



# City of Flint

## Department of Purchases & Supplies

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Sheldon A. Neeley

TO: All Proposers  
FROM: Lauren Rowley, Purchasing Manager  
DATE: **December 07, 2022**  
SUBJECT: **Addendum #03** – Proposal #23000514 – DIGESTER PIPING FABRICATION  
PROJECT: (Water Pollution Control Facility)

**This addendum has been issued because of the following Q & A:**

**Q1.) Can an updated version of the drawings be provided as the current drawings have a few issues?**

**A1.)** Yes, please see attached updated drawings.

**Q2.) Is the intent of this RFP to provide prefabricated stainless steel piping assemblies for the City to install?**

**A2.)** No. The contractor is to provide all fabrication and installation sch10 304 stainless steel pipe per specification and drawings.

**Q3.) Are the pipe support assemblies to be installed by a mechanical contractor, or is the intent for the City of Flint to install pre-fabricated piping supports?**

**A3.)** All installation of piping and appurtenance is to be provided by the awarded contractor.

**Q4.) Who is responsible for cleaning the nozzles in the tank, and how far?**

**A4.)** The contractor is responsible for cleaning of the nozzles. It is assumed that the nozzles are plugged right at the nozzle where the pipe reduces. Contractor shall be responsible for removing the nozzles and cleaning the lines 6 feet back from each nozzle and reinstalling each nozzle. Note that the nozzles are aimed in a certain order and this MUST be maintained. Contractor shall mark each nozzle and reinstall as-is today.

All other bidding terms, requirements, and conditions continue as indicated in the remaining original bid documents.

The Purchasing Manager, Lauren Rowley, is an officer for the City of Flint with respect to this RFP.

**In the submission of their proposal, Proposer must acknowledge receipt of this addendum. Proposer shall acknowledge this addendum by signing and returning one copy of this notice with their submission.**

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City / State / Zip: \_\_\_\_\_



# City of Flint

## Department of Purchases & Supplies

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Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

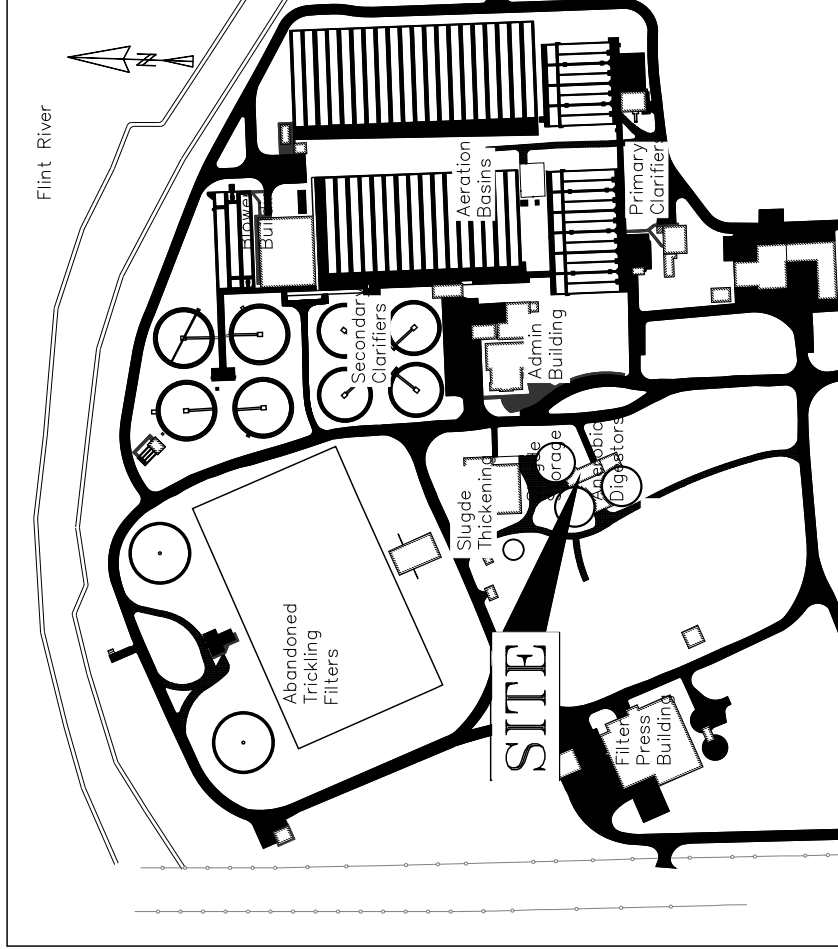
Thank you,

*Lauren Rowley*

# CITY OF FLINT, MICHIGAN WATER POLLUTION CONTROL FACILITY DIGESTER BUILDING IMPROVEMENTS 2022

**Index of Sheets**

1	Title Sheet
2	PID
3	Piping Plan
4	Piping Plan
5	Piping Plan
6	Piping Plan
7	Mechanical Details
8	Mechanical Std Dwg



THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THAT ALL WORK SHOWN HEREAS IS BELIEVED TO BE IN ACCORDANCE WITH MINIMUM REQUIREMENTS INCLUDING THOSE STIPULATED IN THE CONTRACT DOCUMENTS. WHERE IN MY OPINION, PROTECT THE SAFETY OF THE PUBLIC.

PLAN PREPARED BY:



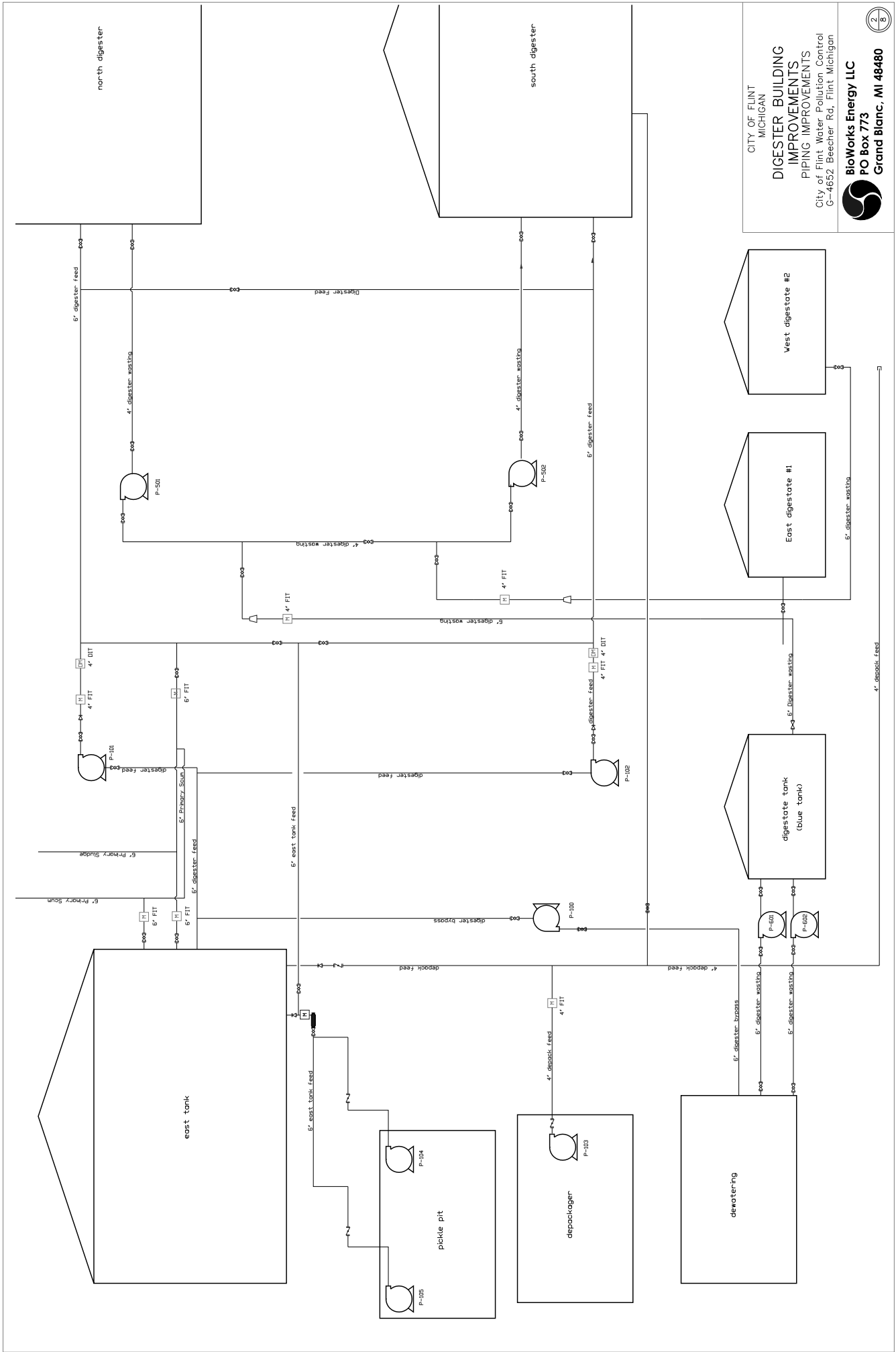
CITY OF FLINT  
MICHIGAN

**DIGESTER BUILDING**  
PIPING IMPROVEMENTS

City of Flint Water Pollution Control  
G--4652 Beecher Rd, Flint Michigan

**BioWorks Energy LLC**  
PO Box 773  
Grand Blanc, MI 48480





CITY OF FLINT  
MICHIGAN

**DIGESTER BUILDING  
IMPROVEMENTS**  
PIPING IMPROVEMENTS

City of Flint Water Pollution Control  
G-4652 Beecher Rd, Flint Michigan

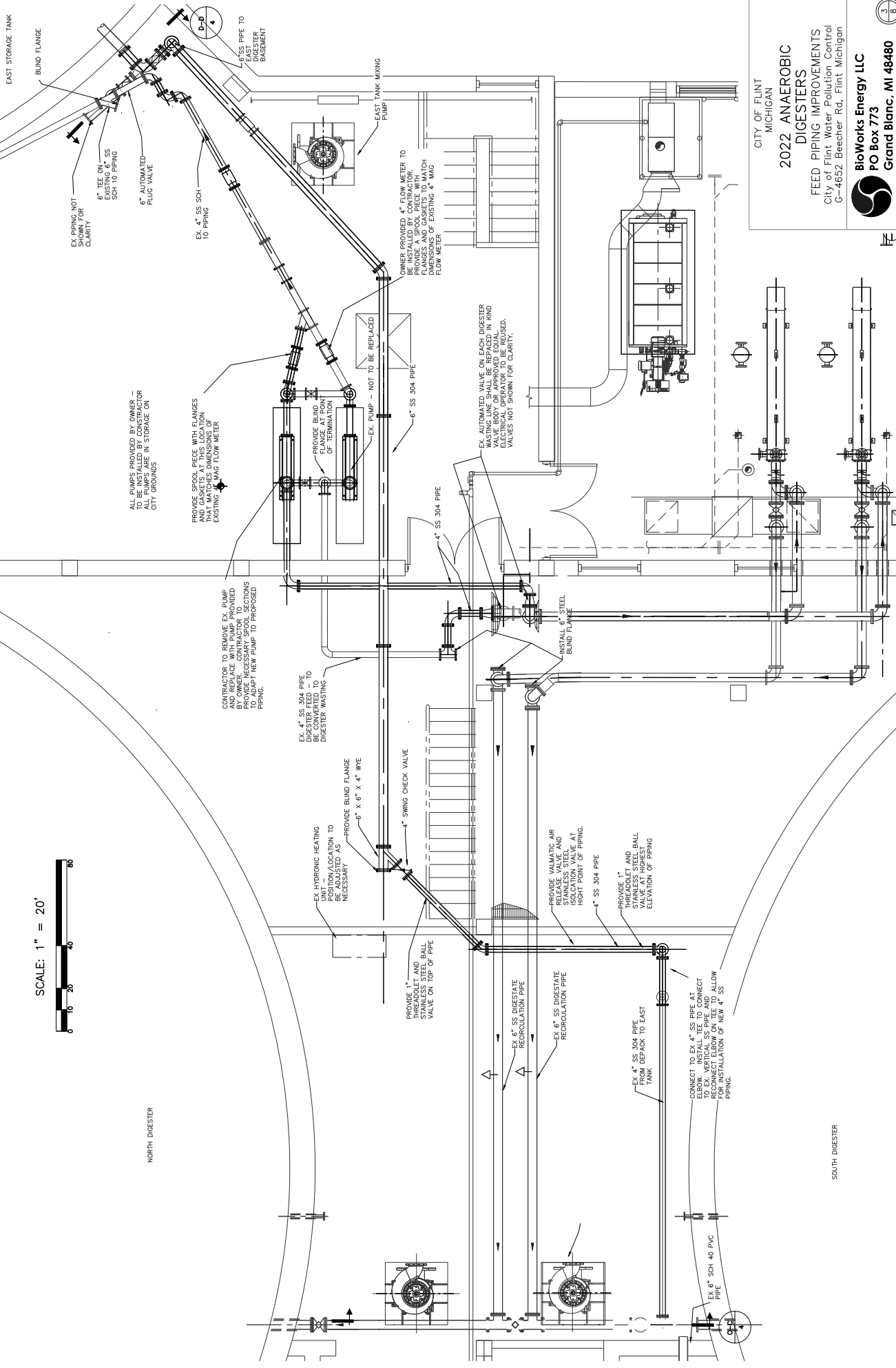
**BioWorks Energy LLC**  
PO Box 773  
Grand Blanc, MI 48480

SCALE: 1" = 20'



NORTH DIGESTER

SOUTH DIGESTER



CITY OF FLINT  
MICHIGAN

### 2022 ANAEROBIC DIGESTERS

FEED PIPING IMPROVEMENTS  
City of Flint Water Pollution Control  
G-4652 Beecher Rd, Flint Michigan

**BioWorks Energy LLC**  
PO Box 773  
Grand Blanc, MI 48480



**DEMOLITION GENERAL NOTES**

1. CONTRACTOR SHALL INCLUDE THE REMOVAL OF ALL PIPING APPURTENANCES WITH EACH BID ITEM.
2. ALL PIPING AND APPURTENANCE SHALL REMAIN AS THE OWNER'S PROPERTY.
3. ALL REMOVED PIPING AND APPURTENANCES SHALL BE RELOCATED TO THE LOCATION OF THE OWNER'S CHOICE ON PLANT GROUNDS.
4. BOTH 6" AND 4" SS SCH 10 PIPE, FITTINGS AND VALVES REMOVED FROM SERVICE AS PART OF DEMOLITION MAY BE REUSED FOR PROPOSED IMPROVEMENTS.

PIPE DEMOLITION SCHEDULE		
DESCRIPTION	UNIT	QUANTITY
4" SS SCH 10	FT	200
6" SS SCH 10	FT	150
4" DIP	FT	100
6" DIP	FT	200

**FABRICATION GENERAL NOTES**

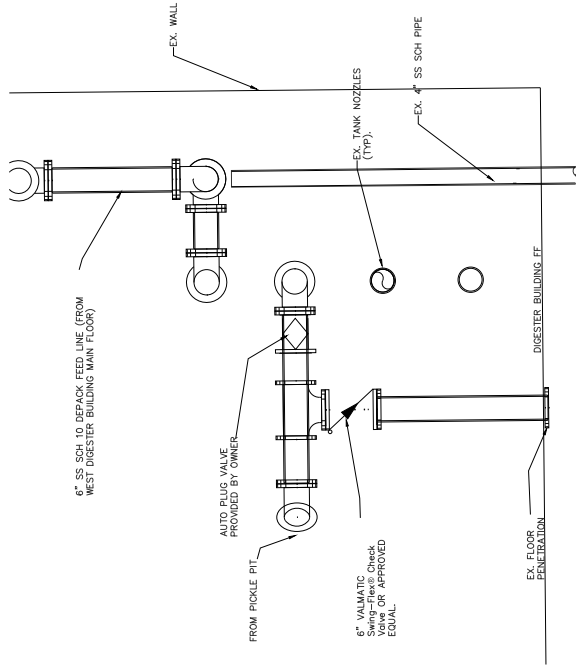
1. CONTRACTOR SHALL RECONFIGURE EXISTING PIPING TO PROVIDE FUNCTIONAL SYSTEM AS PROVIDED HEREIN.
2. REUSE EXISTING PIPING, VALVES, AND APPURTENANCES IS PERMITTED WITH PERMISSION OF THE OWNER.
3. ARRANGE ISOLATION VALVES TO BE LOCATED NEAR INLET AND DISCHARGE OF PUMPS. SELECTED LOCATION TO BE APPROVED BY OWNER PRIOR TO INSTALLATION.
4. CONTRACTOR TO PROVIDE BALANCE OF ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO INSTALL A FUNCTIONAL SYSTEM AS DETAILED HEREIN.
5. ALL VALVES UNLESS OTHERWISE NOTED TO BE DEZURIK ECENTRIC PLUG VALVES OR APPROVED EQUAL.
6. IN ADDITION TO THE BLIND FLANGES SHOWN ON THE DRAWINGS, THE CONTRACTOR, AS PART OF THEIR BID, SHALL INCLUDE THE PROVISION AND INSTALLATION OF FOUR (4) 6" AND FOUR (4) 4" BLIND FLANGES AT THE LOCATION AS DIRECTED BY THE OWNER.



INSTALL TEE ON EX. 6" SS SCH 10 WITH  
DOWNSTREAM SIDES OF TEE

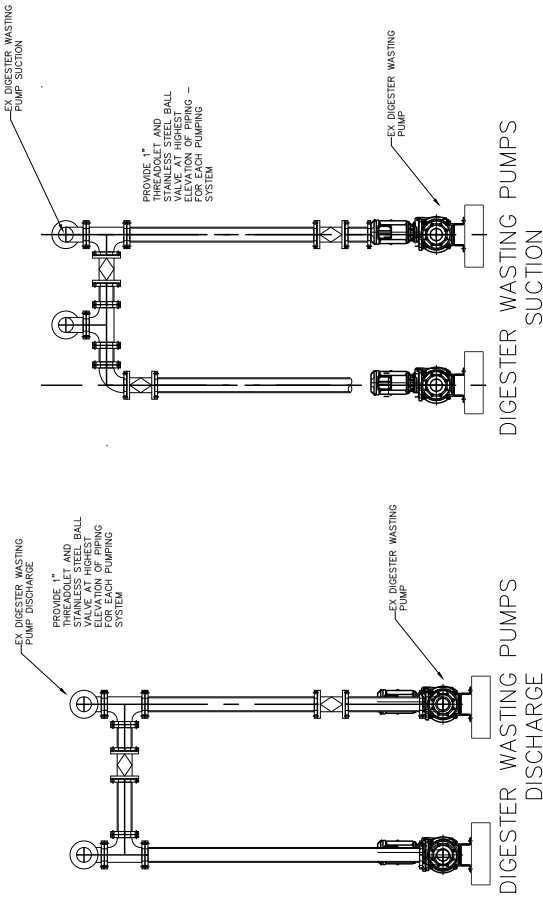
INSTALL 6" SS SCH 10 PIPE THROUGH  
EXISTING FLOOR PENETRATION

EXISTING HYDRONIC EXPANSION TANK TO BE  
REMOVED



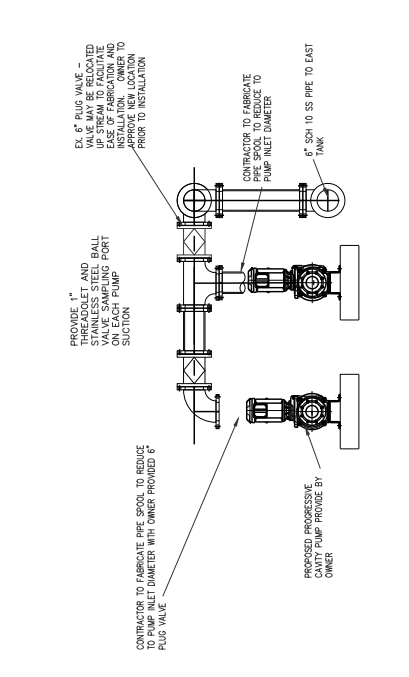
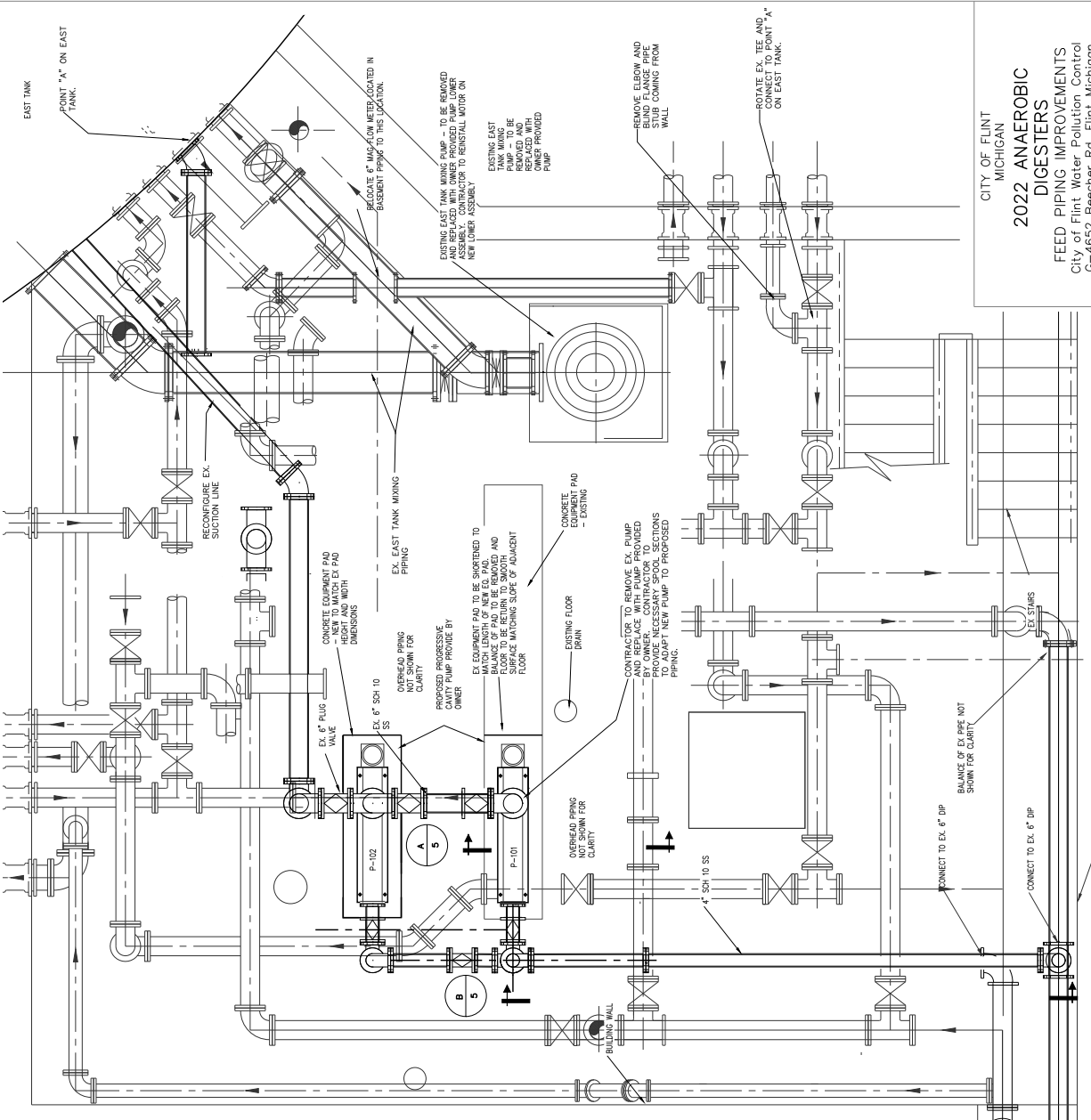
**FEEDSTOCK FEED TO EAST TANK  
PICKLE PIT DISCHARGE TO BASEMENT**

SECTION D  
4  
SCALE: 1"=20'

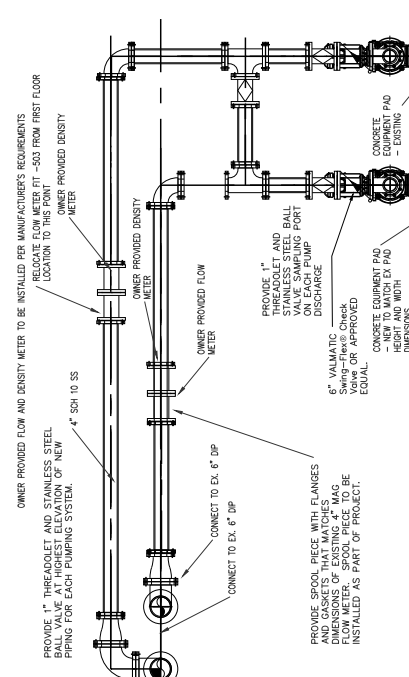


SECTION B  
4  
SCALE: 1"=20'

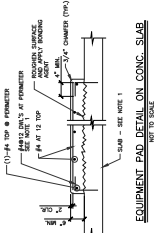
SECTION A  
4  
SCALE: 1"=20'



SECTION A  
SCALE: 1" = 20'



SECTION B  
SCALE: 1" = 20'



EQUIPMENT PAD DETAIL ON CONC. SLAB  
SCALE: 1" = 20'

CITY OF FLINT  
MICHIGAN

**2022 ANAEROBIC  
DIGESTERS**

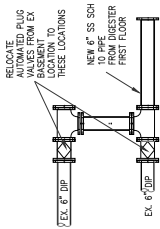
FEED PIPING IMPROVEMENTS  
City of Flint Water Pollution Control  
G-4652 Beecher Rd., Flint Michigan

**BioWorks Energy LLC**  
PO Box 773  
Grand Blanc, MI 48480





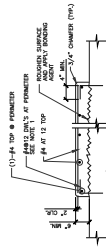
TERMINATE AND BLIND  
FLANGE EX. 4\"/>



SCHEMATIC "A"



SECTION B  
SCALE: 1"=20'



EQUIPMENT PAD DETAIL ON CONC. SLAB

SEE NOTE 1  
FOR THIS DETAIL  
FOR ALL OTHERS  
SEE NOTE 2

CITY OF FLINT  
MICHIGAN  
2022 ANAEROBIC  
DIGESTERS  
FEED PIPING IMPROVEMENTS  
City of Flint Water Pollution Control  
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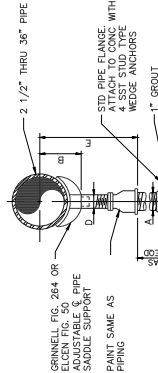
ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D	D MAX
2-1/2"	2-1/2"	1-1/2"	9"	8"	11-1/2"
3"	2-1/2"	1-1/2"	9"	8-1/4"	11-3/4"
3-1/2"	2-1/2"	1-1/2"	9"	8-1/2"	12"
4"	3"	2-1/2"	9"	10-1/4"	14"
6"	3"	2-1/2"	9"	13-5/8"	15-1/4"
8"	3"	2-1/2"	9"	14-5/8"	16-1/4"
10"	3"	2-1/2"	9"	15-5/8"	18-1/4"
12"	3"	2-1/2"	9"	16-5/8"	19-3/4"
14"	4"	3"	11"	18-5/8"	20-3/4"
16"	4"	3"	11"	19-7/8"	22-1/4"
18"	6"	3-1/2"	13-1/2"	21-1/4"	24"
20"	6"	3-1/2"	13-1/2"	23-1/2"	25-1/2"
24"	6"	4"	13-1/2"	26-1/2"	28-1/4"
30"	6"	4"	13-1/2"	29-5/8"	31-1/2"
32"	6"	4"	13-1/2"	30-5/8"	32-3/4"
36"	6"	4"	13-1/2"	32-5/8"	34-3/4"

NOTE:  
1. UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABLE TO ENGINEER.

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ADJUSTABLE PIPE SUPPORTS  
NOT TO SCALE

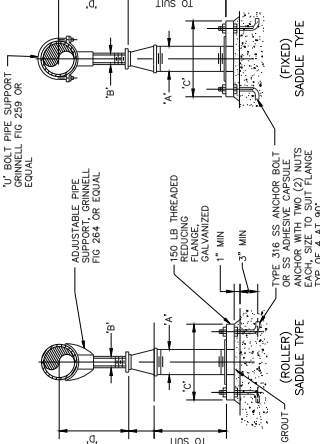
DIMENSION TABLE					
PIPE SIZE	A	B	C	D	E
2-1/2"	2-1/2"	3-3/4"	9"	1-1/2"	8-1/4"
3"	2-1/2"	4"	9"	1-1/2"	8-1/2"
3-1/2"	2-1/2"	4-1/8"	9"	2-1/2"	10"
4"	3"	5-1/8"	9"	2-1/2"	10-1/2"
6"	3"	6-1/2"	9"	2-1/2"	11-3/4"
8"	3"	7-1/2"	9"	2-1/2"	13-1/2"
10"	3"	8-15/16"	9"	3"	15-1/4"
12"	4"	10-15/16"	11"	3"	16-1/2"
14"	4"	11-3/8"	11"	3"	17-1/4"
16"	6"	13-7/8"	13-1/2"	3-1/2"	19-1/4"
20"	6"	15-3/8"	13-1/2"	3-1/2"	21-1/4"
24"	6"	17-1/2"	13-1/2"	4"	23-1/4"
30"	6"	21-1/2"	13-1/2"	4"	28-1/4"
32"	6"	22-1/2"	13-1/2"	4"	29-1/4"
36"	6"	24-1/2"	13-1/2"	4"	30-1/4"



NOTE:  
1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES. GRINNELL FIG. 167 OR ELEN FIG. 219, WHERE PIPE IS INSULATED.  
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE "W" ISOLATION PAD, UNDER SUPPORT. ISOLATION PAD IS ADJACENT TO MECHANICAL EQUIPMENT.  
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.

413

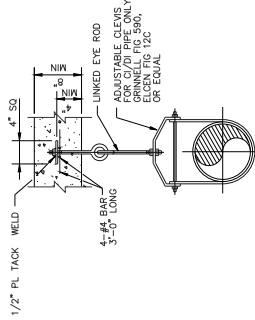
PIPE SUPPORT (TYPE A)  
NOT TO SCALE



NOTE:  
1. VENTILATION AIR PIPING ADD 2" OF INSULATION W/ FIBERGLASS JACKET.  
2. AT PIPE SUPPORTS ADD PROTECTION SADDLES.

408

ADJUSTABLE PIPE SUPPORTS  
NOT TO SCALE

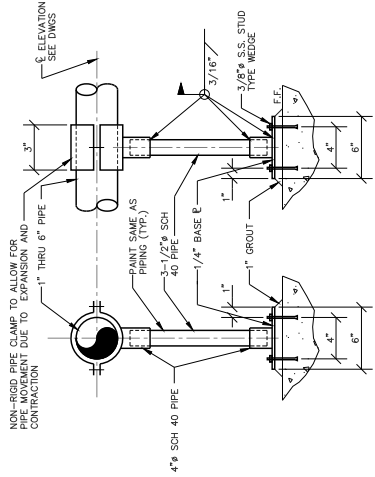


PIPE HANGER RODS & SUPPORT SPACING				
PIPE DIA (INCHES)	ROD DIA (INCHES)	MAX SUPPORT SPACING (FEET)	WEIGHT LIMIT (LBS)	
1" & SMALLER	3/8"	5'	610	TYPE "A"
1-1/2" TO 2"	3/8"	5'	610	TYPE "B"
2-1/2" TO 3-1/2"	1/2"	10'	1130	
4" TO 5"	5/8"	10'	1430	
6"	3/4"	10'	1430	
8", 10", 12"	7/8"	10'	3600	
14", 16"	1"	10'	3600	

NOTE:  
1. GALVANIZE ALL PARTS AFTER FABRICATION.

TYPE "B" FOR HANGER RODS 7/8" DIA AND LARGER, AND MIN 8" THICK CONCRETE  
NOT TO SCALE

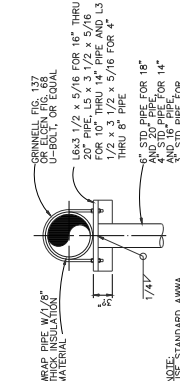
412



NOTE:  
1. EMBEDMENT DEPTH PER MANUFACTURER'S RECOMMENDATIONS.  
2. PROVIDE BITUMASTIC COATING BETWEEN BASE PLATE AND GROUT.  
3. PROVIDE 1/2" MIN. GROUT UNDER BASE PLATE AND GROUT BY OVERTURNING) WITH TOP OF PAD AT FINISHED GRADE. MAXIMUM SPACING BETWEEN SUPPORTS SHALL BE 12".

410

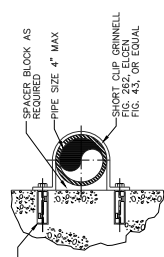
PIPE SUPPORT DETAIL  
NOT TO SCALE



NOTE: STANDARD ANKLE RING FLANGE FOR BASE.

414

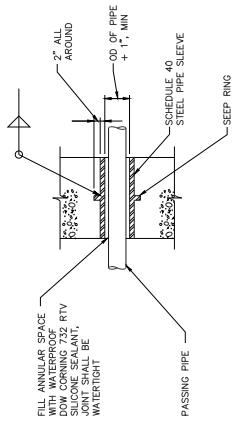
PIPE SUPPORT  
NOT TO SCALE



NOTE:  
1. FOR VERTICAL PIPES ONLY.

416

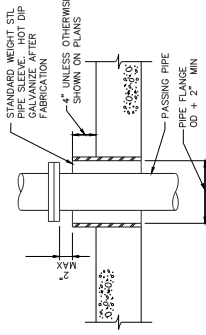
PIPE SUPPORT  
NOT TO SCALE



NOTE:  
1. DO NOT USE WHERE SUBJECT TO HYDROSTATIC PRESSURE. PAINT ENTIRE SLEEVE AND SEEP RING AS SPECIFIED.

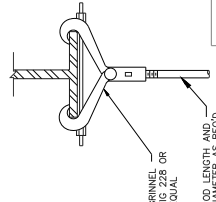
411

TYPE "B" PIPE SLEEVE  
NOT TO SCALE



415

FLOOR SLEEVE  
NOT TO SCALE



417

BEAM CLAMP  
NOT TO SCALE

CITY OF FLINT  
MICHIGAN  
2022 ANAEROBIC DIGESTERS  
FEED PIPING IMPROVEMENTS  
City of Flint Water Pollution Control  
G-4652 Beecher Rd, Flint, Michigan



BioWorks Energy LLC  
PO Box 773  
Grand Blanc, MI 48480

**NOTE:**  
SEE ELECTRICAL DRAWINGS FOR HAZARDOUS  
ATMOSPHERE CLASSIFICATIONS

**INTERIOR AND EXTERIOR  
PROCESS PIPING SCHEDULE**

PIPE MATERIAL AND JOINING	PIPE MATERIAL AND JOINING
DUCTILE IRON PIPE, DUCTILE IRON FITTINGS AND SPECIALS; PIPING AND FITTINGS SHALL BE FLANGED OR GRADE SERVICE. PIPING AND FITTINGS SHALL BE SDR 11 OR ABOVE FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS TO BE SDR 11 UNLESS OTHERWISE SPECIFIED. PIPE AND CLASS OF FITTINGS TO BE AS SPECIFIED.	DUCTILE IRON PIPE, DUCTILE IRON FITTINGS AND SPECIALS; PIPING AND FITTINGS SHALL BE FLANGED OR GRADE SERVICE. PIPING AND FITTINGS SHALL BE SDR 11 OR ABOVE FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS TO BE SDR 11 UNLESS OTHERWISE SPECIFIED. PIPE AND CLASS OF FITTINGS TO BE AS SPECIFIED.
PVC TYPE 1, SCHEDULE 80 PIPE AND FITTINGS. SPECIALS GREATER THAN 3 INCHES TO BE FLANGED, AND SDR 11 ABOVE FOR BURIED SERVICE.	PVC TYPE 1, SCHEDULE 80 PIPE AND FITTINGS. SPECIALS GREATER THAN 3 INCHES TO BE FLANGED, AND SDR 11 ABOVE FOR BURIED SERVICE.
SCHEDULE 10 TYPE 316 SS FOR ABOVE GRADE PIPING, AND SDR 11 ABOVE FOR BURIED SERVICE.	SCHEDULE 10 TYPE 316 SS FOR ABOVE GRADE PIPING, AND SDR 11 ABOVE FOR BURIED SERVICE.
DUCTILE IRON PIPE, DUCTILE IRON FITTINGS AND SPECIALS; PIPING AND FITTINGS TO BE FLANGED OR MECHANICAL GROOVED JOINTS FOR INTERIOR OR GRADE SERVICE. PIPING AND FITTINGS SHALL BE SDR 11 OR ABOVE FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS TO BE SDR 11 UNLESS OTHERWISE SPECIFIED. PIPE AND CLASS OF FITTINGS TO BE AS SPECIFIED.	DUCTILE IRON PIPE, DUCTILE IRON FITTINGS AND SPECIALS; PIPING AND FITTINGS TO BE FLANGED OR MECHANICAL GROOVED JOINTS FOR INTERIOR OR GRADE SERVICE. PIPING AND FITTINGS SHALL BE SDR 11 OR ABOVE FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS FOR BURIED SERVICE. 1 PIPE, PIPE FITTINGS AND JOINTS TO BE SDR 11 UNLESS OTHERWISE SPECIFIED. PIPE AND CLASS OF FITTINGS TO BE AS SPECIFIED.
CARBON STEEL PIPE, SCH 80 PVC	CARBON STEEL PIPE, SCH 80 PVC
BLACK STEEL PIPE, COPPER TYPE K, OR HOPE.	BLACK STEEL PIPE, COPPER TYPE K, OR HOPE.
PVC-66R-35-457N-6-3034 OR DUCTILE IRON SCHEDULE 40 OR 60 WITH WELDED OR FLANGED JOINTS (UNLESS OTHERWISE SPECIFIED).	PVC-66R-35-457N-6-3034 OR DUCTILE IRON SCHEDULE 40 OR 60 WITH WELDED OR FLANGED JOINTS (UNLESS OTHERWISE SPECIFIED).
SCHEDULE 80 PVC	SCHEDULE 80 PVC

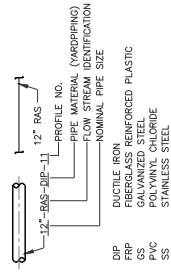
**NOTES:**  
1. NON-METALLIC PIPE SHALL BE INSTALLED WITH METALLIC TRACER WIRE AT THE PIPE CROWN ALONG ENTIRE ALIGNMENT.

**PIPE PAINT SCHEDULE**

RAW SLUDGE LINE, THICKENED SLUDGE	BROWN W/BLACK BANDS
SLUDGE RECIRCULATION SUCTION LINE	BROWN W/YELLOW BANDS
SLUDGE DRAW OFF LINE	BROWN W/ORANGE BANDS
SLUDGE RECIRCULATION DISCHARGE LINE	BROWN
BIODIGESTER (OR DIGESTER) GAS LINE	ORANGE (OR RED)
NATURAL GAS LINE	ORANGE (OR RED) W/BLACK BANDS
NONPOTABLE WATER LINE	BLUE W/BLACK BANDS
POTABLE WATER LINE, SERVICE WATER	BLUE
CHLORINE LINE	YELLOW
SULFUR DIOXIDE	YELLOW W/RED BANDS
SEWAGE (WASTEWATER) LINE	GRAY
COMPRESSED AIR LINE	GREEN
WATER LINES FOR HEATING DIGESTERS OR BUILDINGS	BLUE W/A 6-INCH RED BAND SPACED 30 INCHES
FUEL OIL/DIESEL	RED
PLUMBING DRAINS AND VENTS	BLACK
POLYMER	PURPLE
PLANT DRAIN	BLACK

**NOTES:**  
1. PIPE PAINTING SHALL BE AS SPECIFIED ABOVE AND PER THE GUIDELINES OF THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES PREPARED BY THE GREAT LAKES WATER RESEARCH BOARD AND THE ENVIRONMENTAL ENGINEERING SOCIETY OF AMERICA. THE CONTENT AND DIRECTION OF FLOW SHALL BE STENCILED ON THE PIPING IN A CONTRASTING COLOR.

**PIPE DESIGNATIONS**



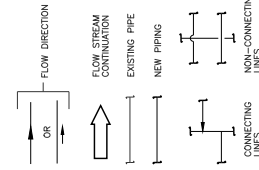
**FLOW STREAM DESIGNATIONS**

- ARP AIR, HIGH PRESSURE
- BG BIODIGESTER, DIGESTER GAS
- DSR DIGESTED SLUDGE RECIRCULATION
- FE FILTER EFFLUENT
- FLT FILTRATE
- HWR HOT WATER RETURN
- HRR HOT WATER RETURN
- NSP NON-POTABLE WATER SUPPLY
- NPW NON-POTABLE WATER, SERVICE WATER
- NATURAL GAS
- PWS POTABLE WATER SUPPLY
- PWR POTABLE WATER RETURN
- SCM SOLID WASTE WATER
- SD STORM DRAIN
- SW SERVICE WATER, NON-POTABLE WATER
- UTL UTILIZATION WATER
- WAS WASTE ACTIVATED SLUDGE

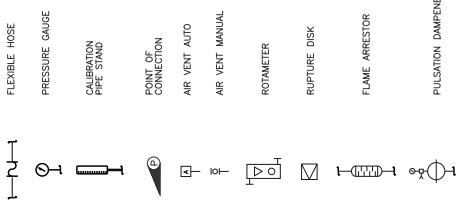
**VALVE DESIGNATION**

- BR-GDA SURVEY LETTER (FOR DISTINCTION OF SIMILAR ITEMS, IF NEEDED)
- VALVE TYPE OR FUNCTION
- ARV AIR RELEASE VALVE
- BAV BALL VALVE
- BRV BUTTERFLY VALVE
- CV CHECK VALVE
- GLV GLOBE VALVE
- GV GATE VALVE
- MOV MOTOR OPERATED VALVE
- MV MID VALVE
- PLV PLUG VALVE
- PRV PRESSURE REDUCING VALVE
- RV RELIEF VALVE
- TV TELESCOPING VALVE

**FLOW STREAM LINE SYMBOLS**



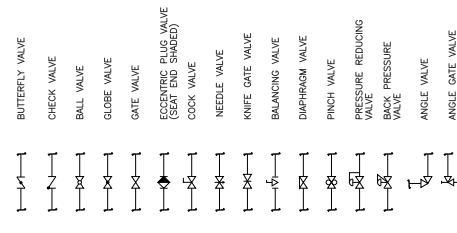
**MISCELLANEOUS SYMBOLS**



**EQUIPMENT DESIGNATION**

- AC AIR COMPRESSOR
- AG AIR GATE
- AO ADIATOR/MIXER
- BO BOILER
- BU BIODIGESTER
- CDU CENTRIFUGE DEWATERING UNIT
- EXP EXPANSION TANK
- FT FLOW THERMOCOOLER
- HEX HEAT EXCHANGER
- MC MACEGATOR
- PO POLYMER FEED SYSTEM
- SST SLUDGE STORAGE TANK
- TA TANK

**VALVE AND GATE SYMBOLS**



**PIPE AND FITTING SYMBOLS**

