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February 1, 2023

Re:     Taco Time Preliminary Drainage Report
         Parcel # 784510-003-2 & 042027-1-171

## Overview:

The site is located on the north side of E Main, east of SR 512.   The site address is 1115 E Main.  Tax parcel numbers are 784510-003-2 &  042027-1-171.  Total parcel area is 3.21 acres.  The site is currently developed with a Taco Time Restaurant, primarily on parcel -003-2.  The project consists of the construction of a new Taco Time Restaurant building and expansion of the existing parking lot.  The existing building will remain for use by other tenants.

Improvements for the project will include the new building, additional parking lot, storm drainage facilities, expansion of existing driveway approach, sanitary sewer service, water service, and other underground utilities.
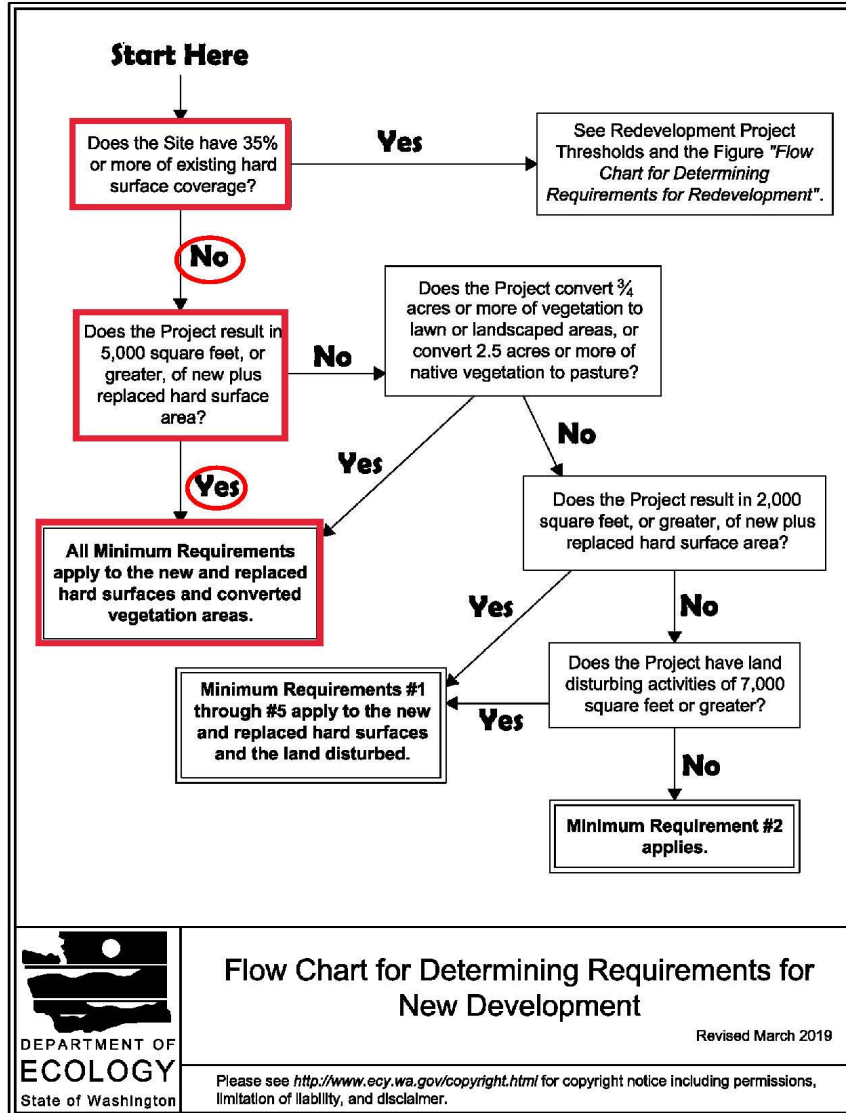
## Project Requirements:

*Determination of Applicable Minimum Requirements*
Per PMC 21.10.040 the City of Puyallup has adopted the Washington State Department of Ecology Stormwater Management Manual for Western Washington (SMMWW), with the version in effect being "the most current version approved for city use by the council."  The 2019 DOE Manual has been adopted by the City and is the controlling regulation and is referred to as "the Manual" or "SMMWW" hereinafter.

The project consists of over 18,000 sf of new plus replaced hard surfaces onsite.  The existing hard surfaces are less than 35% of the site and therefore, the project is considered new development.  Since the total new plus replaced hard surfaces for the project are greater than 5,000 square feet, all minimum requirements apply to the new and replaced hard surfaces and converted vegetation areas.

## Figure I-3.1: Flow Chart for Determining Requirements for New Development



**Start Here**

Does the Site have 35% or more of existing hard surface coverage? — **Yes** → See Redevelopment Project Thresholds and the Figure *"Flow Chart for Determining Requirements for Redevelopment"*.

**No** ↓

Does the Project result in 5,000 square feet, or greater, of new plus replaced hard surface area? — **No** → Does the Project convert ¾ acres or more of vegetation to lawn or landscaped areas, or convert 2.5 acres or more of native vegetation to pasture?

**Yes** ↓ (from 5,000 sq ft box)

**No** ↓ (from ¾ acres box)

Does the Project result in 2,000 square feet, or greater, of new plus replaced hard surface area?

**All Minimum Requirements apply to the new and replaced hard surfaces and converted vegetation areas.**

**Yes** → (toward Minimum Requirements #1)

**No** ↓ (from 2,000 sq ft box)

Does the Project have land disturbing activities of 7,000 square feet or greater?

**Minimum Requirements #1 through #5 apply to the new and replaced hard surfaces and the land disturbed.**

**Yes** → (to Minimum Requirements #1)

**No** ↓

**Minimum Requirement #2 applies.**

**DEPARTMENT OF ECOLOGY** State of Washington

### Flow Chart for Determining Requirements for New Development

Revised March 2019

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## Discussion of Minimum Requirements
The Minimum Requirements per Section I-3.4 of the Manual:

*Minimum Requirement #1: Preparation of Stormwater Site Plans*
The Stormwater Site Plan consists of a report and construction plans. This report and the attached conceptual storm plan are preliminary versions of the Drainage Report and the site improvement plans that will be submitted for construction permits and will satisfy Minimum Requirement #1.

*Minimum Requirement #2: Construction Stormwater Pollution Prevention (SWPPP)*
The SWPPP consists of a narrative and drawings. The narrative will be addressed in Section V of the final version of the Drainage Report. The drawings will include a TESC plan, notes, and details as part of the site development construction plans. The narrative and drawings will be prepared and submitted at time of civil permit application.

*Minimum Requirement #3: Source Control of Pollution*
A Pollution Source Control Plan will be prepared in conformance with requirements of Section IV of the Manual and will be submitted as a separate document at time of civil permit application.

*Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls*
Currently, drainage from the original improvements to the site, generally the southwest portion of the site, are collected in a conveyance system that connects to the existing closed conveyance system in E Main. Drainage from improvements to the site made in 2003 are collected, routed through a bioswale for treatment, then infiltrated in an underground gallery, with an overflow connection into the original conveyance system. The improvements proposed under this permit will infiltrate runoff to the greatest extent feasible to preserve the natural drainage system and outfall.

*Minimum Requirement #5: On-site Stormwater Management*
Because the project triggers MR #1-9, and is inside the urban growth area, the project must either meet the Low Impact Development Performance Standard, or use List #2 to determine applicable On-Site Stormwater Management BMPs. This project will use List #2. For each surface the BMP's must be considered in the order listed for that type of surface and use the first BMP that is considered feasible.

Lawn and Landscaped Areas:
- All lawn and landscaped areas will meet the requirements of BMP T5.13, Post Construction Soil Quality and Depth with notes on the plans to this effect.

Roofs:
1. BMP T5.30: Full Dispersion – infeasible due to inadequate vegetated area to meet the 65:10 ratio.
2. BMP T5.10A: Downspout Full Infiltration – will be used for the new building.

Other Hard Surfaces:
1. BMP T5.30: Full Dispersion – infeasible due to inadequate vegetated area to meet the 65:10 ratio
2. BMP T5.15: Permeable pavement – infeasible due to fill required for grading of parking lot; as a technical equivalent, an infiltration trench per BMP T7.20 will be used

*Minimum Requirement #6:  Runoff Treatment*

New plus replaced pollution generating hard surfaces (PGHS) is the parking lot paving.  The total area is well over 5,000 square feet and therefore runoff treatment is required.  As a commercial development, enhanced treatment is required.  Filterra or Biopod systems will be used for to meet enhanced treatment requirements.

*Minimum Requirement #7:  Flow Control*

The total new plus replaced hard surface for the project is well over 10,000 sf, however, through the use of infiltration, the effective impervious area will be essentially zero.  The converted vegetation areas are below the thresholds, and the increase in runoff rates for the 100-year event is less than 0.15 cfs.  Therefore, this minimum requirement does not apply.

*Minimum Requirement #8:  Wetlands Protection*

There are no wetlands on or near the site.

*Minimum Requirement #9:  Operation and Maintenance*

The stormwater facilities required for this project that require a maintenance plan are: conveyance system, infiltration gallery, and Filterra or Biopod.  All onsite stormwater facilities will be owned, operated, and maintained by the property owner.  An O&M plan will be submitted with civil plan application in the future.

## Soils:

The NRCS Soil Survey of Pierce County indicates the soils on the portion of the site to be developed are Puyallup fine sandy loam (31A).  Puyallup soils are hydrologic group A.   Based on the soils exploration performed by GeoResources, infiltration is feasible on the eastern portion of the development with a design infiltration rate of 1.1 inches per hour.  Groundwater monitoring found peak groundwater at depths ranging from 5.3 to 8.8 feet or elevations 43.7 to 47.7.  Based on the location of monitoring wells, peak groundwater is estimated at 47.7 at the proposed roof drain infiltration trench and 46.0 at the main infiltration trench.

## Floodplain

The site is mapped with an AE floodplain at elevation 46.3.  All proposed improvements are outside the mapped floodplain.

## Flow Control

Infiltration will be used so that there is no effective impervious area and so that runoff rates do not increase by more than 0.15 cfs.  A downspout infiltration trench will be used for the roof, and an infiltration gallery with underground lattice structure such as StormTank will be used for the parking lot.  WWHM is used to size each infiltration facility.  For the WWHM analysis, the site is in the 42-inch, east rainfall zone.  The infiltration systems are modeled in WWHM as gravel trench beds.  For the downspout trench the voids are 30%, standard for drainrock, and for the lattice grid system, 95% per manufacturer's specifications.  The depth of each system is assumed to be 2 feet, so an overflow standpipe is set at that depth and trench re-sized until 100% infiltration is achieved.  The following tables shows the design parameters and trench sizing for full infiltration:

| Infiltration Design for Restaurant | Area | | | Infiltration Design for New Parking Lot | Area | |
|---|---|---|---|---|---|---|
| | sf | acre | | | sf | acre |
| Roof | 2987 | 0.0686 | | Total Area | 22250 | 0.5108 |
| depth | 2 | ft | | Roof | 648 | 0.0149 |
| Infil. Rate | 1.1 | in/hr | | Parking, Flat | 15448 | 0.3546 |
| Voids (%) | 30% | | | Total Impervious | 16096 | 0.3695 |
| Length | 80 | ft | | C, Lawn, Flat | 6154 | 0.1413 |
| Width | 6 | ft | | depth | 2 | ft |
| | | | | Infil. Rate | 1.1 | in/hr |
| | | | | Voids | 95% | |
| | | | | Length | 53 | ft |
| | | | | Width | 32 | ft |

Groundwater at the proposed parking lot infiltration system is interpolated at elevation 46.0.  Therefore, the infiltration trench for parking lot must be 49.0 or higher.  The roof infiltration trench extends closer to the groundwater monitoring well where groundwater peaked at 47.7.  Therefore, the bottom of roof drain trench must be 48.7 or higher.  Finished grade is expected to be approximately 53.0 making the trenches feasible with required separation to groundwater.

*Existing Storm System*

The existing storm drainage system on the site consists of two parts. The original improvements were installed prior to 2003 and consist of a simple conveyance system tied into the City's storm line in Main. In 2003/2004 the parking lot was expanded with a bioswale installed for treatment and an infiltration gallery installed for flow control. The overflow from this system is tied to the original conveyance system.

In existing conditions, the area draining directly to the original conveyance system is:

| PRE-2003 IMPROVEMENTS | |
|---|---|
| DIRECT DISCHARGE | |
| Existing | Area (sf) |
| Roof | 3625 |
| Paving | 6847 |
| Walk | 197 |
| Total Impervious | 10669 |

The proposed improvements will result in the removal of some existing paving and the addition of some new paving. The resulting drainage area to the original conveyance system is:

| DEVELOPED | | | | |
|---|---|---|---|---|
| DIRECT DISCHARGE | Existing | Removed | New | Final |
| | sf | sf | sf | sf |
| Roof | 3625 | 0 | 0 | 3625 |
| Paving | 6847 | 1318 | 469 | 5998 |
| Walk | 197 | 0 | 0 | 197 |
| Total Impervious | 10669 | 1318 | 469 | 9820 |

The new impervious routed to the existing conveyance system is de minimum and the result of the improvements is a net reduction in impervious area with direct discharge.

The area draining to the bioswale and infiltration trench in existing conditions is:

| 2003/2004 IMPROVEMENTS | |
|---|---|
| TO BIOSWALE AND INFILTRATION | |
| Existing | Area (sf) |
| Paving | 17035 |

The proposed improvements will both add and subtract impervious surfaces routed to the existing infiltration trench:

| TO STORMFILTER & EXISTING INFILTRATION | Existing | Removed | New+Replaced | Final |
|---|---|---|---|---|
| | sf | sf | sf | sf |
| Paving | 17035 | 6858 | 1335 | 11512 |
| Walk | 0 | 0 | 1930 | 1930 |
| Total Impervious | 17035 | 6858 | 3265 | 13442 |

The existing infiltration trench will remain.  The infiltration trench has a storage volume of 3,504 cf.  With the proposed improvements, the total tributary impervious area is reduced to 60% of the original.  Therefore, it can be concluded that only 60% of the storage volume will be used, 2,093 cf, leaving 1,411 cf of storage available.  A WWHM analysis was run of the existing infiltration trench for the new plus replaced impervious area.  This analysis shows that only 0.04 feet of storage depth is used for the 100-year event.  This depth equals 71 cf of storage, well below the available storage.

**Runoff Treatment**
Because the project is commercial, enhanced treatment of runoff is required.  Filterra, Biopod, or other GULD enhanced treatment device will be used precedent to infiltration.  The WWHM analysis shows that the treatment flow rate for all new improvements is 0.0795 cfs.  The exact configuration of treatment facilties will be determined at time of civil plan submittal.

In existing conditions, a bioswale provides treatment of runoff for the 2003 improvements.  The improvements for this project will eliminate this bioswale.  It will be replaced by a StormFilter catch basin.

**Conclusions**
The preliminary analysis shows that infiltration is feasible for runoff and the site plan shows there is adequate area for the required infiltration systems.  Full design and analysis will be prepared and submitted with civil permit application.

Please contact us if you require further information.

Sincerely,

Robert Trivitt, P.E.
Project Manager
rob@mailagc.com

# WWHM2012

# PROJECT REPORT

# General Model Information

Project Name:     Taco Time
Site Name:        Taco Time
Site Address:     1115 E Main
City:             Puyallup
Report Date:      2/2/2023
Gage:             42 IN EAST
Data Start:       10/01/1901
Data End:         09/30/2059
Timestep:         15 Minute
Precip Scale:     1.000
Version Date:     2019/09/13
Version:          4.2.17

## POC Thresholds

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

## *Mitigated Land Use*

### Basin 1

| | |
|---|---|
| Bypass: | No |
| GroundWater: | No |

| Pervious Land Use | acre |
|---|---|
| Pervious Total | 0 |

| Impervious Land Use | acre |
|---|---|
| ROOF TOPS FLAT | 0.0686 |
| Impervious Total | 0.0686 |
| Basin Total | 0.0686 |

Element Flows To:

| Surface | Interflow | Groundwater |
|---|---|---|
| Gravel Trench Bed 1 | | |

## Basin 2

Bypass:                  No

GroundWater:             No

| Pervious Land Use | acre |
|---|---|
| C, Lawn, Flat | 0.1413 |
| Pervious Total | 0.1413 |

| Impervious Land Use | acre |
|---|---|
| ROOF TOPS FLAT | 0.0149 |
| PARKING FLAT | 0.3546 |
| Impervious Total | 0.3695 |
| Basin Total | 0.5108 |

Element Flows To:

| Surface | Interflow | Groundwater |
|---|---|---|
| Gravel Trench Bed 2 | Gravel Trench Bed 2 | |

## Basin 3

| | |
|---|---|
| Bypass: | No |
| GroundWater: | No |

| Pervious Land Use | acre |
|---|---|
| Pervious Total | 0 |

| Impervious Land Use | acre |
|---|---|
| SIDEWALKS FLAT | 0.0443 |
| PARKING FLAT | 0.0306 |
| Impervious Total | 0.0749 |
| Basin Total | 0.0749 |

Element Flows To:

| Surface | Interflow | Groundwater |
|---|---|---|
| Gravel Trench Bed 3 | Gravel Trench Bed 3 | |

## Mitigated Routing

### Gravel Trench Bed 1

| | |
|---|---|
| Bottom Length: | 80.00 ft. |
| Bottom Width: | 6.00 ft. |
| Trench bottom slope 1: | 0 To 1 |
| Trench Left side slope 0: | 0 To 1 |
| Trench right side slope 2: | 0 To 1 |
| Material thickness of first layer: | 3 |
| Pour Space of material for first layer: | 0.3 |
| 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: | 1.1 |
| Infiltration safety factor: | 1 |
| Total Volume Infiltrated (ac-ft.): | 30.911 |
| Total Volume Through Riser (ac-ft.): | 0 |
| Total Volume Through Facility (ac-ft.): | 30.911 |
| Percent Infiltrated: | 100 |
| Total Precip Applied to Facility: | 0 |
| Total Evap From Facility: | 0 |
| Discharge Structure | |
| Riser Height: | 2 ft. |
| Riser Diameter: | 8 in. |
| Element Flows To: | |
| Outlet 1 | Outlet 2 |

Gravel Trench Bed Hydraulic Table

| Stage(feet) | Area(ac.) | Volume(ac-ft.) | Discharge(cfs) | Infilt(cfs) |
|---|---|---|---|---|
| 0.0000 | 0.011 | 0.000 | 0.000 | 0.000 |
| 0.0333 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.0667 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.1000 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.1333 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.1667 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.2000 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.2333 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.2667 | 0.011 | 0.000 | 0.000 | 0.012 |
| 0.3000 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.3333 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.3667 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.4000 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.4333 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.4667 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.5000 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.5333 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.5667 | 0.011 | 0.001 | 0.000 | 0.012 |
| 0.6000 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.6333 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.6667 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.7000 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.7333 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.7667 | 0.011 | 0.002 | 0.000 | 0.012 |

| | | | | |
|--------|-------|-------|-------|-------|
| 0.8000 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.8333 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.8667 | 0.011 | 0.002 | 0.000 | 0.012 |
| 0.9000 | 0.011 | 0.003 | 0.000 | 0.012 |
| 0.9333 | 0.011 | 0.003 | 0.000 | 0.012 |
| 0.9667 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.0000 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.0333 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.0667 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.1000 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.1333 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.1667 | 0.011 | 0.003 | 0.000 | 0.012 |
| 1.2000 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.2333 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.2667 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.3000 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.3333 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.3667 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.4000 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.4333 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.4667 | 0.011 | 0.004 | 0.000 | 0.012 |
| 1.5000 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.5333 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.5667 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.6000 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.6333 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.6667 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.7000 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.7333 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.7667 | 0.011 | 0.005 | 0.000 | 0.012 |
| 1.8000 | 0.011 | 0.006 | 0.000 | 0.012 |
| 1.8333 | 0.011 | 0.006 | 0.000 | 0.012 |
| 1.8667 | 0.011 | 0.006 | 0.000 | 0.012 |
| 1.9000 | 0.011 | 0.006 | 0.000 | 0.012 |
| 1.9333 | 0.011 | 0.006 | 0.000 | 0.012 |
| 1.9667 | 0.011 | 0.006 | 0.000 | 0.012 |
| 2.0000 | 0.011 | 0.006 | 0.000 | 0.012 |
| 2.0333 | 0.011 | 0.006 | 0.043 | 0.012 |
| 2.0667 | 0.011 | 0.006 | 0.121 | 0.012 |
| 2.1000 | 0.011 | 0.006 | 0.219 | 0.012 |
| 2.1333 | 0.011 | 0.007 | 0.329 | 0.012 |
| 2.1667 | 0.011 | 0.007 | 0.441 | 0.012 |
| 2.2000 | 0.011 | 0.007 | 0.547 | 0.012 |
| 2.2333 | 0.011 | 0.007 | 0.639 | 0.012 |
| 2.2667 | 0.011 | 0.007 | 0.711 | 0.012 |
| 2.3000 | 0.011 | 0.007 | 0.762 | 0.012 |
| 2.3333 | 0.011 | 0.007 | 0.808 | 0.012 |
| 2.3667 | 0.011 | 0.007 | 0.847 | 0.012 |
| 2.4000 | 0.011 | 0.007 | 0.885 | 0.012 |
| 2.4333 | 0.011 | 0.008 | 0.921 | 0.012 |
| 2.4667 | 0.011 | 0.008 | 0.956 | 0.012 |
| 2.5000 | 0.011 | 0.008 | 0.989 | 0.012 |
| 2.5333 | 0.011 | 0.008 | 1.022 | 0.012 |
| 2.5667 | 0.011 | 0.008 | 1.053 | 0.012 |
| 2.6000 | 0.011 | 0.008 | 1.084 | 0.012 |
| 2.6333 | 0.011 | 0.008 | 1.114 | 0.012 |
| 2.6667 | 0.011 | 0.008 | 1.143 | 0.012 |
| 2.7000 | 0.011 | 0.008 | 1.171 | 0.012 |

| | | | | |
|---|---|---|---|---|
| 2.7333 | 0.011 | 0.009 | 1.198 | 0.012 |
| 2.7667 | 0.011 | 0.009 | 1.225 | 0.012 |
| 2.8000 | 0.011 | 0.009 | 1.252 | 0.012 |
| 2.8333 | 0.011 | 0.009 | 1.277 | 0.012 |
| 2.8667 | 0.011 | 0.009 | 1.303 | 0.012 |
| 2.9000 | 0.011 | 0.009 | 1.328 | 0.012 |
| 2.9333 | 0.011 | 0.009 | 1.352 | 0.012 |
| 2.9667 | 0.011 | 0.009 | 1.376 | 0.012 |
| 3.0000 | 0.011 | 0.009 | 1.399 | 0.012 |

## Gravel Trench Bed 2

| | |
|---|---|
| Bottom Length: | 53.00 ft. |
| Bottom Width: | 32.00 ft. |
| Trench bottom slope  1: | 0 To 1 |
| Trench Left side slope  0: | 0 To 1 |
| Trench right side slope  2: | 0 To 1 |
| Material thickness of first layer: | 3 |
| Pour Space of material for first layer: | 0.95 |
| 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: | 1.1 |
| Infiltration safety factor: | 1 |
| Total Volume Infiltrated (ac-ft.): | 196.506 |
| Total Volume Through Riser (ac-ft.): | 0 |
| Total Volume Through Facility (ac-ft.): | 196.506 |
| Percent Infiltrated: | 100 |
| Total Precip Applied to Facility: | 0 |
| Total Evap From Facility: | 0 |
| Discharge Structure | |
| Riser Height: | 2 ft. |
| Riser Diameter: | 6 in. |
| Element Flows To: | |
| Outlet 1 | Outlet 2 |

### Gravel Trench Bed Hydraulic Table

| Stage(feet) | Area(ac.) | Volume(ac-ft.) | Discharge(cfs) | Infilt(cfs) |
|---|---|---|---|---|
| 0.0000 | 0.038 | 0.000 | 0.000 | 0.000 |
| 0.0333 | 0.038 | 0.001 | 0.000 | 0.043 |
| 0.0667 | 0.038 | 0.002 | 0.000 | 0.043 |
| 0.1000 | 0.038 | 0.003 | 0.000 | 0.043 |
| 0.1333 | 0.038 | 0.004 | 0.000 | 0.043 |
| 0.1667 | 0.038 | 0.006 | 0.000 | 0.043 |
| 0.2000 | 0.038 | 0.007 | 0.000 | 0.043 |
| 0.2333 | 0.038 | 0.008 | 0.000 | 0.043 |
| 0.2667 | 0.038 | 0.009 | 0.000 | 0.043 |
| 0.3000 | 0.038 | 0.011 | 0.000 | 0.043 |
| 0.3333 | 0.038 | 0.012 | 0.000 | 0.043 |
| 0.3667 | 0.038 | 0.013 | 0.000 | 0.043 |
| 0.4000 | 0.038 | 0.014 | 0.000 | 0.043 |
| 0.4333 | 0.038 | 0.016 | 0.000 | 0.043 |
| 0.4667 | 0.038 | 0.017 | 0.000 | 0.043 |
| 0.5000 | 0.038 | 0.018 | 0.000 | 0.043 |
| 0.5333 | 0.038 | 0.019 | 0.000 | 0.043 |
| 0.5667 | 0.038 | 0.021 | 0.000 | 0.043 |
| 0.6000 | 0.038 | 0.022 | 0.000 | 0.043 |
| 0.6333 | 0.038 | 0.023 | 0.000 | 0.043 |
| 0.6667 | 0.038 | 0.024 | 0.000 | 0.043 |
| 0.7000 | 0.038 | 0.025 | 0.000 | 0.043 |
| 0.7333 | 0.038 | 0.027 | 0.000 | 0.043 |
| 0.7667 | 0.038 | 0.028 | 0.000 | 0.043 |
| 0.8000 | 0.038 | 0.029 | 0.000 | 0.043 |
| 0.8333 | 0.038 | 0.030 | 0.000 | 0.043 |

| | | | | |
|---|---|---|---|---|
| 0.8667 | 0.038 | 0.032 | 0.000 | 0.043 |
| 0.9000 | 0.038 | 0.033 | 0.000 | 0.043 |
| 0.9333 | 0.038 | 0.034 | 0.000 | 0.043 |
| 0.9667 | 0.038 | 0.035 | 0.000 | 0.043 |
| 1.0000 | 0.038 | 0.037 | 0.000 | 0.043 |
| 1.0333 | 0.038 | 0.038 | 0.000 | 0.043 |
| 1.0667 | 0.038 | 0.039 | 0.000 | 0.043 |
| 1.1000 | 0.038 | 0.040 | 0.000 | 0.043 |
| 1.1333 | 0.038 | 0.041 | 0.000 | 0.043 |
| 1.1667 | 0.038 | 0.043 | 0.000 | 0.043 |
| 1.2000 | 0.038 | 0.044 | 0.000 | 0.043 |
| 1.2333 | 0.038 | 0.045 | 0.000 | 0.043 |
| 1.2667 | 0.038 | 0.046 | 0.000 | 0.043 |
| 1.3000 | 0.038 | 0.048 | 0.000 | 0.043 |
| 1.3333 | 0.038 | 0.049 | 0.000 | 0.043 |
| 1.3667 | 0.038 | 0.050 | 0.000 | 0.043 |
| 1.4000 | 0.038 | 0.051 | 0.000 | 0.043 |
| 1.4333 | 0.038 | 0.053 | 0.000 | 0.043 |
| 1.4667 | 0.038 | 0.054 | 0.000 | 0.043 |
| 1.5000 | 0.038 | 0.055 | 0.000 | 0.043 |
| 1.5333 | 0.038 | 0.056 | 0.000 | 0.043 |
| 1.5667 | 0.038 | 0.057 | 0.000 | 0.043 |
| 1.6000 | 0.038 | 0.059 | 0.000 | 0.043 |
| 1.6333 | 0.038 | 0.060 | 0.000 | 0.043 |
| 1.6667 | 0.038 | 0.061 | 0.000 | 0.043 |
| 1.7000 | 0.038 | 0.062 | 0.000 | 0.043 |
| 1.7333 | 0.038 | 0.064 | 0.000 | 0.043 |
| 1.7667 | 0.038 | 0.065 | 0.000 | 0.043 |
| 1.8000 | 0.038 | 0.066 | 0.000 | 0.043 |
| 1.8333 | 0.038 | 0.067 | 0.000 | 0.043 |
| 1.8667 | 0.038 | 0.069 | 0.000 | 0.043 |
| 1.9000 | 0.038 | 0.070 | 0.000 | 0.043 |
| 1.9333 | 0.038 | 0.071 | 0.000 | 0.043 |
| 1.9667 | 0.038 | 0.072 | 0.000 | 0.043 |
| 2.0000 | 0.038 | 0.074 | 0.000 | 0.043 |
| 2.0333 | 0.038 | 0.075 | 0.032 | 0.043 |
| 2.0667 | 0.038 | 0.076 | 0.090 | 0.043 |
| 2.1000 | 0.038 | 0.077 | 0.160 | 0.043 |
| 2.1333 | 0.038 | 0.078 | 0.233 | 0.043 |
| 2.1667 | 0.038 | 0.080 | 0.297 | 0.043 |
| 2.2000 | 0.038 | 0.081 | 0.346 | 0.043 |
| 2.2333 | 0.038 | 0.082 | 0.378 | 0.043 |
| 2.2667 | 0.038 | 0.083 | 0.406 | 0.043 |
| 2.3000 | 0.038 | 0.085 | 0.431 | 0.043 |
| 2.3333 | 0.038 | 0.086 | 0.454 | 0.043 |
| 2.3667 | 0.038 | 0.087 | 0.476 | 0.043 |
| 2.4000 | 0.038 | 0.088 | 0.498 | 0.043 |
| 2.4333 | 0.038 | 0.090 | 0.518 | 0.043 |
| 2.4667 | 0.038 | 0.091 | 0.537 | 0.043 |
| 2.5000 | 0.038 | 0.092 | 0.556 | 0.043 |
| 2.5333 | 0.038 | 0.093 | 0.575 | 0.043 |
| 2.5667 | 0.038 | 0.094 | 0.592 | 0.043 |
| 2.6000 | 0.038 | 0.096 | 0.609 | 0.043 |
| 2.6333 | 0.038 | 0.097 | 0.626 | 0.043 |
| 2.6667 | 0.038 | 0.098 | 0.642 | 0.043 |
| 2.7000 | 0.038 | 0.099 | 0.658 | 0.043 |
| 2.7333 | 0.038 | 0.101 | 0.674 | 0.043 |
| 2.7667 | 0.038 | 0.102 | 0.689 | 0.043 |

| | | | | |
|---|---|---|---|---|
| 2.8000 | 0.038 | 0.103 | 0.704 | 0.043 |
| 2.8333 | 0.038 | 0.104 | 0.718 | 0.043 |
| 2.8667 | 0.038 | 0.106 | 0.733 | 0.043 |
| 2.9000 | 0.038 | 0.107 | 0.747 | 0.043 |
| 2.9333 | 0.038 | 0.108 | 0.760 | 0.043 |
| 2.9667 | 0.038 | 0.109 | 0.774 | 0.043 |
| 3.0000 | 0.038 | 0.111 | 0.787 | 0.043 |

## Gravel Trench Bed 3

| | |
|---|---|
| Bottom Length: | 114.80 ft. |
| Bottom Width: | 16.40 ft. |
| Trench bottom slope  1: | 0 To 1 |
| Trench Left side slope  0: | 0 To 1 |
| Trench right side slope  2: | 0 To 1 |
| Material thickness of first layer: | 4 |
| Pour Space of material for first layer: | 0.94 |
| 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: | 1.1 |
| Infiltration safety factor: | 1 |
| Total Volume Infiltrated (ac-ft.): | 33.864 |
| Total Volume Through Riser (ac-ft.): | 0 |
| Total Volume Through Facility (ac-ft.): | 33.864 |
| Percent Infiltrated: | 100 |
| Total Precip Applied to Facility: | 0 |
| Total Evap From Facility: | 0 |
| Discharge Structure | |
| Riser Height: | 1.98 ft. |
| Riser Diameter: | 8 in. |
| Element Flows To: | |
| Outlet 1 | Outlet 2 |

### Gravel Trench Bed Hydraulic Table

| Stage(feet) | Area(ac.) | Volume(ac-ft.) | Discharge(cfs) | Infilt(cfs) |
|---|---|---|---|---|
| 0.0000 | 0.043 | 0.000 | 0.000 | 0.000 |
| 0.0331 | 0.043 | 0.001 | 0.000 | 0.047 |
| 0.0662 | 0.043 | 0.002 | 0.000 | 0.047 |
| 0.0993 | 0.043 | 0.004 | 0.000 | 0.047 |
| 0.1324 | 0.043 | 0.005 | 0.000 | 0.047 |
| 0.1656 | 0.043 | 0.006 | 0.000 | 0.047 |
| 0.1987 | 0.043 | 0.008 | 0.000 | 0.047 |
| 0.2318 | 0.043 | 0.009 | 0.000 | 0.047 |
| 0.2649 | 0.043 | 0.010 | 0.000 | 0.047 |
| 0.2980 | 0.043 | 0.012 | 0.000 | 0.047 |
| 0.3311 | 0.043 | 0.013 | 0.000 | 0.047 |
| 0.3642 | 0.043 | 0.014 | 0.000 | 0.047 |
| 0.3973 | 0.043 | 0.016 | 0.000 | 0.047 |
| 0.4304 | 0.043 | 0.017 | 0.000 | 0.047 |
| 0.4636 | 0.043 | 0.018 | 0.000 | 0.047 |
| 0.4967 | 0.043 | 0.020 | 0.000 | 0.047 |
| 0.5298 | 0.043 | 0.021 | 0.000 | 0.047 |
| 0.5629 | 0.043 | 0.022 | 0.000 | 0.047 |
| 0.5960 | 0.043 | 0.024 | 0.000 | 0.047 |
| 0.6291 | 0.043 | 0.025 | 0.000 | 0.047 |
| 0.6622 | 0.043 | 0.026 | 0.000 | 0.047 |
| 0.6953 | 0.043 | 0.028 | 0.000 | 0.047 |
| 0.7284 | 0.043 | 0.029 | 0.000 | 0.047 |
| 0.7616 | 0.043 | 0.030 | 0.000 | 0.047 |
| 0.7947 | 0.043 | 0.032 | 0.000 | 0.047 |
| 0.8278 | 0.043 | 0.033 | 0.000 | 0.047 |

| | | | | |
|---|---|---|---|---|
| 0.8609 | 0.043 | 0.035 | 0.000 | 0.047 |
| 0.8940 | 0.043 | 0.036 | 0.000 | 0.047 |
| 0.9271 | 0.043 | 0.037 | 0.000 | 0.047 |
| 0.9602 | 0.043 | 0.039 | 0.000 | 0.047 |
| 0.9933 | 0.043 | 0.040 | 0.000 | 0.047 |
| 1.0264 | 0.043 | 0.041 | 0.000 | 0.047 |
| 1.0596 | 0.043 | 0.043 | 0.000 | 0.047 |
| 1.0927 | 0.043 | 0.044 | 0.000 | 0.047 |
| 1.1258 | 0.043 | 0.045 | 0.000 | 0.047 |
| 1.1589 | 0.043 | 0.047 | 0.000 | 0.047 |
| 1.1920 | 0.043 | 0.048 | 0.000 | 0.047 |
| 1.2251 | 0.043 | 0.049 | 0.000 | 0.047 |
| 1.2582 | 0.043 | 0.051 | 0.000 | 0.047 |
| 1.2913 | 0.043 | 0.052 | 0.000 | 0.047 |
| 1.3244 | 0.043 | 0.053 | 0.000 | 0.047 |
| 1.3576 | 0.043 | 0.055 | 0.000 | 0.047 |
| 1.3907 | 0.043 | 0.056 | 0.000 | 0.047 |
| 1.4238 | 0.043 | 0.057 | 0.000 | 0.047 |
| 1.4569 | 0.043 | 0.059 | 0.000 | 0.047 |
| 1.4900 | 0.043 | 0.060 | 0.000 | 0.047 |
| 1.5231 | 0.043 | 0.061 | 0.000 | 0.047 |
| 1.5562 | 0.043 | 0.063 | 0.000 | 0.047 |
| 1.5893 | 0.043 | 0.064 | 0.000 | 0.047 |
| 1.6224 | 0.043 | 0.065 | 0.000 | 0.047 |
| 1.6556 | 0.043 | 0.067 | 0.000 | 0.047 |
| 1.6887 | 0.043 | 0.068 | 0.000 | 0.047 |
| 1.7218 | 0.043 | 0.070 | 0.000 | 0.047 |
| 1.7549 | 0.043 | 0.071 | 0.000 | 0.047 |
| 1.7880 | 0.043 | 0.072 | 0.000 | 0.047 |
| 1.8211 | 0.043 | 0.074 | 0.000 | 0.047 |
| 1.8542 | 0.043 | 0.075 | 0.000 | 0.047 |
| 1.8873 | 0.043 | 0.076 | 0.000 | 0.047 |
| 1.9204 | 0.043 | 0.078 | 0.000 | 0.047 |
| 1.9536 | 0.043 | 0.079 | 0.000 | 0.047 |
| 1.9867 | 0.043 | 0.080 | 0.003 | 0.047 |
| 2.0198 | 0.043 | 0.082 | 0.056 | 0.047 |
| 2.0529 | 0.043 | 0.083 | 0.138 | 0.047 |
| 2.0860 | 0.043 | 0.084 | 0.238 | 0.047 |
| 2.1191 | 0.043 | 0.086 | 0.348 | 0.047 |
| 2.1522 | 0.043 | 0.087 | 0.460 | 0.047 |
| 2.1853 | 0.043 | 0.088 | 0.563 | 0.047 |
| 2.2184 | 0.043 | 0.090 | 0.651 | 0.047 |
| 2.2516 | 0.043 | 0.091 | 0.720 | 0.047 |
| 2.2847 | 0.043 | 0.092 | 0.768 | 0.047 |
| 2.3178 | 0.043 | 0.094 | 0.813 | 0.047 |
| 2.3509 | 0.043 | 0.095 | 0.852 | 0.047 |
| 2.3840 | 0.043 | 0.096 | 0.889 | 0.047 |
| 2.4171 | 0.043 | 0.098 | 0.925 | 0.047 |
| 2.4502 | 0.043 | 0.099 | 0.959 | 0.047 |
| 2.4833 | 0.043 | 0.100 | 0.993 | 0.047 |
| 2.5164 | 0.043 | 0.102 | 1.025 | 0.047 |
| 2.5496 | 0.043 | 0.103 | 1.056 | 0.047 |
| 2.5827 | 0.043 | 0.104 | 1.086 | 0.047 |
| 2.6158 | 0.043 | 0.106 | 1.116 | 0.047 |
| 2.6489 | 0.043 | 0.107 | 1.144 | 0.047 |
| 2.6820 | 0.043 | 0.109 | 1.172 | 0.047 |
| 2.7151 | 0.043 | 0.110 | 1.200 | 0.047 |
| 2.7482 | 0.043 | 0.111 | 1.226 | 0.047 |

| | | | | |
|---|---|---|---|---|
| 2.7813 | 0.043 | 0.113 | 1.253 | 0.047 |
| 2.8144 | 0.043 | 0.114 | 1.278 | 0.047 |
| 2.8476 | 0.043 | 0.115 | 1.303 | 0.047 |
| 2.8807 | 0.043 | 0.117 | 1.328 | 0.047 |
| 2.9138 | 0.043 | 0.118 | 1.352 | 0.047 |
| 2.9469 | 0.043 | 0.119 | 1.376 | 0.047 |

# *Analysis Results*

## *POC 1*

POC #1 was not reported because POC must exist in both scenarios and both scenarios must have been run.

# 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*

Basin 1

S

Gravel
Trench Bed 1

Basin 2
0.51ac

S l

Gravel
Trench Bed 2

Basin 3

S l

Gravel
Trench Bed 3

## Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1901 10 01         END     2059 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN      1                        UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>    <----------File Name----------------------------->***
<-ID->                                                             ***
WDM       26    Taco Time.wdm
MESSU     25    MitTaco Time.MES
          27    MitTaco Time.L61
          28    MitTaco Time.L62
          30    POCTaco Time1.dat
END FILES

OPN SEQUENCE
    INGRP            INDELT 00:15
      IMPLND     4
      PERLND    16
      IMPLND    11
      IMPLND     8
      RCHRES     1
      RCHRES     2
      RCHRES     3
      COPY       1
      COPY     501
      DISPLY     1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Gravel Trench Bed 1        MAX                1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1        1    1
    501      1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #      # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                           User  t-series Engl Metr ***
                                      in   out              ***
    16     C, Lawn, Flat        1    1    1    1    27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************* Active Sections ***************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
    16       0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

```
   PRINT-INFO
     <PLS > ***************** Print-flags **************************** PIVL   PYR
     # - # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC *********
    16         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   END PRINT-INFO

   PWAT-PARM1
     <PLS >   PWATER variable monthly parameter value flags   ***
     # - # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
    16         0    0    0    0    0    0    0    0    0    0    0
   END PWAT-PARM1

   PWAT-PARM2
     <PLS >       PWATER input info: Part 2         ***
     # - # ***FOREST      LZSN     INFILT       LSUR      SLSUR      KVARY      AGWRC
    16            0       4.5       0.03        400       0.05        0.5      0.996
   END PWAT-PARM2

   PWAT-PARM3
     <PLS >       PWATER input info: Part 3         ***
     # - # ***PETMAX     PETMIN      INFEXP     INFILD     DEEPFR     BASETP     AGWETP
    16            0          0           2          2          0          0          0
   END PWAT-PARM3
   PWAT-PARM4
     <PLS >      PWATER input info: Part 4                            ***
     # - #     CEPSC       UZSN        NSUR       INTFW        IRC      LZETP ***
    16          0.1       0.25        0.25          6        0.5       0.25
   END PWAT-PARM4

   PWAT-STATE1
     <PLS > *** Initial conditions at start of simulation
              ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
     # - # ***   CEPS       SURS         UZS       IFWS        LZS       AGWS       GWVS
    16            0          0           0          0        2.5          1          0
   END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
     <PLS ><-------Name-------> Unit-systems   Printer ***
     # - #                      User  t-series Engl Metr ***
                                 in  out            ***
     4      ROOF TOPS/FLAT        1    1    1   27    0
    11      PARKING/FLAT          1    1    1   27    0
     8      SIDEWALKS/FLAT        1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
     <PLS > ************* Active Sections ****************************
     # - # ATMP SNOW IWAT  SLD  IWG IQAL    ***
     4         0    0    1    0    0    0
    11         0    0    1    0    0    0
     8         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
     <ILS > ******** Print-flags ******** PIVL   PYR
     # - # ATMP SNOW IWAT  SLD  IWG IQAL    *********
     4         0    0    4    0    0    0    1    9
    11         0    0    4    0    0    0    1    9
     8         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
     <PLS > IWATER variable monthly parameter value flags   ***
     # - # CSNO RTOP  VRS  VNN RTLI      ***
     4         0    0    0    0    0
```

```
       11           0     0     0     0     0
        8           0     0     0     0     0
     END IWAT-PARM1

     IWAT-PARM2
       <PLS >        IWATER input info: Part 2          ***
       # -  # ***   LSUR       SLSUR        NSUR       RETSC
        4            400        0.01         0.1         0.1
       11            400        0.01         0.1         0.1
        8            400        0.01         0.1         0.1
     END IWAT-PARM2

     IWAT-PARM3
       <PLS >        IWATER input info: Part 3          ***
       # -  # ***PETMAX    PETMIN
        4              0         0
       11              0         0
        8              0         0
     END IWAT-PARM3

     IWAT-STATE1
       <PLS > *** Initial conditions at start of simulation
       # -  # ***  RETS       SURS
        4              0         0
       11              0         0
        8              0         0
     END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                    <--Area-->       <-Target->    MBLK    ***
<Name>    #                   <-factor->       <Name>    #   Tbl#    ***
Basin  1***
IMPLND    4                     0.0686         RCHRES    1      5
Basin  2***
PERLND   16                     0.1413         RCHRES    2      2
PERLND   16                     0.1413         RCHRES    2      3
IMPLND    4                     0.0149         RCHRES    2      5
IMPLND   11                     0.3546         RCHRES    2      5
Basin  3***
IMPLND    8                     0.0443         RCHRES    3      5
IMPLND   11                     0.0306         RCHRES    3      5

******Routing******
IMPLND    4                     0.0686         COPY      1     15
PERLND   16                     0.1413         COPY      1     12
IMPLND    4                     0.0149         COPY      1     15
IMPLND   11                     0.3546         COPY      1     15
PERLND   16                     0.1413         COPY      1     13
IMPLND    8                     0.0443         COPY      1     15
IMPLND   11                     0.0306         COPY      1     15
RCHRES    1                          1         COPY    501     17
RCHRES    2                          1         COPY    501     17
RCHRES    3                          1         COPY    501     17
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #         <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY    501 OUTPUT MEAN   1 1    48.4         DISPLY   1       INPUT  TIMSER 1


<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #         <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
```

```
   RCHRES           Name          Nexits    Unit Systems     Printer                  ***
   # - #<------------------><--->  User T-series   Engl Metr LKFG                      ***
                                          in  out                                      ***
     1     Gravel Trench Be-004    2    1     1    1    28    0    1
     2     Gravel Trench Be-007    2    1     1    1    28    0    1
     3     Gravel Trench Be-009    2    1     1    1    28    0    1
 END GEN-INFO
 *** Section RCHRES***

  ACTIVITY
   <PLS > ************* Active Sections ****************************
   # - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
     1       1    0    0    0    0    0    0    0    0    0
     2       1    0    0    0    0    0    0    0    0    0
     3       1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
   <PLS > ***************** Print-flags ****************** PIVL   PYR
   # - # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL   PYR  *********
     1      4    0    0    0    0    0    0    0    0    0    1    9
     2      4    0    0    0    0    0    0    0    0    0    1    9
     3      4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
   RCHRES   Flags for each HYDR Section                                ***
   # - #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each    FUNCT  for each
          FG FG FG FG  possible  exit *** possible   exit     possible   exit
           *  *  *  *   *  *  *  *  *      *  *  *  *  *         ***
     1      0  1  0  0   4  5  0  0  0      0  0  0  0  0       2  2  2  2  2
     2      0  1  0  0   4  5  0  0  0      0  0  0  0  0       2  2  2  2  2
     3      0  1  0  0   4  5  0  0  0      0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
   # - #    FTABNO      LEN      DELTH     STCOR        KS        DB50      ***
   <------><--------><--------><--------><--------><--------><-------->     ***
     1           1      0.02       0.0       0.0       0.5       0.0
     2           2      0.01       0.0       0.0       0.5       0.0
     3           3      0.02       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
   RCHRES   Initial conditions for each HYDR section                   ***
   # - # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
   <------><-------->   <---><---><---><---><--->  *** <---><---><---><---><--->
     1          0       4.0  5.0  0.0  0.0  0.0        0.0  0.0  0.0  0.0  0.0
     2          0       4.0  5.0  0.0  0.0  0.0        0.0  0.0  0.0  0.0  0.0
     3          0       4.0  5.0  0.0  0.0  0.0        0.0  0.0  0.0  0.0  0.0
   END HYDR-INIT
 END RCHRES

 SPEC-ACTIONS
 END SPEC-ACTIONS
 FTABLES
  FTABLE      1
    92    5
    Depth      Area     Volume  Outflow1  Outflow2  Velocity  Travel Time***
     (ft)    (acres)  (acre-ft)   (cfs)     (cfs)   (ft/sec)    (Minutes)***
 0.000000  0.011019  0.000000  0.000000  0.000000
 0.033333  0.011019  0.000110  0.000000  0.012222
 0.066667  0.011019  0.000220  0.000000  0.012222
 0.100000  0.011019  0.000331  0.000000  0.012222
 0.133333  0.011019  0.000441  0.000000  0.012222
 0.166667  0.011019  0.000551  0.000000  0.012222
 0.200000  0.011019  0.000661  0.000000  0.012222
 0.233333  0.011019  0.000771  0.000000  0.012222
 0.266667  0.011019  0.000882  0.000000  0.012222
 0.300000  0.011019  0.000992  0.000000  0.012222
```

```
0.333333   0.011019   0.001102   0.000000   0.012222
0.366667   0.011019   0.001212   0.000000   0.012222
0.400000   0.011019   0.001322   0.000000   0.012222
0.433333   0.011019   0.001433   0.000000   0.012222
0.466667   0.011019   0.001543   0.000000   0.012222
0.500000   0.011019   0.001653   0.000000   0.012222
0.533333   0.011019   0.001763   0.000000   0.012222
0.566667   0.011019   0.001873   0.000000   0.012222
0.600000   0.011019   0.001983   0.000000   0.012222
0.633333   0.011019   0.002094   0.000000   0.012222
0.666667   0.011019   0.002204   0.000000   0.012222
0.700000   0.011019   0.002314   0.000000   0.012222
0.733333   0.011019   0.002424   0.000000   0.012222
0.766667   0.011019   0.002534   0.000000   0.012222
0.800000   0.011019   0.002645   0.000000   0.012222
0.833333   0.011019   0.002755   0.000000   0.012222
0.866667   0.011019   0.002865   0.000000   0.012222
0.900000   0.011019   0.002975   0.000000   0.012222
0.933333   0.011019   0.003085   0.000000   0.012222
0.966667   0.011019   0.003196   0.000000   0.012222
1.000000   0.011019   0.003306   0.000000   0.012222
1.033333   0.011019   0.003416   0.000000   0.012222
1.066667   0.011019   0.003526   0.000000   0.012222
1.100000   0.011019   0.003636   0.000000   0.012222
1.133333   0.011019   0.003747   0.000000   0.012222
1.166667   0.011019   0.003857   0.000000   0.012222
1.200000   0.011019   0.003967   0.000000   0.012222
1.233333   0.011019   0.004077   0.000000   0.012222
1.266667   0.011019   0.004187   0.000000   0.012222
1.300000   0.011019   0.004298   0.000000   0.012222
1.333333   0.011019   0.004408   0.000000   0.012222
1.366667   0.011019   0.004518   0.000000   0.012222
1.400000   0.011019   0.004628   0.000000   0.012222
1.433333   0.011019   0.004738   0.000000   0.012222
1.466667   0.011019   0.004848   0.000000   0.012222
1.500000   0.011019   0.004959   0.000000   0.012222
1.533333   0.011019   0.005069   0.000000   0.012222
1.566667   0.011019   0.005179   0.000000   0.012222
1.600000   0.011019   0.005289   0.000000   0.012222
1.633333   0.011019   0.005399   0.000000   0.012222
1.666667   0.011019   0.005510   0.000000   0.012222
1.700000   0.011019   0.005620   0.000000   0.012222
1.733333   0.011019   0.005730   0.000000   0.012222
1.766667   0.011019   0.005840   0.000000   0.012222
1.800000   0.011019   0.005950   0.000000   0.012222
1.833333   0.011019   0.006061   0.000000   0.012222
1.866667   0.011019   0.006171   0.000000   0.012222
1.900000   0.011019   0.006281   0.000000   0.012222
1.933333   0.011019   0.006391   0.000000   0.012222
1.966667   0.011019   0.006501   0.000000   0.012222
2.000000   0.011019   0.006612   0.000000   0.012222
2.033333   0.011019   0.006722   0.042996   0.012222
2.066667   0.011019   0.006832   0.121030   0.012222
2.100000   0.011019   0.006942   0.219469   0.012222
2.133333   0.011019   0.007052   0.329384   0.012222
2.166667   0.011019   0.007163   0.441835   0.012222
2.200000   0.011019   0.007273   0.547841   0.012222
2.233333   0.011019   0.007383   0.639435   0.012222
2.266667   0.011019   0.007493   0.711272   0.012222
2.300000   0.011019   0.007603   0.762603   0.012222
2.333333   0.011019   0.007713   0.808195   0.012222
2.366667   0.011019   0.007824   0.847643   0.012222
2.400000   0.011019   0.007934   0.885334   0.012222
2.433333   0.011019   0.008044   0.921485   0.012222
2.466667   0.011019   0.008154   0.956270   0.012222
2.500000   0.011019   0.008264   0.989833   0.012222
2.533333   0.011019   0.008375   1.022295   0.012222
2.566667   0.011019   0.008485   1.053758   0.012222
2.600000   0.011019   0.008595   1.084308   0.012222
2.633333   0.011019   0.008705   1.114021   0.012222
```

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2.666667  0.011019  0.008815  1.142961  0.012222
2.700000  0.011019  0.008926  1.171186  0.012222
2.733333  0.011019  0.009036  1.198748  0.012222
2.766667  0.011019  0.009146  1.225689  0.012222
2.800000  0.011019  0.009256  1.252051  0.012222
2.833333  0.011019  0.009366  1.277869  0.012222
2.866667  0.011019  0.009477  1.303176  0.012222
2.900000  0.011019  0.009587  1.328001  0.012222
2.933333  0.011019  0.009697  1.352370  0.012222
2.966667  0.011019  0.009807  1.376307  0.012222
3.000000  0.011019  0.009917  1.399836  0.012222
3.033333  0.011019  0.010285  1.422975  0.012222
END FTABLE   1
FTABLE       2
  92    5
    Depth      Area     Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)    (acres) (acre-ft)    (cfs)     (cfs)   (ft/sec)    (Minutes)***
0.000000  0.038935  0.000000  0.000000  0.000000
0.033333  0.038935  0.001233  0.000000  0.043185
0.066667  0.038935  0.002466  0.000000  0.043185
0.100000  0.038935  0.003699  0.000000  0.043185
0.133333  0.038935  0.004932  0.000000  0.043185
0.166667  0.038935  0.006165  0.000000  0.043185
0.200000  0.038935  0.007398  0.000000  0.043185
0.233333  0.038935  0.008631  0.000000  0.043185
0.266667  0.038935  0.009863  0.000000  0.043185
0.300000  0.038935  0.011096  0.000000  0.043185
0.333333  0.038935  0.012329  0.000000  0.043185
0.366667  0.038935  0.013562  0.000000  0.043185
0.400000  0.038935  0.014795  0.000000  0.043185
0.433333  0.038935  0.016028  0.000000  0.043185
0.466667  0.038935  0.017261  0.000000  0.043185
0.500000  0.038935  0.018494  0.000000  0.043185
0.533333  0.038935  0.019727  0.000000  0.043185
0.566667  0.038935  0.020960  0.000000  0.043185
0.600000  0.038935  0.022193  0.000000  0.043185
0.633333  0.038935  0.023426  0.000000  0.043185
0.666667  0.038935  0.024659  0.000000  0.043185
0.700000  0.038935  0.025892  0.000000  0.043185
0.733333  0.038935  0.027125  0.000000  0.043185
0.766667  0.038935  0.028358  0.000000  0.043185
0.800000  0.038935  0.029590  0.000000  0.043185
0.833333  0.038935  0.030823  0.000000  0.043185
0.866667  0.038935  0.032056  0.000000  0.043185
0.900000  0.038935  0.033289  0.000000  0.043185
0.933333  0.038935  0.034522  0.000000  0.043185
0.966667  0.038935  0.035755  0.000000  0.043185
1.000000  0.038935  0.036988  0.000000  0.043185
1.033333  0.038935  0.038221  0.000000  0.043185
1.066667  0.038935  0.039454  0.000000  0.043185
1.100000  0.038935  0.040687  0.000000  0.043185
1.133333  0.038935  0.041920  0.000000  0.043185
1.166667  0.038935  0.043153  0.000000  0.043185
1.200000  0.038935  0.044386  0.000000  0.043185
1.233333  0.038935  0.045619  0.000000  0.043185
1.266667  0.038935  0.046852  0.000000  0.043185
1.300000  0.038935  0.048084  0.000000  0.043185
1.333333  0.038935  0.049317  0.000000  0.043185
1.366667  0.038935  0.050550  0.000000  0.043185
1.400000  0.038935  0.051783  0.000000  0.043185
1.433333  0.038935  0.053016  0.000000  0.043185
1.466667  0.038935  0.054249  0.000000  0.043185
1.500000  0.038935  0.055482  0.000000  0.043185
1.533333  0.038935  0.056715  0.000000  0.043185
1.566667  0.038935  0.057948  0.000000  0.043185
1.600000  0.038935  0.059181  0.000000  0.043185
1.633333  0.038935  0.060414  0.000000  0.043185
1.666667  0.038935  0.061647  0.000000  0.043185
1.700000  0.038935  0.062880  0.000000  0.043185
1.733333  0.038935  0.064113  0.000000  0.043185
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1.766667  0.038935  0.065346  0.000000  0.043185
1.800000  0.038935  0.066579  0.000000  0.043185
1.833333  0.038935  0.067811  0.000000  0.043185
1.866667  0.038935  0.069044  0.000000  0.043185
1.900000  0.038935  0.070277  0.000000  0.043185
1.933333  0.038935  0.071510  0.000000  0.043185
1.966667  0.038935  0.072743  0.000000  0.043185
2.000000  0.038935  0.073976  0.000000  0.043185
2.033333  0.038935  0.075209  0.032215  0.043185
2.066667  0.038935  0.076442  0.090096  0.043185
2.100000  0.038935  0.077675  0.160456  0.043185
2.133333  0.038935  0.078908  0.233006  0.043185
2.166667  0.038935  0.080141  0.297598  0.043185
2.200000  0.038935  0.081374  0.346488  0.043185
2.233333  0.038935  0.082607  0.378006  0.043185
2.266667  0.038935  0.083840  0.406615  0.043185
2.300000  0.038935  0.085073  0.431281  0.043185
2.333333  0.038935  0.086305  0.454610  0.043185
2.366667  0.038935  0.087538  0.476799  0.043185
2.400000  0.038935  0.088771  0.498000  0.043185
2.433333  0.038935  0.090004  0.518335  0.043185
2.466667  0.038935  0.091237  0.537902  0.043185
2.500000  0.038935  0.092470  0.556781  0.043185
2.533333  0.038935  0.093703  0.575041  0.043185
2.566667  0.038935  0.094936  0.592739  0.043185
2.600000  0.038935  0.096169  0.609923  0.043185
2.633333  0.038935  0.097402  0.626637  0.043185
2.666667  0.038935  0.098635  0.642916  0.043185
2.700000  0.038935  0.099868  0.658792  0.043185
2.733333  0.038935  0.101101  0.674296  0.043185
2.766667  0.038935  0.102334  0.689450  0.043185
2.800000  0.038935  0.103567  0.704279  0.043185
2.833333  0.038935  0.104800  0.718801  0.043185
2.866667  0.038935  0.106032  0.733036  0.043185
2.900000  0.038935  0.107265  0.747000  0.043185
2.933333  0.038935  0.108498  0.760708  0.043185
2.966667  0.038935  0.109731  0.774173  0.043185
3.000000  0.038935  0.110964  0.787408  0.043185
3.033333  0.038935  0.112262  0.800423  0.043185
END FTABLE    2
FTABLE        3
 91    5
   Depth      Area     Volume   Outflow1  Outflow2  Velocity   Travel Time***
    (ft)    (acres)  (acre-ft)   (cfs)      (cfs)   (ft/sec)    (Minutes)***
0.000000  0.043221  0.000000  0.000000  0.000000
0.033111  0.043221  0.001345  0.000000  0.047940
0.066222  0.043221  0.002690  0.000000  0.047940
0.099333  0.043221  0.004036  0.000000  0.047940
0.132444  0.043221  0.005381  0.000000  0.047940
0.165556  0.043221  0.006726  0.000000  0.047940
0.198667  0.043221  0.008071  0.000000  0.047940
0.231778  0.043221  0.009417  0.000000  0.047940
0.264889  0.043221  0.010762  0.000000  0.047940
0.298000  0.043221  0.012107  0.000000  0.047940
0.331111  0.043221  0.013452  0.000000  0.047940
0.364222  0.043221  0.014798  0.000000  0.047940
0.397333  0.043221  0.016143  0.000000  0.047940
0.430444  0.043221  0.017488  0.000000  0.047940
0.463556  0.043221  0.018833  0.000000  0.047940
0.496667  0.043221  0.020179  0.000000  0.047940
0.529778  0.043221  0.021524  0.000000  0.047940
0.562889  0.043221  0.022869  0.000000  0.047940
0.596000  0.043221  0.024214  0.000000  0.047940
0.629111  0.043221  0.025560  0.000000  0.047940
0.662222  0.043221  0.026905  0.000000  0.047940
0.695333  0.043221  0.028250  0.000000  0.047940
0.728444  0.043221  0.029595  0.000000  0.047940
0.761556  0.043221  0.030940  0.000000  0.047940
0.794667  0.043221  0.032286  0.000000  0.047940
0.827778  0.043221  0.033631  0.000000  0.047940
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0.860889  0.043221  0.034976  0.000000  0.047940
0.894000  0.043221  0.036321  0.000000  0.047940
0.927111  0.043221  0.037667  0.000000  0.047940
0.960222  0.043221  0.039012  0.000000  0.047940
0.993333  0.043221  0.040357  0.000000  0.047940
1.026444  0.043221  0.041702  0.000000  0.047940
1.059556  0.043221  0.043048  0.000000  0.047940
1.092667  0.043221  0.044393  0.000000  0.047940
1.125778  0.043221  0.045738  0.000000  0.047940
1.158889  0.043221  0.047083  0.000000  0.047940
1.192000  0.043221  0.048429  0.000000  0.047940
1.225111  0.043221  0.049774  0.000000  0.047940
1.258222  0.043221  0.051119  0.000000  0.047940
1.291333  0.043221  0.052464  0.000000  0.047940
1.324444  0.043221  0.053810  0.000000  0.047940
1.357556  0.043221  0.055155  0.000000  0.047940
1.390667  0.043221  0.056500  0.000000  0.047940
1.423778  0.043221  0.057845  0.000000  0.047940
1.456889  0.043221  0.059191  0.000000  0.047940
1.490000  0.043221  0.060536  0.000000  0.047940
1.523111  0.043221  0.061881  0.000000  0.047940
1.556222  0.043221  0.063226  0.000000  0.047940
1.589333  0.043221  0.064571  0.000000  0.047940
1.622444  0.043221  0.065917  0.000000  0.047940
1.655556  0.043221  0.067262  0.000000  0.047940
1.688667  0.043221  0.068607  0.000000  0.047940
1.721778  0.043221  0.069952  0.000000  0.047940
1.754889  0.043221  0.071298  0.000000  0.047940
1.788000  0.043221  0.072643  0.000000  0.047940
1.821111  0.043221  0.073988  0.000000  0.047940
1.854222  0.043221  0.075333  0.000000  0.047940
1.887333  0.043221  0.076679  0.000000  0.047940
1.920444  0.043221  0.078024  0.000000  0.047940
1.953556  0.043221  0.079369  0.000000  0.047940
1.986667  0.043221  0.080714  0.003852  0.047940
2.019778  0.043221  0.082060  0.056020  0.047940
2.052889  0.043221  0.083405  0.138135  0.047940
2.086000  0.043221  0.084750  0.238662  0.047940
2.119111  0.043221  0.086095  0.348949  0.047940
2.152222  0.043221  0.087441  0.460186  0.047940
2.185333  0.043221  0.088786  0.563644  0.047940
2.218444  0.043221  0.090131  0.651815  0.047940
2.251556  0.043221  0.091476  0.720025  0.047940
2.284667  0.043221  0.092821  0.768399  0.047940
2.317778  0.043221  0.094167  0.813566  0.047940
2.350889  0.043221  0.095512  0.852509  0.047940
2.384000  0.043221  0.096857  0.889749  0.047940
2.417111  0.043221  0.098202  0.925493  0.047940
2.450222  0.043221  0.099548  0.959906  0.047940
2.483333  0.043221  0.100893  0.993127  0.047940
2.516444  0.043221  0.102238  1.025273  0.047940
2.549556  0.043221  0.103583  1.056441  0.047940
2.582667  0.043221  0.104929  1.086715  0.047940
2.615778  0.043221  0.106274  1.116168  0.047940
2.648889  0.043221  0.107619  1.144864  0.047940
2.682000  0.043221  0.108964  1.172858  0.047940
2.715111  0.043221  0.110310  1.200200  0.047940
2.748222  0.043221  0.111655  1.226932  0.047940
2.781333  0.043221  0.113000  1.253094  0.047940
2.814444  0.043221  0.114345  1.278721  0.047940
2.847556  0.043221  0.115691  1.303844  0.047940
2.880667  0.043221  0.117036  1.328492  0.047940
2.913778  0.043221  0.118381  1.352692  0.047940
2.946889  0.043221  0.119726  1.376465  0.047940
2.980000  0.043221  0.121072  1.399836  0.047940
  END FTABLE  3
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
```

```
<Name>     # <Name>  # tem strg<-factor->strg <Name>     #    #        <Name> # #   ***
WDM      2 PREC    ENGL     1                 PERLND   1 999 EXTNL  PREC
WDM      2 PREC    ENGL     1                 IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP    ENGL     1                 PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP    ENGL     1                 IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>     #       <Name> # #<-factor->strg <Name>     # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1          1     WDM   1000 FLOW      ENGL      REPL
RCHRES   1 HYDR   O      1 1          1     WDM   1001 FLOW      ENGL      REPL
RCHRES   1 HYDR   O      2 1          1     WDM   1002 FLOW      ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1          1     WDM   1003 STAG      ENGL      REPL
COPY     1 OUTPUT MEAN   1 1       48.4     WDM    701 FLOW      ENGL      REPL
COPY   501 OUTPUT MEAN   1 1       48.4     WDM    801 FLOW      ENGL      REPL
RCHRES   2 HYDR   RO     1 1          1     WDM   1008 FLOW      ENGL      REPL
RCHRES   2 HYDR   O      1 1          1     WDM   1009 FLOW      ENGL      REPL
RCHRES   2 HYDR   O      2 1          1     WDM   1010 FLOW      ENGL      REPL
RCHRES   2 HYDR   STAGE  1 1          1     WDM   1011 STAG      ENGL      REPL
RCHRES   3 HYDR   RO     1 1          1     WDM   1012 FLOW      ENGL      REPL
RCHRES   3 HYDR   O      1 1          1     WDM   1013 FLOW      ENGL      REPL
RCHRES   3 HYDR   O      2 1          1     WDM   1014 FLOW      ENGL      REPL
RCHRES   3 HYDR   STAGE  1 1          1     WDM   1015 STAG      ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>    <-Grp> <-Member-><--Mult-->   <Target>        <-Grp> <-Member->***
<Name>             <Name> # #<-factor->   <Name>                 <Name> # #***
  MASS-LINK       2
PERLND     PWATER SURO      0.083333      RCHRES          INFLOW IVOL
  END MASS-LINK   2


  MASS-LINK       3
PERLND     PWATER IFWO      0.083333      RCHRES          INFLOW IVOL
  END MASS-LINK   3


  MASS-LINK       5
IMPLND     IWATER SURO      0.083333      RCHRES          INFLOW IVOL
  END MASS-LINK   5


  MASS-LINK      12
PERLND     PWATER SURO      0.083333      COPY            INPUT  MEAN
  END MASS-LINK  12


  MASS-LINK      13
PERLND     PWATER IFWO      0.083333      COPY            INPUT  MEAN
  END MASS-LINK  13


  MASS-LINK      15
IMPLND     IWATER SURO      0.083333      COPY            INPUT  MEAN
  END MASS-LINK  15


  MASS-LINK      17
RCHRES     OFLOW  OVOL   1                COPY            INPUT  MEAN
  END MASS-LINK  17


END MASS-LINK

END RUN
```

# *Mitigated HSPF Message File*

# *Disclaimer*

## *Legal Notice*

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Olympia, WA.  98501
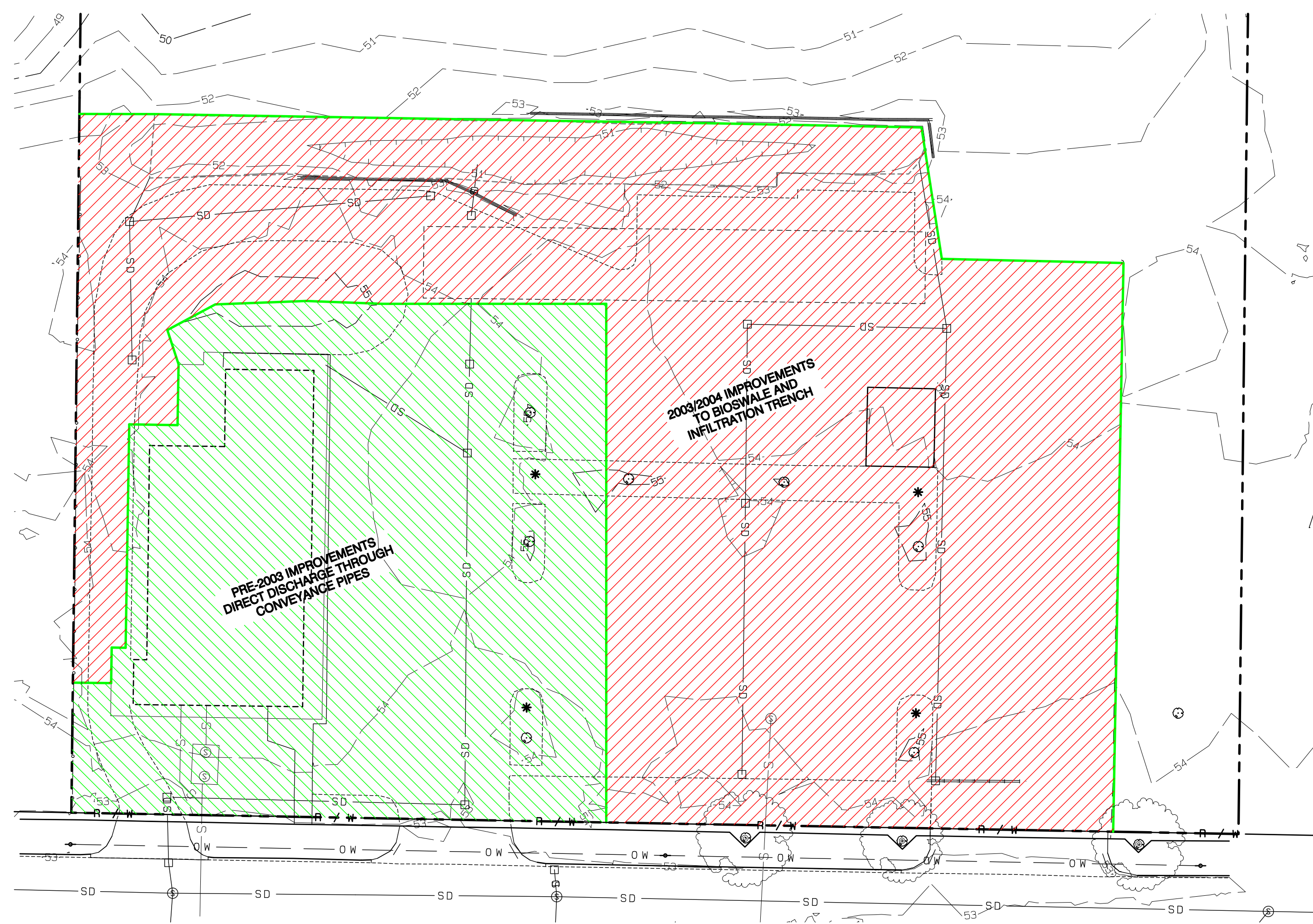Toll Free 1(866)943-0304
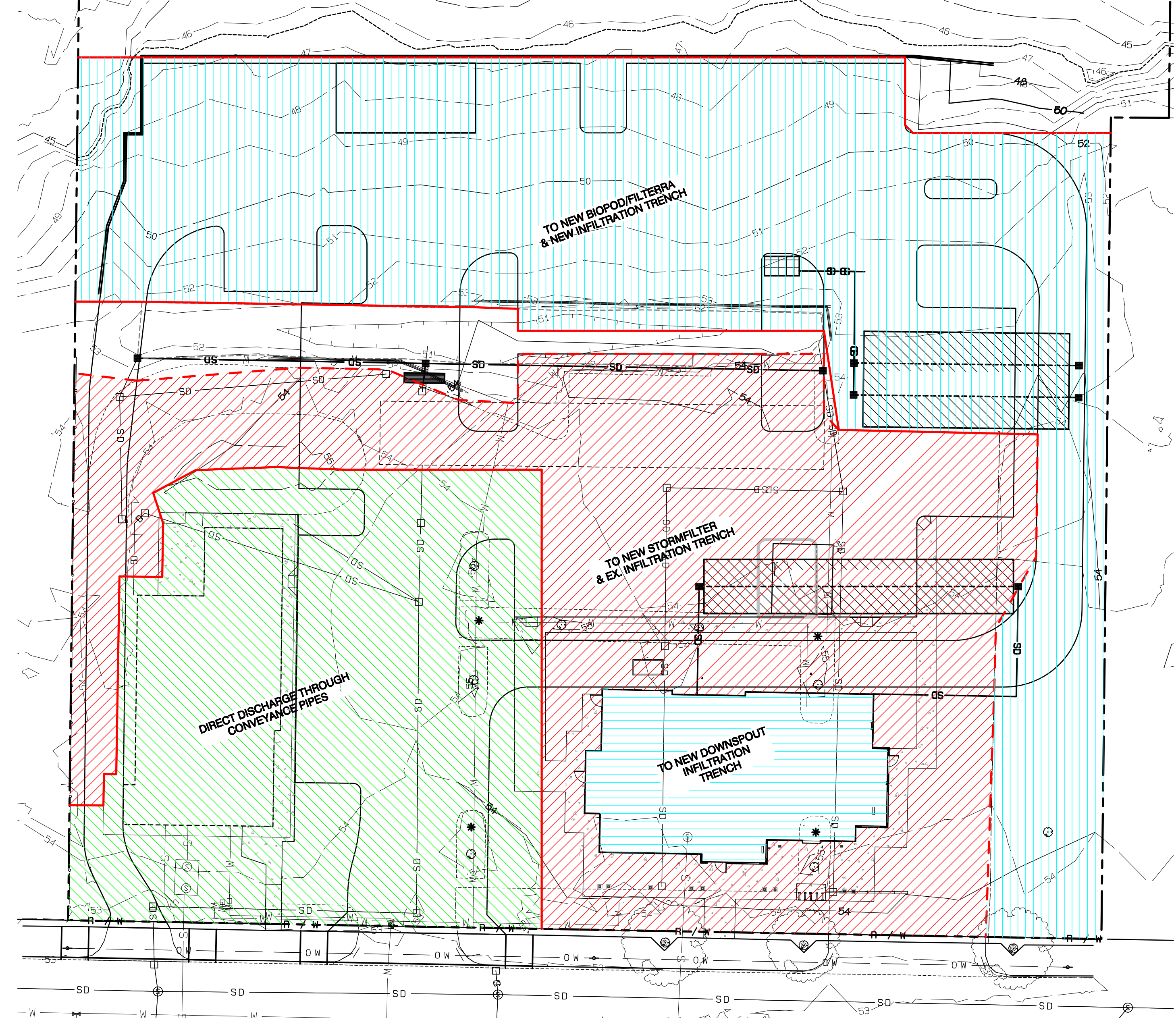Local (360)943-0304

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# Taco Time

Section 27, Township 20 N, Range 4 E, Willamette Meridian, Pierce County, Washington
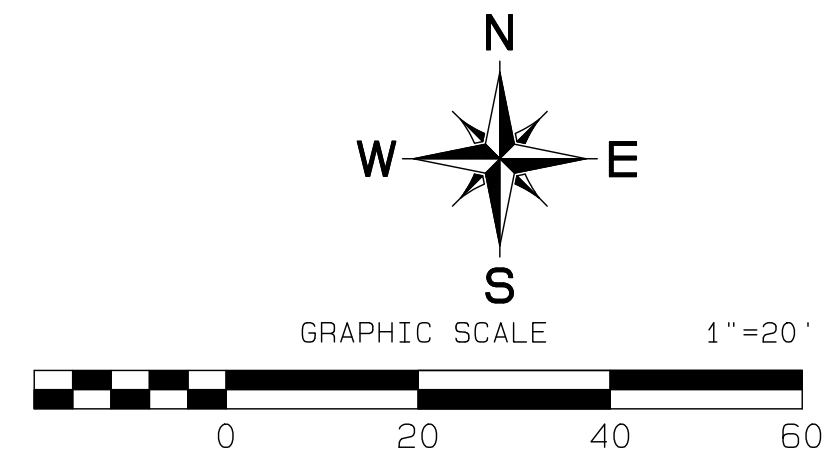
## EXISTING DRAINAGE BASINS

PRE-2003 IMPROVEMENTS DIRECT DISCHARGE THROUGH CONVEYANCE PIPES

2003/2004 IMPROVEMENTS TO BIOSWALE AND INFILTRATION TRENCH

**DIRECT DISCHARGE:**
ROOF = 3,625 SF
PAVING = 6,847 SF
WALK = 197 SF
TOTAL IMP. = 10,669 SF

**TO BIOSWALE & INFILTRATION**
PAVING = 17,035 SF

GRAPHIC SCALE    1" = 20'

0    20    40    60

## DEVELOPED DRAINAGE BASINS

TO NEW BIOPOD/FILTERRA & NEW INFILTRATION TRENCH

TO NEW STORMFILTER & EX. INFILTRATION TRENCH

DIRECT DISCHARGE THROUGH CONVEYANCE PIPES

TO NEW DOWNSPOUT INFILTRATION TRENCH

| DIRECT DISCHARGE | Existing | Removed | New | Final |
|---|---|---|---|---|
| | sf | sf | sf | sf |
| Roof | 3625 | 0 | 0 | 3625 |
| Paving | 6847 | 1318 | 469 | 5998 |
| Walk | 197 | 0 | 0 | 197 |
| Total Impervious | 10669 | 1318 | 469 | 9820 |

| TO STORMFILTER & EXISTING | Existing | Removed | New+Replaced | Final |
|---|---|---|---|---|
| INFILTRATION | sf | sf | sf | sf |
| Paving | 17035 | 6858 | 1335 | 11512 |
| Walk | 0 | 0 | 1930 | 1930 |
| Total Impervious | 17035 | 6858 | 3265 | 13442 |

| TO NEW BIOPOD & INFILTRATION TRENCH | |
|---|---|
| | sf |
| Roof | 648 |
| Paving | 15448 |
| Total Impervious | 16096 |

| TO ROOF DOWNSOPUT | |
|---|---|
| INFILTRATION TRENCH | sf |
| Roof | 2987 |

Preliminary Drainage Basin Map

Taco Time

JOB NO: 2935
DATE: February 1, 2023
DESIGNED BY: Paul Green
DRAWN BY: Rob Trivitt
CHECKED BY: Jim Job
APPROVED BY: Paul Green

ROBERT A. TRIVITT
WASHINGTON
PROFESSIONAL ENGINEER
43315

DRAWING

# D-1

SHEET 1
OF 1

Project Desc.: Taco Time    Path: F:\Jobs\2935 - Taco Time\Rev\Taco 2023 v202.pro    Plot Date/Time: 2/2/2023 8:38:20AM