

WATER WELL RECORD (WWC-5)

KOLAR DOC ID _____ WELL ID _____

Original Record Correction Change in Well Use

LOCATION OF WATER WELL

Latitude		Longitude		Section		Township		Range		E W	Fraction	¼	¼	¼
Datum		Elevation		County										

WATER WELL OWNER

Name	
Business	
Address	
Well location at owner's address	

WELL WATER USE

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COMPLETION

Depth of completed well: _____ ft.
Depth(s) groundwater encountered:
(1) _____ ft.; (2) _____ ft.;
(3) _____ ft.; (4) dry well
Static water level in well: _____ ft.
measured below land surface
on (mm/dd/yy): _____
measured above land surface
on (mm/dd/yy): _____
Estimated yield: _____ gpm
Water level was: _____ ft. after _____ hours
pumping _____ gpm
Pump installed? Yes No
Water well disinfected? Yes No
Date disinfected (mm/dd/yy): _____
Aquifer, if known:

NEAREST SOURCE OF POTENTIAL CONTAMINATION

Source: _____
Distance from well: _____ Direction from well: _____
Source description: _____
Source: _____
Distance from well: _____ Direction from well: _____
Source description: _____
No potential source of contamination within 100 feet.

CONSTRUCTION

Borehole interval:	Borehole diameter:
from _____ to _____ ft.	_____ in.
from _____ to _____ ft.	_____ in.
Casing height above land surface: _____ in.	
If casing height is less than 12 in. has a variance been approved?*	Yes No
*variance not required for monitoring or environmental remediation wells	
Casing type: _____	
Blank casing interval: _____ ft. to _____ ft.	
Blank casing diameter: _____ in.	
Casing joints: _____	
Weight: _____ lbs/ft.	
Wall thickness or gauge no.: _____	
Blank casing interval: _____ ft. to _____ ft.	
Blank casing diameter: _____ in.	
Casing joints: _____	
Weight: _____ lbs/ft.	
Wall thickness or gauge no.: _____	
Grout interval: _____ ft. to _____ ft.	
Grout material: _____	
Grout interval: _____ ft. to _____ ft.	
Grout material: _____	
Screen / perforation material: _____	
Screen / perforation openings: _____	
Screen / perforation intervals:	
From _____ ft. to _____ ft.	
Slot size _____ unit _____	
From _____ ft. to _____ ft.	
Slot size _____ unit _____	
Gravel pack intervals:	
Gravel pack not used: Gravel size _____ in	
From _____ ft. to _____ ft.	
Gravel pack not used: Gravel size _____ in	
From _____ ft. to _____ ft.	

PERMIT & ID NUMBERS (AS REQUIRED)

DWR Application No.: _____
KDHE / EPA Project Code: _____
Site Name: _____
KDHE UIC Class V Form Completed: Yes No
County Permit: Yes No Permit ID: _____
Lease Name & Well #: _____
of boreholes: _____ # of dewatering wells: _____

LITHOLOGIC LOG

FROM	TO	LITHOLOGY INTERVALS

COMMENTS

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CONTRACTOR'S OR LANDOWNERS CERTIFICATION

This water well was constructed reconstructed pursuant to the stated water well contractor's license and was completed on _____. I certify that this record is true to the best of my knowledge and belief. This water well record was completed on _____ under the business name of _____, Kansas Water Well Contractor's License No. _____ under the authority of the designated person as defined in K.A.R. 28-30-2(j) and signed and certified by the electronic signature of the designated person at its submittal: _____.

Send one copy to WATER WELL OWNER and retain one for your records. Fee of \$5.00 for each constructed well.

Form	WWC5.2 - Water Well Record
Doc ID	1676988
Well Owner	City of Olathe, KS
Contractor	Layne Christensen Company #102

Lithology

From	To	Lithology Intervals
0	1	topsoil
1	5	clay,brown
5	9	clay,silty,brown
9	26	sand,very fine
26	29	sand,fine to medium,brown
29	30	sand,fine to medium,clayey,brown,cobble
30	44	sand,fine to medium,gravelly,brown,cobbles
44	50	sand,medium to coarse,gravelly,gray,cobbles
50	64	sand,medium to coarse,gravelly,gray,cobbles,boulders
64	67	limestone,unweathered,brown

February 27, 2021

Layne
620 S. 38th Street
KC KS 66106

Re: Project: Olathe Vertical Wells
Description: Well Sand Sample
Sampled By: Client
Project #: C10-16-191
Report #: K39714
Original Dry: 675.4
Location: Well 5
Depth: 40-45

Report Of Test Results
Gradation ASTM C-136/AASHTO T-27

Sieve size	Opening (mm)	Cumulative Retained	% Retained	% Passing
1/2"	12.5	0	0	100
3/8"	9.5	0.0	0	100
No. 4	4.75	44.8	7	93
No. 8	2.36	199.5	30	70
No. 16	1.180	459.7	68	32
No. 30	0.600	591.2	88	12
No. 50	0.300	637.5	94	6
No. 100	0.150	659.3	98	2
No. 200	0.075	664.1	98.3	1.7

Thank you for your continued interest in Kansas City Testing & Engineering, LLC

Respectfully Submitted
Kansas City Testing & Engineering, LLC

Sam Coulson, PE
Lab Manager

Page 1 of 1 Results relate only to sample tested. Reports shall not be reproduced except in full without the written approval of Kansas City Testing & Engineering, LLC.

February 24, 2021

Layne
620 S. 38th Street
KC KS 66106

Re: Project: Olathe Vertical Wells
Description: Well Sand Sample
Sampled By: Client
Project #: C10-16-191
Report #: K39714
Original Dry: 676.4
Location: Well 5
Depth: 45-50'

Report Of Test Results

Gradation ASTM C-136/AASHTO T-27

Sieve size	Opening (mm)	Cumulative Retained	% Retained	% Passing
1/2"	12.5	0	0	100
3/8"	9.5	0.0	0	100
No. 4	4.75	39.8	6	94
No. 8	2.36	267.7	40	60
No. 16	1.180	536.6	79	21
No. 30	0.600	636.0	94	6
No. 50	0.300	658.5	97	3
No. 100	0.150	667.9	99	1
No. 200	0.075	670.7	99.2	0.8

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February 27, 2021

Layne
620 S. 38th Street
KC KS 66106

Re: Project: Olathe Vertical Wells
Description: Well Sand Sample
Sampled By: Client
Project #: C10-16-191
Report #: K39714
Original Dry: 699.4
Location: Well 5
Depth: 50-55'

Report Of Test Results

Gradation ASTM C-136/AASHTO T-27

Sieve size	Opening (mm)	Cumulative Retained	% Retained	% Passing
1/2"	12.5	0	0	100
3/8"	9.5	0.0	0	100
No. 4	4.75	120.6	17	83
No. 8	2.36	273.0	39	61
No. 16	1.180	512.9	73	27
No. 30	0.600	644.6	92	8
No. 50	0.300	678.1	97	3
No. 100	0.150	692.3	99	1
No. 200	0.075	695.0	99.4	0.6

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February 27, 2021

Layne
620 S. 38th Street
KC KS 66106

Re: Project: Olathe Vertical Wells
Description: Well Sand Sample
Sampled By: Client
Project #: C10-16-191
Report #: K39714
Original Dry: 657.9
Location: Well 5
Depth: 55-60'

Report Of Test Results

Gradation ASTM C-136/AASHTO T-27

Sieve size	Opening (mm)	Cumulative Retained	% Retained	% Passing
1/2"	12.5	0	0	100
3/8"	9.5	13.7	2	98
No. 4	4.75	146.0	22	78
No. 8	2.36	310.5	47	53
No. 16	1.180	550.1	84	16
No. 30	0.600	630.5	96	4
No. 50	0.300	643.5	98	2
No. 100	0.150	648.3	98.5	1.5
No. 200	0.075	649.8	98.8	1.2

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Lab Manager

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February 27, 2021

Layne
620 S. 38th Street
KC KS 66106

Re: Project: Olathe Vertical Wells
Description: Well Sand Sample
Sampled By: Client
Project #: C10-16-191
Report #: K39714
Original Dry: 715.4
Location: Well 5
Depth: 60-65'

Report Of Test Results

Gradation ASTM C-136/AASHTO T-27

Sieve size	Opening (mm)	Cumulative Retained	% Retained	% Passing
1/2"	12.5	0	0	100
3/8"	9.5	1.2	0	100
No. 4	4.75	108.5	15	85
No. 8	2.36	357.3	50	50
No. 16	1.180	597.0	83	17
No. 30	0.600	686.4	96	4
No. 50	0.300	700.0	98	2
No. 100	0.150	705.7	99	1
No. 200	0.075	707.8	98.9	1.1

Thank you for your continued interest in Kansas City Testing & Engineering, LLC

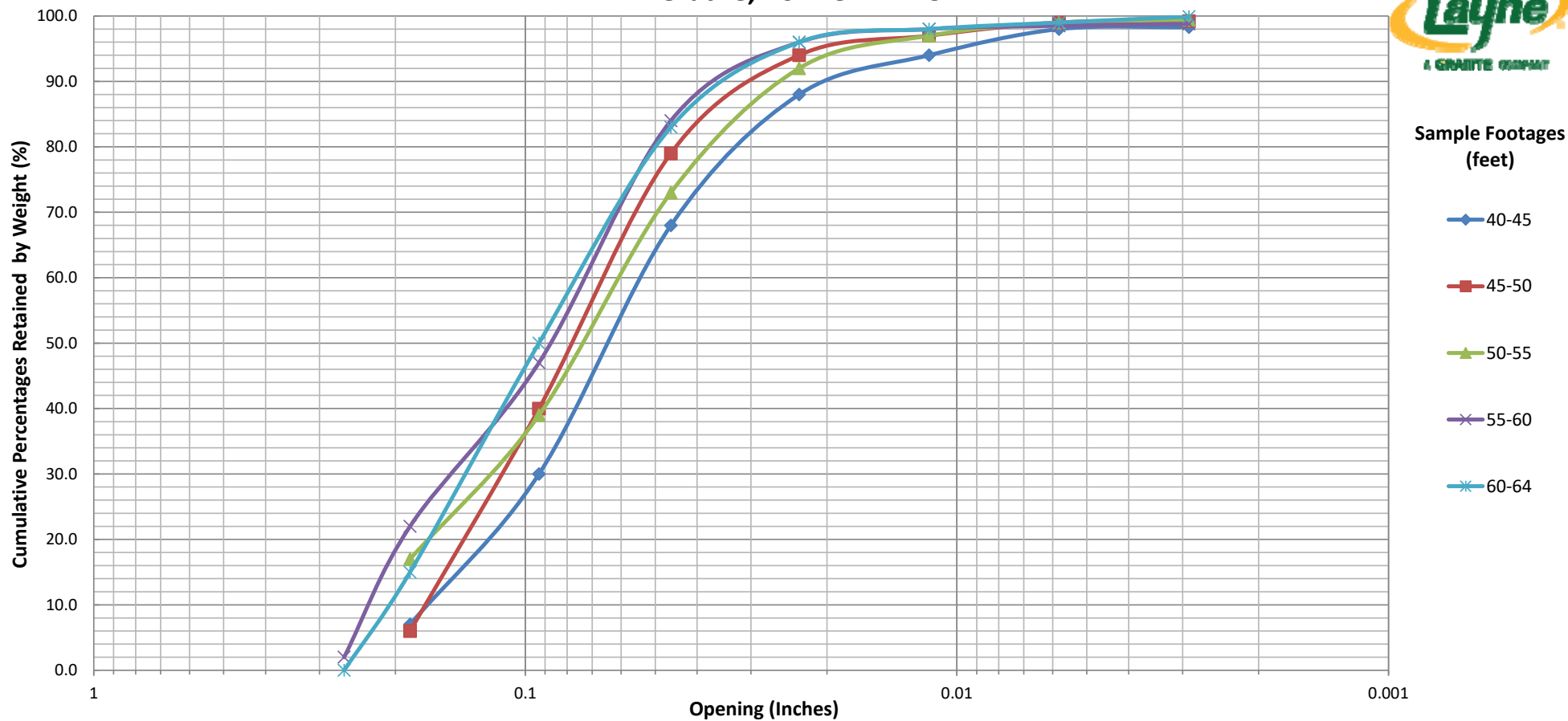
Respectfully Submitted

Kansas City Testing & Engineering, LLC

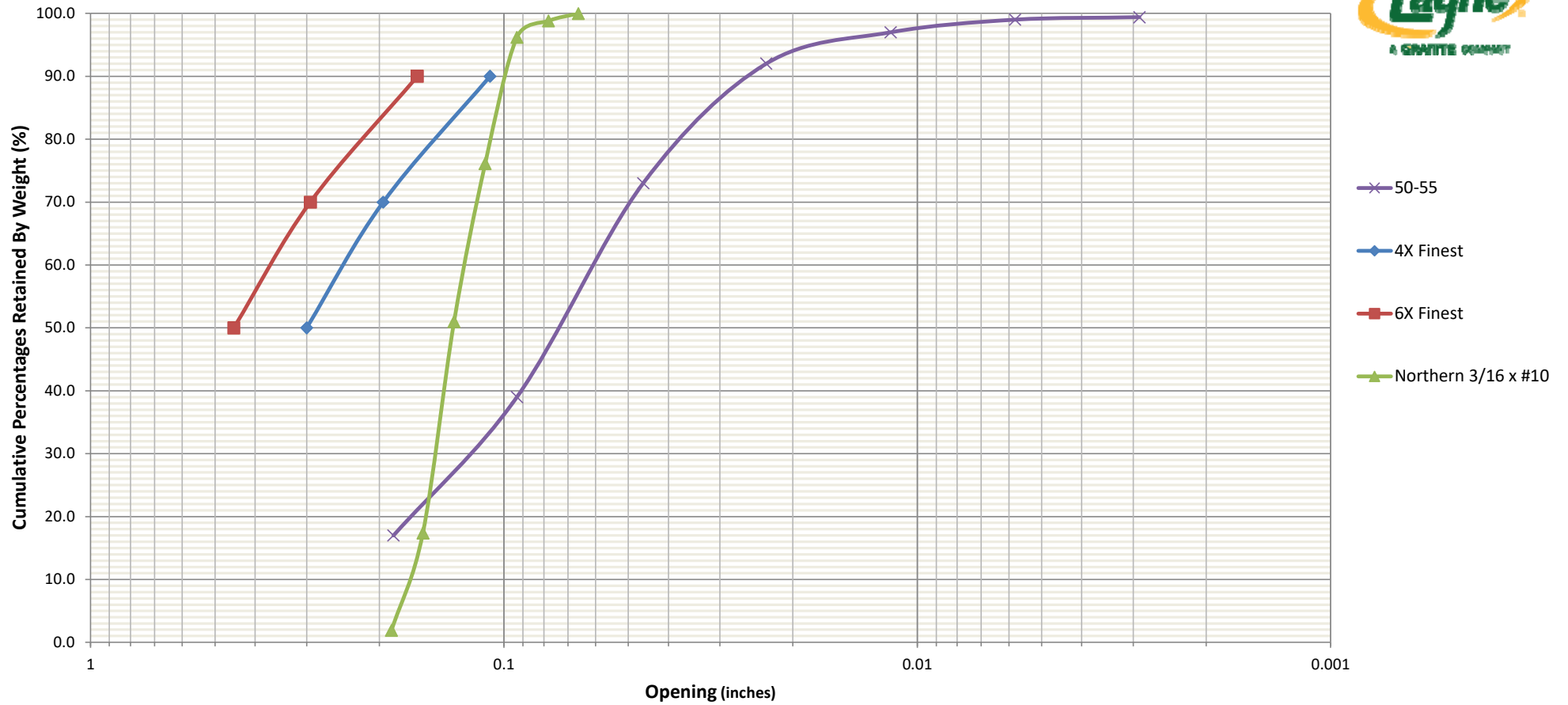
Sam Coulson, PE
Lab Manager

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Olathe, KS Well VW-5



Olathe, KS Well VW-5 Finest Formation & Gravel Selection



WELL SCREEN FLOW CALCULATION
City of Olathe, KS
Well VW-5
3/1/2021

KNOWN PARAMETERS:

- | | |
|---|----------------------------|
| 1. Screen Diameter: | 36 inches |
| 2. Screen Length: | 11 feet |
| 3. Open Area of Johnson Screen
0.090" Slot Wire Wrap Hi-Q Screen | 548.00 in ² /lf |
| 4. Maximum Allowable Entrance
Velocity of Water Entering
Well Screen: | 0.1 ft/sec |

ASSUMED PARAMETERS:

- | | |
|--|------|
| 1. Percent Blockage of Open
Area by Gravel Pack | 50 % |
|--|------|

STANDARD FLOW CALCULATION FORMULA: $Q = VA$

WHERE: Q = FLOW RATE PER FOOT OF SCREEN, GPM

Q_{MAX} = MAXIMUM TOTAL ALLOWABLE FLOW RATE, GPM

V = VELOCITY OF WATER ENTERING THE SCREEN, FT/SEC

A = OPEN AREA OF THE SCREEN, FT²

$$Q = VA$$

$$Q = \left(0.1 \text{ ft/sec} \right) \left(548.0 \text{ in}^2/\text{lf} \right) \left(0.5 \text{ for blockage} \right)$$

$$Q = \left(0.1 \text{ ft/sec} \right) \left(274.0 \text{ in}^2/\text{lf} \right)$$

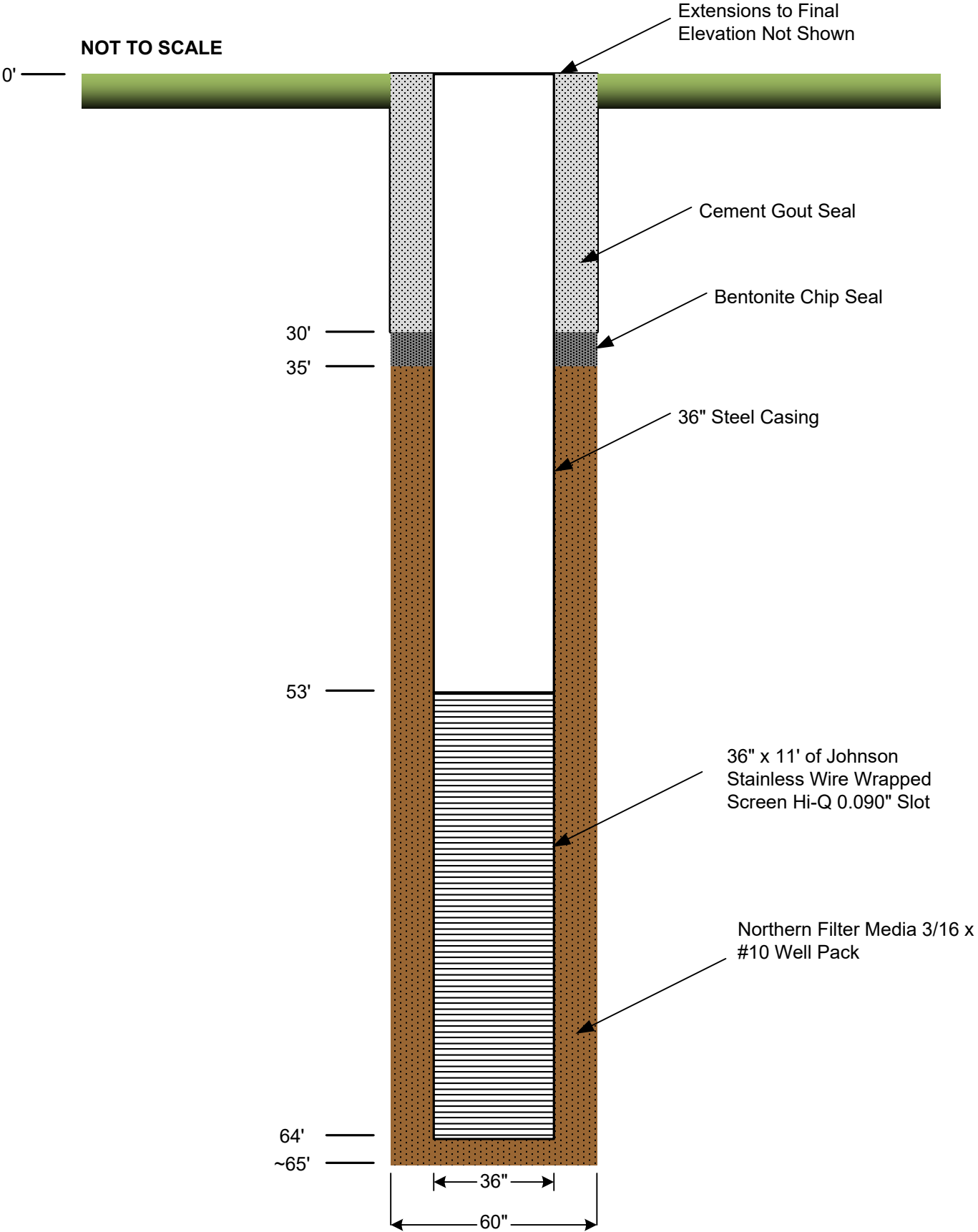
$$Q = \left(0.1 \text{ ft/sec} \right) \left(60 \text{ sec/min} \right) \left(274.0 \text{ in}^2/\text{lf} \right) \left(1 \text{ ft}^2 / 144 \text{ in}^2 \right) \left(7.48 \text{ gal/ft}^3 \right)$$

$$Q = 85.4 \text{ gpm/lf of screen}$$

$$Q_{MAX} = \left(85.4 \text{ gpm/lf of screen} \right) \left(11 \text{ lf of screen} \right)$$

$$Q_{MAX} = 939.36 \text{ GPM}$$

City of Olathe, KS
Well VW-5
2/19/2021 Proposed Construction



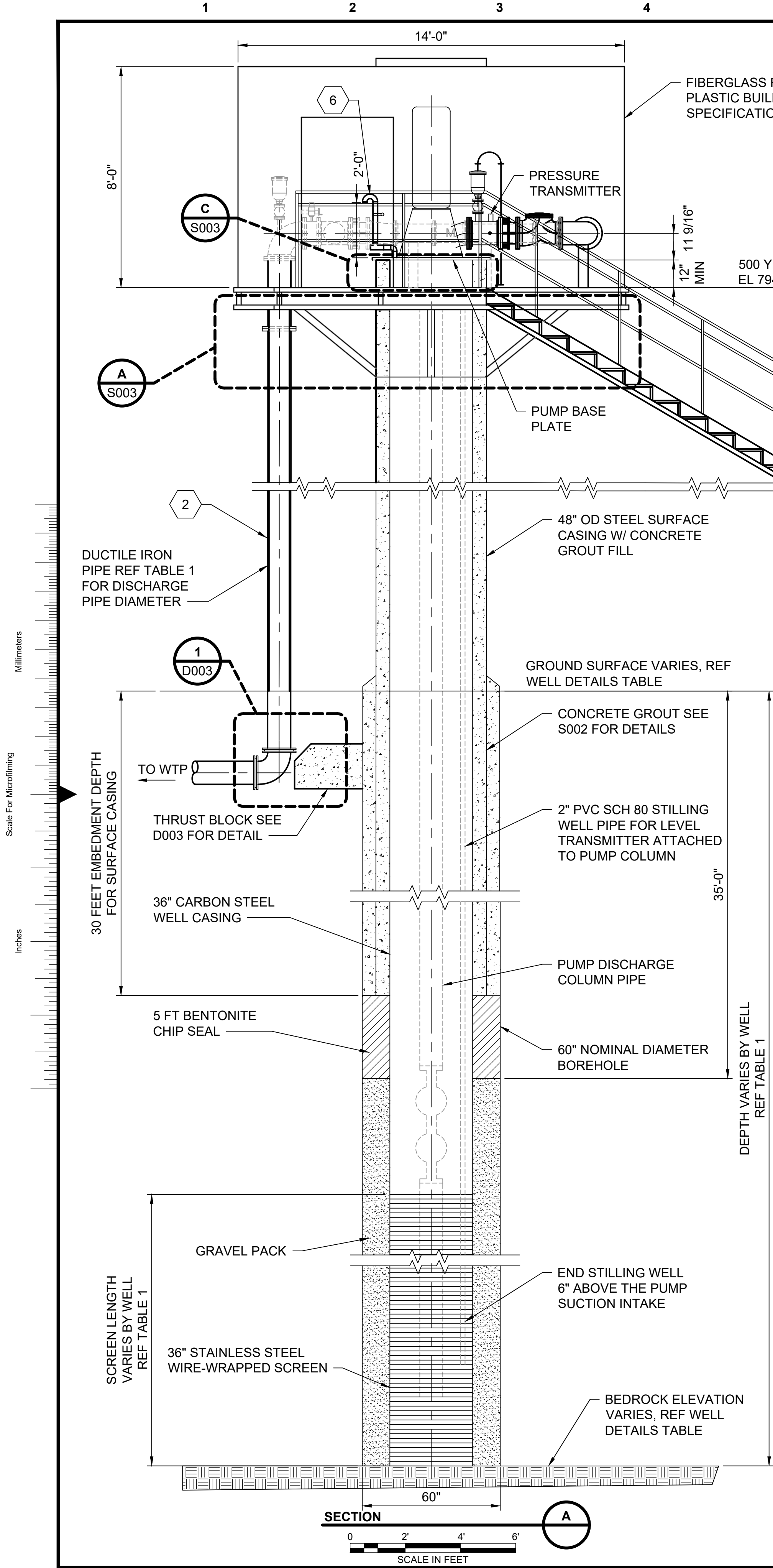
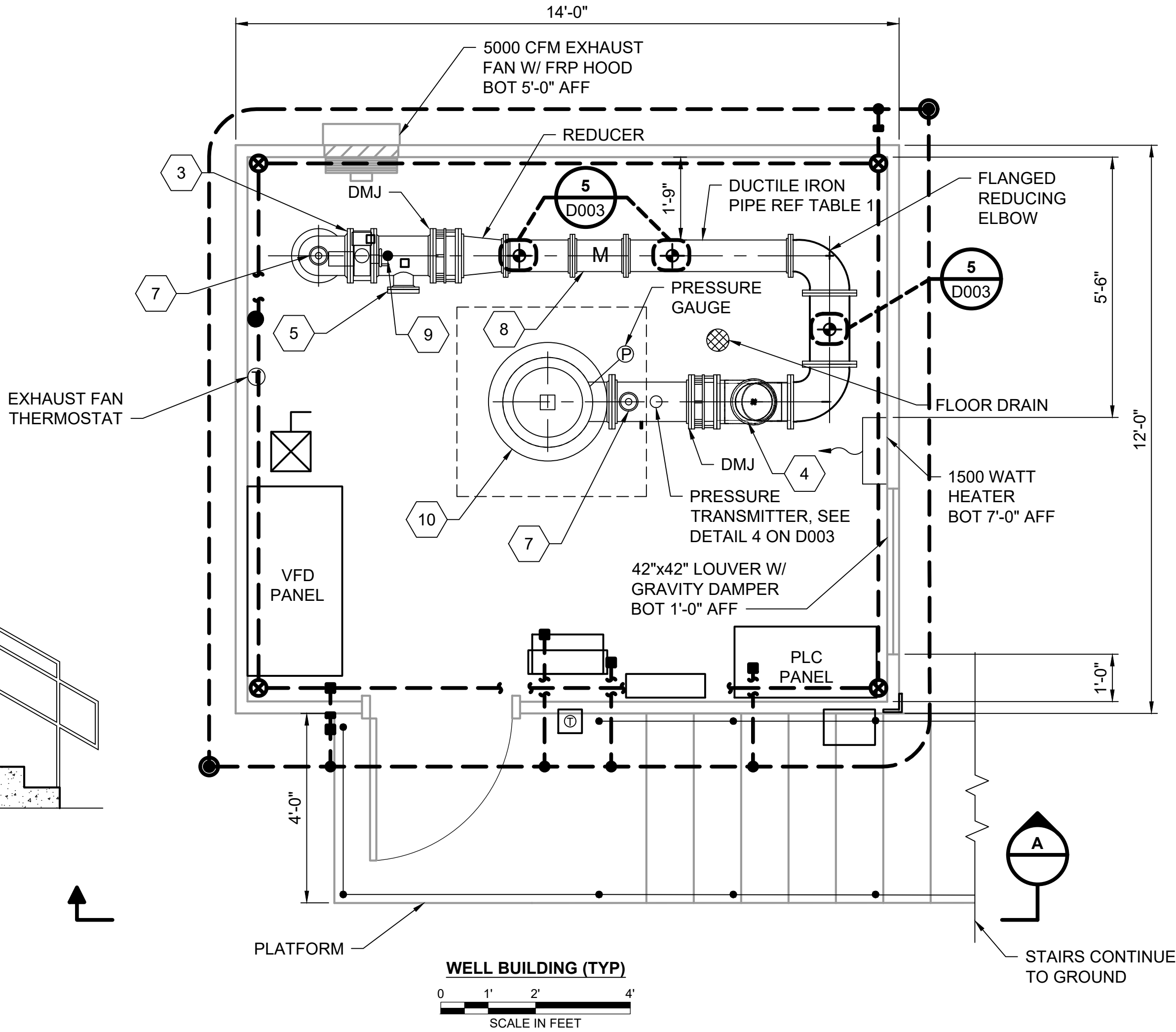


TABLE 1 - WELL DETAILS											
WELL ID	NORTHING	EASTING	SURFACE ELEVATION (FEET AMSL)	ESTIMATED DEPTH TO BEDROCK (FEET BELOW GROUND SURFACE)	BOREHOLE DIAMETER (INCHES)	WELL CASING AND SCREEN DIAMETER (INCHES)	WELL SCREEN LENGTH (FEET)	DESIGN MAXIMUM PUMPING RATE (GPM)	DISCHARGE PIPING DIAMETER (INCHES)	REDUCER SIZE (INCHES)	FLOW METER DIAMETER (INCHES)
VW1	251,411.646	2,185,797.143	787.73	73	60.0	36.0	12.0	950.0	10.0	8	8.0
VW2	251,597.450	2,186,149.783	780.24	62	60.0	36.0	10.0	800.0	10.0	8	8.0
VW10	251,557.000	2,186,523.000	782.00	63	60.0	36.0	10.0	600.0	8.0	6	6.0
VW6R	250,984.000	2,186,241.000	787.00	64	60.0	36.0	8.0	500.0	8.0	6	6.0
VW5	252,032.000	2,185,831.000	781.00	64	60.0	36.0	11.0	940.0	10.0	8	8.0

* COORDINATES PROVIDED ARE IN THE STATE PLANE COORDINATE SYSTEM, NAD83, KANSAS NORTH, FIPSZONE 1501, WITH UNITS OF US SURVEY FEET

- GENERAL NOTES:**
1. PIPING WILL BE CONNECTED TO EXISTING RAW WATER SYSTEM COLLECTION PIPING AS SHOWN ON CIVIL (C-DWGS) DRAWING.
 2. REFER TO CIVIL DRAWINGS FOR PLAN ORIENTATION.
 3. WELL CONSTRUCTION DETAILS ARE PRELIMINARY. FINAL WELL DETAILS WILL BE BASED ON THE TEST BORING DRILLED AT EACH WELL LOCATION.
 4. WELL CONSTRUCTION SHOWN AS SECTION A FOR VW1 ONLY.
 5. REFER TO SPECIFICATION SECTION 13 34 23 AND DRAWING A001 FOR FRP BUILDING REQUIREMENTS.
 6. REFER TO DRAWINGS S002 AND S003 FOR STRUCTURAL AND FRAMING DETAILS.
 7. PUMP SUCTION SET 5'-0" ABOVE BOTTOM OF WELL.

- KEYED NOTES:**
- 1 OSHA STAIRS. MINIMUM 36-INCH WIDE. REFER TO A001.
 - 2 HEAT TRACE AND INSULATE ABOVE GRADE PIPING.
 - 3 ELECTRONICALLY ACTUATED BUTTERFLY VALVE W/ VALVE STEM.
 - 4 SWING CHECK VALVE.
 - 5 TEE WITH BLIND FLANGE DIAMETER TO MATCH DISCHARGE PIPING.
 - 6 WELL VENT WITH RETURN BEND AND #16 COPPER SCREEN.
 - 7 2" BALL VALVE TO 2" COMBINATION AIR RELEASE VALVE W/ MESH COPPER SCREEN. SEE DETAIL 2 ON D003. PIPE DISCHARGE TO FLOOR DRAIN
 - 8 FOXBORO MAGNETIC FLOW METER. SEE TABLE 1 FOR SIZE.
 - 9 SMOOTH NOSE SAMPLE TAP. SEE DETAIL 4 ON D003.
 - 10 CAST-IRON DISCHARGE HEAD WITH MINIMUM 2-INCH THICK BASE PLATE.



no.	date	by	ckd	description
A	7/31/20	BDF	LD	ISSUED FOR 60% OWNER REVIEW
B	9/30/20	BDF	LD	ISSUED FOR 90% OWNER REVIEW

PRELIMINARY - NOT FOR CONSTRUCTION



9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
BMCD LICENSE NO. E-65

date	JUNE 25, 2020	detailed	B. FIFIELD
designed	L. DEANGELIS	checked	



Johnson County, Kansas
CITY PROJECT No 5-C-031-18

VERTICAL WELL FIELD IMPROVEMENTS PROJECT
GENERAL WELL ARRANGEMENTS

project	110372	contract	
drawing		rev.	
D002		B	
sheet	of	sheets	
file 110372_D002 - GENERAL ARRANGEMENT.DWG			