Oregon
Kate Brown, Governor

Water Resources Department
725 Summer St NE, Ste A
Salem, OR, 97301
Phone: 503-986-0900
Fax: 503-986-0904

January 5, 2021

STEVE KASER WWC #1962
GROUNDWATER PROTECTION SERVICES LLC
502 LEWIS STREET
SILVERTON, OREGON 97381

FINAL ORDER

Dear Mr. Kaser:

The Special Standards Request you submitted for the City of Salem Public Works Department, Start Card number 1050343, is hereby approved for the following: You may construct a 24 ft diameter collector well as described on your special standards request form and addendum dated December 22, 2020, with the following stipulations: As the licensed and bonded constructor responsible for this work, you must be on site for all work involving a material change in the construction of the well. This includes, but is not limited to, setting or advancing the caisson; placing the grout seal and floor; and installation of the laterals and screens. In addition, the annular space requirements must be met (OAR 690-210-0420(2)); the seal must extend to the appropriate depth based on the formations encountered; the well head must meet top terminal height requirements (OAR 690-210-0250); the well must be properly covered (OAR 690-215-0050); a well identification label must be attached to the well (OAR 690-200-0048); and an access port must be provided (OAR 690-210-0250). In addition, the two-inch grouting pipes built into the caisson must be completely filled with grout once the seal has been placed so that they are not left open. In addition, the cement grout seal that is installed must completely displace the sodium bentonite slurry that is used during caisson installation so that the vertical movement of water within the annular space is completely stopped. All other well construction standards apply. A copy of your Special Standards Request Form and addendum are enclosed.

The Well Construction Standards serve to protect groundwater resources. By approving and issuing this special construction standard, the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

If you have any questions concerning this letter, I may be contacted at (503) 986-0851, or by e-mail at Kristopher.r.byrd@oregon.gov.

Sincerely,

Kristopher Byrd, Manager
Well Construction and Compliance Section

Enclosure

cc: Tommy Laird, Well Inspector, Northwest Region

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Special Standards
Request Form

REQUEST FOR WRITTEN APPROVAL TO USE CONSTRUCTION METHODS NOT INCLUDED IN OREGON ADMINISTRATIVE RULES 690-200 THROUGH 690-240

Before the request can be considered, this form must be completed. Requests shall be submitted to the Well Construction Program Coordinator, Water Resources Department, 725 Summer Street NE, Suite A, Salem OR 97301-1266. Requests may also be considered by the appropriate Regional Manager.

Date of request: 12/22/2020 **Oral approval date (if applicable):** _____

Bonded Well Constructor (**name, license #, and mailing address**): STEVE KASER WWC 1962

GROUNDWATER PROTECTION SERVICES LLC 502 LEWIS STREET SILVERTON OREGON 97381

(1) Location of Well: SW 1/4 NE 1/4 Tax lot 00400 Section 13 ,

Township 9 S , Range 1 W , MARION County

Address at well site: ON GEREN ISLAND SOUTH OF HYWY 2700 SOUTH OF OLD MEHAMA HYWY

(2) Start Card Number(s)(for work to be done): 1050343

(3) Name and Address of Land Owner: CITY OF SALEM PUBLIC WORKS DEPARTMENT

555 LIBERTY STREET SE ROOM 325 SALEM OREGON 97301

(4) Distance to the nearest septic tank, drainfield, closed sewage line (if water supply well)

>500 FT

(5) The unusual site conditions which necessitate this request: 24 FT DIAMETER

RANNY HORIZONTOL COLLECTOR WELL

(6) The proposed construction methods that the bonded well constructor believes will be adequate for this well: (attach additional pages if needed)

SEE CONSTRUCTION ADDENDUM ATTACHED

(7) Diagram showing the pertinent features of the proposed well design and construction: (attach additional pages if needed)

PLEASE NOTE:

(1) The Well Construction Standards serve to protect ground water resources. By approving and issuing this special construction standard the Oregon Water Resources Department is not representing that a well constructed in accordance with this condition will maintain structural integrity or that it meets engineering standards. The well constructor/or landowner is responsible for ensuring that a well is constructed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240.

(2) If it should be determined at some future date that the well, due to its construction, is allowing ground water contamination, waste or loss of artesian pressure, the undersigned shall return to the site and rectify the problem.

(3) If oral approval was granted, a written request must be submitted to the Department either within three (3) working days of the date of oral approval or prior to the completion of the associated well work. Failure to submit a written request as described above may void prior oral approval.

I have read and understand the above information. I further attest that the information provided is accurate to the best of my knowledge.

Bonded Constructor Signature: STEVE KASER WWC #1962 12/22/2020

SPECIAL STANDARDS CONSTRUCTION REQUEST ADDENDUM

SALEM PUBLIC WORKS COLLECTOR WELL

GEREN ISLAND HYWY 2700 OFF OLD MEHAMA HYWY

START CARD 1050343

CONTRACTOR: LAYNE CHRISTENSEN/RANNY COLLECTOR DIVISION

SCOPE OF WORK: A 24 ft OD by 20 ft ID caisson well will be constructed to an approximate depth of 35.6 feet from land surface. The caisson will be constructed and installed on site at the well location in 10-foot-long sections one constructed on top of the other. Once to depth a concrete floor will be poured. Horizontal wells will be constructed through ports in the bottom of the caisson. A 16" OD casing will be installed to refusal. A 12" 304 stainless well screen of appropriate construction strength and slot size will be installed inside the 16" casing. The casing will be retracted in five-foot lengths exposing the well screen.

WELL SEALING DURING INSTALLATION OF CAISSONS: The first 7-foot tall caisson lift will have constructed to its face a steel "drive shoe" which will cut a 24 ft – 8-inch diameter bore hole. Upper caisson lifts are 24 feet OD, creating a 4-inch annular space between the caisson wall and bore hole. A sodium bentonite slurry will be placed in the annulus to hold the hole open and lubricate the caisson as each section is installed. Additionally, on the first section there will be a ¾" bentonite chip seal between the jacking pads and caisson.

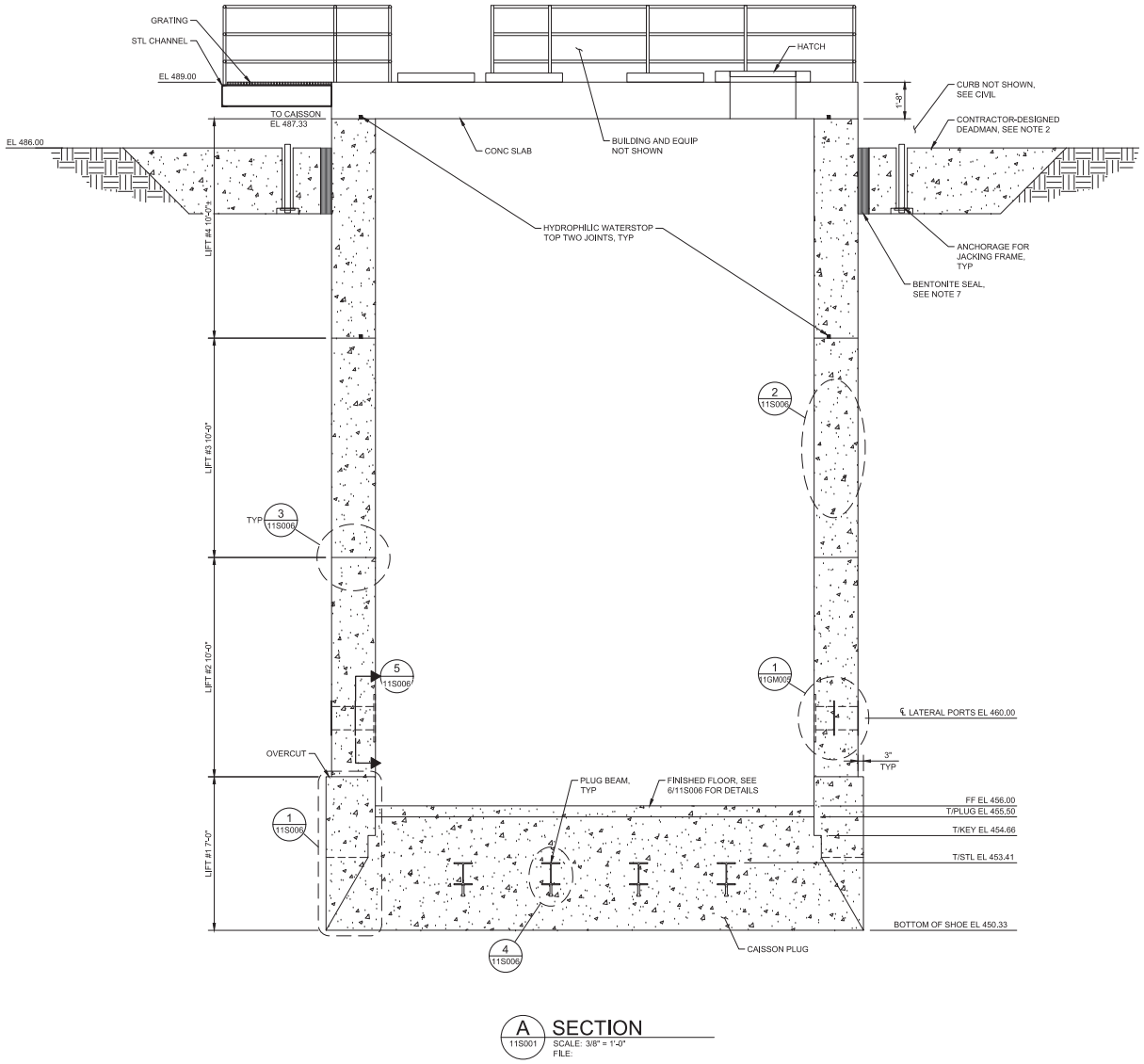
WELL SEALING AFTER CAISSON REACHES TOTAL DEPTH: There will be 2" grouting pipes built into the caissons for the purpose of pressure grouting cement after the floor of the caisson has been poured. From discussions with the contractor there will be a grout pipe every 7 ½ feet around the circumference of the caisson. Half of these 20 grout pipes will extend to 19 feet with the other half will extend 8 feet. The cement grout will be a 6-gallon water to 94 pounds cement mix.

PRESENCE OF LICENSE BONDED CONTRACTOR DURING WELL CONSTRUCTION: There is substantial time involved in the preparation of the jobsite, installation of jacking pads and constructing the caissons. The rules require a licensed bonded contractor be present during casing installation and/or seal placement. Therefore, I request this be acknowledged and written into the special standards approval along with any other circumstances the Oregon WRD deems necessary.

SUMMARY: While this caisson collection well is out of the norm for most of us, the construction of this well is basically the same as our constructing smaller diameter wells in that we start at the top extend casing (caissons) to the depth required and do everything possible to protect the groundwater in the process. I believe collectively working close with the Oregon WRD this can be accomplished.

Steve Kaser WWC #1962

Groundwater Protection Service LLC



A SECTION
11S001 SCALE: 3/8" = 1'-0"
FILE:

GENERAL NOTES:

1. CAISSON HAS BEEN DESIGNED FOR PERMANENT EARTH, GROUNDWATER, AND LIVE LOADS. CONTRACTOR MUST CONFIRM INSTALLATION (JACKING) LOADS TO NOT OVERSTRESS CAISSON CONSIDERING SELECTED MEANS AND METHODS.
2. DEADMAN SHOWN IS CONCEPTUAL. CONTRACTOR IS RESPONSIBLE FOR FINAL DESIGN OF DEADMAN AND CONNECTION TO CAISSON JACKING SYSTEM. DEADMAN MAY BE LEFT IN PLACE.
3. CONTRACTOR MAY PROVIDE ALTERNATE DESIGN OF CUTTING SHOE AND PLUG BEAM CONNECTIONS. SEE SHEET 11S006.
4. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN OF GROUT (LUBRICATION) PORTS IF USED. GROUT PORTS MUST BE SEALED AFTER CAISSON SINKING IS COMPLETE.
5. CAISSON LIFT HEIGHTS ARE TYPICAL. CONTRACTOR MAY ALTER LIFT HEIGHTS TO SUIT MEANS AND METHODS. MAINTAIN REINFORCEMENT AND JOINT DETAILS SHOWN ON 11S006.
6. ENGINEER TO VERIFY CAISSON TERMINATION DEPTH AND BASE CONDITION PRIOR TO PLACEMENT OF PLUG BEAMS.
7. PROVIDE BENTONITE SEAL IN ANNULUS BETWEEN CAISSON AND DEADMAN. FILL SEAL WITH BENTONITE CHIPS TO FULL DEPTH OF DEADMAN AND DEEPER AS REQUIRED BY OAR 690-DIV 210. SEE SPEC SECTION 13 73 10.
8. **HYDROSTATIC LOADING DURING CONSTRUCTION: THE CAISSON HAS BEEN DESIGNED TO RESIST UPLIFT FORCES DUE TO GROUNDWATER AT A MAXIMUM OF ELEVATION 482 FT WHILE UNWATERED. IF GROUNDWATER LEVELS EXCEED THIS ELEVATION WHILE UNWATERED, THE SHAFT MUST BE FLOODED OR TIED DOWN BY OTHER MEANS TO RESIST FLOTATION.**
9. **PERMANENT HYDROSTATIC LOADING: THE CAISSON HAS BEEN DESIGNED TO RESIST UPLIFT LOADINGS DUE TO GROUNDWATER AT A MAXIMUM OF ELEVATION 486 FT (GROUND SURFACE) WHILE UNWATERED. DO NOT UNWATER SHAFT IF WATER LEVELS EXCEED THIS ELEVATION.**

ENGINEERING DIVISION
SALEM PUBLIC WORKS DEPARTMENT

SHEET PREPARED BY:
McMILLEN JACOBS ASSOCIATES
carollo

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 9, 2005
BRYAN J. DUEVEL
EXPIRES: 12/31/21

CERTIFICATE EXPIRES:
DATE SIGNED:

VERIFY SHEET SIZE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, SHEET SIZE HAS BEEN MODIFIED

GEREN ISLAND WATER TREATMENT PLANT IMPROVEMENTS PROJECT
SE COLLECTOR WELL

REVISIONS

NO.	DESCRIPTION	DATE	BY

PROJECT NO:	
FILE NAME:	
DATUM:	
SURVEY:	
HORIZ SCALE:	
VERT SCALE:	
DESIGN:	C. BAUMAN
DRAWN:	R. GUERRERO
CHECKED:	B. DUEVEL
APPROVED:	

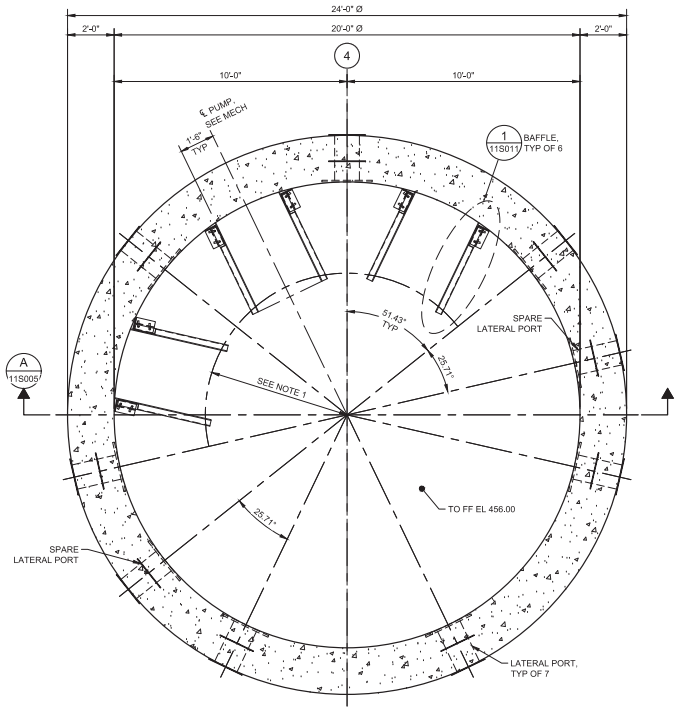
SHEET TITLE

SE COLLECTOR WELL CAISSON SECTION AND DETAILS

11S005

SHEET OF XXX

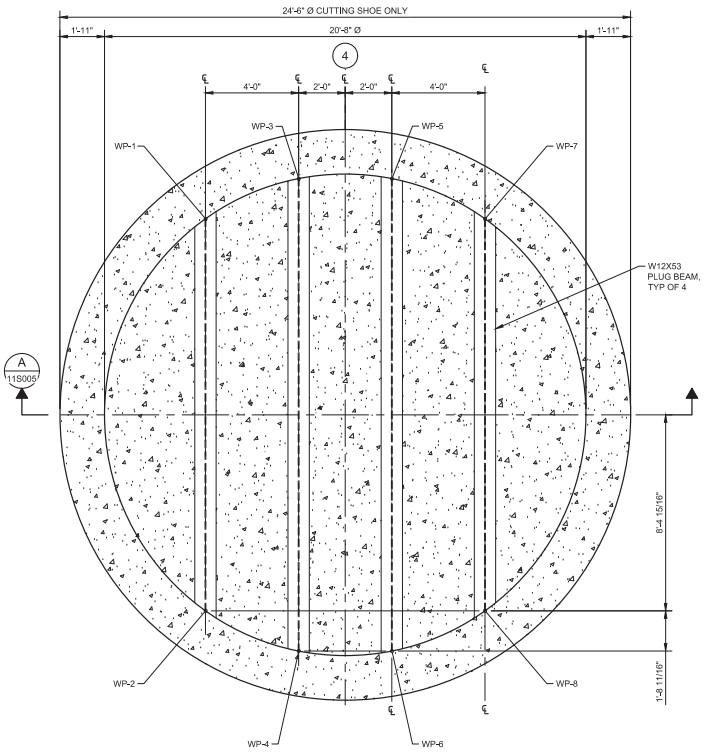
DWG: C:\Vault2\City of Salem\Geren Island LTWSS\CADD\DOCUMENT\CONTRACT DOCS\McMillen\11S005.dwg USER: Guerrero
DATE: Sep 25, 2020 12:02pm XREFS:Salem Title Block ANSI D X-WELL_STRUCT



NOTES:

1. DISTANCE FROM CENTER OF SHAFT TO ANCHOR ROD PER DET 3/11S011 IS APPROX 6'-1". CONTRACTOR TO FIELD-INSTALL ANCHORS SO FIT IS CONFIRMED.

1 - WELL - BOTTOM PLAN AT LATERAL, EL 459.00
SCALE: 3/8" = 1'-0"
FILE:



NOTES:

1. LENGTH BETWEEN WORKPOINTS WP-1 & WP-2 = 16'-9⅝"
2. LENGTH BETWEEN WORKPOINTS WP-3 & WP-4 = 20'-3⅝"
3. LENGTH BETWEEN WORKPOINTS WP-5 & WP-6 = 20'-3⅝"
4. LENGTH BETWEEN WORKPOINTS WP-7 & WP-8 = 16'-9⅝"
5. EACH WORKPOINT AT TOP OF FLANGE, BEAM CENTERLINE. SEE DETAIL 4/11S006.
6. CONTRACTOR TO VERIFY LENGTHS IN FIELD

2 - WELL - PLAN AT EL 453.41
SCALE: 3/8" = 1'-0"
FILE:

ENGINEERING DIVISION
SALEM PUBLIC WORKS DEPARTMENT

SHEET PREPARED BY:
McMILLEN JACOBS ASSOCIATES
carollo

REGISTERED PROFESSIONAL ENGINEER
SIGNATURE
OREGON
JULY 9, 2004
BRYAN J. DUEVEL
EXPIRES: 12/31/21

CERTIFICATE EXPIRES:
DATE SIGNED:

VERIFY SHEET SIZE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, SHEET SIZE HAS BEEN MODIFIED

GEREN ISLAND WATER TREATMENT PLANT IMPROVEMENTS PROJECT
SE COLLECTOR WELL

REVISIONS

NO.	DESCRIPTION	DATE	BY

PROJECT NO:	
FILE NAME:	
DATUM:	
SURVEY:	
HORIZ SCALE:	
VERT SCALE:	
DESIGN:	C. BAUMAN
DRAWN:	R. GUERRERO
CHECKED:	B. DUEVEL
APPROVED:	

SHEET TITLE

SE COLLECTOR WELL CAISSON BOTTOM PLAN

11S001

SHEET OF XXX

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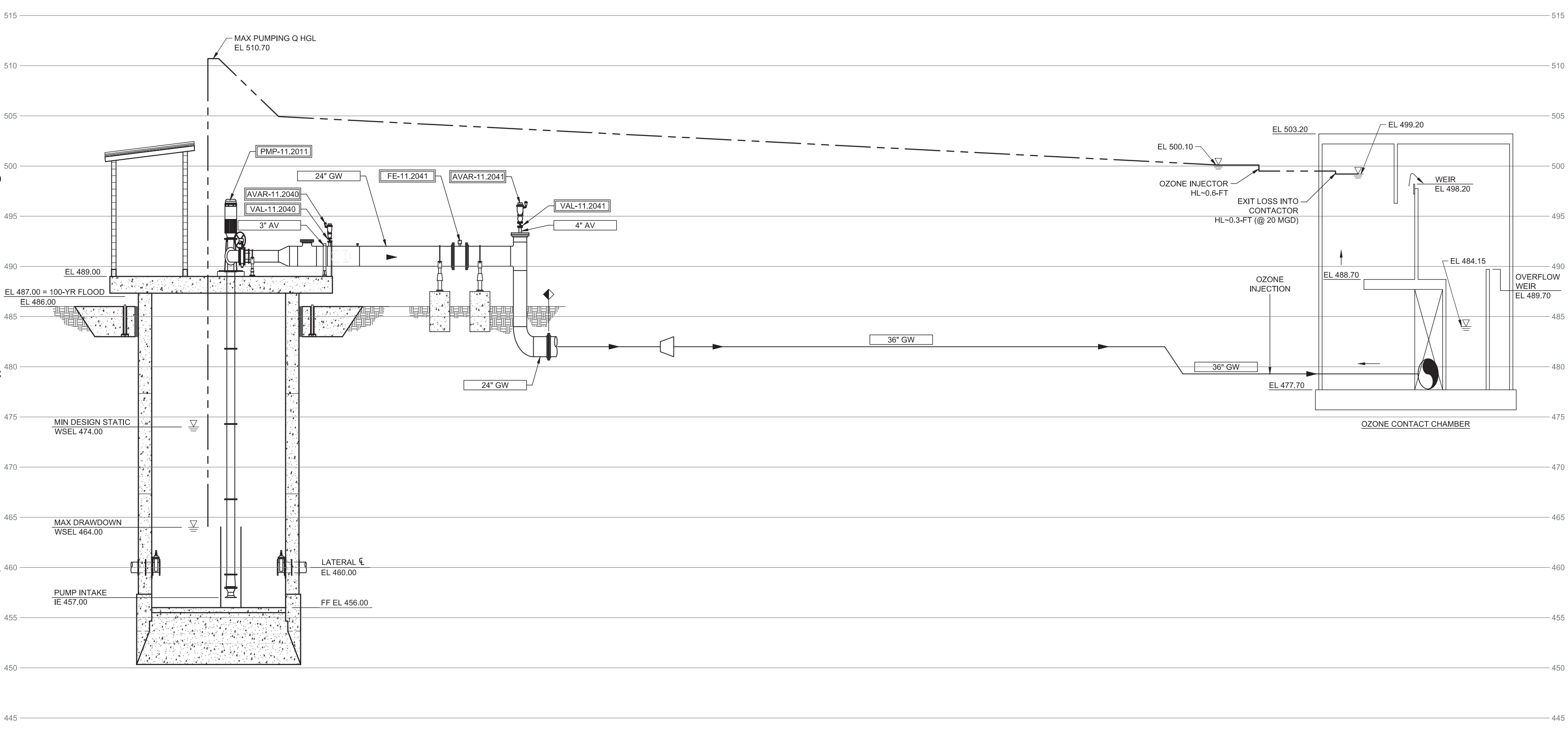
DATE: Sep 25, 2020 12:01pm XREFS:Salem Title Block ANSI D X-WELL_STRUCT

PROJECT DESIGN CRITERIA

CRITERIA	VALUE	CRITERIA	VALUE
EXISTING GROUND EL	486.0 FT	MAX FLOW	10 MGD
LATERAL CL EL	460.0 FT (26.0-FT BGS)	MAX STATIC HEAD	35.2-FT
EST. AVG. STATIC WSEL	476.5 FT (9.5-FT BGS)	RATED TDH	46 TO 50-FT
MIN DESIGN STATIC WSEL	474.0 FT (12.0-FT BGS)	No. PUMPS	3 (2 DUTY, 1 STANDBY)
MIN DESIGN PUMPING WSEL (MAX DRAWDOWN)	464.0 FT (22.0-FT BGS)	MAX Q PER PUMP	5.5 MGD
LATERAL NOMINAL DIA	12.0-INCH	PUMP MOTOR SIZE	75 HP
MAX LENGTH OF SINGLE LATERAL	~200.0-FT	PUMP SPEED	1200 RPM
REQD NO. OF LATERALS	7 EQUALLY SPACED	PUMP DRIVE	VARIABLE FREQUENCY
EST. DESIGN FLOW PER LATERAL	1,000-GPM/LATERAL	COLLECTOR WELL ID	20.0-FT
LATERAL SCREEN SLOT SIZE	0.08 TO 0.15-INCH*		
REQD IMPORT FILTER PACK AROUND LATERALS	NONE**		

* TO BE VERIFIED DURING LATERAL INSTALLATION AND DEVELOPMENT
** RELYING ON NATURAL LATERAL DEVELOPMENT TO FORM FILTER PACK AROUND LATERALS



HYDRAULIC PROFILE (@ 10MGD FLOW)

SCALE: NTS

ENGINEERING DIVISION
SALEM PUBLIC WORKS DEPARTMENT

SHEET PREPARED BY:

McMILLEN JACOBS ASSOCIATES

carollo

REGISTERED PROFESSIONAL ENGINEER
96311PE
Digitally Signed
OREGON
JULY 14, 2020
JODI L. BURNS
09/25/2020
EXPIRES: 12/31/21

CERTIFICATE EXPIRES:
DATE SIGNED:

VERIFY SHEET SIZE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH, SHEET SIZE HAS BEEN MODIFIED

GEREN ISLAND WATER TREATMENT PLANT IMPROVEMENTS PROJECT
SE COLLECTOR WELL

REVISIONS

NO.	DESCRIPTION	DATE	BY

PROJECT NO:
FILE NAME:
DATUM:
SURVEY:
HORIZ SCALE:
VERT SCALE:
DESIGN: J. BURNS
DRAWN: R. GUERRERO
CHECKED: M. MOUGHAMIAM

APPROVED:

SHEET TITLE

SE COLLECTOR WELL HYDRAULIC PROFILE & DESIGN CRITERIA

11G004

SHEET OF XXX

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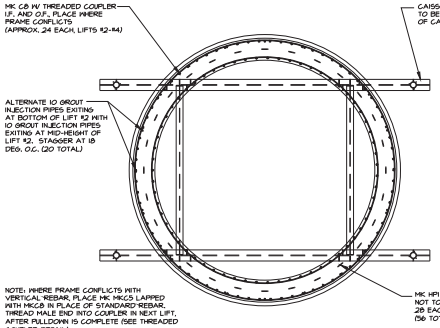
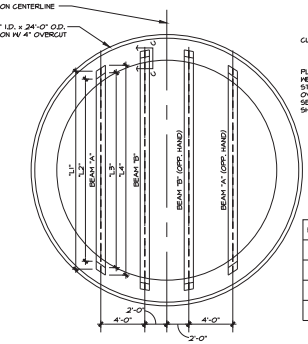
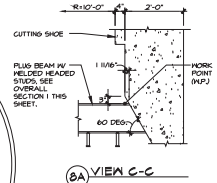


7 PULLDOWN FRAME, HAIRPIN & THREADED COUPLER LOCATIONS
3/16" = 1'-0"



BEAM	"A"	"B"
"L1"	18'-0"	21'-6 13/16"
"L2"	16'-6 11/16"	20'-4 5/8"
"L3"	17'-8 11/16"	20'-8 1/2"
"L4"	19'-0 15/16"	21'-10 1/2"

8 TYP. PLUG BEAM DETAIL
N.T.S.



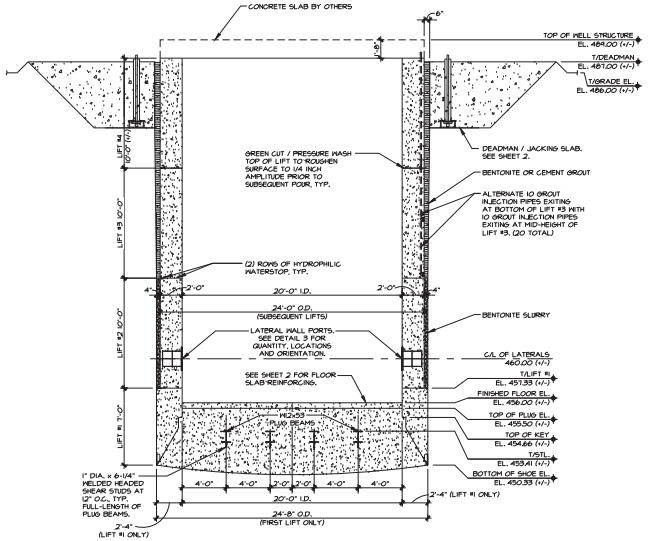
8A VIEW C-C

REINFORCING STEEL SCHEDULE

MARK	BAR SIZE	NO. REQ'D	LENGTH	A	B	C	DESCRIPTION
C1	7	67	11'-10 1/2"	8'-8"	3'-2 1/2"	-	A, B, 30 DEG
C1A	5	72	8'-0"	6'-2"	1'-10"	-	A, B, 45 DEG
C2	7	78	7'-4"	6'-2"	1'-2"	-	A, B
C3	7	65	7'-11"	6'-9"	1'-2"	-	
C4	7	228	15'-0"	-	-	-	
C4A	7	114	10'-8"	-	-	-	
C5	7	72	9'-10"	-	-	-	STRAIGHT BARS
C6	7	73	10'-0"	-	-	-	
C7	5	72	8'-0"	-	-	-	
C8	7	72	5'-0"	WITH FEMALE COUPLER			
C9	7	48	5'-0"	WITH MALE THREAD			

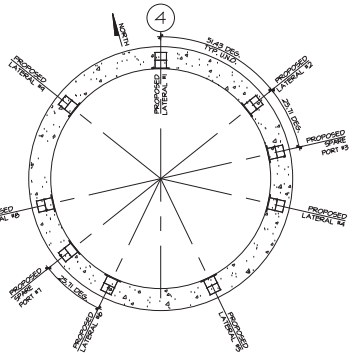
MARK	BAR SIZE	NO. REQ'D	LENGTH	A	B	C	DESCRIPTION
C12	4	38	22 1/2"	11"	4"	5"	A, B, C, 4 1/2"
C13	4	76	30 1/2"	18"	4"	5"	
C14	4	76	34 1/2"	23"	4"	5"	
C15	7	3	24'-3"	22'-0 7/8"	1'-4 3/8"	11'-7"	A, B, C RADIUS
C16	7	3	28'-8"	21'-6 7/8"	1'-11 1/4"	11'-3 5/8"	
C17	7	3	28'-1"	21'-0 5/8"	1'-9 5/8"	11'-0 1/8"	
C18	7	12	27'-6"	20'-6 1/2"	1'-8 1/8"	10'-8 1/2"	
C19	7	102	26'-9"	19'-11 1/4"	1'-5 7/8"	10'-4 1/2"	
C20	7	36	30'-4"	22'-11 5/8"	8'-4"	12'-1"	
C21	7	90	24'-8"	22'-4 3/4"	8'-2 1/4"	11'-8"	
HPI	5	56	17'-0"	-	-	-	90°, 6"

REINFORCING NOTES:
1. MINIMUM HORIZONTAL LAP SPLICE = 60".
2. MINIMUM VERTICAL LAP SPLICE = 60".

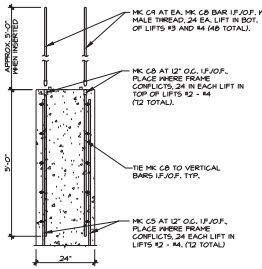


1 VERTICAL SECTION THRU CAISSON
3/16" = 1'-0"

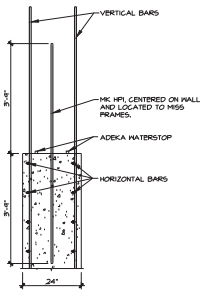
NOTES:
1. REINFORCING STEEL SHALL COMPLY WITH ASTM A-615, GRADE 60.
2. CONCRETE FOR CAISSON WALLS WILL BE PER THE SPECIFICATIONS WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH = 5,000 PSI.
3. CONCRETE FOR PLUG WILL BE PER THE APPROVED MIX DESIGN WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH = 5,000 PSI AND MAXIMUM SLUMP = 9".
4. HEADED SHEAR STUDS: ALL HEADED SHEAR STUDS SHALL CONFORM TO ASTM A108 AND SHALL BE 1-INCH DIAMETER HEADED STUDS UNLESS NOTED OTHERWISE. STUD LENGTHS AFTER WELD SHALL BE AS SHOWN ON THE DRAWINGS. ALL STUDS SHALL BE END WELDED IN SHOP OR IN FIELD WITH EQUIPMENT RECOMMENDED BY MANUFACTURER.
5. ALL THREADED REBAR COUPLINGS WILL DEVELOP AT LEAST 125% OF THE YIELD STRENGTH OF THE REINFORCING BAR.
6. THREADED COUPLERS ARE USED WHERE JACKING FRAME CONFLICTS WITH TYPICAL VERTICAL REINFORCING. SEE DETAILS 4 AND 7 THIS SHEET.
7. HYDROSTATIC LOADING DURING CONSTRUCTION: THE CAISSON HAS BEEN DESIGNED TO RESIST UPLIFT FORCES DUE TO GROUNDWATER AT A MAXIMUM ELEVATION OF 482 FT. WHILE UNWATERED. IF GROUNDWATER LEVELS EXCEED THIS ELEVATION WHILE UNWATERED, THE SHAFT MUST BE FLOODED OR TIED DOWN BY OTHER MEANS TO RESIST FLOTATION.
8. FIELD VERIFY DIMENSIONS AND ANGLES OF PLUG BEAM CUTS TO FIT CUTTING SHOE.
9. CAISSON SIZE, ELEVATIONS, AND REINFORCING ARE BASED ON DRAWINGS DATED 9/25/2020 BY MCMILLEN JACOBS ASSOCIATES.
10. ELEVATIONS ARE APPROXIMATE. CAISSON SUNK TO REFUSAL.



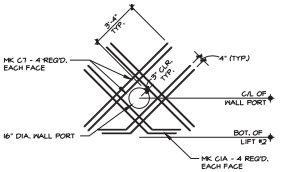
3 LATERAL PORT LOCATIONS
N.T.S.



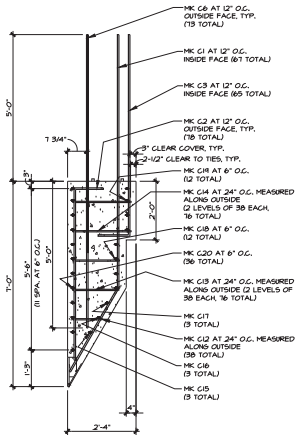
4 REBAR W/ THREADED COUPLER DETAIL
1/2" = 1'-0"



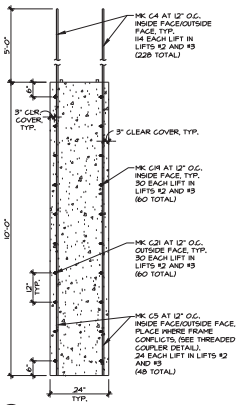
5 TYP. CONSTRUCTION JOINT DETAIL
N.T.S.



6 TYP. WALL PORT REINF.
1/4" = 1'-0"

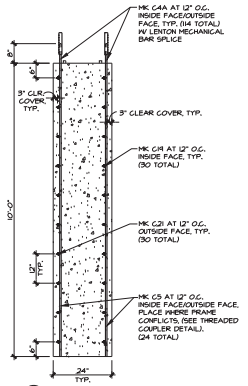


A LIFT #1



B LIFT #2 AND #3

2 LIFT DETAILS
1/2" = 1'-0"



C LIFT #4

Layne
A GRAYTEC COMPANY
LAYNE CHRISTENSEN COMPANY
6360 HUNTLEY ROAD
COLUMBUS, OHIO 43229
(614) 888-6263 / FAX (614) 888-9208

CITY OF Salem AT YOUR SERVICE

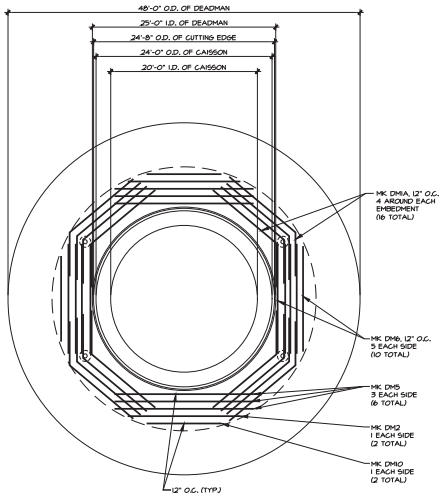
Project Reference: S.E. COLLECTOR WELL
GEREN ISLAND
W.T.P. IMPROVEMENTS

General Contractor: SLAYDEN CONSTRUCTORS, INC.

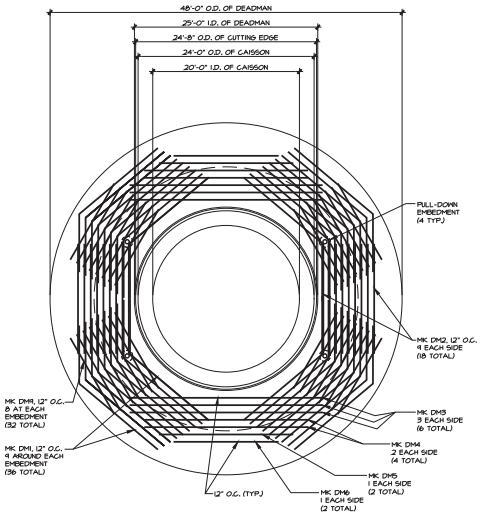
Client: CITY OF SALEM, OREGON

SUBMITTAL SET 12/17/2020

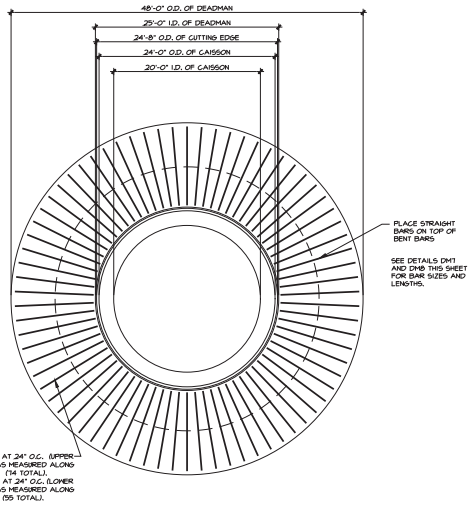
CAISSON REINFORCING



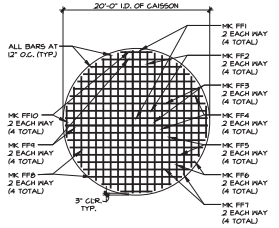
9 LOWER BENT BAR LOCATIONS (PLAN VIEW)
1/8" = 1'-0"



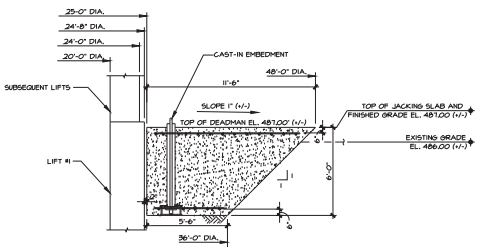
10 UPPER BENT BAR LOCATIONS (PLAN VIEW)
1/8" = 1'-0"



11 UPPER AND LOWER HORIZ. STRAIGHT BARS (PLAN VIEW)
1/8" = 1'-0"

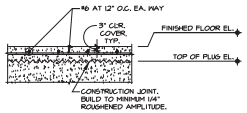


12 FINISH FLOOR BARS (PLAN VIEW)
1/8" = 1'-0"

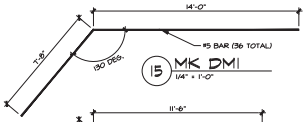


13 SECTION AT EMBEDMENT
1/4" = 1'-0"

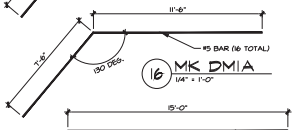
NOTES:
1. USE 3000 PSI CONCRETE (MIN.)
2. TOTAL VOLUME: APPROXIMATELY 200 C.Y.
3. CAST DEADMAN CONCRETE AGAINST EARTH CUTS.
4. DEADMAN DIMENSIONS ARE APPROXIMATE. DEPTH IS 6'-0" MINIMUM, 6'-6" MAXIMUM. BOTTOM DIAMETER IS 36'-0" MINIMUM. IF SIDE SLOPE IS MORE VERTICAL THAN SHOWN, BOTTOM DIAMETER MAY BE INCREASED AND TOP DIAMETER DECREASED. ADJUST ARRANGEMENT AND SPACING OF REINFORCING AS REQUIRED.



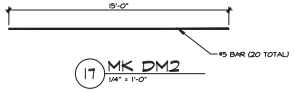
14 TYP. FINISH SLAB DETAIL
1/2" = 1'-0"



15 MK DM1
1/4" = 1'-0"

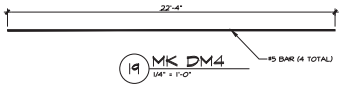


16 MK DM1A
1/4" = 1'-0"

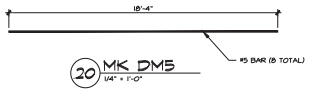


17 MK DM2
1/4" = 1'-0"

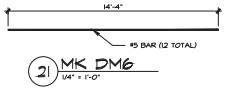
18 MK DM3
1/4" = 1'-0"



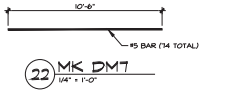
19 MK DM4
1/4" = 1'-0"



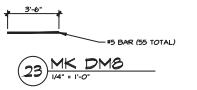
20 MK DM5
1/4" = 1'-0"



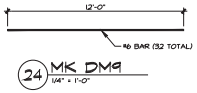
21 MK DM6
1/4" = 1'-0"



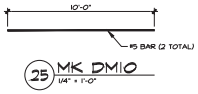
22 MK DM7
1/4" = 1'-0"



23 MK DM8
1/4" = 1'-0"



24 MK DM9
1/4" = 1'-0"



25 MK DM10
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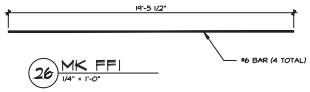
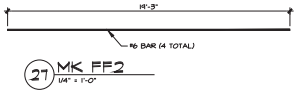
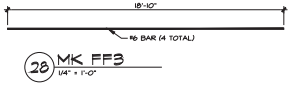


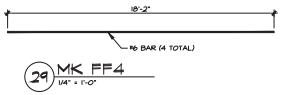
26 MK FF1
1/4" = 1'-0"



27 MK FF2
1/4" = 1'-0"



28 MK FF3
1/4" = 1'-0"



29 MK FF4
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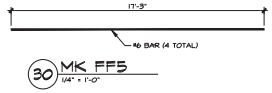
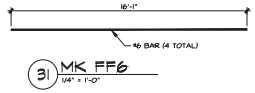
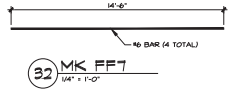


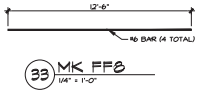
30 MK FF5
1/4" = 1'-0"



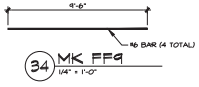
31 MK FF6
1/4" = 1'-0"



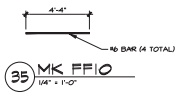
32 MK FF7
1/4" = 1'-0"



33 MK FF8
1/4" = 1'-0"



34 MK FF9
1/4" = 1'-0"



35 MK FF10
1/4" = 1'-0"

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General Contractor: SLAYDEN CONSTRUCTORS, INC.

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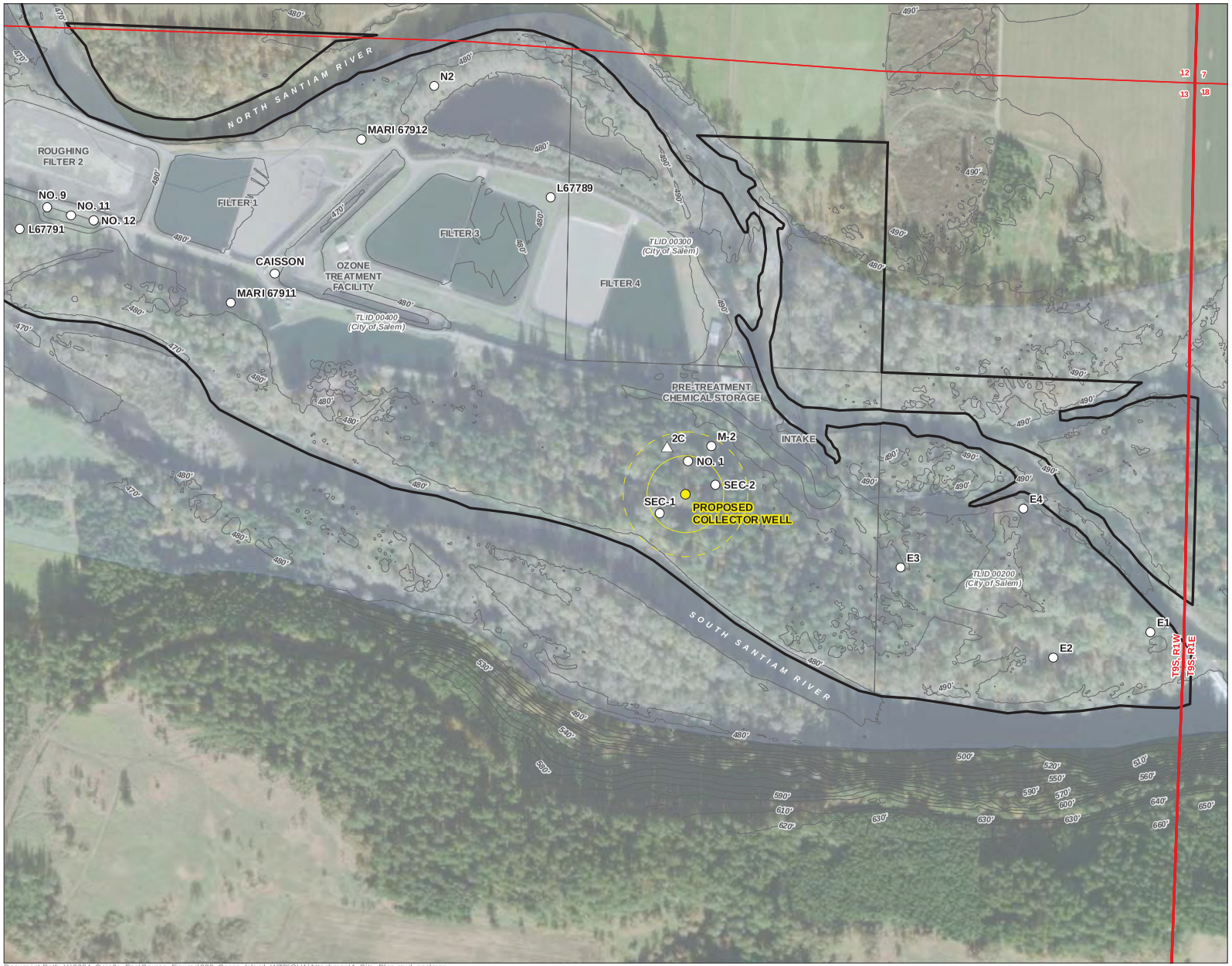
SUBMITTAL SET 12/17/2020

DEADMAN AND FINISH FLOOR SLAB REINFORCING

2



ATTACHMENT A

Site Plan

Salem Public Works,
PWS ID #41-00731

LEGEND

- Proposed Collector Well – 20' Caisson and Pumping Facilities
- Extent of Horizontal Laterals
- 100' Buffer Around Laterals
- Well
- Piezometer
- Property Boundary
- Tax Lot
- Elevation Contour, 10'
- FEMA Floodway

PROPOSED COLLECTOR WELL LOCATION:
Located 1,845' south and 2,135' west from the NE corner of Section 13, Township 9 South, Range 1 West
Tax Lot: 091W13 00400
Latitude: 44.790192, Longitude: -122.751561

DeEtta Fosbury, RG – GSI Water Solutions, Inc.
971.200.8532
55 SW Yamhill St., Portland, OR, 97202

N

0 200 400 600
Feet

Date: September 24, 2020
Data Sources: DEA 2020, ESRI, USGS, West Consultants, Maxar 2019

GSI Water Solutions, Inc.

Document Path: Y:\0384_Carollo_Eng\Source_Figures\009_Geren_Island_WTP\OHA\AttachmentA_Site_Plan.mxd, npalmer