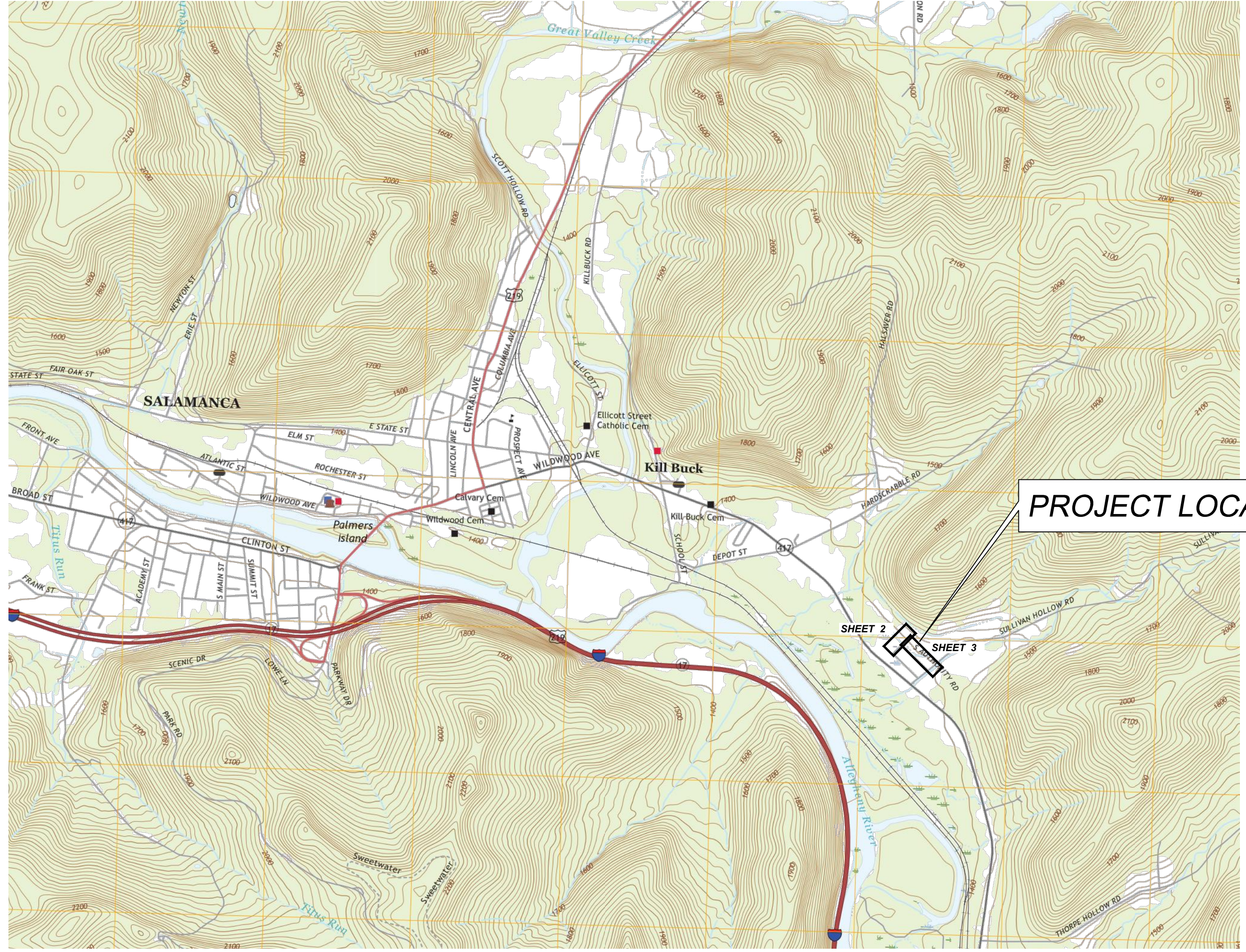


K:\PROJECT FILES\2021\2021-04-01-SNY-SULLIVAN HOLLOW WTP UPGRADES\AL DESIGN\AL DESIGN\COVER PAGE 2021\AL2R.DWG
PLOTTED: 5/2/2021 12:29 PM
RENDER IS THE MAIN THAT WAILETHY NOT IN THE CONCORD... BUT THE DELIGHTS IN THE LAVOF THE LORD.

SENECA NATION OF INDIANS SULLIVAN HOLLOW WATER TREATMENT PLANT UPGRADES

**SENECA NATION OF INDIANS
12837 ROUTE 438
IRVING, NEW YORK 14081**

LEGEND	
— BC —	BURIED CABLE
BH#	TEST BORE W/ ELEVATION
CABLE UG	UNDERGROUND CABLE MARKER
—▶—	CHECK DAM
CO	MAINLINE CLEANOUT
CONC	CONCRETE
CP	PRIMARY CONTROL POINT
DI	DRAINAGE INLET
DMH	STORM DRAINAGE MANHOLE
EM	ELECTRIC METER
EOP	EDGE OF PAVEMENT
EOR	EDGE OF UNPAVED ROAD
EOS	EDGE OF SHOULDER
EPS	EDGE OF PAVED SHOULDER
CLF	FENCE LINE - CHAIN LINK
WFL/IFL	FENCE LINE - WOOD/STEEL
GAS	GAS METER
— G —	GAS LINE
GLM	GAS LINE MARKER
GPI/POST	GUARD POSTS
—□—	GUIDE RAIL
GRD	GARDEN
—◇—	BUSH
*	SHRUB
⊙	STUMP
★	TREE CONIFEROUS
⊕	TREE DECIDUOUS
⊗	PROTECT TREE
⊗	REMOVE TREE
GV	GAS VALVE
GW	GUY WIRE
FH	HYDRANT
MB	MAIL BOX
⊗	NATIONAL GRID RISER
— OH —	OVERHEAD WIRES
SCO	SEWER CLEANOUT
— SA —	EXISTING SANITARY LINE
SAMH	SANITARY MANHOLE
SFL	STOCKADE FENCE
dd	DOUBLE SIGN
d	SIGN
MM	MILE MARKER
× 552.4	SPOT ELEVATION
⊙	LIGHT STANDARD
— ST —	STORM LINE
SW	SIDEWALK
///	SELECT FILL
TEL	TELEPHONE MANHOLE/ UG BOX
UG TEL	UNDERGRND TELEPHONE FLAG
TRANS	TRANSFORMER
⊙	TEST / POTHOLE*
— UG —	UNDERGROUND WIRES
UP	UTILITY POLE
UPL	UTILITY POLE W/ LIGHT
— UT —	UNDERGROUND TELEPHONE
---	WATER (CREEK, STREAM, POND)
— W —	WATER MAIN
□	WATER END CAP
▶	WATER REDUCER FITTING
⊕	WATER SHUT OFF
WV	WATER VALVE, EXISTING
⊕	WATER VALVE, PROPOSED
⊙	WELL
W	WETLAND
W	WETLAND DISTURBANCE



LOCATION MAP
SCALE: 1" = 2000'

PROJECT LOCATION

SNI President
Rickey L. Armstrong, Sr.

Treasurer
Matthew Pagels

Clerk
Bethany Johnson

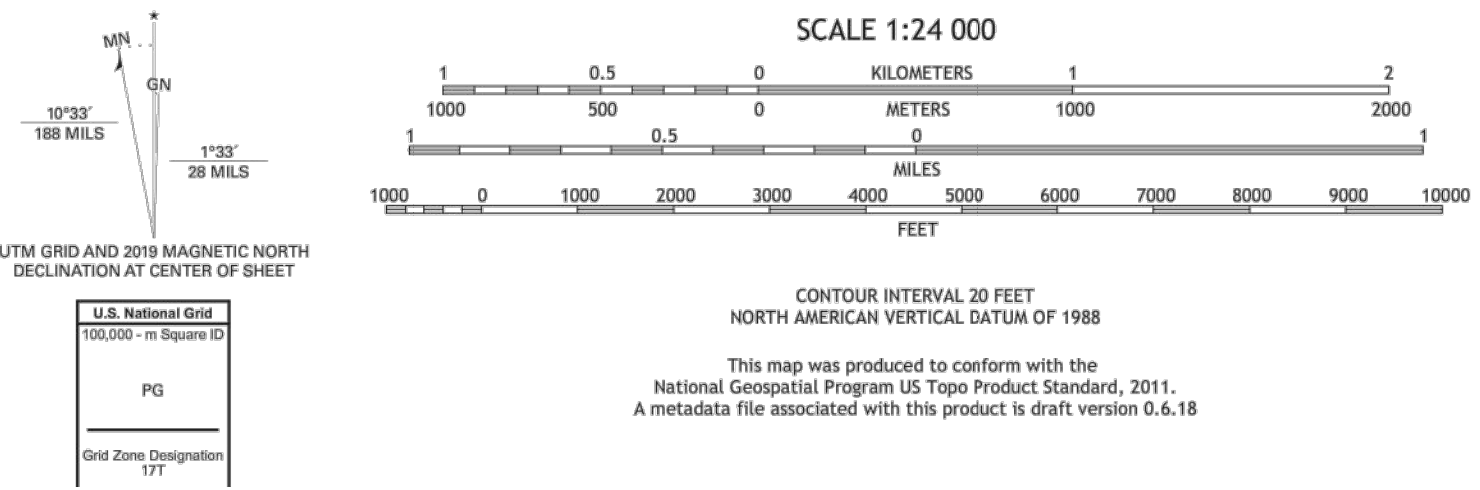
Allegany Councilors
Tina Abrams
Arlene C. Bova
Mike Williams
Al E. George
Timothy Waterman
Josh Jimerson
William Canella
Angie Kennedy

Seneca Nation Health Engineer
Joel A. Merrill, P.E.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	TANK FILL LINE
3	FIRE PROTECTION MAIN
4	TANK ACCESS ROAD
5	TANK ACCESS ROAD
6	TREATMENT PLANT SITE PLAN
7	TREATMENT PLANT FOUNDATION PLAN AND SECTIONS
8	TREATMENT PLANT ELEVATIONS
9	TREATMENT PLANT EQUIPMENT LAYOUT PLAN
10	TREATMENT PLANT ELECTRICAL PLAN
11	STANDARD CONSTRUCTION DETAILS
12	STANDARD CONSTRUCTION NOTES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid/Universal Transverse Mercator, Zone 17T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.



ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

**Dig Safely.
New York**
www.digsafelynewyork.com
Know what's below.
Call 811 before you dig.

Dig|Safely, New York
5063 Brittonfield Parkway
East Syracuse, NY 13057
Stakeout Requests: 1-800-962-7962 or 811

NO.	DATE	BY							
1									
2									
3									
4									
5									
6									
7									
8									

MDA Consulting Engineers, PLLC
office@mdaengineers.com
Phone (716) 699-4650
Fax (716) 699-4652
P.O. BOX 604
THREE BRISTOL LN.
ELLCOTTVILLE, NY 14731

DOCUMENT STATUS
DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
ISSUED BY: CDH
MDA CONSULTING ENGINEERS, PLLC

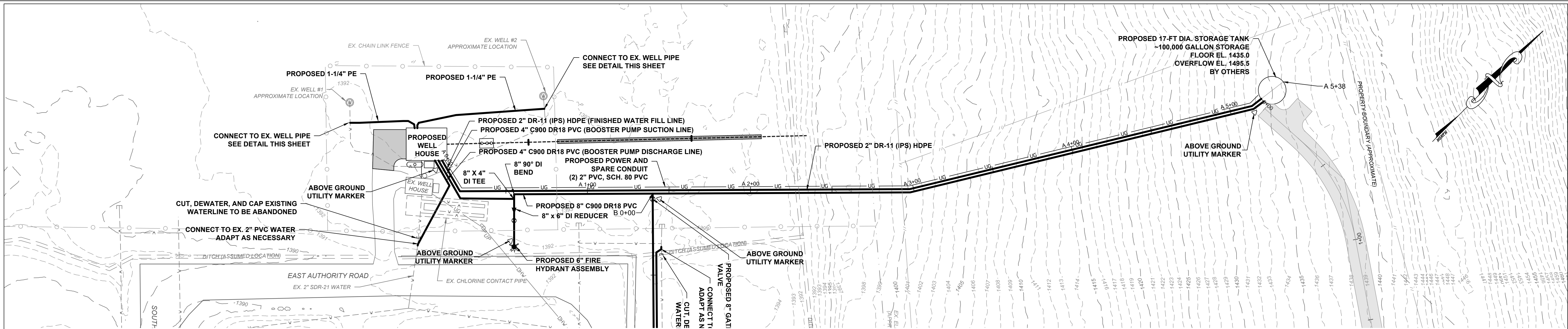
**SULLIVAN HOLLOW
WTP UPGRADES**
SENECA NATION OF INDIANS
12837 ROUTE 438
IRVING, NEW YORK 14081

COVER SHEET

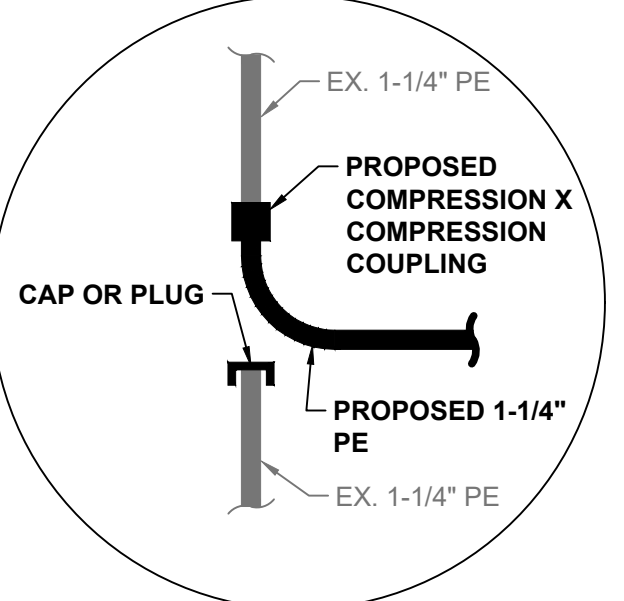
DATE	4/28/2021
SCALE	AS SHOWN
PROJECT NAME	SULLIVAN HOLLOW WTP UPGRADES
JOB NO.	20430
DRAWN BY	MNM
CHECK BY	CDH
SHEET NO.	1

OF 12

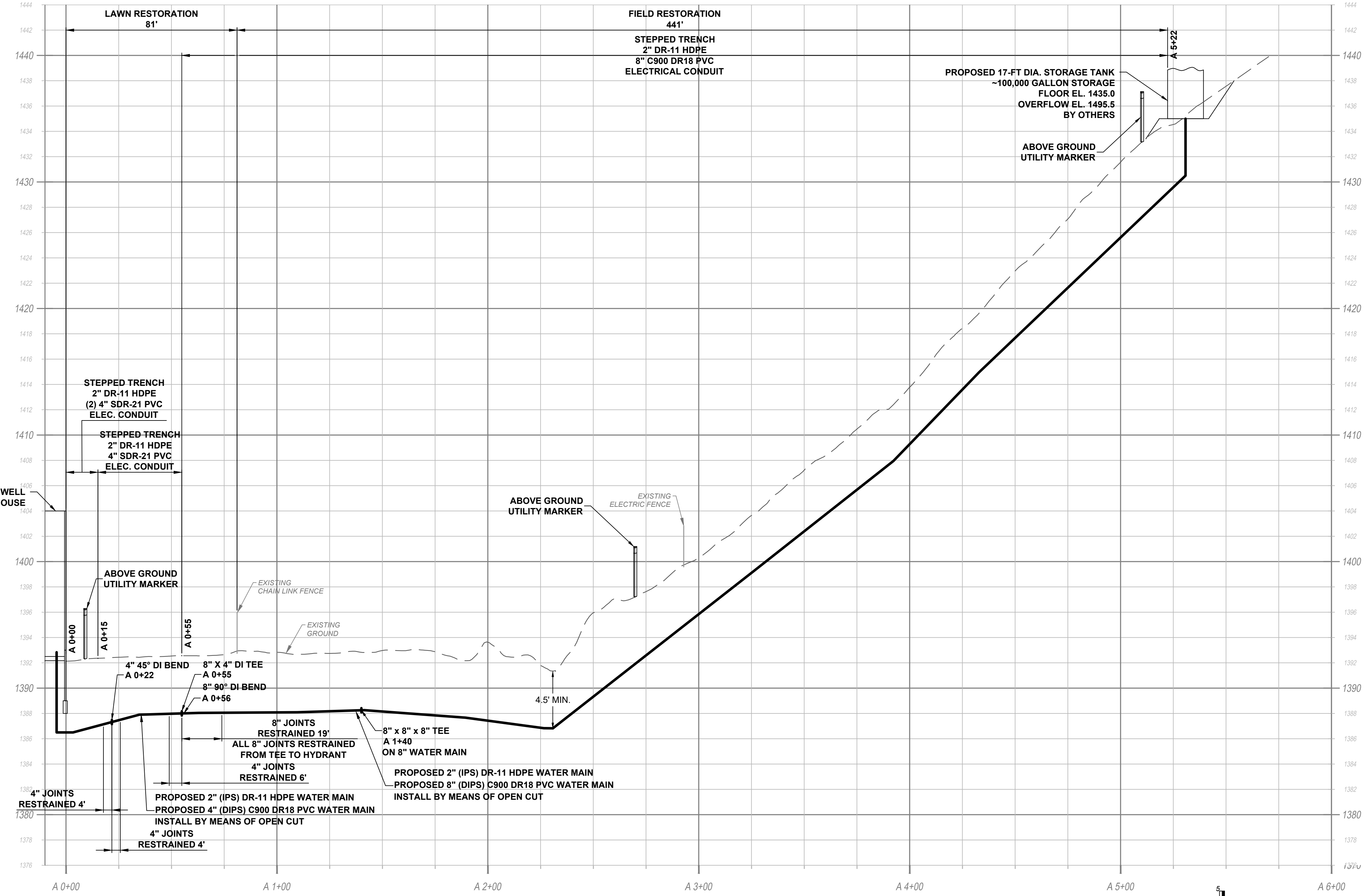
K:\PROJECT FILES\2020\20430 - SULLIVAN HOLLOW WTP UPGRADES\04 DESIGN\02 DRAWINGS\DWG\SULLIVAN HOLLOW WTP UPGRADES 2020.05.06.DWG
 PLOTTED: 5/2/2021 1:30 PM
 PLS/AS/ST RELEASED IS THE MAIN THAT VALVE/IT IS NOT IN THE CONSOLE OF THE UNDO... BUT THE DETAILED IS IN THE FAVOR OF THE OWNER.
 COPYRIGHT © MDA CONSULTING ENGINEERS, PLLC. ALL RIGHTS RESERVED. NO PORTION OF THIS DRAWING MAY BE REPRODUCED, STORED, OR TRANSMITTED BY ANY MEANS WITHOUT PRIOR WRITTEN PERMISSION OF THE ENGINEER. UNAUTHORIZED ALTERATION OR ADDITION TO THIS ENGINEERING DRAWING IS A VIOLATION OF SECTION 2209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.



PLAN - BURIED WATER
SCALE: 1" = 30'



WELL PIPE INTERCONNECTION DETAIL
N.T.S.



PROFILE
SCALE: 1" = 30' H
1" = 5' V

NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			

MDA Consulting Engineers, PLLC
 office@mdaengineers.com
 Phone (716) 699-4650
 Fax (716) 699-4657
 P.O. BOX 604
 THREE BRISTOL LN.
 ELLICOTTVILLE, NY 14751

DOCUMENT STATUS
DATE: 04/28/2021
<input type="checkbox"/> NOT FOR CONSTRUCTION
<input type="checkbox"/> PROGRESS SET
<input type="checkbox"/> PRELIMINARY
<input checked="" type="checkbox"/> FINAL
ISSUED BY: CDH
MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW
WTP UPGRADES
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081



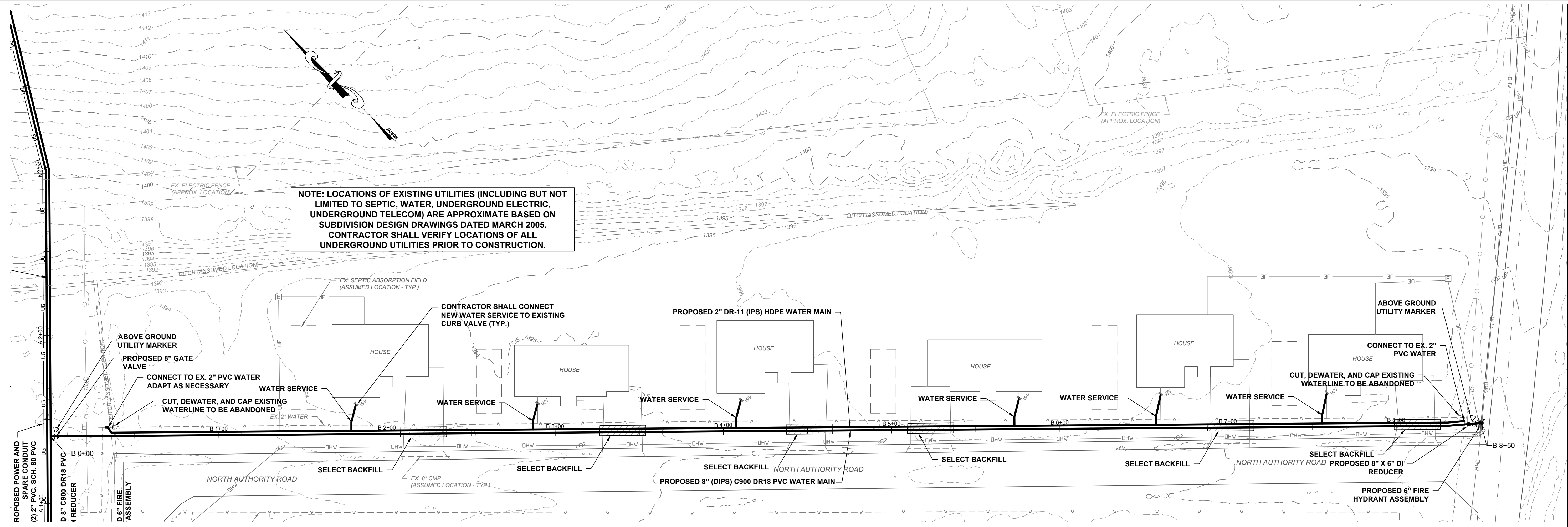
PLAN AND PROFILE
TANK FILL AND DRAIN

DATE	4/28/2021
SCALE	1" = 30'
PROJECT NAME	SULLIVAN HOLLOW WTP UPGRADES
ROW NO.	20430
DRAWN BY	MNM
CHECK BY	CDH
SHEET NO.	2

K:\PROJECT FILES\2020\20430 - SULLIVAN HOLLOW WTP UPGRADES\AL DESIGN (CD DRAWINGS)\SULLIVAN HOLLOW WATER 2020 (6) (6) DWG

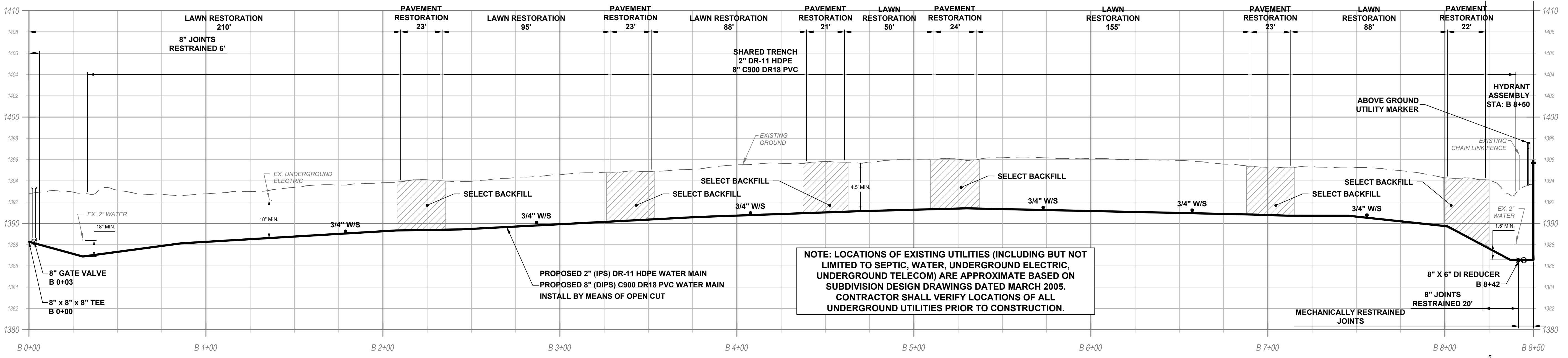
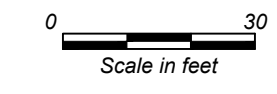
PLOTTED: 5/2/2021 1:01 PM

AS SHOWN RELEASED IS THE MAIN THAT WAIVER NOT IN THE CONCORDANCE OF THE UNCONDO... BUT THE DELIGHTS IN THE LAW OF THE LORD.



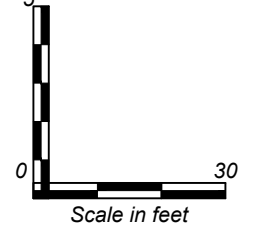
PLAN

SCALE: 1" = 30'



PROFILE

SCALE: 1" = 30' H
1" = 5' V



NO.	1	2	3	4	5	6	7
BY							
REVISION							
DATE							

MDA Consulting Engineers, PLLC
 office@mdaengineers.com
 P.O. BOX 604
 THREE BRISTOL LN.
 ELLICOTTVILLE, NY 14751
 Phone (716) 699-4650
 Fax (716) 699-4659

DOCUMENT STATUS

DATE: 04/28/2021

NOT FOR CONSTRUCTION

PROGRESS SET

PRELIMINARY

FINAL

ISSUED BY: CDH
 MDA CONSULTING ENGINEERS, PLLC

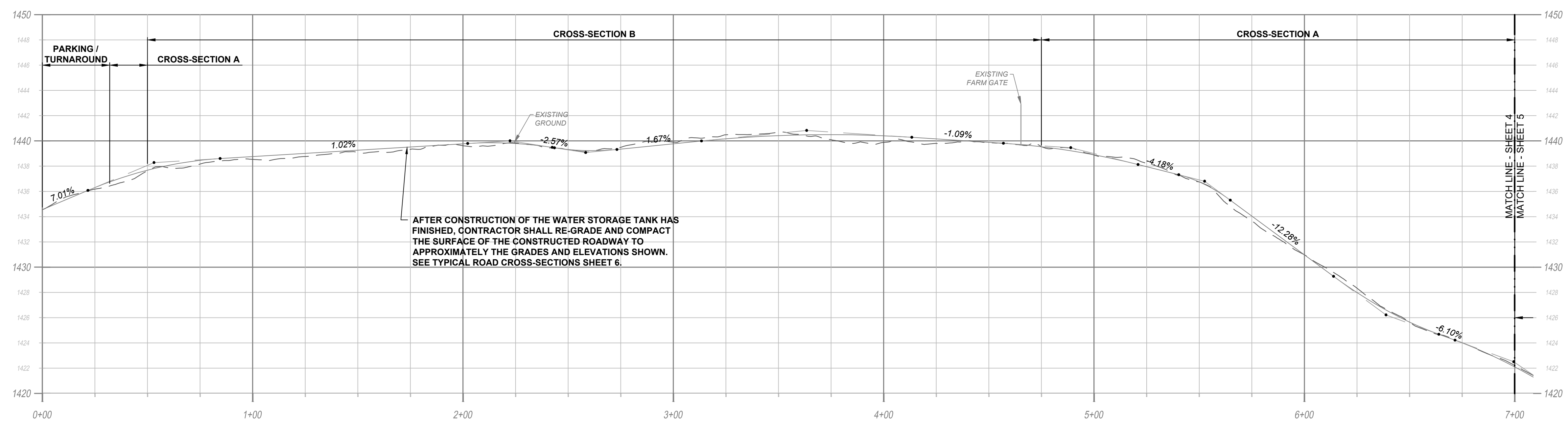
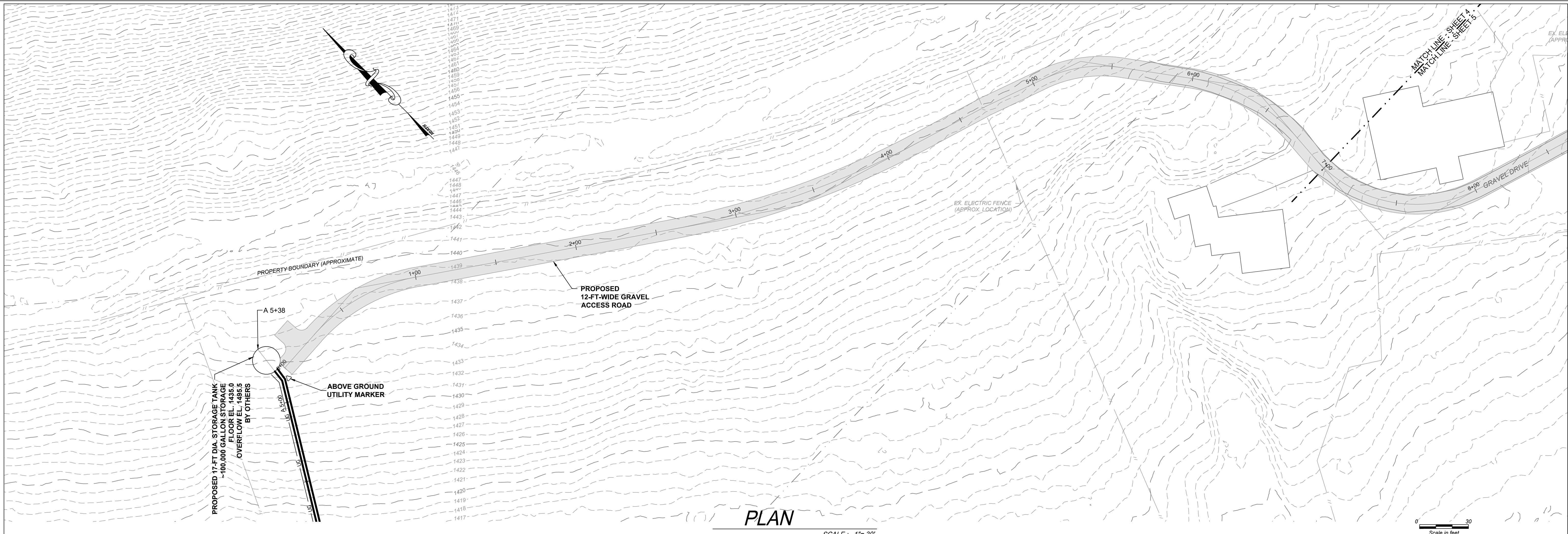
**SULLIVAN HOLLOW
 WTP UPGRADES**
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081



**PLAN AND PROFILE
 FIRE PROTECTION**

DATE: 4/28/2021
 SCALE: 1" = 30'
 PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES
 JOB NO.: 20430
 DRAWN BY: MNM
 CHECK BY: CDH
 SHEET NO.: 3

K:\PROJECT FILES\2020\20430 - SULLIVAN HOLLOW WTP UPGRADES\AL DESIGN\CD DRAWINGS\DRS\SULLIVAN HOLLOW WATER 2020\06.DWG
 PLOTTED: 5/2/2021 1:01 PM
 PLS/AS/1 REUSED IS THE MAN THAT WAILETH NOT IN THE COUNSEL OF THE UNWISDOMY... BUT HIS DELIGHTS IN THE LAWF OF THE LORD.



NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			

MDA Consulting Engineers, PLLC
 office@mdaengineers.com
 Phone (716) 699-4650
 Fax (716) 699-4657
 P.O. BOX 604
 THREE BRISTOL LN
 ELLICOTTVILLE, NY 14751

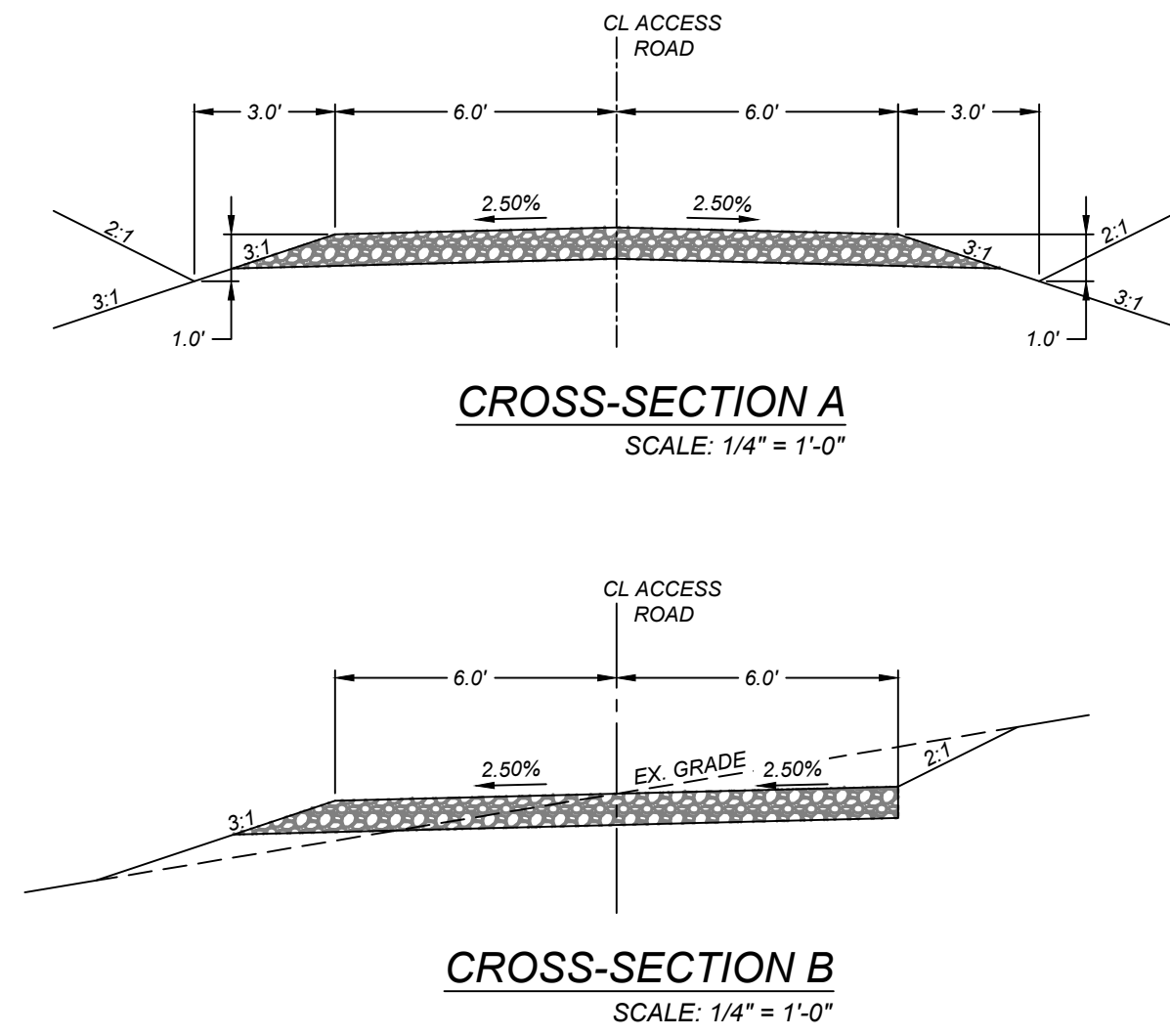
DOCUMENT STATUS
 DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
 ISSUED BY: CDH
 MDA CONSULTING ENGINEERS, PLLC

**SULLIVAN HOLLOW
 WTP UPGRADES**
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081



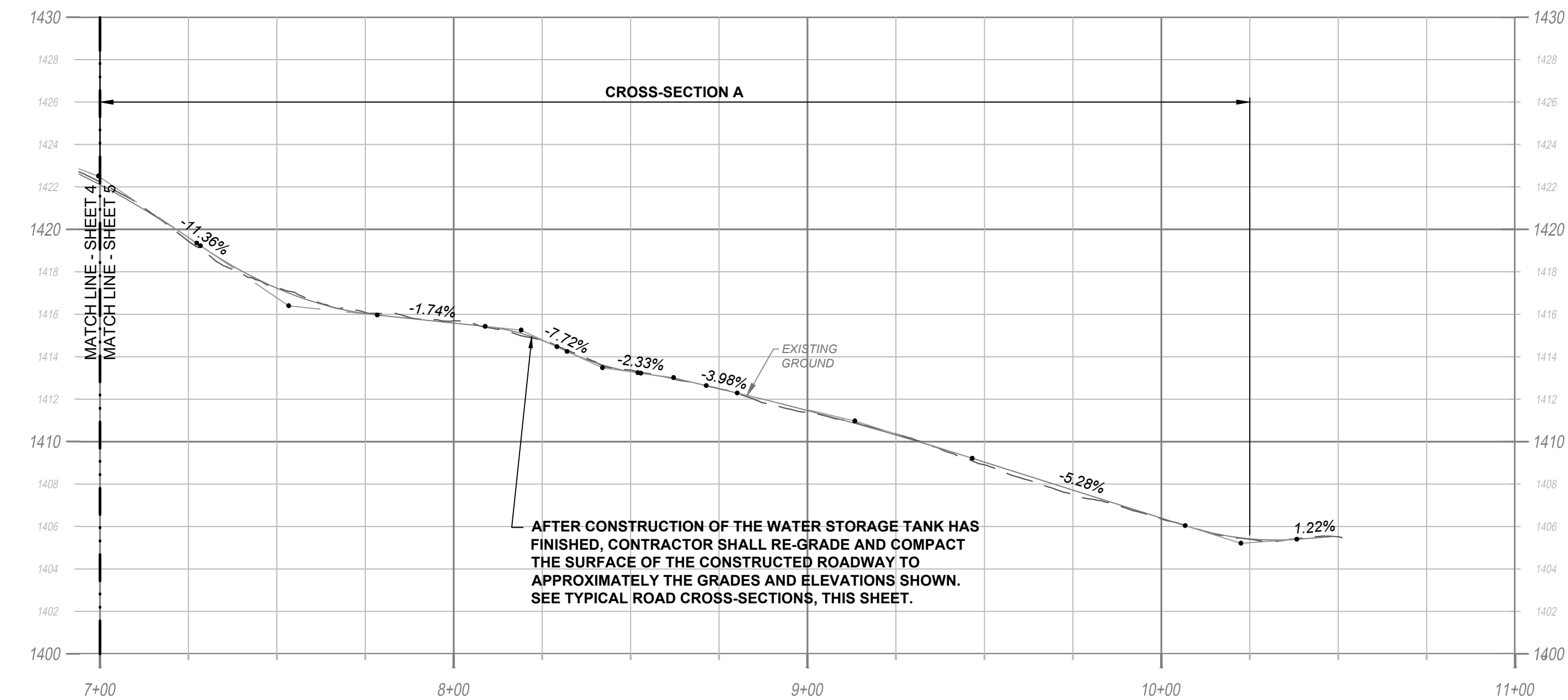
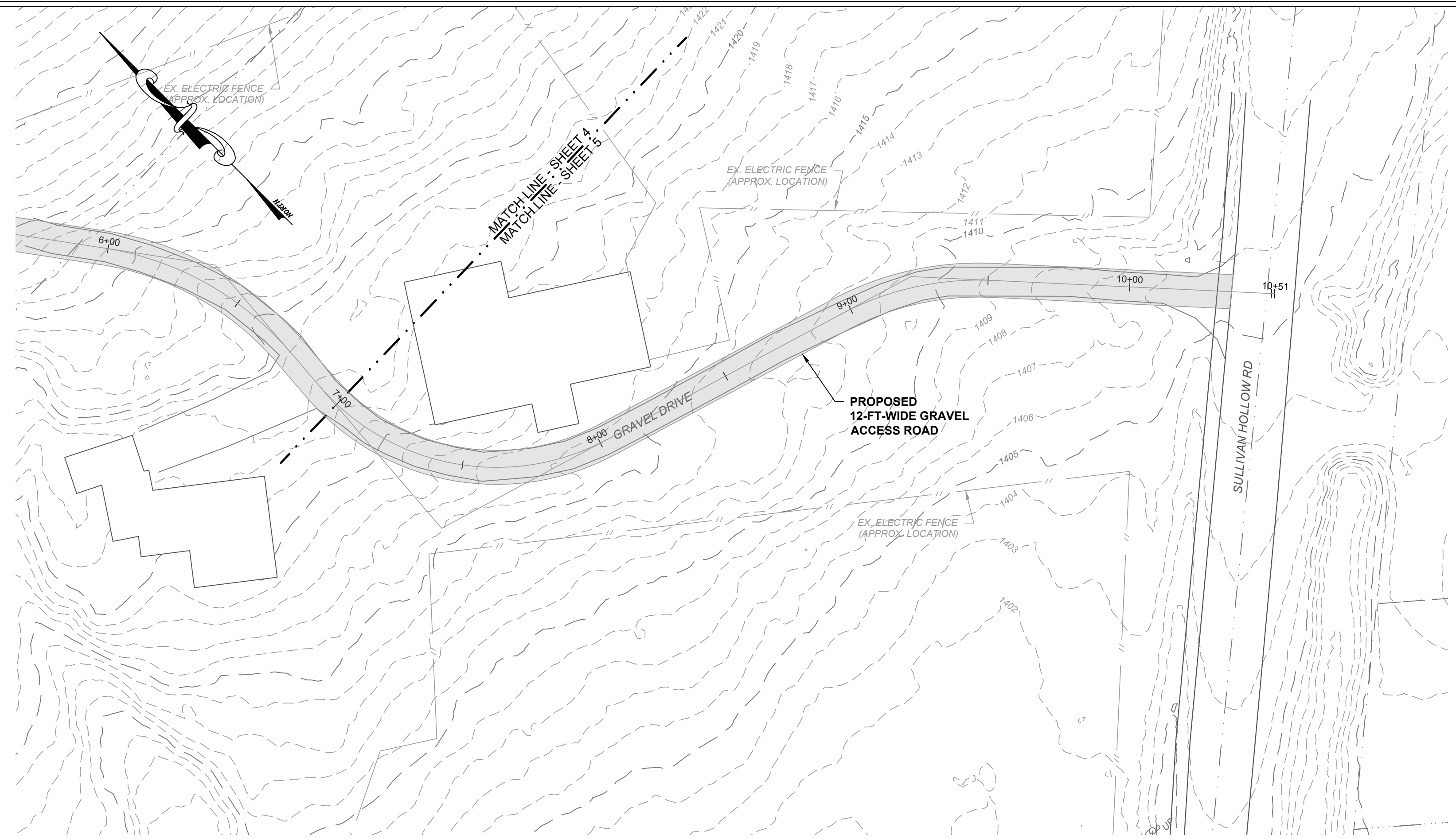
**TANK ACCESS ROAD
 PLAN AND PROFILE**

DATE: 4/28/2021
 SCALE: 1" = 30'
 PROJECT NAME:
**SULLIVAN HOLLOW
 WTP UPGRADES**
 JOB NO.: 20430
 DRAWN BY: MNM
 CHECK BY: CDH
 SHEET NO.:



TYPICAL ACCESS ROAD CROSS-SECTIONS

NOTE:
1. AFTER CONSTRUCTION OF THE WATER STORAGE TANK HAS FINISHED, CONTRACTOR RE-GRADE AND COMPACT THE SURFACE OF THE CONSTRUCTED ROADWAY. CONTRACTOR SHALL THEN TOP THE ROAD WITH A 12-FT WIDE, 6-IN THICK LAYER OF CONTRACTED SELECT BACKFILL MATERIAL CONFORMING TO NYS DOT 304-2.02 (SEE NOTE 2, SHEET 12).



AFTER CONSTRUCTION OF THE WATER STORAGE TANK HAS FINISHED, CONTRACTOR SHALL RE-GRADE AND COMPACT THE SURFACE OF THE CONSTRUCTED ROADWAY TO APPROXIMATELY THE GRADES AND ELEVATIONS SHOWN. SEE TYPICAL ROAD CROSS-SECTIONS, THIS SHEET.

NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			

MDA Consulting Engineers, PLLC
office@mdaengineers.com
Phone (716) 699-4650
Fax (716) 699-4657
P.O. BOX 604
THREE BRISTOL LN
ELLICOTTVILLE, NY 14751

DOCUMENT STATUS
DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
ISSUED BY: CDH
MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW WTP UPGRADES
SENECA NATION OF INDIANS
12837 ROUTE 438
IRVING, NEW YORK 14081



TANK ACCESS ROAD PLAN AND PROFILE

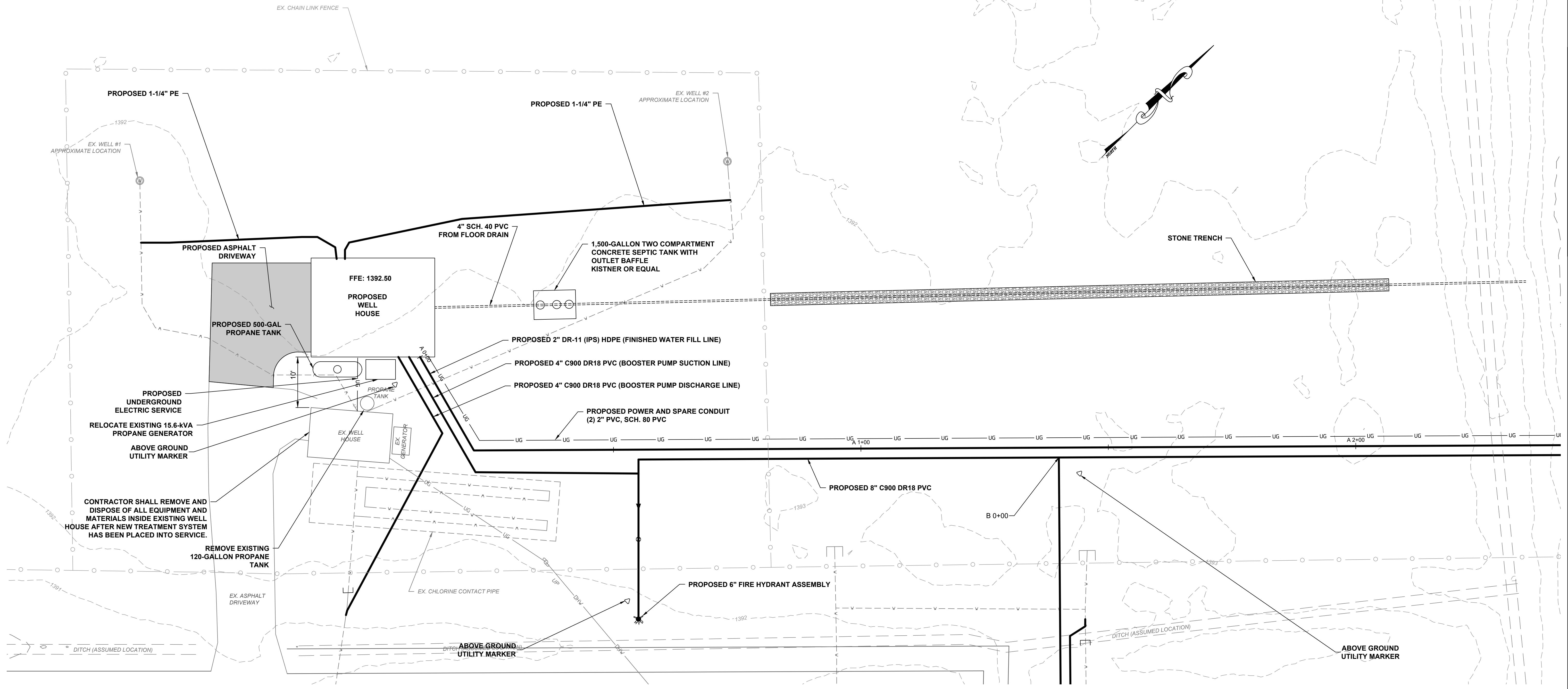
DATE: 4/28/2021
SCALE: 1" = 30'
PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES
JOB NO.: 20430
DRAWN BY: MNM
CHECK BY: CDH
SHEET NO.:

K:\PROJECT FILES\2020\20430-SULLIVAN HOLLOW WTP UPGRADES\PLANS\WELL HOUSE\WELL HOUSE SITE PLAN.DWG

PLOTTED: 5/2/2021 1:31 PM

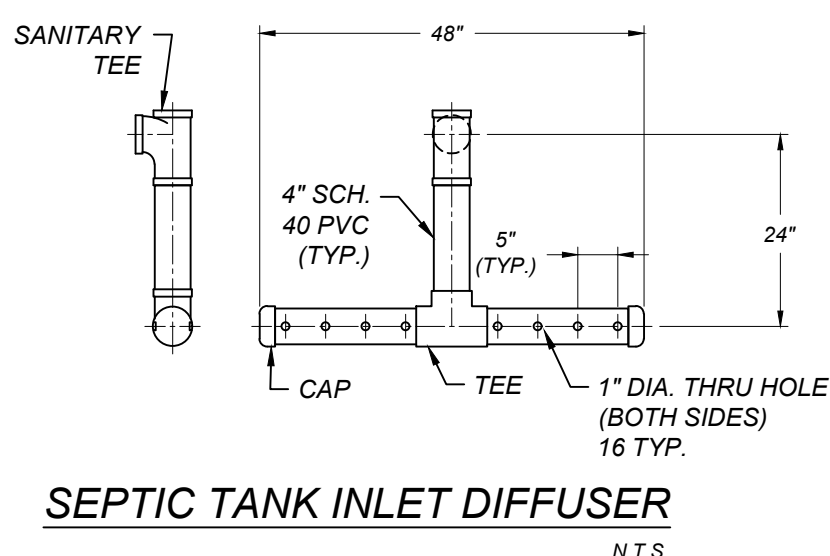
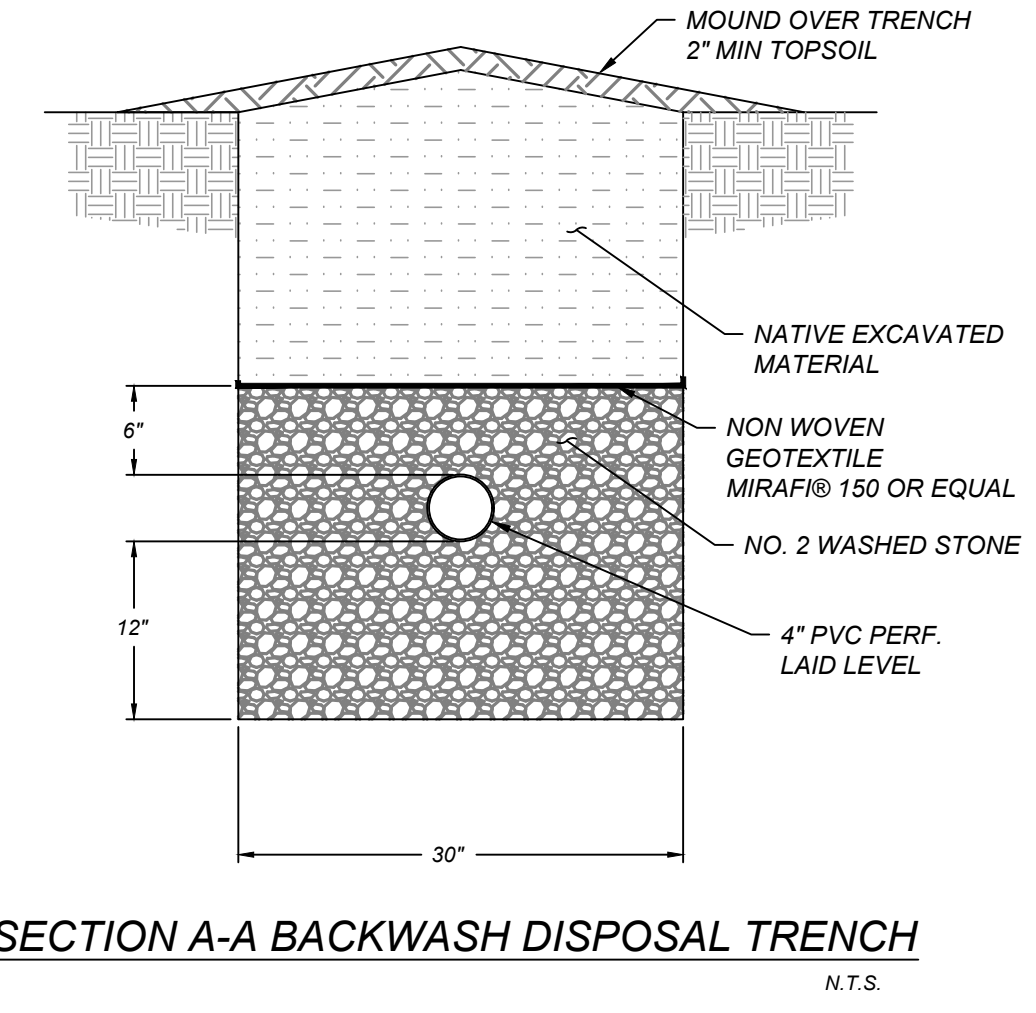
PLEASED IS THE MAIN THAT WAILETTI NOT IN THE CONSOLE OF THE UNDOKEY... BUT THE DELIGHTS IN THE LAWFOR THE LORD.

PSCALE1

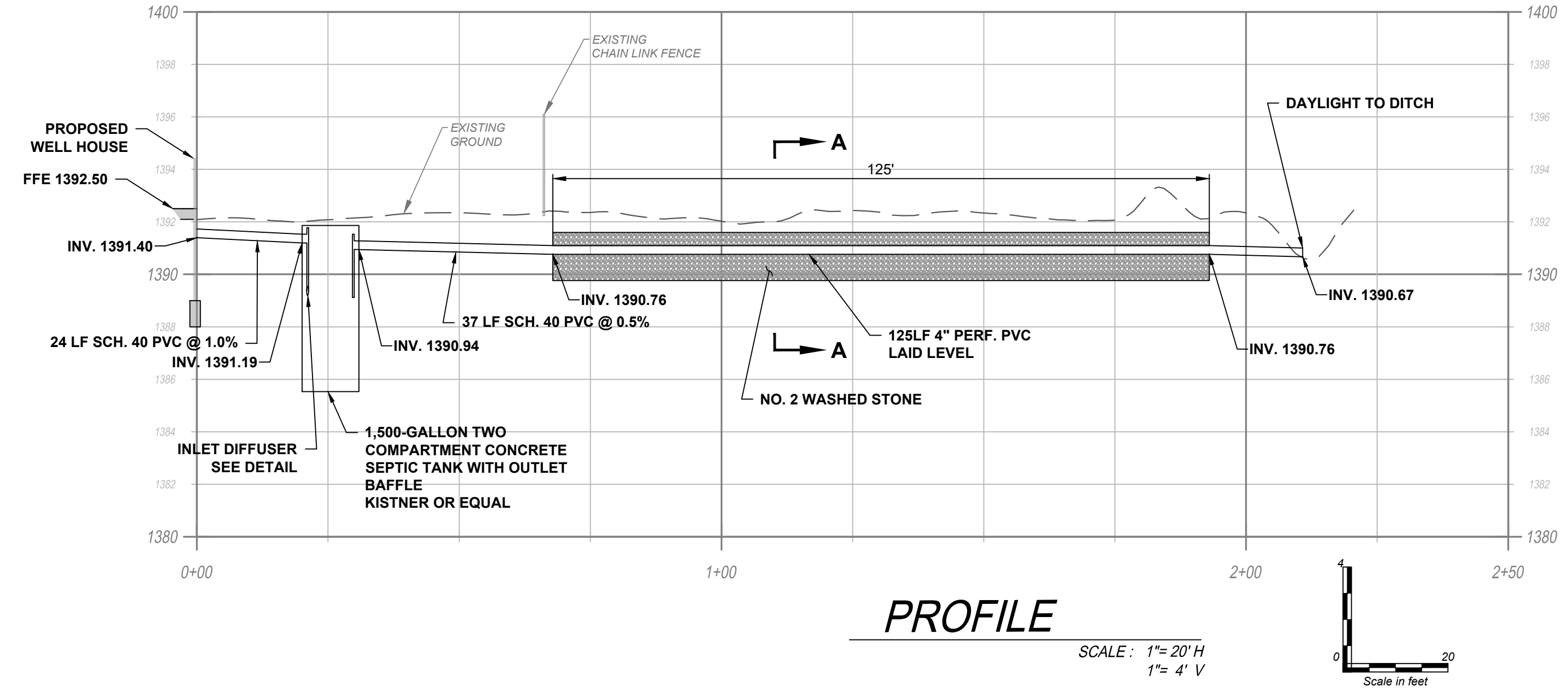


WELL HOUSE SITE PLAN
SCALE: 1"= 10'

- BACKWASH DISPOSAL DESIGN NOTES**
1. STORAGE VOLUME WITHIN PORE SPACE OF STONE TRENCH (ASSUME 40% VOID SPACE) IS APPROXIMATELY 313 CUBIC FEET BELOW INVERT OF PIPE.
 2. ASSUMED BACKWASH VOLUME IS 300 GALLONS (40 CU. FT.).
 3. ASSUMED BACKWASH FREQUENCY IS 9 DAYS.
 4. MAPPED PERCOLATION RATE OF SOILS IS 0.20 IN/HR TO 0.57 IN/HR. ASSUMED PERCOLATION RATE IS 0.2 IN/HR.
 5. CALCULATED ABSORPTIVE CAPACITY OF DISPOSAL TRENCH IS 5.2 CU. FT./HR THROUGH TRENCH BOTTOM.



- NOTES:**
1. SEPTIC TANK INLET DIFFUSER SHALL BE CONSTRUCTED OF 4" SCH. 40 PVC PIPE WITH SOLVENT WELDED FITTINGS.
 2. INLET DIFFUSER SHALL BE ADAPTED TO INLET OF SEPTIC TANK.



NO.	1	2	3	4	5	6	7	8
DATE								
BY								
REVISION								

MDA Consulting Engineers, PLLC
office@mdaengineers.com
Phone (716)699-4650
Fax (716)699-4657
P.O. BOX 604
THREE BRISTOL LN
ELLCOTTVILLE, NY 14751

DOCUMENT STATUS
DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
ISSUED BY: CDH
MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW WTP UPGRADES
SENECA NATION OF INDIANS
12837 ROUTE 438
IRVING, NEW YORK 14081

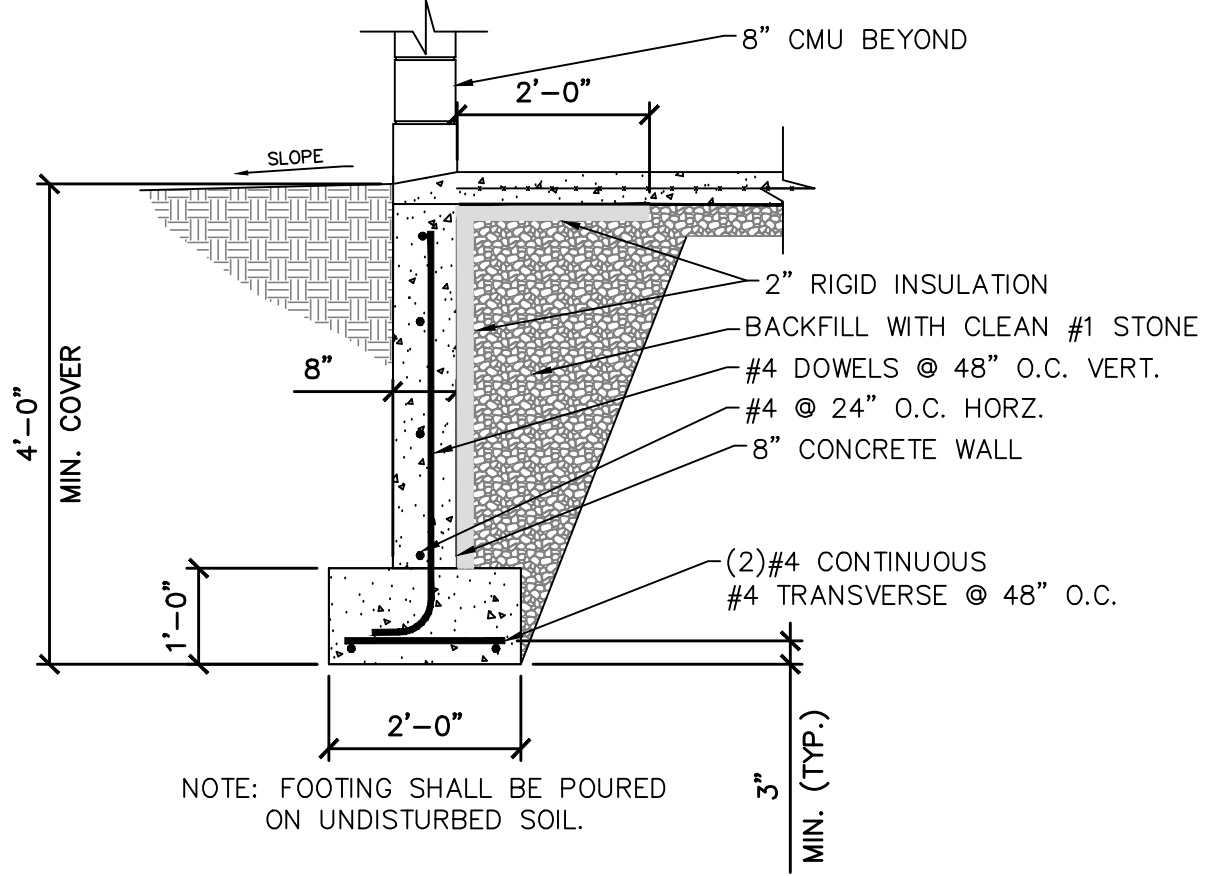
STATE OF NEW YORK
SEAL OF NEW YORK
CDH
056931
PROFESSIONAL ENGINEER

WELL HOUSE SITE PLAN

DATE: 4/28/2021
SCALE: 1"= 10'
PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES
JOB NO.: 20430
DRAWN BY: MNM
CHECK BY: CDH
SHEET NO.: 6

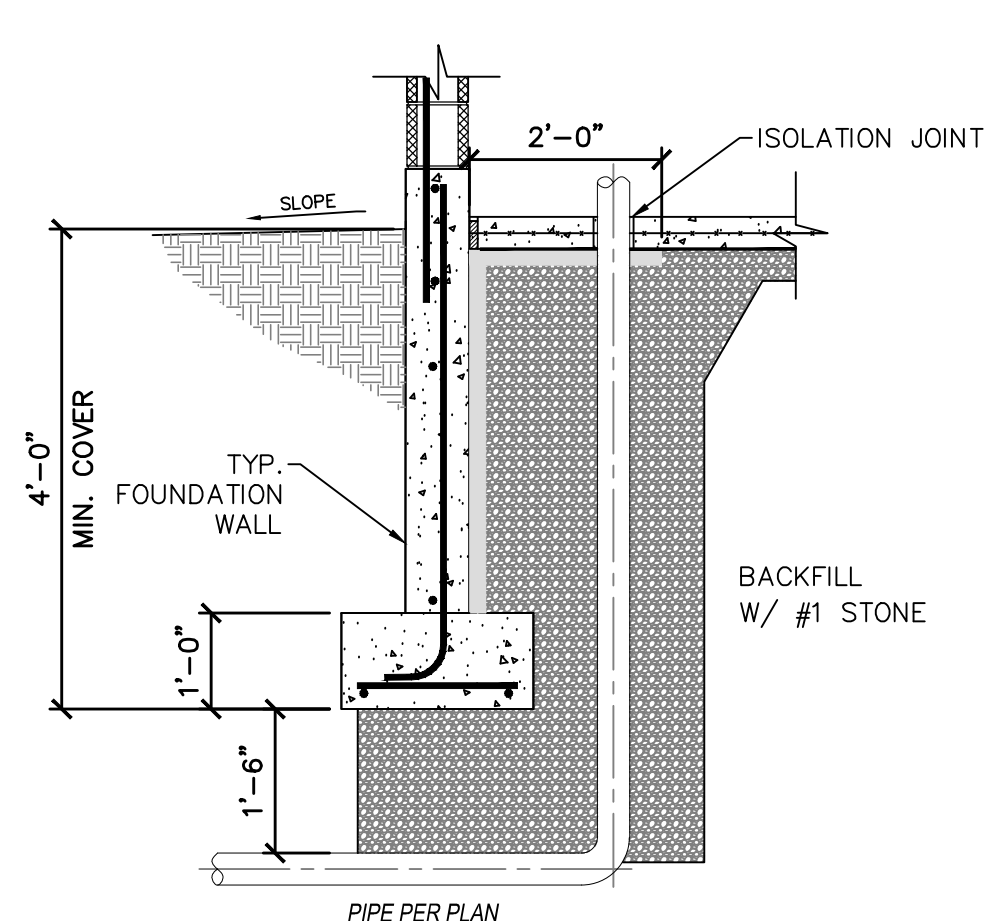
OF 12

K:\PROJECT FILES\2021\2400 - SULLIVAN HOLLOW WTP UPGRADES\DRAWINGS\2021\WTP BUILDING\2021\010.DWG
 PLOTTED: 5/2/2021 10:17 AM
 ISSUED IS THE MAIN THAT WAILETHAND NOT IN THE CONSOLE OF THE UNDOKEY... BUT HIS DELIGHTS IN THE LAVOR OF THE LORD.
 25/04/21



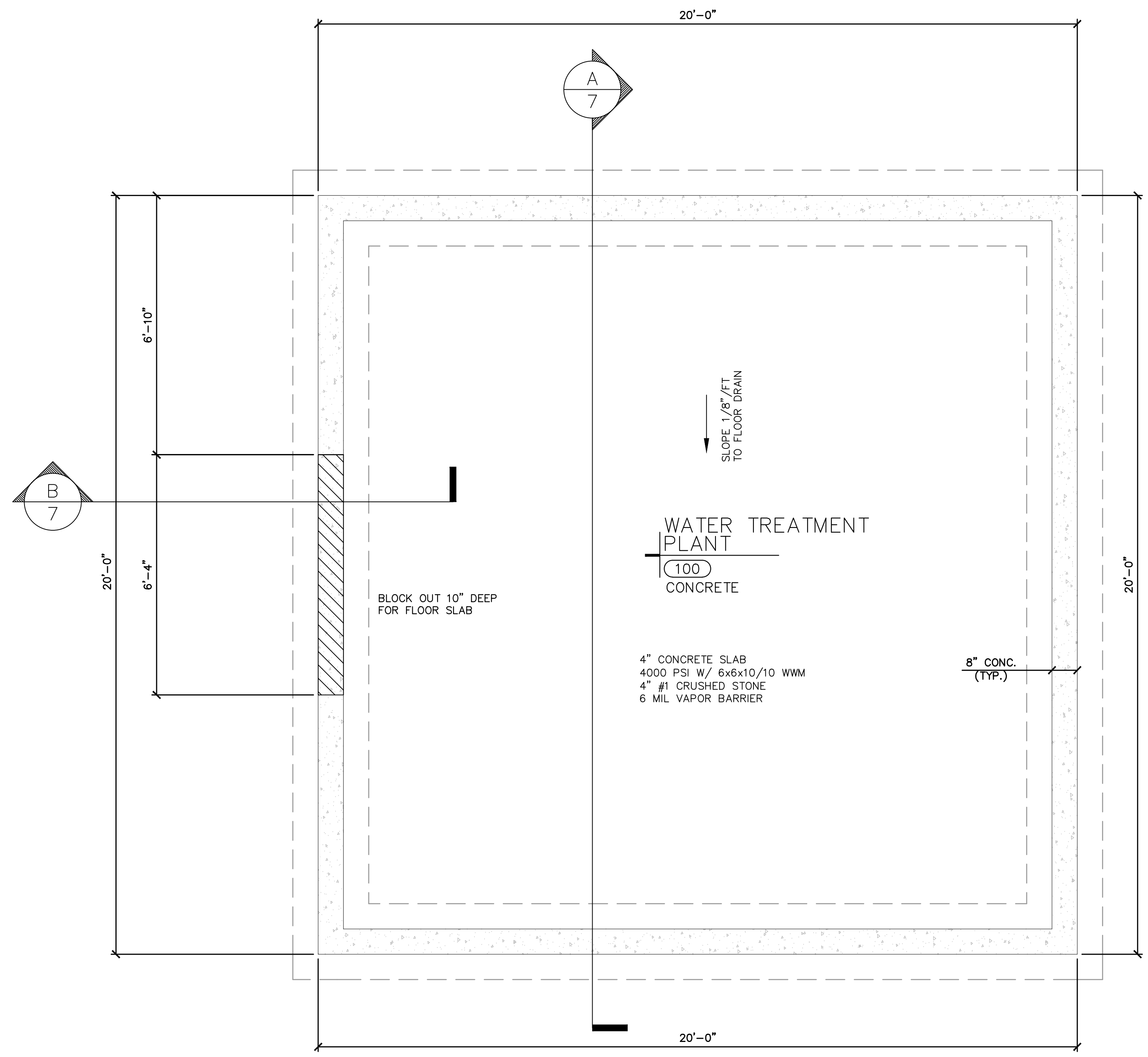
PROPOSED CROSS SECTION B @ DOOR

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



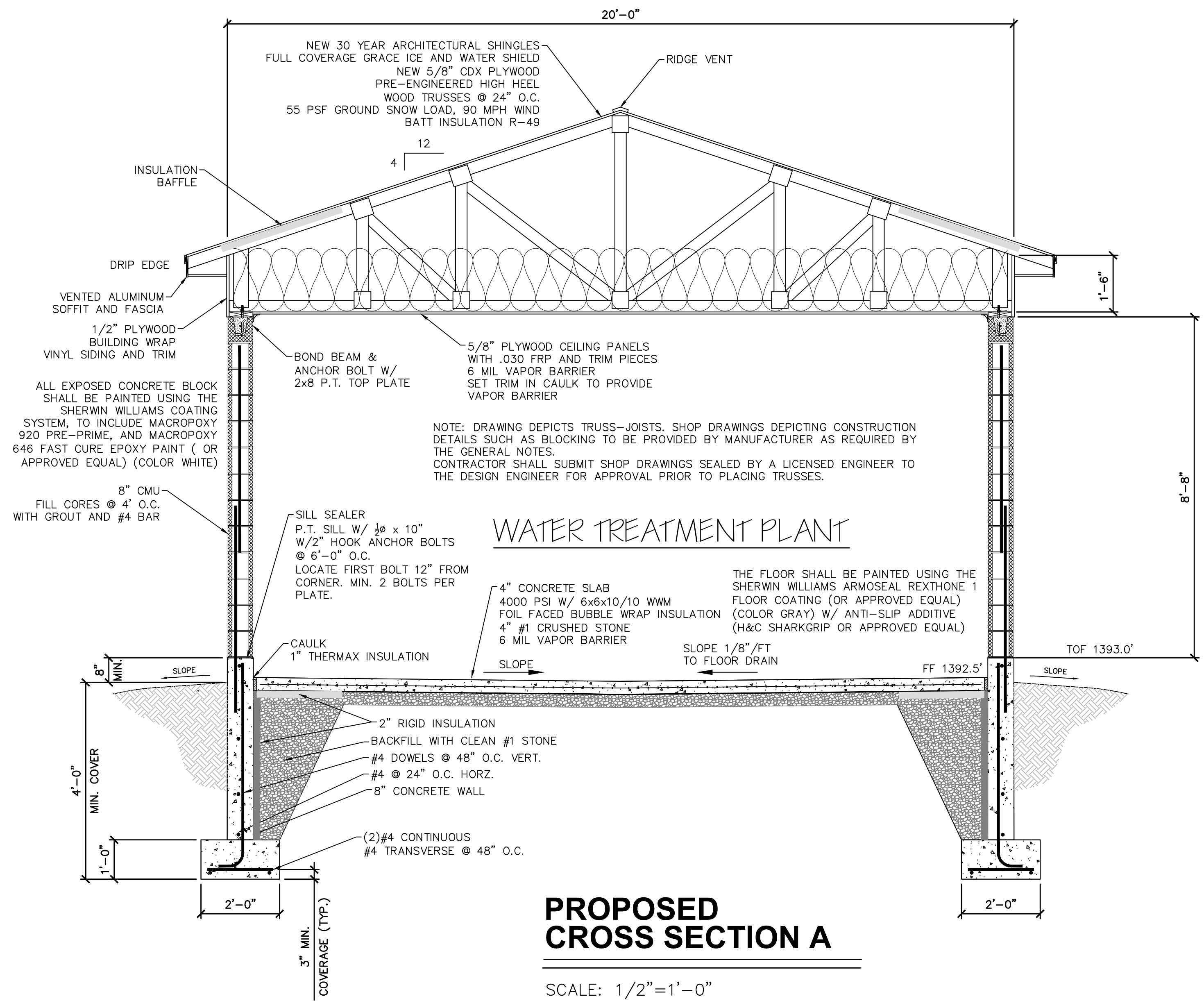
TYPICAL PIPE PENETRATION DETAIL

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



PROPOSED FOUNDATION PLAN

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



PROPOSED CROSS SECTION A

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

NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			

MDA Consulting Engineers, PLLC
 office@mdayce.com
 Phone (716) 699-1650
 Fax (716) 699-1650
 P.O. BOX 604
 THREE BIRCHES LN.
 ELLICOTTVILLE, NY 14731

DOCUMENT STATUS

DATE: 04/28/2021

NOT FOR CONSTRUCTION

PROGRESS SET

PRELIMINARY

FINAL

ISSUED BY: CDH

MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW WTP UPGRADES
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081



FOUNDATION PLAN AND SECTIONS

DATE: 4/28/2021

SCALE: 1/2" = 1'

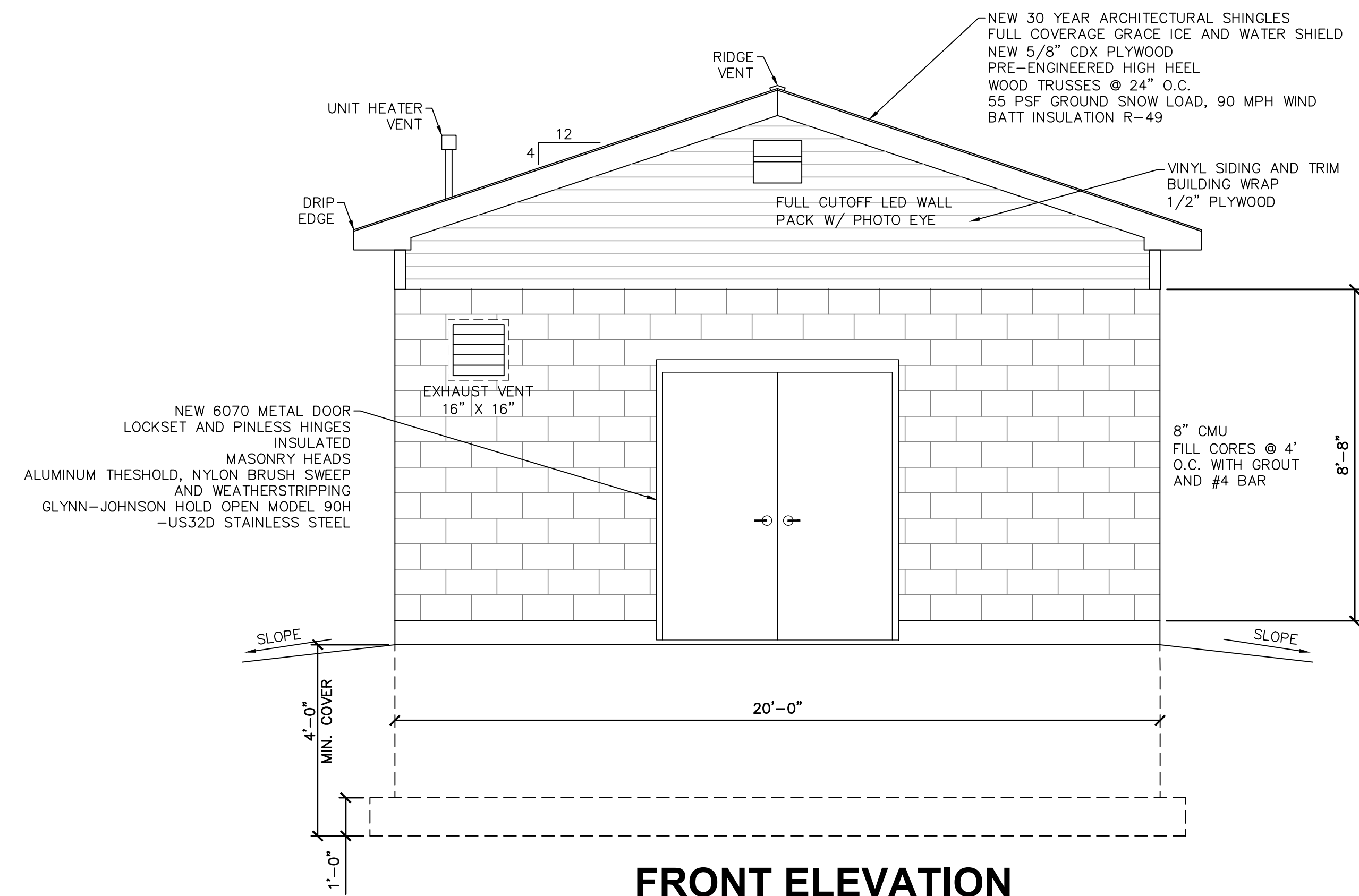
PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES

JOB NO: 20430

DRAWN BY: MNM

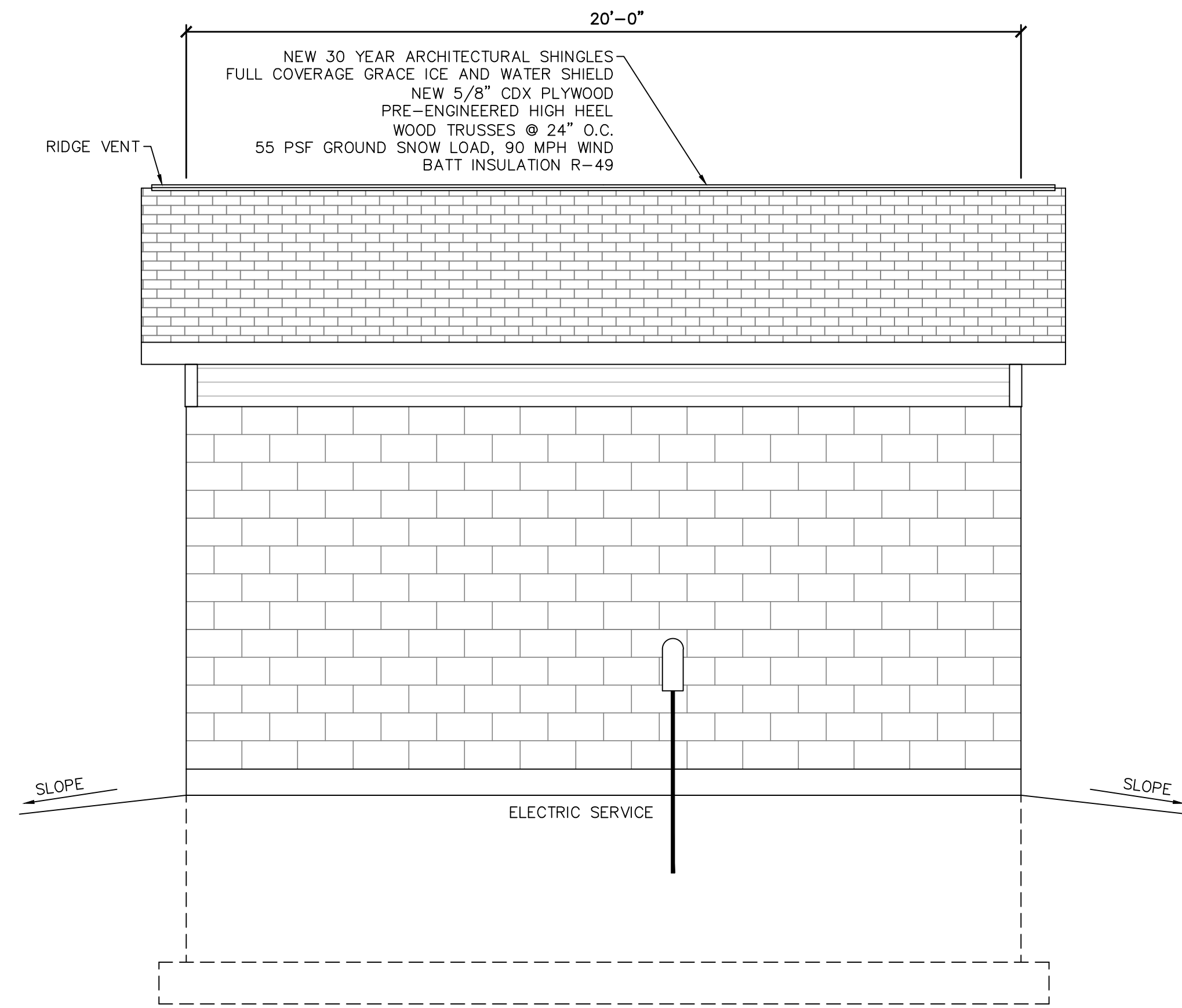
CHECK BY: CDH

SHEET NO: 7



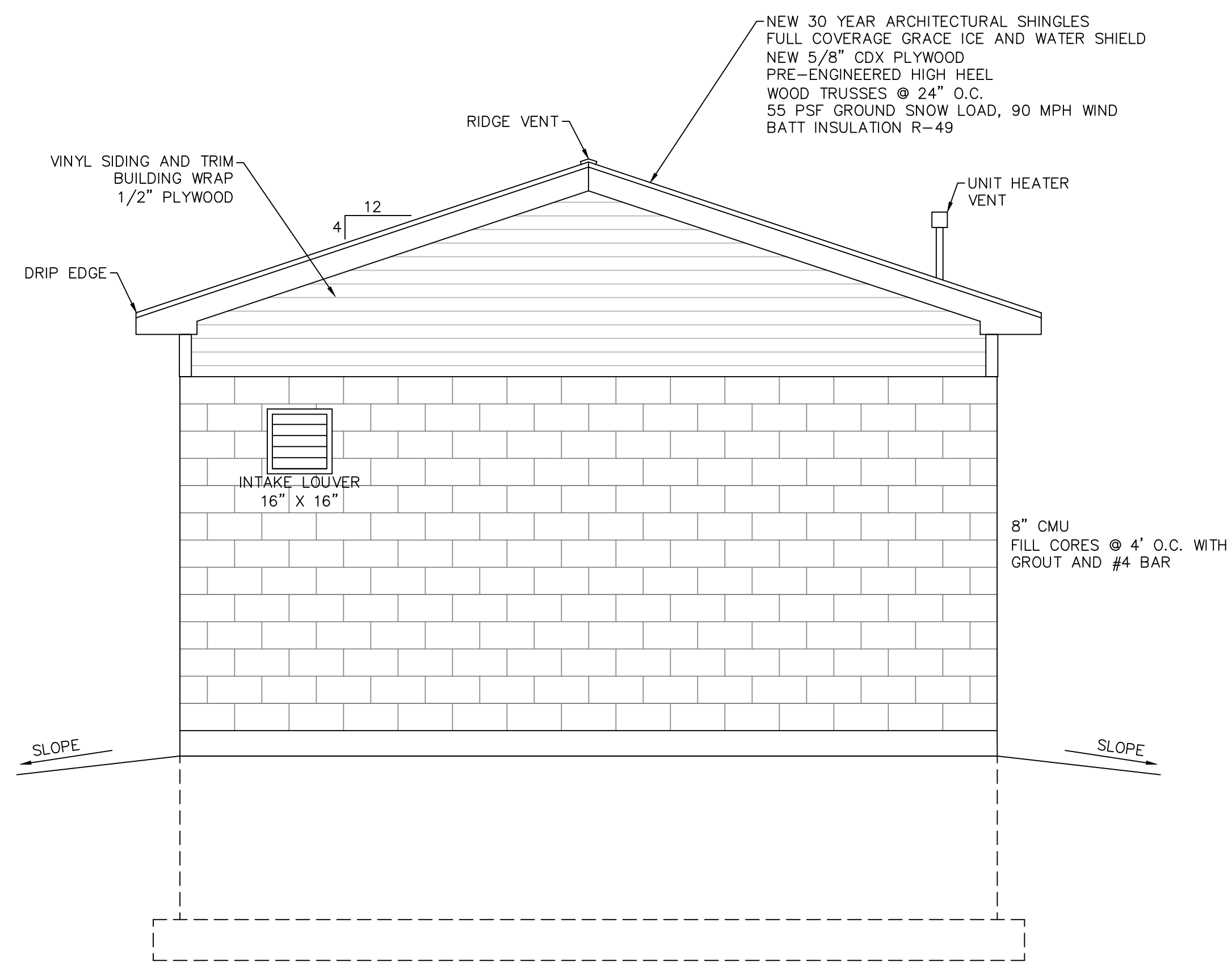
FRONT ELEVATION

SCALE: 3/8"=1'-0"



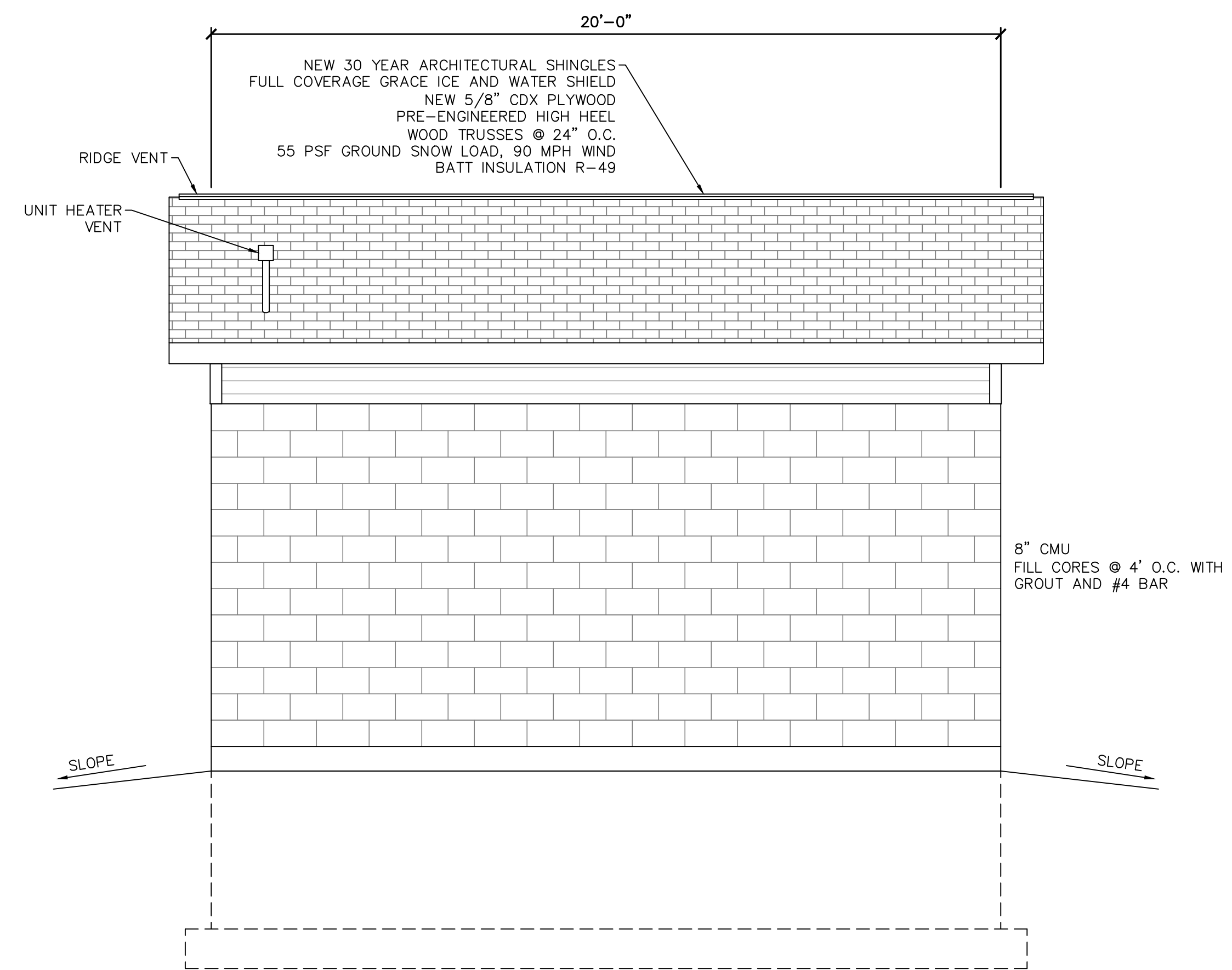
RIGHT ELEVATION

SCALE: 3/8"=1'-0"



RIGHT ELEVATION

SCALE: 3/8"=1'-0"



LEFT ELEVATION

SCALE: 3/8"=1'-0"

NO.	DATE	BY	REVISION
1			
2			
3			
4			
5			
6			
7			
8			

MDA Consulting Engineers, PLLC
 office@mdayce.com
 Phone (716)699-1650
 Fax (716)699-1650
 P.O. BOX 604
 THREE BRISTOL LN.
 ELLICOTTVILLE, NY 14731

DOCUMENT STATUS
 DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
 ISSUED BY: CDH
 MDA CONSULTING ENGINEERS, PLLC

**SULLIVAN HOLLOW
WTP UPGRADES**
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081



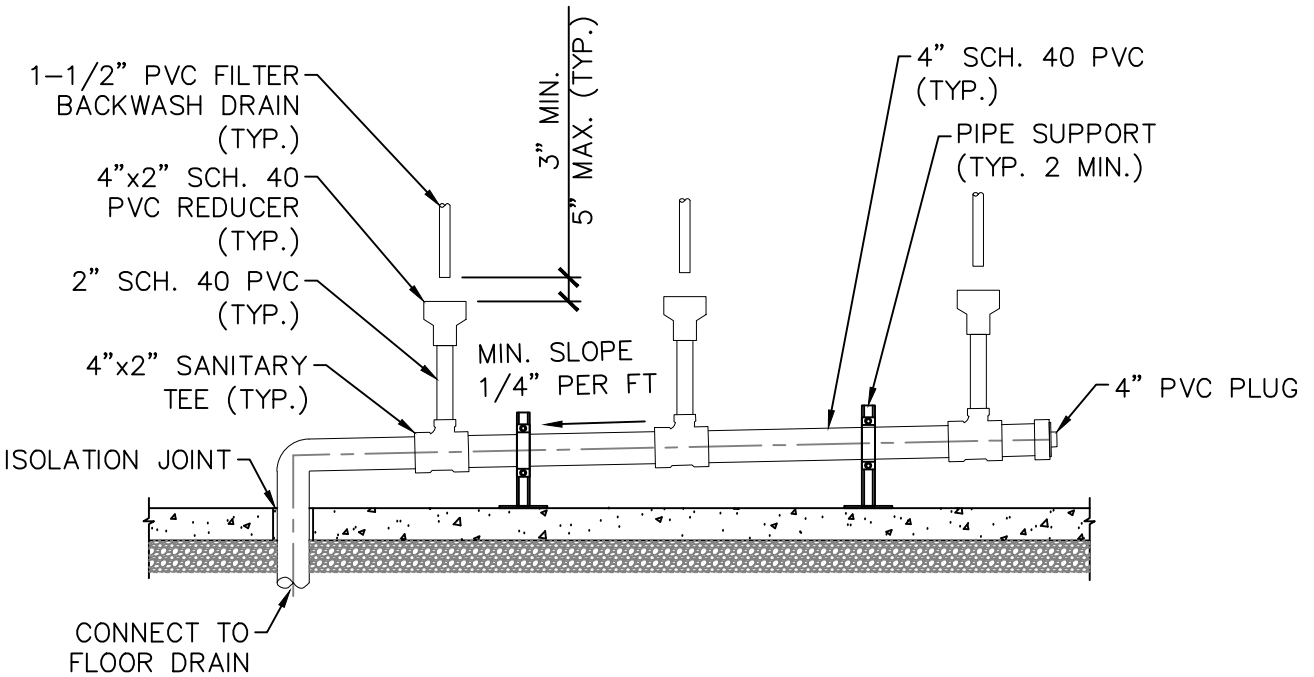
**TREATMENT PLANT
ELEVATIONS**

DATE	4/28/2021
SCALE	3/8" = 1'
PROJECT NAME	SULLIVAN HOLLOW WTP UPGRADES
JOB NO.	20430
DRAWN BY	MNM
CHECK BY	CDH
SHEET NO.	8

AS LARS 1 REVISIONS TO THE MAIN THAT WALTERED NOT IN THE CONSOLE OF THE UNCLONED... BUT THE DELIGHTS IN THE LAYOFF OF THE LORD.

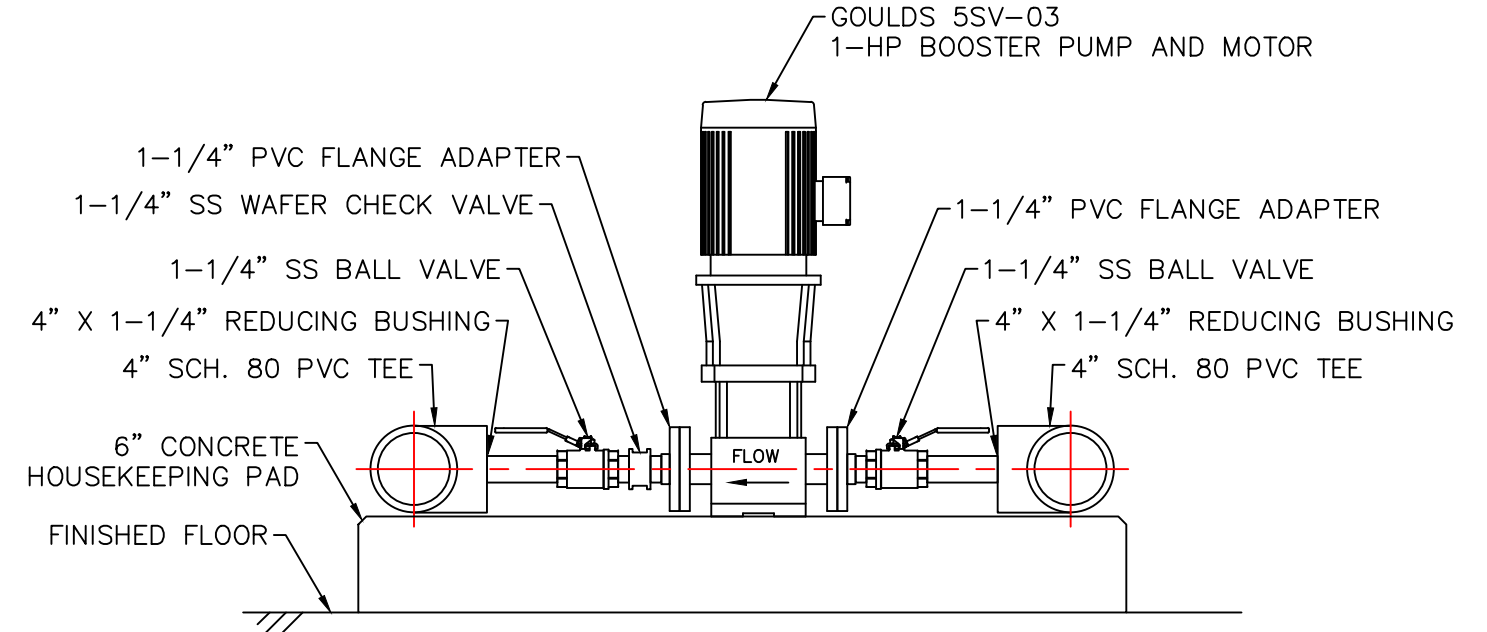
PLOTTED: 5/2/2021 10:31 PM

AS LARS 1 REVISIONS TO THE MAIN THAT WALTERED NOT IN THE CONSOLE OF THE UNCLONED... BUT THE DELIGHTS IN THE LAYOFF OF THE LORD.



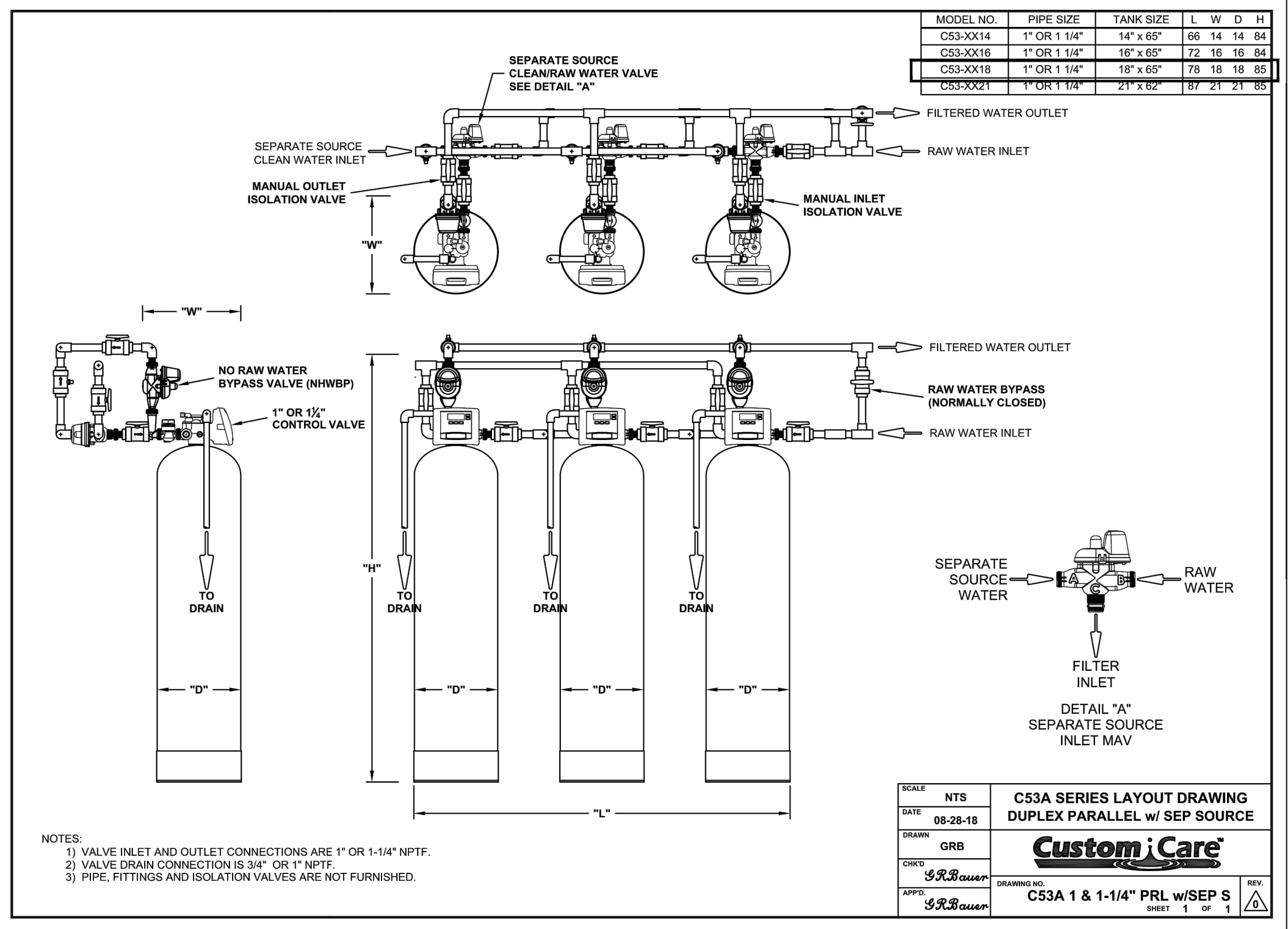
FILTER BACKWASH DRAIN HEADER

SCALE: N.T.S.



TYPICAL BOOSTER PUMP DETAIL

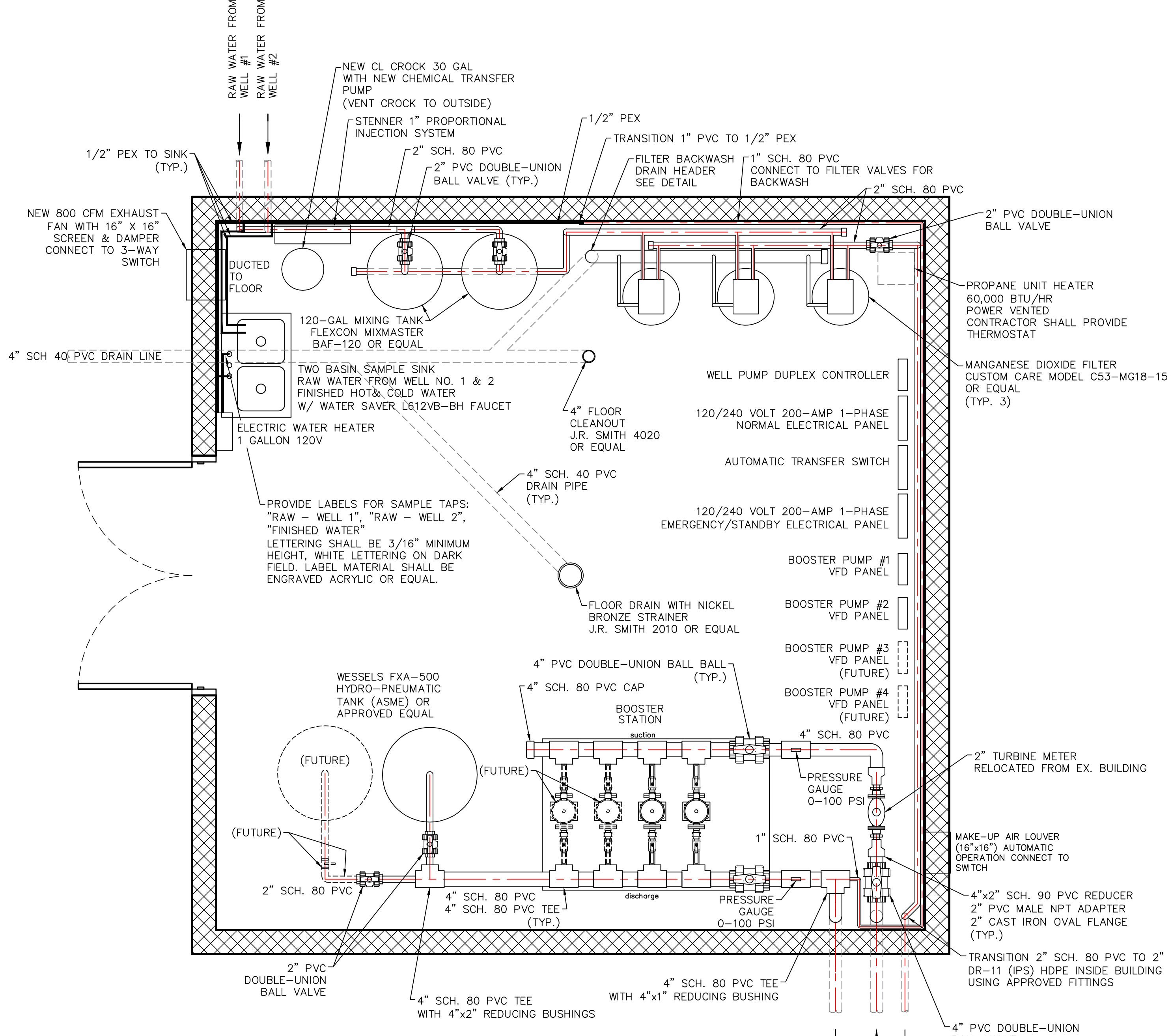
SCALE: 1"=1'-0"



SCALE: N.T.S.
DATE: 08-28-18
DRAWN: GRB
CHECKED: JRS
APPROVED: JRS

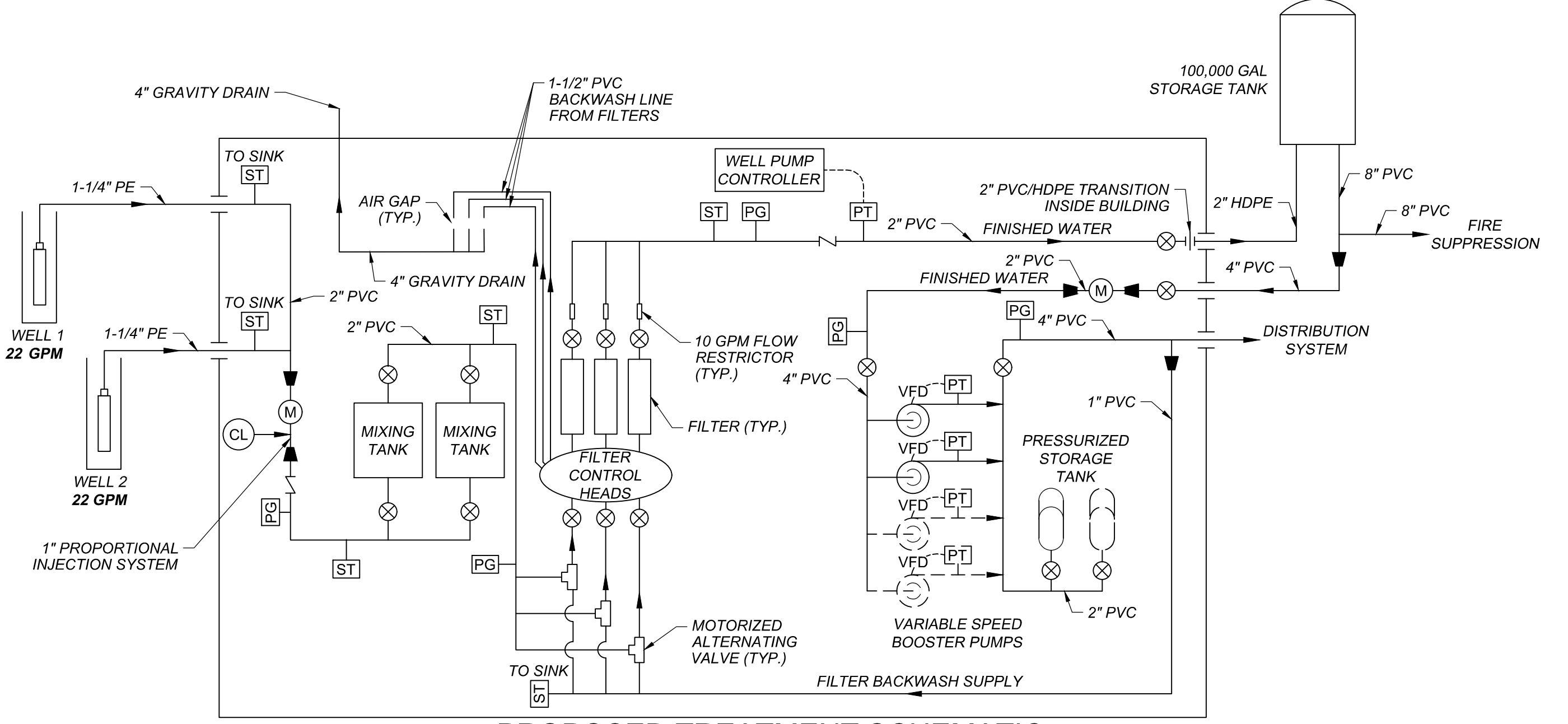
CS3A SERIES LAYOUT DRAWING
DUPLX PARALLEL w/ SEP SOURCE

Custom Care
C53A 1 & 1-1/4" PRL w/SEP S



PROPOSED FLOOR PLAN

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



PROPOSED TREATMENT SCHEMATIC

- NOTES:
- WELL FLOW RATES SHOWN ARE AVERAGE PUMP FLOW RATES CALCULATED FROM METERED PRODUCTION AND RECORDED PUMP RUN TIMES FROM FEBRUARY 2019 THROUGH JULY 2020, NOT RATED PRODUCTION CAPACITY.
 - MIXING TANK SHALL BE A FLEXCON BAF-120 INTERNALLY BAFLED CONTACT TANK, OR APPROVED EQUAL.
 - FILTERS SHALL BE CUSTOM CARE MODEL C53-MG18-15, OR APPROVED EQUAL, AND PLUMBED IN PARALLEL. FILTER MEDIA SHALL BE A MANGANESE DIOXIDE COATED MEDIA, SUCH AS INVERSAND GREENSAND PLUS, OR EQUAL.
 - CONTRACTOR SHALL CONNECT THE CONTROL WIRING FOR THE MOTORIZED ALTERNATING VALVES TO THEIR CORRESPONDING FILTER.
 - THE CHEMICAL FEED SYSTEM FOR DISINFECTION SHALL BE STENNER PUMPS® 1" PROPORTIONAL INJECTION SYSTEM, OR EQUAL CAPABLE OF FLOW PACED CHLORINATION. AT MINIMUM, THE DISINFECTION SYSTEM SHALL INCLUDE A WATER METER WITH A PULSE OUTPUT, CONNECTED TO A PUMP CONTROL MODULE CAPABLE OF ADJUSTING THE CHEMICAL FEED PUMP DOSING RATE BASED ON THE OUTPUT FROM THE WATER METER.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIGURING THE CHLORINATION PUMP TO MAINTAIN A 1.0 PPM RESIDUAL AFTER THE FILTER UNITS AT 22 GPM. THIS SHALL BE CONFIRMED IN THE FIELD AT THE TIME OF START-UP.
 - THE VARIABLE SPEED BOOSTER PUMPS SHALL BE CONTROLLED BY VARIABLE FREQUENCY DRIVES (VFD) CONFIGURED TO RUN IN A LEAD/LAG CONFIGURATION. THE BOOSTER PUMPS AND CONTROLLERS SHALL BE SET TO MAINTAIN A CONSTANT DISCHARGE PRESSURE OF 60 PSI.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR MINIMIZING DOWNTIME OF THE SYSTEM AND INFORMING THE OWNER ANY TIME THE POTABLE WATER TREATMENT SYSTEM IS PROPOSED TO BE OFFLINE.
 - ALL INTERIOR PIPING SHALL BE 2" SCH. 80 PVC, UNLESS OTHERWISE NOTED.
 - ALL PIPING, VALVES, FITTINGS, AND EQUIPMENT THAT WILL COME IN CONTACT WITH POTABLE WATER SHALL BE NSF-61 APPROVED.
 - ALL FINISHED WATER PIPES SHALL BE CLEARLY LABELED "FINISHED WATER" USING ADHESIVE LABELS WITH ARROWS INDICATING FLOW DIRECTION.
 - CONSTRUCTION SEQUENCING:
 - CONSTRUCT NEW BUILDING, TREATMENT TRAIN, STORAGE TANK, FIRE SUPPRESSION LINE, AND BOOSTER PUMPS TO THE EXTENT POSSIBLE TO ALLOW WELL NO. 1 TO PUMP THROUGH THE NEW TREATMENT TRAIN AND BOOSTER SYSTEM.
 - PERFORM PRESSURE TESTING, DISINFECTION, AND BACTERIOLOGICAL TESTING FOR NEWLY INSTALLED PIPING AND EQUIPMENT.
 - DISCONNECT WELL NO. 1 FROM EXISTING TREATMENT TRAIN AND CONTROLLER.
 - CONNECT WELL NO. 1 TO NEW TREATMENT TRAIN AND CONTROLLER.
 - VERIFY OPERATION OF NEW TREATMENT TRAIN AND BOOSTER SYSTEM USING WELL NO. 1 ONLY.
 - COORDINATE WITH STORAGE TANK INSTALLER TO FILL STORAGE TANK. CALIBRATE TANK LEVEL PRESSURE TRANSDUCER DURING FILL OPERATION. TANK MUST BE FILLED BEFORE PRESSURE BOOSTER SYSTEM CAN BE ACTIVATED.
 - DISCONNECT EXISTING TREATMENT TRAIN FROM DISTRIBUTION SYSTEM AND CONNECT NEW TREATMENT TRAIN AND BOOSTER SYSTEM TO DISTRIBUTION SYSTEM.
 - DISCONNECT WELL NO. 2 FROM EXISTING TREATMENT TRAIN AND AND CONTROLLER.

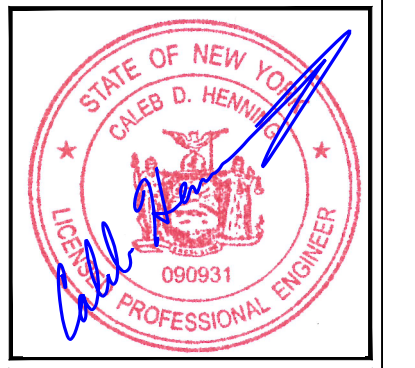
- LEGEND:
- WATER METER: (M)
 - BALL VALVE: (X)
 - GLOBE VALVE: (G)
 - WATER FLOW: (→)
 - CHECK VALVE: (∩)
 - PRESSURE GAUGE: (PG)
 - PRESSURE TRANSMITTER: (PT)
 - SAMPLE TAP: (ST)
 - CHLORINATION PUMP: (CL)
 - REDUCER: (▸)

NO.	DATE	REVISION
1		
2		
3		
4		
5		
6		
7		
8		
9		

MDA Consulting Engineers, PLLC
office@mdaengineers.com
P.O. BOX 604
THIRTE BRISTOL LN.
ELLICOTTVILLE, NY 14751
Phone (716)699-1650
Fax (716)699-1650

DOCUMENT STATUS
DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
ISSUED BY: CDH
MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW
WTP UPGRADES
SENECA NATION OF INDIANS
12837 ROUTE 438
IRVING, NEW YORK 14081



TREATMENT PLANT
FLOOR PLAN

DATE: 4/28/2021
SCALE: 1/2" = 1'
PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES
JOB NO: 20430
DRAWN BY: MNM
CHECK BY: CDH
SHEET NO: 9

K:\PROJECT FILES\2021\20430 - SULLIVAN HOLLOW WTP UPGRADES\02 DRAWINGS\20430 WTP\20430-0101.DWG

PLOTTED: 5/2/2021 10:17 AM

ISSUES: THE MAIN THAT WALKERHANT NOT IN THE COUNSEL OF THE UNCONDO... BUT THE DELIGHTS IN THE LAVER OF THE LORD.

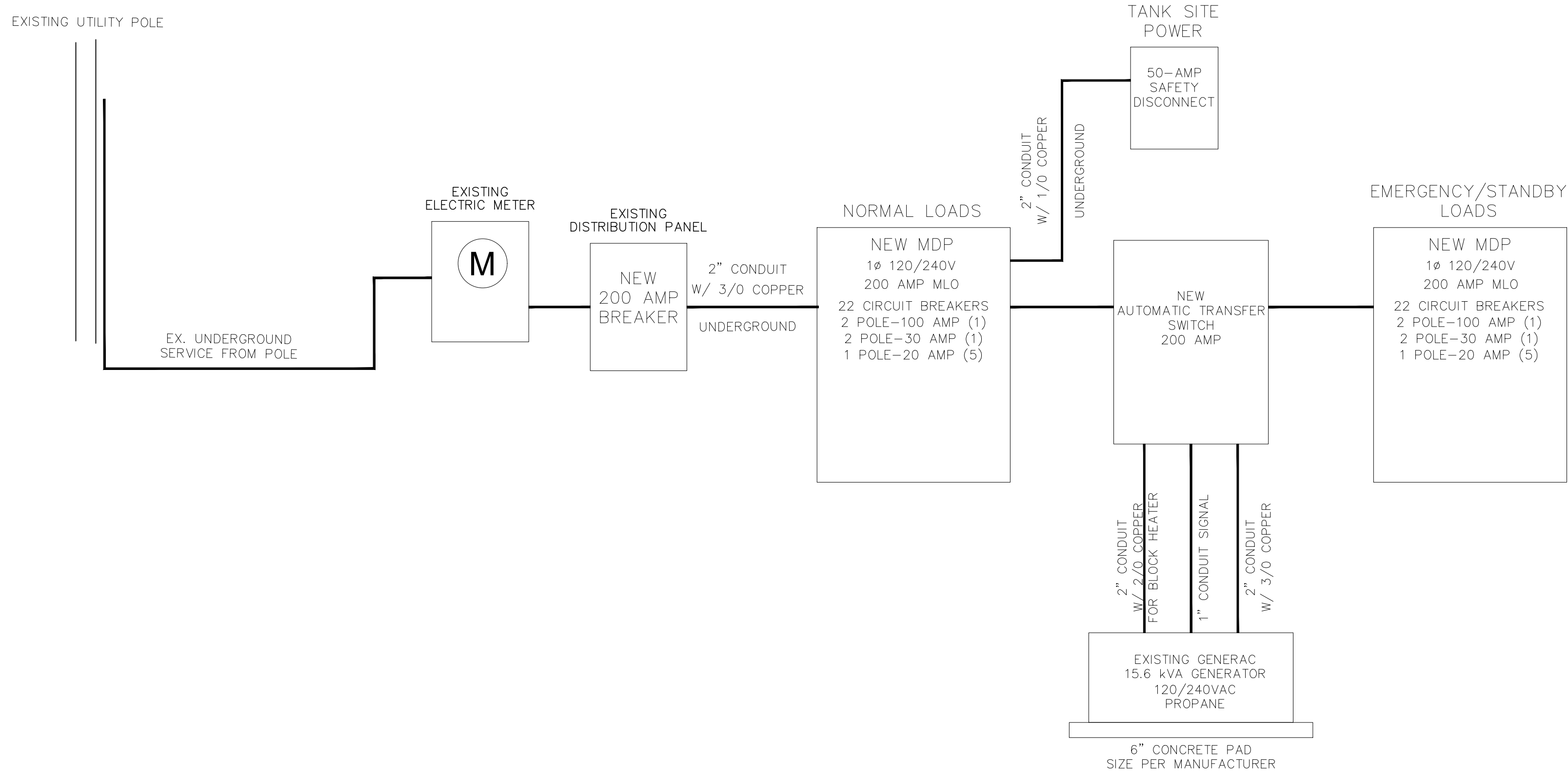
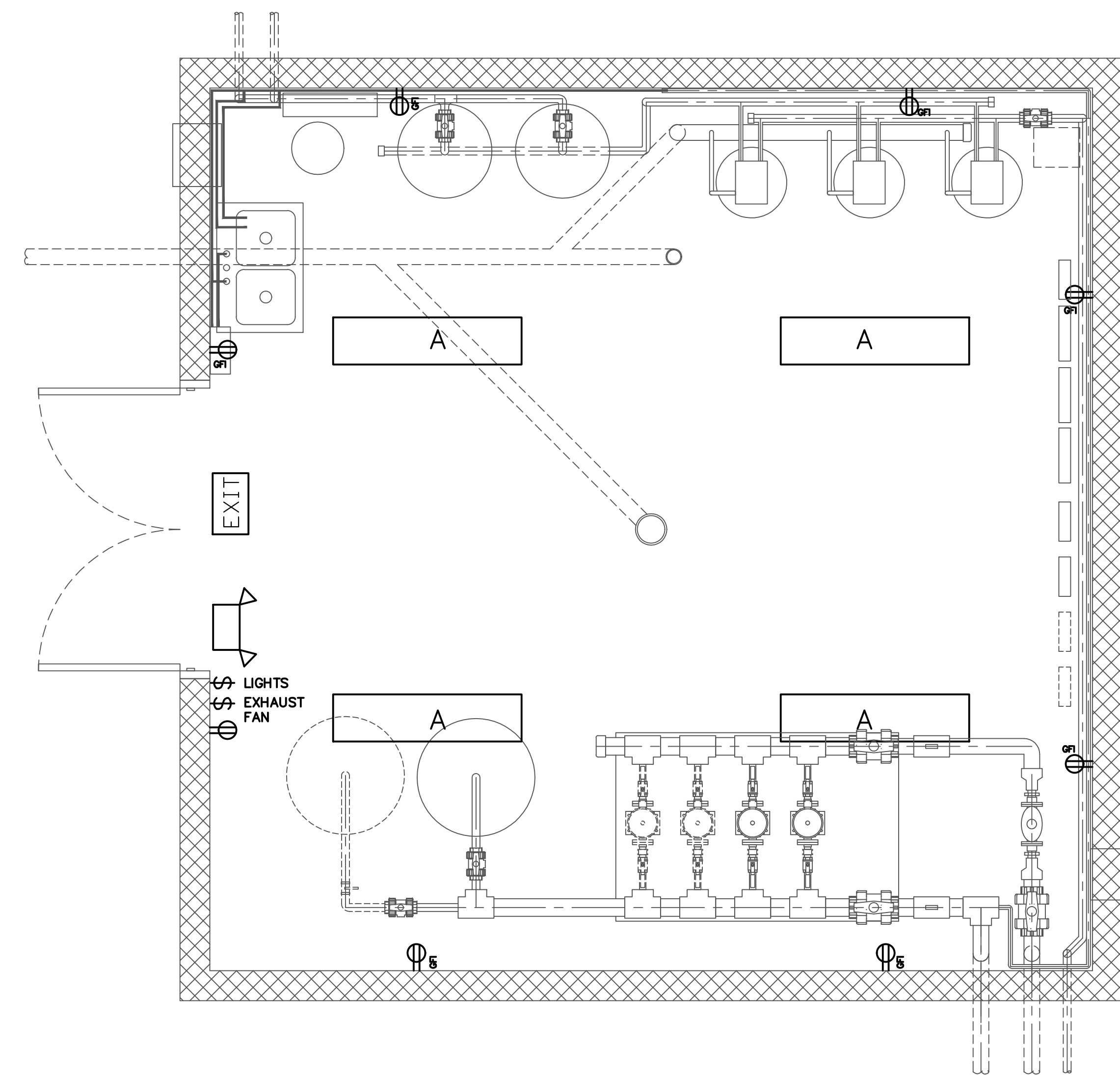
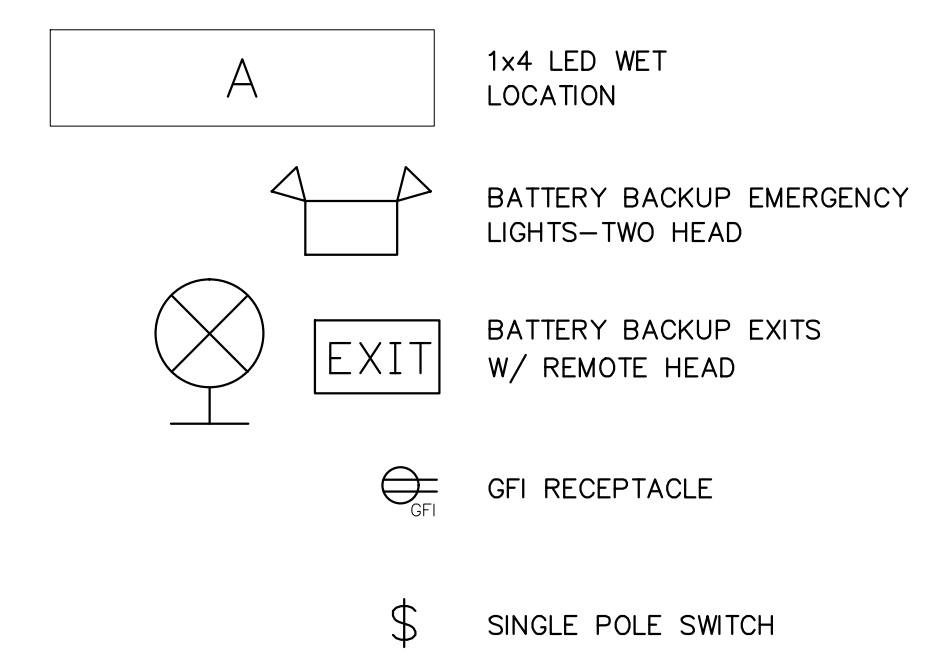
ELECTRICAL AND CONTROL NOTES

- 1. WELL PUMP CONTROLS**
 - 1.1. THE WELL PUMPS ARE INTENDED TO PUMP WATER FROM THE WATER WELLS, THROUGH THE TREATMENT TRAIN, AND INTO THE 100,000-GALLON STORAGE TANK VIA A DEDICATED 2-INCH FILL LINE.
 - 1.2. THE WELL PUMPS SHALL BE CONTROLLED BY A TANK LEVEL PRESSURE TRANSDUCER INSTALLED ON THE 2-INCH FILL LINE INSIDE THE WELL HOUSE.
 - 1.3. MATERIALS
 - 1.3.1. THE WELL PUMP CONTROL PANEL SHALL BE A SINGLE-PHASE DUPLEX ALTERNATING CURRENT PANEL CAPABLE OF OPERATION BASED ON A TANK LEVEL PRESSURE TRANSDUCER. THE CONTROL PANEL SHALL MEET THE FOLLOWING REQUIREMENTS:
 - 1.3.1.1. NEMA 4X RATED ENCLOSURE
 - 1.3.1.2. MINIMUM ONE OUTPUT FOR ALARM BEACON
 - 1.3.1.3. MINIMUM ONE CONTROL SIGNAL OUTPUT
 - 1.3.1.4. ANALOG INPUT FOR TANK LEVEL PRESSURE TRANSDUCER. TANK LEVELS ABOVE THE WELL HOUSE FINISHED FLOOR ARE EXPECTED TO BE FROM 42.5 FEET (TANK FLOOR) TO 103 FEET (TANK OVERFLOW).
 - 1.3.1.5. HAND-OFF-AUTO SWITCH FOR EACH PUMP
 - 1.3.1.6. AUTOMATIC PUMP ALTERNATOR
 - 1.3.2. INSTALLATION
 - 1.3.2.1. THE DUPLEX PUMP CONTROL PANEL SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. THE CONTROL PANEL SHALL BE CONFIGURED TO CONTROL THE OPERATION OF THE TWO WELL PUMPS, BASED ON INPUT FROM THE TANK LEVEL PRESSURE TRANSDUCER INSTALLED ON THE 2-INCH FILL LINE INSIDE THE WELL HOUSE.
 - 1.3.2.2. THE PRESSURE TRANSDUCER SETPOINTS SHALL BE CALIBRATED AT INSTALLATION TO REFLECT THE ACTUAL TANK LEVELS WHILE ONE (1) WELL PUMP IS RUNNING. THE PRESSURE TRANSDUCER READING AND THE ACTUAL TANK LEVEL SHALL BE RECORDED WHILE THE WELL PUMP IS RUNNING AND THE TANK IS HALF-FULL AND WHILE THE WELL PUMP IS RUNNING AND THE TANK IS FULL.
 - 1.3.2.3. STATIC PRESSURES SHALL ALSO BE NOTED WITH NO PUMPS RUNNING AND CORRELATED TO ACTUAL TANK LEVELS WHEN THE TANK IS HALF-FULL AND FULL.
- 2. BOOSTER PUMP CONTROLS**
 - 2.1. THE BOOSTER PUMPS ARE INTENDED TO MAINTAIN A CONSTANT DISCHARGE PRESSURE OF 60 PSI AT VARYING FLOWRATES UP TO 48 GPM WITH TWO PUMPS RUNNING.
 - 2.2. THE BOOSTER PUMPS SHALL BE GOULDS® 5SV-03, OR EQUAL, AND SHALL BE SIZED TO MEET THE FOLLOWING DESIGN CRITERIA:
 - 2.2.1. SUCTION HEAD: 54 TO 98 FEET
 - 2.2.2. DISCHARGE HEAD: 138 FEET
 - 2.2.3. TDH: 40 TO 85 FEET
 - 2.2.4. MAX. FLOW: 24 GPM PER PUMP
 - 2.3. THE BOOSTER PUMP CONTROLLERS SHALL BE GOULDS® AQUAVAR IPC, OR EQUAL, AND SHALL BE SIZED TO BE COMPATIBLE WITH THE BOOSTER PUMPS.
 - 2.3.1. INPUT VOLTAGE: 120/240-VOLT, 1-PHASE
 - 2.3.2. OUTPUT VOLTAGE/PHASE: PER PUMP
 - 2.4. THE BOOSTER PUMP CONTROL SYSTEM SHALL BE CAPABLE OF OPERATING THE BOOSTER PUMPS BASED ON INPUT FROM PRESSURE TRANSDUCERS INSTALLED AT THE DISCHARGE ENDS OF THE BOOSTER PUMPS.
- 3. TANK POWER SERVICE**
 - 3.1. CONTRACTOR SHALL PROVIDE TWO (2) ELECTRICAL CONDUITS FROM THE WELL HOUSE TO THE 100,000-GALLON STORAGE TANK. ONE CONDUIT SHALL BE USED FOR POWER SERVICE, AND ONE CONDUIT SHALL BE A SPARE.
 - 3.2. CONTRACTOR SHALL PROVIDE 50-AMP, 240-VOLT ELECTRICAL POWER SERVICE TO THE TANK SITE FOR FUTURE USE. CONDUCTOR SIZE SHALL BE AS NOTED ON ONE-LINE DIAGRAM.
 - 3.3. FUTURE POWER SERVICE SHALL BE STUBBED UP AT TANK SITE AND TERMINATED WITH A MINIMUM 50-AMP SAFETY DISCONNECT SWITCH, NEMA 3R ENCLOSURE.
 - 3.4. SPARE CONDUIT SHALL BE INSTALLED WITH NYLON PULL STRING FOR FUTURE USE. A MINIMUM OF 30 FEET OF EXCESS PULL STRING SHALL BE PROVIDED AT EACH END.

NORMAL LOADS			
CIRCUIT DIRECTORY			
1Ø 120/240V 100 AMP			
CIR	DESCRIPTION	CIR	DESCRIPTION
1	20 AMP WELL PUMP #1	2	50 AMP TANK POWER SVC
3	20 AMP WELL PUMP #2	4	
5	20 AMP LIGHTING	6	20 AMP WATER FILTERS
7	20 AMP RECEPTACLES	8	
9		10	
11		12	
13		14	
15		16	
17		18	
19		20	
21		22	
23		24	

EMERGENCY/STANDBY LOADS			
CIRCUIT DIRECTORY			
1Ø 120/240V 100 AMP			
CIR	DESCRIPTION	CIR	DESCRIPTION
1	20 AMP PUMP #1	2	20 AMP PUMP #2
3	20 AMP PUMP #3 (FUTURE)	4	20 AMP PUMP #4 (FUTURE)
5	20 AMP LIGHTING, EXIT/ EMERGENCY	6	20 AMP PROPANE HEATER
7	20 AMP OUTSIDE LIGHTING	8	
9		10	
11		12	
13		14	
15		16	
17		18	
19		20	
21		22	
23		24	

ELECTRICAL KEY



ONE LINE DIAGRAM

PROPOSED ELECTRICAL PLAN

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

DATE	04/28/2021
BY	
REVISION	
NO.	1
	2
	3
	4
	5
	6
	7
	8

MDA Consulting Engineers, PLLC
 office@mdeengineers.com
 Phone (716)699-1458
 Fax (716)699-1459
 P.O. BOX 604
 THREE BRISTOL LN.
 ILLICOITVILLE, NY 14731

DOCUMENT STATUS
 DATE: 04/28/2021
 NOT FOR CONSTRUCTION
 PROGRESS SET
 PRELIMINARY
 FINAL
 ISSUED BY: CDH
 MDA CONSULTING ENGINEERS, PLLC

SULLIVAN HOLLOW WTP UPGRADES
 SENECA NATION OF INDIANS
 12837 ROUTE 438
 IRVING, NEW YORK 14081

STATE OF NEW YORK
 SEAL OF NEW YORK
 PROFESSIONAL ENGINEER

ELECTRICAL PLAN AND CONTROLS NOTES

DATE: 4/28/2021
 SCALE: 1/2" = 1'
 PROJECT NAME: SULLIVAN HOLLOW WTP UPGRADES
 JOB NO.: 20430
 DRAWN BY: MNM
 CHECK BY: CDH
 SHEET NO.: 10

OF 12

