



Oregon

Kate Brown, Governor

Water Resources Department

725 Summer St NE, Ste A

Salem, OR, 97301

Phone: 503-986-0900

Fax: 503-986-0904

July 19, 2022

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 Boardman, Start Card number 1057608, is hereby approved for the following: You may construct a 19 ft diameter collector well as described on your Special Standards Request form and addendum dated July 19, 2022, 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) 302-8618, or by e-mail at Tommy.K.Laird@water.oregon.gov.

Sincerely,

Tommy Laird
Well Construction Program Coordinator
Well Construction and Compliance Section

Enclosure

cc: Shaun Finn, Well Inspector, Northcentral Region

This is a FINAL ORDER other than contested case. This final order is subject to judicial review under ORS 183.484. Any petition for judicial review of the final order must be filed within the time 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: 7/19/2022 **Oral approval date (if applicable):** _____

Bonded Well Constructor (name, license #, and mailing address): _____

STEVE KASER WWC #1962 502 LEWIS STREET SILVERTON OREGON 97381

(1) Location of Well: NW 1/4 NW 1/4 Tax lot 102 Section 9 ,
 Township 4 N , Range 25 E , MORROW County

Address at well site: _____

OFF MARINE DRIVE NE BOARDMAN OREGON (NO ASSIGNED ADDRESS YET)

(2) Start Card Number(s)(for work to be done): 1057608

(3) Name and Address of Land Owner: _____

CITY OF BOARDMAN 200 CITY CENTER CIRCLE BOARDMAN OREGON 97818

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

N/A

(5) The unusual site conditions which necessitate this request: _____

19 FT OD RANNY 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 ATTACHED CONSTRUCTION ADDENDUM

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

SEE ENGINEERED DRAWINGS ATTACHED

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 7/19/2022

SPECIAL STANDARDS CONSTRUCTION REQUEST ADDENDUM

CITY OF BOARDMAN COLLECTOR WELL #3

SAILBOARD BEACH OFF MARINE DRIVE BOARDMAN OREGON

START CARD 1057608

CONTRACTOR: LAYNE CHRISTENSEN/RANNY COLLECTOR DIVISION

SCOPE OF WORK: A 19 ft 6" OD (first lift) by 16 ft ID caisson well will be constructed to an approximate depth of 51 feet from land surface. The caisson will be constructed and installed on site at the well location in 10- and 12-foot-tall sections, one constructed on top of the other. Once to depth a concrete floor will be poured. Horizontal wells will be constructed through 10 ports in the bottom of the caisson. The number of laterals installed will depend on the length of laterals achieved. The plan is to install 6 to 10 laterals, totaling 1000' length. Spare ports will be plated off for possible future use. During lateral installation, a 16 inch OD casing will be installed to 200 feet length, or refusal. A 12 inch 304 stainless well screen of appropriate construction strength and slot size will be installed inside the 16" casing. A sand sieve analysis will be done to determine the slot size of screens installed. The casing will be retracted in five-foot lengths exposing the well screen.

WELL SEALING DURING INSTALLATION OF CAISSONS: The first 5-foot-tall caisson lift will have constructed to its face a steel "drive shoe" which will cut a 19 ft – 6-inch diameter bore hole. Upper caisson lifts are 19 feet OD, creating a 3-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.

WELL SEALING AFTER CAISSON REACHES TOTAL DEPTH: There will be 16 each 2-inch grouting pipes built into the caissons for the purpose of pressure grouting cement after the floor of the caisson has been poured. Per the drawing the grout pipes will be spaced evenly around the circumference of the caisson. 8 of these 16 grout pipes will exit the caisson wall not less than 18 feet from land surface feet with the remaining 8 will exit 7 feet below land surface. 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 each of the caisson sections. The rules require a licensed bonded contractor be present during casing installation and/or seal placement. Additionally, there will be a licensed driller on site during the pouring of the 6 ft bottom cement plug. I request this be acknowledged and written into the special standards approval along with any other circumstances the Oregon WRD deems necessary.

SUMMARY: We believe our construction methods as explained above, meet, or exceed Oregon well installation regulations, allowing for the differences between vertical well and radial collector well installation techniques.

Steve Kaser WWC #1962

CAISSON REINFORCING

1

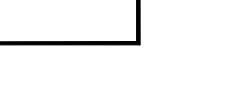
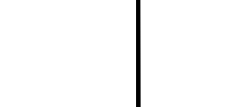
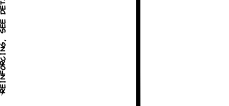
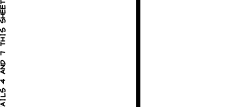
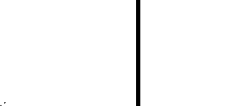
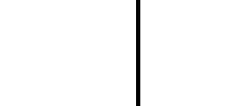
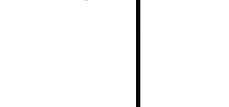
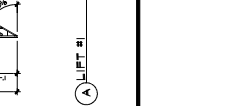
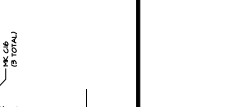
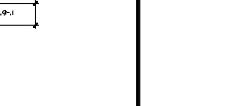
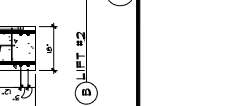
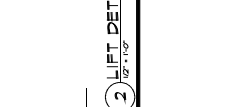
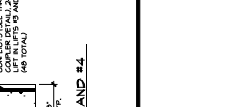
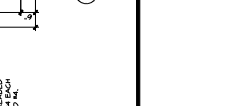
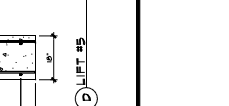
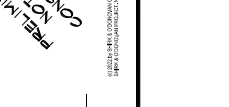
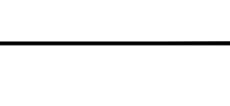
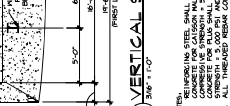
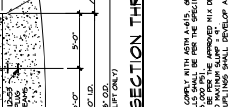
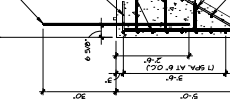
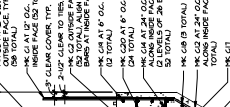
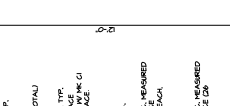
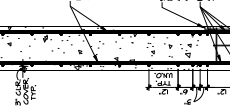
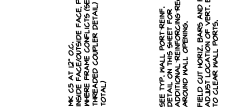
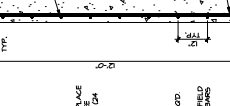
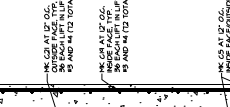
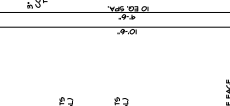
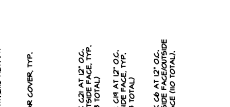
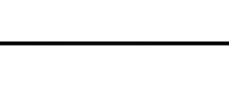
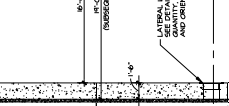
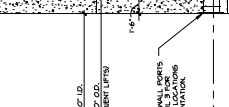
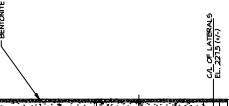
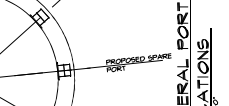
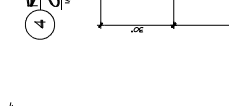
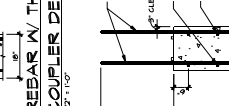
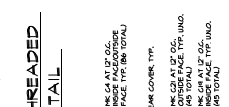
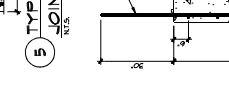
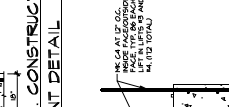
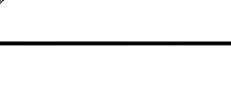
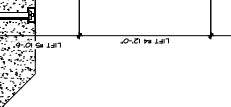
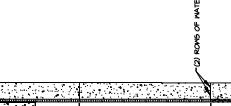
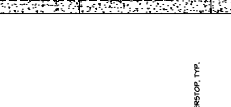
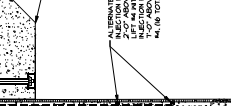
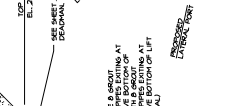
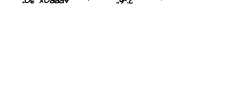
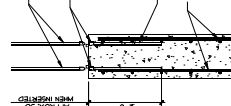
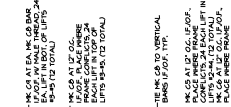
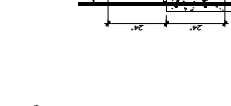
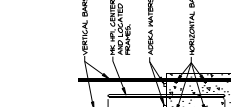
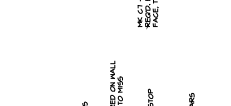
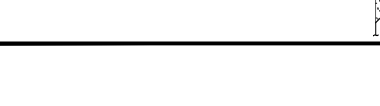
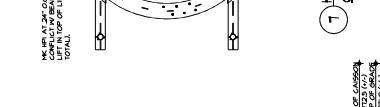
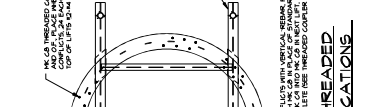
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 BOARDMAN, OH
 Engineer: ANDERSON AND PERRY ASSOC., INC.
 Client: CITY OF BOARDMAN, OH

LA VNE CHRISTENSEN COMPANY
 6500 HUNTLLEY ROAD
 COLUMBUS, OHIO 43229
 (614) 888-6293 / FAX (614) 888-9208



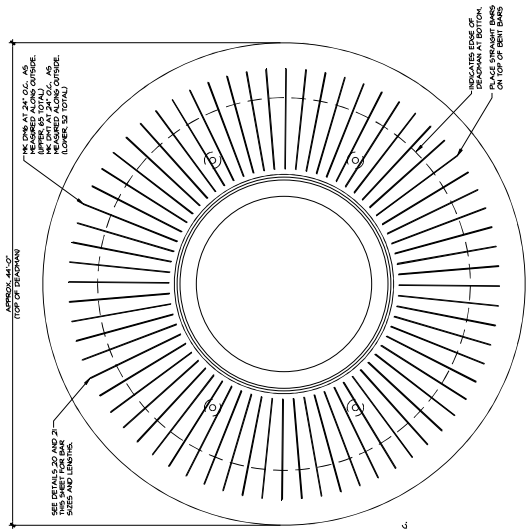
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G4	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 4
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G6	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 6
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G44	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 44
G45	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 45
G46	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 46
G47	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 47
G48	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 48
G49	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 49
G50	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 50
G51	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 51
G52	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 52
G53	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 53
G54	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 54
G55	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 55
G56	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 56
G57	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 57
G58	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 58
G59	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 59
G60	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 60
G61	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 61
G62	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 62
G63	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 63
G64	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 64
G65	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 65
G66	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 66
G67	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 67
G68	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 68
G69	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 69
G70	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 70
G71	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 71
G72	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 72
G73	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 73
G74	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 74
G75	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 75
G76	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 76
G77	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 77
G78	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 78
G79	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 79
G80	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 80
G81	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 81
G82	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 82
G83	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 83
G84	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 84
G85	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 85
G86	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 86
G87	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 87
G88	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 88
G89	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 89
G90	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 90
G91	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 91
G92	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 92
G93	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 93
G94	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 94
G95	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 95
G96	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 96
G97	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 97
G98	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 98
G99	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 99
G100	6	5'-0"	4'-0"	4'-0"	SEE DETAIL 100

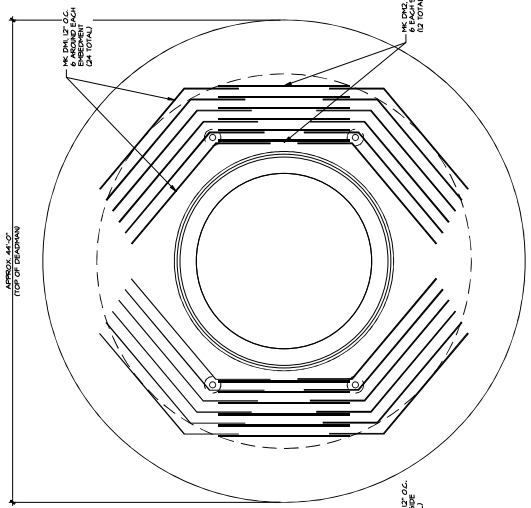


1 VERTICAL SECTION THRU CAISSON
 3'-0" x 1'-0"
 NOTES:
 1. REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60.
 2. CONCRETE FOR CA

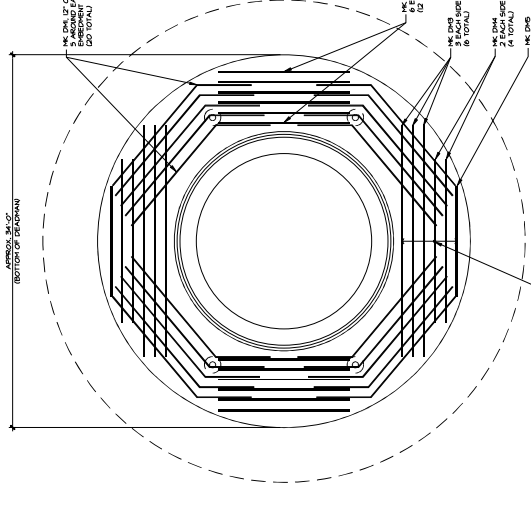
PRELIMINARY
 NOT FOR
 CONSTRUCTION



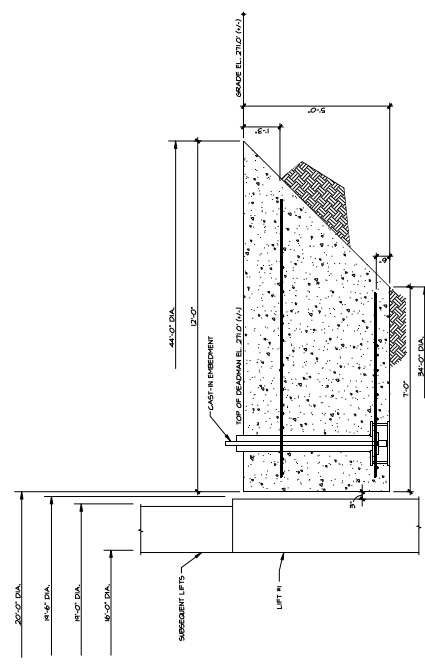
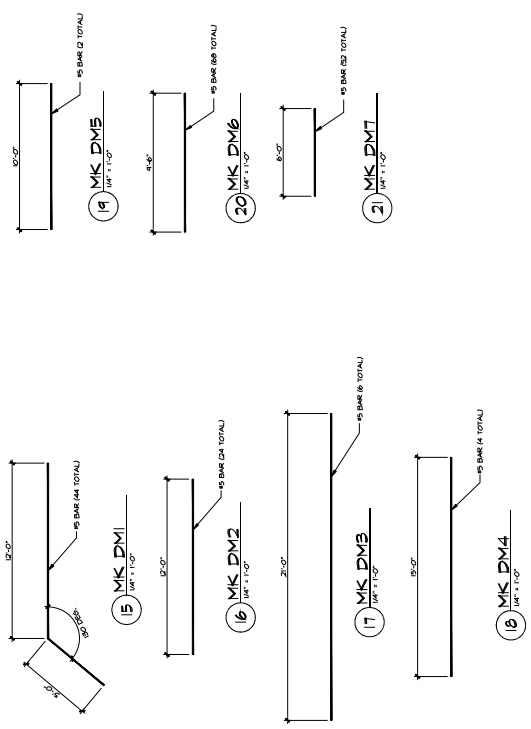
(1) UPPER AND LOWER HORIZ. STRAIGHT BARS (PLAN VIEW)
 3/16" x 1'-0"



(2) UPPER BENT BAR LOCATIONS (PLAN VIEW)
 3/16" x 1'-0"



(3) LOWER BENT BAR LOCATIONS (PLAN VIEW)
 3/16" x 1'-0"



(9) CROSS SECTION AT EMBEDMENT
 1/2" x 1'-0"

NOTES:
 1. USE #5 BARS.
 2. TOP OF DEADMAN IS 271.0' (1.1').
 3. USE 2000 PSI CONCRETE WITH 3% AIR.

SHIRK & O'DONOVAN CONSULTING ENGINEERS