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IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF THE FIFTH PLAN
FILED BY IGWA TO PROVIDE MITI-
GATION TO RANGEN, INC.

Docket No. CM-MP-2014-008

IGWA’S Fifth Mitigation Plan and Request for Hearing

Idaho Ground Water Appropriators, Inc. (IGWA), acting for and on behalf of its members and non-member participants in mitigation activities, submits this fifth mitigation plan and request for hearing (“Mitigation Plan”) pursuant to rule 43 of the Rules for Conjunctive Management of Surface and Ground Water Resources¹ (“CM Rules”) to provide mitigation water to Rangen, Inc.

INTRODUCTION

The Idaho Department of Water Resources’ (IDWR) *Final Order Regarding Rangen, Inc.’s Petition for Delivery Call; Curtailing Ground Water Rights Junior to July 13, 1962* (“Curtailment Order”) requires holders of groundwater rights junior to July 13, 1962, to mitigate material injury to water right nos. 36-2551 and 36-7694 owned by Rangen, Inc., or suffer curtailment. The Curtailment Order requires juniors to deliver 3.4 cfs in the first year, 5.2 cfs in the second year, 6.0 cfs the third year, 6.6 cfs the fourth year, and 9.1 cfs the fifth year.

¹ IDAPA 37.03.11.043.

Rangen filed another delivery call on June 27, 2014, asserting material injury to water right nos. 36-15501, 36-134B, and 36-135A. Rangen has since withdrawn its call with respect to water right nos. 36-134B and 36-135A, but maintains it with respect to water right no. 36-15501.

This Plan provides alternate means of providing mitigation to Rangen in addition to those authorized under IGWA's First Mitigation Plan, IDWR Docket No. CM-MP-2014-001, and Fourth Mitigation Plan, IDWR Docket No. CM-MP-2014-006.

MITIGATION PLAN

This Plan proposes to deliver water to Rangen under water right no. 36-16976 to mitigate material injury to any water rights now owned or hereafter acquired by Rangen from the Martin-Curren Tunnel.

IGWA's member groundwater districts North Snake Ground Water District, Bingham Ground Water District, Bonneville-Jefferson Ground Water District, Jefferson-Clark Ground Water District, Madison Ground Water District, and Magic Valley Ground Water District (collectively, the "Districts") own Permit to Appropriate Water no. 36-16976, a copy of which is attached hereto as *Exhibit A*. The Permit was issued by IDWR on November 18, 2014, pursuant to the Preliminary Order attached hereto as *Exhibit B*.

Permit no. 36-16976 authorizes the Districts to divert up to 12 cfs from Billingsley Creek for mitigation purposes from two alternative points of diversion. One point of diversion is commonly known as the Bridge Diversion which may be used to divert mitigation water to Rangen's Large Raceways. The other consists of a pump station which may be used to pump water from Billingsley Creek to Rangen's Hatch House, Green House, and/or Small Raceways. Attached as *Exhibit C* is an engineering report describing the equipment the Districts will utilize and construct to deliver mitigation water to Rangen under this Plan. The Districts have initiated condemnation proceedings to acquire all easements necessary to construct and operate such equipment.

The following additional information is provided to enable the Director to evaluate the factors set forth in CM Rule 43.03:

- a. This Plan will utilize water right no. 36-16976 in accordance with its defined elements. Therefore, it is in compliance with Idaho law.
- b. This Plan will provide water directly to Rangen at locations that will enable it to be utilized in any of its fish-rearing facilities. Rangen's Hatch House, Greenhouse, and Small Raceways presently receive water from the Martin-Curren Tunnel. The Hatch House has a flow capacity of 0.5 cfs; the Greenhouse has a capacity of __ cfs; and the

Small Raceways have a capacity of 4 cfs. At times when flows from the Martin-Curren Tunnel are inadequate to meet water needs in any of these facilities, the Districts will deliver additional water to these facilities under water right no. 36-16976. The balance of water right no. 36-16976 will be delivered to Rangen via the Bridge Diversion or an adjacent diversion structure installed by the Districts.

- c. This Plan will provide mitigation water to Rangen on a year-round basis in accordance with mitigation obligations imposed by the Director. Because there are no water rights on Billingsley Creek senior to water right no. 36-16976 with diversion points upstream of water right no. 36-16976, and because the mitigation water will be used for fish propagation, a non-consumptive use, there is no risk of the water source becoming unavailable. To protect against failure of the pump station, the Districts will utilize redundant pumps and power supplies, and/or liability insurance. In addition, the Districts are constructing a pipeline to provide mitigation water to Rangen from Magic Springs under IGWA's Fourth Mitigation Plan which provides alternative source of mitigation water should the flow in Billingsley Creek be inadequate to meet the Districts' mitigation obligations.
- d. This Plan does not propose artificial recharge.
- e. This Plan is not based upon computer simulations and calculations.
- f. This Plan does not involve aquifer analyses.
- g. This Plan does not involve consumptive use calculations.
- h. This Plan proposes to divert water at the head of Billingsley Creek, which is a reliable source of water. Attached hereto as **Exhibit D** is a hydrograph of Billingsley Creek water flows from 1996 to 2012.
- i. This Plan will not enlarge the rate of diversion, seasonal quantity, or time of diversion under water right no. 36-16976.
- j. Fish propagation is a non-consumptive use; therefore, this Plan is consistent with the conservation of water resources. This Plan is in the public interest because it protects the Magic Valley farm and dairy industries from being decimated by curtailment. This Plan does not cause groundwater to be withdrawn from the ESPA at a rate beyond the reasonably anticipated rate of future natural recharge.
- k. The amount of water delivered to Rangen under this Plan may be adjusted by adjusting the headgate on the Bridge Diversion and the diversion rate of the pump station.
- l. This Plan mitigates for all groundwater rights that belong to a ground water district or irrigation district that is a member of IGWA and are

subject to curtailment from a delivery call by Rangen based on a water right from the Martin-Curren Tunnel.

- m. Junior-priority groundwater rights that do not currently belong to a ground water district or irrigation district that is a member of IGWA may participate in this Plan in the future on an equitable basis by complying with the statutes governing admission into such districts.
- n. This Plan does not involve segmenting the common ground water supply into zones for the purpose of considering local impacts, timing of depletion, and replacement water supplies.
- o. This Plan does not involve an agreement between IGWA and Rangen.

REQUEST FOR HEARING

Pursuant to CM Rule 43.02, IGWA requests that this Mitigation Plan be promptly processed and advertised, and that a scheduling conference be set with notice given to the parties to discuss this Plan and schedule a hearing if necessary.

RESPECTFULLY SUBMITTED this 18th day of December, 2014.

RACINE OLSON NYE BUDGE &
BAILEY, CHARTERED



By: _____

Randall C. Budge
Thomas J. Budge

CERTIFICATE OF MAILING

I certify that on this 18th day of December, 2014, the foregoing document was served on the following persons in the manner indicated.

Randall C. Bridge

Signature of person mailing form

Director, Gary Spackman Idaho Department of Water Resources PO Box 83720 Boise, ID 83720-0098 Deborah.Gibson@idwr.idaho.gov kimi.white@idwr.idaho.gov	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input checked="" type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
Garrick Baxter Emmi Blades Idaho Department of Water Resources P.O. Box 83720 Boise, Idaho 83720-0098 garrick.baxter@idwr.idaho.gov emmi.blades@idwr.idaho.gov	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
Robyn M. Brody Brody Law Office, PLLC PO Box 554 Rupert, ID 83350 rbrody@cablone.net robynbrody@hotmail.com	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
Fritz X. Haemmerle Haemmerle & Haemmerle, PLLC PO Box 1800 Hailey, ID 83333 fxh@haemlaw.com	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
J. Justin May May, Browning & May, PLLC 1419 West Washington Boise, ID 83702 jmay@maybrowning.com	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail

EXHIBIT A
Permit No. 36-16976

State of Idaho
 Department of Water Resources
Permit to Appropriate Water

NO. 36-16976

Priority: April 03, 2013

Maximum Diversion Rate: 12.00 CFS

This is to certify, that AMERICAN FALLS ABERDEEN GROUND WATER DISTRICT
 BINGHAM GROUND WATER DISTRICT
 MAGIC VALLEY GROUND WATER DISTRICT
 NORTH SNAKE GROUND WATER DISTRICT
 MADISON GROUND WATER DISTRICT
 BONNEVILLE JEFFERSON GROUND WATER DISTRICT
 CLARK JEFFERSON GROUND WATER DISTRICT
 C/O RANDALL C BUDGE
 PO BOX 1391
 POCATELLO ID 83204-1391

has applied for a permit to appropriate water from:

Source: BILLINGSLEY CREEK **Tributary:** SNAKE RIVER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
MITIGATION	01/01 to 12/31	12.00 CFS

LOCATION OF POINT(S) OF DIVERSION:

BILLINGSLEY CREEK	SW ¼ NW ¼	Sec. 32	Twp 07S	Rge 14E, B.M.	GOODING County
BILLINGSLEY CREEK	SW ¼ NW ¼	Sec. 32	Twp 07S	Rge 14E, B.M.	GOODING County

PLACE OF USE: MITIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07S	14E	32							X										

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **December 01, 2019**.
2. Subject to all prior water rights.
3. Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 36A.
4. Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works of a type acceptable to the Department as part of the diverting works.
5. The right holder shall not divert water at a rate exceeding what is reasonably necessary for the beneficial use authorized by this right.
6. Use of water under this right shall be non-consumptive.

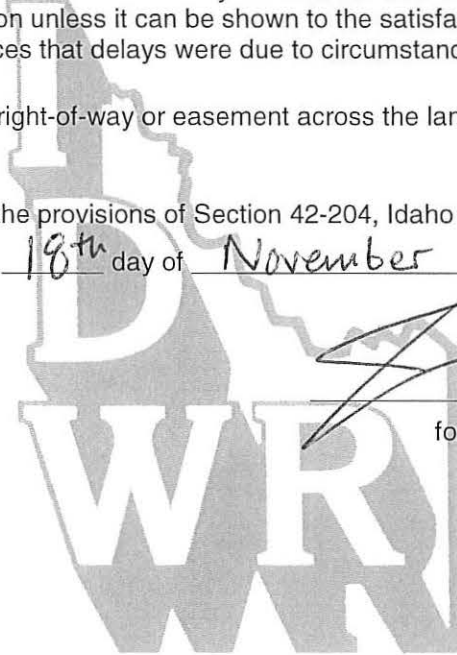
State of Idaho
Department of Water Resources
Permit to appropriate Water

NO. 36-16976

CONDITIONS OF APPROVAL

7. This right shall be junior and subordinate to all future water rights, other than those for fish propagation, wildlife, recreation, aesthetic, or hydropower uses, within the state of Idaho that are initiated later in time than the priority date of this right and shall not give rise to any claim against any future rights for the use of water, other than those for fish propagation, wildlife, recreation, aesthetic, or hydropower uses, within the state of Idaho initiated later in time than the priority date of this right.
8. This right is for the use of trust water and is subject to review 5 years after the issuance of the permit to determine availability of water and to re-evaluate the public interest.
9. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
10. This right does not grant any right-of-way or easement across the land of another.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 18th day of November, 20 14.





for GARY SPACKMAN
Director

EXHIBIT B

Preliminary Order Issuing

Permit No. 36-16976

**BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO**

IN THE MATTER OF APPLICATION)	
FOR PERMIT NO. 36-16976)	PRELIMINARY ORDER
IN THE NAME OF NORTH SNAKE)	ISSUING PERMIT
<u>GROUND WATER DISTRICT, ET AL.</u>)	

On April 3, 2013, North Snake Ground Water District (GWD), Aberdeen American Falls GWD, Bingham GWD, Bonneville Jefferson GWD, Jefferson Clark GWD, Madison GWD, and Magic Valley GWD (“the Districts”), represented by attorney T.J. Budge of Racine Olson Nye Budge & Bailey, filed Application for Permit No. 36-16976 with the Idaho Department of Water Resources (“Department”). Protests against the application were filed by Blind Canyon Aquaranch Inc. (“Blind Canyon”) and by Rangen Inc. (“Rangen”), represented by attorneys Robyn Brody, Justin May and Fritz Haemmerle.

A pre-hearing conference was held on May 13, 2014. The parties were unable to resolve the issues of protest at that time and requested that a hearing be held to decide the contested case. An administrative hearing was conducted on September 17, 2014, in Twin Falls, Idaho. Although the proposed points of diversion are located within Gooding County, the parties agreed to hold the hearing in Twin Falls County.

Blind Canyon did not participate in the hearing and, therefore, waived its right to offer evidence into the administrative record and cross examine witnesses. During the hearing, the Districts and Rangen offered testimonial and documentary evidence into the record. After carefully considering the evidence in the record, the Department finds, concludes, and orders as follows:

FINDINGS OF FACT

1. Application 36-16976 was filed on April 3, 2013. The original application proposed diverting water from springs tributary to Billingsley Creek and from Billingsley Creek for “mitigation for irrigation” and “fish propagation.” The proposed place of use was described as the SENE of Section 31 and the SWNW of Section 32, T07S, R14E. The application was amended on February 11, 2014, updating the proposed place of use to include the SWNE of Section 31, T07S, R14E, which contains the end section of Rangen’s CTR raceways.
2. The application was advertised to the public beginning on February 20, 2014. The deadline for filing protests was set as March 10, 2014.
3. The application was amended a second time on May 27, 2014. The second amendment changed one of the proposed beneficial uses from “mitigation for irrigation” to “mitigation” and revised the answers to some of the application questions. The Department determined that the changes were minor and did not warrant re-advertisement of the application or advancement of the

priority date. The Districts assert that the beneficial use “mitigation” is non-consumptive because it will be used for fish propagation. (Testimony of Scott King)

4. Application 36-16976 proposes diverting a combined total of 12 cfs from springs tributary to Billingsley Creek and from Billingsley Creek for mitigation and fish propagation. The proposed place of use includes portions of the SWNE and SENE of Section 31, and the SWNW of Section 32, T07S, R14E. The proposed place of use covers the entire Rangen facility. Rangen owns the property at the proposed place of use and points of diversion.

5. Application 36-16976 lists two proposed points of diversion. The Districts’ initial disclosures also describe two points of diversion: “Water will be delivered . . . either by gravity flow through an existing headgate on Billingsley Creek (known as the bridge diversion) . . . or by pumping water from Billingsley Creek to various fish rearing facilities at the Rangen hatchery.” (Exhibit 1009, page 2; see also Exhibit 1059)

6. Even though they are located relatively close to one another, the bridge diversion and the proposed pump station represent two distinct points of diversion. The bridge diversion and pump station would be separately measured diversions and would supply water to different portions of the Rangen facility.

7. The two points of diversion described in the testimony and documents provided by the Districts are not consistent with the legal descriptions provided in the application. The application lists one point of diversion in the SESWNW of Section 32 and one point of diversion in the SWSWNW of Section 32. However, both proposed diversion structures (the bridge diversion and the proposed pump station) are located in the SWSWNW of Section 32. (Exhibit 1015, page 26; Exhibit 1041; Exhibit 1048)

8. Some of the evidence presented at the hearing suggests that the Districts intend to develop additional points of diversion from spring sources on the talus slope near the Rangen facility. (Testimony of Scott King) However, only two points of diversion are listed on the application and they are clearly identified in the District’s initial disclosures as the bridge diversion and the proposed pump station. (Exhibit 1009, page 2)

9. Rangen owns and operates a fish propagation and research facility near the head of Billingsley Creek. Rangen diverts water to the facility from the Martin-Curren Tunnel (“Curren Tunnel”) and from the head of Billingsley Creek, which is fed by various springs arising on a talus slope east of the facility and by overflow water from the Curren Tunnel diversion structures.

10. The Rangen facility is comprised of a green house, hatch house and small raceways, which are all located south of the Billingsley Creek channel. The facility also includes a set of large raceways and structures known as the CTR raceways, which are both located north of the Billingsley Creek channel. The Rangen facility has been in existence for over 50 years.

11. Rangen has several diversions bringing water to its facility. There is a pipe placed in the mouth of the Curren Tunnel that conveys water to the hatch house and greenhouse.

12. Water emanating from the Curren Tunnel flows into a concrete structure called the Farmers Box. Two pipelines release water out of the Farmers Box toward the Rangen facility. One

pipeline is an overflow structure which spills water into the head of Billingsley Creek. The other pipeline conveys water down to a structure called the Rangen Box. A single pipe runs out of the Rangen Box to the hatch house, greenhouse, and small raceways.

13. All of the water from the talus slope and the overflow from the Farmers Box and Rangen box collects and forms the headwaters of Billingsley Creek. Rangen has a large diversion on Billingsley Creek (the bridge diversion) which supplies water to the large raceways and CTR raceways. (Exhibit 1048; Exhibit 1059) Water from the small raceways is piped across Billingsley Creek and added to the water flowing through the large raceways.

14. Water used in the Rangen facility is returned to Billingsley Creek at the end of the CTR raceways. There are no water right points of diversion located between the Rangen bridge diversion and the return flow into Billingsley Creek at the end of the Rangen facility. (Testimony of Scott King)

15. Three water rights are currently used for fish propagation purposes at the Rangen facility. Water right 36-15501 carries a priority date of July 1, 1957 and authorizes the diversion of 1.46 cfs for fish propagation. Water right 36-2551 carries a priority date of July 13, 1962 and authorizes the diversion of 48.54 cfs for fish propagation and domestic use. Water right 36-7694 carries a priority date of April 12, 1977 and authorizes the diversion of 26.00 cfs for fish propagation.

16. Water rights 36-15501, 36-2551 and 36-7694 only identify a single water source, the Curren Tunnel. None of these three water rights list Billingsley Creek or springs tributary to Billingsley Creek as authorized sources. None of these three water rights identify the Rangen bridge diversion as an authorized point of diversion.

17. Rangen diverts two other small water rights (36-134B and 36-135A) from the Curren Tunnel for domestic and irrigation use. Neither of these water rights list Billingsley Creek or springs tributary to Billingsley Creek as authorized sources. Neither of these water rights identifies the Rangen bridge diversion as an authorized point of diversion.

18. The pump station proposed by the Districts is designed to divert up to 4.0 cfs to supply water from Billingsley Creek to the hatch house, greenhouse and small raceways. (Exhibit 1015, page 22) The remaining 8.0 cfs described in the application would be diverted through the existing Rangen bridge diversion to supply the large raceways and CTR raceways. (Testimony of Robert Hardgrove)

19. The pump station would allow water to be diverted from Billingsley Creek to the facility structures on the south side of the creek (hatch house, greenhouse and small raceway). (Testimony of Robert Hardgrove) Currently, because of elevation differences, only the Curren Tunnel pipeline system can supply water to those structures. (Id.) A pump station would offer greater flexibility in the diversion and use of water from the head of Billingsley Creek at the Rangen facility.

20. The flow in Billingsley Creek has, at times, exceeded 12 cfs at the bridge diversion over the last decade. (Exhibit 1021; Exhibit 1022; Exhibit 1040, page 1; Exhibit 2017)

21. The Rangen facility was designed to handle 76 cfs of flow. In recent years, some parts of the facility cannot be used because of a lack of flow from the Curren Tunnel and the headwaters of Billingsley Creek. Currently, Rangen diverts almost all of the water arising upstream of the bridge diversion. (Testimony of Wayne Courtney)

22. Due to a decline in the flow from the Curren Tunnel and from the various springs at the head of Billingsley Creek, Rangen filed a Petition for Delivery Call in December 2011. The Petition alleged that Rangen's water rights were being injured by the diversion of ground water by junior water users located upgradient from the facility.

23. On January 29, 2014, the Director of the Department issued a final order addressing the Rangen delivery call, concluding that certain ground water users within the boundaries of the North Snake GWD and Magic Valley GWD were causing material injury to Rangen by reducing flows from the Curren Tunnel. The order further stated that certain water rights within those districts would be curtailed if mitigation was not provided to Rangen.

24. Certain elements of the Department's final order for the Rangen delivery call are currently being challenged and appealed in the Idaho courts. Mitigation plans offered by the Districts in response to the Rangen call are also currently being challenged and appealed before the Department and within the Idaho courts.

25. Application 36-16976 (second amendment) includes the following statement:

The GW Districts will use this water for mitigation purposes to protect groundwater use on the Eastern Snake Plain to mitigate for Rangen's apparent material injury and to provide mitigation for the curtailment of junior groundwater users as specified in the Final Order dated 1/29/14 for Rangen's delivery call. Mitigation water will be provided to Rangen for its Curren Tunnel rights for fish propagation purposes. If unable to secure proper consent, the GWDs will use their power of eminent domain as set for the in I.C. Sec. 42-5224(13) to secure easements, as necessary.

26. As part of their Rule 40.05 disclosures (IDAPA 37.03.08), the Districts notified Gooding County, Idaho Department of Fish & Game, Idaho Department of Environmental Quality, and Big Bend Irrigation and Mining Company of the pending application. The notice letters contained errors in the legal description for the proposed points of diversion. However, the errors were minor and did not affect the viability of the notice letters. None of the notified entities provided comment.

27. The Districts were formed under Chapter 52, Title 42, Idaho Code, and represent the interests of ground water users within their respective district boundaries. Among other things, the Districts prepare plans to address mitigation obligations arising from various water calls. (Testimony of Lynn Carlquist)

28. The Districts assess the water users within their district boundaries to fund the activities of the Districts, including the development and implementation of mitigation plans. (Testimony of Lynn Carlquist) Other mitigation activities of the Districts have cost several million dollars. (Id.)

29. Application for Permit 36-16976 was signed by T.J. Budge on behalf of the Districts. Lynn Carlquist testified that T.J. Budge had the authority to sign Application 36-16976 at the time the application was signed. In processing the application, the Department never requested additional evidence relating to T.J. Budge’s authority to sign the application.

30. On September 16, 2014, Magic Valley GWD and North Snake GWD adopted resolutions confirming that T.J. Budge, through his law firm Racine, Olson, Nye, Budge & Bailey Chartered, had the authority to file Application for Permit 36-16976 on behalf of Magic Valley GWD and North Snake GWD, respectively. (See Exhibits 1076 and 1077)

31. The Districts do not intend to operate the Rangen facility or to raise fish. (Testimony of Lynn Carlquist) The Districts are not pursuing any permits associated with commercial fish production facilities. (Id.)

32. On August 25, 2014, North Snake GWD, Magic Valley GWD, and Southwest Irrigation District (who is not a party to this case) served Rangen with a “Notice of Intent to Exercise Eminent Domain and Summary of Rights of Property Owner” (“Eminent Domain Notice”). (Exhibit 1014)

33. The Eminent Domain Notice stated that the two GWDs and Southwest Irrigation District intended to purchase “easements, rights-of-way, and other rights of access” over the Rangen property. (Id. at page 1) Such easements, rights-of-way and other rights of access would be used to “design, install, operate, and maintain pipes, pumps, and related facilities to deliver water to the Rangen fish hatchery” (Id.)

34. The Eminent Domain Notice refers to certain sections of the Idaho Code which establish the Districts’ eminent domain authority. Idaho Code § 42-5224(13) states that the Districts have the power to condemn private property for “easements, rights-of-way, and other rights of access” necessary to exercise their mitigation powers as defined in statute.

APPLICABLE STATUTES AND RULES

1. Idaho Code § 42-203A(5) states in pertinent part:

In all applications whether protested or not protested, where the proposed use is such (a) that it will reduce the quantity of water under existing water rights, or (b) that the water supply itself is insufficient for the purpose for which it is sought to be appropriated, or (c) where it appears to the satisfaction of the director that such application is not made in good faith, is made for delay or speculative purposes, or (d) that the applicant has not sufficient financial resources with which to complete the work involved therein, or (e) that it will conflict with the local public interest as defined in section 42-202B, Idaho Code, or (f) that it is contrary to conservation of water resources within the state of Idaho . . . the director of the department of water resources may reject such application and refuse issuance of a permit therefor, or may partially approve and grant a permit for a smaller quantity of water than applied for, or may grant a permit upon conditions.

2. The applicant bears the burden of proof regarding all factors set forth in Idaho Code § 42-203A(5).

3. Rule 45.01.c of the Department’s Water Appropriation Rules sets forth the criteria for determining whether an application is made in good faith and not for delay or speculative purposes. “Speculation for the purpose of this rule is an intention to obtain a permit to appropriate water without the intention of applying the water to beneficial use with reasonable diligence.” (IDAPA 37.03.08.45.01.c)

4. Rule 45.01.c further requires: “The applicant shall have legal access to the property necessary to construct and operate the proposed project, has the authority to exercise eminent domain authority to obtain such access, or in the instance of a project diverting water from or conveying water across land in state or federal ownership, has filed all applications for a right-of-way.” (IDAPA 37.03.08.45.01.c.i)

5. The applicant must also demonstrate that it is “in the process of obtaining other permits needed to construct and operate the project” and that there are “no obvious impediments that prevent successful completion of the project.” (IDAPA 37.03.08.45.01.c.i - ii)

ANALYSIS

Reduction to Existing Water Rights

There is no evidence in the record suggesting that the amount of water available to satisfy other water rights will be reduced or diminished by the proposed water use. The Districts and Rangen both asserted that the beneficial use of fish propagation should be considered non-consumptive. (See Exhibits 1016 and 1047) Fish propagation rights are generally described as non-consumptive by the Department. The mitigation use proposed in the application will provide water to the Rangen facility for fish propagation and would also be considered non-consumptive. There are no other water rights between the proposed points of diversion and the point of return flow from the Rangen facility into Billingsley Creek. The Districts have satisfied their burden of proof regarding no injury to other water rights.

Sufficiency of Water Supply

The Districts have satisfied their burden of proof regarding the sufficiency of the water supply. Evidence in the record shows that the flow in Billingsley Creek at the Rangen facility has, at times, exceeded 12 cfs in recent years. (Exhibit 1021; Exhibit 1022; Exhibit 1040, page 1; Exhibit 2017)

Good Faith / Speculative Purposes

For this section, the two proposed beneficial uses (fish propagation and mitigation) will be discussed separately.

1) Fish Propagation

The Districts' proposal to divert water for fish propagation is speculative. Mr. Carlquist testified that the Districts do not intend to operate the Rangen facility or to raise fish. The Districts are not actively pursuing local and state permits which would be needed to raise fish for commercial purposes. (Exhibits 2019 and 2020 provide examples of additional permits needed to operate an aquaculture facility) In his post-hearing brief, Mr. Budge confirmed that the Districts do not intend to operate the Rangen facility. Rather, the Districts plan on immediately assigning Permit 36-16976 to Rangen and allowing Rangen to develop the fish propagation element of the permit.

Obtaining a permit, hoping to immediately assign the permit to another party, without the intent of developing the water right (putting water to beneficial use), is speculative. (See IDAPA 37.03.08.045.01.c) A permit holder cannot rely on another person to perfect his water right. The requirement to develop and beneficially use water within the time frame set forth under a permit rests entirely on the permit holder. By their own admission, the Districts will not accomplish the beneficial use of fish propagation.

A water right cannot be established through trespass onto another's property. *Lemmon v. Hardy*, 519 P.2d 1168 (Idaho 1974). The Districts do not currently have legal access to the Rangen facility necessary to accomplish the beneficial use of fish propagation. Lynn Carlquist testified that the Districts would use eminent domain, if needed, to perfect the proposed water right. He also testified that the Districts would acquire only as much of the Rangen facility as would be needed to develop the permit.

Idaho Code § 7-711 describes the three types of estates or property interests that can be acquired through eminent domain proceedings: fee simple, easements, or rights of occupation. Pursuant to Idaho Code § 42-5224(13), the District's eminent domain authority appears to be limited to easements (including rights-of-way and other rights of access). In order to accomplish the proposed beneficial use of fish propagation, the Districts would need to condemn a fee simple interest in the Rangen facility or, at a minimum, a right of occupation for the entire facility, which exceeds the eminent domain authority described in Section 42-5224.

Because the Districts, by their own admission, do not intend to develop the beneficial use of fish propagation and because the Districts have not sufficiently demonstrated that they will be able to obtain legal access to the Rangen property necessary to complete the proposed beneficial use of fish propagation, the fish propagation element of the application is speculative under Idaho Code § 42-203A(5) and should be denied.

2) Mitigation

The question of whether the mitigation use proposed by the Districts is not made in good faith or is for delay or speculative purposes under Idaho Code § 42-203A(5) can be split into two inquiries. First, the Department must determine whether the mitigation use described by the Districts should be recognized as a beneficial use. Second, the Department must determine whether the Districts will be able to develop (perfect) the proposed mitigation use. These two inquiries are discussed separately below.

a) **Mitigation Use Described by the Districts**

The Department has recognized the beneficial use of mitigation in other water rights. The beneficial use of “mitigation” is fairly new when compared with the other recognized beneficial uses in the state. (Testimony of Scott King) As such, the understanding of how, when and where mitigation rights can be used will continue to develop over time.

The Department’s Water Appropriation Rules (IDAPA 37.03.08) do not contain a definition for the beneficial use “mitigation.” The Department’s Conjunctive Management Rules (IDAPA 37.03.11) provide a definition for “mitigation plan,” which is helpful for understanding the nature of mitigation. “Mitigation plan” is defined as

A document submitted by the holder(s) of a junior-priority ground water right and approved by the Director . . . that identifies actions and measures to prevent, or compensate holders of senior-priority water rights for, material injury caused by the diversion and use of water by the holders of junior-priority ground water rights within an area having a common ground water supply. (IDAPA 37.03.11.010.15)

Idaho Code § 42-5201 includes a similar definition for “mitigation plan”: “[A] plan to prevent or compensate for material injury to holders of senior water rights caused by the diversion and use of water by the holders of junior priority ground water rights who are participants in the mitigation plan.”

Using the definitions for “mitigation plan” referenced above as a guide, “mitigation” could be defined as any action taken to prevent injury to senior water right holders or to compensate senior water right holders for injury caused by the diversion and use of water by junior water right holders.

The key terms in the definitions listed above are “prevent” and “compensate.” In order for a proposed mitigation use to be viable, it must prevent material injury to senior water rights or compensate senior water right holders for material injury.

Prevention of injury is accomplished by incorporating water efficiency measures that minimize the impact of junior diversions on senior appropriators. The pending application does not propose any methods to prevent or reduce the depletionary effects of ground water diversions by junior water right holders.

Compensation mitigation has been recognized by the Department in three basic forms. The first type of compensation mitigation involves providing water directly to a senior water user owning water rights on a source that has been diminished by junior water users. Mitigation water is diverted from a separate source and delivered directly into the senior water user’s system.

The second type of compensation mitigation involves diverting water from a separate source and injecting water into the diminished water source to compensate senior water users on the

diminished source. Water is added to the diminished source above and beyond that which would otherwise be available to the senior water right holders from that source.

The third type of compensation mitigation involves holding a senior water right (which would otherwise divert from the diminished source) unused. (See Idaho Code § 42-223(10))

The second and third types of compensation mitigation described above do not apply to the pending application. The Districts do not propose injecting water from Billingsley Creek into the diminished water source (the Curren Tunnel). Nor do the Districts propose holding a senior water right unused.

In the pending application, the Districts propose the first type of compensation mitigation, whereby water from Billingsley Creek would be delivered directly to Rangen (injected into the Rangen infrastructure). Evidence in the record shows that the source listed on Rangen's water rights (the Curren Tunnel) has been diminished by diversion under junior water rights. The Districts propose to mitigate for the reduced flows in the Curren Tunnel by diverting water from a separate source (Billingsley Creek) and delivering the mitigation water directly into Rangen's water system.

Rangen may argue that the beneficial use proposed by the Districts does not constitute mitigation because it does not result in any additional water above the Rangen bridge diversion. Evidence suggests that Rangen has diverted water from Billingsley Creek at the bridge diversion since the time the facility was built. At the time of this order, Rangen's water rights do not authorize any diversion from Billingsley Creek at the bridge diversion. If Rangen had an existing water right from Billingsley Creek, then the beneficial use proposed by the District might not qualify as mitigation. However, Rangen does not have a water right or authorized point of diversion for Billingsley Creek. Therefore, the Districts may pursue a water right from Billingsley Creek to deliver to Rangen to compensate for the diminishment of flows from the Curren Tunnel (the source listed on the Rangen's water rights).

To summarize, the beneficial use "mitigation" is not defined in statute or rule. This order sets forth a logical definition for the beneficial use of mitigation. The mitigation beneficial use described in the pending application falls within the definition of mitigation because it proposes to compensate Rangen for diminishment of the source listed on Rangen's water rights (the Curren Tunnel) by delivering water from a separate source (Billingsley Creek) directly into the Rangen system. The mitigation beneficial use proposed by the Districts constitutes a viable beneficial use which should be recognized by the Department.

b) Developing or Perfecting a Mitigation Beneficial Use

The second inquiry under the Department's speculation analysis is determining whether the Districts currently have or can obtain legal access to the proposed points of diversion and place of use necessary to construct and operate the proposed project. (IDAPA 37.03.08.45.01.c.i) The Districts' access to the proposed place of use and points of diversion are discussed separately.

i. Place of Use

During the hearing, a significant amount of time was spent trying to define where the beneficial use of mitigation actually takes place. The parties also provided arguments on this topic in their post-hearing briefs. The question of where mitigation occurs is critical in the context of an application for permit because the Department's Water Appropriation Rules (IDAPA 37.03.08) require an applicant to demonstrate legal access to the proposed place of use.

The testimony offered by the Districts' water right expert, Scott King, provides an example of the difficulty of defining a place of use for mitigation water rights. In response to questions posed by the hearing officer, Mr. King stated that the beneficial use of mitigation would occur throughout the raceways at the Rangen facility and that the mitigation beneficial use ends where the water is returned to Billingsley Creek. (Testimony of Scott King, Transcript pages 219-220) This would require the Districts to obtain legal access to the entire Rangen facility in order to develop the mitigation use. In their post-hearing brief, however, the Districts argue that the mitigation use takes place at the point where water is delivered to Rangen. (Districts Post-hearing Brief, page 18).

Unlike other beneficial uses, the place of use for a mitigation water right is not readily apparent. For example, the place of use for an irrigation water right is easily identified. It is the area where water is applied to plants. The place of use for an industrial water right is the location where an industrial process requires water. Mitigation water rights are not as straight-forward. As described above, there are a number of circumstances where mitigation has been recognized within the state of Idaho. Each one of these types of mitigation will have a unique way to describe the place of use.

For water rights where mitigation is accomplished by "preventing" injury to senior water rights (where efficiency measures are incorporated to reduce the impact of junior-priority diversions), the mitigation place of use would cover the same area as the other beneficial uses listed on the junior water right. Mitigation occurs instantaneously as efficiency/preventative measures are used. This scenario does not apply to the pending application because the Districts are not proposing to accomplish mitigation by preventing injury.

Similarly, for the scenario where a senior water right is held unused, mitigation occurs at the location where the water right is not used. Therefore, the mitigation element of the water right should have a place of use that covers the same area as the other beneficial uses listed on the unused senior water right. The Department does not require water users who mitigate by holding senior water rights unused to file transfers to formally change the beneficial use of the unused rights to mitigation. Therefore, in such cases, there is no need or opportunity to define a mitigation place of use. This scenario does not apply to the pending application because the Districts do not propose to hold a senior water right unused.

Some mitigation uses involve diverting water from one source to augment the flow in another source. In this scenario, mitigation occurs at the point of delivery to the augmented source. The place of use would properly be described as the location where water is added to the diminished

source. In other words, once the water is injected into the diminished source, mitigation is accomplished.

Finally, some mitigation uses involve diverting water from a separate source to deliver the water directly to a senior water right holder on a diminished source. Mitigation occurs when water is injected into the infrastructure of the senior water right holder. Water may be injected into a pipeline or ditch. In either instance, the mitigation place of use would be properly described as the point of delivery.

In this case, the Districts propose to accomplish mitigation by delivering water to Rangen at the bridge diversion and at the pipeline coming from the Rangen Box to the facilities on the south side of Billingsley Creek. The mitigation use would take place at the point of delivery. The place of use for this type of mitigation use would be properly described as the area where water is delivered into the Rangen infrastructure. The areas of delivery into the Rangen infrastructure are included within the proposed place of use described in the application for permit.

The areas of delivery into the Rangen facility (the mitigation places of use) are located on property owned by Rangen. Rule 45.01.c of the Department's Water Appropriation Rules (IDAPA 37.03.08) requires the Districts to demonstrate legal access to the proposed place of use. The Districts provided evidence of the authority and intent to exercise eminent domain to obtain an easement for the construction of the pump station and an easement for use of the bridge diversion. The Districts eminent domain authority would allow the Districts to acquire an easement for the places where water would be delivered into the Rangen facility. Therefore, the Districts have sufficiently demonstrated access to the proposed place of use.

ii. Point of Diversion

During the hearing and in the post-hearing briefs, there was some discussion as to whether a mitigation water right could be developed or perfected without a physical diversion of water. The idea that a water right can be developed or perfected without a diversion is not consistent with Idaho water law. The Idaho Supreme Court has confirmed that a diversion is almost always required to establish a valid water right:

Idaho water law generally requires an actual diversion and beneficial use for the existence of a valid water right. Only two exceptions to the diversion requirement exist. No diversion from a natural watercourse or diversion device is needed to establish a valid appropriative water right for stock watering. In addition, State entities acting pursuant to statute may make non-diversionary appropriations for the beneficial use of Idaho citizens. *State v. United States*, 996 P.2d 806, 811 (Idaho 2000), citations omitted.

Neither of the exceptions to the diversion requirement set forth in *State v. United States* pertain to the pending application. The application is not for instream stockwater. The application was not filed by the state of Idaho for the benefit of the citizens of the state. (See Chapter 15, Title 42, Idaho Code) Therefore, the Districts must identify point where the Districts (not Rangen) intend to divert water under the proposed permit.

The application states that water will be diverted by the Districts at the pump station or at the Rangen bridge diversion. Both of these proposed points of diversion are located entirely on property owned by Rangen. Rule 45.01.c of the Department's Water Appropriation Rules (IDAPA 37.03.08) requires the Districts to demonstrate legal access to the two proposed points of diversion. The Districts provided evidence of the authority and intent to exercise eminent domain to obtain an easement for the construction of the pump station and an easement for use of the bridge diversion. The Districts eminent domain authority would allow the Districts to acquire an easement for the proposed points of diversion. Therefore, the Districts have sufficiently demonstrated access to the proposed points of diversion.

3) Other Speculation Arguments Raised by Rangen

Rangen argues that the application should also be considered speculative because the Districts did not have a formal mitigation obligation to Rangen at the time the application was filed. This is not a convincing argument. The fact that the Districts were not yet under a formal mitigation order in April 2013, by itself, does not make the application speculative.

Rangen filed its pending delivery call against the Districts in December 2011. Therefore, at the time Application 36-16976 was filed, there was a pending water call against the Districts. The Districts should have recognized that some amount of material injury was occurring at the Rangen facility due to upstream ground water pumping, regardless of whether the Department had made a formal finding of material injury. The Districts' future mitigation obligation was reasonably foreseeable. Therefore, the Districts could pursue measures to mitigate the apparent injury which was already occurring at the Rangen facility at the time the application was filed.

Sufficient Financial Resources

Rule 45.01.d of the Department's Water Appropriation Rules (IDAPA 37.03.08) states: "A governmental entity will be determined to have satisfied [the financial resources] requirement if it has the taxing, bonding or contracting authority necessary to raise the funds needed to commence and pursue project construction in accordance with the construction schedule."

Ground water districts are governmental entities established by Chapter 52, Title 42, Idaho Code. The Districts met their burden of proof for this element because they have the ability to assess their water users to cover any costs associated with development of the proposed permit. Lynn Carlquist testified that the Districts, individually and collectively, have assessed their water users to pay for multi-million dollar projects in the past.

Conservation of Water Resources

No evidence was presented suggesting that the proposed development is contrary to the conservation of water resources of the state of Idaho.

Local Public Interest

No evidence was presented suggesting that the proposed development is contrary to the local public interest. The Department should condition the permit to be subordinate to future upstream development except for other non-consumptive uses. In their post-hearing brief, the Districts agree that such a condition is appropriate. It is not in the local public interest to allow large non-consumptive water rights to tie up a significant amount of water in a basin, thereby restricting future development within the basin. (See Exhibits 1024 and 1025)

Sufficiency of the Original Application

Rangen argued that the application, as filed, was deficient on its face and should have been rejected by the Department. First, Rangen argues that T.J. Budge did not have the legal authority to act on behalf of the Districts at the time the application was filed. Lynn Carlquist, as a representative of the Districts, testified that T.J. Budge did have the authority to file the application on behalf of the Districts in April 2013. Mr. Carlquist's testimony is sufficient evidence to satisfy the question of Mr. Budge's authority to file.

Rule 35.03 of the Department's Water Appropriation Rules (IDAPA 37.03.08) sets forth the requirements for applications for permit to be considered complete and acceptable for filing. "The application form shall be signed by the applicant listed on the application or evidence must be submitted to show that the signator has authority to sign the application." (IDAPA 37.03.08.035.03.b.xii) When it was originally filed, the application did not include any evidence that T.J. Budge had the authority to sign the application on behalf of the Districts.

The Water Appropriation Rules also include the following provision:

An application for permit that is not complete as described in Rule Subsection 035.03 will not be accepted for filing and will be returned along with any fees submitted to the person submitting the application. No priority date will be established by an incomplete application. Applications meeting the requirements of Rule Subsection 035.03 will be accepted for filing and will be endorsed by the department as to the time and date received. (IDAPA 37.03.08.035.d)

In this case, the Department considered Application for Permit 36-16976 complete at the time it was filed and prepared the application for public advertising. The Department could have requested evidence of authority to file, but did not, likely due to T.J. Budge's representation of the Districts in other water right proceedings.

If T.J. Budge acted outside of his authority in pursuit of the application for permit, such action may give rise to a private civil dispute between Mr. Budge and his clients. However, that is a matter outside of the Department's jurisdiction. The Department need only obtain basic evidence of an authority to file. Such evidence was provided at the hearing through Lynn Carlquist's testimony.

Rangen also argues that the address listed on the application (the address for the law firm of Racine, Olson, Nye, Budge & Bailey Chartered) does not satisfy the filing requirements. Because

the Department has determined that Application for Permit 36-16976 was properly filed by T.J. Budge on behalf of the Districts, the address for the Budge law firm, as a common mailing address for all of the Districts, is also acceptable.

Conclusion

Based on the evidence in the administrative record, the Districts satisfied their burden of proof for all of the review criteria set forth in Idaho Code § 42-203A(5). Therefore, the pending application should be approved and a permit issued with certain limits. First, because the Districts' initial disclosures and witnesses only identified points of diversion from Billingsley Creek, the permit should only list Billingsley Creek as an authorized source. Second, because the points of diversion are from Billingsley Creek, they only need to be described to the 40-acre tract (SWNW of Section 32, T07S, R14E). Third, "fish propagation" must be excluded from the permit because it is found to be speculative. Fourth, the place of use for mitigation should be limited to the area where water will be delivered into the Rangen infrastructure (SWNW of Section 32, T07S, R14E). Finally, the permit should include a condition stating that the water right is subordinate to future upstream uses (except for other non-consumptive uses).

ORDER

IT IS HEREBY ORDERED that Application for Permit No. 36-16976 in the name of North Snake GWD et al. is APPROVED and Permit 36-16976 is ISSUED with the following elements and conditions:

Priority Date: April 3, 2013

Source: Billingsley Creek Tributary to: Snake River

Period of Use: 1/1 – 12/31

Beneficial Use: Mitigation

Diversion Rate: 12.00 cfs

Points of Diversion: SW¹/₄ NW¹/₄ of Section 32, T07S, R14E, B.M.

SW¹/₄ NW¹/₄ of Section 32, T07S, R14E, B.M.

Place of Use: SW¹/₄ NW¹/₄ of Section 32, T07S, R14E, B.M.

Permit Conditions

1. Proof of application of water to beneficial use shall be submitted on or before **December 01, 2019**.
2. Subject to all prior water rights.
3. Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 36A.
4. Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works of a type acceptable to the Department as part of the diverting works.
5. The right holder shall not divert water at a rate exceeding what is reasonably necessary for the beneficial use authorized by this right.

6. Use of water under this right shall be non-consumptive.
7. This right shall be junior and subordinate to all future water rights, other than those for fish propagation, wildlife, recreation, aesthetic, or hydropower uses, within the state of Idaho that are initiated later in time than the priority date of this right and shall not give rise to any claim against any future rights for the use of water, other than those for fish propagation, wildlife, recreation, aesthetic, or hydropower uses, within the state of Idaho initiated later in time than the priority date of this right.
8. This right is for the use of trust water and is subject to review 5 years after the issuance of the permit to determine availability of water and to re-evaluate the public interest.
9. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
10. This right does not grant any right-of-way or easement across the land of another.

Dated this 18th day of November, 2014.



James Cefalo
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 18th day of November, 2014, true and correct copies of the documents described below were served by placing a copy of the same with the United States Postal Service, certified with return receipt requested, postage prepaid and properly addressed, to the following:

Document Served: Preliminary Order Issuing Permit

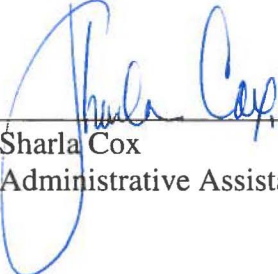
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Blind Canyon Aquaranch Inc
Gary Lemmon
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Hagerman ID 83332



Sharla Cox
Administrative Assistant

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

EXHIBIT C
Engineering Report

**IGWA'S APPLICATION FOR PERMIT 36-16976
BRIDGE DIVERSION 60% DESIGN REPORT**

Prepared for

**THE IDAHO GROUND WATER APPROPRIATORS, INC.
NORTH SNAKE GROUND WATER DISTRICT
MAGIC VALLEY GROUND WATER DISTRICT
SOUTHWEST IRRIGATION DISTRICT**

Prepared by

**SPF Water Engineering, LLC
300 East Mallard Drive, Suite 350
Boise, Idaho 83706
(208) 383-4140**

September 5, 2014



**SPF WATER
ENGINEERING**

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Appendices

- Appendix A: 60% Design Drawing Set
- Appendix B: Pump Curve

1. PROJECT SUMMARY

The Idaho Ground Water Appropriators, Inc. (IGWA) is reviewing legal and technical options to mitigate material injury to Rangen, Inc. (Rangen). IGWA has requested through its water rights legal counsel that SPF Water Engineering, LLC (SPF) provide design support to divert flow from Billingsley Creek, upstream of the existing Bridge Diversion, to Rangen's small raceways and hatch house (Project). This work is associated with IGWA's Application for Permit 36-16976. The existing Bridge Diversion infrastructure will allow the delivery of the application's 12 cfs to Rangen's large and CTR raceways. The Project will provide Rangen the ability to use up to 4 cfs of the overall 12 cfs in their small raceways and hatch house. To date, the engineering required to construct the Project is 60% complete. Current engineering drawings are included as Appendix A. This report summarizes the work SPF has completed regarding the Project.

2. DESCRIPTION OF RANGEN FACILITIES

The following descriptions of Rangen facilities pertinent to the project were developed from observations made by SPF during multiple site visits and from information provided by Joy Kinyon with Rangen. A map of these facilities is provided as Figure 1.

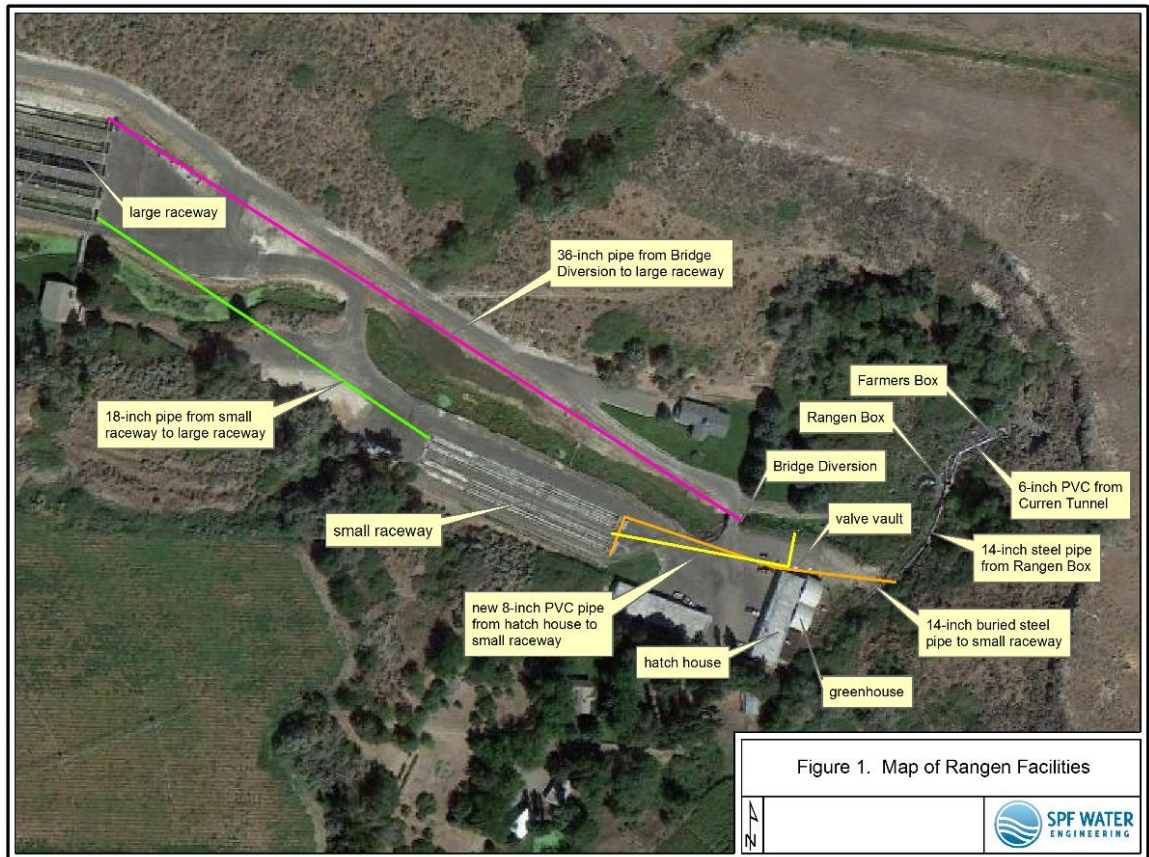


Figure 1. Map of Rangen Facilities

2.1. Farmers Box

Water from the Curren Tunnel is captured in two open concrete boxes near the tunnel opening collectively referred to as the Farmers Box. One box has three steel pipes discharging from it: the Musser, Morris, and Candy pipelines that travel to the southwest and eventually off of Rangen property (Photo 1). The other box has two PVC pipes discharging from it; one discharges water onto the talus slope approximately 50 feet down gradient of the box; the other PVC pipe carries water to the Rangen Box (Photo 2).



Photo 1. Farmers Box for Musser, Morris, and Candy pipelines



Photo 2. Farmers Box for pipeline to Rangen Box

2.2. Curren Tunnel Pipe

There is also a 6-inch PVC pipeline that extends into the Curren Tunnel to collect water, which bypasses the Farmers and Rangen boxes. This pipeline delivers water to the hatch house and also is the supply for Rangen's domestic water needs.

2.3. Rangen Box

The Rangen Box is an open concrete box that receives water from a single PVC pipe from the Farmers Box (Photo 3). The Rangen Box collects water to deliver to Rangen through a 14-inch steel pipe. Unused water spills from the box downslope into Billingsley Creek.



Photo 3. Rangen Box

2.4. 14-inch Pipeline to Small Raceways

The 14-inch steel pipeline from the Rangen Box travels above grade in a southwesterly direction down the talus slope for approximately 150 feet before being buried. The pipeline then travels west below grade to a concrete vault located adjacent to the greenhouse. The pipeline is exposed in this box, and the pipe is tapped with what appears to be an air valve and associated small-diameter gate valves (Photo 4). The pipeline continues west to another vault located adjacent to the hatch house. This vault contains a gate valve on the 14-inch pipeline and a smaller 6-inch steel pipeline that elbows off the 14-inch line. The smaller line travels into the hatch house (Photo 5) and is equipped with a gate valve. From this vault the 14-inch pipeline continues to travel in a westerly

direction to the small raceways. According to Mr. Kinyon, the pipeline elbows at the northeast corner of the small raceways, and forms a header at the head of the small raceways. Each of the eight channels of the small raceways have individual buried valves to control inflow from the header.



Photo 4. 14-inch pipeline exposed in vault.

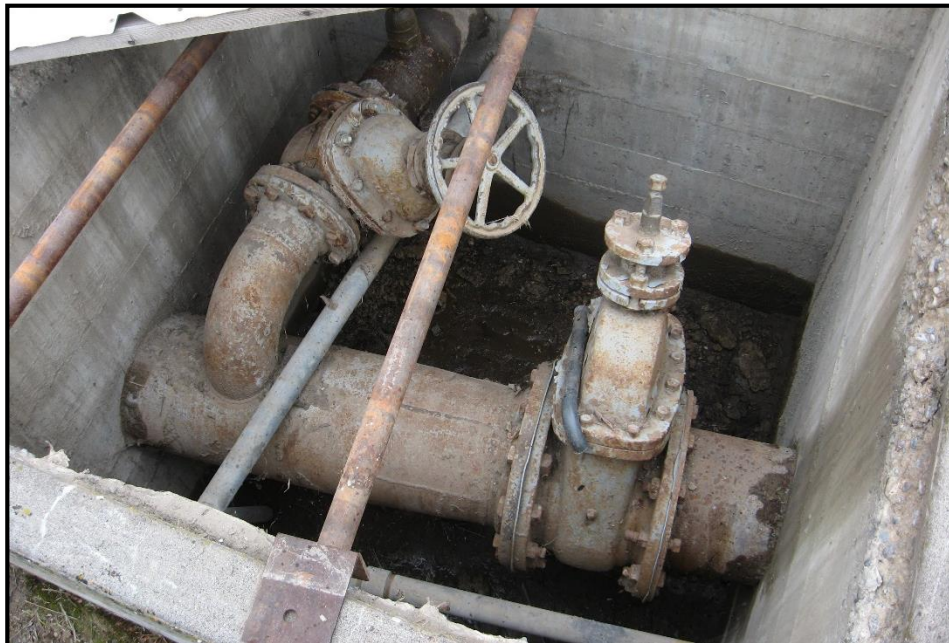


Photo 5. 14-inch pipeline exposed in valve vault.

2.5. 8-inch Pipeline to Small Raceways

Rangen installed an 8-inch PVC pipeline in the spring of 2014 to direct water from the hatch house to the small raceways. It is our understanding this pipeline exits the hatch house on the north side and tees just north of the building, with one leg going north to Billingsley Creek and the other leg going west to the small raceways. The legs of the tee are valved, so the flow can be directed to Billingsley Creek or the small raceways. The pipeline terminates above grade at the small raceways (Photo 6).



Photo 6. New 8-inch hatchery overflow pipeline at small raceways

2.6. 18-inch Pipeline Between Small and Large Raceways

There is an 18-inch pipeline that flows from the downstream end of the small raceways to the large raceways. The invert of one end of the pipe is located at the bottom of the downstream end of the small raceways (Photo 7) and the invert of the other end is located at the bottom of the upstream end of the large raceways. Flow not directed to the large raceways through the 18-inch pipe overflows from the small raceways into Billingsley Creek.

2.7. Bridge Diversion and Pipeline

There is a diversion structure located in Billingsley Creek referred to as the Bridge Diversion (Photo 8). Check structures installed at the bridge direct flow into an approximate 36-inch pipeline that carries water to the large raceways.



Photo 7. 18-inch pipeline at downstream end of small raceways



Photo 8. Bridge Diversion

3. PROJECT DESIGN

3.1. Delivery Flow

Application for Permit 36-16976 seeks to appropriate the diversion of 12 cfs of flow from springs and/or Billingsley Creek from points of diversion located in the SWSWNW and SESWNW of Section 32, T7S R14E. Currently flow from these sources can be left in Billingsley Creek or diverted at the Bridge Diversion into a 36-inch pipe to the large raceways. The proposed point of diversion for the Project is located just upstream of the existing Bridge Diversion infrastructure to deliver spring water to the hatch house and small raceways. The delivery of water to these proposed locations will require the installation of a pump system.

During SPF's April 1, 2014 site visit to Rangen, Mr. Kinyon indicated that the small raceways do not require more than 4 cfs of flow and typically use between 2 and 3 cfs. For the 60% design submittal, the pumps are sized to pump a total of 4 cfs of flow. We have designed the proposed system assuming 0.5 cfs of the 4 cfs could be directed to the hatch house, while the difference would flow to the small raceways. The total flow of 4 cfs could also be pumped to the small raceways with no flow going to the hatch house.

The design anticipates a separate delivery system to the small raceways and a supply line to the hatch house. This will allow Rangen to use any Curren Tunnel or Rangen Box flow separately from the proposed pump flow from Billingsley Creek. The 60% design does provide a connection to the hatch house in the event Rangen needs water from Billingsley Creek.

3.1.1. Pump Station Intake

Billingsley Creek water will be diverted into a 6-foot diameter wet well through a self-cleaning intake screen placed in the pool directly upstream of the Bridge Diversion. The intake screen will be sized to accommodate a flow of 4 cfs. A separate dedicated pump will be used to provide 44 gpm at a pressure of approximately 65 psi for operating the self-cleaning screen. The screen will have a flanged connection to a 16-inch diameter intake pipe that will supply flow to a 6-foot diameter precast concrete wet well. The wet well will be located just south of Billingsley Creek east of the bridge, as shown on Figure 2.

SPF's field survey data indicate the pool depth at the bridge diversion was over 4 feet deep. During our site visits, it appeared Rangen directs almost all the flow from the pool into the 36-inch pipeline. Check boards may be required upstream of the 36-inch pipeline to maintain the desired pool depth. These boards would be set lower than the Billingsley Creek check boards so the flow not pumped to the small raceways would enter the large raceway pipe.

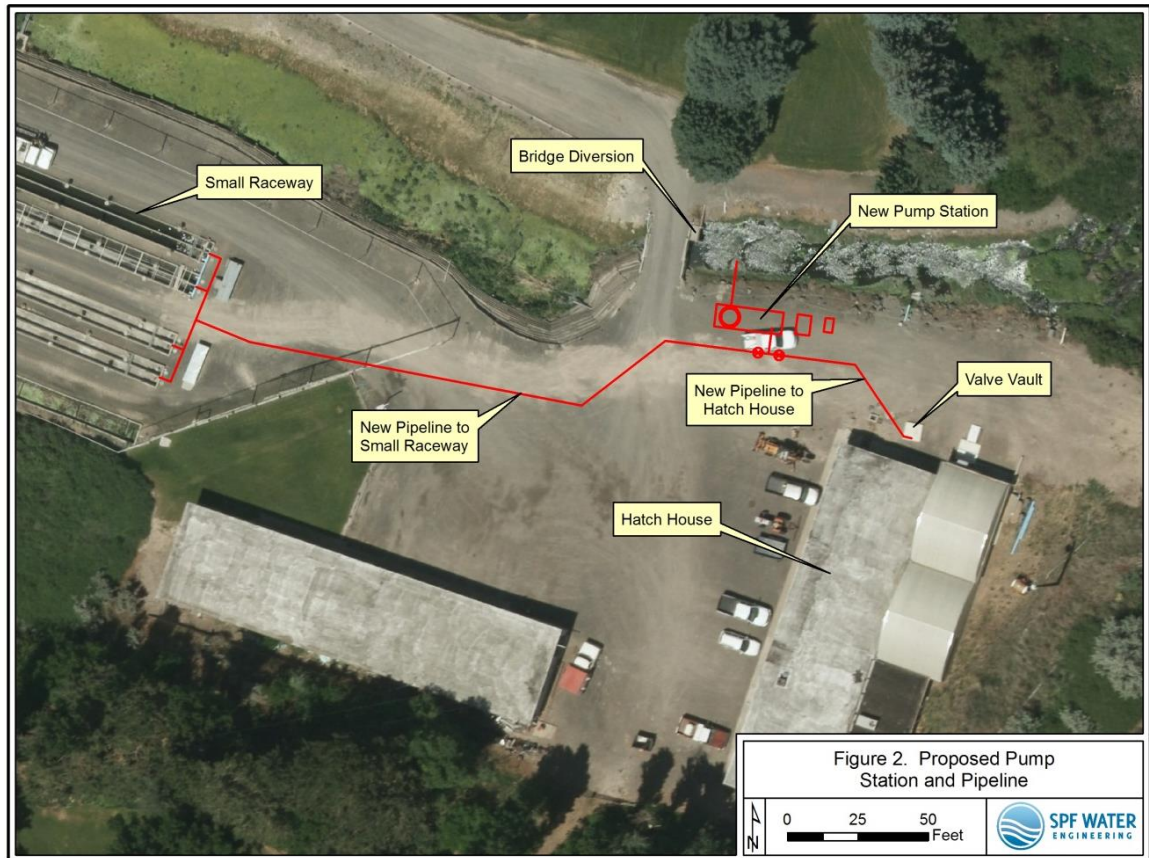


Figure 2. Map of Proposed Pump Station and Pipelines

3.2. Pump Station Design

The 60% design contemplates utilizing a skid-mounted packaged pump station including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs), pressure sustaining valve, associated controls, generator, and enclosure. The pump station is proposed south of Billingsley Creek and east of the bridge, as shown on Figure 2. The proposed location has good access for operations and maintenance and does not hinder access to Rangen’s existing facilities.

The pump station will include three short-set line-shaft turbine pumps. Two of the pumps will be duty pumps and one will be on standby to ensure two pumps operate at all times should one be taken out of service for maintenance. The pumps will be placed in a 6-foot diameter, 12-foot deep, precast concrete wet well. The wet well will be fed from a 16-inch diameter gravity pipe from Billingsley Creek.

The two duty pumps are sized to deliver a total of 4 cfs. The most conservative scenario assumes 0.5 cfs is delivered to the hatch house and 3.5 cfs is delivered to the small raceways. This is because the hatch house is at a higher elevation, the existing piping

is small diameter, and a higher delivery pressure is assumed to deliver water to the interior of the building. To deliver 3.5 cfs to the small raceways and 0.5 cfs to the hatch house, the pump station will be required to generate approximately 48 feet of total dynamic head (TDH). The TDH calculation assumes:

- A pumping water elevation of 3069 feet at the pump station (equal to the existing water surface elevation upstream of the Bridge Diversion)
- 0.5 cfs delivered to the existing 6-inch hatch house supply pipe at the valve box connection point (elevation of top of pipe at 3075 feet)
- 3.5 cfs delivered to the small raceways at the head of the manifold at elevation of 3068 feet
- 250 feet of 12-inch PVC pipe (IPS, SDR 21, 11.47-inch I.D.) to the small raceways
- 65 feet of 4-inch PVC pipe (IPS, SDR 21, 4.05-inch I.D.) to the hatch house

All three pumps will be controlled by VFDs to maintain a constant discharge pressure at pumping rates varying from 1 to 4 cfs. A pump curve showing single and dual pump operation at different motor speeds is included in Appendix B. This curve demonstrates that a single pump operating at approximately 87% speed (52 Hz) can pump 1 cfs at a TDH of 48 feet. Two pumps each running at 98% speed (59 Hz) can pump a total of 4 cfs at a TDH of 48 feet.

The 60% design contemplates using a pressure sustaining valve to maintain a minimum pressure at the pump station, which would prevent over pumping of the pump station. The pressure sustaining valve would be set to maintain an up stream pressure of 10 psi.

With a TDH of 48 feet and a delivery rate of 4 cfs (1,800 gpm), total brake horsepower required is 29 hp, or 14.5 hp per pump with two pumps running. The pumps will require nominal 15-hp motors. All three 15-hp pumps will be controlled by VFDs and set to maintain a constant discharge pressure. System operation will be controlled by a programmable logic controller with remote monitoring and auto-restart capabilities. The packaged pump station will include an isolation and check valve on each pump, a main-line butterfly valve, pressure relief valve, combination air valve, pressure sustaining valve, and a flow meter all within the secure enclosure. A generator is proposed to provide emergency power. The pump station will be enclosed for protection from weather and to provide sound attenuation. The insulated enclosure will be heated and ventilated.

The pump station is designed to be a reliable, year-round facility. It includes a redundant pump, remote monitoring and alarming capabilities, auto-restart, and a proposed standby power generator and auto-transfer switch. The pump station VFDs will be controlled by discharge pressure, allowing them to automatically adjust their speed to deliver a constant pressure as downstream valves are adjusted by Rangen staff. The pump station enclosure will be lockable and durable. The pump station will be on

Rangen property, with vehicle access to the site restricted by a locked gate after hours. All these items will make the pump station dependable, biologically and physically secure, and will minimize downtime due to maintenance and power outages.

3.3. Power Availability

Idaho Power Company (IPCo) will be contacted to determine the best way to provide service to the pump station. SPF does not believe 3-phase power currently exists at Rangen, so the pump station is being designed assuming only a single-phase service will be available.

3.4. Delivery to Rangen

Currently, water can be used by Rangen in the following ways: (1) at the hatch house from the Curren Tunnel pipe, (2) at the hatch house from the 6-inch pipe supplied by the 14-inch Rangen Box pipeline, (3) at the small raceways from the hatch house, (4) at the small raceways from the 14-inch Rangen Box pipeline, (5) at the large raceways through the existing 36-inch pipe from the Bridge Diversion, (6) at the large raceways from the small raceways, and (7) at the CTR raceways from the large raceways. The proposed pump diversion will add additional ability and flexibility for Rangen to use water from Billingsley Creek in the hatch house and in the small raceways.

3.4.1. Hatch House

The hatch house could continue to receive water from the Curren Tunnel pipeline and from the 14-inch Rangen Box pipeline. The proposed pump station would add a third source of water for hatch house use. The proposed design anticipates a new 4-inch pipeline from the pump station which would connect to the existing 6-inch hatch house supply pipe. The connection would occur just downstream of the 6-inch elbow off the 14-inch line. If the water from the proposed pump station is desired to be used, the 6-inch supply from the 14-inch line would need to be turned off using the 6-inch gate valve due to the pressure differential between the two supplies. Figure 3 shows the proposed pipeline tie in configuration.

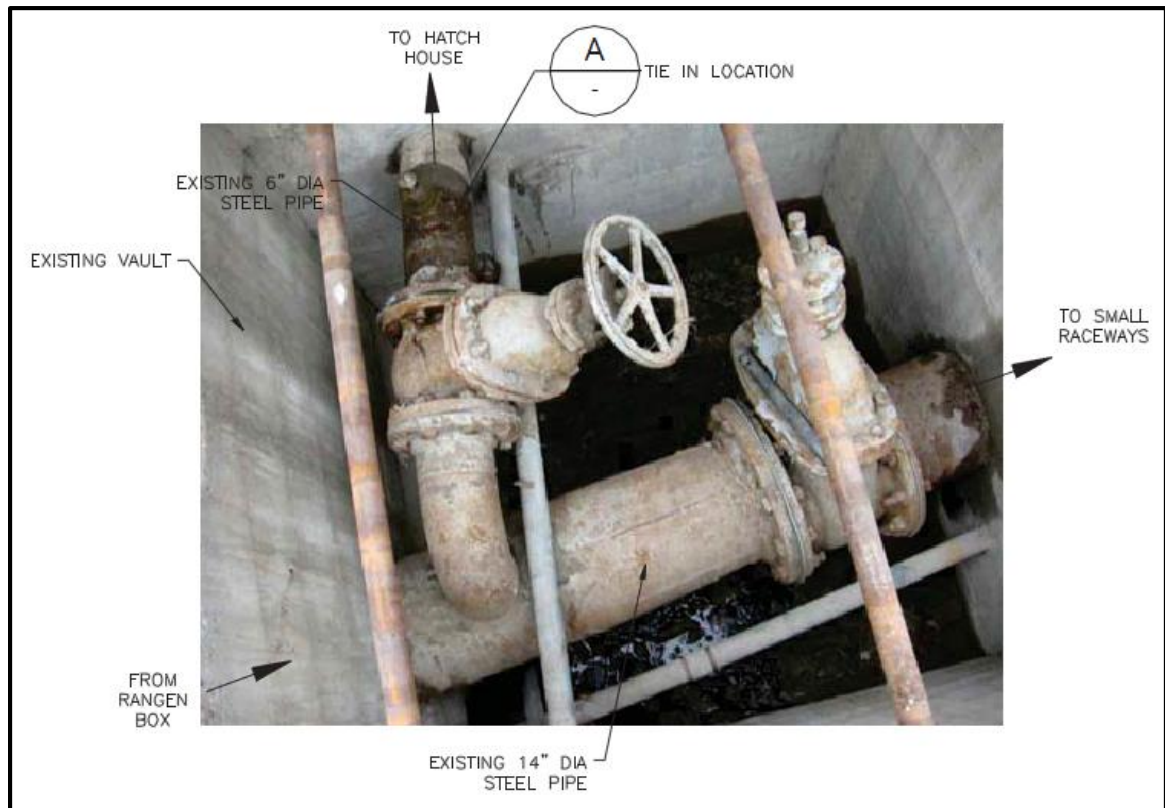


Figure 3. Hatch House Tie-in Location

3.4.2. Small Raceways

The small raceways could continue to receive water from the hatch house and from the 14-inch Rangen Box pipeline. The proposed pump station would add a third source of water for the small raceways to use. A new 12-inch PVC pipeline will be installed from the discharge of the new pump station to the small raceways. The 12-inch line will terminate at an underground 12-inch manifold at the upstream end of the small raceways. Four 8-inch diameter pipelines will be fed from the manifold to supply water to the four small raceway structures. Each of the four 8-inch supply pipelines will have a buried gate valve, a drain valve, and an air relief valve. This configuration will allow the above ground piping to be drained to prevent freezing during non-use.

The 8-inch supply line will project out of the ground at the head of each raceway structure and terminate at an 8-inch x 6-inch tee set on the top of the wall separating the two raceways within each small raceway structure. A 6-inch diameter service line with a manually controlled butterfly valve would provide supply to each of the individual raceways. The pipeline from the proposed pump station will be operated independently of the existing small raceway supplies. This will allow Rangen to keep the different supplies separated within the individual raceways or mix them together as they choose. Figure 4 shows the proposed pump station supply manifold to the small raceways.

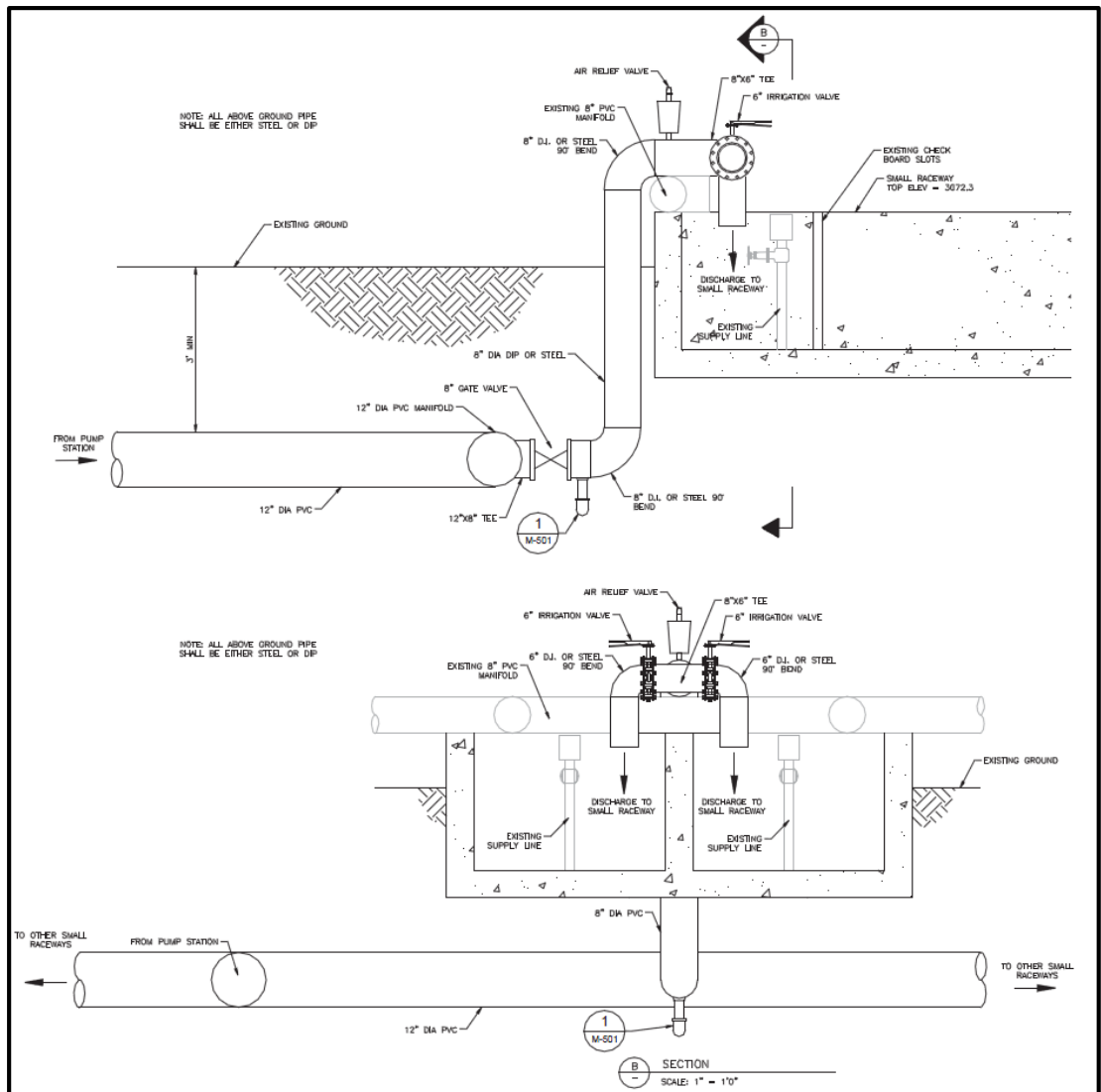


Figure 4. Small Raceways Delivery Manifold

3.4.3. Large Raceways

The large raceways would continue to receive gravity flow water from the 36-inch diameter pipeline from the Billingsley Creek Bridge Diversion and from the small raceways. A direct supply to the large raceways from the proposed pump station is not contemplated as part of this design. When pumping is occurring at the proposed pump station, it is anticipated the flow contribution to the large raceways from the large pipeline would be reduced while flow from the small raceways to the large raceways would increase.

4. WATER QUALITY DATA

SPF performed a limited water quality field analysis on May 7, 2014 and June 12, 2014 at Rangen. This analysis focused on pH, electrical conductivity, specific conductance, and dissolved oxygen. The results are shown in Table 1. This information compares these parameters between the Farmers Box, Rangen Box, and Bridge Diversion. On both occasions upstream of the Bridge Diversion had the highest dissolved oxygen content and percent saturation.

Rangen Field Water Quality						
May 7, 2014		pH Meter	Conductivity Meter		DO Meter	
Location	Date/Time	pH	EC (µS)	SC (µS)	DO (mg/L)	% Saturation
Upstream Farmers Box	5/7/2014 9:30	7.28	263.7	326.1	8.3	93
Upstream Rangen Box	5/7/2014 9:38	7.28	261.8	323.7	8.5	95
Upstream Bridge Diversion	5/7/2014 9:52	7.52	262.4	325.5	8.6	96
June 12, 2014						
June 12, 2014		pH Meter	Conductivity Meter		DO Meter	
Location	Date/Time	pH	EC (µS)	SC (µS)	DO (mg/L)	% Saturation
Upstream Farmers Box	6/12/2014 13:40	7.95	258.6	319.0	8.3	94
Upstream Rangen Box	6/12/2014 13:30	8.10	259.8	319.1	8.6	97
Upstream Bridge Diversion	6/12/2014 14:00	7.62	262.0	321.3	8.7	99

Table 1. Water Quality Field Data

SPF also took temperature readings on the same two days. Three different instruments were calibrated with a mercury thermometer and a correction factor by dividing the thermometer reading by the instrument reading. Field measurements of temperature and the corrected temperatures are shown in Table 2. The temperature readings are fairly consistent between the measurement locations and any increases in temperature due to the proposed pumping and piping system are considered negligible.

Rangen Field Water Temperature							
May 7, 2014		pH Meter ⁴		Conductivity Meter ⁵		DO Meter ⁵	
Location	Date/Time	Temp (°C)	Corr Temp (°C) ¹	Temp (°C)	Corr Temp (°C) ²	Temp (°C)	Corr Temp (°C) ³
Upstream Farmers Box	5/7/2014 9:30	14.8	15.7	15.0	15.9	15.1	15.9
Upstream Rangen Box	5/7/2014 9:38	14.8	15.7	15.0	15.9	15.0	15.8
Upstream Bridge Diversion	5/7/2014 9:52	14.6	15.5	14.8	15.7	14.6	15.4
1 - Calibrated against mercury thermometer using tap water, correction factor = 1.0634 2 - Calibrated against mercury thermometer using tap water, correction factor = 1.0583 3 - Calibrated against mercury thermometer using tap water, correction factor = 1.0531 4 - Temperature accuracy of 0.5°C 5 - Temperature accuracy of 0.2°C							
June 12, 2014		pH Meter ⁴		Conductivity Meter ⁵		DO Meter ⁵	
Location	Date/Time	Temp (°C)	Corr Temp (°C) ¹	Temp (°C)	Corr Temp (°C) ²	Temp (°C)	Corr Temp (°C) ³
Upstream Farmers Box	6/12/2014 13:40	14.7	15.3	15.1	15.6	15.2	15.5
Upstream Rangen Box	6/12/2014 13:30	15.1	15.7	15.3	15.8	15.4	15.7
Upstream Bridge Diversion	6/12/2014 14:00	15.1	15.7	15.3	15.8	15.5	15.8
1 - Calibrated against mercury thermometer using tap water, correction factor = 1.0422 2 - Calibrated against mercury thermometer using tap water, correction factor = 1.0313 3 - Calibrated against mercury thermometer using tap water, correction factor = 1.0191 4 - Temperature accuracy of 0.5°C 5 - Temperature accuracy of 0.2°C							

Table 2. Water Temperature Field Data

5. PROJECT SCHEDULE

If the Bridge Diversion Project is constructed, the target completion date would be January 19, 2015, but no later than April 1, 2015. The hearing for the Application for Permit is scheduled for September 17, 2014. In order to meet the earlier date, it is assumed the IDWR Director will render a favorable decision within three weeks of the hearing and a 404 permit will not be required to install the 16-inch intake pipeline into the pool upstream of the existing Bridge Diversion. If a 404 permit is required, then the April 1, 2015 date becomes the target date. The proposed schedule in Figure 5 identifies the major tasks and their timeframes required to meet the January 19, 2015 date.

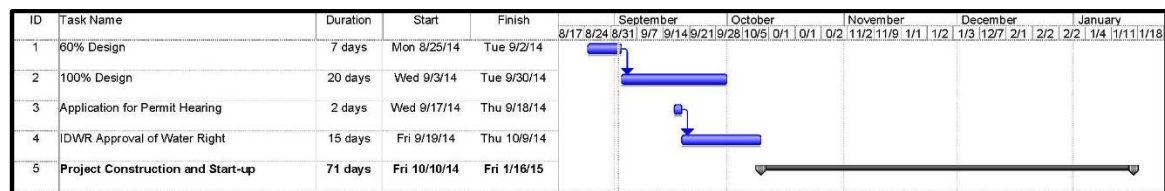


Figure 5. Project Schedule

6. PROJECT COST ESTIMATE

6.1. Capital Construction Cost Estimate

The Preliminary Opinion of Probable Cost developed for the 60% design is based on direct vendor material pricing, contractor installation input, and historical information SPF had available. The 60% design contemplates a skid-mounted packaged pump station, including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs) and associated controls, generator, and enclosure.

The estimate includes a new underground Idaho Power electrical supply from an adjacent overhead pole and does not include any distribution line upgrades. The estimate also includes a 15% construction contingency and engineering and construction services of 10% to finalize the design and support the construction effort. Table 3 summarizes the Preliminary Opinion of Probable Cost for the 60% design of the Project.


 OPINION OF PROBABLE COST BRIDGE DIVERSION PUMPING SYSTEM SUMMARY OF COSTS		
PROJECT : Bridge Diversion Pumping System SPF JOB # : 535.0080 LOCATION : Hagerman, Idaho		ESTIMATE CLASS : 4 DATE : 9/2/2014 BY : RRH REVIEWED : JT
NO.	DESCRIPTION	ESTIMATED COSTS
1	PIPELINE AND APPURTENANCES	\$ 51,415
2	PUMPING AND MECHANICAL	\$ 105,000
3	ELECTRICAL AND CONTROLS	\$ 53,000
4	MOBILIZATION, FEES, CONTINGENCY, ENGINEERING	\$ 58,636
ESTIMATED DESIGN AND CONSTRUCTION COST		\$ 268,000
<p><i>This estimate of probable cost reflects our professional opinion of accurate costs at this time based on current conditions at the project location. This estimate is subject to change through the project planning and design process. Actual construction cost will depend on the cost of labor, materials, equipment, and services provided by others, contractor's methods of determining prices, competitive bidding and market conditions.</i></p>		

Table 3. Preliminary Opinion of Probable Cost

6.2. Annual System Operational Costs

If the Bridge Diversion Project is constructed there will be on-going operational and maintenance costs associated with the new system. A capital reserve fund is recommended to help with replacement costs of the equipment. On-going operational costs include electricity, operational labor, and preventative maintenance. These costs, along with the capital reserve fund, are summarized in Table 4. The most significant annual cost will be the electrical. This estimate assumes a \$0.06/kW-Hr power cost and 4 cfs is pumped continuously.

Item	Annual Cost
2 - 15 HP Electrical Costs (\$0.06/kW-Hr)	\$10,560
Weekly Inspections (\$100/week)	\$5,200
Miscellaneous Maintenance	\$5,000
Remote Monitoring	\$2,450
Capital Reserve Fund	\$8,695
TOTAL	\$31,904

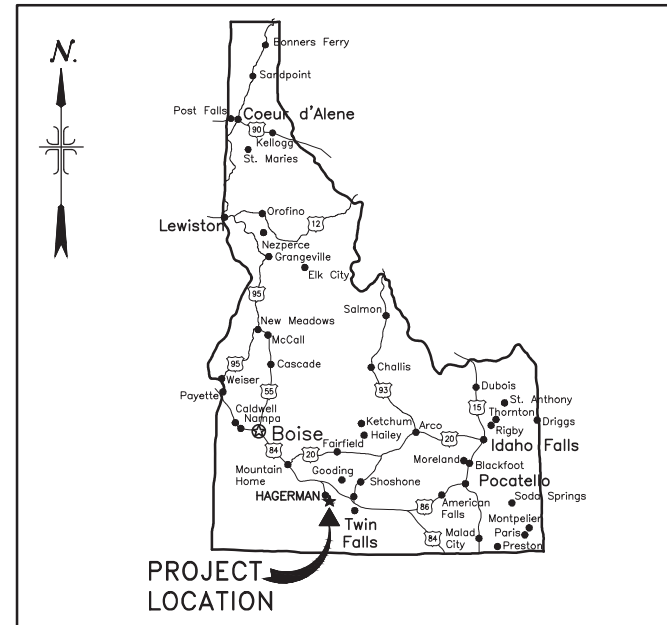
Table 4. Annual Operating Costs

APPENDIX A: 60% DESIGN DRAWING SET

RANGEN BRIDGE DIVERSION PROJECT PUMP STATION AND PIPELINE

HAGERMAN, IDAHO

2014



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

PROJECT TEAM

OWNER

NORTH SNAKE AND MAGIC VALLEY GROUND WATER DISTRICTS
AND SOUTHWEST IRRIGATION DISTRICT
LYNN CARLQUIST
152 E MAIN ST
JEROME, ID 83338
(208) 324-8995

CIVIL ENGINEER

SPF WATER ENGINEERING
ATTN: ROBERT HARDGROVE, PE
300 E MALLARD DR, SUITE 350
BOISE, ID 83706
PHONE: (208) 383-4140
EMAIL: bhardgrove@spfwater.com

SURVEYOR

QUADRANT CONSULTING, INC
ATTN: PETE LOUNSBURY
1904 W OVERLAND RD
BOISE, ID 83705
PHONE: (208) 342-0091
EMAIL: pete@quadrant.cc

3Di GEOTERRA MAPPING GROUP
ATTN: SCOTT WILSON
9543 W EMERALD ST, STE 203
BOISE, ID 83704
PHONE: (208) 336-2430
EMAIL: swilson@3DiMapping.com



RANGEN BRIDGE DIVERSION PROJECT
PUMP STATION AND PIPELINE

COVER SHEET

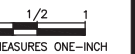
PRELIMINARY
DRAFT NOT FOR
CONSTRUCTION

SHEET INDEX

G-001	COVER SHEET
G-002	DESIGN CRITERIA
G-003	PROCESS FLOW DIAGRAM
G-004	HYDRAULIC PROFILE
C-001	SITE PLAN
M-101	PUMP STATION PLAN
M-201	PUMP STATION SECTION
M-501	DETAILS
M-502	DETAILS

ITEM	DESCRIPTION	DATE	
		REVISIONS	DATE
A	PRELIMINARY DESIGN SUBMITTAL		8/27/14
B	60% SUBMITTAL		9/2/14

VERIFY SCALE



BAR MEASURES ONE-INCH
ON FULL SIZE DRAWING.

PROJECT: 535.0080

DESIGNED: JWT

DRAWN: PZC

CHECKED: RRH

G-001

**RANGEN BRIDGE DIVERSION PROJECT
DESIGN CRITERIA AND ASSUMPTIONS**

PUMPING DATA

1. SOURCE WATER: BILLINGSLEY CREEK UPSTREAM FROM BRIDGE DIVERSION
2. TOTAL PUMP CAPACITY: 4 CFS (1,800 GPM)
 - a.FLOW TO SMALL RACEWAY: UP TO 4 CFS (1,800 GPM)
 - b.FLOW TO HATCH HOUSE: UP TO 0.5 CFS (225 GPM)
3. DESIGN TOTAL DYNAMIC HEAD: 48 FEET
 - a.ASSUMED LOW WATER ELEVATION IN WET WELL: 3068.9 FEET
 - b.PRESSURE SUSTAINING VALVE ELEVATION: 3078 FEET
 - c.PUMP STATION DISCHARGE ELEVATION: 3078 FEET
 - d.TOP OF HATCH HOUSE 6-INCH DIAMETER SUPPLY PIPE ELEVATION: 3075
 - e.TOP OF SMALL RACEWAY 12-INCH DIAMETER MANIFOLD PIPE ELEVATION: 3068 FEET
 - f.TOP OF SMALL RACEWAY ELEVATION: 3072.3 FEET
 - g.PRESSURE SUSTAINING VALVE SETPOINT: 10 PSI ON PUMP STATION SIDE
 - h.PUMP DISCHARGE PRESSURE SETPOINT: 17 PSI
 - i. MINIMUM HEAD DELIVERED TO TOP OF HATCH HOUSE 6-INCH DIAMETER SUPPLY PIPE: 15 FEET
 - i. MINIMUM HEAD DELIVERED TO TOP OF SMALL RACEWAY 12-INCH DIAMETER MANIFOLD PIPE: 25 FEET
 - j. ASSUMES VALVE THROTTLING AT SMALL RACEWAY TO MAINTAIN MINIMUM HEAD DELIVERY AT HATCH HOUSE
4. ACTUAL HORSEPOWER REQUIRED TO DELIVER 4.0 CFS AT 48 FEET TDH: 29 HP
5. NOMINAL HORSEPOWER REQUIRED TO DELIVER 4.0 CFS AT 48 FEET TDH: 30 HP
6. PUMP STATION WILL INCLUDE THREE (3) 15-HP PUMPS: TWO (2) DUTY PUMPS AND ONE (1) STANDBY PUMP
7. ALL THREE (3) PUMPS WILL BE CONTROLLED BY VARIABLE FREQUENCY DRIVES (VFDS)
8. THE PUMP STATION WILL BE PROVIDED WITH A HEATED AND VENTILATED INSULATED ENCLOSURE FOR YEAR-ROUND OPERATION AND SOUND ATTENUATION.
9. STANDBY POWER GENERATION WILL BE INCORPORATED INTO THE 100% DESIGN.

PIPELINE

1. WELDED STEEL OR DUCTILE IRON PIPE ABOVE GROUND, 200 PSI SDR 21 I.P.S PVC PIPE BELOW GROUND.

RANGEN TIE-IN

1. POINT OF DELIVERY:
 - a.RANGEN INC.'S BURIED 6-INCH DIAMETER HATCH HOUSE SUPPLY PIPE
 - b.OPEN DISCHARGE TO TOP OF RANGEN INC.'S SMALL RACEWAY BAYS (8 TOTAL)
2. FLOW WILL BE DELIVERED TO THE HATCH HOUSE, SMALL RACEWAYS AND LARGE RACEWAYS
 - a.DIRECTLY TO HATCH HOUSE THROUGH THE EXISTING 6-INCH DIAMETER PIPE
 - b.DIRECTLY TO THE SMALL RACEWAYS THROUGH OPEN DISCHARGE IN NEW PIPE
 - c.INDIRECTLY TO THE LARGE RACEWAYS AFTER IT FLOWS THROUGH THE SMALL RACEWAYS
3. REMAINING FLOW IN BILLINGSLEY CREEK WILL BE DELIVERED DIRECTLY TO THE LARGE RACEWAYS THROUGH THE BRIDGE DIVERSION PIPE

PUMP SCHEDULE

Pump Name	Type	Controls	Design Flow (gpm)	Design TDH (ft)	Pump Model, Or Approved Equal	Number of Stages	Pump HP
Duty Pump 1	Short Set Lineshaft Turbine	VFD	900	48	Goulds 12RJLC	1	15
Duty Pump 2	Short Set Lineshaft Turbine	VFD	900	48	Goulds 12RJLC	1	15
Duty Pump 3	Short Set Lineshaft Turbine	VFD	900	48	Goulds 12RJLC	1	15

GENERAL NOTES:

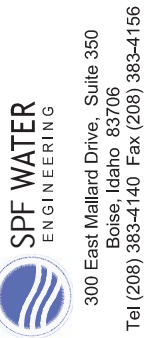
1. CONSTRUCTION SHALL BE PER THE LATEST VERSION OF THE ISPCW OR PROJECT PLANS/SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL EVERYTHING REQUIRED TO PROVIDE COMPLETE AND OPERABLE FACILITIES AS SHOWN HEREIN. IF THERE IS AN OMISSION ON THE PLANS, SUCH OMISSION SHALL NOT BE CONSTRUED TO MEAN THAT THE CONTRACTOR IS NOT REQUIRED TO FURNISH OR PROVIDE EVERYTHING THAT IS NECESSARY TO PROVIDE COMPLETE AND OPERABLE FACILITIES.
3. ANY CHANGES TO THE DESIGN AS SHOWN IN THESE CONSTRUCTION DRAWINGS MUST BE REVIEWED AND APPROVED BY THE ENGINEER BEFORE CHANGES ARE MADE. THIS INCLUDES CHANGES REQUESTED BY THE OWNER'S REPRESENTATIVE AND SUBCONTRACTORS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS, OTHER SURVEY MARKERS, STREET SIGNS, UTILITIES, IRRIGATION LINES, PAVEMENT, TREES, FENCES, AND ANY OTHER IMPORTANT OBJECTS ON OR ADJACENT TO THE JOB SITE AS DETERMINED BY THE OWNER'S REPRESENTATIVE OR ENGINEER.
5. CONTRACTOR SHALL CONTACT IDAHO DIG LINE (208) 342-1585 TO MARK AND IDENTIFY UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
6. CONTRACTOR SHALL LEGALLY DISPOSE OF ALL EXCESS MATERIAL.
7. ALL "OR EQUAL" ITEMS ARE SUBJECT TO REVIEW AND APPROVAL OF THE ENGINEER.
8. CONTRACTOR SHALL PROVIDE, MAINTAIN, AND BE RESPONSIBLE FOR ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND PRACTICES AND MEET THE REQUIREMENTS OF ANY AGENCY HAVING JURISDICTION.
9. CONTRACTOR TO OBTAIN AND PAY ALL COSTS FOR ALL APPLICABLE PERMITS.
10. UPON THE COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT A SET OF "RED-LINED" RECORD DRAWINGS TO THE ENGINEER.
11. CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE OWNER'S REPRESENTATIVE PRIOR TO, DURING, AND AT THE COMPLETION OF CONSTRUCTION ACTIVITY.
12. IF WITHIN ONE (1) YEAR FROM THE DATE OF COMPLETION, THE PUMPING SYSTEM, PIPELINE, AND ALL APPURTENANCES OR ANY PART THEREOF INSTALLED AS NEW SHALL PROVE TO BE DEFECTIVE IN INSTALLATION, MATERIAL, OR WORKMANSHIP THE CONTRACTOR SHALL WARRANT REPLACEMENT OR REPAIR TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO EXPENSE TO THE OWNER.
13. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE LOCATION ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL CONTACT PROPERTY OWNERS TO GAIN INFORMATION ON PRIVATE UTILITIES.
14. CONTRACTOR TO NOTIFY AND COORDINATE WITH PRIVATE PROPERTY OWNERS PRIOR TO BLOCKING AND DETOURING DRIVEWAYS AND PROPERTY ACCESS POINTS.
15. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODY.
16. CONTRACTOR SHALL PROVIDE, MAINTAIN, AND BE RESPONSIBLE FOR TRAFFIC CONTROL PERSONNEL AND DEVICES.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEWATER ALL EXCAVATIONS DURING CONSTRUCTION. GROUNDWATER SHALL BE KEPT BELOW THE BOTTOM OF EXCAVATIONS DURING INSTALLATION AND TESTING OF ALL UTILITIES AND STRUCTURES.
18. CONSTRUCTION STAKING SHALL BE DONE USING THE CONTROL DATA CREATED AND SET IN THE FIELD BY QUADRANT CONSULTING, INC. ALL LINES AND GRADES ON THE DESIGN SHEETS WERE BASED ON THE TOPOGRAPHICAL SURVEY COMPLETED BY QUADRANT CONSULTING, INC. AND 3Di GEOTERRA MAPPING GROUP.
19. CONTRACTOR TO COORDINATE WITH IDAHO POWER ON INSTALLING NEW ELECTRICAL SERVICE TO PUMP STATION SITE. IGWA WILL PAY ALL IDAHO POWER FEES. CONTRACTOR SHALL PROVIDE AND INSTALL METER CAN NEAR PUMP STATION TRANSFORMER PROVIDED BY IDAHO POWER.

PIPELINE CONSTRUCTION NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REQUIRED PIPELINE TESTING. ALL TESTING SHALL BE IN ACCORDANCE WITH SECTION 401 OF ISPCW. PIPELINE SHALL BE TESTED TO 100 PSI AT THE PUMP STATION. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS PRIOR TO CONDUCTING TESTING. THE ENGINEER OR DESIGNATED REPRESENTATIVE WILL BE PRESENT FOR THE TESTING.
2. CONTRACTOR TO USE AND PLACE NATIVE BEDDING AND MATERIAL 6 INCHES OVER PIPE. NATIVE MATERIAL SHALL CONTAIN NO ROCK, ORGANIC MATTER, OR MATERIALS LARGER THAN 2", PER DETAIL 3/M-501.
3. CONTRACTOR TO USE NATIVE TRENCH BACKFILL MATERIAL ABOVE THE BEDDING ZONE FREE FROM CINDERS, ASHES, REFUSE, ORGANIC, AND FROZEN MATERIAL, ROCKS, 8" OR LARGER, OR OTHER UNSUITABLE MATERIALS. BACKFILL AND COMPACTION PRACTICES SHALL BE TYPE A-1 PER SECTION 306 OF THE ISPCW PER DETAIL 3/M-501.
4. PIPELINE SHALL HAVE A MINIMUM BURY DEPTH OF 3 FEET.
5. INSTALL PIPE WITH UNIFORM SLOPES AND STRAIGHT ALIGNMENTS, AVOID LOCALIZED HIGH AND LOW POINTS (TYP).
6. POLYETHYLENE ENCASE ALL BURIED DUCTILE IRON AND STEEL PIPING, JOINTS, BOLTS AND RESTRAINING DEVICES.
7. PIPELINE MATERIAL SHALL BE WELDED STEEL OR DUCTILE IRON PIPE ABOVE GROUND AND 200 PSI SDR21 I.P.S. PVC BELOW GROUND. SIZES PER PLANS.
8. BURIED VALVES TO BE RESILIENT SEATED GATE VALVES (AWWA C509) WITH CAST IRON VALVE BOX.
9. INSTALL THRUST BLOCKS PER DETAIL 2/M-501 FOR ALL PIPE FITTINGS AND ACCESSORIES.
10. VALVE BOXES AND LIDS SHALL BE PER ISPCW STANDARD DETAIL SD-406. CONCRETE COLLAR REQUIRED.
11. CONTRACTOR SHALL VERIFY EXISTING LOCATIONS, ELEVATIONS, AND MATERIAL TYPES OF ALL UTILITIES AND FEATURES WHERE PROPOSED IMPROVEMENTS CONNECT. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

EROSION AND SEDIMENT CONTROL (ESC) NOTES:

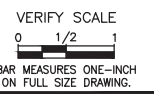
1. CONTRACTOR SHALL PROVIDE, MAINTAIN, AND BE RESPONSIBLE FOR ALL ESC STRUCTURES, PRACTICES, AND PLANS TO MEET ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR WATER QUALITY AND EROSION AND SEDIMENT CONTROL. THE FOLLOWING ARE SUGGESTIONS, BUT ALTERNATE BMPS AND PRACTICES MAY BE APPROPRIATE AND SHOULD BE NOTED ON THE CONTRACTOR'S ESC PLAN.
2. CONTRACTOR SHALL UTILIZE ESC BEST MANAGEMENT PRACTICES (BMPS) PER THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY CATALOG OF STORMWATER BMPS FOR IDAHO CITIES AND COUNTIES IN CONJUNCTION WITH ANY LOCAL AMENDMENTS OR REQUIREMENTS.
3. CONTRACTOR TO PRESERVE EXISTING VEGETATION AND MINIMIZE THE AREAS DISTURBED BY CONSTRUCTION ACTIVITY.
4. ANY DEWATERING ACTIVITIES SHOULD MEET ALL APPLICABLE REQUIREMENTS AND DEWATERING FLOWS SHALL NOT BE DISCHARGED INTO RECEIVING WATERS WITHOUT THE CONTRACTOR OBTAINING THE APPROPRIATE APPROVALS AND PERMITS.
5. SWEEPING OF PAVED SURFACES SHALL BE CONDUCTED AS NECESSARY TO KEEP PAVED SURFACES CLEAN.
6. CONTRACTOR SHALL PROVIDE INLET PROTECTION TO ALL CULVERTS, INLETS, CANALS, AND SUB-SURFACE DRAINS.



RANGEN BRIDGE DIVERSION PROJECT
PUMP STATION AND PIPELINE
DESIGN CRITERIA

PRELIMINARY DRAFT NOT FOR CONSTRUCTION

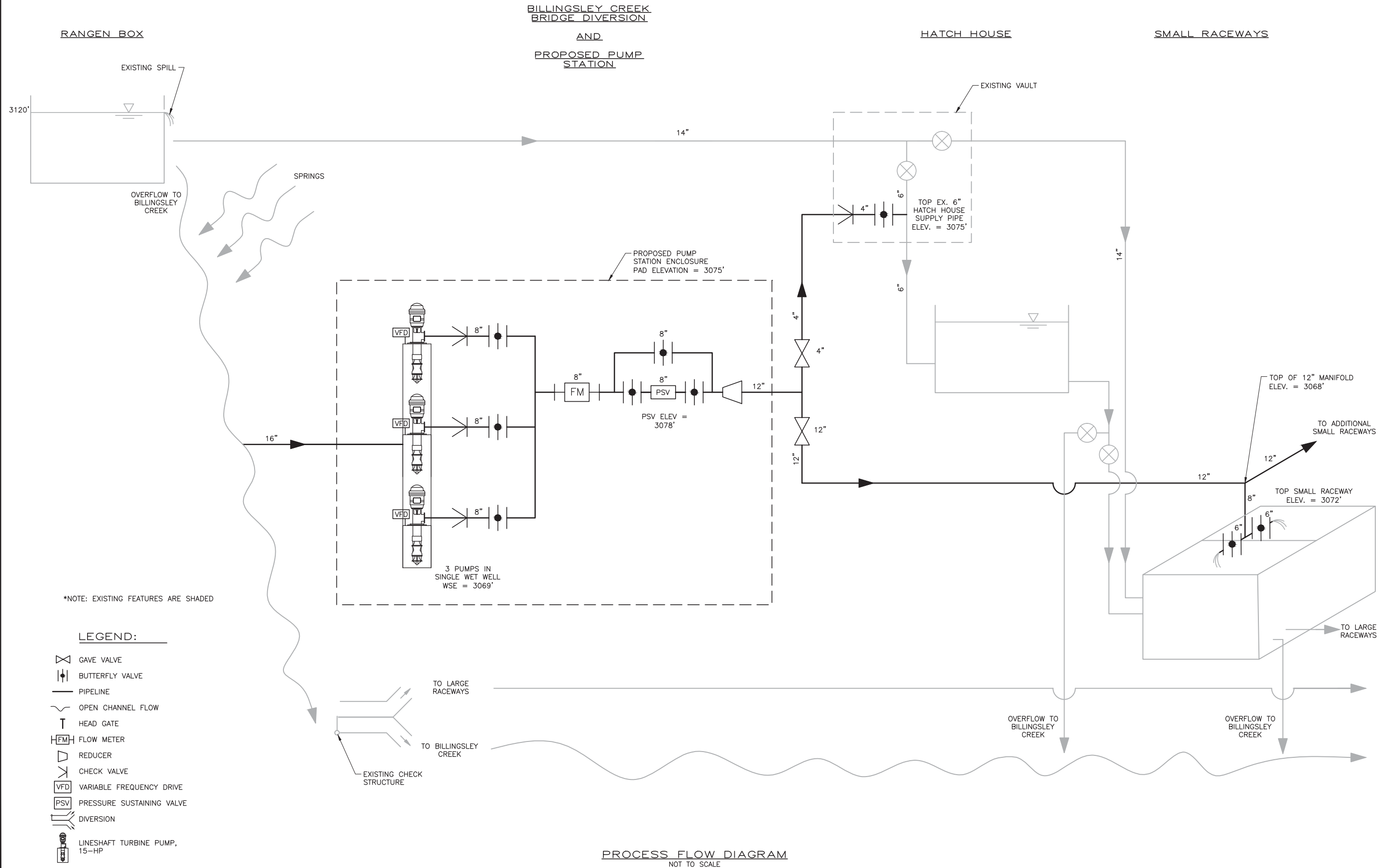
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A	PRELIMINARY DESIGN SUBMITTAL	8/27/14
B	60% SUBMITTAL	9/2/14



PROJECT: 535.0080
 DESIGNED: JWT
 DRAWN: PZC
 CHECKED: RRH

G-002

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 Xref File: BRIDGE-XR-TB



*NOTE: EXISTING FEATURES ARE SHADED

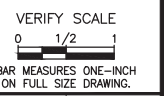
LEGEND:

- GATE VALVE
- BUTTERFLY VALVE
- PIPELINE
- OPEN CHANNEL FLOW
- HEAD GATE
- FLOW METER
- REDUCER
- CHECK VALVE
- VARIABLE FREQUENCY DRIVE
- PRESSURE SUSTAINING VALVE
- DIVERSION
- LINESHAFT TURBINE PUMP, 15-HP

PROCESS FLOW DIAGRAM
NOT TO SCALE

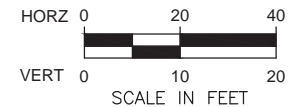
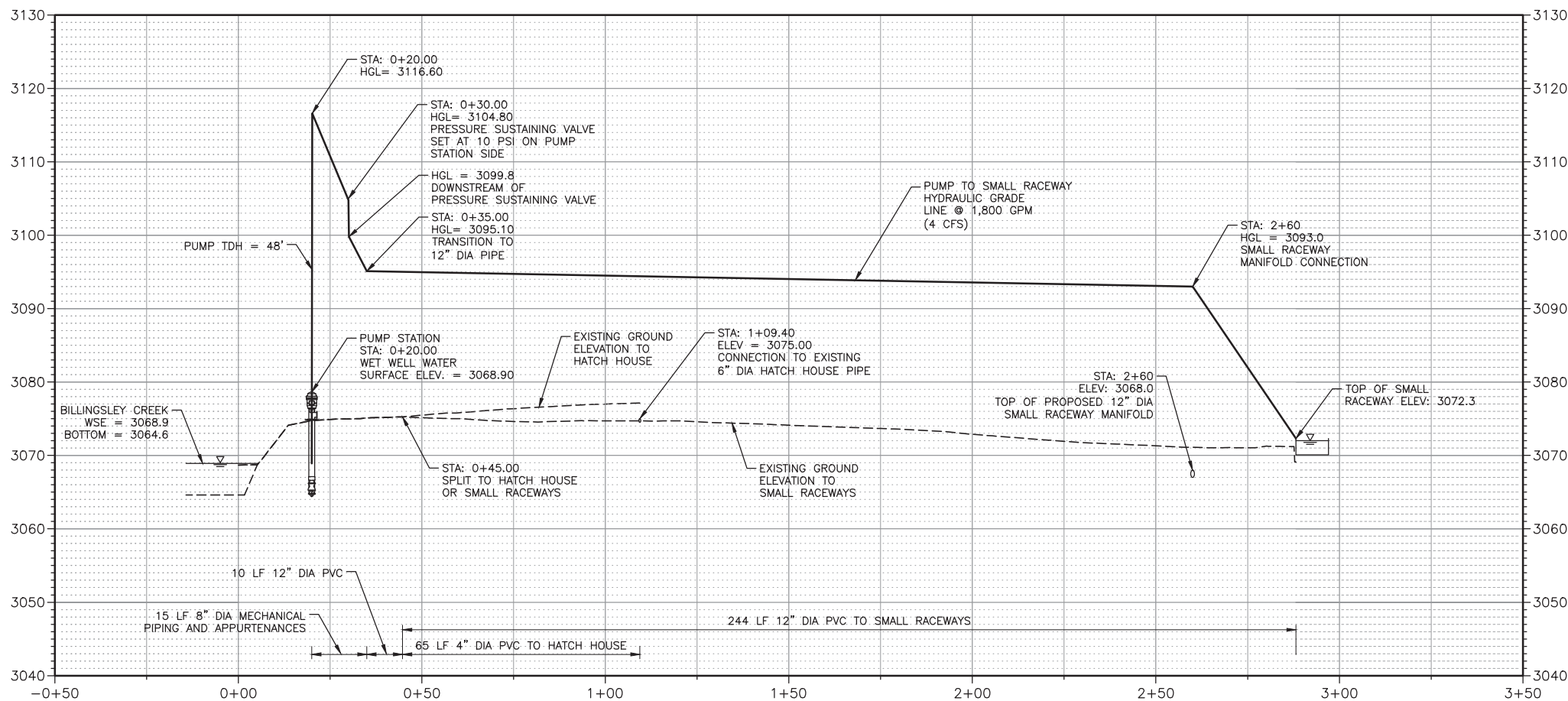
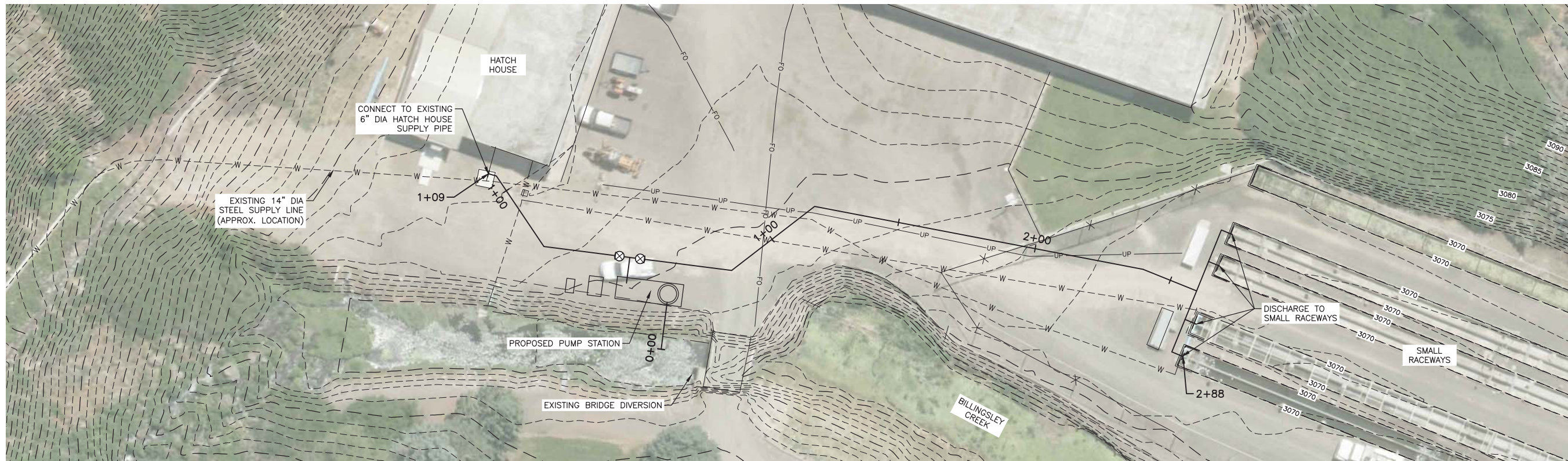
PRELIMINARY DRAFT NOT FOR CONSTRUCTION

ITEM	DATE	DESCRIPTION
A	8/27/14	PRELIMINARY DESIGN SUBMITTAL
B	9/2/14	60% SUBMITTAL



PROJECT: 535.0080
 DESIGNED: JWT
 DRAWN: PZC
 CHECKED: RRH

Path: Y:\PROJECTS\535.0080\RANGEN BRIDGE DIVERSION\5HE File Name: BRIDGE G-004 Plot Date: Sep 02, 2014-08:44:03pm CAD User: P.Cooper.
 Xref File Name: | BRIDGE-XR-TB | BRIDGE-XR-CIVIL | 5350000-XR-TOPO | BRIDGE-XR-301 AERIAL |



RANGEN BRIDGE PUMP HYDRAULIC PROFILE

DESIGN CRITERIA

1. TOTAL PUMP CAPACITY: 4 CFS (1,800 GPM)
2. DELIVERY TO SMALL RACEWAYS: UP TO 4 CFS (1,800 GPM)
3. DELIVERY TO HATCH HOUSE: UP TO 0.5 CFS (225 GPM)
4. PUMPS CONTROLLED OFF PRESSURE
5. SMALL RACEWAY AND HATCH HOUSE VALVES MANUALLY CONTROLLED BY RANGEN STAFF

PRELIMINARY
 DRAFT NOT FOR
 CONSTRUCTION

REVISIONS	DATE	DESCRIPTION
A	8/27/14	PRELIMINARY DESIGN SUBMITTAL
B	9/2/14	60% SUBMITTAL

VERIFY SCALE	0 1/2 1
BAR MEASURES ONE-INCH ON FULL SIZE DRAWING.	
PROJECT:	535.0080
DESIGNED:	JWT
DRAWN:	PZC
CHECKED:	RRH

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 Xref File name: | 5350120-XR-3D1 AERIAL | BRIDGE-XR-TB | BRIDGE-XR-CIVIL | 5350000-XR-TOPO |



GENERAL CONSTRUCTION NOTES

1. PROPOSED ALIGNMENT WILL BE COORDINATED WITH RANGEN STAFF TO PROVIDE AN ACCEPTABLE ALIGNMENT FOR RANGEN OPERATIONS.

CONSTRUCTION KEYNOTES

1. INSTALL 12" 45' BEND
2. INSTALL 12" 11.25' BEND
3. INSTALL 12" TEE FOR CONNECTION TO PROPOSED SMALL RACEWAY DELIVERY MANIFOLD. SEE DETAIL 5/M-502.
4. INSTALL 12" GATE VALVE
5. INSTALL 4" GATE VALVE
6. INSTALL PUMP STATION AND INTAKE PER M-101 AND M-201.
7. PROPOSED GENERATOR PAD
8. PROPOSED TRANSFORMER PAD
9. INSTALL 4" 45' BEND
10. CONNECT TO EXISTING 6-INCH DIAMETER STEEL HATCH HOUSE SUPPLY LINE PER DETAIL 4/M-502
11. INSTALL 12" TEE WITH 12" X 4" REDUCER ON EAST LEG

SPF WATER ENGINEERING
 300 East Mallard Drive, Suite 350
 Boise, Idaho 83706
 Tel (208) 383-4140 Fax (208) 383-4156

**RANGEN BRIDGE DIVERSION PROJECT
 PUMP STATION AND PIPELINE**

SITE PLAN

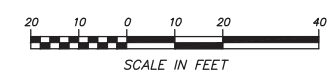
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 CONSTRUCTION**

REVISIONS	DATE
DESCRIPTION	8/27/14
PRELIMINARY DESIGN SUBMITTAL	9/2/14
60% SUBMITTAL	

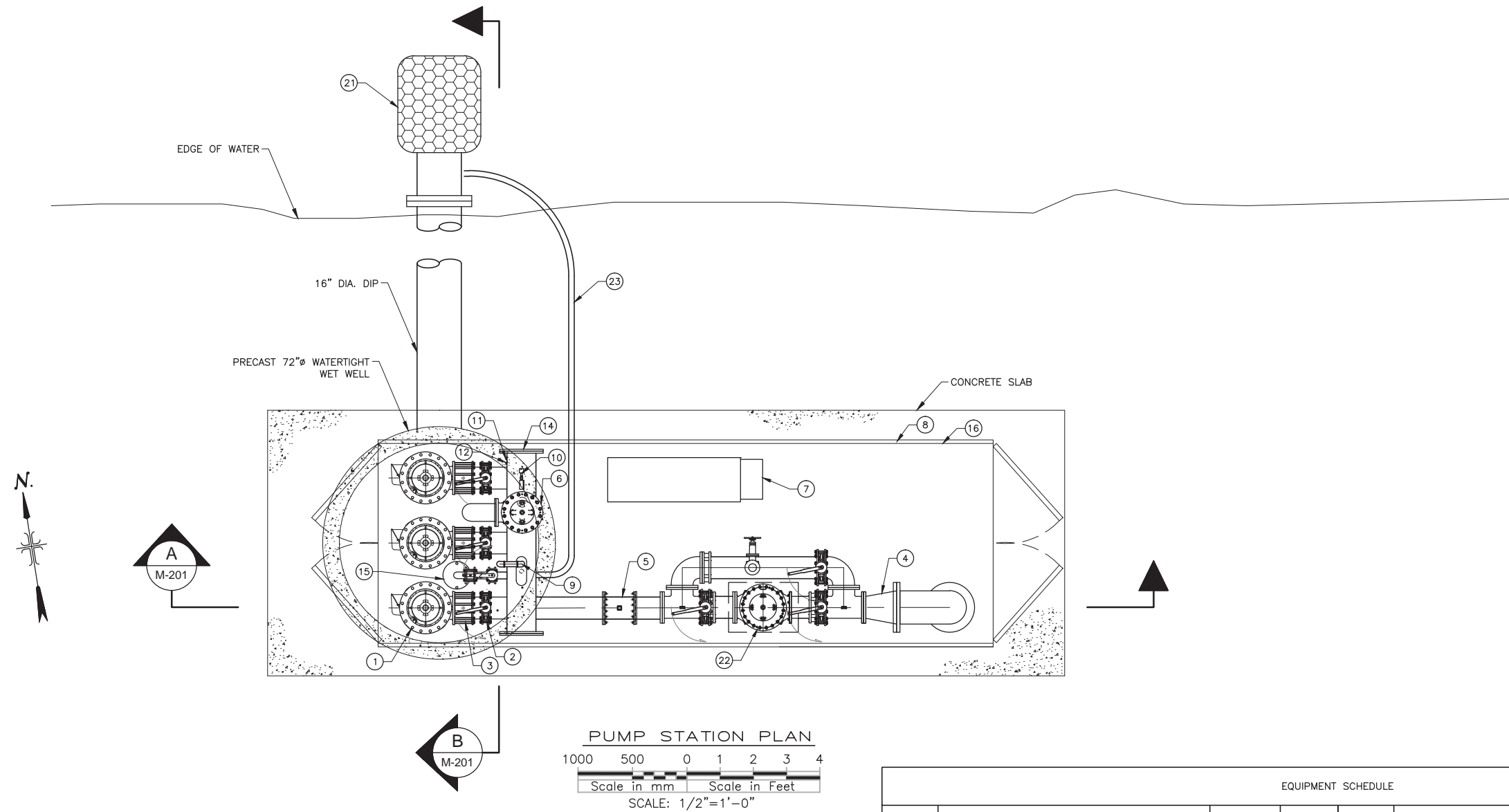
VERIFY SCALE

 BAR MEASURES ONE-INCH ON FULL SIZE DRAWING.
 PROJECT: 535.0080
 DESIGNED: JWT
 DRAWN: PZC
 CHECKED: RRH

C-001



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 Xref Filename: | BRIDGE-XR-MECH | BRIDGE-XR-TB |



PUMP STATION PLAN
 1000 500 0 1 2 3 4
 Scale in mm Scale in Feet
 SCALE: 1/2"=1'-0"

EQUIPMENT SCHEDULE							
ITEM	DESCRIPTION	SIZE	QTY	ITEM	DESCRIPTION	SIZE	QTY
1	TURBINE PUMP, GOULDS 12 RJLC, 7.69" IMPELLER, 1-STAGE, 15-HP		3	14	BLIND FLANGE	12"	2
2	BUTTERFLY VALVE	8"	6	15	2 HP INTAKE SCREEN JOCKEY PUMP		1
3	SILENT CHECK VALVE	8"	3	16	PUMP STATION ENCLOSURE W/ HEATER AND VENTILATION		1
4	REDUCER	12"x8"	1	17	COLUMN PIPE	8"	3
5	MAGNETIC FLOW METER	8"	1	18	STAINLESS STEEL LINESHAFT	1.5"	3
6	HIGH PRESSURE RELIEF VALVE	8"	1	19	WET WELL LEVEL SENSOR		1
7	PUMP CONTROL PANEL		1	20	MANIFOLD DRAIN VALVE	4"	1
8	POWDER COATED SKID		3	21	CLEMONS CLEARWATER CW3000 SELF-CLEANING SUCTION SCREEN WITH 8 MESH SCREEN		1
9	COMBINATION AIR VALVE W/ ISOLATION VALVE	2"	1	22	PRESSURE SUSTAINING VALVE	8"	1
10	PRESSURE TRANSDUCER AND PRESSURE GAUGE W/ ISOLATION VALVE	1/4"	1	23	INTAKE SCREEN SUPPLY LINE	1.5"	
11	HIGH PRESSURE CUT-OFF SWITCH	1/2"	1				
12	HALF COUPLER (MISC)	3/4"	1				
13	HALF COUPLER (MISC)	1"	1				

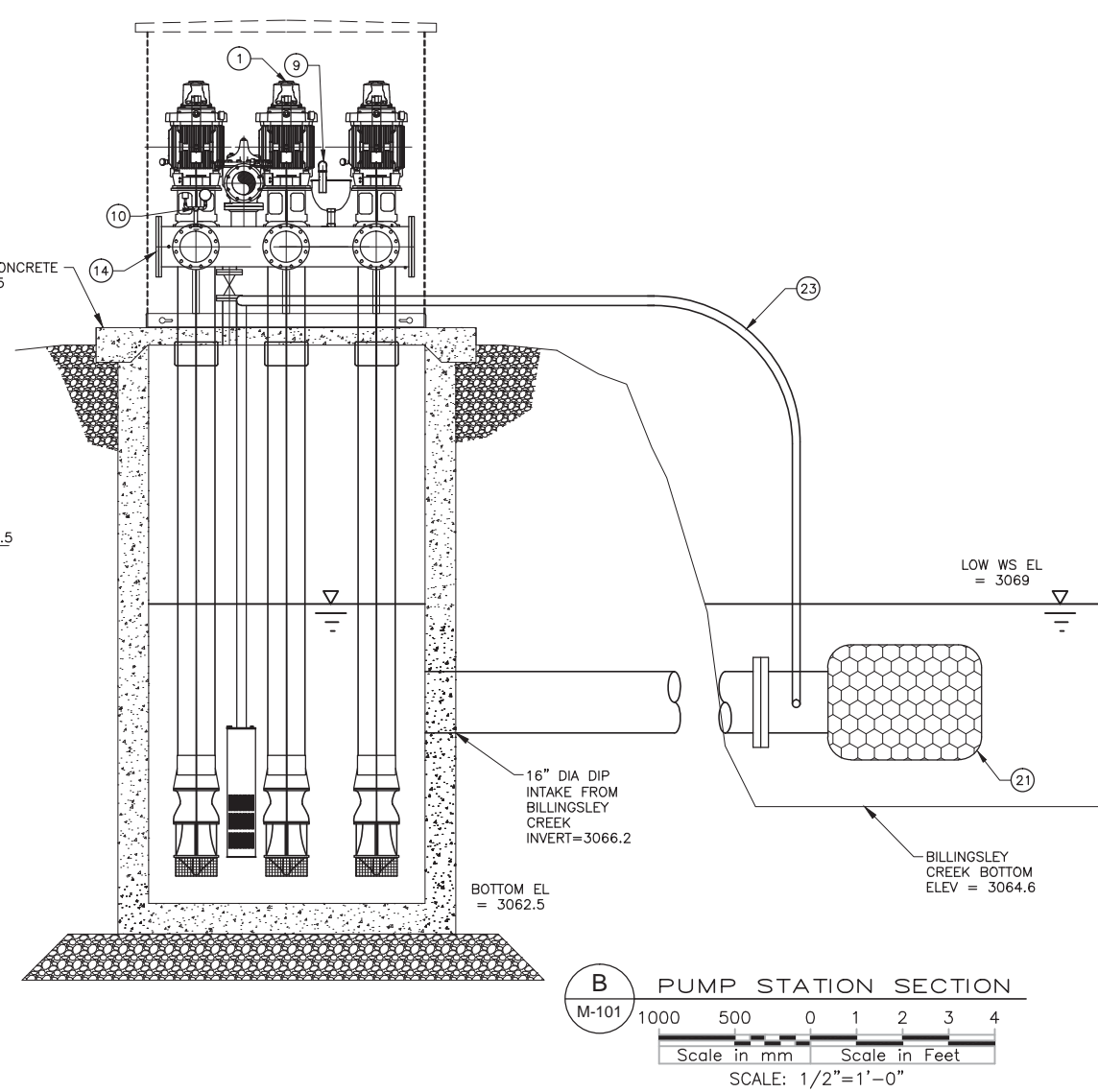
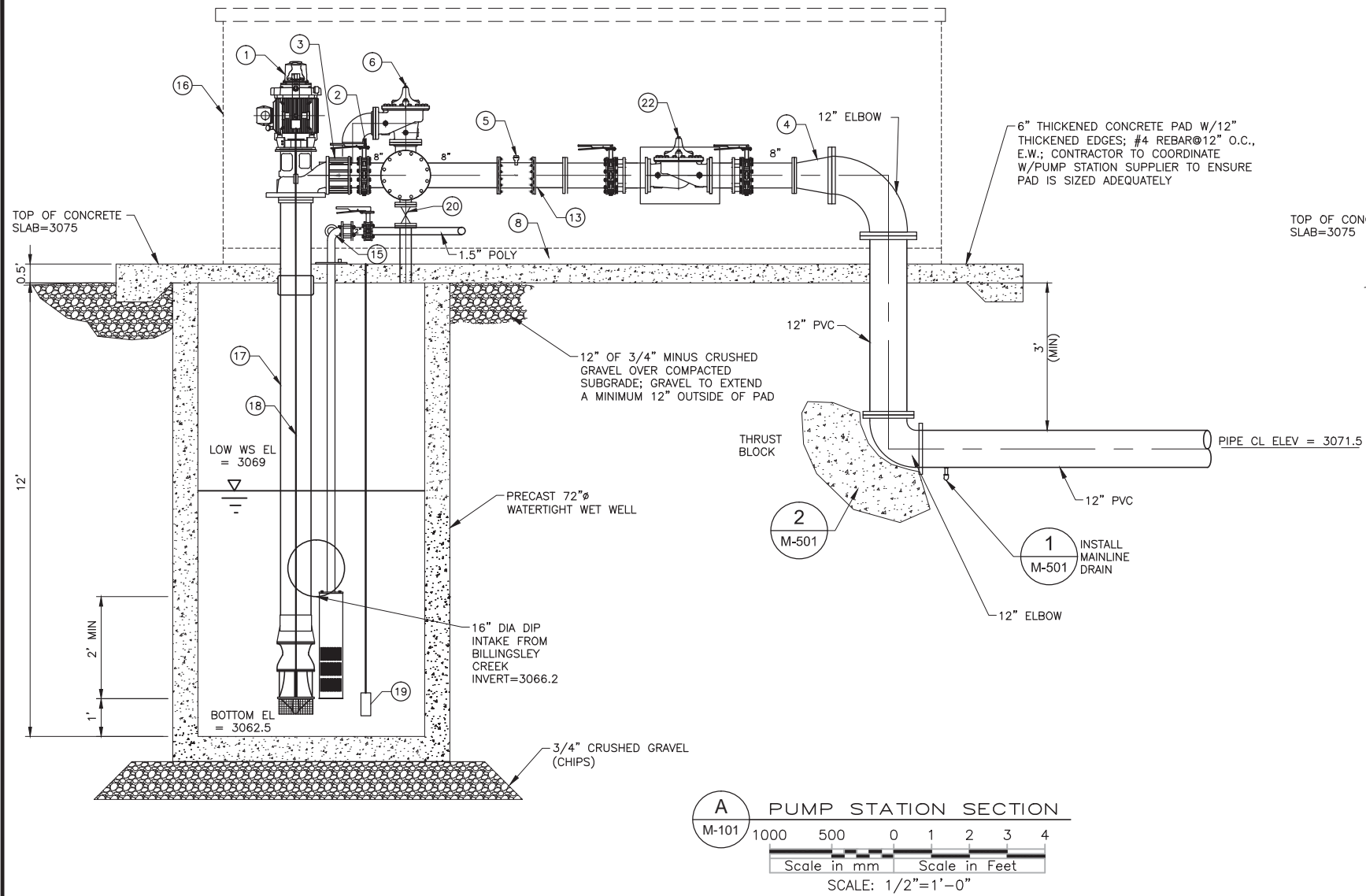
**RANGEN BRIDGE DIVERSION PROJECT
 PUMP STATION AND PIPELINE
 PUMP STATION PLAN**

**PRELIMINARY
 DRAFT NOT FOR
 CONSTRUCTION**

REVISIONS	DATE	DESCRIPTION
A	8/27/14	PRELIMINARY DESIGN SUBMITTAL
B	9/2/14	60% SUBMITTAL

VERIFY SCALE
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 BAR MEASURES ONE-INCH ON FULL SIZE DRAWING.
 PROJECT: 535.0080
 DESIGNED: JWT
 DRAWN: PZC
 CHECKED: RRH

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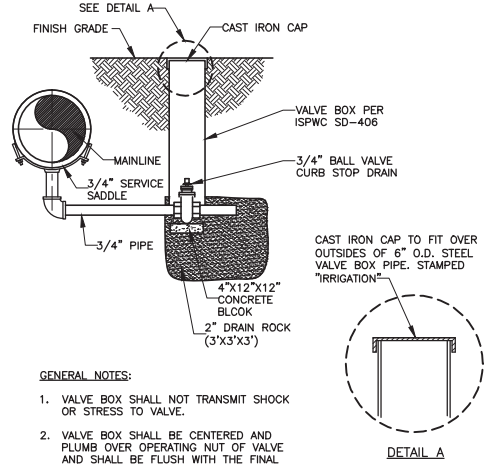


EQUIPMENT SCHEDULE											
ITEM	DESCRIPTION	SIZE	QTY	ITEM	DESCRIPTION	SIZE	QTY	ITEM	DESCRIPTION	SIZE	QTY
1	TURBINE PUMP, GOULDS 12 RJLC, 7.69" IMPELLER, 1-STAGE, 15-HP		3	9	COMBINATION AIR VALVE W/ ISOLATION VALVE	2"	1	17	COLUMN PIPE	8"	3
2	BUTTERFLY VALVE	8"	6	10	PRESSURE TRANSDUCER AND PRESSURE GAUGE W/ ISOLATION VALVE	1/4"	1	18	STAINLESS STEEL LINESHAFT	1.5"	3
3	SILENT CHECK VALVE	8"	3	11	HIGH PRESSURE CUT-OFF SWITCH	1/2"	1	19	WET WELL LEVEL SENSOR		1
4	REDUCER	12"x8"	1	12	HALF COUPLER (MISC)	3/4"	1	20	MANIFOLD DRAIN VALVE	4"	1
5	MAGNETIC FLOW METER	8"	1	13	HALF COUPLER (MISC)	1"	1	21	CLEMONS CLEARWATER CW3000 SELF-CLEANING SUCTION SCREEN WITH 8 MESH SCREEN		1
6	HIGH PRESSURE RELIEF VALVE	8"	1	14	BLIND FLANGE	12"	2	22	PRESSURE SUSTAINING VALVE	8"	1
7	PUMP CONTROL PANEL		1	15	2 HP INTAKE SCREEN JOCKEY PUMP		1	23	INTAKE SCREEN SUPPLY LINE	1.5"	
8	POWDER COATED SKID		3	16	PUMP STATION ENCLOSURE W/ HEATER AND VENTILATION		1				

PRELIMINARY DRAFT NOT FOR CONSTRUCTION

REVISIONS	DESCRIPTION	DATE
A	PRELIMINARY DESIGN SUBMITTAL	8/27/14
B	60% SUBMITTAL	9/2/14

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 PROJECT: 535.0080
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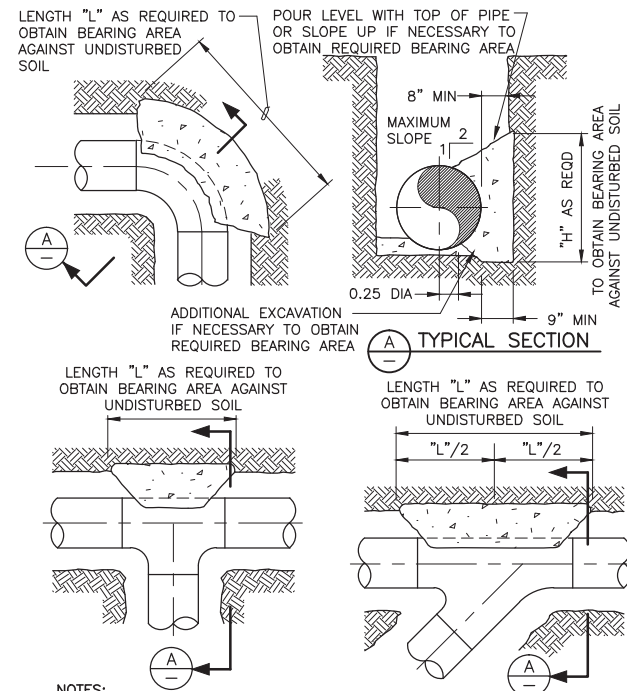
GENERAL NOTES:

1. VALVE BOX SHALL NOT TRANSMIT SHOCK OR STRESS TO VALVE.
2. VALVE BOX SHALL BE CENTERED AND PLUMB OVER OPERATING NUT OF VALVE AND SHALL BE FLUSH WITH THE FINAL SURFACE OF STREET OR GROUND.

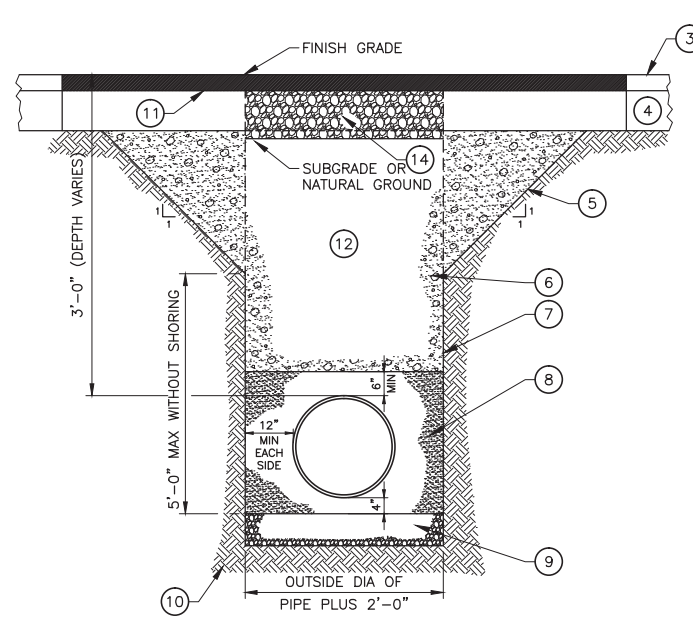
NOTE:

1. INSTALL MAINLINE DRAINS AS REQUIRED TO PROVIDE COMPLETE DRAINAGE DURING SHUT DOWN OF SYSTEM.

1 MAINLINE DRAIN
 VAR NOT TO SCALE



2 THRUST BLOCK DETAIL
 VAR NOT TO SCALE



3 TYPICAL TRENCH DETAIL
 VAR NOT TO SCALE

LEGEND:

- 1 NOT USED
- 2 NOT USED
- 3 EXISTING GRAVEL
- 4 EXISTING BASE
- 5 TRENCH BACK SLOPE PER OSHA OR SUITABLE SHORING
- 6 NATIVE TRENCH BACKFILL, TYPE A-1 PER ISPCW
- 7 VERTICAL TRENCH WALLS SHORING PER OSHA
- 8 NATIVE ROCK FREE PIPE BEDDING
- 9 FOUNDATION STABILIZATION MAY VARY PER SOIL TYPE AND STABILITY (PER SECTION -304)
- 10 UNDISTURBED SOIL (TYP)
- 11 SURFACE REPAIR AND BASE; TYPE C
- 12 COMPACTION ZONE
- 13 NOT USED
- 14 MINIMUM 1' OF 3/4" MINUS COMPACTED, CRUSHED GRAVEL

RANGEN BRIDGE DIVERSION PROJECT
 PUMP STATION AND PIPELINE
 DETAILS

PRELIMINARY
 DRAFT NOT FOR
 CONSTRUCTION

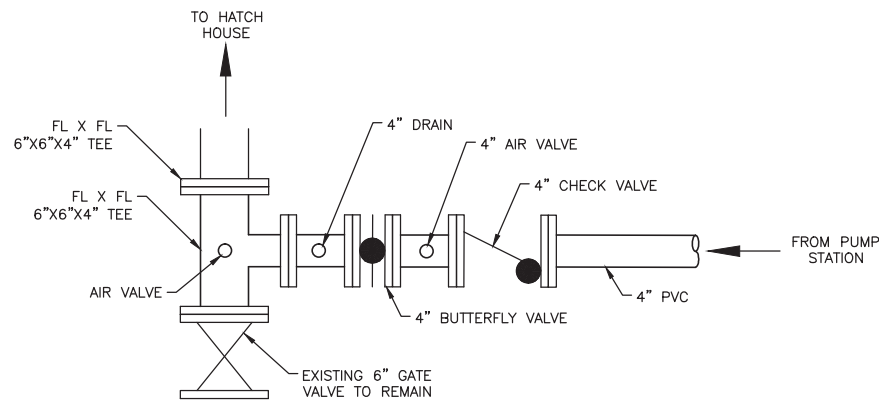
REVISIONS	DESCRIPTION	DATE
A	PRELIMINARY DESIGN SUBMITTAL	8/27/14
B	60% SUBMITTAL	9/2/14

VERIFY SCALE
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 BAR MEASURES ONE-INCH ON FULL SIZE DRAWING.

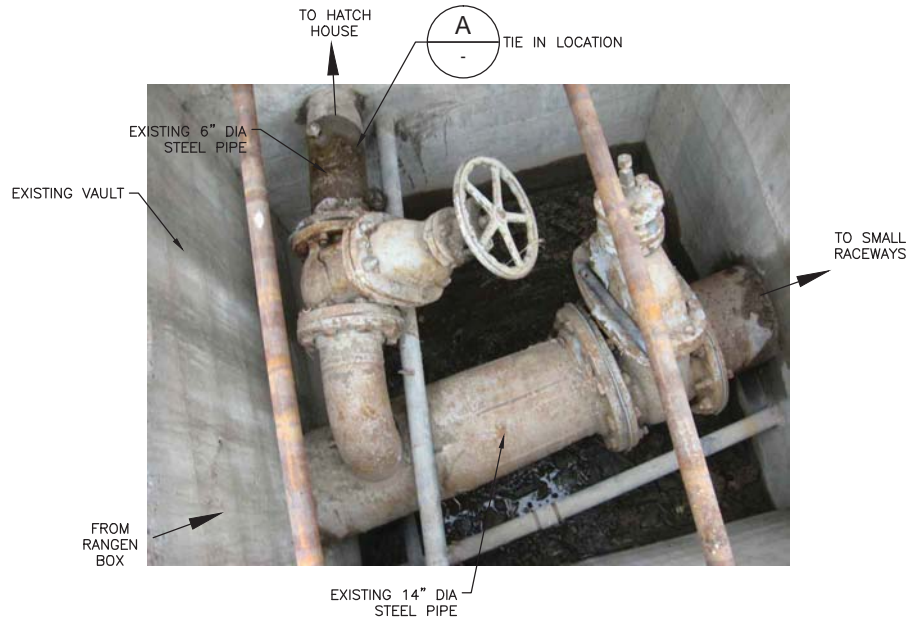
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 DRAWN: PZC
 CHECKED: RRH

M-501

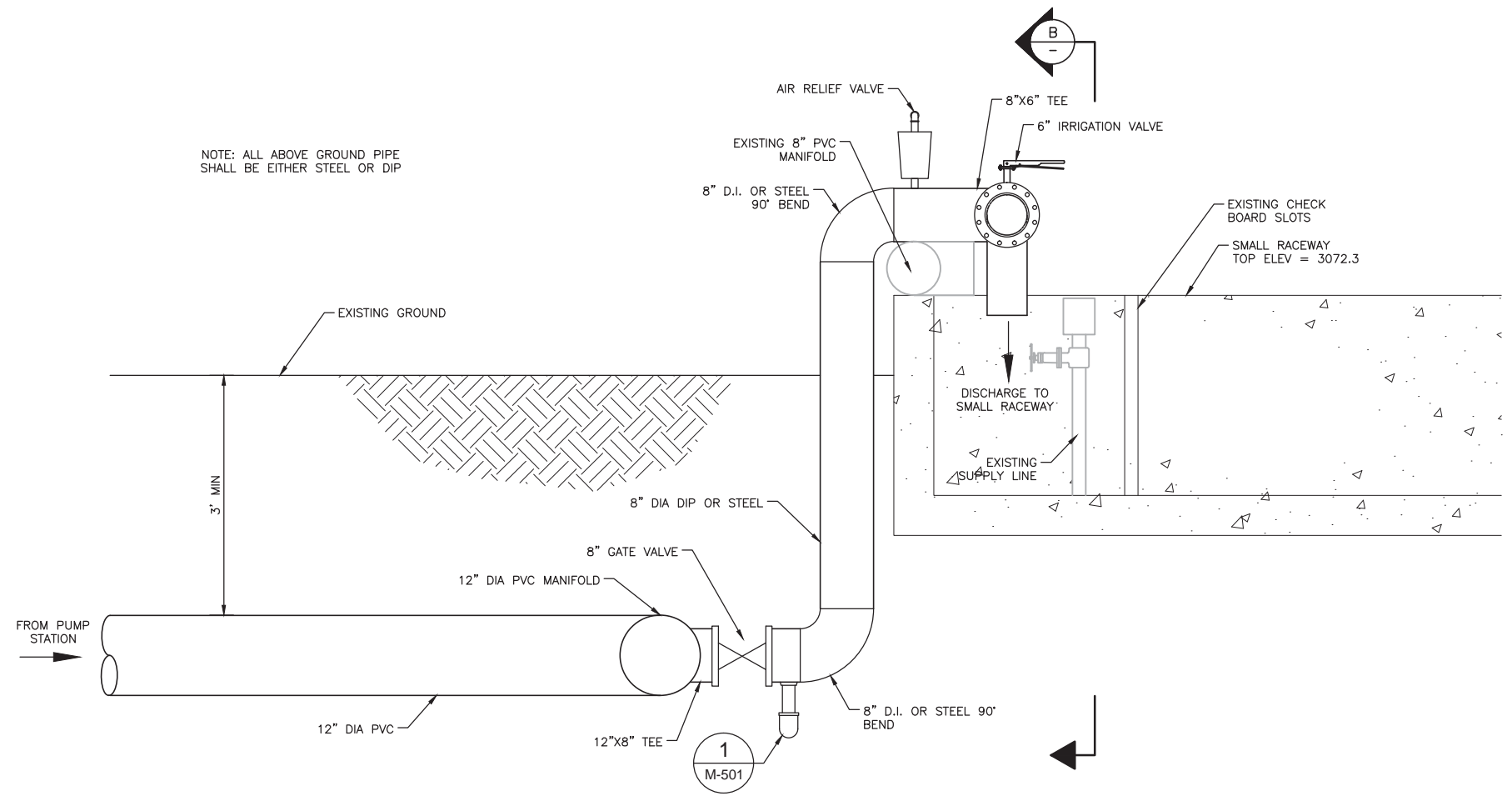
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 Xref File Name: | BRIDGE-XR-TB | BRIDGE-XR-DETAILS |



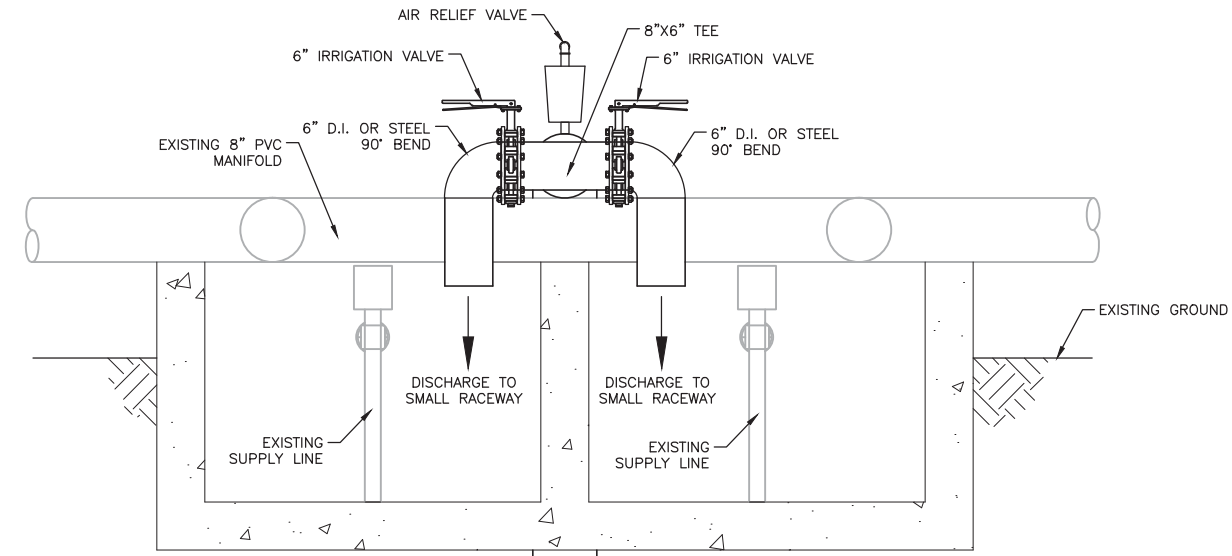
A TIE-IN DETAIL
 SCALE: 1" = 1'0"



4 HATCH HOUSE TIE-IN
 SCALE: 1" = 1'0"



NOTE: ALL ABOVE GROUND PIPE SHALL BE EITHER STEEL OR DIP



5 SMALL RACEWAY DELIVERY MANIFOLD DETAIL (TYP 4 PLACES)
 SCALE: 1" = 1'0"

PRELIMINARY
 DRAFT NOT FOR
 CONSTRUCTION

REVISIONS	DATE	DESCRIPTION
A	8/27/14	PRELIMINARY DESIGN SUBMITTAL
B	9/2/14	60% SUBMITTAL

VERIFY SCALE	0 1/2 1
BAR MEASURES ONE-INCH ON FULL SIZE DRAWING.	
PROJECT:	535.0080
DESIGNED:	JWT
DRAWN:	PZC
CHECKED:	RRH

APPENDIX B: PUMP CURVE

Billingsley Creek Pump Station (2) 15-hp Lineshaft Turbine Pumps: Goulds 12RJLC, 1 Stage

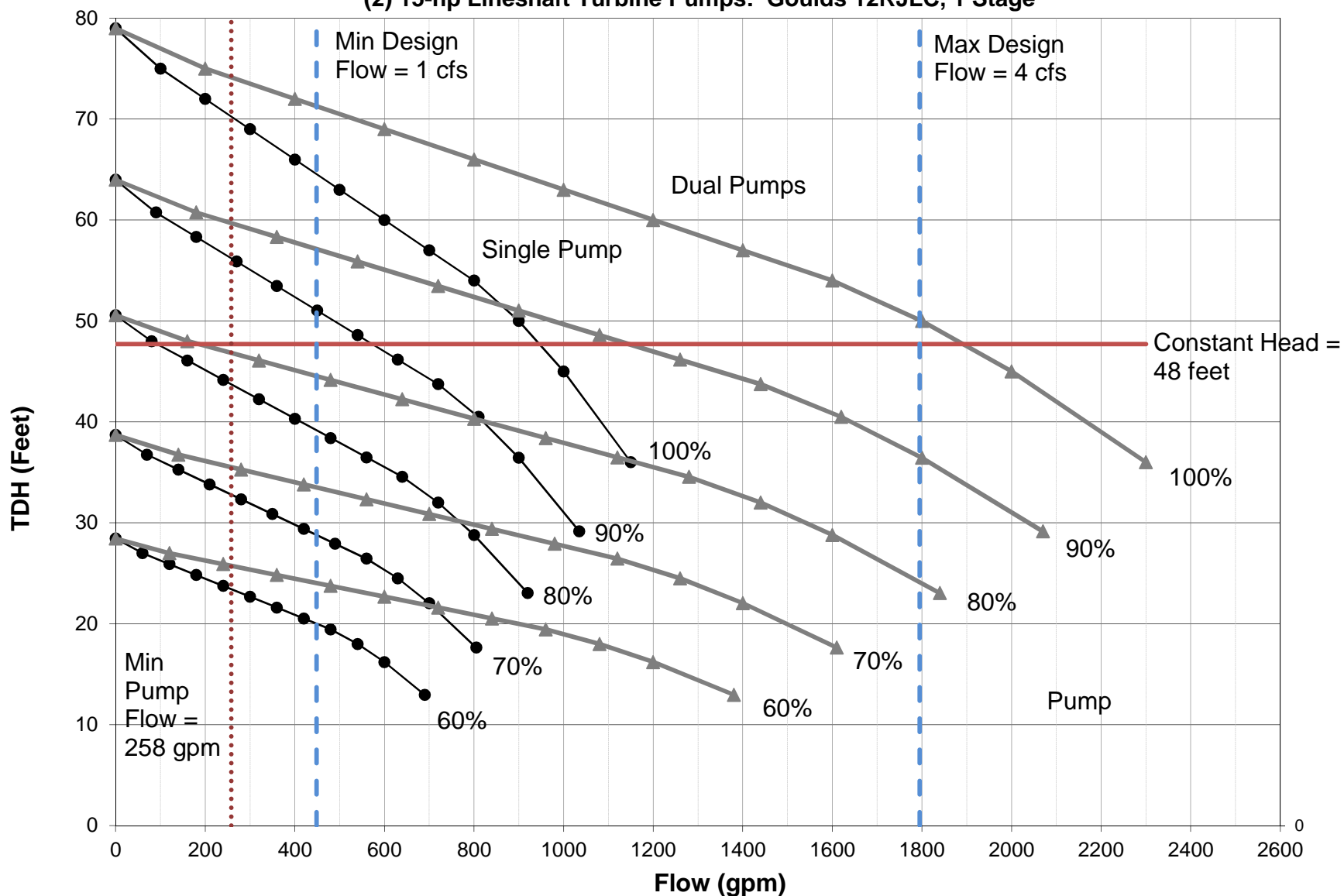


EXHIBIT D
Billingsley Creek Hydrograph

Billingsley Creek Water Right Flows

