY MORE THAN 10%.	NO TRASH OR DEBRIS LOCATED IMMEDIATELY IN FRONT OF CATCH BASIN OPENING.
		TRASH OR DEBRIS (IN THE BASIN) THAT EXCEEDS 1/3 THE DEPTH FROM THE BOTTOM OF BASIN TO INVERT T OF THE LOWEST PIPE INTO OR OUT OF THE BASIN.	NO TRASH OR DEBRIS IN THE CATCH BASIN.
		TRASH OR DEBRIS IN ANY INLET OR OUTLET PIPE BLOCKING MORE THAN 1/3 OF ITS HEIGHT.	INLET AND OUTLET PIPES FREE OF TRASH OR DEBRIS.
		DEAD ANIMALS OR VEGETATION THAT COULD GENERATE ODORS THAT WOULD CAUSE COMPLAINTS OR DANGEROUS GASES (E.G., METHANE).	NO DEAD ANIMALS OR VEGETATION PRESENT WITHIN THE CATCH BASIN.
		DEPOSITS OF GARBAGE EXCEEDING 1 CUBIC FOOT IN VOLUME.	NO CONDITION PRESENT WHICH WOULD ATTRACT OR SUPPORT THE BREEDING OF INSECTS OR RODENTS.
	STRUCTURAL DAMAGE TO FRAME AND/OR TOP SLAB	CORNER OF FRAME EXTENDS MORE THAN 3/4 INCH PAST CURB FACE INTO THE STREET (IF APPLICABLE).	FRAME IS EVEN WITH CURB.
		TOP SLAB HAS HOLES LARGER THAN 2 SQUARE INCHES OR CRACKS WIDER THAN 1/4 INCH (INTENT IS TO MAKE SURE ALL MATERIAL IS RUNNING INTO THE BASIN).	TOP SLAB IS FREE OF HOLES AND CRACKS.
		FRAME NOT SITTING FLUSH ON TOP SLAB, I. E., SEPARATION OF MORE THAN 3/4 INCH OF THE FRAME FROM THE TOP SLAB.	FRAME IS SITTING FLUSH ON TOP SLAB.
CRACKS IN BASIN WALLS/BOTTOM	CRACKS WIDER THAN 1/2 INCH AND LONGER THAN 3 FEET, ANY EVIDENCE OF SOIL PARTICLES ENTERING CATCH BASIN THROUGH CRACKS, OR MAINTENANCE PERSON JUDGES THAT STRUCTURE IS UNSOUND.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS.	
	CRACKS WIDER THAN 1/2 INCH AND LONGER THAN 1 FOOT AT THE JOINT OF ANY INLET/OUTLET PIPE OR ANY EVIDENCE OF SOIL PARTICLES ENTERING CATCH BASIN THROUGH CRACKS.	NO CRACKS MORE THAN 1/4 INCH WIDE AT THE JOINT OF INLET/OUTLET PIPE.	
SETTLEMENT/ MISALIGNMENT	BASIN HAS SETTLED MORE THAN 1 INCH OR HAS ROTATED MORE THAN 2 INCHES OUT OF ALIGNMENT.	BASIN REPLACED OR REPAIRED TO DESIGN STANDARDS.	

	FIRE HAZARD	PRESENCE OF CHEMICALS SUCH AS NATURAL GAS. OIL, GASOLINE.	NO FLAMMABLE CHEMICALS PRESENT.
	VEGETATION	VEGETATION GROWING ACROSS AND BLOCKING MORE THAN 10% OF THE BASIN OPENING.	NO VEGETATION BLOCKING OPENING TO BASIN.
		VEGETATION GROWING IN INLET/OUTLET PIPE JOINTS THAT IS MORE THAN SIX INCHES TALL AND LESS THAN SIX INCHES APART.	NO VEGETATION OR ROOT GROWTH PRESENT.
	POLLUTION	NONFLAMMABLE CHEMICALS OF MORE THAN 1/2 CUBIC FOOT PER THREE FEET OF BASIN LENGTH.	NO POLLUTION PRESENT OTHER THAN SURFACE FILM.
CATCH BASIN COVER	COVER NOT IN PLACE	COVER IS MISSING OR ONLY PARTIALLY IN PLACE. ANY OPEN CATCH BASIN REQUIRED MAINTENANCE.	CATCH BASIN COVER IS CLOSED.
	LOCKING MECHANISM NOT WORKING	MECHANISM CANNOT BE OPENED BY ONE MAINTENANCE PERSON WITH PROPER TOOLS. BOLTS INTO FRAME HAVE LESS THAN 1/2 INCH OF THREAD.	MECHANISM OPENS WITH PROPER TOOLS.
	COVER DIFFICULT TO REMOVE	ONE MAINTENANCE PERSON CANNOT REMOVE LID AFTER APPLYING 80 LBS. OF LIFT; INTENT IS KEEP COVER FROM SEALING OFF ACCESS TO MAINTENANCE.	COVER CAN BE REMOVED BY ONE MAINTENANCE PERSON.
PIPES	SEDIMENT & DEBRIS	ACCUMULATED SEDIMENT THAT EXCEEDS 20% OF THE DIAMETER OF THE PIPE.	PIPE CLEANED OF ALL SEDIMENT AND DEBRIS.
	VEGETATION	VEGETATION THAT REDUCES FREE MOVEMENT OF WATER THROUGH PIPES.	ALL VEGETATION REMOVED SO WATER FLOWS FREELY THROUGH PIPES.
	DAMAGED	PROTECTIVE COATING IS DAMAGED; RUST IS CAUSING MORE THAN 50% DETERIORATION TO ANY PART OF PIPE.	PIPE REPAIRED OR REPLACED.
		ANY DENT THAT DECREASES THE CROSS SECTION AREA OF PIPE BY MORE THAN 20%.	PIPE REPAIRED OR REPLACED.
	TRASH & DEBRIS	TRASH AND DEBRIS EXCEEDS 1 CUBIC FOOT PER 1,000 SQUARE FEET OF DITCH AND SLOPES.	TRASH AND DEBRIS CLEARED FROM DITCHES.

Infiltration Trench			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed Or Not Needed
General	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants in or around facility. • Identify and remove source	No contaminants or pollutants present.
	Observation Well	Sediment depth greater than one foot above stone aggregate or the surface inlet.	No sediment in infiltration trench.
	Drainage Slow	Decreased capacity that indicates slow drainage.	Verify facility design rate. Clean perforated drain pipe. Do not allow removed sediment and water to discharge back into the storm sewer.

Catch Basins			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed Or Not Needed
General	Trash and Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No Trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (Intent is to make sure no material is running into basin).	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.
		Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present.

Catch Basins (Continued)			
Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed Or Not Needed
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure (Intent is to keep cover from sealing off access to maintenance).	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

6/18/2014
Stoddard International
Building Expansion

STORMWATER POLLUTION PREVENTION PLAN

SWPP PLAN

LEVEL 1 CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN

THE PROPOSED PROJECT WAS EVALUATED PER THE 2005 DEPARTMENT OF ECOLOGY DRAINAGE MANUAL TO DETERMINE THE EROSION RISK CATEGORY AND THE CORRESPONDING SWPPP. THE SOIL ON THE PROPOSED SITE, DEEP GRAVELLY SAND HAS A RISK CATEGORIZATION OF LOW. THE PROPOSED PROJECT MAY REQUEST A WINTER GRADING PERMIT BUT A LEVEL 1 CONSTRUCTION SWPPP IS REQUIRED.

POTENTIAL POLLUTANTS

THERE ARE THREE TYPES OF POTENTIAL POLLUTANTS THAT THIS SWPPP IS INTENDED TO ADDRESS:

1. HAZARDOUS CHEMICALS.
2. PETROLEUM PRODUCTS.
3. SEDIMENT.

REASONABLE CARE AND DISCRETION SHALL BE EXERCISED TO PREVENT DAMAGE TO THE ENVIRONMENT THROUGH A RELEASE OF ANY OF THE THREE TYPES OF POLLUTANTS. THIS SWPPP IS TO BE CONSIDERED A GUIDE AND REPRESENTS ONLY A MINIMUM STANDARD OF CARE TO BE PRACTICED DURING THE CONSTRUCTION PHASE OF THE PROJECT. AN EROSION CONTROL OFFICER SHALL BE RESPONSIBLE FOR EVALUATING THE CONDITIONS AND POLLUTION POTENTIAL ON THE PROJECT SITE AT ALL TIMES AND FOR DETERMINING WHAT ADDITIONAL MEASURES NEED TO BE ENACTED TO PROTECT THE ENVIRONMENT. THIS MAY INCLUDE STOPPING CONSTRUCTION UNTIL CONDITIONS CHANGE SUCH THAT THE DANGER TO THE ENVIRONMENT HAS PASSED.

HAZARDOUS CHEMICALS

HAZARDOUS CHEMICALS SUCH AS CLEANING AGENTS AND SOLVENTS SHALL BE STORED IN AN APPROVED CHEMICAL FACILITY (IES) LOCATED IN THE EQUIPMENT STAGING AREA. WHEN CHEMICALS ARE USED DURING CONSTRUCTION ACTIVITY, CARE SHALL BE TAKEN TO GUARD AGAINST SPILLAGE. IN THE EVENT OF A CHEMICAL RELEASE, THE APPROPRIATE AUTHORITIES ARE TO BE NOTIFIED AND THE SPILL IS TO BE CLEANED UP IMMEDIATELY.

PETROLEUM PRODUCTS

THE CONSTRUCTION SITE IS TO BE PROTECTED AGAINST EXCESSIVE PETROLEUM POLLUTION. ALL CONSTRUCTION EQUIPMENT AND VEHICLES SHALL HAVE A REGULAR MAINTENANCE SCHEDULE AS RECOMMENDED BY THE PRODUCT MANUFACTURER. PARTICULAR CARE SHALL BE PAID TO LOCATIONS THAT ARE COMMONLY KNOWN TO LEAK LUBRICANTS. UPON DISCOVERY OF AN UNSATISFACTORY PART, THAT VEHICLE OR EQUIPMENT SHALL NOT BE OPERATED UNTIL IT HAS BEEN FIXED. ADDITIONALLY, ALL OIL AND REFUELING OPERATIONS SHALL BE CONDUCTED IN A DESIGNATED AREA THAT HAS BEEN PREPARED TO PREVENT THE LOSS OF SPILLED OIL/FUEL TO THE ENVIRONMENT THROUGH THE USE OF A LINER, SPILL TRAP OR OTHER MEANS.

SEDIMENT

THE RELEASE OF SEDIMENT TO THE ENVIRONMENT SHALL BE PREVENTED AT ALL TIMES. THE FOLLOWING BMP'S ARE CONSIDERED MINIMUM PROTECTION MEASURES:

1. THE DISTRIBUTION/TRACKING OF MUD ONTO ROADS FROM CONSTRUCTION EQUIPMENT/VEHICLES SHALL BE PREVENTED. THE CONSTRUCTION SITE SHALL BE ACCESSED VIA A ROCK CONSTRUCTION ENTRANCE, UNDERLAIN BY GEOTEXTILE FABRIC. THE CONSTRUCTION ENTRANCE SHALL BE EXTENDED IF NECESSARY TO PROVIDE ACCESS TO THE EMPLOYEE PARKING LOT AND EQUIPMENT STAGING AREAS. PRIOR TO LEAVING THE CONSTRUCTION SITE, CONSTRUCTION EQUIPMENT /VEHICLES SHALL BE INSPECTED FOR MUD/SEDIMENT. ALL WHEELS AND SURFACES ARE TO BE BRUSHED/WASHED/CLEANED AS NECESSARY PRIOR TO ENTERING THE PUBLIC ROW. IN ADDITION, THE EXISTING PAVEMENT SHALL BE SWEEPED ALONG THE SITE FRONTAGES ON A DAILY BASIS AS DIRECTED BY THE ENGINEER AND/OR THE CITY INSPECTOR.
2. COVER MATERIALS (I.E. HOG FUEL, WOOD CHIPS, STRAW OR PLASTIC SHEETING) SHALL BE STORED ON SITE IN SUFFICIENT QUANTITIES SUCH THAT ALL PORTIONS OF EXPOSED EARTH CAN BE COMPLETELY COVERED TO PREVENT EROSION.
3. THE PLANNED CONSTRUCTION ACTIVITIES SHALL BE EVALUATED ON A DAILY BASIS, TAKING INTO ACCOUNT THE LATEST WEATHER FORECAST. THE WEATHER FORECAST SHALL DICTATE WHETHER LARGE-SCALE EARTH MOVING OPERATIONS SHALL COMMENCE OR CONTINUE. IF RAIN OCCURS DURING CONSTRUCTION INTENSE ENOUGH TO PRODUCE RUNOFF, ALL EARTH MOVING ACTIVITIES SHALL CEASE AND EXPOSED EARTH SHALL BE COVERED TO PREVENT EROSION. WHILE PRECIPITATION PERSISTS, THE ONLY ACTIVITY ALLOWED SHALL BE THE EFFORTS REQUIRED TO MAINTAIN EROSION CONTROL MEASURES, INSTALL NEW EROSION CONTROL BMP'S AND NON-EROSION/SEDIMENT GENERATING ACTIVITIES.
4. CONSTRUCTION ACTIVITIES SHALL BE PHASED TO MINIMIZE THE SURFACE AREA OF EXPOSED EARTH. CLEARING/GRADING LIMITS ARE IDENTIFIED ON THE TEAS & GRADING PLAN SHEET.

MAINTENANCE, INSPECTION AND PROJECT MANAGEMENT

PRIOR TO ANY SITE DEVELOPMENT ACTIVITY, A PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR, OWNER, ENGINEER (J.C.MCDONNELL ENGINEERING, PC.), EROSION CONTROL OFFICER AND CITY INSPECTOR SHALL BE HELD. THE PROPOSED CONSTRUCTION ACTIVITIES SHALL BE MONITORED BY THE EROSION CONTROL OFFICER, AFTER EVERY RAINSTORM OR AT A MINIMUM, WEEKLY, FOR COMPLIANCE WITH SWPPP GUIDELINES & OBJECTIVES. THE OWNER SHALL DESIGNATE THE EROSION CONTROL OFFICER FOR THE PROJECT (TCO). THE TCO MUST HAVE RECEIVED TRAINING (I.E. EROSION CONTROL SEMINAR ETC.) OR HAVE HAD SUFFICIENT EXPERIENCE WITH EROSION CONTROL TECHNIQUES TO IMPLEMENT THE SWPPP.

HE SHALL BE RESPONSIBLE TO ENSURE THAT ALL WATER QUALITY OBJECTIVES OF THE SWPPP ARE ACHIEVED AND FOR INSPECTING THE CONSTRUCTION SITE TO ENSURE THAT ALL CONSTRUCTION SWPPP MEASURES ARE FUNCTIONING AS INTENDED. THE TCO SHALL HAVE THE AUTHORITY TO ALLOCATE RESOURCES TO REPAIR ALL EROSION CONTROL STRUCTURES THAT ARE IN NEED OF MAINTENANCE.

MAINTENANCE, INSPECTION AND PROJECT MANAGEMENT (CONT.)

ADDITIONALLY THE **TCO** SHALL BE RESPONSIBLE FOR MONITORING THE CONSTRUCTION SITE TO ENFORCE COMPLIANCE WITH THE APPROVED SWPPP. IF, DURING THE COURSE OF THE WORKDAY, A RAIN EVENT OCCURS, THE **TCO** SHALL EVALUATE THE INTENSITY OF RAINFALL AND THE POTENTIAL TO GENERATE EROSION. SHOULD HE DETERMINE THAT EROSION IS OCCURRING, HE SHALL HAVE THE AUTHORITY TO REDIRECT CONSTRUCTION ACTIVITY TO COVER EXPOSED SOILS, TO MAINTAIN EXISTING SWPPP ELEMENTS (I.E. BMP'S) AND TO ORDER CONSTRUCTION OF ADDITIONAL POLLUTION PREVENTION SYSTEMS AS NECESSARY.

ADDITIONALLY, THE SWPPP **TCO** SHALL BE RESPONSIBLE TO MONITOR WATER QUALITY. DURING PRECIPITATION EVENTS THAT GENERATE RUNOFF, WATER QUALITY MEASURES SHALL BE TAKEN. FOR RUNOFF GENERATING EVENTS THAT OCCUR DURING EVENING HOURS, WATER QUALITY SHALL BE MONITORED PRIOR TO BEGINNING CONSTRUCTION THE FOLLOWING DAY. IF THERE HAS BEEN NO MEASURABLE DEGRADATION IN WATER QUALITY, CONSTRUCTION MAY RESUME AS SCHEDULED. IF A MEASUREABLE DEGRADATION IS IDENTIFIED SUCH AS AN INCREASE OF TURBIDITY IN EXCESS OF 5 NTU'S ABOVE BACKGROUND. THE ONLY ALLOWED ACTIVITIES WILL BE REPAIR OF EROSION CONTROL STRUCTURES, INSTALLATION OF ADDITIONAL BMP'S, MINIMIZATION OF SEDIMENT TRANSPORT OR ACTIVITIES THAT DO NOT DISTURB EXPOSED EARTH AND THAT HAVE NO POTENTIAL TO GENERATE ADDITIONAL SEDIMENT.

THE TWELVE (12) ELEMENTS OF CONSTRUCTION SWPPP

1. **CLEARING LIMITS:**
THE CLEARING LIMITS ARE INDICATED ON THE TESC PLAN SHEET. FURTHERMORE, CLEARING AND GRADING WILL BE LIMITED TO ONLY AREAS THAT NEED TO BE DISTURBED FOR GRADING/CONSTRUCTION. FIELD MARKING THE CLEARING LIMITS SHALL BE COMPLETED PRIOR TO CLEARING AND GRUBBING ACTIVITIES.
BMP'S: FIELD MARKING CLEARING LIMITS
2. **CONSTRUCTION SITE ACCESS:**
ACCESS SHALL BE LIMITED TO ROCK CONSTRUCTION ENTRANCES. THE CONSTRUCTION ENTRANCES SHALL BE EXTENDED TO PROVIDE ACCESS TO CONSTRUCTION VEHICLE/EQUIPMENT STAGING AND EMPLOYEE PARKING AREAS.
BMP'S: STABILIZED CONSTRUCTION ENTRANCE (BMP-C105)
3. **FLOW RATE CONTROL:**
STORMWATER DETENTION OF RUNOFF WILL BE PROVIDED IN THE DETENTION POND OR VAULT OR TEMPORARY SILT TRAP THROUGHOUT THE CONSTRUCTION PHASE.
BMP'S: SILT POND (BMP-C233)
BMP'S: SILT TRAP (BMP-C233)
4. **SEDIMENT CONTROL:**
SEDIMENT CONTROL WILL BE PROVIDED WITH ORANGE FILTER FENCE AND/OR COMPOST BERMS LOCATED ALONG THE DOWN SLOPE OF THE CONSTRUCTION ACTIVITY. FINAL DETENTION PONDS SHALL BE UTILIZED AND RUNOFF SHALL BE PUMPED BACK UP TO THE VEGETATED AREA ON THE SITE. IF NECESSARY, CHITOSON SOCKS WILL BE USED AT THE DISCHARGE OF THE PUMP LINE.

THE TWELVE (12) ELEMENTS OF CONSTRUCTION SWPPP (CONT.)

5. SEDIMENT CONTROL:
 BMP'S: ORANGE OR BLACK FILTER FENCE (BMP- C233)
 TRIANGULAR SILT DIKE (BMP-C208)
 ROCK CHECK DAMS (BMP-C207)
 CHITOSAN SOCK. (SEE SWPP DETAIL)

6. TEMPORARY AND PERMANENT SOIL STABILIZATION:
 TEMPORARY STABILIZATION WILL BE PROVIDED THROUGH THE APPLICATION OF STRAW, HOG FUEL OR PLASTIC SHEETING TO EXPOSED WORKED EARTH. STABILIZE EXPOSED SOIL WITHIN THE TIME FRAMES INDICATED IN THE WET WEATHER NOTES ON THIS SHEET. PERMANENT SOIL STABILIZATION CONSISTS OF ESTABLISHING VEGETATION BY SEEDING OR PLANTING.
 BMP'S: STRAW MULCHING OR HOG FUEL PLACEMENT (BMP-C121)
 PLASTIC SHEETING (BMP-C123)
 TEMPORARY & PERMANENT SEEDING (BMP-C120)

7. SLOPES SHALL BE PROTECTED FROM EROSION THROUGH COVER AND PREVENTION OF CONCENTRATED SURFACE RUNOFF FLOWS:
 BMP'S: STRAW MULCHING (BMP-C122)
 PLASTIC SHEETING (BMP-C123)
 INTERCEPTOR SWALES (BMP-C200)

7. INLET PROTECTION SHALL BE INSTALLED IN ALL CATCH BASINS AND SHALL REMAIN UNTIL CONSTRUCTION OF ALL RESIDENCES WITHIN THE DEVELOPMENT HAS BEEN COMPLETED. NO UNFILTERED STORMWATER SHALL BE ALLOWED TO ENTER THE CLOSED CONVEYANCE SYSTEM. INLET PROTECTION SHALL BE INSPECTED REGULARLY AND FILTER FABRIC SHALL BE CLEANED/REPLACED AS NECESSARY. WHEN PROVIDING MAINTENANCE TO INLET PROTECTION, FABRIC SHALL BE REMOVED IN SUCH A WAY AS TO PREVENT RETAINED SEDIMENT FROM FALLING INTO THE CATCH BASIN.
 BMP'S: INLET PROTECTION (BMP- C220 OR EQUAL)

8. ALL CHANNEL SLOPES SHALL BE CONSTRUCTED AND PROTECTED AGAINST EROSION IN ACCORDANCE WITH CITY OF ARLINGTON POLICY.
 BMP'S: RIPRAP (QUARRY SPALLS) (BMP-C209)
 INTERCEPTOR SWALES (BMP-C200)
 ROCK CHECK DAMS (BMP-C207)

9. POLLUTANTS SHALL BE CONTROLLED AS DESCRIBED IN THE POTENTIAL POLLUTANTS SECTION OF THIS SWPPP.

10. DE-WATERING: INTERCEPTION OF THE WATER TABLE IS NOT EXPECTED TO OCCUR. HOWEVER, SHOULD GROUND WATER FLOWS BE ENCOUNTERED, THESE FLOWS CAN BE DIRECTED TO THE INTERCEPTOR SWALES AND CONVEYED TO THE TEMPORARY SEDIMENTATION FACILITIES OR TO SILT FILTRATION BAGS.
 BMP'S: INTERCEPTOR SWALES (BMP-C200)
 ROCK CHECK DAMS (BMP-C207)

11. ALL BMP'S AND SWPP ELEMENTS SHALL BE INSPECTED AND MAINTAINED AS REQUIRED IN THE APPROVED CONSTRUCTION PLANS AND THE GOVERNING LAKE STEVENS REQUIREMENTS.

12. PROJECT MANAGEMENT:
THE PROJECT SHALL BE MANAGED IN A COOPERATIVE EFFORT BY THE PROJECT MANAGER, CONTRACTOR, PROJECT ENGINEER AND CITY INSPECTOR. DURING THE CONSTRUCTION PROCESS, IF UNFORSEEN ISSUES ARISE THAT CANNOT BE RESOLVED ON SITE, CONSTRUCTION ACTIVITY (OTHER THAN SWPPP MAINTENANCE) SHALL BE HALTED AND THE CITY AND THE PROJECT ENGINEER ARE TO BE CONTACTED AND INFORMED OF THE SITUATION.

CONSENSUS

PRIOR TO CONSTRUCTION, THE PROJECT ENGINEER (J.C. MCDONNELL ENGINEERING PC), THE PROJECT MANAGER, THE GENERAL CONTRACTOR, THE CITY INSPECTOR AND/ OR A CITY ENGINEER/ PLAN REVIEWER MUST ALL AGREE THAT THE PROPOSED PLAN IS FEASIBLE. IF CONCENSUS CANNOT BE REACHED, THE CITY OF ARLINGTON PUBLIC WORKS DIRECTOR SHALL APPOINT A THREE-PERSON COMMITTEE TO RESOLVE THE ISSUES.

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