LETTERS OF SUPPORT

Gina D. Perkins, *Record-Courier*
Colleen Taylor, Haines Stampede & Rodeo Association
Bill Randall, Reliance Connects
Jerry Hampton, Fire Chief of the Haines Fire Protection District

ATTACHMENTS:

#1. 2013 OHA Compliance Letter

#2. 2013 WMP Amendment

#3. System Deficiencies Diagram

#4. Selected Plans (complete set is 90 pages of plans and 200+ of technical specs)

#5. 2015 Agency Approval Letter for Plan Set

#6. Construction Outline (Schedule A & B)

#7. Opinion of Probable Cost

#8. Proposed Project Timeline

#9. Property Acquisition Documents

#10. ODOT Grant Award - Special City Allotment Project (for culverts)

#11. Consultation/Communication with Legislative Commission on Indian Services, including emails to Burns-Paiute and Warm Springs tribes.

#12. 2015 Completed Cultural Assessment in Coordination with CTUIR

#13. WRD Inventory Form

J-U-B ENGINEERS, INC.

THE LANGDON GROUP a J-U-B Company

GATEWAY MAPPING INC. a J-U-B Company

OTHER J-U-B COMPANIES

LETTERS OF SUPPORT

Record-Courier
From the Blue Mountains to Hells Canyon
Intensely local news
914 Front Street | Haines, Oregon 97833 | 541.856.3615 | www.therconline.com

January 17, 2016

RE: City of Haines Water Compliance Project

To whom it may concern:

As a resident and owner of a historic business in Haines established in 1901, I am writing this letter of strong support for the City of Haines water compliance project.

Currently, the system is out of compliance with the Oregon Health Drinking Water agency due to the lack of consistent pressure, working isolation valves, leaking distribution system and meters. Should a water line break occur, sometimes it is necessary to drain the water tower and and the entire system in order to make the repair because several of the isolation valves are not functioning properly. Not only does this leave the town without water, but leaves it vulnerable to potential contamination.

A lack of water volume or storage places the town and its residents in an extremely vulnerable situation should there be a major fire. Currently, there is only enough water to suppress a fire for about 20 minutes, making it necessary to truck water from nearby communities to assist in fighting the fire. Every minute counts when fighting fire.

The need and strong desire to bring the water system into compliance is evident, but the extraordinary cost associated with doing so is beyond the reach of small, impoverished communities like Haines.

For all these reasons, I strongly support the Haines water compliance project. Having a safe, reliable, clean water source and ensuring citizens will have enough water available in the event of a large fire, are basic needs.

Thank you for your consideration regarding this serious matter.

Best regards,

Gina D. Perkins

Gina D. Perkins

"Cut'er Loose"

Haines Stampede

P O Box 202
Haines, OR 97833

January 14, 2016

To Whom It May Concern:

This is a letter of support from the Haines Stampede & Rodeo Association for the City of Haines Water Compliance Project.

Our organization is located in the community of Haines, Oregon, and we rely on the city to supply water to our facility for use. The entire water system of Haines needs to be upgraded as there are concerns of fire suppression, lack of isolation valves, and old pipes.

An example of the need for this water system upgrade is during our annual rodeo if we were to fill the two water trucks that we use for dust abatement, the process would take about 45 minutes to an hour to fill a 1000 gallon tank. During that time, the line draws the water pressure down from other lines to a trickle. During our two day rodeo event, the Friends of Haines hold their Fourth of July Firework display next to our facility. We provide our water trucks to assist with fire protection, however, they are not adequate if a fire should occur due to the lack of water pressure to fill the water trucks or fire hydrants in that part of town.

The lack of adequate water service is also a concern for future expansion projects for our facility, as well as economic and residential growth for our community. With the system that is in existence now, growth is just not possible.

Please give the City of Haines Water Compliance Project your support.

Sincerely,

Colleen Taylor

Colleen Taylor, Treasurer
Haines Stampede & Rodeo Assn

ROOTED HERE. **REACHING THERE.**

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To The Grant Advisory Council,

Re: City of Haines Water Compliance Project

I am writing this letter in support of the grant funding the replacement of the existing water system in Haines, Oregon.

As Area Manager for Reliance Connects, I have worked with the City of Haines on a weekly basis since 1986 locating lines to install our buried facilities and gathering water samples. Currently, there is a lot of guess work involved when trying to locate water mains & arterials that may or may not be within the State of Oregon's locate law of reasonable two feet on each side of the locate mark. This inaccuracy of mapping contributes to wasted time for the contractor and the city's money. The aging system in place today has become deteriorated over time and has numerous vulnerabilities that are detrimental to the system running properly. Failing fragile lines, non functioning water valves, difficult depth maintenance in creek crossings, water main sizing issues and the need for more fire hydrants for firefighting are just a few of the areas where I see improvements are necessary. In addition, the water quality for our local residents could be affected in the event of a water line break that could potentially require draining the entire system to make repairs, leaving the drinking water infrastructure vulnerable to contamination.

I would like to close by stating that the current system is no longer capable of managing the increased demand of our growing city and replacing the existing water system would be a vital investment in our community that will be beneficial to countless community members for generations to come.

Sincerely Yours,

Bill Randall

Bill Randall
Reliance Connects Area Manager
PO Box 308
Haines, Oregon 97833
(541) 856-3661
RandallB@cuaccess.net

Letter of Support 1-20-2016

To whom it may concern:

My name is Jerry Hampton and I am the Fire Chief of The Haines Fire Protection District, Haines Oregon. I would like to share with you just what a grant would mean to all within the City of Haines and to all the people within the fire district. Over the years the fire dept. and city have worked to test and maintain the worn out water system within the city of Haines. We have spent countless hours testing hydrants and studying just how we are losing both volume and pressure to the water system. The water system has failed during structure fires and the fire dept. has had to resort to water tenders on several occasions. The three biggest reasons for the need to replace the worn out system are very simple first the need for dependable water for drinking and household use and second to maintain the ISO rating the city has which is a ISO fire class 5 rating. Third and one of the biggest reasons for this water system is the required water flows to fight structure fires within the city of Haines. The fire flows are nowhere near what is required to suppress structure fires within the city of Haines. The Haines School alone requires several thousand gallons per minute for duration of at least two hours. The best the current water system can provide is just less than 1,000 gallons per minute for just under 1 hours of required flow during a fire at the best hydrant. This is not even good enough for a single family dwelling 1,500 square feet per water flow requirements under ISO or the Oregon State Fire Marshalls office-OSFM. The benefits of a better water system are not only the obvious things but the

maintenance requirements for many years will be much less and the cost figures of doing nothing will only drive up the costs for repairs as each year goes on.

Last thing that is a big worry to all of our fire fighters the lack of water places a high Safety factor on their lives as well as the folks who live within the city of Haines and this changes how we fight structure fires within the city.

In closing I would like to ask for your support in this matter and thank you for your consideration.

Thank you,

Jerry Hampton Chief

Haines Fire Protection District

Jerry Hampton

Cell# 541-519-4816

E-mail: hainesfire3801@yahoo.com

ATTACHMENT #1.
OHA Drinking Water Program Compliance Letter
March 29, 2013

PUBLIC HEALTH DIVISION
Drinking Water Program

John A. Kitzhaber, MD, Governor

Oregon Health Authority

700 SE Emigrant Avenue, Suite 240
Pendleton, OR 97801
Phone: 541-276-8006
FAX: 541-276-4778
http://healthoregon.org/dwp

March 29, 2013

Jason Melo
City of Haines
P.O. Box 208
Haines, Oregon 97833

Re: Compliance Status of City of Haines with Minimum Pressure Standard, PWS ID #4100362

I am writing to review the compliance status of the City of Haines in relation to the minimum required pressure standard, and to clarify when chlorination of the water system is needed.

Minimum Pressure Standard

A minimum pressure of 20 psi is to be maintained at all service connections at all times per OAR 333-061-0025(7). Based on demand estimates in the 2005 water system master plan, the existing elevated reservoir could drain completely and result in a violation of the minimum pressure requirement in as little as a couple of hours if power were lost or the main well pump were to fail during a time of peak use.

It is also my understanding that when repairs to water mains are necessary, either the water tower must be drained or else large sections of the distribution system shut off due to an inadequate number of operable valves. While an emergency repair in and of itself may not be a violation of the minimum pressure standard, the extent of pressure loss in the city's system would make it a violation. It is my understanding this has occurred several times over the last few years.

The 2005 master plan indicates that between 400,000 and 630,000 gallons of additional storage capacity is needed for the water system. Drinking Water Services supports a project to add storage capacity to the water system, which would significantly reduce the risk of losing pressure in the above scenarios.

Should pressure in the water mains ever drop to zero psi, a boil water order must be distributed to the affected customers after pressure is restored, and must remain in place until bacteria samples demonstrate the safety of the drinking water. Should this situation ever occur, please call my office to consult on what actions will be taken. I have enclosed handouts that describe best management practices for repairing water mains and for reduced pressure events.

Chlorination

It is my understanding that chlorination of the water system was discontinued at the beginning of March. In general, chlorination of systems that use groundwater sources such as wells or springs is not required as long as routine coliform bacteria samples regularly test absent. Water sample results over the coming months will determine whether chlorination will need to be resumed or not.

If you have any questions, or would like this in an alternate format, please contact me at (541) 966-0900.

Sincerely,

William Goss

William Goss, P.E.
Regional Engineer

cc: OHA - Drinking Water Services, Portland
Gary Viehdorfer, Infrastructure Finance Authority
Nathan Black, P.E., J-U-B Engineers

enclosures

ATTACHMENT #2.
2013 Water Master Plan Update
July 17, 2013

J-U-B ENGINEERS, INC.

J-U-B COMPANIES THE LANGDON GROUP GATEWAY MAPPING INC.

MEMORANDUM

DATE:	July 17, 2013
TO:	William Goss, P.E., OHA Drinking Water Services
FROM:	Nathan Black, P.E., CFM
SUBJECT:	**Revision 1.0- 2006 Water System Master Plan – Amendment**
PROJECT:	Haines Water Master Plan Evaluation and Opinion of Cost
PROJECT NO.:	33-13-005
COPIES:	John Garlitz P.E, J-U-B ENGINEERS, INC.

This Technical Memo was done under the direction of:

Engineer: Nathan Black, P.E.

Signature:

Registration #: 86879PE

State: Oregon

Date: July 17, 2013

REGISTERED PROFESSIONAL ENGINEER 86879PE OREGON SEPT. 18, 2012 NATHAN DEAN BLACK

HTM 7/17/13

EXPIRES: 12/31/2013

Revisions:

Revision # 1, July 17, 2013:

1a: Changed Drinking Water Program (DWP) to Drinking Water Services (DWS)
1b: Updated Planning Costs to account for recent local bid tabs, including the 2013 Wallowa Water System Bids.
1c: Updated Section 3.2 to address DWS comments to clarify disinfectant residual requirements.
1d: Updated Table 2 items 38, 39 reason for the improvement description.

a 1201 Adams Avenue, La Grande, OR 97850-2607 p 541 963 7100 f 541 963 7118 w www.jub.com

This Technical Memorandum (TM) was authorized by the City of Haines Mayor, City Council and Staff on January 8, 2013 to review their 2006 Water Master Plan (WMP) and provide recommendations and/or modifications in order to meet regulatory compliance. Project elements that need approval which were not included in the WMP will be obtained during design through a preliminary engineering report. The TM was developed with consultation with Bill Goss of the Drinking Water Services (DWS)[1a] and Gary Viehdorfer with the Infrastructure Finance Authority (IFA).

The State of Oregon Health Authority's (OHA), DWS has the regulatory authority to implement Oregon's Drinking Water Act and Administrative Rules for Public Water Systems. There are many Federal and State regulatory rules that must be met to ensure safe drinking water for the citizens of Haines. Based on the City's groundwater source and size of public water system the relevant rules for compliance are:

OAR 333-061-0025 Responsibilities of Water Suppliers

(7) Maintain a pressure of at least 20 pounds per square inch (psi) at all service connections at all times;"

> If the system losses pressure, then operator should follow DWP best management practices, which may include a "boil water" order. Please see DWP letter address to the City of Haines dated March 29, 2013 for further details.

(10) Submit, to the Authority, plans prepared by a professional engineer registered in Oregon for review and approval before undertaking the construction of new water systems or major modifications to existing water systems, unless exempted from this requirement;"

OAR 333-061-0050 Construction Standards

(1)(a) These standards shall apply to the construction of new public water systems and to the major additions or modifications to existing public systems and are intended to assure that the facilities, when constructed, will be free of public hazards and will be capable of producing water which consistently complies with the maximum contamination limits.

OAR 333-061-0061 Capacity Requirements for Public Water Systems

(2)(E)Community water systems shall have water use meters installed at all service connections.

OAR 333-061-0064 Emergency Response Plan Requirements

(5)(d)(a) Public water systems shall make provisions for an auxiliary power supply, if not a gravity system and redundant equipment for critical components…

OAR 690-400-0010 Definitions for State Water Resources Policy

(5) "Conservation" means eliminating waste or otherwise improving efficiency in the use of water while satisfying beneficial use by modifying the technology or method for diverting, transporting, applying or recovering the water, by changing management of water use, or by implanting other measures.

The City's public water system must reliably and consistently produce and distribute water to the citizens of Haines. This technical memorandum will summarize deficiencies and remedies to achieve this objective.

Technical Memorandum: 2006 Water System Master Plan Evaluation

1. Summary

Major system capital improvements are required for the City of Haines to be in compliance with Oregon Drinking Water Services (DWS) rules as mandated by Oregon Administrative Rules (OARs) and to preserve the City's ISO current rating of 5. Currently the public water system:

- Cannot reliably provide system pressure at or above 20 PSI at all service connections at all times,
    - Lacks inadequate groundwater production wells and storage to meet current and future needs.
    - Does not fully provide for adequate redundancy of critical components of the system (wells and emergency power).
    - Includes well controls that are near or at their end of life and prone to failure.
    - Includes system components and auxiliary power that cannot provide water for power outages greater than 2 hours and greater than a few minutes during a fire emergency.
- Lacks the ability for the wells to pump-to-waste as denoted as construction deficiency by DWP in 2002 and 2012 Sanitary Surveys.
- Requires additional source protection measures.
    - High risk of source contamination at Well #1 from the backup generator fuel supply. The generator lacks secondary containment as required by OAR: 333-061-0050
    - Well #2 is sensitive to flooding and needs to be formally abandoned.
    - Includes groundwater wells that are vulnerable to viral contamination.
- Has approximately forty (45) percent of the distribution pipes are old, prone to leaking and/or failure, outside their design life, and not in compliance with current Public Works Construction Standards.
    - Potential supply contamination from leaking non gasketed pipe.
    - Potential supply contamination from leaking meters.
    - Inadequate number of working isolation valves that have contributed to system wide pressure loss (less than 20 psi)
- Lacks functioning meters to bill based on consumption which can lead to overuse of groundwater resources.

The deficiencies as denoted in the 2006 Water Master Plan and the additional deficiencies in the technical memo if corrected will allow the City the ability to produce water that consistently and reliably meets Oregon and Federal regulatory compliance. The total estimated budget to correct the identified deficiencies is $5,836,000.00[1b], in 2013 dollars

2. Background Information

2.1 Background

The City of Haines, Oregon Water System Master Plan received Oregon Department of Human Services final approval on March 8, 2006. The City Council and Staff has identified numerous operational issues with their water system. In October 2012 the City of Haines, selected J-U-B ENGINEERS, Inc. (J-U-B), as their Engineer of Record and directed J-U-B to review the current Water Master Plan (WMP), update the system deficiencies, and to seek funding to implement correction measures. This Technical Memorandum is a review of the existing Master Plan and system deficiencies and not a Water Master Plan update.

The service area, service population and planning period data developed in the WMP is assumed to be valid and will not be reevaluated as part of this technical memorandum. The current population according to Portland State University Population Research Center dated 12/15/2012 is 415 as compared to 440 in 2006, a reduction of 25 individuals which equals to six (6) percent of the population.

2.2 Purpose and Need

To provide a reliable water system that meets the DWP requirements for water quality and availability as identified and stipulated in OAR 333-061. According to the WMP the last documented major capital improvements were competed in the early 1980s. Since 2006 the City has experienced events that confirmed the systems deficiencies as presented in the WMP and additional issues that need to be addressed. Therefore, the City Council acted to secure an Engineer of Record in accordance with OAR 137 Division 48 Oregon Qualification Based Selection (QBS) process to assist the City with general engineering services, including assistance with the City's public water system

2.3 Authorization

On January 15, 2013 the City Council contracted with J-U-B ENGINEERS, Inc. (J-U-B) to evaluate the current WMP, provide a technical memorandum that summarizes and updates the system deficiencies, including updating opinions of construction cost. The memorandum is intended to assist with funding application(s) to design and install required improvements to meet Oregon DWP requirements.

3. Water Supply, Source Protection, Treatment and Storage

A review of the supply, treatment and storage requirements in the WMP was completed. A summary of existing deficiencies and capacity are provided.

3.1 Assessment of Supply

Currently two groundwater wells provide water for the system. Existing combined well capacity is 1,065 gpm. Well #3 capacity is documented at 780 GPM and the City exclusively relies upon it as their primary supply well and does not have auxiliary power. Well #1 is considered the emergency backup, with a measured capacity of 285 GPM and does have auxiliary power. At the 2011 and 2012 water consumption levels Well # 1 and existing storage does not have the capacity to meet the Maximum Day Demand (MDD) of 345 GPM. The existing storage of 50,000 gallons (working volume of 35,000 gallons) cannot provide the additional volume required to maintain system pressures at or above the 20 PSI DWP requirement at all times. Existing wells and storage is under sized. City Staff and the Fire Protection District Chief have reported that the tank has been drained during fire emergency or when well #3 is offline. In the last ten (10) years the tank has been drained at least ten (10) times: seven (7) times for fire emergencies and at least three (3) times in the last three (3) years to depressurize system for distribution repairs, due to the lack of working isolation valves.

3.1.1 Water Rights

The WMP states that the existing water rights appear to be adequate to meet Haines existing and 2027 projected water usage. Future research is recommended to insure water rights are properly written in a manner to allow diversion for existing and future usage.

The City has water rights for 1,017.5 gpm per day or instantaneous flow 977.1 gpm. The City has a current need for: 832 gpm to meet Peak Demands and 3,832 gpm to meet Peak Demands plus commercial fire flow of 3,000 gpm. The implementation of "radio read" meters and usage base billing is expected to reduce future water demand as presented in the WMP. Peak usage in 2027 is estimated at 530 gpm and 3,530 gpm with commercial fire flow of 3,000 gpm. The approved WMP future flow assumptions are assumed to be valid and confirmation of future flows is outside the scope of this memorandum.

Since the required water demand is nearly four (4) times the amount accessible by water rights, storage is a cost effective approach to offset the difference and allows for the proper conservation of water resources.

3.1.2 Well Controls and Emergency Power

While the existing well controls are at or near their design life and are at risk of failure, they currently are able to provide water during normal operations. However during an emergency such as a power outage, the wells and storage can only supply water for forty (42) minutes at Peak Hour demand or eleven (11) minutes if a power outage is coupled with a fire at a commercial building before the system pressure would drop below 20 psi. Therefore at the current demands well # 1 is not considered an adequate backup supply source although the well has a manual start back generator.

To resolve this issue, the City should:

- Install a new 800 gpm well with auxiliary power and add an additional 500K gallon storage reservoir which would provide adequate and reliable emergency water at all times, including when well #3 is offline for maintenance or emergency repair. This would fulfill the OAR *333-061-0064 (5)(c)(A) Emergency Response Plan Requirements, The emergency response plan shall include but is not limited to the following elements, Emergency Equipment and water supplies:…auxiliary power supply if not a gravity system and redundant equipment for critical components."*
- Provide for the ability to notify the citizen of water restrictions and/or irrigation restrictions during power outages and/or fires.
- Install an auto start portable emergency generator at well #3.
- Provide for an auxiliary power connection at the other wells.
- Update the well controls with current technology.

3.1.3 Source Protection

Protecting sources of water supply from contamination is significantly less expensive than treating water to levels adequate for drinking. The 2003 Source Water Assessment Report completed by the Department of Human Services (DHS) and the Department of Environmental Quality (DEQ) reports that "*Well # 1 and the aquifer are considered sensitive to viral contamination."* The source water is from an unconfined shallow aquifer. As noted in the WMP, ground water ranges from 0 to 15 feet below the ground surface. Items that the WMP and our additional review identified for source projection include:

- Formally abandoning Well #2 since seasonal flooding of Rock Creek increases the risk of aquifer contamination.

- Providing secondary containment for the backup generator at Well #1 to meet OAR 33-061-0050 requirements of 125% of fuel capacity. Currently fuel storage and generator have signs of leakage and spillage.

3.2 Treatment[1c]

Sodium hypochlorite (liquid chlorine) is used to maintain a disinfectant residual in the distribution system for the City of Haines. Disinfection is currently not required by DWS (see letter March 30, 2013). If the wells were to become pathogen contaminated, the existing disinfection system does not provide an adequate contact time of 30 minutes for all flows before the first service connection (customer) per OAR 333-061-0050-5(i). The City has received customer complaints of high chlorine smells and tastes. To address the customers' complaints the City reduced the chlorine to 0.02 mg/L which is below the 0.2 mg/L residual concentration normally recommend by DWS. DWS requires that the water systems either provide adequate dosage that results in a detectable residual or else not add a disinfectant. The 2012 Sanitary Survey notes that the City has the option of discontinuing disinfection, which would remove additional sampling and monitoring requirements.

3.3 Storage

The existing 50,000 gallon (working volume of 35,000 gallon) elevated old steel water storage reservoir does not provide adequate and reliable water supply to the City of Haines to meet DWS's requirement of 20 psi at all service connections at all times. The WMP recommend that the City add additional storage and the DWS letter dated March 29, 2013 supports the additional storage in the range of 400,000 to 630,000 gallons. The City Staff and Fire Protection District Chief have stated that the tank has been drained during emergency and when well #3 is offline. The current wells and storage are sized to meet a demand of 1,089 gpm during normal operations. The City's current peak demand is 3,832 gpm.

Options to provide adequate supply and storage to meet current and future demands are to significantly increase water production, install a new storage tank, or a combination of the two. It is recommended that a combination of increasing well production to meet current water rights and installing a new storage tank will be the most cost effective manner to provide for water demands and pressures. It is our recommendation to evaluate usefulness of the existing reservoir during design and to select a new 500,000 gallon storage reservoir.

Table 1: Supply, Source Protection, Treatment and Storage Improvements		
No.	**Description and Location**	**Reason of the Improvement**
1.	800 gpm new well at a location to be determine at preliminary engineering	Existing emergency well #1 cannot provide current water system demands and is consider susceptible to viral contamination by DWS and DEQ.
2.	New 0.5 MG Storage Reservoir at a location to be determine at preliminary engineering	Existing 50,000 gallon reservoir cannot provide the required flows to maintain 20 psi at all service connections.
3.	New mobile auto-start propane backup-generator and quick connects at Well # 3	Well # 3 currently does not have any backup power and it is the only water supply that can meet existing maximum day demand and provide very limited water for fire demand
4.	New well controls at Well # 3 and Well #1	New well controls: Existing well controls are at their end of design life, are prone to fail and parts are hard to find.
5.	New auxiliary power quick disconnect at well #1. If new well is not constructed.	Existing generator lacks secondary fuel containment and auto start controls. Existing storage tank and piping shows signs of leakage and is consider a high risk of failure.
6.	Install pump-to-waste piping at Well # 1 and #3	It has been denoted as construction deficiency by DWS in the sanitary survey
7.	Formally abandoned Well # 2 per OAR 690-220	Potential viral contamination. The well is near Rock Creek which has seasonal flooding issues.

4. Distribution System

A majority of the deficiencies were identified in the WMP. Due to limited City's funds most of these deficiencies have not been addressed. Current water system deficiencies are identified and presented in Table 2 and Figure 1. A pre-design justification and correction action for each deficiency are included in the tables. Distribution deficiencies will be evaluated during a preliminary engineering report based on cost and risk and is outside of the scope of this technical memorandum.

4.1 Criteria for Distribution Evaluation

There are two general criteria to use to evaluate the distribution system: 1. Can the system reliably *"Maintain a pressure of at least 20 pounds per square inch (psi) at all service connections at all time"*? *OAR 333-061-0025 (7)* 2. Can the system reliably deliver high quality water per *OAR 333-061-0030?*

Deficiencies include:

- Non-functioning isolation valves on older pipe which has resulted in the complete system being down for periods of four (4) to eight (8) hours for minor system repairs and possibly longer for major system repairs. Depressurizing the water system in high ground water area places the system at risk of possible contamination. It is recommended that all non-functional isolation valves and non-gasketed pipes be replaced.
- Lack of accessible, functional and properly installed water meters have resulted in frequent water breaks during the winter from freezing and a flat usage billing rate. Properly installed new meter

boxes and automatic meter reading systems (AMR) also known as radio read meters could limit winter freezing issues and promote water conservation through consumption based billing user rates.

- Old asbestos concrete pipes exist and it is recommended to be replaced with gasketed PVC or ductile iron pipe.
- According to the 2006 WMP, there is a lack of documentation of the old pipe conditions and material. It is suspected that these older pipes are leaking and contributing to the high water usage. Evidence to the leakage is that the population in Haines has decreased from 440 in 2006 to 415 in 2012 (-6 %) while the water usage has increase by 20%.

Summary of Distribution System Improvements are in Table #2 and location on Figure #1.

Table 2:[1d]
Distribution System Improvements

No.	Description and Location	Reason for the Improvement
1.	223 Meter Boxes and Meters: Relocate all meters to edge of public right-of way and install radio read meters.	Replace old non-functional water meters and shallow buried depth meter that are failure-prone to leak due to freezing issues
2.	8-inch water main, isolation valves, and services from 3rd Street to 5th Street along School Street	Replace old 6-inch potentially asbestos concrete pipe or cast iron and potentially leaking and non-functioning valves.
3.	8-inch water main, isolation valves, and services from Wilcox Street to School Street along 5rd Street	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
4.	8-inch water main, isolation valves, and services from Wilcox Street to School Street along 3th Street.	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
5.	8-inch water main, isolation valves, and services from 1st Street to 2nd Street along Wilcox Street.	Replace old 6-inch PVC pipe and potentially leaking and non-functioning valves. Improves system pressures and system reliability
6.	8-inch water main, isolation valves, and services from 2nd Street to 3rd Street Road along Wilcox Street.	Replace old 6-inch PVC or potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
7.	8-inch water main, isolation valves, and services from 3rd Street to 5th Street along Wilcox Street.	Replace old 4-inch PVC or potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
8.	8-inch water main, isolation valves, and services from 1st Street to 3rd Street along Amy Street	Replace old 4-inch potentially asbestos concrete pipe or cast iron and potentially leaking and non-functioning valves. Improves system pressures and flows
9.	8-inch water main, isolation valves, and services from 3rd Street to 5th Street along Amy Street.	Replace old 4-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves. Improves system pressures and flows

Table 2:[1d] Distribution System Improvements		
No.	**Description and Location**	**Reason for the Improvement**
10.	8-inch water main, isolation valves, and services from Amy Street to Wilcox Street along 5rd Street.	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
11.	8-inch water main, isolation valves, and services from Cole Street to Amy Street along 5rd Street	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
12.	8-inch water main, isolation valves, and services from Hwy 30 to Cole Street along 5rd Street.	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
13.	8-inch water main, isolation valves, and services 5th Street to 6th Street along Cole Street.	Replace old 4-inch potentially asbestos concrete or cast iron pipe and potentially leaking and non-functioning valves.
14.	8-inch water main, isolation valves, and services 3rd Street to 5th Street along Cole Street.	Replace old 4-inch potentially asbestos concrete or cast iron pipe and potentially leaking and non-functioning valves.
15.	8-inch water main, isolation valves, and services 1st Street to 3rd Street along Cole Street.	Replace old 4-inch potentially asbestos concrete or cast iron pipe and potentially leaking and non-functioning valves.
16.	8-inch water main, isolation valves, and services from Birch Street to 1st Street along Cole Street.	Replace old 4-inch potentially asbestos concrete or cast iron pipe and potentially leaking and non-functioning valves.
17.	8-inch water main, isolation valves, and services from 1st Street to 3rd Street along John Street.	Replace old 4-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
18.	8-inch water main, isolation valves, and services from Robert Street to John Street along 1st Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
19.	8-inch water main isolation valves, and services from Olson Street to Robert Street along 1st Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
20.	8-inch water main, isolation valves, and services from 1st Street to 2nd Street along Olson Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
21.	8-inch water main, isolation valves, and services from 2nd Street to 3rd Street along Olson Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
22.	8-inch water main, isolation valves, and services from Olson Street to Robert Street along 3rd Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.

Table 2:[1d] Distribution System Improvements		
No.	**Description and Location**	**Reason for the Improvement**
23.	8-inch water main, isolation valves, and services from Olson Street to Robert Street along 3rd Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
24.	8-inch water main, isolation valves, and services from 1st Street to 3rd Street along Robert Street.	Replace old 8-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves.
25.	8-inch water main, isolation valves, and services from Olson Street to Robert Street along 3rd Street.	Replace old 8-inch potentially asbestos concrete or ductile iron pipe and potentially leaking and non-functioning valves and protect from potential Railroad contamination.
26.	6-inch water main, isolation valves, and services from 4th Street to 5th Street along Anderson Street and from Anderson Street to Long Street along 5th Street.	Replace old 6-inch potentially asbestos concrete pipe and potentially leaking and non-functioning valves. Improves system reliability.
27.	8-inch water main, isolation valves, and services from 6th Street to the Rodeo Grounds along Hwy 30.	Replace old, existing, 2-inch possible steel pipe and non-functioning valves. Improves system pressure, system reliability and fire flows.
28.	6-inch water main, isolation valves, services from Anderson Street west to City Limits along 4th Street (Anthony Lakes Hwy).	Replace old, potentially leaking, unknown size and pipe material, and non-functioning valve.
29.	6-inch water main, isolation valves, services from 5th Street to 6th Street along Ruby Street.	Replace old, potentially leaking, unknown size and pipe material, and non-functioning valve.
30.	6-inch water main, isolation valves, services from 5th Street to 6th Street along Olson Street.	Replace old, potentially leaking, unknown size and pipe material, and non-functioning valve.
31.	6-inch water main, isolation valves, services from 5th Street to 6th Street along Amy Street.	Replace old, potentially leaking, ¾ inch steel pipe size service lines with a main. Improves system pressures and system reliability.
32.	6-inch water main, isolation valves, services from 5th Street to 6th Street along Wilcox Street.	Replace old, potentially leaking, 1.0 inch steel pipe size service lines with a main. Improves system pressures and system reliability.
33.	6-inch water main, isolation valves, services from 5th Street to 6th Street along School Street.	Replace old, potentially leaking, ¾ inch steel pipe size service lines with a main. Improves system pressures and system reliability.
34.	New hydrant at corner of 3rd Street and School Street.	Replace old potentially leaking hydrant and provides school fire protection. Protects system water quality.
35.	New hydrant at corner of 4th Street and School Street.	Improves system reliability and protection for the school.
36.	New hydrant at corner of 5th Street and School Street	Replace old potentially leaking hydrant. Protects system water quality.

Table 2:[1d] Distribution System Improvements		
No.	**Description and Location**	**Reason for the Improvement**
37.	New hydrant at corner of 5th Street and Amy Street.	Replace old potentially leaking hydrant. Protects system water quality.
38.	New hydrant at corner of 2nd Street and Amy Street.	Replace old potentially leaking hydrant. Protects system water quality.
39.	New hydrant at corner of Birch Street and Cole Street.	Replace old potentially leaking hydrant. Protects system water quality.
40.	New hydrant at halfway between Birch Street and 1st Street along Cole Street	Replace old potentially leaking hydrant. Protects system water quality.
41.	New hydrant at corner of 4th Street and Cole Street.	Improves system reliability and add commercial fire protection.
42.	New hydrant at corner of 1st Street and John Street.	Replace old potentially leaking hydrant. Protects system water quality
43.	New hydrant at corner of 3rd Street and John Street.	Replace old potentially leaking hydrant. Protects system water quality.
44.	New hydrant at corner of 2nd Street and Robert Street.	Improves fire protection.
45.	New hydrant at corner of 3rd Street and Olson Street.	Replace old potentially leaking hydrant. Protects system water quality.
46.	New hydrant at corner of 5th Street and Ruby Street	Replace old potentially leaking hydrant. Protects system water quality.

5. Updated Opinion of Probable Costs

Updated opinion of probable costs for Supply, Source Protection, Treatment, Storage and Distribution capital improvements were developed and are presented in Table 3. The opinion of costs were developed using a combination of existing WMPs, ENR construction cost index (March 2013), relevant past construction bid tabs from local projects, and manufacturer engineering cost estimates. The preliminary engineering report will develop alternatives based on cost and risk. An updated opinion probable cost will be developed at that time. Estimated costs include: 10% construction contingency, 20% for engineering, 2% for surveying and geotechnical (contracted by others) and associated project soft costs. These costs are considered pre-design, AACE International level 4. Final capital improvement costs may vary within 20 to 50 percent. To correct all identified deficiencies it is estimated at $5.8M[1b]. A comparison between the WMP and 2013 identified deficiencies and their associated costs are in Table 4 and Figure 1.

Table 3: [1b]
Opinion of Probable Cost for System Improvements

No.	DESCRIPTON	Opinion of Cost[1,2,3]
A. Supply		
1.	New 800 gpm, 300 ft Deep Well and pump house	$ 638,000.00
2.	Updating Water Rights	$ 5,000.00
3.	Well# 3: New mobile auto-start backup-generator and controls	$ 125,000.00
4.	Well #3: Pump-To-Waste piping	$ 24,000.00
5.	Well #1: Pump-To-Waste piping	$ 24,000.00
6.	Well #1: New controls and auxiliary power quick disconnect	$ 55,000.00
7.	Formally abandoned Well # 2 per OAR 690-220	$ 15,000.00
8.	Mobilization and Demobilization (10%)	$ 89,000.00
	Supply Subtotal	*$ 975,000.00*
B. Storage		
1.	0.5 MG Storage Reservoir: ground level w/o booster station	$ 1,176,000.00
2.	Mobilization and Demobilization (5%)	$ 59,000.00
	Storage Subtotal	*$ 1,235,000.00*
C. Distribution System		
1.	223 Meter Boxes and Meters: Relocate all meters to edge of public right of way and replace with radio read meters.[4]	$ 357,000.00
2.	2 New Hydrant	$ 8,000.00
3.	WMP: Replacement of 4" and 6" pipe: 8,730 LF with 8" Pipe[5]	$ 664,000.00
4	Additional Replacement of 4", 6", and 8" Pipe: 4,520 LF 8" Pipe[5]	$ 344,000.00
5.	Additional Replacement of 2"or smaller Pipe: 2,800 LF with Pipe 6" Pipe[5]	$ 196,000.00
6.	11 Replacement Hydrants	$ 44,000.00
7.	Stream Crossings (Three)	$ 120,000.00
8.	Rail Road Crossing (one)	$ 115,000.00
9.	Mobilization and Demobilization (5%)	$ 93,000.00
	Distribution System Subtotal	$ 1,941,000.00
CONSTRUCTION TOTAL		$ 4,151,000.00
CONSTRUCTION CONTINGENCY (10%)		$ 416,000.00
	Construction with Contingency Subtotal	$ 4,567,000.00
1.	Engineering and Construction Enginering (20%)	$ 914,000.00
2.	Surveying and Geotechnical (2%)	$ 92,000.00
3.	Environmental Review	$ 15,000.00
4.	Legal Fees and Cultural Resources (2%)	$ 92,000.00
5.	Grant Administration	$ 25,000.00
6.	Labor Standard Review	$ 15,000.00
7.	Land Purchase: Well and Reservoir	$ 116,000.00
	Project Soft Costs Subtotal	$ 1,269,000.00
Total Project Budget Costs		**$ 5,836,000.00**

Notes:

1 Opinion cost is pre-design level equal to AACE Class 4, accuracy range is 20 to 50%.
2 Estimated Costs are in 2013 dollars and are updated to reflect recent Bid prices: Wallowa Water System, Irrigon Sewer Conversion and others.
3 All costs are shown rounded up to the nearest $1,000.
4 Assumes all meters to be replaced. The total number will be determined in preliminary engineering report.
5 Pre-design pipe sizing base on recommend minimum size for fire flow and peak hour demands capacities. Estimated cost per foot for 6 inch PVC is $70.00 and 8 inch PVC is $76.00.

Table 4:[1b]
Opinion of Probable Cost Comparison between 2006 WMP and 2013 TM

No.	DESCRIPTION	ESTIMATED COSTS	ESTIMATED COSTS
A. Supply		**2006 WMP[1,2]**	**2013[2,3]**
1.	New 800 gpm, 300 ft Deep Well and pump house	$ 202,000.00	$ 638,000.00
2.	Disinfection upgrade: Chlorine Contact Time	$ 210,000.00	*Not Included*
3.	Updating Water Rights	$ 5,000.00	$ 5,000.00
4.	Well # 3: Mobile auto-start backup-generator and controls	*Not Included*	$ 125,000.00
5.	Well # 3: Pump-to-Waste upgrade	*Not Included*	$ 24,000.00
6.	Well # 1: Pump-to-Waste upgrade	*Not Included*	$ 24,000.00
7.	Well# 1: New Controls and Auxiliary power quick disconnect	*Not Included*	$ 55,000.00
8.	Formally abandoned Well # 2 per OAR 690-220	*Not Included*	$ 15,000.00
9.	Mobilization and Demobilization (10%)	*Not Included*	$ 89,000.00
	Supply Subtotal	*$ 417,000.00*	*$ 975,000.00*
B. Storage			
1.	0.5 MG Storage Reservoir: ground level w/o booster station[4]	$ 875,000.00	$ 1,176,000.00
2.	Mobilization and Demobilization (5%)	*Not Included*	$ 59,000.00
	Storage Subtotal	*$ 875,000.00*	*$ 1,235,000.00*
C. Distribution[3]			
1.	223 New Radio Read Meters (Installed Complete)	$ 111,650.00	$ 357,000.00
2.	2 New hydrants	$ 4,800.00	$ 8,000.00
3.	WMP Replacement of 4" and 6" Pipe: 8,730 LF with 8" Pipe[5,6]	$ 656,300.00	$ 664,000.00
4.	Additional Replacement of 4 and 6" Pipe: 4,520 LF with Pipe 8" Pipe[5]	*Not Included*	$ 344,000.00
5.	Additional Replacement of 4 and 6" Pipe: 2,800 LF with Pipe 6" Pipe[5]	*Not Included*	$ 196,000.00
6.	11 Replacement Hydrants	*Not Included*	$ 44,000.00
7.	Stream Crossings (Three)	*Not Included*	$ 120,000.00
8.	Rail Road Crossing (one)	*Not Included*	$ 115,000.00
9.	Mobilization and Demobilization (5%)	*Not Included*	$ 93,000.00
	Distribution Subtotal	$ 772,750.00	$ 1,941,000.00
CONSTRUCTION TOTAL		$ 2,064,750.00	$ 4,151,000.00
CONSTRUCTION CONTINGENCY (10%)		$ 207,000.00	$ 416,000.00
	Construction with Contingency Subtotal	$ 2,271,750.00	$ 4,567,000.00
1.	Engineering and Construction Observation (20%)	$ 454,400.00	$ 914,000.00
2.	Surveying and Geotechnical (2%)	$ 45,500.00	$ 92,000.00
3.	Environmental Review	$ 15,000.00	$ 15,000.00
4.	Legal Fees and Cultural Resources (2%)	$ 45,435.00	$ 92,000.00
5.	Grant Administration	$ 25,000.00	$ 25,000.00
6.	Labor Standard Review	$ 15,000.00	$ 15,000.00
7.	Land Purchase: Well and Reservoir	$ 200,000.00	$ 116,000.00
	Project Soft Cost Subtotal	$ 800,335.00	$ 1,269,000.00
Total Project Budget Costs		***$ 3,072,085.00***	***$ 5,836,000.00***

Notes:

1. Based on the 2006 Water Master Plan (2006 Dollars), Contingency are based on CDBG guidelines, Opinion cost is pre-design level equal to AACE Class 4, accuracy range is 20 to 50%.
2. All cost are rounded up to the nearest $1000.00.
3. Estimated Costs are in 2013 dollars and are updated to reflect recent Bid prices: Wallowa Water System, Irrigon Sewer Conversion and others.
4. WMP Storage option Table 7.3.
5. Pre-design pipe sizing base on recommend minimum size for fire flow and peak hour demands capacities. 2013 estimated cost per liner foot for 6 inch PVC is $70.00 and 8 inch PVC is $76.00, 2006 WMP has $55.00 for 6" and $60 for 8" pipe.
6. 2013 Cost excluded 800 LF of 8" pipe that has replaced since 2006.

6. Conclusion:

Deficiencies have been identified that require immediate attention to bring the water system into compliance. Currently the City of Haines' water system does not have the ability meet "*OAR 333-061-0025 (7) Maintain a pressure of at least 20 pounds per square inch (psi) at all service connections at all times;"* Planning level project budget improvement cost estimate is $5,836,000.00[1b]. A preliminary engineering report (PER) will be developed, submitted for DWS approval for elements that were not identified in the WMP. The PER will contain updated alternatives that are based on cost, and risk. Improvements denoted in the 2006 WMP and the additional recommended improvements in the technical memo will allow the City the ability to produce water that consistently and reliably meets Oregon and Federal regulatory compliance.

ATTACHMENT #3.
System Deficiences Diagram

CITY OF HAINES
WATER SYSTEM DEFICIENCIES

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{¸{¢9 a DEFICIENCIES

LEGEND

WATER SYSTEM DEFICIENCES

Supply

- Reservoir - 35K Gallons
- Well

Fire Hydrant

- 2006 WMP Deficiencies
- Additional Deficiencies
- Existing Post 1980

Waterlines

- Existing Pre-1980
- Existing Post-1980
- 2006 WMP Deficiencies
- Additional Deficiencies

AC = Asbestos Concrete
CI = Cast Iron
DI = Ductile Iron
PVC = PVC
S = Steel
UNK = Unknown

- Railroads
- City Limits
- Streams
- Tax Lots

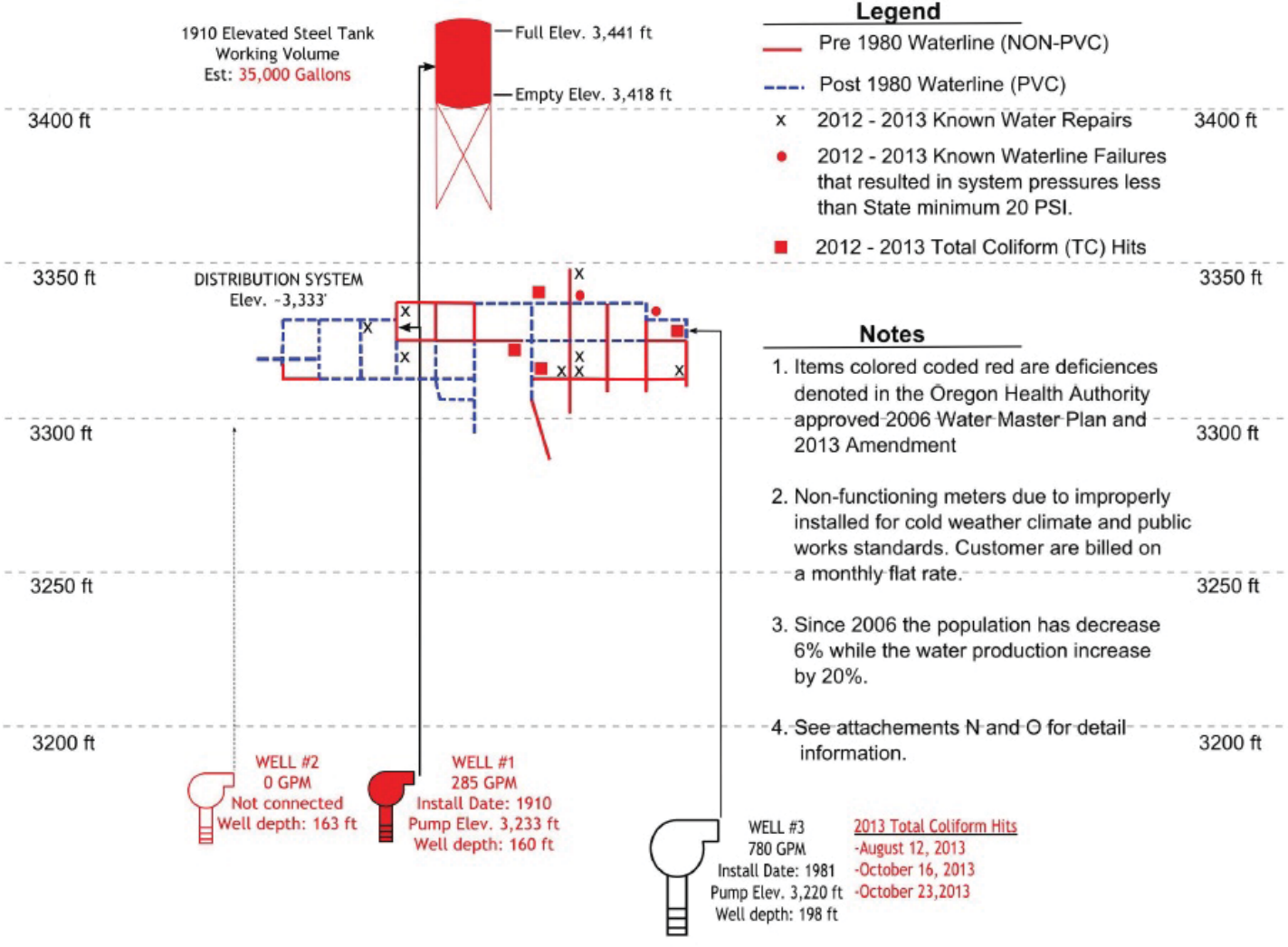
Revision Date: 3/12/2013

J-U-B ENGINEERS, INC.

ATTACHMENT #3

Path: \\gfiles\public\F:\Projects\JUB\City of Haines\33-13-005 Water-Master-Plan-Review\F70 GIS\Haines City-Figure 1-11x17-blue.mxd

City of Haines, OR - Schematic of Existing Water System Deficiences and Failures

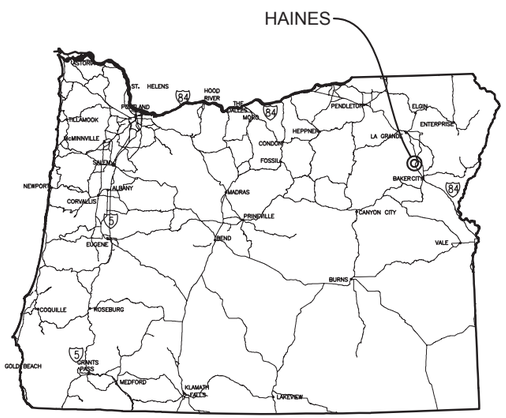


ATTACHMENT #4.
Selected Plans

CITY OF HAINES

WATER COMPLIANCE PROJECT

AGENCY SUBMITTAL SET
JULY 31, 2015



VICINITY MAP

LOCATION MAP

819 FRONT STREET
HAINES, OREGON 97837

PROJECT NO. 33-14-003

UTILITY CONTACTS

WATER/SEWER/STORM/ROADS

CITY OF HAINES
819 FRONT ST
HAINES, OR 97833
CONTACT: CITY RECORDER, VALERIE RUSSELL
CONTACT: PUBLIC WORKS, JOSH PROEBSTEL

TELEPHONE

PHONE: 541-856-3366

POWER

OREGON TRAIL ELEC CO-OP
4005 23RD ST
PO BOX 226
BAKER CITY, OR

PHONE: 541-523-3616

TELEPHONE/FIBER OPTIC

RELIANCE CONNECTS
940 2ND ST
HAINES, OR 97833

PHONE: 541-856-3661

ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-221-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER AT WWW.DIGSAFELYOREGON.COM. ONE OF THE REQUIREMENTS OF THESE RULES IS THAT EXCAVATORS MUST NOTIFY THE CENTER AT LEAST 2 BUSINESS DAYS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. TO COMPLY TO THIS REQUIREMENT, CALL 811.

J-U-B ENGINEERS, INC.

1201 Adams Avenue La Grande,OR 97850
p 541 963 7100 f w www.jub.com

OTHER J-U-B COMPANIES THE LANGDON GROUP GATEWAY MAPPING INC.

ELEVATION DATUM

HORIZONTAL DATUM: NAD 1983/2011
VERTICAL DATUM: NAVD 88

811 Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

LAST UPDATED: 7/31/2015
SHEET NUMBER:
G-001

Plot Date:7/31/2015 F:\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_G-001.DWG

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G-006	GENERAL SYMBOLS

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CW-142	WELL #4 WELL HOUSE PLAN
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EW-146	LOCAL CONTROL PANEL "LCP-W4" WIRING DIAGRAMS
ED-500	ELECTRICAL DETAILS
ED-501	ELECTRICAL DETAILS

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EXPIRES: 6/30/2017

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City of Haines

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

WATER COMPLIANCE PROJECT
CITY OF HAINES

SHEET INDEX

FILE : 33-14-003_G-002
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY: JFG
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2015

SHEET NUMBER:
G-002

Plot Date:7/31/2015 12:02 PM Plotted By:Chris Ciantelllo
Date Created:7/31/2015 I:\PROJECTS\JUBCITY-OF-HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_G-002.DWG

SEE SHEET CM-103 - 3RD ST

SEE SHEET CM-103 - COLE ST

SEE SHEET CM-103 - HWY 30

SEE SHEET CM-102 - 3RD ST

WATER METER REPLACEMENT NOTES

1. THE WATER METERS SHOWN ON THIS SHEET HAVE BEEN ORGANIZED INTO 3 COLUMNS ADDRESS; WITH THE FIRST METER LOCATED AT THE TOP OF THE PLAN VIEW AND THE FOLLOWING METERS LISTED IN ORDER GENERALLY FROM LEFT TO RIGHT AND FROM TOP TO BOTTOM
2. WATER METERS SHALL BE EITHER REPLACED OR NEWLY INSTALLED DEPENDING ON THE METHOD TYPE LISTED.

METER TYPE	
TYPE	ADDRESS
1	420 3RD ST
1	620 2ND ST
4	1010 SCHOOL ST
2	910 SCHOOL ST
2	620 3RD ST
2	819 SCHOOL ST
4	820 SCHOOL ST
2	811 SCHOOL ST
2	818 SCHOOL ST
2	615 4TH ST
2	715 SCHOOL ST
2	716 SCHOOL ST
2	710 SCHOOL ST
2	610 5TH ST
2	611 SCHOOL ST
3	610 1ST ST
3	710 1ST ST
1	1120 WILCOX ST
1	1014 WILCOX ST
1	920 WILCOX ST
1	918 WILCOX ST
1	914 WILCOX ST
1	915 WILCOX ST
2	645 3RD ST
1	725 3RD ST
2	816 WILCOX ST
1	815 WILCOX ST
2	814 WILCOX ST
2	810 WILCOX ST
2	811 WILCOX ST
2	715 4TH ST
1	645 4TH ST
2	716 WILCOX ST
1	710 WILCOX ST
2	645 5TH ST
2	610 WILCOX ST
1	740 1ST ST
1	825 1ST ST

METER TYPE	
TYPE	ADDRESS
2	740 2ND ST
2	917 AMY ST
2	918 AMY ST
2	915 AMY ST
2	914 AMY ST
2	911 AMY ST
2	730 3RD ST
1	745 3RD ST
2	815 AMY ST
2	814 AMY ST
2	810 AMY ST
2	810 4TH ST
2	730 4TH
1	735 4TH ST
1	745 4TH ST
2	815 4TH ST
2	740 5TH ST
2	620 5TH ST
2	612 AMY ST
1	1020 1ST ST
2	1016 COLE ST
2	1014 COLE ST
2	910 ASH ST
2	1010 COLE ST
2	920 COLE ST
2	916 COLE ST
1	917 COLE ST
2	830 COLE ST
2	913 COLE ST
2	845 3RD ST
2	818 COLE ST
2	816 COLE ST
2	925 3RD ST
2	840 4TH ST
2	920 4TH ST
2	925 4TH ST
2	845 4TH ST
2	714 COLE ST

METER TYPE	
TYPE	ADDRESS
2	715 COLE ST
2	920 5TH ST
2	710 5TH ST
2	825 5TH ST
2	925 5TH ST
2	616 COLE ST
2	615 COLE ST
2	610 COLE ST
2	510 COLE ST
1	925 1ST ST
1	910 1ST ST
1	930 1ST ST
1	935 1ST ST
1	950 1ST ST
1	1120 1ST ST
1	1020 FRONT ST
1	1010 FRONT ST
1	940 2ND ST
1	925 2ND ST
1	920 FRONT ST
1	918 FRONT ST
1	916 FRONT ST
1	914 FRONT ST
1	910 FRONT ST
1	935 3RD ST
2	821 FRONT ST
1	818 FRONT ST
1	814 FRONT ST
1	812 FRONT ST
1	810 FRONT ST
1	720 FRONT ST
1	718 FRONT ST
1	714 FRONT ST
2	710 FRONT ST
1	620 FRONT ST
1	614 FRONT ST
1	612 FRONT ST
1	819 FRONT
1	917 JOHN ST

INSTALLATION

TYPE	WATER METER REPLACEMENT INSTALLATION METHOD
1	REPLACE METER AND CONNECT SERVICE LINE TO EXST WATERLINE (ALREADY IN ROW)
2	REPLACE METER AND CONNECT SERVICE LINE TO NEW WATERLINE
3	INSTALL NEW METER IN ROW AND CONNECT TO EXST WATERLINE
4	INSTALL NEW METER IN ROW AND CONNECT TO NEW WATERLINE

Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

J-U-B ENGINEERS, INC.

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1201 Adams Avenue
La Grande, OR 97850
Phone: 541.963.7100
www.jub.com

City of Haines

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

WATER COMPLIANCE
CITY OF HAINES

CIVIL: DISTRIBUTION
WATER MEER REPLACEMENT SCHEDULE
EAST OF HIGHWAY 30

FILE : 33-14-003_CM-100
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY: JFG
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2015

SHEET NUMBER:
CM-100

Plot Date:7/31/2015 5:37 AM Plotted By: Chris Carratello
Date Created:7/31/2015 F:\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_CM-100.DWG

WATER METER REPLACEMENT NOTES

1. THE WATER METERS SHOWN ON THIS SHEET HAVE BEEN ORGANIZED INTO 3 COLUMNS BY ADDRESS; WITH THE FIRST METER LOCATED AT THE TOP OF THE PLAN VIEW AND THE FOLLOWING METERS LISTED IN ORDER GENERALLY FROM LEFT TO RIGHT AND FROM TOP TO BOTTOM
2. WATER METERS SHALL BE EITHER REPLACED OR NEWLY INSTALLED DEPENDING ON THE METHOD TYPE LISTED.

METER TYPE	
TYPE	ADDRESS
1	1115 FRONT ST
2	1020 JOHN ST
1	1210 2ND ST
2	921 JOHN ST
2	915 JOHN ST
1	821 JOHN ST
1	817 JOHN ST
1	811 JOHN ST
1	717 JOHN ST
3	1225 4TH ST
1	715 JOHN ST
3	1145 6TH ST
1	617 JOHN ST
1	613 JOHN ST
1	1021 1ST ST
2	1017 ROBERT ST
1	1011 ROBERT ST
1	921 ROBERT ST
2	920 ROBERT ST
2	916 ROBERT ST
2	917 ROBERT ST
2	914 ROBERT ST
2	1230 3RD ST
2	912 ROBERT ST
1	1320 3RD ST
1	821 ROBERT ST
2	816 ROBERT ST
2	814 ROBERT ST
2	812 ROBERT ST
2	810 ROBERT ST
2	811 ROBERT ST
2	720 ROBERT ST
2	721 ROBERT ST
2	715 ROBERT ST
2	711 ROBERT ST
1	710 ROBERT ST
2	619 ROBERT ST
2	618 ROBERT ST

METER TYPE	
TYPE	ADDRESS
2	617 ROBERT ST
4	612 ROBERT ST
2	615 ROBERT ST
2	613 ROBERT ST
2	611 ROBERT ST
2	610 ROBERT ST
1	1019 OLSON ST
1	1345 1ST ST
1	1016 OLSON ST
1	1014 OLSON ST
1	1012 OLSON ST
1	1010 OLSON ST
1	1340 3RD ST
1	1410 3RD ST
1	820 OLSON ST
1	1415 3RD ST
1	817 OLSON ST
1	815 OLSON ST
1	811 OLSON ST
1	720 OLSON ST
1	718 OLSON ST
1	710 OLSON ST
1	621 OLSON ST
1	502 OLSON ST
1	500 OLSON ST
1	503 OLSON ST
1	501 OLSON ST
1	510 OLSON ST
1	512 OLSON ST
1	610 OLSON ST
1	520 OLSON ST
1	522 OLSON ST
3	1430 2ND ST
3	1445 2ND ST
1	921 RUBY ST
1	911 RUBY ST
3	1435 3RD ST
1	820 RUBY ST

METER TYPE	
TYPE	ADDRESS
1	1515 3RD ST
1	812 RUBY ST
1	1510 4TH ST
1	721 RUBY ST
1	717 RUBY ST
1	715 RUBY ST
1	713 RUBY ST
1	1430 5TH ST
1	711 RUBY ST
1	1435 5TH ST
1	1515 5TH ST
1	1525 5TH ST
1	1510 2ND ST
1	921 LONG ST
1	916 LONG ST
1	1540 3RD ST
2	1545 3RD ST
1	1620 3RD ST
1	821 LONG ST
1	815 LONG ST
1	1530 4TH ST
1	1545 4TH ST
1	811 LONG ST
1	719 LONG ST
1	712 LONG ST
1	1640 2ND ST
1	912 ANDERSON ST
1	911 ANDERSON ST
3	819 ANDERSON ST
1	1645 3RD ST
1	1640 4TH ST
3	811 ANDERSON ST
1	1645 4TH ST
3	719 ANDERSON ST
1	714 ANDERSON ST
3	711 ANDERSON ST
3	715 ANDERSON ST
1	1625 5TH ST

INSTALLATION

TYPE	WATER METER REPLACEMENT INSTALLATION METHOD
1	REPLACE METER AND CONNECT SERVICE LINE TO EXST WATERLINE (ALREADY IN ROW)
2	REPLACE METER AND CONNECT SERVICE LINE TO NEW WATERLINE
3	INSTALL NEW METER IN ROW AND CONNECT TO EXST WATERLINE
4	INSTALL NEW METER IN ROW AND CONNECT TO NEW WATERLINE

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

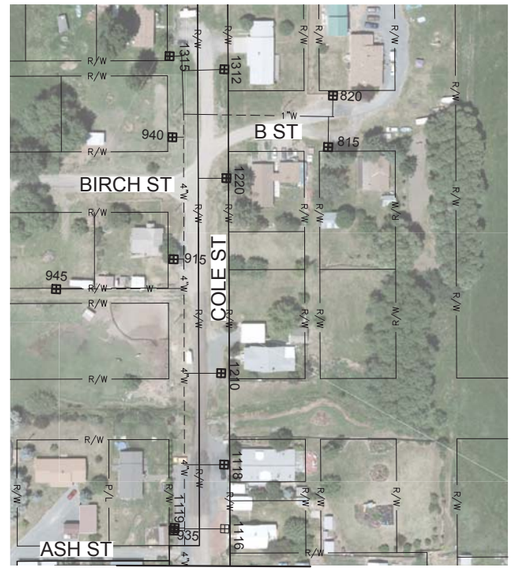
WATER COMPLIANCE
CITY OF HAINES

WATER METER REPLACEMENT SCHEDULE
WEST OF HIGHWAY 30

FILE : 33-14-003_CM-101
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY: JFG
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2015

SHEET NUMBER:
CM-101

Plot Date:7/31/2015 5:36 AM Plotted By: Chris Carratello
Date Created:7/31/2015 F:\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\FRO_CAD\SHEET\33-14-003_CM-101.DWG



SEE SHEET CM-101

3RD ST

0 100 200

SCALE IN FEET

COLE ST

0 50 200

SCALE IN FEET

HWY 30

0 100 200

SCALE IN FEET

4TH ST

0 100 200

SCALE IN FEET

WATER METER REPLACEMENT NOTES

1. THE WATER METERS SHOWN ON THIS SHEET HAVE BEEN ORGANIZED INTO 3 COLUMNS ADDRESS; WITH THE FIRST METER LOCATED AT THE TOP OF THE PLAN VIEW AND THE FOLLOWING METERS LISTED IN ORDER GENERALLY FROM LEFT TO RIGHT AND FROM TOP TO BOTTOM
2. WATER METERS SHALL BE EITHER REPLACED OR NEWLY INSTALLED DEPENDING ON THE METHOD TYPE LISTED.

METER TYPE	
TYPE	ADDRESS
3	16458 3RD ST
3	16482 3RD ST
2	820 B ST
2	815 B ST
2	1315 COLE ST
2	1312 COLE ST
2	940 BIRCH ST
2	1220 COLE ST
2	915 BIRCH ST
2	945 BIRCH ST

METER TYPE	
TYPE	ADDRESS
2	1210 COLE ST
2	1118 COLE ST
2	1116 COLE ST
2	1119 COLE ST
2	935 ASH ST
1	410 FRONT ST
1	519 JOHN ST
1	511 JOHN ST
1	43813 3RD ST

INSTALLATION

TYPE	WATER METER REPLACEMENT INSTALLATION METHOD
1	REPLACE METER AND CONNECT SERVICE LINE TO EXST WATERLINE (ALREADY IN ROW)
2	REPLACE METER AND CONNECT SERVICE LINE TO NEW WATERLINE
3	INSTALL NEW METER IN ROW AND CONNECT TO EXST WATERLINE
4	INSTALL NEW METER IN ROW AND CONNECT TO NEW WATERLINE

Know what's **below.** **Call** before you dig.

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51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

WATER COMPLIANCE
CITY OF HAINES

WATER METER REPLACEMENT SCHEDULE
ADDITIONAL LOCATIONS

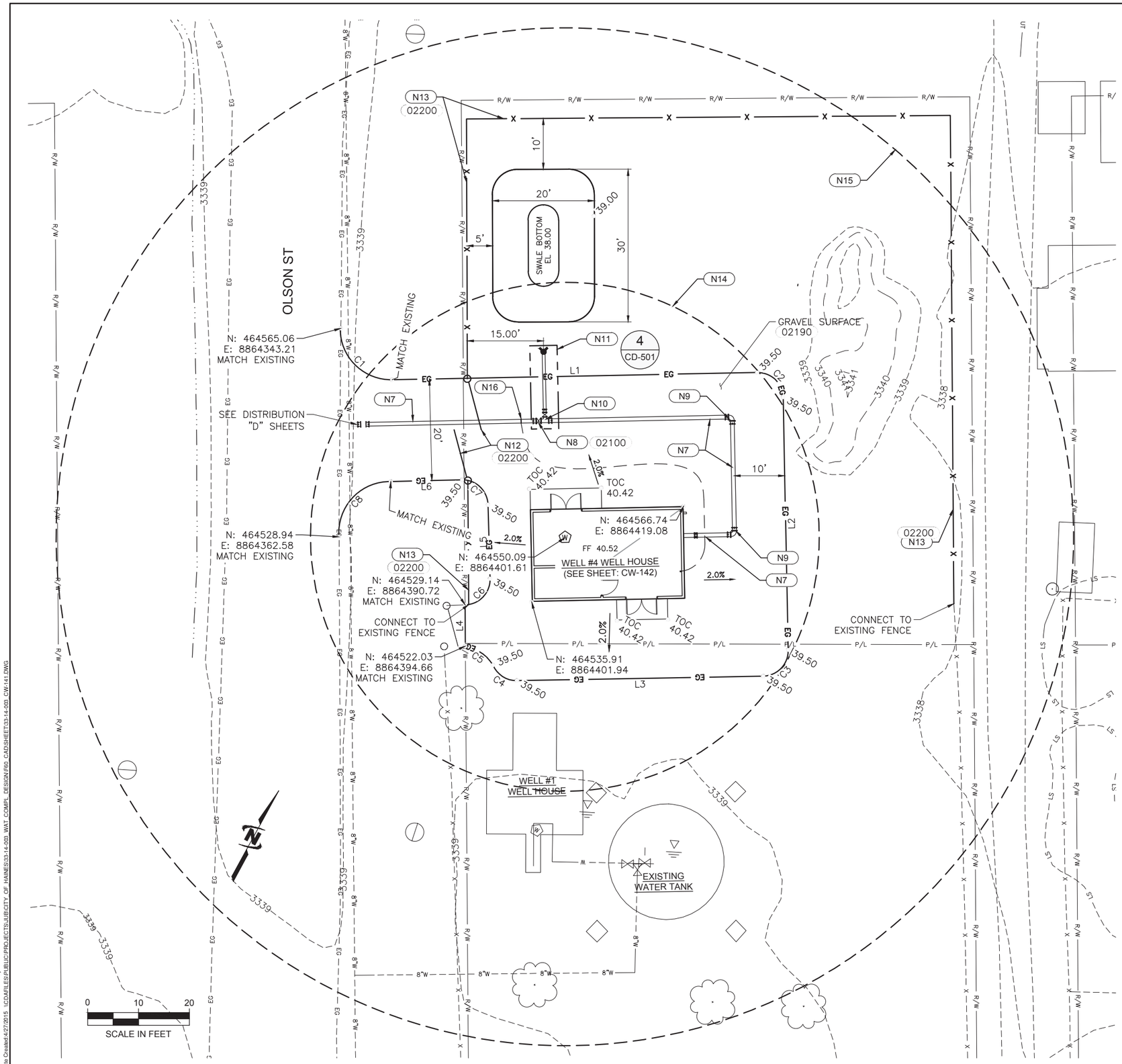
FILE : 33-14-003_CM-102
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY:

HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY

LAST UPDATED: 7/31/2015

SHEET NUMBER:
CM-102

Plot Date:7/31/2015 5:41 AM Plotted By: Chris Carratello
Date Created:7/31/2015 F:\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_CM-102.DWG



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GENERAL NOTES:

1. ALL ABBREVIATED ELEVATIONS ARE 3,3XX.XX'.
2. SEE SURVEY CONTROL SHEET FOR BENCHMARKS.
3. ALL BELOW GRADE PIPING SHALL BE INSTALLED FOLLOWING THE STANDARD TRENCH DETAIL, DETAIL 1 ON SHEET CD-500, AND THE RESTRAINED PIPE TABLE, DETAIL 2 ON SHEET CD-500, UNLESS OTHERWISE INDICATED ON THESE PLANS.

KEYED NOTES: (this sheet)	
N7	8" C900 PVC WATER PIPE
N8	8" GATE VALVE
N9	8" 90° BEND
N10	8" MJ X 6" FL TEE
N11	PUMP TO WASTE HYDRANT
N12	20-FT DOUBLE-WIDE CHAIN LINK GATE.
N13	6-FT CHAIN LINK FENCE.
N14	50-FT RADIUS SETBACK.
N15	100-FT RADIUS SETBACK.
N16	STAINLESS STEEL SADDLE TAP, CORP STOP W/ VALVE BOX, AND 3/4" HDPE PIPE

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	N60°09'48"E	71.79'
L2	S29°50'12"E	49.67'
L3	S60°15'16"W	48.43'
L4	N28°55'35"W	8.13'
L5	N30°19'22"W	14.52'
L6	S59°55'42"W	14.01'

CURVE TABLE						
CURVE #	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD LENGTH
C1	16.00'	10.00'	10.30'	91°41'52"	S73°59'16"E	14.36'
C2	7.78'	5.00'	4.93'	89°12'28"	S75°13'26"E	7.02'
C3	7.92'	5.00'	5.07'	90°47'33"	S14°46'35"W	7.12'
C4	5.97'	5.00'	3.40'	68°21'17"	N85°39'00"W	5.62'
C5	6.76'	8.25'	3.58'	46°58'11"	N84°27'28"W	6.59'
C6	7.90'	5.00'	5.04'	90°29'07"	N14°55'11"E	7.12'
C7	7.85'	5.00'	5.00'	89°59'28"	N74°49'56"W	7.07'
C8	16.79'	10.02'	11.13'	96°02'14"	S14°23'24"W	14.90'

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

J-U-B ENGINEERS, INC.

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

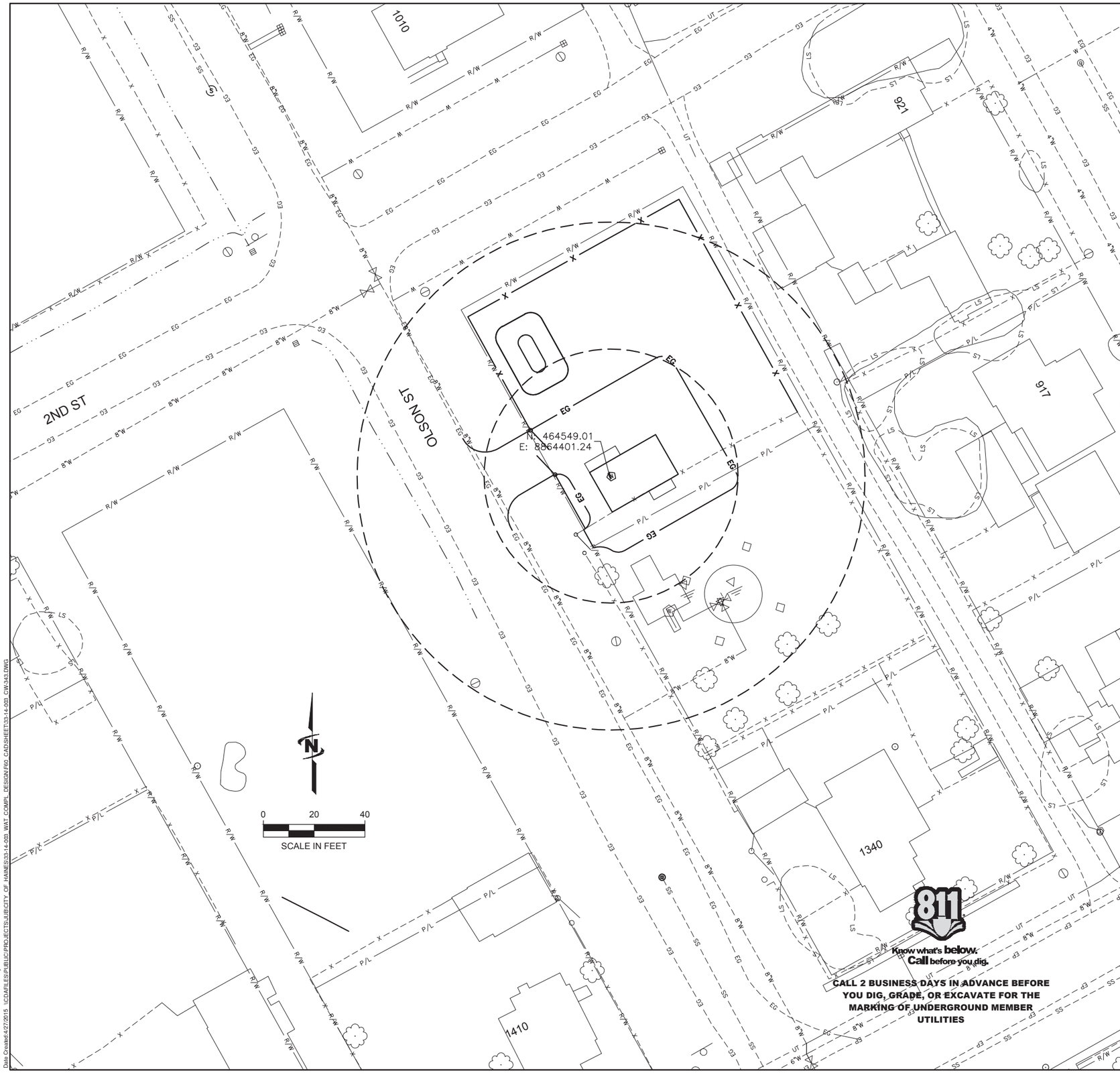
WATER COMPLIANCE PROJECT
CITY OF HAINES

CIVIL: WELL #4
SITE PLAN

FILE : 33-14-003_CW-141
JUB PROJ. # : 33-14-003
DRAWN BY: KEH
DESIGN BY: KEH
CHECKED BY: DLB
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

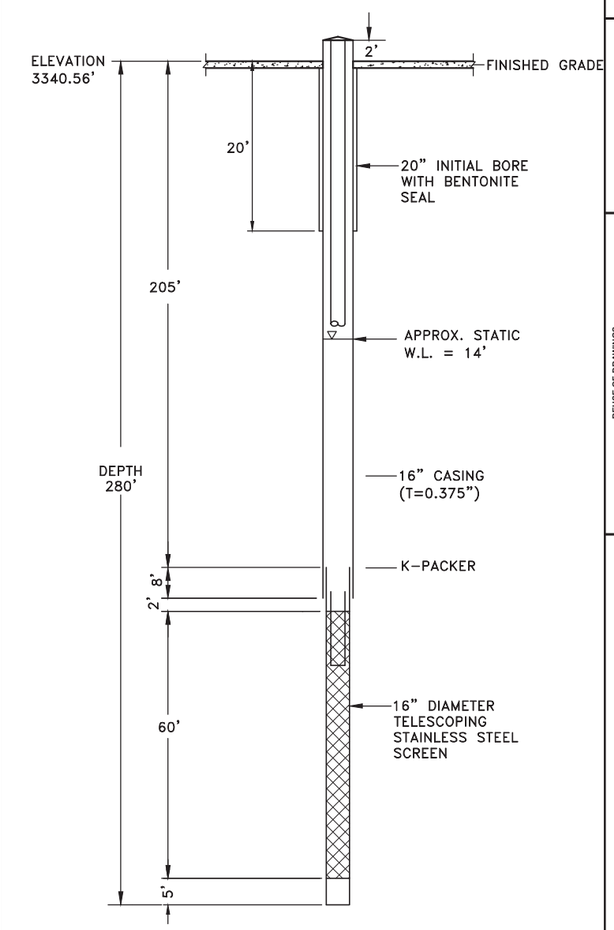
SHEET NUMBER:
CW-141

Plot Date:7/30/2015;2:47 PM, Plotted By: William Holder
Date Created:4/27/2015 \\CDAFILES\PUBLIC\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_CW-141.DWG



NOTES:

1. WELL CASING, SCREEN AND BLANK CASING LENGTHS AND LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.
2. THE TOTAL DEPTH OF THE WELL AS SHOWN IS APPROXIMATE. IF INADEQUATE FORMATIONS ARE ENCOUNTERED THAT WILL NOT ALLOW THE DESIRED CAPACITY TO BE ACHIEVED, THE OWNER MAY ELECT TO DRILL DEEPER.
3. THE DEPTH OF THE SURFACE SEAL MAY BE ADJUSTED DURING CONSTRUCTION.
4. THE CONTRACTOR MAY ELECT TO CONSTRUCT THE WELL WITHOUT UTILIZING TELESCOPING SCREENS AND BLANK CASING. THE CONTRACTOR MAY CONSTRUCT THE WELL UTILIZING A SINGLE CASING STRING.



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DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

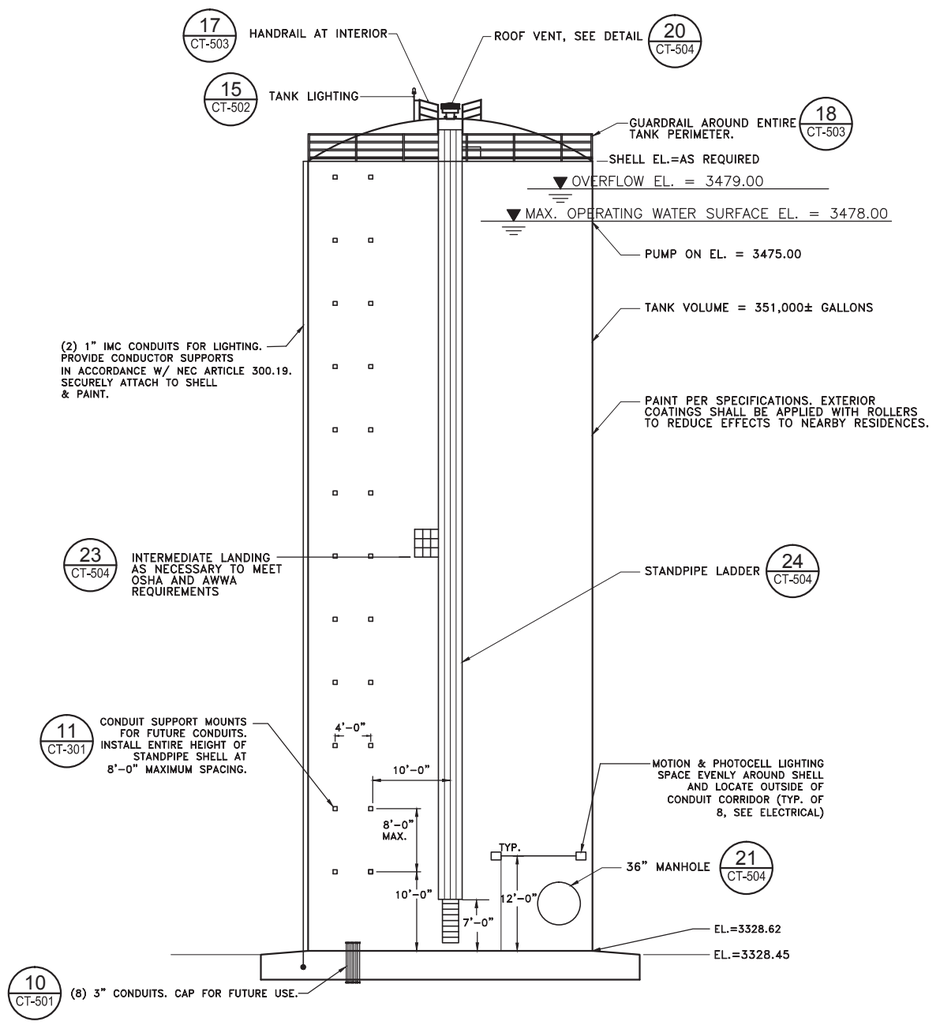
WATER COMPLIANCE PROJECT
CITY OF HAINES

CIVIL: WELL #4
WELL DESIGN

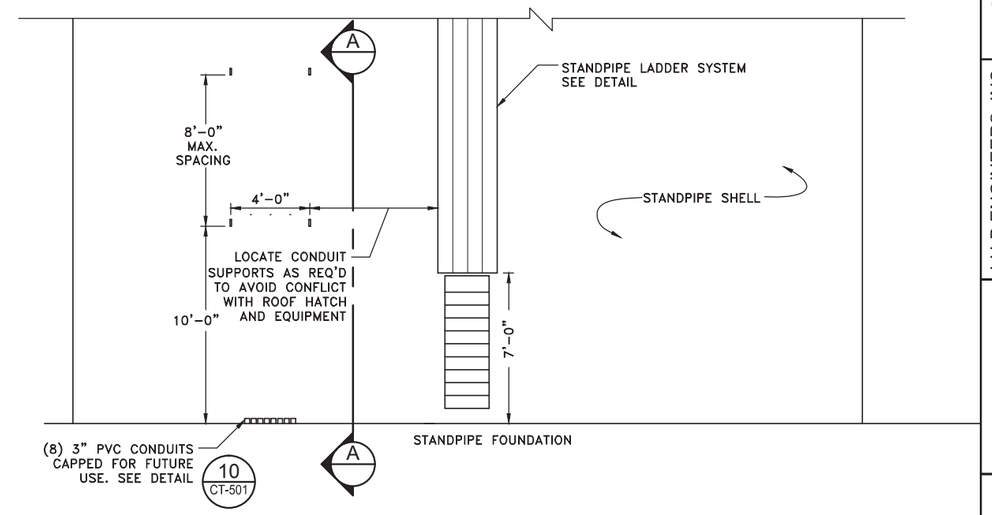
FILE : 33-14-003_CW-343
JUB PROJ. # : 33-14-003
DRAWN BY: KEH
DESIGN BY: KEH
CHECKED BY: DLB
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

SHEET NUMBER:
CW-343

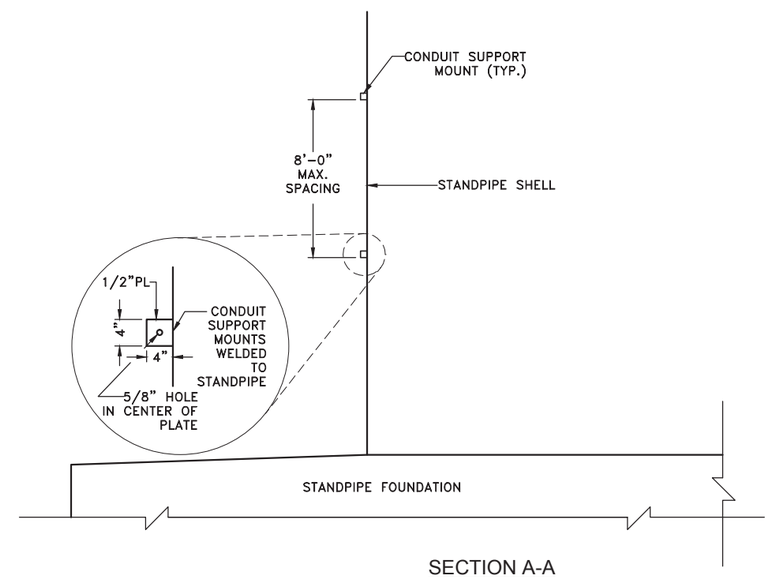
Plot Date:7/30/2015 2:49 PM, Plotted By: William Holder
Date Created:4/27/2015 \\CDAFILES\PUBLIC\PROJECTS\JUB\CITY OF HAINES\33-14-003_WAT COMPL DESIGN\F60_CADSHEET\33-14-003_CW-343.DWG



A STANDPIPE - SOUTH ELEVATION
SCALE: not to scale



SOUTH ELEVATION VIEW



SECTION A-A

11 CONDUIT SUPPORT MOUNT - DETAIL
SCALE: not to scale

NOTES:

1. DETAILS SHOWN ON THIS SHEET ARE CONCEPTUAL, FINAL DESIGN INCLUDING ALL MATERIAL SIZES, SPACING, WELDING AND OTHER INCIDENTAL ITEMS REQUIRED TO COMPLETE ASSEMBLIES SHALL BE BY THE TANK MANUFACTURER. ALL DESIGN SHALL BE IN CONFORMANCE WITH CURRENT AWWA, AISC, AND OSHA REQUIREMENTS.
2. *** NOT USED ***
3. BRACKETS TO BE 4" WIDE AND WELDED TO STANDPIPE PRIOR TO PAINT SYSTEM APPLICATION. BRACKETS SHALL BE COATED WITH SAME PAINT SYSTEM AS STANDPIPE. DESIGN FOR LOAD OF 50 POUNDS PER VERTICAL FOOT FOR ALL CONDUITS,WIRE & SUPPORTS COMBINED.
4. PAINT ALL EXPOSED SURFACES AND APPURTENANCES TO MATCH STANDPIPE, UNLESS NOTED OTHERWISE.

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

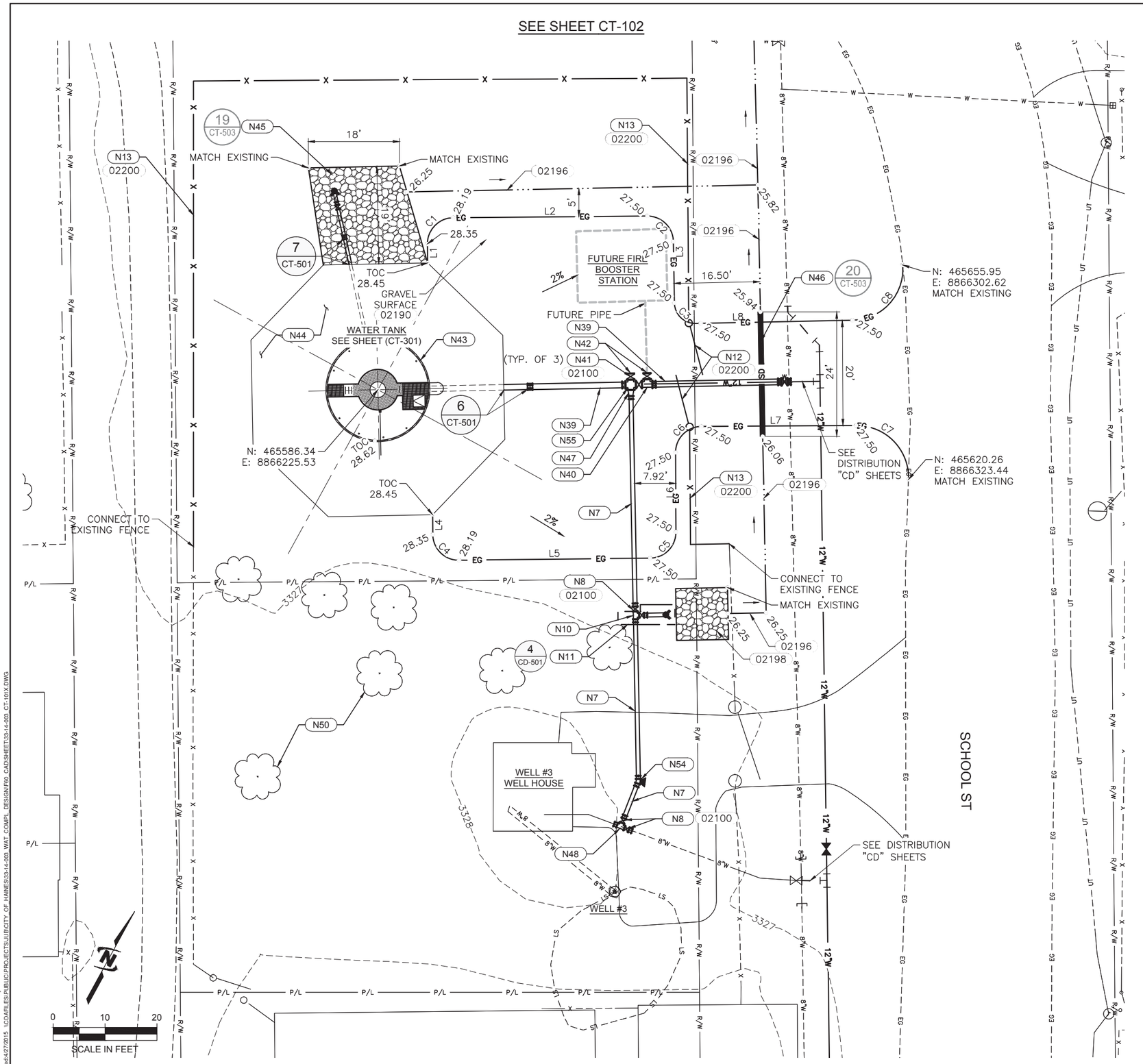
WATER COMPLIANCE PROJECT
CITY OF HAINES

CIVIL: WATER TANK
SECTION VIEW

FILE : 33-14-003_CT-301
JUB PROJ. # : 33-14-003
DRAWN BY: KEH
DESIGN BY: KEH
CHECKED BY: DLB
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

SHEET NUMBER:
CT-301

Plot Date:7/30/2015 2:54 PM Plotted By: William Holder
Date Created:6/19/2015 \\CDAFILES\PUBLIC\PROJECTS-JUB\CITY OF HAINES\33-14-003 WAT COMPL DESIGN\F60 CAD\SHEET\33-14-003 CT-301.DWG



GENERAL NOTES:

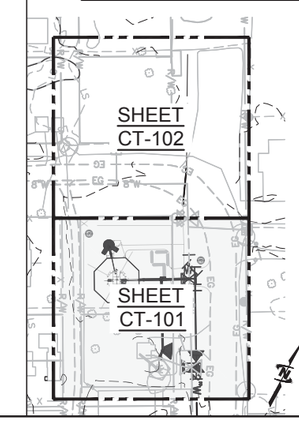
1. ALL ABBREVIATED ELEVATIONS ARE 3,3XX.XX'.
2. SEE SURVEY CONTROL SHEET FOR BENCHMARKS.
3. ALL BELOW GRADE PIPING SHALL BE INSTALLED FOLLOWING THE STANDARD TRENCH DETAIL, DETAIL 1 ON SHEET CD–500, AND THE RESTRAINED PIPE TABLE, DETAIL 2 ON SHEET CD–500, UNLESS OTHERWISE INDICATED ON THESE PLANS.

KEYED NOTES: (this sheet)	
N7	8" C900 PVC WATER PIPE
N8	8" GATE VALVE
N10	8" MJ X 6" FL TEE
N11	PUMP TO WASTE HYDRANT
N12	20-FT DOUBLE-WIDE CHAIN LINK GATE.
N13	6-FT CHAIN LINK FENCE.
N39	12" C900 PVC WATER PIPE
N40	12" TEE
N41	12" GATE VALVE
N42	12" BLIND FLANGE
N43	WATER STORAGE TANK
N44	WATER STORAGE TANK FOUNDATION
N45	TANK DRAIN OUTLET HYDRANT AND SPLASH PAD
N46	10" CMP
N47	12" X 8" CONCENTRIC REDUCER
N48	8" TEE
N50	RETAIN AND PROTECT TREE, TYPICAL
N54	8" 22.5° BEND
N55	12" CROSS

Know what's **below.** **Call** before you dig.

PARCEL SEGMENT TABLE		
LINE #	LENGTH	DIRECTION / DELTA
L1	3.652'	S29°13'29"E
L2	37.374'	N60°47'28"E
L3	11.799'	S29°38'00"E
L4	3.838'	S29°20'06"E
L5	36.806'	N60°39'54"E
L6	15.288'	N28°57'36"W
L7	29.827'	N60°58'21"E
L8	30.232'	N60°06'59"E

CURVE TABLE						
CURVE #	LENGTH	RADIUS	TANGENT	DELTA	CHORD BEARING	CHORD LENGTH
C1	7.86'	5.00'	5.00'	90°00'57"	N15°47'00"E	7.07'
C2	7.82'	5.00'	4.96'	89°35'29"	S74°25'44"E	7.05'
C3	6.33'	4.00'	4.05'	90°44'32"	S74°30'45"E	5.69'
C4	7.85'	5.00'	5.00'	90°00'00"	S74°20'06"E	7.07'
C5	7.85'	5.00'	5.00'	89°59'29"	N15°51'12"E	7.07'
C6	7.85'	5.00'	5.00'	89°59'28"	N15°51'15"E	7.07'
C7	16.16'	10.00'	10.47'	92°36'39"	S72°50'42"E	14.49'
C8	16.10'	9.80'	10.53'	94°07'29"	N13°33'12"E	14.37'



REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITIAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1201 Adams Avenue
La Grande, OR 97850
Phone: 541.963.7100
www.jub.com

City of Haines

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NO.	DESCRIPTION	BY	APR.	DATE
	REVISION			

WATER COMPLIANCE PROJECT
CITY OF HAINES

CIVIL: WATER TANK
SITE PLAN
AREA 1

FILE : 33-14-003_CT-101X
JUB PROJ. # : 33-14-003
DRAWN BY: KEH
DESIGN BY: KEH
CHECKED BY: DLB
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

SHEET NUMBER:
CT-101

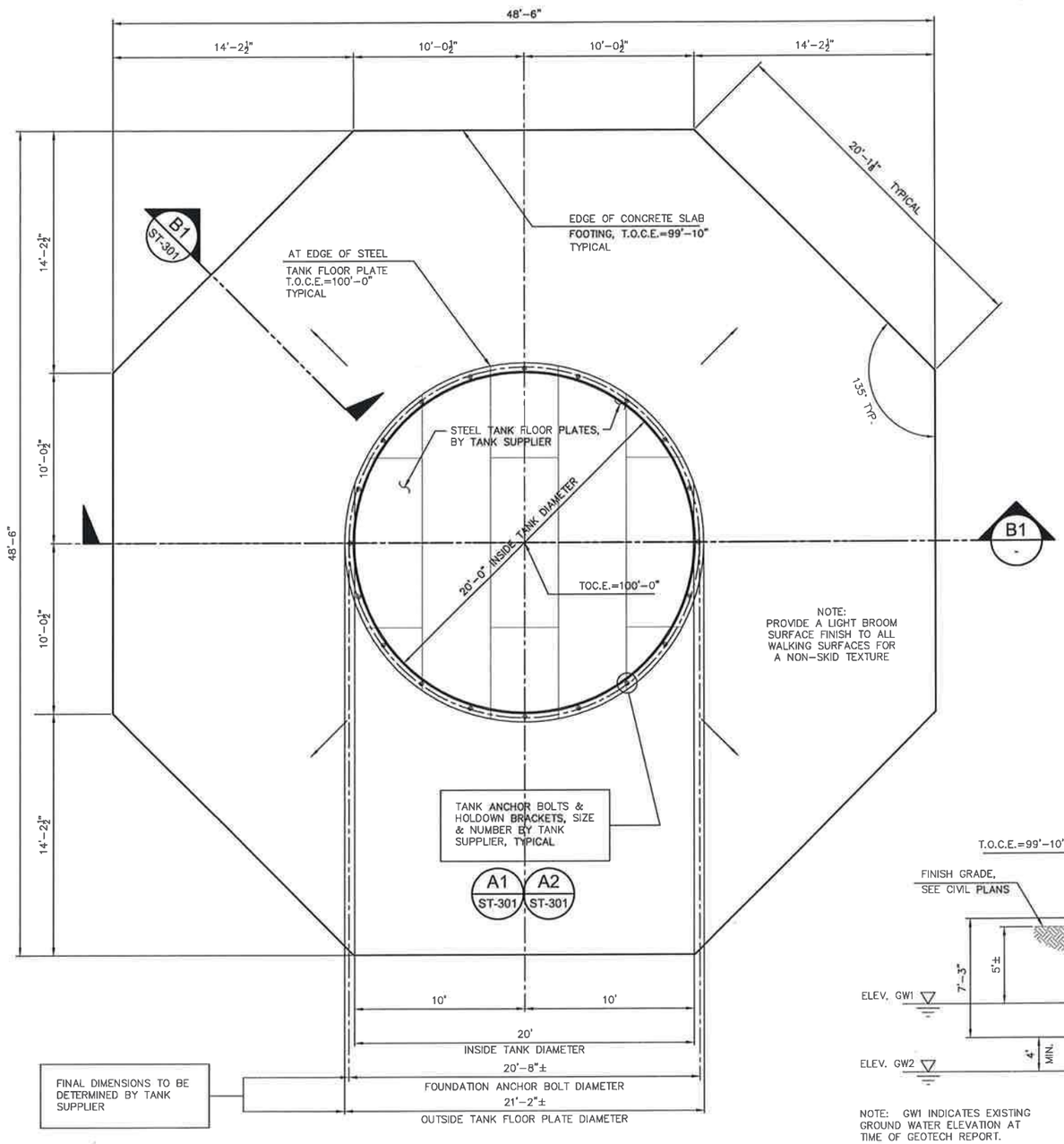
Plot Date:7/30/2015 2:52 PM Plotted By: William Holder
Date Created:4/27/2015 \\CDAFILES\PUBLIC\PROJECTS\JUB\CITY OF HAINES\33-14-003 WAT COMPL DESIGN\F60_CAD\SHEET\33-14-003_CT-101X.DWG

GENERAL PLAN NOTES:

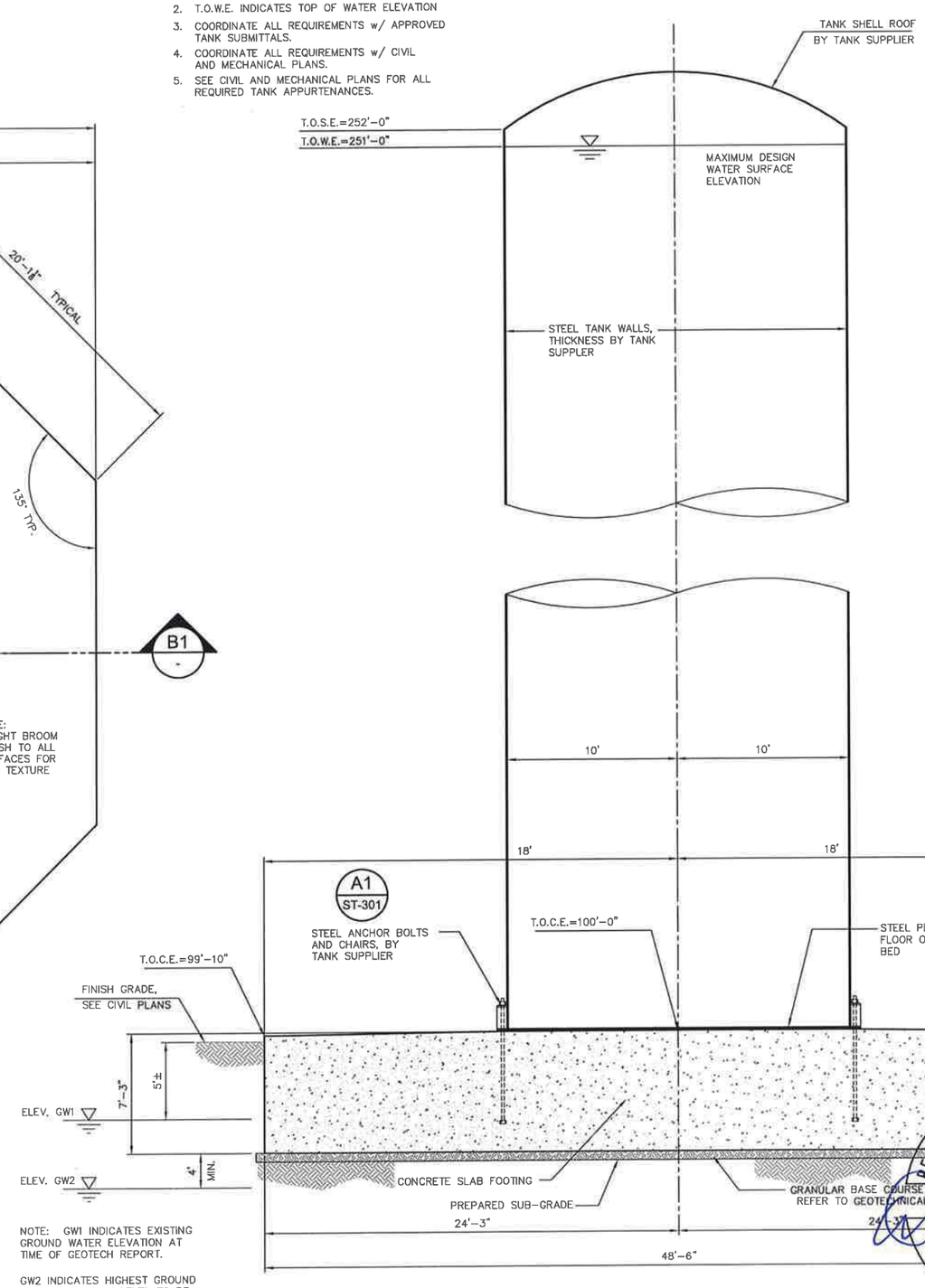
1. T.O.C.E. INDICATES TOP OF CONCRETE ELEVATION
2. ←—— INDICATES DIRECTIONOF SLOPE DOWN.
3. COORDINATE ALL REQUIREMENTS w/ APPROVED TANK SUBMITTALS.
4. COORDINATE ALL REQUIREMENTS w/ CIVIL AND MECHANICAL PLANS.

GENERAL SECTION NOTES:

1. T.O.S.E. INDICATES TOP OF STEEL TANK WALL ELEVATION
2. T.O.W.E. INDICATES TOP OF WATER ELEVATION
3. COORDINATE ALL REQUIREMENTS w/ APPROVED TANK SUBMITTALS.
4. COORDINATE ALL REQUIREMENTS w/ CIVIL AND MECHANICAL PLANS.
5. SEE CIVIL AND MECHANICAL PLANS FOR ALL REQUIRED TANK APPURTENANCES.



A1 TANK FLOOR & FOUNDATION PLAN
SCALE: 0 2' 4' 8'
1/8"=1'-0"



NOTE: GW1 INDICATES EXISTING GROUND WATER ELEVATION AT TIME OF GEOTECH REPORT.

GW2 INDICATES HIGHEST GROUND WATER ELEVATION LEVEL TO BE MAINTAINED BY CONTRACTOR DURING FOUNDATION CONSTRUCTION.

B1 TANK & FOUNDATION STRUCTURAL SECTION VIEW
SCALE: 0 2' 4' 8'
1/8"=1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 16485 OREGON MAY 18, 1993 DAVID L. BARNETT
7/31/15

EXPIRES: 12-31-2015

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
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NO.	DESCRIPTION	BY	APR.	DATE
	REVISION			

WATER COMPLIANCE PROJECT
CITY OF HAINES

STRUCTURAL: WATER TANK
FOUNDATION PLAN & ELEVATION VIEW

FILE: 33-14-003_ST-001X
JUB PROJ. # : 33-14-003
DRAWN BY: KEH
DESIGN BY: KEH
CHECKED BY: DLB
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

SHEET NUMBER:
ST-101

Plot Date:7/31/2015 1:31 PM Plotted By: Kristen Howard
Date Created:7/27/2015 F:\PROJECTS\JUB\CITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\FBD_CAD\SHEET\33-14-003_ST-001X.DWG

DISTRIBUTION IMPROVEMENTS SCHEDULE NOTE:

THE PROJECT IMPROVEMENTS FOR THE DISTRIBUTION SYSTEM HAVE BEEN ORGANIZED BY IMPROVEMENT SCHEDULE. THE LIST BELOW DETAILS EACH IMPROVEMENT SCHEDULE AND THE APPLICABLE PLAN SHEET.

IMPROVEMENT SCHEDULE A SHEET NUMBER

CD-101
CD-102
CD-103

IMPROVEMENT SCHEDULE B SHEET NUMBER

CD-104

IMPROVEMENT SCHEDULE C SHEET NUMBER

CD-105	CD-112	CD-119
CD-106	CD-113	CD-120
CD-107	CD-114	CD-121
CD-108	CD-115	CD-122
CD-109	CD-116	CD-123
CD-110	CD-117	CD-124
CD-111	CD-118	CD-125

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

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NO.	REVISION	BY	APR.	DATE
	DESCRIPTION			

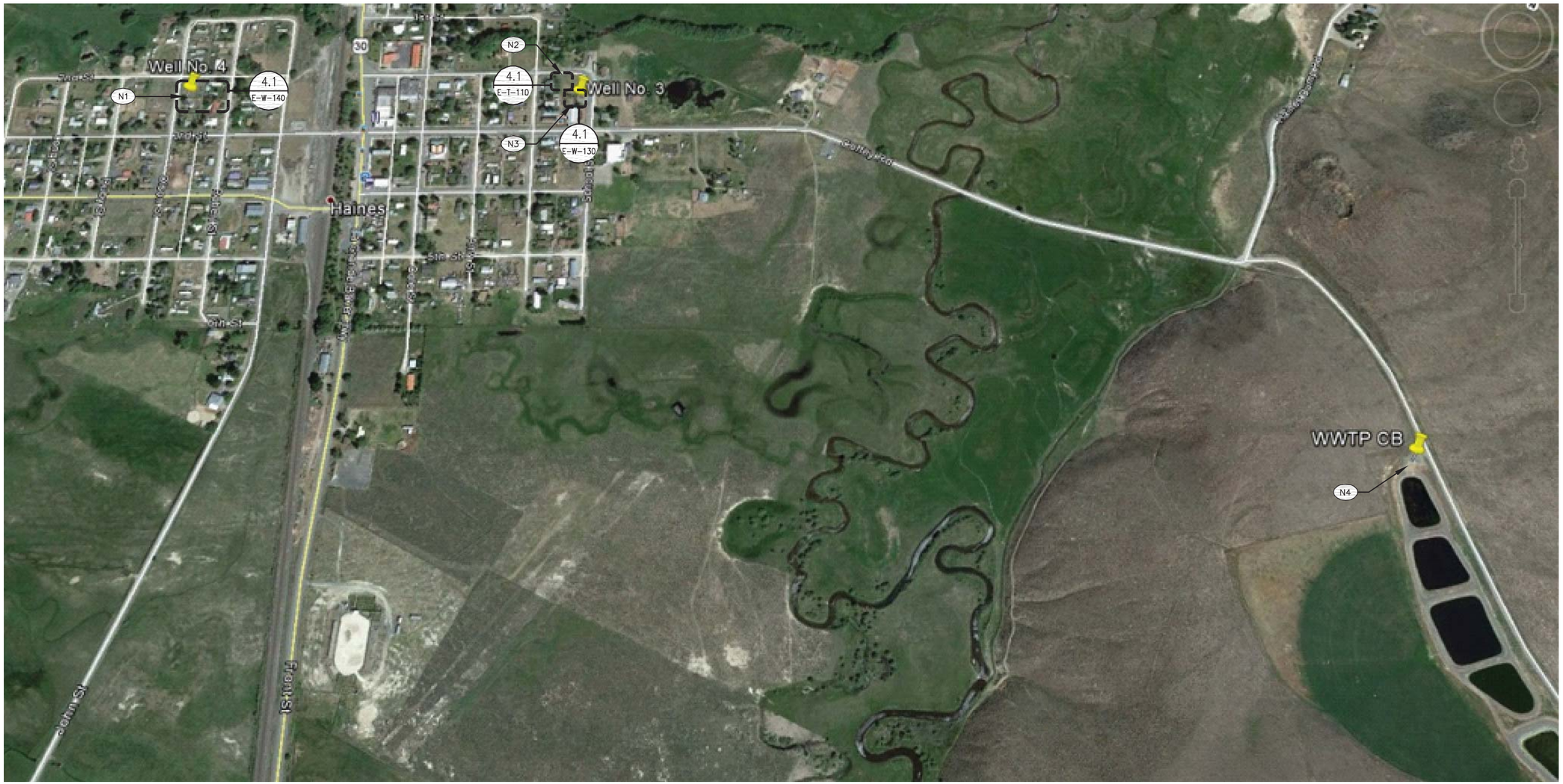
WATER COMPLIANCE CITY OF HAINES

DISTRIBUTION PLAN KEY

FILE: 33-14-003_CD-100
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY: JFG
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2015

SHEET NUMBER:
CD-100

Plot Date:7/31/2015 6:32 AM Plotted By: Chris Carrabello
Date Created:7/31/2015 F:\PROJECTS\JUBCITY_OF_HAINES\33-14-003_WAT_COMPL_DESIGN\F60_CAD\SHEET\33-14-003_CD-100.DWG



NOTES: (for this sheet)

- (N1) NEW WELL HOUSE NO. 4.
- (N2) NEW STORAGE TANK.
- (N3) EXISTING WELL HOUSE NO. 3.
- (N4) EXISTING WWTP CONTROL BUILDING (NOT IN PROJECT).

4.1 OVERALL SITE PLAN
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
18044PE
OREGON
JULY 25, 1995
RAYMOND JOSEPH WATKINS
07/30/15

RENEWS: 06/30/2016

AEI Engineering Incorporated
1238 W. Davidson Avenue
Coeur d'Alene, ID 83814
(208) 666-4001 office
(208) 666-4021 fax

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No.	REVISION	BY	APR.	DATE
A	AGENCY REVIEW	T.S.	R.JW	07/30/15

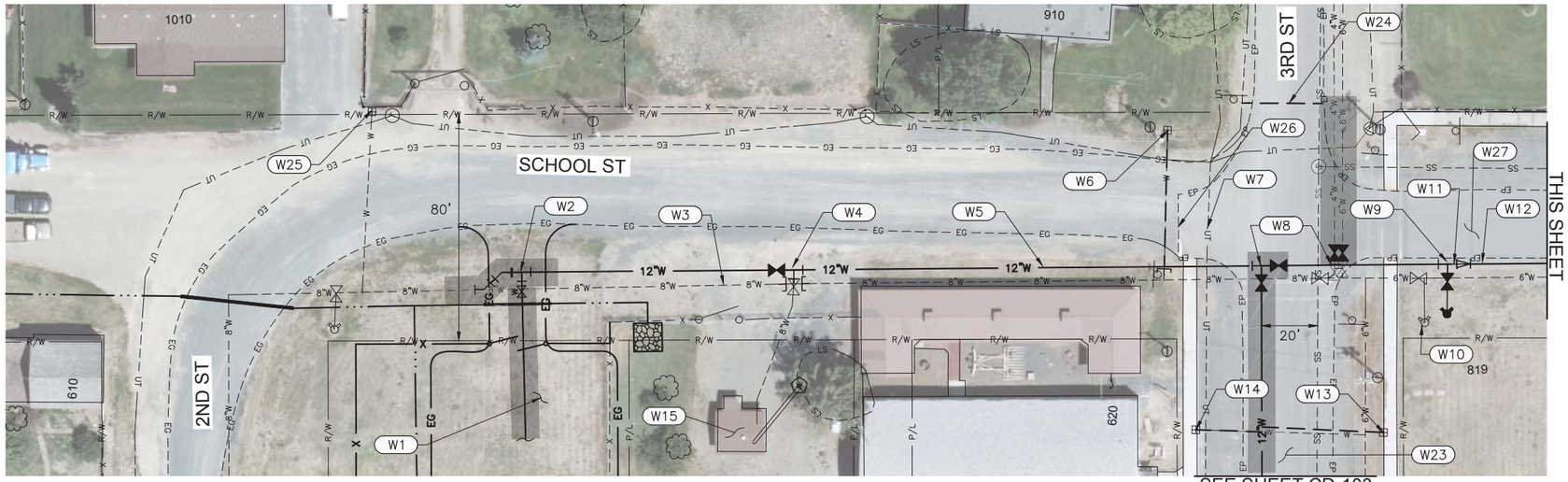
WATER COMPLIANCE CITY OF HAINES

OVERALL SITE PLAN

FILE: M15105-E-G-101
JUB PROJ. # : 33-14-003
DRAWN BY: TLS
DESIGN BY: LRL
CHECKED BY: RJW
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

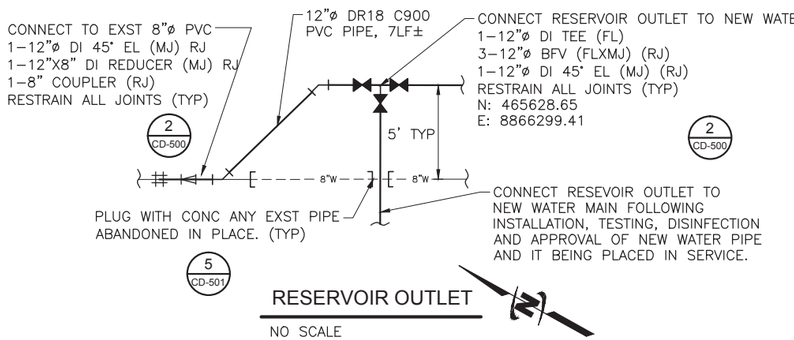
SHEET NUMBER:
E-G-101

Plot Date: 7/31/2015 8:10 AM Plotted By: Ted Schauwecker
Date Created: 7/31/2015 P:\2015\M15105 - JUB - HAINES WATER SYSTEM IMPROVEMENTS\DRAWINGS\M15105-E-G-101.DWG



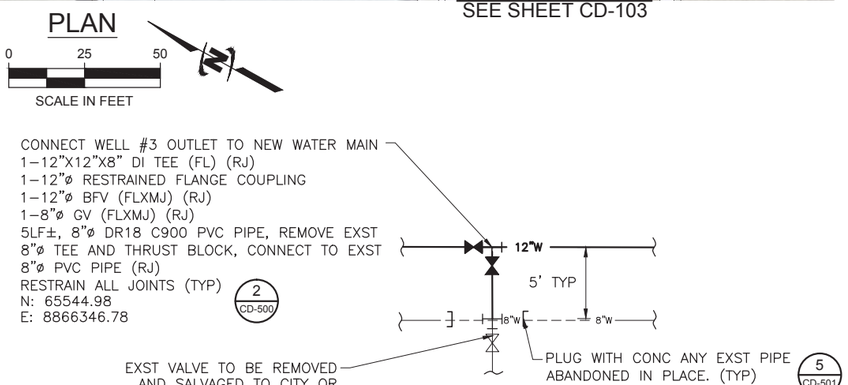
PLAN

0 25 50
SCALE IN FEET



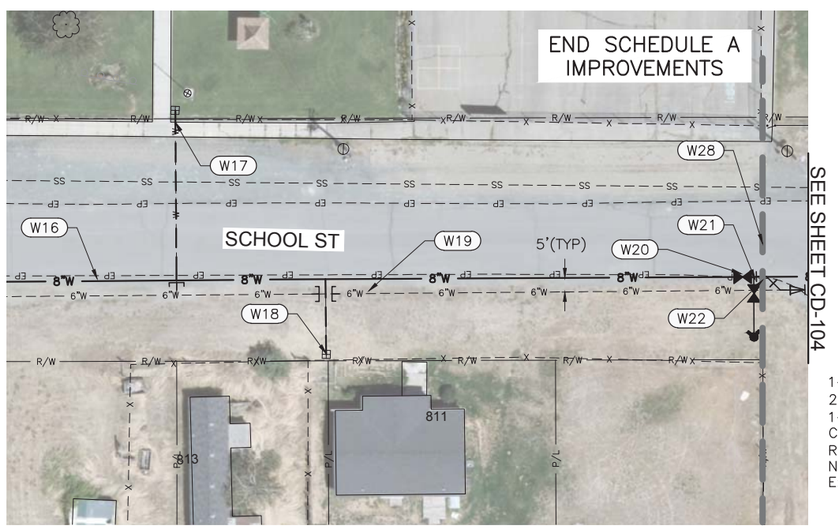
RESERVOIR OUTLET

NO SCALE



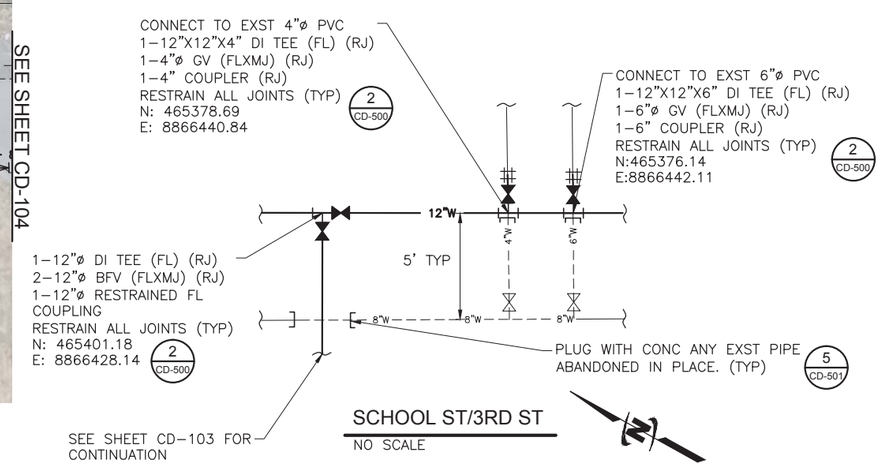
WELL #3 INTERTIE

NO SCALE



PLAN

0 25 50
SCALE IN FEET



SCHOOL ST/3RD ST

NO SCALE

DISTRIBUTION NOTES:

- W1 NEW STANDPIPE RESERVOIR SITE, SEE TANK PLANS
- W2 SEE RESERVOIR OUTLET DETAIL BELOW
- W3 EXST 8"ø PVC
- W4 SEE WELL #3 INTERTIE DETAIL BELOW
- W5 12"ø DR18 C900 PVC PIPE, 340 LF ± — 1 CD-500
- W6 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465453.36 E: 8866453.94 — 2 CM-500
- W7 BURIED PHONE UTILITY CROSSING PROTECT & RETAIN EXST UTILITY
- W8 SEE SCHOOL ST/3RD ST DETAIL BELOW
- W9 CONSTRUCT NEW FIRE HYDRANT–TYPE 1 N: 46535.5620 E: 8866445.0669 — 1 CD-501
- W10 EXST HYDRANT TO BE REMOVED AND PROPERLY DISPOSED OF, PLUG WITH CONC. ANY EXST PIPE ABANDONED IN PLACE
- W11 12"X8" DI CONCENTRIC REDUCER (FL) (RJ)
- W12 8"ø DR18 PVC PIPE, 30 LF±
- W13 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465334.94 E: 8866397.61 — 2 CM-500
- W14 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465393.40 E: 8866366.33 — 2 CM-500
- W15 EXST WELL #3 AND WELL HOUSE, SEE WELL AND WELL HOUSE PLANS
- W16 8"ø DR18 C900 PVC PIPE, 245LF±
- W17 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465290.66 E: 8866550.68 — 2 CM-500
- W18 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465209.92 E: 8866507.81 — 2 CM-500
- W19 EXST 6"ø CI
- W20 8"ø GV (FLXMJ) (RJ)
- W21 CONSTRUCT NEW FIRE HYDRANT–TYPE 1, N: 465098.97 E: 8866598.50 — 1 CD-501
- W22 IN LIEU OF SCHEDULE B IMPROVEMENTS, CONNECT TO EXST 6"ø CI PIPE WITH, 2–8"ø DI 45° EL 2 MJ (RJ), 1–8"X6" DI REDUCING COUPLER (RJ), AND 8"ø DR18 C900 PVC PIPE AS REQ'D, RESTRAIN ALL PIPE JOINTS — 2 CD-500
- W23 FULL WIDTH ROADWAY REPAIR, 235LF± (THIS SHEET) — 4 CD-500
- W24 END FULL WIDTH ROADWAY REPAIR MATCH EXST ℄ GRADE AND ELEVATION N: 465420.51 E: 8866483.18 — 4 CD-500
- W25 REPLACE EXST WATER SERVICE AND CONNECT TO NEW WATER MAIN. N: 465702.36 E: 8866323.30 — 2 CM-500
- W26 BEGIN PARTIAL WIDTH ROADWAY REPAIR MATCH EXST ℄ GRADE AND ELEVATION N: 465433.36 E: 8866428.94 — 5 CD-500
- W27 PARTIAL WIDTH ROADWAY REPAIR, 380LF± (THIS SHEET)
- W28 END PARTIAL WIDTH ROADWAY REPAIR MATCH EXST ℄ GRADE AND ELEVATION N: 465103.97 E: 8866613.50 — 5 CD-500

REGISTERED PROFESSIONAL ENGINEER
51373PE
DIGITAL SIGNATURE
OREGON
JAN. 12, 1999
JOHN F. GARLITZ

EXPIRES: 6/30/2017

Know what's below. Call before you dig.

J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
1201 Adams Avenue
La Grande, OR 97850
Phone: 541.963.7100
www.jub.com

City of Haines

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NO.	DESCRIPTION	BY	APR.	DATE

REVISION

WATER COMPLIANCE PROJECT
CITY OF HAINES

SCHOOL ST: 2ND ST TO 3RD ST DISTRIBUTION PLAN

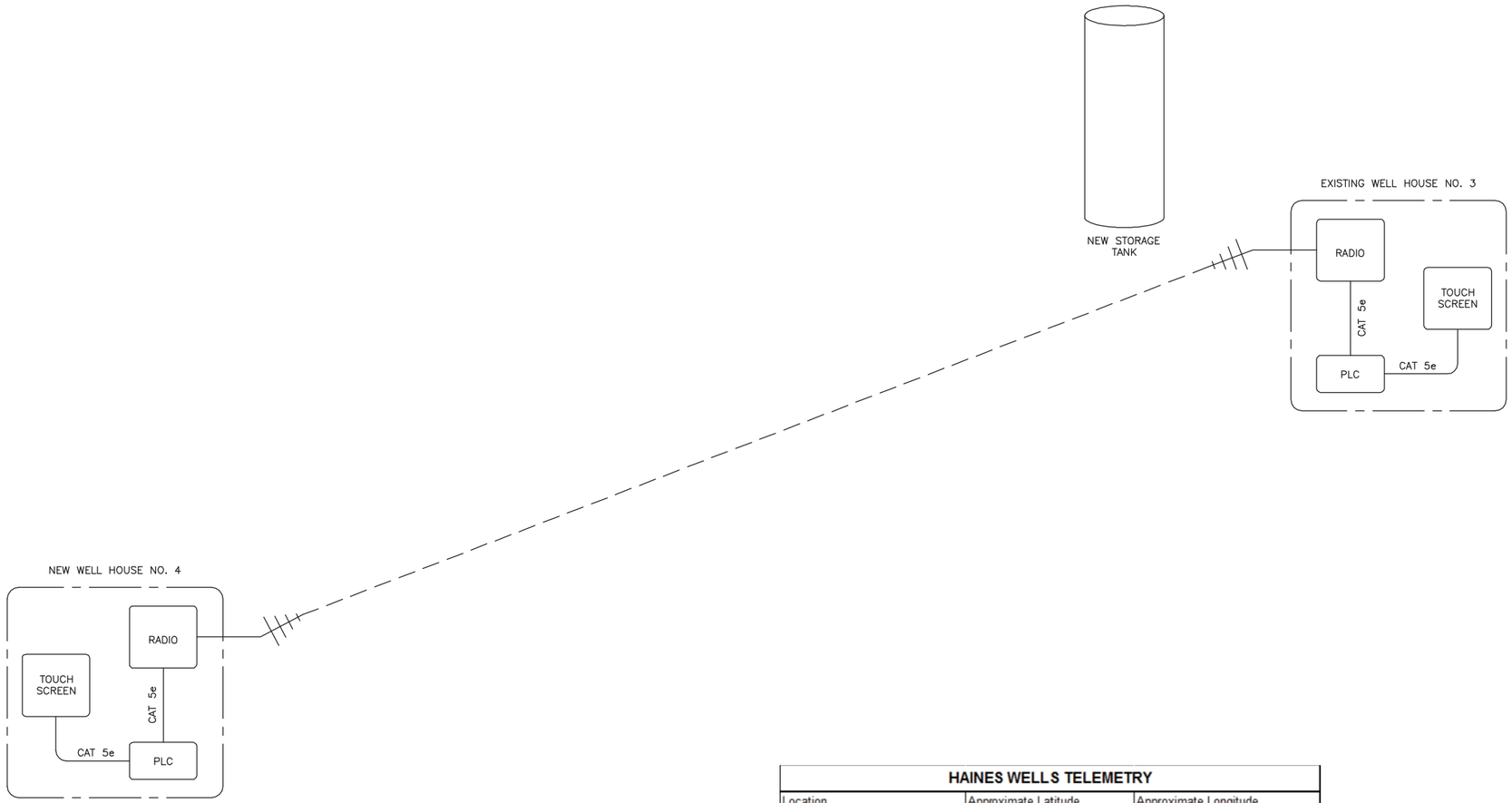
FILE : 33-14-003_CD-101
JUB PROJ. # : 33-14-003
DRAWN BY: CMC
DESIGN BY: ZSW
CHECKED BY: JFG
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2015

SHEET NUMBER:
CD-101

Plot Date:7/31/2015 10:10 AM Plotted By: Chris Carrasillo
Date Created7/31/2015 F:/PROJECTS/JUB/CITY_OF_HAINES/33-14-003_WAT_COMPL_DESIGN/F60_CAD/SHEET/33-14-003_CD-101.DWG

LEGEND

- HARD WIRED
- RADIO COMMUNICATIONS
- DIRECTIONAL ANTENNA



HAINES WELLS TELEMETRY		
Location	Approximate Latitude	Approximate Longitude
New Well House No. 4	44°54'43.67"N	117°56'34.62"W
Existing Well House No. 3	44°54'52.88"N	117°56'8.01"W

4.1 TELEMETRY SYSTEM DIAGRAM
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
18044PE
OREGON
JULY 25, 1995
RAYMOND JOSEPH WATKINS
07/30/15

RENEWS: 06/30/2016

AEI Engineering Incorporated
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Coeur d'Alene, ID 83814
(208) 666-4001 office
(208) 666-4021 fax

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No.	REVISION	BY	DATE
A	AGENCY REVIEW	T.S.	RJW 07/30/15

WATER COMPLIANCE
CITY OF HAINES

TELEMETRY SYSTEM DIAGRAM

FILE: M15103-E-G-102
JUB PROJ. #: 33-14-003
DRAWN BY: TLS
DESIGN BY: LRL
CHECKED BY: RJW
HALF INCH
AT FULL SIZE, IF NOT HALF INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/30/2015

SHEET NUMBER:
E-G-102

Plot Date: 7/31/2015 8:14 AM Plotted By: Ted Schauweker
Date Created: 7/23/2015 P:\2015\M15103 - JUB - HAINES WATER SYSTEM IMPROVEMENTS\DRAWINGS\M15103-E-G-102.DWG

ATTACHMENT #5.
Agency Approval for Plan Set
September 10, 2015

PUBLIC HEALTH DIVISION
Drinking Water Services
Kate Brown, Governor

Oregon Health Authority
800 SE Emigrant Ave., Suite 240
Pendleton, OR 97801
(541) 276-8006
FAX (541) 276-4778
www.healthoregon.org/dwp

September 10, 2015

John Garlitz, P.E.
J-U-B Engineers, Inc.
1201 Adams Avenue
La Grande, Oregon 97850

Re: New Well, Reservoir, and Distribution Mains, PR#126-2015, City of Haines, PWS ID#4100362, SRF Project SD-2014-43
Conditional Approval

Dear John:

Thank you for your submittal of plan review information for the water project at the City of Haines to the Oregon Health Authority's Drinking Water Services (DWS). On July 31, 2015, our office received plan drawings and specifications. On August 17, the plan review fee of $750 was received.

The project plans include drilling a new well #4, formally abandoning wells #1 and #2, constructing a new 350,000 gallon standpipe reservoir, replacing distribution mains, and installing new meters, fire hydrants, and related appurtenances.

The proposed location for the new well north of well #1 is approved. The well construction plans have been reviewed by our staff hydrogeologist who provided the following comments:

> Based on the rise in static water level in the log for well #2, the aquifer in the area of the proposed well is confined or semi-confined. DWS recommends the well be sealed five feet into the consolidated layer directly above the water bearing zone, noted on the well #2 log BAKE 121 as cemented gravel at approximately 74.5 feet below ground surface. See OAR 690-210-0150 to -0155.

The plans are approved with the following conditions:

- The Grundfos DDE 6-10 chemical feed pump specified on sheet CW-502 is not NSF/ANSI Standard 61 certified. A certified feed pump must be installed.
- The chemical feed pump must apply chlorine proportional to flow, i.e. be wired so that it turns on/off with the well pump.
- Provisions shall be made to alert the water supplier before the chlorine supply is exhausted. Daily inspections may be allowed in lieu of a low level alarm.
- Dead end lines must be provided with either blow-offs or hydrants for flushing.
- Air-relief valves must be installed at any high points where air can accumulate. The breather tube on air-relief valves shall be extended above ground surface and provided with a screened, downward facing elbow.
- The distance between tracer wire lead access locations must not be more than 1000 feet. Joints or splices in the wire shall be waterproof.
- Separations and crossings of water lines and sanitary sewer lines must meet the provisions of OAR 333-061-0050(9).

Upon completion of the project, the engineer must verify in writing that construction was completed according to the submitted plans and conditions listed above. **Until verification is received stating that the project was completed in accordance with the conditions listed above and Final Approval has been granted for the project, the new facilities are not approved for use.**

If substantial changes are made, a set of record (as-built) drawings must be submitted. Documentation demonstrating how the above conditions were met should reference Plan Review #126-2015 and can be e-mailed to me at william.h.goss@state.or.us or mailed to:

Attn: William Goss
OHA- Drinking Water Services
800 SE Emigrant Ave., Suite 240
Pendleton, OR 97801

In addition to the above conditions, I have the following comments:

- Water note no. 7 on sheet G-004 should refer to OAR 333-061-0050(9) and -0050(10).
- Note 9C on sheet SW-041 lists the allowable bearing pressure for the well building as 2000 psf, while on page 12 of the Strata report the allowable bearing pressure is listed as 1500 psf.

- It is my understanding that you have been in contact with the Oregon Water Resources Department regarding changing the point of diversion for the city's existing water right to the proposed well.

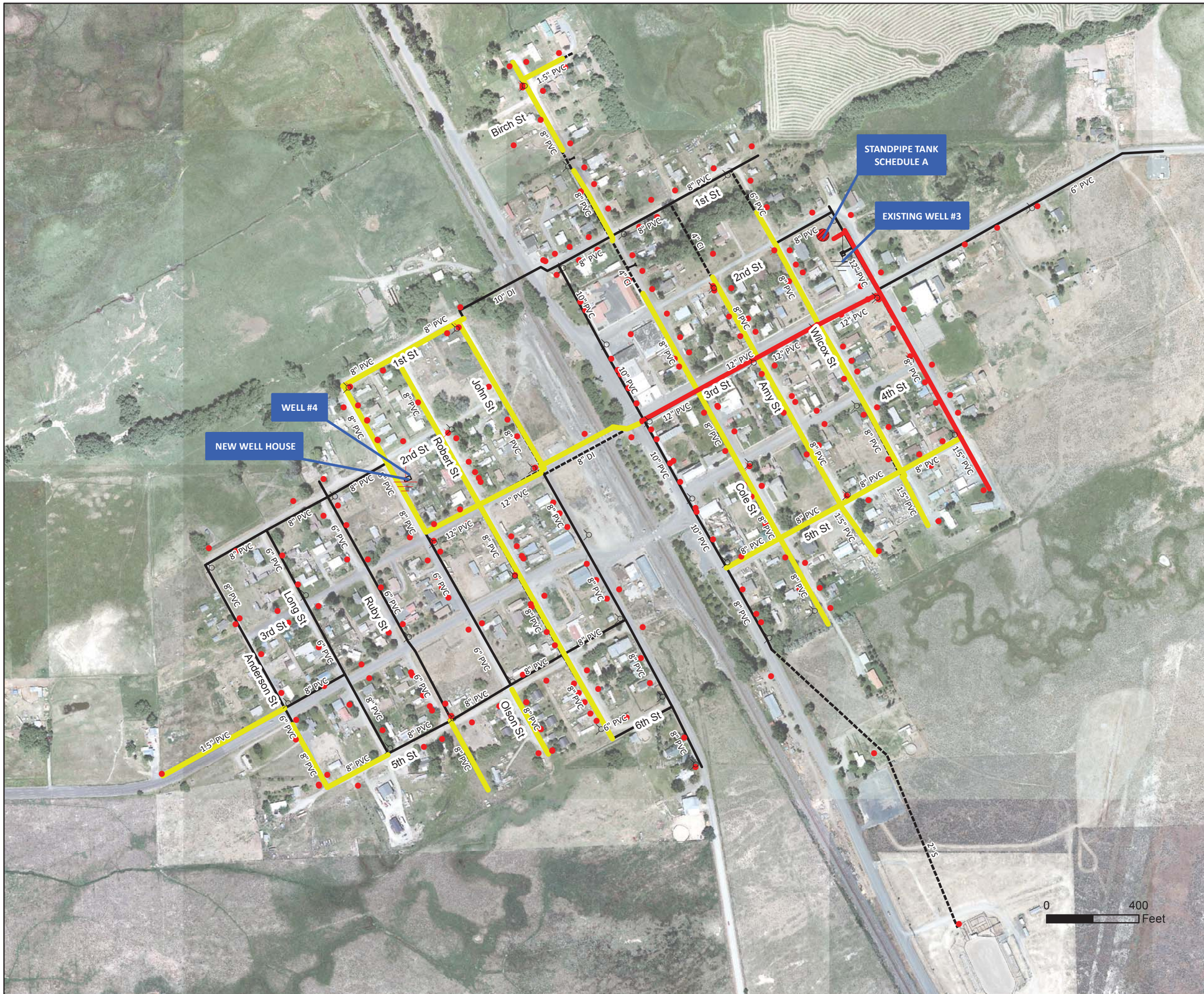
If you have any questions, please feel free to e-mail me at william.h.goss@state.or.us or call at (541) 966-0900.

Sincerely,

William Goss, P.E.
Regional Engineer

cc: Julie Wray, OHA-DWS
Shanna Bailey, Infrastructure Finance Authority
Rick Lusk, Oregon Water Resources Department
Valerie Russell, City of Haines

ATTACHMENT #6.
Construction Outline (Schedule A & B)



CITY OF HAINES
WATER COMPLIANCE PROJECT

CITY of Haines
Founded 1885

CONSTRUCTION OUTLINE

LEGEND

PROPOSED WATER

- Schedule A
- Schedule B
- Standpipe Tank Schedule A
- Well #4 - Well House Schedule A
- Fire Hydrant
- Water Meters Schedule A

EXISTING WATERLINES

- POST 1980
- PRE 1980
- Fire Hydrants

Revision Date: 12/29/2015

J-U-B ENGINEERS, INC.

EXHIBIT #1

ATTACHMENT #7.
Opinion of Probable Cost

CITY OF HAINES - WATER COMPLIANCE PROJECT
Opinion of Probable Construction Cost
City CDBG Agency Approved Plans
Fall 2015

J-U-B ENGINEERS, INC. | THE LANGDON GROUP a J-U-B Company | GATEWAY MAPPING INC. a J-U-B Company | OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
SCHEDULE A					
GENERAL					
AG1	Mobilization & Demobilization (Not to Exceed 5% of Schedules A)	LS	1	$ 198,990	$ 198,990
AG2	Traffic Control	LS	1	$ 25,000	$ 25,000
AG3	Erosion & Sedimentation Control	LS	1	$ 25,000	$ 25,000
DISTRIBUTION					
AD1	Restrain Existing 4" Pipe joints, Backfill, Surface Repair, Installed Complete	LF	80	$ 20	$ 1,600
AD2	Restrain Existing 6" Pipe joints, Backfill, Installed Complete	LF	60	$ 25	$ 1,500
AD3	Restrain Existing 10" Pipe, Restrain Existing Joints	LF	60	$ 30	$ 1,800
AD4	Restrained Coupling 4-inch	EA	5	$ 150	$ 750
AD5	Restrained Coupling 6-inch	EA	1	$ 200	$ 200
AD6	8" DR18 C900 PVC Pipe	LF	385	$ 55	$ 21,175
AD7	8" DR18 C900 PVC Restrained Joint Pipe	LF	355	$ 63	$ 22,365
AD8	12" DR18 C900 PVC Pipe	LF	995	$ 60	$ 59,700
AD9	12" DR18 C900 PVC Pipe (Restrained Joint)	LF	590	$ 68	$ 40,120
AD10	Repair of Unmarked Water Main	EA	2	$ 1,000	$ 2,000
AD11	Repair of Unmarked Water Service	EA	5	$ 500	$ 2,500
AD12	Repair of Unmarked Sewer Service	EA	3	$ 500	$ 1,500
AD13	4-inch Gate Valve	EA	1	$ 700	$ 700
AD14	6-inch Gate Valve	EA	1	$ 1,050	$ 1,050
AD15	8-inch Gate Valve	EA	8	$ 1,300	$ 10,400
AD16	10-inch Gate Valve	EA	1	$ 1,800	$ 1,800
AD17	12-inch Butterfly Valve	EA	9	$ 2,250	$ 20,250
AD18	10-inch DI Tee	EA	1	$ 650	$ 650
AD19	10"X10" Tapping Sleeve	EA	1	$ 1,800	$ 1,800
AD19	12-inch x 12-inch x 4inch DI Tee	EA	1	$ 1,800	$ 1,800
AD20	12-inch x 12-inch x 6-inch DI Tee	EA	1	$ 1,900	$ 1,900
AD21	12-inch x 12-inch X 8-inch DI Tee	EA	1	$ 2,000	$ 2,000
AD22	12-inch DI Tee	EA	2	$ 750	$ 1,500
AD23	8-inch DI 45° Bend	EA	14	$ 550	$ 7,700
AD24	12inch DI 45° Bend	EA	2	$ 1,150	$ 2,300
AD25	8-inch DI 90° Bend	EA	1	$ 715	$ 715
AD26	8-inch X 4-inch DI Concentric Reducer	EA	5	$ 600	$ 3,000
AD27	12-inch X 8-inch DI Concentric Reducer	EA	1	$ 900	$ 900
AD28	12-inch X 10-inch DI Concentric Reducer	EA	1	$ 1,100	$ 1,100
AD29	12-inch x 8-inch DI Cross	EA	3	$ 3,500	$ 10,500
AD30	12-inch X 10-inch DI Cross	EA	1	$ 3,850	$ 3,850
AD31	4-inch Coupler	EA	6	$ 400	$ 2,400
AD32	6-inch Coupler	EA	1	$ 600	$ 600
AD33	8-inch Coupler	EA	1	$ 700	$ 700
AD34	10-inch Coupler	EA	2	$ 800	$ 1,600
AD35	8-inch x 6-inch Reducer Coupler	EA	2	$ 575	$ 1,150
AD36	8-inch x 1.5-inch Service Saddle & Sch 40 Adapter	EA	1	$ 300	$ 300
AD37	1.5-inch SCH 40 PVC Pipe	LF	250	$ 17	$ 4,250
AD38	Restrained FL Coupling 10-inch	EA	2	$ 1,400	$ 2,800
AD39	Restrained FL Coupling 12-inch	EA	5	$ 1,500	$ 7,500
AD40	Fire Hydrant Assembly - Type 1, Installed Complete	EA	10	$ 3,500	$ 35,000
AD41	Fire Hydrant Assembly - Type 2, Installed Complete	EA	2	$ 2,000	$ 4,000
AD42	Connect to Existing Pipe	EA	15	$ 850	$ 12,750
AD43	Abandon Pipe, Plug w/ Concrete	EA	20	$ 550	$ 11,000
AD44	Concrete Curb Restoration	LF	150	$ 12	$ 1,800
AD45	Concrete Sidewalk Restoration	SY	10	$ 15	$ 150
AD46	Gravel Surface Restoration	SY	350	$ 6	$ 2,100
AD47	HMA Trench Surface Restoration	SY	150	$ 35	$ 5,250

CITY OF HAINES - WATER COMPLIANCE PROJECT
Opinion of Probable Construction Cost
City CDBG Agency Approved Plans
Fall 2015

J-U-B ENGINEERS, INC. | THE LANGDON GROUP | GATEWAY MAPPING INC. | OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
AD48	Hydroseed Surface Restoration	SY	150	$ 3	$ 450
AD49	Full Roadway Pavement Surface Restoration	LF	1300	$ 90	$ 117,000
AD50	Partial Roadway Pavement Surface Restoration	LF	125	$ 50	$ 6,250
AD51	Rock Excavation	CY	100	$ 150	$ 15,000
AD52	Trench Dewatering	HR	250	$ 150	$ 37,500
WELLS & WELLHOUSE					
AW1	Formally Abandon Well #1, Complete	LS	1	$ 10,000	$ 10,000
AW2	Formally Abandon Well #2, Complete	LS	1	$ 5,000	$ 5,000
AW3	Well #4 Drilling	LS	1	$ 201,540	$ 201,540
AW4	Well #4 Well House	LS	1	$ 180,000	$ 180,000
AW5	Well #4 Electrical/HVAC/Controls, Installed Complete	LS	1	$ 160,000	$ 160,000
AW6	Well #4 OTECC Electrical Service	LS	1	$ 12,000	$ 12,000
AW7	Disinfection Equipment (pump, 55 gallon drum, injection quill, etc.)	LS	1	$ 30,597	$ 30,597
AW8	Site Excavation & Grading	LS	1	$ 25,000	$ 25,000
AW9	Gravel	SY	350	$ 20	$ 7,000
AW10	Sidewalk	SY	25	$ 94	$ 2,350
AW11	6-foot Chain Link Fence	LF	270	$ 11	$ 2,970
AW12	Swale, Complete	LS	1	$ 2,500	$ 2,500
AW13	8-inch C900 PVC Water Pipe (RJ), Installed Complete	LF	100	$ 56	$ 5,600
AW14	8-inch Gate Valve, Buried w/ Valve Box	EA	1	$ 1,456	$ 1,456
AW15	8-inch 90° Bend	EA	4	$ 737	$ 2,948
AW16	8-inch MJ X 6-inch FL Tee	EA	1	$ 1,236	$ 1,236
AW17	20-foot Chain Link Gate	EA	1	$ 1,000	$ 1,000
AW18	3/4-inch Well House Water Service (Saddle, corp stop, pipe, etc.)	EA	1	$ 1,397	$ 1,397
AW19	Well Pump (Pump, Column, Discharge Head, Motor), Installed Complete	EA	1	$ 50,000	$ 50,000
AW20	Pump Pad	EA	1	$ 1,000	$ 1,000
AW21	8-inch DI Pipe, FLXFL	LF	10	$ 165	$ 1,650
AW22	8-inch Butterfly Valve, Manual	EA	1	$ 2,000	$ 2,000
AW23	8-inch Globe Silent Check Valve	EA	1	$ 2,575	$ 2,575
AW24	8-inch Propeller Flow Meter, w/ Digital Read out & 4-20 mA Signal	EA	1	$ 3,090	$ 3,090
AW25	8inch FL Coupling Adapter w/ Mega-Lug Restraint	EA	10	$ 412	$ 4,120
AW26	1-inch Combination Air/Vac Valve	EA	1	$ 1,030	$ 1,030
AW27	1/2-inch Smooth Nose Sample Tap	EA	1	$ 206	$ 206
AW28	Pressure Gauge Assembly	EA	1	$ 500	$ 500
AW29	Pre-Lube Assembly	LS	1	$ 500	$ 500
AW30	Emergency Eye Wash w/ Water Heater & Blending Valve	EA	1	$ 824	$ 824
AW31	Floor Drain Check Valve	EA	1	$ 300	$ 300
AW32	Pump to Waste Hydrant (Tee, 6-inch Valve, Pipe, Hydrant Base, Riser, Hydrant)	EA	1	$ 7,518	$ 7,518
AW33	Hydroseeding & Surface Repair	LS	1	$ 5,000	$ 5,000
WATER TANK & WELL #3 ELECTRICAL UPGRADES					
AT1	Water Tank Foundation, Excavation, Dewatering, & Installation	LS	1	$ 350,000	$ 350,000
AT2	Water Tank, Mixing System, & Painting	LS	1	$ 1,522,175	$ 1,522,175
AT3	Tank Drain Outlet Hydrant Assembly and Splash Pad	LS	1	$ 7,144	$ 7,144
AT4	8-inch C900 PVC Water Pipe, Installed Complete	LF	80	$ 56	$ 4,480
AT5	8-inch Gate Value, Buried w/ Valve Box	EA	3	$ 1,456	$ 4,368
AT6	8-inch MJ X 6-inch FL Tee	EA	2	$ 1,312	$ 2,624
AT7	Pump to Waste Hydrant Assembly	EA	1	$ 7,518	$ 7,518
AT8	20-foot Chain Link Gate	EA	1	$ 1,000	$ 1,000
AT9	6-foot Chain Link Fence	LF	260	$ 11	$ 2,860
AT10	12-inch C900 PVC Water Pipe, Restrained, Installed Complete	LF	35	$ 70	$ 2,450
AT11	12-inch Cross	EA	1	$ 4,326	$ 4,326
AT12	12-inch Tee	EA	1	$ 2,357	$ 2,357
AT13	12-inch Gate Valve	EA	3	$ 6,798	$ 20,394
AT14	10-inch CMP Culvert	LF	64	$ 23	$ 1,472

CITY OF HAINES - WATER COMPLIANCE PROJECT
Opinion of Probable Construction Cost
City CDBG Agency Approved Plans
Fall 2015

J-U-B ENGINEERS, INC. | THE LANGDON GROUP | GATEWAY MAPPING INC. | OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
AT15	12-inch x 8-inch Concentric Reducer	EA	1	$ 909	$ 909
AT16	8-inch Tee	EA	1	$ 1,311	$ 1,311
AT17	8-inch 22.5° Bend	EA	1	$ 554	$ 554
AT18	Gravel	SY	325	$ 20	$ 6,500
AT19	Rip Rap Pad	SY	11	$ 50	$ 550
AT20	6-inch Steel Pipe	LF	177	$ 57	$ 10,089
AT21	6-inch Steel Elbow	EA	1	$ 1,058	$ 1,058
AT22	8-inch Steel Pipe	LF	165	$ 83	$ 13,695
AT23	8-inch Steel Elbow	EA	5	$ 1,512	$ 7,560
AT24	12-inch Steel Pipe	LF	35	$ 204	$ 7,140
AT25	12-inch Steel Elbow	EA	1	$ 2,543	$ 2,543
AT26	12-inch Waterflex Check Valve	EA	1	$ 6,315	$ 6,315
AT27	V-Ditch, Installed Complete	LF	290	$ 7	$ 2,030
AT28	Well #3 Electrical Demolition, Upgrades, Gen Set, Installed Complete	LS	1	$ 155,000	$ 155,000
AT29	Water Tank Electrical Upgrades, Installed Complete	LS	1	$ 20,000	$ 20,000
AT30	Hydroseeding & Surface Repair	LS	1	$ 8,000	$ 8,000
WATER METERS					
AM1	TYPE 1, Install Complete w/ Surface Restoration	EA	127	$ 1,500	$ 190,500
AM2	TYPE 2, Installed Complete w/ Surface Restoration	EA	104	$ 2,500	$ 260,000
AM3	TYPE 3, Installed Complete w/ Surface Restoration	EA	14	$ 1,700	$ 23,800
AM4	TYPE 4, Installed Complete w/ Surface Restoration	EA	3	$ 2,500	$ 7,500
AM5	Water Meters, provided to City Shops	EA	10	$ 1,500	$ 15,000
AM6	AMR Reading System, Data Collectors, computer, software, training & support	LS	1	$ 25,000	$ 25,000
				Schedule A Subtotal	**$ 4,178,794**
				Construction Contingency (10%)	**$ 417,879**
				SCHEDULE A TOTAL (2015 Dollars)	**$ 4,596,674**

SCHEDULE B

GENERAL					
BG1	Mobilization & Demobilization (Not to Exceed 5% of Schedules C)	LS	1	$ 69,327	$ 69,327
BG2	Traffic Control	LS	1	$ 25,000	$ 25,000
BG3	Erosion & Sedimentation Control	LS	1	$ 20,000	$ 20,000
DISTRIBUTION					
BD1	6-inch DR18 C900 PVC Pipe, Installed Complete	LF	10	$ 30	$ 300
BD2	8-inch DR18 C900 PVC Pipe, Installed Complete	LF	9000	$ 55	$ 495,000
BD3	12-inch DR18 C900 PVC Pipe, Installed Complete	LF	710	$ 60	$ 42,600
BD4	Repair of Unmarked Water Main	EA	5	$ 1,000	$ 5,000
BD5	Repair of Unmarked Water Service	EA	25	$ 500	$ 12,500
BD6	Repair of Unmarked Sewer Service	EA	15	$ 500	$ 7,500
BD7	4-inch DR18 C900 PVC Pipe (RJ), Installed Complete	LF	65	$ 50	$ 3,250
BD8	6-inch DR18 C900 PVC Pipe (RJ), Installed Complete	LF	110	$ 65	$ 7,150
BD9	8-inch DR18 C900 PVC Pipe (RJ), Installed Complete	LF	2250	$ 65	$ 146,250
BD10	10-inch DR18 C900 PVC Pipe (RJ), Installed Complete	LF	80	$ 65	$ 5,200
BD11	12-inch DR18 C900 PVC Pipe (RJ), Installed Complete	LF	10	$ 68	$ 680
BD12	12" CL50 DI Pipe, Installed Complete	LF	180	$ 80	$ 14,400
BD13	RR Crossing (24" ST Casing, 12" Pipe, & Appurtences, Jacking/Receiving Pits), Com	LS	1	$ 150,000	$ 150,000
BD14	8-inch Gate Valve	EA	46	$ 1,300	$ 59,800
BD15	12-inch Butterfly Valve	EA	4	$ 2,250	$ 9,000
BD16	8-inch DI Tee	EA	7	$ 1,300	$ 9,100
BD17	12-inch x 12-inch x 8-inch DI Tee	EA	3	$ 2,000	$ 6,000
BD18	8-inch DI 45° Bend	EA	18	$ 550	$ 9,900
BD19	12-inch DI 45° Bend	EA	2	$ 1,150	$ 2,300
BD20	8-inch DI 90° Bend	EA	3	$ 715	$ 2,145
BD21	8-inch x 4-inch DI Concentric Reducer	EA	5	$ 600	$ 3,000

CITY OF HAINES - WATER COMPLIANCE PROJECT
Opinion of Probable Construction Cost
City CDBG Agency Approved Plans
Fall 2015

J-U-B ENGINEERS, INC. | THE LANGDON GROUP | GATEWAY MAPPING INC. | OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
BD22	8-inch x 6-inch DI Concentric Reducer	EA	3	$ 600	$ 1,800
BD23	12-inch x 6-inch DI Concentric Reducer	EA	1	$ 900	$ 900
BD24	8-inch DI Cross	EA	3	$ 2,200	$ 6,600
BD25	12-inch x 8-inch DI Cross	EA	2	$ 3,500	$ 7,000
BD26	4-inch Coupling	EA	4	$ 400	$ 1,600
BD27	6-inch Coupling	EA	1	$ 600	$ 600
BD28	8-inch Coupling	EA	5	$ 700	$ 3,500
BD29	8-inch x 6-inch Reducer Coupler	EA	1	$ 575	$ 575
BD30	Restrained FL Coupling, 6-inch	EA	1	$ 600	$ 600
BD31	Restrained FL Coupling, 8-inch	EA	13	$ 750	$ 9,750
BD32	Restrained FL Coupling, 12-inch	EA	6	$ 1,500	$ 9,000
BD33	10-inch x 8-inch Tapping Sleeve	EA	2	$ 2,600	$ 5,200
BD34	8-inch MJ Plug	EA	1	$ 400	$ 400
BD35	8-inch X 1.5-inch Service Saddle & Sch 40 Adapter	EA	5	$ 300	$ 1,500
BD36	1.5-inch Sch 40 PVC Water Service Pipe	LF	1800	$ 17	$ 30,600
BD37	1.5-inch Sch 40 PVC Sov Weld Cap	EA	2	$ 25	$ 50
BD38	Blowoff Assembly, Installed Complete	EA	3	$ 1,100	$ 3,300
BD39	Fire Hydrant Assembly - Type 1, Installed Complete	EA	2	$ 3,500	$ 7,000
BD40	Fire Hydrant Assembly - Type 2, Installed Complete	EA	4	$ 2,000	$ 8,000
BD41	Remove Existing Hydrant	EA	7	$ 1,250	$ 8,750
BD42	Connect to Existing Pipe	EA	16	$ 850	$ 13,600
BD43	Abandon Pipe, Plug w/ Concrete	EA	45	$ 550	$ 24,750
BD44	Concrete Curb Restoration	LF	10	$ 12	$ 120
BD45	Concrete Sidewalk Restoration	SY	4	$ 15	$ 60
BD46	Gravel Surface Restoration	SY	2500	$ 6	$ 15,000
BD47	HMA Trench Surface Restoration	SY	240	$ 35	$ 8,400
BD48	Hydroseed Surface Restoration	SY	2100	$ 3	$ 6,300
BD49	Full Roadway Pavement Surface Restoration	LF	700	$ 90	$ 63,000
BD50	Trench Dewatering	HR	500	$ 150	$ 75,000
BD51	Rock Excavation	CY	250	$ 150	$ 37,500
				Schedule B Subtotal	**$ 1,455,857**
				Construction Contingency (10%)	**$ 145,586**
				SCHEDULE B TOTAL (2015) Dollars	**$ 1,601,442**

SCHEDULE A&B GRAND TOTAL (2015 Dollars) $ 6,198,116
ENR CCI = 10,039

REGISTERED PROFESSIONAL ENGINEER 51373 OREGON JAN. 12, 1999 JOHN F. GARLITZ
EXPIRATION DATE: 6/30/17 4/9/16

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ATTACHMENT #8.
Proposed Project Timeline

Haines Water Compliance Project: Construction

ANTICIPATED PROJECT WORK PLAN – 2Q CDBG Application

Rev Date: December 28, 2015

ATTACHMENT #9.
Property Acquisition Documents

B16 02 0102

Tax Statements To:
City of Haines
PO Box 208
Haines, OR 97833

After Recording Return To:
Elkhorn Title Company
1725 Main Street
Baker City OR 97814

Grantee(s) address:
City of Haines
PO Box 208
Haines, OR 97833

Grantor(s) address:
Tonya Yvonne Aldrich
P.O. Box 1464
White Salmon, WA 98672

WARRANTY DEED

Tonya Yvonne Aldrich herein after called Grantor, convey(s) to **City of Haines, a municipal subdivision of the state of oregon** herein after called Grantee, the following described real property situated in the County of Baker, State of Oregon, described as:

Lots 1 and 2, Block 8, REVISED PLAT OF HAINES TOWNSITE, in the City of Haines, County of Baker and State of Oregon.

This legal description was created prior to January 1, 2008.

(502 07S3933AD 1600, Ref. No. 4726)

and covenants that grantor is the owner of the above-described property free of all encumbrances except covenant(s) conditions, restrictions, reservations, assessments, easements, rights of way of record or visible thereon; shortages in acreages, boundary disputes, encroachments or any other matters which a true and accurate survey would reveal; and will warrant and defend the same against all persons who may lawfully claim the same, except as shown above.

ETC #15-21114

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 to 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

The true consideration for this conveyance is **$19,000.00**.

Dated this 4 day of ~~December, 2015~~ January 2016 g.

Tonya Aldrich 01-04-16
Tonya Yvonne Aldrich

STATE OF Klickitat Washington }
COUNTY OF Klickitat } SS:

On this 4th day of ~~December, 2015~~ January, 2016 g, personally appeared the above-named **Tonya Yvonne Aldrich** and acknowledged the foregoing instrument to be her voluntary act and deed.

Before me: Tonya Y Aldrich

Gabriela Medrano T.

My appointment expires: November 21, 2016

GABRIELA MEDRANO T.
Commission Expires
NOTARY PUBLIC
NOVEMBER 21, 2016
STATE OF WASHINGTON

Approved By:

James H. Brown, Mayor On Behalf of the City of Haines, a Municipal Corporation of the State of Oregon

STATE OF Oregon)
COUNTY OF Baker) SS:

On this 11 day of January, 2016, personally appeared the above-named and acknowledged the foregoing instrument to be his voluntary act and deed.

Before me:

My appointment expires: February 22, 2017

OFFICIAL SEAL
HEIDI LOUANN JONES
NOTARY PUBLIC - OREGON
COMMISSION NO. 474546
MY COMMISSION EXPIRES FEBRUARY 22, 2017

B16 02 0104

REQUEST TO BAKER COUNTY ASSESSOR

FOR CERTIFICATION OF CHARGES PAID

(ORS 311.370; 2015 Oregon Laws Chapter 96)

THE BELOW INDICATED PROPERTY IS PENDING TRANSFER TO AN EXEMPT ENTITY UNDER ORS 307.040 OR 370.090.

TO COMPLY WITH ORS 311.370, THIS IS A REQUEST FOR A CERTIFICATION OF CHARGES PAID.

PROPERTY TAX ACCOUNT: 502753933AD

MAP/TAX LOT: [illegible]

Ref.No 4726

GRANTEE: City of Haines, A Municipal Subdivision of the State of Oregon

GRANTOR: Tonya Yvonne Aldrich

I UNDERSTAND THAT THE DEED MUST BE RECORDED BY JUNE 30TH THAT THE CERTIFICATION OF CHARGES PAID IS SIGNED.

ASSESSOR'S USE ONLY: DATE REQUEST RECEIVED IN BAKER COUNTY ASSESSOR'S OFFICE: 1/11/16

ANY BACK YEAR TAXES OUTSTANDING? ☒ NO ☐ YES $ _____

ANY DEFERRED TAXES OUTSTANDING (INCLUDING ANY SPECIAL ASSESSMENTS REQUIRING DISQUALIFICATION)?

☒ NO ☐ YES $ _____

FOR ACQUISITIONAFTER JUNE 30TH CURRENT YEAR ESTIMATED TAX PAID? N/A ☐ YES ☒ NO $ _____

SIGNATURE: [signature] DATE CERTIFICATION SIGNED: 1/11/16

In part ORS 311.370 Section 1 (1) as used in this section:

(b) "Charges against the real property" means all ad valorem property taxes, additional taxes and potential additional taxes, fees, interest, penalties, costs and other charges that have been or will be charged or listed during the property tax year on the assessment roll or the tax roll with respect to real property that is the subject of an instrument described in subsection (2) of this section.

(e) "Conveyance" means the transfer of, or a contract to transfer, fee title to any real property located in this state to a transferee whose property is exempt from taxation under ORS 307.040 or 307.090.

(2) Notwithstanding ORS 205.130, a county clerk may not record or cause to be recorded an instrument conveying or contracting to convey fee title to real property to an entity whose property is exempt from taxation under ORS 307.040 or 307.090 unless the instrument is accompanied by a certificate issued by the assessor of the county in which the real property is located attesting that all charges against the real property as of the date of the recording have been paid.

307.040 Property of the United States; certain electricity transmission system property leased to United States. (1) As used in this section, "United States" means the federal government or an agency or instrumentality of the federal government.

307.090. (1) Except as provided by law, all property of the state and all public or corporate property used or intended for corporate purposes of the several counties, cities, towns, school districts, irrigation districts, drainage districts, ports, water districts, housing authorities and all other public or municipal corporations in this state, is exempt from taxation.

STATE OF OREGON }
COUNTY OF BAKER }
I CERTIFY THAT THIS
INSTRUMENT WAS RECEIVED
AND RECORDED IN THE BOOK
OF RECORDS OF SAID COUNTY
CINDY CARPENTER, BAKER CO. CLERK
BY _____ DEPUTY
DOC#: 16020102B
1/11/2016 2:20 PM
REF .00 56.00

OK

Elkhorn Title Company

Your only locally owned Title and Escrow Company in Baker County

1725 Main St. • Baker City, OR 97814 • www.elkhorntitle.com • 541-523-6477

Agent for

First American Title Insurance Company

Elkhorn Title Company
1725 Main Street
Baker City, OR 97814

Attn: **Heidi Jones**

File No.: **15-21105**
Escrow No.: 15-21105

Date: December 3, 2015
Re: **Unger/City of Haines**

Preliminary Title Report

Owners Standard Coverage	Liability **$ TBD**	Premium	**$ TBD**
Government Lien Search Fee		Cost	**$ 35.00**

We are prepared to issue a Title Insurance Policy in the usual form as of **December 2, 2015, at 8:00 a.m.**, insuring title to:

SEE EXHIBIT "A" ATTACHED HERETO FOR DETAILED LEGAL DESCRIPTION

Vested in:

HEIRS AND/OR DEVISEES OF HUGH E. UNGER, DECEASED

The estate or interest in the land which is covered by this policy is:

Fee Simple Title

We searched for liens and judgments against prospective purchaser, **CITY OF HAINES, OREGON**, and found **NONE**.

Subject to the usual printed exceptions, exclusions, and stipulations (see copy attached), which are ordinarily part of such Policy form and the following:

This report is for the exclusive use of the parties herein shown and is preliminary to the issuance of a title insurance policy and shall become void unless a policy is issued, and the full premium paid.

SPECIAL EXCEPTIONS:

1. City of Haines Liens, if any.

   NOTE: Unpaid Water and Sewer bills are not a lien on the property and will be the responsibility of the Seller, Purchaser, and/or Borrower to take care of outside of closing.

2. Due probate and administration of the Estate of Hugh E. Unger, deceased and the interest to be disclosed thereby.

   NOTE: We find no record of probate filed in the Circuit Court of Baker County, Oregon.

- END OF EXCEPTIONS -

NOTE: Taxes for 2015-2016 are PAID IN FULL.

Tax Amount: $ 155.63
Account No.: 502 7S3933CA 600
Reference No.: 4773

NOTE: We are informed that the property described herein has a physical address of:

Bare Land - No Address Assigned, Haines, OR 97833

NOTE: The last recorded deed conveying the herein described property to Hugh E. Unger and Tara K. Unger, co-tenants, was recorded July 6, 1981, in Deed 81 27 021, Records of Baker County, Oregon.

NOTE: The Escrow Closer for this transaction is: Heidi Jones

NOTE: CANCELLED ORDERS ARE SUBJECT TO A $200.00 CANCELLATION FEE.

Sincerely,
ELKHORN TITLE COMPANY

Brian Geddes
Title Officer

BG/bg

CC: City of Haines
Hugh E. Unger

THANK YOU FOR CHOOSING ELKHORN TITLE COMPANY!

EXHIBIT "A"

Lots 11 and 12, Block "O", REVISED PLAN OF HAINES TOWNSITE, in the City of Haines, County of Baker and State of Oregon.

This legal description was created prior to January 1, 2008.

(502 7S3933CA 600; Ref. No. 4773)

First American Title Insurance

SCHEDULE OF EXCLUSIONS FROM COVERAGE

ALTA LOAN POLICY (06/17/06)

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

(a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 (i) the occupancy, use, or enjoyment of the Land;
 (ii) the character, dimensions, or location of any improvement erected on the Land;
 (iii) the subdivision of land; or
 (iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

Defects, liens, encumbrances, adverse claims, or other matters
 (a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

(a) a fraudulent conveyance or fraudulent transfer, or

(b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

ALTA OWNER'S POLICY (06/17/06)

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

(a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 (i) the occupancy, use, or enjoyment of the Land;
 (ii) the character, dimensions, or location of any improvement erected on the Land;
 (iii) the subdivision of land; or
 (iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

SCHEDULE OF STANDARD EXCEPTIONS

Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.

Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.

Any lien" or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

FIRST AMERICAN TITLE INSURANCE COMPANY
PRIVACY POLICY

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information – particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our parent company, The First American Corporation, we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information which you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its *Fair Information Values*, a copy of which can be found on our website at www.firstam.com.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies, and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies, or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

January 26, 2016

Nicole Ducote
Funding Specialist
JUB Engineering Inc.

I have agreed to sell the property located in Haines, Oregon, for the purposes of a water system through a grant project.

The city of Haines has made me fully aware of all aspects of the project and I totally agree with all current negotiations.

Feel free to call if you have any questions.

Thank you,

Greg Unger

Elkhorn Title Company

Your only locally owned Title and Escrow Company in Baker County
1725 Main St. • Baker City, OR 97814 • www.elkhorntitle.com • 541-523-6477

December 3, 2015

CITY OF HAINES email: haines@cascadeaccess.com

Order No. 15-21105

Please advise if you have any City Liens on the following property:

Code & Map No.: 502 7S3933CA 600; Ref. No. 4773

As outlined on map attached.

Address: Bare Land - No Address Assigned
(PLEASE VERIFY ADDRESS)

Owner: Unger

Thank you.

ELKHORN TITLE COMPANY

By: BG

YES_____ NO_____

Street_____

Sewer_____

Miscellaneous_____

Proposed Assessment_____

Date_____ By_____

Escrow parties acknowledge that the payment of all monthly utilities, including but not limited to water, sewer, electric, phone, gas, etc. are the responsibility of the parties to pay outside of escrow. Upon request of the parties, escrow will, as an accommodation, issue checks for payment of items showing on the City Lien Search. All other bills must be handled outside of escrow.

E.1/4 S.W.1/4 SEC.33 T.7S. R.39E. W.M.
BAKER COUNTY
1" = 100'

7S 39 33CA

07S39E
HA

Last
45

ATTACHMENT #10.
ODOT Grant Award - Special City Allotment Project
(for culvert design)

Oregon
John A. Kitzhaber, M.D., Governor

Department of Transportation
ODOT Region 5
3012 Island Avenue
La Grande, Oregon 97850-9497
Phone: (541) 963-3177
Fax: (541) 963-9079

October 27, 2014

Valerie Russell, City Recorder
City of Haines
P.O. Box 208
Haines, Oregon 97833

Dear Valerie:

RE: 2015 Special City Allotment Project Submittals

I am pleased to inform you that on October 22, 2014, the Manager of the Program Funding Services Unit in Active Transportation, by delegated authority of the Oregon Transportation Commission, approved your proposed project for construction under the 2014 Special City Allotment Program. As you know, the SCA funding is limited to $50,000 for your project. Work may not begin until after January 1, 2015, and after execution of an SCA agreement. The funds may only be used for work as proposed in the application. Project costs, which exceed this amount, shall be the responsibility of the City.

We will be preparing a Special City Allotment Agreement for your project in the near future for the City's review and approval. Until then, no other action by the City is necessary.

If you have any questions please don't hesitate to contact me at your convenience.

Sincerely,

Michael P. Barry

Michael P. Barry
Region 5 Local Agency Liaison

cc: file

RECEIVED
OCT 30 2014
BY: lk

ATTACHMENT #11.
Consultation/Communication with Legislative Commission on Indian Services, including emails to Burns-Paiute and Warm Springs tribes.

Nicholas Ducote

From: Nicholas Ducote
Sent: Monday, January 11, 2016 1:19 PM
To: 'karen.m.quigley@state.or.us'
Subject: Consultation about Affected Indian Tribes for OWRD Grants

Karen,
I am putting together two implementation grants for the Oregon Water Resources grant programs and Jon Unger said you were the person to contact regarding this portion of the application.

The first is a water compliance project in the City of Haines. We have completed a cultural review already, to comply with IFA/HUD Block Grant rules on our design phase, and worked with Confederated Tribes of the Umatilla Indian Reservation (CTUIR) on that.

The second is a reuse project in the City of Umatilla. The City has been collaborating with CTUIR on this project and it will also serve an industrial site CTUIR is developing.

Let me know if you need more information. Thanks,

NICK DUCOTE
Funding Specialist

J-U-B ENGINEERS, Inc.
1201 Adams Avenue, La Grande, OR 97850
e nducote@jub.com *w* www.jub.com
p 541 963 7100 *c* 541 805 5543

Nicholas Ducote

From: Quigley Karen M <karen.m.quigley@state.or.us>
Sent: Monday, January 11, 2016 2:07 PM
To: Nicholas Ducote
Subject: RE: Consultation about Affected Indian Tribes for OWRD Grants

For the Haines project, you might consider notifying Kathleen Sloan, Cultural resources Manager at Warm Springs, kathleen.sloan@ctwsbnr.org and Diane Teeman, Cultural Resources Director at Burns Paiute, dlteeman.burns.paiute@gmail.org
Thanks,
Karen

Karen Quigley, Executive Director
karen.m.quigley@state.or.us
Legislative Commission on Indian Services

Nicholas Ducote

From: Nicholas Ducote
Sent: Monday, January 11, 2016 2:17 PM
To: 'Quigley Karen M'
Subject: RE: Consultation about Affected Indian Tribes for OWRD Grants

Karen, is there a protocol for the notification or just a generic message that we are proceeding with a project/grant application?

Thanks

NICK DUCOTE
Funding Specialist

J-U-B ENGINEERS, Inc.
1201 Adams Avenue, La Grande, OR 97850
e nducote@jub.com *w* www.jub.com
p 541 963 7100 *c* 541 805 5543

From: Quigley Karen M [mailto:karen.m.quigley@state.or.us]
Sent: Monday, January 11, 2016 2:07 PM
To: Nicholas Ducote <nducote@jub.com>
Subject: RE: Consultation about Affected Indian Tribes for OWRD Grants

For the Haines project, you might consider notifying Kathleen Sloan, Cultural resources Manager at Warm Springs, kathleen.sloan@ctwsbnr.org and Diane Teeman, Cultural Resources Director at Burns Paiute, dlteeman.burns.paiute@gmail.org
Thanks,
Karen
Karen Quigley, Executive Director
karen.m.quigley@state.or.us
Legislative Commission on Indian Services

Nicholas Ducote

From: Quigley Karen M <karen.m.quigley@state.or.us>
Sent: Monday, January 11, 2016 2:20 PM
To: Nicholas Ducote
Subject: RE: Consultation about Affected Indian Tribes for OWRD Grants

Thanks for asking. At this time there is no formal protocol other than to suggest letting the Tribe know the basics of the project/grant application and see if they would like any additional info/have any questions or comments.

Karen Quigley, Executive Director
karen.m.quigley@state.or.us

Legislative Commission on Indian Services

Nicholas Ducote

From: Nicholas Ducote
Sent: Monday, January 11, 2016 3:49 PM
To: 'dlteeman.burns.paiute@gmail.com'
Subject: Notification of Project for WRD Grant

Diane Teeman,

The City of Haines is applying for an Oregon Water Resources Department Implementation Grant, which requires the City to contact tribes that may be affected by the project. Oregon's Legislative Commission on Indian Services identified your tribe as possibly affected by our project. The project is located entirely within Haines' City Limits and is a public water system improvement project that includes culvert replacement to meet state fish passage guidelines. Let me know if you would like more information on the project, my number is: 541-963-7100

Thank you,

NICK DUCOTE
Funding Specialist

J-U-B ENGINEERS, Inc.
1201 Adams Avenue, La Grande, OR 97850
e nducote@jub.com *w* www.jub.com
p 541 963 7100 *c* 541 805 5543

Nicholas Ducote

From: Nicholas Ducote
Sent: Monday, January 11, 2016 3:47 PM
To: 'kathleen.sloan@ctwsbnr.org'
Subject: Notification of Project for WRD Grant

Kathleen Sloan,

The City of Haines is applying for an Oregon Water Resources Department Implementation Grant, which requires the City to contact tribes that may be affected by the project. Oregon's Legislative Commission on Indian Services identified your tribe as possibly affected by our project. The project is located entirely within Haines' City Limits and is a public water system improvement project that includes culvert replacement to meet state fish passage guidelines. Let me know if you would like more information on the project, my number is: 541-963-7100

Thank you,

NICK DUCOTE
Funding Specialist

J-U-B ENGINEERS, Inc.
1201 Adams Avenue, La Grande, OR 97850
e nducote@jub.com *w* www.jub.com
p 541 963 7100 *c* 541 805 5543

ATTACHMENT #12.
2015 Completed Cultural Assessment in Coordination with CTUIR

Findings:
Prehistoric N/A
Historic N/A
Isolate N/A
County: Baker
Township: 7S
Range: 39E
Section: 33
USGS Quad: Haines
Project Acres: 0.396 acres
Acres Surveyed: 0.396 acres
Type of Project: Phase I Survey
Field Notes Location: With Blue Mountain Consulting in La Grande, Oregon
Curation Location: N/A

A Phase 1 Archaeological Survey of the City of Haines, Oregon Water System Improvement Project

Prepared by
Linda Jerofke, PhD,
Co-Owner & Principal Investigator
Blue Mountain Consulting – Archaeology and Public History
60500 Bushnell Rd.
La Grande, OR 97850

August 30, 2015

The preparation of this document was funded in its entirety with federal funds from the Oregon Community Development Block Grant Program administered by the Oregon Business Development Department

Prepared for the
City of Haines
PO Box 208
Haines, OR 97833

SITE LOCATION AND PROJECT BACKGROUND

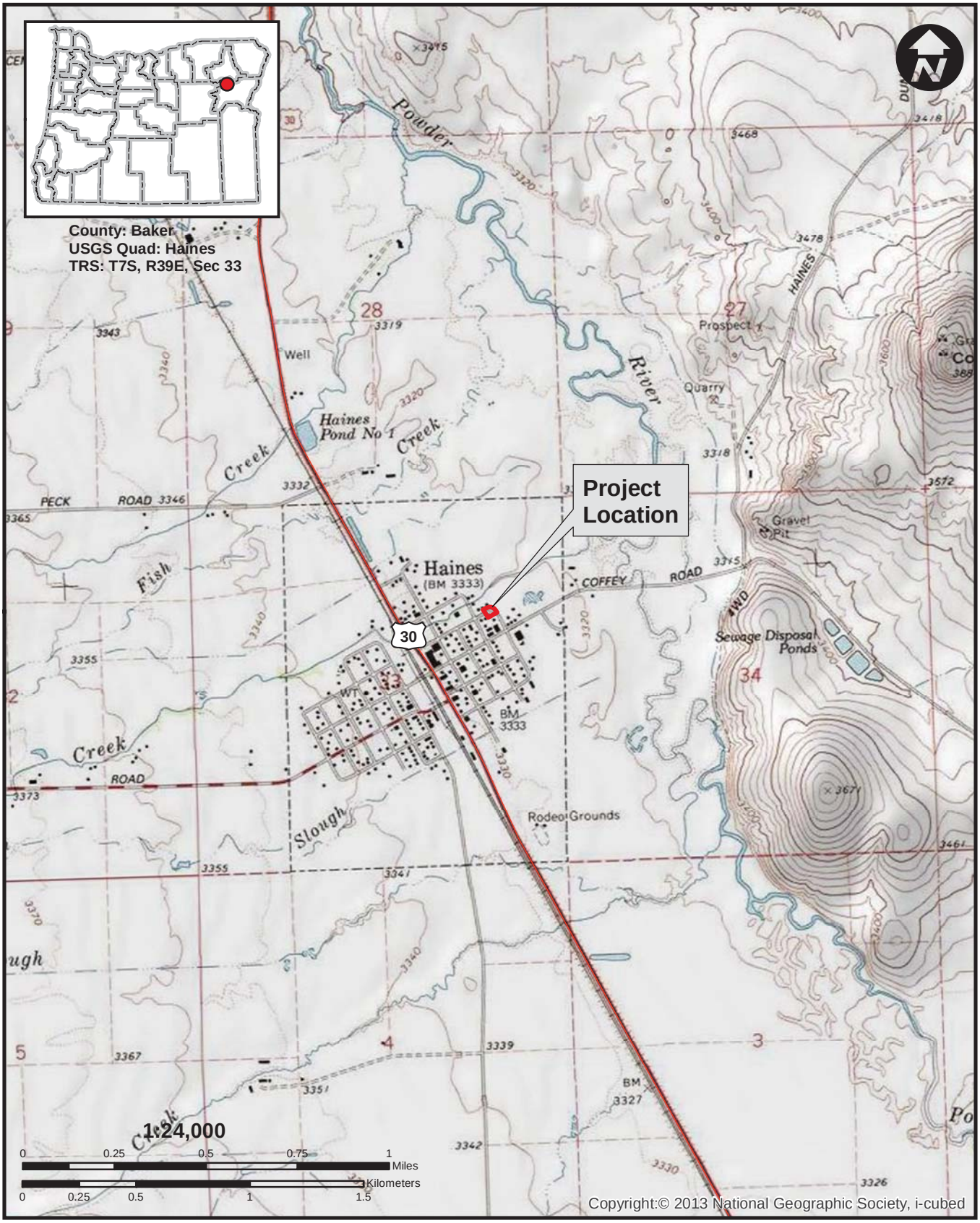
Blue Mountain Consulting: Archaeology and Public History (BMC) was hired to conduct a Phase 1 archaeological survey of the City of Haines, Oregon Water System Improvement Project area, which was conducted on August 30, 2015. The survey occurred in Tax Lot 1600. The proposed project encompasses 0.396 acres and is located in Township 7S, Range 39E and Section 33 of the Haines Quad (Figures 1-3). According to the City of Haines "The water system improvement project will provide the final design to provide a reliable water system that meets the Oregon Drinking Water Program (DWP) requirements for water quality and availability as identified and stipulated in OAR 333-061. In summary, the proposed improvements are as follows:

- Plans to formally abandon city well #2
- Engineering design for existing primary well #3 upgrades,
- Engineering design and specifications for constructing a new well #1, pump house and reservoir
- Engineering design and specifications for installation of new water service connections and water meters in the public right-of-way
- Engineering design and specifications for replacement of water pipes installed prior to 1980
- Engineering ring design and specifications for installation of new fire hydrants
- Updating city water rights, water rate study, and environmental review record" (Brown 2015:1).

NATURAL SETTING

This site is in the area of the east end of the Elkhorn Ridge that merges with the Blue Mountain province. Raymond (1991) indicates that the "Blue Mountain physiographic province was formed from lava flows and geologic uplift. As the valley started to form, the lava filled in very quickly, covering both the valley floor and the surrounding ridges" (Reidel 2003,

Figure 1. Vicinity Map - City of Hines, Oregon Water System Improvement Project

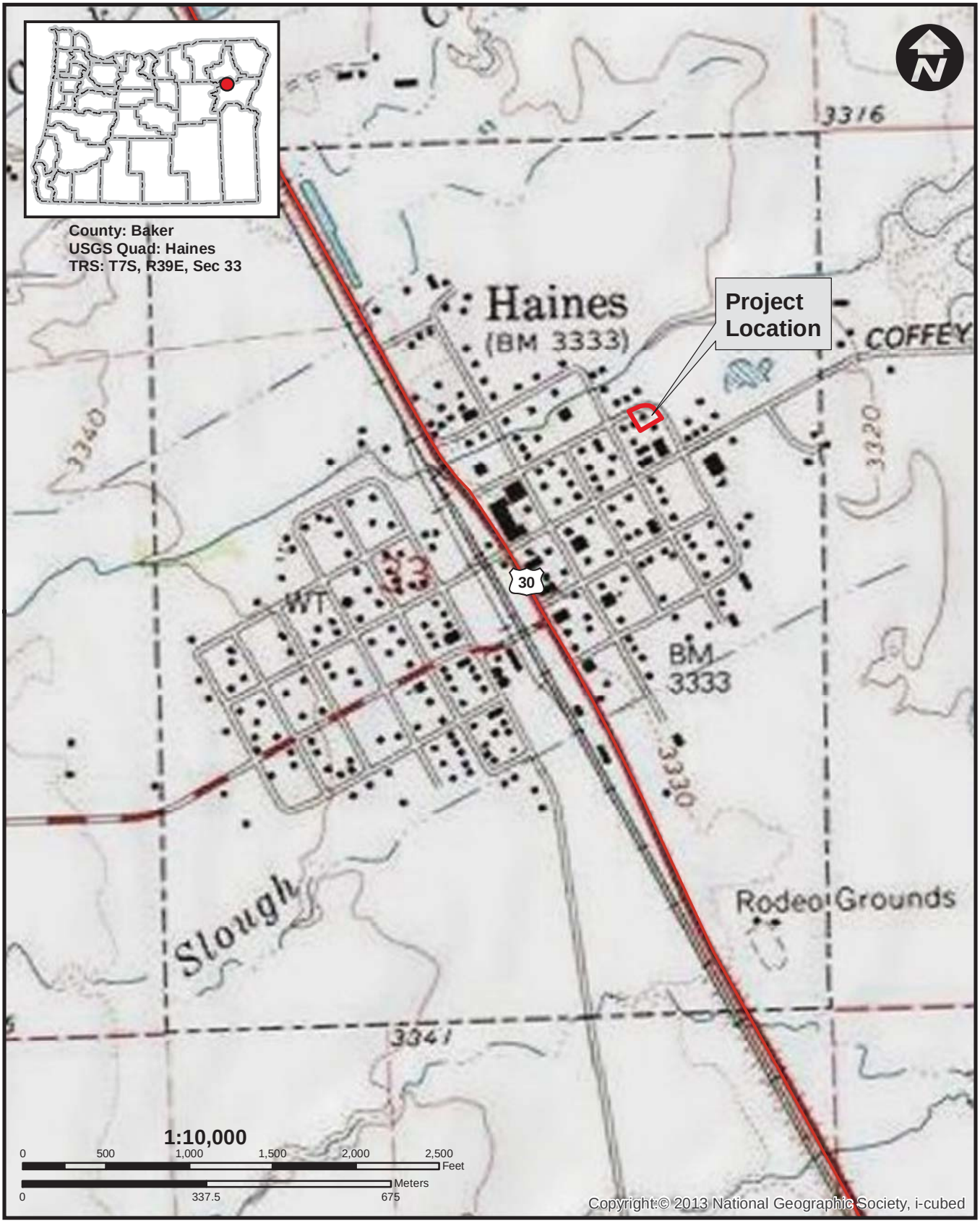


Created by Blue Mountain Consulting

August 30, 2015

DISCLAIMER:
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Figure 2. Location Map - City of Hines, Oregon Water System Improvement Project



Created by Blue Mountain Consulting

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August 30, 2015

Figure 3. Aerial View - City of Hines, Oregon Water System Improvement Project

Created by Blue Mountain Consulting

DISCLAIMER:
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August 30, 2015

(www.pnl.gov). This resulted in over 42,000 cubic miles of basalt (Orr and Orr 1996) covering the Columbia Plateau. The basalt flows redirected or blocked rivers and streams, creating sediment basins.

The vegetation of the Blue Mountain Province of the Columbia Basin physiographic area include ponderosa pine (*Pinus ponderosa*), grand fir (*Abiew grandis*), Douglas Fir (*Pseudotsuga menziesii*), western larch (*Larix occidentalis*), bunch-grasses bluebunch wheatgrass (*Agropyron spicatum*), Idaho fescue (*Festuca idahoensis*) and bitterbrush (*Purshia tridentate*) (Franklin and Dryness 1973).

PREHISTORIC USE

There are a number of theories on the population dynamics of eastern and southeastern Oregon. Archaeological sites within eastern and southeastern Oregon date back to at least 10,000 years ago (y.a.). Tool technology during this time period focused on hunting of large mammals and included knife and spear blades. From 10,000 y.a. to the early contact period there was a gradual shift in technology from large hunting tools to more refined tools used in smaller game hunting as well as fishing. Other tools associated with this region include root digging sticks, and arrow points. They learned to survive in the Plateau and Great Basin areas by moving from resource to resource as needed. Families or small groups would travel – occasionally meeting other families. Large winter camps developed in protected areas close to water, such as lakes, hot spring or rivers (Burns Paiute Tribe 2000, Fowler & Liljeblad 1986, and Soucie 1972).

Traditionally, this area was used by the Cayuse, Walla Walla and Umatilla Tribes (Ray 1938). The project area lies within the overlap area between the Plateau culture and Great Basin areas. Walker (1998:3) lists eight distinguishing features of the Plateau:

- riverine (linear) settlement patterns;
- reliance on a diverse subsistence base of anadromous fish and extensive game and root resources;
- a complex fishing technology similar to that seen on the Northwest Coast;
- mutual cross-utilization of subsistence resources among the various groups comprising the populations of the area;
- extension of kinship ties through extensive intermarriage throughout the area;
- extension of trade links throughout the area through institutionalized trading partnerships and regional trade fairs;
- limited political integration, primarily at the village and band levels, until adoption of the horse; and
- relatively uniform mythology, art styles, and religious beliefs and practices focused on the vision quest, shamanism, life-cycle, and religious beliefs and practices focused on the annual subsistence cycle.

This information is substantiated by Anastasio (1972) who focused on the riverine nature of the Plateau cultures, including that of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and the Nez Perce. Other researchers indicate that villages and travel routes focused on the river systems, including the Columbia, Snake and Grande Ronde Rivers (Ray 1938, Stern 1998). The Nez Perce movements throughout the Plateau are well-documented (Josephy 1965) and Walker (1998:425) indicates that the Nez Perce moved throughout "Oregon, Washington, western Montana and Idaho… [and] indicative of their influence in the Plateau is the fact that Nez Perce was rapidly becoming the language of trade and diplomacy throughout the region when Euro-Americans arrived shortly after 1800. At that time the Cayuse language was already being lost in favor of Nez Perce". Steward and Wheeler-Voegelin (1974:198-199) support the multi-cultural use of the area:

> The question of nomenclature in this area is further complicated because mounted Bannock and Northern Shoshoni, as well as Columbia River tribes, frequented it. The valley of the Snake River and its tributaries from the Bruneau River to Weiser Creek, Burnt River and Powder River was a thoroughfare. Mounted Shoshoni and Bannock from the upper Snake River visited the Camas Prairie to dig yampa roots, the Snake River to fish, and went up Burnt and Powder Rivers to the Grand [sic] Ronde to trade with Nez Perce and Cayuse. The last two passed through this

> valley on their way east to hunt buffalo and to trade. Scattered throughout the mountains and valleys were foot people, probably speaking both Shoshoni and Northern Paiute, who also visited the Snake river to fish.

Fowler and Liljeblad (1986) indicate that the Northern Paiute prehistory before A.D. 1000 is difficult to determine within the Great Basin and Plateau regions. Researchers have argued that the Northern Paiute, a Numic-speaking population, may have only inhabited the Great Basin 2000 years ago (Aikens 1994; and Jorgensen 1994). The Numic theory is still being debated by researchers and has not been resolved. Northern Paiute history is easier to reconstruct since the 1700s. Researchers indicate that Indians in southeastern Oregon obtained horses and were able to travel extensively (Steward 1938 and Stewart 1970) and were documented using the Snake River system and tributaries by non-Indians traveling through the region (Ogden 1909). There was also ongoing contact with trappers and explorers which did very little to limit or change Indian lifestyles (Fremont 1945). Culture change increased rapidly in the 1800s as more non-Indians moved into the region (Leonard 1904, and Steward and Voegelin 1974).

Plant resources were an important part of the diet of the Indians living in this region. Food resources heavily relied on included camas, bitterroot, kouse, and huckleberries. Anastasio (1972) suggests that the large quantity of roots such as camas correlated with the grouping of people during harvest. Game meat was important for survival during the winter months and included elk, bear, duck and beaver (Anastasio 1972, Ray 1938).

Contact between Indians and non-Indians became problematic by the mid 1800's. A number of skirmishes between Indians and settlers led to the intervention of the U.S. Army. The Umatilla, Cayuse, Nez Perce and Yakima Indians were defeated in the Grande Ronde battle of 1856 (Johnson 1948). Loss of life was high on both sides, with the Indians suffering a greater

loss. During this same time period representatives of the CTUIR ceded lands to the US government in the Treaty of 1855.

After the establishment of reservations in eastern Oregon the movement of settlers to the region increased along the Oregon Trail. The settlers who stayed in the region established farms and ranches that were centered on grazing animals, such as cattle and sheep. Trappers continued to utilize the region, but one of the most significant impacts was associated with the second wave of the gold rush in the West. This was due to the declining viability of the California gold fields and miners started moving north and east in order to capitalize on the gold finds in eastern Oregon throughout the 1860's. Ethnic diversity increased during this time due to individuals from Europe and Asia immigrating into the United States who were focused on finding prosperity through gold. Finally, one of the other significant impacts on the region was the placement of an extensive railroad system in the West along with barges on the Columbia and Snake Rivers, which allowed the immigrants to transport their products to regional cities such as Portland, Oregon.

HISTORY OF HAINES, OREGON

Haines was founded in 1885 and is associated with the transcontinental railroad (City of Haines 2014). A review of McArthur & McArthur (2003:437) shows that the city was named after Mr. Haines who had owned the land where the current city is situated and they indicate the town dates back to a few years earlier in 1883, which is around the same time as the railroad described earlier in the report. Like the rest of Baker County, Haines is connected with a rich history based in mining, as well as timber and agriculture.

PREVIOUS RESEARCH

A search of the State Historic Preservation Office (SHPO) records yielded a single survey report and map documentation of a century farm within one mile of the project and was conducted on August 28, 2015:

- Jerofke, Linda, 2014, Rock Creek Stabilization Project, Baker County Soil and Water Conservation District, Baker City, Oregon.
- Jones, John W., 2011, Cultural Resource Survey Haines Fiber Optic Project. No cultural materials located during the research.
- Donovan, Steve, 2003, Sackos Restoration Project. No cultural materials were located during the research.
- Hatz, Russell, 2000, Sackos Fish Stream Improvement Project. No cultural resources located during the course of this research.
- Martin, Guy, 1998, Anthony Lakes Highway Reconstruction, Wallowa Whitman National Forest. Historic irrigation ditches were documented during the course of his research that were privately owned and partially located in the Baker County right-a-way. He indicated that they were National Register eligible and there was a recommendation to record and photograph the ditches in order to mitigate any adverse effect from the proposed project. In addition, Martin documented split rail fences adjacent to the highway that were also National Register eligible. His recommendation was to photograph, record, and then move the fences to an area outside of the area of potential effect.
- Swanson, Cynthia, 1976, Archaeological Reconnaissance of the Proposed Waste-Water Facilities at Haines, Oregon. No cultural materials were located during this research.

- SHPO, a Century Farm which is documented on the SHPO map database but there is no additional documentation regarding the farm. It is located across the highway from the proposed project, but will not be impacted by it.

METHODOLOGY

Linda Jerofke and Erik Harvey of Blue Mountain Consulting: Archaeology and Public History conducted a Phase I survey of the entire project area using two meter transects due to the small size of the project. In addition, three 50cm shovel probes were placed in a triangle pattern, located fifteen feet apart from each other and were excavated to a depth of 50cm. The placement of shovel probes are allowed in Oregon during field surveys (SHPO 2007). Ground visibility was excellent at 80%. A review of the 1864 General Land Office map of the project area yielded no additional historic information (University of Oregon 2014). Finally, a review of Metsker's Atlas of Baker County, Oregon (1938) and the Sanborn Map (1911) yielded no additional information. The Metsker's map of Haines replicated information provided in a map at the beginning of the report and the Sanborn Map (1911) of Haines did not include Lot 1600.

FINDINGS AND RECOMMENDATIONS

No cultural materials were located during the process of this research. Due to the absence of cultural materials within the project area there is a finding of no effect. Any ground disturbing activities should be stopped if any historic or prehistoric artifacts are uncovered and a qualified archaeologist contacted in order to make an assessment of any inadvertent discovery. In addition, due to the concerns of the Confederated Tribes of the Umatilla Indian Reservation, it

is my recommendation to have a monitor present during ground disturbing activities (Miller 2015).

References Cited

Aikens, C. Melvin
1994. Adaptive Strategies and Environmental Change in the Great Basin and its Peripheries as Determinants in the Migrations of Numic-speaking Peoples. In Across the West: Human Population Movement and the Expansion of the Numa, ed. By David B. Madsen and David Rhode. Salt Lake City: University of Utah Press.

Anastasio, Angleo
1972. "The Southern Plateau: An Ecological Analysis of Intergroup Relations", Northwest Research Notes 6:102-229.

Braley, David
1976. Early Days in Eastern and Central Oregon, Prineville: American Media Company.

Brown, Jim
2015. Letter to Carey Miller, THPO, Confederated Tribes of the Umatilla Indian Reservation, June 24.

Burns Paiute Tribe
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City of Haines
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ATTACHMENT #13.
WRD Inventory Form

Request to be added to the Oregon Water Resources Department's

Inventory of Potential Conservation Opportunities

The purpose of this inventory is to catalogue potential conservation projects that water users themselves have identified but not yet pursued because of financial, institutional, or other barriers. For the purpose of this application, water storage other than above-ground are included as conservation opportunities and are most likely capital conservation projects.

As a water provider or user, you know your water demands and water conservation opportunities better than anyone. We would appreciate your assistance with this important data collection effort by completing this survey. Your participation will help provide the building blocks we need to begin to identify and achieve potential future water supplies. Please answer the questions as completely as possible, to the best of your ability. We appreciate your help with this important effort.

This inventory of already-identified, potential conservation projects includes both capital and programmatic projects. Capital projects are defined as one-time, large investments resulting in water savings. Examples include reclaimed water plants, reservoir covering, transmission line upgrades reducing leaks, or industrial engineering modifications to re-use process water. Programmatic projects are defined as ongoing investments resulting in water savings. Examples include facilitating upgrades to more efficient water using devices (e.g., distributing free showerheads, toilet rebates) and distribution system leak detection programs. The conservation inventory is primarily intended to include "planned" projects rather than projects that are currently being implemented. However, currently active programmatic projects may be listed if they will continue or expand in future years. The inventory of projects submitted will be compiled by county or basin.

Examples are provided below.

	Example **Capital Conservation Project**	**Example** **Programmatic Conservation Project**
Project Description Provide brief sentence	Line 3 miles of unlined ditch.	Toilet rebate program for residential customers
Estimated Future Savings Provide brief sentence, including information regarding savings seasonality.	20 acre feet of water per year	If we spend our full budget each year, we estimate 50,000 gallons of water save per year
Seasonality Indicate what part of the year savings are generated (e.g. year-round; summer only; etc.).	Peak (irrigation) season savings.	Savings should occur throughout the year.
Estimated Future Costs Provide brief sentence.	$500,000 total project costs.	$40,000 a year.
Implementation Schedule Provide brief sentence.	Not set. Have conducted cost and savings estimate, but still seeking funding.	We started the program in 2005 and plan to implement until 2015.
Project Funded? Designate either "yes", "no", or provide brief sentence if necessary	No. Pursuing grant funding.	Yes. IN our CIP through the next 5 years.

To add a project to the inventory of potential conservation opportunities, please provide the following information for each conservation project.

This is a ☒ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	**Water Compliance Project, City of Haines**
Project Description	Install a pipeline to recycle industrial wastewater flows within the City and Port of Umatilla for beneficial resue into the WEID
Estimated Future Savings	Conservation, 14 MG/yr
Seasonality	All year long savings
Estimated Future Costs	$7,230,000
Implementation Schedule	2016-2018
What are the barriers to implementation, e.g. funding?	Funding. The City must secure grant funds to complete the project or rates will become cost-prohibitive for most residents.
This is a ☐ Capital Conservation Project ☐ Programmatic Conservation Project	
Project #/Name	
Project Description	
Estimated Future Savings	
Seasonality	
Estimated Future Costs	
Implementation Schedule	
What are the barriers to implementation, e.g. funding?	

- Include this form with your application -