Village of Middlefield, Ohio
Wastewater Treatment Plant
Screen Rehabilitation Project

Scope of Work and Bid Proposal Form

March 19, 2026

Village of Middlefield, Ohio
Wastewater Treatment Plant
Screen Rehabilitation
Scope of Work
March 19, 2026

Work Description and Scope of Work:

The work shall be completed by a bidder that is either the original equipment manufacturer (OEM) or has adequate experience and certified by the original equipment manufacturer to perform complete rehabilitation work of the screen. The bidder shall be able to provide and support the specified performance warranties. The work shall be completed at the bidder's facility to maintain proper climate control and allow for testing the rehabilitated screen and compactor systems. Bidder shall provide all necessary labor, materials, equipment, and facilities necessary to properly complete all work as indicated herein. The rehabilitated screen and compactor systems shall be tested for proper operations in a proper and professional manner. Work shall include but not be limited to the work scope as shown herein.

The Screen and Compactor systems are currently in use at the Middlefield wastewater treatment plant (WWTP). The screen and compactor systems are currently located in the WWTP Headworks Building and are an Andritz Aquascreen 1200x3500x6 and compactor and shall be rehabilitated as follows:

1. Receive screen and compactor systems from Village Contractor and arrange for transportation to the rehabilitation shop from the Middlefield WWTP.
2. All parts and material used in the rehabilitation shall be original manufacturer genuine parts.
3. The rehabilitation shall consist of the following:
    a. Upgrade the wash brush to the new split brush design
    b. Replacement of main drive gear box and motor
    c. Removal and replacement of the guide rails and half moons
    d. Replacement of the chain
    e. Side seal upgrade to the channel wall
    f. The frame and all panels will be cleaned
    g. All fasteners will be replaced
    h. The compactor will be completely refurbished with new consumable components
    i. Freight and field service are included in the budget amount
    j. Loading and transporting the screen and compactor systems back to the Middlefield WWTP
4. After the Village Contractor Reinstall the screen and compactor system, observe installation and perform final check-up of the installed equipment before field start-up and provide direction as needed. Attend field start-up of the rehabilitated systems.
5. After successful start-up of the screen and compactor systems, provide warranty documentation for Village Records.

Site Access:

The Middlefield WWTP is located at 14680 Tare Creek Parkway, Middlefield, Ohio 44062. The Village shall secure the services of a Village Contractor to disconnect the screen and compactor systems from its current connections and with the use of a crane, remove the screen from the existing building onto a bidder provided transportation vehicle. The bidder shall be responsible for securing the screen and compactor systems onto the transportation vehicle and be responsible for transportation to the bidder's shop.

Two weeks prior to the return of the rehabilitated screen and compactor equipment, the bidder shall advise the Village, so that the Village Contractor can be available to unload the screen and compactor and reinstall them in the existing system. The Village Contractor is identified as Workman Industrial Services, Inc. and is located in Kent, Ohio.

Time of Completion:

Cost proposals are due at the office of the Village Administrator, Village Hall, 149860 N. State Avenue, Middlefield, Ohio 44062, Attention Mrs. Leslie Gambosi-McCoy, until 12:00 Noon, local time on Friday April 3, 2026, and at that time the Bids received will be publicly opened and read.

The cost proposal submittal shall include all pages of the entire package provided to bidder.

It is anticipated that formal Agreements will be signed between the Village and the selected bidder within 30 consecutive calendar days of bid award by the Village. The successful bidder would move to the project site to initiate construction work no later than 15 consecutive days after receipt of Notice to Proceed. All Work shall be completed within 180 consecutive calendar days after the date when the Contract Times commence to run.

To expedite initiation of the rehabilitation efforts, the successful bidder may coordinate with the WWTP Superintendent regarding field mobilization and coordination with the Village Contractor etc. shortly after opening of the bids.

Payment:

Village shall pay contractor for completion of the Work in accordance with the stipulated amount in the Agreement, subject to adjustment allowed under the Agreement.

Attachments:

1. Bid Proposal Form, dated March 19, 2026, consisting of two pages.
2. Wastewater Treatment Plant Improvements – Record Drawings dated December 18, 20027 – Partial set of drawings, 17 drawings, are included. Additional drawings can be provided upon request.
3. Village Contractor, Workman Industrial services, scope of services and fee dated November 26, 2025 and consisting of one page.
4. Standard Village Agreement form, consisting of five pages.

Village of Middlefield, Ohio
Wastewater Treatment Plant
Screen Rehabilitation
BID PROPOSAL FORM
March 19, 2026

Bid Proposal for rehabilitation to the existing influent screen at the Middlefield, Ohio Wastewater Treatment Plant (WWTP) and in accordance with the approved documents as provided by the Village. Upon acceptance of this Proposal, it shall become part of the Contract between the Bidder and the Village.

THE UNDERSIGNED, as Bidder, declares that he has or they have carefully examined the site of the work and the required Improvement, and that he or they will contract to provide all necessary labor, machinery, parts, equipment, tools and appliances and other means for the required rehabilitation work for one mechanical screen, and do all work called for by the Village in the manner therein prescribed and upon the following terms and for the following prices submitted herein:

BID SCHEDULE							
	REHABILITATION WORK	BID QUANTITY		LABOR	MATERIAL	UNIT TOTAL	TOTAL
REHABILITATION	REHABILITATE SCREEN SYSTEM	1	LUMP SUM				
	REHABILITATE COMPACTOR SYSTEM	1	LUMP SUM				
	TRANSPORTATION/ROUND TRIP	1	LUMP SUM				
	CONTINGENCY ALLOWANCE	1	LUMP SUM	---	---	$20,000	$20,000

Informal Bid Grand Total _____

Bid Submitted by:

_____
Firm, Corporation, or Individual

_____
Officer's Name and Title (typed)

_____

Officer's Signature

_____

Street Address

_____

City, State, Zip Code

_____

Date

_____

Email

BID PRICES TO INCLUDE

All work shown or required but not paid for separately as a bid item shall be included in the cost of other bid items. The amount bid shall include the following:

1. All labor, materials, tools, equipment and transportation necessary for the proper execution of the work in accordance with Documents provided by the Village.
2. Project coordination and scheduling.
3. All provisions necessary to protect workmen, the public and property along the work in accordance with the Contract Documents and OSHA requirements.
4. Mobilization/demobilization and final project area clean-up.
5. Bonds and insurances and/or endorsements required to fully comply with and adhere to the work.

++ End of Document ++

PROJECT SERVICES AGREEMENT

This PROJECT SERVICES AGREEMENT (the "Agreement") is made by and between the Village of Middlefield, Ohio (the "Village"), a municipal corporation with offices at 14860 N. State Avenue, Middlefield, Ohio and _____ ("Bidder"), an Ohio _____, with offices at _____.

WHEREAS, Bidder is the winning bidder, having submitted the lowest and best bid, in connection with the Village's Wastewater Treatment Plant Screen Rehabilitation project (the "Project");

WHEREAS, Bidder is either the original equipment manufacturer or has adequate experience and is certified by the original equipment manufacturer to perform complete rehabilitation work on the screen; and

WHEREAS, the Village and Bidder wish to enter into this Agreement for performance of Project services;

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties hereto, the parties now agree as follows.

1. The Project Work Description and Scope of Work (the "Scope of Work") is attached hereto as Exhibit A, and each and every term and provision thereof is incorporated herein by reference herein as if fully rewritten and made a part of this Agreement.

2. The Project shall be completed at the Bidder's facility to maintain proper climate control and allow for testing of the rehabilitated screen and compactor systems. Bidder shall provide all necessary labor, materials, equipment and facilities necessary to properly complete all work as indicated in the Scope of Work. The rehabilitated screen and compactor systems shall be tested for proper operations in a proper and professional manner.

3. Bidder represents that it is either the original equipment manufacturer or has adequate experience and is certified by the original equipment manufacturer to perform complete rehabilitation work of the screen.

4. Bidder shall provide all necessary labor, materials, equipment, and facilities necessary to properly complete all work as indicated herein and in the Scope of Work.

5. Bidder shall commence the work hereunder no later than fifteen (15) days after receipt of a Notice to Proceed (the "Commencement Date"). All work shall be completed within one hundred eighty (180) days from the Commencement Date.

6. On or about the first (1st) business day of each month following the Commencement Date, Bidder shall submit to the Village an application for payment consisting of the cost of the work performed up to the last day of the previous month, including materials suitably stored on the worksite. Commencing with the second monthly application for payment, Bidder shall include with each subsequent application for payment executed lien waivers for payments made from the previous application for payment.

Within seven (7) days after receipt pf each monthly application for payment, the Village shall provide written notice to the Bidder of the Village's acceptance or rejection, in whole or in part, of such application for payment. If the Village does not notify the Bidder within seven (7) days after receipt thereof, the application shall be deemed approved by the Village. Within fifteen (15) days after receipt of such application (and no later than twenty-two (22) days after the Village's receipt of an application, Owner shall pay directly to Bidder the amount for which application for payment is made, less amounts previously paid by the Village and less Retainage (as such term is hereafter defined). If such application is rejected in whole or in part, the Village shall indicate in writing the reasons for its rejection. If the Village and Bidder cannot agree on a revised amount then, within fifteen (15) days after its initial rejection in part of such application (and no later than twenty-two (22) days after Village's receipt of such application), the Village shall pay directly to the Bidder the amounts due for those items not rejected by Bidder for which application for payment is made, less amounts previously paid by Village and less Retainage. Those items rejected by the Village shall be due and payable when the reasons for the rejection have been removed.

If the Village fails to pay the Bidder at the time payment of any amount becomes due, then Bidder may, at any time thereafter, upon serving written notice that work will be stopped within seven (7) days after receipt of the notice by the Village, and after such seven (7) day period, stop the Work until payment of the amount owing is received.

The Village's progress payment(s) or use of the Project, whether in whole or in part, shall not be deemed an acceptance of any work not conforming to the requirements of this Agreement and/or the Scope of Work.

After the Village Contractor (as such term is defined in the Scope of Work) reinstalls the screen and compactor systems (as described in the Scope of Work), which process Bidder shall observe, Bidder shall perform a check-up of the installed equipment before field start-up of the rehabilitated systems. Once the check up on the installed and

rehabilitated equipment and systems is deemed satisfactory by the Village ("Project Completion"), the Village shall pay Bidder the unpaid balance of the contract amount, including any Retainage.

From each progress payment made before the time of Project Completion, the Village may retain five percent (5%) of the amount otherwise due after deduction of any amounts already paid by the Village ("Retainage"), subject to the following provisions. After the work is fifty percent (50%) complete, the Village shall withhold no further Retainage and shall pay Bidder the full amount due on account of subsequent progress payments. The Village may, in its sole discretion, reduce the amount to be retained at any time.

Following final payment by the Village, Bidder shall provide any and all lien waivers.

7. Following Project Completion, Bidder shall provide warranty documentation to the Village, evidencing warranty of the work for a period of _____.

8. Any change to the Scope of Work, cost of Work, and/or time period by which the work must be completed, shall, in order to be effective, be made in writing signed by the Village and the Bidder as an amendment to this Agreement (a "Change Order"). The Village and the Bidder shall negotiate the cost of any Change Order expeditiously and in good faith. The Bidder shall be under no obligation to perform any additional work or implement any change to the Scope of Work prior to the execution by both parties of a Change Order.

9. To the fullest extent permitted by Law, Bidder shall indemnify and hold harmless the Village and its elected officials, appointed officials, officers, employees and agents from and all claims for bodily injury and property damage, including reasonably attorney fees, costs and expenses, that may arise from the performance of the work, but only to the extent caused by the negligence or intentional misconduct of Bidder or any of Bidder's agents, subcontractors or invitees.

10. Before commencing work and as a condition for payment, Bidder shall procure and maintain in force Workers' Compensation Insurance, Employers' Liability Insurance, Business automobile Liability Insurance, and Commercial General Liability Insurance ("CGL"). The CGL Policy shall include coverage for liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, contractual liability, and broad form property damage. Bidder shall maintain completed operations liability insurance for one year after Project Completion. Bidder's Employers' Liability, Business Automobile Liability, and CGL policies shall be written with at least the following limits of liability:

(a) Workers Compensation Insurance covering the statutory requirements of the State of Ohio;

(b) Employers' Liability Insurance ("stopgap" Employers Liability) with limits of not less than five hundred thousand dollars ($500,000.00) for injury to any one person;

(c) CGL with limits of insurance of not less than $1,000,000 each occurrence and $2,000,000 annual aggregate. CGL coverage shall cover liability from premises, operations, independent contractors, products-completed operations, and personal and advertising injury;

(d) Comprehensive Automobile Liability Insurance covering all owned, non-owned and hired automobiles used in connection with the performance of the Bidder's services, with combined single limits for bodily injury, including death and property damage, in the amount of one million dollars ($1,000,000) per accident.

Bidder shall maintain in effect all insurance coverage required under this Section with insurance companies lawfully authorized to do business in the State of Ohio. Bidder shall require all Subcontractors to obtain and maintain the same products and levels of insurance as described herein. If Bidder or its Subcontractors fail to obtain or maintain any insurance coverage required under this Agreement, Village may purchase such coverage and charge the expense to Bidder (including by offsetting such expense against any amount otherwise owing from Village to Bidder), or terminate this Agreement.

11. Bidder shall be responsible for management of any Subcontractors in the performance of their work. Bidder agrees to bind any Subcontractors to the terms, conditions and provisions of this Agreement.

12. This Agreement shall be governed by the laws of the State of Ohio. Any dispute arising hereunder shall be resolved in the Court of Common Pleas, Geauga County, Ohio.

13. This Agreement may be executed in Counterparts, each of which shall be deemed to be an original and both together shall be deemed to be one and the same Agreement. Delivery of an executed counterpart of a signature page to this Agreement in electronic format (e.g. " .pdf") shall be effective as delivery of a manually executed counterpart of this Agreement.

(--Remainder of Page Intentionally Left Blank--)

14. In the event that any provision of this Agreement is found to be illegal or unenforceable in any way, such finding shall in no way invalidate any other provision of this Agreement, and this Agreement shall be deemed amended to the minimum extent necessary to comply with such ruling.

IN WITNESS WHEREOF, the parties hereto have set their hands this ___ day of February, 2026.

VILLAGE Village of Middlefield	BIDDER _____
By: _____	By: _____
Its: _____	Its: _____

Workman Industrial Services, Inc.
361 Old Forge Road • Kent, Ohio 44240
(330) 678-7002 • FAX (330) 678-7332
wis@workmanindustrial.com

PROPOSAL

PROPOSAL NO: 25030 - JTW

DATE: November 26, 2025

Middlefield WWTP
14680 Tare Creek Parkway
Middlefield, Ohio 44062
Attn: Mike Cippola

EMAIL: mcipolla@middlefieldohio.com

TELEPHONE: (440) 632-5248 FAX:

LOCATION:

Middlefield WWTP Headworks

We Hereby Submit Estimates For:

Labor, material and equipment to remove your Andritz screen and load on your truck for refurbishing. This includes all mechanical and electrical disconnections. In the interim of the screen return, there are several electrical conducts and fittings that are corroded and will be replaced. Upon the screen return, it will be off loaded and reinstalled with all the mechanical and electrical reconnections. A technician from Andritz will be on site to supervise and startup.

Does not include any painting other than the skylight opening liner, licenses, fees, permits, sales tax, overtime and premium wage.

We Propose Hereby To Furnish Material And Labor Complete In Accordance With The Above Specification For The Sum Of:

Thirty-Seven Thousand Six Hundred and Eighty-One Dollars $37,681.00

Payment To Be Made As Follows: Net 30 Days

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workers' Compensation Insurance.

Authorized Signature: James T. Workman

Note: This proposal may be withdrawn by us if not accepted within 15 days.

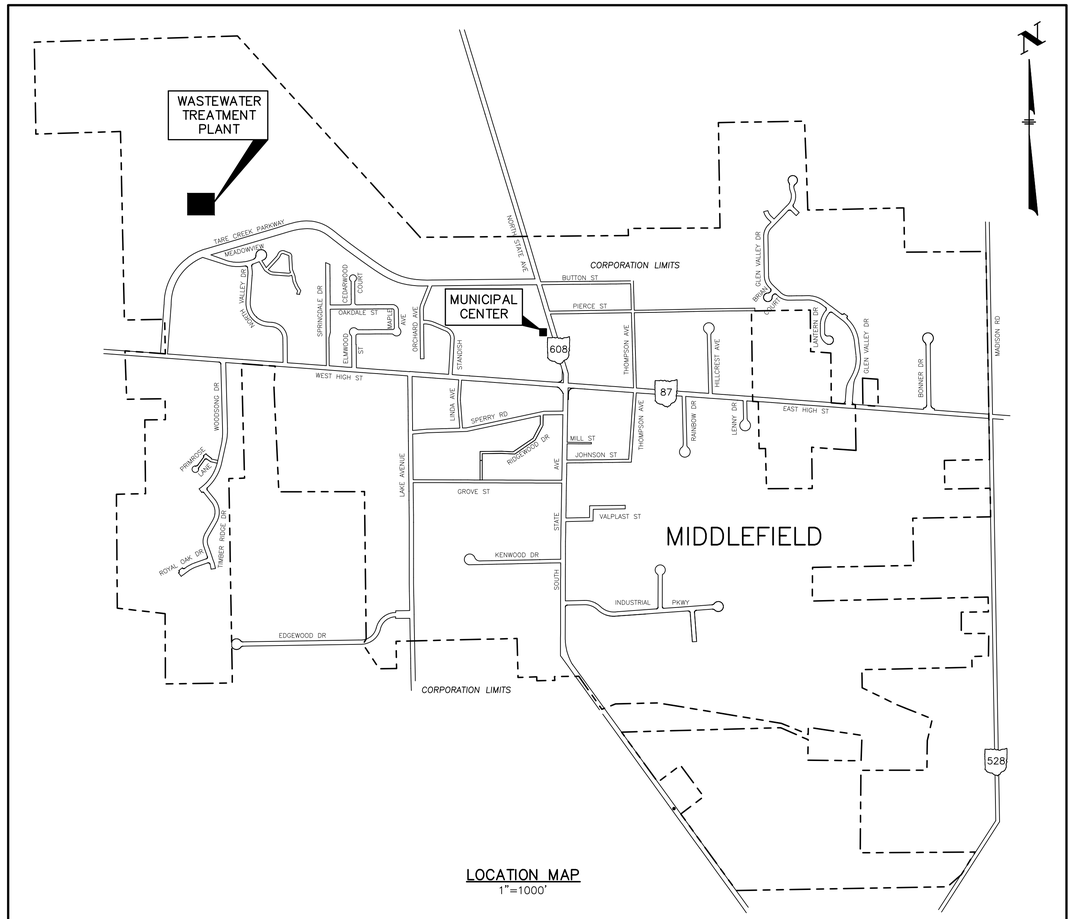
If accepted, please sign and return a copy. The above prices, specifications, and conditions are satisfactory and hereby accepted.

P.O # 26-0181

Date Of Acceptance: 2/3/2026 Signature: Leslie McCoy

SEALING OF DOCUMENTS

	SHEETS CERTIFIED
STATE OF OHIO · SAID W. ABOUABDALLAH · 53224 · REGISTERED PROFESSIONAL ENGINEER NAME: SAID W. ABOUABDALLAH, P.E. DATE:	SHEETS: 1–65
STATE OF OHIO · LEONARD R. RYCHLIK · E–37515 · REGISTERED PROFESSIONAL ENGINEER NAME: LEONARD R. RYCHLIK, P.E. DATE:	SHEETS: 43–52
STATE OF OHIO · JULIE A. LAWSON · E–68219 · REGISTERED PROFESSIONAL ENGINEER NAME: JULIE A. LAWSON, P.E. DATE:	SHEETS: 37–42, 53–55, 60
STATE OF OHIO · LISA A. BOWE · E–57389 · REGISTERED PROFESSIONAL ENGINEER NAME: LISA A. BOWE, P.E. DATE:	SHEETS: 15–19, 29–35, 43–63
STATE OF OHIO · AARON ALLEN HUNT · E–66590 · REGISTERED PROFESSIONAL ENGINEER NAME: AARON A. HUNT, P.E. DATE:	SHEETS: 20–26, 37–42
STATE OF OHIO · BRIAN D. LOHMANN · E–58395 · REGISTERED PROFESSIONAL ENGINEER NAME: BRIAN D. LOHMANN, P.E. DATE:	SHEETS: 14–19, 37–52, 56–60, 63
STATE OF OHIO · ZOLTON F. BITTO · 42355 · REGISTERED PROFESSIONAL ENGINEER NAME: ZOLTON F. BITTO, P.E. DATE:	SHEETS: E1–E37, I1–I7



LOCATION MAP
1"=1000'

GEAUGA COUNTY

RECORD DRAWINGS

WASTEWATER TREATMENT PLANT EXPANSION
PHASE I

MIDDLEFIELD, OHIO

ARCADIS

ARCADIS U.S., Inc.
1100 Superior Avenue
Suite 1250
Cleveland, Ohio 44114
Tel: 216–781–6177 Fax: 216–781–6243
www.arcadis–us.com

2005

UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG
CALL: 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

VILLAGE OF MIDDLEFIELD, OHIO
P.O. BOX 1019
MIDDLEFIELD, OHIO 44062
(440) 632–5248
MR. DANIEL WEIR

DOMINION EAST OHIO GAS
1201 EAST 55TH
CLEVELAND, OHIO
(216) 736–6826
MR. MIKE ANTONIUS

THE ILLUMINATIING COMPANY
730 SOUTH AVENUE
YOUNGSTOWN, OHIO
(330) 740–7635
MR. BILL SPECE

ADELPHIA CABLE
8385 BAVARIA ROAD
MACEDONIA, OHIO 44056
(330) 963–3620
MR. BERT MCDANIELS

BRAINARD GAS
4369 BRAINARD ROAD
ORANGE VILLAGE, OHIO 44022
(216) 591–9110
MR. ED BONK

WESTERN RESERVE TELEPHONE (ALLTEL)
245 NORTH MAIN STREET
HUDSON, OHIO 44236
(330) 993–1621
MR. RICK ANDREGO

STAR CABLE
4720 MAHONING AVENUE
YOUNGSTOWN, OHIO 44515
(800) 569–0200
MR. TOM BEAT

CONTRACTOR
JACK GIBSON CONSTRUCTION CO.
2460 PARKMAN RD NW
WARREN, OHIO 44844
PH: (330) 394–5280
FAX: (330) 393–6515
MR. JOHN REED

RESIDENT PROJECT REPRESENTATIVE
ARCADIS
1100 SUPERIOR AVE, SUITE 1250
CLEVELAND, OHIO 44114
MR. TOM BRADY

DATE: 12/18/07

PLUMBING AND PIPING SYMBOLS

- P.V.C. PIPE
- FLANGE PIPE
- MECHANICAL JOINT
- CONCRETE PIPE
- SCREWED
- PUMP
- BLOWER
- VALVE
- METER
- WALL CASTING
- "P" TRAP
- THERMOMETER
- METER
- PUMPS
- BACKFLOW PREVENTER
- PRESSURE SWITCH
- TEMPERATURE SWITCH
- WATER HAMMER ARRESTER
- UNION
- STRAINER
- GAUGE COCK
- SAMPLING COCK VALVE
- WATER HEATER
- BACKFLOW PREVENTER
- SUMP PUMP
- SLIDE GATE
- PRESSURE GAUGE WITH COCK VALVE
- PRESSURE GAUGE
- PRESSURE RELIEF VALVE
- ANGLE VALVE
- SOLENOID VALVE
- PRESSURE REGULATOR VALVE
- FLOW CONTROL VALVE
- GLOBE VALVE
- VALVE WITH HANDWHEEL
- DIAPHRAGM VALVE
- ANTI-SIPHON VALVE
- BALANCING COCK VALVE
- TRUE UNION BALL VALVE
- BACK PRESSURE VALVE
- BUTTERFLY VALVE
- SHUT-OFF VALVE
- CHECK VALVE
- BALL CHECK VALVE
- FLOW SWITCH
- FABRICATED GATE

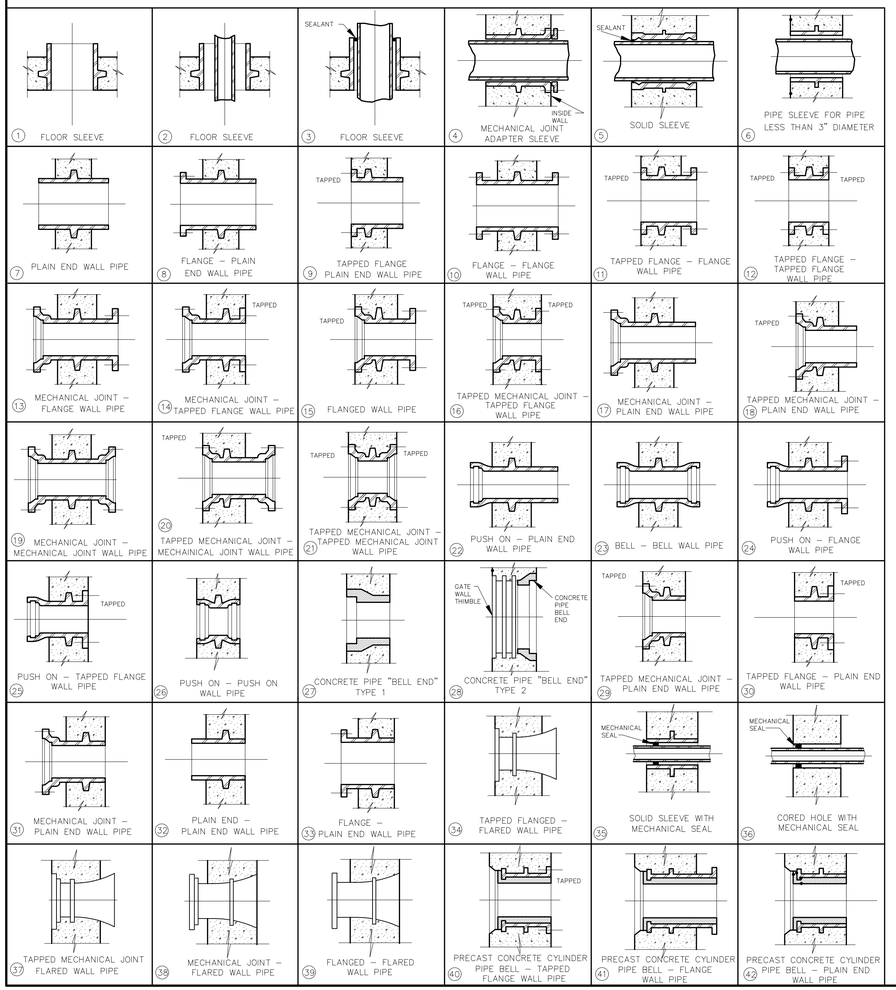
CIVIL SYMBOLS

- PROPOSED PIPING AND SEWERS
- EXISTING PIPING AND SEWERS
- WATER MAINS
- GAS LINES
- VALVE
- CATCH BASIN (GRADE ELEVATION / INVERT ELEVATION(S))
- MANHOLE (PROPOSED)
- MANHOLE (EXISTING) (GRADE ELEVATION / INVERT ELEVATION(S))
- WATER CURB STOP & BOX
- GAS CURB STOP & BOX
- MAIN LINE GAS VALVE
- WATER MAIN VALVE & VALVE BOX
- WATER MAIN VALVE IN STRUCTURE
- CLEANOUT
- YARD HYDRANT
- WATER HYDRANT
- WATER METER
- GAS METER
- ELECTRICAL MANHOLE
- TELEPHONE POLE
- POWER POLE & GUY WIRE
- LIGHT POLE
- MONUMENT
- PROPERTY PIN
- CENTER LINE
- BASE LINE & STATION (1+00, 2+00)
- TEST BORING
- PROPERTY LINE
- RIGHT OF WAY LINE
- STUMP
- HEDGE ROW
- TREES
- EVERGREENS
- SHRUBS & BUSHES
- RAILROAD TRACKS
- BURIED TELEPHONE LINES (TELE)
- OIL LINES (OIL)
- DITCHES
- GUARD RAIL
- CURB INLET
- CULVERT OR BRIDGE
- CURB
- SLOPE OF BANK (EXISTING)
- SLOPE OF BANK (PROPOSED)
- ENCASEMENT PIPE
- FENCE
- PROPOSED CONTOURS (300)
- EXISTING CONTOURS (300)
- SILT FENCE
- RIP RAP AT PIPE OUTLET
- RIP RAP CHECK DAM

ABBREVIATIONS

ABANDONED	ABAND	ELEVATION	EL	ORIGINAL	ORIG
ABOVE FINISHED FLOOR	AFF	ENGINEER	ENGR	OUT TO OUT	O/O
ACOUSTICAL	ACC	ESTABLISH	EST	OUTSIDE FACE	OF
AGGREGATE	AGGR	EXISTING	EXST	PERIMETER	PERIM
AGGREGATE BASE COURSE	ABC	EXPANSION	EXP	PERPENDICULAR	PERP
ALTERNATE	ALT	EXTERIOR	EXT	PLACES	PLCS
ALUMINUM	AL	FACE TO FACE	F/F	PLATE	PL
ASPHALT	ASPH	FIBERGLASSS	FGL	POTABLE WATER	PW
BACK OF CURB	BC	FLOOR DRAIN	FD	POUNDS PER CUBIC FOOT	PCF
BACK TO BACK	B/B	FOOTING	FTG	POUNDS PER SQUARE FOOT	PSF
BACKFLOW PREVENTER	BFP	FOUNDATION	FDN	POUNDS PER SQUARE INCH	PSI
BASE LINE	BL	GALLONS PER DAY	GPD	POUNDS PER SQUARE INCH ABSOLUTE	PSIA
BASE PLATE	BP	GALLONS PER HOUR	GPH	POUNDS PER SQUARE INCH GAGE	PSIG
BEAM	BM	GALLONS PER MINUTE	GPM	PREFABRICATED	PREFAB
BEARING	BRG	GRAD (E) (ING)	GR	PREFORMED PLASTIC	
BENCH MARK	BM	GRATING	GRTG	ADHESIVE WATERSTOP	PPAWS
BOTH FACES	BF	GROUND	GND	PRESTRESSED CONCRETE	PS CONC
BOTTOM	BOT	HEADER	HDR	PROPERTY LINE	PL
BRITISH THERMAL UNIT	BTU	HEATING, VENTILATING & AIR CONDITIONING	HVAC	QUANTITY	QTY
BUILDING	BLDG	HORIZONTAL	HORIZ	REDUCER	RDC
CARBON DIOXIDE	CO2	HOSE BIB	HB	REINFORCE (D) (ING) (MENT)	REINF
CARBON MONOXIDE	CO	HOT WATER	HW	RIGHT OF WAY	ROW
CAST IRON	CI	HOT WATER RETURN	HWR	ROOF DRAIN	RD
CATCH BASIN	CB	HOT WATER SUPPLY	HWS	SANITARY	SAN
CENTER LINE	CL	HOT WATER TANK	HWT	SIDEWATER DEPTH	SWD
CENTER TO CENTER	C/C	INFLUENT	INF	SQUARE FOOT	SQ FT
CLEANOUT	CO	INSIDE DIAMETER	ID	SQUARE INCH	SQ IN
COLD WATER	CW	INVERT	INV	SQUARE YARD	SQ YD
COLUMN	COL	IRON PIPE	IP	STAINLESS STEEL	SST
CONCRETE	CONC	KIP (1000 LB)	K	TEST BORING–XX (E.G. TB–1)	TB–XX
CONCRETE MASONRY UNIT	CMU	LABORATORY	LAB	THICKNESS	THK
CONSTRUCTION JOINT	CJ	LINEAR	LIN	TO BE REMOVED	TBR
CONTROL DENSITY FILL	CDF	LINEAR FOOT	LF	TOP AND BOTTOM	T&B
CONTROL JOINT	CLJ	LONG LEG HORIZONTAL	LLH	TOP OF BEAM	TB
COUPLING	CPLG	LONG LEG VERTICAL	LLV	TOP OF CONCRETE	TC
CROSS SECTION	X SECT	MANHOLE	MH	TOP OF CURB	TC
CUBIC FEET PER MINUTE	CFM	MANUFACTURER	MFGR	TOP OF FOOTING	TF
DEAD LOAD	DL	MASONRY OPENING	MO	TOTAL DYNAMIC HEAD	TDH
DECORATIVE	DEC	MAXIMUM	MAX	TYPICAL	TYP
DEMOLITION	DEMO	MECHANICAL JOINT	MJ	ULTRAVIOLET	UV
DETAIL	DET	MILLION GALLONS PER DAY	MGD	UNLESS OTHERWISE NOTED	UON
DIAMETER	DIA	MINIMUM	MIN	VACUUM	VAC
DITTO	DO	NON–POTABLE WATER	NPW	WALL FAUCET	WF
DOWN	DN	NON–RISING STEM	NRS	WASTEWATER	WW
DOWNSPOUT	DS	NORMALLY CLOSED	NC	WATER CLOSET	WC
DRAIN	DR	NORMALLY OPEN	NO	WATER HAMMER ARRESTER	WHA
DROP MANHOLE	DMH	NOT IN CONTRACT	NIC	WATER MAIN	WM
DUCTILE IRON	DI	NOT TO SCALE	NTS	WATER SURFACE	WS
EACH FACE	EF	NUMBER	NO	WIDE FLANGE	WF
EACH WAY	EW	ON CENTER	OC	WIDTH	WD
EASEMENT	ESMT	OPENING	OPNG	WIND LOAD	WL
EDGE OF PAVEMENT	EP	OPPOSITE	OPP	WITH	W/
EFFLUENT	EFL			WITHOUT	W/O

WALL CASTING SCHEDULE



ARCHITECTURAL SYMBOLS

- WOOD (SECTION)
- WOOD (ELEVATION)
- INSULATION
- EXISTING CONCRETE
- PROPOSED CONCRETE
- GLAZED BLOCK
- GLAZED TILE
- EXISTING CONCRETE BLOCK
- PROPOSED CONCRETE BLOCK
- EXISTING BRICK
- PROPOSED BRICK
- ALUMINUM
- STEEL
- PROPOSED ASPHALT ROADWAY IN PLAN
- D — DOOR
- W — WINDOW
- METAL CASE WORK
- RESIDENTIAL CASE WORK
- OFFICE FURNITURE
- PROPOSED CONSTRUCTION
- EXISTING CONSTRUCTION
- TEXT — PROPOSED NOTE
- TEXT — EXISTING NOTE

HVAC SYMBOLS

- AC — AIR CONDITIONING CONDENSER UNIT
- AHU — AIR HANDLING UNIT OR FURNACE
- BDD — BACKDRAFT DAMPER
- BD — BALANCE DAMPER
- CAV — COMBUSTION AIR VENT
- DH — DEHUMIDIFIER
- DF — DESTRATIFICATION FAN
- EUH — ELECTRIC UNIT HEATER
- EWH — ELECTRIC WALL HEATER
- EF — EXHAUST FAN
- EG — EXHAUST GRILLE
- FC — FAN COIL UNIT
- FT — FINNED–TUBE RADIATOR
- FD — FIRE DAMPER
- GUH — GAS–FIRED UNIT HEATER
- HTP — HEAT PUMP UNIT
- HWB — HOT WATER BOILER
- HWH — HOT WATER UNIT HEATER
- CP — HVAC PUMP
- L — LOUVER
- MD — MOTORIZED DAMPER
- PH — PENTHOUSE
- RG — RETURN GRILLE
- SD — SUPPLY DIFFUSER
- SF — SUPPLY FAN
- SR — SUPPLY REGISTER

GENERAL

COVER SHEET
1. SYMBOLS, ABBREVIATIONS AND INDEX
2. PLANT FLOW DIAGRAM AND SCHEMATICS
3. OVERALL SITE PLAN
4. DEMOLITION PLAN–WEST
5. DEMOLITION PLAN–EAST
6. GRADING PLAN–WEST
7. GRADING PLAN–EAST
8. PIPING PLAN–WEST
9. PIPING PLAN–EAST
10. ROADWAY PLAN
11. SITE DETAILS
12. SITE DETAILS
13. EXISTING STRUCTURE DEMOLITION
14. EXISTING STRUCTURE DEMOLITION

HEADWORKS

15. EXTERIOR ELEVATIONS
16. SECTIONAL PLANS
17. FLOOR PLAN AND SCHEMATICS
18. ROOF PLAN AND SECTIONS
19. SECTIONS
19A. HOT WATER HEATING SCHEMATIC

AERATION TANKS

20. SECTIONAL PLAN–EL 1125.0
21. SECTIONAL PLAN–EL 1134.0
22. PLAN
23. SECTIONS
24. SECTIONS
25. INFLUENT FLOW SPLITTER DETAILS
26. EFFLUENT FLOW SPLITTER DETAILS

FINAL SETTLING TANKS

27. PLAN AND SECTIONAL PLAN
28. SECTIONS

UV DISINFECTION AND METERING STRUCTURE

29. PLAN, SECTIONAL PLAN AND SECTIONS
30. DETAILS

AEROBIC DIGESTER AND SLUDGE HOLDING TANK NO 1

31. PLAN AND SECTIONAL PLAN–DEMOLITION
32. SECTIONS AND DETAILS–DEMOLITION
33. PLAN AND SECTIONAL PLAN
34. SECTIONS AND DETAILS
35. SECTIONS

SLUDGE HOLDING TANK NO 2 MODIFICATIONS

36. SECTIONAL PLAN, PLAN AND SECTIONS

BLOWER BUILDING

37. EXTERIOR ELEVATIONS
38. BASEMENT PLAN AND SECTIONAL PLAN–EL 1130.0
39. FLOOR PLAN AND ROOF PLAN
40. SECTIONS
41. SECTIONS AND DETAILS
42. DETAILS AND SCHEMATICS

SHEET INDEX

FILTER/DEWATERING BUILDING

43. EXTERIOR ELEVATIONS
44. SECTIONAL PLAN–EL 1113.0 AND DETAILS
45. SECTIONAL PLAN–EL 1122.0
46. FLOOR PLAN
47. SECTIONAL PLAN–EL 1138.0
48. ROOF PLAN
49. SECTIONS
50. SECTIONS
51. SECTIONS
52. SCHEMATICS

EQUALIZATION BASIN

53. PLAN, SECTIONS AND DETAILS
54. PARTIAL PLANS, SECTIONS AND DETAILS
55. FOUNDATION DRAIN PUMPING STATION

OPERATIONS BUILDING MODIFICATIONS

56. EXTERIOR ELEVATIONS
57. PLANS AND LAB ELEVATIONS
58. WALL SECTIONS, HVAC PLAN AND REFLECTED CEILING PLAN
59. SCHEMATICS

FERROUS CHLORIDE FEED BUILDING

60. SECTIONAL PLAN, PLAN AND SECTIONS

YARD DRAIN PUMPING STATION

61. SECTIONAL PLAN, PLAN AND SECTIONS

MISCELLANEOUS SCHEDULES AND DETAILS

62. WINDOW AND DOOR SCHEDULES AND DETAILS
63. SCHEDULES AND DETAILS
64. MISCELLANEOUS SCHEDULES
65. MISCELLANEOUS DETAILS

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- E1 ELECTRICAL SYMBOL LEGEND
- E2 ELECTRICAL SITE DEMOLITION PLAN
- E3 PROPOSED ELECTRICAL SITE PLAN
- E4 PROPOSED ELECTRICAL SITE PLAN
- E5 HEADWORKS POWER PLAN
- E6 HEADWORKS LIGHTING PLAN
- E7 FINAL SETTLING TANKS NO. 1, NO. 2 POWER PLAN
- E8 UV DISINFECTION POWER AND LIGHTING
- E9 BLOWER BUILDING–POWER PLAN– LOWER LEVEL
- E10 BLOWER BUILDING–POWER PLAN–1ST FLOOR
- E11 BLOWER BUILDING–LIGHTING PLAN–LOWER LEVEL
- E12 BLOWER BUILDING–LIGHTING PLAN–1ST FLOOR
- E13 FILTER/ DEWATERING BUILDING POWER PLAN
- E14 FILTER/ DEWATERING BUILDING POWER PLAN
- E15 FILTER/ DEWATERING BUILDING LIGHTING PLAN
- E16 EQUALIZATION BASIN/ POWER LIGHTING PLAN
- E17 EQ BASIN DRAIN PUMPING STATION POWER PLAN
- E18 EQ BASIN FOUNDATION DRAIN PUMPING STATION
- E19 OPERATIONS BUILDING POWER PLAN
- E20 OPERATIONS BUILDING LIGHTING PLAN
- E21 FERRIC CHLORIDE FEED BUILDING
- E22 YARD DRAIN PUMPING STATION
- E23 PROPOSED SINGLE LINE DIAGRAM
- E24 PROPOSED SINGLE LINE DIAGRAM
- E25 MCC ELEVATIONS
- E26 ELECTRICAL PANEL SCHEDULES
- E27 EQUIPMENT WIRING DIAGRAMS
- E28 ELECTRICAL SCHEMATICS–BLOWER BUILDING
- E29 ELECTRICAL SCHEMATICS–BLOWER BUILDING
- E30 ELECTRICAL SCHEMATICS–FILTER BUILDING
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- E32 ELECTRICAL SCHEMATICS–OPERATIONS BUILDING
- E33 CONDUIT SCHEDULE
- E34 CONDUIT SCHEDULE
- E35 ELECTRICAL DETAILS
- E36 ELECTRICAL DETAILS
- E37 ELECTRICAL DETAILS

PROCESS AND INSTRUMENTATION

- I1 P & ID–SYMBOL LEGEND
- I2 P & ID–INFLUENT & SCREENING
- I3 P & ID–AERATION TANKS
- I4 P & ID–FINAL SETTLING TANKS, RAS, WAS PUMPS
- I5 P & ID–AIR SYSTEMS & AEROBIC DIGESTER
- I6 P & ID–TERTIARY FILTERS, UV & EQ BASIN
- I7 P & ID–SLUDGE CENTRIFUGE
- I8 P & ID– MISCELLANEOUS

STATE OF OHIO — SAID W. ABOUABDALLAH — 53224 — REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DESCRIPTION	DATE	BY	APP'D
	RECORD DRAWINGS	12/18/07	RHQ	SWA

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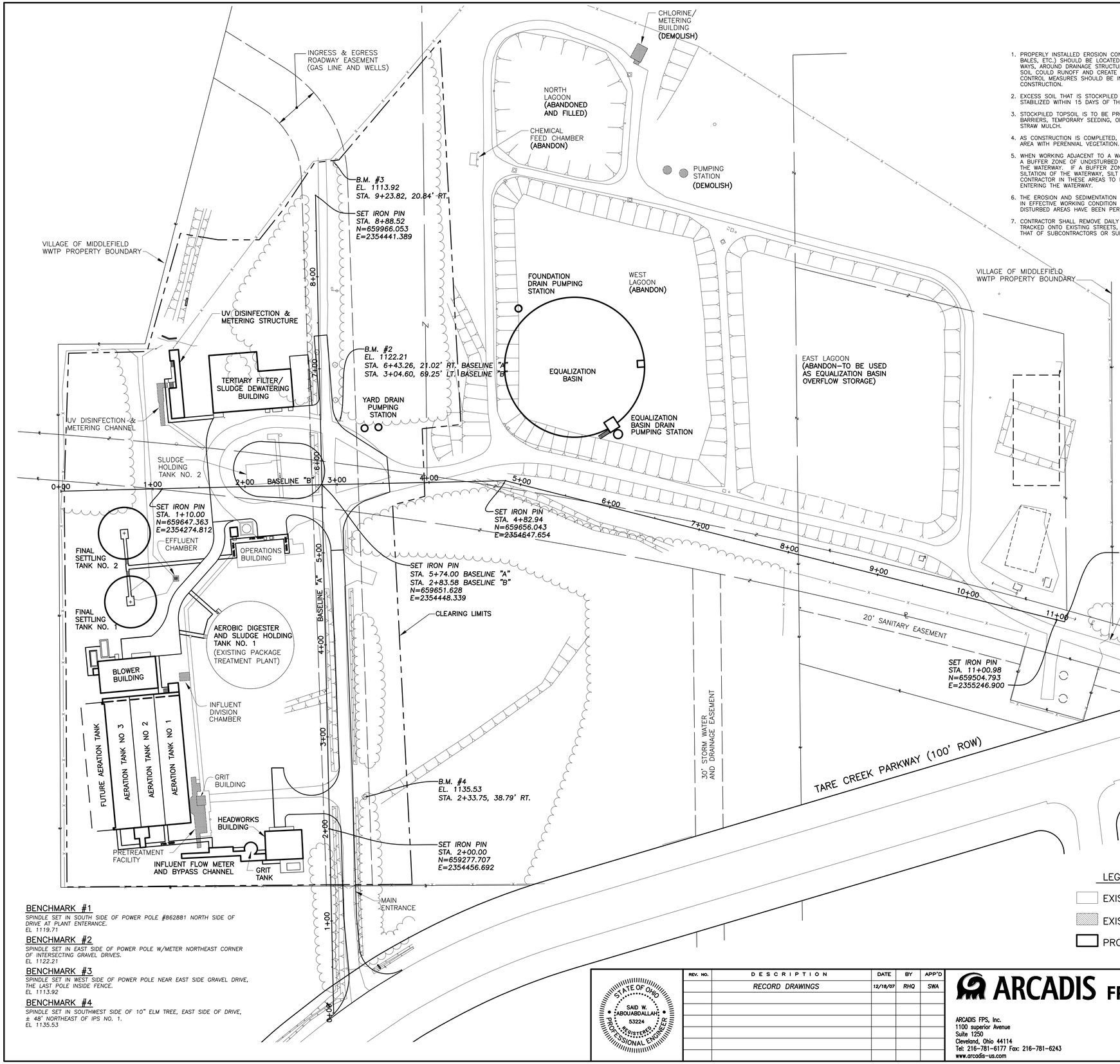
SCALE: AS NOTED
DESIGNED BY: HLS
DRAWN BY: BRC
CHECKED BY: RBW

SYMBOLS, ABBREVIATIONS AND INDEX

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1 MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDIN01A
CONTRACT:
DATE: 11–08–05
1 OF 65



BENCHMARK #1

SPINDLE SET IN SOUTH SIDE OF POWER POLE #862881 NORTH SIDE OF DRIVE AT PLANT ENTERANCE.
EL 1119.71

BENCHMARK #2

SPINDLE SET IN EAST SIDE OF POWER POLE W/METER NORTHEAST CORNER OF INTERSECTING GRAVEL DRIVES.
EL 1122.21

BENCHMARK #3

SPINDLE SET IN WEST SIDE OF POWER POLE NEAR EAST SIDE GRAVEL DRIVE, THE LAST POLE INSIDE FENCE.
EL 1113.92

BENCHMARK #4

SPINDLE SET IN SOUTHWEST SIDE OF 10" ELM TREE, EAST SIDE OF DRIVE, ± 48' NORTHEAST OF IPS NO. 1.
EL 1135.53

EROSION AND SEDIMENTATION CONTROL NOTES

1. PROPERLY INSTALLED EROSION CONTROL BARRIERS (E.G., SILT FENCES, STRAW BALES, ETC.) SHOULD BE LOCATED ON SLOPES, ALONG STREAMS AND DRAINAGE WAYS, AROUND DRAINAGE STRUCTURES, AND ANYWHERE ELSE THAT EXPOSED SOIL COULD RUNOFF AND CREATE SEDIMENT PROBLEMS. ALL SEDIMENT CONTROL MEASURES SHOULD BE IN PLACE PRIOR TO THE INITIATION OF CONSTRUCTION.
2. EXCESS SOIL THAT IS STOCKPILED MUST BE EITHER REMOVED OR PERMANENTLY STABILIZED WITHIN 15 DAYS OF THE COMPLETION OF THE CONSTRUCTION.
3. STOCKPILED TOPSOIL IS TO BE PROTECTED THROUGH THE USE OF SILT BARRIERS, TEMPORARY SEEDING, OR COVERING SUCH AS WITH ANCHORED STRAW MULCH.
4. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH DISTURBED AREA WITH PERENNIAL VEGETATION.
5. WHEN WORKING ADJACENT TO A WATERWAY, THE CONTRACTOR SHALL MAINTAIN A BUFFER ZONE OF UNDISTURBED VEGETATION BETWEEN THE WORK AREA AND THE WATERWAY. IF A BUFFER ZONE OF VEGETATION CANNOT PREVENT SILTATION OF THE WATERWAY, SILT BARRIERS SHALL ALSO BE INSTALLED BY THE CONTRACTOR IN THESE AREAS TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE WATERWAY.
6. THE EROSION AND SEDIMENTATION CONTROL PRACTICES, SHALL BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
7. CONTRACTOR SHALL REMOVE DAILY ALL MUD, SOIL AND DEBRIS THAT MAY BE TRACKED ONTO EXISTING STREETS, DRIVES, OR WALKS BY HIS EQUIPMENT OR THAT OF SUBCONTRACTORS OR SUPPLIERS.
8. ALL MATERIALS TO BE DISPOSED OF OFF-SITE MUST BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. NO EXCESS MATERIALS ARE TO BE DISPOSED OF IN ANY WETLAND, FLOODPLAIN, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS. EROSION CONTROL MEASURES AT THE DISPOSAL SITE MUST BE INSTALLED AND MAINTAINED UNTIL DISPOSAL IS COMPLETE AND THE DISPOSAL SITE IS PERMANENTLY STABILIZED.
9. SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM SEWER SYSTEM. WHEN CONSTRUCTION OCCURS NEAR STORM SEWER INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND HAY BALES SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM SEWERS.
10. WHEN CLEARING VEGETATION PRIOR TO INITIATING STREAM CROSSING WORK, STREAMBANK TREES, SHRUBS, AND OTHER VEGETATION SHOULD BE LEFT IN PLACE TO HELP CONTROL EROSION; WHERE EQUIPMENT OPERATION REQUIRES TREE REMOVAL, STUMPS AND ROOTS ARE TO REMAIN IN PLACE TO HELP ANCHOR THE STREAMBANK.
11. PRIOR TO THE ONSET OF ANY STREAM CROSSING, SILT BARRIERS SHALL BE PLACED ALONG THE BANKS WHERE VEGETATION REMOVAL HAS OCCURRED OR IS ANTICIPATED, EXPOSED SOIL EXISTS, AND/OR SPOILS OR OTHER FILL MATERIALS ARE PRESENT; SUCH MATERIALS SHOULD NOT BE STOCKPILED WITHIN 50 FEET OF THE STREAM.
12. CONSTRUCTION WITHIN A STREAM WILL BE CONTINUED UNTIL COMPLETED. A STREAM CROSSING SHALL NOT BE INITIATED UNLESS THE CONTRACTOR IS PREPARED TO FINISH THE WORK. ALSO, WORK MUST NOT BE INITIATED UNLESS TIME AND WEATHER CONSTRAINTS HAVE BEEN PROVIDED FOR. STREAM CROSSING WORK SHALL BE RESTRICTED TO PERIODS OF DRY WEATHER AND LOW-FLOW OR NO-FLOW CONDITIONS.
13. CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE SECTION 149.53 TO NOTIFY THE OHIO HISTORICAL SOCIETY AND THE OHIO HISTORIC SITE PRESERVATION BOARD OF ARCHAEOLOGICAL DISCOVERIES LOCATED IN THE PROJECT AREA, AND TO COOPERATE WITH THOSE ENTITIES IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND SALVAGE EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.

    CONTACT: OHIO HISTORIC PRESERVATION OFFICE
    MS. JULIE QUINLAN

    PHONE 614-297-2470

14. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS IS PROHIBITED.
15. INDISCRIMINATE ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS IS PROHIBITED.
16. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM SEWERS IS PROHIBITED; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
17. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO IS PROHIBITED.
18. DISPOSING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDOR, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS IS PROHIBITED.
19. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT IS PROHIBITED.
20. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, DRILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION IS PROHIBITED.
21. TRENCH AND GROUNDWATER DEWATERING: ALL TRENCH DEWATERING SHALL BE DIRECTED THROUGH A SEDIMENT IMPOUNDMENT STRUCTURE. ADEQUATE OUTLET PROTECTION MUST BE PROVIDED FOR EACH IMPOUNDMENT.

    IF ANY GROUNDWATER DEWATERING SHOULD OCCUR, THE CONTRACTOR SHALL CONTACT THE OHIO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WATER, TO ASSURE PROPER WELL INSTALLATION AND ABANDONMENT OF WELLS. THE CONTRACTOR SHALL NOT DIRECT THE GROUNDWATER TO THE IMPOUNDMENT INTENDED FOR TRENCH DEWATERING DISCHARGES.

22. STREAM CROSSING: STREAM CROSSINGS SHALL BE CONDUCTED DURING PERIODS OF LOW FLOW, WITH PROVISIONS MADE TO REDIRECT THE STREAM FLOW AROUND THE CONSTRUCTION AREA. IF THE ENTIRE STREAM FLOW CANNOT BE DIRECTED AROUND THE CONSTRUCTION AREA, CONSTRUCTION SHALL BE POSTPONED UNTIL FLOW REDIRECTION IS POSSIBLE. COFFER DAMS MAY BE USED TO REDIRECT THE STREAM FLOW AROUND THE CONSTRUCTION AREA. UPON COMPLETION OF THE STREAM CROSSING, THE AREA SHALL BE STABILIZED THROUGH THE USE OF SOD OR EROSION CONTROL MATTING WITHIN THE BUFFER ZONE. THE BUFFER ZONE IS DEFINED AS 1.5 TIMES THE WETTED WIDTH OF THE STREAM AT NORMAL FLOW ON EACH SIDE OF THE STREAM. THE FOLLOWING MEASURES SHALL BE EMPLOYED:

    A. SEDIMENT CONTROLS: EXCAVATED MATERIAL SHALL BE STORED IN AREAS SURROUNDED BY SILT FENCES. STABILIZED WORKING PADS SHALL BE PROVIDED FOR EQUIPMENT ASSOCIATED WITH THE CONSTRUCTION OF THE CROSSING. ADDITIONAL SEDIMENT CONTROL DEVICES (I.E. SILT FENCE, SEDIMENT TRAPS) SHALL BE USED WHEN THE CONSTRUCTION AREA FALLS WITHIN 100 FEET OF THE STREAM.

    B. BACKFILL/TEMPORARY CROSSINGS: ONLY CLEAN NON-ERODIBLE MATERIAL SHALL BE UTILIZED FOR BACKFILL. TEMPORARY STREAM CROSSINGS FOR EQUIPMENT SHALL BE CONSTRUCTED OF NON-ERODIBLE MATERIAL. PIPE(s) INSTALLED DURING CONSTRUCTION OF THE CROSSING SHALL BE ADEQUATELY SIZED TO ALLOW FOR STREAM PASSAGE THROUGH THE CROSSING.

23. U.S. ARMY CORPS OF ENGINEERS: THE APPLICANT SHALL CONTACT THE APPROPRIATE DISTRICT OF THE U.S ARMY CORPS OF ENGINEERS FOR A DETERMINATION REGARDING POTENTIAL IMPACTS TO WATERS OF THE STATE AS WELL AS REQUIREMENTS FOR OBTAINING, IF NECESSARY, A CLEAN WATER ACT SECTION 404 PERMIT AND 401 WATER QUALITY CERTIFICATION. THE APPLICANT SHALL ACQUIRE A SECTION 404 PERMIT AND 401 CERTIFICATION IF NEEDED BEFORE IMPACTING ANY WATERS OF THE STATE AS PART OF THIS PROJECT.
24. STORM WATER PERMIT REQUIREMENTS: A STORM WATER PERMIT WILL BE REQUIRED IF CONSTRUCTION RESULTS IN A DISTURBANCE OF FIVE ACRES OR GREATER.
25. AIR POLLUTION PERMIT REQUIREMENT: FUGITIVE DUST GENERATED BY THIS CONSTRUCTION PROJECT WILL BE CONTROLLED AS DESCRIBED IN OAC 3745-17-08 (B).
26. PROHIBITED CONSTRUCTION ACTIVITIES:

    DISPOSING OF EXCESS OR UNSUITED EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.

    LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS.

    DISPOSING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STEAM CORRIDORS, ANY WETLAND, ANY SURFACE WATER OR AT UNSPECIFIED LOCATIONS.

    DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.

27. EROSION RESTORATION AND SEDIMENTATION CONTROL:

    SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY SEEDING AND MULCHING IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISHED GRADING.

LEGEND

- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED/DEMOLISHED
- PROPOSED STRUCTURE

STATE OF OHIO — SAID W. ABOUABDALLAH — 53224 — REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DESCRIPTION	DATE	BY	APP'D
	RECORD DRAWINGS	12/18/07	RHQ	SWA

ARCADIS FPS

ARCADIS FPS, Inc.
1100 superior Avenue
Suite 1250
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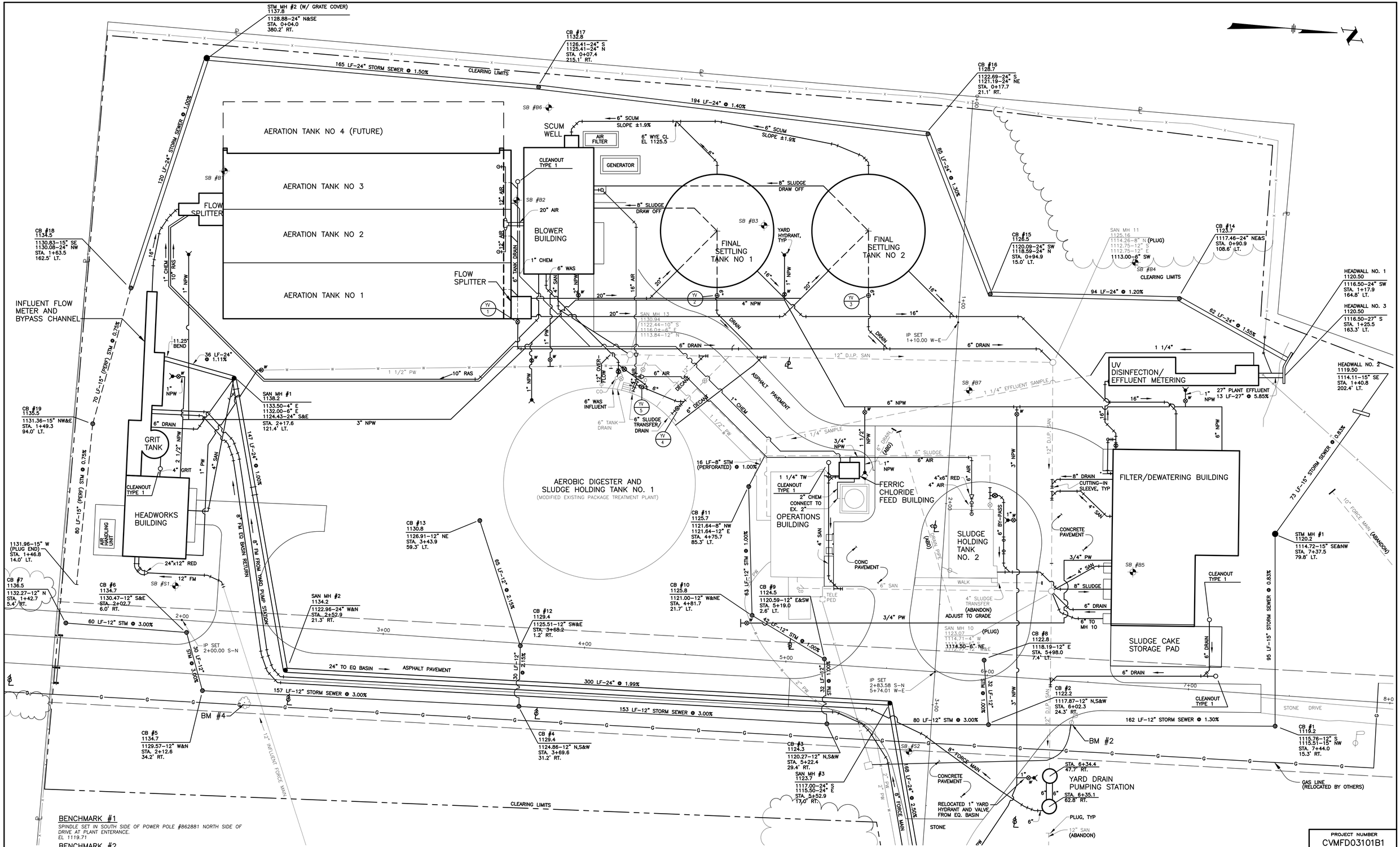
Tel: 216-781-6177 Fax: 216-781-6243
www.arcads-us.com

SCALE: 1"=50'
DESIGNED BY: HLS
DRAWN BY: BRC
CHECKED BY: RBW

OVERALL SITE PLAN

WASTEWATER TREATMENT PLANT EXPANSION-PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDSI01A
CONTRACT:
DATE: 11-08-05
3 OF 65



STATE OF OHIO
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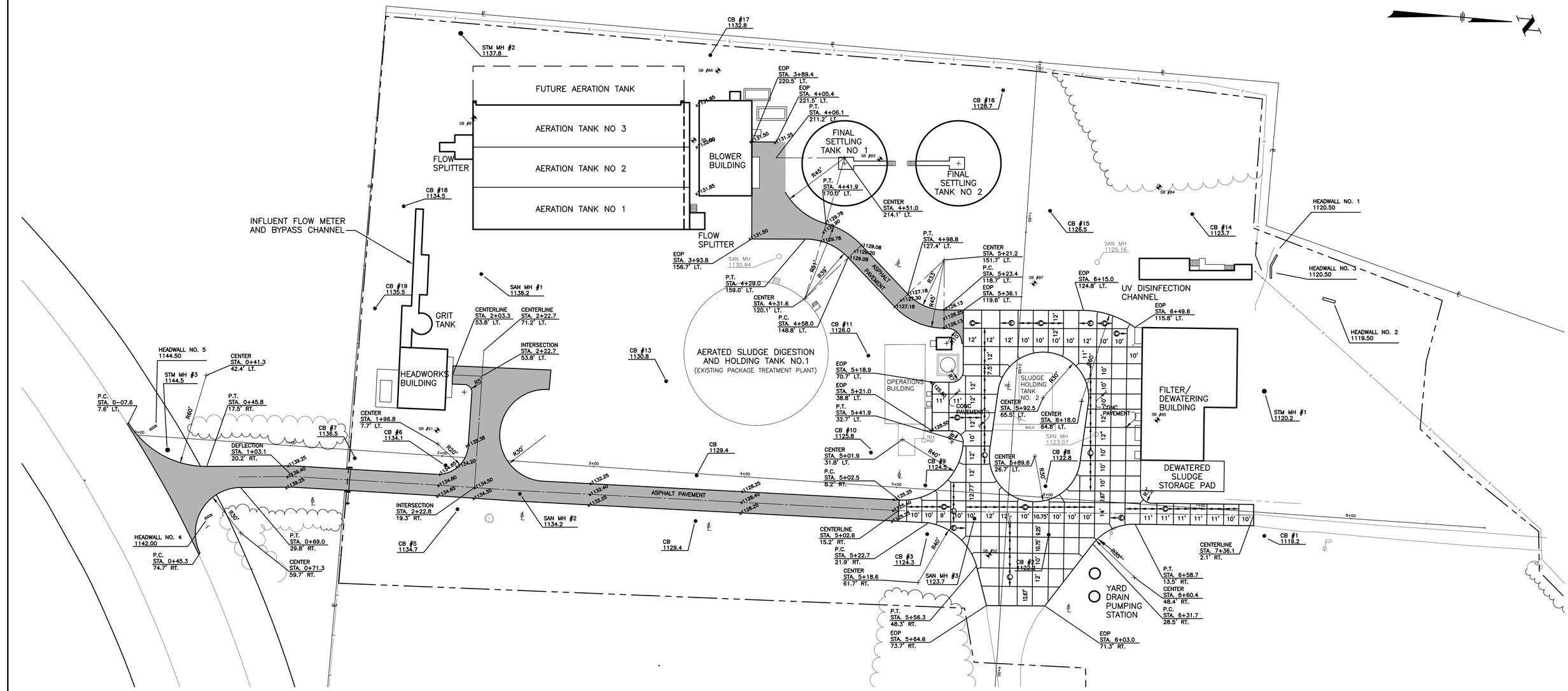
SCALE	1"=20'
DESIGNED BY	JAL
DRAWN BY	BRC
CHECKED BY	RBW

PIPING PLAN–WEST

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDPP01A
CONTRACT	
DATE	11–08–05
	8 OF 65



STAKING PLAN

1"=20'

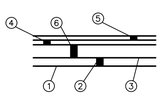
Ⓒ – CONTRACTION JOINT AS PER ODOT STD. DWG. BP-2.2

Ⓔ – EXPANSION JOINT AS PER ODOT STD. DWG. BP-2.2

Ⓛ – LONGITUDINAL JOINT AS PER ODOT STD. DWG. BP-2.1

BUTT JOINT DETAIL

NOT TO SCALE

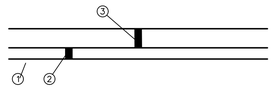


1. ODOT ITEM 203 SUBGRADE COMPACTION
2. 6" ODOT ITEM 304 AGGREGATE BASE
3. PRIME COAT ODOT ITEM 408
4. 2" ODOT ITEM 402 ASPHALT CONCRETE INTERMEDIATE COURSE
5. 1 1/2" ODOT ITEM 404 ASPHALT CONCRETE SURFACE COURSE
6. 6" ODOT ITEM 301 BITUMINOUS AGGREGATE BASE COURSE

SECTION

ASPHALT PAVEMENT DETAIL

NO SCALE



1. ODOT ITEM 203 SUBGRADE COMPACTION
2. 6" ODOT ITEM 304 AGGREGATE BASE
3. ODOT ITEM 452 8" NON-REINFORCED CONCRETE PAVEMENT

SECTION

CONCRETE PAVEMENT DETAIL

NO SCALE

BENCHMARK #1

SPINDLE SET IN SOUTH SIDE OF POWER POLE #862881 NORTH SIDE OF DRIVE AT PLANT ENTERANCE.
EL 1119.71

BENCHMARK #2

SPINDLE SET IN EAST SIDE OF POWER POLE W/METER NORTHEAST CORNER OF INTERSECTING GRAVEL DRIVES.
EL 1122.21

BENCHMARK #3

SPINDLE SET IN WEST SIDE OF POWER POLE NEAR EAST SIDE GRAVEL DRIVE, THE LAST POLE INSIDE FENCE.
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BENCHMARK #4

SPINDLE SET IN SOUTHWEST SIDE OF 10" ELM TREE, EAST SIDE OF DRIVE, ± 48' NORTHEAST OF IPS NO. 1.
EL 1135.53

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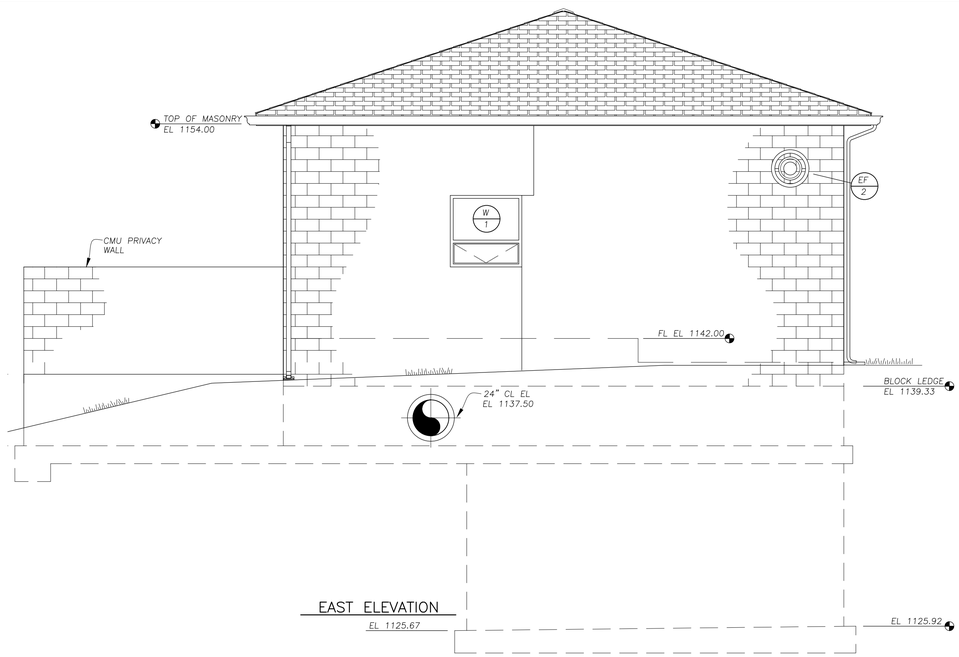
SCALE: 1"=30'
DESIGNED BY: CAS
DRAWN BY: BRC
CHECKED BY: RBW

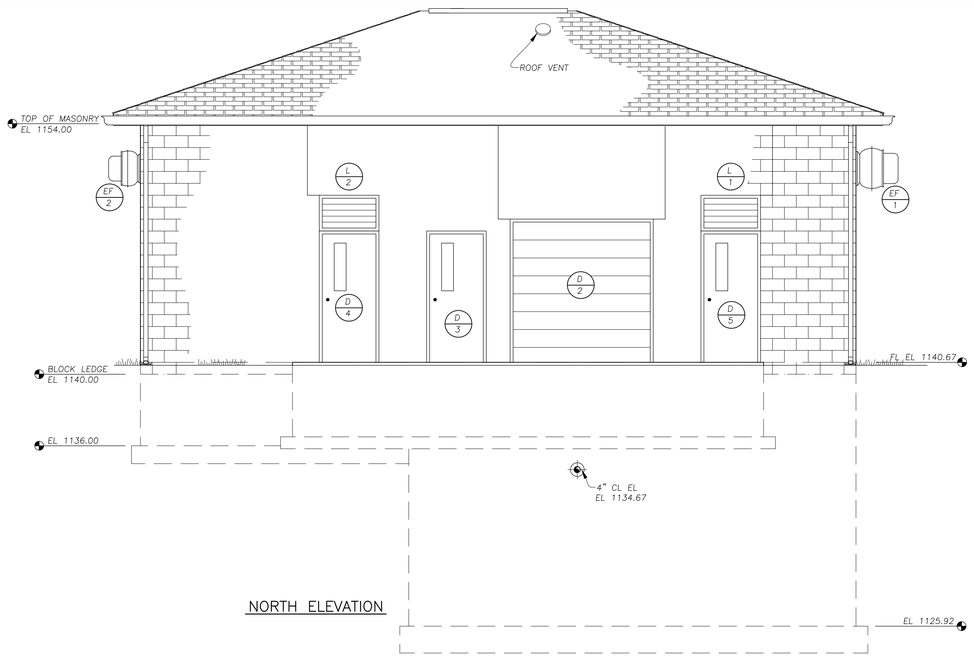
ROADWAY PLAN

WASTEWATER TREATMENT PLANT EXPANSION-PHASE 1
MIDDLEFIELD, OHIO

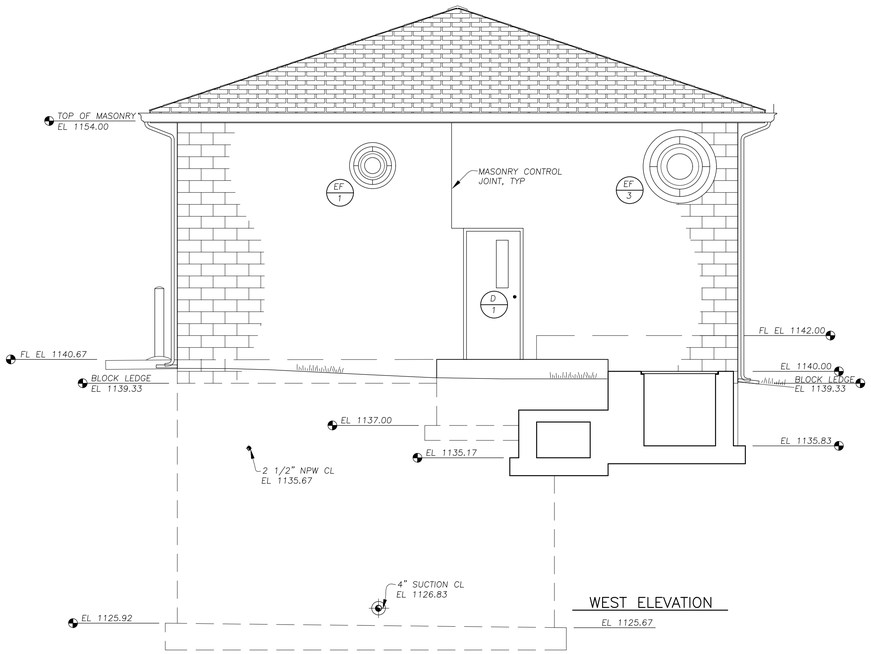
PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDRP01A
CONTRACT:
DATE: 11-08-05



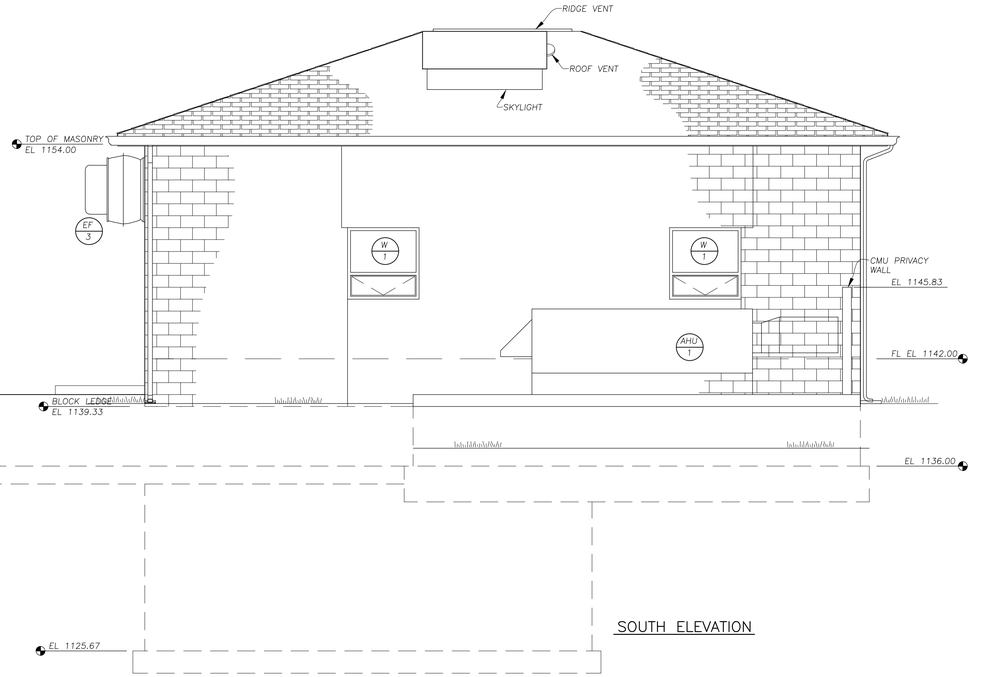
EAST ELEVATION



NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION

HEADWORKS BUILDING DESIGN INFORMATION

OBC USE GROUP		F2
OBC CONSTRUCTION TYPE		II–B
OCCUPANCY LOAD		17 (CALCULATED)
R – VALUE INSULATIONS	ROOF	19
	WALLS	10
DESIGN FLOOR LIVE LOAD		250 PSF
DESIGN ROOF LIVE LOAD		30 PSF
DESIGN SOIL BEARING PRESSURE		2500 PSF

DESIGN SNOW LOAD
OBC 2002 SECTION 1608
GROUND SNOW LOAD = 30 PSF
SNOW EXPOSURE FACTOR = 9
SNOW LOAD IMPORTANCE FACTOR = 1.1
THERMAL FACTOR = 1.1
SLOPE ROOF SNOW LOAD = 22.9 PSF

DESIGN WIND LOAD
OBC 2002 SECTION 1609
BASIC WIND SPEED 90 MPH
WIND LOAD IMPORTANCE FACTOR = 1.15
WIND EXPOSURE = C
INTERNAL PRESSURE COEFFICENT = ±0.55
COMPONENT AND CLADDING PRESSURE:
WALLS = –27 PSF MAX
ROOF = –39 PSF MAX

DESIGN EARTHQUAKE
OBC 2002 SECTION 1617
SEISMIC USE GROUP = II
SPECTRAL RESPONSE COEFFICIENTS Sds = 0.18
Sd1 = 0.07
SITE CLASS C
BASIC SEISMIC FORCE RESISTING SYSTEM:
ORDINARY REINFORCED MASONRY SHEAR WALLS

DESIGN BASE SHEAR = 14,000 LBS
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

NOTE:
SOUTH AND WEST PRIVACY WALLS
NOT SHOWN FOR CLARITY.

STATE OF OHIO
SAID W. ABOUABDALLAH
53224
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DESCRIPTION	DATE	BY	APP'D

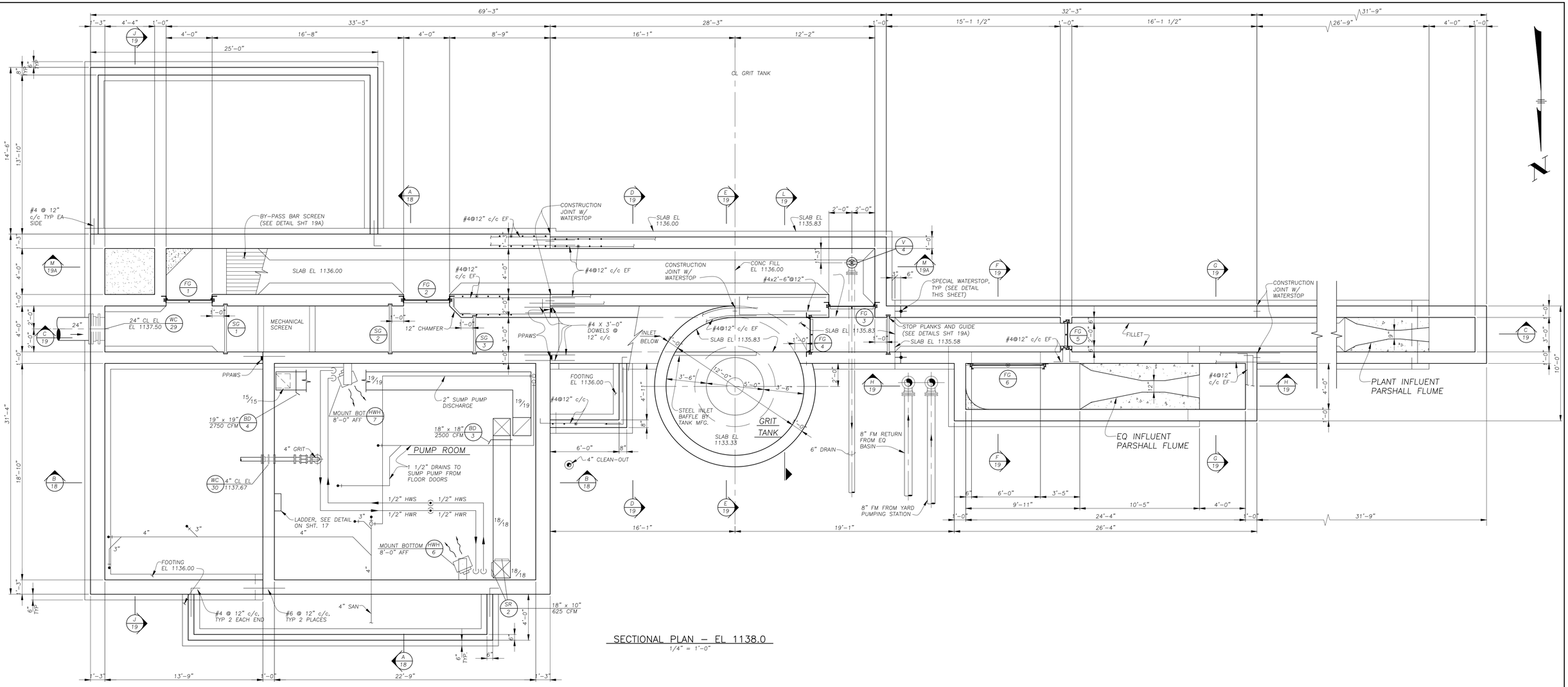
ARCADIS FPS
ARCADIS FPS, Inc.
1100 Superior Avenue
Suite 1250
Cleveland, Ohio 44114
Tel: 216–781–6177 Fax: 216–781–6243
www.arcadis-us.com

SCALE: 1/4" = 1'–0"
DESIGNED BY: HLS
DRAWN BY: DMS
CHECKED BY: RBW

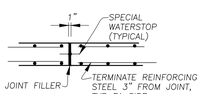
HEADWORKS
WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDHW01A
CONTRACT:
DATE: 11–08–05

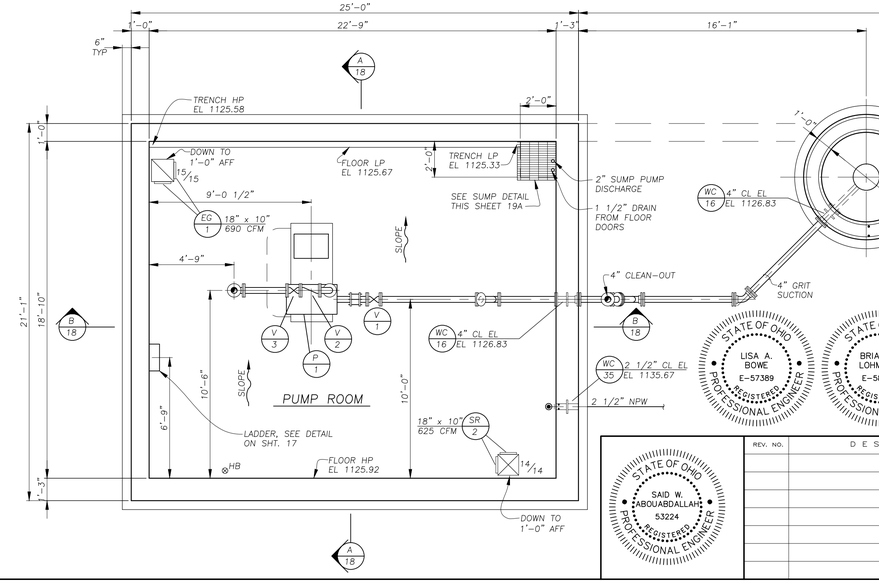
11–08–05



SECTIONAL PLAN – EL 1138.0
1/4" = 1'-0"



SECTIONAL PLAN
SPECIAL WATERSTOP DETAIL
3/8"=1'-0"



SECTIONAL PLAN – EL 1129.0
1/4" = 1'-0"

STATE OF OHIO · LISA A. BOWE · E-57389 · REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO · BRIAN D. LOHMANN · E-58395 · REGISTERED PROFESSIONAL ENGINEER

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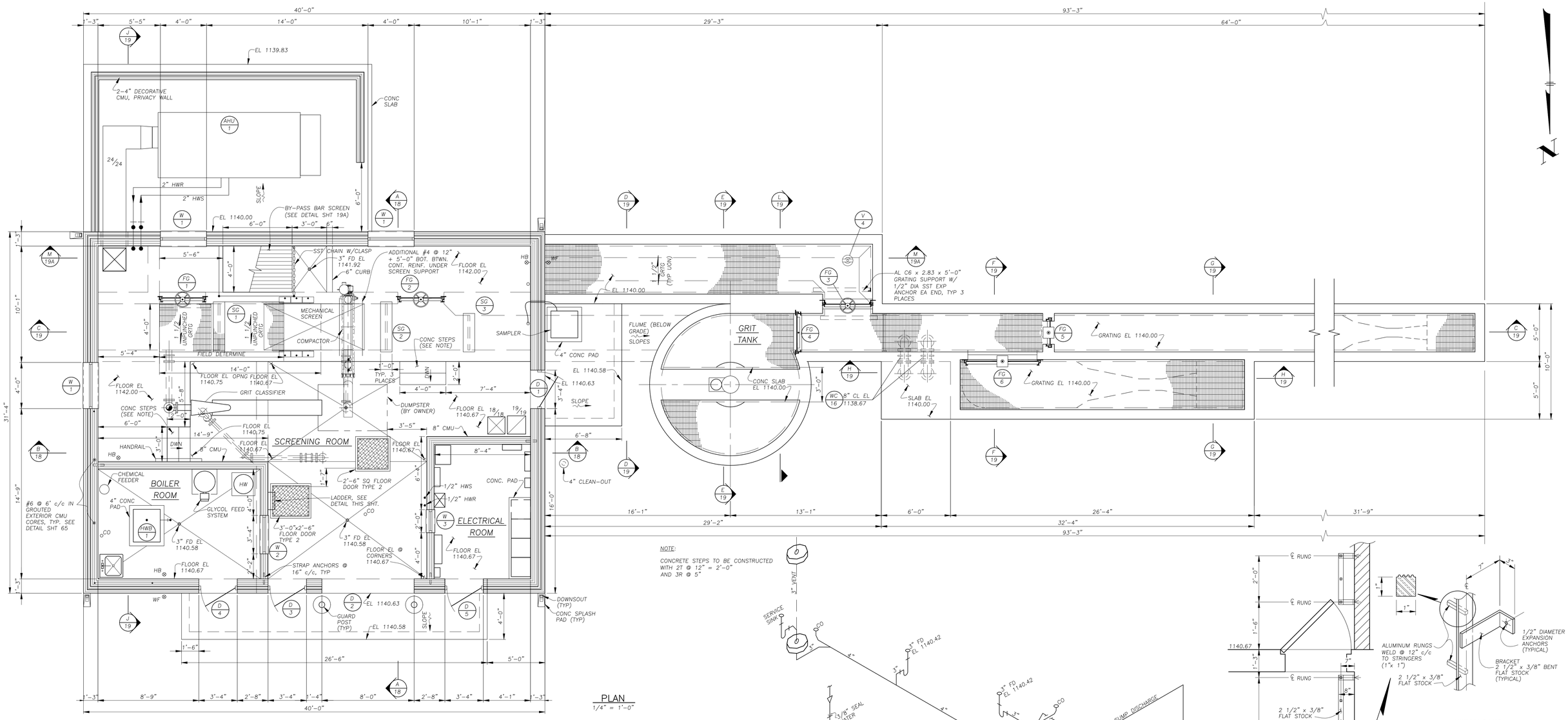
DRAWN BY	DMS
CHECKED BY	RBW

HEADWORKS
WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

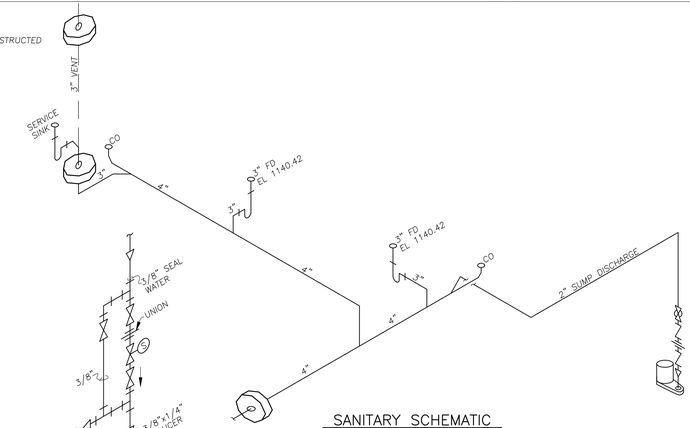
PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDHW02A
CONTRACT	
DATE	11–08–05
	16 OF 65

11–08–05



PLAN
1/4" = 1'-0"

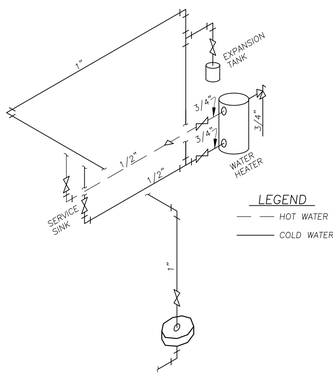
NOTE:
CONCRETE STEPS TO BE CONSTRUCTED WITH 2T @ 12" = 2'-0" AND 3R @ 5"



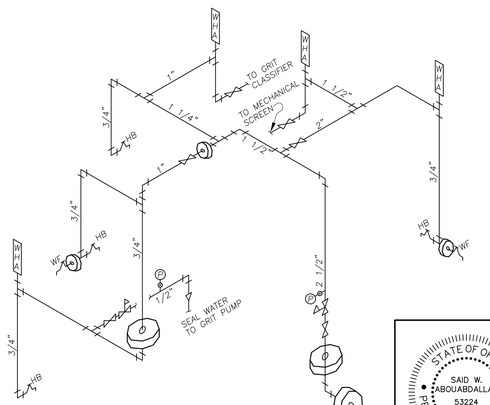
NOTES:
PROVIDE UNION AT PUMPS

SANITARY SCHEMATIC

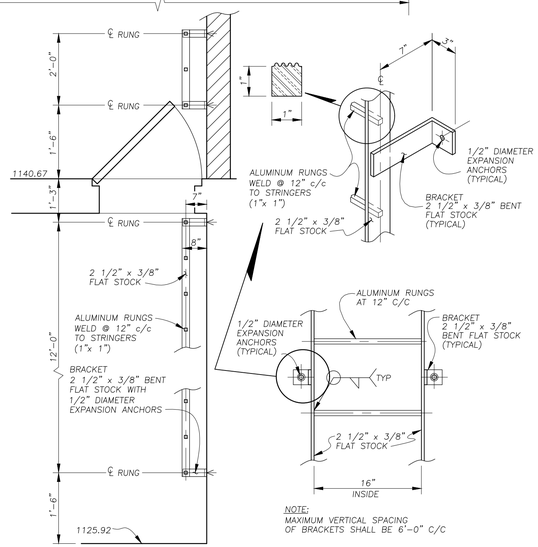
SEAL WATER
PUMP CONNECTION SCHEMATIC



POTABLE WATER SCHEMATIC



NON-POTABLE WATER SCHEMATIC



SECTION ELEVATION

LADDER DETAIL
N.T.S.

NOTE:
MAXIMUM VERTICAL SPACING OF BRACKETS SHALL BE 6'-0" C/C

STATE OF OHIO
BRIAN D. LOHMANN
E-58395
REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO
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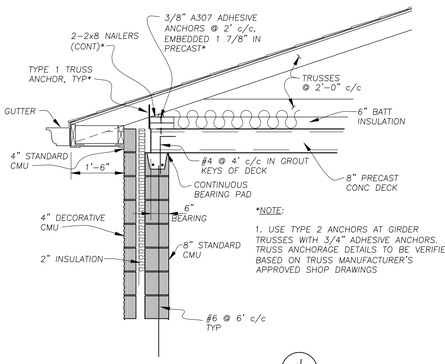
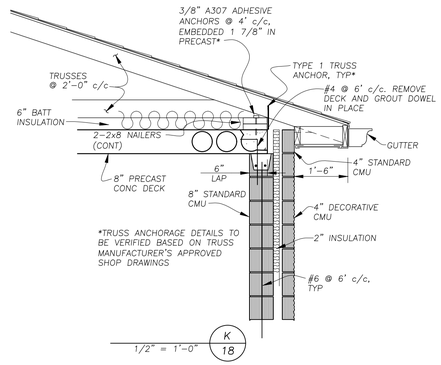
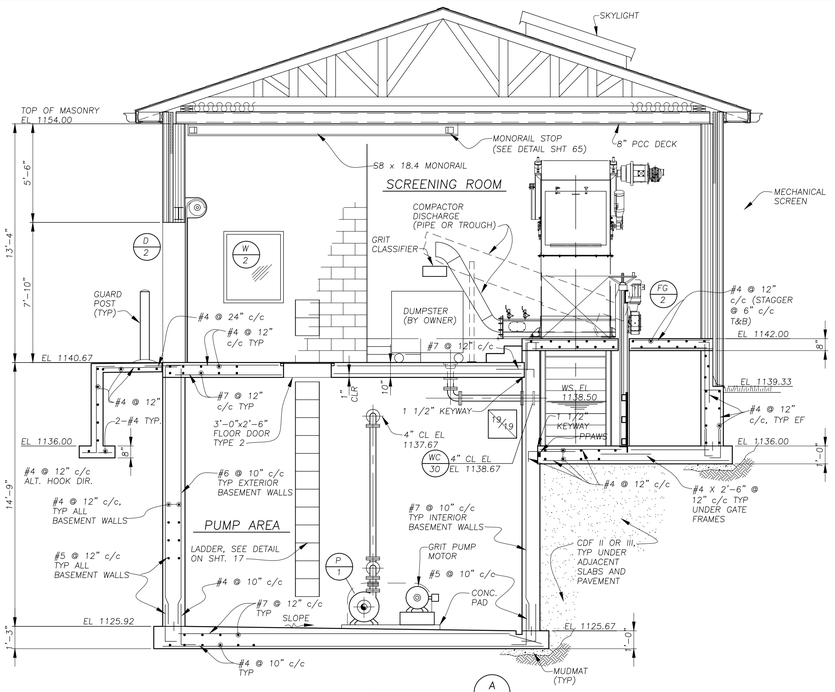
HEADWORKS
WASTEWATER TREATMENT PLANT EXPANSION-PHASE 1
MIDDLEFIELD, OHIO

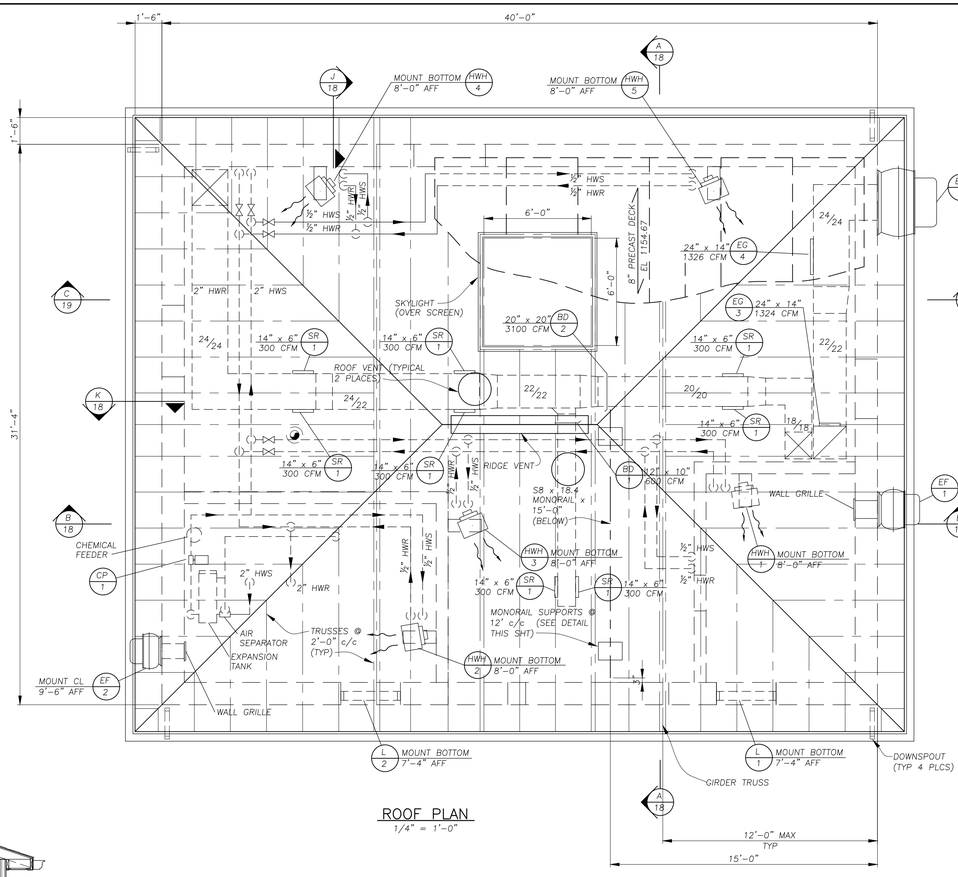
PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDHW03A
CONTRACT	
DATE	11-08-05
	17 OF 65

11-08-05

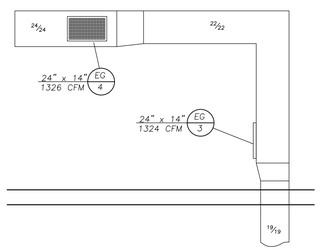




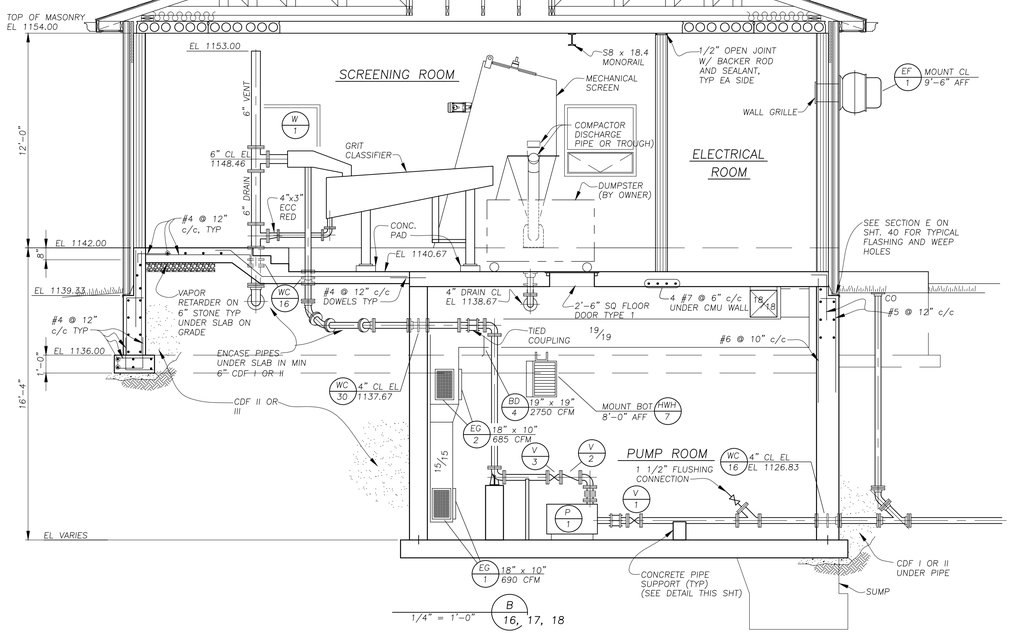


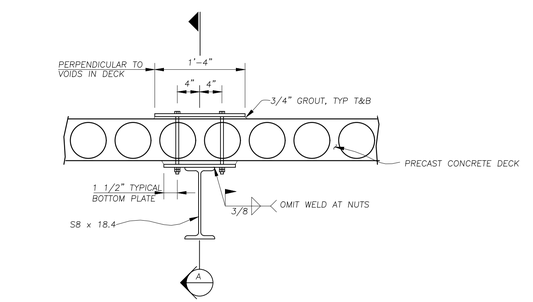


ROOF PLAN
1/4" = 1'-0"



SECTION EF-3 DUCTWORK





CONNECTION DETAIL
MONORAIL TO 8" PRECAST DECK
1/2" = 1'-0"

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HEADWORKS

WASTEWATER TREATMENT PLANT EXPANSION-PHASE 1

MIDDLEFIELD, OHIO

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	18 OF 65

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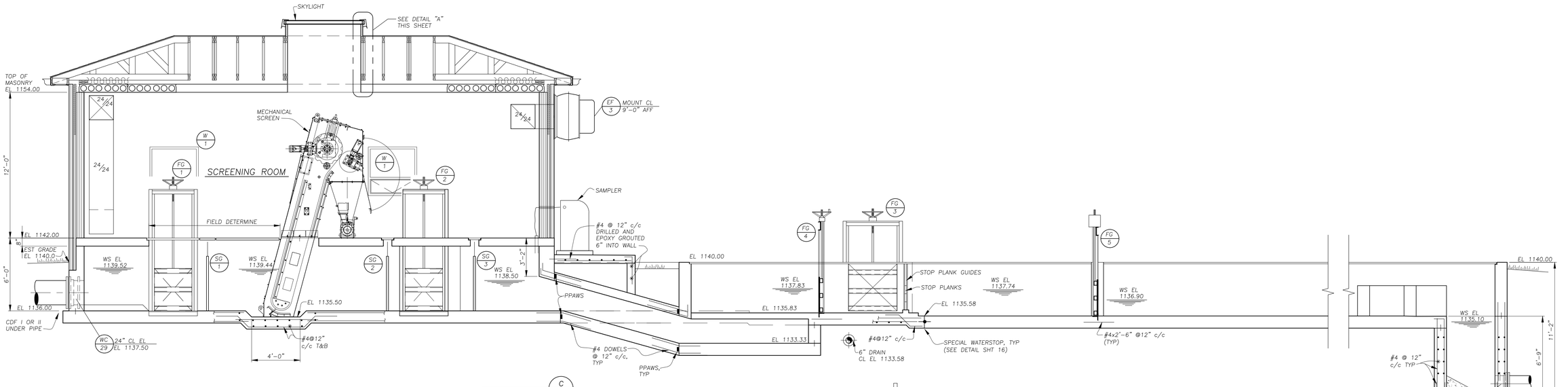

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HEADWORKS

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1

MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
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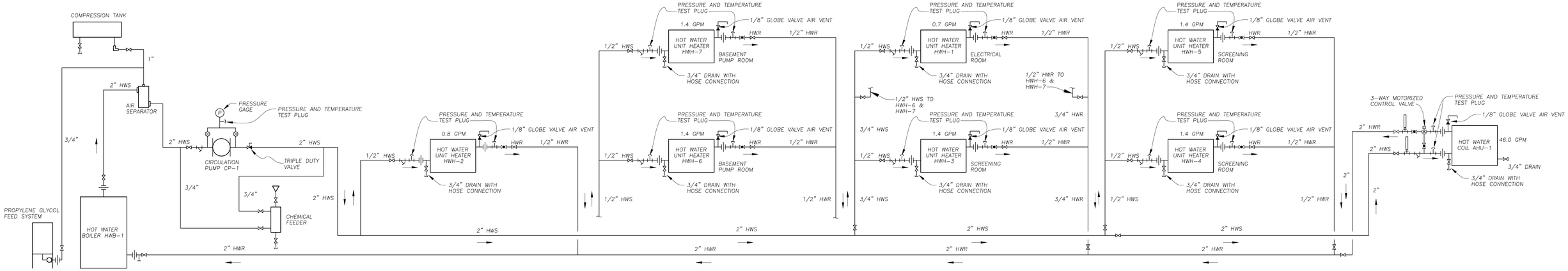
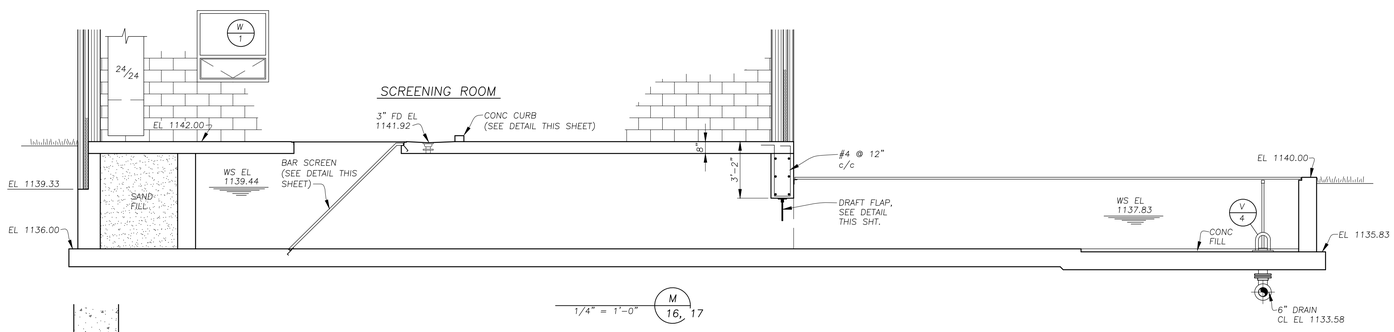
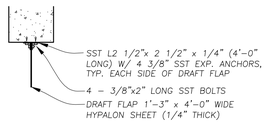


HOT WATER HEATING SCHEMATIC

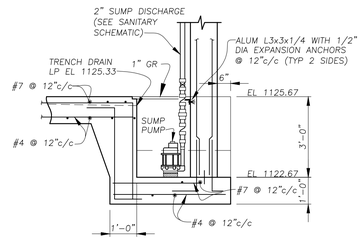


1/4" = 1'-0" (M 16, 17)



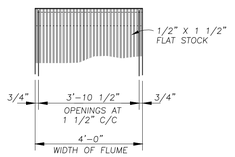
DRAFT FLAP DETAIL

N.T.S.



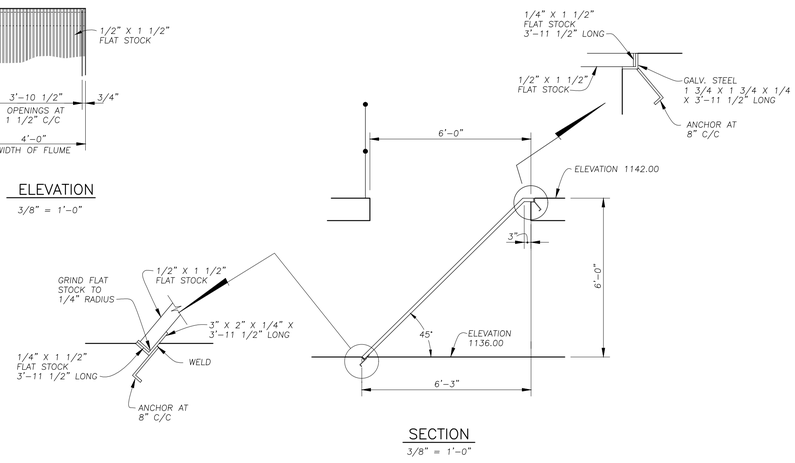
SUMP DETAIL

3/8" = 1'-0"



ELEVATION

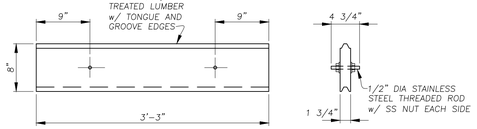
3/8" = 1'-0"



SECTION

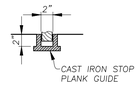
3/8" = 1'-0"

BAR SCREEN DETAILS



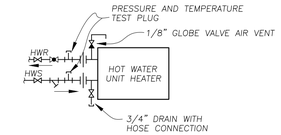
WOOD STOP PLANK DETAIL

1" = 1'-0"

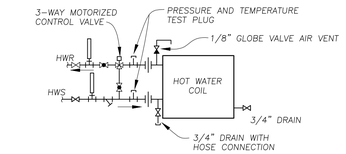


STOP PLANK GUIDE DETAIL

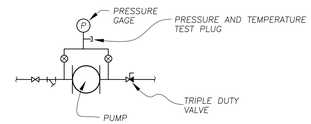
1" = 1'-0"



HOT WATER UNIT HEATER DIAGRAM



AIR HANDLING UNIT HEATING DIAGRAM



HVAC PUMP DIAGRAM

HEADWORKS
WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

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DRAWN BY	BDL
CHECKED BY	RBW
PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDHW05A
CONTRACT	
DATE	11-08-05
	19A OF 65

11-08-05

SCHEMATICS

- WIRING CONNECTED
- WIRING NOT CONNECTED
- MECHANICAL CONNECTION
- MECHANICAL INTERLOCK CONNECTION
- TERMINAL
- MCC BUS CONNECTION
- M — MOTOR STARTER CONTACTOR
- RELAY COIL
  - CR – CONTROL RELAY
  - TDR – TIME DELAY RELAY
  - RCR – REPEAT CYCLE TIMER
  - LR/L – LATCHING RELAY/LATCH COIL
  - LR/U – LATCHING RELAY/UNLATCH COIL
- OL'S — OVERLOADS
- AC MOTOR – SQUIRREL CAGE INDUCTION TYPE SINGLE AND THREE PHASE
- GROUND
- HORN OR SIREN
- M — METER
- FUSE
- DIODE
- DISCONNECT
- NON–AUTOMATIC CIRCUIT BREAKER
- CIRCUIT BREAKER WITH THERMAL TRIP
- CIRCUIT BREAKER WITH MAGNETIC TRIP
- CIRCUIT BREAKER WITH THERMAL AND MAGNETIC TRIP
- TIMED CONTACT – NORMALLY OPEN, TIMED TO CLOSE ON ENERGIZE
- TIMED CONTACT – NORMALLY CLOSED, TIMED TO OPEN ON ENERGIZE
- TIMED CONTACT – NORMALLY OPEN, TIMED TO OPEN ON DE–ENERGIZE
- TIMED CONTACT – NORMALLY CLOSED, TIMED TO CLOSE ON DE–ENERGIZE
- THERMAL OVERLOAD RELAY
- CONTROL POWER TRANSFORMER
- CURRENT TRANSFORMER
- ON OFF — 2 POSITION SELECTOR SWITCH
- H O A — 3 POSITION SELECTOR SWITCH
- PL. — PILOT LIGHT, NON PUSH–TO–TEST
  COLORS: G–GREEN, R–RED, A–AMBER, W–WHITE, B–BLUE
- PL. — PILOT LIGHT, PUSH–TO–TEST
  COLORS: G–GREEN, R–RED, A–AMBER, W–WHITE, B–BLUE
- INSTANT OPERATING CONTACT, NORMALLY CLOSED
- INSTANT OPERATING CONTACT, NORMALLY OPEN
- LIMIT SWITCH, NORMALLY CLOSED
- LIMIT SWITCH, NORMALLY OPEN
- PRESSURE OR VACUUM SWITCH, NORMALLY CLOSED
- PRESSURE OR VACUUM SWITCH, NORMALLY OPEN
- LEVEL OR FLOAT SWITCH, NORMALLY CLOSED
- LEVEL OR FLOAT SWITCH, NORMALLY OPEN
- TEMPERATURE ACTUATED SWITCH OR THERMOSTAT NORMALLY CLOSED
- TEMPERATURE ACTUATED SWITCH OR THERMOSTAT NORMALLY OPEN
- FLOW SWITCH, NORMALLY OPEN
- FLOW SWITCH, NORMALLY CLOSED
- SOLENOID OPERATED DEVICE
- TRANSIENT SURGE PROTECTION
- ETM — ELAPSED TIME METER
- N.O. — SEAL WATER SOLENOID VALVE

ONE–LINE DIAGRAMS

- SERVICE CONNECTION
- PULL–OUT TYPE FUSE
- PLUG–IN TYPE STABS
- CIRCUIT BREAKER
- HP — MOTOR OR GENERATOR
- MOTOR STARTER W/ MOTOR CIRCUIT PROTECTOR, OVERLOADS AND MOTOR
- RVSS — REDUCED VOLTAGE SOLID STATE STARTER
- DISCONNECT SWITCH
- FUSIBLE DISCONNECT SWITCH
- TRANSFORMER
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER

PLANS

- OVERHEAD RUN
- EXPOSED CONDUIT RUN
- UNDERGROUND OR CONCEALED CONDUIT RUN
- C — CONCRETE ENCASED DUCTBANK
- D — DRAIN LINE
- POWER POLE
- TELEPHONE POLE
- LIGHT POLE
  > INDICATES DIRECTION OF LUMINAIRE
- ANTENNA
- GROUND ROD
- ESW — ENCLOSED SWITCH
- ECB — ENCLOSED CIRCUIT BREAKER
- EMC — ENCLOSED MOTOR CONTROLLER
- EMC — COMBINATION ENCLOSED MOTOR CONTROLLER
- CS — START–STOP CONTROL STATION
- CS — START–STOP CONTROL STATION WITH PILOT LIGHT
- CS — ON–OFF CONTROL STATION WITH PILOT LIGHT
  H–O–A CONTROL STATION WITH PILOT LIGHT
- CS — LOCAL–REMOTE/H–O–A CONTROL STATION WITH PILOT LIGHT
- DTT — DRY–TYPE TRANFORMER OR SMALL POWER CENTER
- ELECTRIC HEATER
- PB — SECONDARY OR BRANCH CIRCUIT PANELBOARD
- MCC — MOTOR CONTROL CENTER
- ATS — AUTOMATIC TRANSFER SWITCH
- XX — LUMINAIRES – LETTER DESIGNATES TYPE OF FIXTURE
- XX
- EMERGENCY LIGHT
- EXIT LIGHT
- DC MOTOR – ARMATURE CONTROLLED
- AC MOTOR – SQUIRREL CAGE INDUCTION TYPE SINGLE AND THREE PHASE
- DUPLEX CONVENIENCE RECEPTACLE
- SINGLE RECEPTACLE–SEE PLAN FOR CONFIGURATION AND RATING
- $ — SINGLE POLE WALL SWITCH
- $3 — THREE–WAY WALL SWITCH
- $4 — FOUR–WAY WALL SWITCH
- $M — MANUAL MOTOR CONTROLLER

WP – WEATHERPROOF
CR – CORROSION RESISTANT
GFI – GROUND FAULT INTERRUPT
C – ABOVE COUNTER
XP – EXPLOSION–PROOF

- T — THERMOSTAT OR TEMPERATURE SWITCH
- ZS — LIMIT SWITCH
- PS — PRESSURE OR VACUUM SWITCH
- LS — LEVEL OR FLOAT SWITCH
- FE — FLOW SENSOR
- FS — FLOW SWITCH
- PC — PHOTOCELL
- SV — SOLENOID OPERATED DEVICE
- DP — DIFFERENTIAL PRESSURE TRANSMITTER
- P — PRESSURE TRANSMITTER
- M — MAGNETIC FLOW METER
- DEMOLITION / REMOVE
- J — JUNCTION BOX
- TELEPHONE JACK
- DATA JACK
- HORN PAGING SPEAKER
- JB — JUNCTION BOX
- ALARM SWITCH
- K — KEY SWITCH
- TE — TEMPERATURE SENSOR
- MS — MOTION SENSOR
- DS — DOOR SWITCH
- KP — KEY PAD
- W — WATCHTOUR PUSHBUTTON
- VIDEO CAMERA

GENERAL NOTES

1. THIS IS A GENERAL ELECTRICAL SYMBOLS AND GENERAL NOTES SHEET. SOME SYMBOLS AND/OR NOTES MAY NOT BE USED IN THIS SET OF DRAWINGS.
2. LIGHT LINES (———) DESIGNATE EXISTING CONDITIONS AND EQUIPMENT.
3. HEAVY LINES (———) DESIGNATE PROPOSED WORK OR EQUIPMENT.
4. ALL HOMERUNS TO THE PANEL BOARDS AND SMALL POWER CENTERS AND WIRE/CONDUIT RUNS BETWEEN ALL SINGLE PHASE EQUIPMENT (TYPICALLY SMALLER THAN 1/2 HP MOTORS AND EQUIVALENT LOADS) SHALL BE 2 #12, 1#12 GND.–3/4" C. UNLESS OTHERWISE NOTED.
5. ALL HOMERUNS TO THE LOAD CENTERS, MOTOR CONTROL CENTERS AND MOTOR STARTER SWITCHBOARDS AND WIRE/CONDUIT RUNS BETWEEN ALL THREE PHASE EQUIPMENT (TYPICALLY 1/2 HP AND LARGER AND EQUIVALENT LOADS) SHALL BE 3 #12, 1 #12 GND.–3/4" C. UNLESS OTHERWISE NOTED.
6. ALL HOMERUNS TO THE INSTRUMENTATION PANEL (IP), RMP'S, RTU'S ETC. AND BETWEEN INSTRUMENTATION TYPE EQUIPMENT SHALL BE TWO PAIR #18 AWG SHIELDED CABLE (STP), 1 #12 GND.–3/4" C. UNLESS OTHERWISE NOTED.
7. ALL SURFACE MOUNTED AND PENDANT MOUNTED LIGHTING FIXTURES SHALL BE MOUNTED SO THAT NO INTERFERENCE IS ENCOUNTERED WITH OTHER EQUIPMENT IN THE SAME LOCATION.
8. ALL TABLES ARE SHOWN FOR REFERENCES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILTY TO PROVIDE ALL OF THE ITEMS SHOWN ON THE INDIVIDUAL DRAWINGS.
9. ALL HOMERUNS FROM TELEPHONES, PAGING SPEAKERS AND TALKBACK PAGING SPEAKERS TO THEIR APPURTENANT TELEPHONE PULL BOX SHALL BE IN 1" CONDUIT WITH ONE #12 PULLWIRE PROVIDED.
10. ALL HOMERUNS TO PANEL BOARDS AND THE HOMERUNS TO THE INSTRUMENTATION PANELS CAN BE COMBINED IN THEIR RESPECTIVE HOMERUN CONDUITS TO MINIMIZE THE TOTAL NUMBER OF CONDUITS ENTERING THE PANEL, PROVIDED THE INTEGRITY OF REDUNDANCY IS MAINTAINED AND PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER. CONTRACTOR MUST DERATE THE CONDUCTORS IN ACCORDANCE WITH MOST RECENT NEC REQUIREMENTS.
11. REFER TO APPROPRIATE SCHEDULE FOR EQUIPMENT IDENTIFIED WITH —
12. ALL * MARKED EQUIPMENT IS FURNISHED AND INSTALLED BY THE CONTRACTOR RESPONSIBLE FOR THAT EQUIPMENT, BUT SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR.
13. ALL ** MARKED EQUIPMENT IS FURNISHED BY THE CONTRACTOR RESPONSIBLE FOR THAT EQUIPMENT, BUT SHALL BE INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.

STATE OF OHIO
ZOLTON F. BITTO
42355
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DESCRIPTION	DATE	BY	APP'D
	RECORD DRAWINGS	12/18/07	RHQ	SWA

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1100 Superior Avenue
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Tel: 216–781–6177 Fax: 216–781–6243
www.arcadis–us.com

SCALE: NONE
DESIGNED BY: JMS
DRAWN BY: JMS
CHECKED BY: ZFB

ELECTRICAL SYMBOL LEGEND
WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDSLE1
CONTRACT:
DATE: 11–08–05
E1 OF E37

FUTURE AERATION TANK

AERATION TANKS

FLOW SPLITTER

BLOWER BUILDING

AIR FILTER

STANDBY GENERATOR

FINAL SETTLING TANK NO. 1

FINAL SETTLING TANK NO. 2

UV DISINFECTION/ EFFLUENT METERING

LIGHTNING PROTECTION GROUND RODS AS REQUIRED. (TYPICAL)

GRIT TANK

LIGHTNING PROTECTION GROUND RODS AS REQUIRED. (TYPICAL)

HEADWORKS BUILDING

AEROBIC DIGESTER AND SLUDGE HOLDING TANK

FERRIC CHLORIDE FEED BUILDING

OPERATIONS BUILDING

SLUDGE HOLDING TANK

WALK

TELE PED

FILTER/DEWATERING BUILDING

DEWATERED SLUDGE STORAGE PAD

YARD DRAIN PUMPING STATION

HH-1

HH-3

MH-2

MP

LS

(TYP.)

SEE SHEET E4 FOR CONTINUATION

SEE SHEET E4 FOR CONTINUATION

GENERAL NOTES:

1. SEE SHEETS E33 AND E34 FOR CONDUIT SCHEDULE.

PLAN NOTES:

1. UTILITY OWNED PAD-MOUNTED TRANSFORMER. SEE SHEET E35 FOR CONCRETE PAD DETAIL.
2. 4"X4" POST FOR GATE ENTRY DETECTOR. SEE SHEET E35 FOR DETAIL.
3. YARD DRAIN PUMPING STATION CONTROL PANEL.
4. BOND ELECTRICAL SYSTEM GROUND TO LIGHTNING PROTECTION GROUND. USE #3/0 GROUNDING ELECTRODE CONDUCTOR, MINIMUM. SEE PLANS FOR LOCATION OF BUILDING SERVICE ENTRANCE.
5. MANHOLE DRAIN TO YARD PUMPING STATION.
6. MANHOLE DRAIN TO STORM WATER MANHOLE.
7. HAND HOLE DRAIN TO YARD PUMPING STATION.

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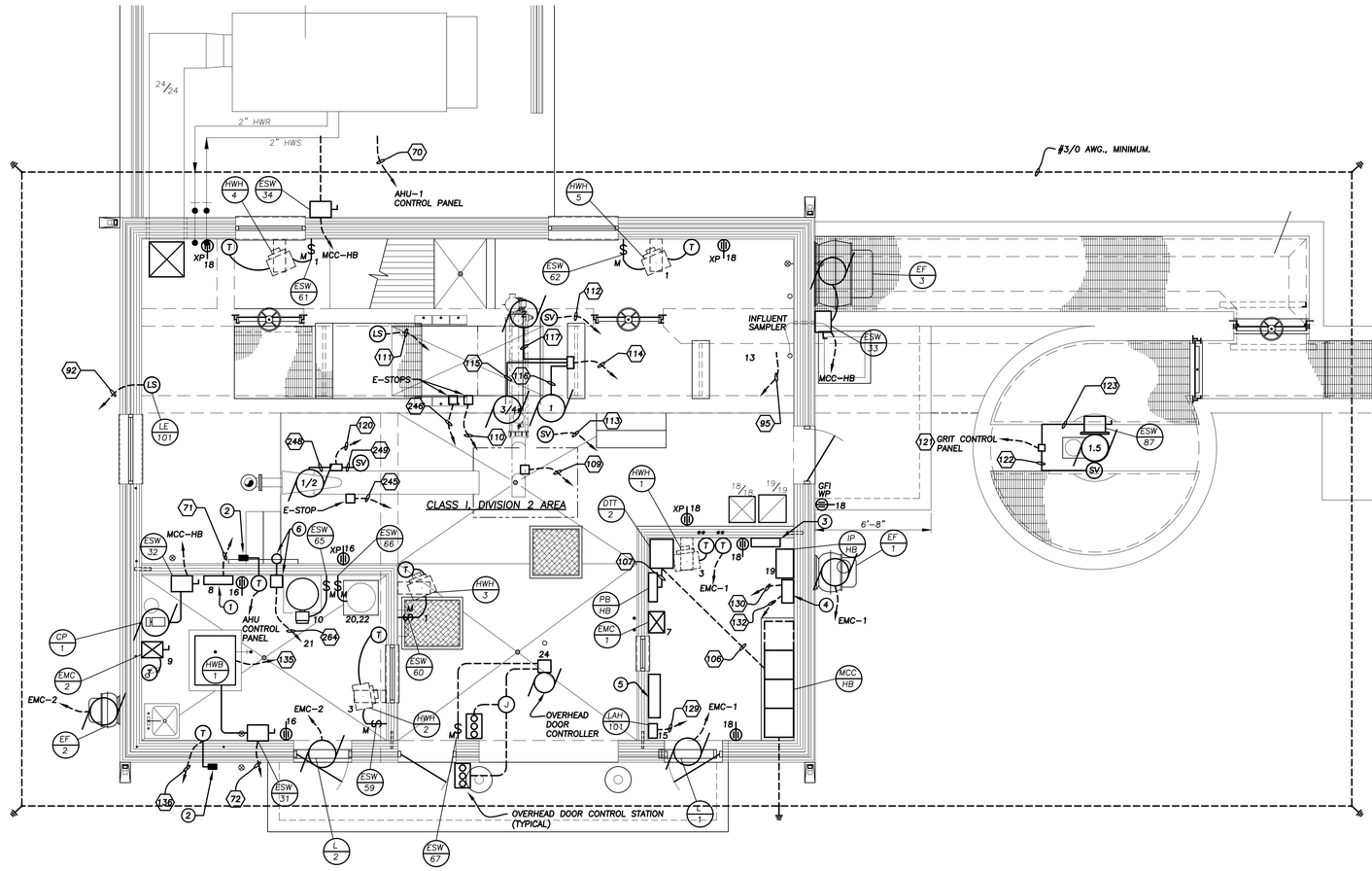
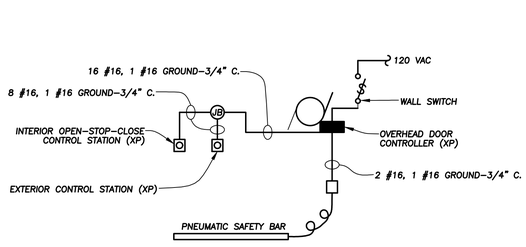
SCALE	1"=20'
DESIGNED BY	JMS
DRAWN BY	JMS
CHECKED BY	ZFB

PROPOSED ELECTRICAL SITE PLAN

WASTEWATER TREATMENT PLANT EXPANSION-PHASE 1 MIDDLEFIELD, OHIO

PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDSIE1
CONTRACT	
DATE	11-08-05
	E3 OF E37





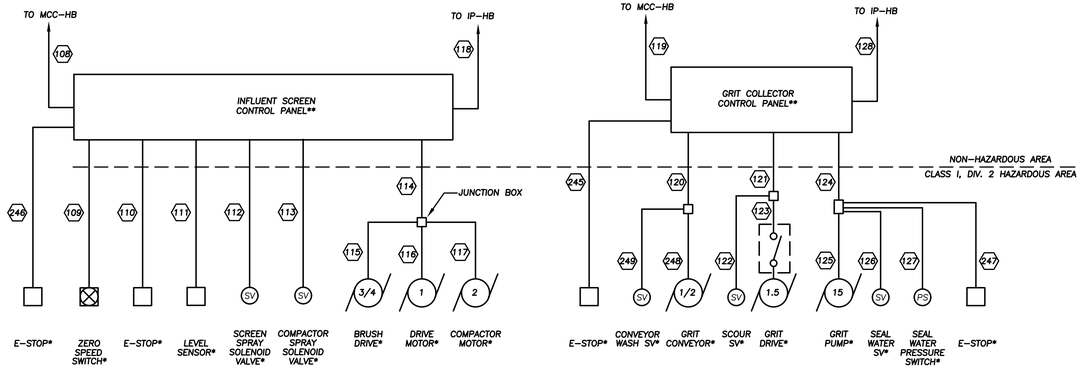
RISER DIAGRAM
OVERHEAD COILING DOOR

GENERAL NOTES:

1. EXCEPT FOR THE ELECTRICAL AND MECHANICAL ROOMS, THIS BUILDING IS A CLASS I, DIVISION 2 HAZARDOUS AREA. CONTINUOUSLY VENTED AT 12 AIR CHANGES PER HOUR.
2. 120V, 1# CIRCUITING TO BE (2) #12, (1) #12G., 3/4"C UNLESS OTHERWISE NOTED.
3. 480V, 3# CIRCUITING TO BE (3) #12, (1) #12G., 3/4"C, UNLESS OTHERWISE NOTED.
4. THERMOSTAT WIRING TO CONTROLLED UNIT TO BE (2) #14, (1) #14G., 3/4"C UNLESS OTHERWISE NOTED.
5. CIRCUITS WIRED TO PANEL "PB-HB", UNLESS OTHERWISE NOTED.
6. USE #10 CONDUCTORS FOR 120V, 20A BRANCH CIRCUITS OVER 100 FEET.
7. SEE SHEETS E33 AND E34 FOR CONDUIT SCHEDULE.
8. SEE SPECIFICATION SECTION 15989 FOR CONDUIT/WIRING RESPONSIBILITIES FOR HVAC SYSTEMS.

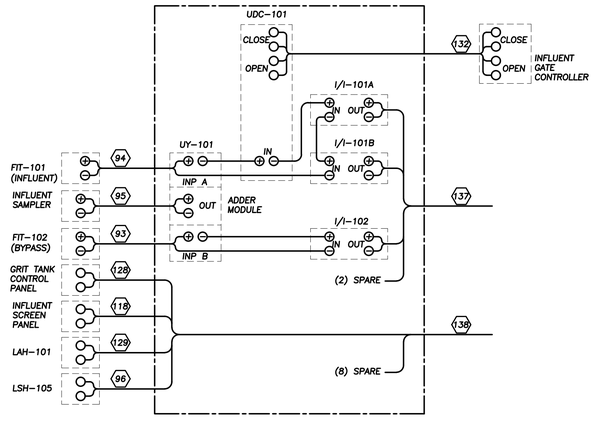
PLAN NOTES:

1. AHU-1 CONTROL PANEL
2. THERMOSTAT REMOTE SENSING BULB AND SHIELD.
3. GRIT COLLECTOR CONTROL PANEL
4. GATE CONTROL PANEL
5. INFLUENT SCREEN CONTROL PANEL
6. COMBUSTIBLE GAS DETECTOR



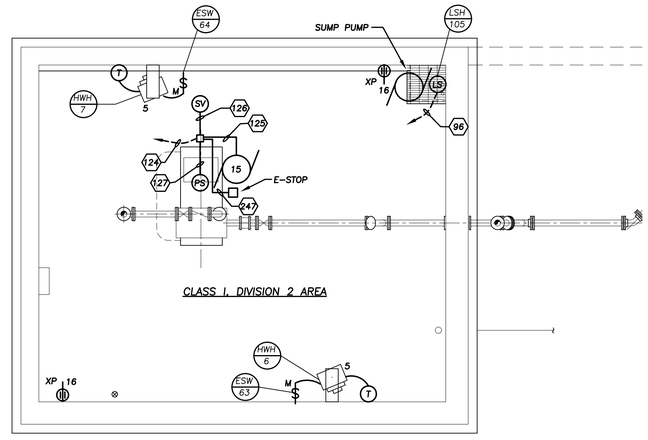
INFLUENT SCREEN WIRING DIAGRAM

GRIT COLLECTION WIRING DIAGRAM



INSTRUMENTATION PANEL IP-HB WIRING DIAGRAM

120V WIRING NOT SHOWN



SECTIONAL PLAN – EL 1137.00
1/4" = 1'-0"

REV. NO.	DESCRIPTION	DATE	BY	APP'D
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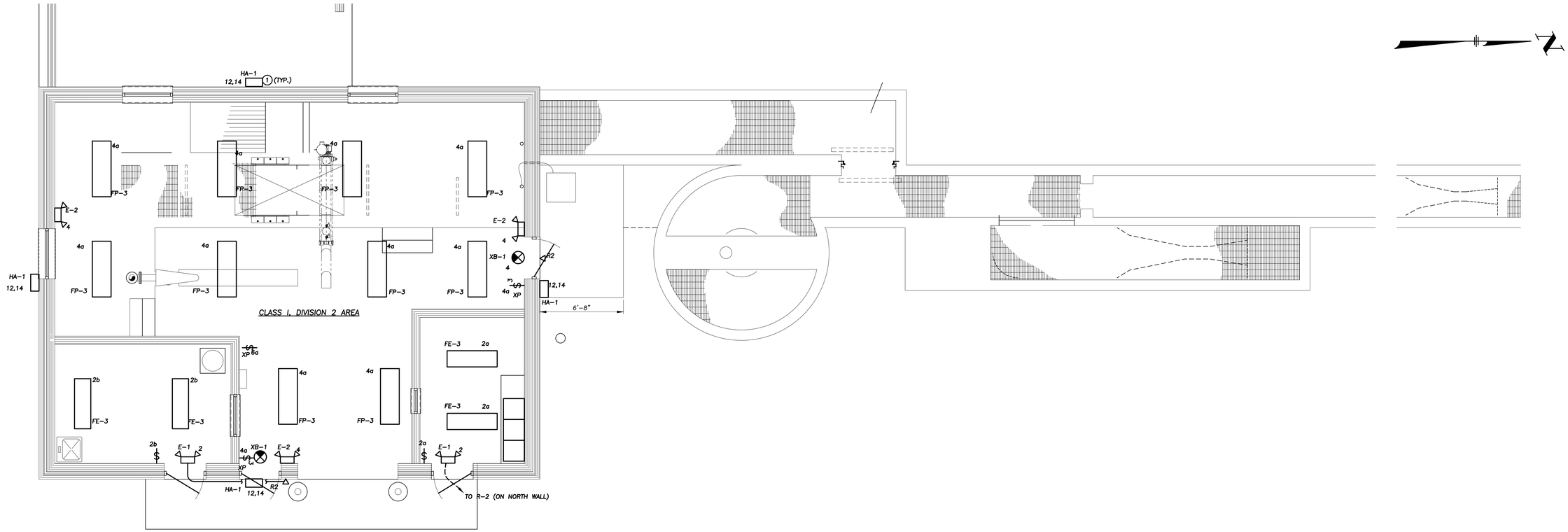
SCALE	1/4" = 1'-0"
DESIGNED BY	JMS
DRAWN BY	JMS
CHECKED BY	ZFB

HEADWORKS POWER PLAN

WASTEWATER TREATMENT
PLANT EXPANSION-PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDHWPE1
CONTRACT	
DATE	11-08-05
	E5 OF E37

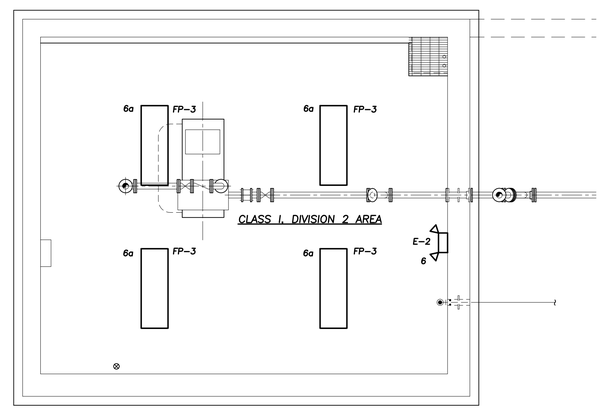


GENERAL NOTES:

1. *EXCEPT FOR THE ELECTRICAL AND MECHANICAL ROOMS, THIS BUILDING IS A CLASS I, DIVISION 2 HAZARDOUS AREA. CONTINUOUSLY VENTED AT 12 AIR CHANGES PER HOUR.*
2. *120V, 1ø CIRCUITING TO BE (2) #12, (1) #12 G., 3/4" C UNLESS OTHERWISE NOTED.*
3. *CIRCUITS WIRED TO PANEL "PB-HB", UNLESS OTHERWISE NOTED.*
4. *USE #10 CONDUCTORS FOR 120V, 20A BRANCH CIRCUITS OVER 100 FEET.*
5. *EXTERIOR WALL PACK LIGHTING CIRCUITING TO BE 208V, 1ø, (2) #10, (1) #10 G., 3/4" C UNLESS OTHERWISE NOTED.*

PLAN NOTES:

(1) *MOUNT AT 10' ABOVE FINISHED GRADE TO CENTERLINE OF LUMINAIRE.*



SECTIONAL PLAN – EL 1137.00
1/4" = 1'-0"

REV. NO.	DESCRIPTION	DATE	BY	APP'D
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CHECKED BY	ZFB

HEADWORKS LIGHTING PLAN

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1 MIDDLEFIELD, OHIO

PROJECT NUMBER	CVMFD03101B1
CAD NUMBER	MFDHWLE1
CONTRACT	
DATE	11-08-05
	E6 OF E37

INSTRUMENTATION SYMBOLS

FIELD WIRING

PROCESS PIPE

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS

UNDEFINED SIGNAL

PNEUMATIC SIGNAL

ELECTRIC SIGNAL

ELECTRIC BINARY SIGNAL

CAPILLARY TUBE

ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)

ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)

MECHANICAL LINK

SYSTEM DATA LINK

OPERATOR ACCESSIBLE (PANEL MOUNTED) — NOT OPERATOR ACCESSIBLE (FIELD MOUNTED) — DISCRETE INSTRUMENTS

SHARED COMPUTER DISPLAY, SHARED COMPUTER CONTROL

COMPUTER INTERFACE

COMPUTER SEQUENCE LOGIC CONTROL

INSTRUMENTS SHARING COMMON HOUSING (LOCAL)

INSTRUMENTS SHARING COMMON HOUSING (PANEL MTD.)

PILOT LIGHT

PANEL MOUNTED PATCHBOARD POINT

PURGE OR FLUSHING DEVICE

UNDEFINED INTERLOCK LOGIC

QUICK HOSE CONNECTOR

ROTARY MOTOR

SOLENOID

ROTARY PUMP WITH MOTOR

DRAIN

PROPORTIONING PUMP

BELTS OR SHAKERS

SCREW CONVEYOR

DIAPHRAGM SEAL

TANK

SCREW PUMP

MIXER

CONE VALVE

GENERAL VALVE – NORMALLY OPEN

ANGLE VALVE

THREE–WAY VALVE

FOUR–WAY VALVE

GENERAL VALVE – NORMALLY CLOSED

BALL VALVE

GLOBE VALVE

GLOBE VALVE – NORMALLY CLOSED

DIAPHRAGM VALVE

MANUAL LEVER OPERATED VALVE

MOTORIZED VALVE

SOLENOID VALVE

BUTTERFLY VALVE

ROTARY VALVE

CHECK VALVE

PLUG VALVE

PRESSURE REDUCING REGULATOR SELF–CONTAINED, HAND WHEEL ADJUST

PRESSURE REDUCING REGULATOR SELF–CONTAINED

DIFFERENTIAL PRESSURE REGULATION WITH INTERNAL & EXTERNAL PRESSURE TAPS

PRESSURE RELIEF VALVE STRAIGHT THROUGH PATTERN

TWO–WAY VALVE FAIL OPEN (F.O.)

TWO–WAY VALVE FAIL CLOSED (F.C.)

THREE–WAY VALVE FAIL OPEN TO PATH A–C

FOUR–WAY VALVE FAIL OPEN TO PATHS A–C & D–B

ANY VALVE – FAIL IN PLACE (POSITION DOES NOT CHANGE) (F.I.P.)

ANY VALVE – FAIL INTERMEDIATE (F.I.)

PRESSURE RELIEF VALVE

VACUUM RELIEF VALVE

HOSE WITH HOSE COUPLING

HOSE (FLEXIBLE CONNECTION)

MAGNETIC FLOWMETER

SONIC FLOWMETER

FLOW SWITCH

HEAT EXCHANGER (HEAT EXCHANGER / COOLING WATER)

VENTURI TUBE

CENTRIFUGAL PUMP WITH MOTOR

BLOWER OR FAN WITH MOTOR

ARROW

MOTOR

ULTRASONIC FLOW METER

PUMP (GRAPHIC DISPLAYS)

VALVE ACTUATOR WITH ATTACHED PNEUMATIC CONVERTER (IA)

ALL TRAPS

SINGLE PORT PITOT TUBE OR PITOT VENTURI TUBE

AVERAGING PITOT TUBE

FLUME

WEIR

TURBINE OR PROPELLER TYPE PRIMARY ELEMENT

ROTOMETER TYPE FLOW INDICATOR

POSITIVE DISPLACEMENT TYPE FLOW TOTALIZING INDICATOR (FQI)

FLOW NOZZLE

SLUICE GATE

MOTORIZED SLUICE GATE

DUST COLLECTOR

SUMP PUMP

PRESSURE SWITCH

CURRENT ISOLATOR/AMPLIFIER

CURRENT ADDER (Σ)

ALARM ANNUNCIATOR WINDOW LOCATION (AA XYZ)
X = ROW
Y = COLUMN
Z = POSITION:
T = TOP
M = MIDDLE
B = BOTTOM

PROCESS & INSTRUMENTATION ABBREVIATIONS

AA	ALARM ANNUNCIATOR
AAH	ANALYSIS ALARM HIGH
AAHH	ANALYSIS ALARM HIGH/LOW
AAL	ANALYSIS ALARM LOW
AE	ANALYSIS ELEMENT
AIC	ANALYSIS INDICATING CONTROLLER
AIR	ANALYSIS INDICATING RECORDER
AIT	ANALYSIS INDICATING TRANSMITTER
AQI	ANALYSIS TOTAL INDICATOR
AT	ANALYSIS TRANSMITTER
AY	ANALYSIS COMPUTER OR RELAY
CON PROB	CONDUCTANCE PROBE
CV	CONTROL VALVE
DIF	DIFFERENTIAL
DPU	DISTRIBUTED PROCESSOR UNIT
FAH	FLOW ALARM HIGH
FAL	FLOW ALARM LOW
FC	FLOW CONTROLLER
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FFC	FLOW RATIO CONTROLLER
FG	FLOW GLASS
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FISL/H	FLOW INDICATING SWITCH LOW/HIGH
FIT	FLOW INDICATING TRANSMITTER
FQ	FLOW TOTALIZER
FQR	FLOW TOTALIZING RECORDER
FR	FLOW RECORDER
FS	FLOW SWITCH
FSL/H	FLOW SWITCH LOW/HIGH
FT	FLOW TRANSMITTER
FY	FLOW COMPUTER OR RELAY
HA	HAND OPERATION ALARM
HFC	HAND RATIO CONTROLLER
HID	HAND INDICATING CONTROLLER
HK	HAND CONTROL STATION
HS	HAND SWITCH
HSF	HAND SWITCH FORWARD (FAST)
HSH	HAND SWITCH START/COMPUTER
HSL	HAND SWITCH STOP/LOCAL
HSR	HAND SWITCH REVERSE
HSS	HAND SWITCH SLOW
IE	CURRENT ELEMENT
II	CURRENT INDICATOR
IT	CURRENT TRANSMITTER
JBI	POWER APPARENT INDICATOR
JE	POWER SENSOR
JI	POWER INDICATOR
JQ	POWER TOTALIZER
JT	POWER TRANSMITTER
JXE	POWER FACTOR SENSOR
JXI	POWER FACTOR INDICATOR
JXT	POWER FACTOR TRANSMITTER
JY	POWER COMPUTER OR RELAY
LAH	LEVEL ALARM HIGH
LAL	LEVEL ALARM LOW
LAL/H	LEVEL ALARM LOW/HIGH
LCV	LEVEL CONTROL VALVE
LD	LEVEL DIFFERENTIAL
LE	LEVEL ELEMENT
LG	LEVEL GLASS
LI	LEVEL INDICATOR
LIT	LEVEL INDICATING TRANSMITTER
LLH	LEVEL LIGHT HIGH
LLL	LEVEL LIGHT LOW
LMP	LOAD MONITOR PANEL
LSH	LEVEL SWITCH HIGH
LSH/HH	LEVEL SWITCH HIGH – HIGH/HIGH
LSL	LEVEL SWITCH LOW
LSL/H	LEVEL SWITCH LOW/HIGH
LY	LEVEL COMPUTER OR RELAY
MLTXR	CUTLER HAMMER DIRECTROL MULTIPLEXER
MNTR	MOMENTARY
MXR	MULTIPLEXER
OC	OPERATOR CONSOLE
OL	OVERLOAD
PAH	PRESSURE ALARM HIGH
PAL	PRESSURE ALARM LOW
PC	PRESSURE CONTROL
PCV	PRESSURE CONTROL VALVE
PdAH	PRESSURE DIFFERENTIAL ALARM HIGH
PDI	PRESSURE DIFFERENTIAL INDICATOR
PDIS	PRESSURE INDICATOR SWITCH
PDIT	PRESSURE DIFFERENTIAL INDICATING TRANSMITTER
PdSH	PRESSURE DIFFERENTIAL SWITCH HIGH
PDT	PRESSURE DIFFERENTIAL TRANSMITTER
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATING TRANSMITTER
PL	PILOT LIGHT
PNL	PANEL
PP	POWER PANEL
PS	PRESSURE SWITCH
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PSL/H	PRESSURE SWITCH LOW/HIGH
PSV	PRESSURE SAFETY VALVE
PT	PRESSURE TRANSMITTER
QI	QUANTITY INDICATOR OR EVENT
QS	PREDETERMINING COUNTER
RCDR	RECORDER
RTU	REMOTE TERMINAL UNIT
SA	SPEED ALARM
SC	SPEED CONTROLLER
SE	SPEED ELEMENT
SIC	SPEED INDICATING CONTROLLER
SIR	SPEED INDICATING RECORDER
SIT	SPEED INDICATING TRANSMITTER
SL	SEAL LEAK DETECTOR
SS	SPEED SWITCH
SY	SPEED RELAY
SZ	VARIABLE FREQUENCY DRIVE
TAH	TEMPERATURE ALARM HIGH
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TIT	TEMPERATURE INDICATING TRANSMITTER
TJB	TERMINAL POST JUNCTION BOX
TSH	TEMPERATURE SWITCH HIGH
TSL	TEMPERATURE SWITCH LOW
UC	MULTIFUNCTION CONTROLLER
UJ	DIRECTIONAL MULTIPLEXER
UR	MULTIPOINT RECORDER
WAH	TORQUE ALARM HIGH
WS	TORQUE SWITCH
WSH	TORQUE SWITCH HIGH
WSHH	TORQUE SWITCH HIGH/HIGH
XA	SHUTDOWN ALARM
XAH	VIBRATION ALARM HIGH
XCD2	DXYGEN CONTROL
XMTR	TRANSMITTER
XSH	VIBRATION SWITCH HIGH
XV	AUTOMATIC VALVE (UNCLASSIFIED VARIABLE)
XY	SOLENOID VALVE (UNCLASSIFIED VARIABLE)
YA	EVENT ALARM
YAS	EVENT ALARM SWITCH
YI	EVENT INDICATOR
YI	EVENT INDICATOR FORWARD
YIR	EVENT INDICATOR REVERSE
YSF	EVENT SWITCH FORWARD (FAST)
YS	EVENT SWITCH
YSR	EVENT SWITCH REVERSE
YSS	EVEN SWITCH SLOW
YY	EVENT RELAY
ZAH	POSITION ALARM HIGH
ZAL	POSITION ALARM LOW
ZI	POSITION INDICATOR
ZIH	POSITION INDICATOR HIGH (OPEN)
ZIL	POSITION INDICATOR LOW (CLOSE)
ZIT	POSITION TRANSMITTER
ZLH	POSITION LIGHT HIGH
ZLL	POSITION LIGHT LOW
ZSH	POSITION SWITCH HIGH (OPEN)
ZSL	POSITION SWITCH HIGH (CLOSE)

GENERAL NOTES

1. ALL HOMERUNS TO THE LIGHTING PANELS AND MINI POWER CENTERS AND WIRE/CONDUIT RUNS BETWEEN ALL SINGLE PHASE EQUIPMENT SHALL BE 2 #12, 1#12 GND. –3/4" C. UNLESS OTHERWISE NOTED.
2. ALL HOMERUNS TO THE LOAD CENTERS, MOTOR CONTROL CENTERS AND MOTOR STARTER SWITCHBOARDS AND WIRE/CONDUIT RUNS BETWEEN ALL THREE PHASE EQUIPMENT SHALL BE 3 #12, 1 #12 GND–3/4" C, UNLESS OTHERWISE NOTED.
3. ALL HOMERUNS TO INSTRUMENTATION PANELS (IP), RMP'S, RTU'S ETC. AND BETWEEN ANALOG INSTRUMENTATION TYPE EQUIPMENT SHALL BE TWO PAIR #18 AWG SHIELDED CABLE–3/4" C.
4. ALL SURFACE MOUNTED AND PENDANT MOUNTED LIGHTING FIXTURES SHALL BE MOUNTED SO THAT NO INTERFERENCE IS ENCOUNTERED WITH OTHER EQUIPMENT IN THE SAME LOCATION.
5. ALL TABLES ARE SHOWN FOR REFERENCES ONLY, IT SHALL BE THE CONTRACTORS RESPONSIBILTY TO PROVIDE ALL OF THE ITEMS SHOWN ON THE INDIVIDUAL DRAWINGS.

STATE OF OHIO — ZOLTON F. BITTO — 42355 — REGISTERED PROFESSIONAL ENGINEER

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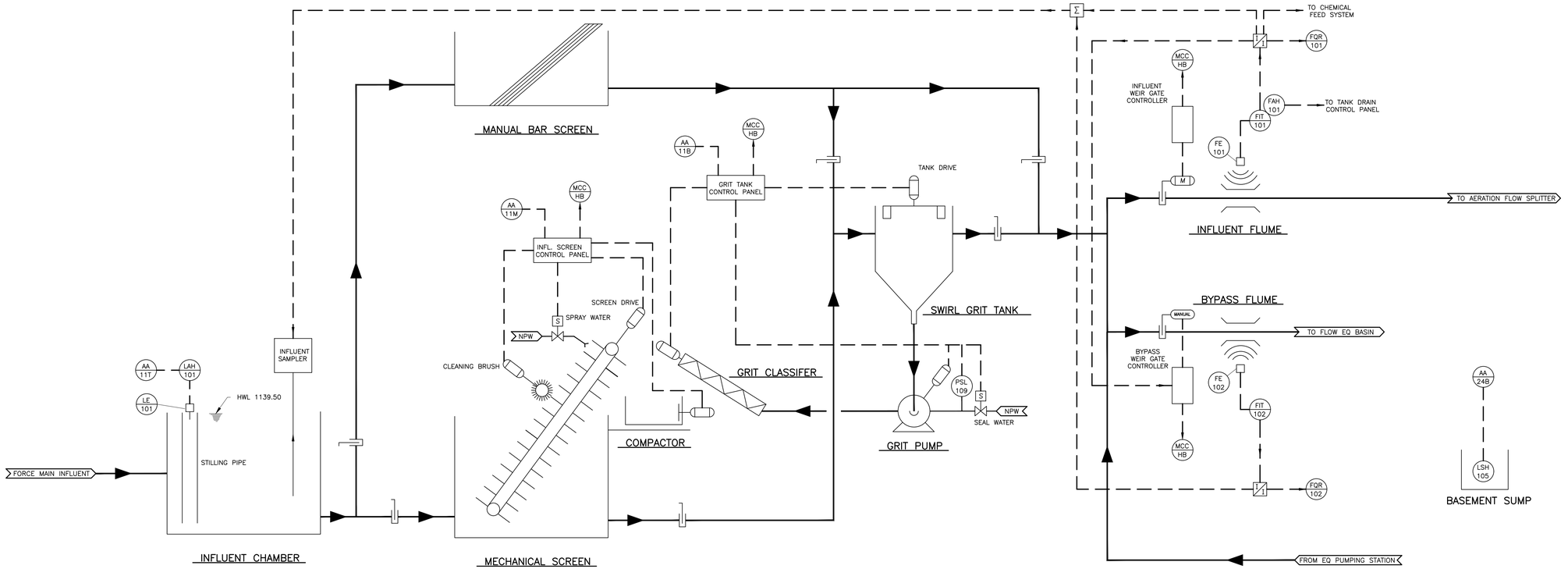
SCALE: NONE
DESIGNED BY: RFB
DRAWN BY: RFB
CHECKED BY: ZFB

PROCESS AND INSTRUMENTATION SYMBOL LEGEND

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDPDSYE
CONTRACT:
DATE: 11–08–05
I–1 OF I–8



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SCALE: AS NOTED
DESIGNED BY: HLS
DRAWN BY: BRC
CHECKED BY: JLS

P&ID – INFLUENT AND SCREENING

WASTEWATER TREATMENT PLANT EXPANSION–PHASE 1
MIDDLEFIELD, OHIO

PROJECT NUMBER: CVMFD03101B1
CAD NUMBER: MFDPD01E
CONTRACT:
DATE: 11–08–05
I–2 OF I–8