

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9189
Exam Date: 08/11/2016

1. Current Owner:
CITY OF SANDPOINT 1123 LAKE ST SANDPOINT ID 83864-1714
2. Accompanied by: Austin Hull
Phone No: 208-263-3674
Address: Same as above
Relationship to permit Holder: Parks Supervisor

3. **SOURCE:**
SAND CREEK

Tributary
LAKE PEND OREILLE

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
96-8353	LAKE PEND OREILLE	IRRIGATION	LICENSE

Comments: WR 96-8353 is used for irrigation purposes by Condo Del Sol ASSN INC, from Lake Pend Oreille, but is not a concern from overlap.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

SAND CREEK NW¼ NW¼ SW¼, Sec. 23, Twp 57N, Rge 02W, B.M. BONNER County
SAND CREEK L2 (SW¼ SW¼ NW¼), Sec. 23, Twp 57N, Rge 02W, B.M. BONNER County

Method of Determination: GPS; PODs are pumps located at -116°32.743, 48°16.430 and -116°32.677, 48°16.300.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	02W	22	0.4			0.2													0.6
57N	02W	23							1.1 L2			2.2	0.1						3.4

Total Acres: 4.0

Method of Determination: Arcmap and GPS

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
☒ Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be
☒ 1:24,000 or greater.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
LAKE PUMP	FRANKLIN	7.5	5199	HYDROFLO	
LAKE PUMP	UNK	3.0			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurements, as there was inadequate pipe length available to install measuring device, as piping ran directly from pump stations (2ea) to sprinkler systems.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Applicant provided pump design documentation for larger 7.5 hp pump stating the pump produced 80 gpm operating at 65 psi. The second pump was a pre-existing pump without data; a Theoretic Pumping Equation was used to derive the diversion rate, with the 3.0 hp pump estimated to be 20 feet deep, operating at 65 psi, and producing 55.7 gpm – rounded up to 56 gpm to account for significant figure values detailed in department admin memo (application processing memo No. 6). The two pumps combined produce a maximum diversion rate of 80 gpm + 56 gpm = 136 gpm = **0.3 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5.0 \text{ acres} \times 3 \text{ afa} = 15.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.3 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 127.3 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 15.0 \text{ af}$$

2. Volume Calculations for Other Uses: N/A

This is a surface water right, so no volume will be included on the water right license.

G. NARRATIVE/REMARKS/COMMENTS

At time of licensing, the permitted POU for irrigation component was found to be inaccurate, see below:

POU: was not authorized on permit for irrigation in SE¼ NE¼, Sec. 22, Twp 57N, Rge 02W. During field exam irrigation was found along walk path in this location. An Application for Amendment was initiated, and mailed with cover letter to applicant on 6 May 2020.

The field exam conducted with Austin Hull, Parks Supervisor, showed water being pumped from Lake Pend Oreille where Sand Creek flows into the lake, being used for irrigation purposes. There were two PODs, drawing water from the same source on opposing sides of the I-95 overpass. The PODs had two different pumps due to size of irrigation requirements. The larger pump was a 7.5 hp pump to serve a pressurized sprinkler system. The second pump was a smaller, 3 hp pump that also served a pressurized sprinkler system. Irrigation was used to water along the I-95 byway corridor coming in and out of Sandpoint, and a trail system that ran alongside the highway and railway. Flow measurements were not able to be performed due to inadequate pipe requirements. Applicant provided engineer documentation for the larger 7.5 hp pump demonstrating 80 gpm performance rating. The smaller pump was older, and a Theoretical Pumping Equation was used to determine a diversion rate of 56 gpm. The combined maximum diversion rate equals $80 \text{ gpm} + 56 \text{ gpm} = 136 \text{ gpm} = 0.3 \text{ cfs}$, which will be carried forward to licensing.

During licensing review, it was found that the POD located in the SWNW of section 23 is in Government Lot 2. The license was updated to reflect POD location of L2 (NW¼NW¼SW¼), Sec. 23, Twp 57N, Rge 02W. See attached memo for change in POD description. At time of licensing, the permitted POU for irrigation component was found to be inaccurate, see below:

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The applicant has applied for a larger diversion rate than the department standard rate, but the place of use is a city park and walking path landscaping, and due to their need to consistently irrigate during a compressed time each day, typically at night, the increase in diversion rate is justified. The applicant stated in correspondence that the sprinkler system included 80ea rainbird 1800 series 4" pop=up sprinklers, each with a 15' half circle tip operating at 30 psi.

Irrigation acreage was difficult to calculate using Arcmap, as the sprinkler system used by applicant watered in areas beneath overpass locations. During the field exam, a rough sketch was drawn showing irrigation area, and then traced out using arcmap equaling 4.0 acres which results in an annual volume of 12.0 af. On licensing maps, the POU for irrigation will show concrete areas, but these include areas showing overpass, with irrigation occurring beneath them. The applicant uses Sand Creek and Lake Pend Oreille as the source of water, this is a surface water right, and no volume diversion will be included on the water right license.

Condition 26A was removed from license. All other condition will remain on license. WR 96-8353 overlaps this license's POU, and is used by Condo Del Sol ASSN, INC for irrigation purpose, but is not a concern for overlap with this water right.

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Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>
IRRIGATION	04/01 to 10/31	0.30 CFS

Totals: 0.30 CFS

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ None

I. AUTHENTICATION

Luke Bates - Water Resource Agent

Field Examiner's Name

Date

Reviewer

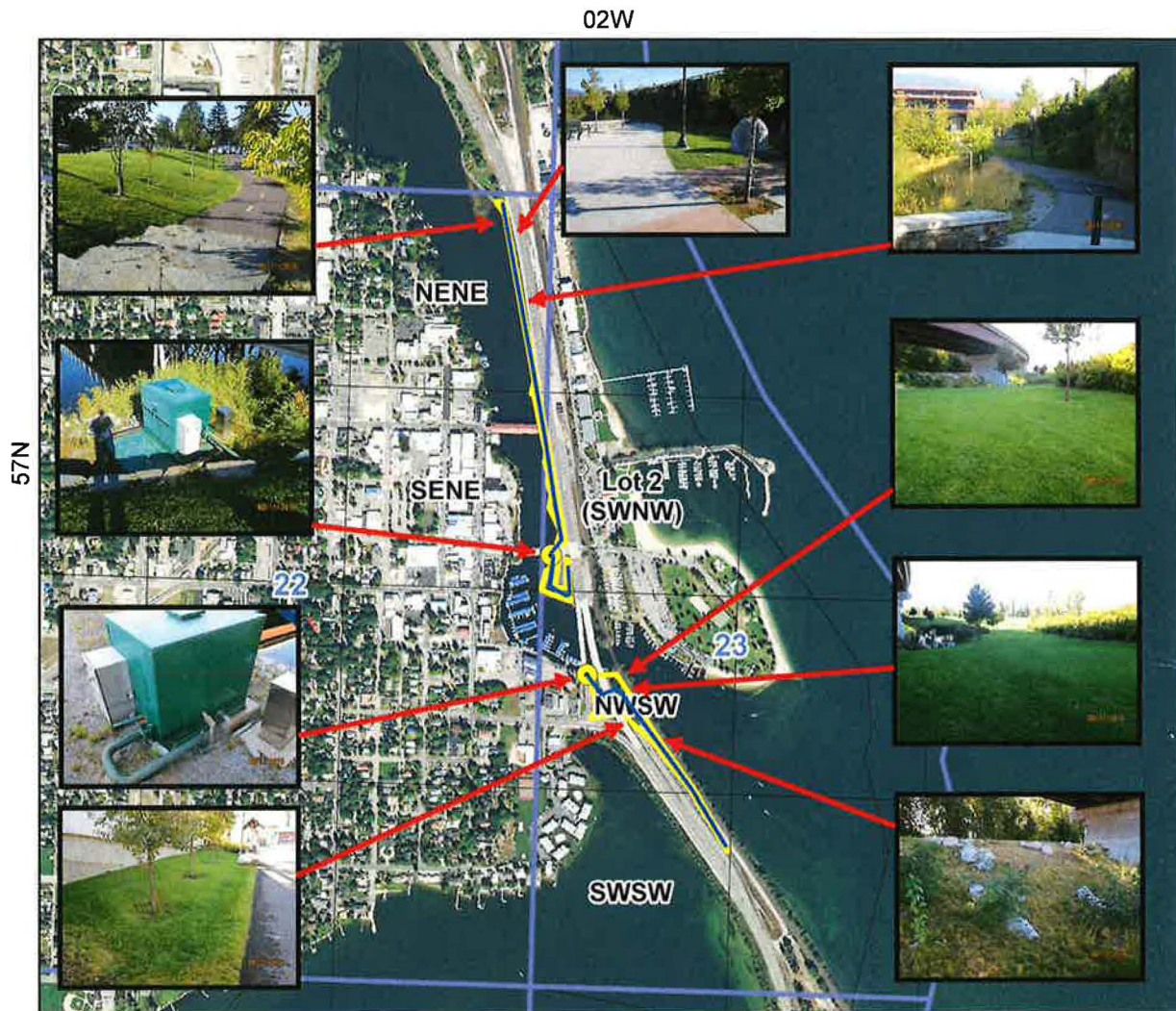
Date

8/31/2020

8/31/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9189

IRRIGATION system diagram.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.15 0.3 0.6 Miles



MEMORANDUM

To: Water Right Permit 96-9189

From: Luke Bates 

Date: 5/4/2020

Re: Application for a Permit to Appropriate Water within the State of Idaho.

An application for permit was received for irrigation use for the City of Sandpoint. The application showed a Point of Diversion (POD) location as follows:

(NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$), Sec. 23, Twp 57N, Rge 02W

This description does not account for the POD residing in a Government Lot No.2. The license was updated to reflect Government lot 2 and will read as follows:

L2 (NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$), Sec. 23, Twp 57N, Rge 02W

Frederick, Adam

From: Kim Woodruff <kwoodruff@sandpointidaho.gov>
Sent: Wednesday, May 17, 2017 2:33 PM
To: Frederick, Adam; Kim Woodruff
Subject: FW: Additional Information for 96-9189 & 96-9268

Thanks Austin.

Adam – Please find info below.

Thanks
Kim

From: Beach Shop
Sent: Wednesday, May 17, 2017 1:14 PM
To: Kim Woodruff <kwoodruff@sandpointidaho.gov>; Frederick, Adam <Adam.Frederick@idwr.idaho.gov>
Subject: Re: Additional Information for 96-9189 & 96-9268

Adam:

Sport complex we run two stations at a time with 12 heads per station. The heads are Hunter I 25 rotors with # 15 gray tip in them at 60 PSI.

15 tip at 60 PSI = 14.3 GPM x 17 heads = 243.1 GPM

Byway we run 80 rainbird 1800 4" pop up with 15' half circle tip at 30 PSI = 1.85 GPM x 70 heads = 129.5 Gpm

Let me know if you need more information.

Frederick, Adam

From: Frederick, Adam
Sent: Tuesday, May 16, 2017 11:16 AM
To: 'Kim Woodruff'
Subject: Additional Information for 96-9189 & 96-9268

Kim,

I am trying to gather additional information to justify the maximum diversion rate for the I-95 irrigation system (96-9189) and the Travers Park irrigation system from Chuck Slough (96-9268). So there a couple ways to figure out the maximum diversion rate:

1. Have a 3 foot section of pipe with no obstructions to perform a flow measurement with the system running at its maximum rate. Sometimes hard to do because pipes are buried or elbows or connection pipes that don't provide for a measurement.
2. Identifying the largest zone(s) of irrigation, count the number and types of sprinkler heads, find out the psi the system is running at to determine each sprinkler heads diversion rate. If we know this we can determine a rate by using something like this as an example.

<https://www.sprinklerwarehouse.com/Rain-Bird-Nozzle-Performance-Charts-s/6541.htm>

If you have any questions feel free to give me a call.

Adam

Adam Frederick
Senior Water Resource Agent
Idaho Department of Water Resources
Northern Regional Office
Phone 208-762-2800

YOUR WATERTRONICS PUMP STATION CREDENTIALS

Congratulations on the purchase of your new Watertronics Pump Station! Thank you for choosing Watertronics

U.S. 95 SANDPOINT SOUTH

DESIGN - 80 GPM @ 65 PSI

WATERTRONICS MODEL # : SSTSTV-7.5-230-1		WATERTRONICS PUMP STATION SERIAL: 2011-102	
ELECTRICAL SCHEMATICS: # SC11102 1-6	STATION FULL LOAD AMPS : 44.0	POWER : 230 Volts DISCONNECT: 60Amp	1 Phase - 60 Hz

Programmable Logic Controller Type: NAIS FPO-C14RS

Display : Aromat ATM-10

ALARMS Low Pressure High Temperature VFD Fault

PRESSURE SETPOINTS Regulate = 65 psi Low Cut = 45 psi High Cut = 76 psi

SSSSSSSSSSSS	Pump # 1	
HORSEPOWER	7.5	
RPM	3450	
DESIGN - Gallons / Minute	94	
(TDH)	185 ft.	
PUMP - Manufacturer	HYDROFLO	
Model #	5LH-4	
Trim	S/N 5199	
Serial Number		
MOTOR - Manufacturer	Franklin	
Model /Cat. No. / Frame #	2366019020	
Voltage	230 V	
ID #	336553963 S/N 11B19-25-06202A	
Motor-Full Load Amps (FLA)	21.8	
Butterfly Valve Size/ Make	3" Watts	
Check Valve	3" Valmatic #1403	
Pressure Transducer : Gems 4-20ma 200psi # 2200BGG2002A3UA	Relief Valve : 3/4" CLA-VAL 55F (20-200 P.S.I.)	Liquid Level Float : CONERY-2901-B3S1-20
Flow Sensor : Data Industrial 220BR # 220BR-0005-1211	Fan : 6" Axial 115V / 240cfm Mechatronics #UF15PC12-BTH	Intake Screen :Sure-Flo SCS-3-DD-M32
VARIABLE FREQUENCY DRIVE		
Telemechanique		
Altivar : ATV61HU75M3 S/N 8B1029114016		
Nema 1 Kit : VW3A9204		
Filter		
Amiad 3" TAF-750E s/n 1012100011952		
300 Micron Screen		

**THIS IS AN IMPORTANT DOCUMENT.
PLEASE RETAIN IT FOR FUTURE REFERENCE.**

SST COVER PAGE

U.S. 95 SANDPOINT SOUTH

TOTAL STATION PERFORMANCE
80 GPM @ 65 PSI

STATION MODEL
SSTSTV-3-7.5-230-1-80-65

JOB NUMBER
2011102

JOB CODE
02

DATE
4/19/2011

LISTED BELOW IS THE PRODUCTION ROUTING ORDER - PLEASE INITIAL AND FORWARD ON

POSITION	INITIALS	DATE
ENGINEERING / DESIGN	DJR	4/19/2011
ENGINEERING REVIEW	WTS	4/20/2011
PRODUCTION REVIEW		
INVENTORY CONTROL	HMC	4/21/2011
DATA ENTRY		
PRODUCTION RELEASE	MHP	4/21/2011
FAB		
FAB REVIEW	TK	4/21/2011
ASSEMBLY		
TEST		
ELECTRICAL REVIEW		
FINAL ENGINEERING	DJR	6/6/2011
MANUAL		

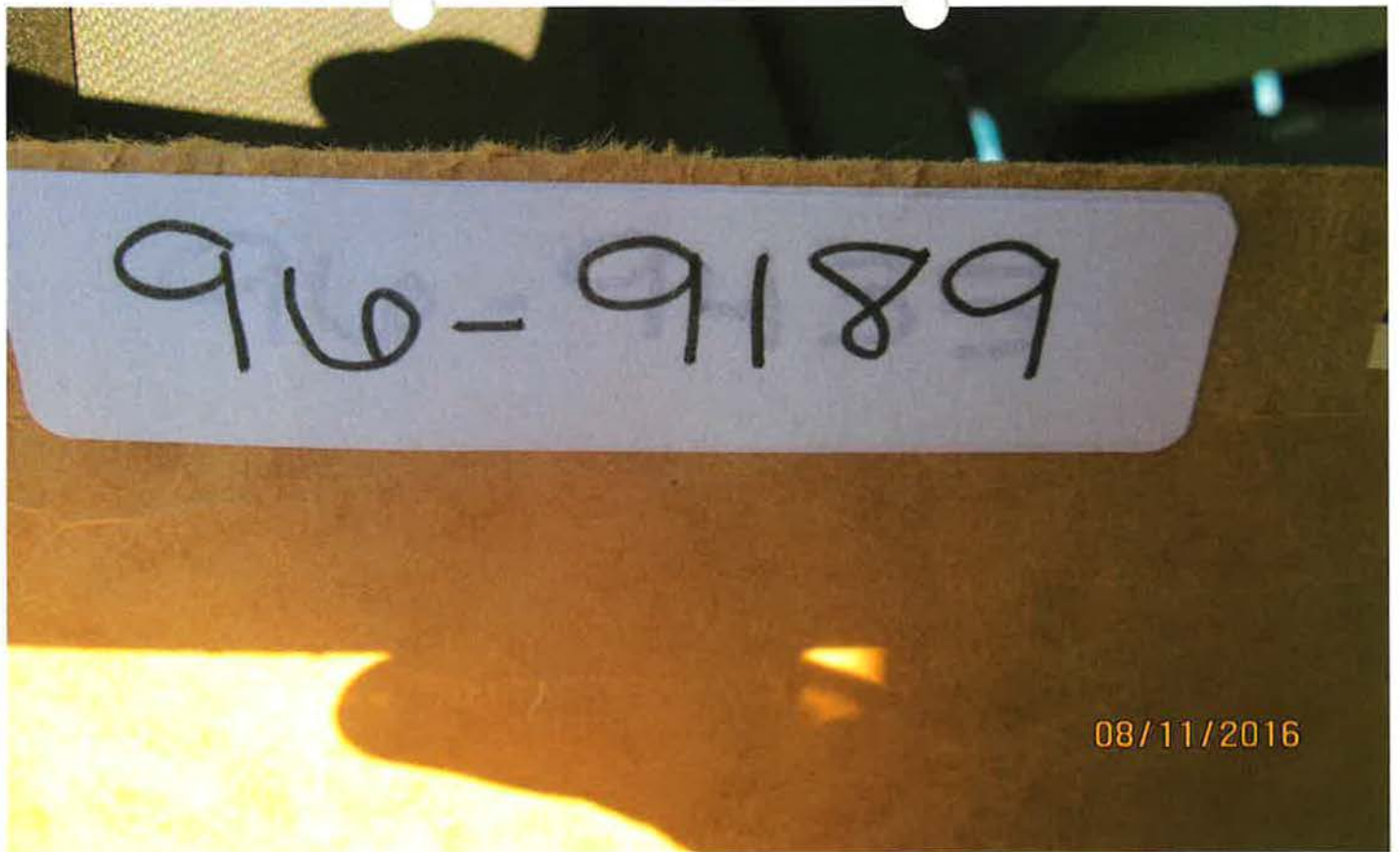
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SST BASE & ENCL GREEN/ 5LH SUB PUMP / 3/4" PRV/
AMIAD TAF-750E FILTER
SAME AS 2011101

THEORETICAL PUMPING EQUATION FOR WR# 96-9189

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 20 ft, and running at 65 psi.

<u>PUMP EQUATIONS</u>						
WATER RIGHT No.		96-9189				
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	3	170.3401	0.8	20	65
Q =	0.124 cfs		55.7 gpm			



POD I-95 BYWAY



IRRIGATION POU





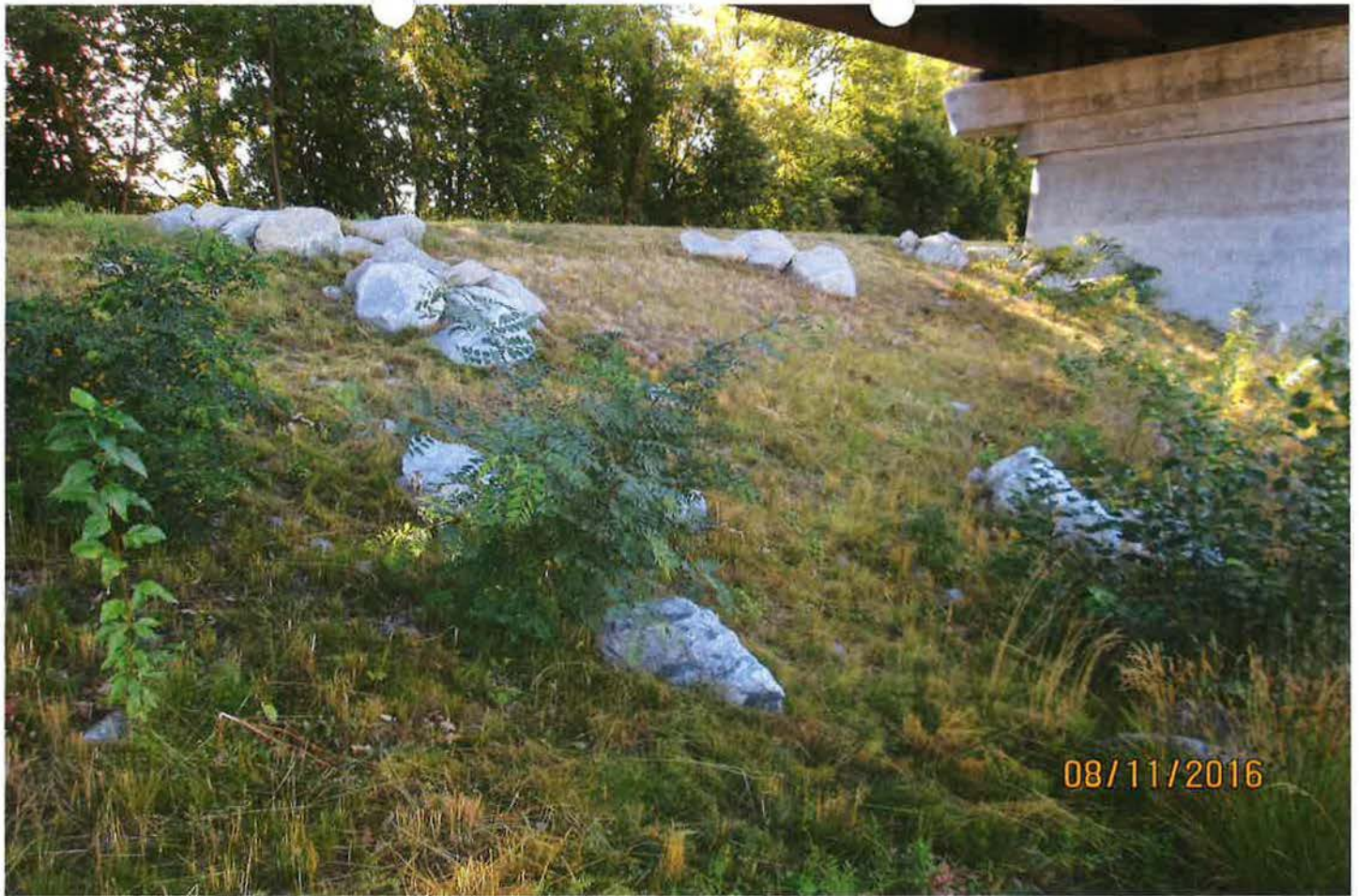
IRRIGATION POU





POD – PARKSIDE





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU

