Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Application for Limited Water Use License

License No.: LL-1992

Applicant Information

NAME				PHONE (HM)
Kiewit Infrastructure West Co.				410-474-2585
PHONE (WK)	CELL			FAX
ADDRESS				
16300 S. Agnes Ave				
CITY	STATE	ZIP	E-MAIL *	
Oregon City	OR	97045	ian.langdale@kiewit.com	

Agent Information

NAME		PHONE	FAX
Ian Langdale		410-474-2585	
ADDRESS			CELL
16300 S. Agnes Ave			410-474-2585
CITY	STATE	ZIP	E-MAIL *
Oregon City	OR	97045	ian.langdale@kiewit.com

I (We) make application for a Limited License to use or store the following described surface waters or groundwater – not otherwise exempt, or to use stored water of for a use of a short-term or fixed-duration:

1. **SOURCE(S) OF WATER:** Willamette River a tributary of Columbia Gorge
2. **AMOUNT OF WATER** to be diverted;
   Maximum and instantaneous rate (cubic feet or gallons per minute): 320 GPM
   Total volume (gallons or acre-feet): 18,000 gal max per 10 day period. If water is to be used from more than one source, give the quantity from each:
3. **INTENDED USE(S) OF WATER:** (check all that apply)
   - ☐ Road construction or maintenance
   - ☑ General construction
   - ☐ Forestland and rangeland management; or
   - ☐ Other:
4. **DESCRIPTION OF PROPOSED PROJECT:** Include a description of the place of use as shown on the accompanying site map, the method of water diversion, the type of equipment to be used (including pump horsepower, if applicable), length and dimensions of supply ditches and pipelines:

Received by OWRD
SEP 19 2024
Salem, OR

5. **PROJECT SCHEDULE:** (List day, month, and year)
   Date water use will begin: 9/1/2024
   Date water use will be completed: 7/1/2026

   Months of the year water would be diverted and used: Year round from September 2024 to July 2026

   If for other than irrigation from stored water, how and where will water be discharged after use:

   Water will be discharge back into the Willamette River through a diffuser

Applicant Signature | Ian Langdale Environmental Manager (Print Name *and title if applicable*) | 5/30/2024 (Date)

PLEASE READ CAREFULLY

NOTE: A completed water availability statement from the local watermaster, Land Use Information Form completed by the local Planning Department, fees and site map meeting the requirements of OAR 690-340-030 must accompany this request. The fee for this request is **$280** for the first point of diversion plus **$30** for each additional point of diversion. Please review the Department's fee schedule to view fees required to request a limited license for Aquifer Storage and Recovery testing purposes or for Artificial Groundwater Recharge testing purposes.

Failure to provide any of the required information will result in return of your application. The license, if granted, will not be issued or replaced by a new license for a period of more than five consecutive years. The license, if granted, will be subordinate to all other authorized uses that rely upon the same source, or water affected by the source, and may be revoked at any time it is determined the use causes injury to any other water right or minimum perennial streamflow.

If water source is well, well logs or adequate information for the Department to determine aquifer, well depth, well seal and open interval, etc. are required. The licensee shall indicate the intended aquifer. If for multiple wells, each map location shall be clearly tired to a well log.

If a limited license is approved, the licensee shall give notice to the Department (Watermaster) at least 15 days in advance of using the water under the Limited License and shall maintain a record of use. The record of use shall include, but need not be limited to, an estimate of the amount of water used, the period of use and the categories of beneficial use to which the water is applied. During the period of the Limited License, the record of use shall be available for review by the Department upon request.

**A summary of review criteria and procedures that are generally applicable to these applications is available at: http://www.oregon.gov/owrd/pages/pubs/forms.aspx*

Mapping Requirements (OAR 690-340-0030):

(1) A request for a limited license shall be submitted on a form provided by the Water Resources Department, and shall be accompanied by the following:

a. A site map of reproducible quality, drawn to a standard, even scale of not less than 2 inches = 1 mile, showing:

i. The locations of all proposed points of diversion referenced by coordinates or by bearing and distance to the nearest established or projected public land survey corner;

ii. The general course of the source for the proposed use, if applicable;

iii. Other topographical features such as roads, streams, railroads, etc., which may be helpful in locating the diversion points in the field.

REMARKS:

Received by OWRD
SEP 19 2024
Salem, OR

For WRD Use Only

LL-1992

Received by OWRD

SEP 19 2024

Salem, OR

This page to be completed by the local Watermaster.

WATER AVAILABILITY STATEMENT

Name of Applicant: Ian Langdale Limited License Number: LL-1992

1. To your knowledge, has the stream or basin that is the source for this application ever been regulated for prior rights?

☐ Yes ☑ No

If yes, please explain:

2. Based on your observations, would there be water available in the quantity and at the times needed to supply the use proposed by this application?

☑ Yes ☐ No

3. Do you observe this stream system during regular fieldwork?

☑ Yes ☐ No

If yes, what are your observations for the stream?

Water will likely be available for the proposed use.

4. If the source is a well and if WRD were to determine that there is the potential for substantial interference with nearby surface water sources, would there still be ground water and surface water available during the time requested and in the amount requested without injury to existing water rights?

☐ Yes ☐ No ☒ N/A

What would you recommend for conditions on a limited license that may be issued approving this application?

5. Any other recommendations you would like to make?

Signature Amy Landvoigt Digitally signed by Amy Landvoigt DN: OU="Watermaster District 20, Northwest Region", O=Oregon Water Resources Department, CN=Amy Landvoigt, E=amy.j.landvoigt@water.oregon.gov Reason: I am the author of this document Location: Date: 2024.05.31 07:35:53 07'00' Foxit PDF Editor Version: 12.1.5 WM District #: 20 Date: 5/31/2024

Land Use Information Form

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

Received by OWRD
SEP 19 2024
Salem, OR

NOTE TO APPLICANTS

In order for your application to be processed by the Oregon Water Resources Department (OWRD), this Land Use Information Form must be completed by a local government planning official in the jurisdiction(s) where your water right will be diverted, conveyed, used, and developed. The planning official may choose to complete the form while you wait or return the "Receipt Acknowledging Request for Land Use Information" to you. Applications received by OWRD without the Land Use Information Form, or the signed receipt, will be returned to you. **IMPORTANT:** Please note that while OWRD can accept a signed receipt as part of intake for an application for a new permit to use or store water, a completed Land Use Information Form is required for OWRD's acceptance of all other applications. Please be aware that your application cannot be approved without land use approval.

This form is NOT required if:

1) Water is to be diverted, conveyed, and used on federal lands only; **OR**

2) The application is for a water right transfer, allocation of conserved water, exchange, permit amendment, or ground water registration modification, and **all** of the following apply:
   - **a.** The existing and proposed water use is located entirely within lands zoned for exclusive farm-use or within an irrigation district;
   - **b.** The application involves a change in place of use only;
   - **c.** The change does not involve the placement or modification of structures, including but not limited to water diversion, impoundment, distribution facilities, water wells and well houses; **and**
   - **d.** The application involves irrigation water uses only.

NOTE TO LOCAL GOVERNMENTS

The person presenting the attached Land Use Information Form is applying for a new water right or modifying an existing water right. The Oregon Water Resources Department (OWRD) requires applicants to obtain land use information to ensure the water right does not result in land uses that are incompatible with your comprehensive plan. Please complete the form and return it to the applicant for inclusion in their application. **NOTE:** For new water right applications only, if you are unable to complete this form while the applicant waits, you may complete the "Receipt Acknowledging Request for Land Use Information" and return it to the applicant.

You will receive notice via OWRD's weekly Public Notice once the applicant formally submits their request to OWRD. The notice will give more information about OWRD's water right process and provide additional comment opportunities. If you previously only completed the receipt for an application for a new permit to use or store water, you will have 30 days from the Public Notice date to complete the Land Use Information Form and return it to OWRD. Your attention to this request for information is greatly appreciated. If you have questions concerning this form, please contact OWRD's Customer Service Group at 503-986-0900 or WRD□DL□customerservice@water.oregon.gov.

LL-1992

This page intentionally left blank.

LL-1992

Received by OWRD
SEP 19 2024
Salem, OR

Land Use Information Form

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

NAME			PHONE
Ian Langdale			410-474-2585
MAILING ADDRESS			
16300 Agnes Ave, Oregon City OR 97045			
CITY	STATE	ZIP	EMAIL
Oregon City	OR	97045	ian.langdale@kiewit.com

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts, may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:	Proposed Land Use:
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

West Linn, OR

NOTE: A separate Land Use Information Form must be completed and submitted for each county and city, as applicable.

B. Description of Proposed Use

Type of application to be filed with the Oregon Water Resources Department:

☐ Permit to Use or Store Water ☐ Water Right Transfer ☐ Permit Amendment or Ground Water Registration Modification
☒ Limited Water Use License ☐ Exchange of Water ☐ Allocation of Conserved Water

Source of water: ☐ Reservoir/Pond ☐ Ground Water ☒ Surface Water (name) Willamette River

Estimated quantity of water needed: 300 ☐ cubic feet per second ☒ gallons per minute ☐ acre-feet

Intended use of water: ☐ Irrigation ☐ Commercial ☐ Industrial ☐ Domestic for _____ household(s)
☐ Municipal ☐ Quasi-Municipal ☐ Instream ☒ Other Construction

Briefly describe:

River water will be used for thermal cooling of the concrete for the crossbeam section of the Abernethy Bridge. This is a closed loop system that will discharge the water back into the river.

Note to applicant: For new water right applications only, if the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt on the bottom of page 4 and include it with the application filed with the Oregon Water Resources Department.

See Page 4 ➔

LL-1992

For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

☐ Land uses to be served by the proposed water use(s), including proposed construction, are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): _____

☑ Land uses to be served by the proposed water use(s), including proposed construction, involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being Pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
Water Resource Area Permit	West Linn Community Development Code Chapter 32	☑ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
Willamette River Greenway Permit	West Linn Community Development Code Chapter 28	☑ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
Flood Management Area Permit	West Linn Community Development Code Chapter 27	☑ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued

Local governments are invited to express special land use concerns or make recommendations to the Oregon Water Resources Department regarding this proposed use of water in the box below or on a separate sheet.

Received by OWRD
SEP 19 2024
Salem, OR

Name: Darren Wyss Title: Planning Manager

Signature: Darren Wyss Date: 6/25/2024

Governmental Entity: City of West Linn Phone: 503-742-6064

Receipt Acknowledging Request for Land Use Information

Note to Local Government Representative:
Please complete this form and return it to the applicant. **For new water right applications only**, if you are unable to complete this form while the applicant waits, you may complete this receipt and return it to the applicant. If you sign the receipt, you will have 30 days from the date of OWRD's Public Notice of the application to submit the completed Land Use Information Form to Oregon Water Resources Department. Please note while OWRD can accept a signed receipt as part of intake for an application for a new permit to use or store water, a completed Land Use Information Form is required for all other applications.

Applicant Name: _____

Staff Name: _____ Title: _____

Staff Signature: _____ Date: _____

Governmental Entity: _____ Phone: _____

LL-1992

Land Use Information Form

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

NAME			PHONE
Kiewit Infrastructure West Co			410-474-2585
MAILING ADDRESS			
16300 Agnes Ave			
CITY	STATE	ZIP	EMAIL
Oregon City	OR	97045	ian.langdale@kiewit.com

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts, may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:	Proposed Land Use:
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	
						☐ Diverted ☐ Conveyed ☐ Used	

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

Oregon City, OR

NOTE: A separate Land Use Information Form must be completed and submitted for each county and city, as applicable.

B. Description of Proposed Use

Type of application to be filed with the Oregon Water Resources Department:

☐ Permit to Use or Store Water ☐ Water Right Transfer ☐ Permit Amendment or Ground Water Registration Modification
☒ Limited Water Use License ☐ Exchange of Water ☐ Allocation of Conserved Water

Source of water: ☐ Reservoir/Pond ☐ Ground Water ☒ Surface Water (name) Willamette River

Estimated quantity of water needed: 300 ☐ cubic feet per second ☒ gallons per minute ☐ acre-feet

Intended use of water: ☐ Irrigation ☐ Commercial ☐ Industrial ☐ Domestic for _____ household(s)
☐ Municipal ☐ Quasi-Municipal ☐ Instream ☒ Other Construction

Briefly describe:

River water will be used for thermal cooling of the concrete for the crossbeam section of the Abernethy Bridge. This is a closed loop system that will discharge the water back into the river.

Note to applicant: For new water right applications only, if the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt on the bottom of page 4 and include it with the application filed with the Oregon Water Resources Department.

See Page 4 ➔

LL-1992

For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

☐ Land uses to be served by the proposed water use(s), including proposed construction, are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): _____

☒ Land uses to be served by the proposed water use(s), including proposed construction, involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being Pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:
Natural Resource overlay	OCMC 17.49	☐ Obtained ☐ Being Pursued ☐ Denied ☒ Not Being Pursued
Willamette River Greenway	OCMC 17.48	☐ Obtained ☐ Being Pursued ☐ Denied ☒ Not Being Pursued
Flood Management Area	OCMC 17.42	☐ Obtained ☐ Being Pursued ☐ Denied ☒ Not Being Pursued
		☐ Obtained ☐ Being Pursued ☐ Denied ☒ Not Being Pursued

Local governments are invited to express special land use concerns or make recommendations to the Oregon Water Resources Department regarding this proposed use of water in the box below or on a separate sheet.

No concerns. Proposed activity does not require land use action

Received by OWRD
SEP 19 2024
Salem, OR

Name: Josh Wheeler Title: Assistant City Engineer

Signature: _____ Date: 8/22/2024

Governmental Entity: City of Oregon City Phone: 971-204-4634

Receipt Acknowledging Request for Land Use Information

Note to Local Government Representative:
Please complete this form and return it to the applicant. **For new water right applications only**, if you are unable to complete this form while the applicant waits, you may complete this receipt and return it to the applicant. If you sign the receipt, you will have 30 days from the date of OWRD's Public Notice of the application to submit the completed Land Use Information Form to Oregon Water Resources Department. Please note while OWRD can accept a signed receipt as part of intake for an application for a new permit to use or store water, a completed Land Use Information Form is required for all other applications.

Applicant Name: _____

Staff Name: _____ Title: _____

Staff Signature: _____ Date: _____

Governmental Entity: _____ Phone: _____

LL-1992

TABLE OF CONTENTS

Attachments

Attachment "A": Site Map

Attachment "B": Crossbeam Drawings

Attachment "C": Intake Pump Cutsheet

LL-1992

1.0 PURPOSE

Thermal cooling is needed for mass concrete placement on the I-205 Abernethy Bridge project to control maximum temperature and temperature difference during and after concrete placement for the crossbeam sections. River water will be used in a closed system to control the thermal temperature of the placed concrete during the curing period. The water used for the thermal cooling will not encounter the concrete or process water at any point during the operation.

3.0 Process

River water from the Willamette River will be pumped to a steel manifold, which will distribute the water to multiple runs of standard ¾ Pex A piping. The runs of pex piping will be attached to reinforcing steel at predetermined spacing, where new concrete will be placed. The pex lines will exit the concrete placement area and terminate at an into a manifold that will drain back into the Willamette River. Prior to placing concrete, the pex lines will be filled with water, capped and pressure tested to ensure there are no leaks in the system. Water must flow straight thru the concrete placement and be isolated from the work area via the piping, at all times. Once fresh concrete is placed, end caps will be removed and water will be allowed to flow from the manifold, through the pex lines then on to the river. Each pex line will run approximately 5 gallons per minute. For the cooling water at that flow rate, we expect an approximate 1-degree F temperature rise, with a maximum of 2 degrees F. Discharge volume will vary between piers but will be no greater than 18,000gals/hour (300gpm) See attachment "B" for crossbeam drawing. Each cycle will last ten to fourteen days depending on curing time and temperature of the concrete.

4.0 Schedule

Year round from September 2024 to July 2026

5.0 Intake and Discharge

Intake: Intake pump will be placed next to Pier 6A and will not be moved to any other location.

Intake Screen Requirements: Kiewit will follow the following requirement for fish screening on intake pumps.

> **ODOT Special Provisions (3) Water Intake Screening** - Install, operate, and maintain fish screens on each water intake used for project construction, including pumps used to isolate an in-water work area. When drawing or pumping water from any stream, protect fish by equipping intakes with screens having a minimum 27 percent open area and meeting the following requirements:

LL-1992

- Mesh or woven wire screen openings shall be 3/32 inch or smaller in the narrowest direction.
- Profile bar screen or wedge wire openings shall be 1/16 inch or smaller in the narrow direction.

Choose size and position of screens to meet the following criteria in Table 00290-1:

Table 00290-1

Type	Approach Velocity [1] (Ft./Sec.)	Sweeping Velocity [2] (Ft./Sec.)	Wetted Area of Screen (Sq. Ft.)	Comments
Ditch Screen	≤ 0.4	Shall exceed approach velocity	Divide max. water flow rate (cfs) by 0.4 fps	If screen is longer than 4 feet, angle 45° or less to stream flow
Screen with proven self-cleaning system	≤ 0.4	–	Divide max. water flow rate (cfs) by 0.4 fps	–
Screen with no cleaning system other than manual	≤ 0.2	–	Divide max. water flow rate (cfs) by 0.2 fps	Pump rate 1 cfs or less
[1] Velocity perpendicular to screen face at a distance of approximately 3 inches [2] Velocity parallel to screen				

1.3.1 FAHP Program Administration

15. Fish screens. A fish screen installed, operated, and maintained on every temporary water withdrawal as follows (NMFS 2011e or most recent version):

a. An automated cleaning device with (i) a minimum effective surface area of 2.5 square feet per cubic foot per second (cfs), and a nominal maximum approach velocity of 0.4 fps, or (ii) no automated cleaning device, a minimum effective surface area of 1 square foot per cubic foot per second, and a nominal maximum approach rate of 0.2 foot per second.

b. A round or square screen mesh that is no larger than 2.38 mm (0.094") in the narrow dimension, or any other shape that is no larger than 1.75 mm (0.069") in the narrow dimension.

Discharge: Discharge location will coincide with the associated pier location and discharge above the water level to avoid fish attraction.

See Attachment "A" for site map showing discharge locations and intake pump.

See Attachment "C" for pump cutsheet.

LL-1992

6.0 Responsible Personnel

The thermal cooling operation will be operated by Kiewit staff, led by the site's Crossbeam Superintendent, Evan Gross. If any unanticipated issues or problems are encountered while discharging, operations will immediately stop, and Kiewit Environemtnal Manager will be notified.

Kiewit Crossbeam Superintendent: Evan Gross
Phone - 971-710-8006
Email - evan.gross@kiewit.com
Kiewit Environmental Manager: Ian Langdale
Phone - 410-474-2585
Email - ian.langdale@kiewit.com

LL-1992

Attachment "A"
Site Drawings

Received by OWRD
SEP 19 2024
Salem, OR

LL-1992

Attachment "C"
Intake Pump
Cutsheet

Received by OWRD
SEP 19 2024
Salem, OR

LL-1992

TSURUMI PUMP™

BUILT FOR WORK®

SLIMLINE

ELECTRIC SUBMERSIBLE PUMPS

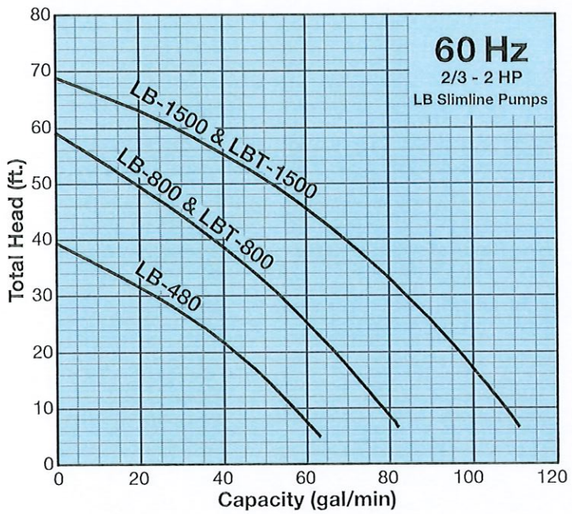
LL-1992

SLIMLINE

Portable electric submersible dewatering pumps **LB • LBT**

8"

LB Series • LBT Series Slimline design pumps fits into 8" pipes. Powerful pump built with durable materials in an easy handling design. Top discharge provides maximum motor cooling efficiency allowing continuous duty operation at low levels and extended dry-run capability. Single-Phase (LB-480, LB-800, and LB-1500) and Three-Phase (LBT-800 and LBT-1500) are available.



All Models:

- Built with durable materials and light weight for easy handling
- Built-in Motor Protector
- Double Inside Mechanical Seal with Silicon Carbide faces
- Oil Lifter provides lubrication of the seal faces
- Single-phase is available in automatic operation

LB(T)-1500 Only:

- High Chrome Iron Semi-Open Impeller
- Synthetic Rubber Pump Casing
- Optional 2" discharge available

MODEL	Output (HP)	Phase	MOTOR SPECIFICATIONS Rated Current (A)						RPM	Discharge Size (inches)	DIMENSIONS (inches)		Max. Solids Dia. (inches)	Continuous Running Water Level (in.)	Pump Weight (lbs.)
			Single Phase		Three Phase						Diameter	Height			
			115V	230V	208V	230V	460V	575V							
LB-480	2/3	Single	5.9	3	-	-	-	-	3525	2	7 11/16	11 1/4	0.236	2	21
LB-800	1	Single	10.5	5.2	-	-	-	-	3316	2	7 9/16	13 7/16	0.236	2	29
LBT-800	1	Three	-	-	3.6	3.7	1.7	1.4	3404	2	7 9/16	13 7/1	0.236	2	28
LB-1500	2	Single	26.2	13.2	-	-	-	-	3480	3	7 3/8	23 5/16	0.236	3 1/8	72
LBT-1500	2	Three	-	-	7.2	8.0	4.0	3.0	3515	3	7 3/8	23 5/16	0.236	3 1/8	70

LL-1992

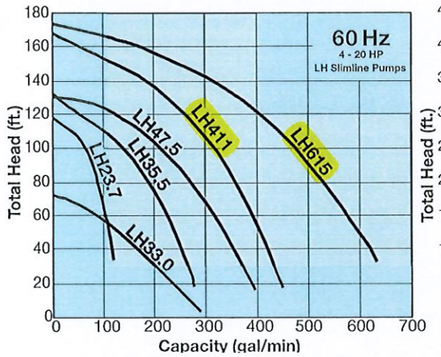
SLIMLINE

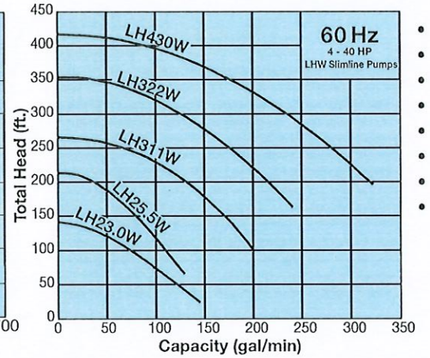
Extreme high pressure pumping at high volumes **LH • LHW**

8" 12" 16"

LH Series handles medium to high flows at higher heads, yet its top discharge flow-through design welcomes low water level operation for extended periods. Complete with a high chromium semi-open impeller and adjustable wear rings, our LH pumps provide you with increased wear resistance whether your application is construction site drainage, or commercial/industrial mine dewatering, or effluent transfer.

LHW series achieves extremely high head pressure. Our dual enclosed impellers are just one of many features found engineered into these durable pumps which can help you solve all your long distance water transfer needs.





- High Pressure Capability
- High Pressure Rated Mechanical Seals
- Seal Pressure Relief Ports
- Rugged Iron Construction
- Anti-Wicking Cable Entrance
- Dual Silicon Carbide Mechanical Seals
- Oil Lifter
- Internal Thermal Motor Protection

MODEL	Output (HP)	MOTOR SPECIFICATIONS Rated Current (A) 208V	230V	460V	575V	RPM	Discharge Size (inches)	DIMENSIONS (inches) Diameter	Height	Max. Solids Dia. (inches)	Continuous Running Water Level (in.)	Pump Weight (lbs.)
LH33.0	4	12.3	12	6.0	4.7	3430	3	7 5/16	25 3/8	0.236	5 7/8	93
LH23.7	5	14.6	14.6	7.3	—	3420	3	10	31 1/8	0.334	5 7/8	200
LH35.5	7.5	20.5	19.4	10	—	3430	2	10	31 1/8	0.334	5 7/8	220
LH47.5	10	28	26.5	13.5	—	3490	3	11 13/16	35 1/2	0.334	6 1/4	325
LH411	15	41	38.5	19.5	—	3495	4	11 13/16	35 1/2	0.334	6 1/4	345
LH615	20	53.8	48	24	19	3465	6	13	39 15/16	0.334	7 1/4	470

MODEL	Output (HP)	MOTOR SPECIFICATIONS Rated Current (A) 208V	230V	460V	575V	RPM	Discharge Size (inches)	DIMENSIONS (inches) Diameter	Height	Max. Solids Dia. (inches)	Continuous Running Water Level (in.)	Pump Weight (lbs.)
LH23.0W	4	12.3	12	6.0	4.7	3430	2	7 5/16	24 13/16	0.236	7 7/8	101
LH25.5W	7.5	22	19.2	9.6	7.7	3385	2	9 5/8	29 1/2	0.236	6 3/4	176
LH311W	15	42	37	18.5	14.5	3465	3	10 5/8	40 5/16	0.334	7 7/8	287
LH322W	30	—	—	35.5	28	3490	3	13	48 5/8	0.334	11 3/4	670
LH430W	40	—	—	48	38.5	3475	4	14 3/8	54 1/8	0.334	11 3/4	714

LL-1992

SLIMLINE

ELECTRIC SUBMERSIBLE PUMPS

✓ SLIM DESIGN

Allows the pump to fit in small diameter space

- Well casings
- Sumps
- Manholes

Fit in casings

8"

12"

16"

✓ TOP DISCHARGE

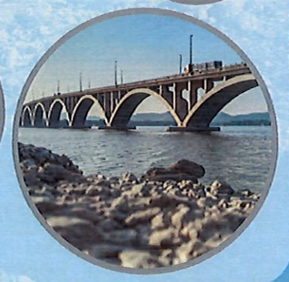
- Flow path cools the motor
- Allows for low water level operation for extended periods

✓ FEATURES

- Tsurumi Oil lifter
- Anti-Wicking Cable Entry
- Dual Silicone Mechanical Seal
- Seal Pressure Relief Ports
- High Chrome Semi-Open Impeller for Wear Resistance
- Urethane Rubber Impeller
- Dual Staged Enclosed Impellers (LHW)

✓ APPLICATIONS

- Well dewatering
- River bypass
- Site dewatering
- Manholes in tanks



TSURUMI PUMP™

BUILT FOR WORK®

Headquarters: 1625 Fullerton Ct, Glendale Heights, IL 60139 | Utah Office: 6216 West 9790 South, West Jordan, UT 84081
Tel: 1-888-878-7864 (Toll-Free) • 1-630-793-0127 • Fax: 1-630-793-0146 • www.tsurumipump.com

B03_TAI_SlimlinePumps-MAR2021

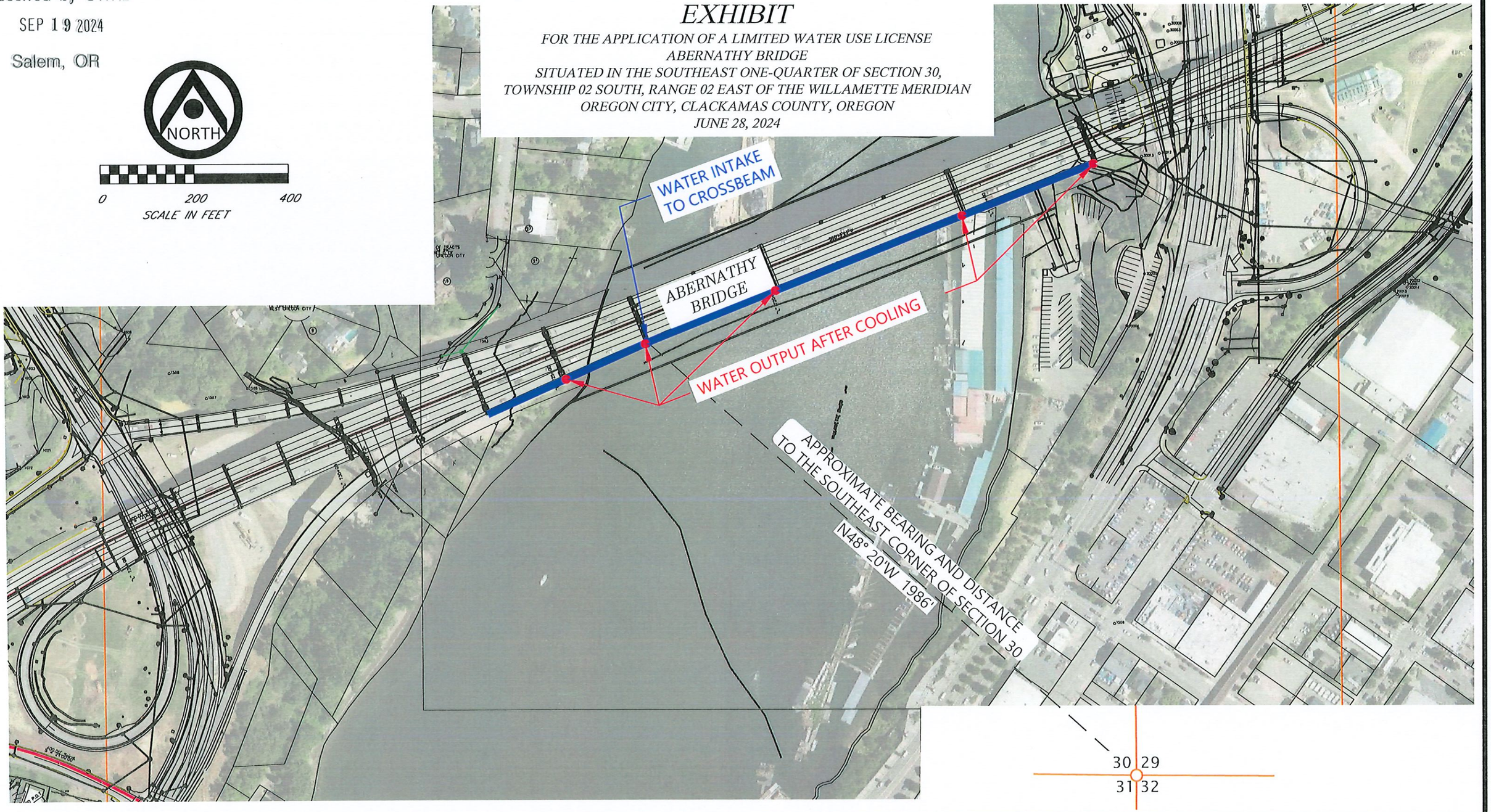
LL-1992

EXHIBIT

FOR THE APPLICATION OF A LIMITED WATER USE LICENSE
ABERNATHY BRIDGE
SITUATED IN THE SOUTHEAST ONE-QUARTER OF SECTION 30,
TOWNSHIP 02 SOUTH, RANGE 02 EAST OF THE WILLAMETTE MERIDIAN
OREGON CITY, CLACKAMAS COUNTY, OREGON
JUNE 28, 2024

NORTH

0 200 400
SCALE IN FEET



ABERNATHY BRIDGE
OREGON CITY, OR
EXHIBIT FOR THE APPLICATION
LIMITED WATER USE LICENSE

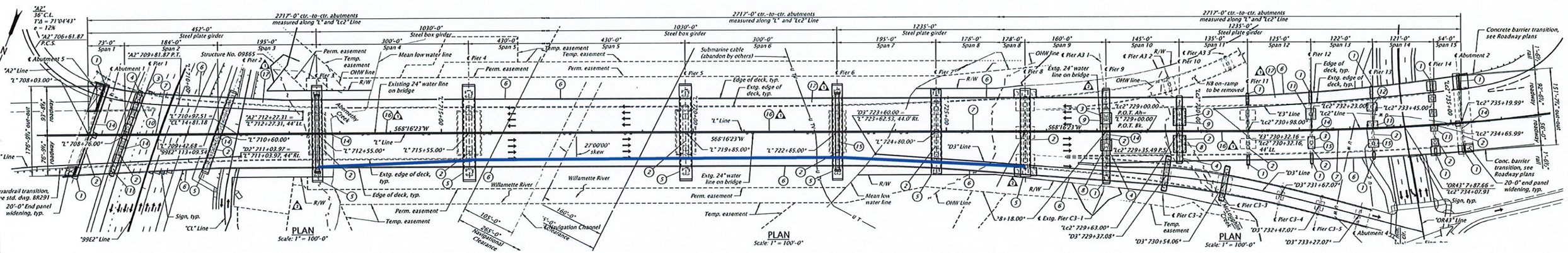
DRAWN BY: J. WHITE

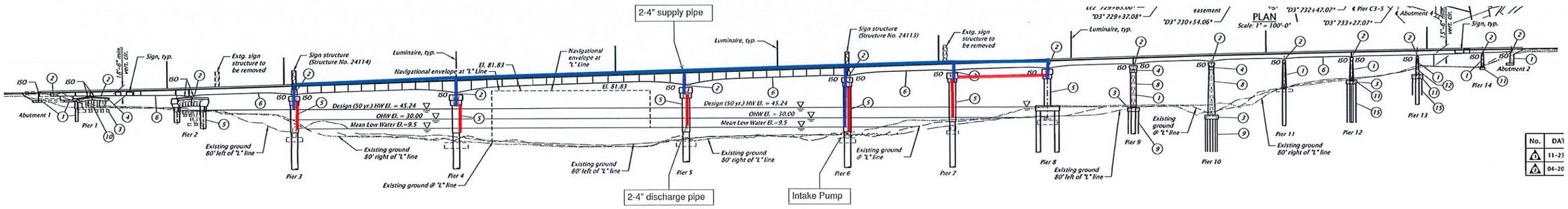
JOB#: KWIT_21-240 DATE: 06-28-2024

1 ALLIANCE GEOMATICS
AN ATLAS COMPANY
9755 SW Commerce Cir, Ste. B-4
Wilsonville, Oregon 97070
Ph: (503) 278-5000
Fax: (425) 502-8067

Jesse.white 09/09/24 1:46pm - W:\KWIT_21-240 ODOT I-205 Abernethy Brdg\03000AD\EXHIBITS\OWRD Limited License Application - Exhibit.dwg

LL-1992

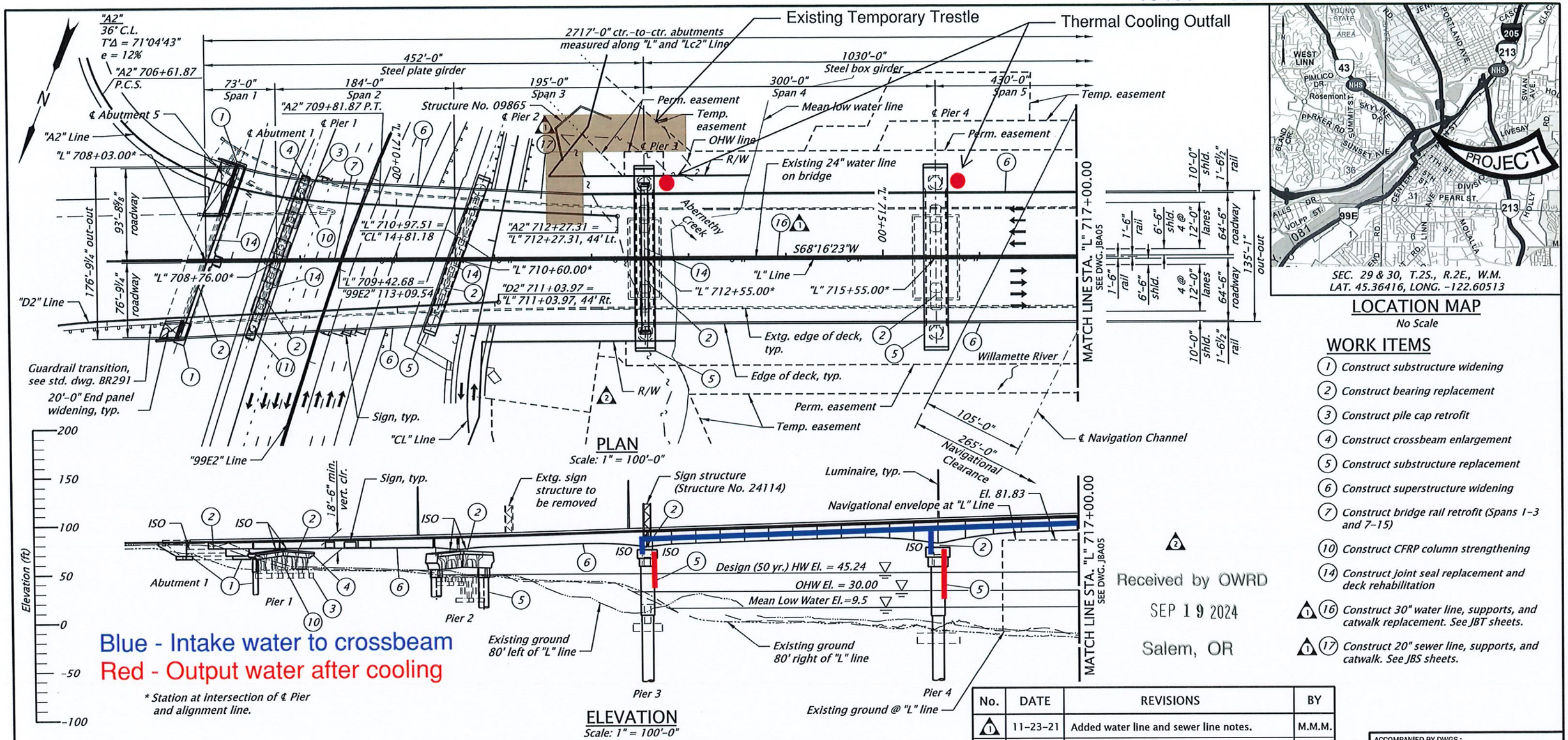




Blue - Intake water to crossbeam
Red - Output water after cooling

LL-1992

Intake Screen Criteria
-Screen material open area must be at least 27% of the total wetted screen area.
-Perforated plate: Circular screen face openings must not exceed 3/32 or 0.0938 inch (2.38 mm) in diameter.
-Mesh/Woven wire screen: Square screen face openings must not exceed 3/32 or 0.0938 inch (2.38 mm) on a diagonal.
-Profile bar screen/Wedge wire: Slotted screen face openings must not exceed 0.0689 inch (1.75 mm) in the narrow direction.
-Screen area must be large enough not to cause fish impact. The wetted screen area required depends on the water approach velocity.
-Approach velocity is the water velocity perpendicular to and upstream of the vertical projection of the screen face.
-An Active pump screen is a self-cleaning screen that has a proven automatic cleaning system. The screen approach velocity for active pump screens must not exceed 0.4 ft/s (feet per second) or 0.12 m/s (meters per second). The minimum wetted screen area needed in square feet is calculated by dividing the maximum water



SEC. 29 & 30, T.2S., R.2E., W.M.
LAT. 45.36416, LONG. -122.60513

LOCATION MAP
No Scale

WORK ITEMS

1. Construct substructure widening
2. Construct bearing replacement
3. Construct pile cap retrofit
4. Construct crossbeam enlargement
5. Construct substructure replacement
6. Construct superstructure widening
7. Construct bridge rail retrofit (Spans 1-3 and 7-15)
10. Construct CFRP column strengthening
14. Construct joint seal replacement and deck rehabilitation
16. Construct 30" water line, supports, and catwalk replacement. See JBT sheets.
17. Construct 20" sewer line, supports, and catwalk. See JBS sheets.

Received by OWRD
SEP 19 2024
Salem, OR

Notes:

1. Elevations shown are based on North American Vertical Datum (1988).
2. ISO indicates the end of the span is supported by an isolation bearing. Where only one ISO is noted at a Pier, the superstructure is continuous across that Pier.
3. Rail mounted signs, deck drains, and illumination locations are provided on the Deck Plan sheets.
4. Drilled shaft, pile cap, and foundation elevations are provided on the JBD sheets.
2.
6. River levels are tidally influenced at this location.

HYDRAULIC DATA

ITEMS	(UNITS)	DESIGN FLOOD	BASE FLOOD	MAX. PROBABLE FLOOD
DISCHARGE	(cfs)	295,000	341,000	469,000
RECURRENCE INTERVAL	(yrs.)	50	100	500
H.W. ELEVATION AT UPSTREAM FACE OF BRIDGE ALONG EMBANKMENT	(ft.)	45.24	48.66	56.35
BACKWATER	(ft.)	0.02	0.03	0.04
SCOUR ELEVATION	(ft.)	N/A	See hydraulics report	

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

No.	DATE	REVISIONS	BY
1	11-23-21	Added water line and sewer line notes.	M.M.M.
2	04-20-22	Removed improved soil mass work and notes.	M.M.M.

1 ACCOMPANIED BY DWGS.: JBA01 thru JBT32

STRUCTURE NO.	09403
BDS DWG NO.	107767
CALC. BOOK	7558
HWY: 064 M.P.: 9.03	
COUNTY	Clackamas
DATE	10/2021

REGISTERED PROFESSIONAL ENGINEER
74544PE
DIGITALLY SIGNED 2022.04.18 15:47:03-07'00'
OREGON
MARCH 9, 2004
JEFFREY W. OLSON
RENEWS: 12-31-2022

HDR ENGINEERING, INC
1050 SW 6TH AVENUE, SUITE 1800
PORTLAND, OR 97204-1134
503.423.3700

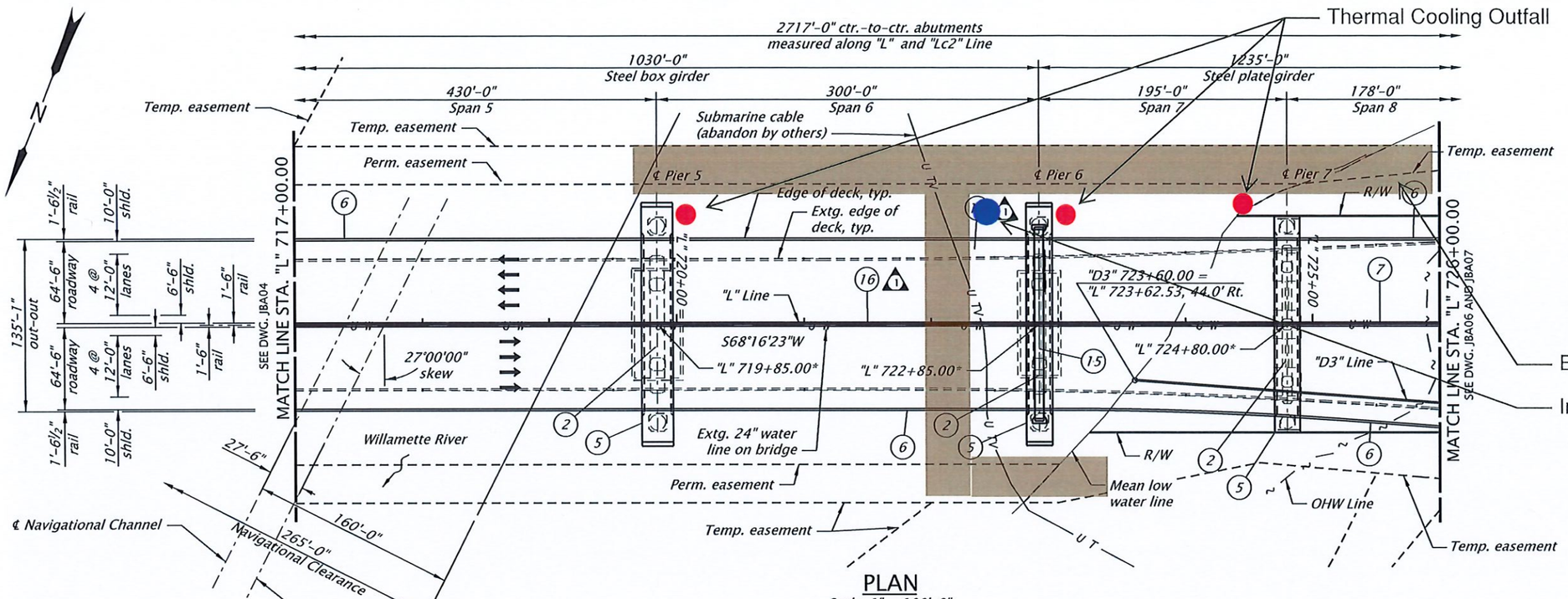
WILLAMETTE R & HWYS 1E & 3, HWY 64 (GEO ABERNETHY)

I-205 IMPROVEMENTS 1A - OR43 TO OR213 SEC.
EAST PORTLAND FREEWAY
CLACKAMAS COUNTY

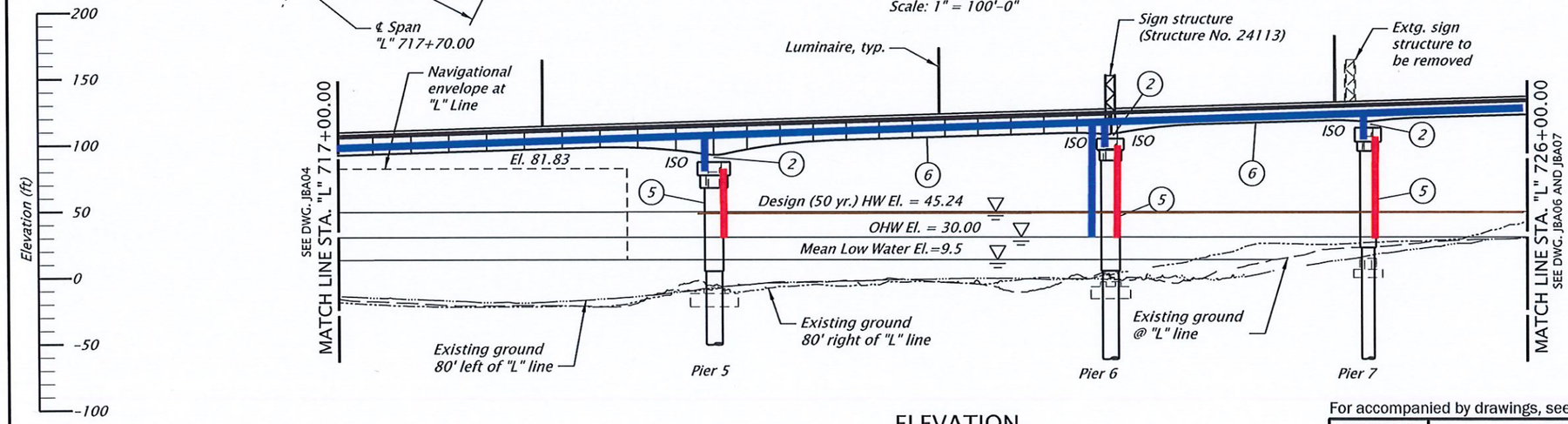
Designer: Mikal Mitchell | Reviewer: Jeff Olson
Drafter: Heather Gonsior | Checker: Dace Morgan

PLAN AND ELEVATION - 1 | SHEET NO. JBA04

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST



PLAN
Scale: 1" = 100'-0"



ELEVATION
Scale: 1" = 100'-0"

Remaining portions of existing structure shown approximately at "L" Line.
Proposed structure shown approximately at right edge of mainline structure.

* Station at intersection of ℄ Pier and alignment line.

WORK ITEMS
(2) Construct bearing replacement
(5) Constructure substructure replacement
(6) Construct superstructure widening
(7) Construct bridge rail retrofit (Spans 1-3 and 7-15)
(15) Construct joint replacement
(1) (16) Construct 30" water line, supports, and catwalk replacement. See JBT sheets.
(1) (17) Construct 20" sewer line, supports, and catwalk. See JBS sheets.

No.	DATE	REVISIONS	BY
1	11-23-21	Added water line and sewer line notes.	M.M.M.

Received by OWRD
SEP 19 2024
Salem, OR

Notes:
1. Elevations shown are based on North American Vertical Datum (1988).
2. ISO indicates the end of the span is supported by an isolation bearing. Where only one ISO is noted at a Pier, the superstructure is continuous across that Pier.
3. Rail mounted signs, deck drains, and illumination locations are provided on the Deck Plan sheets.
4. Drilled shaft, pile cap, and foundation elevations are provided on the JBD sheets.
5. River levels are tidally influenced at this location.

For accompanied by drawings, see sht. JBA04

SCALE WARNING
IF THIS SCALE LINE DOES NOT MEASURE ONE INCH, THEN DRAWING IS NOT TO SCALE

STRUCTURE NO.	09403
BDS DWG NO.	107768
CALC. BOOK	7558
HWY: 064 M.P.: 9.03	
COUNTY	Clackamas
DATE	10/2021

REGISTERED PROFESSIONAL ENGINEER
74544PE
DIGITALLY SIGNED 2021.12.07 14:19:24-08'00'
OREGON
MARCH 9, 2004
JEFFREY W. OLSON
RENEWS: 12-31-2022

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

HDR ENGINEERING, INC
1050 SW 6TH AVENUE, SUITE 1800
PORTLAND, OR 97204-1134
503.423.3700

WILLAMETTE R & HWYS 1E & 3, HWY 64 (GEO ABERNETHY)

I-205 IMPROVEMENTS 1A - OR43 TO OR213 SEC.
EAST PORTLAND FREEWAY
CLACKAMAS COUNTY

Designer: Mikal Mitchell | Reviewer: Jeff Olson
Drafter: Heather Gonsior | Checker: Dace Morgan

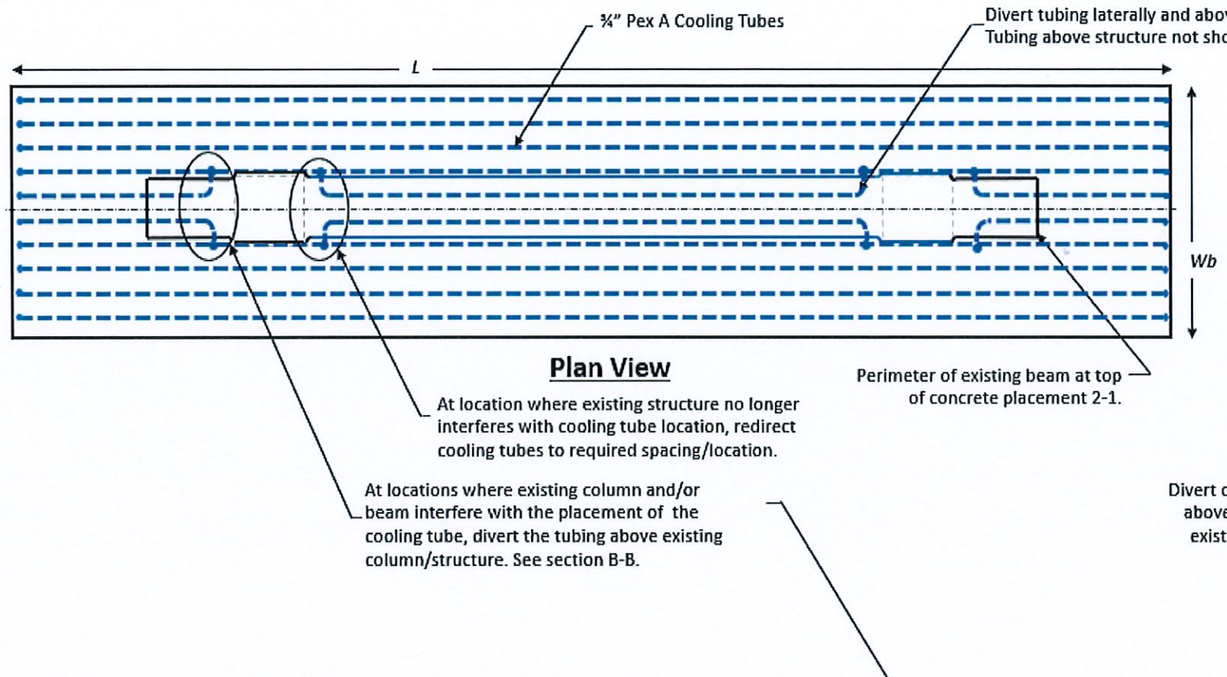
PLAN AND ELEVATION - 2 | SHEET NO. JBA05

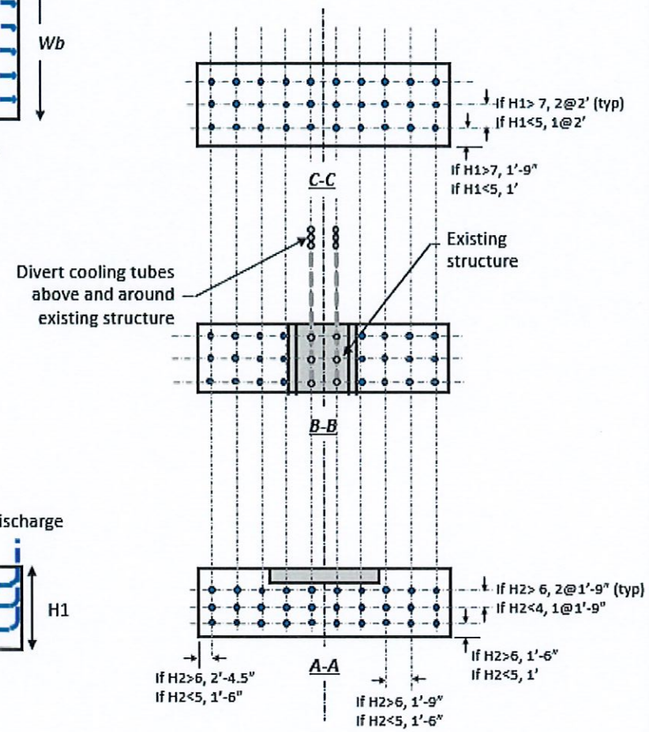
LL-1992

Attachment "B"
Crossbeam Drawing

Received by OWRD
SEP 19 2024
Salem, OR

LL-1992





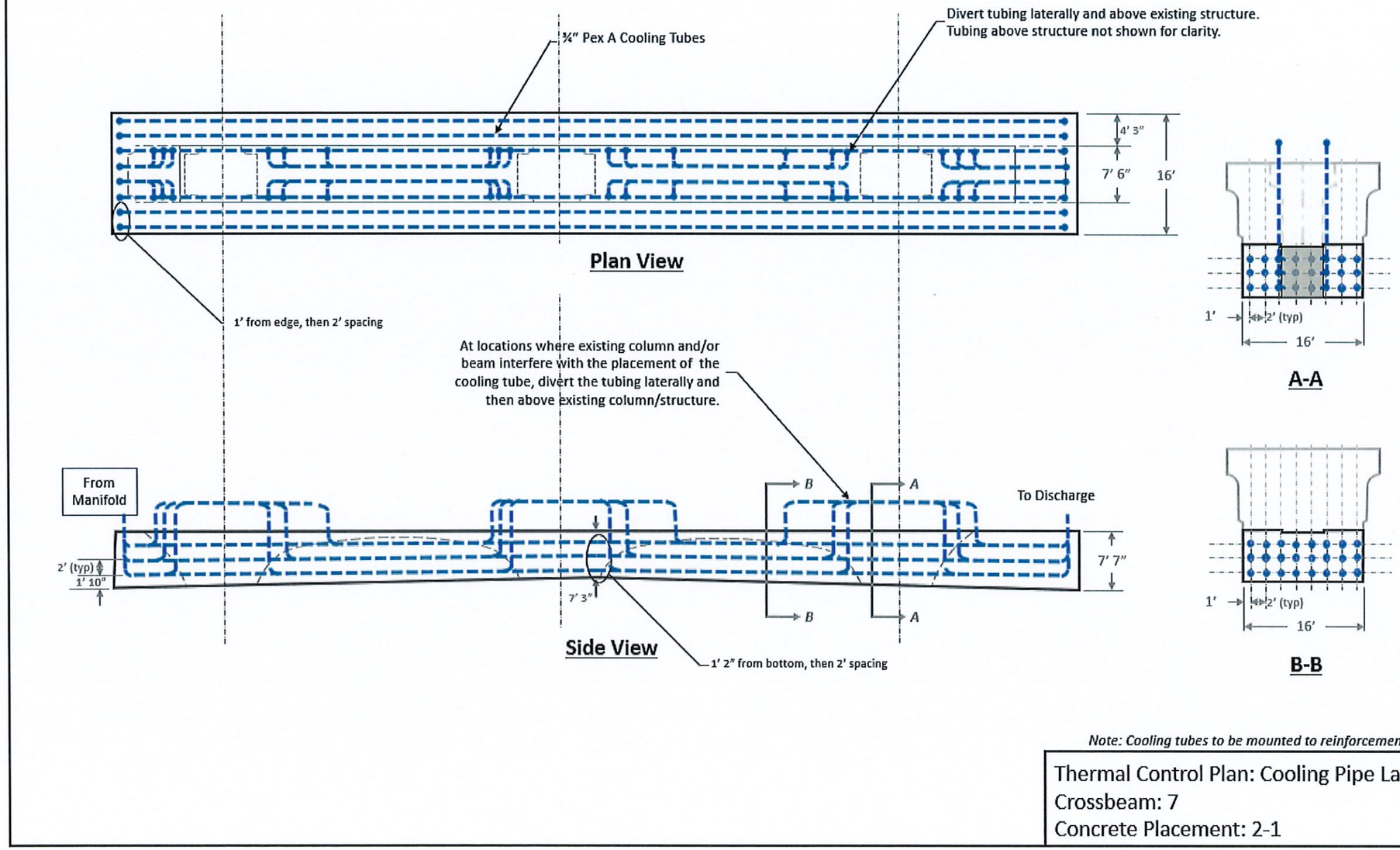
Note: Cooling tubes to be mounted to reinforcement.

Crossbeam	Placement No.	Length, *L* (ft)	Width @ Top, *Wt* (ft)	Width @ Bottom, *Wb* (ft)	Ht @ Ext, *H1* (ft)	Ht @ Int, *H2* (ft)
3	2.1	114	20.5	16.5	4.5	3.5
4	2.1	112	20.5	20.5	7.5	6.5
5	2.1	112.5	20.5	20.5	7.5	6.5
6	2.1	115.5	16.5	16.5	4.5	3.5

Concrete placement 2.2 not shown for clarity.

Thermal Control Plan: Cooling Pipe Layout
Crossbeams: 3-6
Concrete Placement: 2-1

44-1982



Note: Cooling tubes to be mounted to reinforcement.

Thermal Control Plan: Cooling Pipe Layout
Crossbeam: 7
Concrete Placement: 2-1

44-1992