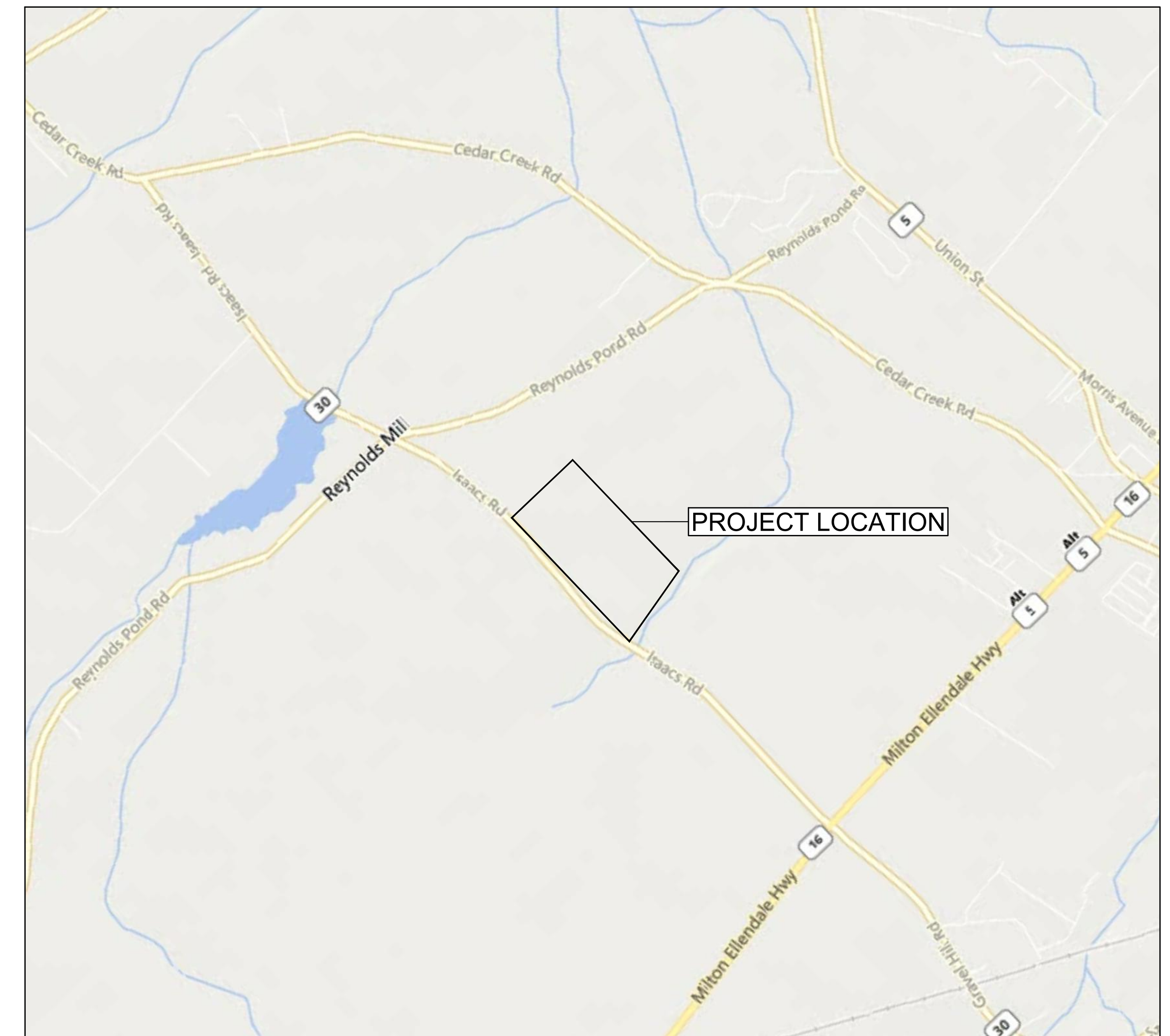
SCALE: 1" = 2 MI.

ARTESIAN SRRF WASTEWATER TREATMENT PLANT EXPANSION PROJECT PHASE 3

SUSSEX COUNTY, DELAWARE



SCALE: 1"=2000'

DRAWING LIST

SHEET	NAME
G-0.01	COVER SHEET
G-0.02	GENERAL NOTES & LEGEND
G-0.03	DESIGN CRITERIA
G-0.04	HYDRAULIC PROFILE & PROCESS FLOW DIAG.
C-1.01	OVERALL SITE PLAN & KEY SHEET
C-1.02	HEADWORKS VICINITY SITE PLAN
C-1.03	PROCESS VICINITY SITE PLAN
P1.01	HEADWORKS BUILDING PLAN VIEW
P1.02	HEADWORKS BUILDING SECTION VIEWS
P1.03	INFLUENT PUMP STATION PLAN & SECTIONS
P1.04	FILTER AND UV PROCESS BUILDING PLAN
P1.05	FILTER PLANS, SECTIONS, & DETAILS
P1.06	UV PLAN AND SECTIONS
P1.07	EFFLUENT PUMP STATION PLAN & SECTIONS
	DUTCHLAND DESIGN DRAWINGS

DNREC PERMIT SET
MAY 2025

MISS UTILITY
DELMARVA

BEFORE YOU DIG CALL
1-800-282-8555 (in Del.)
1-800-441-8355 (Md., Va.)
PROTECT YOURSELF, GIVE TWO WORKING DAYS NOTICE

DATE	REVISION

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CHURCHMANS ROAD
NEWARK, DE 19702
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

COVER SHEET
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NO.: 22929
EXPIRATION DATE: 06-30-26

DANIEL R. STRING LICENSE No. 13838 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

Drafting: TJG		Check: DS	
Design: TJG		Check: DS	
SCALE:			
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	G-0.01		

BY: Thomas Gilchrist PRINTED: 5/16/2025 8:33 AM
LOCATION: C:\dms\kci-projects_02\thomas.gilchrist\d0122254\132007289_G Series_01.dwg

GENERAL NOTES:

OWNER: ARTESIAN WASTEWATER MANAGEMENT INC.
SITE ADDRESS: 12941 ISAACS ROAD
MILTON, DE 19968

1. THE PURPOSE OF THIS PLAN IS TO PROVIDE NECESSARY DOCUMENTS TO SECURE A CONSTRUCTION PERMIT FROM DNREC FOR CONSTRUCT COMPONENTS OF A WASTEWATER TREATMENT PLANT TO BE OWNED AND OPERATED BY ARTESIAN WASTEWATER MANAGEMENT INC. (AWMI) AT THE SUSSEX REGIONAL RECHARGE FACILITY (SRRF) IN MILTON, SUSSEX COUNTY, DELAWARE. THE PLANS WERE DEVELOPED IN CONJUNCTION WITH ARTESIAN WASTEWATER MANAGEMENT INC. AND ARE INTENDED FOR USE WITH COMPONENTS DESIGNDED BY OTHERS. THE PLANS DO NOT INCLUDE ALL CONSTRUCTION DETAILS OR REQUIREMENTS WHICH WILL BE COORDINATED BY THE OWNER.
2. GROUND SURFACE ELEVATIONS SHOWN ON THE DRAWINGS ARE CORRECT AS OF THE DATE OF THE ASSOCIATED FIELD SURVEY PROVIDED BY AWMI.
3. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ARTESIAN WASTEWATER MANAGEMENT INC STANDARDS AND SPECIFICATIONS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL AMENDMENTS THERE TO. THESE DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
5. ALL WORK SHALL COMPLY WITH SUSSEX CONSERVATION DISTRICT AND THE EROSION AND SEDIMENT CONTROL PLAN.
6. PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. FULL ACCESS SHALL BE PROVIDED FOR EMERGENCY VEHICLES, PEDESTRIANS, MAIL, TRASH PICKUP, DELIVERIES, AND ACCESS TO ALL BUILDINGS.
8. EXISTING UTILITIES AS OF THIS DATE ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS AND CORRECTNESS THEREOF IS NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONFER WITH THE UTILITY COMPANIES INVOLVED IN ORDER TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BE DONE WITHOUT FIRST CALLING "MISS UTILITY" (1-800-257-7777) 72 HOURS PRIOR TO EXCAVATION TO HAVE UNDERGROUND UTILITY CABLES LOCATED AND MARKED.
9. CONTRACTOR SHALL PERFORM TEST PITS AS NECESSARY TO VERIFY EXISTING CONDITIONS AT THE SITE. IN CERTAIN INSTANCES, SPECIFIC TEST PIT LOCATIONS HAVE BEEN IDENTIFIED AS REQUIRED BY THE ENGINEER. THIS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO VERIFY OTHER LOCATIONS AS NEEDED. IN ADDITION, ALL EXISTING UTILITIES & ASSOCIATED DEPTHS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TO BEST FACILITATE THE INSTALLATION / OPERATION OF THE INTENDED DESIGN. IT IS RECOMMENDED THAT FIELD VERIFICATIONS BE DONE FIRST TO AVOID COMPLICATIONS DURING CONSTRUCTION. ANY ERRORS DURING INSTALLATION WILL BE ON THE CONTRACTOR TO CORRECT AT HIS EXPENSE AND IN A TIMELY MANOR.
10. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE, AND ANY DAMAGE DONE TO THEM DUE TO THEIR NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S SOLE EXPENSE. THIS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO STORM DRAINS, INLETS, PAVEMENT, SIGNALS, CONDUITS, CABLES, PIPING POLES, AND OVERHEAD FACILITIES, ETC., REGARDLESS OF OWNERSHIP.
11. THE CONTRACTOR SHALL PROTECT ALL ADJOINING AND NEARBY BUILDINGS, EQUIPMENT, ALL UTILITIES, STRUCTURES, FENCES, TREES, SHRUBBERY, ETC. FROM DAMAGE DUE TO EXCAVATION, DEMOLITION, AND CONSTRUCTION, DURING THE ENTIRE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED DIRECTLY OR INDIRECTLY WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
12. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL INSTALLED UTILITIES UNTIL THE COMPLETION OF CONSTRUCTION. PIPES WITH SHALLOW COVER SHALL BE PROTECTED FROM DAMAGE BY CONSTRUCTION MACHINERY WITH ADEQUATE TEMPORARY COVER. PIPING AND MANHOLE AND VAULT OPENINGS SHALL BE PROTECTED TO PREVENT MUD, DEBRIS AND WATER FROM ENTERING THE FACILITIES. THE CONTRACTOR SHALL CLEAN AND DISPOSE OF ALL MATERIAL TO THE SATISFACTION OF THE OWNER SHOULD THESE MATERIALS BE ALLOWED TO ENTER THE INSTALLED FACILITIES OR EXISTING FACILITIES WHERE CONNECTIONS EXIST.
13. THE CONTRACTOR'S ATTENTION IS CALLED TO THE ELECTRICAL FACILITIES WITHIN THE PROJECT AREA. ELECTRICAL POLES ARE SHOWN ON THE DRAWINGS, HOWEVER, OVERHEAD ELECTRIC LINES PRESENT IN THE CONSTRUCTION AREA HAVE NOT BEEN SHOWN ON THE PLANS FOR CLARITY.
14. THE CONTRACTOR SHALL SOLICIT SPECIFIC REQUIREMENT FROM THE POWER COMPANY RELATIVE TO THE OWNER'S REQUIREMENTS FOR WORKING AROUND AND UNDER THEIR OVERHEAD FACILITIES. CERTAIN ELECTRIC POLES ALONG THE PROJECT LIMITS MAY REQUIRE HOLDING AND BRACING DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH ARTESIAN WASTEWATER MANAGEMENT INC TO SCHEDULE THE REQUIRED HOLDING AND BRACING AS THE WORK PROGRESSES.
15. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION ACTIVITIES WITHIN THE DESIGNATED LIMITS OF DISTURBANCE. ANY CHANGE TO THOSE LIMITS MUST BE AGREED UPON BY AWMI AND SCD. STAGING AREAS SHALL ONLY BE THOSE APPROVED BY AWMI. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR THE LOCATION AND SIZE OF THE CONTRACTOR'S TEMPORARY LAY DOWN, STORAGE AREA AND CONSTRUCTION TRAILER. THIS AREA SHALL BE RESTORED TO ITS ORIGINAL BY THE CONTRACTOR UPON COMPLETION OF CONSTRUCTION.
16. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTY OWNER'S AND BUSINESS POINTS OF ACCESS.
17. ALL FIRE HYDRANTS SHALL BE MARKED AND/OR PROTECTED IN ACCORDANCE WITH THE DELAWARE STATE FIRE REGULATIONS.
18. ALL COMMON FACILITIES INCLUDING, BUT NOT LIMITED TO, PAVED AREAS, SIDEWALKS, CURBING, LANDSCAPING, PUBLIC OPEN SPACE, AND/OR DAMAGE FACILITIES SHALL BE KEPT IN GOOD REPAIR AND MAINTAINED IN A SAFE SANITARY CONDITION.
19. CONTRACTOR SHALL MAINTAIN A CLEAN AND ORGANIZED WORK SITE AT ALL TIMES.
20. THE CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH OR ACCESS PITS WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. STEEL PLATES SHALL BE USED ON ANY TRENCH OR ACCESS PITS WHICH MUST REMAIN OPEN OVERNIGHT. THIS REQUIREMENT DOES NOT APPLY TO AREAS COMPLETELY CLOSED AND SECURE FROM VEHICULAR OR PEDESTRIAN TRAFFIC.
21. ALL MATERIALS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
22. CONTRACTOR SHALL PROVIDE ALL NECESSARY ADAPTER FITTINGS OR REDUCERS REQUIRED TO CONNECT TO EXISTING UTILITIES.
23. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE INTENDED WORK.
24. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND ELEVATIONS OF BOTH THE EXISTING AND PROPOSED UTILITIES SHALL BE SHOWN ON THE AS-BUILT DRAWINGS TO BE MAINTAINED BY THE CONTRACTOR IN THE FIELD.
25. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE SUFFICIENT INFORMATION TO THE CONTRACTOR TO COMPLETE THE WORK. ALL OTHER INCIDENTAL WORK REQUIRED BY THE DRAWINGS OR SPECIFICATIONS FOR WHICH NO PAYMENT IS SPECIFICALLY PROVIDED AND ANY WORK OR MATERIALS NOT THEREIN SPECIFIED WHICH ARE REQUIRED TO COMPLETE THE WORK AND WHICH MAY FAIRLY BE IMPLIED AS INCLUDED IN THE CONTRACT OR WHICH THE ENGINEER MAY JUDGE TO BE SO INCLUDED SHALL BE FURNISHED AND CONSTRUCTED BY THE CONTRACTOR.
26. CONTRACTOR SHALL VERIFY THAT ALL APPLICABLE PERMITS HAVE BEEN OBTAINED PRIOR TO THE START OF WORK.

STANDARD NOTES FOR UTILITY INSTALLATION:

1. CALL MISS UTILITY AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
2. ONLY ENOUGH TRENCH SHOULD BE EXCAVATED WHICH CAN BE BACKFILLED DAILY.
3. EXCAVATED TRENCH MATERIALS SHOULD BE PLACED ON THE HIGH SIDE OF THE TRENCH.
4. IMMEDIATELY FOLLOWING UTILITY INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCHES SHALL BE OPENED THAN CAN BE COMPLETED IN THE SAME DAY.
5. FULL TRENCH COMPACTION IS REQUIRED.
6. MULCHING TO SCD SPECIFICATIONS OF ALL DISTURBED AREAS AND DAILY ON BACKFILL WILL BE REQUIRED.
7. ANY SEDIMENT CONTROL PRACTICES WHICH ARE DISTURBED DURING UTILITY CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE END OF EACH WORKING DAY.
8. ANY DITCHES OR DRAINAGE WAYS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.

SURVEY NOTES:

1. BASIS OF BEARINGS IS DELAWARE STATE PLANE COORDINATE SYSTEM, NAD 83.
2. ALL EXISTING FEATURES AS SHOWN IN THE SITE PLAN SHEETS ARE FROM FIELD LOCATION OR DUPLICATED FROM AS-BUILT DRAWINGS PROVIDED BY ARTESIAN WASTEWATER MANAGEMENT INC

NOTICE TO CONTRACTOR: "EROSION AND SEDIMENT CONTROL WILL BE STRICTLY ENFORCED"

LEGEND

EXISTING		PROPOSED	
	STRUCTURE / BUILDING / OBJECT		FORCEMAIN
	TREE		ARV VAULT
OHE	EX OVER HEAD ELECTRIC		FLOW METER VAULT
T	EX BURIED TELEPHONE		
	PAVED ROADWAY		SEWER MANHOLE
W	EX WATER MAIN AND LATERALS		
G	EX GAS LINE		MJ 90° BEND
FM	EX SANITARY SEWER FORCE MAIN		MJ WYE
SS	EX SANITARY SEWER		MJ 45° BEND
	EX PROPERTY LINE		MJ REDUCER
			MJ PLUG VALVE
			MJ TEE

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CALEB SMITH ROAD
PLYMOUTH, MA 02360
PHONE: (302) 436-8060
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION	DATE

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GENERAL NOTES & LEGEND
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE
LICENSE NO: 22923
EXPIRATION DATE: 06-30-26

DANIEL R. STRUNK LICENSE No. 12923 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE: _____

Drafting:	TJG	Check:	DS
Design:	TJG	Check:	DS
SCALE:			
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	G-0.02		

BY: Thomas Gabriel PRINTED: 5/12/2025 1:03 PM
LOCATION: C:\Users\tgabriel\Documents_DTS\acad\R2025\Projects\00122541\3000799_G Series_01.dwg

DESIGN PARAMETERS

DOMESTIC INFLUENT CHARACTERISTICS		
PEAK DAILY FLOW	1.875	MGD
PEAK HOURLY INFLUENT (HEADWORKS) PF = 2.0	3.750	MGD
EQUALIZED PEAK FLOW	2.40	MGD
MAX MONTHLY FLOW (MMF)	1.875	MGD
MINIMUM TEMPERATURE	12	DEG C
5-DAY CARBONACEOUS BIOLOGICAL OXYGEN DEMAND (CBOD5)	400	mg/L
TOTAL SUSPENDED SOLIDS (TSS)	450	mg/L
TKN	70	mg/L
TOTAL PHOSPHORUS	9	mg/L
		1,302

EFFLUENT CHARACTERISTICS		
BOD5	10	mg/L
TOTAL SUSPENDED SOLIDS	10	mg/L
TOTAL NITROGEN	10.0	mg/L
TOTAL PHOSPHOROUS	4.00	mg/L
E. COLI	20	MPN/100ML
DISSOLVED OXYGEN	1	mg/L AT ANY TIME
PH	6.0 < x < 9.5	SU

INFFLUENT PUMP STATION		
PUMP TYPE	SUBMERSIBLE PUMP(W/VFD)	
NUMBER OF UNITS	3	2 DUTY + 1 STANDBY
PUMP HORSE POWER	60.00	HP (W/VFD)
DESIGN DUTY POINT (PEAK FLOW)	833.50	GPM
	133.00	TDH (FT)
WET WELL DIMENSIONS	8' X 9'4"	FEET
TOP OF WALL ELEVATION	37.00	FEET
INLET ELEVATION	26	FEET
HIGH WATER ALARM ELEVATION	33.00	FEET
LAG PUMP START ELEVATION	32.00	FEET
LEAD PUMP START ELEVATION	31.00	FEET
SHUTOFF ELEVATION	29.00	FEET
BOTTOM ELEVATION	25.00	FEET
DISCHARGE ELEVATION (INFLUENT SCREEN)	44.00	FEET

HEADWORKS - SCREENS		
NUMBER OF UNITS	1 DUTY + 1 STANDBY	
TYPE OF SCREENING UNIT	MULTIRAKE FINE SCREEN	
PEAK FLOW CAPACITY (PER SCREEN)	4.5	MGD
MOTOR SIZE	1.00	HP
SCREEN OPENING SIZE	6	MM
COMPACTOR HORSE POWER	5	HP

EQUALIZATION LAGOON		
MIXER TYPE	FLOATING SURFACE AERATOR	
NUMBER OF MIXER	2	
MIXER HORSE POWER	75	HP
EQ TANK VOLUME PROVIDED	3000000	GALLONS
OPERATING RANGE	17.00	FEET

	EFFLUENT PUMP STATION		
1.	NEW PUMPS	3	2 DUTY + 1 STANDBY
2.	PUMP TYPE	SUBMERSIBLE PUMP(W/VFD)	
3.	PUMP HORSE POWER	25.00	HP
4.	DESIGN DUTY POINT (PEAK FLOW)	833.50	GPM
		72.00	TDH (FT)
5.	WET WELL AREA	72	SQUARE FEET
6.	TOP OF WALL EL	30	FEET
7.	HIGH WATER ALARM ELEVATION	24.5	FEET
8.	LAG PUMP START ELEVATION	24	FEET
9.	LEAD PUMP START ELEVATION	23	FEET
10.	SHUTOFF ELEVATION	21	FEET
11.	BOTTOM ELEVATION	19.5	FEET

PHASE 2

Bardenpho - PROCESS REQUIREMENTS Trains 1 and 2		
PROPOSED AVERAGE DAILY FLOW (ADF)	0.625	MGD
PROPOSED PEAK DAILY FLOW (PDF)	0.800	MGD
NUMBER OF TREATMENT TRAINS	4	QTY
ANAEROBIC	48,021	GAL (TOTAL OF 2 TRAINS)
FIRST ANOXIC	134,191	GAL (TOTAL OF 4 TRAINS)
OXIC	430,847	GAL (TOTAL OF 4 TRAINS)
SECOND ANOXIC	88,862	GAL (TOTAL OF 4 TRAINS)
REAERATION	8,583	GAL (TOTAL OF 4 TRAINS)
AEROBIC SOLIDS RETENTION TIME	30	DAYS
MLSS (BIOLOGICAL REACTOR)	2,500	MG/L
INTERNAL MIXED LIQUOR RECYCLE RATE (to Anaerobic)	200%	
NUMBER OF NITRATE RECYCLE PUMPS	2	QTY
INTERNAL MIXED LIQUOR RECYCLE PUMP CAPACITY (GPM @ Total Head and HP)	3HP	
NITRATE RECYCLE RATE	400%	
NUMBER OF NITRATE RECYCLE PUMPS	2	QTY
NITRATE RECEYCLE PUMP CAPACITY (GPM @ Total Head and HP)	10 HP	
RAS RATE	100%	
NUMBER OF RAS PUMPS	4	QTY
RAS RECIRCULATION PUMP CAPACITY	0.5 HP	
AERATION TYPE	FINE BUBBLE MEMBRANE DIFFUSERS	
NUMBER OF DIFFUSERS (PROCESS)	776 (388 PER TRAIN)	QTY
PROCESS AIR REQUIREMENTS (AVG/PEAK)	580 / 650	PER REACTOR ZONE (SCFM)
NUMBER OF PROCESS AERATION BLOWERS	3	QTY
AERATION BLOWER CAPACITY	650	SCFM (EACH)
AERATION BLOWER HORSE POWER	40	HP (W/ VFD)

CLARIFIERS		
NUMBER OF CLARIFIERS	2.000	QTY
PROPOSED DIMENSIONS	51 FT L X 20 FT W X 18 FT D	
SURFACE AREA	2,000	SF
WEIR LENGTH	39	FEET
TOTAL VOLUME	269,280	GAL
SURFACE OVERFLOW RATE (ADF)	312.5	GPD/SF
SURFACE OVERFLOW RATE (EPF)	400.0	GPD/SF
SOLIDS LOADING RATE (ADF)	13.03	LBS/DAY/SF

EFFLUENT CLOTH MEDIA FILTERS		
NUMBER OF UNITS	2	QTY
NUMBER OF DISKS PER UNIT	2	QTY
PORE SIZE	10	MICRON
TOTAL FILTER AREA	215.2	SF
AVERAGE HYDRAULIC LOADING RATE	2.02	GPM / SF
MAXIMUM HYDRAULIC LOADING RATE	2.58	GPM / SF
AVERAGE HYDRAULIC LOADING RATE WITH 1 FILTER O.O.S.	4.03	GPM / SF

UV DISINFECTION		
PROCESS TYPE	LOW PRESSURE, HIGH INTENSITY - HORIZONTAL BULBS	
PEAK FLOW	1.25	mgd
NUMBER OF CHANNELS	1	QTY
NUMBER OF BANKS PER CHANNEL	2	(1 Duty + Standby)
NUMBER OF MODULES PER BANK	2	QTY
NUMBER OF LAMPS PER MODULE	16	LAMPS
TOTAL NUMBER OF LAMPS	64	LAMPS
MINIMUM UV TRANSMITTANCE	65	PERCENT
TOTAL SUSPENDED SOLIDS (DESIGN)	10	MG/L
UV DOSSAGE	90,000	uWs/cm^2
EFFLUENT ECOLI CONCENTRATION	<20	MPN/100 ML

SLUDGE HOLDING TANK		
NUMBER OF TANKS	1	QTY
SLUDGE HOLDING TANK VOLUME	224,599	GAL
SOLIDS RETENTION TIME (SRT)	30	DAY
AERATION TYPE	COARSE BUBBLE DIFFUSER	
AERATION REQUIREMENTS	30 SCFM/1000 CF	
NUMBER OF BLOWERS	1	QTY
BLOWER HORSE POWER	60	HP
BLOWER CAPACITY	900	SCFM

PHASE 3

Bardenpho - PROCESS REQUIREMENTS Trains 3 - 6		
PROPOSED AVERAGE DAILY FLOW (ADF)	1.250	MGD
PROPOSED PEAK DAILY FLOW (PDF)	2.400	MGD
NUMBER OF TREATMENT TRAINS	4	QTY
ANAEROBIC	96,042	GAL (TOTAL OF 4 TRAINS)
FIRST ANOXIC	268,382	GAL (TOTAL OF 4 TRAINS)
OXIC	861,696	GAL (TOTAL OF 4 TRAINS)
SECOND ANOXIC	177,724	GAL (TOTAL OF 4 TRAINS)
REAERATION	17,166	GAL (TOTAL OF 4 TRAINS)
AEROBIC SOLIDS RETENTION TIME	30	DAYS
MLSS (BIOLOGICAL REACTOR)	2,500	MG/L
INTERNAL MIXED LIQUOR RECYCLE RATE (to Anaerobic)	200%	
NUMBER OF NITRATE RECYCLE PUMPS	2	QTY
INTERNAL MIXED LIQUOR RECYCLE PUMP CAPACITY (GPM @ Total Head and HP)	3 HP	
NITRATE RECYCLE RATE	400%	
NUMBER OF NITRATE RECYCLE PUMPS	2	QTY
NITRATE RECEYCLE PUMP CAPACITY (GPM @ Total Head and HP)	10 HP	
RAS RATE	100%	
NUMBER OF RAS PUMPS	4	QTY
RAS RECIRCULATION PUMP CAPACITY	0.5 HP	
AERATION TYPE	FINE BUBBLE MEMBRANE DIFFUSERS	
NUMBER OF DIFFUSERS (PROCESS)	1,552 (388 PER TRAIN)	QTY
PROCESS AIR REQUIREMENTS (AVG/PEAK)	580 / 650	PER REACTOR (SCFM)
NUMBER OF PROCESS AERATION BLOWERS	3	QTY
AERATION BLOWER CAPACITY	650	SCFM (EACH)
AERATION BLOWER HORSE POWER	40	HP (W/ VFD)

CLARIFIERS		
NUMBER OF CLARIFIERS	2.000	QTY
PROPOSED DIMENSIONS	51 FT L X 20 FT W X 18 FT D	
SURFACE AREA	2,000	SF
WEIR LENGTH	39	FEET
TOTAL VOLUME	269,280	GAL
SURFACE OVERFLOW RATE (ADF)	312.5	GPD/SF
SURFACE OVERFLOW RATE (EPF)	400.0	GPD/SF
SOLIDS LOADING RATE (ADF)	13.03	LBS/DAY/SF

EFFLUENT CLOTH MEDIA FILTERS		
NUMBER OF UNITS	2	QTY
NUMBER OF DISKS PER UNIT	6	QTY
PORE SIZE	10	MICRON
TOTAL FILTER AREA	645.6	SF
AVERAGE HYDRAULIC LOADING RATE	1.34	GPM / SF
MAXIMUM HYDRAULIC LOADING RATE	2.58	GPM / SF
AVERAGE HYDRAULIC LOADING RATE WITH 1 FILTER O.O.S.	2.69	GPM / SF

UV DISINFECTION		
PROCESS TYPE	LOW PRESSURE, HIGH INTENSITY - HORIZONTAL BULBS	
PEAK FLOW	2.50	mgd
NUMBER OF CHANNELS	1	QTY
NUMBER OF BANKS PER CHANNEL	2	(1 Duty + Standby)
NUMBER OF MODULES PER BANK	4	QTY
NUMBER OF LAMPS PER MODULE	16	TOTAL LAMPS
TOTAL NUMBER OF LAMPS	128	QTY
MINIMUM UV TRANSMITTANCE	65	PERCENT
TOTAL SUSPENDED SOLIDS (DESIGN)	10	MG/L
UV DOSSAGE	90,000	uWs/cm^2
EFFLUENT ECOLI CONCENTRATION	<20	MPN/100 ML

SLUDGE HOLDING TANK		
NUMBER OF TANKS	2	QTY
SLUDGE HOLDING TANK VOLUME	224,599	GAL
SOLIDS RETENTION TIME (SRT)	30	DAY
AERATION TYPE	COARSE BUBBLE DIFFUSER	
AERATION REQUIREMENTS	30 SCFM/1000 CF	
NUMBER OF BLOWERS	2	QTY
BLOWER HORSE POWER	60	HP
BLOWER CAPACITY	900	SCFM

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CAUSEWAY MAINS ROAD
BETHANY BEACH, DE 19930
PHONE: (302) 493-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION	DATE

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DESIGN CRITERIA

ARTESIAN SRRF WASTEWATER TREATMENT
PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
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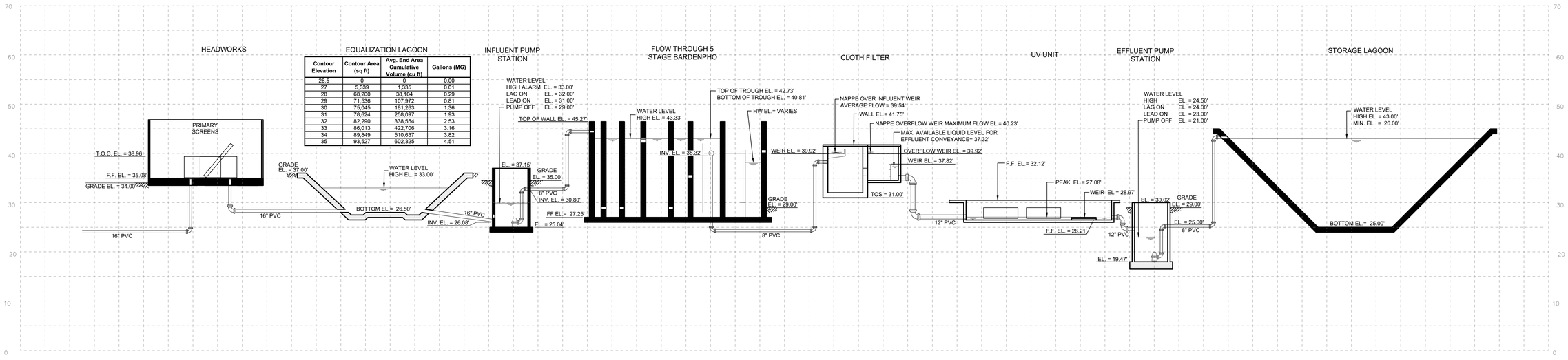
SCALE:	NA		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	G-0.03		

BY: Thomas Gilmer PRINTED: 5/15/2025 3:45 PM
LOCATION: C:\Users\tgilmer\Desktop\Projects\00048021\22254132007269_G-Series_G3.DWG

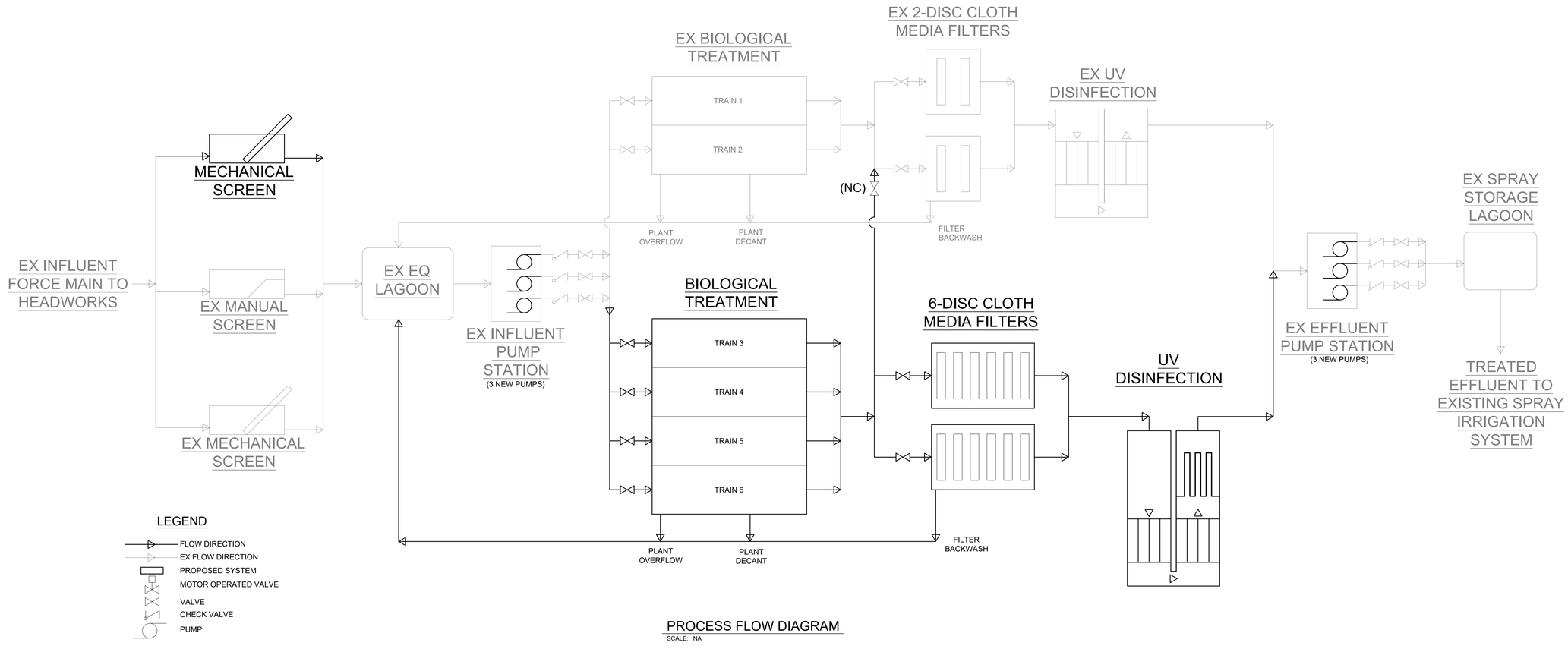


LEGEND

I.E. =	INVERT ELEVATION
H.G. =	HYDRAULIC GRADE
L.W. =	LOW WATER LEVEL
H.W. =	HIGH WATER LEVEL
EL. =	ELEVATION
F.F. =	FINISHED FLOOR
L.L. =	LOW LEVEL
H.L. =	HIGH LEVEL
GPD. =	GALLONS PER DAY
T.O.C. =	TOP OF CONCRETE

HYDRAULIC PROFILE

* HYDRAULIC PROFILE INCLUDES INFORMATION REGARDING PROCESSES NOT DESIGNED BY KCI & REPRESENTS A COMPILATION OF DATA PROVIDED BY OTHERS.



LEGEND

- FLOW DIRECTION
- EX FLOW DIRECTION
- PROPOSED SYSTEM
- MOTOR OPERATED VALVE
- VALVE
- CHECK VALVE
- PUMP

PROCESS FLOW DIAGRAM

SCALE: NA

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
647 CHURCHMANS ROAD
NEWARK, DE 19702
PHONE: (302) 453-6960
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION	DATE

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

HYDRAULIC PROFILE & PROCESS FLOW DIAG.
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE;
LICENSE NO.
EXPIRATION DATE:

DANIEL R. STRINO LICENSE No. 13333 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE

Drafting:	AP	Check:	DS
Design:	DS	Check:	DS
SCALE:	NTS		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	G-0.04		

BY: Thomas Eckman PRINTED: 5/13/2025 4:43 PM
LOCATION: C:\Users\tjeckman\Documents\Projects\00048021\2025-05-13\2025-05-13 G-Series_02.DWG

EX. 3MG COMBINED EQUALIZATION AND DIVERSION LAGOON (BOTTOM EL. 26.5-28.0)

EX. OVERFLOW PIPE

FUTURE LAGOON

EX. RECIRC. LINE

EX. INFLUENT PUMP STATION & VALVE VAULT W/ NEW UPGRADED PUMPS

EX. HEADWORKS BUILDING

C-1.02

EX. INFLUENT PS FM TO DUTCHLAND

EX. COMBINED PLANT DRAIN AND DIVERSION LINE TO LAGOON

EX INFLUENT FORCE MAIN TO HEADWORKS

C-1.03

EX. INFLUENT PUMP STATION TO GET 3 NEW 30 HP SUBMERSIBLE PUMPS

EX. OFFICE & PROCESS BUILDING

PROPOSED FILTER & UV BUILDING

EX. UV PROCESS

EX. DISK FILTERS

EX.PLANT DRAIN P.S.

PROPOSED ACCESS ROAD

PROPOSED BIOLOGICAL PROCESS TRAINS (BPT) 3 THRU 6

EX. BIOLOGICAL PROCESS TRAINS (BPT) 1 & 2

MON. WELL

AIR RELEASE ?

C.B. RIM: 34.49' 24" RCP INV EAST: 29.28' INV WEST: 29.32'

C.B. RIM: 34.11' 24" RCP INV EAST: 27.88' INV WEST: 27.89'

24" RCP INV: 30.57'

24" RCP INV: 30.59'

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WATER MANAGEMENT, INC.
644 CULVER'S RUN ROAD
NEWARK, DE 19711
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

NO.	REVISION	DATE

1" = 60' SCALE - PLAN, 1"=60' 0 60' 120'

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

OVERALL SITE PLAN & KEY SHEET

ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE
LICENSE NO.: 13933
EXPIRATION DATE: 06-30-26

DANIEL R. STRING LICENSE No. 13933 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

Drafting:	TJG	Check:	KN
Design:	TJG	Check:	DS
SCALE:	1"=70'		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	C-1.01		

BY: Thomas Gilchrist PRINTED: 5/16/2025, 4:01 PM
LOCATION: C:\Users\tgilchrist\Desktop\Projects\00048021\Drawings\Plan Sheets\00122555.13000728_C-Series.dwg

EX. 3MG COMBINED EQUALIZATION
AND DIVERSION LAGOON
(SEE C-1.01)

EX. 12' x 12' CONCRETE SPLASH PAD
(@ GRADE BELOW LINER)

EX. 12' x 12' CONCRETE SPLASH PAD
(@ GRADE BELOW LINER)

EX. INFLUENT PUMP STATION TO GET
3 NEW 60 HP SUBMERSIBLE PUMPS

EX. BYPASS VAULT W/ QUICK CONNECT

EX FM VAULT

EX. 8" FLOW
METER

EX. HEADWORKS BUILDING
38' x 43'-6" (F.F. EL. 35 FT)

EX. FM VAULT
(4' SQ.)

EX. 8" FLOW METER

PROPOSED NEW MECHANICAL
SCREEN IN EX. CHANNEL

EXISTING
DRIVEWAY

EX. FENCE

SEE SHEET C-1.01 FOR
CONTINUATION

1+00
10+00
11+00
16" PVC
8" PVC
(N.C.)
IV
27
30
35
34
33

FLOW DIRECTION

ISOLATION VALVE

NORTH SITE PIPING PLAN

SCALE: 1" = 10'

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WATER MANAGEMENT, INC.
664 CHURCHMANS ROAD
NEWARK, DE 19702
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

NO.	REVISION	DATE

1" = 10'
SCALE - PLAN, 1"=10'
0 10' 20'

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

HEADWORKS VICINITY SITE PLAN

ARTESIAN SRRF WASTEWATER TREATMENT
PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

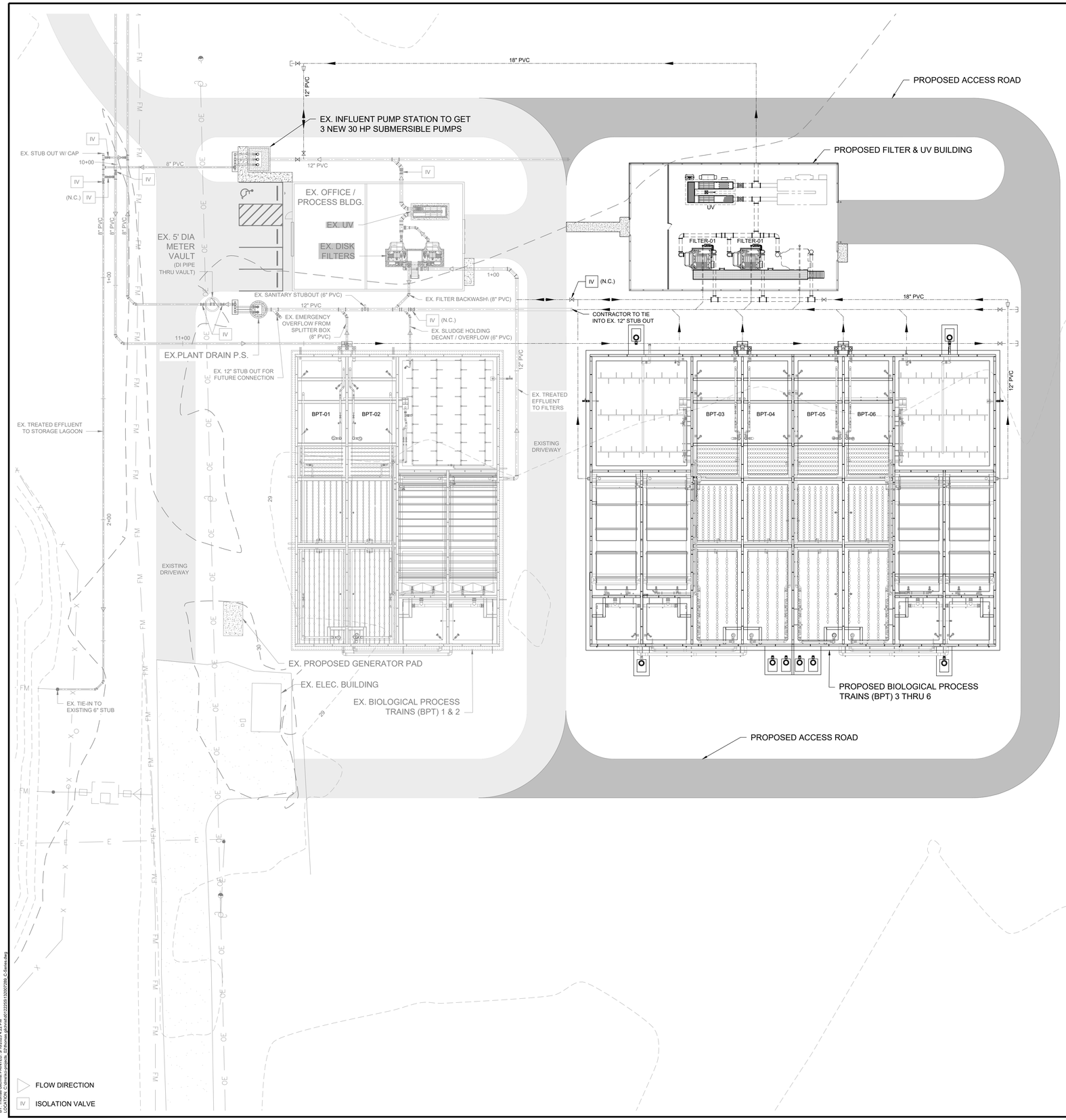
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NO.: 13033
EXPIRATION DATE: 06-30-26

DANIEL R. STRUNK LICENSE No. 13033 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE: _____

Drafting:	TJG	Check:	KN
Design:	TJG	Check:	DS
SCALE:	1"=10'		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	C-1.02		

BY: Thomas Coleman PRINTED: 5/16/2025 4:47 PM
DWG: C:\Users\tcoleman\Desktop\Artesian\Artesian SRRF\00048021\Drawings\Plan Sheets\00048021_C-Series.dwg



OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CULVERS RUN ROAD
NEWARK, DE 19702
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION	DATE

1" = 20'
SCALE - PLAN: 1"=20'

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

PROCESS VICINITY SITE PLAN
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NUMBER 13538
EXPIRATION DATE 07/31/26

DANIEL R. STRINGO — LICENSE — No. 13538 — DELAWARE — PROFESSIONAL ENGINEER

SIGNATURE

Drafting:	TJG	Check:	KN
Design:	TJG	Check:	DS
SCALE:	1"=20'		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	C-1.03		

By: Thomas Gibson PRINTED: 5/16/2025 2:23 PM
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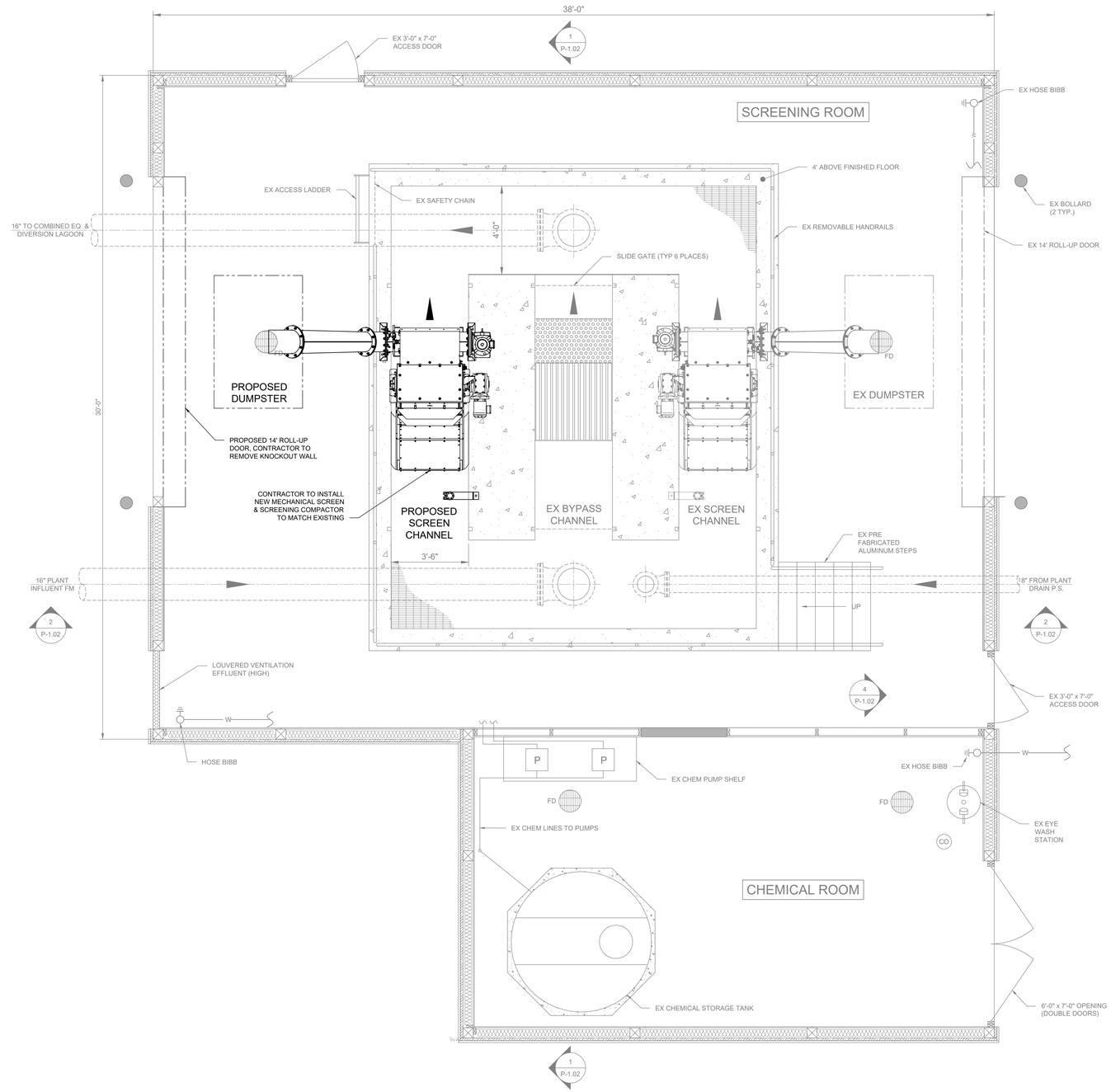


HEADWORKS LAYOUT PLAN

SCALE: 3/8" = 1'-0"
NOTE: SEE STRUCTURAL PLANS FOR FOUNDATION DESIGN

LEGEND

FD =	FLOOR DRAIN
CO =	CLEANOUT
P =	PUMP
S.S. =	STAINLESS STEEL
P.S. =	PUMP STATION

RH Thomas Global PRINTED: 9/4/2025 1:44 PM
LOCATION: C:\Users\dsmith\Documents\RH Thomas Global\22561\300\7389_P-Sales_01_Headworks Bldg (Phase 2).dwg

REVISION | DATE

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CULVERS KAMS ROAD
DELMAR, DE 19940
PHONE: (302) 436-8960
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

32" 64" 32"
3/8"=1'-0"

KCI TECHNOLOGIES, INC.
ENGINEERS • PLANNERS • SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

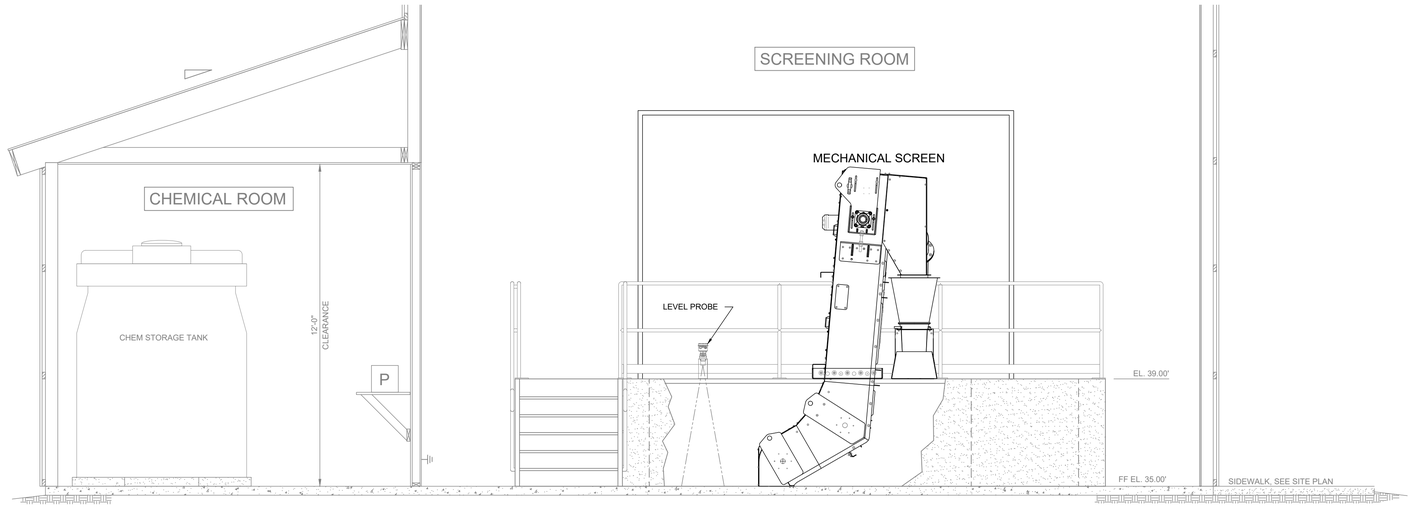
HEADWORKS BUILDING PLAN VIEW
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENT(S) WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NO.: 13033
EXPIRATION DATE: 06-30-26

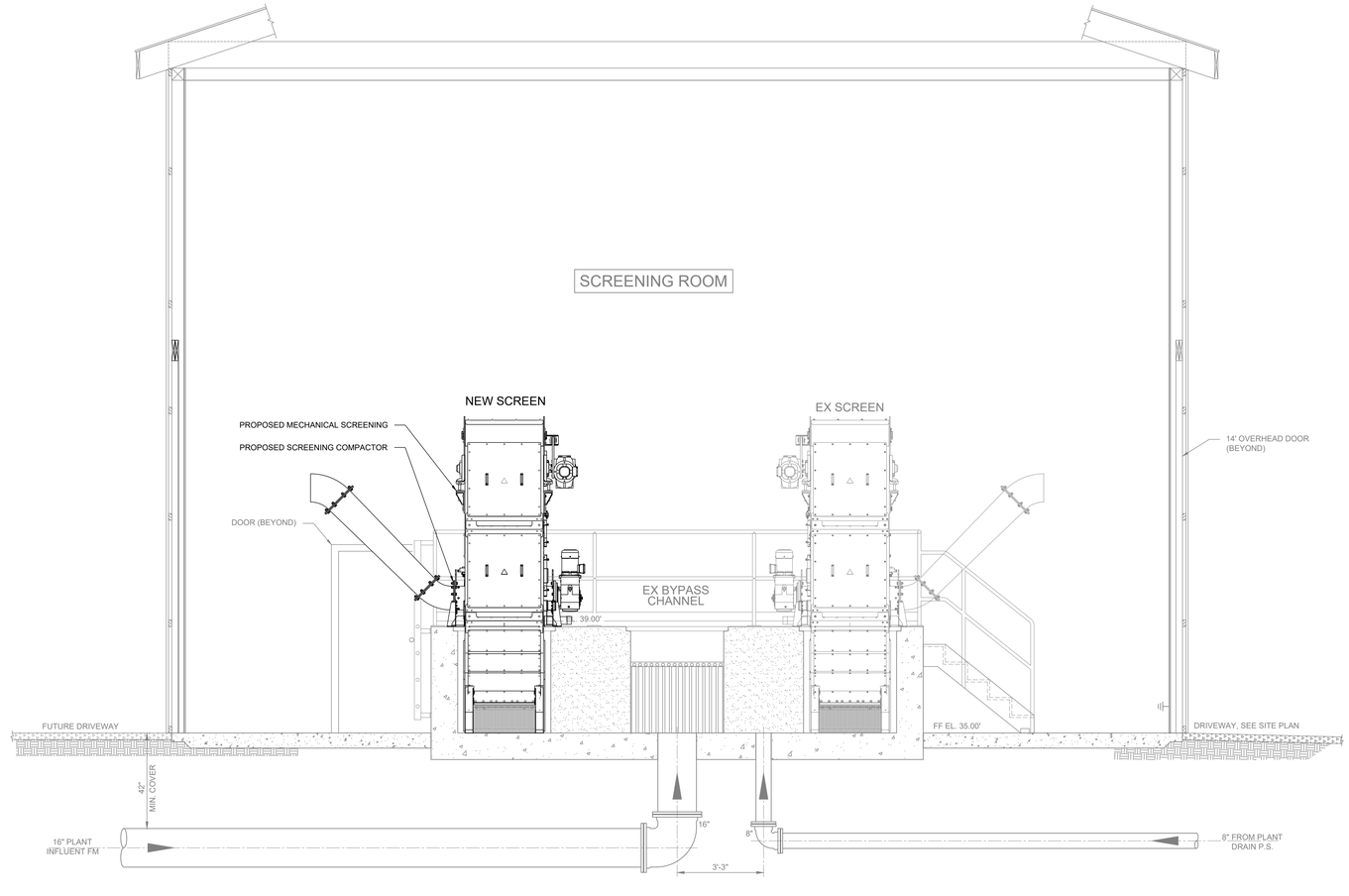
DANIEL R. STRING LICENSE No. 13033 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

Drafting:	TJG	Check:	DS
Design:	TJG	Check:	DS
SCALE:	3/8"=1'-0"		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	P-1.01		



1 P-1.01 MECHANICAL SCREEN ELEVATION
SCALE: 3/8" = 1'-0"
NOTE: SEE STRUCTURAL PLANS FOR FOUNDATION DESIGN



2 P-1.01 MECHANICAL SCREEN ELEVATION
SCALE: 3/8" = 1'-0"
NOTE: SEE STRUCTURAL PLANS FOR FOUNDATION DESIGN

3 P-1.01 ELEVATION VIEW
SCALE: 3/8" = 1'-0"

REVISION | DATE

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
844 CHURCHMANS ROAD
NEWARK, DE 19702
PHONE: 302.453.6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

32" 3/32" 64" 3/8"=1'-0"

HEADWORKS BUILDING SECTION VIEWS
ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

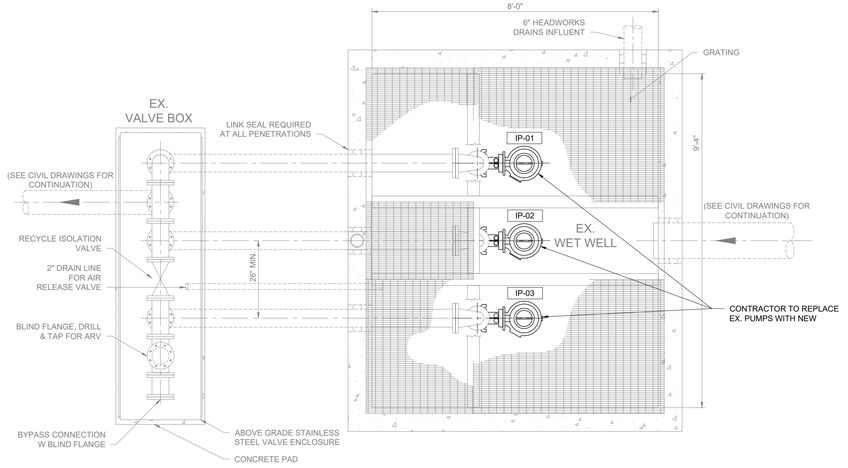
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE,
LICENSE NO.: 20809
EXPIRATION DATE: 06-30-26

DANIEL R. STRINGO LICENSE No. 13533 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

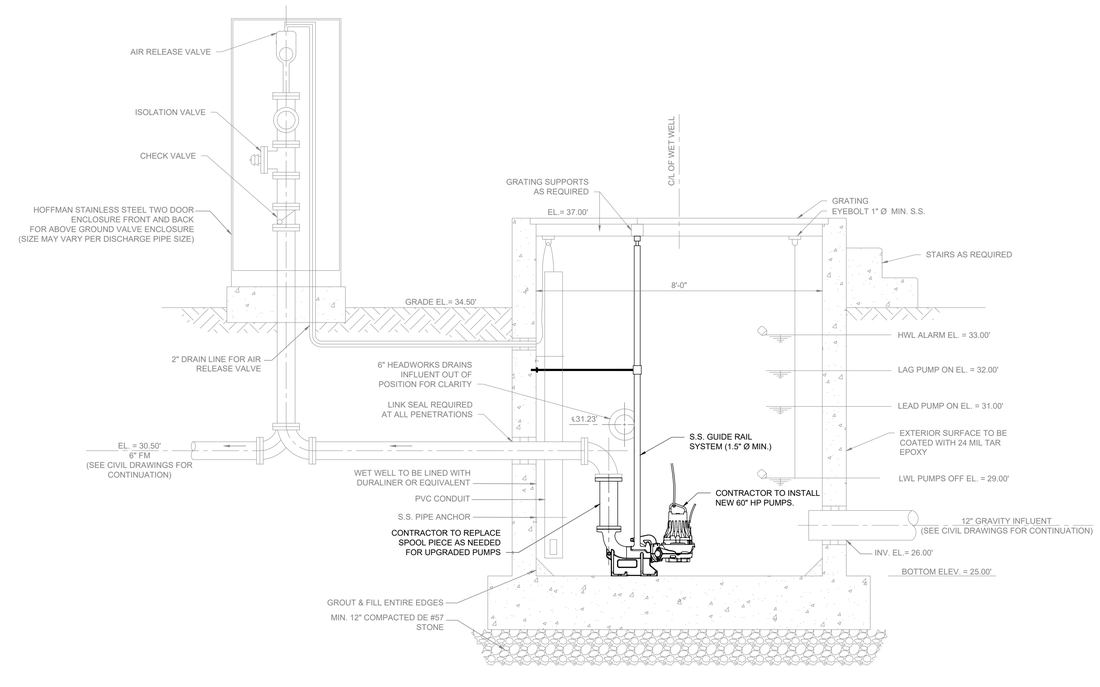
Drafting:	TJG	Check:	DS
Design:	TJG	Check:	DS
SCALE:	3/8"=1'-0"		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	P-1.02		

BY: Thomas Gilmer (PRINTED: 5/15/2025 1:34 PM
LOCATION: C:\Users\tgilmer\KCI\KCI - Documents - 48\Active\122256\13200289_P-Series_01_Headworks Bldg (Phase 2).dwg



INFLUENT P.S. PLAN VIEW

SCALE: 1/2" =1'-0"



INFLUENT P.S. SECTION VIEW

SCALE: 1/2" =1'-0"

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CALIFICHIAKIS ROAD
MILFORD, DE 19963
PHONE: (302) 430-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION	DATE

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

2" 4"
2' 1/2" =1'-0"

INFLUENT PUMP STATION PLAN & SECTION

ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION

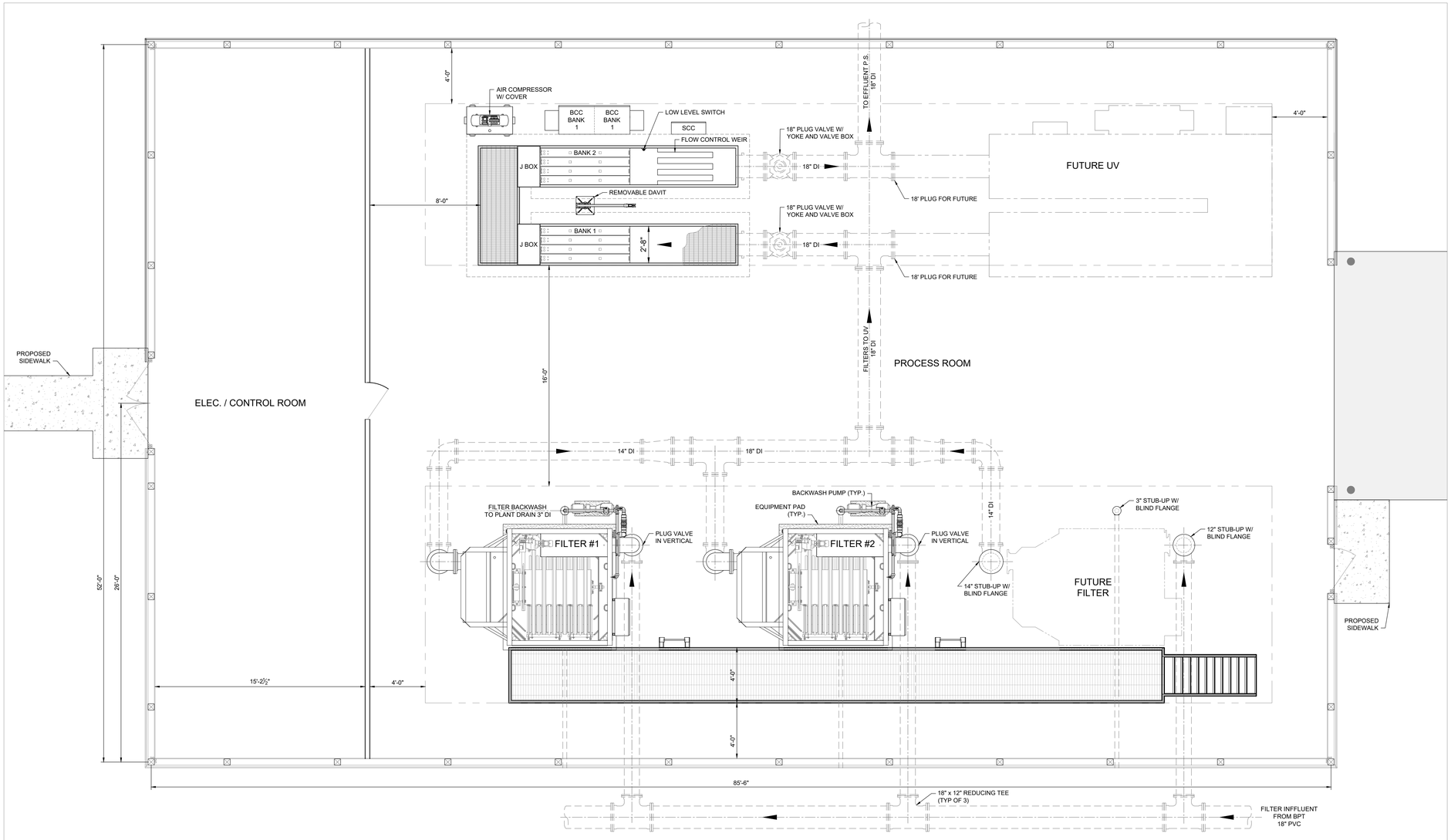
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE;
LICENSE NO.: 13033
EXPIRATION DATE: 06-30-26

DANIEL R. STRINO LICENSE No. 13033 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE

Drafting:	AP	Check:	DS
Design:	DS	Check:	DS
SCALE:	1/2" =1'-0"		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	P-1.03		

By: Thomas Dolphin PRINTED: 5/15/2025 1:51 PM
LOCATION: C:\Users\tdolphin\...\D\Process plant\Art\03225\03225\13207299 -P-Series_02 -Influent PS (Phase 2).dwg



PLAN VIEW

SCALE: 1/4" =1'-0"

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WATER MANAGEMENT, INC.
664 CHURCHMANS ROAD
NEWARK, DE 19702
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

DATE	REVISION

SCALE - PLAN: 1/4" =1'-0"

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

FILTER AND UV PROCESS BUILDING PLAN

ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NUMBER: 13533
EXPIRATION DATE: 06-30-26

DANIEL R. STRING LICENSE No. 13533 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

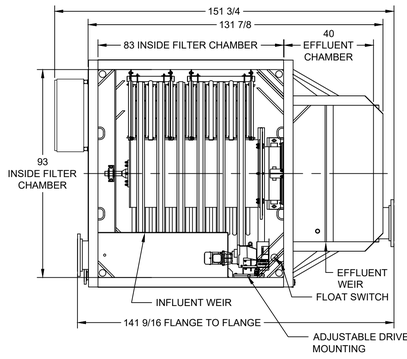
Drafting:	TJG	Check:	DS
Design:	TJG	Check:	DS
SCALE:	1/4" =1'-0"		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	P-1.04		

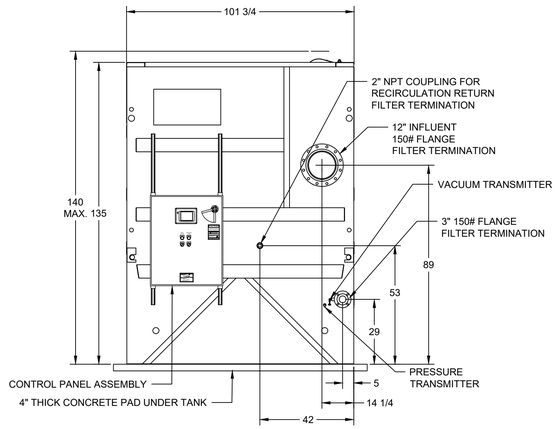
BY: Thomas Ginkel PRINTED: 5/15/2025 1:44 PM
LOCATION: C:\Users\tginkel\Documents - DTM\Projects\Artesian\00122956\13307799_P-Sheet_03 Filter & UV Bldg (Phase 2).dwg

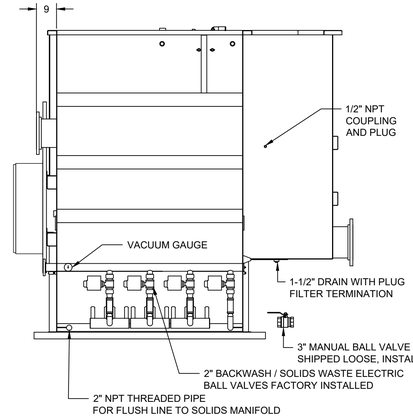
INSTALLATION NOTES:

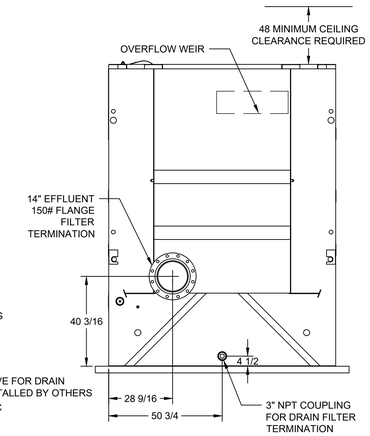
1. PLEASE REVIEW ALL INDIVIDUAL INSTALLATION DRAWINGS FOR ACTUAL DETAILS IN THE OPERATION AND MAINTENANCE MANUAL PRIOR TO INSTALLING THE EQUIPMENT.
2. 8" 150# FLANGE INFLUENT HOOK-UP.
3. 8" 150# FLANGE EFFLUENT HOOK-UP.
4. 3" 150# BACKWASH SUCTION HOOK-UP.
5. 2" FNPT COUPLING HOOK-UP FOR RE-CIRCULATION LINE AT TANK, w/ A 3" GATE VALVE FOR BACKWASH DISCHARGE.
6. 3" FNPT COUPLING HOOK-UP FOR MANUAL BALL VALVE TO BE INSTALLED IN THE TANK DRAIN LINE BY OTHERS.
7. THE JOB SITE O&M MANUAL (ITEM 7) CONTAINING (1) "B" SIZE SET OF INSTALLATION DRAWINGS WILL BE LOCATED INSIDE OF THE PROJECT HARDWARE BOX.
8. PLATFORM AND STAIRS, BY OTHERS, MUST NOT BE SUPPORTED BY FILTER TANKS.
9. ALL THREADED FASTENERS MUST BE SECURED WITH A FULL NUT AND JAM NUT.
10. ANTI-SEIZE LUBRICANT IS REQUIRED ON ALL STAINLESS STEEL FASTENERS.
11. VACUUM GAUGES TO BE INSTALLED IN MANIFOLD AS SHOWN BY OTHERS.
12. REFER TO SHEET 4 OF THIS DRAWING FOR ADDITIONAL NOTES.
13. REFER TO EP-10031 FOR LIFTING INSTRUCTIONS.

MAX LIFTING WEIGHT: 7,500 LB
OPERATIONAL WEIGHT: 27,500 LB









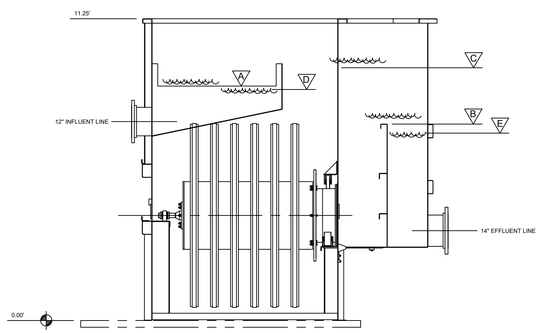
1 IF FREEZING IS A CONCERN AQUA-AEROBIC SYSTEMS RECOMMENDS THE FILTERS BE PLACED IN A HEATED BUILDING. IF A BUILDING IS NOT PROVIDED, ANY NECESSARY PROTECTION, INCLUDING BUT NOT LIMITED TO, HEAT TRACING AND INSULATION OF PUMPS AND PIPING, AS WELL AS PROTECTION AGAINST INTERNAL TANK FREEZING, SHALL BE PROVIDED BY THE INSTALLING CONTRACTOR.

2 THE FILTER CONTROL PANEL IS SHOWN IN THE STANDARD LOCATION. IF THE FILTER IS LOCATED OUTSIDE, THE CONTROL PANEL MAY BE RELOCATED TO THE SIDE OF THE FILTER FACING NORTH, TO LIMIT EXPOSING THE H.M.I. TO DIRECT SUNLIGHT.

3 THE GRAPHIC ELEMENTS OF THIS COMPUTER GENERATED DRAWING ARE DRAWN FULL SIZE. THE DIMENSIONS ARE ASSOCIATIVE. IF THE SIZE OF THE GRAPHIC ELEMENTS IS CHANGED THE DIMENSIONS WILL NOT BE CORRECT.

4 AN INFLUENT VALVE IS REQUIRED FOR ISOLATION / MAINTENANCE OF THE FILTER UNIT. THE INFLUENT VALVE SHALL BE PROVIDED BY OTHERS AND INSTALLED BY OTHERS.

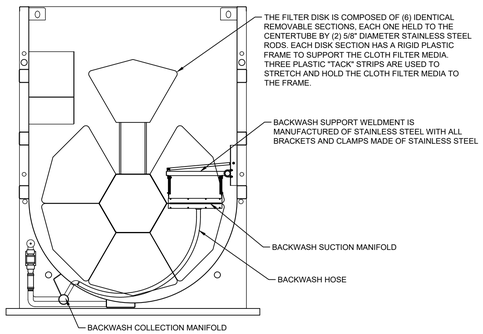
DRY WT (LBS)	OPER. WT. (LBS)
9,500	40,500



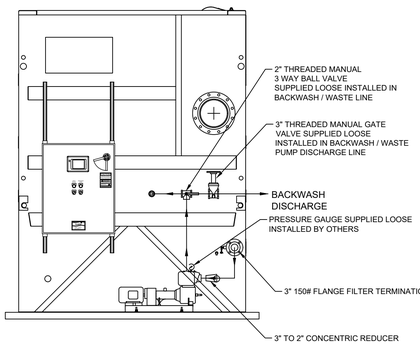
FLOW CONDITION	AVG. DESIGN	MAX. DESIGN
REDUNDANCY CRITERIA		
QTY FILTERS ONLINE	2	2
PLANT FLOW (MGD)	1.25	3.13
FLOW / FILTER (MGD)	.63	1.57
FLUX RATE (GPM/FT²)	1.34	3.37

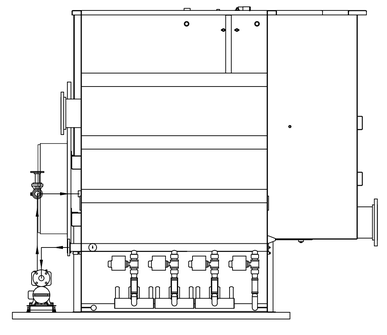
LOCATION		FLANGE DIA (IN)	FLANGE EL (FT)	WEIR LG (FT)	WEIR EL (FT)	NAPPE EL (FT)	NAPPE EL (FT)
A	INFLUENT	12	7.42	4.42	8.74	8.90	9.04
B	EFFLUENT	14	3.35	5.08	7.32	7.47	7.60
C	OVERFLOW	14	8.67	2.67	9.42	9.54	9.84
D	BACKWASH INITIATE EL	-	-	-	8.70	-	-
E	MAX. DOWNSTREAM EL	-	-	-	6.82	-	-

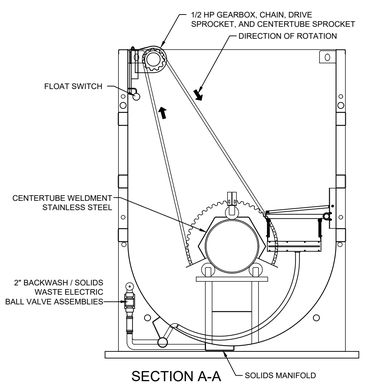
NOTE:
ALL INFORMATION FROM THIS SHEET IS FROM THE MANUFACTURERS CUT SHEETS.



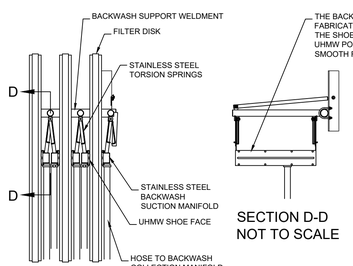
SECTION B-B





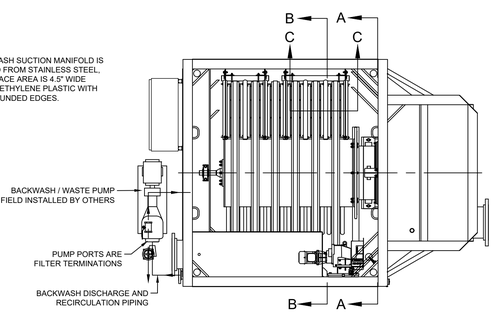


SECTION A-A



SECTION C-C
NOT TO SCALE

SECTION D-D
NOT TO SCALE



1 ALL EXTERNAL PIPING AND FITTINGS SHALL BE PROVIDED BY OTHERS ACTUAL PIPING LAYOUT AND PUMP LOCATION TO BE ETERMINED BY OTHERS WHEN THREADED OR WELDED PIPE IS USED IN LIEU OF FLANGED PIPE, UNIONS SHALL BE USED AT EACH PUMP AND VALVE CONNECTION TO FACILITATE SERVICE.

2 2 H.P. BACKWASH / WASTE PUMP CONNECTIONS ARE 2" N.P.T. BACKWASH / WASTE PIPING IS 3" DIAMETER. 3" TO 2" CONCENTRIC REDUCER FITTINGS SHALL BE PROVIDED AND INSTALLED BY OTHERS AT EACH PUMP PORT.

3 THE BACKWASH / WASTE PUMP CAPABILITIES ARE AS FOLLOWS:

- HORSEPOWER: 2 HP
- FLOW: 130 GPM
- TOTAL DYNAMIC HEAD: 23.2 FT
- ALLOWABLE DISCHARGE HEAD, AFTER FILTER LOSSES: 12 FT

FOR INSTALLATIONS THAT REQUIRE MORE DISCHARGE HEAD, ALTERNATIVE PUMPS ARE AVAILABLE. PLEASE CONSULT ENGINEERING TO VERIFY THE SUITABILITY OF THE DISCHARGE PIPING OR FOR SPECIAL PUMP REQUIREMENTS.

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CULPEPER PARK ROAD
NEW CASTLE, DE 19720
PHONE: (302) 463-6060
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

REVISION | DATE

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

FILTER PLANS, SECTIONS, & DETAILS

ARTESIAN SRRF WASTEWATER TREATMENT
PHASE 3 & 4 PLANT EXPANSION PROJECT
SUSSEX COUNTY DELAWARE

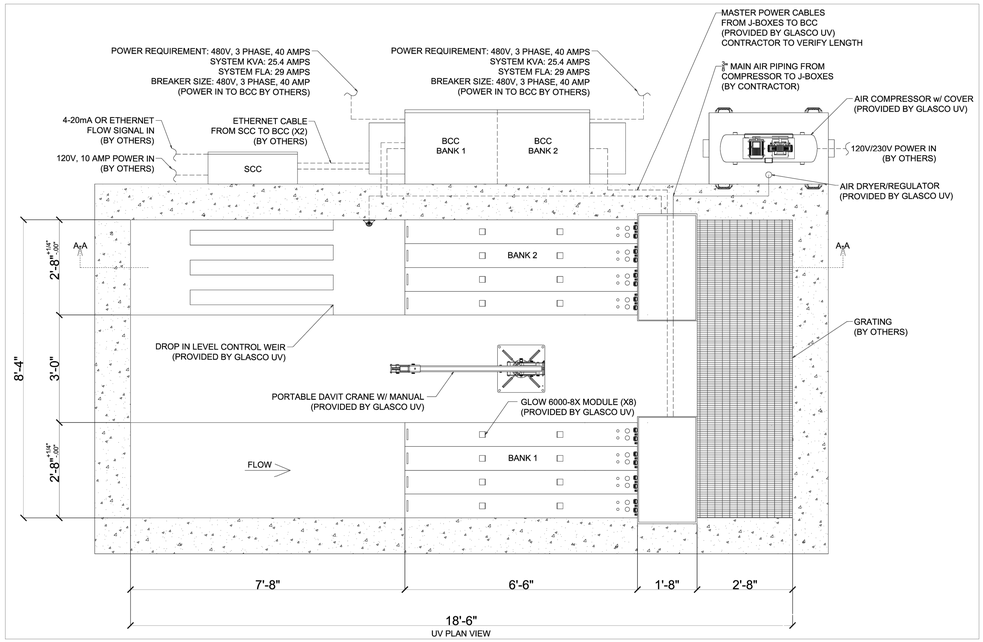
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE.
LICENSE NO: 23923
EXPIRATION DATE: 06-30-26

DANIEL R. STRINO — LICENSE — No. 23923 — DELAWARE — PROFESSIONAL ENGINEER

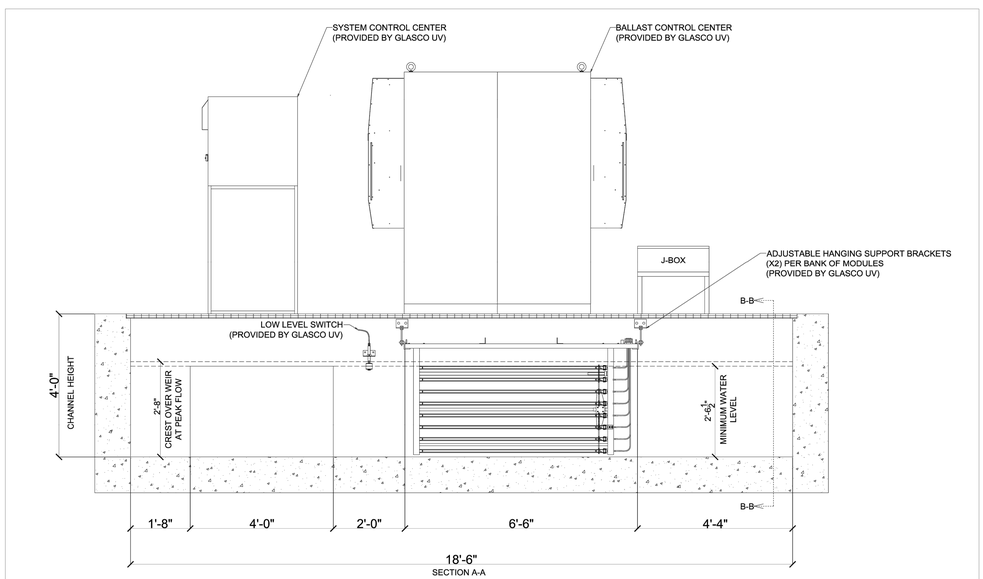
SIGNATURE: _____

Drafting:	TJG	Check:	DS
Design:	DS	Check:	DS
SCALE:		NA	
DATE:		05-15-2025	
KCI JOB #:		00048021_001.000	
SHEET:		P-1.05	

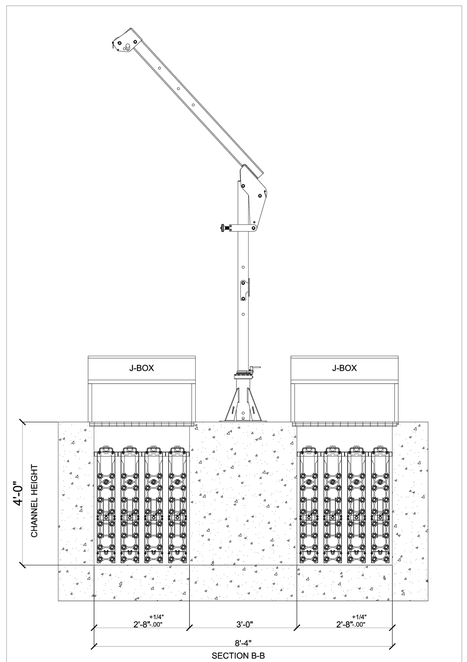
BY: Thomas Gabriel PRINTED: 5/12/2025 1:54 PM
LOCATION: C:\Users\tgabriel\Documents\Projects\00122566\13000799_P-Series_04_Disk Filters (Phase 2).dwg



UV PLAN VIEW



SECTION A-A



SECTION B-B

NOTE:
ALL INFORMATION FROM THIS SHEET IS FROM THE MANUFACTURERS CUT SHEETS.

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WASTEWATER MANAGEMENT, INC.
644 CALHOUN MANS ROAD
SEAFORD, DE 19973
PHONE: (302) 438-8060
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

DATE	REVISION

SCALE: PLAN: 1/2" = 1'-0"

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

UV PLAN & SECTIONS

ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF DELAWARE;
LICENSE NO: 23923
EXPIRATION DATE: 06-30-26

DANIEL R. STRING LICENSE No. 13933 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE:

Drafting:	TJG	Check:	DS
Design:	TJG	Check:	DS
SCALE:	1/2" =1'-0"		
DATE:	05-15-2025		
KCI JOB #:	00048021_001.000		
SHEET:	P-1.06		

BY: Daniel Gabriel PRINTED: 5/12/2025 1:54 PM
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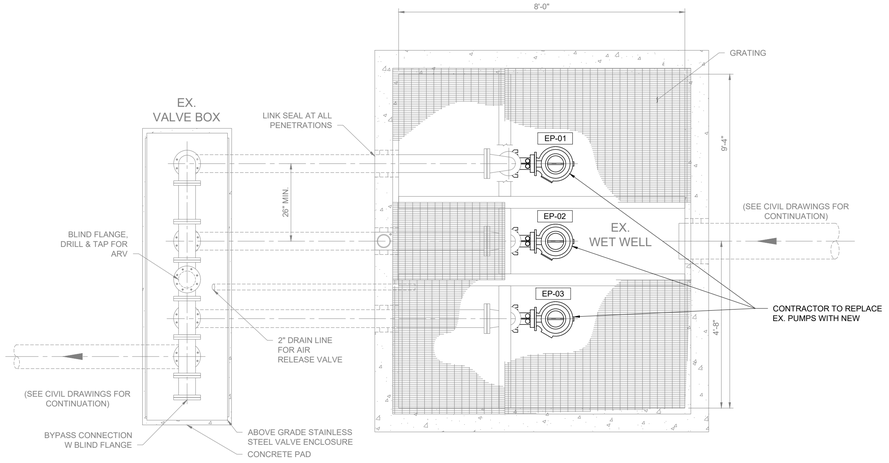
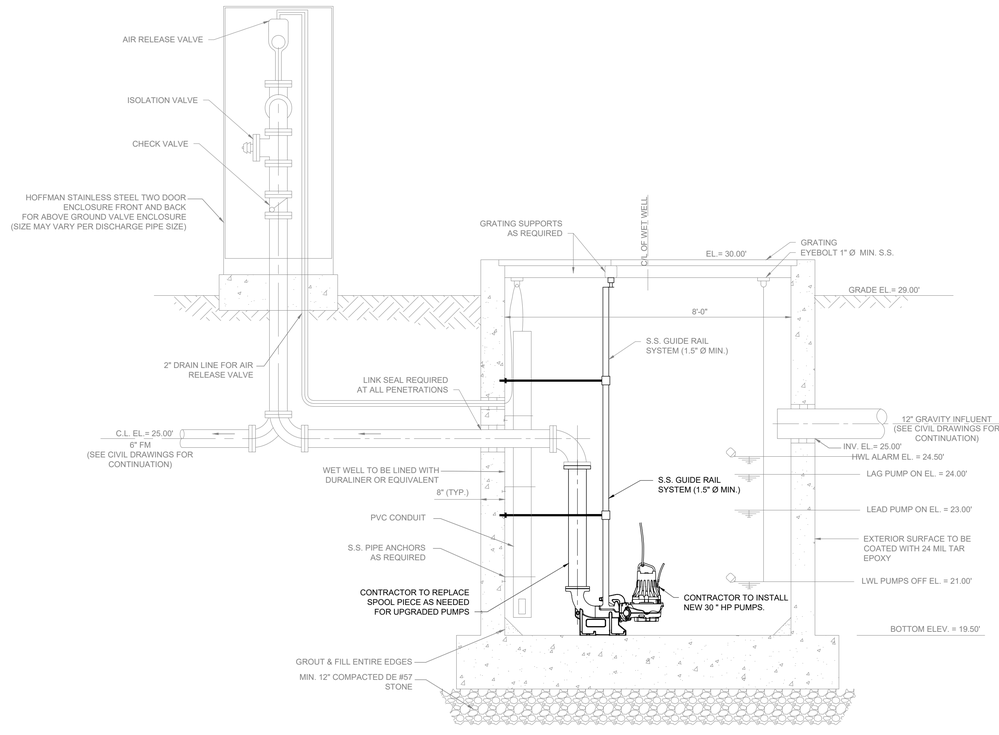


EFFLUENT P.S. PLAN VIEW

SCALE: 1/2"= 1'-0"



EFFLUENT P.S. SECTION VIEW

SCALE: 1/2"= 1'-0"

OWNER/DEVELOPER:
DANIEL KONSTANSKI
ARTESIAN WATER MANAGEMENT, INC.
664 CALIFICHIANS ROAD
ROCKLAND, DE 19732
PHONE: (302) 453-6900
EMAIL: DKONSTANSKI@ARTESIANWATER.COM

NO.	REVISION	DATE

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
614 N. DuPont Highway, Suite 100 Dover DE. 19901
PHONE: (302) 747-5999 FAX: (302) 731-7807 Website: www.kci.com

4" 2" 2"
1/2" =1'-0"

EFFLUENT PUMP STATION PLAN & SECTION

ARTESIAN SRRF WASTEWATER TREATMENT PHASE 3 & 4 PLANT EXPANSION PROJECT

SUSSEX COUNTY DELAWARE

PROFESSIONAL CERTIFICATION
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LICENSE NO. 13933
EXPIRATION DATE: 06-30-26

DANIEL R. STRUNK LICENSE No. 13933 DELAWARE PROFESSIONAL ENGINEER

SIGNATURE

Drafting:	TJG	Check:	DS
Design:	DS	Check:	DS
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KCI JOB #:	00048021_001.000		
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