

# APPLE VALLEY UTILITIES INC. LAKE COUNTY, INDIANA

## APPLE VALLEY UTILITIES EAST PWS WATER UTILITY IMPROVEMENTS DIVISION "A" WELLS AND WATER TREATMENT PLANT OCTOBER 2024

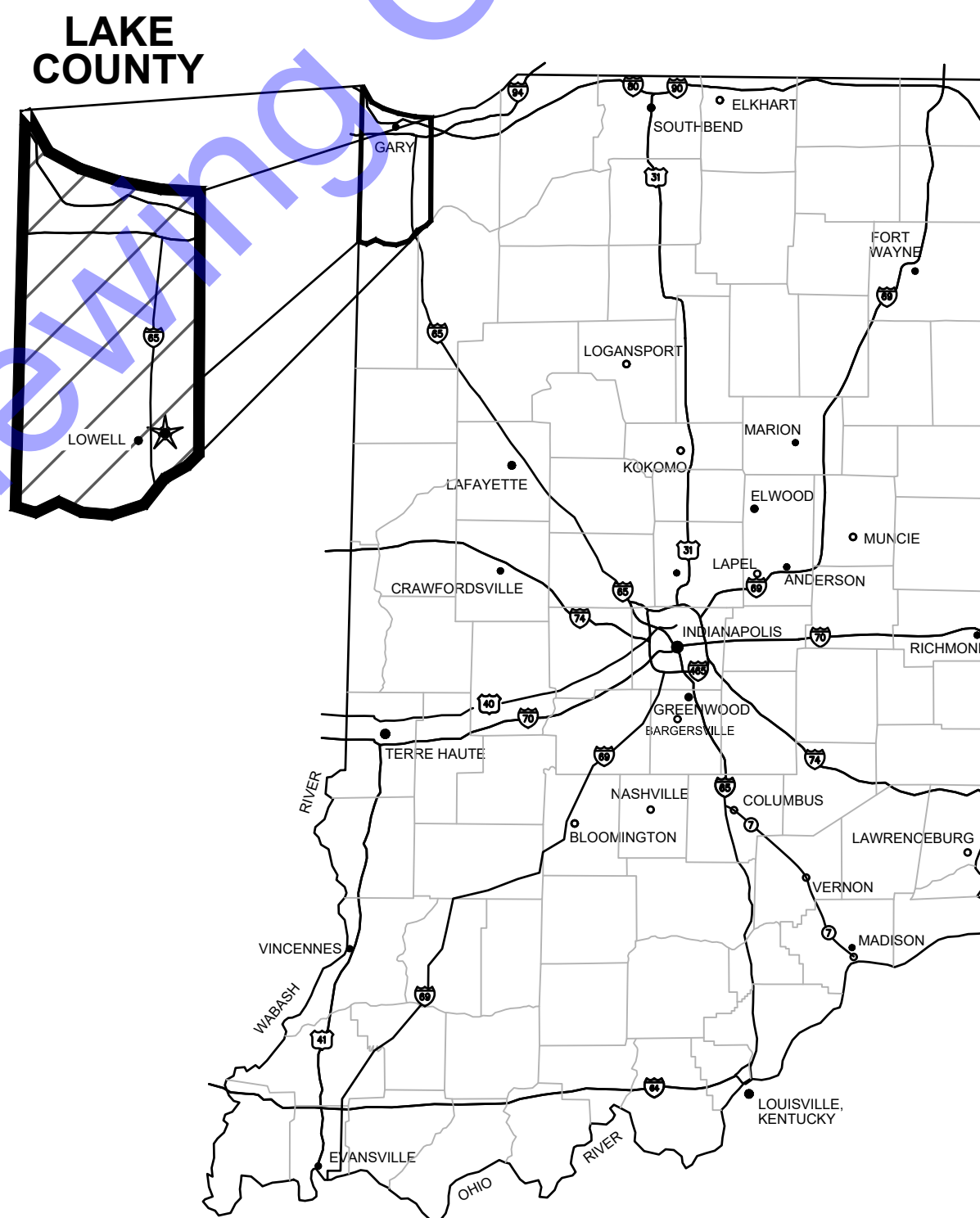
### CORPORATE OFFICERS

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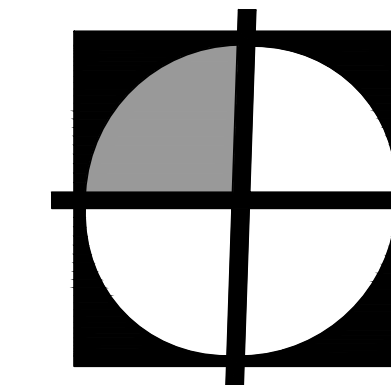
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JONATHAN W. HUGHES.....ATTORNEY



GENERAL LOCATION MAP

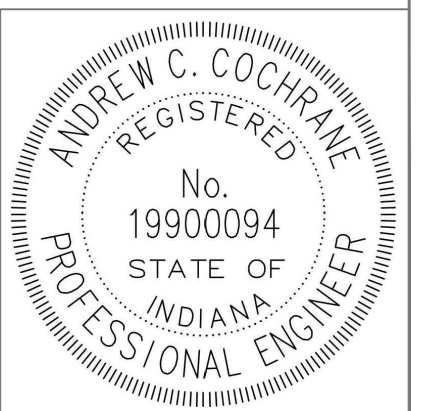


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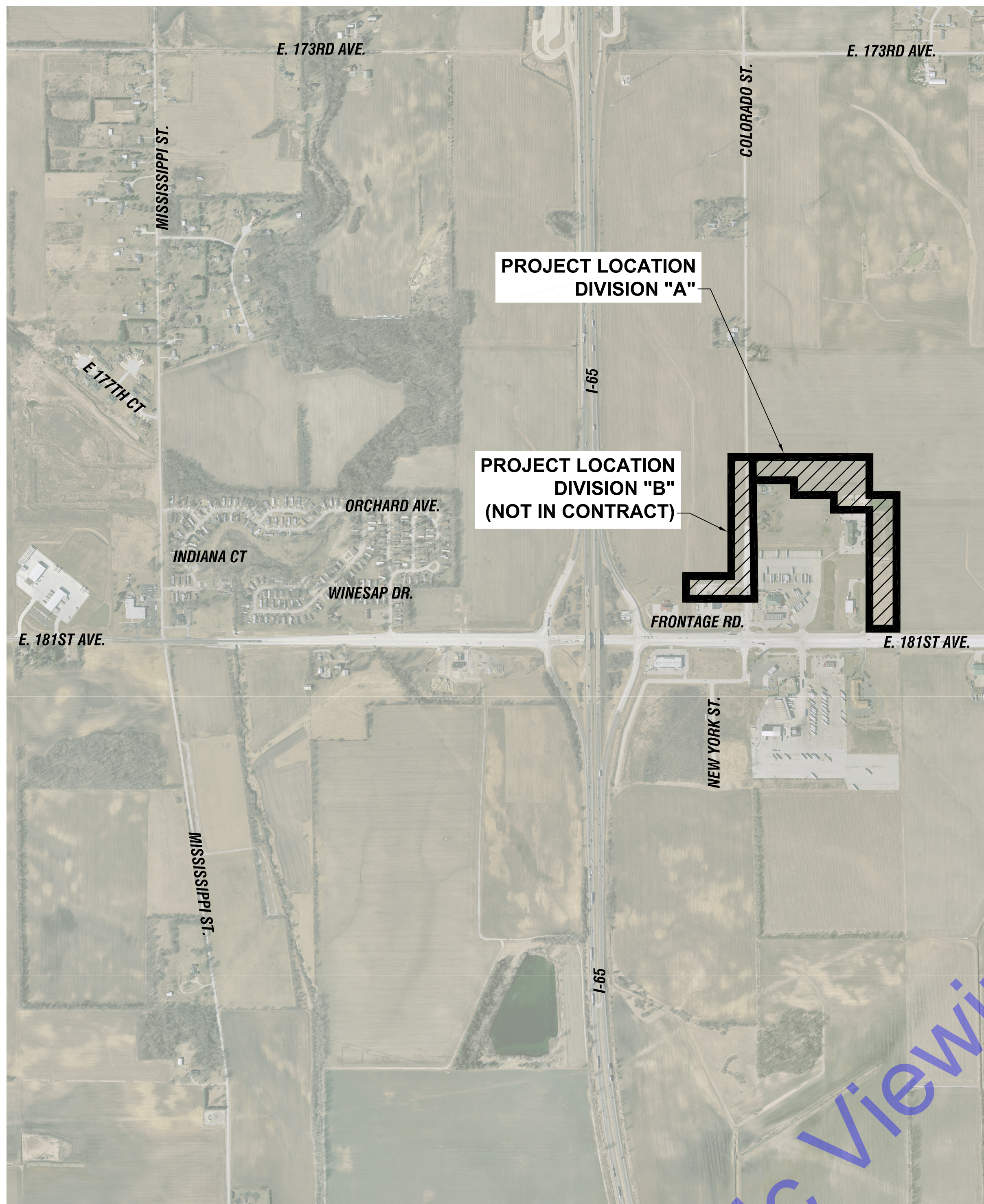
A wealth of resources to master a common goal.

QA/QC BY : DARREN S. WELLS, P.E., BCEE, ENV., SP. 5-8-2024

CERTIFIED BY : *Andrew C. Cochrane* 10-15-2024  
ANDREW C. COCHRANE, P.E. DATE :  
INDIANA P.E. No. 19900094



CONTRACT NO. : W24026



**VICINITY MAP**  
SCALE: 1"=700'-0"  
0 700' 1400'

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ANDREW C. COCHRANE  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: Andrew C. Cochrane Date: 10/15/2024

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**APPLE VALLEY UTILITIES EAST**  
 PWS - WATER UTILITY IMPROVEMENTS  
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No.	Submittal / Revision	By	Date

Designed By: ACC	Drawn By: GCR	Checked By: DW
Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

VICINITY MAP AND DRAWING SET INDEX

Drawing No:  
**G2**  
 Sheet: 02 OF 73

**GENERAL ABBREVIATIONS**

A	AIR	FLD	FILTRATE DRAIN	P/L	MATERIAL
AB	ANCHOR BOLT	FLG	FLANGE	P/OJ	PROPERTY LINE
AFF	ABOVE FINISH FLOOR	FL	FLUSHING LINE	PSF	PUSH ON JOINT
ALT	ALTERNATE	FLR	FLOOR	PSI	POUNDS PER SQUARE FOOT
ALUM	ALUMINUM	FM	FORCE MAIN	PVC	POUNDS PER SQUARE INCH
@	AT	FRP	FIBER REINFORCED PLASTIC	PW	POLYVINYL CHLORIDE
APP.	APPARENT	FT	FEET OR FOOT		POTABLE WATER
ATT	AERATION TANK TRANSFER	FTG	FOOTING	R	RECIRCULATION
AUTO	AUTOMATIC	FW	FINISHED WATER	RAD	RADIUS
AVG	AVERAGE	G	GAS	RAS	RETURN ACTIVATED SLUDGE
		GALV	GALVANIZED	RCP	REINFORCED CONCRETE PIPE
B	BAFFLE	GEN	GENERAL	RD	ROOF DRAIN
BLDG	BUILDING	GRD	GROUND OR GRADE	REINF	REINFORCING
BM	BENCH MARK	HB	HOSE BIBB	REQ'D	REQUIRED
BOT	BOTTOM	HORIZ	HORIZONTAL	R/W (ROW)	RIGHT-OF-WAY
BRG	BEARING	HP	HORSEPOWER	SAN	SANITARY
		HP	HORSEPOWER	SAS	SANITARY SEWER
CFM	CUBIC FEET PER MINUTE	HW	HOT WATER	SCH	SCHEDULE
CL	CENTERLINE	ID	INSIDE DIAMETER	SECT	SECTION
CO	CLEAN OUT	IJ	ISOLATION JOINT	SF	SQUARE FEET
COL/C	COLUMN	INV	INVERT	SHT	SHEET
CONC	CONCRETE	IP	IRON PIN	SL	SAMPLE LINE
COP	COPPER	LAV	LAVATORY	SOS	STORM SEWER
CJ	CONSTRUCTION JOINT	LB	POUND	SP	STOP PLATE
CW	COLD WATER	LL	LIVE LOAD	SQ	SQUARE
CY	CUBIC YARD	LLV	LONG LEG VERTICAL	STD	STANDARD
		LTG	LIGHTING	S STL, SS	STAINLESS STEEL
D	DRAIN	MAX	MAXIMUM	STL	STEEL
DEC	DECANT	MCC	MOTOR CONTROL CENTER	SUP	SUPERNATANT
DIA	DIAMETER	MGD	MILLIONS GALLONS PER DAY	SY	SQUARE YARD
DIM	DIMENSION	MH	MANHOLE	TOS	TOP OF SLAB
DI	DUCTILE IRON PIPE	MIN	MINIMUM, MINUTE	TOW	TOP OF WALL
DL	DEAD LOAD	MJ	MECHANICAL JOINT	TW	TERTIARY WATER
DSPT	DOWN SPOUT	NC	NORMALLY CLOSED	TYP	TYPICAL
DWG	DRAWING	NG	NATURAL GAS	V	VACUUM OR VALVE
		NIC	NOT IN CONTACT	VAR	VARIES
E	ELECTRICAL CONDUIT	NO	NORMALLY OPEN	VERT	VERTICAL
EA	EACH	NO.	NUMBER	W	WEIR
EF	EACH FACE	NPW	NON-POTABLE WATER	W/	WITH
EFFL	EFFLUENT	OC	ON CENTER	W/O	WITHOUT
EL	ELEVATION	OD	OUTSIDE DIAMETER	WAS	WASTE ACTIVATED SLUDGE
EW	EACH WAY	OPG	OPENING	WC	WATER CLOSET
EX	EXISTING	OPP	OPPOSITE	WH	WATER HEATER
EXF	EXHAUST FAN			WL	WATER LINE
EXP JP	EXPANSION JOINT	PB	PULL BOX	WWF	WELDED WIRE FABRIC
		PE	POLYETHYLENE EXP. JT.	YH	YARD HYDRANT

**GENERAL NOTES**

- ALL PROPERTY AND RIGHT-OF-WAY LINE INFORMATION SHOWN IN DRAWING SET ARE APPARENT AND SHALL NOT BE DEEMED EXACT LOCATIONS, UNLESS OTHERWISE NOTED. INFORMATION WAS OBTAINED VIA "INDIANA ON-LINE" GIS SHAPE FILES.
- EXISTING UTILITY INFORMATION SHOWN IN DRAWING SET, MEETS "ASCE 36-02" QUALITY LEVEL "C", UNLESS OTHERWISE NOTED.  
UTILITY COORDINATION AND PROJECT DIRECTION OF EXISTING SUBSURFACE UTILITY DATA:  
**UTILITY QUALITY LEVEL DESCRIPTIONS:**  
**UTILITY QUALITY LEVEL A** - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATIONS OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. ACCURACY OF LOCATION MATCHES PROJECT SURVEY TOLERANCE.  
**UTILITY QUALITY LEVEL B** - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION SUBSURFACE UTILITIES. THE RELIABILITY OF THIS INFORMATION IS SURVEYED TO PROJECT CONTROL AND SUBJECT TO ACCURACY LEVELS OF THE GEOPHYSICAL TOLERANCE DEFINED BY THE PROJECT.  
**UTILITY QUALITY LEVEL C** - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND CORRELATING QUALITY LEVEL "D" INFORMATION.  
**UTILITY QUALITY LEVEL D** - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.
- NORTHING AND EASTING COORDINATES SHOWN ON ALL MANHOLE, INLETS, ETC. ARE SHOWN FROM CENTER OF STRUCTURE NOT CASTING, UNLESS OTHERWISE NOTED.
- ALL MANHOLES THAT HAVE PIPE INVERT DIFFERENTIAL OF 2' OR GREATER, SHALL BE CONSIDERED A DROP MANHOLE. CONTRACTOR SHALL REFER TO MISCELLANEOUS DETAILS AND DETAILED SPECIFICATIONS FOR MORE INFORMATION.

**GENERAL SCHEMATIC LEGEND**

	QUICK DISCONNECT	ARV	AIR RELIEF VALVE
	FLANGED SPOOL SECTION	FM	FLOW METER
	PRESSURE REDUCER VALVE	GV	GATE VALVE
	FLANGED COUPLING ADAPTER	FCV	FLOW CONTROL VALVE
	BALL CHECK VALVE	V	VALVE
	MOTOR ACTUATOR	R	REDUCER
	FLEXIBLE CONNECTION	EPV	ECCENTRIC PLUG VALVE
	FLANGE FILLER & S.S. MESH SCREEN	CV	CHECK VALVE
	90° V-NOTCH WEIR	IR	INCREASER / REDUCER
	MAGNETIC FLOW METER	BV	BUTTERFLY VALVE
	ULTRASONIC SENSOR	MV	MECHANICAL BUTTERFLY VALVE
	SUBMERSIBLE PUMP	PT	PIPE THROUGH FLOOR / WALL
	BOOSTER PUMP	BV	BALL VALVE
	PRESSURE GAUGE	BLF	BLIND FLANGE OR PLUG
	PRESSURE INDICATOR	HB	HOSE BIBB
	NEW PIPING AND EQUIPMENT	SP	STOP PLATE
	EXISTING PIPING AND EQUIPMENT	W	WEIR
	FUTURE PIPING AND EQUIPMENT	O	ORIFICE

**HATCHING SYMBOLS**

	-CMU WALL (PLAN VIEW)
	-GRANULAR BACKFILL (PROFILE VIEW)
	-DEMOLITION (CONTRACTOR SHALL REFER TO DETAILED SPECIFICATIONS)
	-GROUT
	-CONCRETE
	-STEEL
	-COMPACTED GRANULAR BACKFILL OR COMPACTED FOUNDATION
	-ABANDONED IN PLACE

**DRAWING SET LEGEND**

	EXISTING OVERHEAD TELEPHONE LINE		AC UNIT
	EXISTING GAS LINE AND VALVE		BOLLARD
	EXISTING WATER LINE AND VALVE		BOULDER / LARGE ROCK
	EXISTING FIBER OPTIC LINE		CENTER LINE MONUMENT
	EXISTING OVERHEAD ELECTRIC LINE		CONTROL POINT / BENCH MARK
	EXISTING BURIED ELECTRIC		DRILL HOLE
	EXISTING NON-POTABLE WATER LINE		MAIL BOX
	EXISTING POTABLE WATER LINE		FLAG POLE
	EXISTING BURIED TELEPHONE LINE		POST
	EXISTING FENCE		STUMP
	APPARENT RIGHT-OF-WAY		BUSH / HEDGE
	APPARENT PROPERTY LINE		DECIDUOUS TREE
	EDGE OF ROAD		CONIFEROUS TREE
	EDGE OF ROAD WITH CURB		SIGN
	EXISTING MAJOR CONTOUR LINE		UTILITY LOCATE FLAG
	EXISTING MINOR CONTOUR LINE		GAS LINE MARKER
	NEW WATER LINE		GAS VALVE
	PROPOSED MAJOR CONTOUR LINE		GAS METER
	PROPOSED MINOR CONTOUR LINE		GUY POLE
			POWER POLE
			LIGHT POLE
			GUY WIRE
			ELECTRIC METER
			ELECTRIC PANEL
			ELECTRIC TRANSFORMER
			HAND HOLE BOX
			FIBER OPTIC MARKER
			TEL/TV PEDESTAL
			TELEPHONE MANHOLE
			TELEPHONE LINE MARKER
			TRAFFIC MANHOLE
			WATER LINE MARKER
			WATER METER
			VALVE
			IRRIGATION CONTROL VALVE
			FIRE HYDRANT
			FLUSH HYDRANT
			YARD HYDRANT
			WALL SPIGOT
			EXISTING PIPE PLUG
			STORM CATCH BASIN (SQUARE)
			STORM CATCH BASIN (ROUND)
			STORM CURB INLET
			STORM MANHOLE
			SANITARY MANHOLE
			SANITARY VALVE
			CLEANOUT
			VENT
			NEW VALVE
			NEW FIRE HYDRANT
			NEW FLUSH HYDRANT
			NEW WET SADDLE AND VALVE BODY
			NEW PLUG
			NEW LINE STOP
			NEW CUT AND CAP
			NEW SANITARY MH

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**ANDREW C. COCHRANE**  
REGISTERED PROFESSIONAL ENGINEER  
No. 19900094  
STATE OF INDIANA  
Signature *Andrew C. Cochrane* Date 10/15/2024

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LAKE COUNTY, INDIANA  
**APPLE VALLEY UTILITIES EAST**  
PWS - WATER UTILITY IMPROVEMENTS  
**DIVISION "A" - WELLS AND WATER TREATMENT PLANT**

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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN
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**GENERAL ABBREVIATIONS LEGENDS SYMBOLS AND NOTES**

Drawing No:  
**G3**  
Sheet: 03 OF 73

File: Z:\GENERAL\CLIENTS\APPLE VALLEY UTILITIES\PWS\CAVIA\CURRENT FILES\DRAWINGS\DIVISION A\WTR02-GENERAL DRAWINGS.DWG  
Sheet: 10/17/2024 11:34:41 AM Plotted: 10/17/2024 1:19:59 PM Current User: George Radek Date Plotted: 10/17/2024

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**PLAN VIEW**  
 SCALE: 1"=700'-0"  
 0 700' 1400'

CONTROL POINT INFORMATION			
IDENTIFIER	NORTHING	EASTING	DESCRIPTION
CP-100	2201701.38	2895132.11	CP/CAPRBR
CP-101	2201947.66	2894606.62	CP/CAPRBR

TEMPORARY BENCHMARK INFORMATION		
IDENTIFIER	ELEVATION	DESCRIPTION
TBM-1	667.01	MAGNAIL

Project coordinates are based on the following:  
**HORIZONTAL**-US State plane coordinates: NAD83 (North American Datum) Indiana West Zone (1302)  
**VERTICAL**-USGS 1988 NAVD (North American Vertical Datum)-per GPS observations (Not verified by physical location of published USGS monuments)

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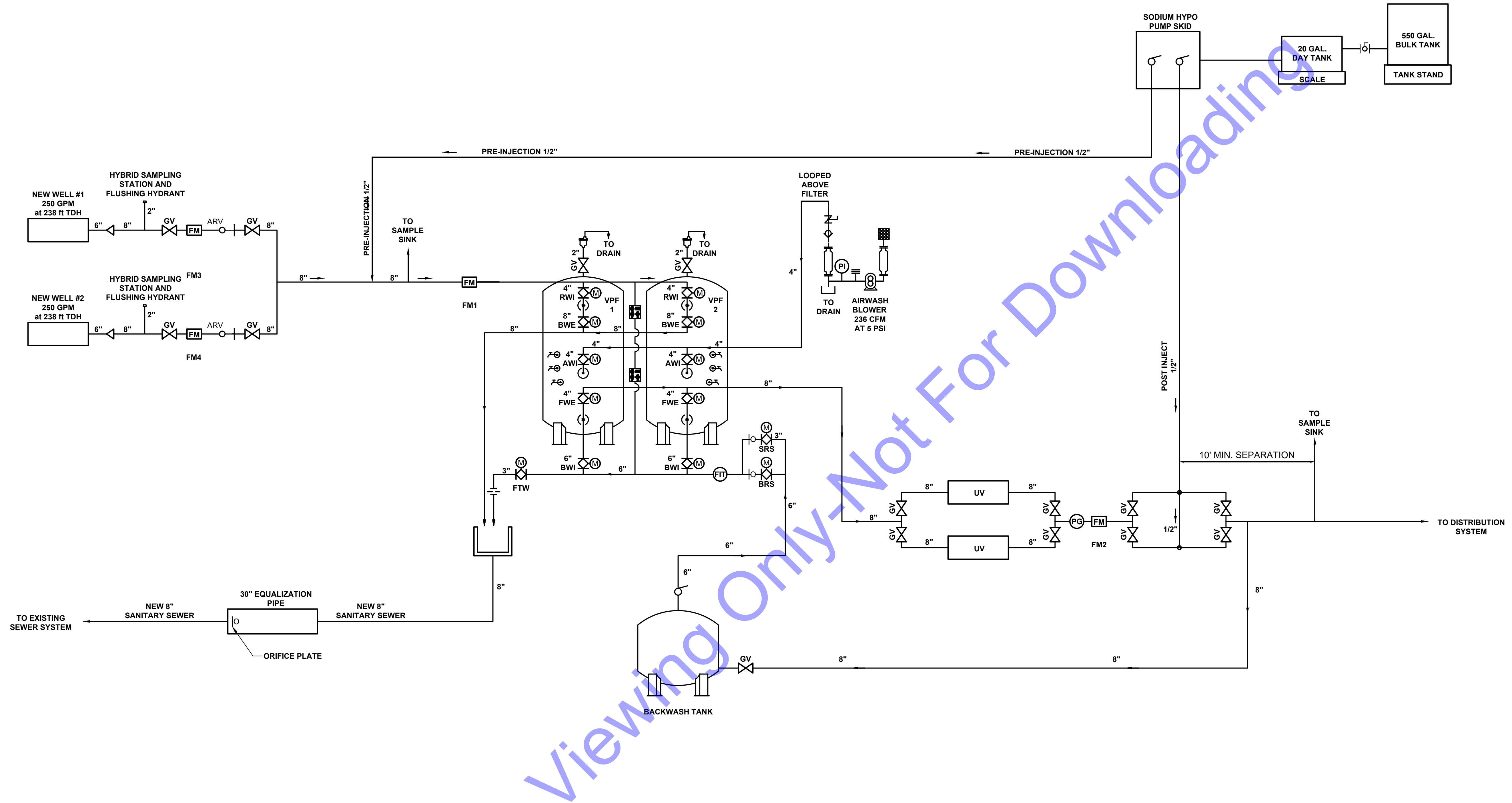
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SURVEY DATA

Drawing No:  
**G4**  
 Sheet: 04 OF 73

FILE: Z:\SHARED\CLIENTS\_4\APPLE VALLEY UTILITIES\WATER UTILITY IMPROVEMENTS\CAD\A\CURRENT FILES\DRAWINGS\DIVISION A\WTP02-GENERAL DRAWINGS.DWG  
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**PROCESS FLOW SCHEMATIC**  
 SCALE: 1"=5'-0"  
 0 5 10'

**GENERAL NOTES:**  
 1. SEE SHEET G3 FOR SCHEMATIC SYMBOLS LEGEND

- LEGEND:**
- RWI - RAW WATER INFLUENT
  - BWE - BACKWASH EFFLUENT
  - AWI - AIRWASH INFLUENT
  - FWE - FILTERED WATER EFFLUENT
  - BWI - BACKWASH INFLUENT
  - FTW - FILTER TO WASTE
  - SRS - SIMUL-WASH RATE SET
  - BRS - BACKWASH RATE SET

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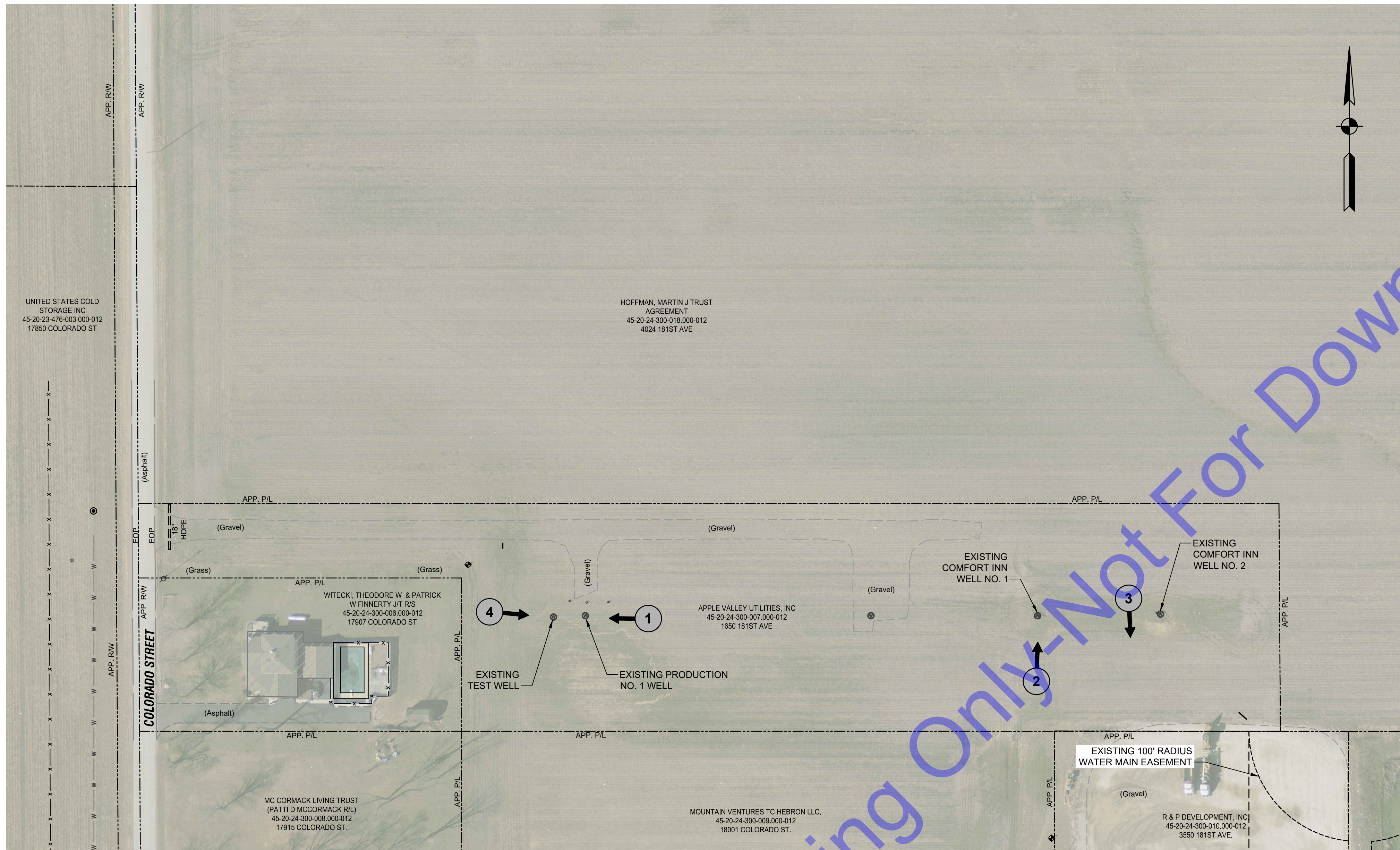
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**PROCESS FLOW SCHEMATIC**

Drawing No:  
**G5**  
 Sheet: 05 OF 73



**SITE PLAN**  
 SCALE: 1"=60'-0"  
 0 60' 120'

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**LEGEND:**  
 INDICATES PHOTO NUMBER AND DIRECTION OF PHOTO (PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC. IN 02-08-2024)



**PHOTO #1**



**PHOTO #2**



**PHOTO #3**



**PHOTO #4**

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 SOUTH BEND, IN

REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

**APPLE VALLEY UTILITIES, INC.**  
 LAKE COUNTY, INDIANA  
**APPLE VALLEY UTILITIES EAST**  
 PWS - WATER UTILITY IMPROVEMENTS  
 DIVISION "A" - WELLS AND WATER TREATMENT PLANT

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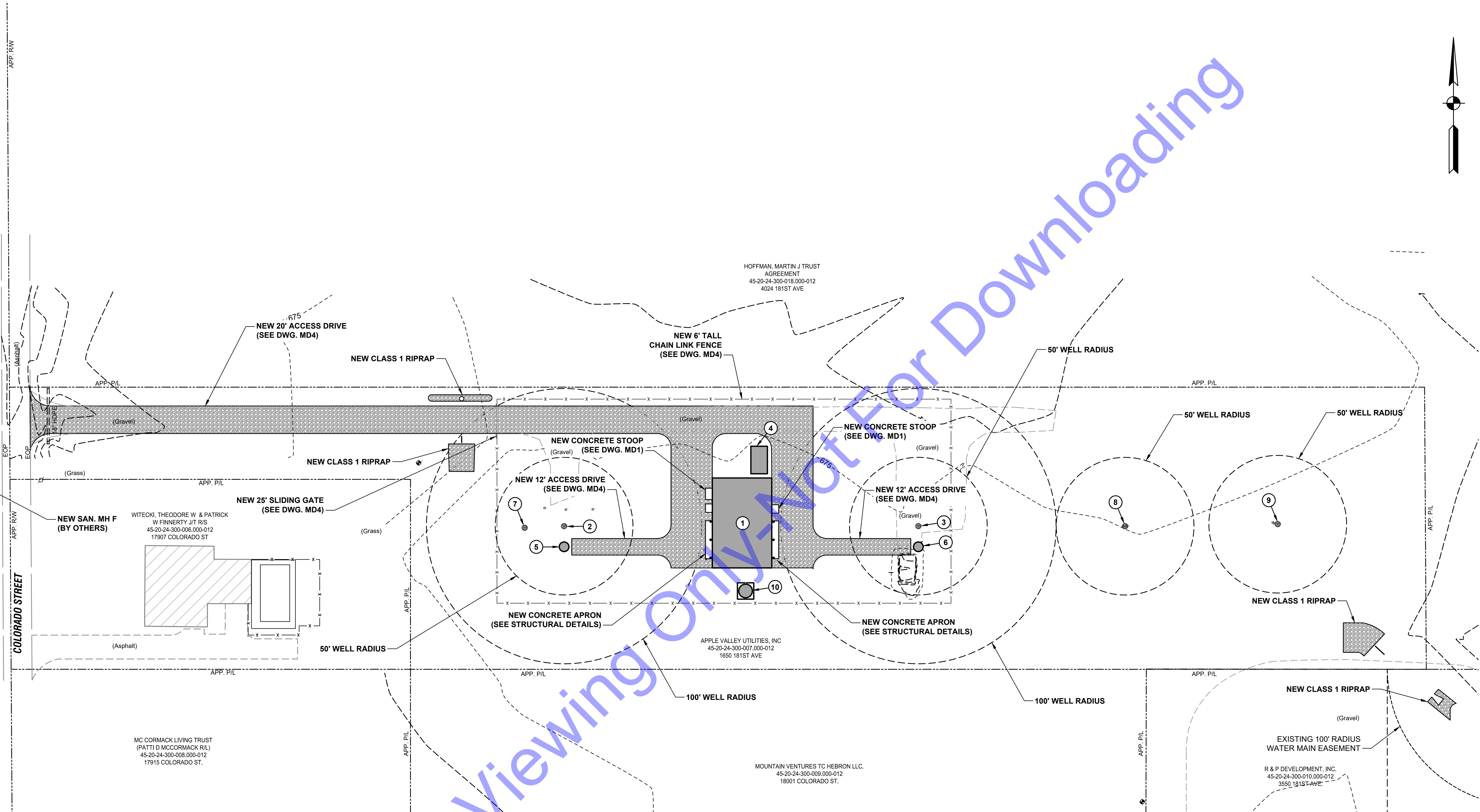
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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

OVERALL PROPERTY PLAN, PHOTO LOG AND PHOTO INDEX

Drawing No:  
**C01**  
 Sheet: 06 OF 73

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UNITED STATES COLD STORAGE INC  
 45-20-23-476-003.000-012  
 17850 COLORADO ST



**SITE PLAN**  
 SCALE: 1"=40'-0"  
 0 40' 80'

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D1-1)
2	NEW WELL NO. 1 (SEE DWG. D2-1)
3	NEW WELL NO. 2 (SEE DWG. D2-1)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D2-2)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D2-2)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)

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ANDREW C. COCHRANE  
 REGISTERED  
 No. 19900094  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER  
 Signature: *Andrew C. Cochran* Date: 10/15/2024

APPLE VALLEY UTILITIES, INC.  
 LAKE COUNTY, INDIANA  
 APPLE VALLEY UTILITIES EAST  
 PWS - WATER UTILITY  
 IMPROVEMENTS  
 DIVISION "A" - WELLS AND  
 WATER TREATMENT PLANT

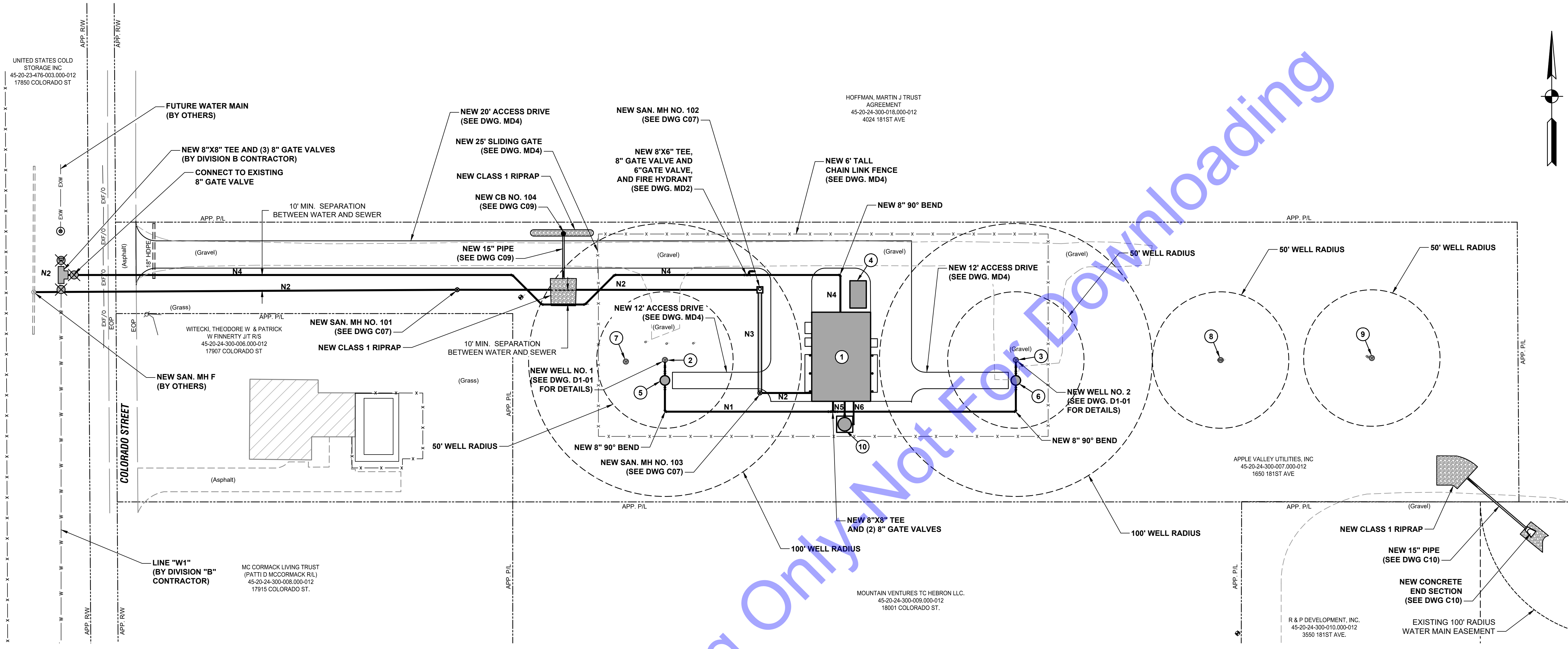
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EXISTING SITE PLAN IMPROVEMENTS

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**SITE PLAN**  
 SCALE: 1"=40'-0"  
 0 40' 80'

NEW PROCESS PIPING	
IDENTIFIER	DESCRIPTION
N-1	NEW 8" RAW WATER MAIN FROM NEW WELLS #1, AND #2
N-2	NEW 8" DRAIN FROM BACKWASH DRAIN
N-3	NEW 30" EQUALIZATION PIPE
N-4	NEW 8" FINISHED WATER MAIN FROM NEW WATER TREATMENT FACILITY
N-5	NEW 8" BACKWASH TANK INFLUENT PIPE
N-6	NEW 6" BACKWASH TANK EFFLUENT PIPE

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
3	NEW WELL NO. 2 (SEE DWG. D1-01)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D1-02)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D1-02)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)

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 SOUTH BEND, IN

ANDREW C. COCHRANE  
 No. 19900094  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER

Signature: Andrew C. Cochran Date: 10/15/2024

**APPLE VALLEY UTILITIES, INC.**  
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**DIVISION "A" - WELLS AND WATER TREATMENT PLANT**

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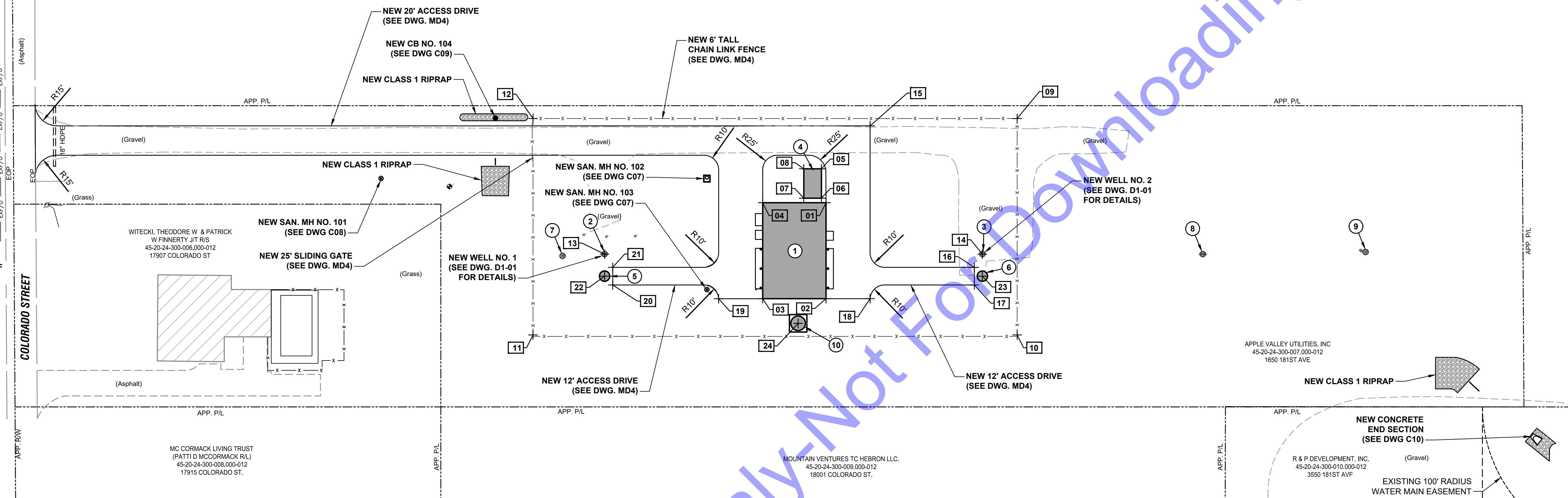
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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

**NEW SITE PIPING PLAN**

Drawing No:  
**C03**  
 Sheet: 08 OF 73





**SITE PLAN**  
SCALE: 1"=40'-0"  
0 40' 80'

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
3	NEW WELL NO. 2 (SEE DWG. D1-01)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D1-02)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D1-02)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)

NEW STRUCTURE COORDINATES			
IDENTIFIER	DESCRIPTION	NORTHING	EASTING
01	NEW WATER TREATMENT FACILITY - NORTHEAST CORNER	2201936.70	2894863.06
02	NEW WATER TREATMENT FACILITY - SOUTHEAST CORNER	2201871.37	2894863.06
03	NEW WATER TREATMENT FACILITY - SOUTHWEST CORNER	2201871.33	2894819.90
04	NEW WATER TREATMENT FACILITY - NORTHWEST CORNER	2201936.70	2894819.90
05	NEW EMERGENCY GENERATOR - NORTHEAST CORNER	2201959.75	2894859.90
06	NEW EMERGENCY GENERATOR - SOUTHEAST CORNER	2201959.75	2894859.90
07	NEW EMERGENCY GENERATOR - SOUTHWEST CORNER	2201939.75	2894847.90
08	NEW EMERGENCY GENERATOR - NORTHWEST CORNER	2201959.75	2894847.90
09	NEW 6' CHAIN LINK FENCE - NORTHEAST CORNER	2201993.99	2894993.22
10	NEW 6' CHAIN LINK FENCE - SOUTHEAST CORNER	2201846.70	2894993.22
11	NEW 6' CHAIN LINK FENCE - SOUTHWEST CORNER	2201846.70	2894663.49
12	NEW 6' CHAIN LINK FENCE - NORTHWEST CORNER	2201993.99	2894663.49
13	NEW WELL NO. 1 - CENTER	2201901.70	2894712.26
14	NEW WELL NO. 2 - CENTER	2201901.70	2894969.54
15	NEW GRAVEL ACCESS DRIVE - NORTHEAST CORNER	2201988.99	2894893.05
16	NEW WELL GRAVEL ACCESS DRIVE - NORTHEAST CORNER	2201892.70	2894964.03
17	NEW WELL GRAVEL ACCESS DRIVE - SOUTHEAST CORNER	2201880.70	2894964.04
18	NEW GRAVEL ACCESS DRIVE - SOUTHWEST CORNER	2201870.70	2894893.05
19	NEW GRAVEL ACCESS DRIVE - SOUTHWEST CORNER	2201871.33	2894789.90
20	NEW WELL GRAVEL ACCESS DRIVE - SOUTHWEST CORNER	2201880.70	2894717.77
21	NEW WELL GRAVEL ACCESS DRIVE - NORTHWEST CORNER	2201892.70	2894717.77
22	NEW FLOW METER VAULT WELL NO. 1 - CENTER	2201886.70	2894712.26
23	NEW VALVE VAULT WELL NO. 2 - NORTHEAST CORNER	2201886.70	2894969.54
24	BACKWASH TANK - CENTER	2201854.59	2894844.06

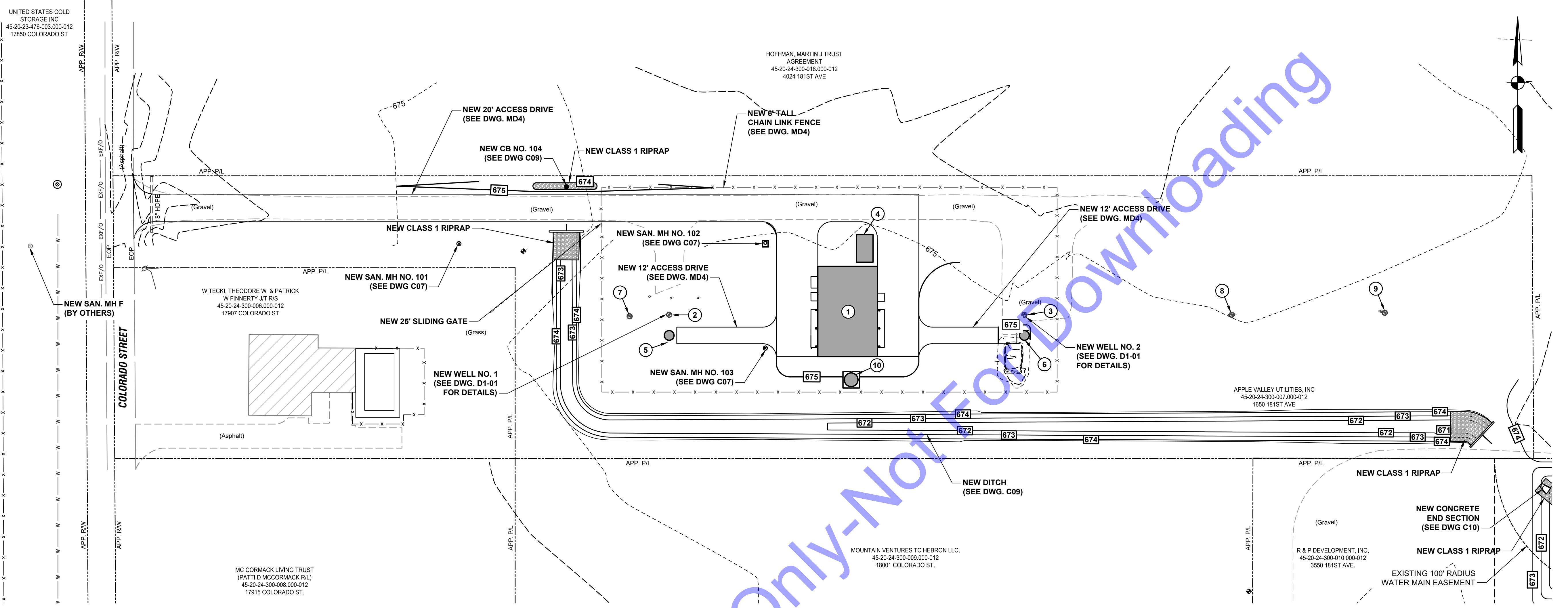
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**NEW SITE DIMENSIONING PLAN**

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**SITE PLAN**  
 SCALE: 1"=40'-0"  
 0 40' 80'

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
3	NEW WELL NO. 2 (SEE DWG. D1-01)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D1-02)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D1-02)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)

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 SOUTH BEND, IN

**ANDREW C. COCHRANE**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: Andrew C. Cochran Date: 10/15/2024

**APPLE VALLEY UTILITIES, INC.**  
 LAKE COUNTY, INDIANA  
**APPLE VALLEY UTILITIES EAST**  
 PWS - WATER UTILITY IMPROVEMENTS  
**DIVISION "A" - WELLS AND WATER TREATMENT PLANT**

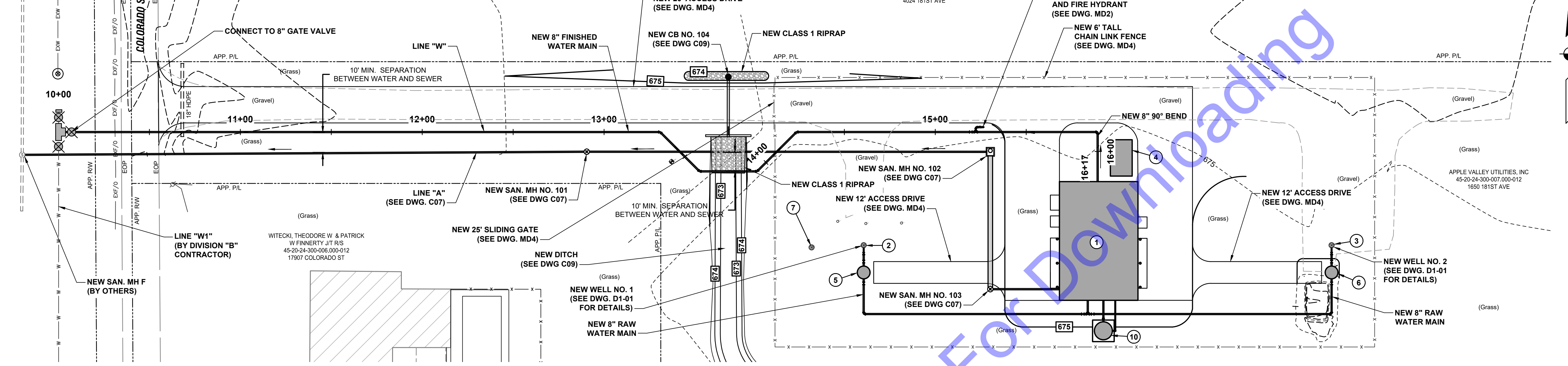
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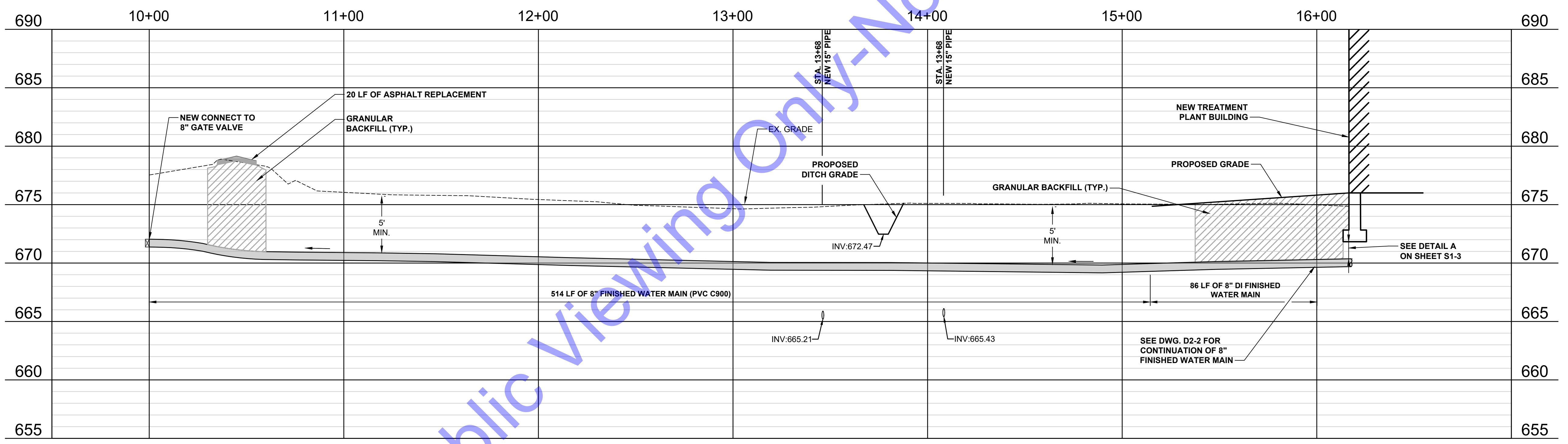
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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

**NEW SITE GRADING PLAN**

UNITED STATES COLD STORAGE, INC.  
45-20-24-176-003.000-012  
17850 COLORADO ST

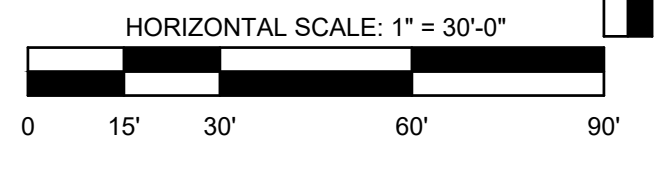


PLAN VIEW - LINE "W"



PROFILE VIEW - LINE "W"

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
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8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)



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ANDREW C. COCHRANE  
REGISTERED PROFESSIONAL ENGINEER  
No. 19900094  
STATE OF INDIANA  
Signature: Andrew C. Cochran Date: 10/15/2024

APPLE VALLEY UTILITIES, INC.  
LAKE COUNTY, INDIANA  
APPLE VALLEY UTILITIES EAST  
PWS - WATER UTILITY IMPROVEMENTS  
DIVISION "A" - WELLS AND WATER TREATMENT PLANT

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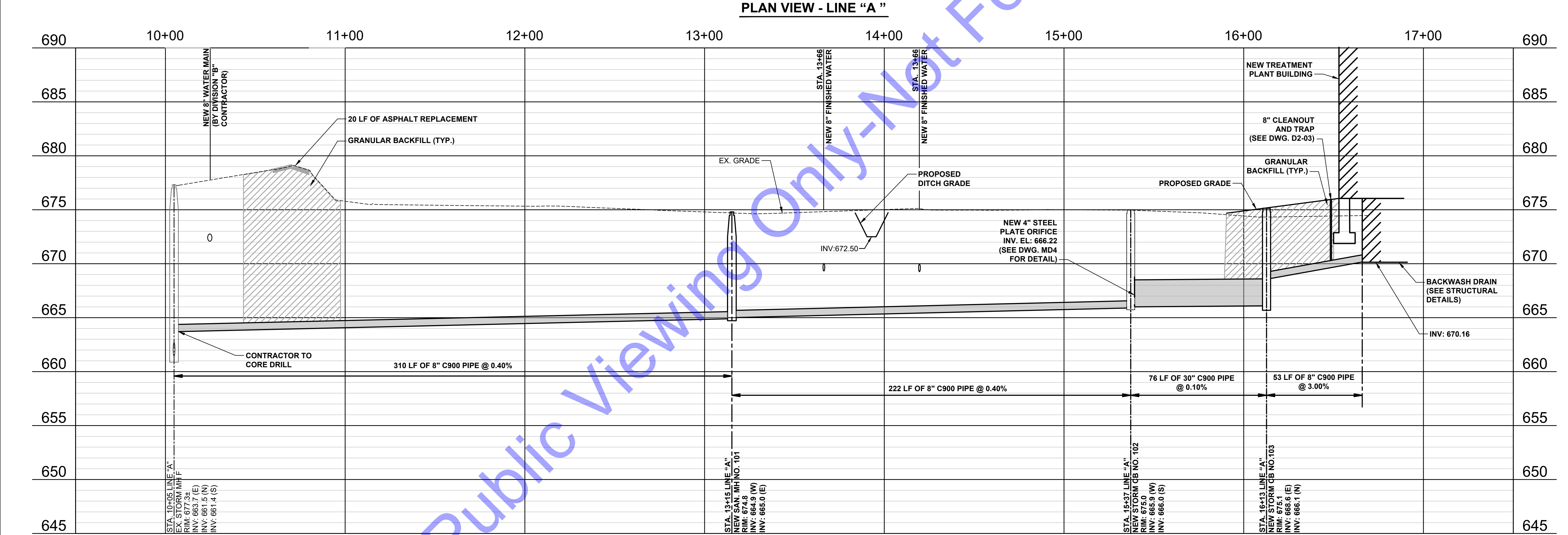
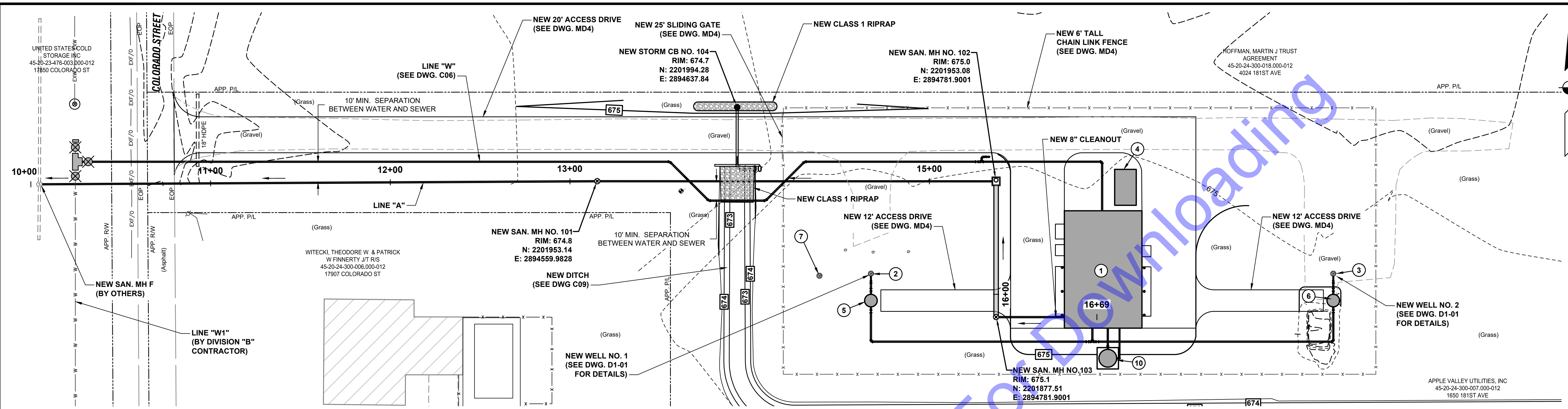
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PLAN AND PROFILE VIEWS - LINE "W"

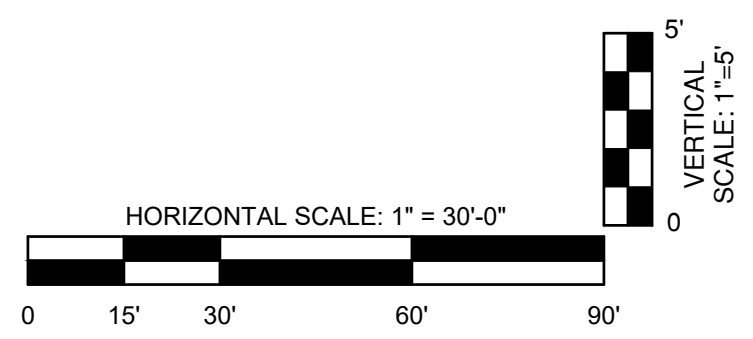
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**PROFILE VIEW - LINE "A"**

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
3	NEW WELL NO. 2 (SEE DWG. D1-01)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D1-02)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D1-02)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)



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REGISTERED PROFESSIONAL ENGINEER  
 No. 1990094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date: 10/15/2024

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 LAKE COUNTY, INDIANA  
**APPLE VALLEY UTILITIES EAST**  
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 DIVISION "A" - WELLS AND WATER TREATMENT PLANT

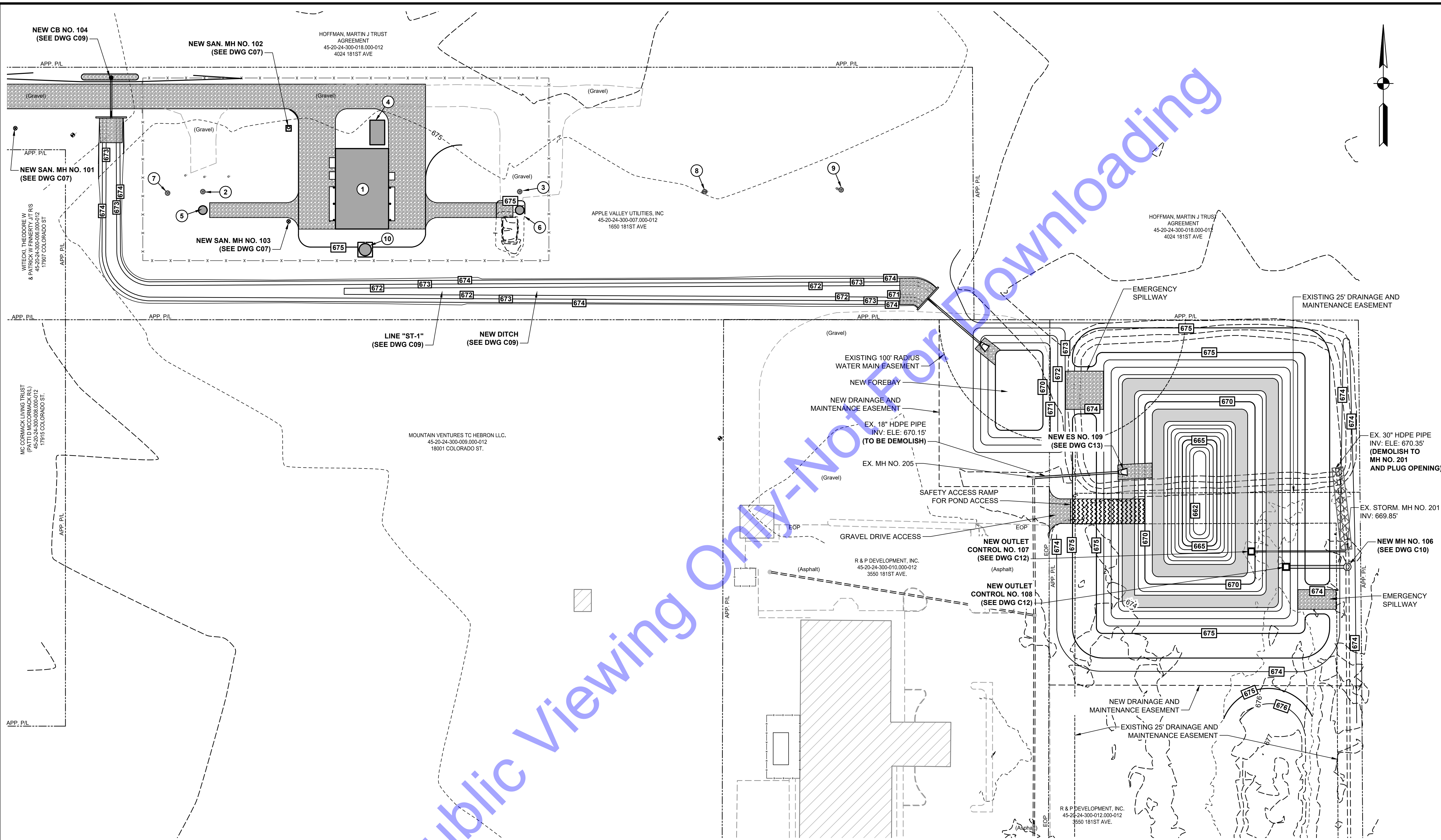
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**PLAN AND PROFILE VIEWS - LINE "A"**

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**SITE PLAN**  
 SCALE: 1"=40'-0"  
 0 40' 80'

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
3	NEW WELL NO. 2 (SEE DWG. D1-01)
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5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D1-02)
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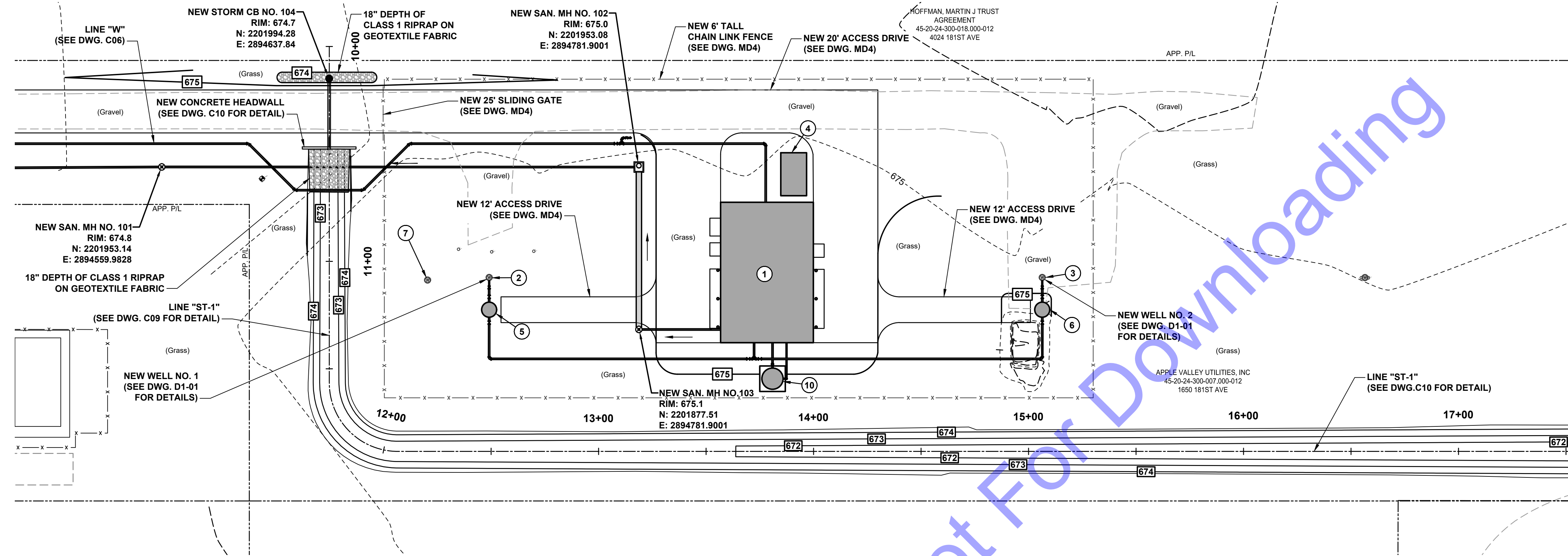
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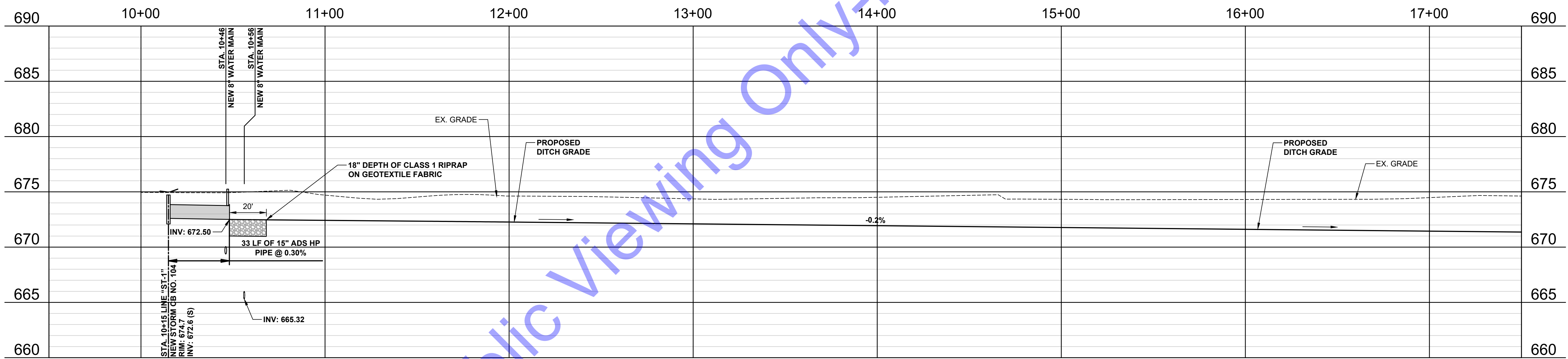
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EXISTING OVERALL DETENTION POND GRADING PLAN IMPROVEMENTS

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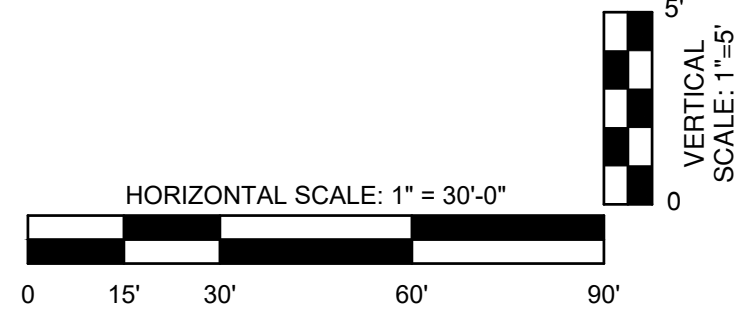


PLAN VIEW - LINE "ST-1"



PROFILE VIEW - LINE "ST-1"

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D2-01)
2	NEW WELL NO. 1 (SEE DWG. D1-01)
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**ANDREW C. COCHRANE**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: Andrew C. Cochran Date: 10/15/2024

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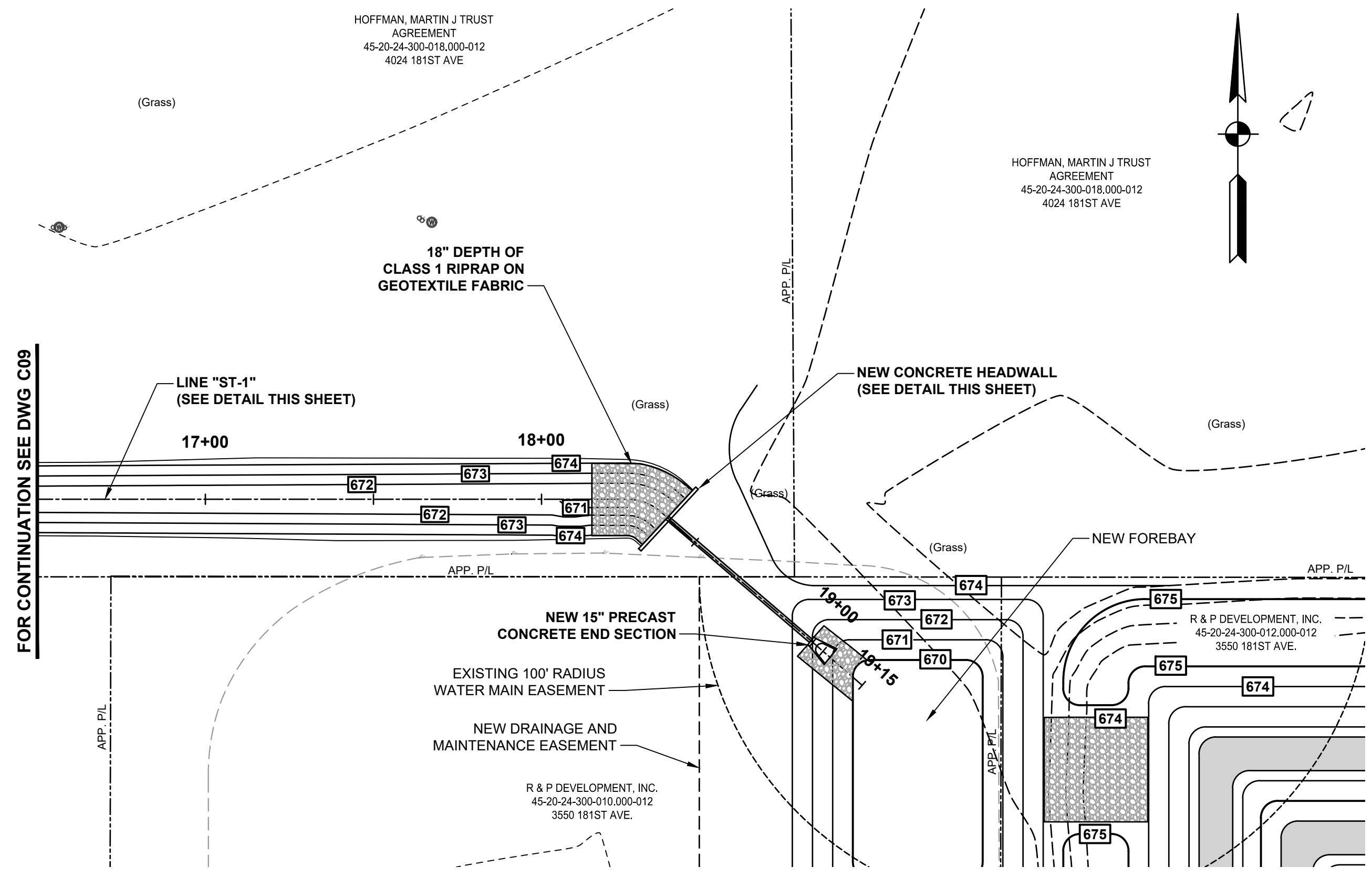
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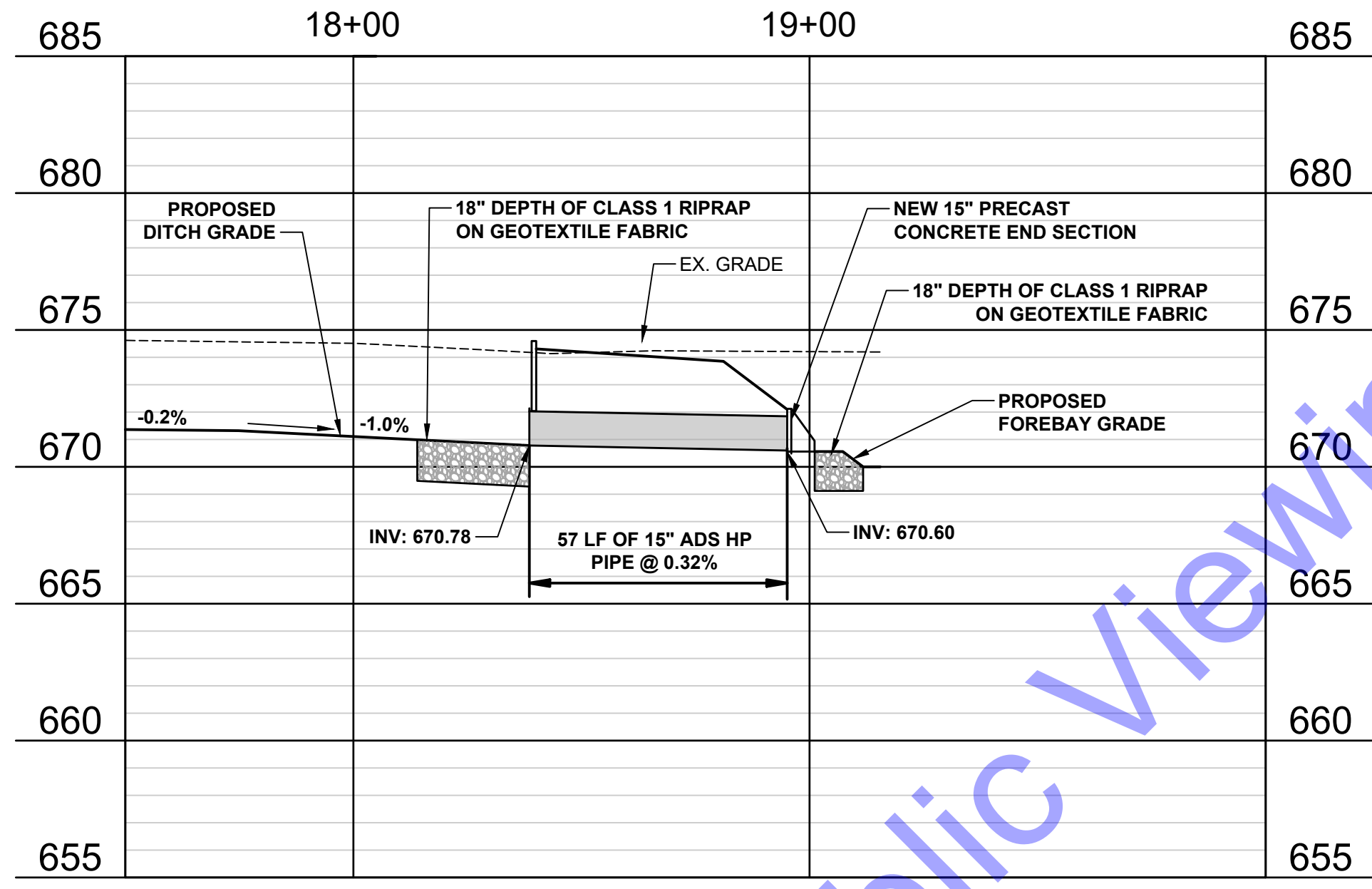
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PLAN AND PROFILE VIEWS - LINE "ST-1"

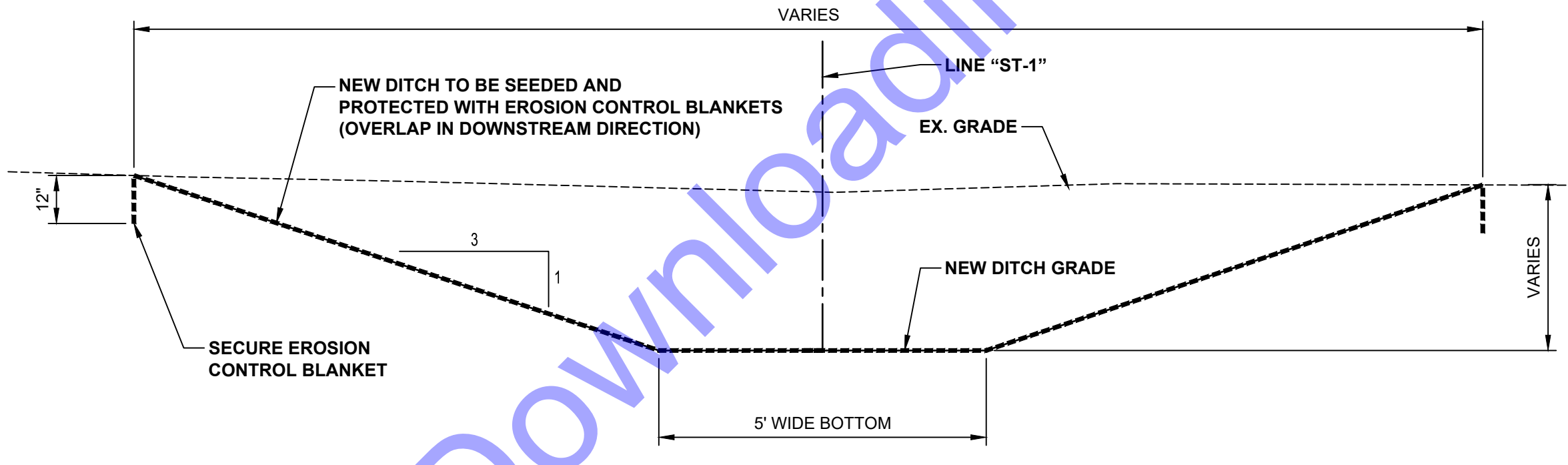
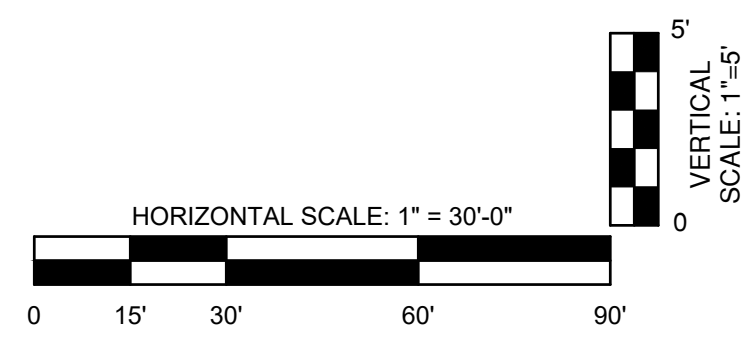
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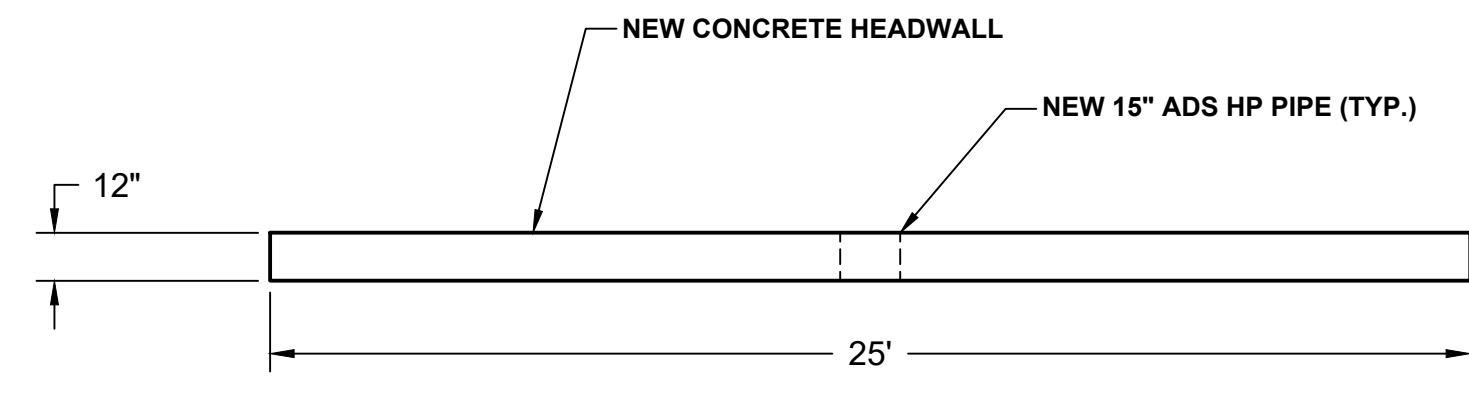
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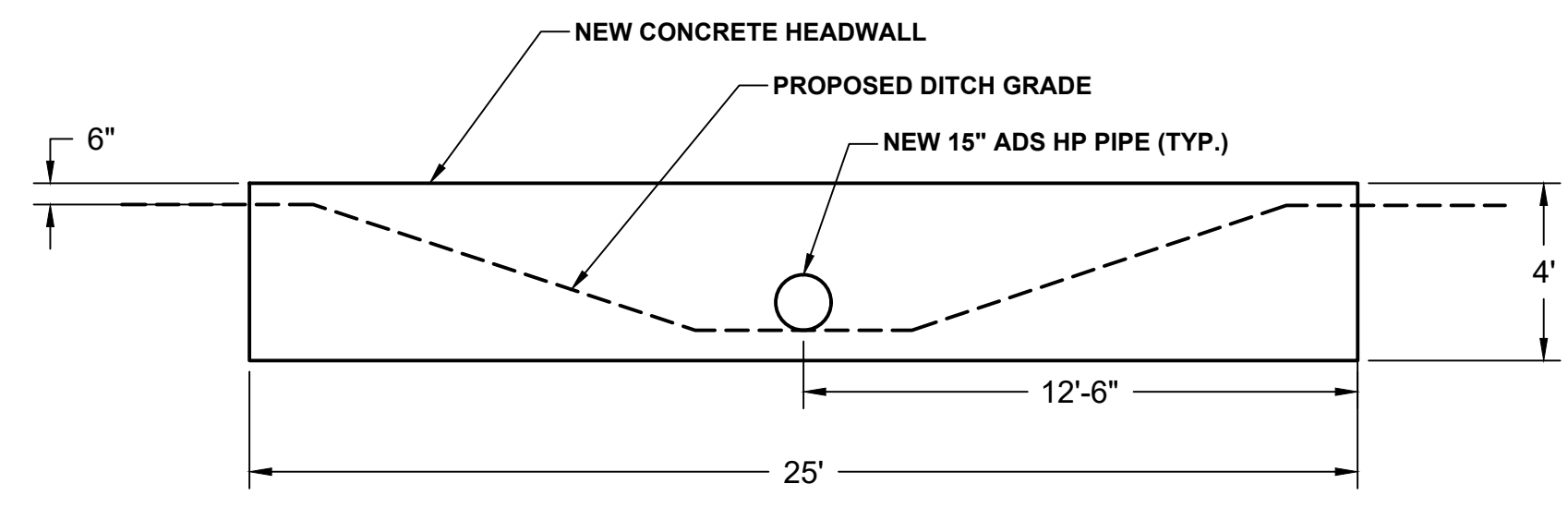
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**NEW CONCRETE HEADWALL TYPICAL DETAIL ELEVATION VIEW**  
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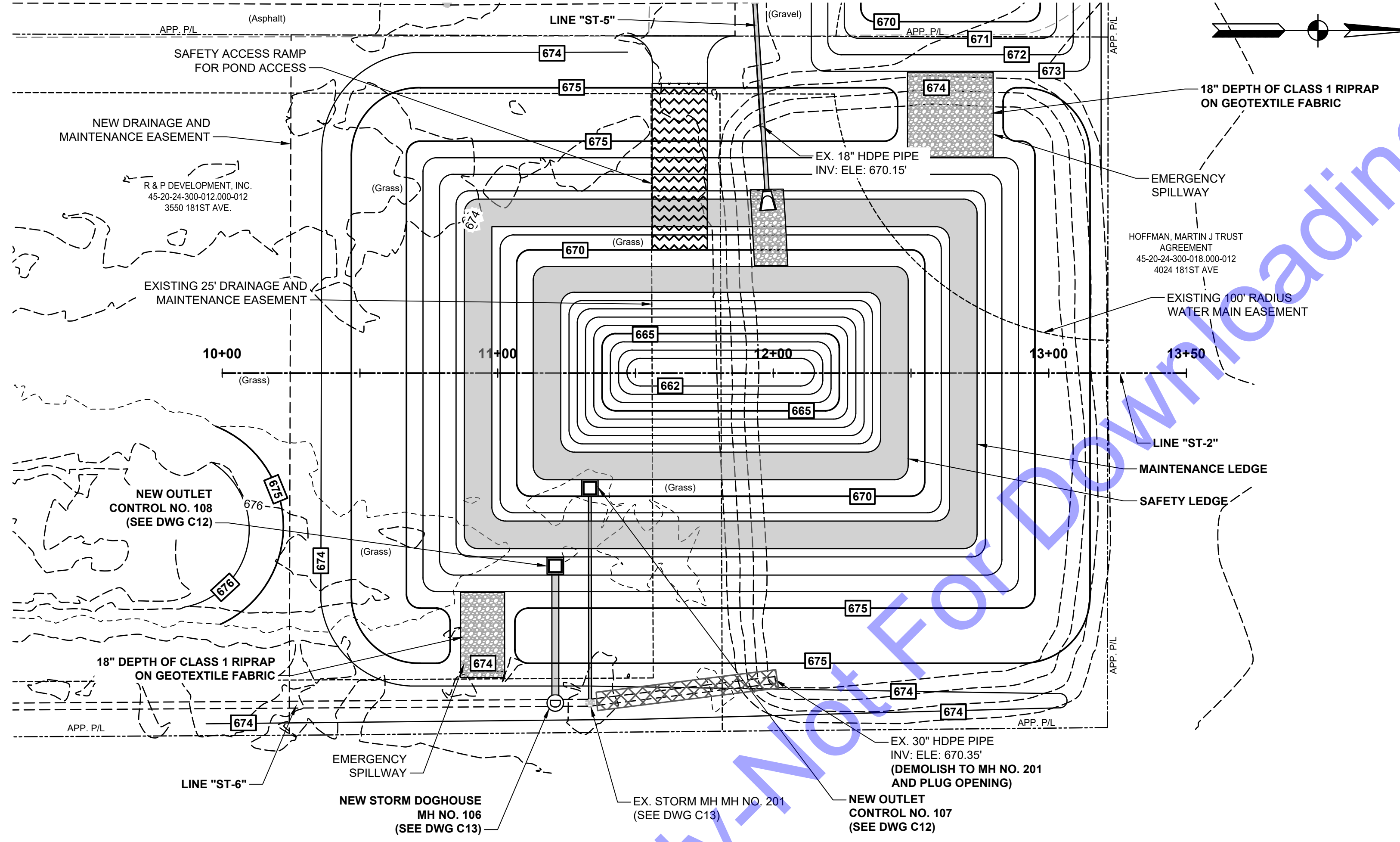
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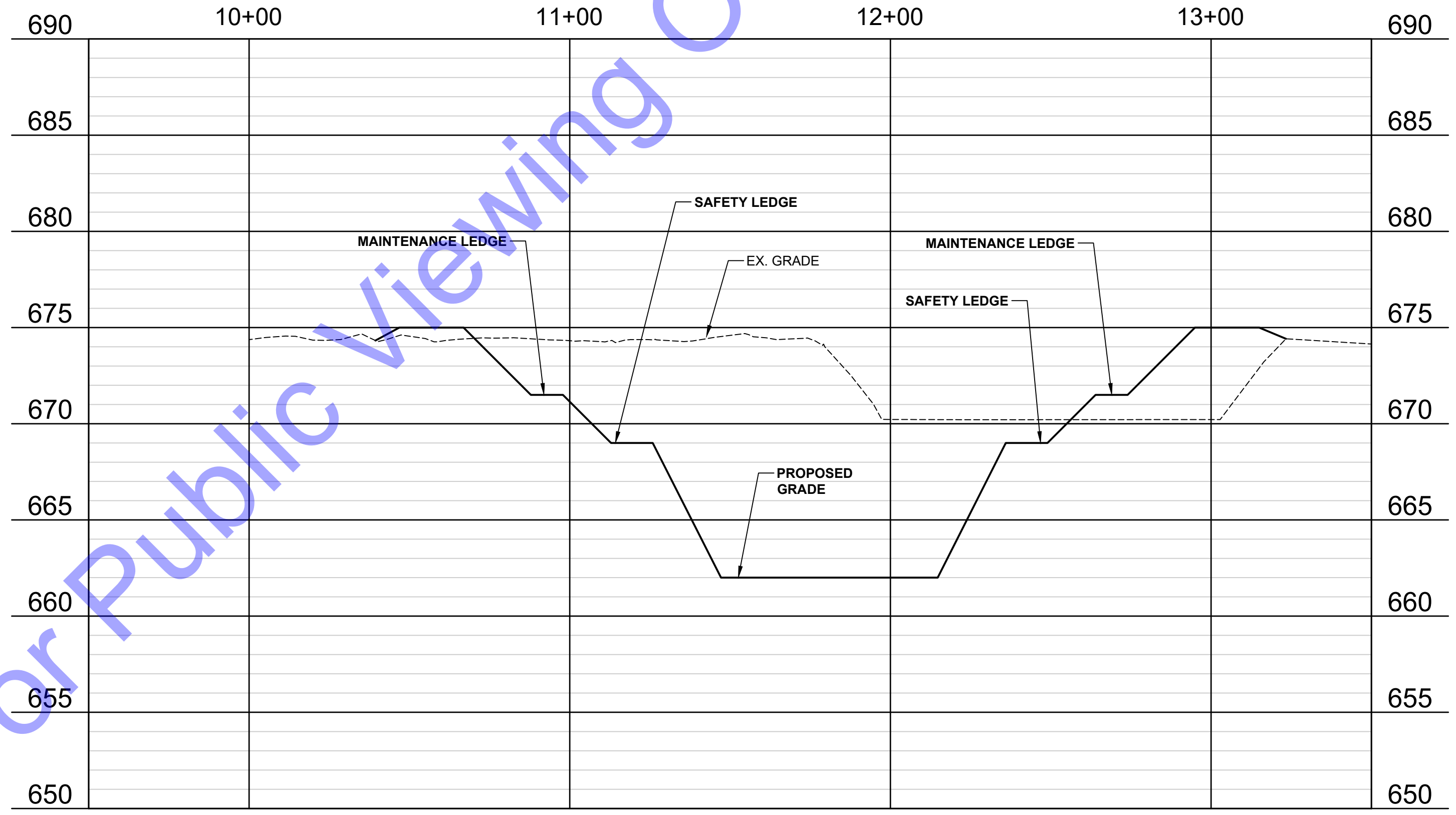
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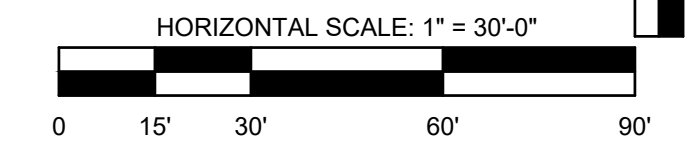
**PLAN AND PROFILE VIEWS - LINE "ST-1"**



PLAN VIEW - LINE "ST-2"



PROFILE VIEW - LINE "ST-2"



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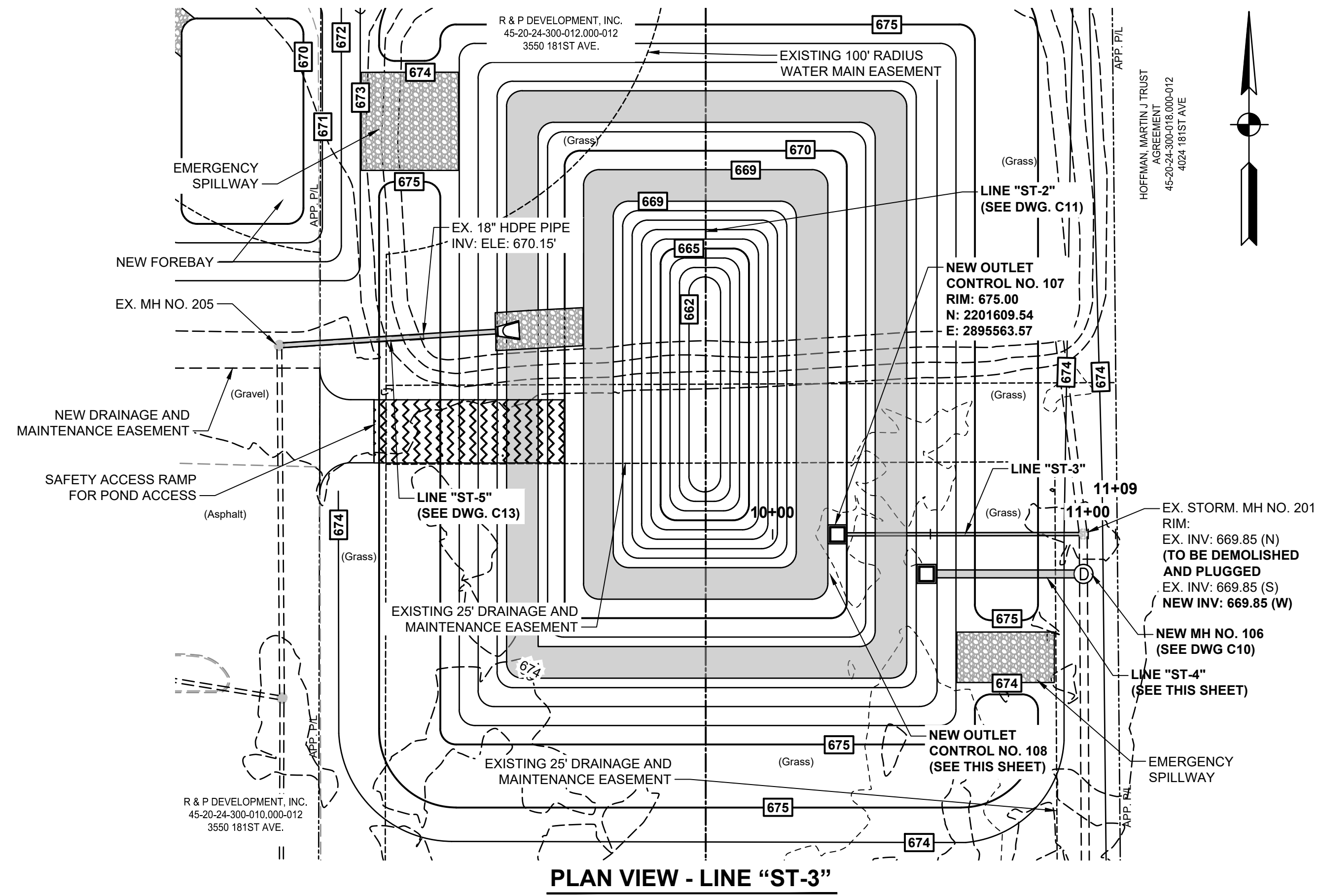
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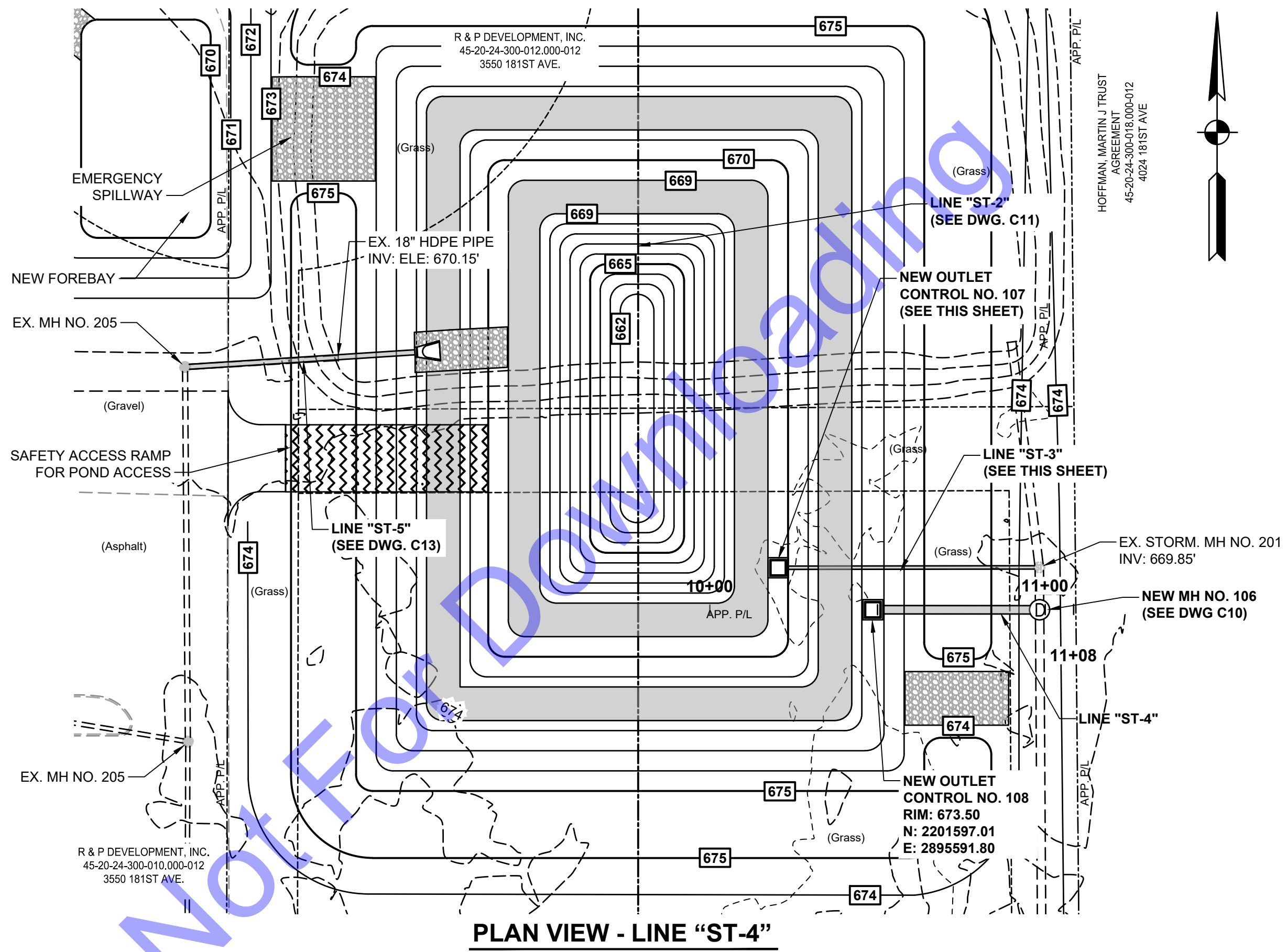
PLAN AND PROFILE VIEWS - LINE "ST-2"



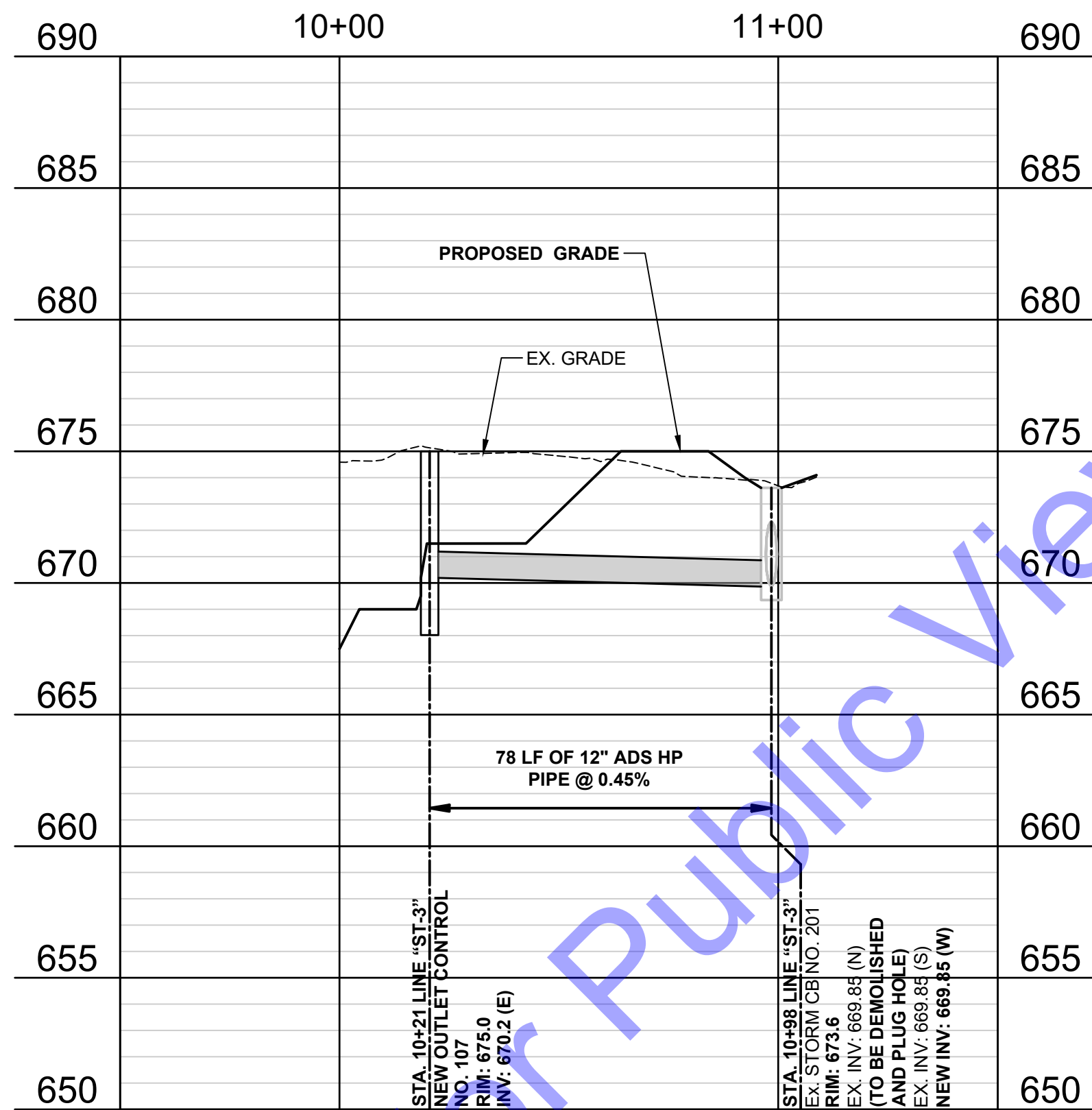
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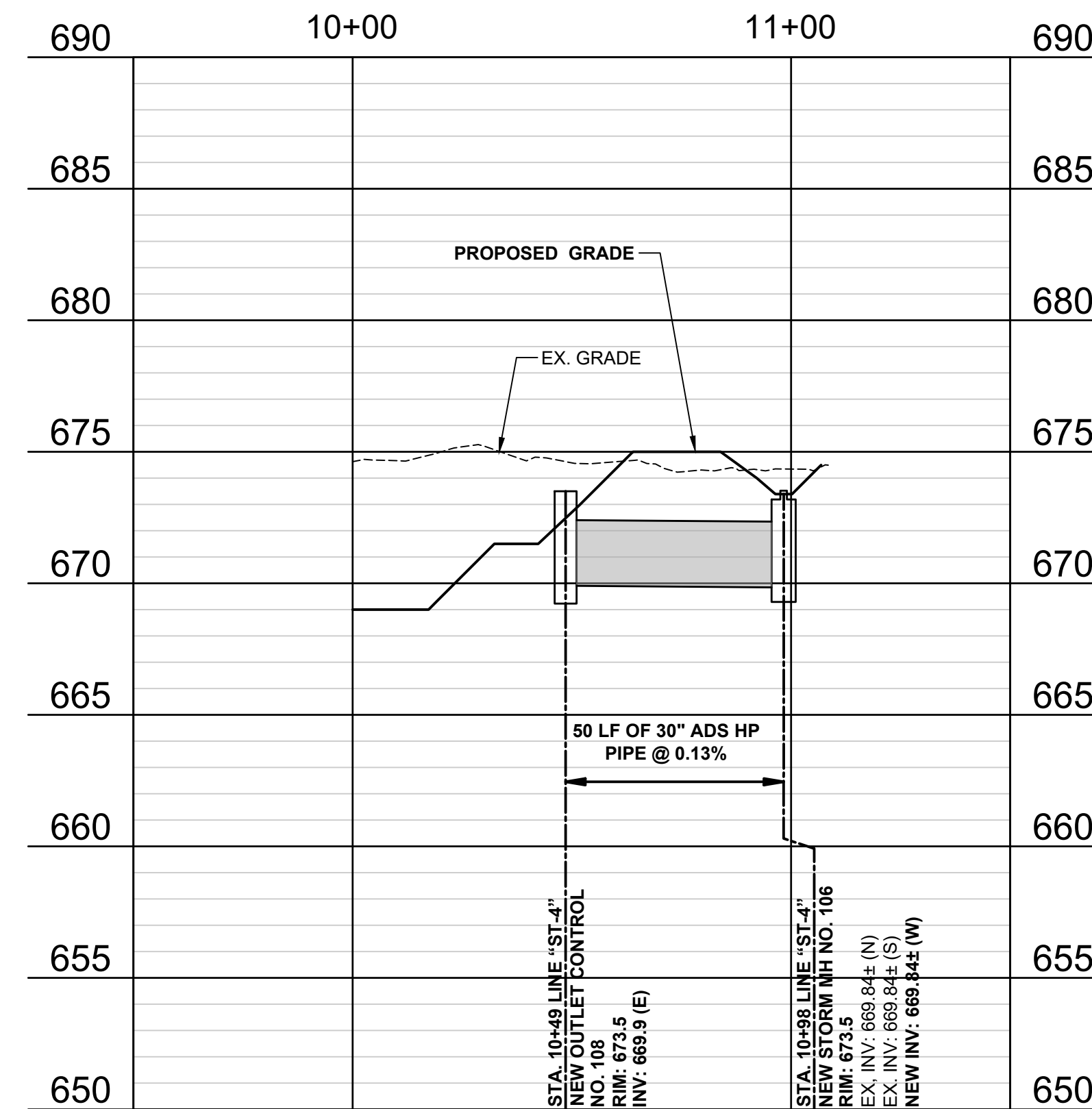
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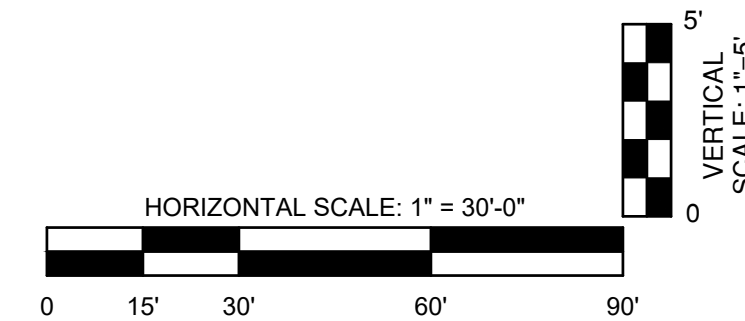
PLAN VIEW - LINE "ST-4"



PROFILE VIEW - LINE "ST-3"



PROFILE VIEW - LINE "ST-1"



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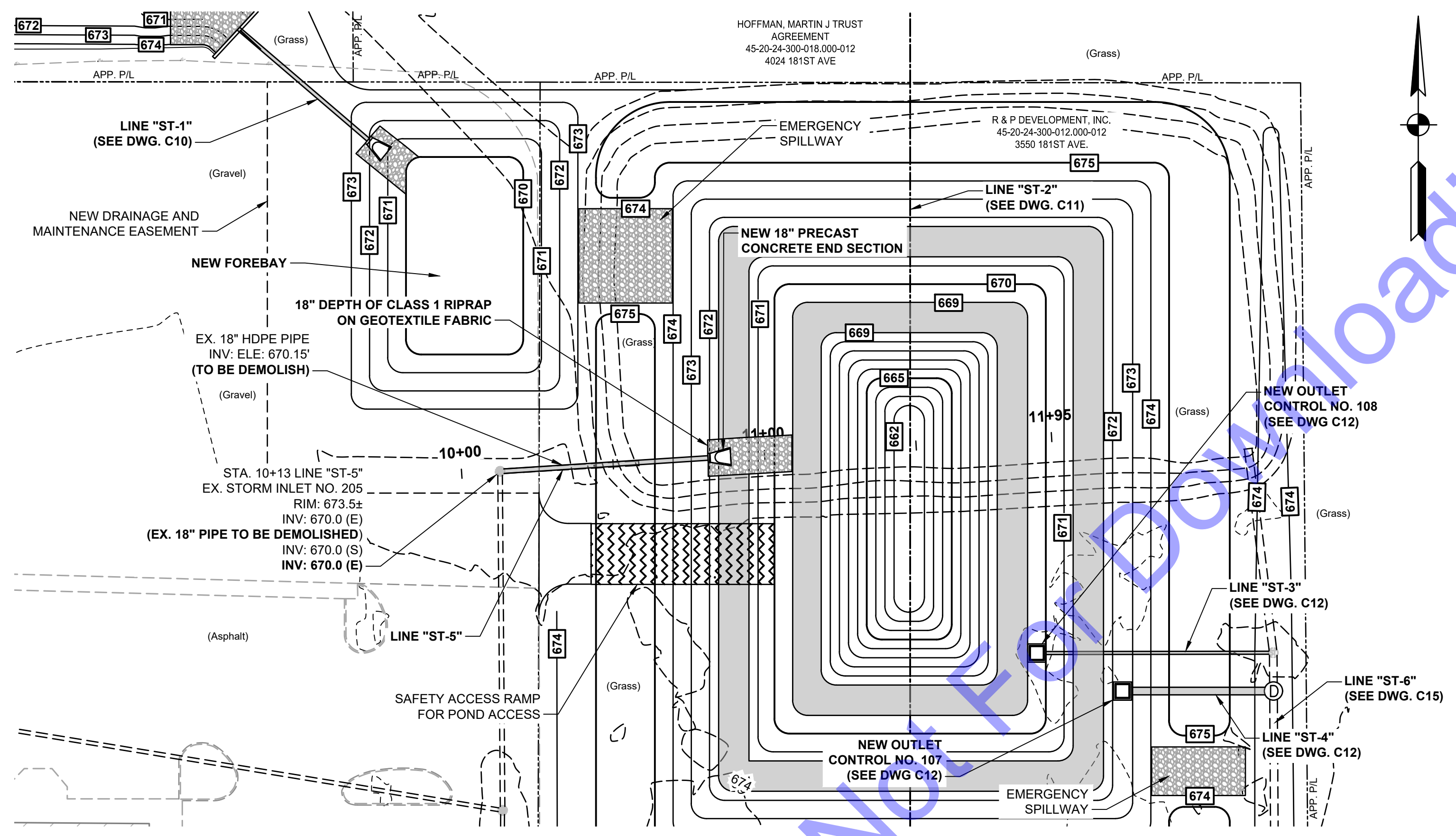
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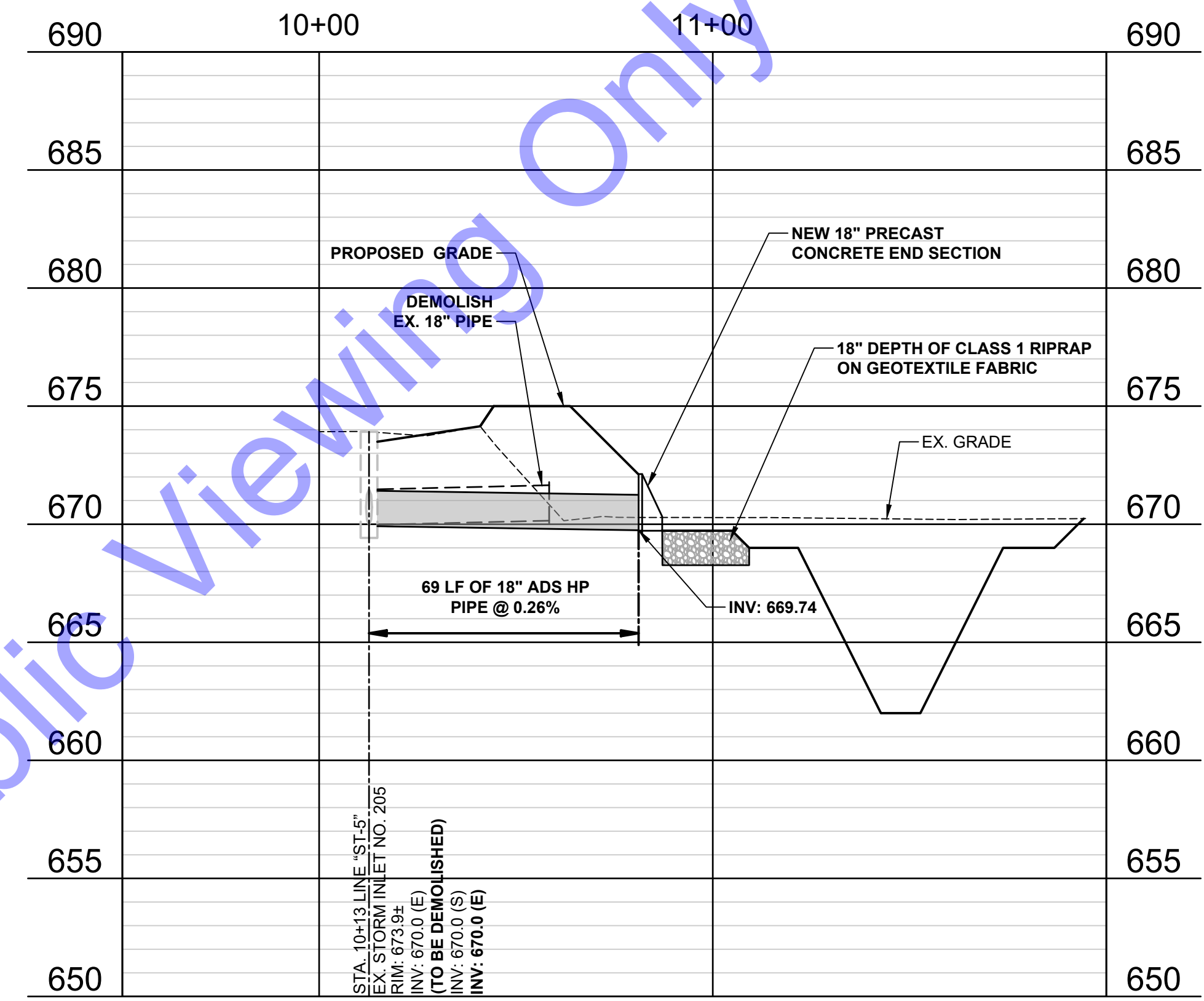
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PLAN AND PROFILE VIEWS - LINE "ST-3" AND LINE "ST-4"



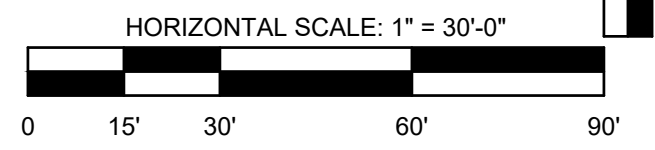
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PROFILE VIEW - LINE "ST-5"

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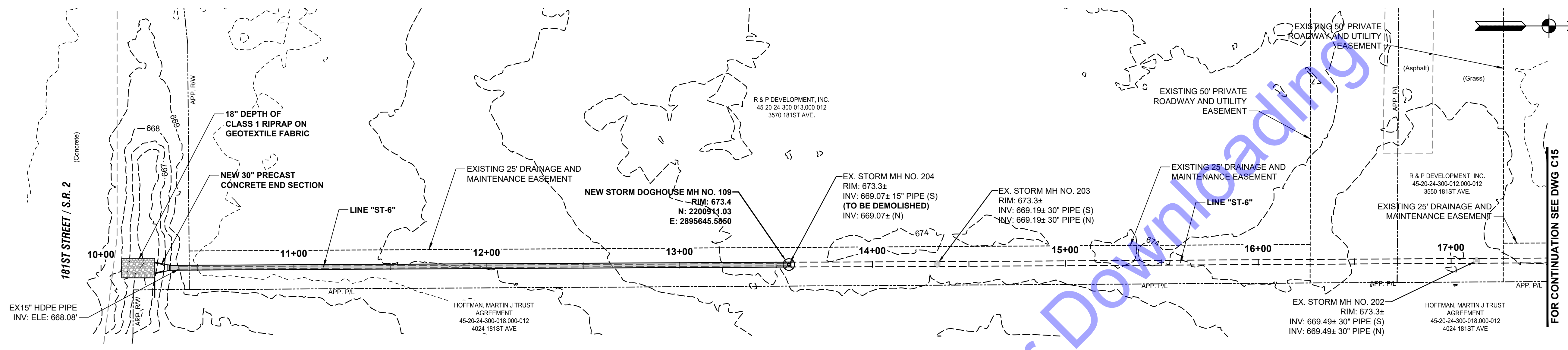
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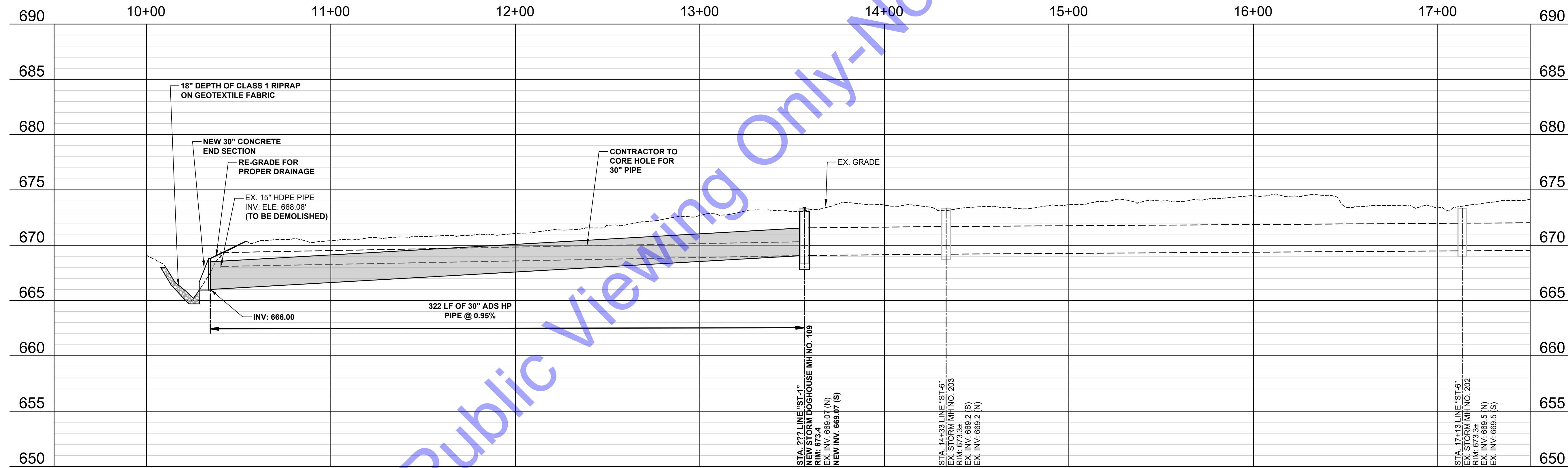
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PLAN AND PROFILE VIEWS - LINE "ST-5"



**PLAN VIEW - LINE "ST-6"**



**PROFILE VIEW - LINE "ST-6"**

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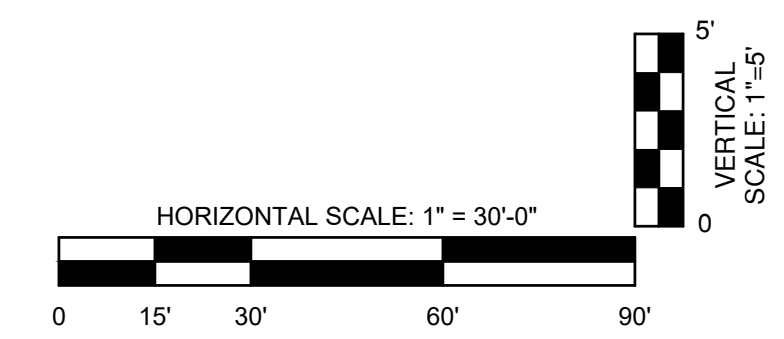
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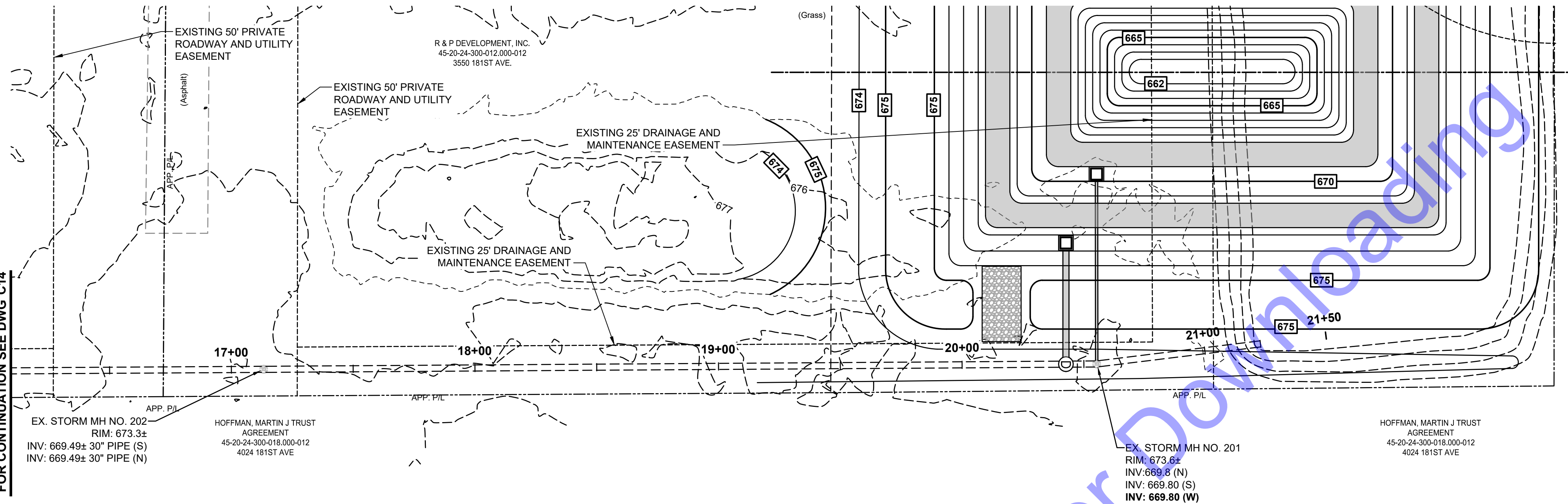
**PLAN AND PROFILE VIEWS - LINE "ST-6"**

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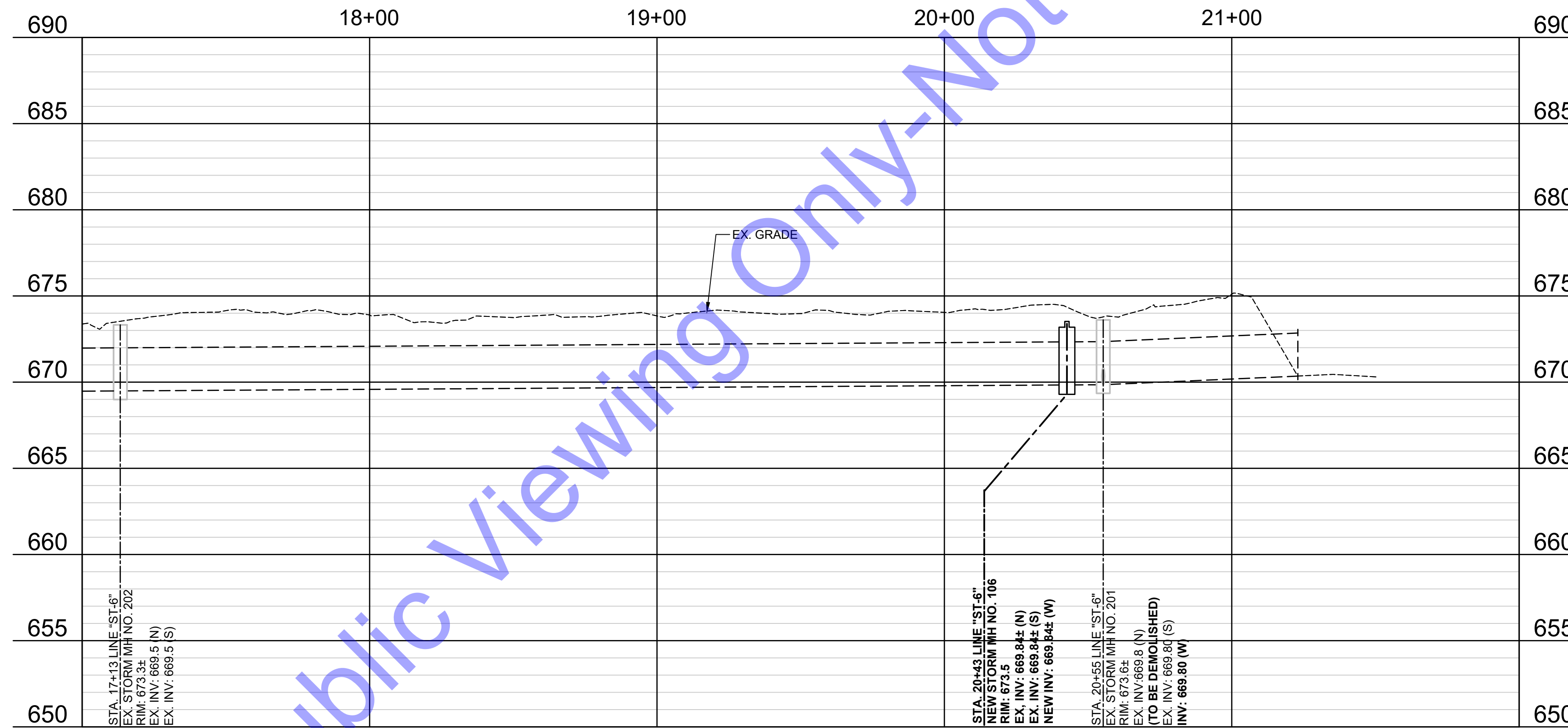
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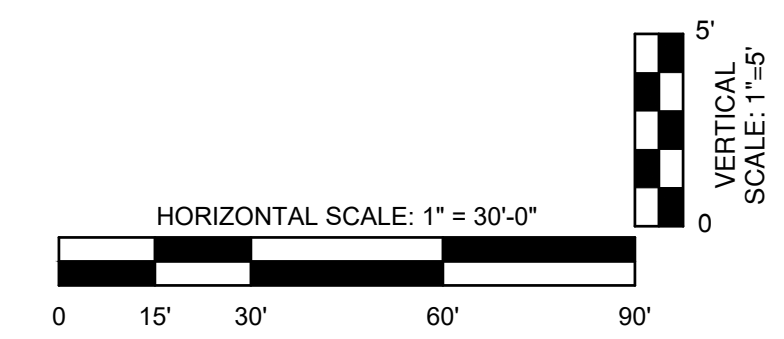
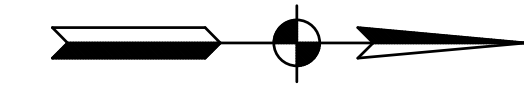


PLAN VIEW - LINE "ST-6"



PROFILE VIEW - LINE "ST-6"

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PLAN AND PROFILE VIEWS - LINE "ST-6"



STORMWATER POLLUTION PREVENTION - POST-CONSTRUCTION COMPONENT (SECTION C)

C1. DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE:

THE FINAL LAND USE IS NOT PROPOSED TO CHANGE FROM THE EXISTING. POTENTIAL POLLUTANTS FROM THIS PROJECT AFTER CONSTRUCTION IS COMPLETED INCLUDE SEDIMENT, HYDROCARBONS, AND LITTER.

FOR THIS PROJECT, SEDIMENTATION MAY OCCUR DUE TO RUNOFF FROM EXPOSED SOIL DURING CONSTRUCTION. SEDIMENT POLLUTION MAY ALSO BE CAUSED BY ON-SITE STORAGE OF EXCAVATED MATERIALS, BACKFILL MATERIALS, AND CONSTRUCTION SPOIL AREAS. HYDROCARBON POLLUTION MAY OCCUR DUE TO LEAKAGE AND SPILLS FROM ITEMS SUCH AS GASOLINE, OIL, GREASE, VEHICLE BRAKE AND TRANSMISSION FLUIDS, ANTIFREEZE, AND COOLANTS. LITTER MAY OCCUR IN PROJECT AREAS DUE TO HUMAN ACTIVITIES AND INCLUDES PLASTIC BAGS, BOTTLES, ALUMINUM CANS, AND OTHER GARBAGE.

C2. DESCRIPTION OF PROPOSED POST-CONSTRUCTION STORMWATER QUALITY MEASURES:

PERMANENT SEEDING IS THE ONLY POST-CONSTRUCTION STORMWATER MEASURE PROPOSED, AS THE AMOUNT OF IMPERVIOUS SURFACE BEING ADDED IS APPROXIMATELY EQUAL TO THE AMOUNT BEING REMOVED. AS SUCH, OVERALL SITE CONDITIONS AND STORMWATER RUNOFF ARE NOT ANTICIPATED TO CHANGE FROM EXISTING. ALL VEGETATED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND NOT COVERED BY PERMANENT IMPERVIOUS SURFACE WILL BE REQUIRED TO BE RESTORED. PERMANENT SEEDING SPECIFICATIONS WILL BE IN ACCORDANCE WITH WM-24 - SEEDING AND SODDING.

C3. PLAN DETAILS FOR EACH STORMWATER QUALITY MEASURE:

PERMANENT SEEDING IS THE ONLY POST-CONSTRUCTION STORMWATER QUALITY MEASURE ANTICIPATED FOR THIS PROJECT. ALL VEGETATED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND NOT COVERED BY PERMANENT IMPERVIOUS SURFACE WILL BE REQUIRED TO BE RESTORED. PERMANENT SEEDING SPECIFICATIONS WILL BE IN ACCORDANCE WITH WM-24 - SEEDING AND SODDING.

TEMPORARY EROSION CONTROL MEASURES WILL NOT BE REMOVED UNTIL THE PERMANENT SEEDING HAS BEEN ESTABLISHED. FINAL STABILIZATION OF A PROJECT SITE IS ACHIEVED WHEN ALL LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND UNIFORM (EVENLY DISTRIBUTED WITHOUT LARGE BARE AREAS), PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% HAS BEEN ESTABLISHED ON ALL UNPAVED DISTURBED AREAS AND ARE NOT COVERED BY PERMANENT STRUCTURES.

C4. SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION:

POST-CONSTRUCTION SEQUENCING MEASURES FOR THIS PROJECT WILL BE AS FOLLOWS:

- 1. TEMPORARY PLANTINGS WILL BE PROVIDED IN CRITICAL AREAS DEVOID OF VEGETATION AND SUBJECT TO EROSION. SUCH TEMPORARY PLANTINGS MAY BE NECESSARY TO PROTECT AN AREA WHEN PREPARING FOR WINTER SHUT DOWN OR TO PROVIDE COVER WHEN PERMANENT SEEDLINGS ARE LIKELY TO FAIL DUE TO AN EXTENDED PERIOD OF HEAT OR DROUGHT.
2. REMOVAL AND CLEANUP OF ALL TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCES AND INLET PROTECTION.
3. THE ENTIRE CONSTRUCTION AREA IS TO BE INSPECTED AND CLEANED, INCLUDING THE COLLECTION AND DISPOSAL OF CONSTRUCTION TRASH AND DEBRIS.
4. PERMANENT SEEDING AND MULCHING WILL BE INSTALLED IMMEDIATELY AFTER ACHIEVING FINAL GRADE OR WITHIN SEVEN (7) DAYS OF INACTIVITY. IF NECESSARY, A TEMPORARY STABILIZATION PRACTICE WILL BE EMPLOYED UNTIL THE NEXT PRIME SEEDING PERIOD.
5. A FINAL SITE INSPECTION WILL TAKE PLACE TO ASSURE THAT ALL REQUIREMENTS OF THE SWPPP, CONSTRUCTION DRAWINGS, AND SUPPORTING DOCUMENTS HAVE BEEN FULFILLED.

C5. MAINTENANCE GUIDELINES FOR PROPOSED POST-CONSTRUCTION WATER QUALITY MEASURES:

PERMANENT SEEDING IS THE ONLY ANTICIPATED POST-CONSTRUCTION STORMWATER QUALITY MEASURE. VEGETATED AREAS WITHIN THE PROJECT BOUNDARIES MUST BE MAINTAINED ON A REGULAR BASIS DURING THE ACTIVE GROWING SEASON. MAINTENANCE ACTIVITIES WILL INCLUDE INSPECTION FOR SPARSELY SEEDED AREAS AND RESEEDING AREAS WHICH HAVE BEEN DAMAGED OR WHICH HAVE NOT EXHIBITED A SUCCESSFUL AND HARDY STAND OF VEGETATIVE COVER. FERTILIZATION AND WATERING REQUIREMENTS WILL BE IN ACCORDANCE WITH WM-24 - SEEDING AND SODDING.

C6. ENTITY RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE POST-CONSTRUCTION STORMWATER MEASURES:

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE SITE INSPECTIONS AFTER RAINFALL EVENTS AND TO CORRECT ANY EROSION AND SEDIMENT CONTROL MEASURES SHOWING SIGNS OF DAMAGE OR FAILURE FOR A ONE-YEAR WARRANTY PERIOD FOLLOWING THE ISSUANCE OF A SUBSTANTIAL COMPLETION CERTIFICATE FOR THE PROJECT. THIS INCLUDES CORRECTION OF SITE STABILIZATION MEASURES AND REMOVAL OF ACCUMULATED SEDIMENT AS NEEDED. APPLE VALLEY UTILITIES WILL ULTIMATELY BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF POST-CONSTRUCTION STORMWATER MEASURES.

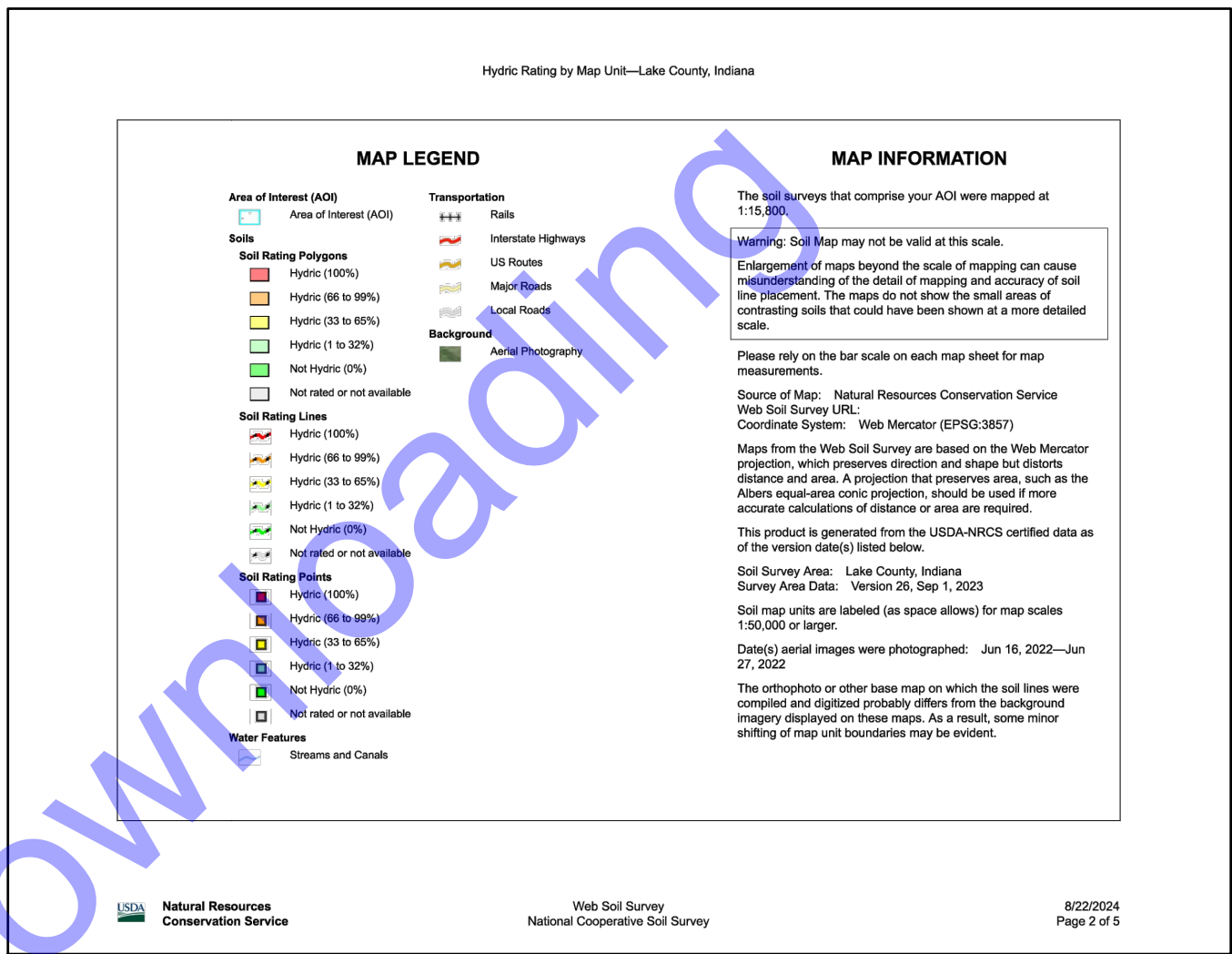
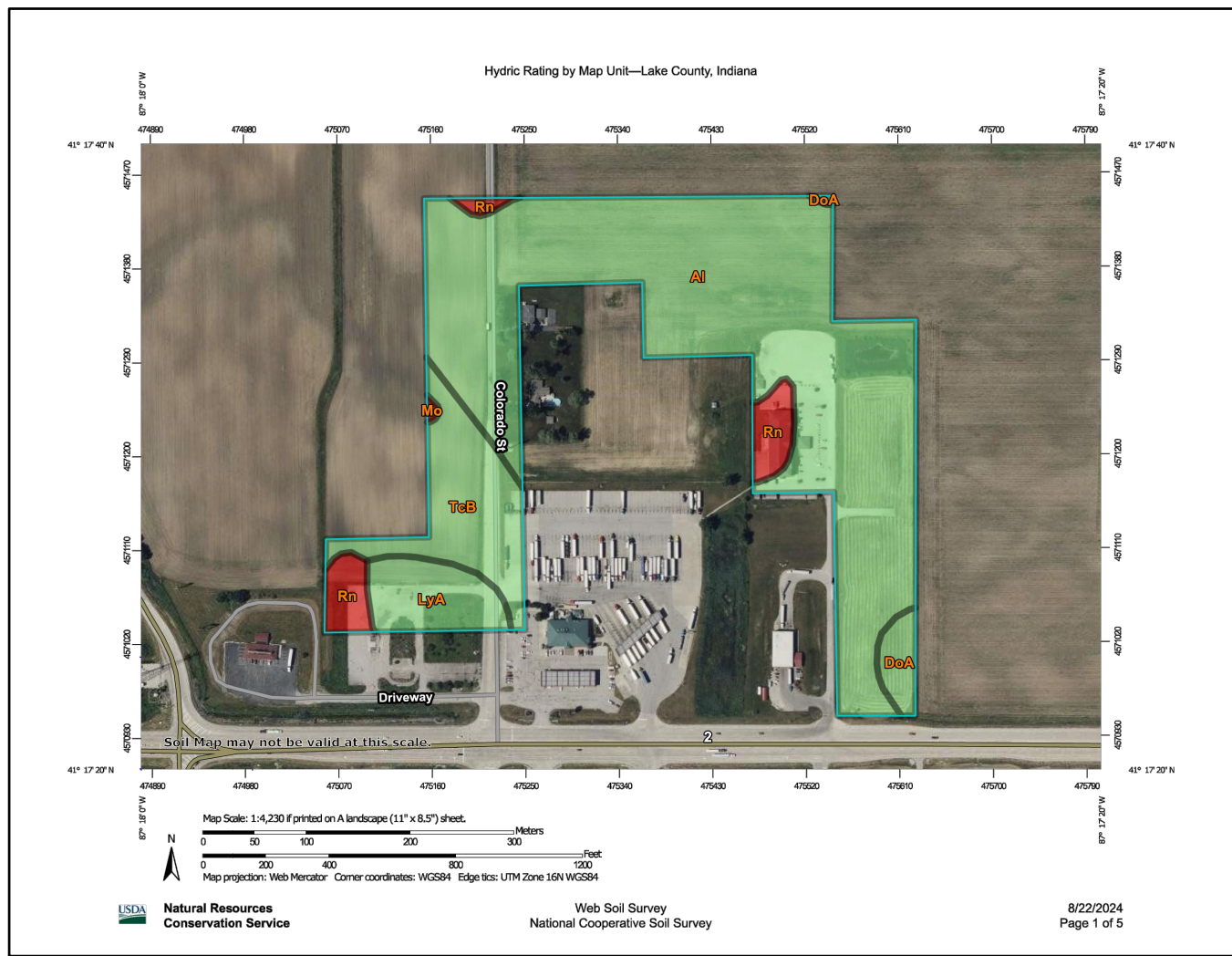


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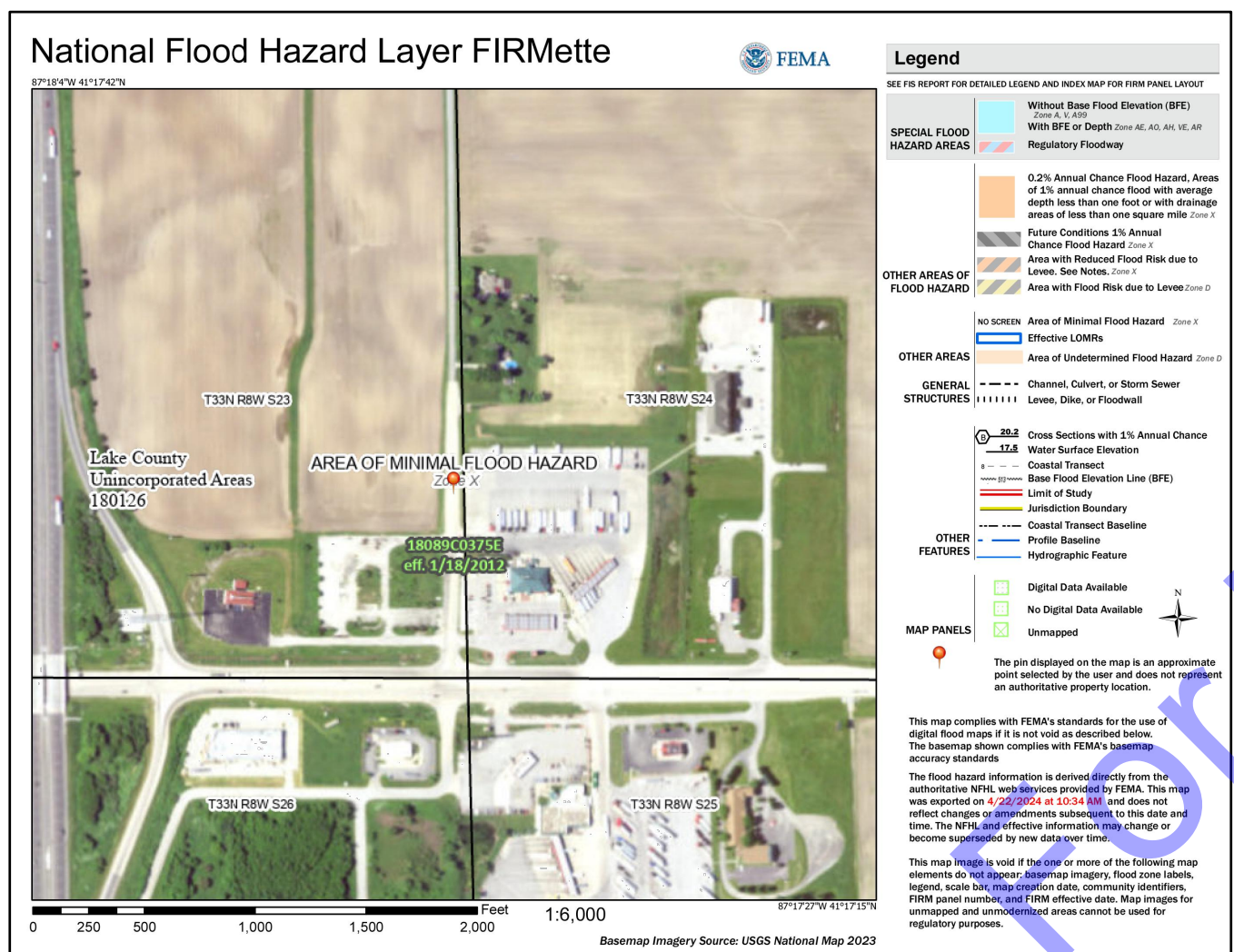
Description
This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States. U.S. Department of Agriculture Handbook 18.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service, U.S. Department of Agriculture Handbook 436.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436.
Soil Survey Staff. 2006. Keys to soil taxonomy, 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

HYDRIC SOILS LEGEND

HYDRIC SOILS LEGEND

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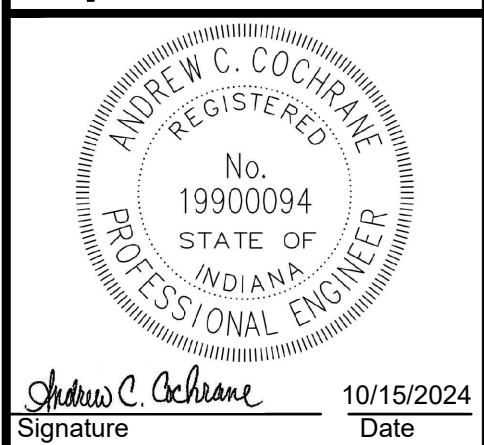
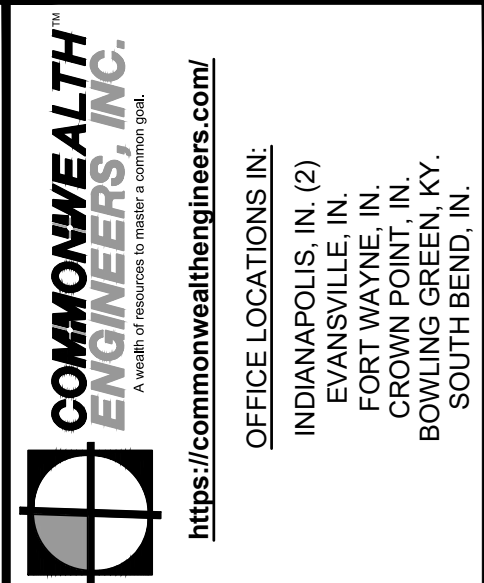


FLOODPLAIN MAP

HYDRIC SOILS

HYDRIC SOILS LEGEND

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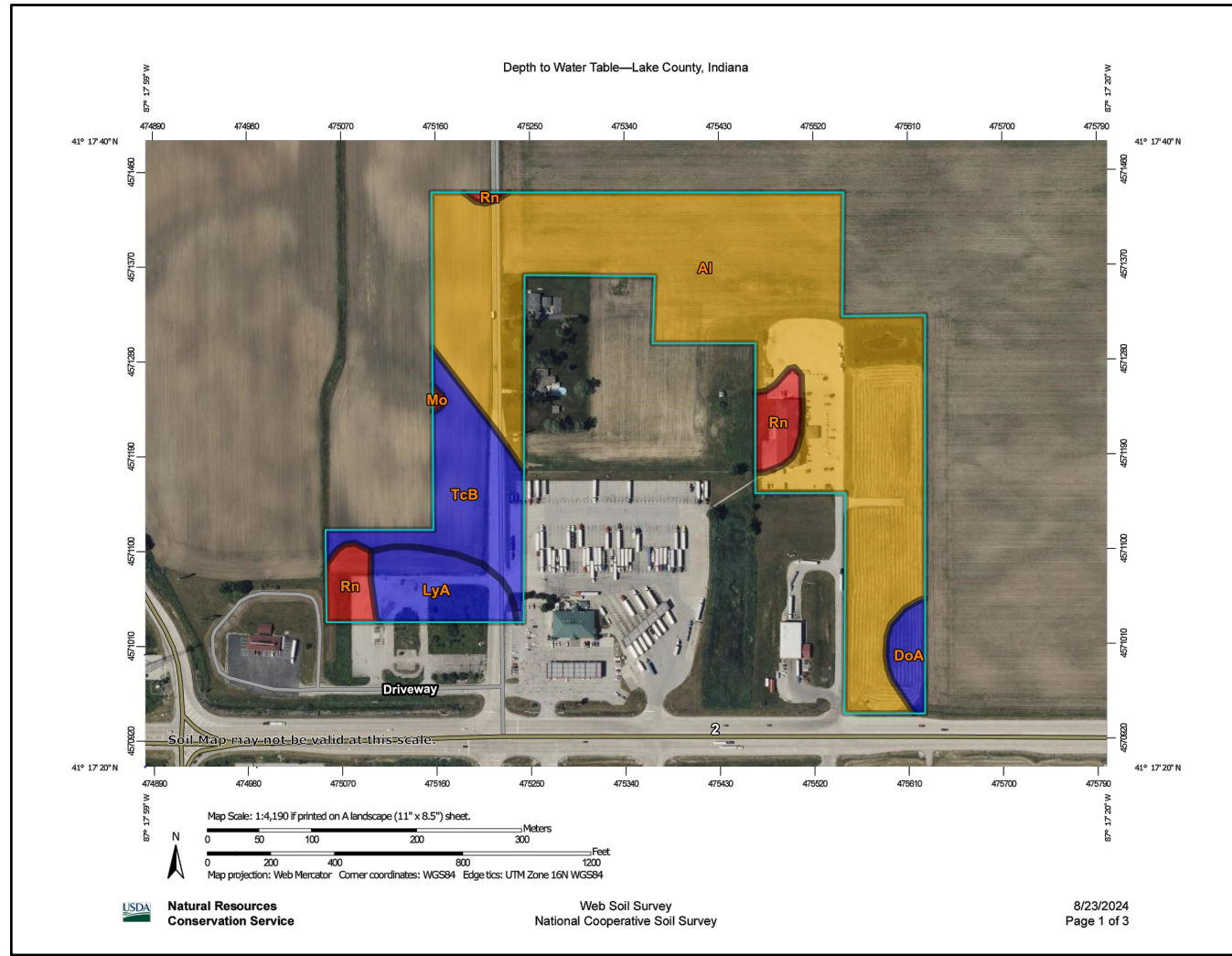


Table for tracking design and revision, with columns for No., Submittal/Revision, Date, By, and a grid for tracking changes.

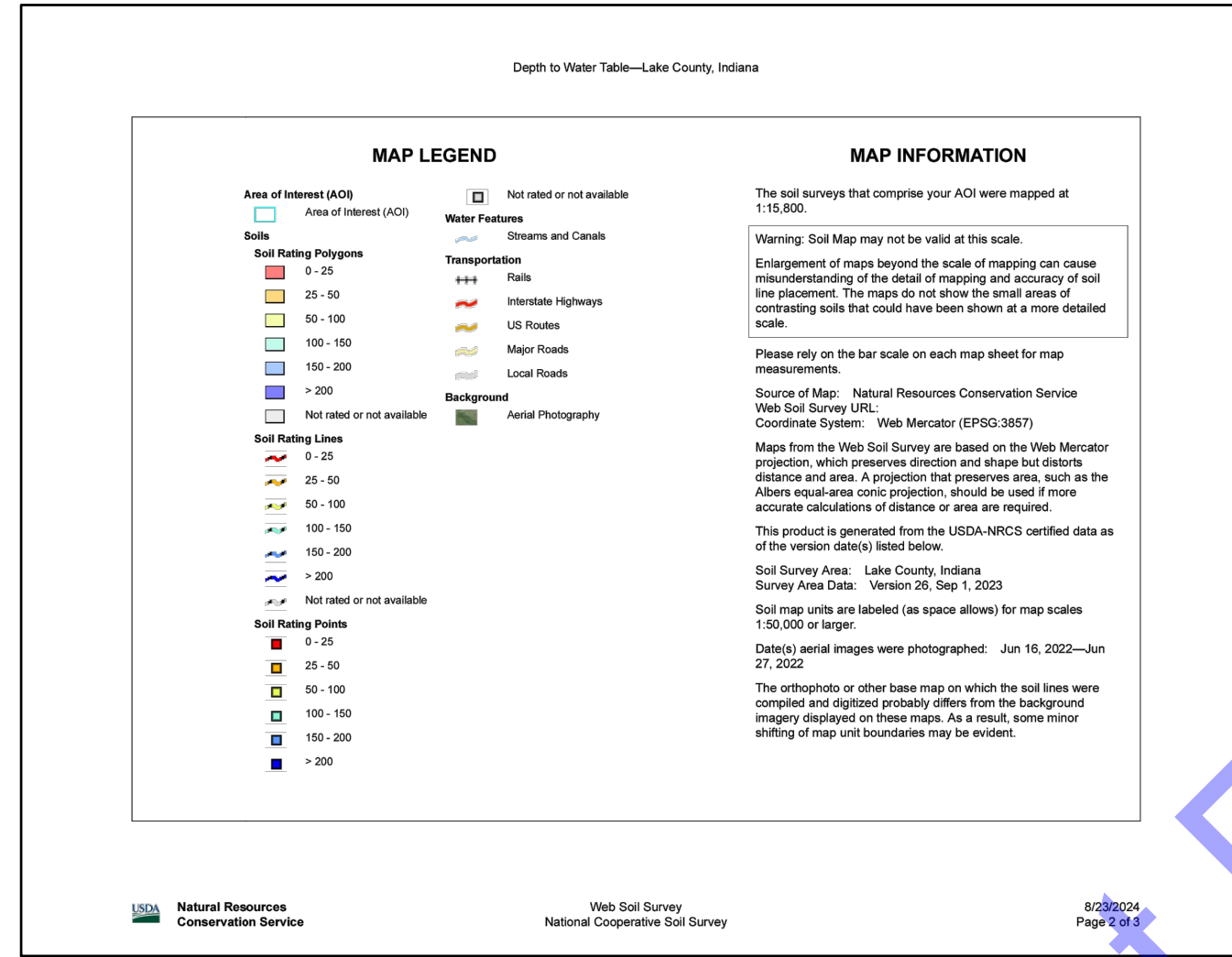
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Issue Date: 10-17-24, Project No: W24026, Scale: AS SHOWN

STORMWATER POLLUTION PREVENTION PLAN

Drawing No: EC2
Sheet: 22 OF 73



**DEPTH TO WATER**



**DEPTH TO WATER LEGEND**

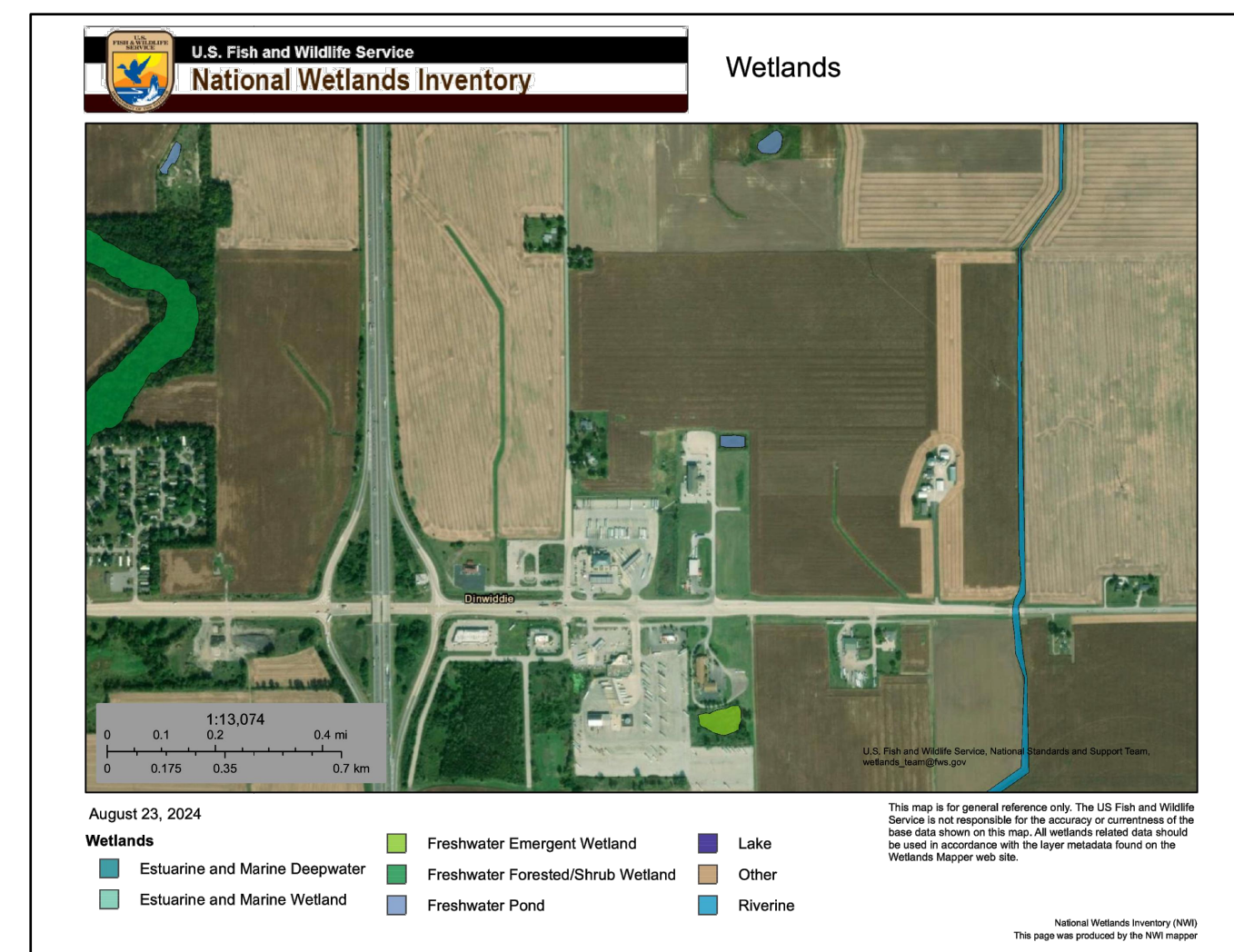
Depth to Water Table - Lake County, Indiana

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Al	Alida loam	48	21.8	72.5%
DoA	Door loam, 0 to 2 percent slopes	>200	0.8	2.5%
Lya	Lydick loam, 0 to 2 percent slopes	>200	2.1	6.6%
Mo	Milford silt loam, gentle slope	7	0.0	0.1%
Rn	Russell loam, sandy substratum	15	1.7	5.6%
ToB	Trochilum, 2 to 8 percent slopes	>200	3.7	12.4%
<b>Totals for Area of Interest</b>			<b>30.1</b>	<b>100.0%</b>

**Description**  
 "Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (pedomorphs) in the soil. A saturated zone that lasts for less than a month is not considered a water table.  
 This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

**Rating Options**  
 Units of Measure: centimeters  
 Aggregation Method: Dominant Component  
 Component Percent Cutoff: None Specified  
 Tie-break Rule: Lower  
 Interpret Nulls as Zero: No  
 Beginning Month: January  
 Ending Month: December

**DEPTH TO WATER LEGEND**



**SURFACE WATER AND WETLAND MAP**

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ANDREW C. COCHRANE  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: Andrew C. Cochrane Date: 10/15/2024

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**STORMWATER POLLUTION PREVENTION PLAN**

UNITED STATES COLD STORAGE INC  
45-20-23-476-003,000-012  
17850 COLORADO ST

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REGISTERED PROFESSIONAL ENGINEER  
No. 19900094  
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Signature: *Andrew C. Cochran* Date: 10/15/2024

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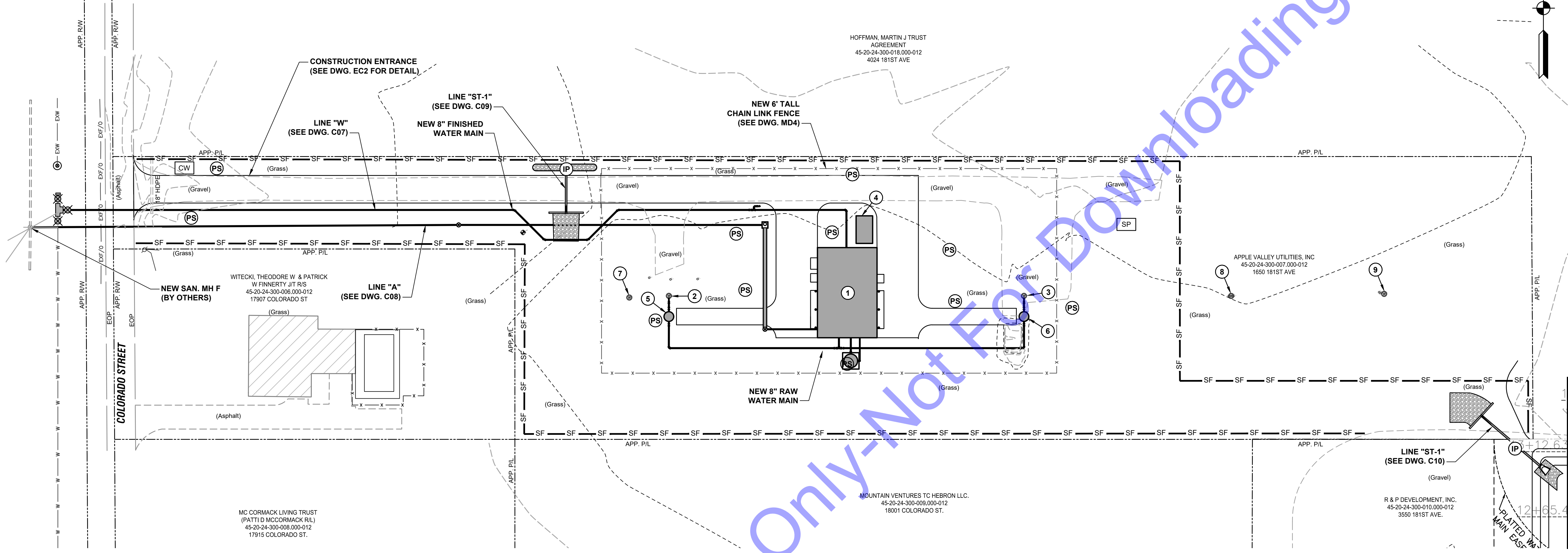
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Issue Date: 10-17-24 Project No: W24026 Scale: AS SHOWN

**EROSION CONTROL PLAN**

Drawing No:  
**EC4**  
Sheet: 24 OF 73



**PLAN VIEW**  
SCALE: 1"=40'-0"  
0 40' 80'

- EROSION CONTROL LEGEND:**
- PERMANENT SEEDING
  - SILT FENCE (LIMITS OF DISTURBANCE)
  - STORM INLET PROTECTION
  - CONCRETE WASHOUT
  - STOCKPILE

- GENERAL NOTES:**
- CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL MEASURES AS SPECIFIED IN THE DETAILED SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO CONCRETE WASHOUT STATIONS, TEMPORARY CONSTRUCTION ENTRANCES, TEMPORARY SEEDING, ETC. AS REQUIRED DURING THE DURATION OF THE PROJECT TO MAINTAIN COMPLIANCE WITH THE GENERAL STORM WATER CONSTRUCTION PERMIT. CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS OF THE GENERAL STORM WATER CONSTRUCTION PERMIT, INCLUDING PROVIDING REQUIRED NOTIFICATIONS TO THE REQUIRED AGENCIES.
  - SEE DRAWING EC6 FOR EROSION CONTROL DETAILS.

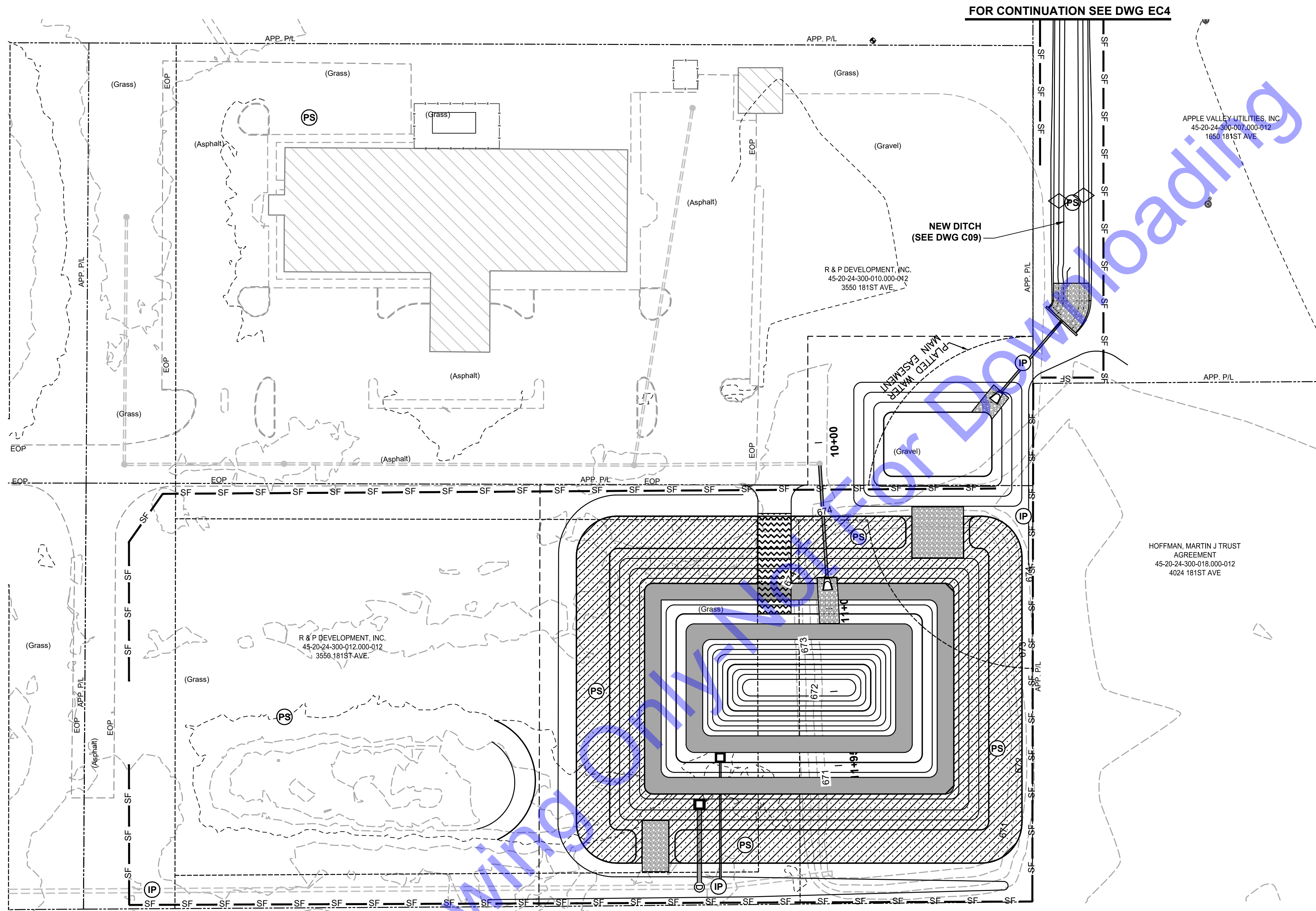
**NEW STRUCTURE LEGEND**

STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D1-1)
2	NEW WELL NO. 1 (SEE DWG. D2-1)
3	NEW WELL NO. 2 (SEE DWG. D2-1)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D2-2)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D2-2)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2

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FOR CONTINUATION SEE DWG EC4

**PLAN VIEW**  
 SCALE: 1"=40'-0"  
 0 40' 80'

- EROSION CONTROL LEGEND:**
- PS PERMANENT SEEDING
  - SF — SILT FENCE (LIMITS OF DISTURBANCE)
  - TEMPORARY EROSION CONTROL BLANKET
  - CW CONCRETE WASHOUT
  - SP STOCKPILE
  - IP STORM INLET PROTECTION

- GENERAL NOTES:**
- CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL MEASURES AS SPECIFIED IN THE DETAILED SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO CONCRETE WASHOUT STATIONS, TEMPORARY CONSTRUCTION ENTRANCES, TEMPORARY SEEDING, ETC. AS REQUIRED DURING THE DURATION OF THE PROJECT TO MAINTAIN COMPLIANCE WITH THE GENERAL STORM WATER CONSTRUCTION PERMIT. CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS OF THE GENERAL STORM WATER CONSTRUCTION PERMIT, INCLUDING PROVIDING REQUIRED NOTIFICATIONS TO THE REQUIRED AGENCIES.
  - SEE DRAWING EC6 FOR EROSION CONTROL DETAILS.

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 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

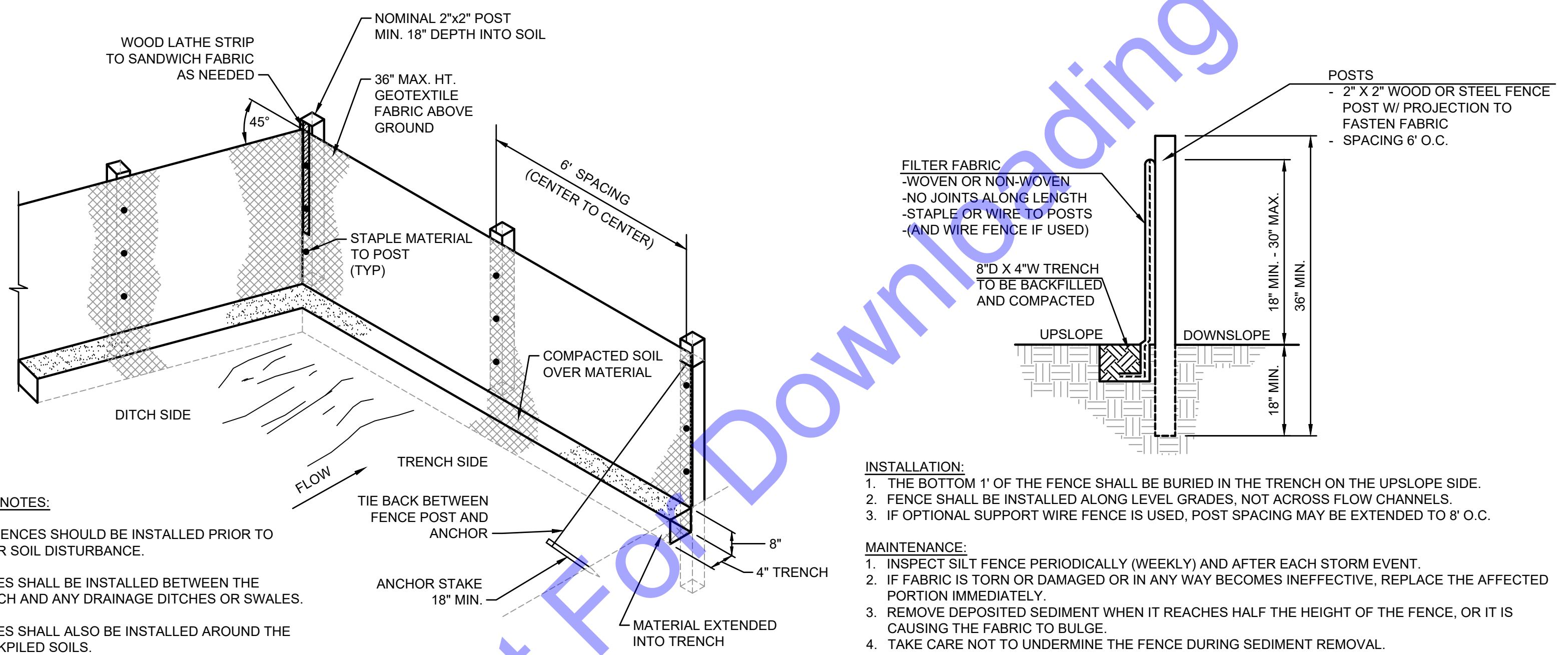
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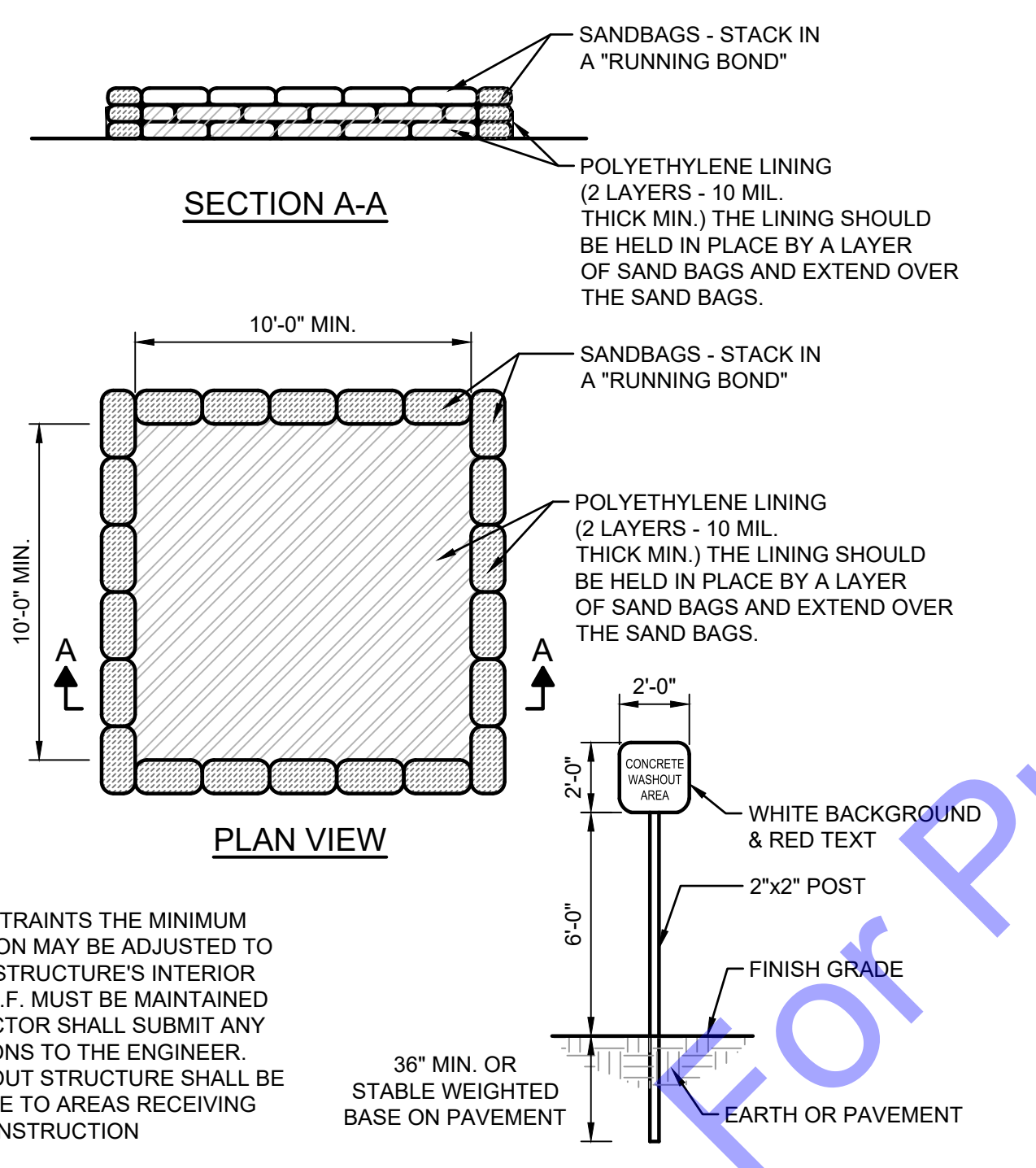
**EROSION CONTROL PLAN**



- GENERAL NOTES:**
- SILT FENCES SHOULD BE INSTALLED PRIOR TO MAJOR SOIL DISTURBANCE.
  - FENCES SHALL BE INSTALLED BETWEEN THE TRENCH AND ANY DRAINAGE DITCHES OR SWALES.
  - FENCES SHALL ALSO BE INSTALLED AROUND THE STOCKPILED SOILS.
  - THE GEOTEXTILE SHALL BE FREE FROM DEFECTS, TEARS, PUNCTURES, FLAWS, DETERIORATION OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION, STORAGE, OR INSTALLATION.
  - TIE BACKS SHALL BE PLACED AS REQUIRED.

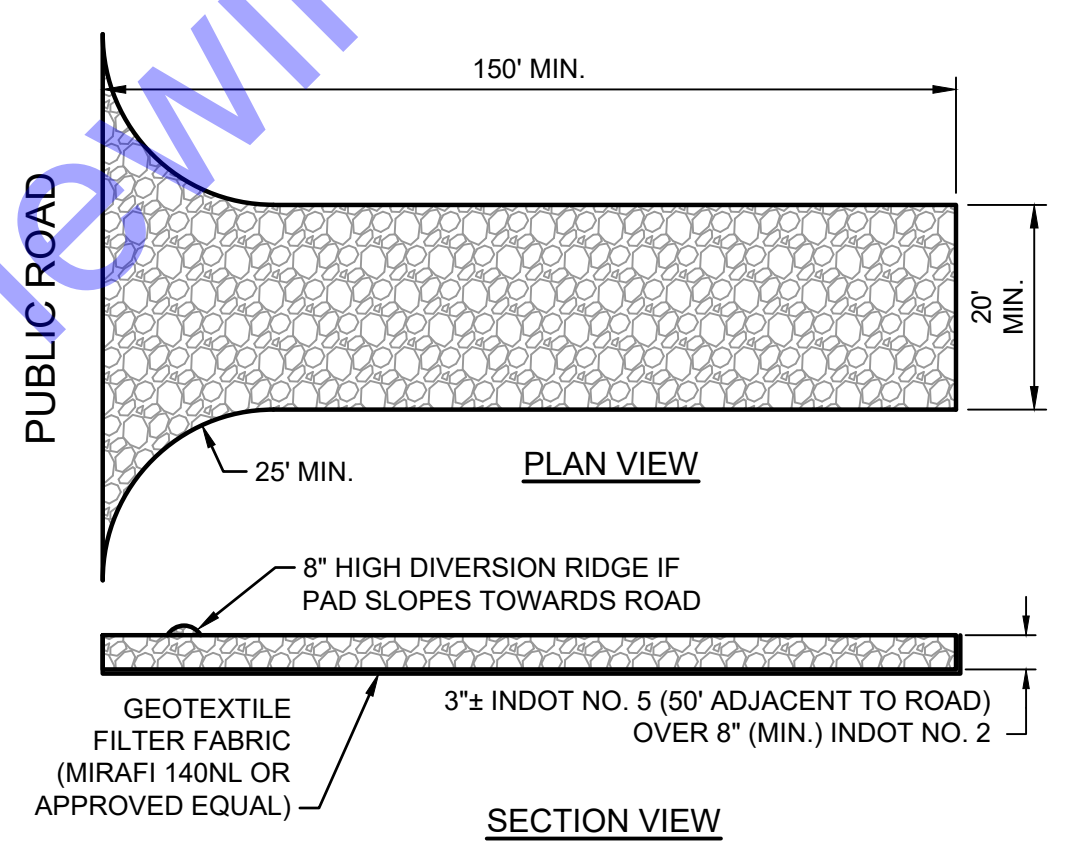
- INSTALLATION:**
- THE BOTTOM 1" OF THE FENCE SHALL BE BURIED IN THE TRENCH ON THE UPSLOPE SIDE.
  - FENCE SHALL BE INSTALLED ALONG LEVEL GRADES, NOT ACROSS FLOW CHANNELS.
  - IF OPTIONAL SUPPORT WIRE FENCE IS USED, POST SPACING MAY BE EXTENDED TO 8' O.C.
- MAINTENANCE:**
- INSPECT SILT FENCE PERIODICALLY (WEEKLY) AND AFTER EACH STORM EVENT.
  - IF FABRIC IS TORN OR DAMAGED OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
  - REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE, OR IT IS CAUSING THE FABRIC TO BULGE.
  - TAKE CARE NOT TO UNDERMINE THE FENCE DURING SEDIMENT REMOVAL.
  - AFTER THE CONTRIBUTING AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND REMAINING SEDIMENT, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

**SILT FENCE DETAIL**  
SCALE: 1"=5'-0"



**NOTE:**  
DUE TO SITE CONSTRAINTS THE MINIMUM INTERIOR DIMENSION MAY BE ADJUSTED TO FIT THE SITE. THE STRUCTURE'S INTERIOR FOOTAGE OF 100 S.F. MUST BE MAINTAINED AND THE CONTRACTOR SHALL SUBMIT ANY DESIGN ALTERATIONS TO THE ENGINEER. CONCRETE WASHOUT STRUCTURE SHALL BE RE-LOCATED CLOSE TO AREAS RECEIVING CONCRETE, AS CONSTRUCTION PROGRESSES.

**CONCRETE WASHOUT PIT DETAIL**  
SCALE: 1"=5'-0"



- MAINTENANCE:**
- INSPECT DAILY, AND AFTER EACH STORM EVENT OR HEAVY USE.
  - RESHAPE AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
  - TOPDRESS WITH CLEAN STONE AS REQUIRED. MAINTAIN MINIMUM DEPTH THROUGHOUT CONSTRUCTION.
  - IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY SWEEPING OR BRUSHING. (DO NOT FLUSH AREA WITH WATER UNLESS WATER IS CONVEYED TO SEDIMENT TRAP)
  - REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

**STABILIZED CONSTRUCTION ENTRANCE DETAIL**  
SCALE: 1"=5'-0"

**GENERAL EROSION AND SEDIMENT CONTROL NOTES**

- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE INDIANA STORM WATER QUALITY MANUAL FROM THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND LOCAL EROSION AND SEDIMENT CONTROL ORDINANCE, OR SWCD.
- THE NOTICE OF INTENT (NOI) AND PUBLIC NOTICE FOR THE PROJECT SHALL BE POSTED ON A SIGN INSTALLED AT OR NEAR THE SITE CONSTRUCTION TRAILER. THE NOI SHALL LIST THE CONTACT INFORMATION FOR THE SITE CONTACT PERSON. THE SIGN AND INFORMATION SHALL BE MAINTAINED AND REMAIN LEGIBLE THROUGHOUT CONSTRUCTION.
- A COPY OF THIS EROSION AND SEDIMENT CONTROL PLAN AND THE EROSION AND SEDIMENT CONTROL REPORT SHALL BE AVAILABLE AT THE PROJECT SITE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL CONTROL WASTE, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES ON THE SITE SO THEY WILL NOT BE TRANSPORTED FROM THE SITE BY THE ACTION OF WIND, STORM WATER RUNOFF, OR OTHER FORCES. PROPER DISPOSAL OR MANAGEMENT OF ALL WASTES AND UNUSED BUILDING MATERIAL APPROPRIATE TO THE NATURE OF THE WASTE OR MATERIAL IS REQUIRED.
- PUBLIC OR PRIVATE ROADWAYS SHALL BE KEPT CLEAR OF ACCUMULATED SEDIMENT. ALL SEDIMENT THAT IS CLEARED MUST BE RETURNED TO THE LIKELY POINT OF ORIGIN OR OTHER SUITABLE LOCATION. CLEARING OF LARGE AMOUNTS OF SEDIMENT SHALL NOT INCLUDE FLUSHING THE AREA WITH WATER.
- MINIMIZE THE EXPOSURE OF BARE EARTH BY LIMITING THE WORK AREA TO THAT NECESSARY TO PERFORM THE WORK, AND BY PROPER SCHEDULING OF MANPOWER AND EQUIPMENT.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED, CLEANED, AND MAINTAINED FOLLOWING EACH STORM EVENT.
- WHEREVER POSSIBLE, MAINTAIN EXISTING VEGETATIVE COVER. USE NON-VEGETATIVE MATERIAL INCLUDING MULCH, EROSION BLANKETS, OR STONE TO CONTROL EROSION FROM DISTURBED AREAS.
- A LOG SHALL BE MAINTAINED OF ALL INSPECTIONS (WEEKLY, AND FOLLOWING STORM EVENTS), MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT CONTROL MEASURES. THE LOG SHALL BE MAINTAINED ON SITE AND BE AVAILABLE UPON REQUEST TO THE OWNERS REPRESENTATIVES AND THE OPERATING AUTHORITIES HAVING JURISDICTION OVER THE SITE.

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 No. 19900094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

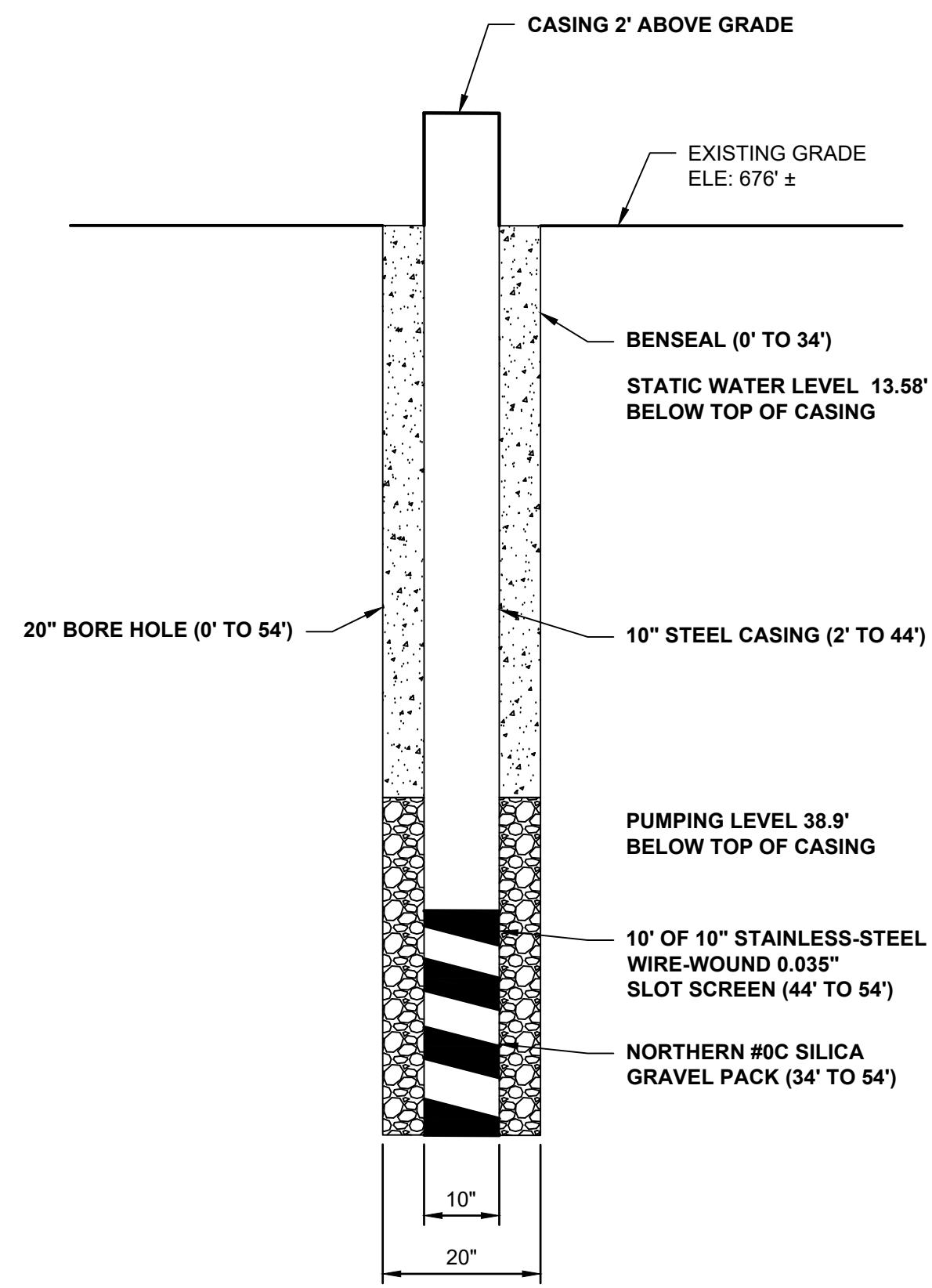
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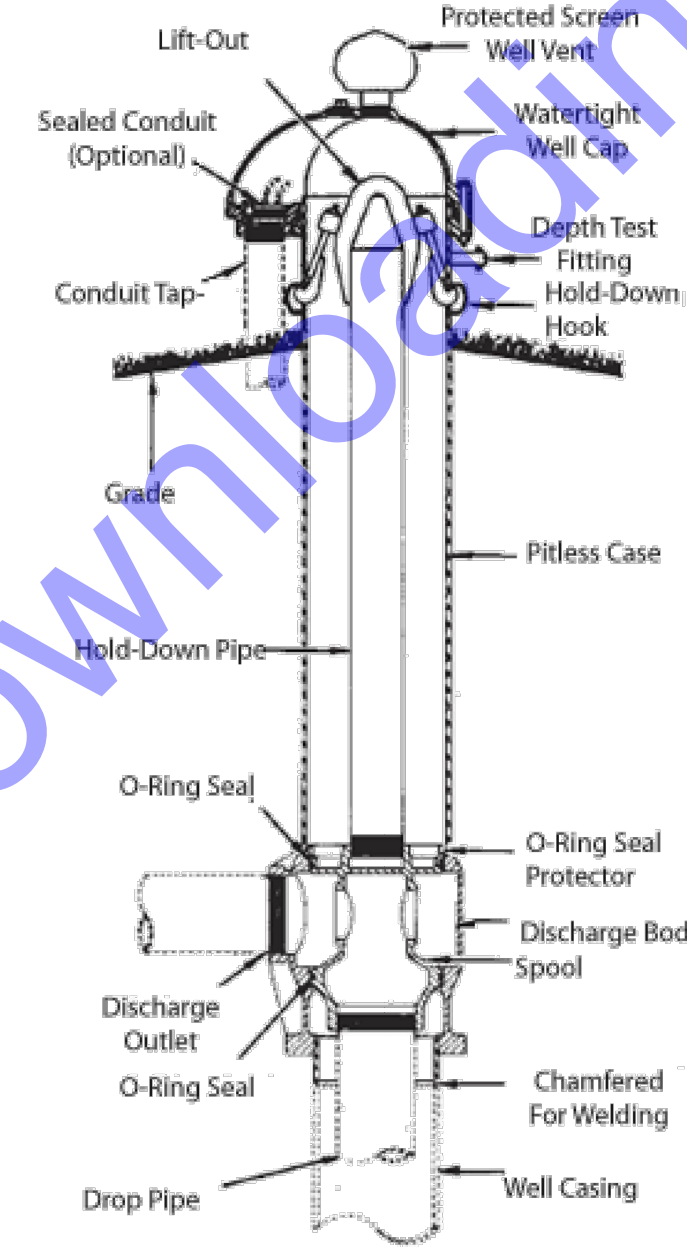
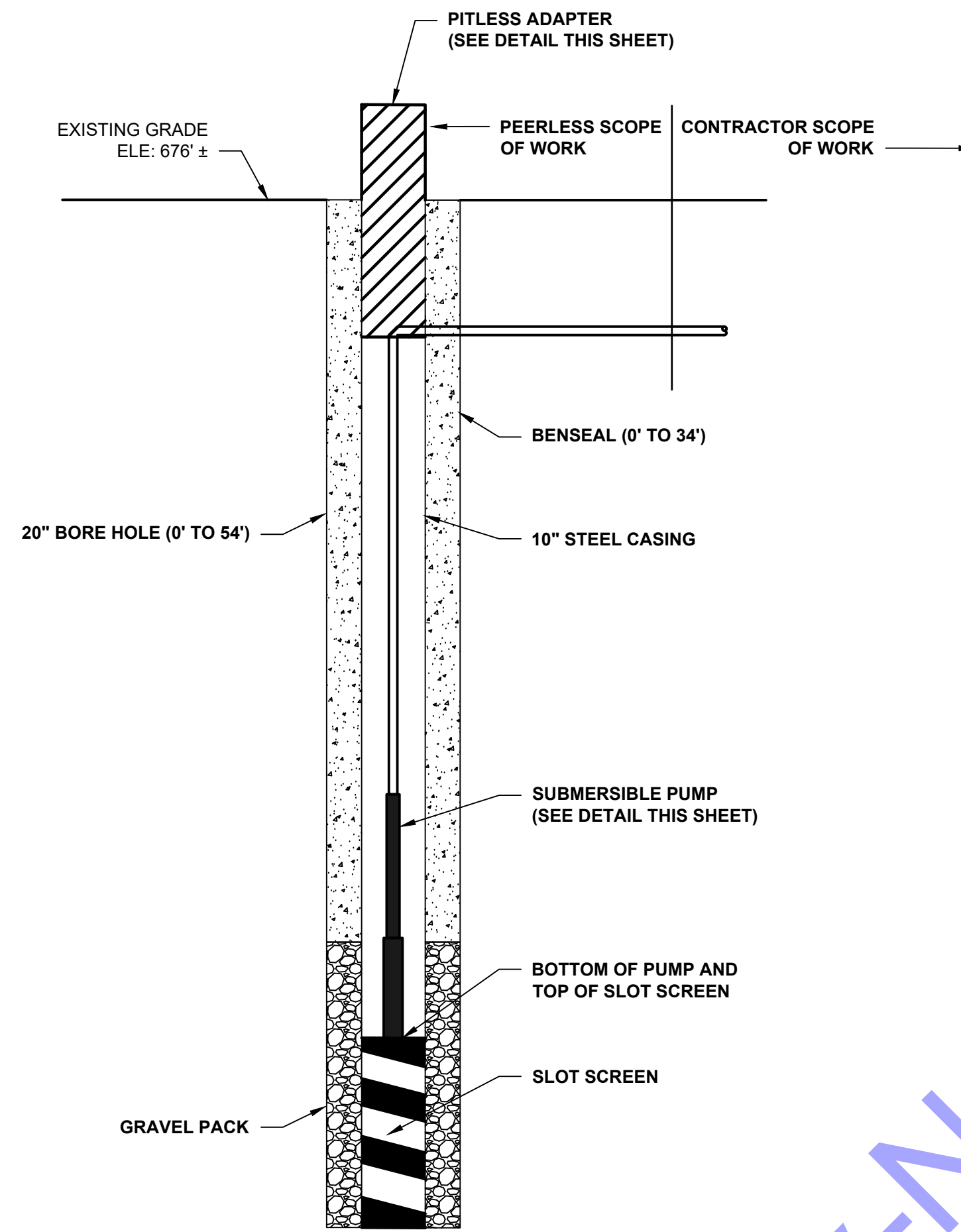
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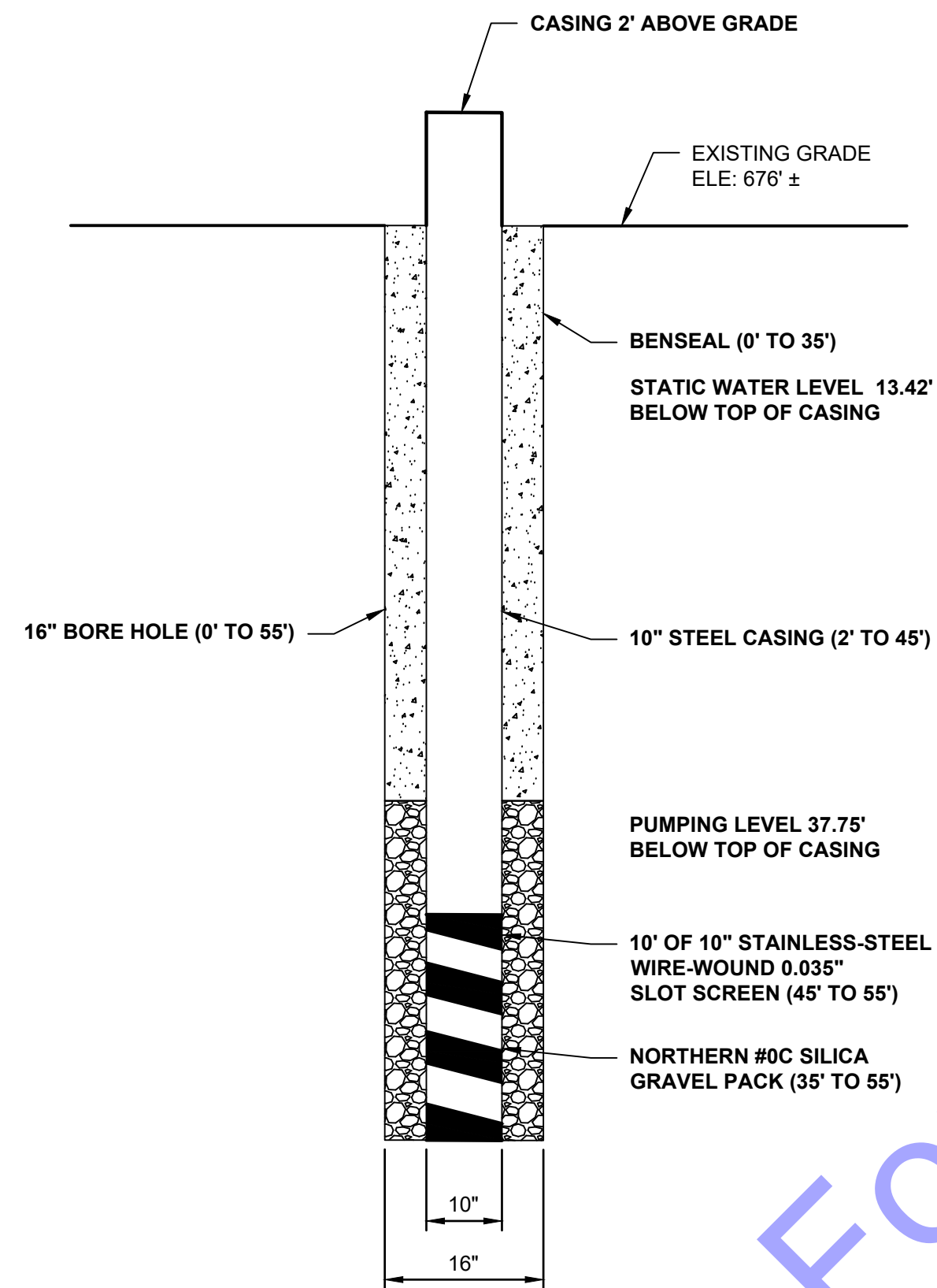
**EROSION CONTROL DETAILS**



**NEW WELL NO. 1 DETAIL**  
NOT TO SCALE

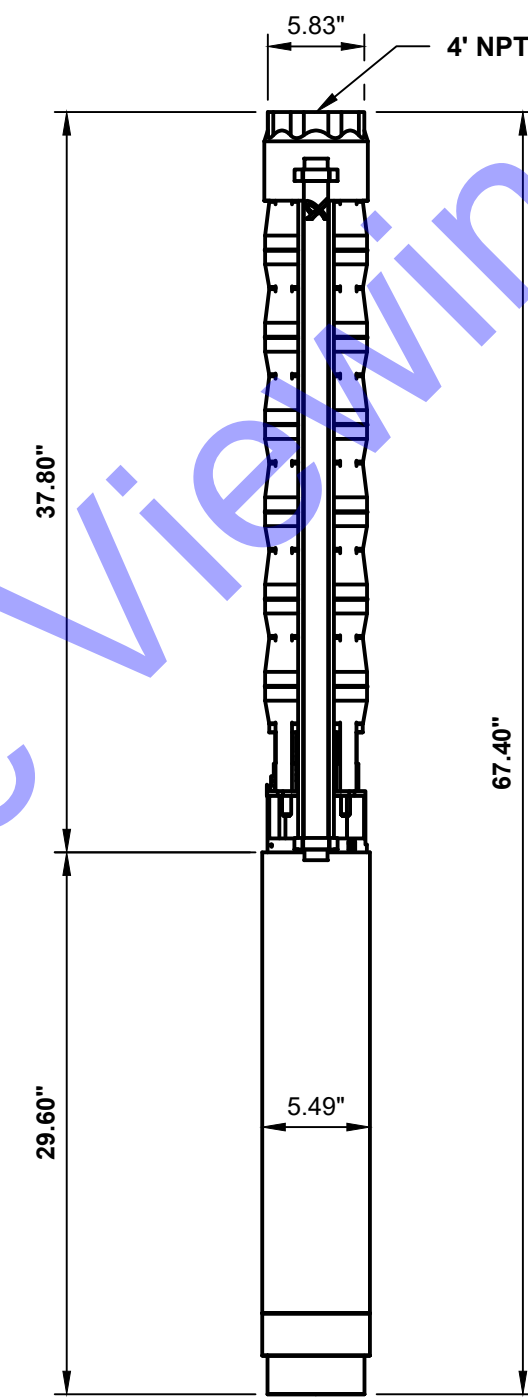


**NEW PITLESS ADAPTER DETAIL**  
NOT TO SCALE



**NEW WELL NO. 2 DETAIL**  
NOT TO SCALE

**NEW WELL DETAIL (TYP.)**  
NOT TO SCALE



**NEW SUBMERSIBLE PUMP DETAIL**  
NOT TO SCALE

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No. 19900094  
STATE OF INDIANA  
Signature: Andrew C. Cochrane  
Date: 10/15/2024

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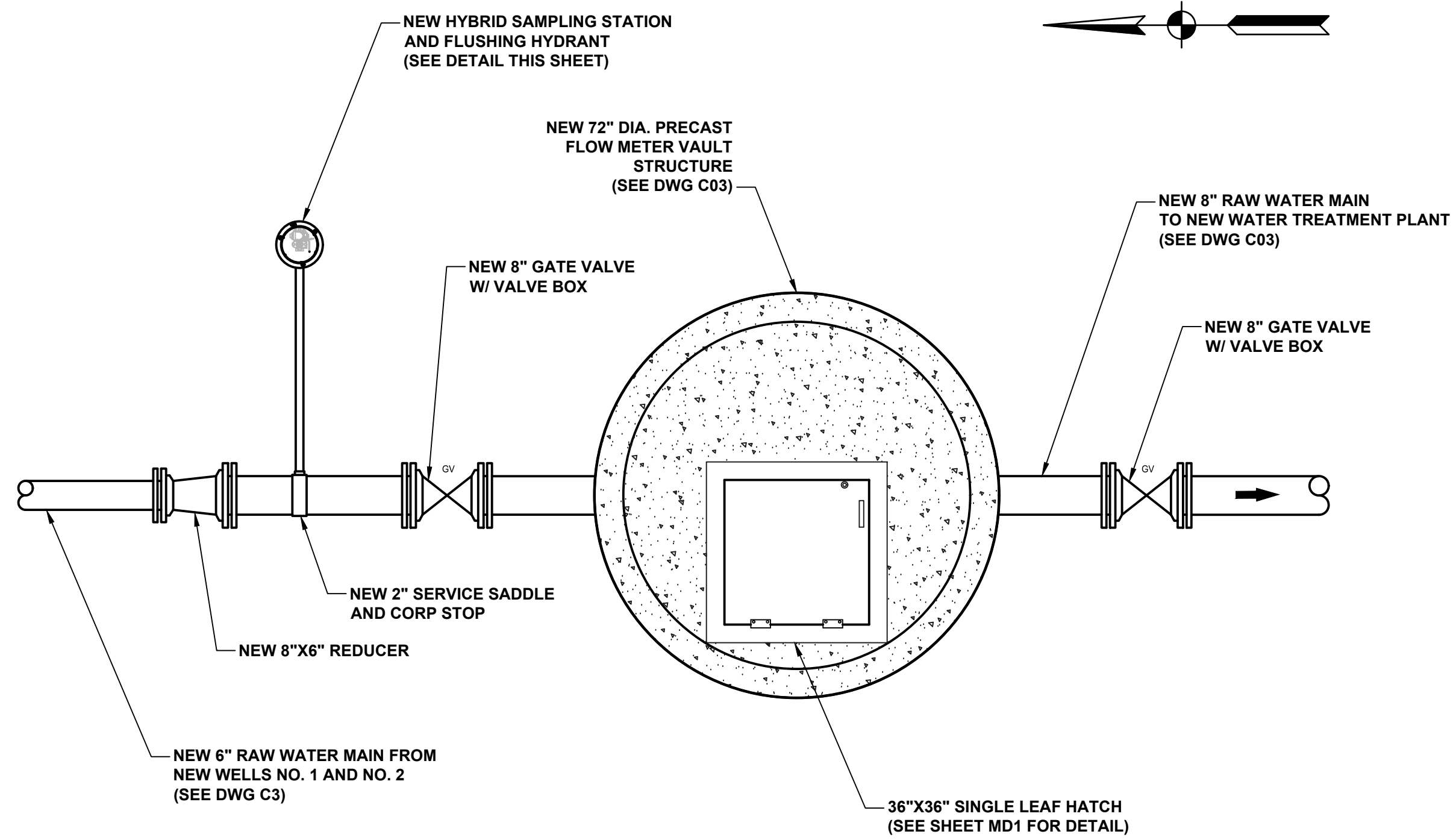
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NEW WELL NO.1 AND NO.2 PLAN AND SECTION VIEWS

Drawing No:  
**D1-1**  
Sheet: 27 OF 73

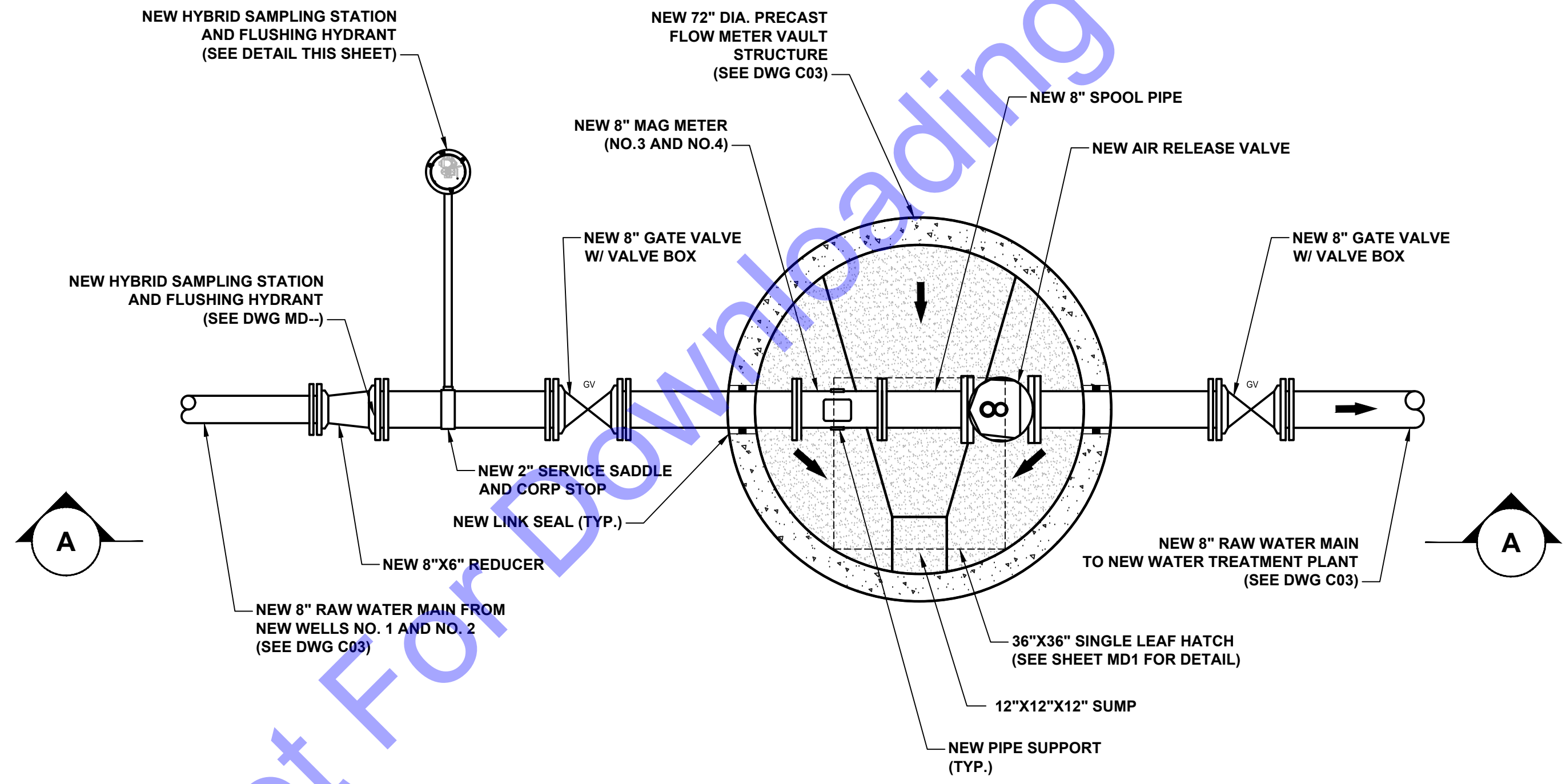
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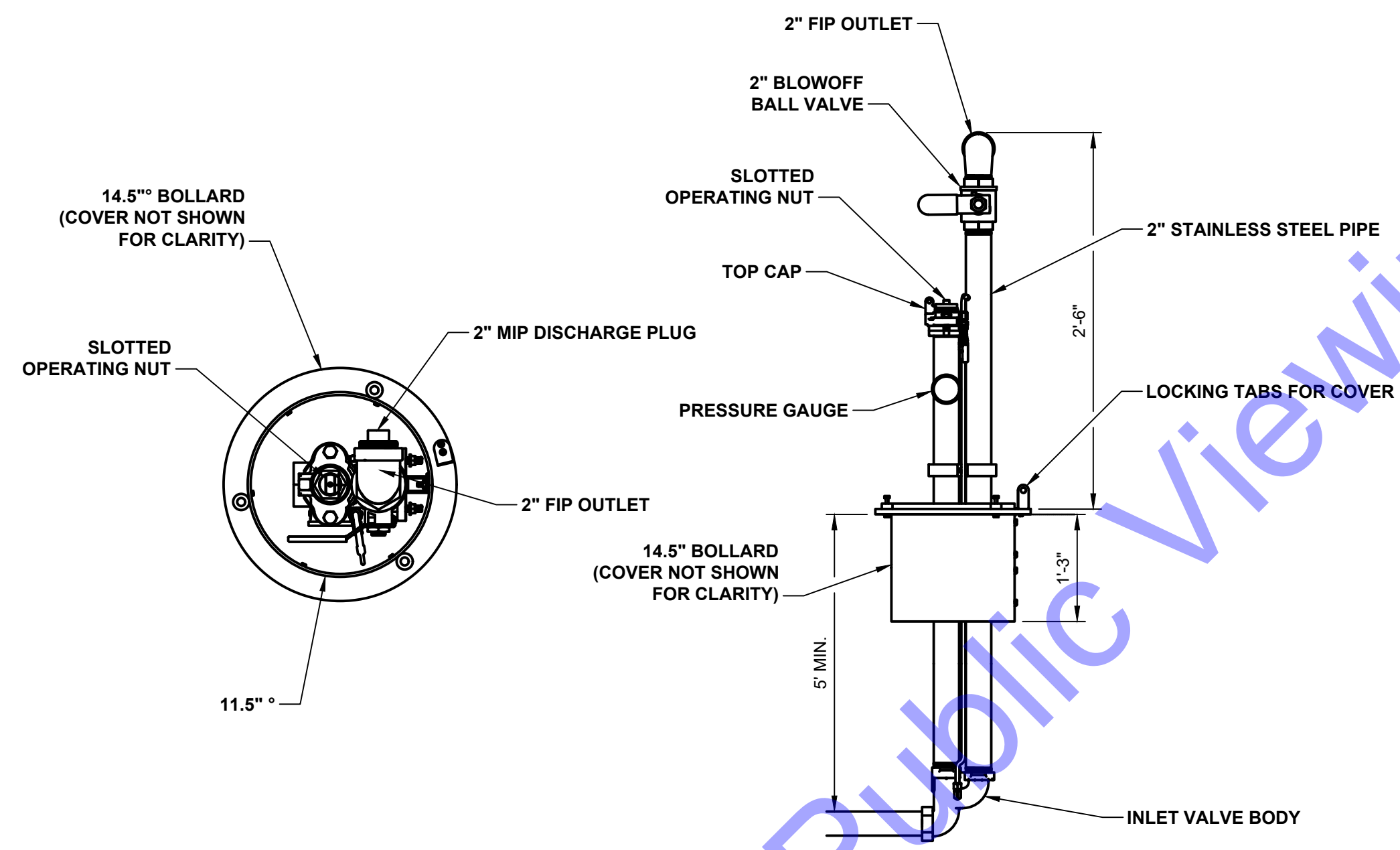
**VALVE VAULT - UPPER PLAN VIEW**

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



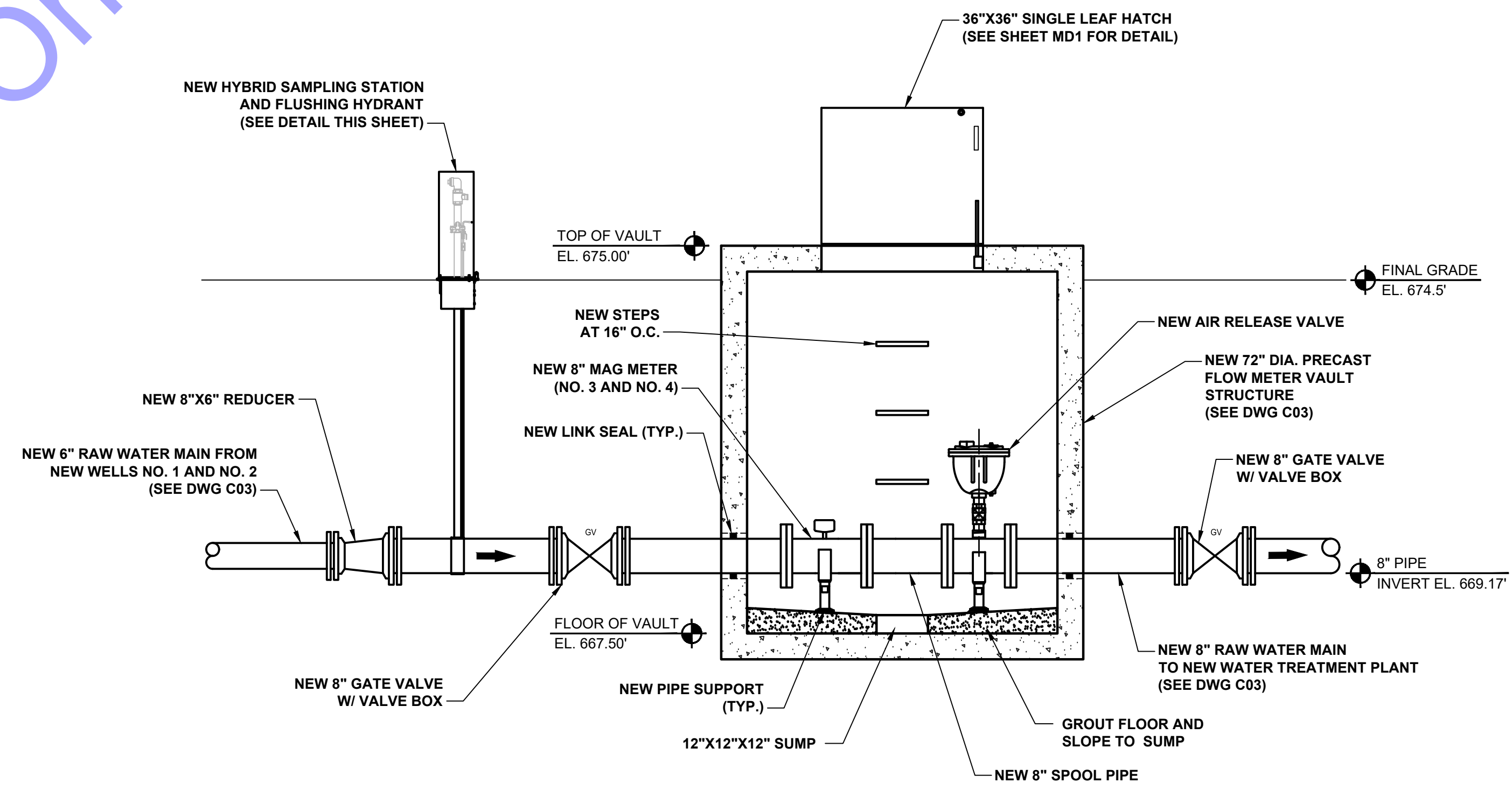
**VALVE VAULT - UPPER PLAN VIEW**

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



**HYBRID SAMPLING STATION AND FLUSHING HYDRANT DETAIL**

NOT TO SCALE



**SECTION VIEW**

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

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 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

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**APPLE VALLEY UTILITIES EAST**  
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**IMPROVEMENTS**  
**DIVISION "A" - WELLS AND**  
**WATER TREATMENT PLANT**

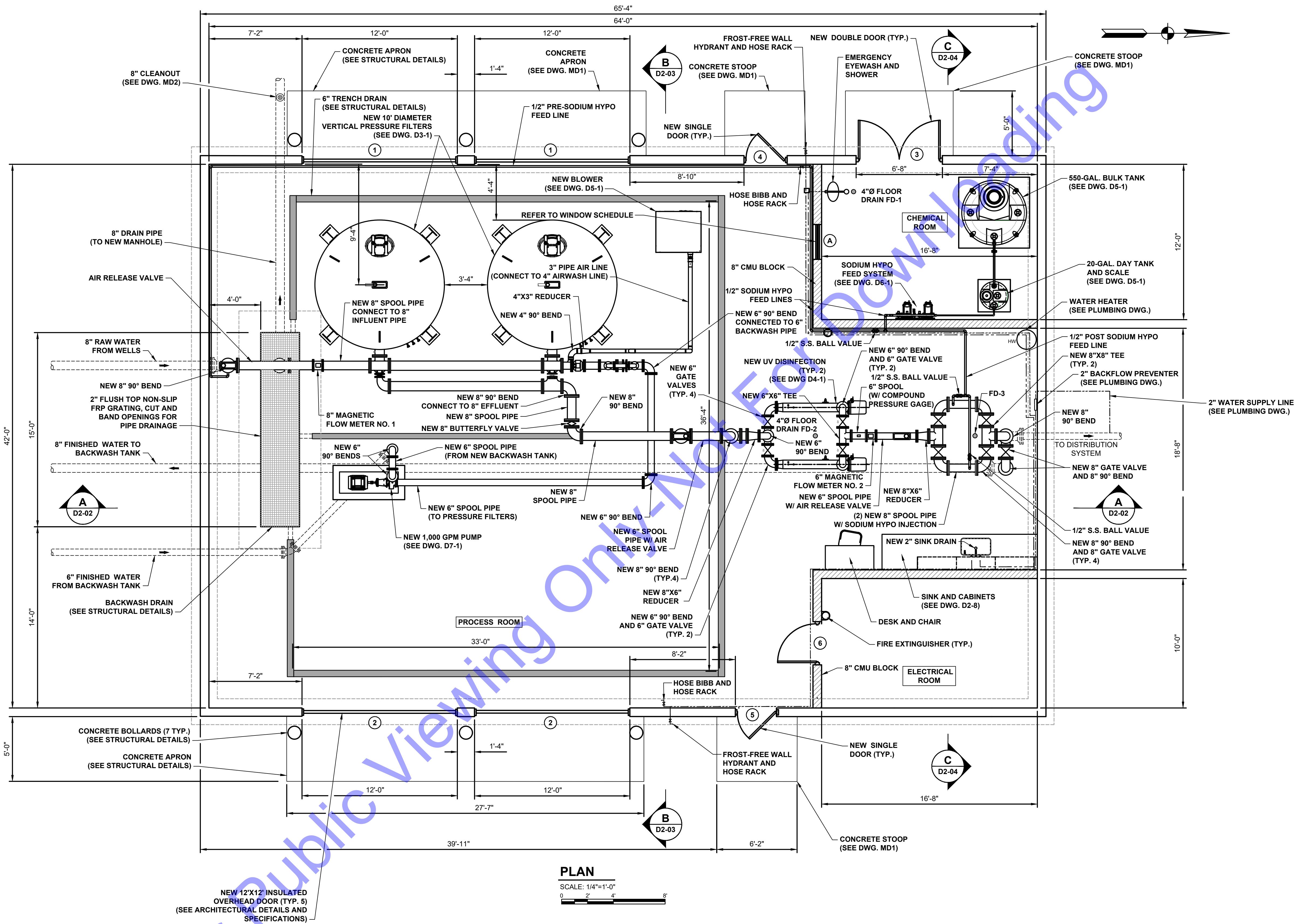
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**NEW WELL NO. 1 AND NO. 2 FLOW METER VAULT PLAN AND SECTION VIEWS**

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 Date: 10/17/2024 11:56:51 AM  
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 Scale: 1/4"=1'-0"



**PLAN**  
 SCALE: 1/4"=1'-0"  
 0 2 4 8'

**GENERAL NOTES:**

1. THE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF ARCHITECTURAL, STRUCTURAL, AND MEP DESIGN CONCEPT, THE DIMENSIONS OF THE BUILDING, THE MAJOR ARCHITECTURAL ELEMENTS, AND THE TYPE OF STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS. AS SCOPE DOCUMENTS, THE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK REQUIRED FOR FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. ON THE BASIS OF THE GENERAL SCOPE INDICATED OR DESCRIBED, THE TRADE CONTRACTORS SHALL FURNISH ALL ITEMS REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK PER THE STRUCTURAL, AND MEP DRAWINGS AND SPECIFICATIONS.
2. THE CONTRACTOR MUST VERIFY ALL CONDITIONS BEFORE STARTING CONSTRUCTION. IF AN UNSUITABLE CONDITION OCCURS, CONTACT THE ENGINEER IMMEDIATELY BEFORE PROCEEDING FURTHER WITH CONSTRUCTION.
3. ALL FIXTURES, EQUIPMENT AND MATERIALS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS, RECOMMENDATIONS AND INSTRUCTIONS.
4. DIMENSIONS ARE FROM INSIDE OF WALLS (SEE STRUCTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS).

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 No. 19900094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

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**APPLE VALLEY UTILITIES EAST**  
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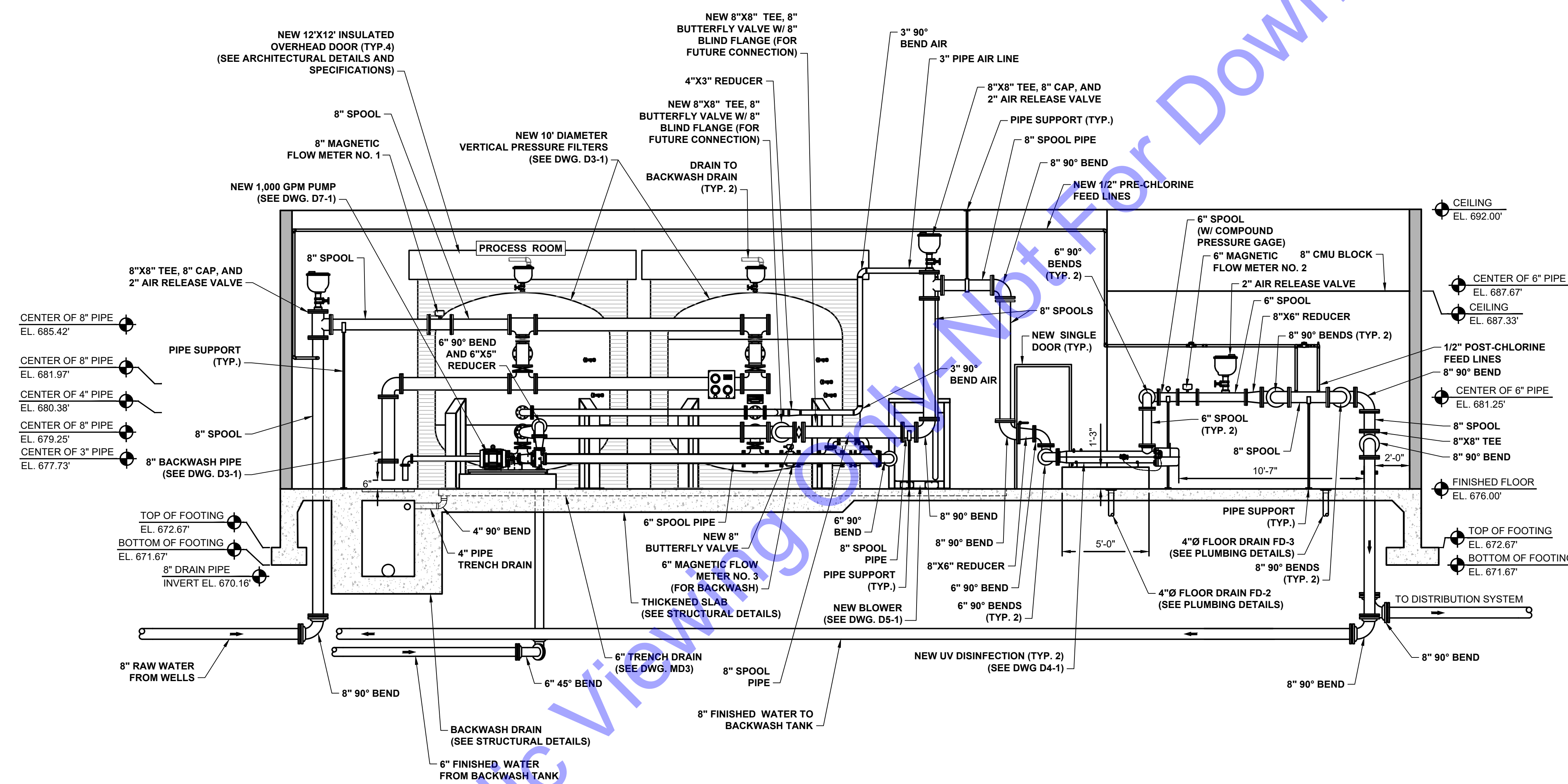
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**NEW WATER TREATMENT PLANT FACILITY - PLAN VIEW**

Drawing No:  
**D2-01**  
 Sheet: 29 OF 73

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**SECTION VIEW A**  
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**ANDREW C. COCHRANE**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: Andrew C. Cochran Date: 10/15/2024

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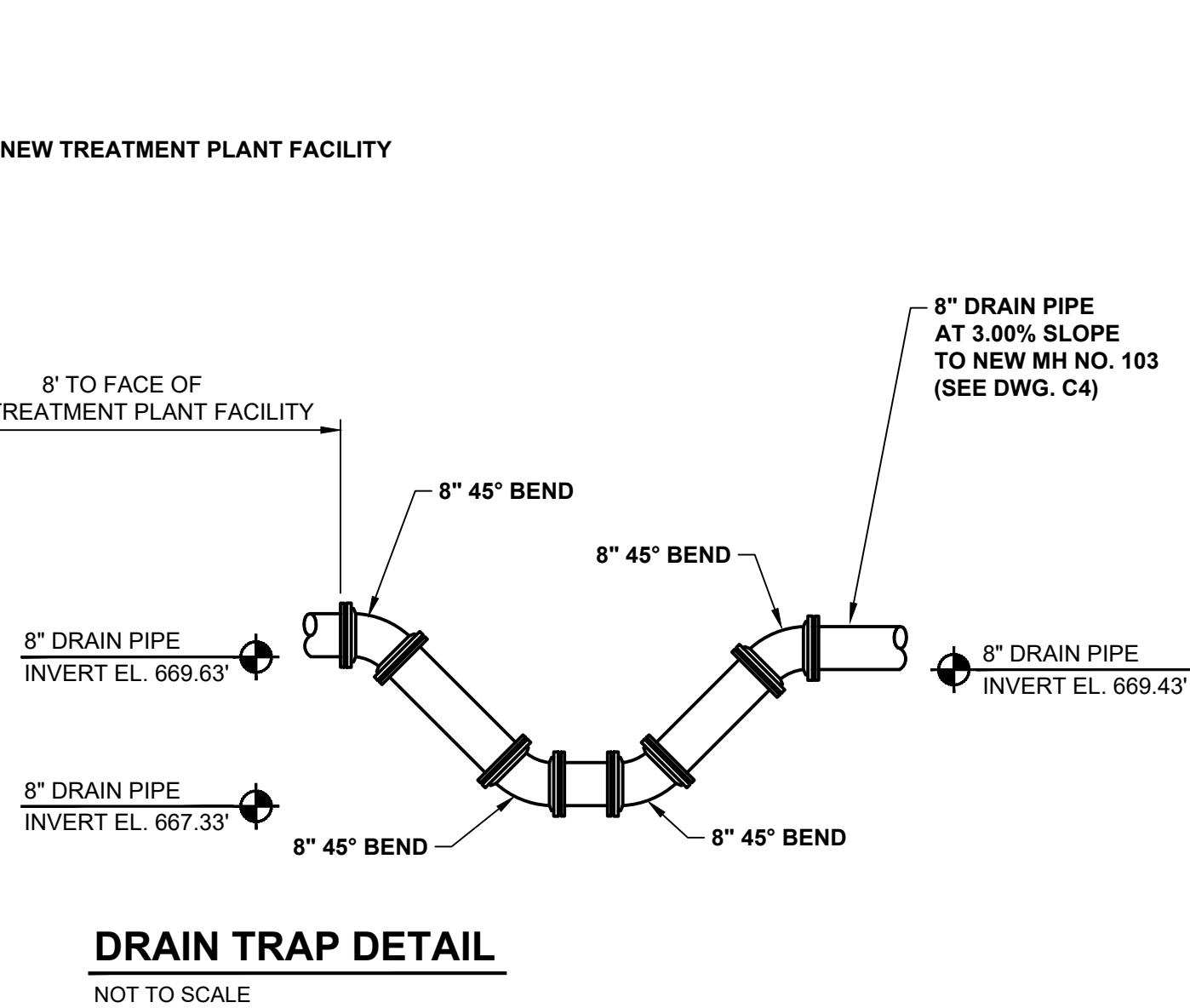
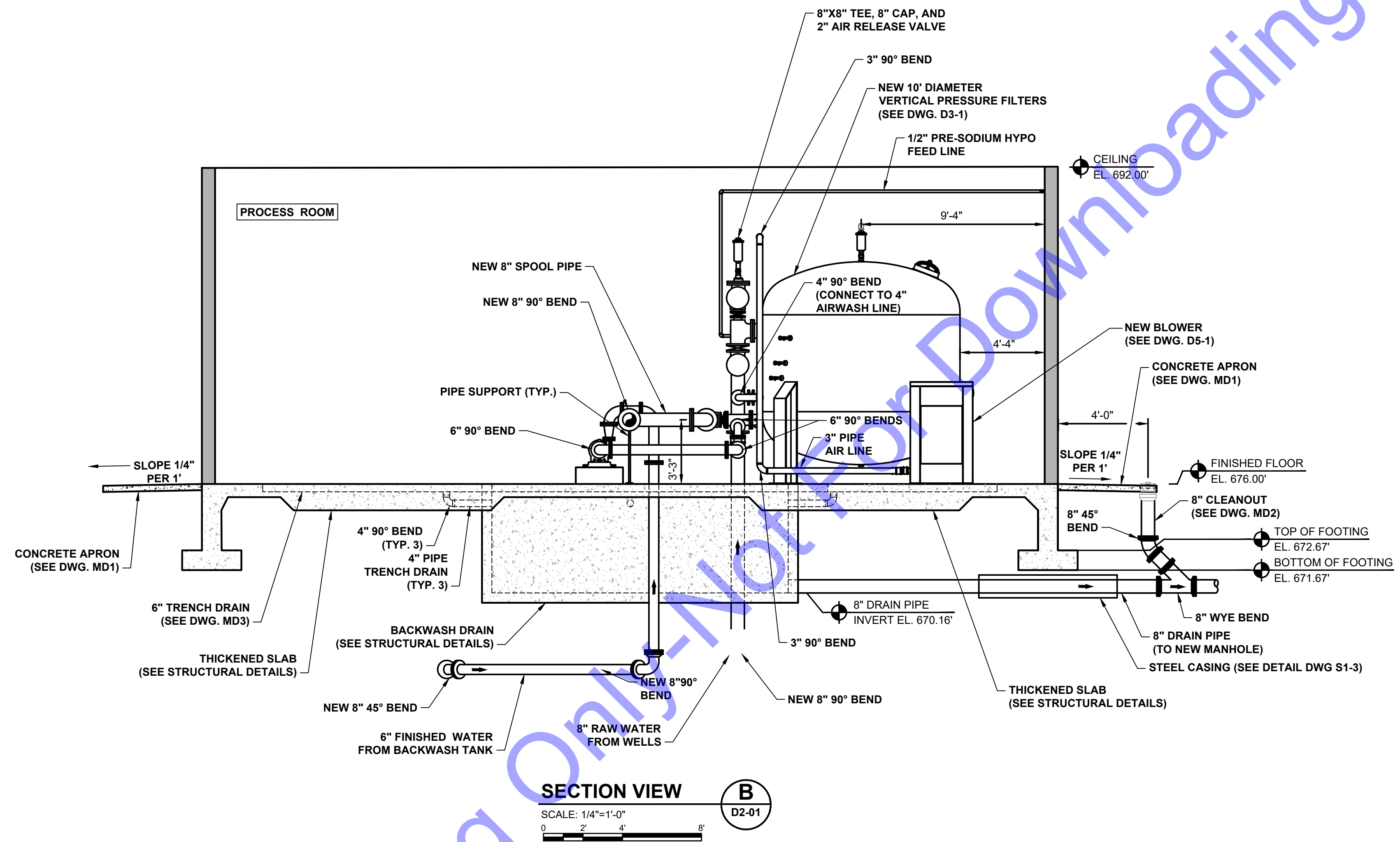
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**NEW WATER TREATMENT FACILITY - SECTION VIEW "A"**

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 STATE OF INDIANA  
 Andrew C. Cochrane  
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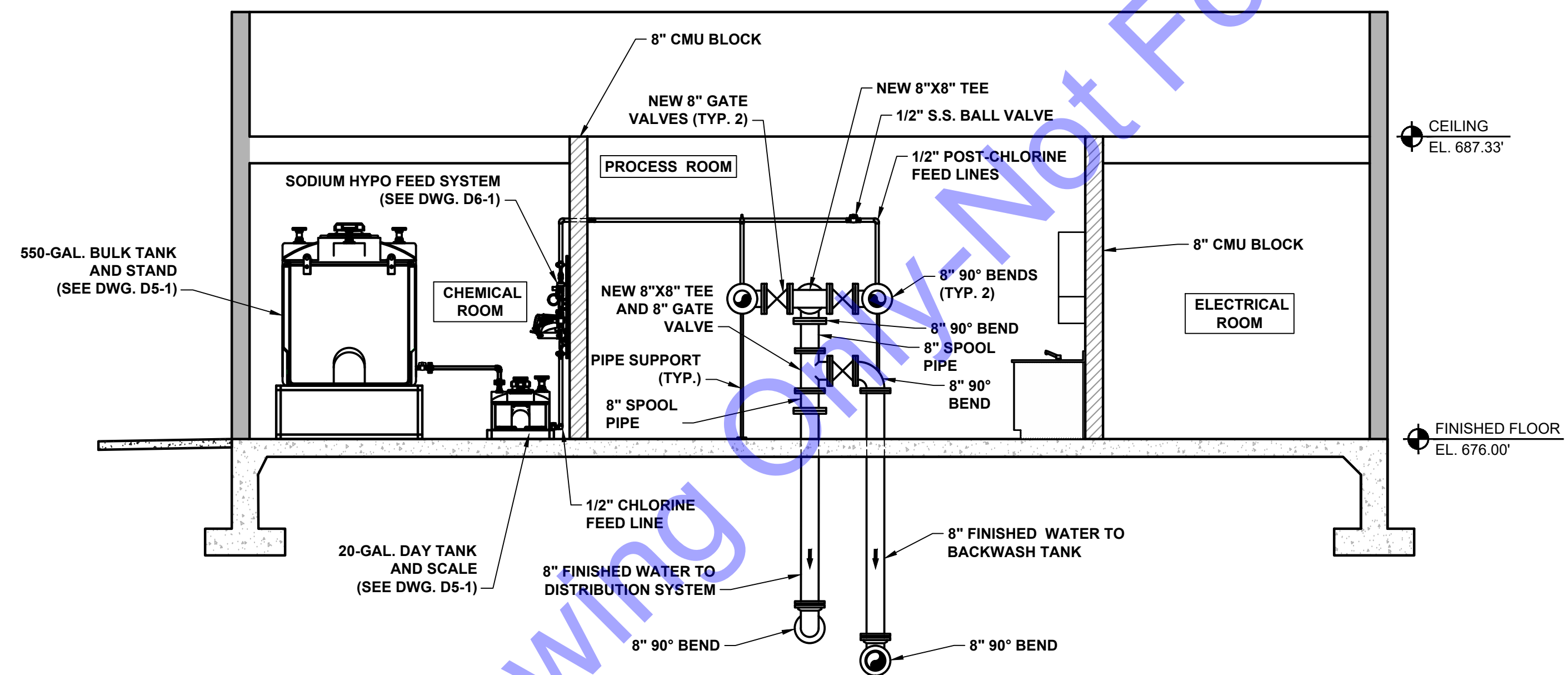
NEW WATER TREATMENT PLANT FACILITY - SECTION VIEW "B"

Drawing No:  
**D2-03**

Sheet: 31 OF 73

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**SECTION VIEW C**  
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 STATE OF INDIANA  
 Andrew C. Cochrane  
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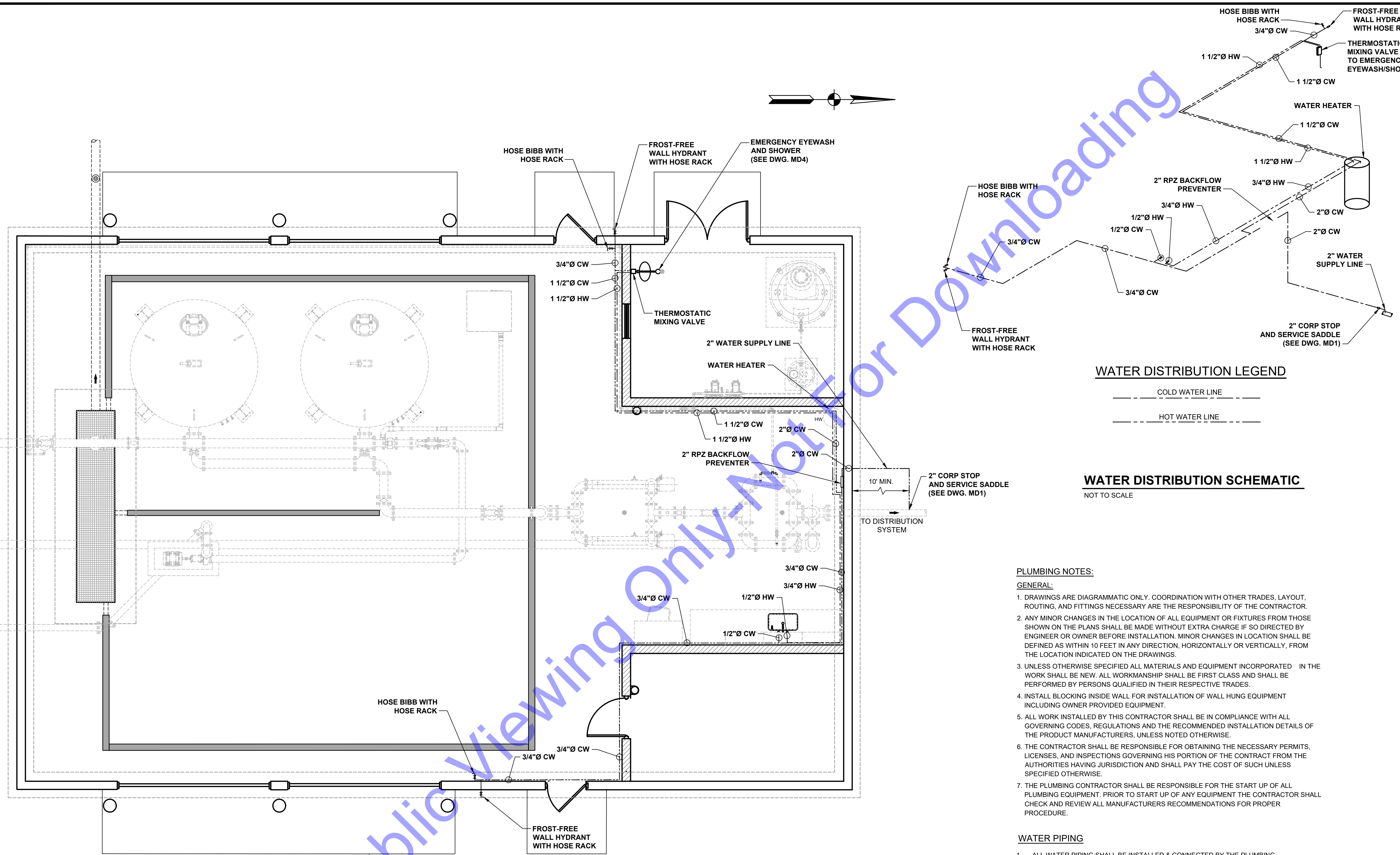
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**NEW WATER TREATMENT PLANT FACILITY - SECTION VIEW "C"**

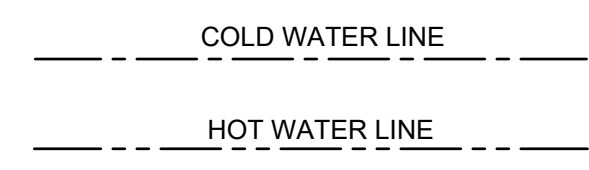
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 Sheet: 32 OF 73



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**WATER DISTRIBUTION LEGEND**



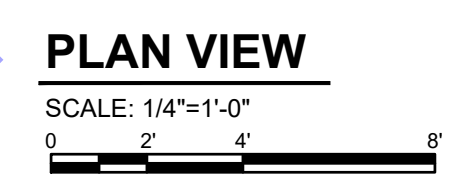
**WATER DISTRIBUTION SCHEMATIC**  
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**PLUMBING NOTES:**

- GENERAL:**
- DRAWINGS ARE DIAGRAMMATIC ONLY. COORDINATION WITH OTHER TRADES, LAYOUT, ROUTING, AND FITTINGS NECESSARY ARE THE RESPONSIBILITY OF THE CONTRACTOR.
  - ANY MINOR CHANGES IN THE LOCATION OF ALL EQUIPMENT OR FIXTURES FROM THOSE SHOWN ON THE PLANS SHALL BE MADE WITHOUT EXTRA CHARGE IF SO DIRECTED BY ENGINEER OR OWNER BEFORE INSTALLATION. MINOR CHANGES IN LOCATION SHALL BE DEFINED AS WITHIN 10 FEET IN ANY DIRECTION, HORIZONTALLY OR VERTICALLY, FROM THE LOCATION INDICATED ON THE DRAWINGS.
  - UNLESS OTHERWISE SPECIFIED ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW. ALL WORKMANSHIP SHALL BE FIRST CLASS AND SHALL BE PERFORMED BY PERSONS QUALIFIED IN THEIR RESPECTIVE TRADES.
  - INSTALL BLOCKING INSIDE WALL FOR INSTALLATION OF WALL HUNG EQUIPMENT INCLUDING OWNER PROVIDED EQUIPMENT.
  - ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE IN COMPLIANCE WITH ALL GOVERNING CODES, REGULATIONS AND THE RECOMMENDED INSTALLATION DETAILS OF THE PRODUCT MANUFACTURERS, UNLESS NOTED OTHERWISE.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS, LICENSES, AND INSPECTIONS GOVERNING HIS PORTION OF THE CONTRACT FROM THE AUTHORITIES HAVING JURISDICTION AND SHALL PAY THE COST OF SUCH UNLESS SPECIFIED OTHERWISE.
  - THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL PLUMBING EQUIPMENT. PRIOR TO START UP OF ANY EQUIPMENT THE CONTRACTOR SHALL CHECK AND REVIEW ALL MANUFACTURERS RECOMMENDATIONS FOR PROPER PROCEDURE.

**WATER PIPING**

- ALL WATER PIPING SHALL BE INSTALLED & CONNECTED BY THE PLUMBING CONTRACTOR.
- PIPE SUPPORTS AND HANGERS ARE OMITTED FROM DRAWINGS IN MOST LOCATIONS FOR CLARITY. WHERE ILLUSTRATED, PIPE SUPPORTS AND HANGERS ARE SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPORTS AND HANGERS AS REQUIRED TO ADEQUATELY SUPPORT ALL NEW PIPING.
- HORIZONTAL AND VERTICAL RUNS OF PIPING SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE WALLS. VERTICAL PIPING SHALL BE PLUMBED AND PERPENDICULAR TO THE FLOORS AND CEILINGS UNLESS NOTED OTHERWISE.
- ALL HOT AND COLD WATER PIPING SHALL BE INSULATED WITH 1/2" THICK ELECTROMETRIC INSULATION INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS ALL INSULATION SHALL BE INSTALLED BY QUALIFIED PERSONNEL TO PROVIDE A PROFESSIONAL VAPOR TIGHT SEAL ON ALL PIPING.
- ALL WATER PIPE SHALL BE PRESSURE TESTED IN ACCORDANCE WITH PART SIX SECTION 15, HYDROSTATIC TESTING IN THE CONTRACT DOCUMENTS.



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REGISTERED PROFESSIONAL ENGINEER  
No. 19900094  
STATE OF INDIANA  
Signature: Andrew C. Cochrane Date: 10/15/2024

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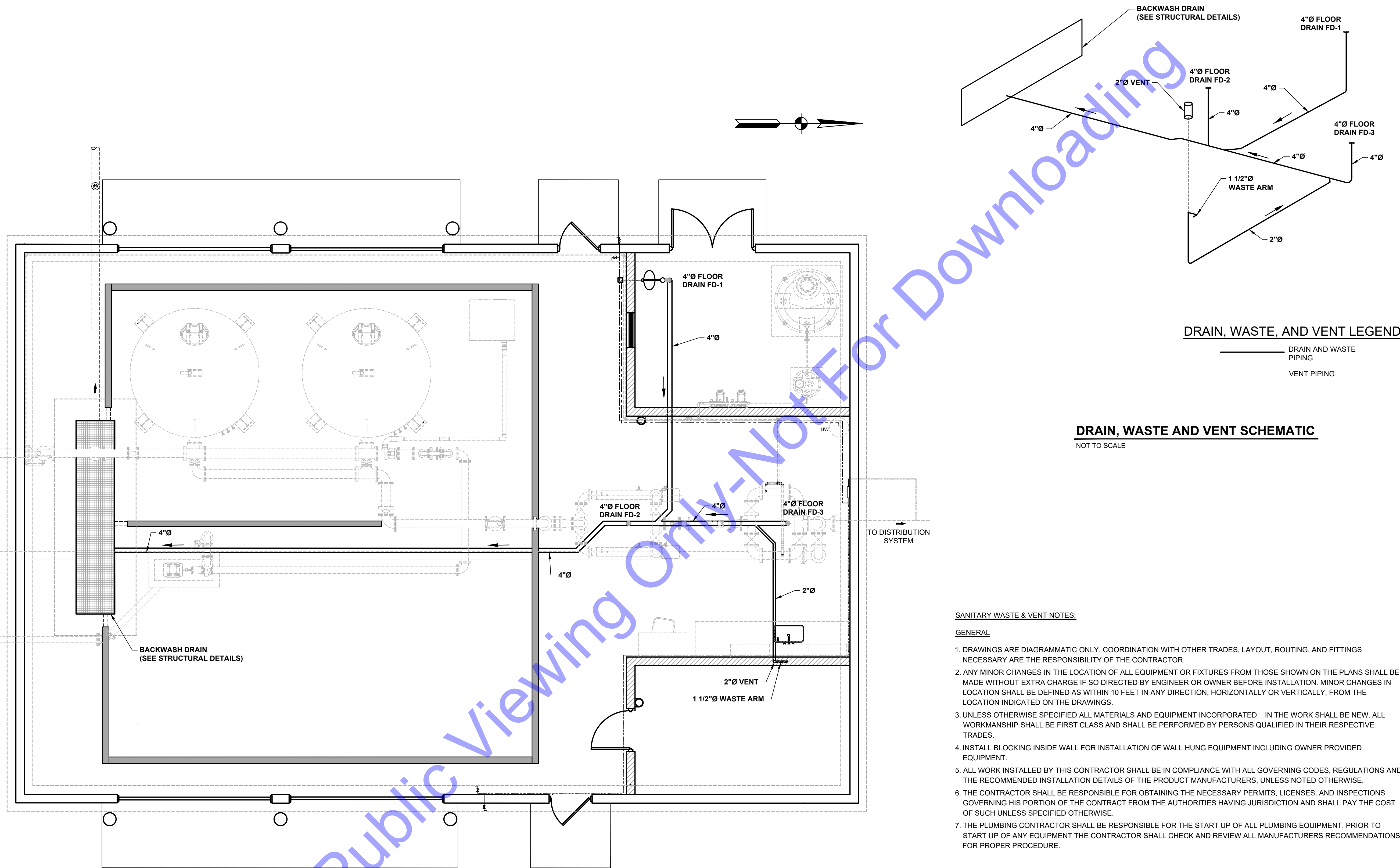
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**NEW WATER TREATMENT PLANT FACILITY - PLUMBING WATER DISTRIBUTION PLAN**

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**DRAIN, WASTE, AND VENT LEGEND**

- DRAIN AND WASTE PIPING
- - - VENT PIPING

**DRAIN, WASTE AND VENT SCHEMATIC**

NOT TO SCALE

**SANITARY WASTE & VENT NOTES:**

**GENERAL**

- DRAWINGS ARE DIAGRAMMATIC ONLY. COORDINATION WITH OTHER TRADES, LAYOUT, ROUTING, AND FITTINGS NECESSARY ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY MINOR CHANGES IN THE LOCATION OF ALL EQUIPMENT OR FIXTURES FROM THOSE SHOWN ON THE PLANS SHALL BE MADE WITHOUT EXTRA CHARGE IF SO DIRECTED BY ENGINEER OR OWNER BEFORE INSTALLATION. MINOR CHANGES IN LOCATION SHALL BE DEFINED AS WITHIN 10 FEET IN ANY DIRECTION, HORIZONTALLY OR VERTICALLY, FROM THE LOCATION INDICATED ON THE DRAWINGS.
- UNLESS OTHERWISE SPECIFIED ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW. ALL WORKMANSHIP SHALL BE FIRST CLASS AND SHALL BE PERFORMED BY PERSONS QUALIFIED IN THEIR RESPECTIVE TRADES.
- INSTALL BLOCKING INSIDE WALL FOR INSTALLATION OF WALL HUNG EQUIPMENT INCLUDING OWNER PROVIDED EQUIPMENT.
- ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE IN COMPLIANCE WITH ALL GOVERNING CODES, REGULATIONS AND THE RECOMMENDED INSTALLATION DETAILS OF THE PRODUCT MANUFACTURERS, UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS, LICENSES, AND INSPECTIONS GOVERNING HIS PORTION OF THE CONTRACT FROM THE AUTHORITIES HAVING JURISDICTION AND SHALL PAY THE COST OF SUCH UNLESS SPECIFIED OTHERWISE.
- THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL PLUMBING EQUIPMENT. PRIOR TO START UP OF ANY EQUIPMENT THE CONTRACTOR SHALL CHECK AND REVIEW ALL MANUFACTURERS RECOMMENDATIONS FOR PROPER PROCEDURE.

**SANITARY WASTE AND VENT PIPING**

- ALL WASTE AND VENT PIPING SHALL BE INSTALLED & CONNECTED BY THE PLUMBING CONTRACTOR.
- PIPING BELOW GRADE TO BE INSTALLED ON FIRM EARTH TO SLOPE AT A MINIMUM 1/8" PER FOOT. VERIFY ALL INVERTS PRIOR TO CONSTRUCTION START.
- PIPE SUPPORTS AND HANGERS ARE OMITTED FROM DRAWINGS IN MOST LOCATIONS FOR CLARITY. WHERE ILLUSTRATED, PIPE SUPPORTS AND HANGERS ARE SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPORTS AND HANGERS AS REQUIRED TO ADEQUATELY SUPPORT ALL NEW PIPING.
- HORIZONTAL AND VERTICAL RUNS OF PIPING SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE WALLS. VERTICAL PIPING SHALL BE PLUMB AND PERPENDICULAR TO THE FLOORS AND CEILINGS UNLESS NOTED OTHERWISE.

**PLAN VIEW**

SCALE: 1/4"=1'-0"  
 0 2' 4' 8'

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**ANDREW C. COCHRANE**  
 REGISTERED  
 No. 19900094  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER

*Andrew C. Cochran* 10/15/2024  
 Signature Date

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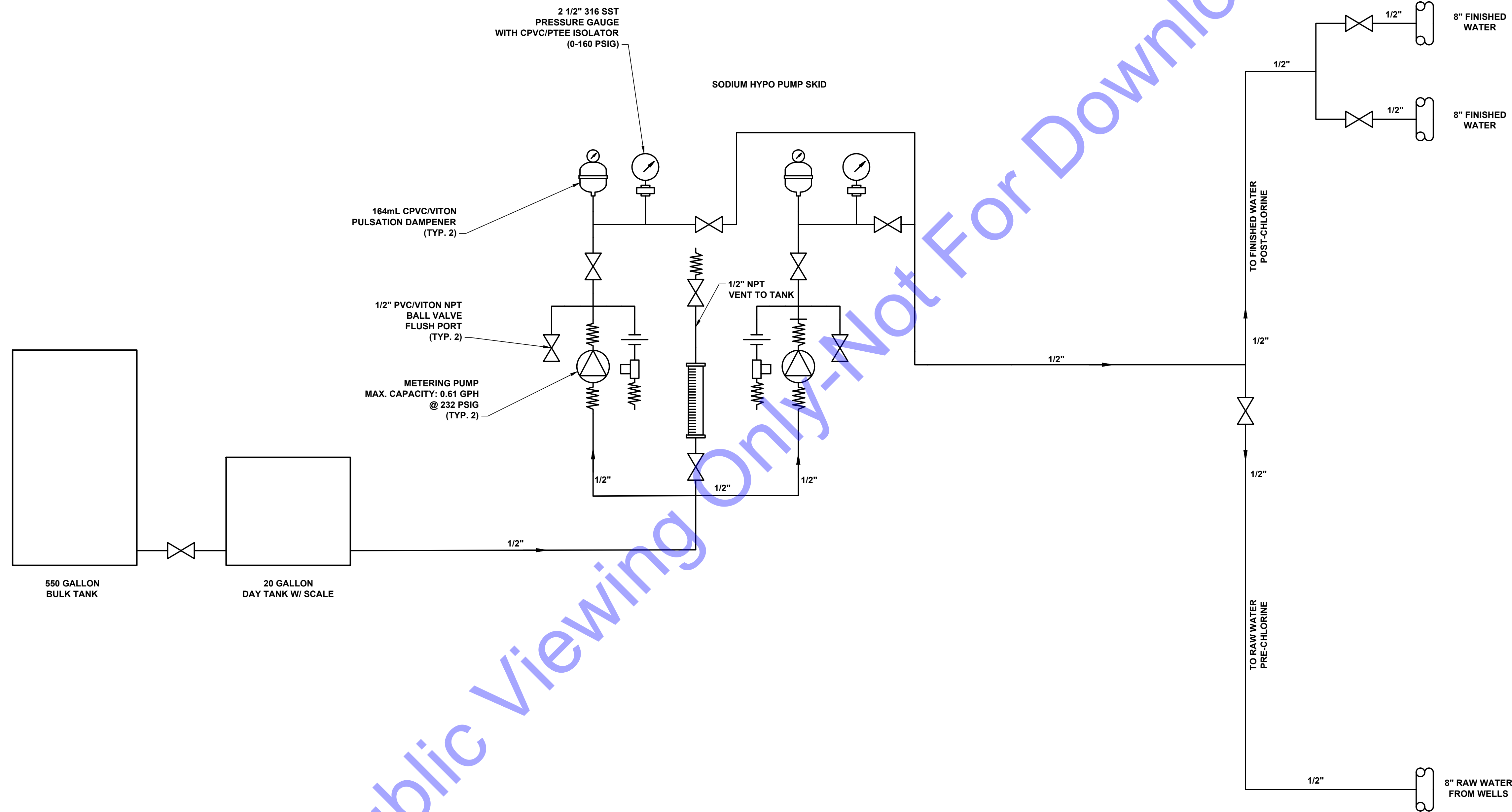
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**NEW WATER TREATMENT PLANT FACILITY - PLUMBING WASTE AND VENT PLAN**

Drawing No:  
**D2-06**  
 Sheet: 34 OF 73

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**SODIUM HYPO CHEMICAL FEED SCHEMATIC**

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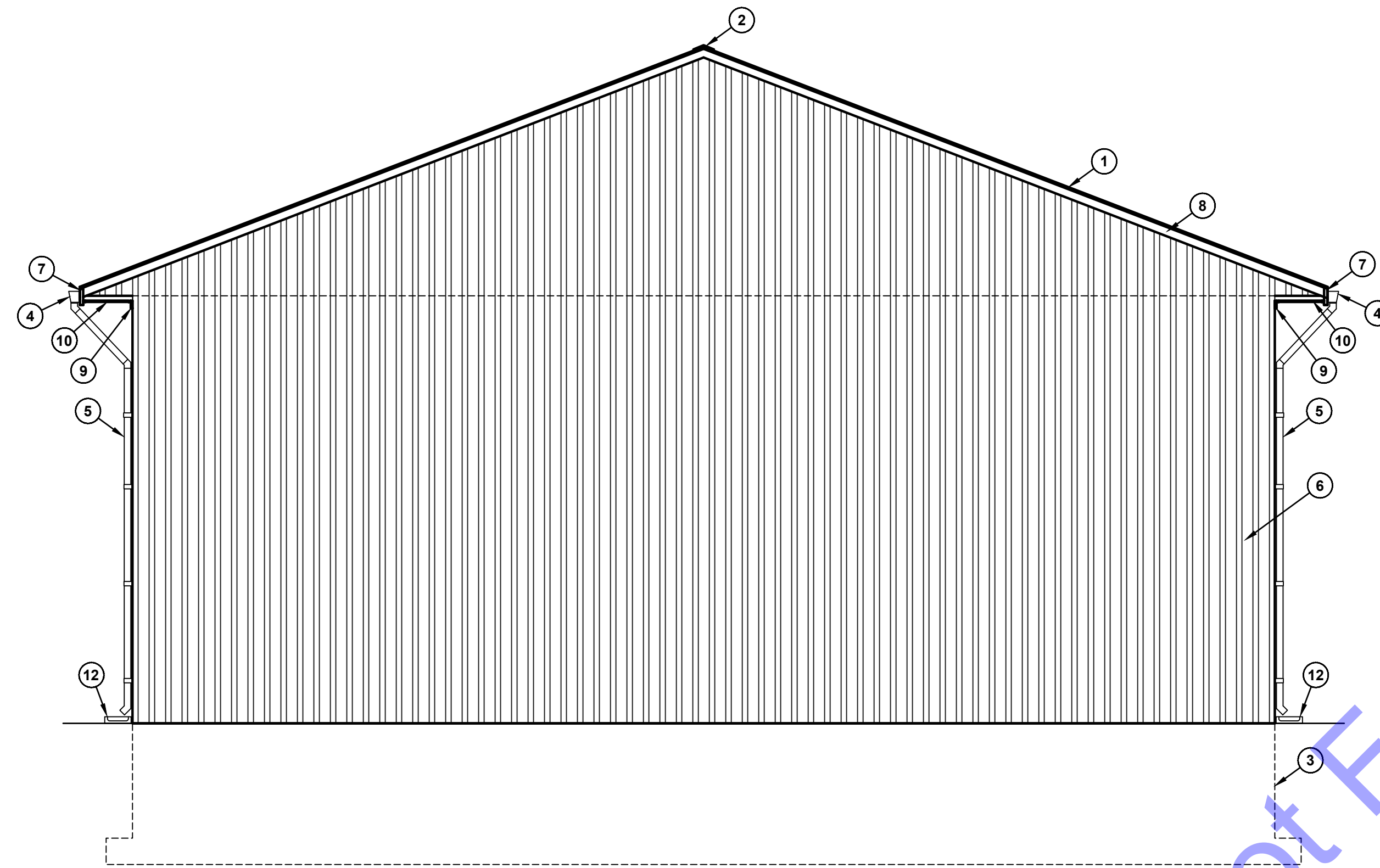
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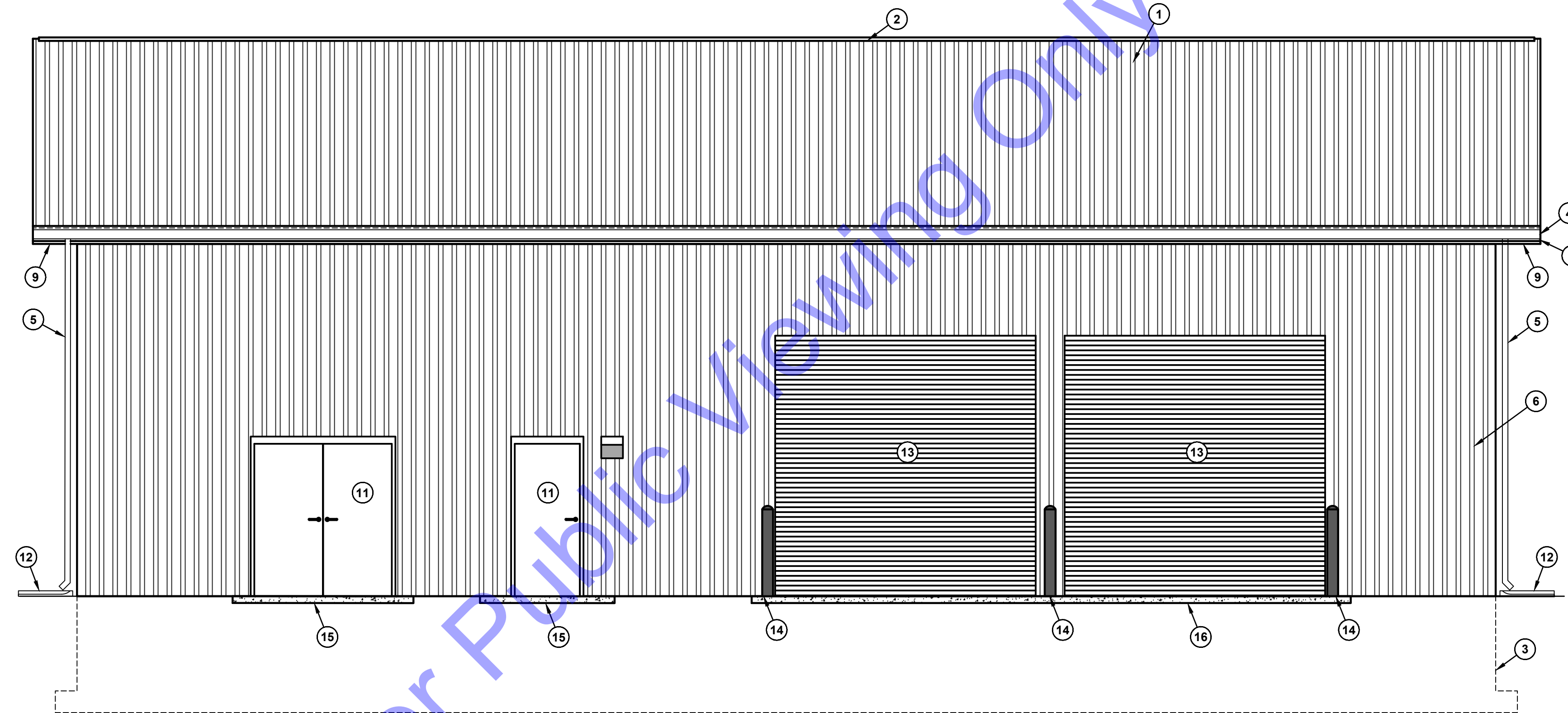
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NEW WATER TREATMENT PLANT FACILITY - SODIUM HYPO CHEMICAL FEED SCHEMATIC



**NORTH ELEVATION**

SCALE: 1/4"=1'-0"  
 0 2' 4' 8'



**WEST ELEVATION**

SCALE: 1/4"=1'-0"  
 0 2' 4' 8'

**ELEVATION KEYNOTES:**

1. STANDING SEAM METAL ROOF
2. RIDGE VENT
3. FOOTING AND FOUNDATION (SEE STRUCTURAL DRAWINGS)
4. 5" PRE-FINISHED ALUM. GUTTER
5. 5" PRE-FINISHED ALUM. DOWNSPOUT
6. HIGH TENSILE STEEL SIDING
7. 2x8 TREATED WOOD FASCIA BOARD W/ PREFINISHED ALUM. TRIM
8. 2x6 TREATED WOOD RAKE BOARD W/ PREFINISHED ALUM. TRIM
9. 1x4 TREATED WOOD TRIM BOARD W/ PREFINISHED ALUM. TRIM
10. SOFFIT VENTS
11. NEW INSULATED METAL DOOR UNIT (PAINTED)
12. PREFABRICATED CONCRETE SPLASH BLOCK
13. OVERHEAD DOOR
14. CONCRETE BOLLARDS
15. CONCRETE STOOP
16. CONCRETE APRON

**GENERAL NOTES:**

1. CONTRACTOR SHALL INSTALL BATT INSULATION ABOVE CEILING AND BETWEEN TRUSSES PER DETAILED SPECIFICATIONS.
2. CONTRACTOR SHALL ENSURE THAT PROPER GRADING IS ESTABLISHED AROUND STRUCTURES SUCH THAT ALL DRAINAGE FLOWS AWAY FROM BUILDING AND SLAB, INCLUDING DOWNSPOUT RUN-OFF WITH SPLASH BLOCK.
3. CONTRACTOR SHALL REFER TO DRAWING D2-9 AND D2-10 FOR ALL DOOR, WINDOW, AND ROOF FINISH SCHEDULES AND DETAILS

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ANDREW C. COCHRANE  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA

Signature: *Andrew C. Cochran* Date: 10/15/2024

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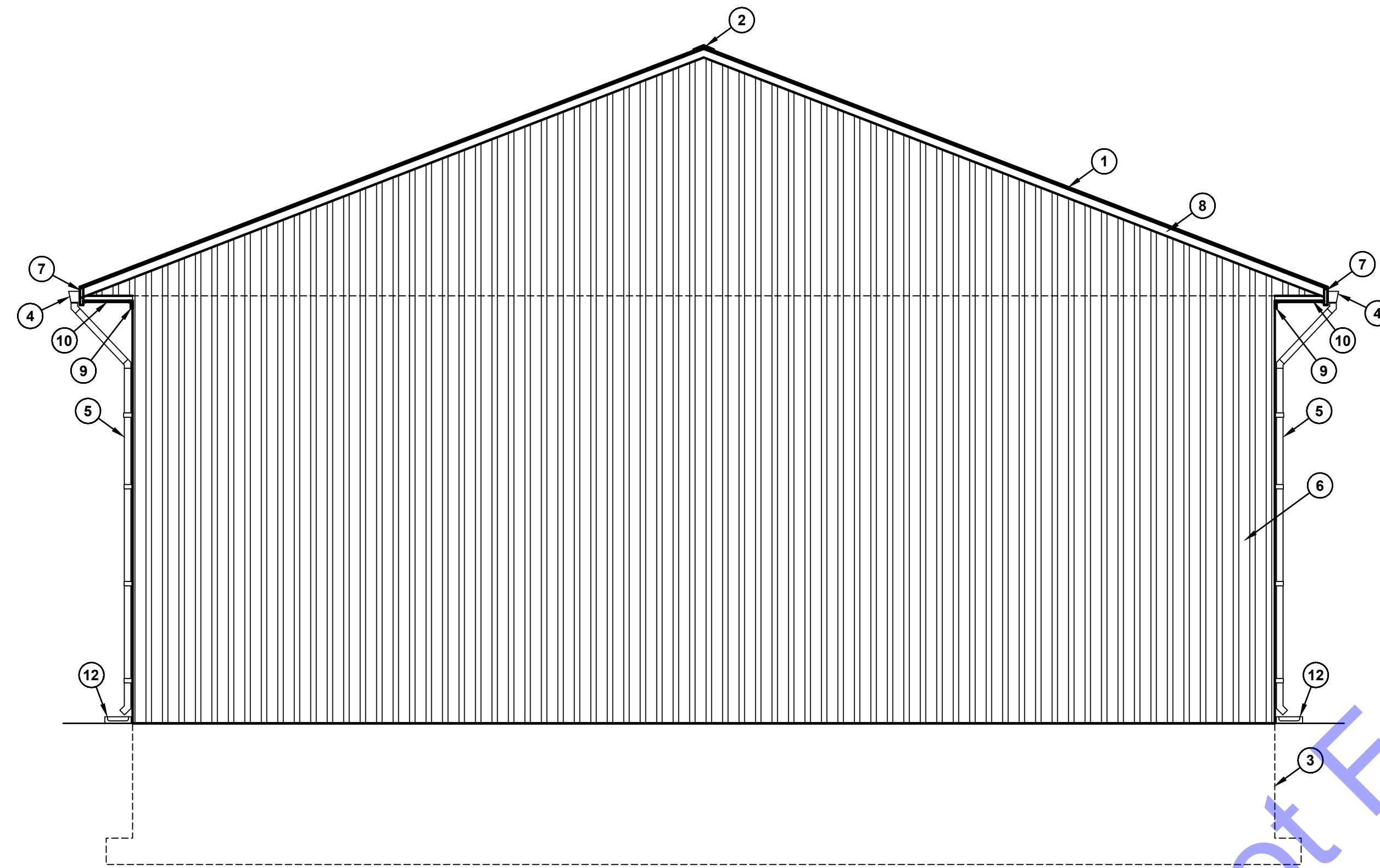
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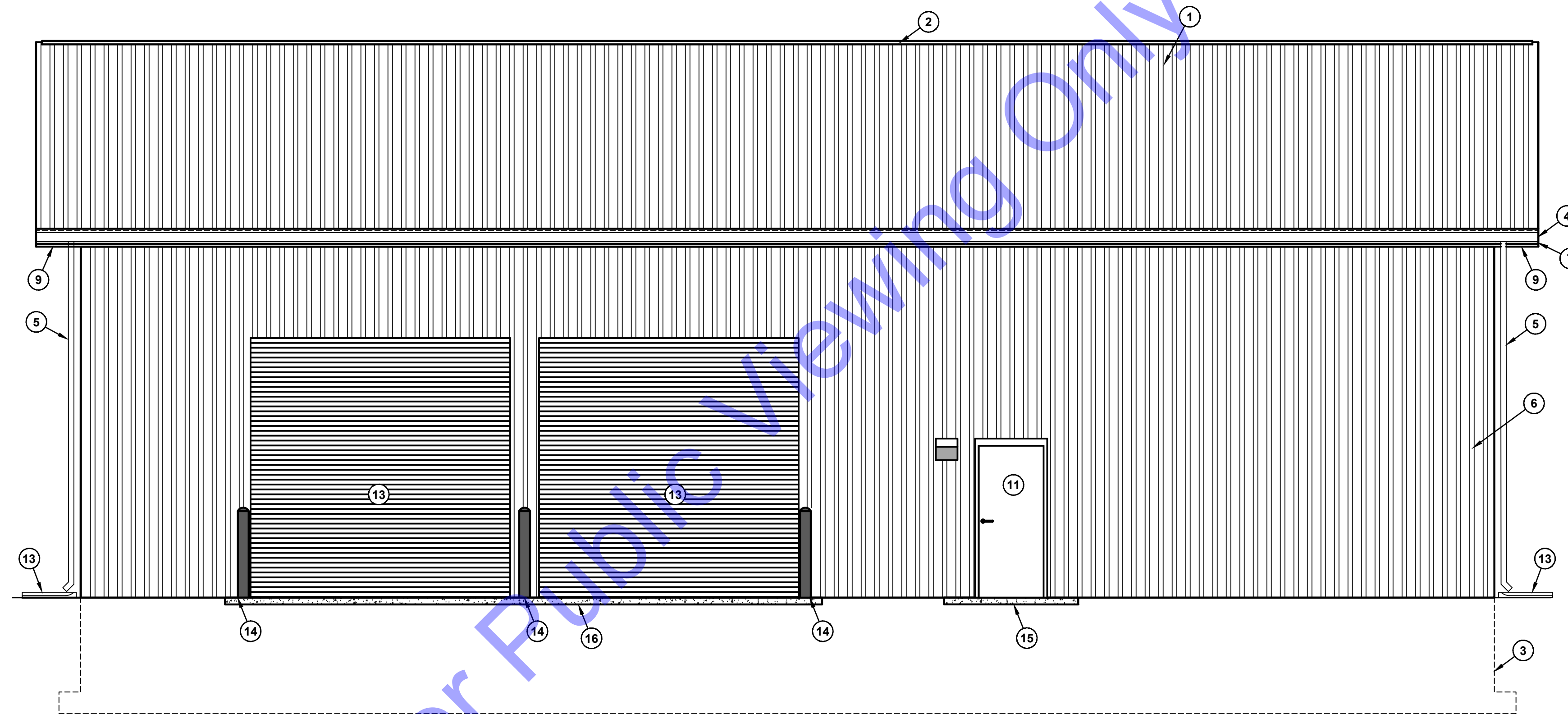
**NEW WATER TREATMENT PLANT FACILITY - EXTERIOR ELEVATIONS**

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**SOUTH ELEVATION**

SCALE: 1/4"=1'-0"  
 0 2' 4' 8'



**EAST ELEVATION**

SCALE: 1/4"=1'-0"  
 0 2' 4' 8'

**ELEVATION KEYNOTES:**

1. STANDING SEAM METAL ROOF
2. RIDGE VENT
3. FOOTING AND FOUNDATION (SEE STRUCTURAL DRAWINGS)
4. 5" PRE-FINISHED ALUM. GUTTER
5. 5" PRE-FINISHED ALUM. DOWNSPOUT
6. HIGH TENSILE STEEL SIDING
7. 2x8 TREATED WOOD FASCIA BOARD W/ PREFINISHED ALUM. TRIM
8. 2x6 TREATED WOOD RAKE BOARD W/ PREFINISHED ALUM. TRIM
9. 1x4 TREATED WOOD TRIM BOARD W/ PREFINISHED ALUM. TRIM
10. SOFFIT VENTS
11. NEW INSULATED METAL DOOR UNIT (PAINTED)
12. PREFABRICATED CONCRETE SPLASH BLOCK
13. OVERHEAD DOOR
14. CONCRETE BOLLARDS
15. CONCRETE STOOP
16. CONCRETE APRON

**GENERAL NOTES:**

1. CONTRACTOR SHALL INSTALL BATT INSULATION ABOVE CEILING AND BETWEEN TRUSSES PER DETAILED SPECIFICATIONS.
2. CONTRACTOR SHALL ENSURE THAT PROPER GRADING IS ESTABLISHED AROUND STRUCTURES SUCH THAT ALL DRAINAGE FLOWS AWAY FROM BUILDING AND SLAB, INCLUDING DOWNSPOUT RUN-OFF WITH SPLASH BLOCK.
3. CONTRACTOR SHALL REFER TO DRAWING D2-9 AND D2-10 FOR ALL DOOR, WINDOW, AND ROOF FINISH SCHEDULES AND DETAILS

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 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA

Signature: *Andrew C. Cochran* Date: 10/15/2024

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 IMPROVEMENTS  
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**NEW WATER  
 TREATMENT PLANT  
 FACILITY - EXTERIOR  
 ELEVATIONS**

Drawing No:  
**D2-09**  
 Sheet: 37 OF 73

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### DOOR SCHEDULE

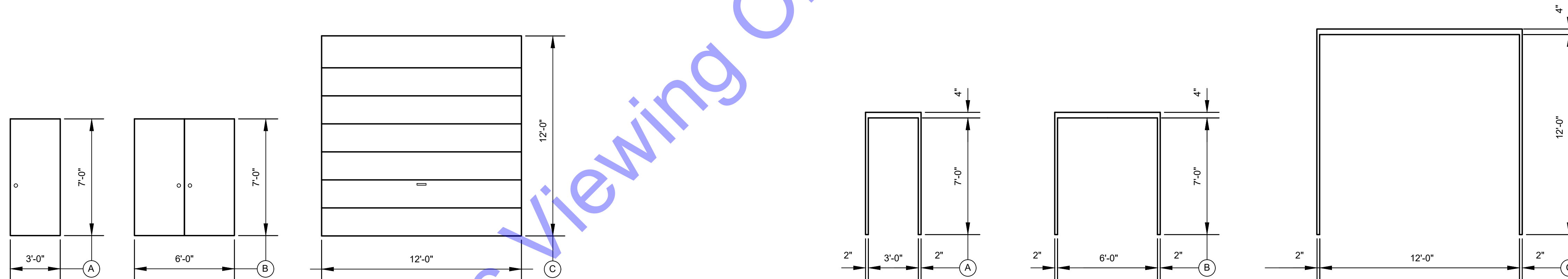
LOCATION	DOOR DATA							FRAME DATA						REMARKS						
	DOOR NUMBER	QUANTITY	DOOR TYPE	M.O./R.O. WIDTH	M.O./R.O. HEIGHT	MATERIAL	DOOR WIDTH	DOOR HEIGHT	THICKNESS	LOUVER	WINDOW	SIDE LIGHT	FRAME NUMBER		MATERIAL	DEPTH	HEAD DETAIL	JAMB DETAIL	SILL DETAIL	HARDWARE SET
NEW TREATMENT FACILITY																				
WEST - OVERHEAD DOOR	1	2	C	12'-4"	12'-4"	INSULATED METAL	12'-0"	12'-0"	1"	N	N	N	C	INSULATED METAL	AS SPECIFIED	5	5	5	N/A	
EAST - OVERHEAD DOOR	2	2	C	12'-4"	12'-4"	INSULATED METAL	12'-0"	12'-0"	1"	N	N	N	C	INSULATED METAL	AS SPECIFIED	5	5	5	N/A	
CHLORINE ROOM - EXTERIOR DOOR	3	1	B	6'-4"	7'-4"	INSULATED METAL	6'-0"	7'-0"	1"	N	N	N	B	INSULATED METAL	5"	2	2	4	SET #1	
WEST - EXTERIOR DOOR	4	1	A	3'-4"	7'-4"	INSULATED METAL	6'-0"	7'-0"	1"	N	N	N	A	INSULATED METAL	5"	2	2	4	SET #3	
EAST - EXTERIOR DOOR	5	1	A	3'-4"	7'-4"	INSULATED METAL	6'-0"	7'-0"	1"	N	N	N	A	INSULATED METAL	5"	2	2	4	SET #3	
ELECTRICAL ROOM - INTERIOR DOOR	6	1	A	3'-4"	7'-4"	HOLLOW METAL	3'-0"	7'-0"	1"	N	Y	N	A	HOLLOW METAL	5"	1	1	3	SET #2	

**NOTES:**

- ALL EXTERIOR DOORS & FRAMES TO BE GALVANIZED.
- ALL EXTERIOR DOORS SHALL BE INSULATED

**HARDWARE SETS**

- |   |  |   |
|---|--|---|
| <ol style="list-style-type: none"> <li>6 HINGES</li> <li>1 LOCK SET</li> <li>2 CLOSER HYDRAULIC</li> <li>2 KICK PLATES</li> <li>2 EXIST BARS</li> <li>2 THRESHOLDS</li> </ol> | <ol style="list-style-type: none"> <li>3 HINGES</li> <li>1 CLOSER HYDRAULIC</li> <li>1 EXIST DEVICE</li> </ol> | <ol style="list-style-type: none"> <li>3 HINGES</li> <li>1 LOCK SET</li> <li>2 CLOSER HYDRAULIC</li> <li>1 KICK PLATES</li> <li>1 EXIST BARS</li> <li>1 THRESHOLDS</li> </ol> |
|---|--|---|



**DOOR TYPE ELEVATION**

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

**DOOR FRAME ELEVATIONS**

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

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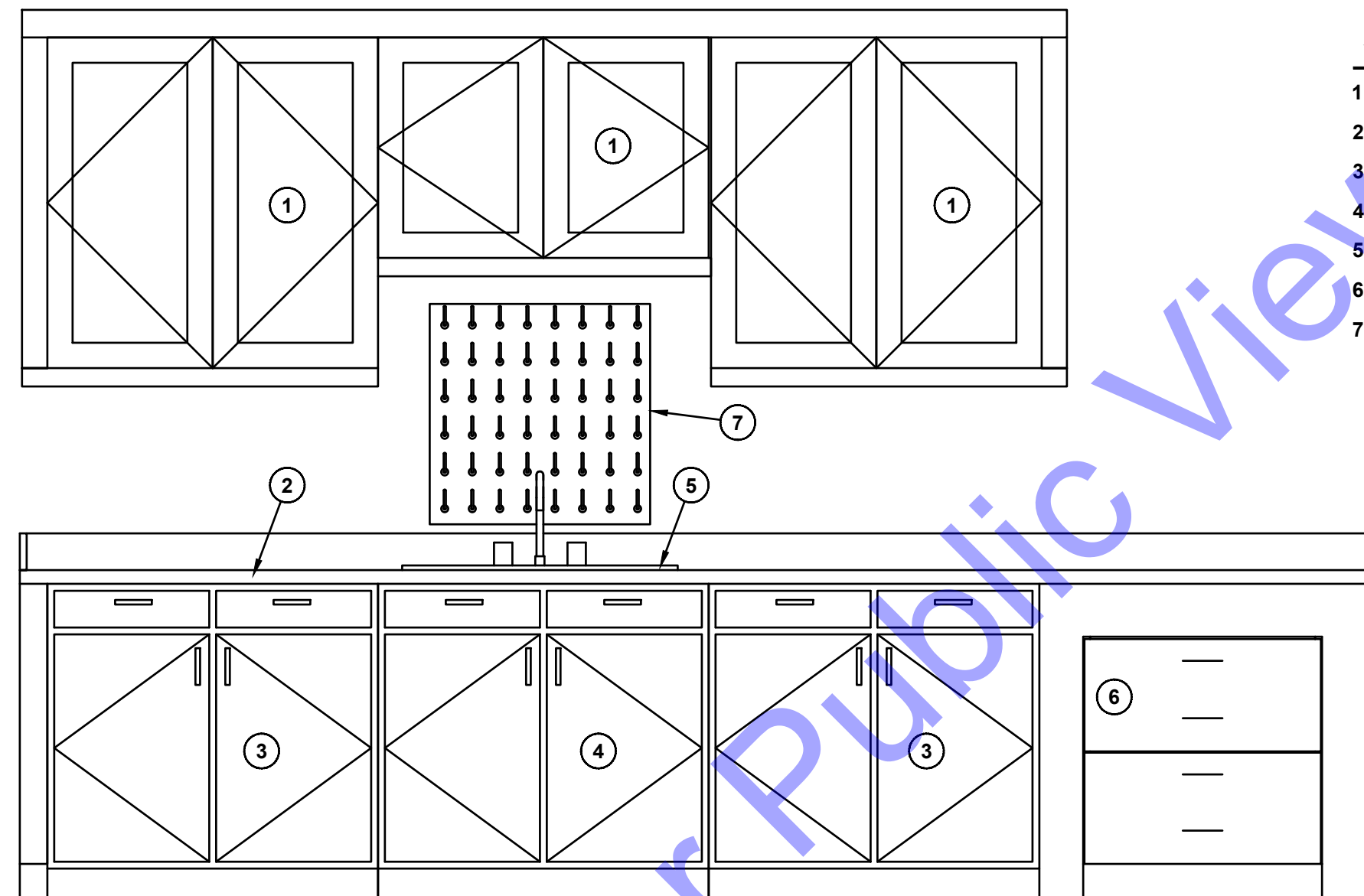
NEW WATER TREATMENT PLANT FACILITY - DOOR SCHEDULES

### ROOM FINISH SCHEDULE

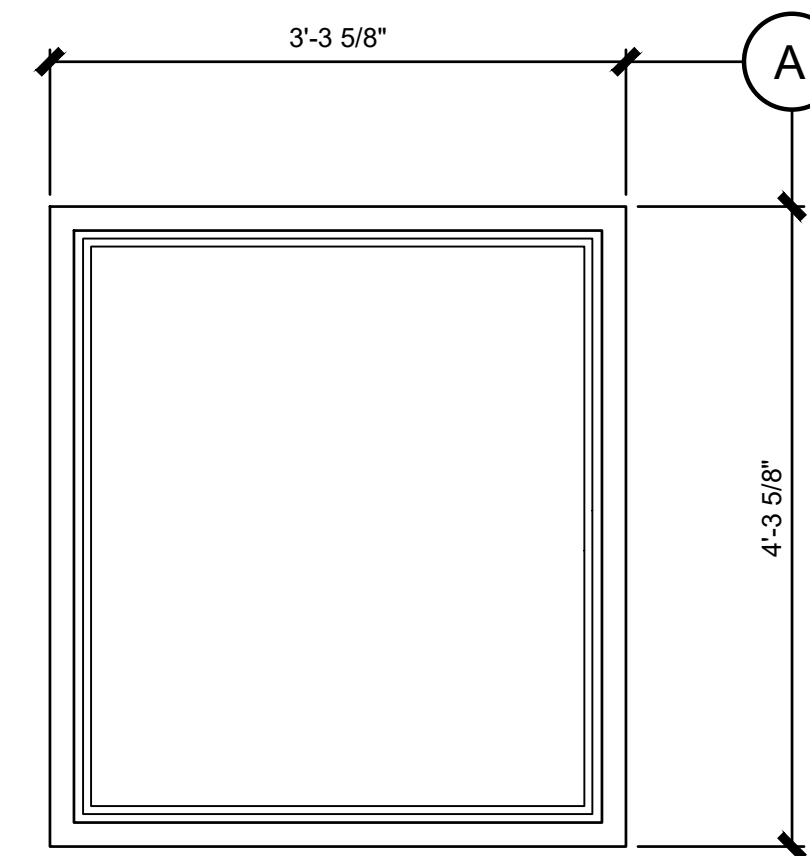
LOCATION	ROOM NAME/NUMBER	FLOOR	WALLS	WALL BASE	CEILING	CEILING HEIGHT	COATING	REMARKS
NEW TREATMENT FACILITY	PROCESS ROOM - 100	CONCRETE	N,S-PAINTED GYP BD E,W-PAINTED GYP BD	4" VINYL	MOISTURE RESISTANT 5/8" GYPSUM BOARD	16'-0"	F-2 FLOOR COATING	TRIM AS REQUIRED
	CHLORINE ROOM - 101	CONCRETE	N,S-PAINTED GYP BD E,W-PAINTED GYP BD	4" VINYL	MOISTURE RESISTANT 5/8" GYPSUM BOARD	9'-4"	F-2 FLOOR COATING	TRIM AS REQUIRED
	ELECTRICAL/MECHANICAL - 102	CONCRETE	N,S-PAINTED GYP BD E,W-PAINTED GYP BD	4" VINYL	MOISTURE RESISTANT 5/8" GYPSUM BOARD	9'-4"	F-2 FLOOR COATING	TRIM AS REQUIRED

### WINDOW SCHEDULE

LOCATION	WINDOW DATA											REMARKS		
	WINDOW SYMBOL	QUANTITY	WINDOW TYPE	WIDTH	HEIGHT	R.O. WIDTH	R.O. HEIGHT	MATERIAL	SCREEN	GLAZING TYPE	HEAD DETAIL		JAMB DETAIL	SILL DETAIL
NEW TREATMENT FACILITY	A	1	A	3'-3 5/8"	4'-3 5/8"	3'-4"	4'-4"	VINYL CLAD	N	HIGH PER. TEMPERED	1	1	1	SINGLE PANEL



- ELEVATION KEYNOTES:**
1. PLASTIC LAMINATE FACED LAB UPPER CABINETS
  2. PHENOLIC COUNTER TOP AND BACKSPLASH
  3. PLASTIC LAMINATE BASE CABINETS
  4. DOUBLE DOOR SINK CABINET
  5. SINK
  6. TWO DRAWER FILE CABINET
  7. AGR FABRICATORS PHENOLIC RESIN PEGBOARD



**WINDOW ELEVATION**  
NOT TO SCALE

### LAB CASEWORK

SCALE: 3/4"=1'-0"

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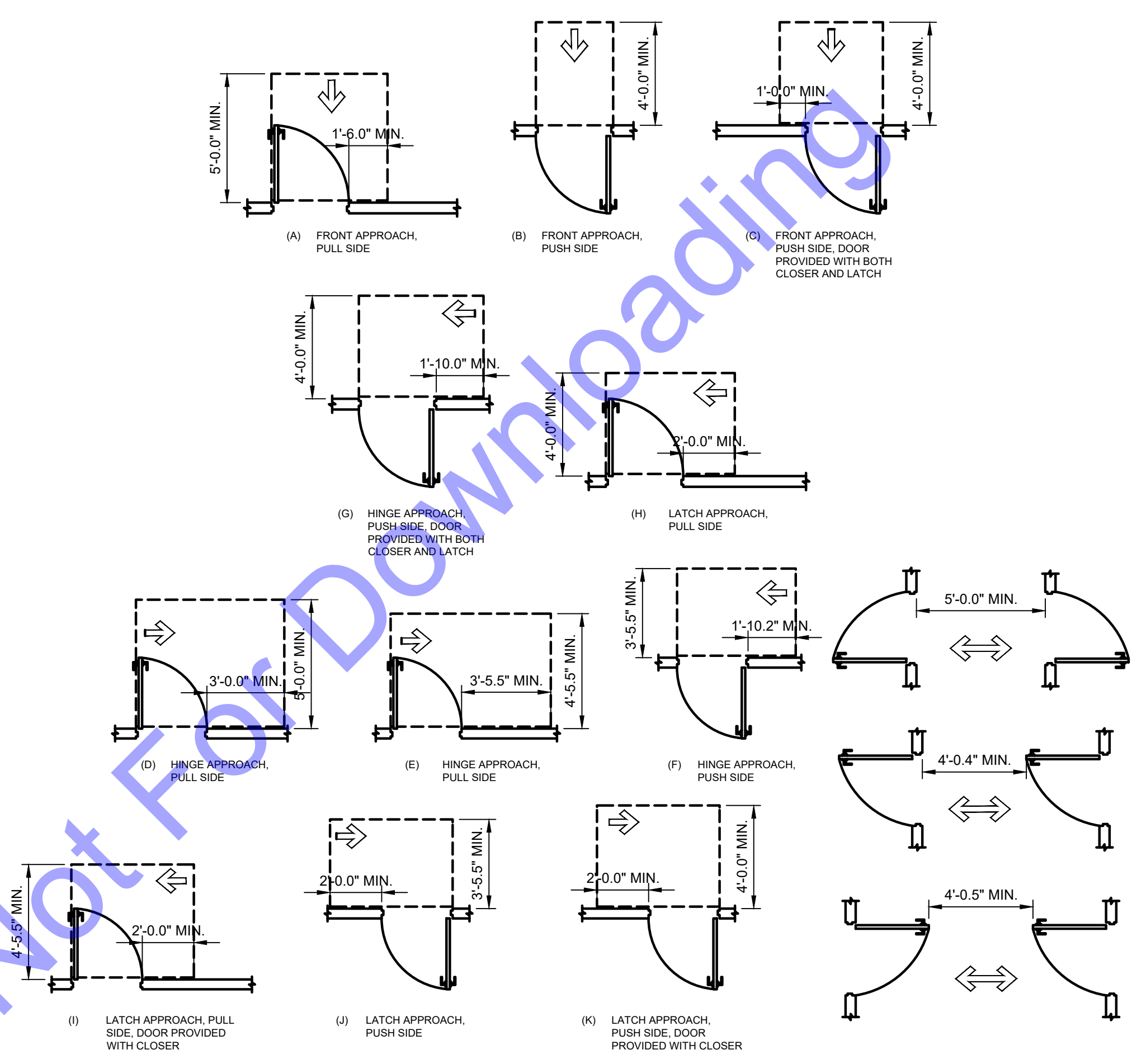
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**NEW WATER TREATMENT PLANT FACILITY - WINDOW AND CASEWORK SCHEDULES**

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**ADA DETAIL VIEW**  
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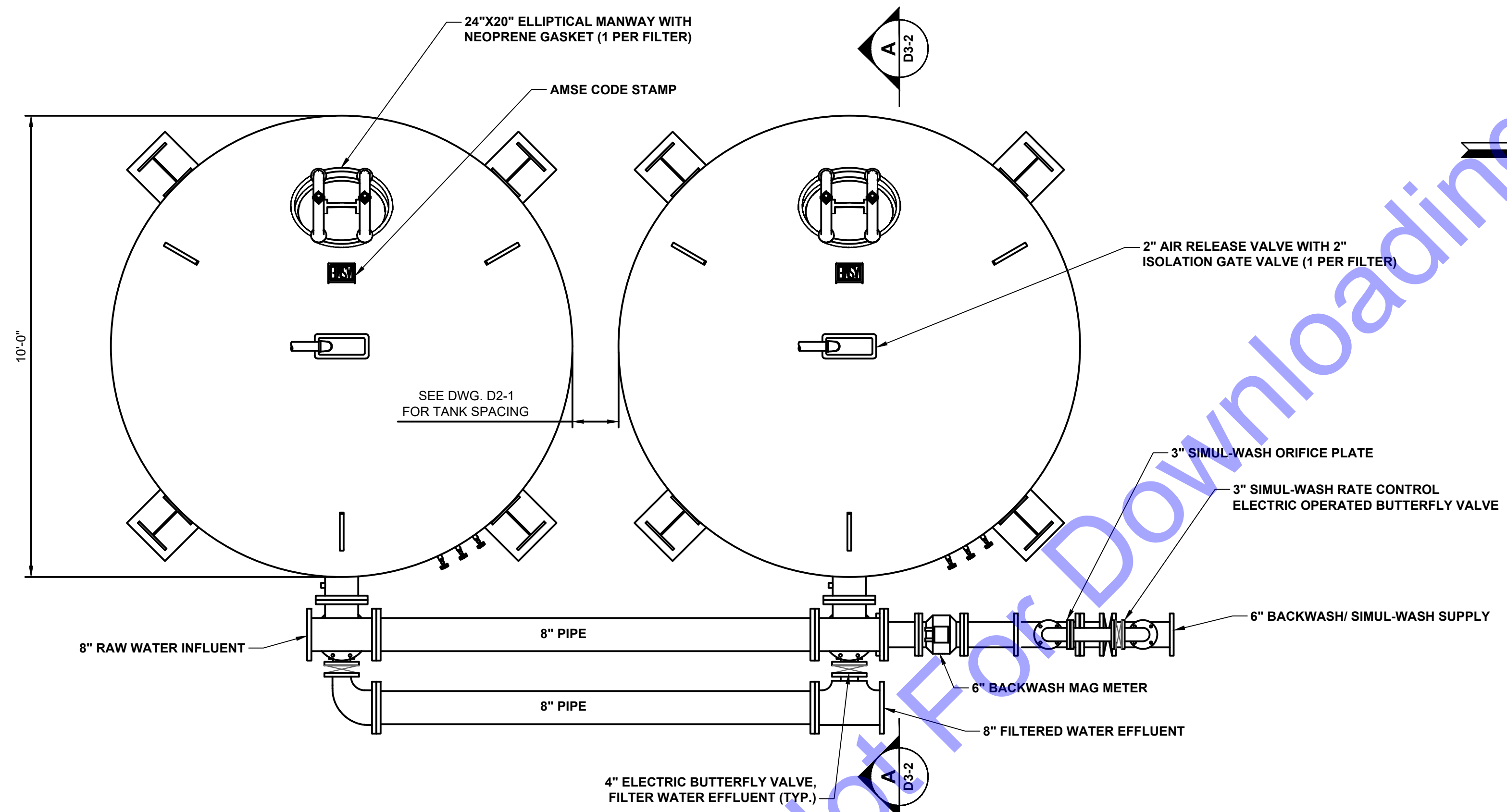
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**NEW WATER TREATMENT PLANT FACILITY - ADA DETAILS**

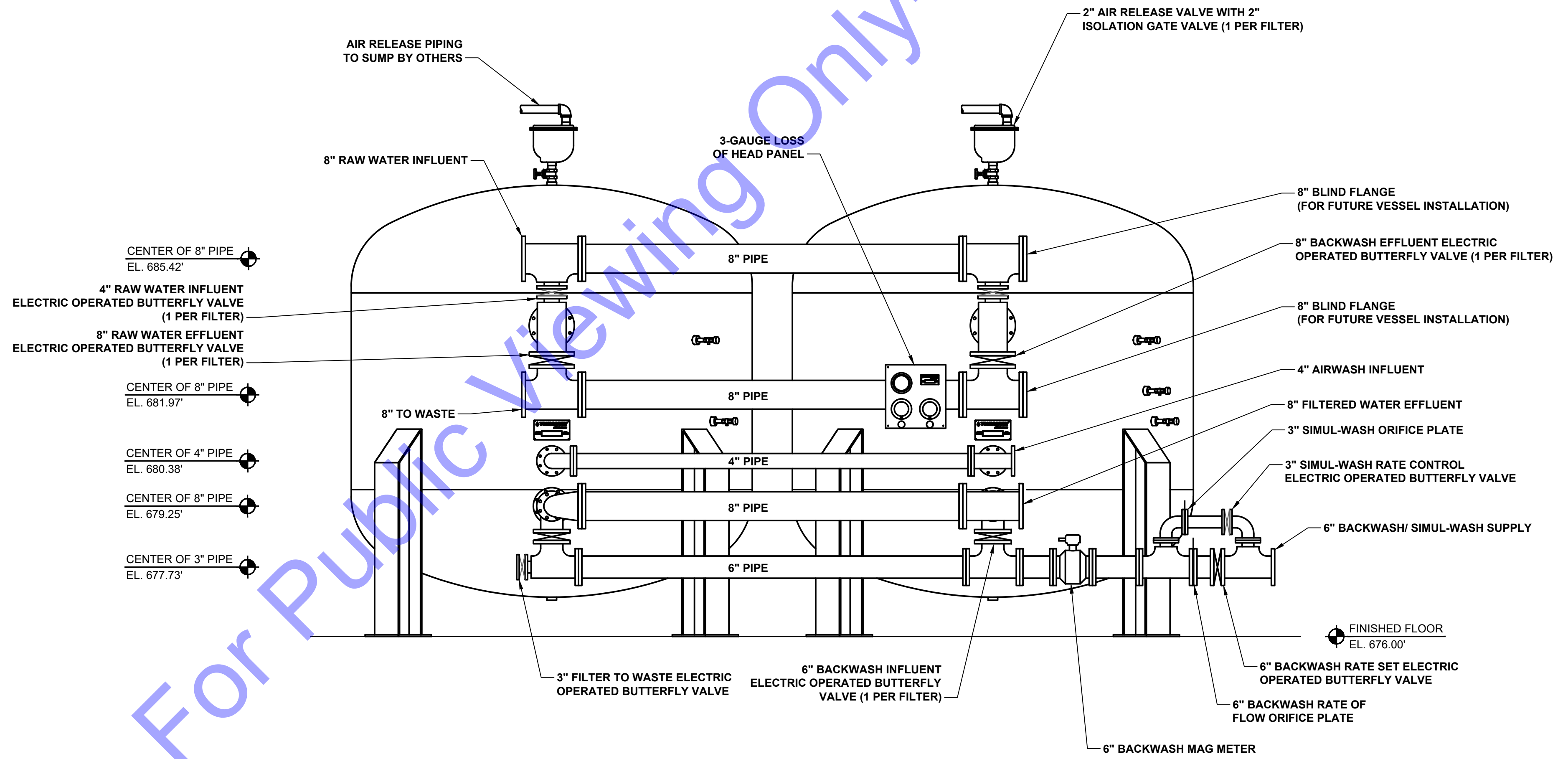
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**PLAN VIEW**  
 SCALE: 1/2"=1'-0"  
 0 1' 2' 4'



**FRONT ELEVATION**  
 SCALE: 1/2"=1'-0"  
 0 1' 2' 4'

- CENTER OF 8" PIPE  
EL. 685.42'
- 4" RAW WATER INFLUENT  
ELECTRIC OPERATED BUTTERFLY VALVE  
(1 PER FILTER)
- 8" RAW WATER EFFLUENT  
ELECTRIC OPERATED BUTTERFLY VALVE  
(1 PER FILTER)
- CENTER OF 8" PIPE  
EL. 681.97'
- CENTER OF 4" PIPE  
EL. 680.38'
- CENTER OF 8" PIPE  
EL. 679.25'
- CENTER OF 3" PIPE  
EL. 677.73'

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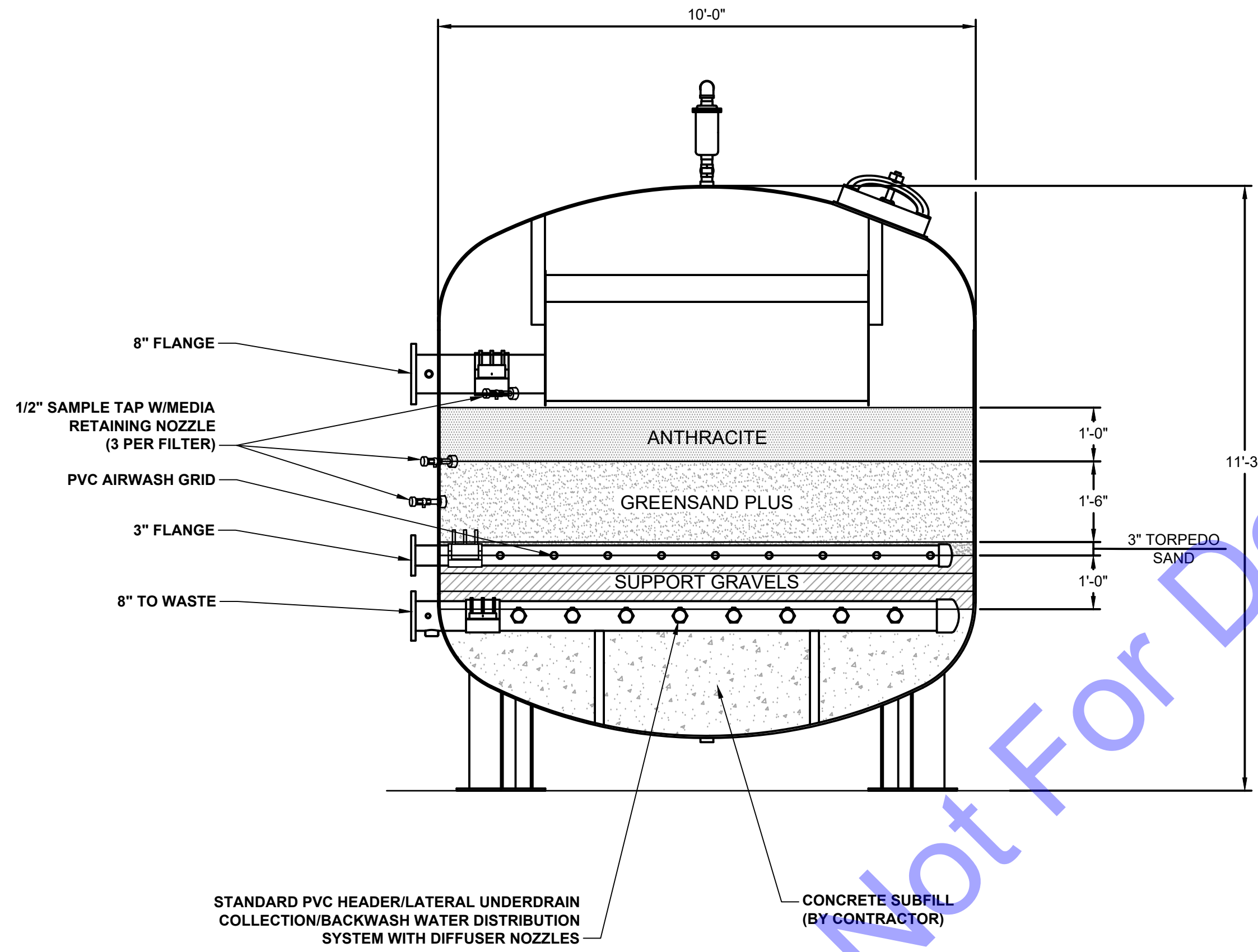
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**NEW VERTICAL PRESSURE FILTER - PLAN AND ELEVATION VIEWS**

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**SECTION VIEW A**  
SCALE: 1/2"=1'-0"  
0 1 2 3 4

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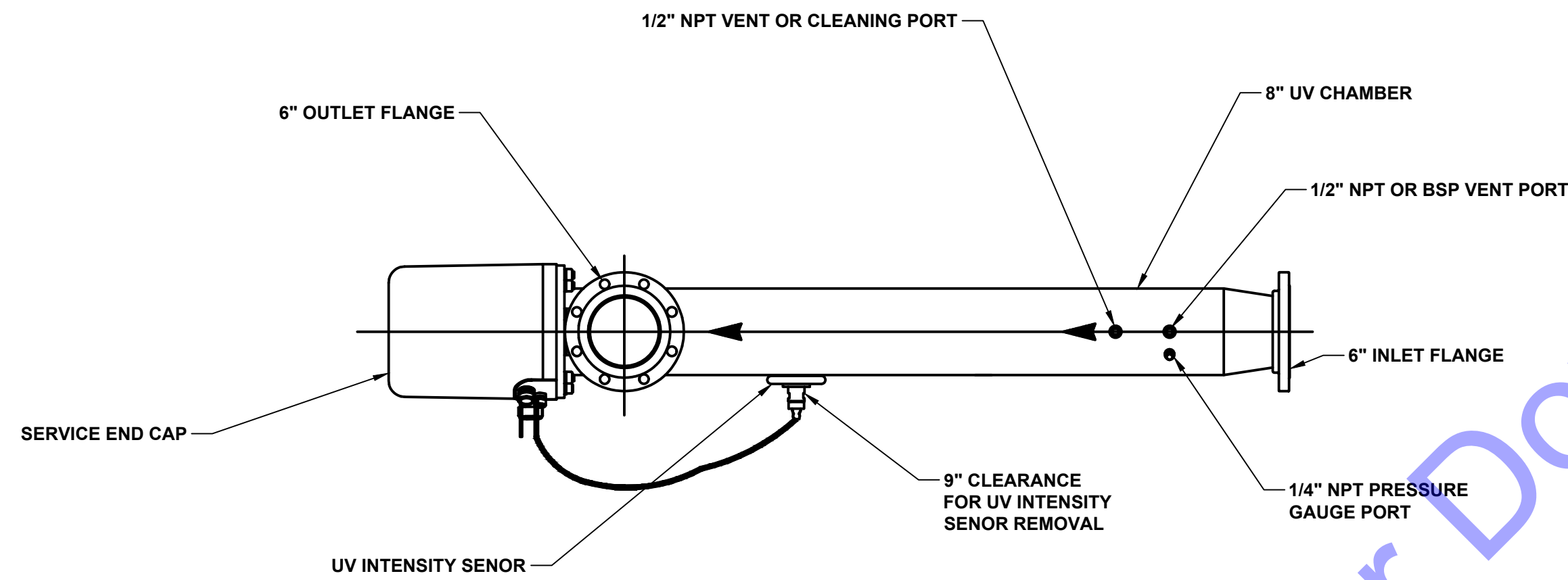
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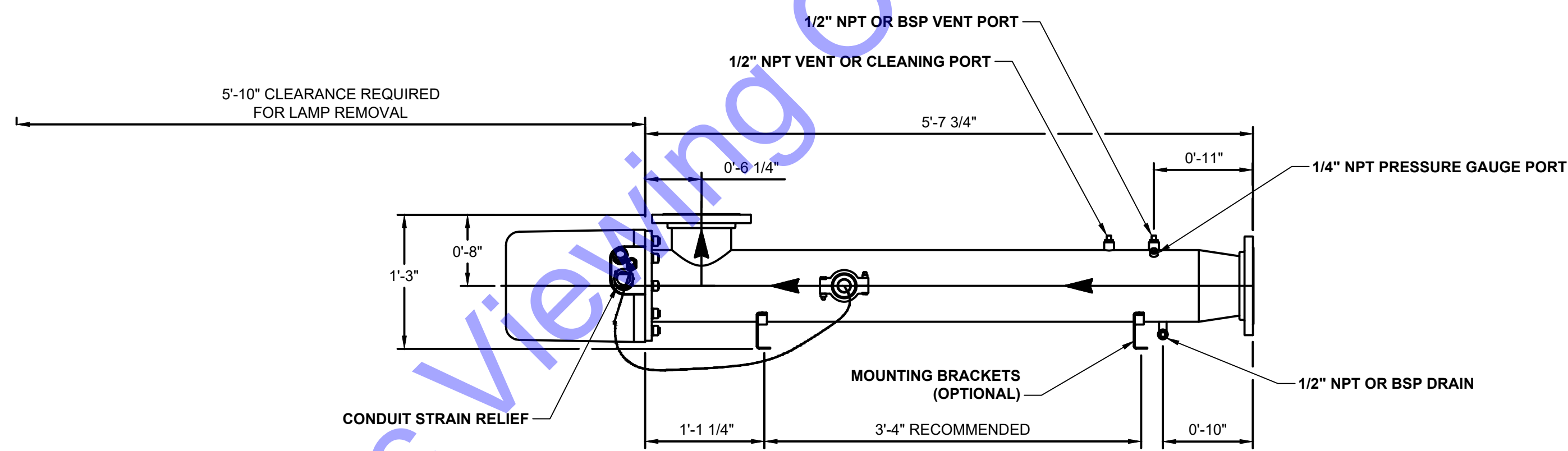
**NEW VERTICAL PRESSURE FILTER - TYPICAL SECTION VIEW**  
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Sheet: 42 OF 73

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



**FRONT ELEVATION**  
 SCALE: 1"=1'-0"  
 0 1/2 1 2

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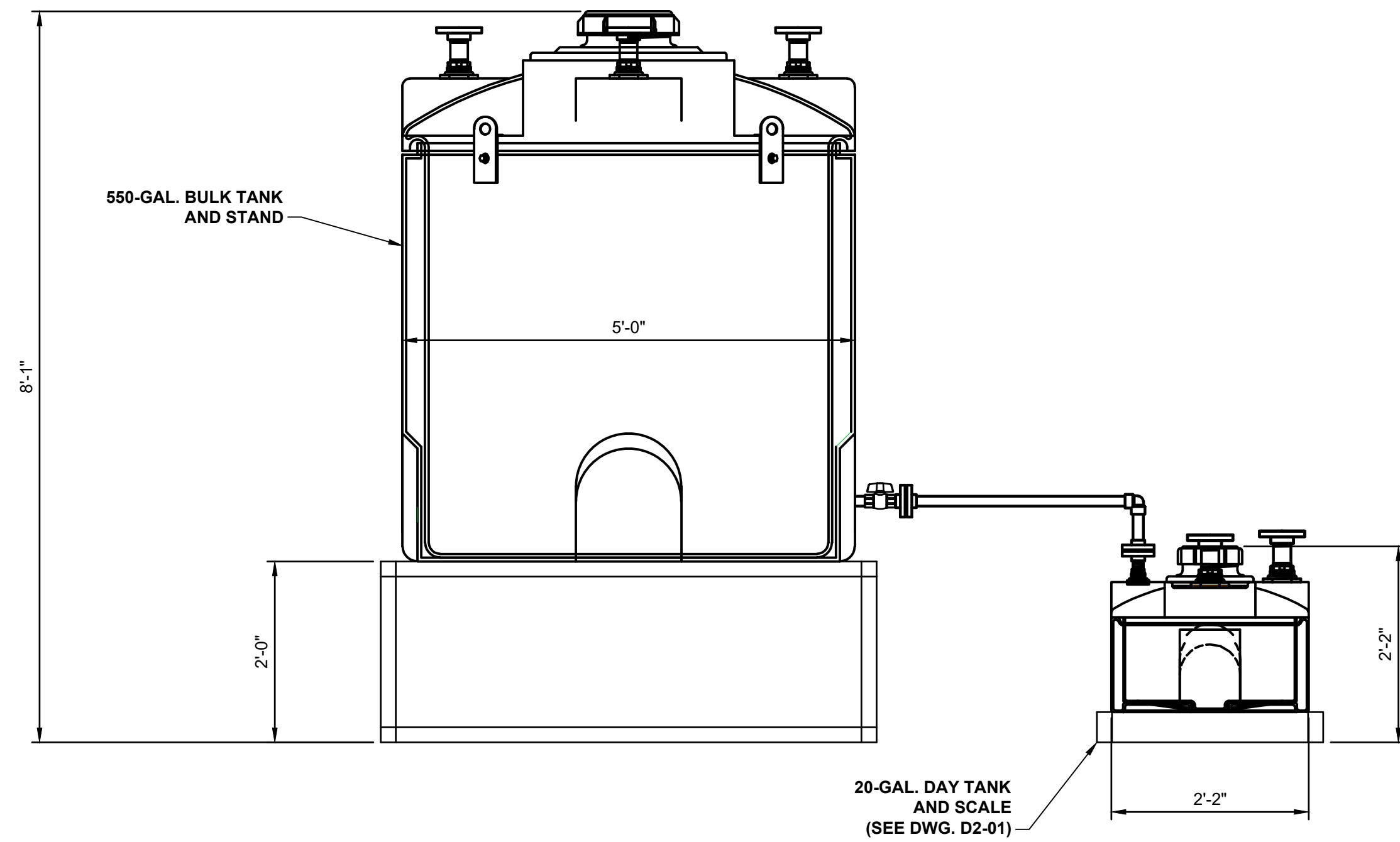
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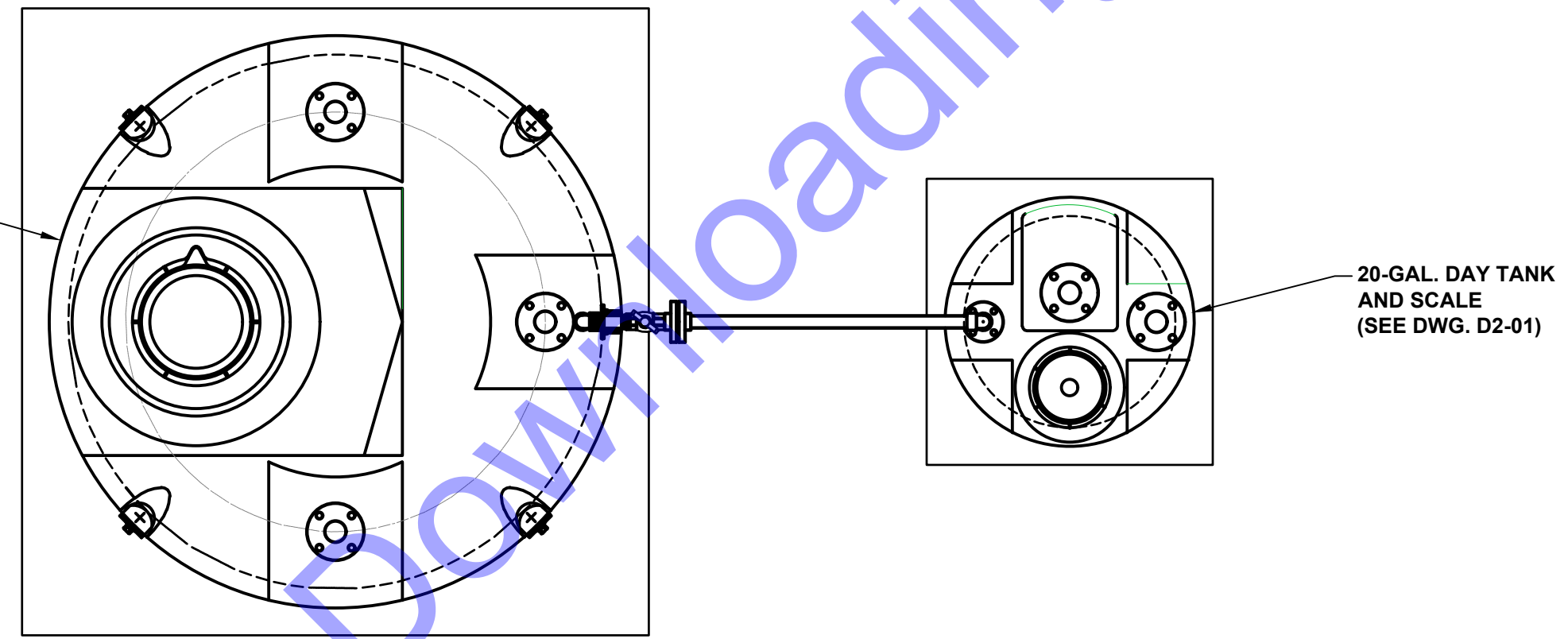
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**NEW UV TREATMENT - PLAN AND ELEVATION VIEWS**



**ELEVATION VIEW**  
SCALE: 3/4"=1'-0"

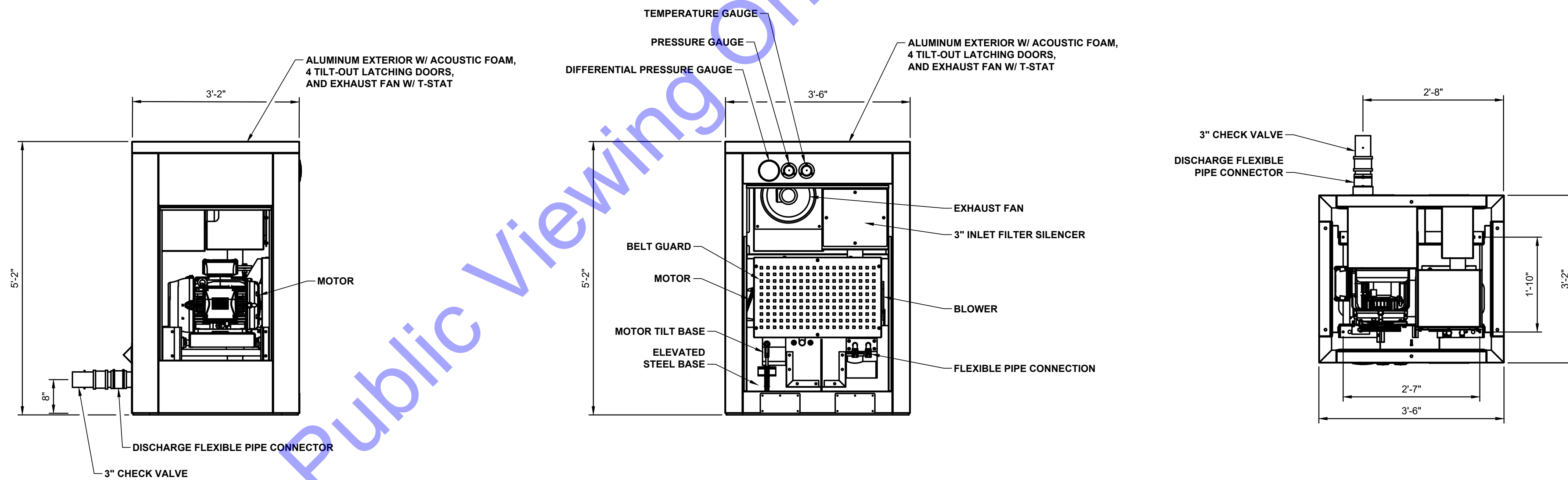


**PLAN VIEW**  
SCALE: 3/4"=1'-0"

**CHEMICAL FEED TANKS**

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**ELEVATION VIEW**  
SCALE: 3/4"=1'-0"

**PLAN VIEW**  
SCALE: 3/4"=1'-0"

**AIRWASH BLOWER ASSEMBLY**

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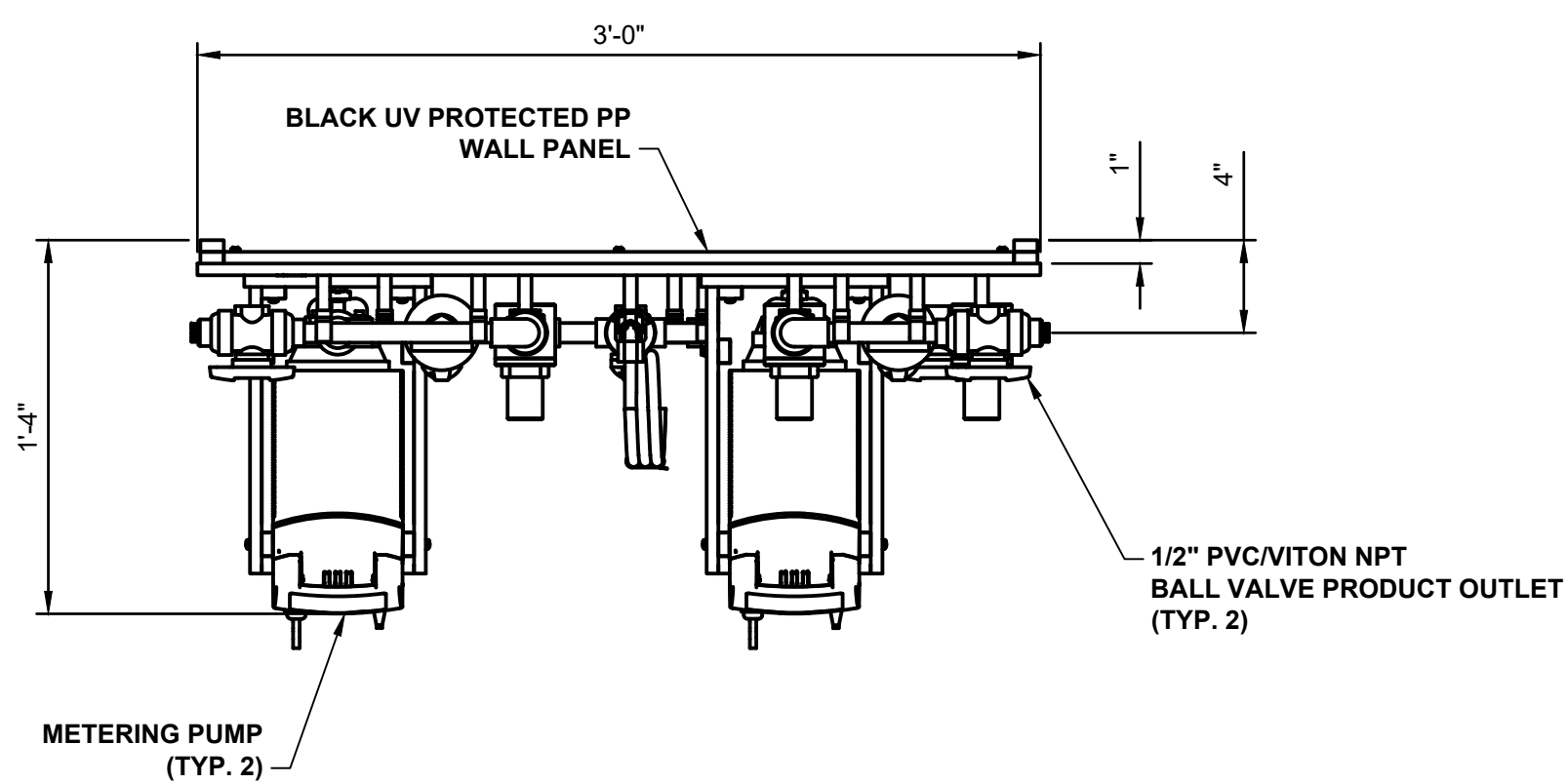
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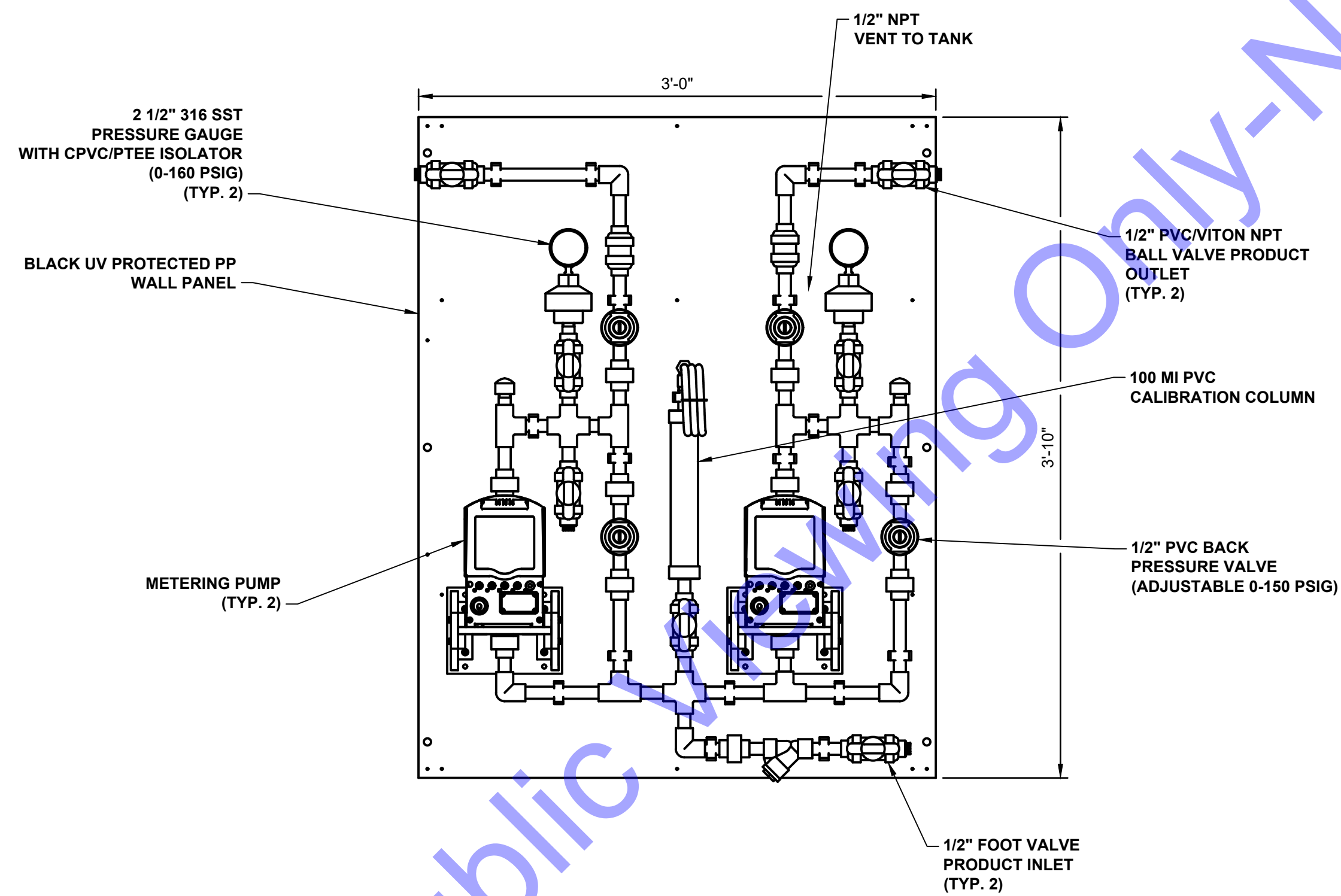
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**CHEMICAL FEED TANKS, AND AIRWASH BLOWER ASSEMBLY- PLAN AND ELEVATION VIEWS**



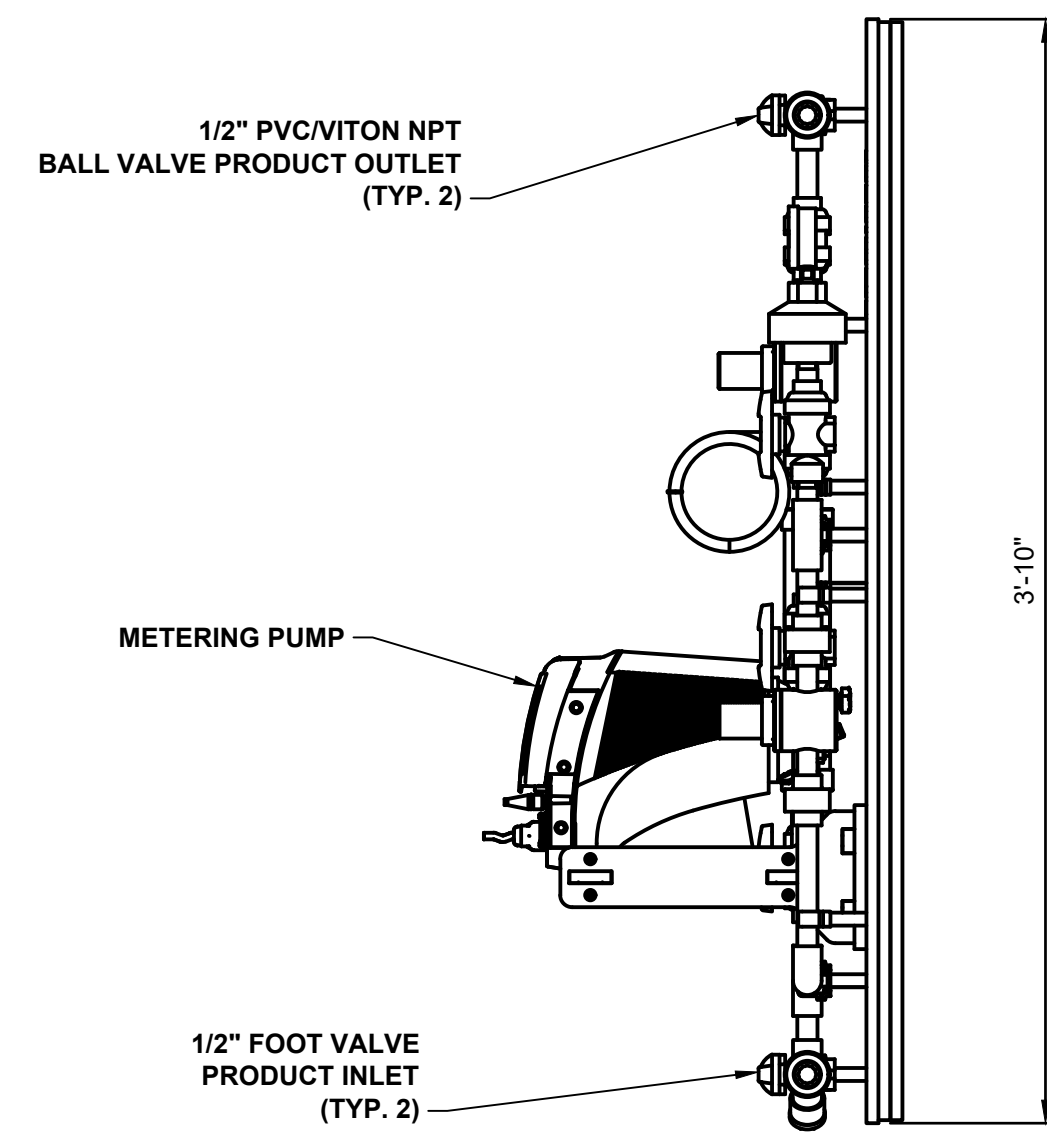
**PLAN VIEW**

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



**FRONT VIEW**

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



**SIDE VIEW**

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

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Signature: *Andrew C. Cochran* Date: 10/15/2024

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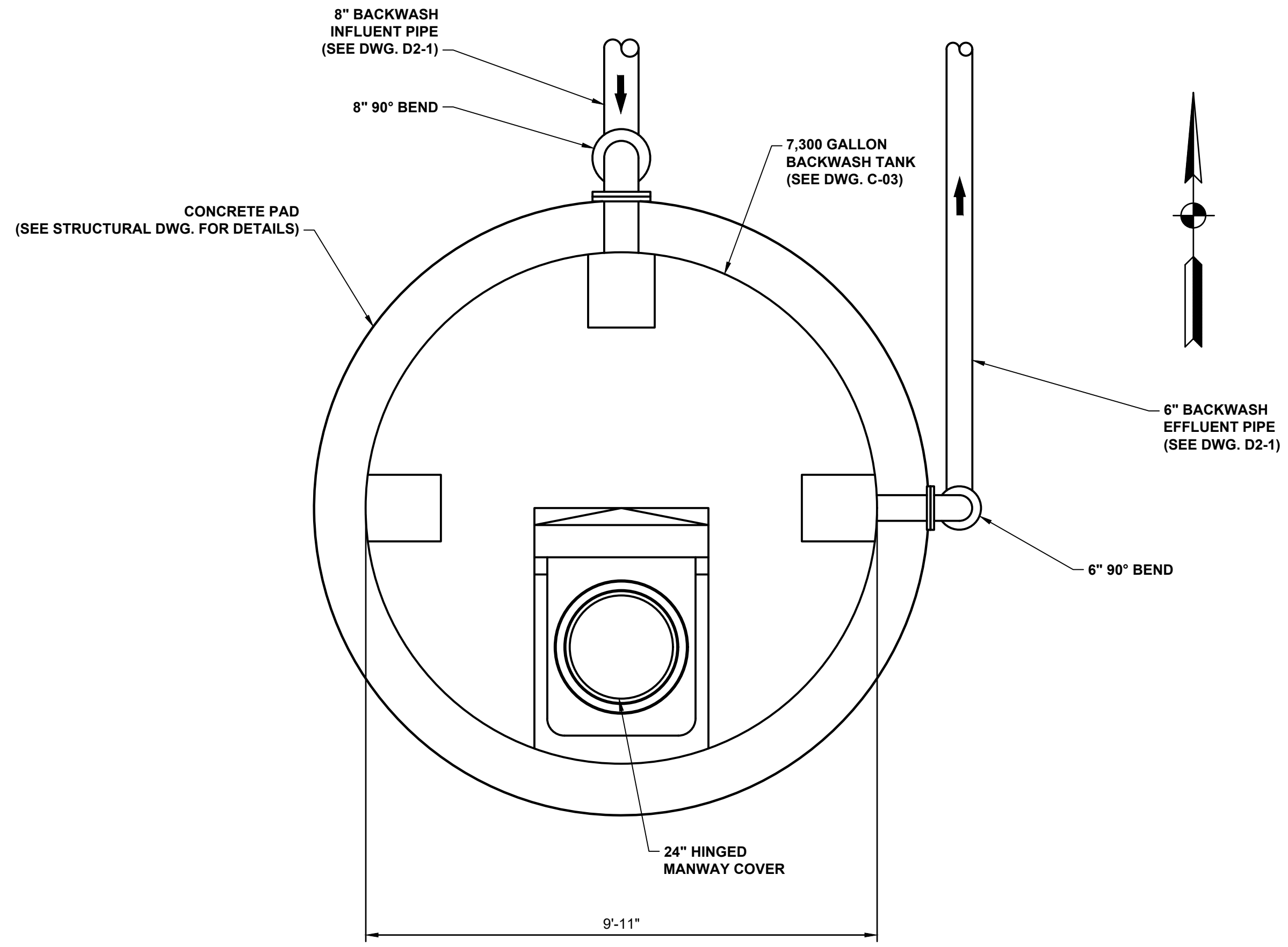
No.	Submittal / Revision	By	Date

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Issue Date:	Project No:	Scale:
10-17-24	W24026	AS SHOWN

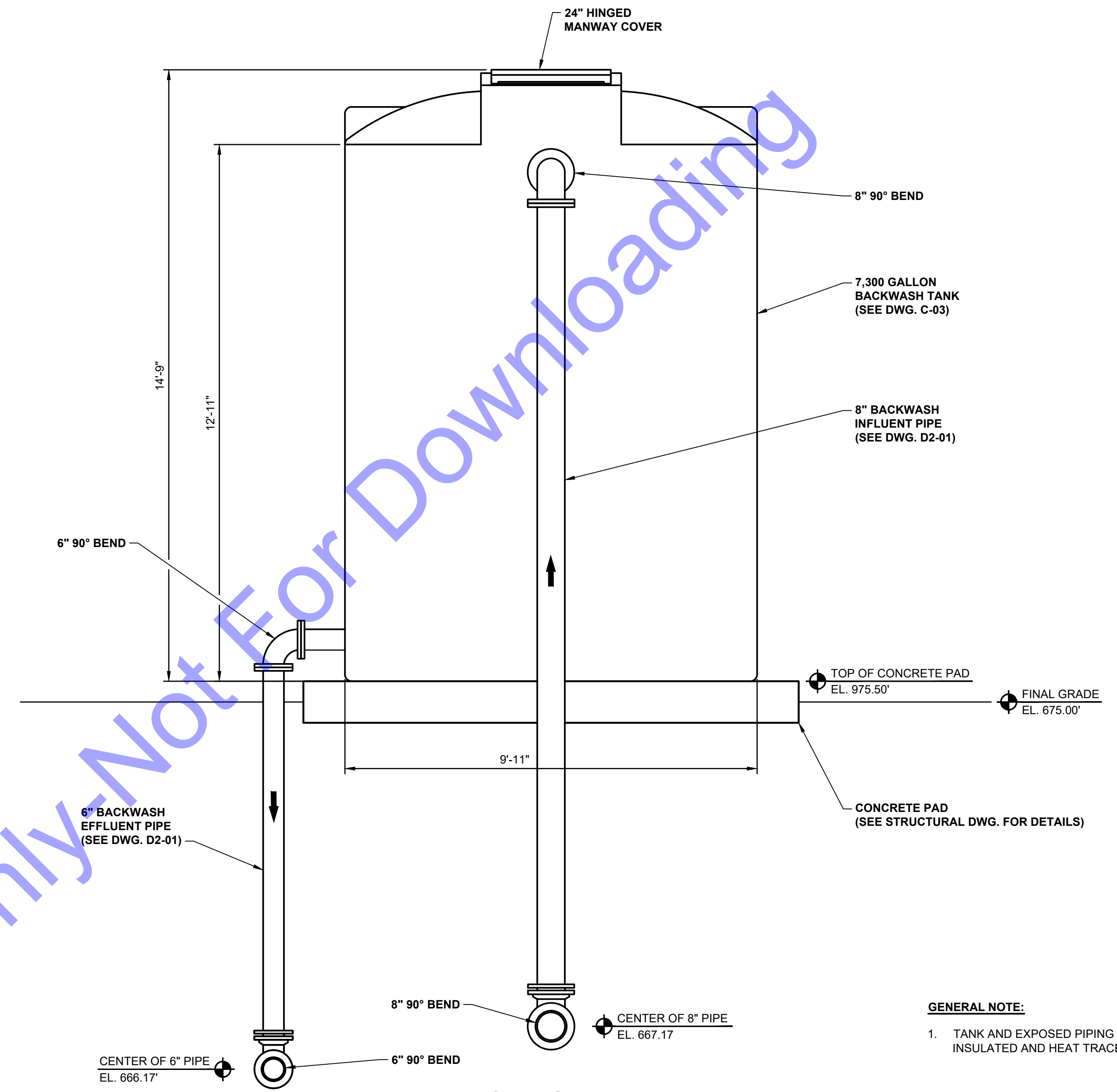
**SODIUM HYPO FEED SYSTEM PLAN AND ELEVATION VIEWS**

Drawing No:  
**D6-1**  
 Sheet: 45 OF 73

**DISCLAIMER NOTES:**  
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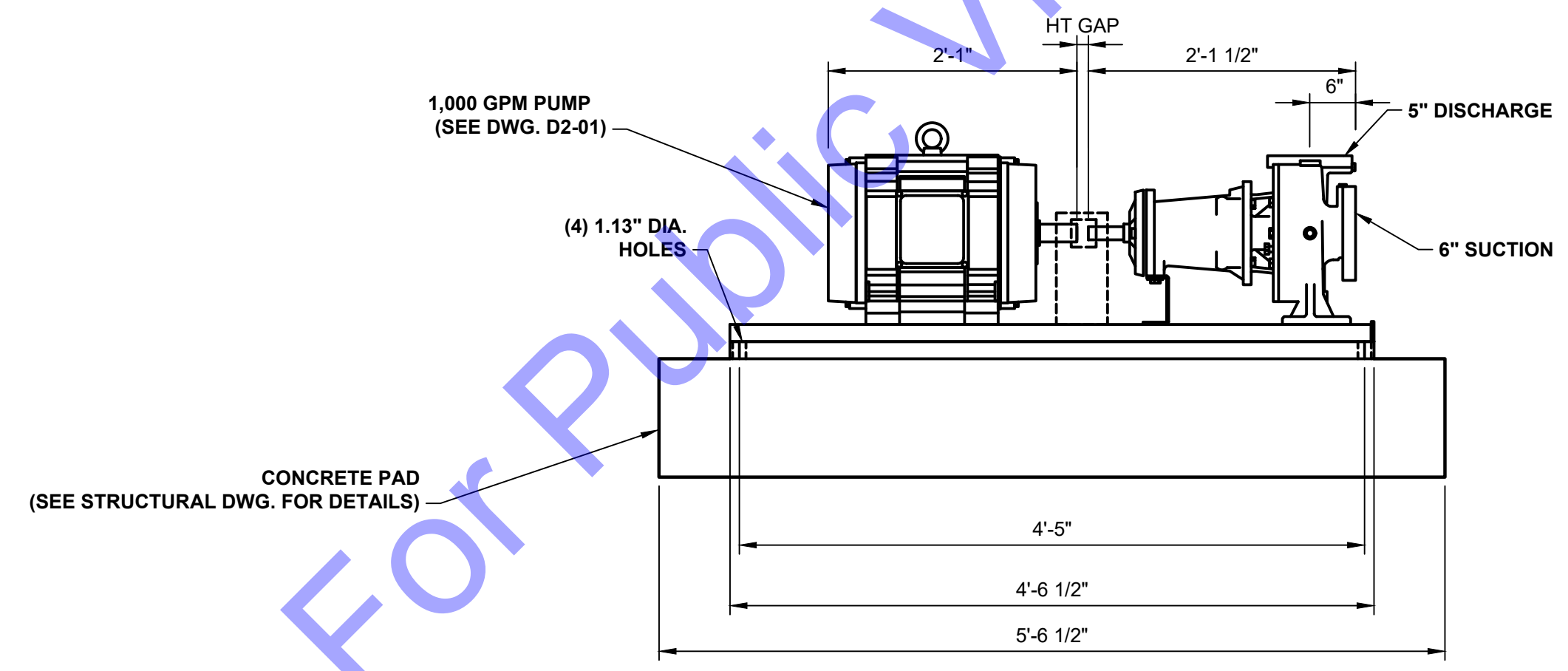
**BACKWASH TANK  
TOP VIEW**  
SCALE: 1/2"=1'-0"  
0 1 2 4



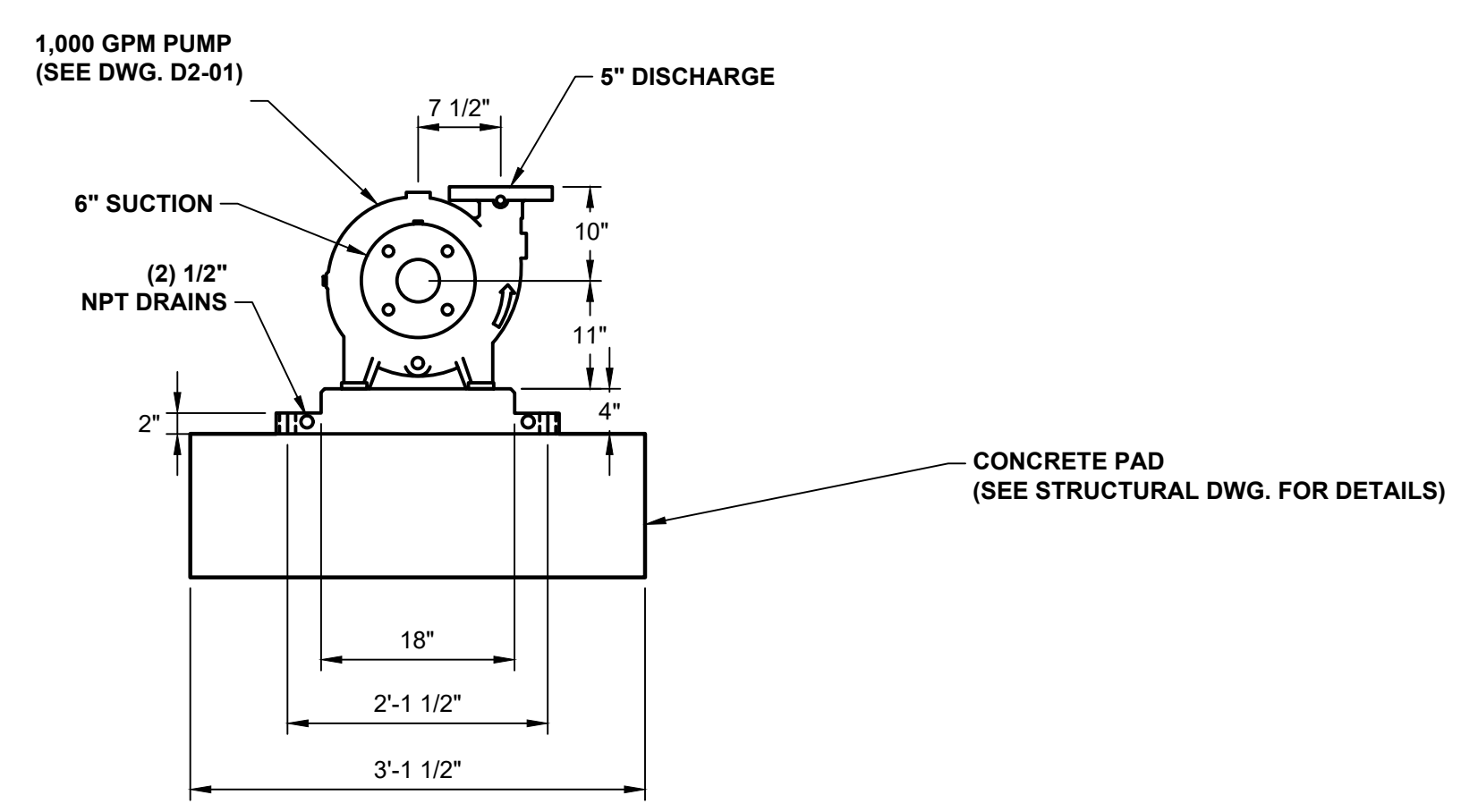
**BACKWASH TANK  
NORTH SIDE VIEW**  
SCALE: 1/2"=1'-0"  
0 1 2 4

**GENERAL NOTE:**  
1. TANK AND EXPOSED PIPING SHALL BE INSULATED AND HEAT TRACED.

**DISCLAIMER NOTES:**  
1. THIS DRAWING WAS OBTAINED FROM ASSMAN AND SHALL BE USED FOR REFERENCE ONLY.



**BACKWASH PUMP  
ELEVATION VIEW**  
SCALE: 1"=1'-0"  
0 1/2 1 2



**BACKWASH PUMP  
SIDE VIEW**  
SCALE: 1"=1'-0"  
0 1/2 1 2

**DISCLAIMER NOTES:**  
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File: Z:\SHARED\CLIENTS\APPLE VALLEY UTILITIES\WORKS\WATER UTILITY IMPROVEMENTS\CADD\CURRENT FILES\DRAWINGS\DIVISION A\WTP\EQUIPMENT PROCESS DRAWINGS.DWG  
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**ANDREW C. COCHRANE**  
REGISTERED  
No. 19900094  
STATE OF INDIANA  
PROFESSIONAL ENGINEER  
*Andrew C. Cochran* 10/15/2024  
Signature Date

**APPLE VALLEY UTILITIES, INC.**  
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**APPLE VALLEY UTILITIES EAST  
PWS - WATER UTILITY  
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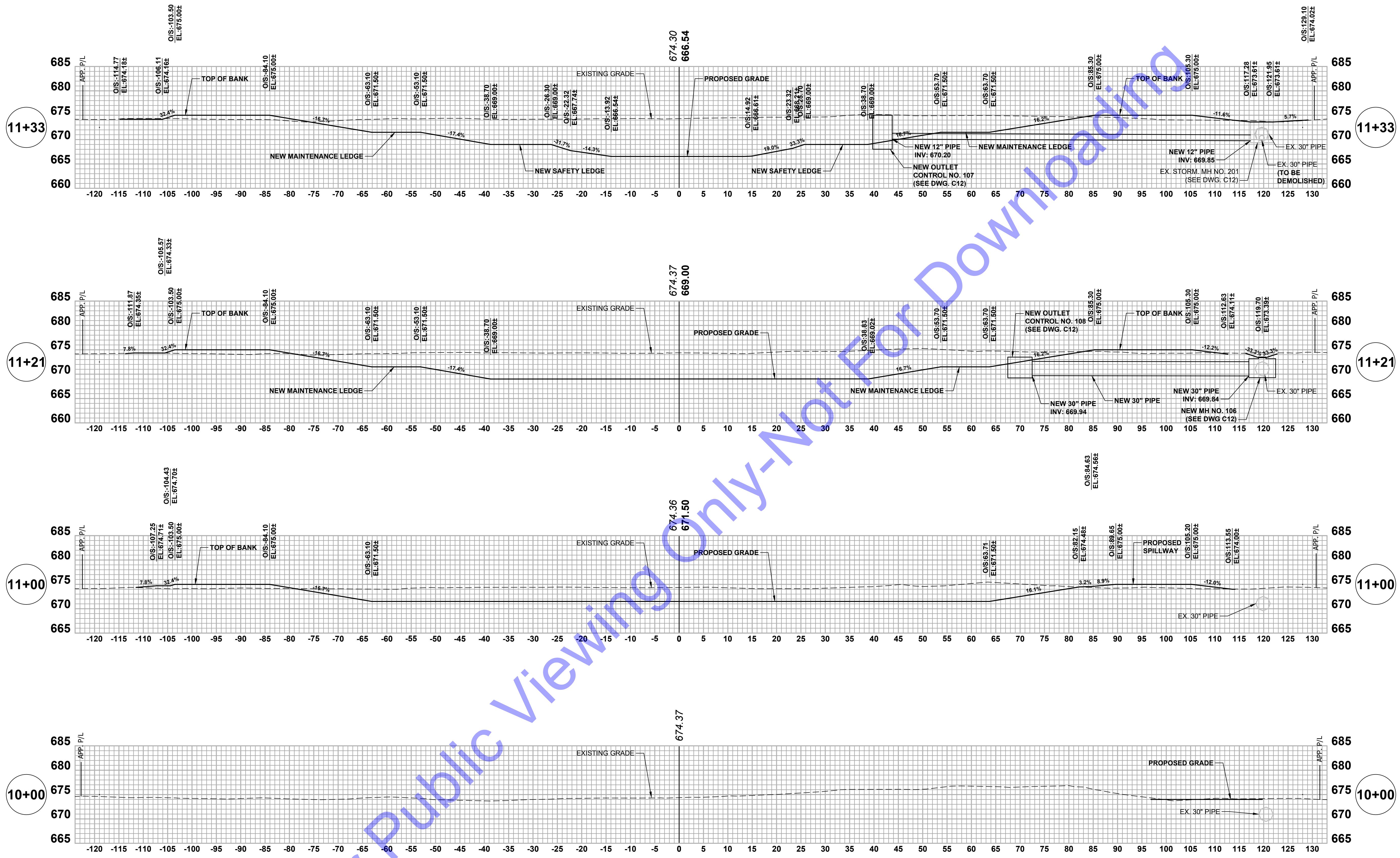
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Issue Date:	Project No:	Scale:
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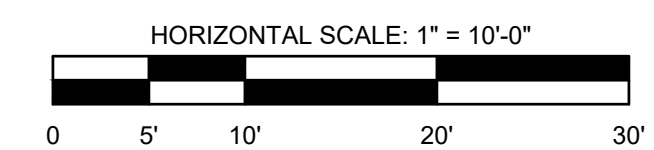
**BASKWASH TANK AND  
PUMP PLAN AND  
ELEVATION VIEWS**

Drawing No:  
**D7-1**

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CUT/FILL SUMMARY			
AREA (SQ. FT.)	CUT (CU. YD.)	FILL (CU. YD.)	NET TOTAL (CU. YD.)
86,740	4,675	2,729	1,946 (CUT)



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REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Signature: *Andrew C. Cochrane* Date: 10/15/2024

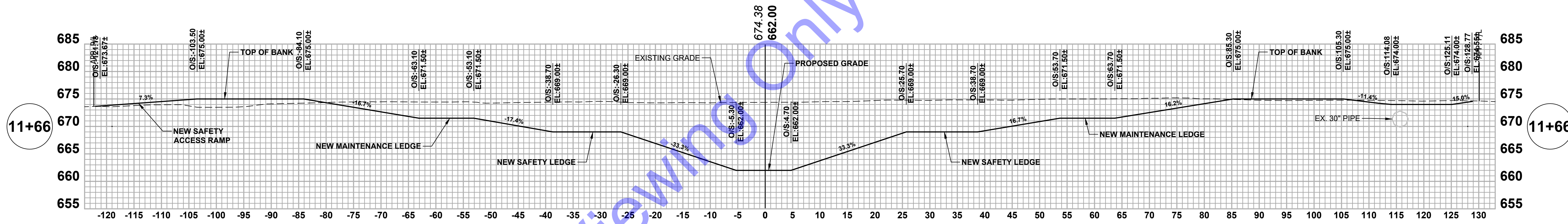
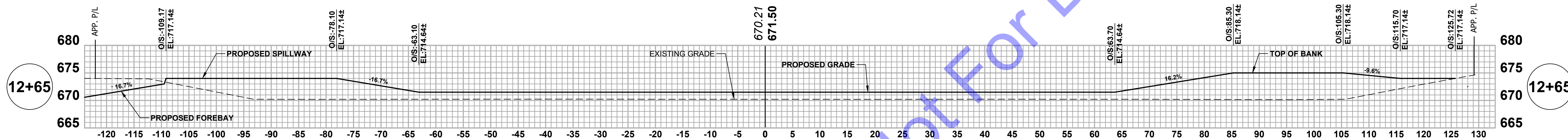
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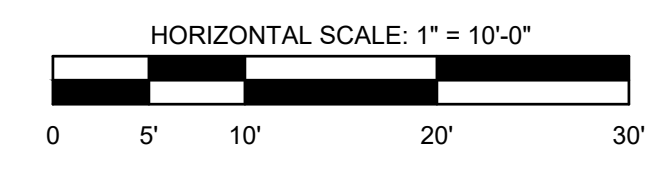
No.	Submitted/Revision	By	Date

Designed By: ACC	Drawn By: GCR	Checked By: DW
Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

CROSS SECTIONS - LINE "ST-2"  
 Drawing No: **CS1**  
 Sheet: 47 OF 73



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ANDREW C. COCHRANE  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA

Signature: *Andrew C. Cochrane* Date: 10/15/2024

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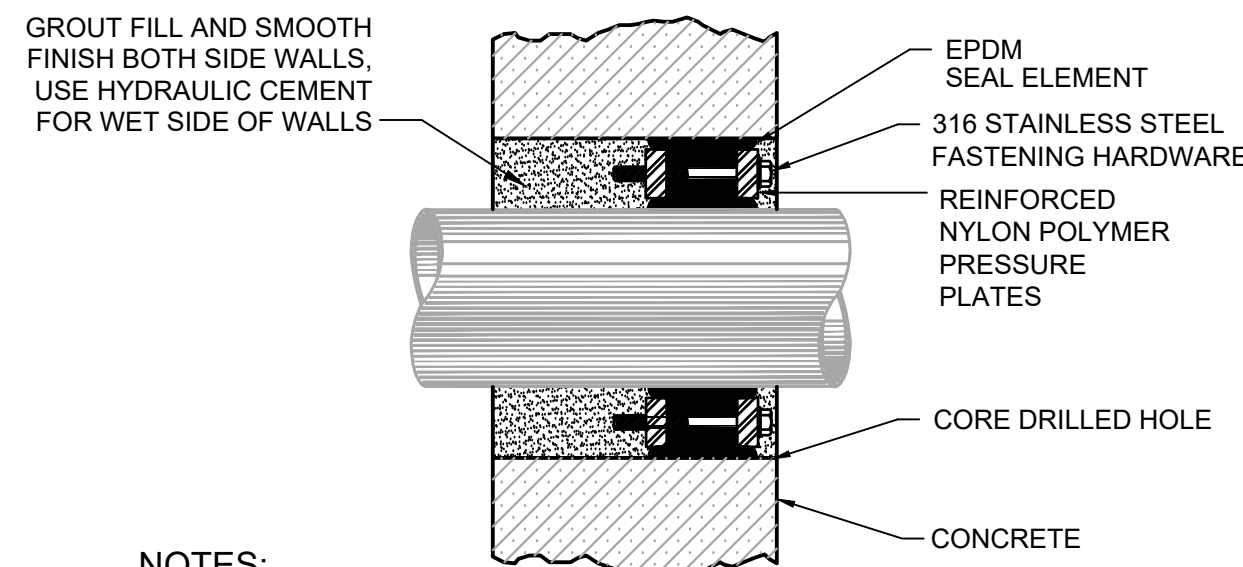
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CROSS SECTIONS - LINE "ST-2"

Drawing No: **CS2**

Sheet: 48 OF 73



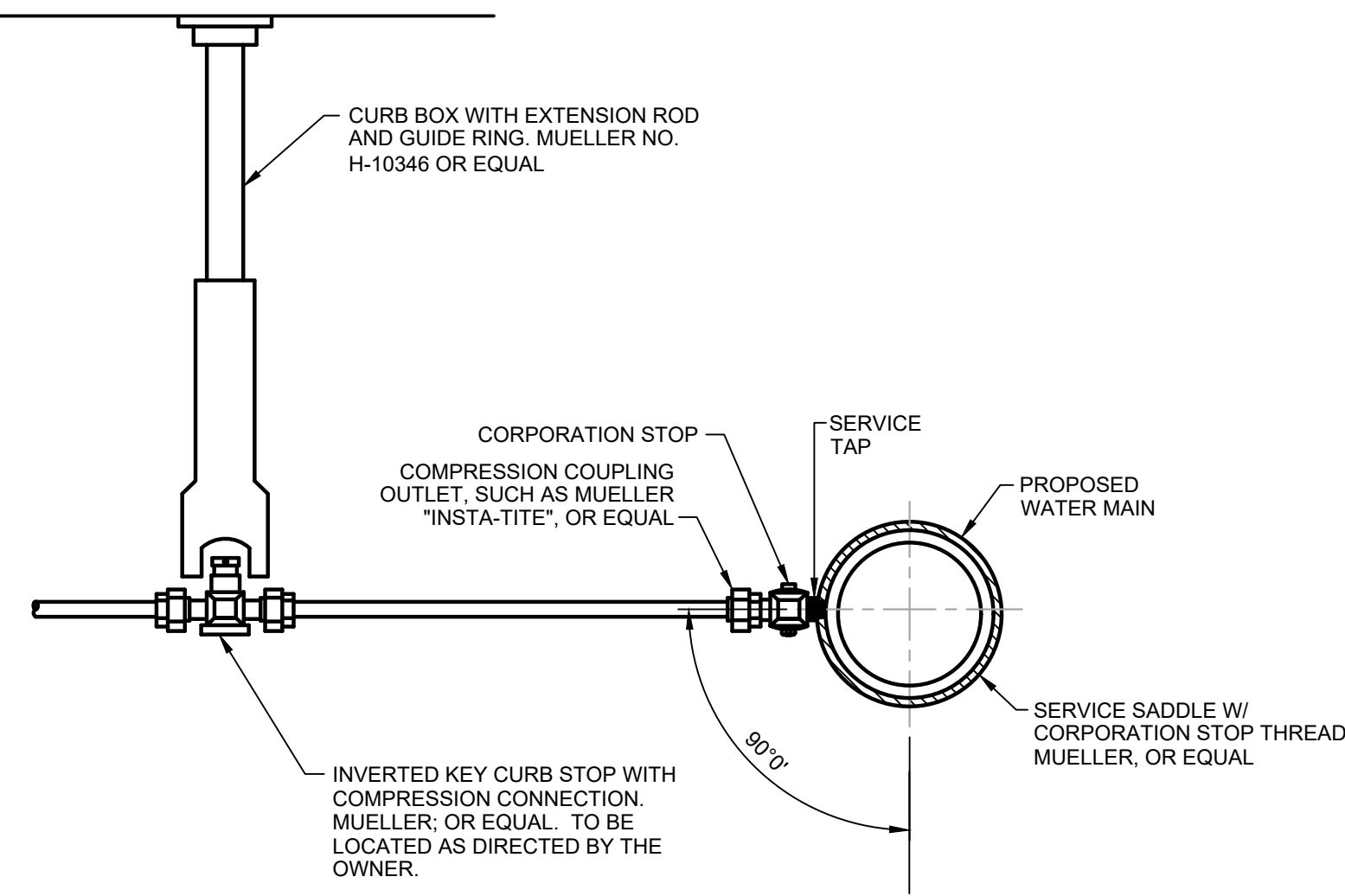


**NOTES:**

- ELASTOMERIC ELEMENT AND LINK-SEAL APPARATUS REQUIRED COMPATIBLE FOR HIGH TEMPERATURE APPLICATIONS - FOR ALL LINES
- ALL WALL PENETRATIONS (EXISTING WALLS) CONVEYING PIPE SHALL UTILIZE A LINK-SEAL EQUIVALENT, SHALL BE GROUTED SMOOTH, AND SHALL HAVE A BONDING AGENT APPLIED.

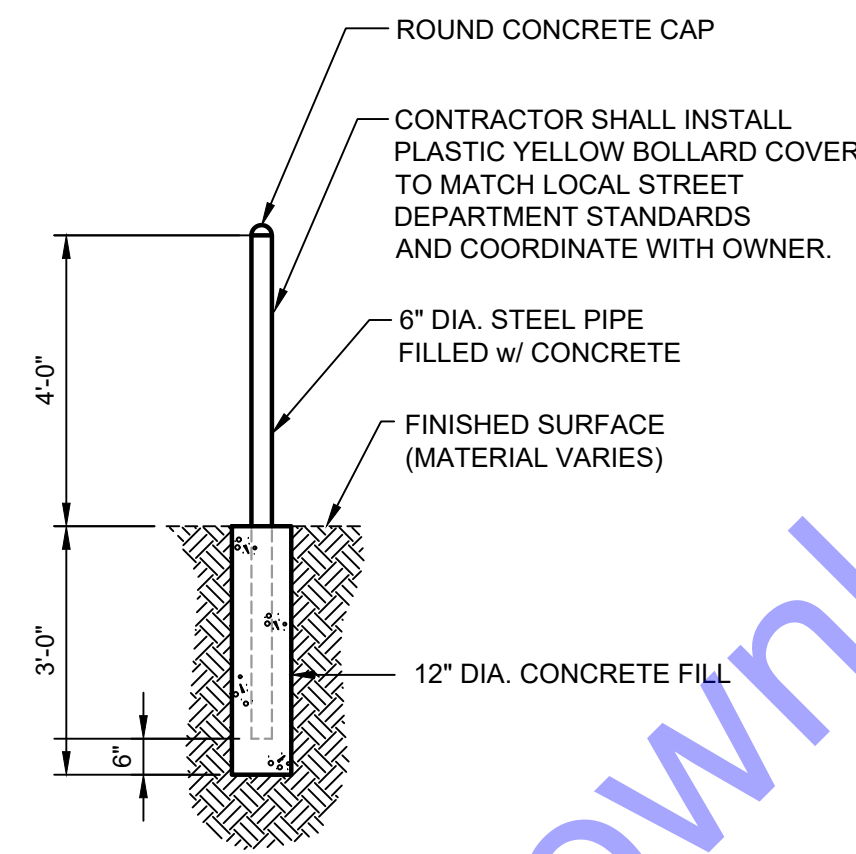
**LINK-SEAL WITH CORE DRILLED HOLE DETAIL**

NOT TO SCALE



**NEW SERVICE CONNECTION DETAIL**

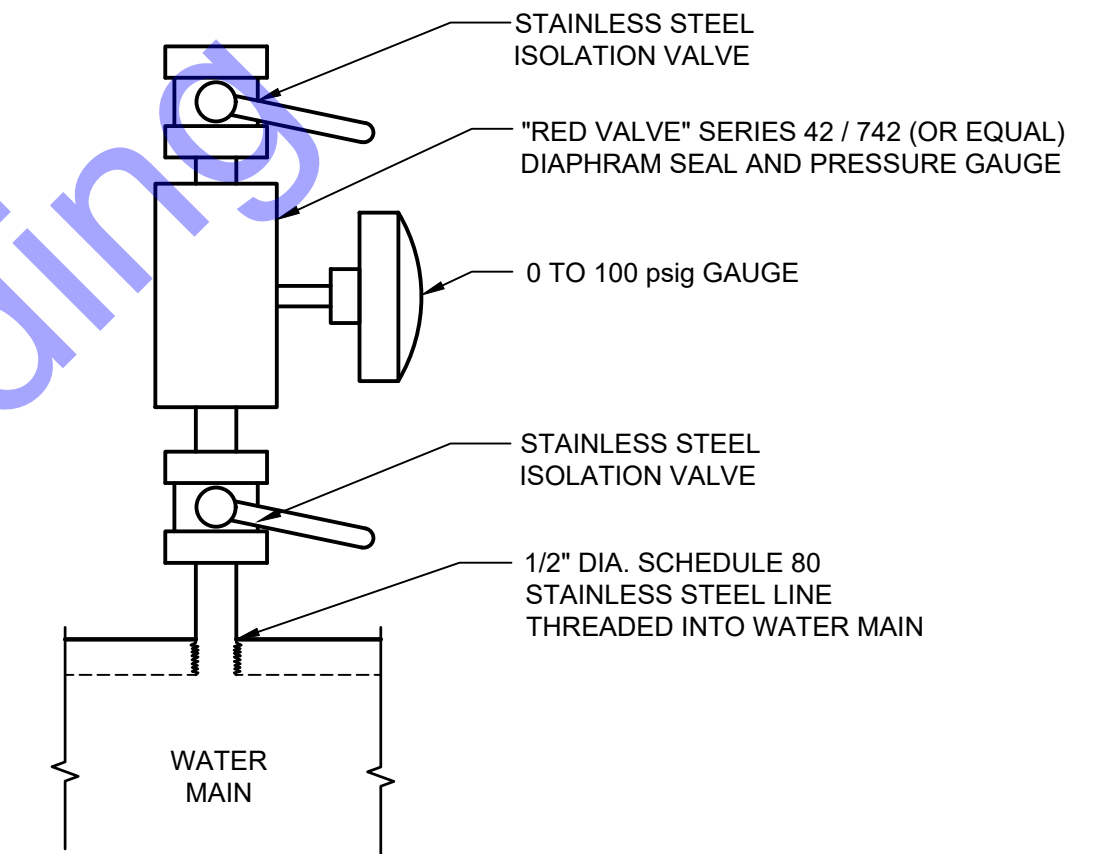
NOT TO SCALE



**NOTE:** CONTRACTOR SHALL PROVIDE 1/4" NOMINAL THICKNESS POLYETHYLENE COVERS OVER ALL BOLLARDS COORDINATE COLOR WITH OWNER

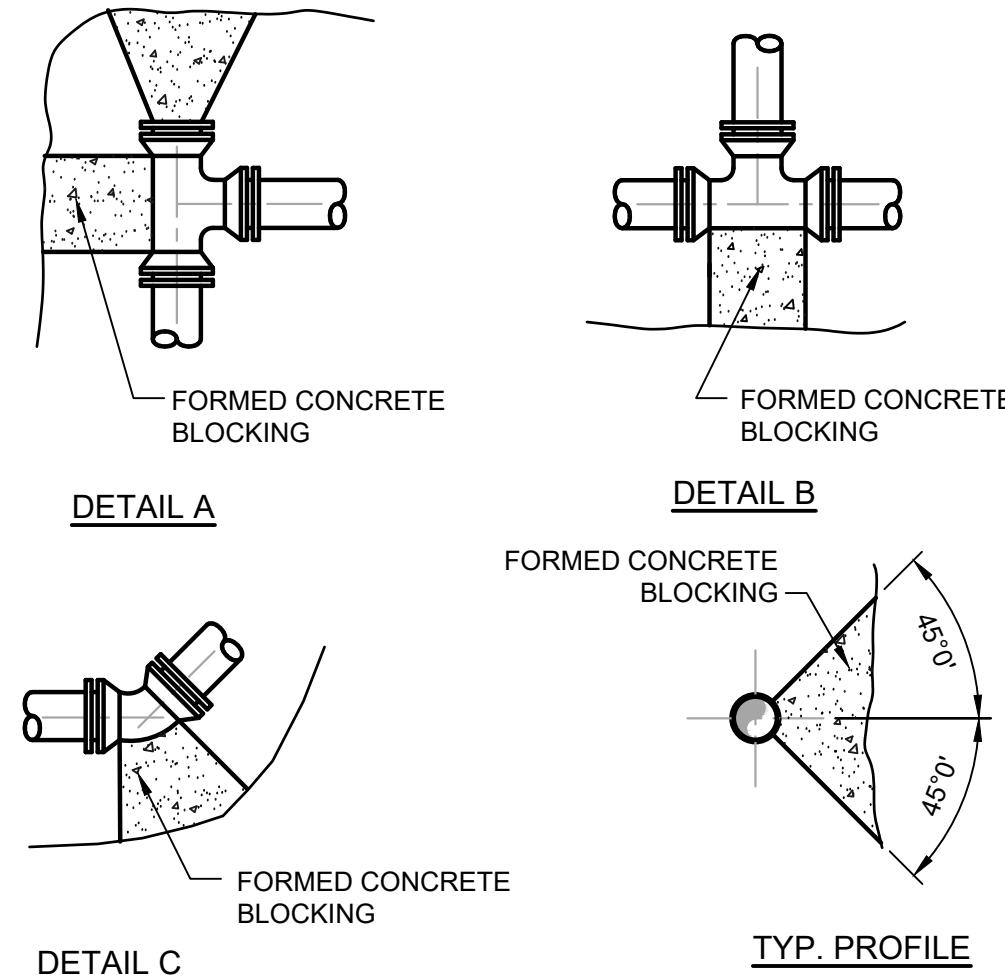
**BOLLARD DETAIL**

NOT TO SCALE



**PRESSURE GAUGE DETAIL**

NOT TO SCALE



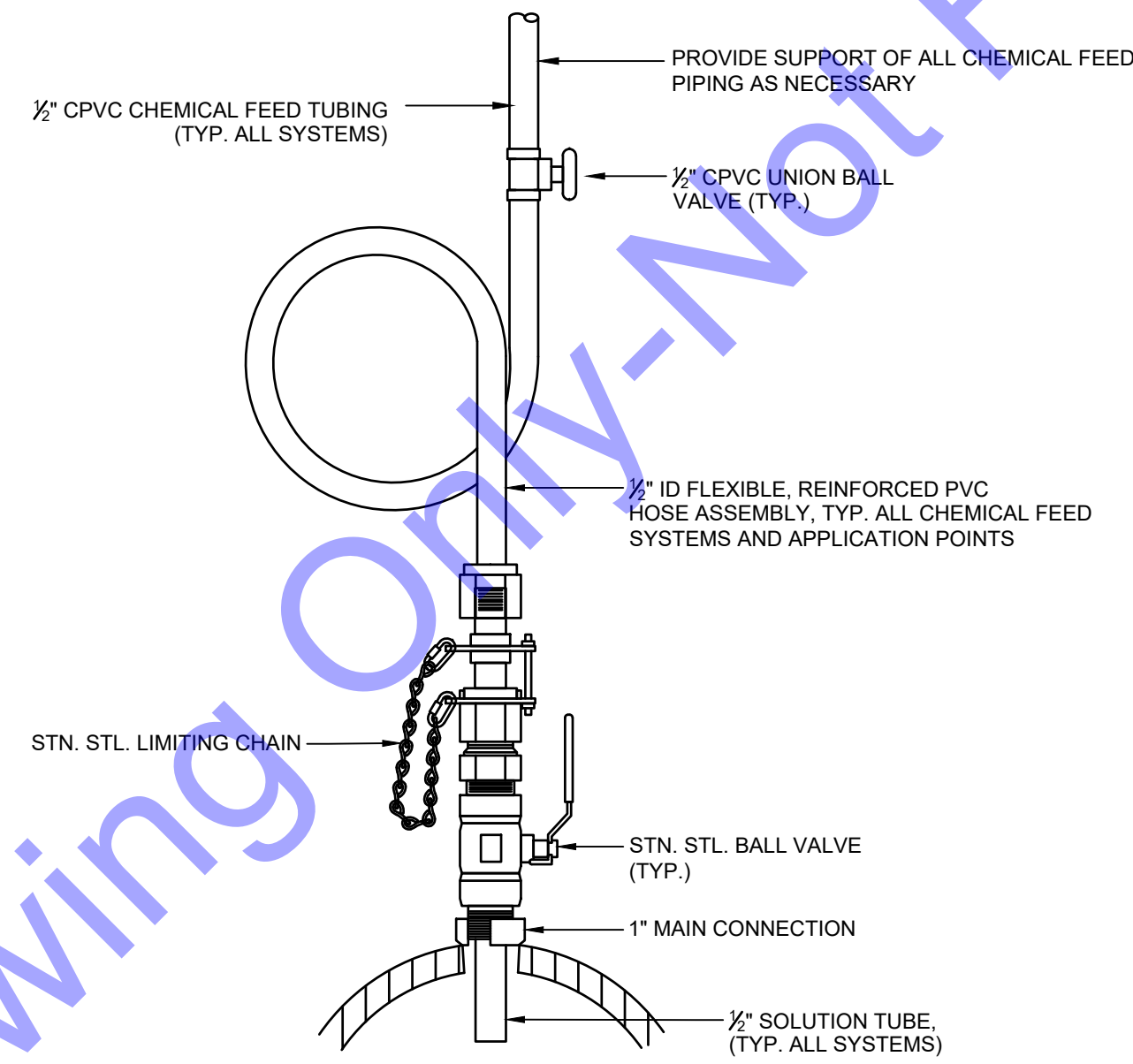
**TABLE OF DIMENSION FOR CONCRETE BLOCKING**

SIZE	TEE				PLUG				90° BEND				45° BEND				22° BEND				11° BEND				
	L	T	W	D	L	T	W	D	L	T	W	D	L	T	W	D	L	T	W	D	L	T	W	D	
4"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	12"	24"	8"	18"	8"	12"	8"	18"	8"	12"	8"	15"	8"	12"	6"
6"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	15"	24"	8"	18"	10"	12"	8"	18"	10"	12"	8"	18"	10"	18"	6"
8"	30"	12"	24"	8"	30"	18"	30"	24"	4"	36"	16"	30"	8"	24"	12"	18"	8"	24"	18"	18"	8"	24"	12"	18"	8"
10"	36"	18"	30"	10"	36"	18"	36"	24"	4"	48"	20"	36"	10"	30"	14"	24"	10"	30"	14"	24"	10"	24"	14"	18"	8"
12"	48"	18"	36"	10"	42"	18"	42"	24"	4"	54"	24"	48"	10"	36"	16"	30"	10"	36"	16"	30"	10"	30"	16"	24"	10"
14"	54"	24"	42"	12"	48"	18"	48"	30"	6"	60"	28"	60"	12"	42"	16"	42"	12"	42"	16"	42"	12"	33"	16"	27"	12"
16"	60"	24"	48"	12"	54"	18"	54"	30"	6"	66"	32"	63"	12"	48"	18"	48"	12"	48"	18"	48"	12"	36"	18"	30"	12"
18"	66"	30"	60"	14"	60"	24"	60"	36"	8"	66"	36"	66"	14"	54"	18"	54"	14"	54"	18"	54"	14"	39"	18"	33"	14"
20"	72"	30"	60"	14"	66"	24"	66"	36"	8"	72"	40"	69"	14"	60"	20"	60"	14"	60"	20"	60"	14"	42"	20"	36"	14"
24"	84"	36"	72"	18"	78"	30"	78"	42"	8"	84"	48"	75"	18"	72"	22"	72"	18"	72"	22"	72"	18"	48"	22"	42"	18"
30"	96"	42"	78"	24"	96"	36"	78"	48"	10"	108"	54"	96"	24"	84"	24"	72"	24"	72"	26"	72"	24"	54"	26"	48"	24"
42"	144"	48"	96"	36"	144"	42"	96"	60"	10"	180"	66"	144"	36"	120"	36"	96"	36"	84"	34"	72"	36"	60"	34"	48"	36"

- NOTES:**
- FOR TEE WITH BRANCH UNEQUAL TO RUN USE TEE TYPE KICKER WITH D, L, AND W DIMENSIONS THE SAME AS THOSE FOR PLUG WITH SAME DIAMETER AS BRANCH OF TEE. SELECT "T" DIMENSIONS FROM TEE TABLE UNDER COLUMN HEADED BY THE SIZE OF THE BRANCH
  - IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN USE NEXT LARGER SIZE
  - DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH OR ROCK
  - CONCRETE BLOCKING SHALL BE CLASS "B"

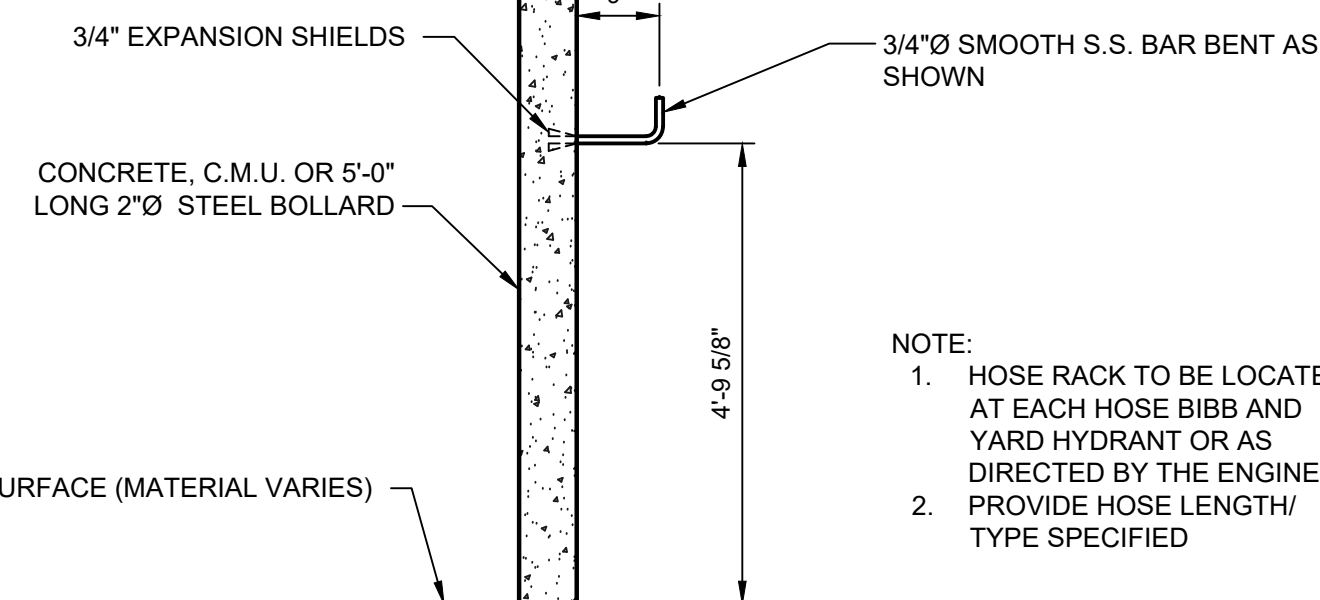
**THRUST BLOCKING DETAIL**

NOT TO SCALE



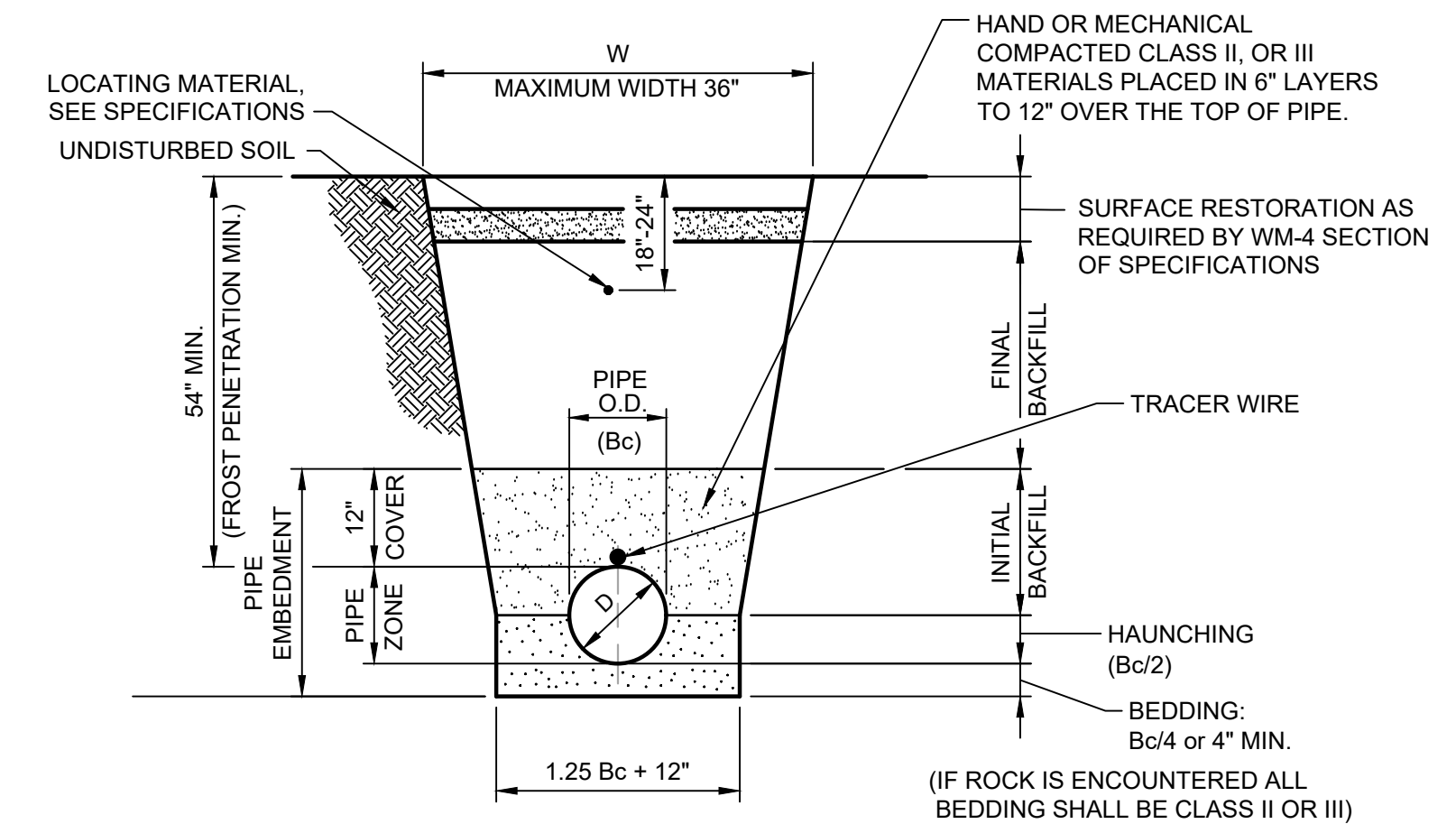
**TYPICAL CHEMICAL INJECTION POINT - DETAIL**

NOT TO SCALE



**HOSE RACK DETAIL**

NOT TO SCALE



W = MAX. ALLOWABLE TRENCH WIDTH FOR PIPE SHALL NOT TO EXCEED 30 INCHES FOR 4" THROUGH 8" PIPE, 36" FOR 8" THROUGH 12" PIPE.

D = PIPE DIAMETER (INTERNAL)  
Bc = PIPE DIAMETER (EXTERNAL)

APPLICATION	BEDDING & HAUNCHING	FINAL
GRASSY AREA OR NEW PAVED AREAS	CLASS I, OR II MATERIAL (REFER TO WORKMANSHIP & MATERIALS SPECIFICATIONS)	SELECTED EXCAVATED MATERIAL
PAVEMENT AREA OR ANY AREA SUBJECT TO VEHICULAR TRAFFIC	CLASS I, II OR III MATERIAL (REFER TO WORKMANSHIP & MATERIALS SPECIFICATIONS)	COMPACTED GRANULAR MATERIAL

**NOTES:**

- INITIAL BACKFILL STOPS AT A POINT 12" ABOVE THE TOP OF THE PIPE. BACKFILLING ABOVE THIS POINT SHALL BE IN ACCORDING WITH THE SPECIFICATIONS AND AS REQUIRED BY HEREIN.
- BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE CLASS I, II, OR III MATERIALS ACCORDING TO THE WORKMANSHIP AND MATERIALS SPECIFICATIONS.
- WORK FALLING UNDER THE JURISDICTION OF THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 12 FEET OF THE EDGE OF PAVEMENT.
- WORK NOT FALLING UNDER THE JURISDICTION OF IN. DEPT. OF TRANSPORTATION SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 5 FEET OF THE EDGE OF PAVEMENT.

**TRENCH DETAIL FOR WATER MAIN**

NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

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 APPLE VALLEY UTILITIES EAST  
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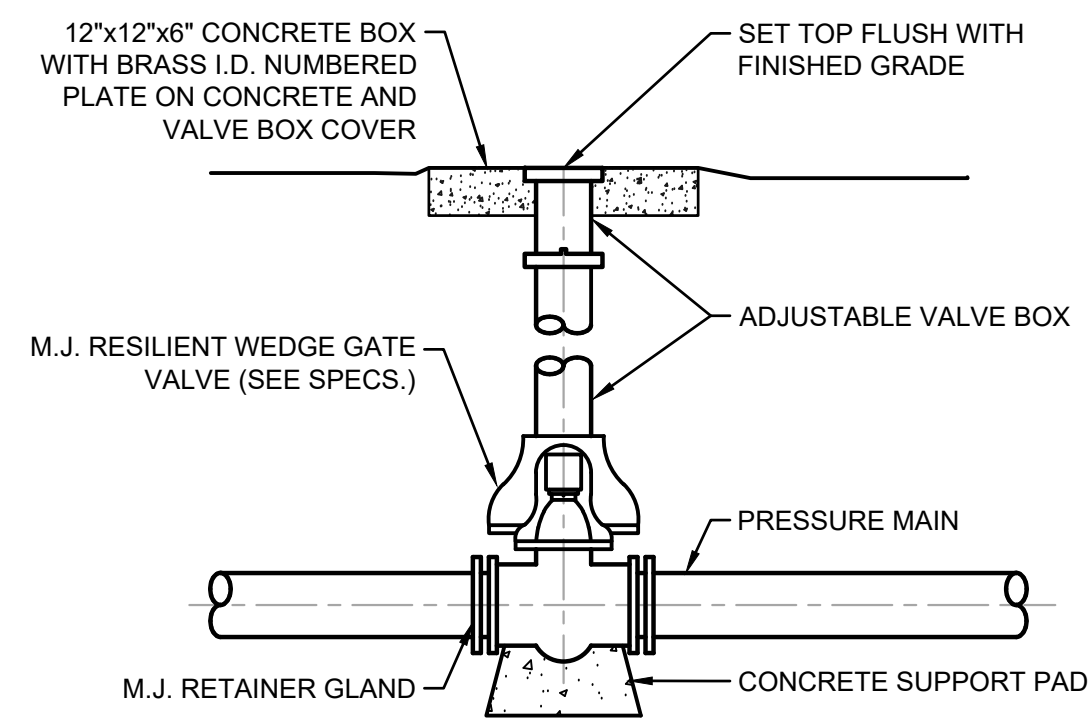
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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

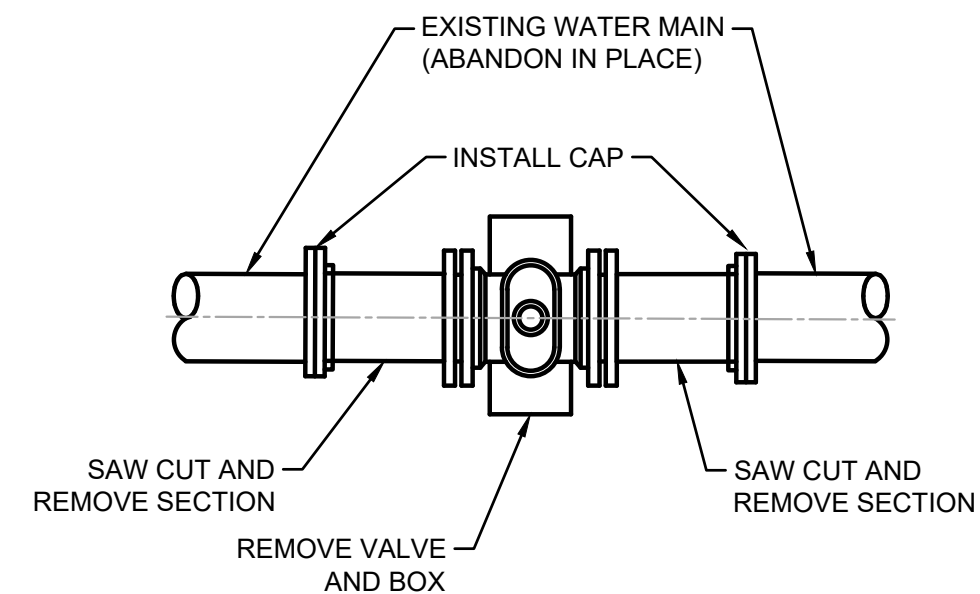
MISCELLANEOUS DETAILS

Drawing No: **MD1**  
 Sheet: 49 OF 73



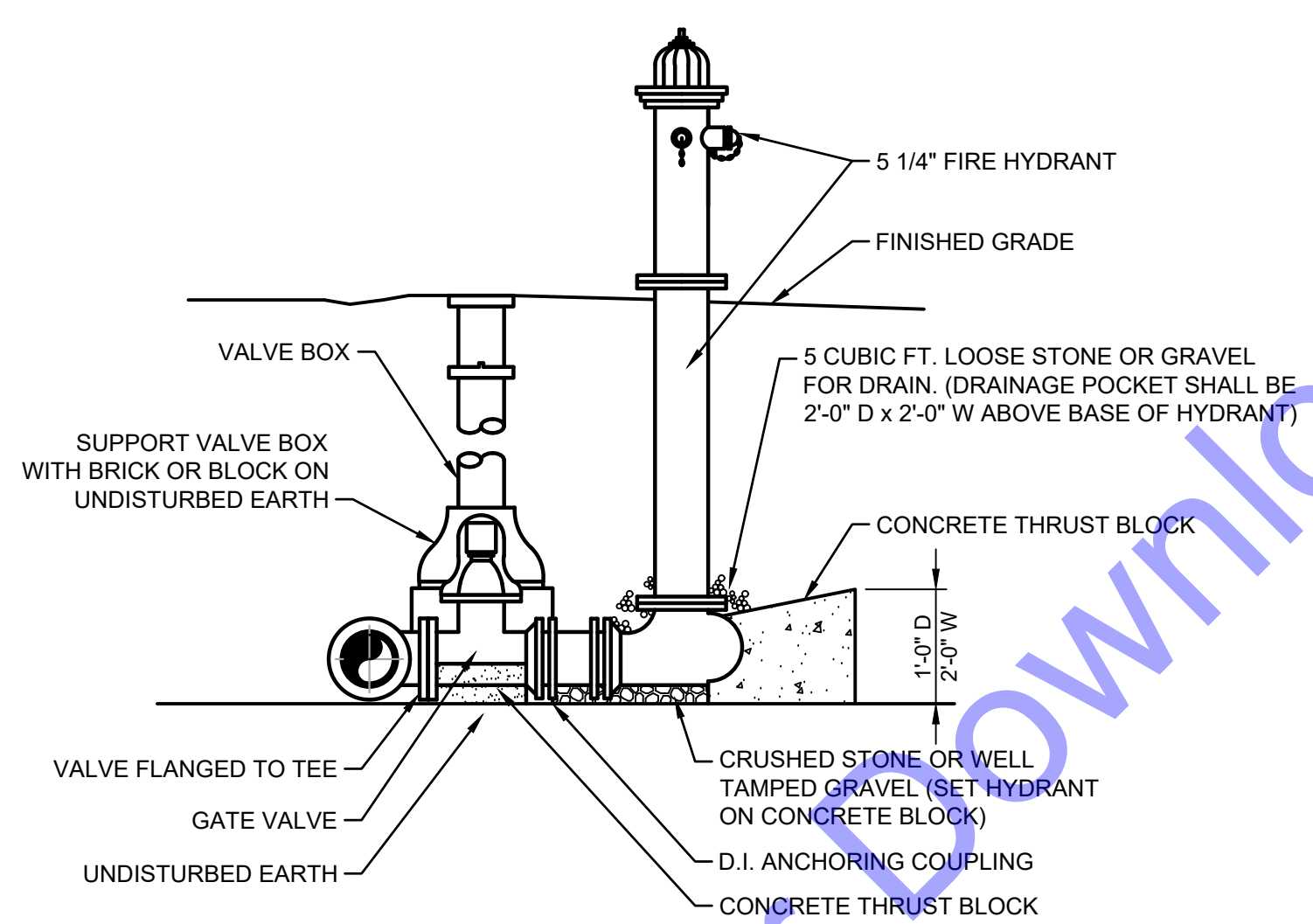
**BURIED PLUG/GATE VALVE AND BOX DETAIL**

NOT TO SCALE



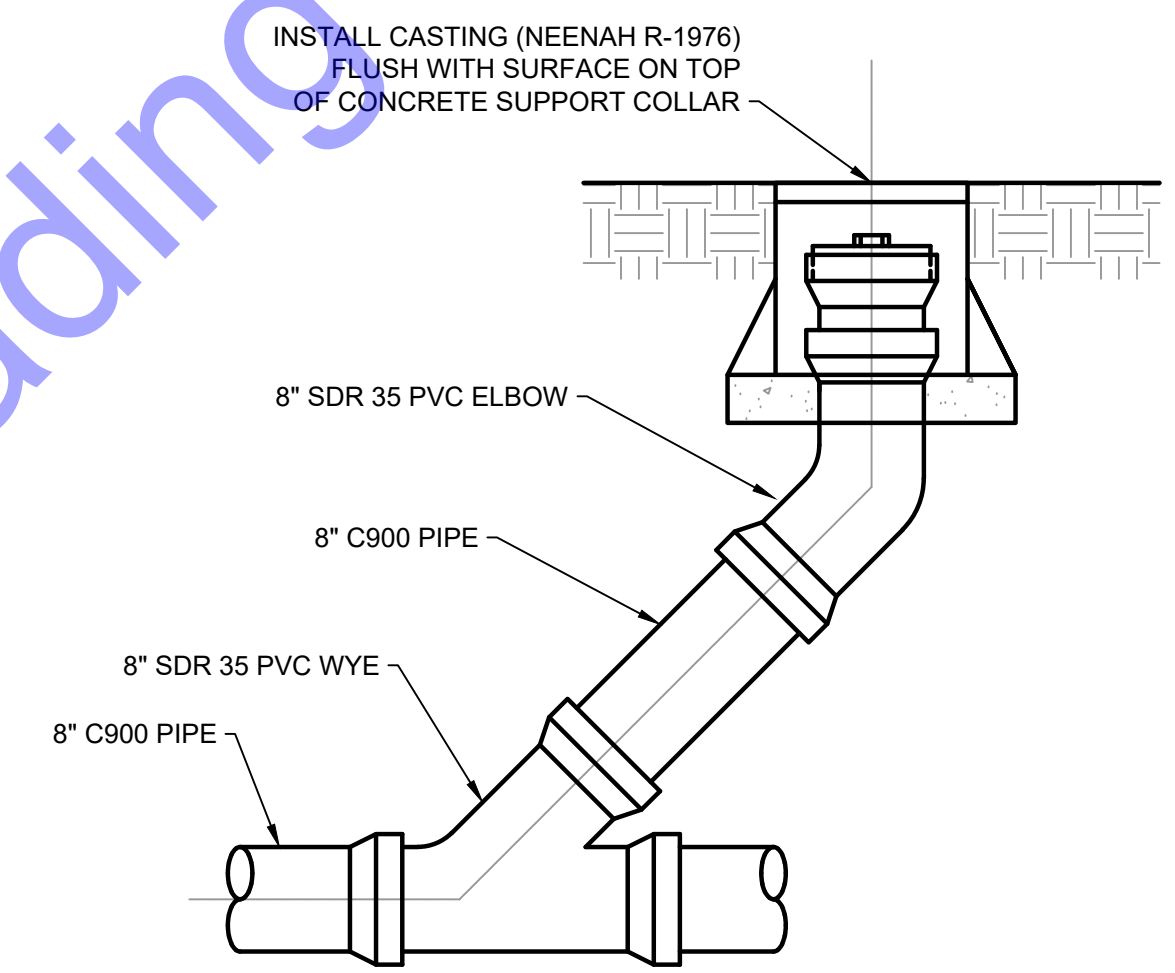
**CUT AND CAP WITH VALVE REMOVED DETAIL**

NOT TO SCALE



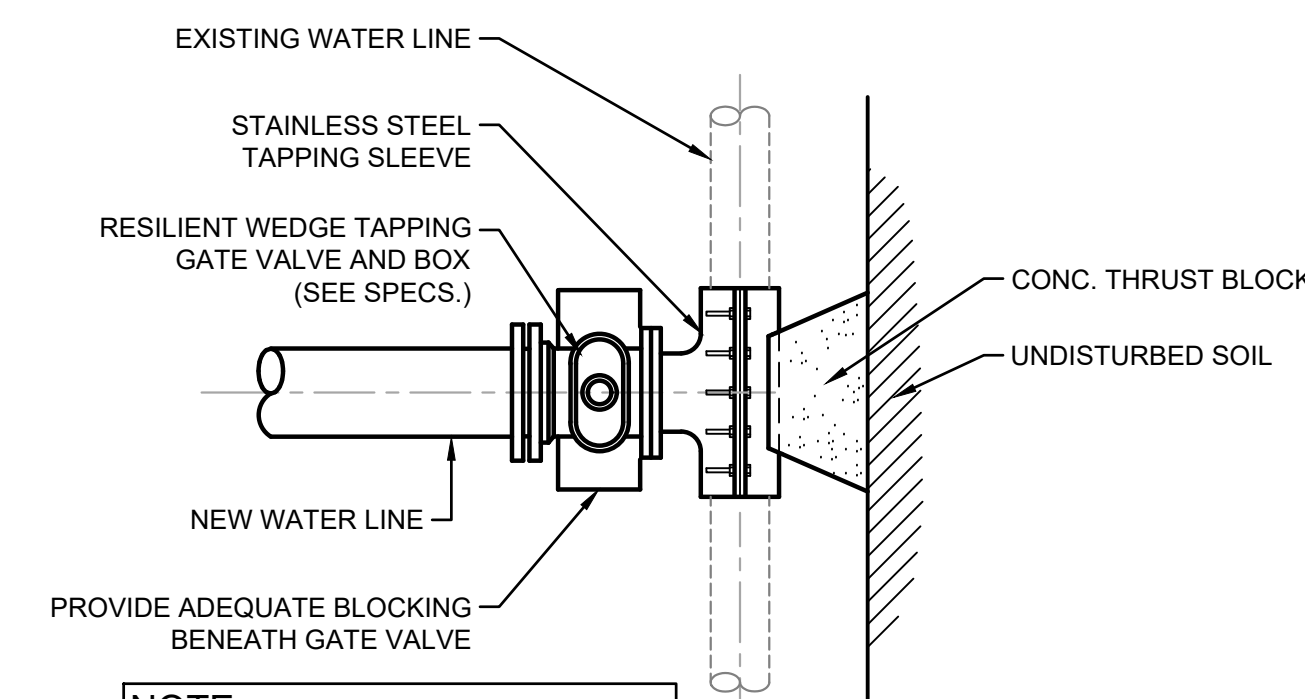
**FIRE HYDRANT DETAIL**

NOT TO SCALE



**CLEANOUT DETAIL**

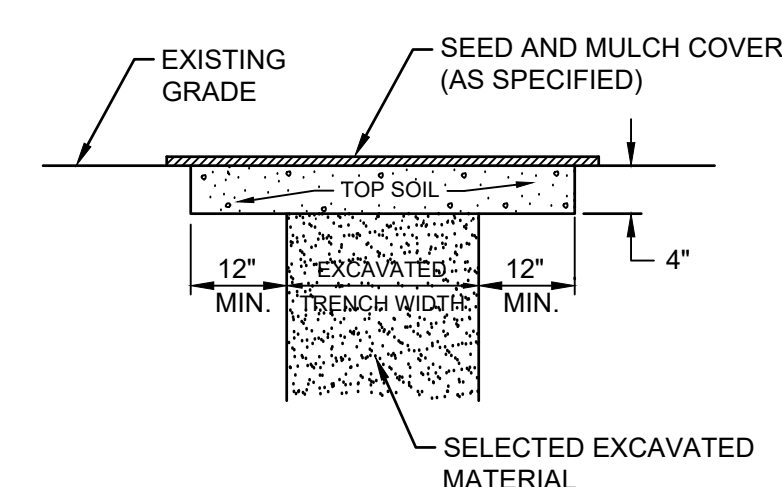
NOT TO SCALE



**NOTE:**  
BENDS AND FITTINGS AS REQUIRED.

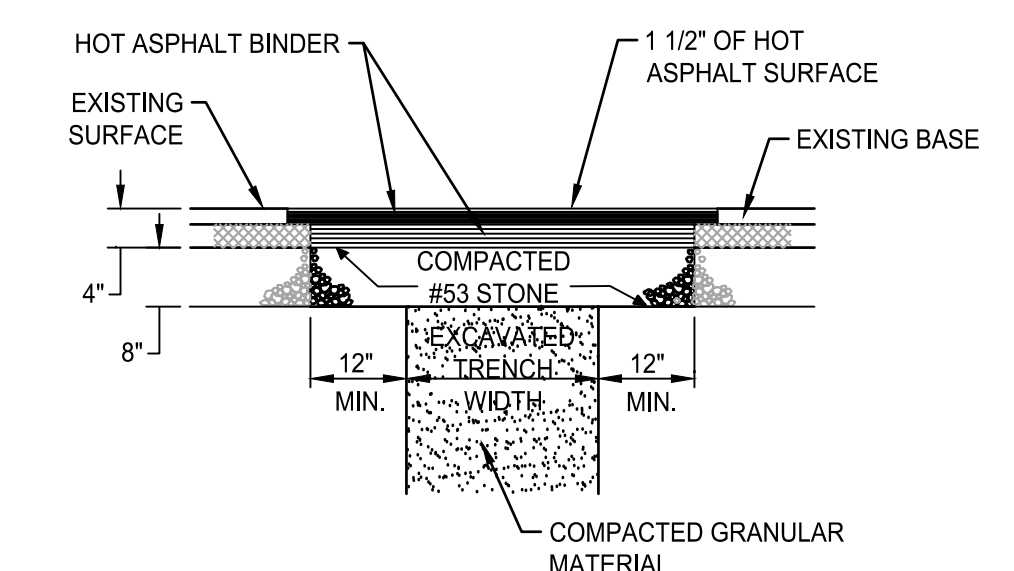
**TYPE \"A\" CONNECTION TO EXISTING WATER MAIN**

NOT TO SCALE



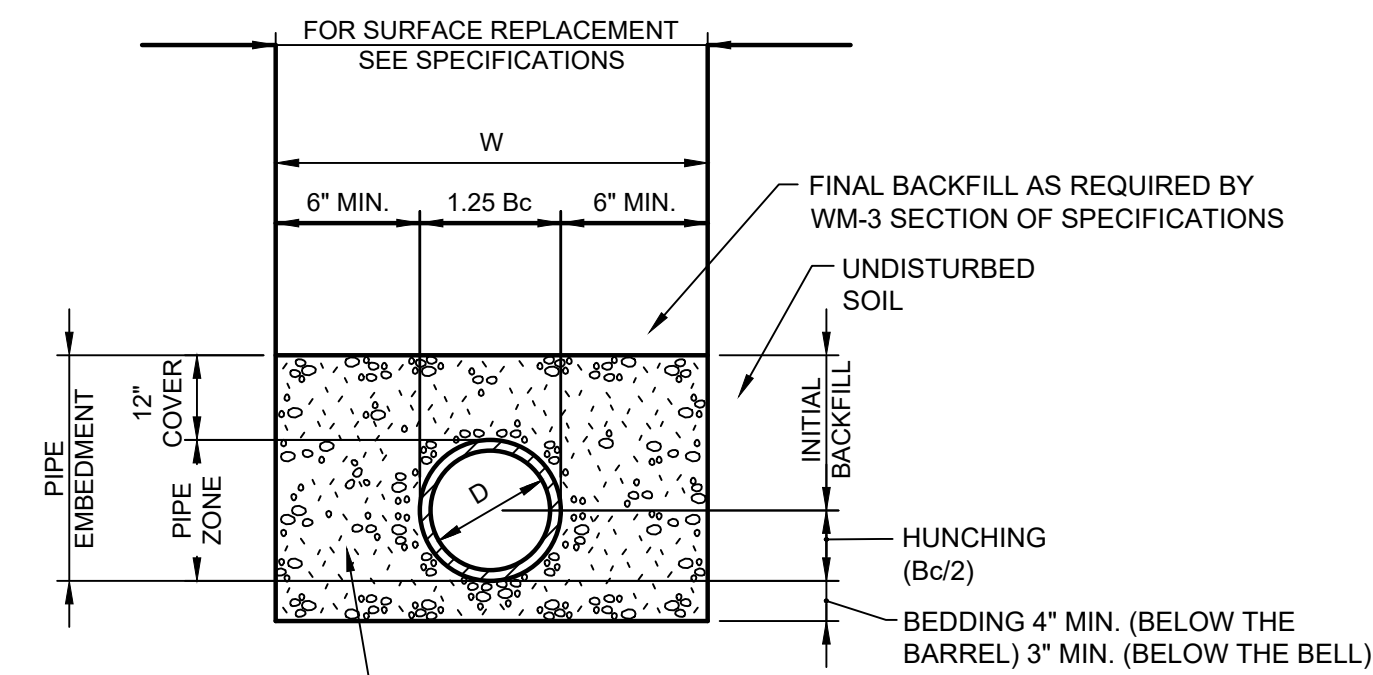
**SURFACE RESTORATION DETAIL FOR GRASS AREAS**

NOT TO SCALE



**SURFACE RESTORATION DETAIL FOR ASPHALT PAVEMENT - ROAD**

NOT TO SCALE

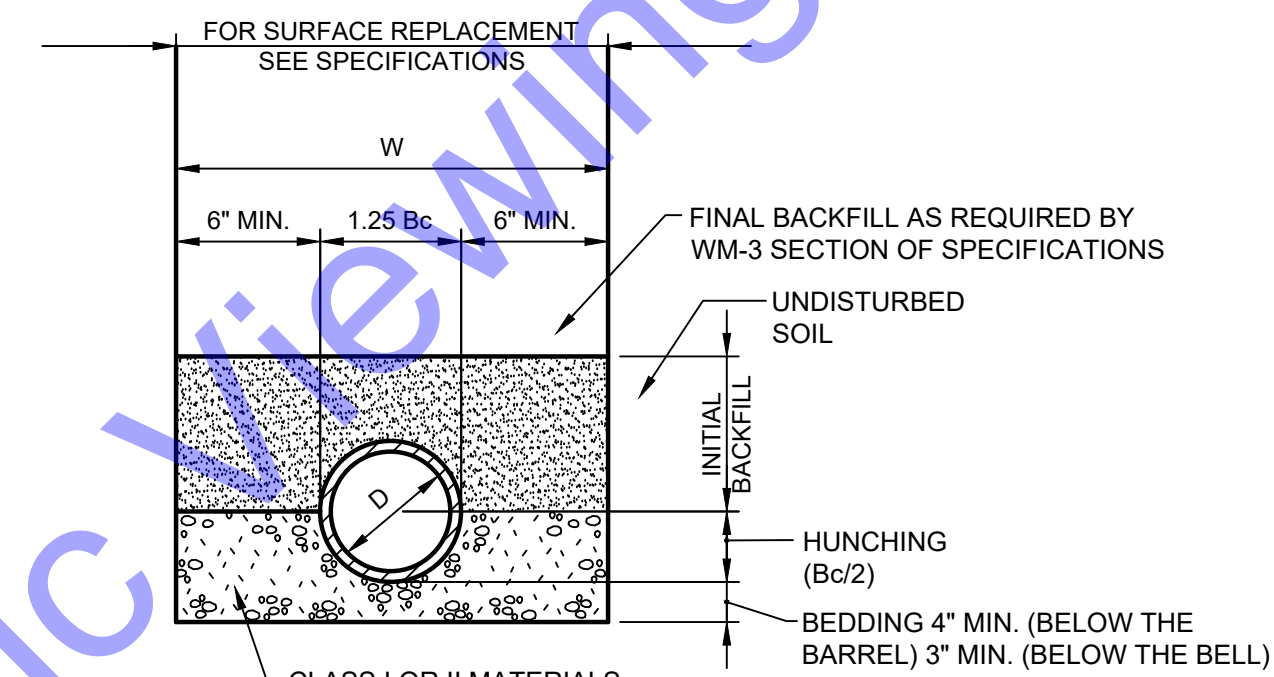


W= MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM NOT TO EXCEED FOUR (4) FEET FOR 6\"/>

- NOTES:**
1. COMPACTED INITIAL BACKFILL SHALL EXTEND A MINIMUM OF 12\"/>

**TRENCH DETAIL FOR FLEXIBLE CONDUITS**

NOT TO SCALE

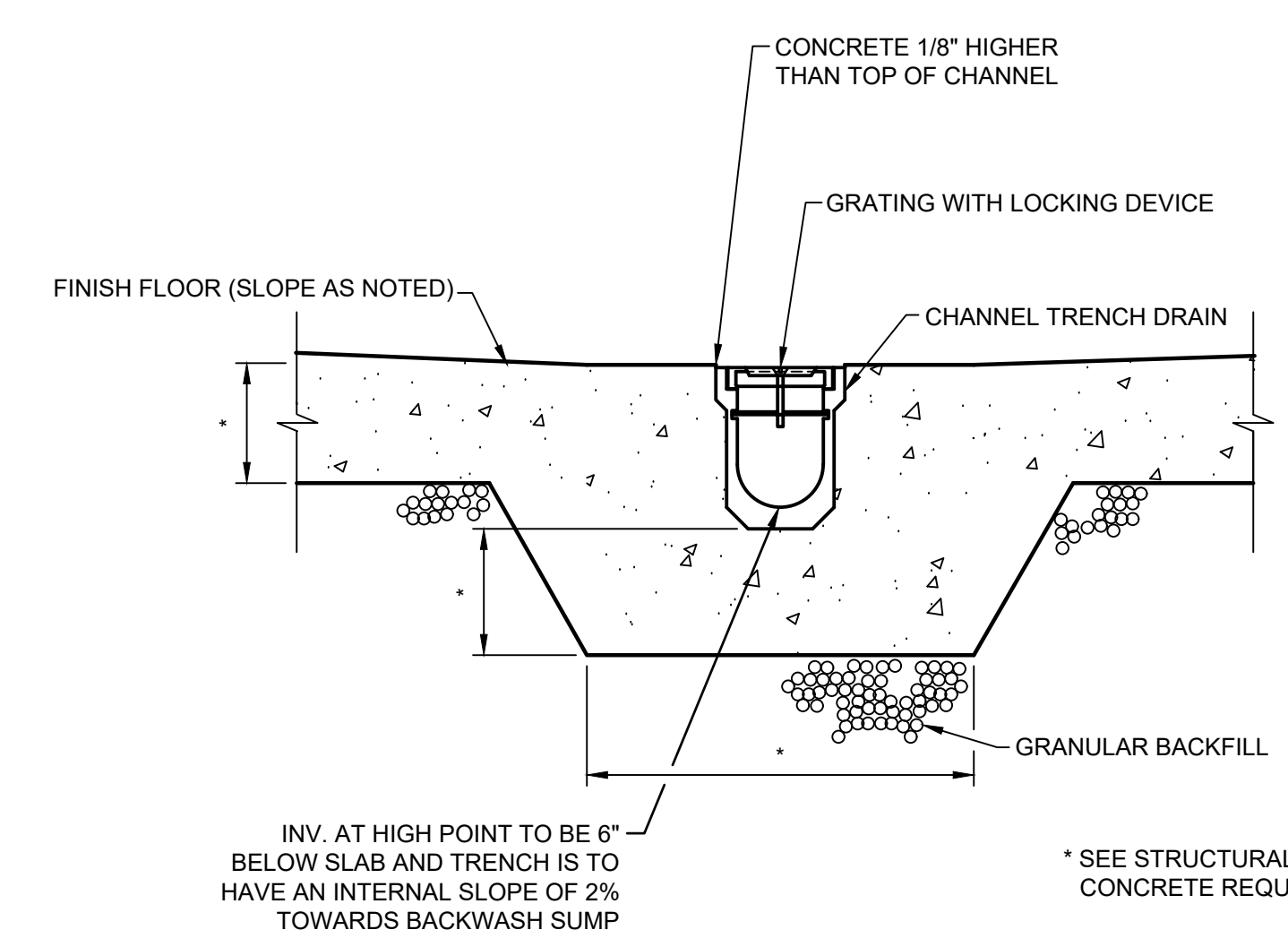


W= MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM NOT TO EXCEED FOUR (4) FEET FOR 6\"/>

- NOTES:**
1. COMPACTED BEDDING STOPS AT SPRING-LINE OF THE PIPE. BACKFILLING ABOVE THIS POINT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS REQUIRED HEREIN.
  2. WHEN CLASS I MATERIAL IS USED FOR BEDDING, HUNCHING, AND INITIAL BACKFILL COMPACTING MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING.
  3. WHEN CLASS II MATERIAL IS USED FOR BEDDING, COMPACTION MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING.
  4. WORK FALLING UNDER THE JURISDICTION OF THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 12 FEET OF THE EDGE OF PAVEMENT. FOR ALL OTHER NON-INDOT PAVEMENT AREAS (INCLUDING BOTH HARD SURFACED AND COMPACTED AGGREGATE), COMPACTED GRANULAR S BACKFILL MATERIAL SHALL BE USED WITHIN 5 FEET OF THE EDGE OF THE PAVEMENT.

**TRENCH DETAIL FOR RIGID CONDUITS**

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**TRENCH DRAIN DETAIL**

NOT TO SCALE

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ANDREW C. COCHRANE  
No. 19900094  
STATE OF INDIANA  
REGISTERED PROFESSIONAL ENGINEER  
Signature: Andrew C. Cochran Date: 10/15/2024

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**DIVISION \"A\" - WELLS AND WATER TREATMENT PLANT**

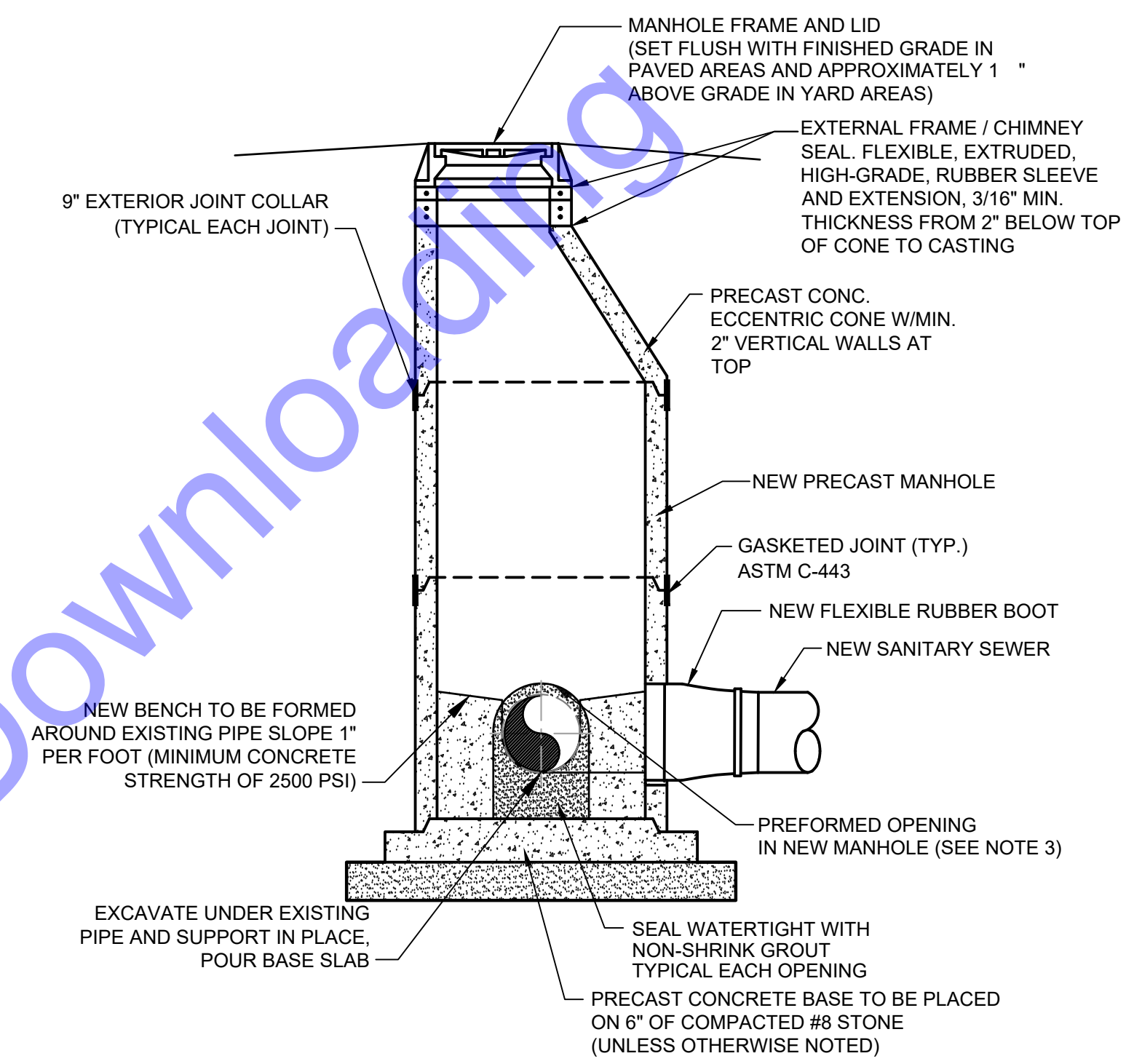
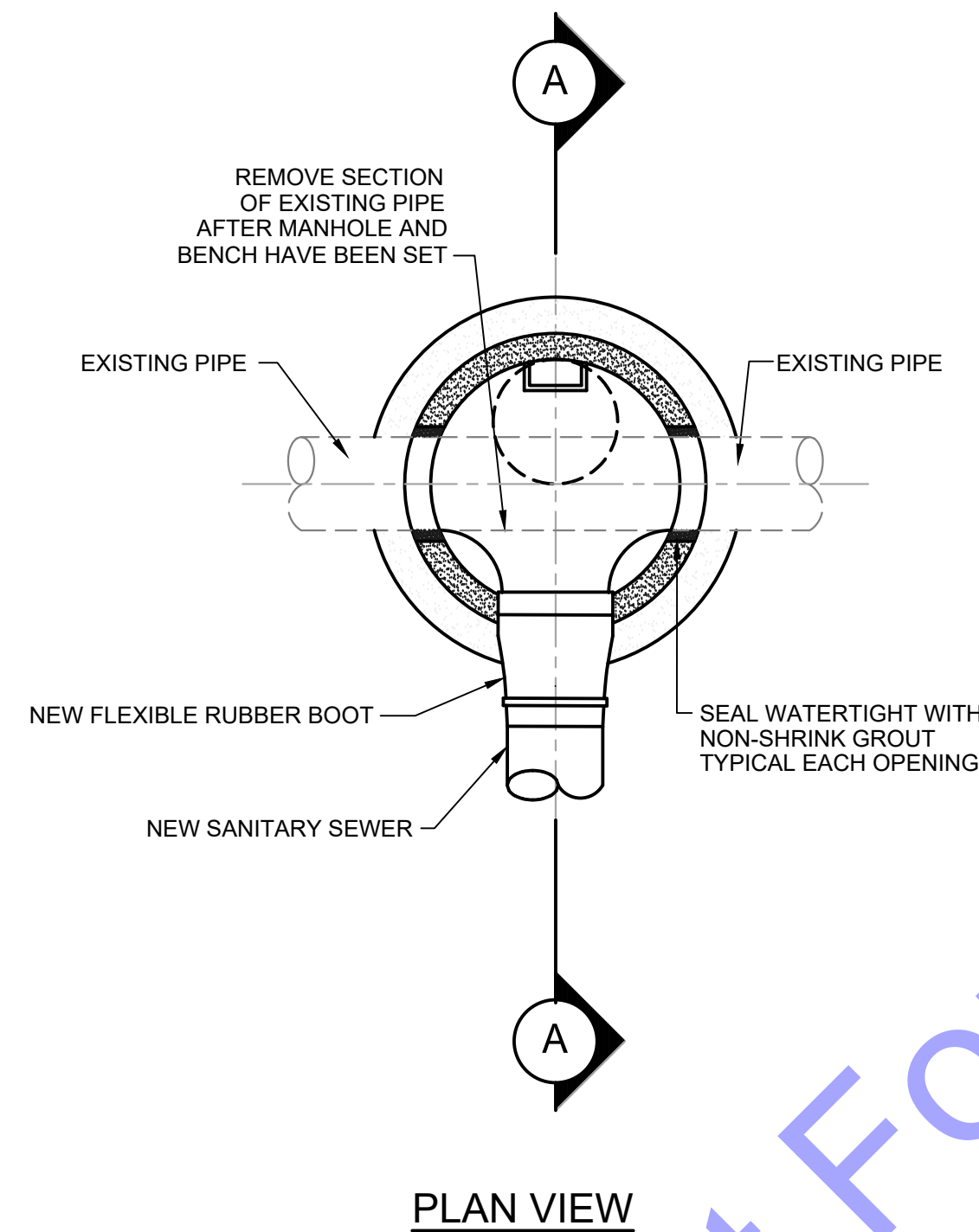
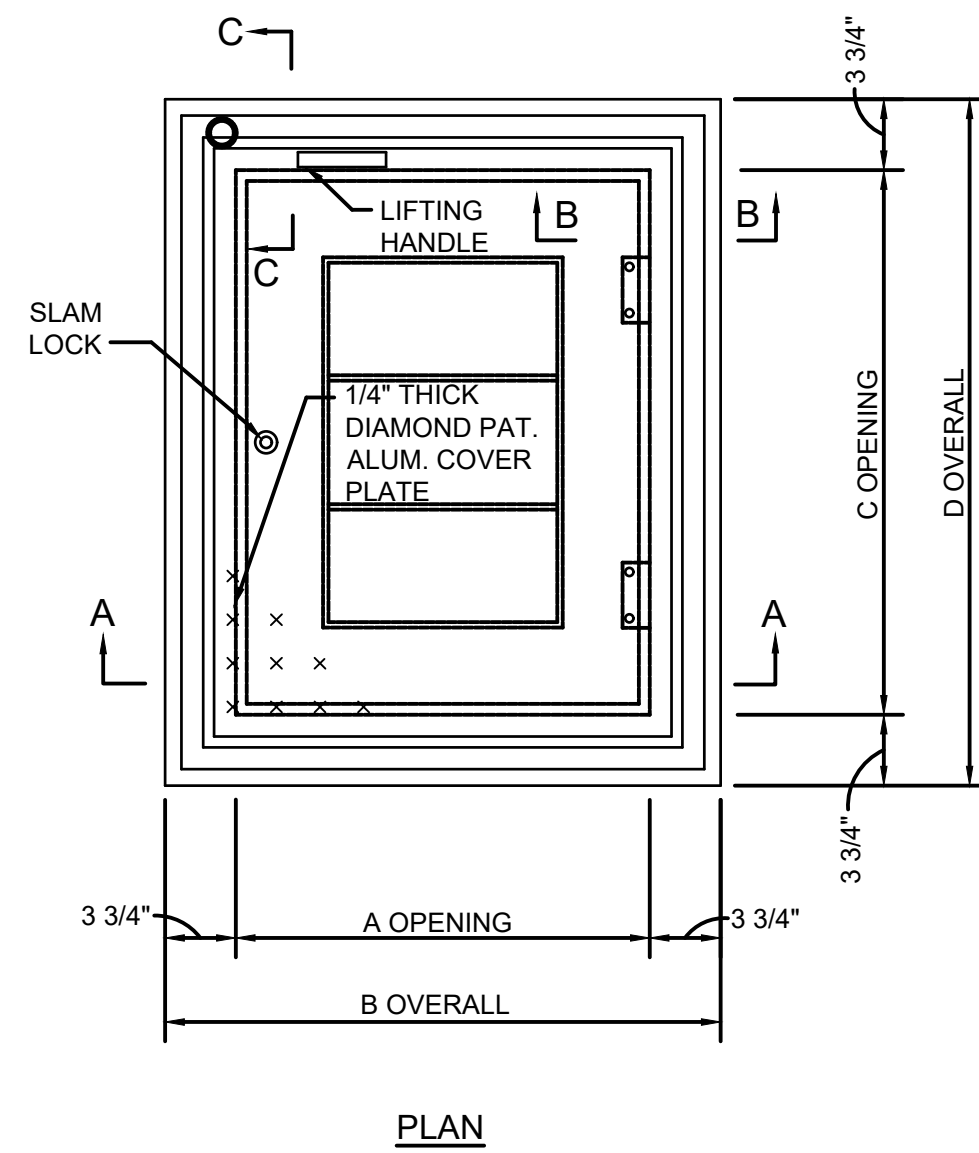
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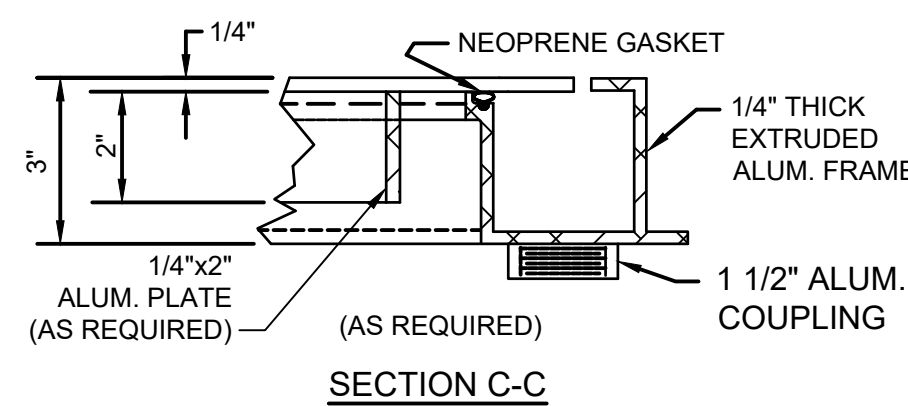
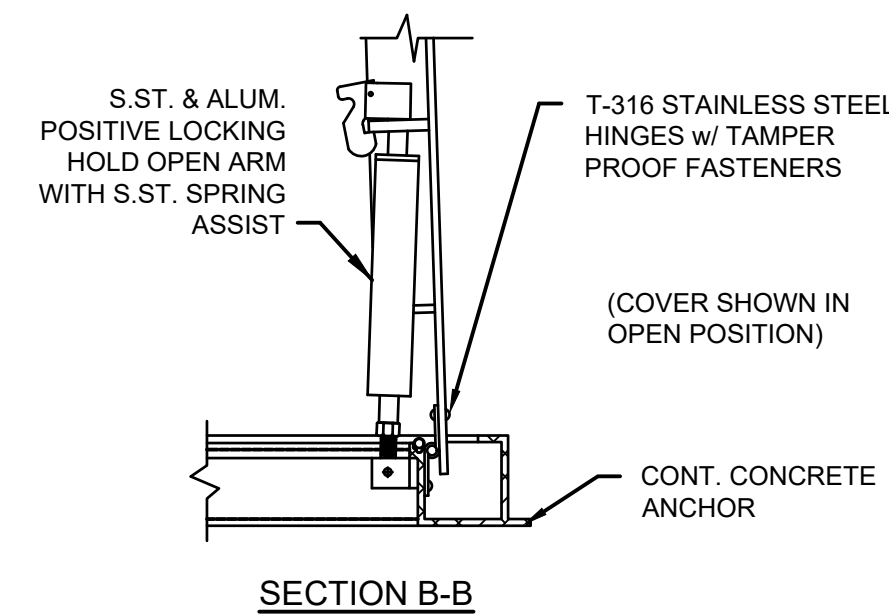
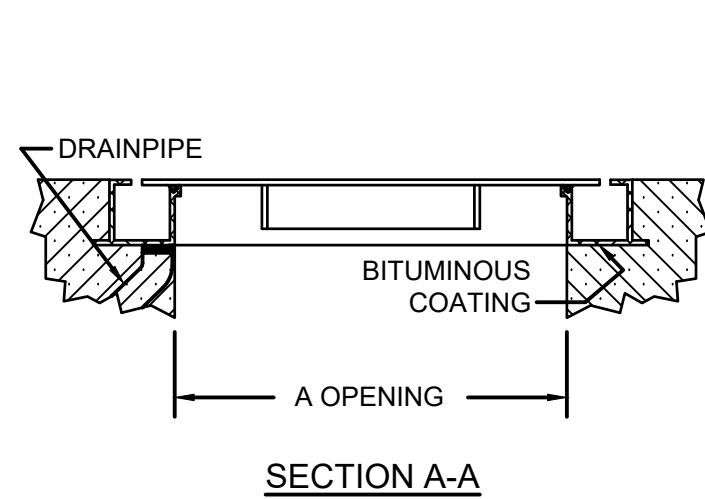
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MISCELLANEOUS DETAILS

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- GENERAL NOTES:**
- NEW "DOG-HOUSE" MANHOLE SHALL BE AS SPECIFIED FOR STANDARD MANHOLES IN WM-9 "STANDARD MANHOLES"
  - ALL REINFORCING SHALL MEET ASTM C-478
  - HOLES IN PRECAST UNITS SHALL BE 4" MIN. TO 8" MAX. LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE

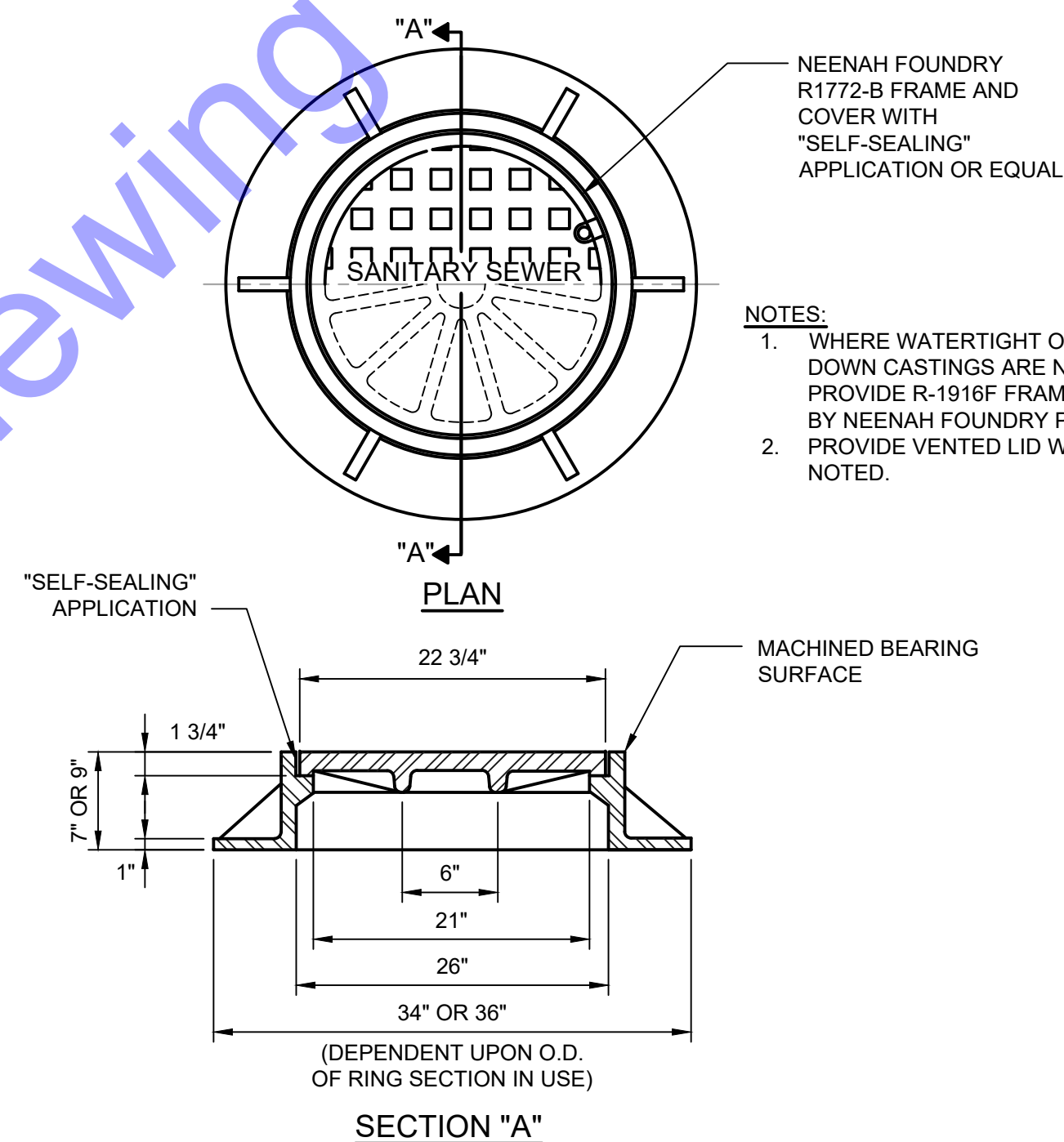


NOMINAL OPENING (INCHES)	DIMENSIONS (VARY PER MANUFACTURER)			
	A	B	C	D
24x24	24"	31 1/2"	24"	31 1/2"
30x30	30"	37 1/2"	30"	37 1/2"
36x36	36"	43 1/2"	36"	43 1/2"
30x48	30"	37 1/2"	48"	55 1/2"
36x48	36"	43 1/2"	48"	55 1/2"

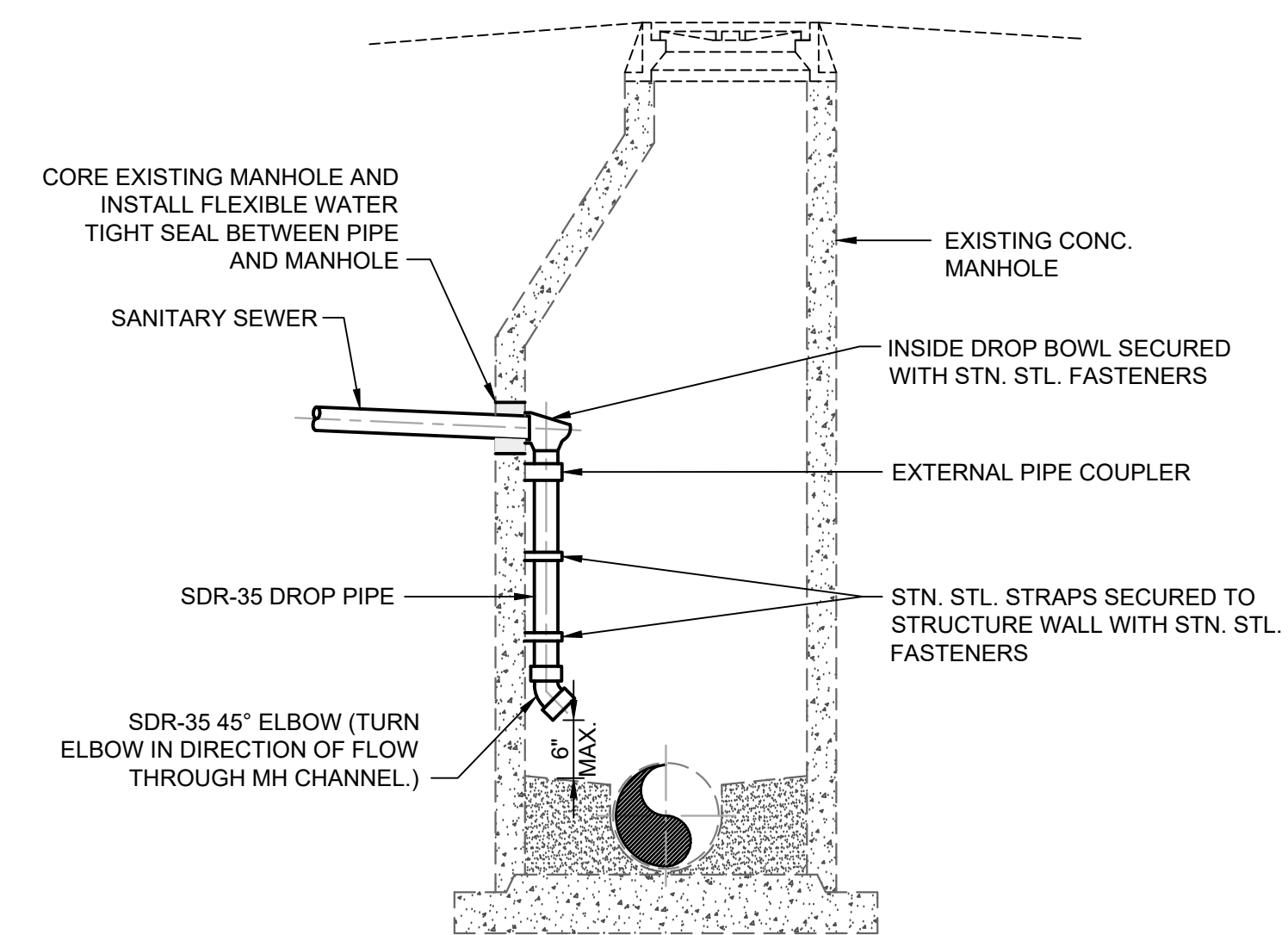
**GENERAL NOTES:**

- CONTRACTOR SHALL PIPE DRAIN TO EXTERIOR OF STRUCTURE. (REFER TO PROCESS DRAWINGS AND SPECIFICATIONS FOR MORE DETAILS)

**TYPICAL SINGLE LEAF ACCESS HATCH DETAIL**  
NOT TO SCALE



**SANITARY SEWER MANHOLE FRAME AND COVER - STANDARD MANHOLE - DETAIL**  
NOT TO SCALE



**INSIDE DROP INTO EXISTING MANHOLE - DETAIL**  
NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER  
No. 19900094  
STATE OF INDIANA  
Signature: Andrew C. Cochrane  
Date: 10/15/2024

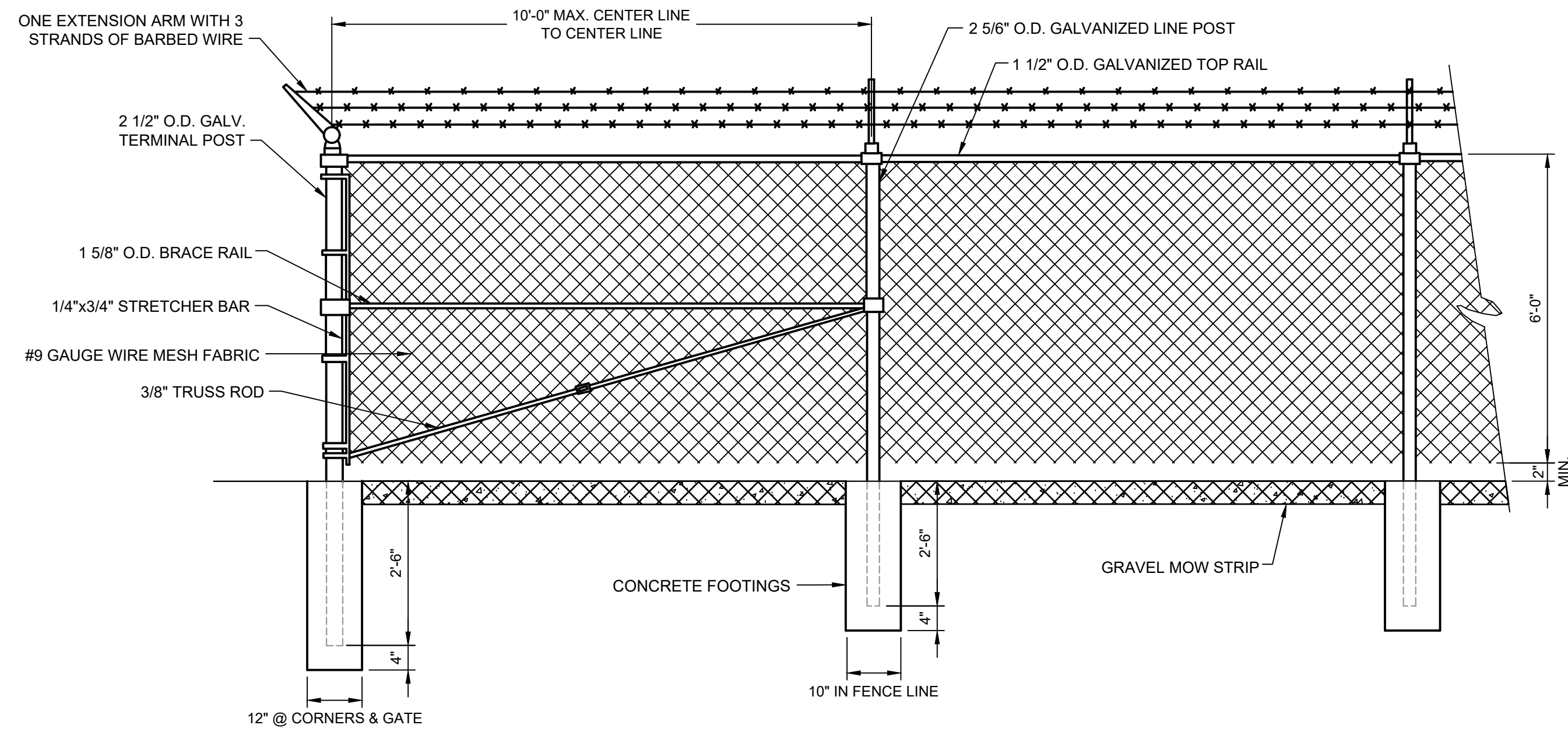
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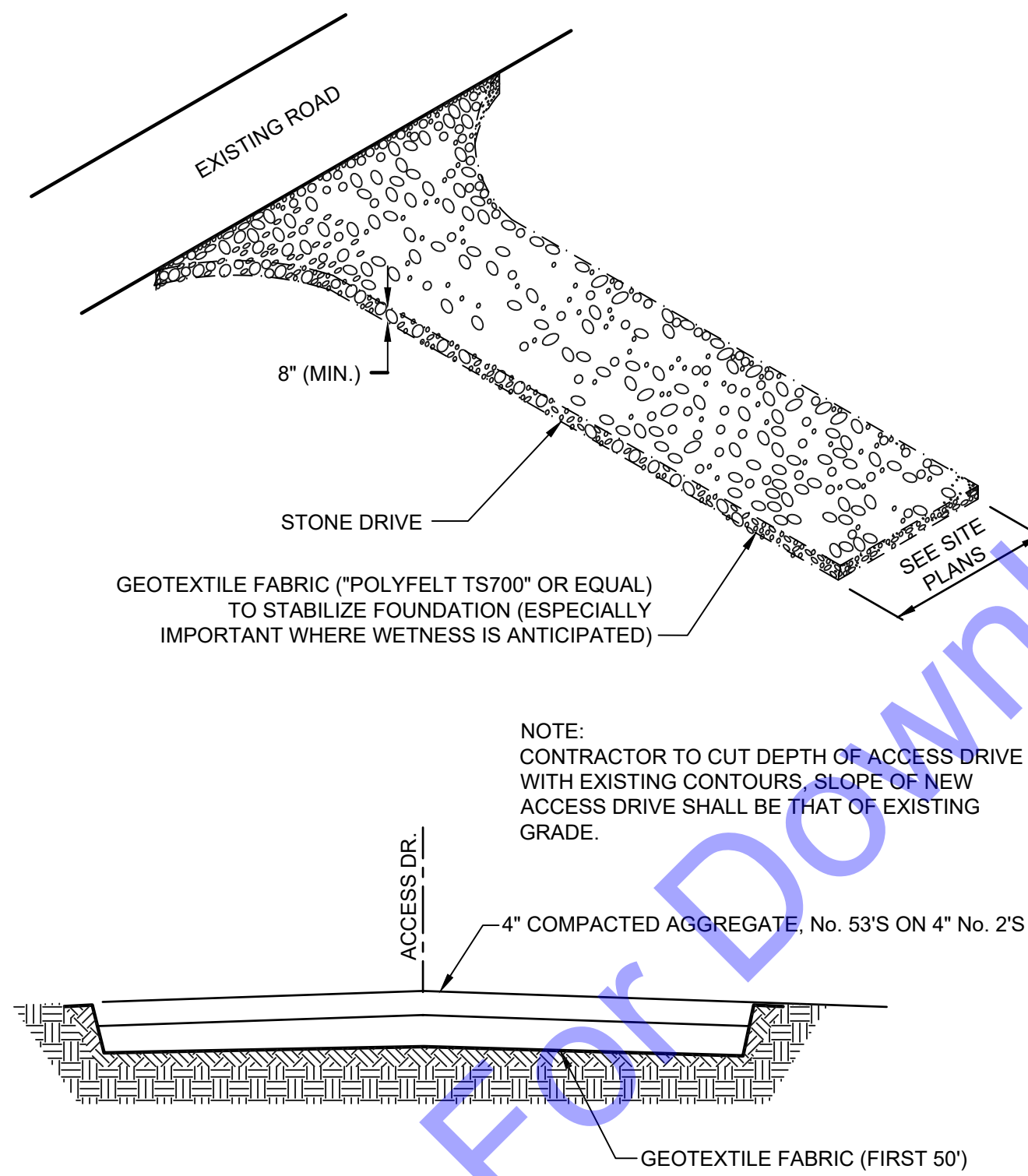
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Drawing No: **MD3**  
Sheet: 51 OF 73

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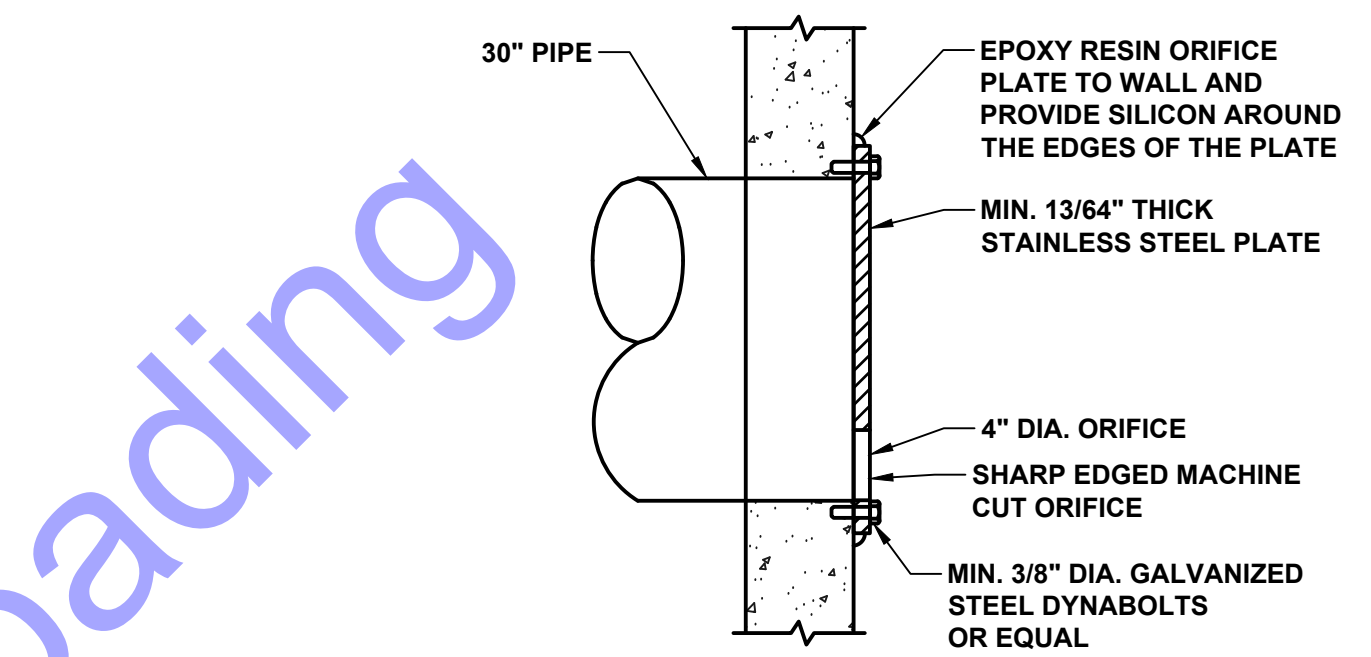
**CHAIN LINK FENCE DETAIL**

NOT TO SCALE

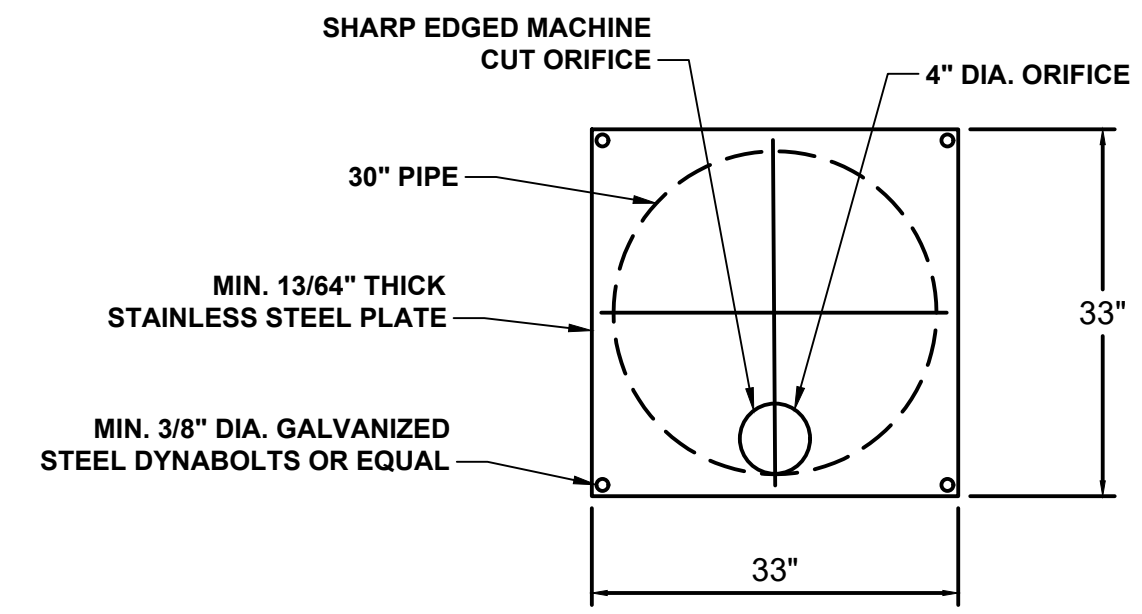


**GRAVEL ACCESS DRIVE DETAIL**

NOT TO SCALE



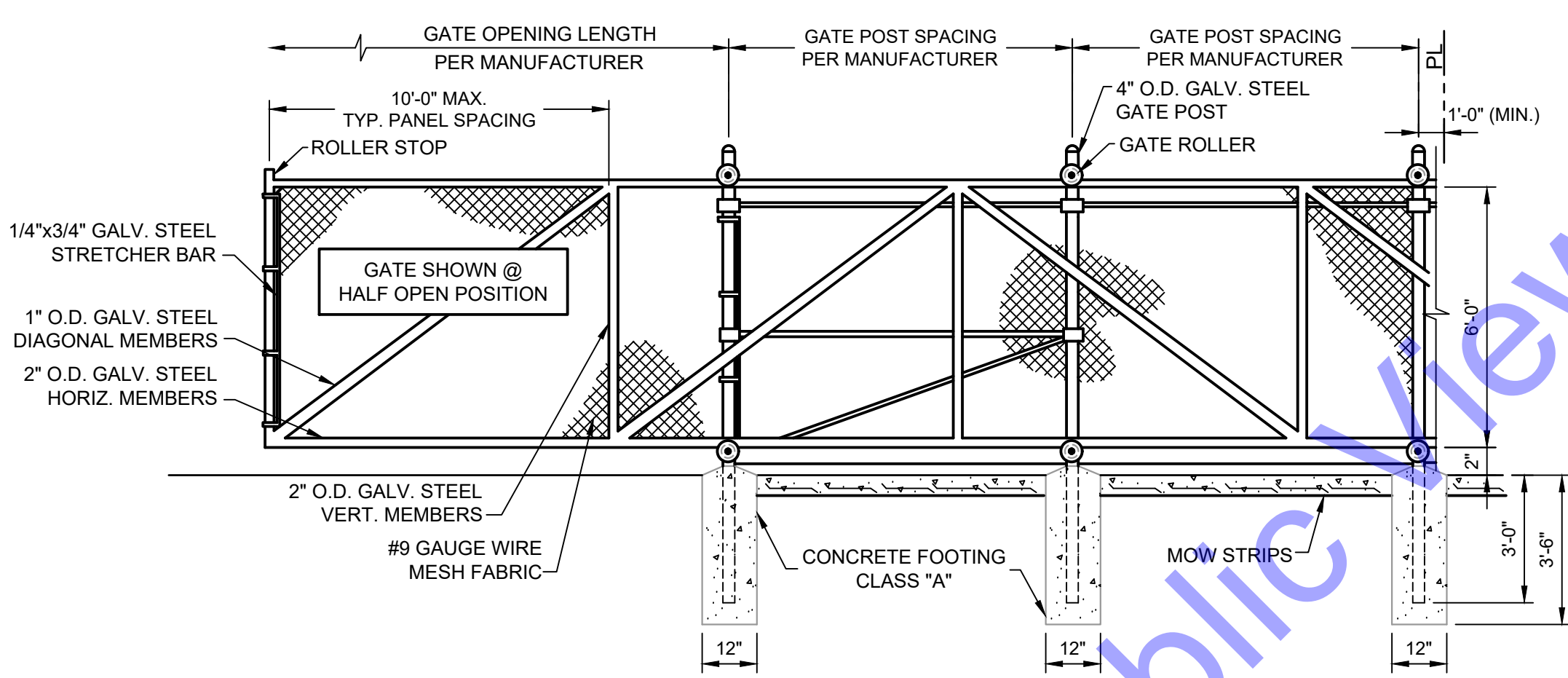
SECTION



ELEVATION

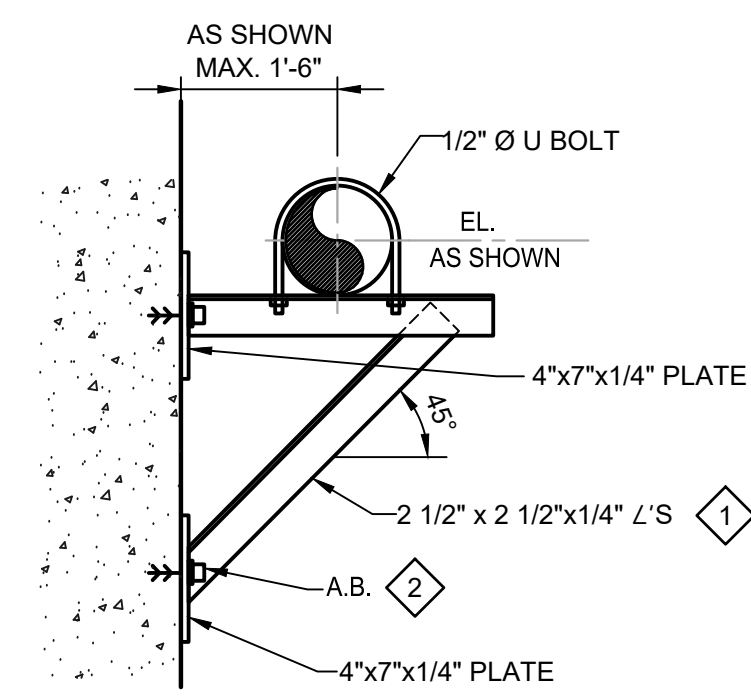
**ORIFICE PLATE DETAIL**

NOT TO SCALE



**CHAIN LINK ROLL FENCE GATE DETAIL**

NOT TO SCALE

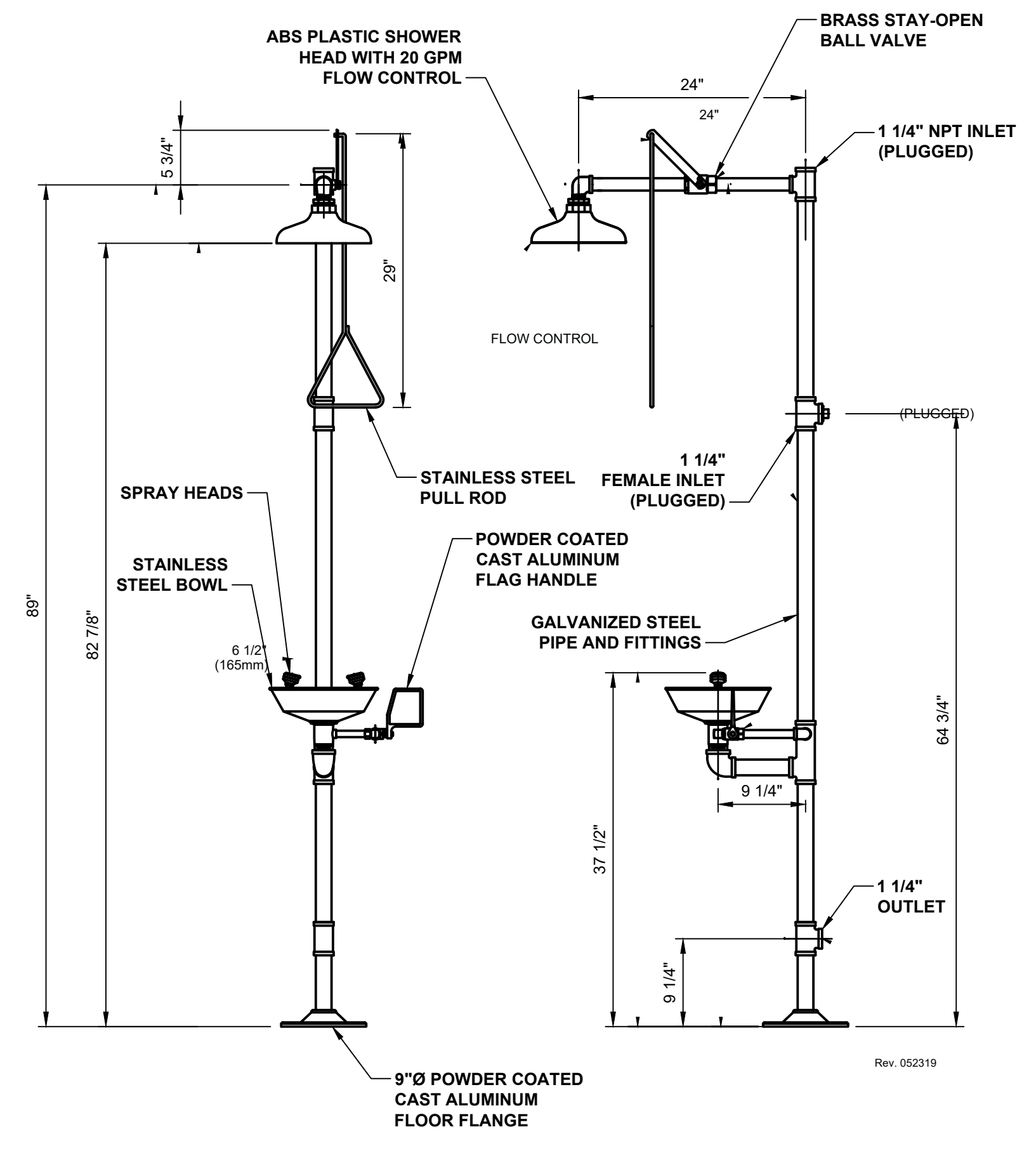


**GENERAL NOTES FOR FABRICATIONS THIS SHEET**

- 1 MISCELLANEOUS FABRICATIONS SHALL BE WELDED CONSTRUCTION, STEEL OR ALUMINUM, 1/4\"/>
- 2 ANCHOR BOLTS SHALL BE HILTI, WEJ-IT OR EQUAL, ANSI 316 STAINLESS STEEL INCLUDING NUTS & WASHERS. ANCHOR BOLTS SHALL 1/2\"/>

**WALL BRACKET PIPE SUPPORT FOR PIPING UNDER 12\"/>**

NOT TO SCALE



**EMERGENCY SHOWER AND EYEWASH -DETAIL**

NOT TO SCALE

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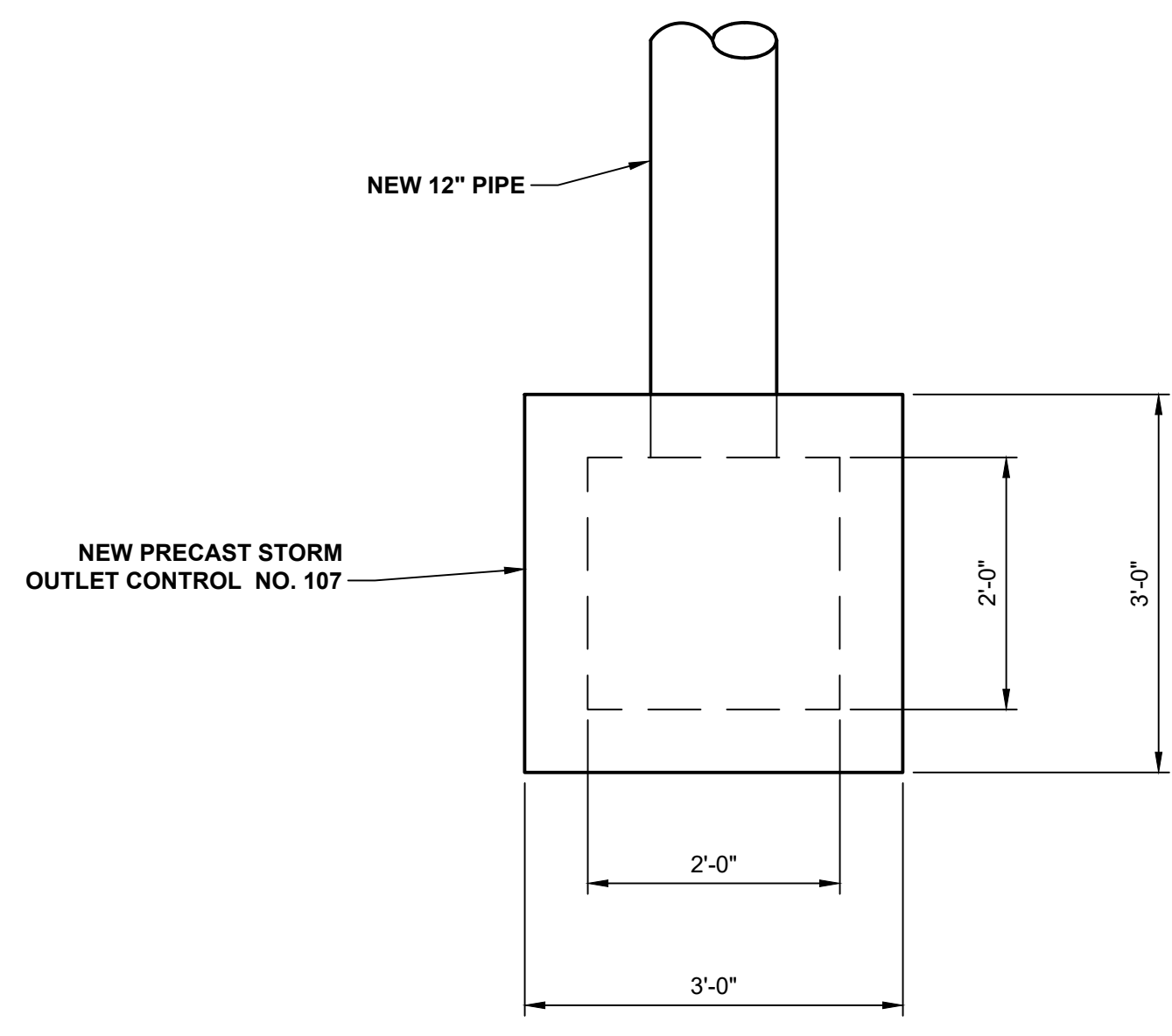
REGISTERED PROFESSIONAL ENGINEER  
 No. 19900094  
 STATE OF INDIANA  
 Andrew C. Cochrane  
 Signature Date 10/15/2024

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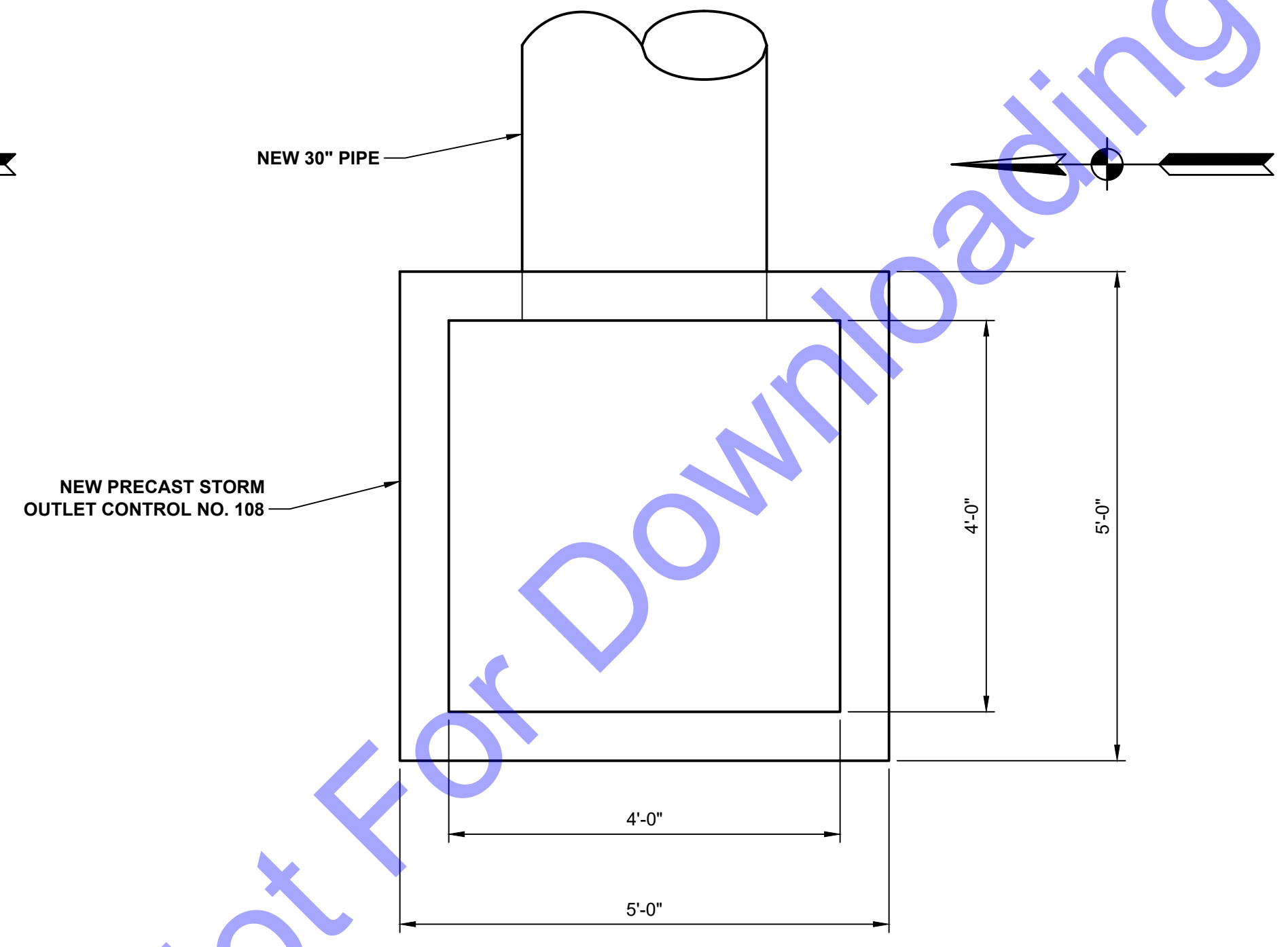
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Checked By:	DW	Project No.:	W24026
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MISCELLANEOUS DETAILS  
 Drawing No:  
**MD4**  
 Sheet: 52 OF 73



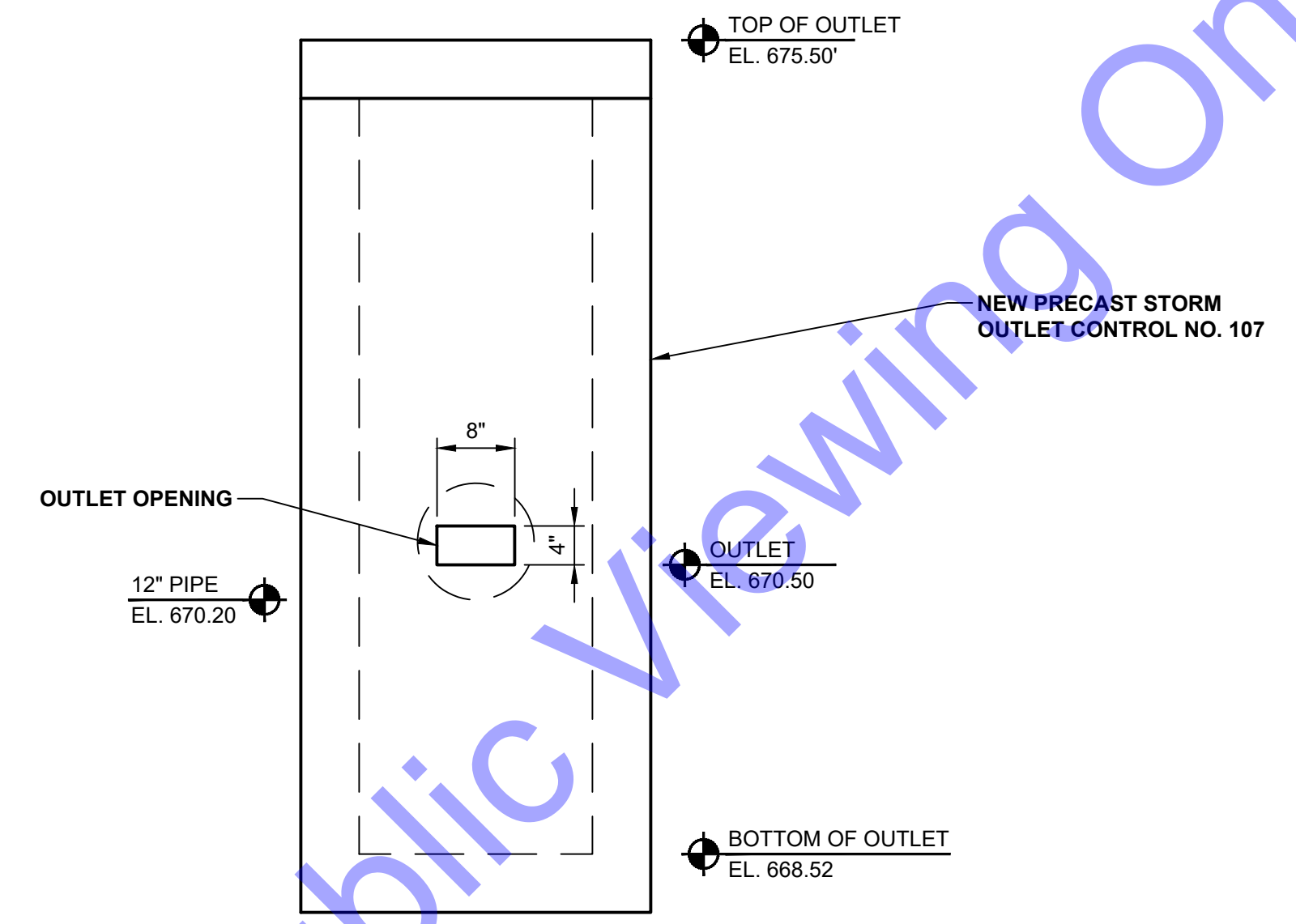
**NEW STORM OUTLET CONTROL NO. 107  
PLAN VIEW**

SCALE: 3/4"=1'-0"  
0 1' 2' 3'



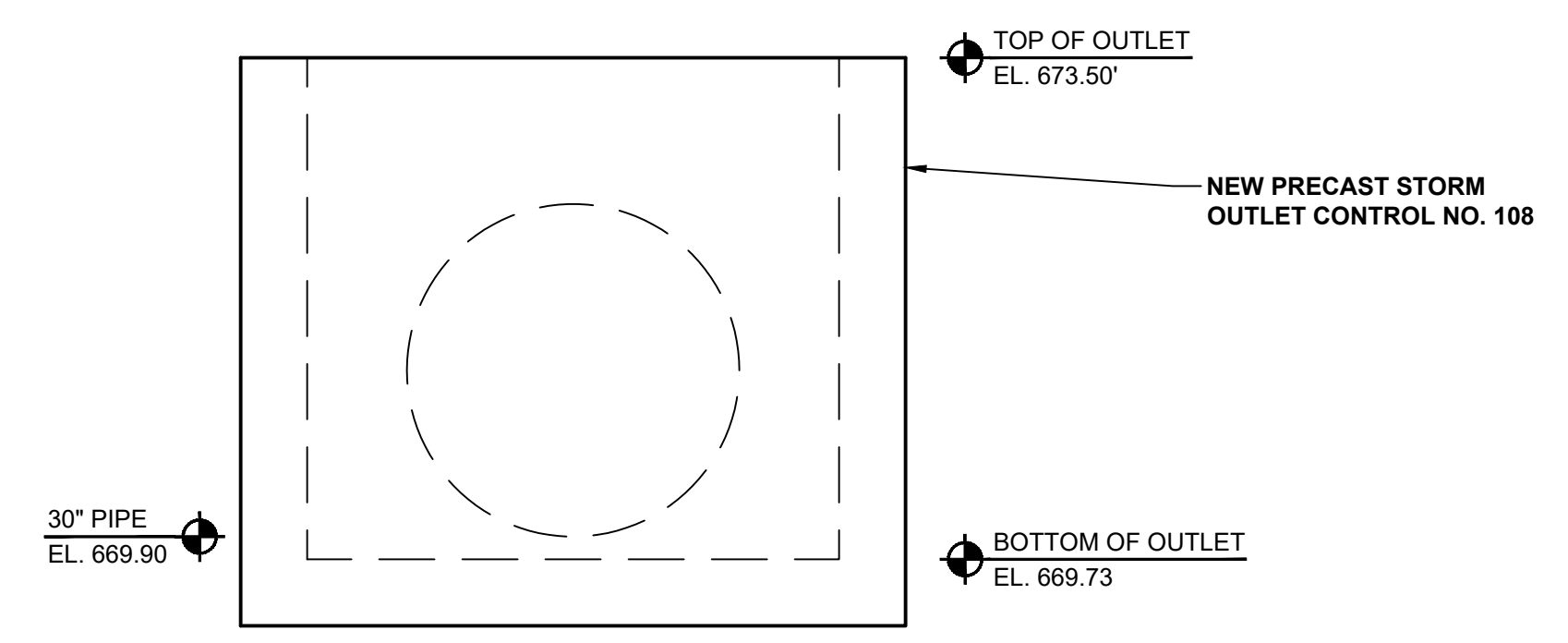
**NEW STORM OUTLET CONTROL NO. 108  
PLAN VIEW**

SCALE: 3/4"=1'-0"  
0 1' 2' 3'



**NEW STORM OUTLET CONTROL NO. 107  
WEST SIDE ELEVATION**

SCALE: 3/4"=1'-0"  
0 1' 2' 3'



**NEW STORM OUTLET CONTROL NO. 108  
WEST SIDE ELEVATION**

SCALE: 3/4"=1'-0"  
0 1' 2' 3'

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ANDREW C. COCHRANE  
 REGISTERED  
 No. 19900094  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER  
 Signature: *Andrew C. Cochrane* Date: 10/15/2024

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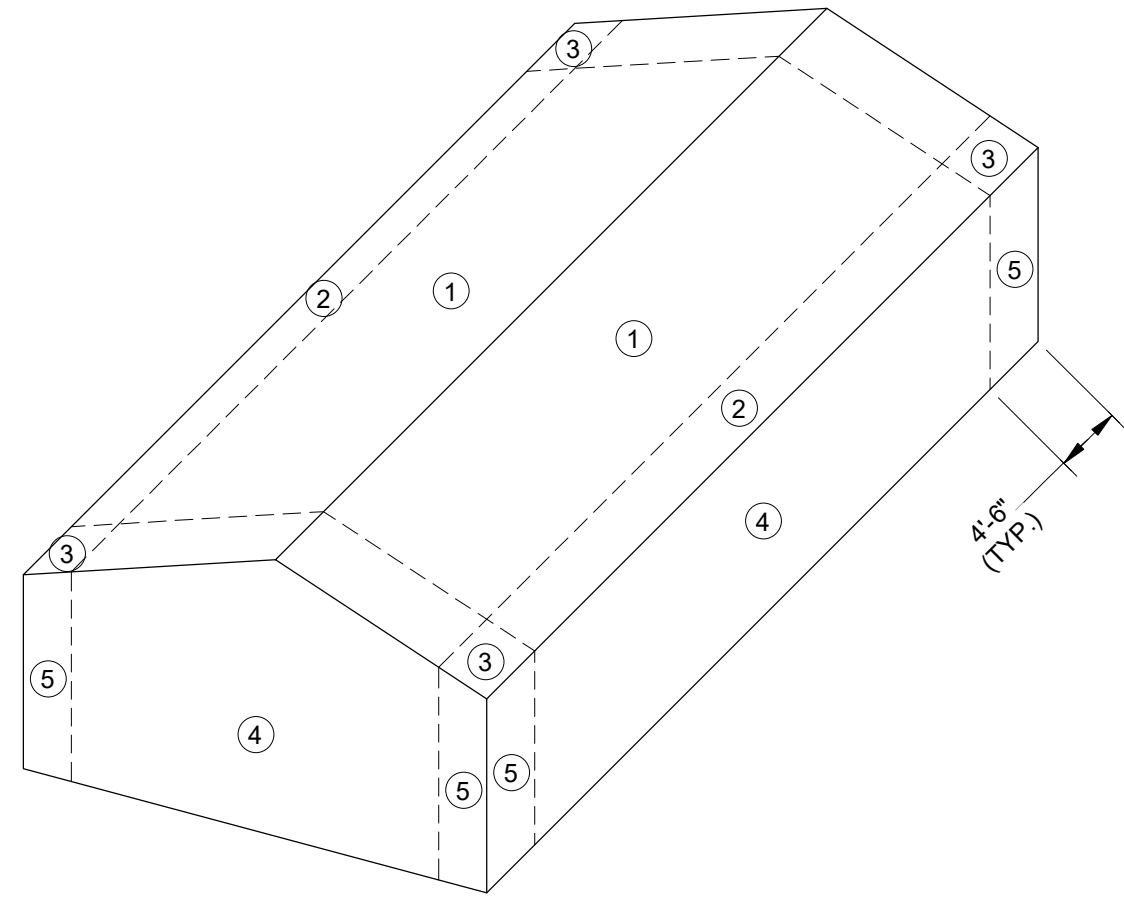
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Issue Date: 10-17-24	Project No: W24026	Scale: AS SHOWN

MISCELLANEOUS  
DETAILS

Drawing No:  
**MD5**  
Sheet: 53 OF 73





COMPONENT & CLADDING DESIGN WIND PRESSURES (PSF)				
LOCATION	ZONE	EFFECTIVE WIND AREA (SF)	POS.	NEG.
ROOF	1	10	+18.2	-28.9
		25	+16.1	-27.8
		50	+16.0	-27.0
		100	+16.0	-26.2
	2	10	+18.2	-50.3
		25	+16.1	-45.0
		50	+16.0	-40.9
		100	+16.0	-36.9
	3	10	+18.2	-74.4
		25	+16.1	-68.0
		50	+16.0	-63.1
		100	+16.0	-58.3
WALLS	4	10	+31.6	-34.2
		50	+28.3	-30.9
		200	+25.4	-28.1
		500	+23.5	-26.2
	5	10	+31.6	-42.3
		50	+28.3	-35.7
		200	+25.4	-30.0
		500	+23.5	-26.2

**NOTES:**  
 1. DESIGN WIND PRESSURES REPRESENT THE NET PRESSURE (SUM OF THE EXTERNAL AND INTERNAL PRESSURES APPLIED NORMAL TO ALL SURFACES).  
 2. DESIGN CRITERIA:  
 BASIC WIND SPEED (3-SECOND GUST) 115 MPH  
 IMPORTANCE FACTOR 1.0  
 EXPOSURE C  
 ENCLOSURE CLASSIFICATION  
 ENCLOSED INTERNAL PRESSURE COEF. GCpi ± 0.18  
 3. WIND PRESSURES FOR THE MAIN WIND FORCE RESISTING SYSTEMS SHOULD BE DETERMINED IN ACCORDANCE WITH INDIANA BUILDING CODE, 2014 EDITION, SECTION 1609 AND ASCE 7-10.

**DESIGN**

- Building Code: Indiana Building Code, 2014 Edition (2012 International Building Code, first printing, with Indiana Amendments).
- Soil information:  
Allowable net bearing pressure: 1500 psf
- Concrete:  
28 day compressive strength (fc) See Schedule
- Masonry:  
28 day compressive strength (fm) 2000 psi
- Reinforcing steel (deformed bars of new billet steel):  
Stirrup and tie ASTM A615, Grade 60  
Weldable (Low-Alloy) ASTM A706, Grade 60  
Otherwise ASTM A615, Grade 60  
Welded wire fabric (smooth) ASTM A185
- Structural Steel:  
Structural tubing members ASTM A500, Grade B, Fy = 46 ksi  
Structural steel pipe members ASTM A53, Type E or S, Grade B Fy = 35 ksi  
Structural steel rolled wide flange W shapes ASTM A992 Fy = 50 ksi  
(as an alternate, ASTM A572, Grade 50 may be used)  
Structural steel rolled S, M, and HP shapes & channels ASTM A36  
Structural steel rolled plates & angles ASTM A36  
All other members ASTM A36  
Connection bolts ASTM A325N  
Anchor bolts ASTM A36
- Structural Lumber (surfaced dry, used at 19% moisture content), unless noted otherwise:  
Roof rafters Southern Pine, No. 2  
Bolts/Lag Screws ANSI/ASME B18.2  
Nails FF-N-105B
- Plywood/Performance Rated Panels, unless noted otherwise:  
Span Rating 32/16  
Thickness 5/8"  
Exposure 1
- Non-shrink grout:  
28 day compressive strength 7,500 psi
- Live loads:  
Roof 20 psf
- Live Load Deflection Limitation:  
Roof L/240
- Risk Category II
- Snow Loads  
Terrain category C  
Importance factor, Ie 1.0  
Exposure category, Ce 0.9  
Thermal category, Ct 1.0  
Ground snow load, Pg 25 psf  
Flat roof snow load, Pf 15.75 psf  
Rain-on-snow surcharge load 5 psf  
Design flat roof snow load 25 psf with drift considerations
- Wind loads:  
Basic wind speed (3-second gust) 115 mph  
Importance factor, Iw 1.0  
Exposure C
- Seismic loads:  
Seismic importance factor, Ie 1.0  
Mapped Spectral Response Acceleration at Short Periods, Ss 12.6% g  
Mapped Spectral Response Acceleration at 1 Second, S1 6.7% g  
Site Class D  
Design Spectral Response Acceleration at Short Periods, Sds 13.4% g  
Design Spectral Response Acceleration at 1 Second, Sd1 10.7% g  
Seismic Design Category B

**STRUCTURAL LUMBER**

- Structural lumber shall be detailed, fabricated and erected in accordance with the latest editions of the Timber Construction Manual by the American Institute of Timber Construction (AITC) and the National Design Specification for Wood Construction by the American Forest & Paper Association (ANSI/NFPA NDS).
- Bolts, lag screws, nails and other wood fastenings, unless otherwise noted, shall conform to the latest edition of the National Design Specification for Wood Construction. Standard cut washers shall be used between the wood and bolt head and the wood and nut.
- Wood members that are in contact with concrete or masonry or exposed to weather shall be pressure treated with a water borne treatment to a net retention level of 0.3 pcf in accordance with applicable American Wood Preservers' Association latest requirements.
- Rough sawn timbers shall be treated and finished where specified. Ends exposed to weather shall be treated with CCA.

**PLYWOOD/PERFORMANCE RATED PANELS**

- Plywood and performance rated panels (oriented strand board) shall be detailed, fabricated and erected in accordance with the latest criteria established by the American Plywood Association (APA) including their latest edition of the Plywood Design Specification (and its Supplements).
- Plywood panels shall be identified with the appropriate trademark of the APA and shall meet the requirements of the latest edition of the U.S. Product Standard PS 1 for Construction and Industrial Plywood. Performance rated panels shall be identified with the appropriate trademark of the APA and shall meet the requirements of the latest edition of the APA PRP-108 Performance Standards and Policies for Structural-Use Panels, or the U.S. Product Standard PS 2 for Wood-Based Structural-Use Panels.
- Roof panels shall be installed with the long dimension (face grain) across the supports with panels continuous over 2 or more supports (minimum 3 span condition).
- Stagger panel end joints. End joints shall only occur over a support. Unless recommended otherwise by the panel manufacturer, provide a 1/8" gap between panel ends and edges. Panel edges shall be tongue-and-groove or supported on 2" (nominal) lumber blocking installed between joists.
- Unless otherwise noted, panels shall be fastened to their supports as follows:  
 A. 6" o.c. along supported panel edges and 12" o.c. at intermediate supports. Use 6d galvanized common nails for panels 1/2" thick and less and 8d galvanized common nails for panels of greater thickness with 1 1/2" minimum penetration into supporting framing members. Galvanized nails shall be hot-dipped or tumbled.

**PRE-ENGINEERED POST-FRAME BUILDING**

- The Pre-Engineered Post-Frame Building manufacturer shall prepare detailed working or shop drawings to enable fabrication, erection and construction of all parts of the work in accordance with the drawings and specifications and shall submit copies per the specifications, including calculations, to the Structural Engineer for review prior to fabrication. These shop drawings shall show the design loads, plans, elevations, sections, connections, required bracing, attachments to other work, and details necessary for the Pre-Engineered Post-Frame Building manufacturer to fabricate, erect and construct all parts of the work. These shop drawings and calculations will be reviewed for design concepts only. The Pre-Engineered Post-Frame Building manufacturer shall be responsible for all dimensions, accuracy, and fit of work. The Pre-Engineered Post-Frame Building framing shall be designed by, and the shop drawings and calculations shall bear the seal and signature of, a registered professional engineer in the State of Indiana.
- The Pre-Engineered Post-Frame Building manufacturer shall submit in a timely manner anchor bolt plans that include anchor bolt location, diameter, and projection as well as minimum column reactions for verification of the foundation design shown in the drawings.
- The Contractor shall reference specification section DS-11 (PRE-ENGINEERED POST-FRAME BUILDING) for additional requirements for the pre-engineered post-frame building systems.
- The Pre-Engineered Post-Frame Building Manufacturer is responsible for the design and supply of wall openings, louvers and exhaust fan support framing.

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JOHN DAVID TAYLOR  
 REGISTERED PROFESSIONAL ENGINEER  
 No. PE19900097  
 STATE OF INDIANA  
 Signature: [Signature] Date: 10.17.24

**CE Solution**  
 structural engineer  
 1870 North State Road  
 Ellettsville, IN 47428  
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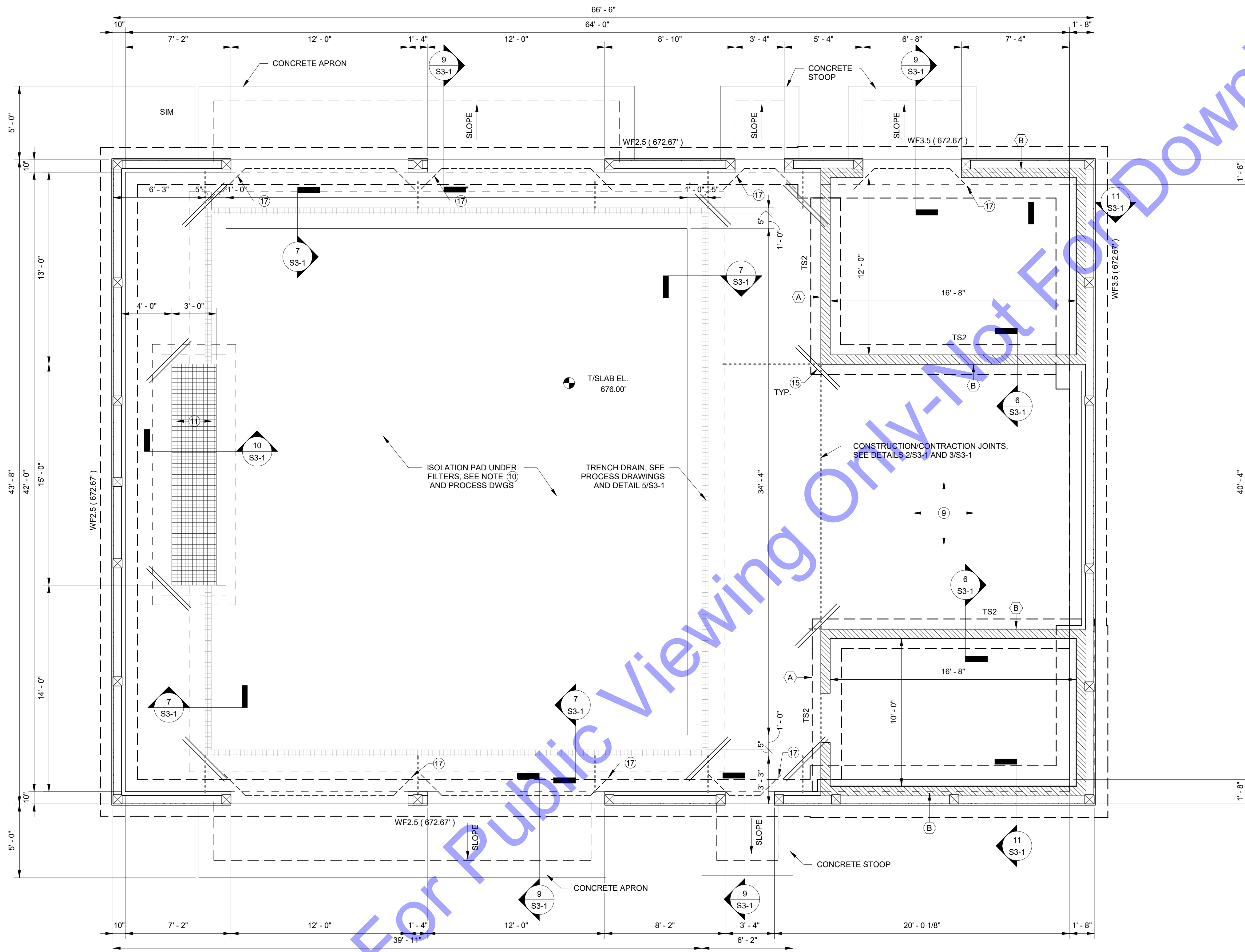
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Designed By: MRC	Drawn By: RMS	Checked By: JDT
Issue Date: 10/17/24	Project No: 24-107	Scale: As indicated

GENERAL STRUCTURAL NOTES  
 Drawing No: **S1-2**  
 Sheet: 55 OF 73



FOUNDATION PLAN NOTES

- INDICATES NOTE REFERENCED IN PLAN
- SEE THE S1-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS.
  - GENERAL CONTRACTOR TO COORDINATE ALL OPENING, PIPE SLEEVES, EMBEDDED ITEMS, HANDRAILS, GRATING, ETC. WITH THE PROCESS DRAWINGS.
  - ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED PRIOR TO FABRICATION, CONSTRUCTION OR ERECTION. THE GENERAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DISCREPANCIES.
  - SEE SITE PLAN FOR ALL FINAL GRADE ELEVATIONS.
  - T/SLAB ELEVATION = SEE PLAN
  - SEE GEOTECHNICAL REPORT FOR ALL BACKFILLING AND COMPACTION REQUIREMENTS BEHIND WALLS AND UNDER BASE SLABS.
  - GENERAL CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT (CJ) AND CONTRACTION JOINT (CT) LOCATION PLAN TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
  - MAINTAIN STRUCTURAL SLAB THICKNESSES AT ALL FLOOR SLOPES AND DEPRESSIONS.
  - FLOOR SLAB SHALL CONSIST OF A 6-INCH SLAB ON GRADE OVER 6-INCHES OF COMPACTED FILL AND A 10-MIL VAPOR RETARDER. REINFORCE SLAB WITH #4 AT 10" O.C., EACH WAY.
  - ISOLATION PAD SHALL CONSIST OF A 15-INCH THICK SLAB ON GRADE OVER 6-INCHES OF COMPACTED FILL AND A 10-MIL VAPOR RETARDER. REINFORCE CONCRETE PAD PER SECTION 5/S3-1.
  - 11/2" THICK MOLDED FIBER REINFORCED PLATFORM GRATING EXTENDS. SEE SPECIFICATIONS ("WM 19-MISCELLANEOUS METALS AND ALUMINUM" AND "WM 20-FIBERGLASS MATERIALS") FOR ADDITIONAL INFORMATION.
  - WFx (XXX.XX) DENOTES FOOTING MARK AND ELEVATION, SEE FOOTING SCHEDULE.
  - TSx DENOTES THICKENED SLAB MARK, SEE THICKENED SLAB SCHEDULE.
  - DENOTES MASONRY WALL TYPE, SEE SCHEDULE.
  - AT RE-ENTRANT SLAB CORNER CONDITIONS, PROVIDE (2) #4 x 4'-0" LONG AT 3-INCHES O.C. PLACED 2-INCHES CLEAR FROM CORNER, CENTERED IN SLAB, TYPICAL.
  - ALL FLOORS SLABS SHALL CONFORM TO THE FOLLOWING ACI F-NUMBER REQUIREMENTS:  
SPECIFIC OVERALL VALUE: FF-50 / FI-30  
MINIMUM LOCAL VALUE: FF-25 / FI-15
  - AT DOOR LOCATIONS PROVIDE "C" SHAPED DOWELS PER DETAIL 4/S2-2
  - FULLY GROUT MASONRY JAMBS PLUS (2) VERTICAL BARS. BARS SHALL MATCH THE SIZE OF THE MASONRY WALL VERTICAL REINFORCEMENT, SEE DETAIL 2/S4-2.
  - GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE LOCATION OF OUTSIDE FACE OF FOUNDATION WALL WITH THE SELECTED PRE-ENGINEERED POST-FRAME BUILDING SUPPLIER.
  - PRE-ENGINEERED POST-FRAME BUILDING SUPPLIER SHALL PROVIDE ADEQUATE FRAMING AT ALL DOOR JAMB AND WINDOW LOCATIONS.

WALL FOOTING SCHEDULE					
MARK	WIDTH	LENGTH	THICK.	BOTT. LONG. REINF.	BOTT. TRANS. REINF.
WF2.5	2'-6"	CONT.	2'-6"	3 - #5	#5 AT 12" O.C.
WF3.5	3'-6"	CONT.	2'-6"	4 - #5	#5 AT 12" O.C.

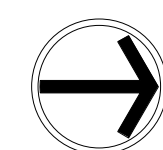
THICKENED SLAB SCHEDULE					
MARK	WIDTH	LENGTH	THICK.	BOTT. LONG. REINF.	BOTT. TRANS. REINF.
TS2	2'-0"	CONT.	1'-0"	2 - #5	#5 AT 12" O.C.

SPREAD FOOTING SCHEDULE					
MARK	WIDTH	LENGTH	THICK.	BOTT. LONG. REINF.	BOTT. TRANS. REINF.
F4	4'-0"	4'-0"	1'-0"	5 - #5	5 - #5

MASONRY WALL REINFORCING SCHEDULE	
A	8-INCH CMU WALL 8-INCH NORMAL WEIGHT CMU BLOCK VERTICAL: #6 BARS AT 32" O.C. HORIZONTAL: (2) #5 BARS AT T/BB ELEV. = T/WALL #9 TRUSS TYPE JOINT REINF. AT 16-INCHES O.C. (8" LAP)
B	8-INCH CMU WALL 8-INCH NORMAL WEIGHT CMU BLOCK VERTICAL: #5 BARS AT 32" O.C. HORIZONTAL: (2) #5 BARS AT T/BB ELEV. = T/WALL #9 TRUSS TYPE JOINT REINF. AT 16-INCHES O.C. (8" LAP)

- NOTES:
- REINFORCE ALL WALLS AS NOTED BY SCHEDULE EXCEPT AS NOTED ON PLANS AND/OR DETAILS.
  - PROVIDE TOP BOND BEAM (BB) TO ALL WALLS. WHEN WALL COURSING DOES NOT FINISH ON A FULL BLOCK, TOP BB DEPTH SHALL BE THE LAST FULL BLOCK PLUS THE PARTIAL DEPTH OF THE REMAINING BLOCK AT TOP OF THE WALL.
  - PROVIDE A 1'-0" HOOK AT TOP OF ALL VERTICAL BARS.
  - PROVIDE DOWELS WITH 1'-0" HOOK AT BOTTOM OF WALL INTO CONCRETE SLAB. DOWELS TO MATCH VERTICALS IN SIZE AND SPACING.

1 FOUNDATION PLAN  
S2-1 1/4" = 1'-0"



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APPLE VALLEY UTILITIES EAST  
PWS - WATER UTILITY  
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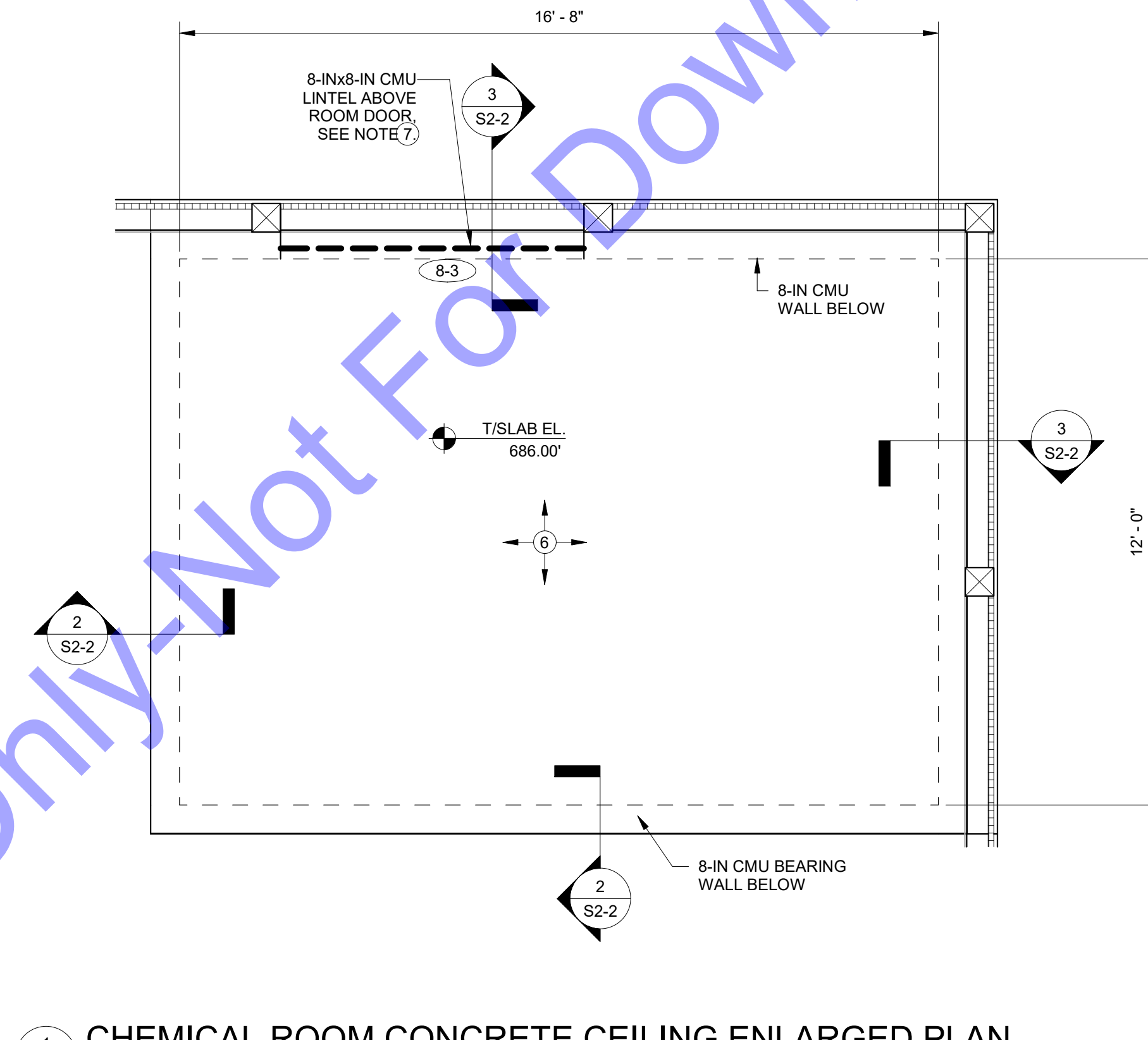
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NEW WATER TREATMENT PLANT FACILITY - FOUNDATION PLAN

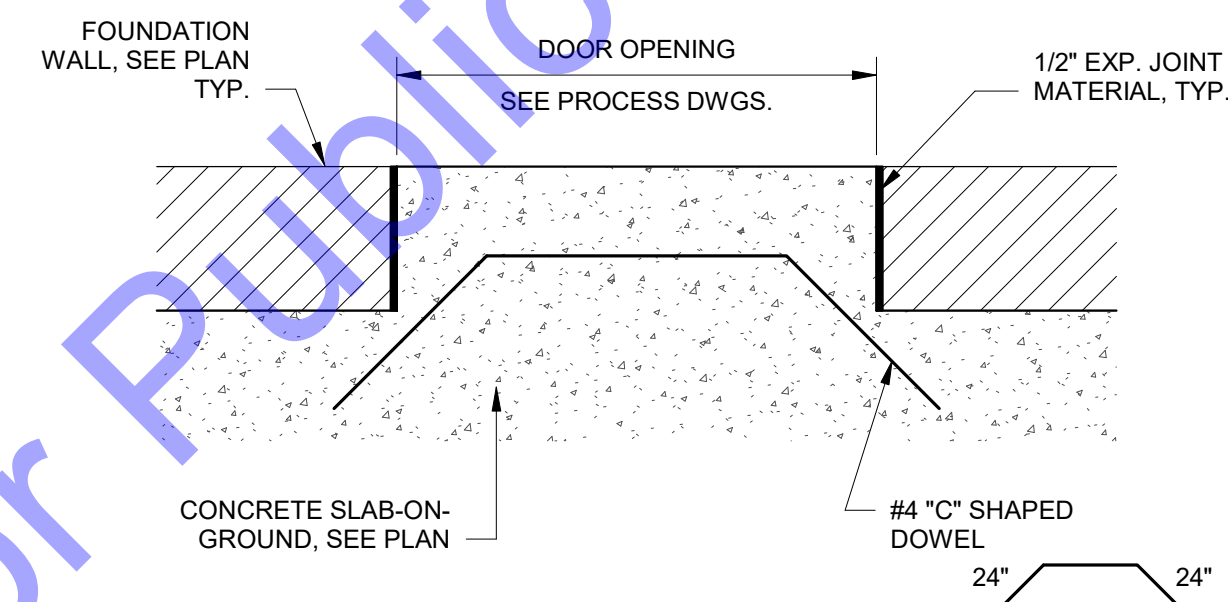


**CHEMICAL ROOM PLAN NOTES**

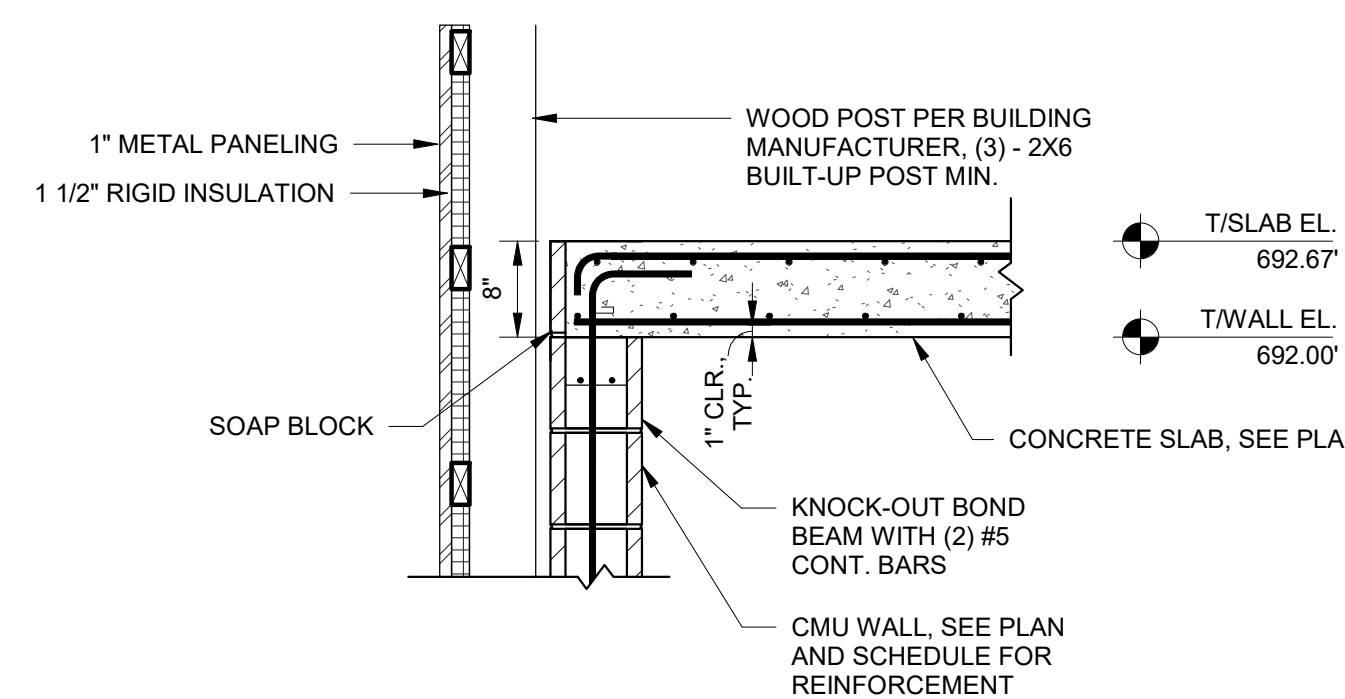
- INDICATES NOTE REFERENCED IN PLAN
- 1. SEE THE S1-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES.
- 2. GENERAL CONTRACTOR TO COORDINATE ALL OPENING, PIPE SLEEVES, EMBEDDED ITEMS, HANDRAILS, GRATING, ETC. WITH THE PROCESS DRAWINGS.
- 3. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED PRIOR TO FABRICATION. CONSTRUCTION OR ERECTION. THE GENERAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DISCREPANCIES.
- 4. T/SLAB ELEVATION = SEE PLAN
- 5. (8-X) DENOTES MASONRY LINTEL - SEE SCHEDULE ON SHEET S2-2.
- 6. CHEMICAL ROOM CEILING SHALL CONSIST OF AN 8-IN CONCRETE SLAB REINFORCED WITH 2-LAYERS OF #4 AT 12" O.C.
- 7. CMU LINTEL SHALL BE REINFORCED WITH (2) #5 CONT. BARS. LINTEL BLOCKS AND BOTTOM BARS TO EXTEND 8-IN PAST THE CMU OPENING. CUT OUT BOTTOM SHELL OF LINTEL BLOCKS AT BEARING TO ALLOW INTEGRAL GROUTING OF LINTEL & FILLED CELLS BELOW AT BEARING. PROVIDE FILLED CELLS FULL FOR THE FULL 8-IN OF BEARING. SEE S1-7 FOR ADDITIONAL REQUIREMENTS. LINTELS SHALL BE GROUTED SIMILAR TO WALLS. ALL GROUT MUST BE CONSOLIDATED TWICE, ONCE WITHIN 5 MINUTES OF PLACEMENT AND ONCE 15-20 MINUTES AFTER PLACEMENT.



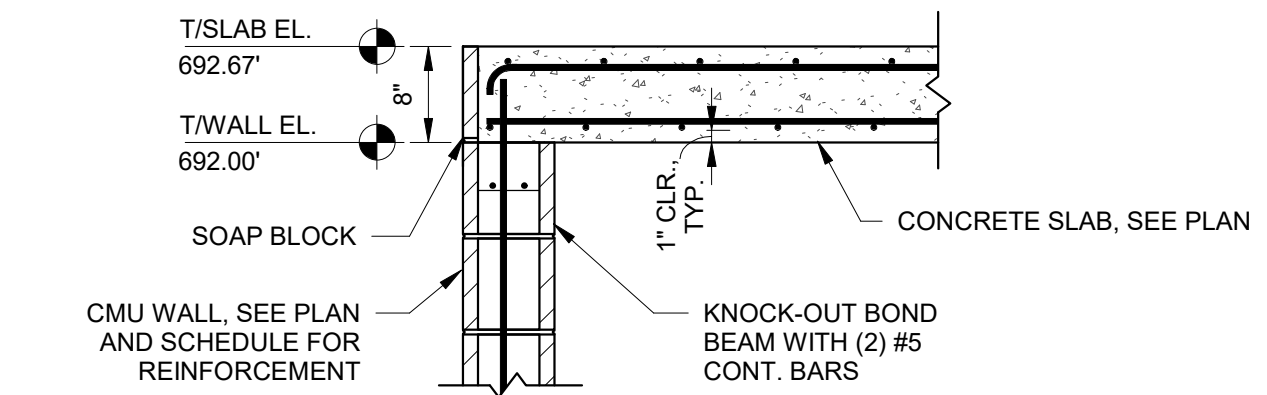
1 CHEMICAL ROOM CONCRETE CEILING ENLARGED PLAN  
S2-2 3/8" = 1'-0"



4 TYP. INTERIOR NON-LOAD BEARING WALL SECTION - 8" CMU  
S2-2 3/4" = 1'-0"



3 SECTION  
S2-2 3/4" = 1'-0"



2 SECTION  
S2-2 3/4" = 1'-0"

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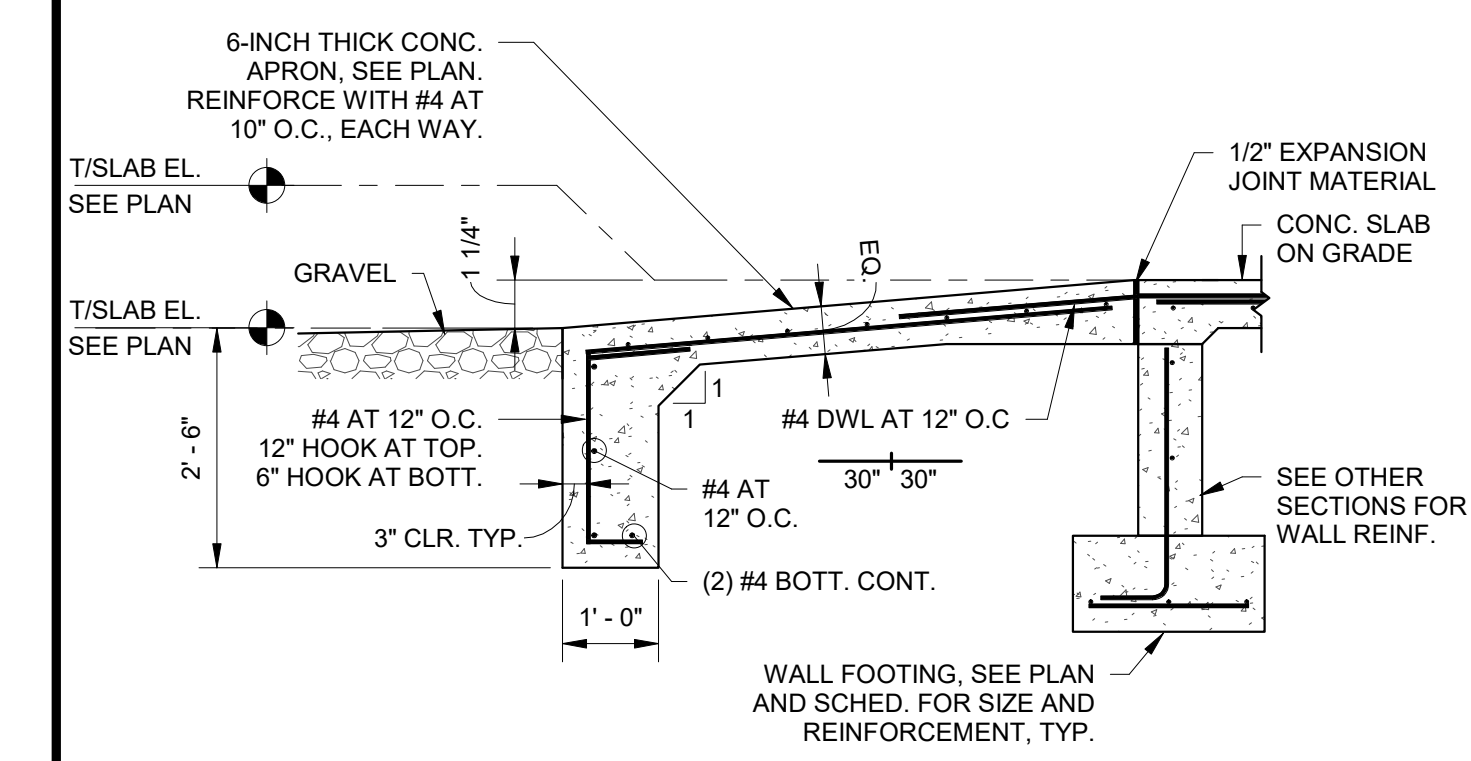
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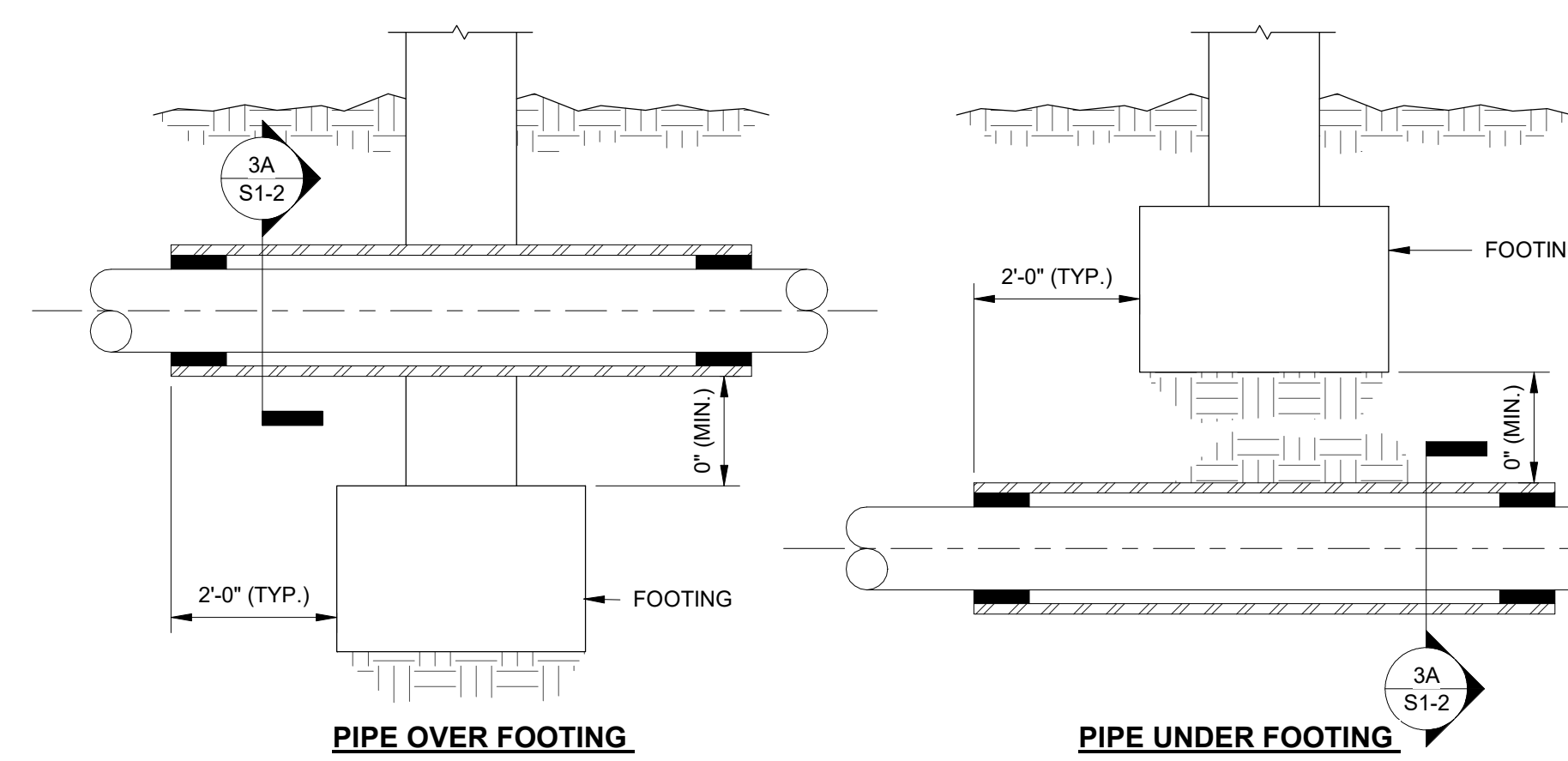
NEW WATER TREATMENT FACILITY - CHEMICAL ROOM ROOF PLAN AND DETAILS

Drawing No: **S2-2**  
Sheet: 57 OF 73

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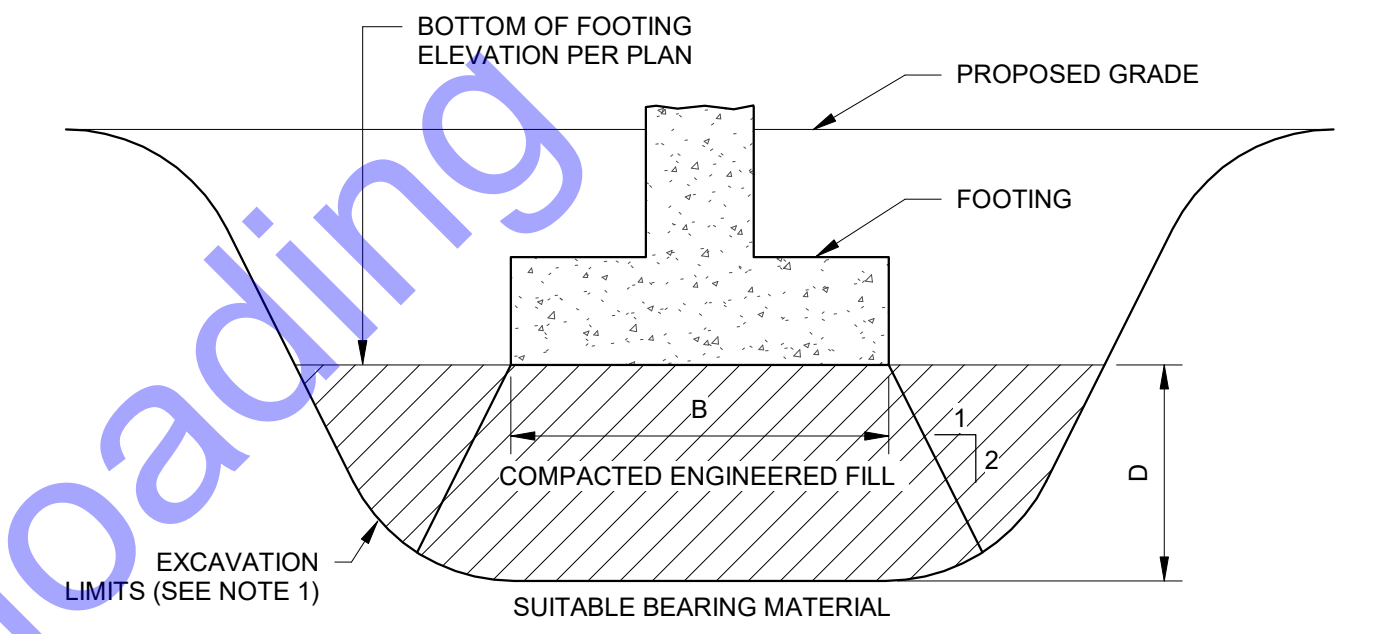


9 SECTION AT CONCRETE APRON  
S3-1 1/2" = 1'-0"



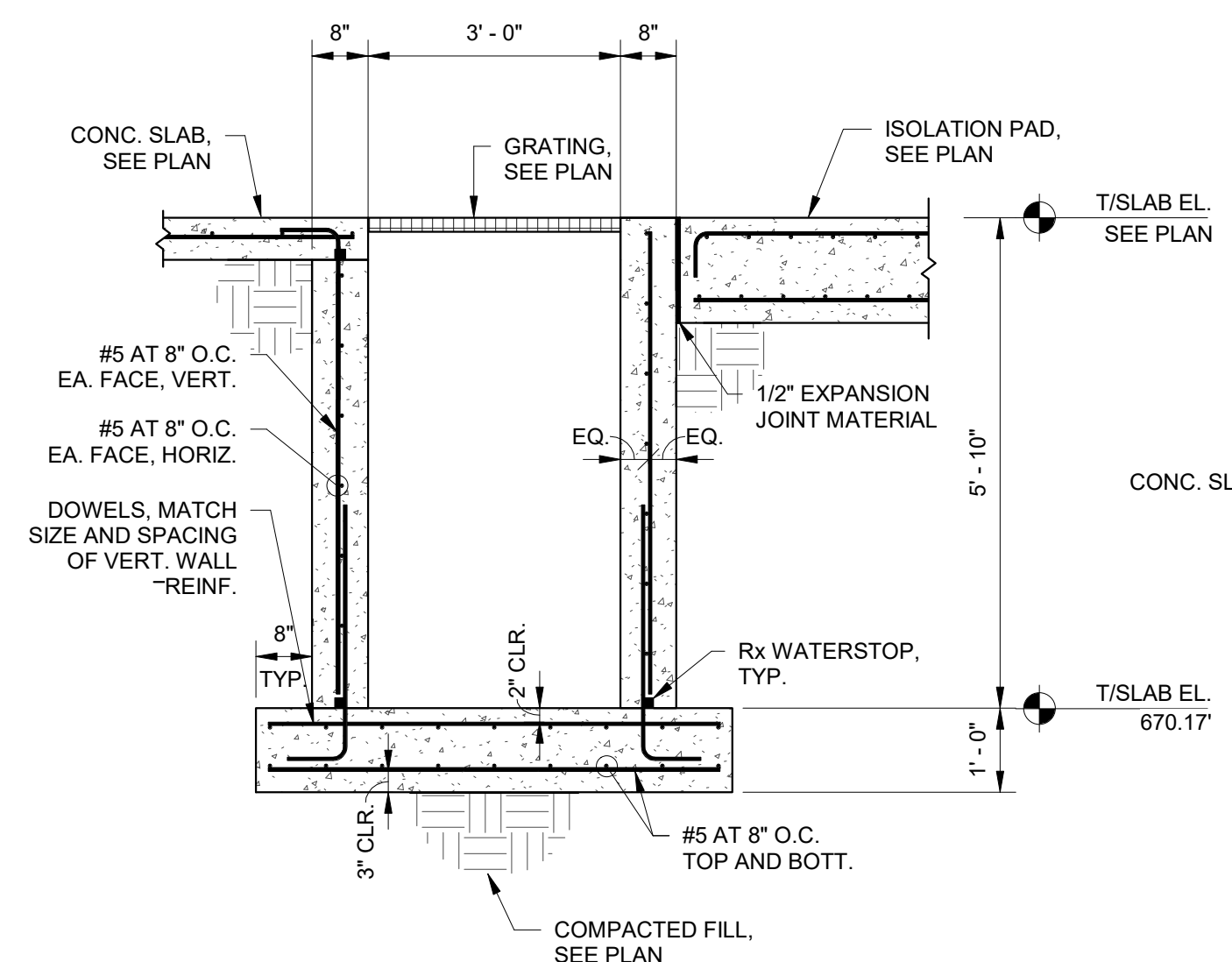
4 TYP. UNDERGROUND SERVICE PIPE DETAIL AT WALL FOUNDATION  
S3-1 1/8" = 1'-0"

NOTES:  
1. COORDINATE THE USE OF THESE DETAILS WITH THE UNDERSLAB PIPING CONTRACTOR.  
2. IF THE TOP OF THE SERVICE PIPE IS 2'-0" (OR GREATER) BELOW THE BOTTOM OF THE FOOTING, STEEL SLEEVE IS NOT REQUIRED.

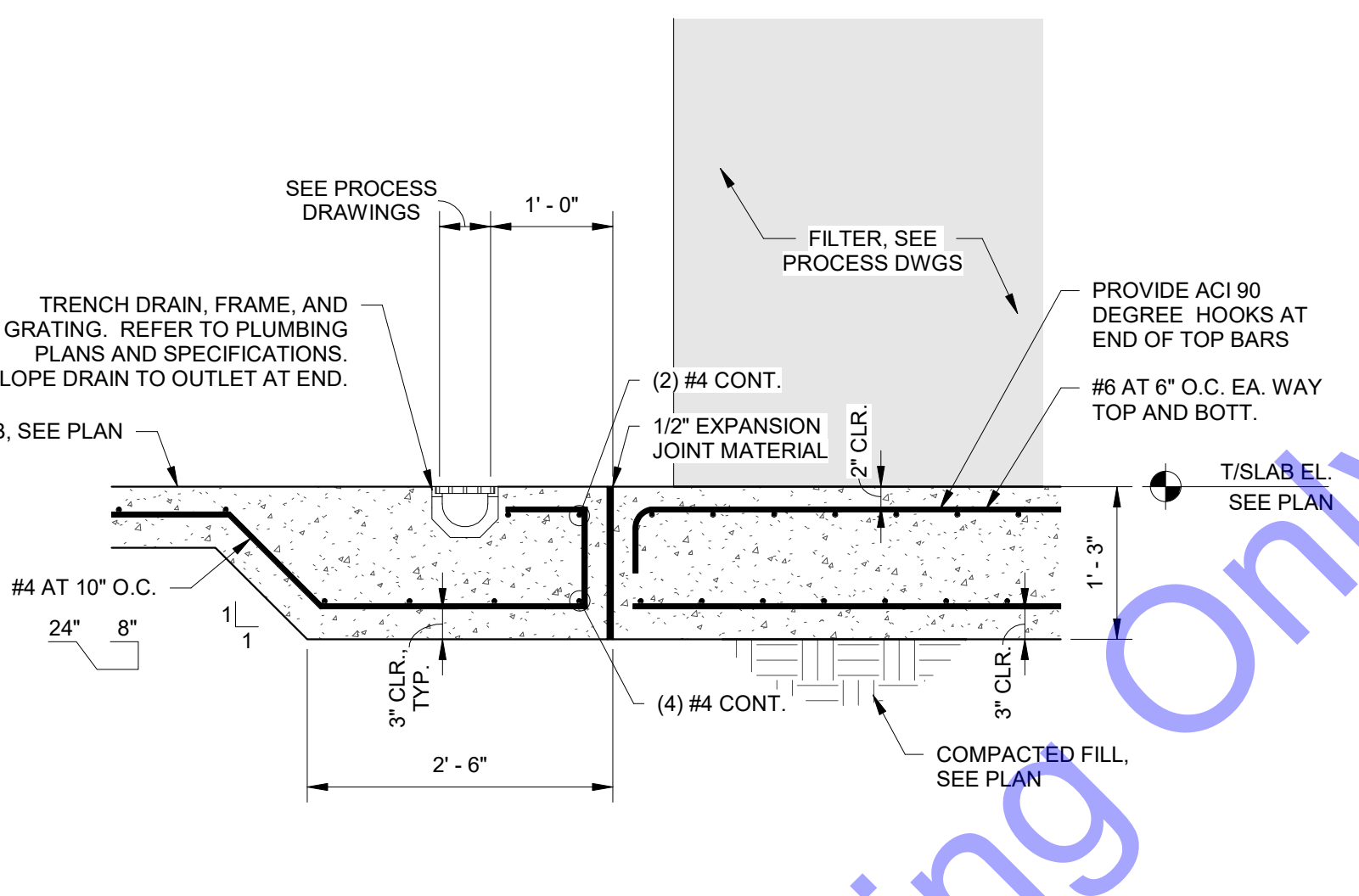


1 TYP. FOOTING IN UNDERCUT AREA  
S3-1 1" = 1'-0"

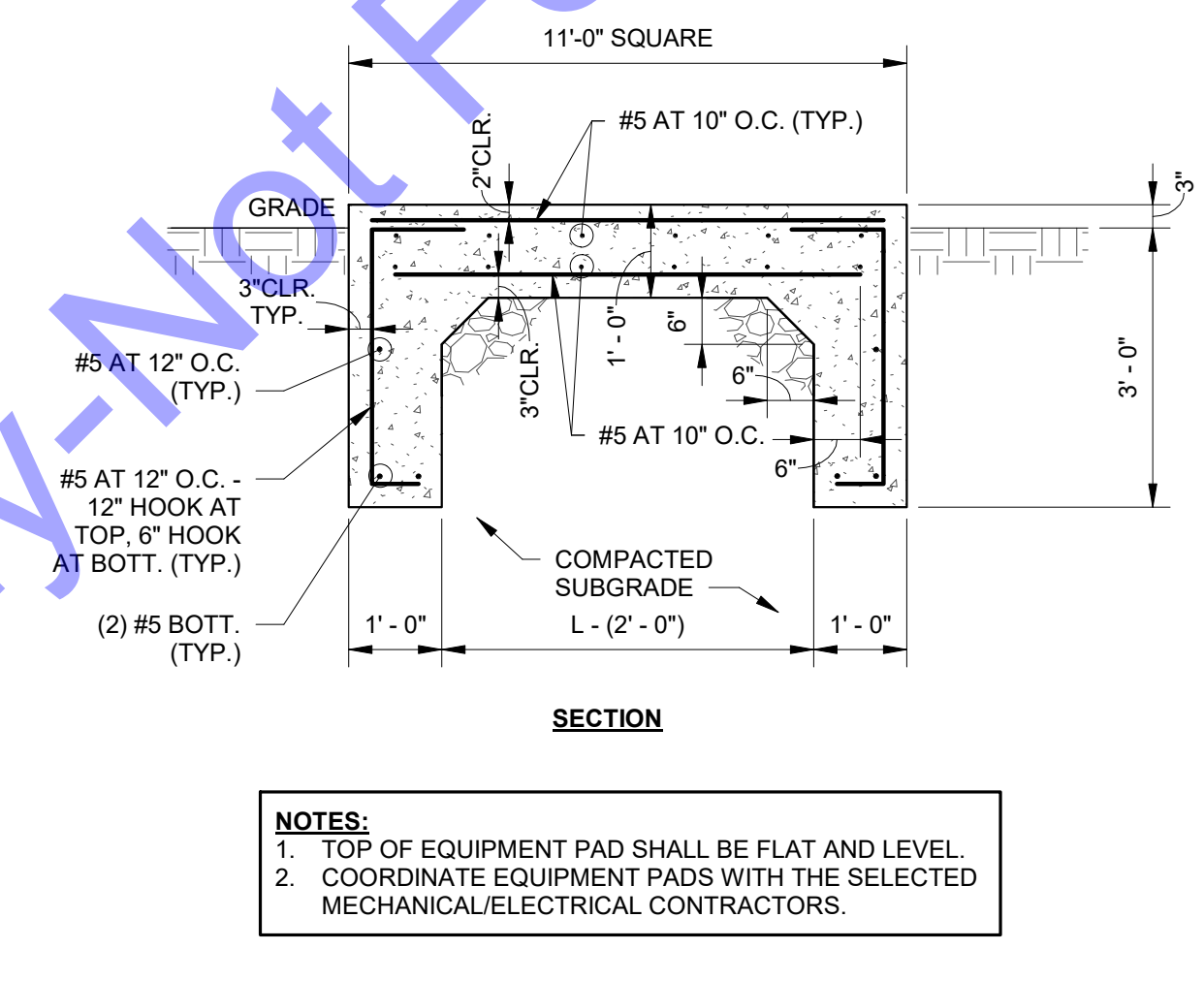
NOTES:  
1. DEWATER EXCAVATION AS REQUIRED.  
2. WIDTH OF EXCAVATION SHALL EQUAL WIDTH OF FOOTING PLUS DEPTH OF UNDERCUT (W+B+D).



10 SECTION  
S3-1 1/2" = 1'-0"

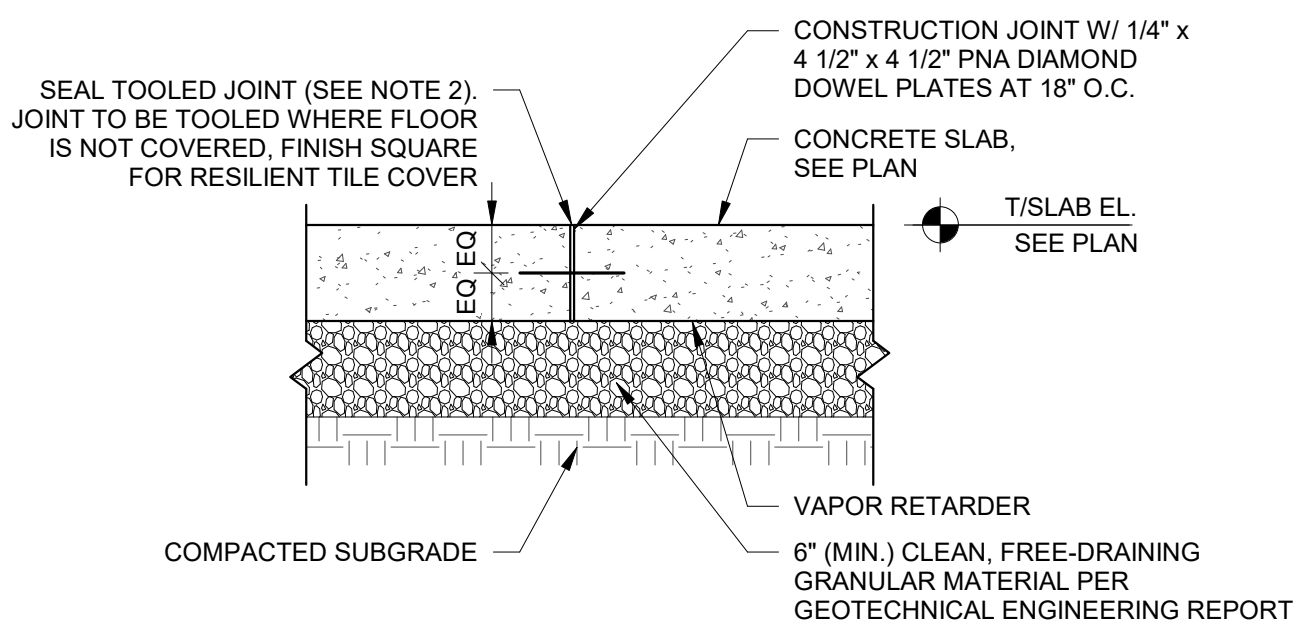


7 SECTION AT ISOLATION PAD  
S3-1 3/4" = 1'-0"



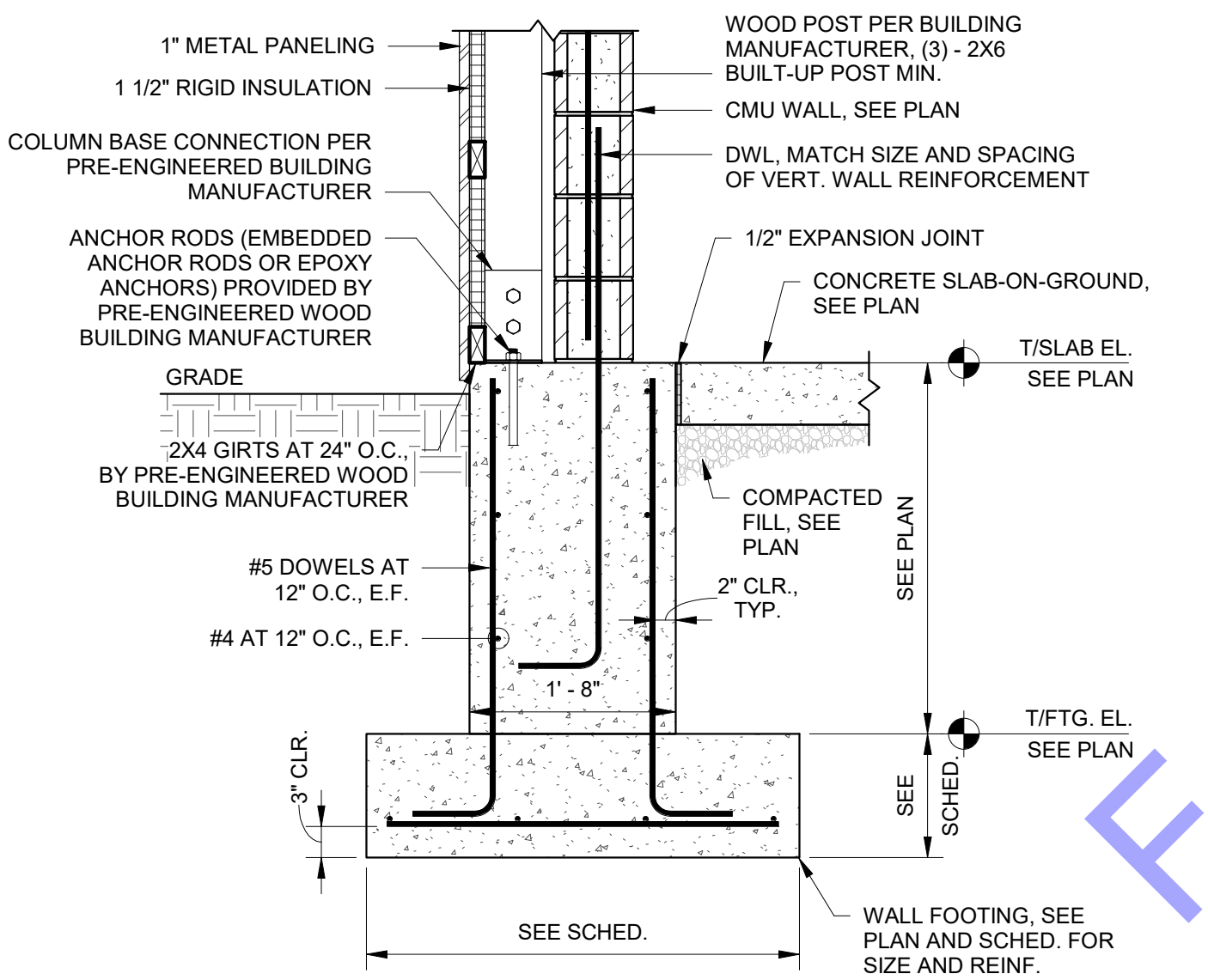
5 ICT 3700 BACKWASH TANK FND. PAD  
S3-1 1/2" = 1'-0"

NOTES:  
1. TOP OF EQUIPMENT PAD SHALL BE FLAT AND LEVEL.  
2. COORDINATE EQUIPMENT PADS WITH THE SELECTED MECHANICAL/ELECTRICAL CONTRACTORS.

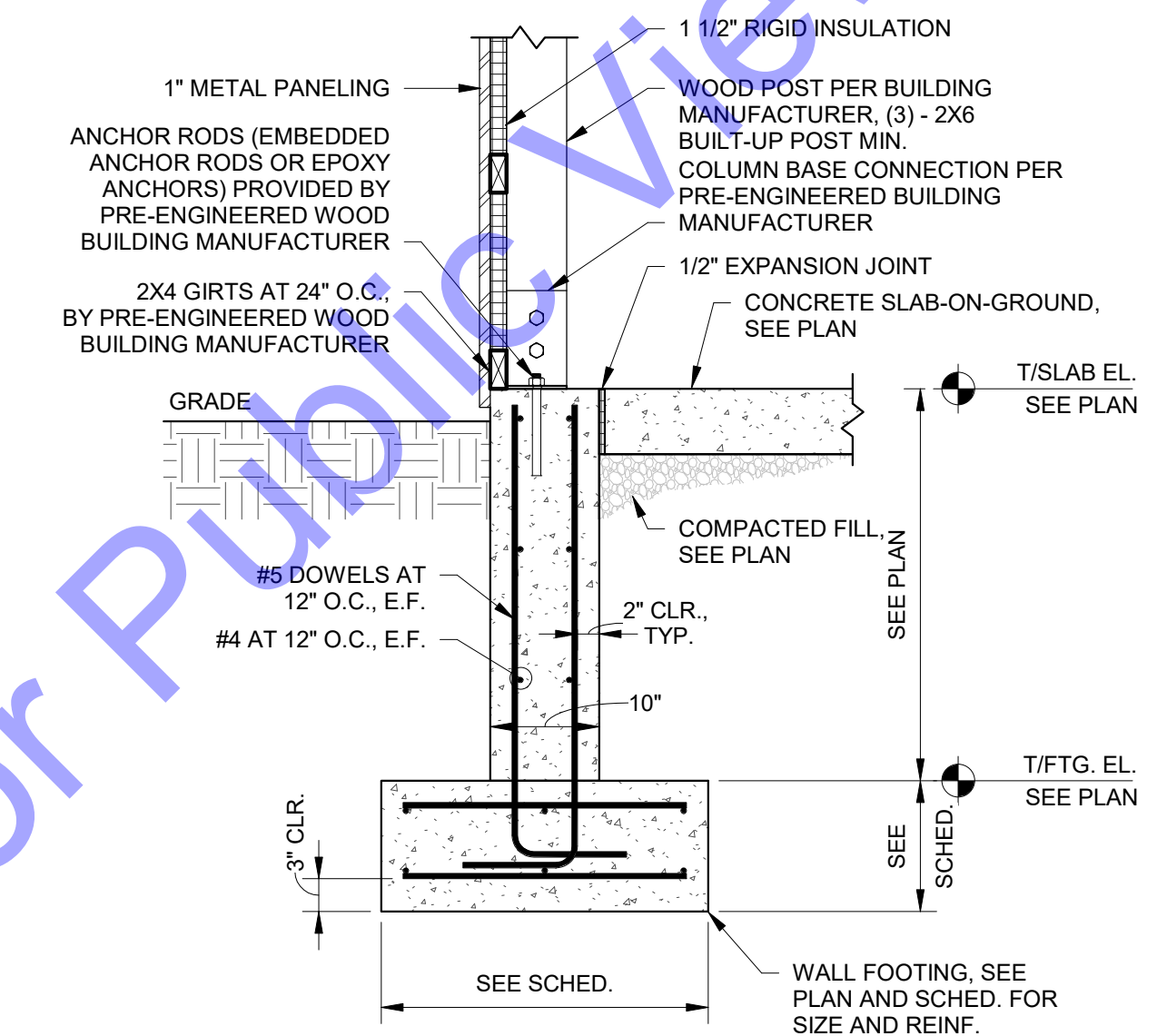


2 TYP. SLAB ON GRADE CONSTRUCTION JOINT  
S3-1 1" = 1'-0"

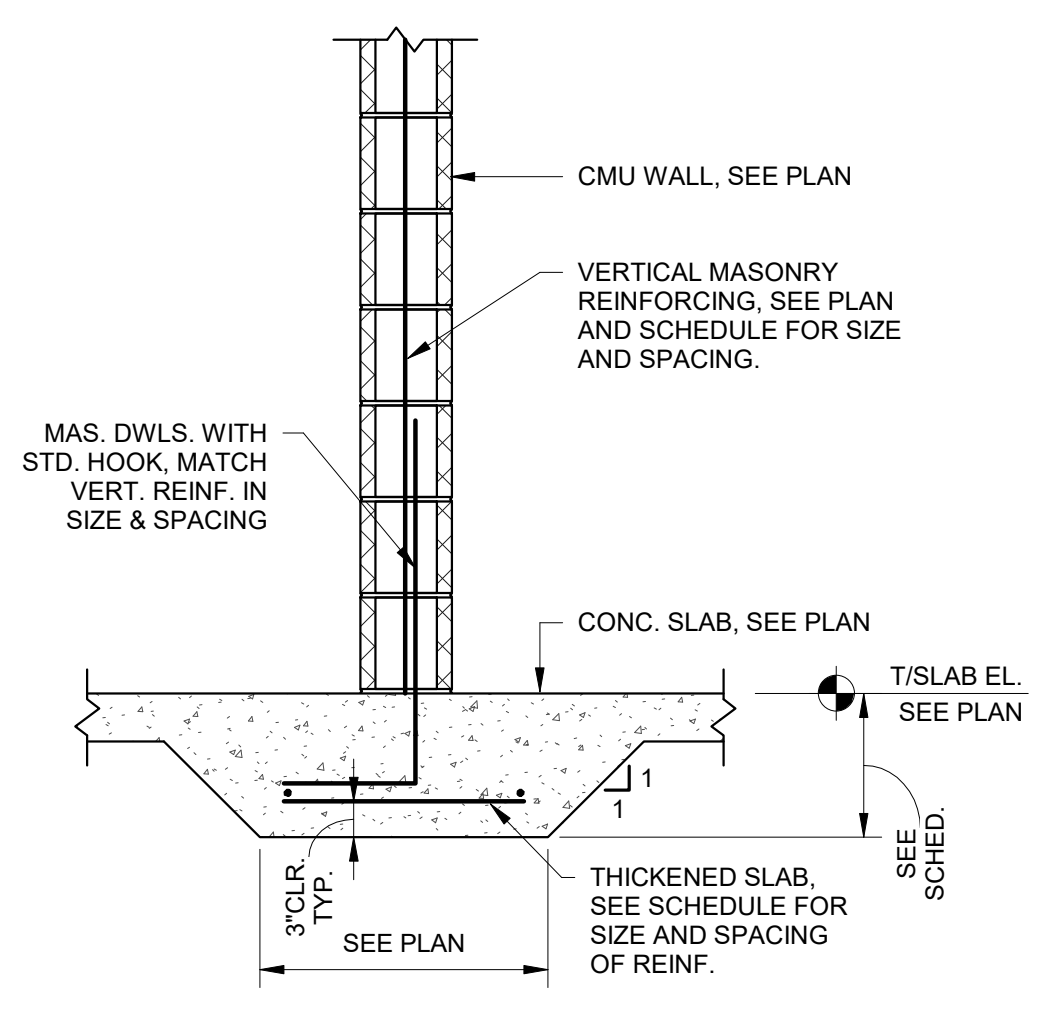
NOTES:  
1. INSTALL PNA DIAMOND DOWEL PLATES PER MANUFACTURER'S RECOMMENDATIONS.  
2. PRIOR TO SEALING JOINT, PREPARE JOINT PER SEALANT MANUFACTURER'S RECOMMENDATIONS.  
3. CONSTRUCTION JOINTS SHALL ONLY OCCUR AT LOCATIONS INDICATED.  
4. APPLY LIQUID BOND BREAKER TO FULL DEPTH OF JOINT.



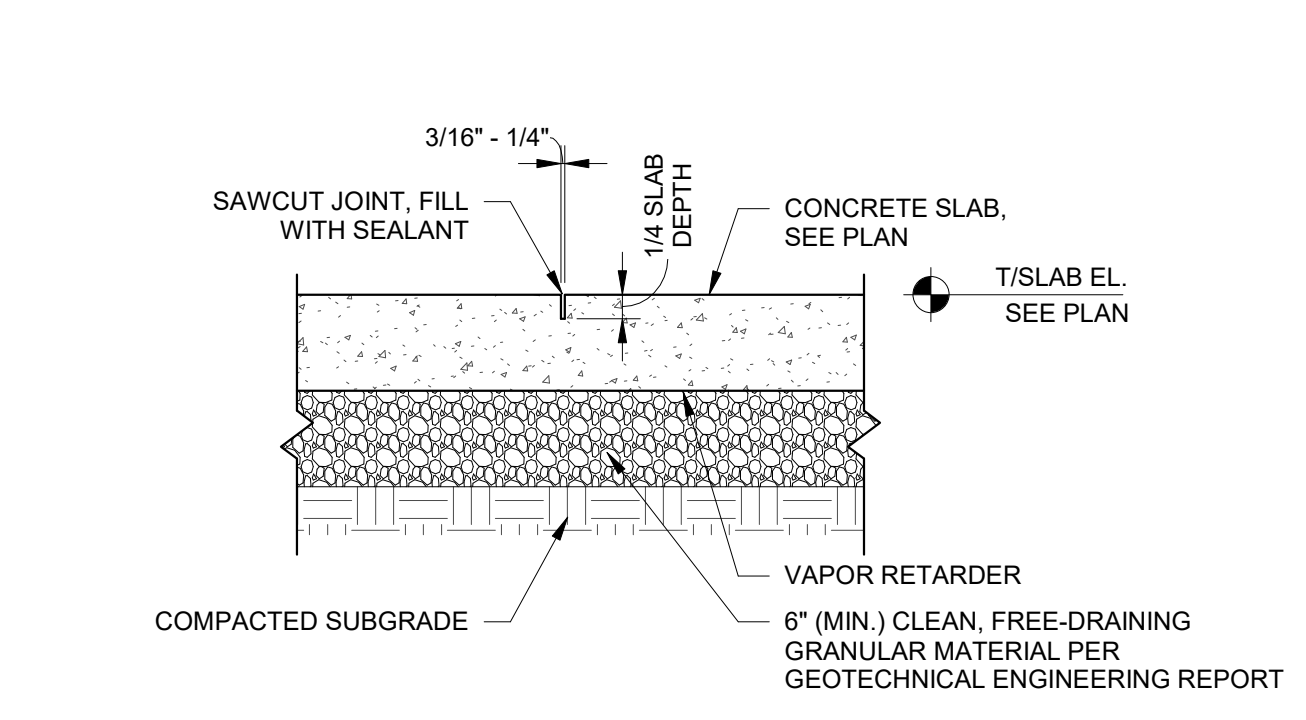
11 SECTION  
S3-1 3/4" = 1'-0"



8 SECTION  
S3-1 3/4" = 1'-0"



6 TYP. INTERIOR NON-LOAD BEARING WALL SECTION - 8" CMU  
S3-1 3/4" = 1'-0"



3 TYP. SLAB ON GRADE CONTRACTION JOINT  
S3-1 1" = 1'-0"

NOTES:  
1. SAWCUT JOINT AS SOON AS POSSIBLE WITHOUT RAVELING THE EDGE OF CONCRETE.  
2. PRIOR TO SEALING JOINT, PREPARE JOINT PER SEALANT MANUFACTURER'S RECOMMENDATIONS.

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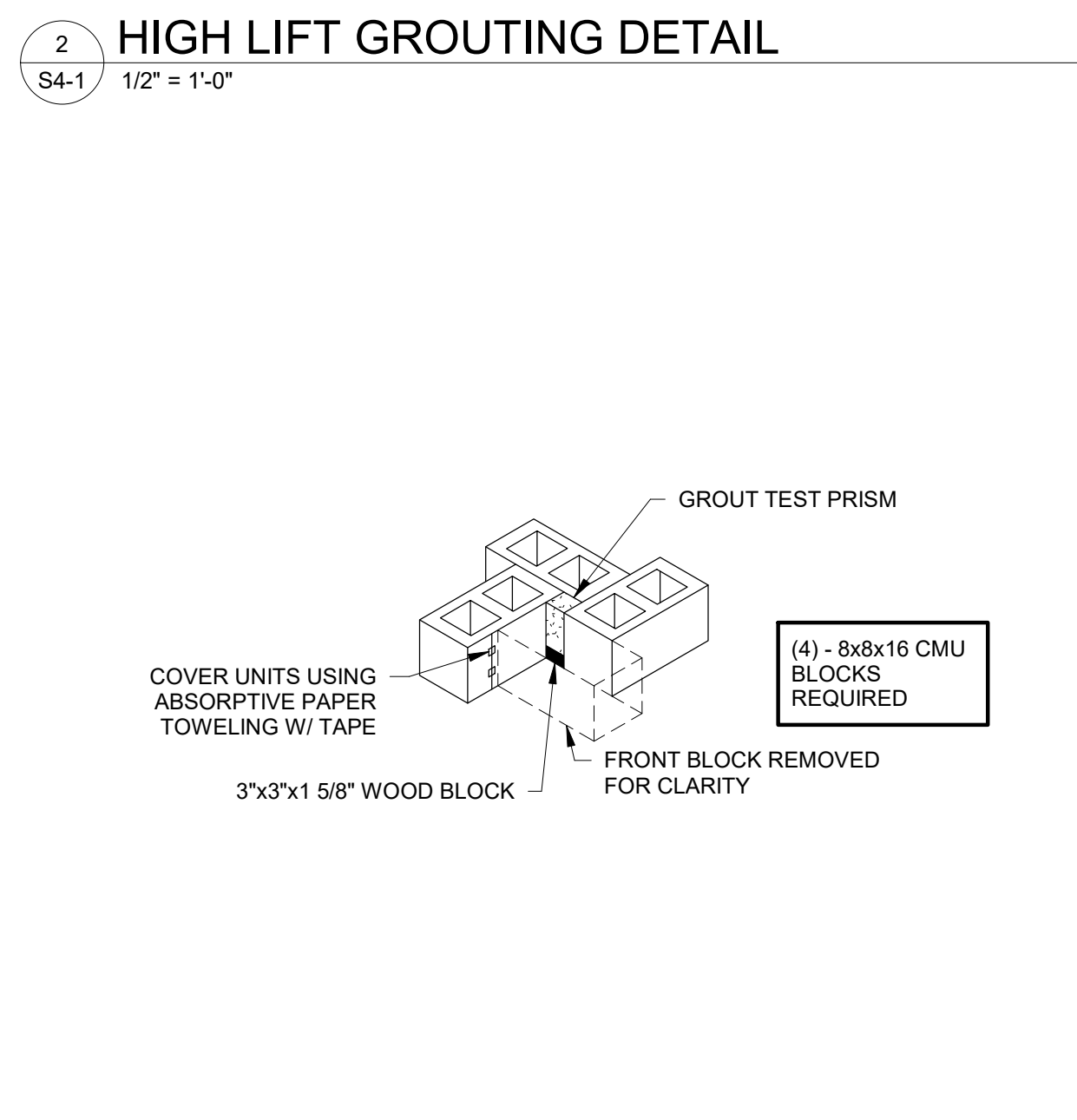
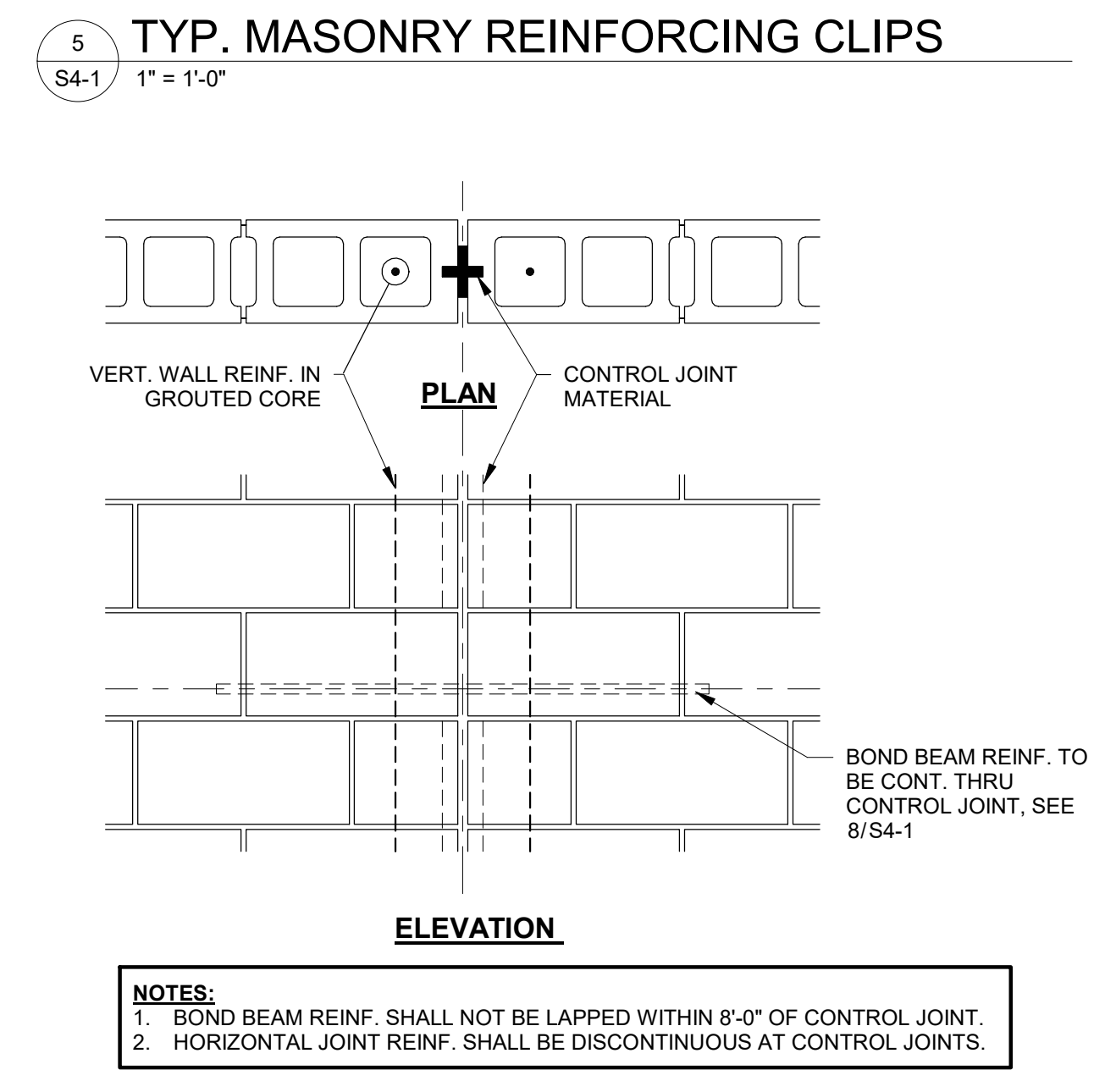
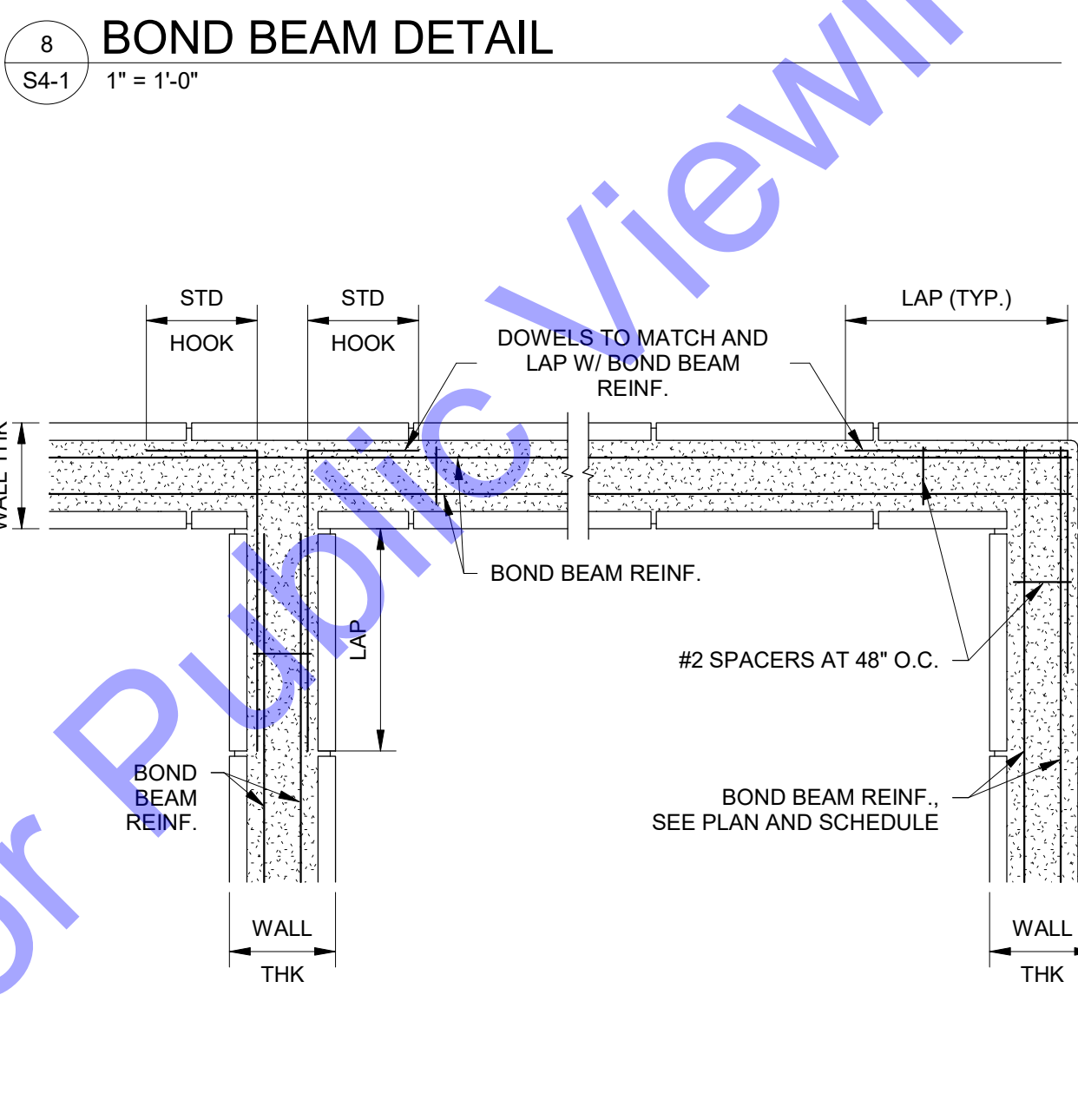
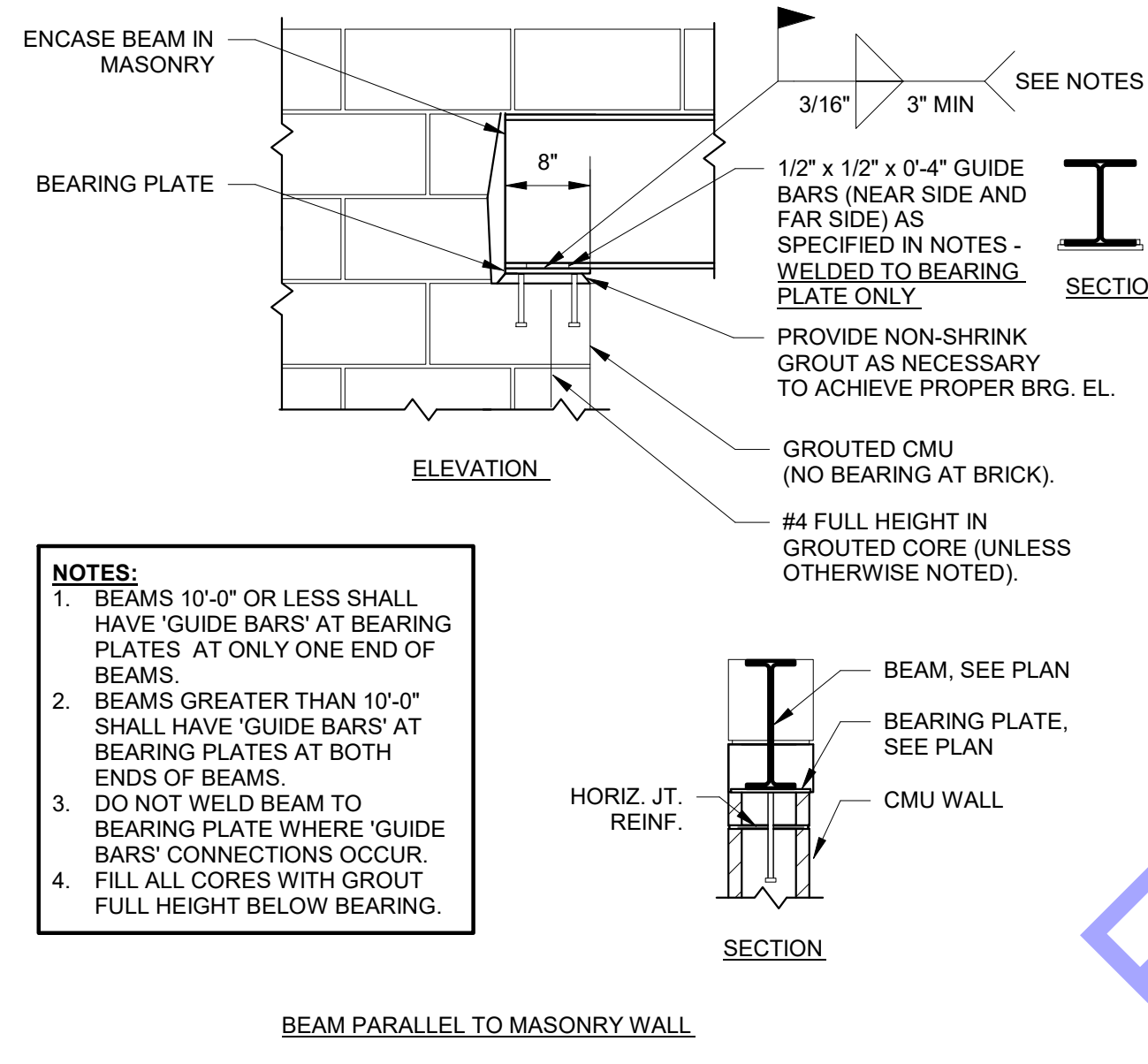
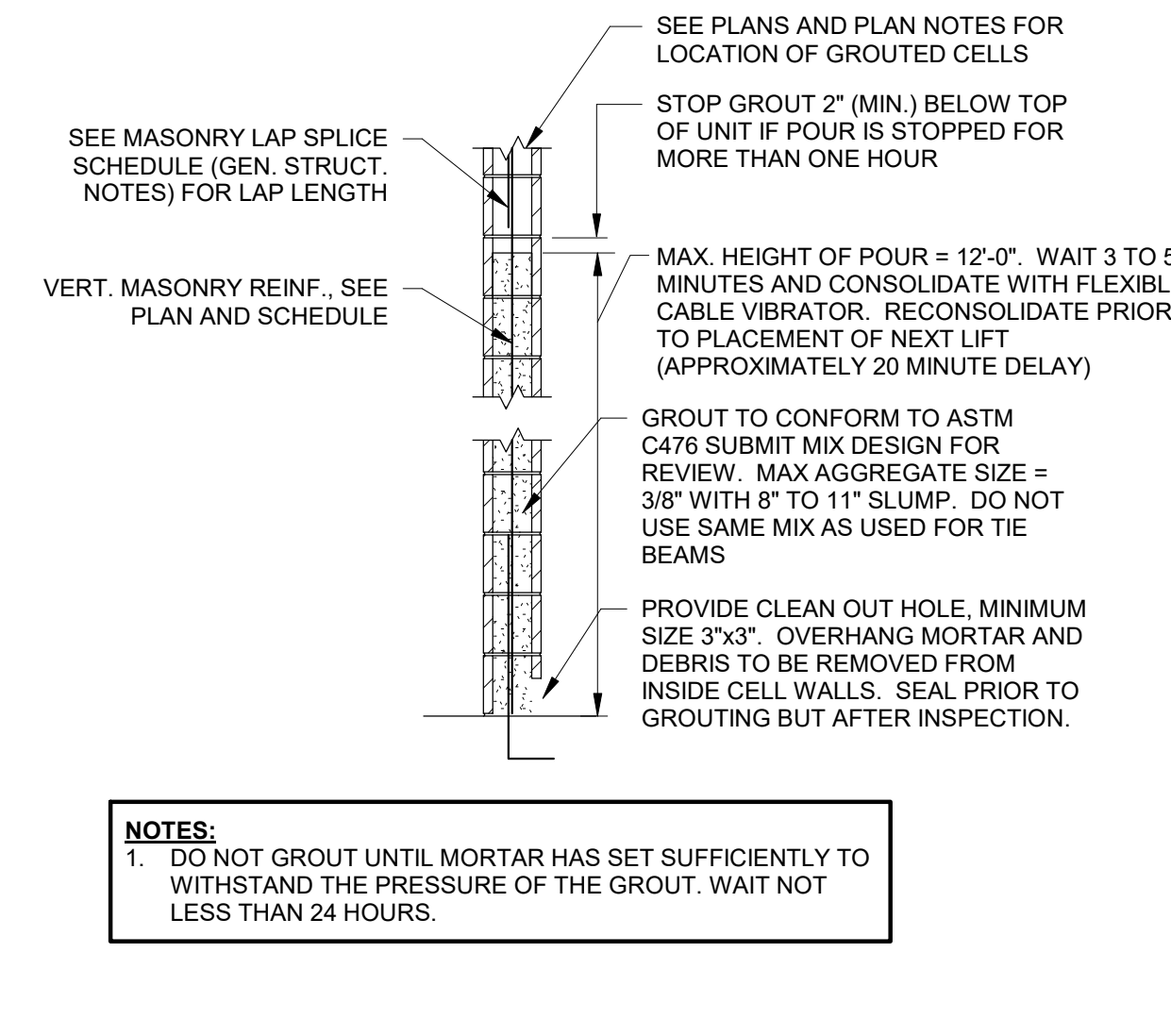
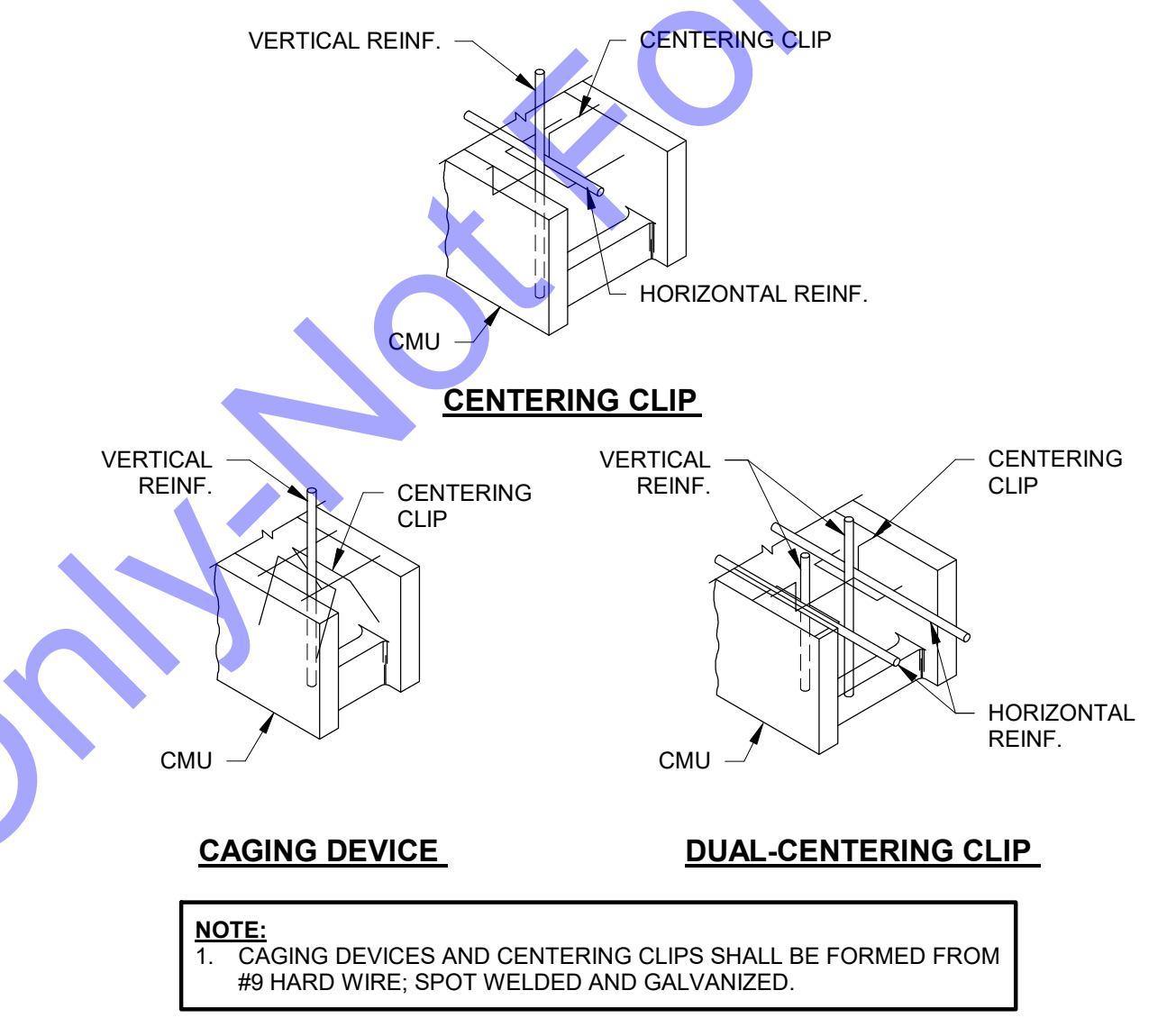
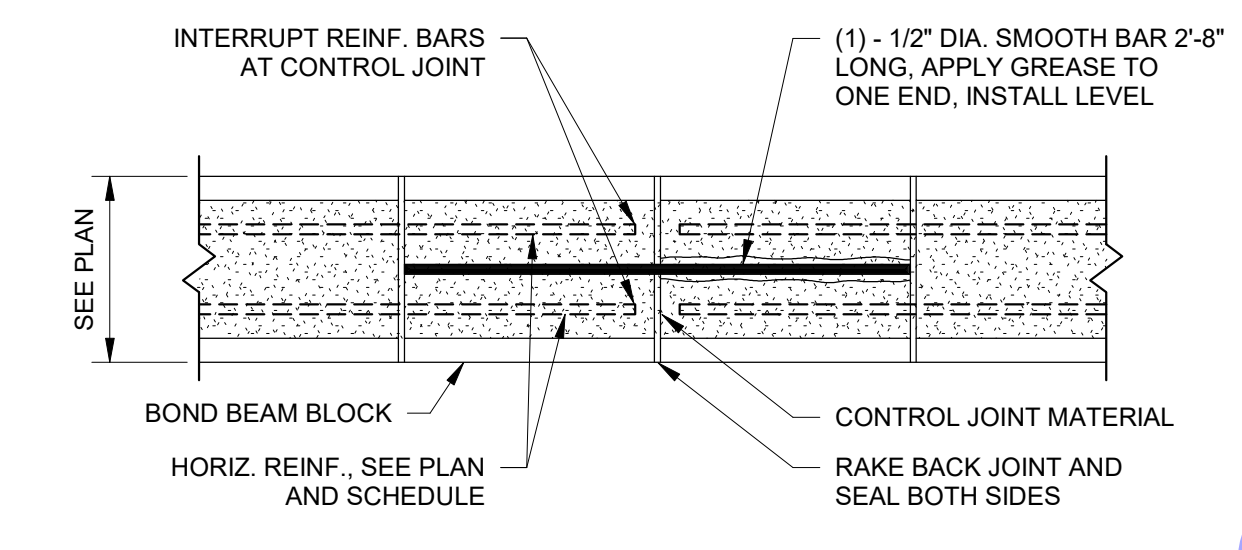
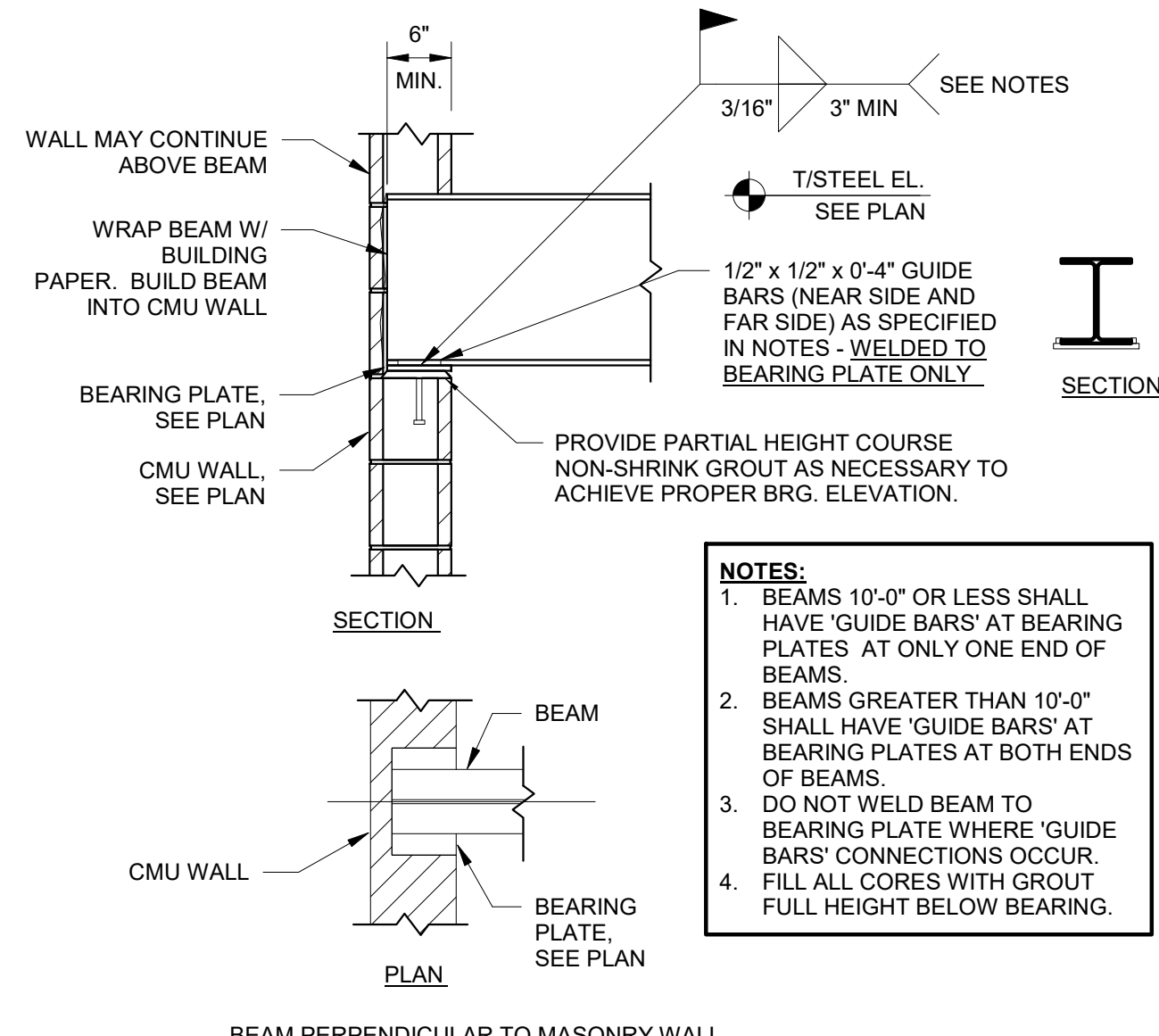
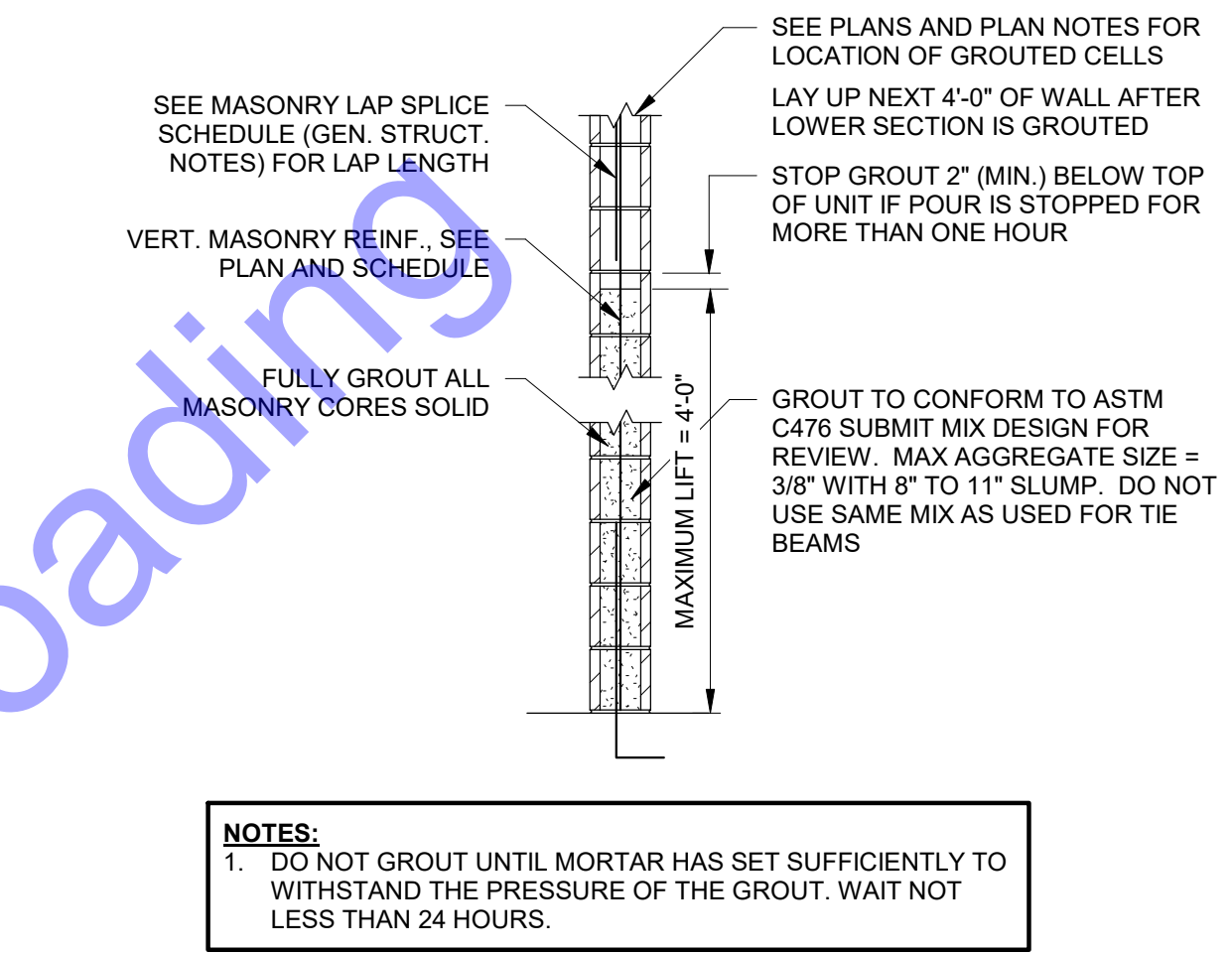
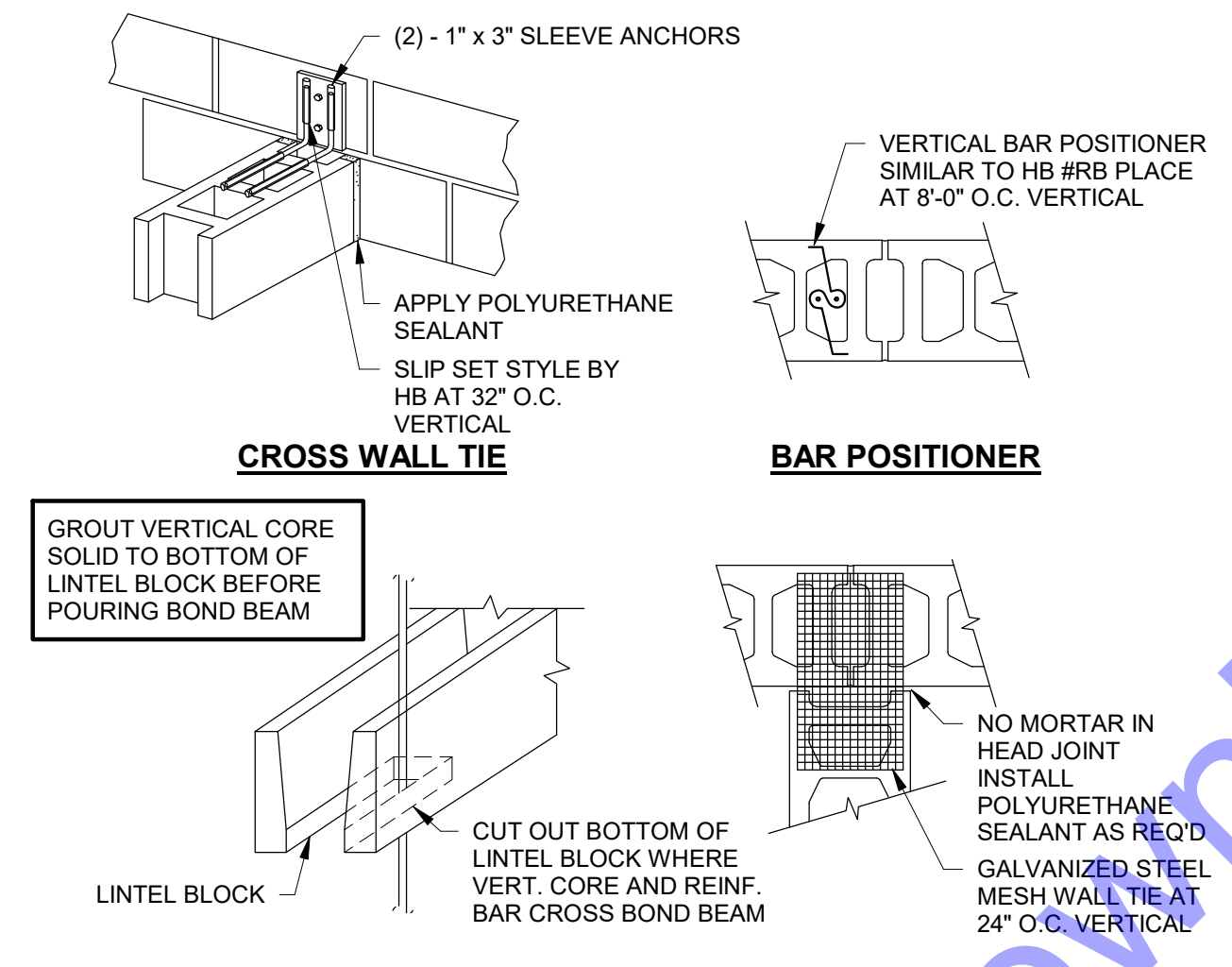
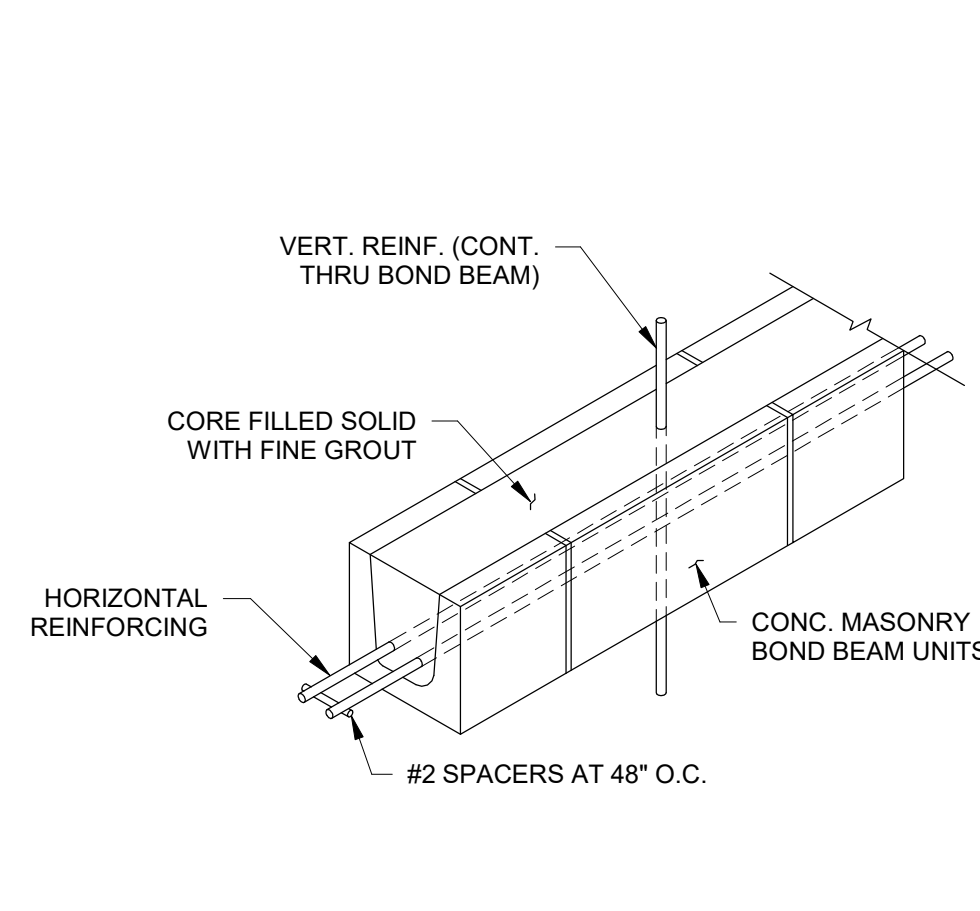
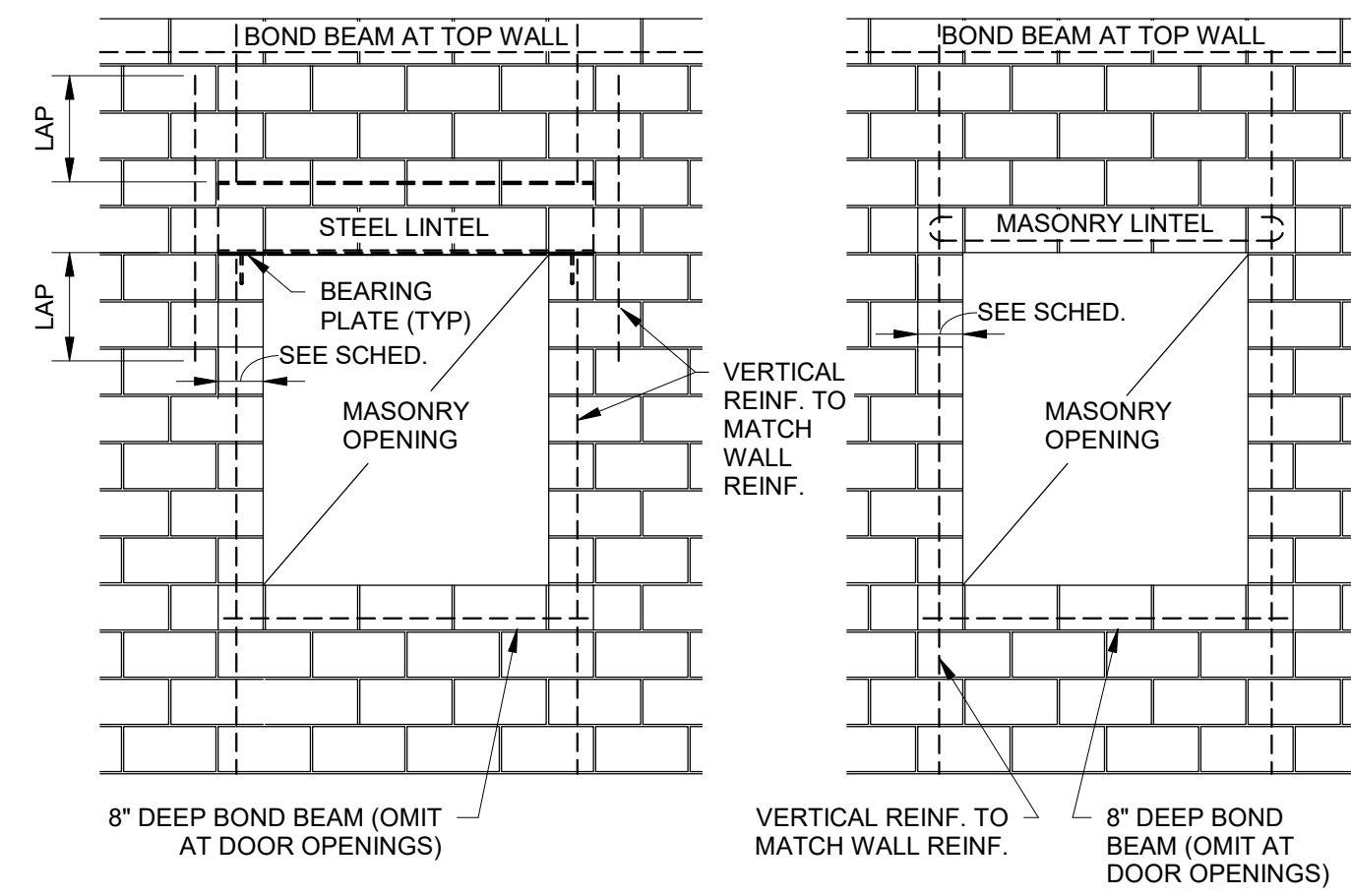
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TYPICAL STRUCTURAL DETAILS - CONCRETE - 01  
Drawing No: **S3-1**  
Sheet: 58 OF 73



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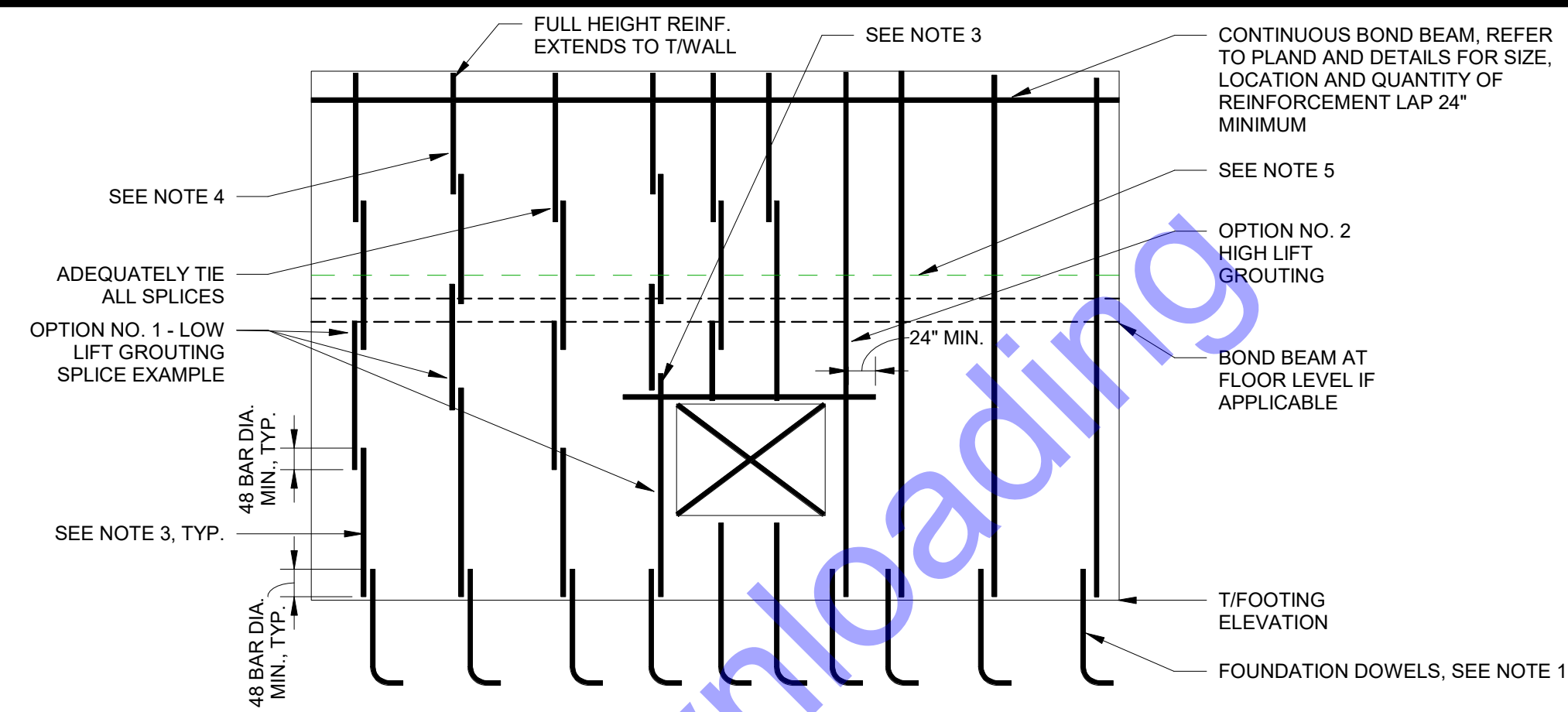
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TYPICAL STRUCTURAL DETAILS - MASONRY - 01  
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Sheet: 59 OF 73

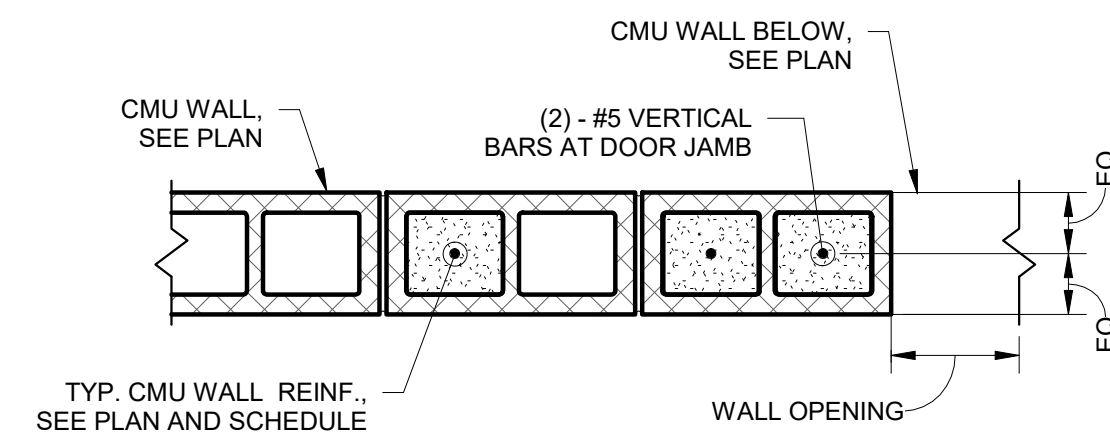
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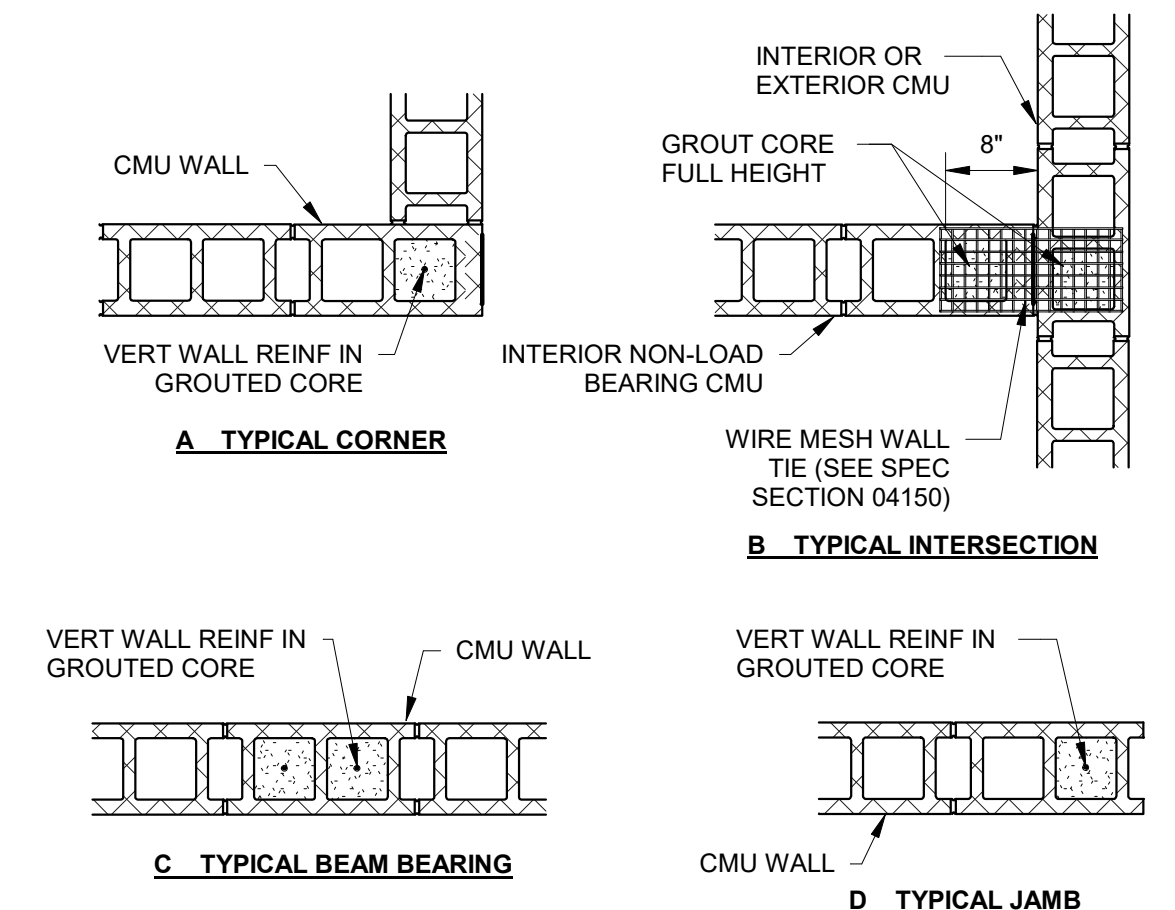


- NOTES:**
- VERTICAL WALL REINFORCING SHALL ALIGN WITH VERTICAL FOUNDATION DOWELS. FOUNDATION DOWELS SHALL MATCH WALL VERT. REINF. SIZE AND SPACING IN CENTER OF C.M.U. WALL WITH A.C.I. STANDARD HOOK.
  - FOR LINTEL REINFORCEMENT, REFER TO C.M.U. LINTEL SCHEDULE FOR SIZE, LOCATION AND QUANTITY OF REINFORCEMENT.
  - SPLICES IN ADJACENT BARS SHALL BE STAGGERED AND ARRANGED SO THAT NOT MORE THAN 1/2 OF THE TOTAL NUMBER OF BARS ARE SPLICED AT ANY ONE HEIGHT. VERTICAL REINFORCING BARS MAY BE SPLICED IN 6'-0" TO 8'-0" LENGTHS.
  - HORIZONTAL WALL REINFORCING SHALL BE STANDARD TRUSS TYPE AT 16" O.C. ABOVE AND 8" O.C. BELOW GRADE, UNLESS NOTED OTHERWISE.
  - EITHER LOW LIFT (OPTION NO. 1) OR HIGH LIFT (OPTION NO. 2) GROUTING TECHNIQUE MAY BE USED AT CONTRACTOR'S OPTION.

1 TYP. MASONRY WALL REINFORCING DETAIL  
S4-2 3/4" = 1'-0"



2 TYP. MASONRY JAMB REINFORCEMENT DETAIL  
S4-2 1" = 1'-0"



- NOTES:**
- REINFORCING SHOWN IS IN ADDITION TO REINFORCING SHOWN ON PLANS AND SPECIAL DETAILS.
  - REINFORCING TO BE THE SAME SIZE AS ADJACENT WALL REINFORCING AS INDICATED ON PLANS.
  - TYPICAL DETAILS APPLY TO ALL EXTERIOR WALLS AND INTERIOR LOAD BEARING WALLS.

3 TYP. VERTICAL MASONRY WALL REINF.  
S4-2 3/4" = 1'-0"

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TYPICAL STRUCTURAL DETAILS - MASONRY - 02  
Drawing No:  
**S4-2**  
Sheet: 60 OF 73

HEAT/COOL DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT

GENERAL NOTES:
(1) - COOLING CAPACITY BASED ON 95° O.A.T. AND 80°/67° INDOOR TEMPERATURE
UNIT ACCESSORIES:
1 - OPERATION TO 20" HEAD PRESSURE CONTROL
2 - WALL MOUNTED TSTAT WITH SUBBASE-HEATING/COOLING WITH AUTOMATIC CHANGEOVER
3 - CONDENSATE PUMP
4 - COLD TEMPERATURE KIT & OUTDOOR DRAIN PAN HEATER
5 - HEAT PUMP WALL MOUNT BRACKET
6 - LINE SET COVER AND WALL SLEEVE

Table with 2 columns: IDENTIFICATION, MANUFACTURER, A/C UNIT MODEL NO., A/C UNIT TYPE, HEAT PUMP UNIT MODEL NO., HEAT PUMP UNIT TYPE, SEER, UNIT ACCESSORIES, INDOOR COIL, COND. UNIT, REMARKS.

COORDINATION NOTES

- 1. VISIT SITE AND BE INFORMED OF CONDITIONS UNDER WHICH WORK MUST BE PERFORMED.
2. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER SHALL COORDINATE LOCATION AND PROVIDE SUPPORT FRAMING FOR ALL ROOF-MOUNTED HVAC EQUIPMENT.
3. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER SHALL INCLUDE ADEQUATE TIME IN THE CONSTRUCTION SCHEDULE FOR THE TEST & BALANCE SUBCONTRACTOR TO COMPLETE THE SETUP AND BALANCE OF ALL AIR AND WATER FLOW SYSTEMS IN THE PROJECT AFTER THE MECHANICAL SUBCONTRACTOR HAS ALL AIR AND WATER SYSTEMS CONTINUOUS, STABLE OPERATION AND UNDER CONTROL PRIOR TO STARTING THE TESTING AND BALANCING WORK.
4. NO SUBSEQUENT ALLOWANCE WILL BE MADE BECAUSE OF ERROR OR FAILURE TO OBTAIN NECESSARY INFORMATION TO COMPLETELY ESTIMATE AND PERFORM ALL WORK INVOLVED.
5. CAREFULLY EXAMINE DRAWINGS AND SPECIFICATIONS TO BE THOROUGHLY FAMILIAR WITH ITEMS WHICH REQUIRE PUMPING OR HVAC CONNECTIONS AND COORDINATION.
6. NOTIFY OTHER TRADES OF ANY DEVIATIONS OR SPECIAL CONDITIONS NECESSARY FOR INSTALLATION OF WORK.
7. RESOLVE INTERFERENCES BETWEEN WORK OF OTHER TRADES PRIOR TO INSTALLATION.
8. ADVISE OTHER TRADES TO LEAVE PROPER CHASES AND OPENINGS, PLACE OUTLETS, ANCHORS, SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OR INSTALLATION OF MASONRY WORK.
9. IN AREAS OF RENOVATION, INSTALLATION OF NEW PIPING, DUCTWORK, AND EQUIPMENT WILL REQUIRE REMOVAL OF THE EXISTING CEILING AND GRID. SURVEY THE SITE AND BE INFORMED OF EXISTING CONDITIONS WHICH WILL REQUIRE CEILING REMOVAL, INCLUDE THE COST OF THE CEILING WORK OR COORDINATE ITS REMOVAL WITH THE GENERAL CONTRACTOR.
10. ADDITIONAL INSTALLATION COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT REQUIRING ADDITIONAL WORK ON THE PART OF THIS CONTRACTOR OR OTHER SUBCONTRACTORS TO SATISFY THE MANUFACTURER'S INSTALLATION REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE SUBMITTING CONTRACTOR.
11. COORDINATE ALL NECESSARY POWER CONNECTIONS AS RECOMMENDED BY THE MANUFACTURERS OF INSTALLED EQUIPMENT WITH ELECTRICAL TRADESMEN.
12. COORDINATE WITH ELECTRICAL TRADESMEN FOR PROPER SIZING OF CIRCUIT BREAKERS, FUSES, SAFETY SWITCHES, CONDUIT AND WIRING FOR ALL EQUIPMENT FURNISHED BY DIVISION 23 EQUIPMENT PRIOR TO INSTALLATION.
13. DO NOT ROUTE ANY PIPING DIRECTLY ABOVE OR 12 INCHES IN FRONT OF ELECTRICAL SWITCHGEAR, PANELS OR TRANSFORMERS.
14. IN CERTAIN AREAS OF RENOVATION, INSTALLATION OF NEW PIPING, DUCTWORK, AND EQUIPMENT AS WELL AS HIGHER CEILING HEIGHTS WILL REQUIRE OFFSETTING, RAISING AND IN SOME INSTANCES RELOCATING OF EXISTING PIPING, DUCTWORK, RAIN WATER LEADERS, SPRINKLERS, AND CONDUIT. SURVEY THE SITE AND BE INFORMED OF EXISTING CONDITIONS IN PARTICULAR ABOVE CEILINGS WHICH WILL REQUIRE OFFSETTING AND OR RELOCATION OF EXISTING PIPING, DUCTWORK AND CONDUIT AND INCLUDE THE COST OF THIS WORK.

MECHANICAL LEGEND

Table with 3 columns: PIPING, DUCTWORK, and other symbols. Includes items like CHS (CHILLED WATER SUPPLY), CHR (CHILLED WATER RETURN), HWS (HOT WATER SUPPLY), HWR (HOT WATER RETURN), HWRS (HOT WATER REVERSE RETURN), CWS (CONDENSER WATER SUPPLY), CWR (CONDENSER WATER RETURN), STM (STEAM SUPPLY PIPING AND ITS PRESSURE), CR (STEAM CONDENSATE RETURN), P.C.R. (PUMPED STEAM CONDENSATE RETURN), D (DRAIN LINE), RS (REFRIGERANT SUCTION), RL (REFRIGERANT LIQUID), FTS (FINNED TUBE SUPPLY), FR (FINNED TUBE RETURN), FOS (FUEL OIL SUPPLY), FOR (FUEL OIL RETURN), V (EQUIPMENT VENT), E.O.M. (END OF MAIN DRIP), P.R.V. (PRESSURE REDUCING VALVE), S (STEAM TRAP), BV (BALL VALVE), GV (GATE VALVE), QV (GLOBE VALVE), BV (BUTTERFLY VALVE), CV (CONTROL VALVE), S (STRAINER WITH HOSE END DRAIN CONNECTION), S (STRAINER AND BLOWDOWN VALVE), B (BIB O-RING TESTER OR EQUAL BALANCING VALVE), P (PLUG COCK (BALANCING VALVE)), U (UNION), C (COMPANION FLANGE), R (REGUL. VALVE), G (GUIDE), A (ANCHOR), GA (GAUGE & GAUGE COCK), T (THERMOMETER), M (MOTORIZED VALVE).

HVAC GENERAL NOTES:

- 1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE APPROXIMATE ROUTING OF PIPING AND DUCTWORK. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS AND DELAYS. MINOR OFFSETS AND ADJUSTMENTS SHALL BE PROVIDED WHERE REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES AND WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.
3. ALL EXHAUST FANS, SUPPLY FANS, DAMPERS, AND RELIEF VENTS SHALL BE MOUNTED 18" BELOW CEILING HEIGHT. COORDINATE FINAL HEIGHT LOCATIONS WITH OWNER/RRP.
4. DUCT DIMENSIONS INDICATED ON THE DRAWINGS ARE NET AIRSIDE DIMENSIONS.
5. DUCTWORK SHALL BE FABRICATED OF FIBERGLASS (UNLESS NOTED OTHERWISE) AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. SEAL ALL DUCTS, JOINTS, AND SEAMS IN DUCTWORK TO INSURE AGAINST LEAKAGE.
6. PENETRATIONS OF THE WALLS AND FLOORS SHALL BE FLASHED WITH ALUMINUM SHEET ANGLES AND SEALED WITH INSULATING FOAM PER SMACNA ARCHITECTURAL SHEETMETAL DETAILS STANDARDS.
7. ELECTRIC MOTORS FOR EQUIPMENT SHALL BE TEFC, SELECTED FOR NON-OVERLOADING OPERATION. MOTORS SHALL NOT OPERATE IN THEIR SERVICE FACTOR.
8. GRILLES AND DIFFUSERS SHALL BE TITUS OR EQUAL ALUMINUM SIDE WALL GRILLES. RETURN REGISTER SHALL BE TITUS OR EQUAL ALUMINUM LOUVERED SURFACE MOUNT. PROVIDE STANDARD WHITE PAINTED FACE.
9. ALL MECHANICAL CONTROL AND POWER WIRING SHALL BE RAN IN CONDUIT MEETING ELECTRICAL SPECIFICATION REQUIREMENTS.

APPLICABLE CODES AND STANDARDS

- 1. MECHANICAL INSTALLATION TO BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES HAVING JURISDICTION.
2. CODES CONSIDERED APPLICABLE TO THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO:
A. IBC: 2011 INDIANA BUILDING CODE - BASED ON IBC 2009.
B. IMC: 2011 INDIANA MECHANICAL CODE - BASED ON IMC 2009.
C. IPC: 2011 INDIANA PLUMBING CODE - BASED ON IPC 2009.
D. OFC: 2011 INDIANA FIRE CODE - BASED ON IF 2009.
E. IECC: 2009 INTERNATIONAL ENERGY CONSERVATION CODE.
F. ASHRAE STANDARD 90.1 2007 ENERGY STANDARDS FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.
G. NFPA 13-2010 SPRINKLER SYSTEM INSTALLATION.
H. NFPA 14-2010 STANDPIPE AND HOSE SYSTEMS.
I. NFPA 70-2011 NATIONAL ELECTRICAL CODE (NEC).
J. NFPA 72-2010 FIRE ALARM AND SIGNALING CODE.
K. ANSI HANDICAPPED CODE A117.1.
L. AGA: AMERICAN GAS ASSOCIATION.
M. AMCA AIR MOVING AND CONDITIONING ASSOCIATIONS, INC.
N. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE.
O. ARI: AMERICAN REFRIGERATION INSTITUTE.
P. ASHRAE: AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS.
Q. ASHRAE: AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
R. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS.
S. MSS: MANUFACTURERS STANDARDS SOCIETY OF THE VALVE AND FITTING INDUSTRY.
T. NEMA: NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION.
U. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION.
V. SMACNA: SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR-CONDITIONING SYSTEMS.
W. UL: UNDERWRITERS LABORATORIES, INC.
3. INSTALL ALL WORK IN STRICT CONFORMITY WITH APPLICABLE CODES.
4. SUBMIT AND/OR FILE WITH PROPER AUTHORITIES NECESSARY CONTRACT DOCUMENTS AS REQUIRED BY GOVERNING AUTHORITIES.

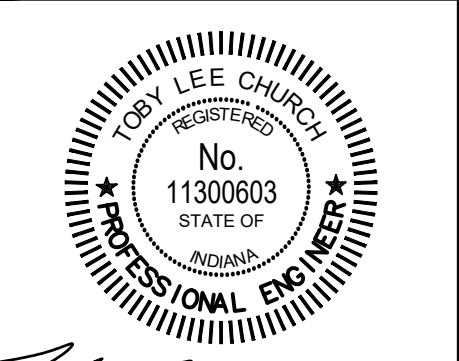
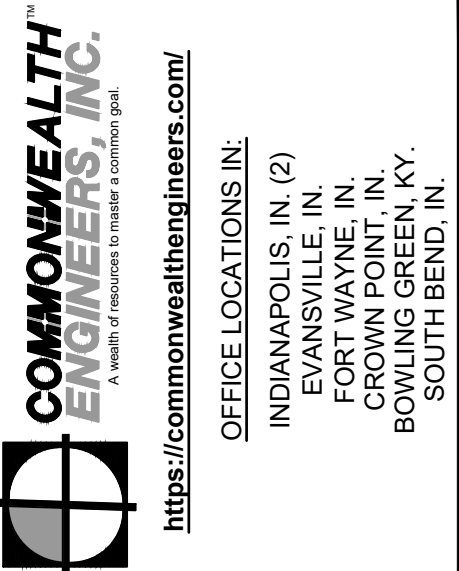
FAN SCHEDULE

Table with 3 columns: GENERAL NOTES, ABBREVIATIONS, and a detailed fan schedule table with columns for UNIT ID, SYSTEM, TYPE, MANUFACTURER, MODEL NO., CFM, S.P., MAX. SONES, ROOF/WALL OPENING, UNIT WEIGHT (LBS), FAN ACCESSORIES, MOTOR (1), STARTER, and NOTES.

ELECTRIC UNIT HEATER SCHEDULE

Table with 10 columns: MARK, LOCATION, CONFIGURATION, AIRFLOW (SUPPLY CFM), FAN DATA (TYPE, VOLTAGE, RPM, FLA), HEATER DATA (KW, MBH, TEMP RISE), ELECTRICAL DATA (FLA, VOLTS, PH), ACCESSORIES (MOUNTING BRACKET, DISCONNECT SWITCH), FILTER DATA (TYPE, EFF), MANUFACTURER WITH MODEL NUMBER, and NOTES.

- 1. OPTION V: 120 VOLT CONTROL CIRCUIT, PROVIDE INDECO 1004328 NEMA 4X REMOTE THERMOSTAT.
2. OPTION T: THERMOSTAT FACTORY INSTALLED AND PRE-WIRED TO THE CONTROL ENCLOSURE. 50 TO 90 DEGREE F - SET AT 65 F.
3. OPTION D: PROVIDE UNIT HEATERS WITH INTEGRAL DISCONNECT.



Signature: Lee Church, Date: 10/17/2024

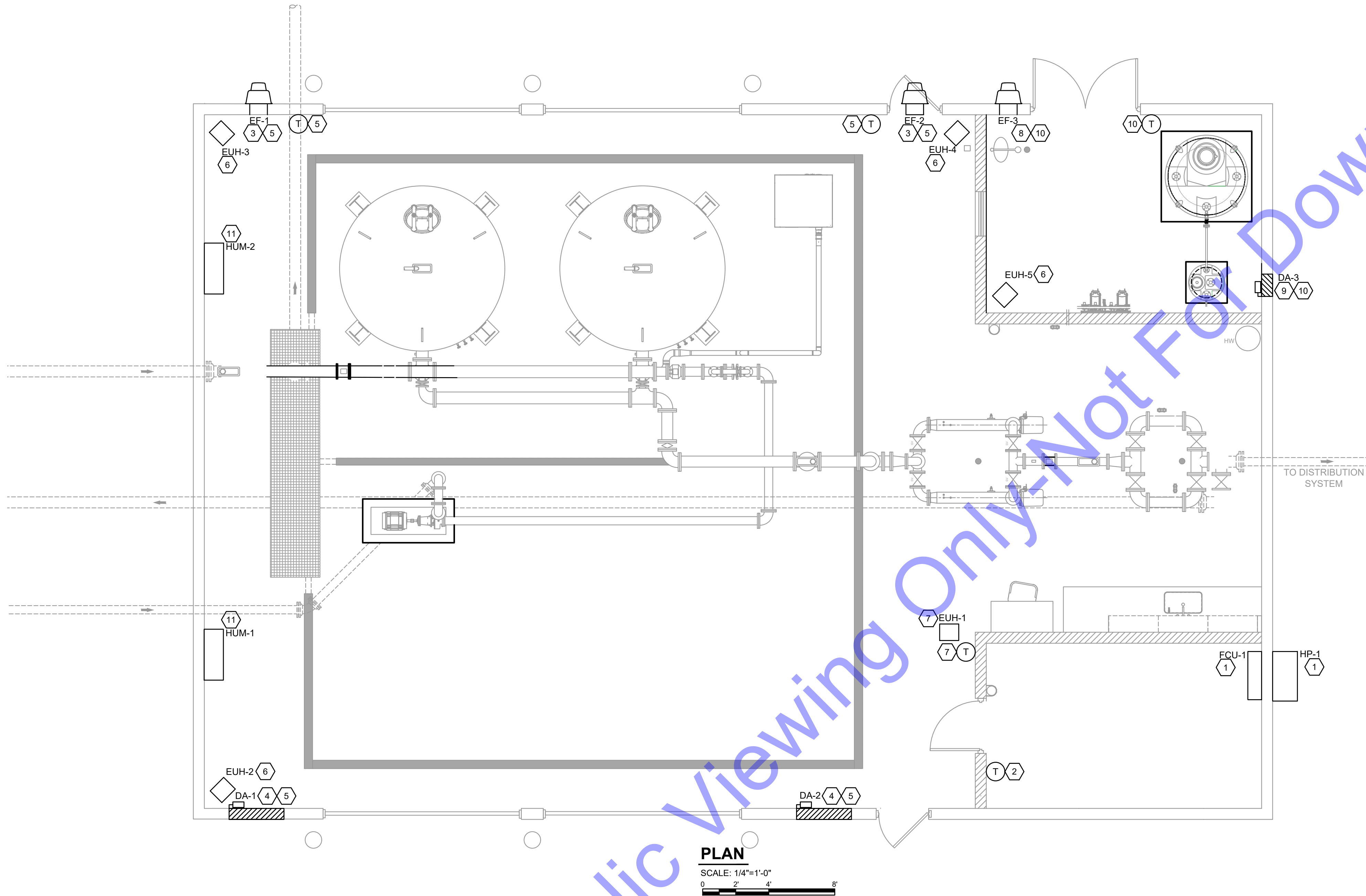
APPLE VALLEY UTILITIES, INC. LAKE COUNTY, INDIANA
APPLE VALLEY UTILITIES EAST PWS - WATER UTILITY IMPROVEMENTS DIVISION "A" - WELLS AND WATER TREATMENT PLANT



Table with 2 columns: No. and Date, for tracking submissions and revisions.

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Issue Date: ---, Project No: W24026, Scale: AS SHOWN

MECHANICAL LEGENDS AND SCHEDULES

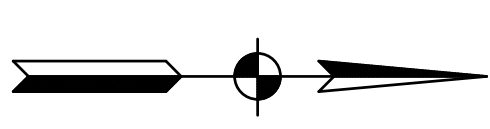


**PLAN**  
SCALE: 1/4"=1'-0"  
0 2' 4' 8'

**MECHANICAL NOTES:**

- 1 THE CONTRACTOR SHALL FURNISH AND INSTALL FAN COIL AND HEAT PUMP SYSTEM. MOUNT FAN COIL (FCU-1) ON WALL NEAR CEILING WHERE SHOWN AND HEAT PUMP (HP-1) ABOVE SNOW LEVEL. FURNISH AND INSTALL FACTORY REFRIGERANT LINES. PIPE DRAIN THROUGH CONTROL ROOM TO 1" ABOVE GRADE AT GRAVEL OR GRASS LOCATION. DRAIN LINE SHALL BE 1/2" SCHEDULE 40 PVC. REFER TO MECHANICAL SCHEDULES FOR FAN COIL AND HEAT PUMP SPECIFICATIONS.
- 2 THE CONTRACTOR SHALL FURNISH AND INSTALL LOCKABLE HEAT/COOL THERMOSTAT HONEYWELL (OR EQUAL) WITH AUTOMATIC SWITCHOVER BETWEEN HEATING AND COOLING.
- 3 THE CONTRACTOR SHALL FURNISH AND INSTALL GREENHECK (OR EQUAL) EXHAUST FANS (EF-1&2). EXHAUST FANS SHALL OPERATE FROM THERMOSTAT IN AUTOMATIC OPERATION AND SHALL OPERATE FROM A MANUAL SWITCH FOR MANUAL OPERATION. REFER TO MECHANICAL SCHEDULES FOR EXHAUST FAN SPECIFICATIONS. INSTALL EXHAUST FANS 18" BELOW CEILINGS.
- 4 THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) GREENHECK EAD-635 40" X 24" MOTORIZED INTAKE DAMPERS (OR EQUAL) WITH BIRD SCREEN. DAMPER ACTUATORS (DA-1&2) SHALL BE BELIMO (OR EQUAL). MOUNT INTAKE LOUVER/DAMPER 18" ABOVE FINISHED GRADE.
- 5 THE CONTRACTOR SHALL FURNISH AND INSTALL NEMA 4X THERMOSTATS, (HONEYWELL OR EQUAL). WIRE EXHAUST FAN EF-1&2 TO START ON A TEMPERATURE RISE ABOVE SET-POINT. INTERLOCK DAMPERS DA-1&2 TO OPEN WITH EXHAUST FAN OPERATION. DA-1&2 SHALL OPEN 90% BEFORE EXHAUST FANS START. PROVIDE ALL CONDUIT, WIRING AND RELAYS REQUIRED FOR PROPER OPERATION. THERMOSTAT SHALL HAVE LOCKABLE SET-POINT.
- 6 THE CONTRACTOR SHALL FURNISH AND INSTALL INDEECO (OR EQUAL) ELECTRIC UNIT HEATERS (EUH-2,3,4,5). REFER TO MECHANICAL SCHEDULES FOR ELECTRIC UNIT HEATER SPECIFICATIONS.
- 7 THE CONTRACTOR SHALL FURNISH AND INSTALL INDEECO (OR EQUAL) ELECTRIC UNIT HEATER (EUH-1) WITH REMOTE INDEECO THERMOSTAT. REFER TO MECHANICAL SCHEDULES FOR ELECTRIC HEATER SPECIFICATIONS.
- 8 THE CONTRACTOR SHALL FURNISH AND INSTALL GREENHECK (OR EQUAL) EXHAUST FAN (EF-3). EF-3 SHALL OPERATE FROM THERMOSTAT IN AUTOMATIC OPERATION AND SHALL OPERATE FROM A MANUAL SWITCH FOR MANUAL OPERATION. REFER TO MECHANICAL SCHEDULES FOR EXHAUST FAN SPECIFICATIONS. INSTALL EXHAUST FAN 18" BELOW CEILING IN CHEMICAL ROOM.
- 9 THE CONTRACTOR SHALL FURNISH AND INSTALL GREENHECK EAD-635 16" X 16" MOTORIZED INTAKE DAMPER (OR EQUAL) WITH BIRD SCREEN. DAMPER ACTUATORS (DA-3) SHALL BE BELIMO (OR EQUAL). MOUNT INTAKE LOUVER/DAMPER 18" ABOVE FINISHED GRADE.
- 10 THE CONTRACTOR SHALL FURNISH AND INSTALL NEMA 4X THERMOSTAT, (HONEYWELL OR EQUAL). WIRE EXHAUST FAN EF-3 TO START ON A TEMPERATURE RISE ABOVE SET-POINT. INTERLOCK DAMPER DA-3 TO OPEN WITH EXHAUST FAN OPERATION. DA-3 SHALL OPEN 90% BEFORE EXHAUST FAN STARTS. PROVIDE ALL CONDUIT, WIRING AND RELAYS REQUIRED FOR PROPER OPERATION. THERMOSTAT SHALL HAVE LOCKABLE SET-POINT.
- 11 CONTRACTOR SHALL FURNISH AND INSTALL HI-E DRY-195 (OR EQUAL MEETING BABA REQUIREMENTS) PORTABLE DEHUMIDIFIER (HUM-1&2), 192 PINTS/DAY @ 80°F/60%; 115V-1Ø, 12A, 540 CFM BLOWER, MERV 8 FILTER, INTERNAL CONDENSATE PUMP. MODEL No. 4030060. ROUTE CONDENSATE TO NEAREST DRAIN.
- 12 ALL MECHANICAL CONTROL AND POWER WIRING SHALL BE RAN IN CONDUIT MEETING ELECTRICAL SPECIFICATION REQUIREMENTS.

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SOUTH BEND, IN

Professional Engineer Seal:  
LEE CHURCH, REGISTERED  
No. 11300603  
STATE OF INDIANA  
Signature: \_\_\_\_\_ Date: 10/17/2024

**APPLE VALLEY UTILITIES, INC.**  
LAKE COUNTY, INDIANA  
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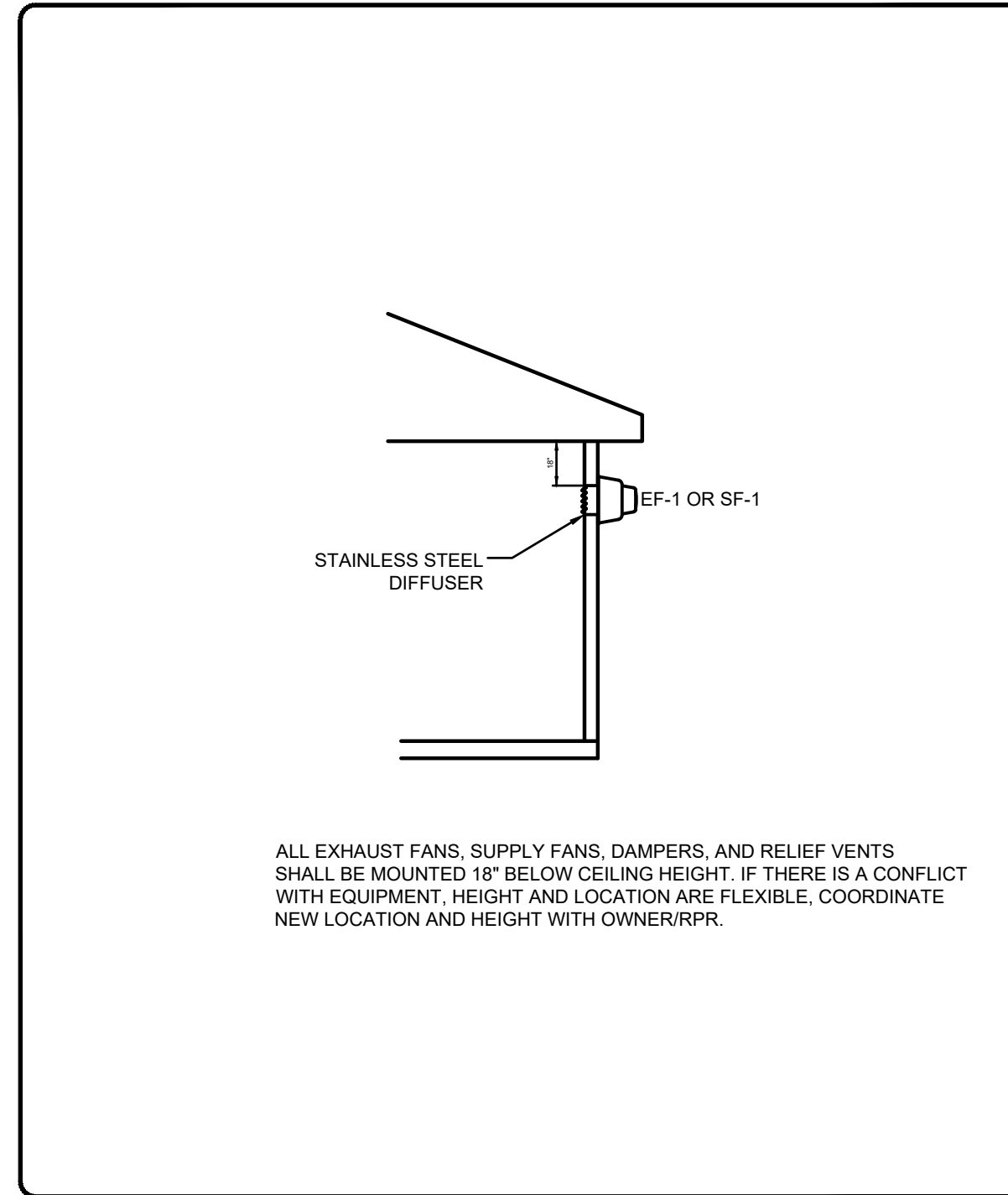
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**MECHANICAL PLAN**

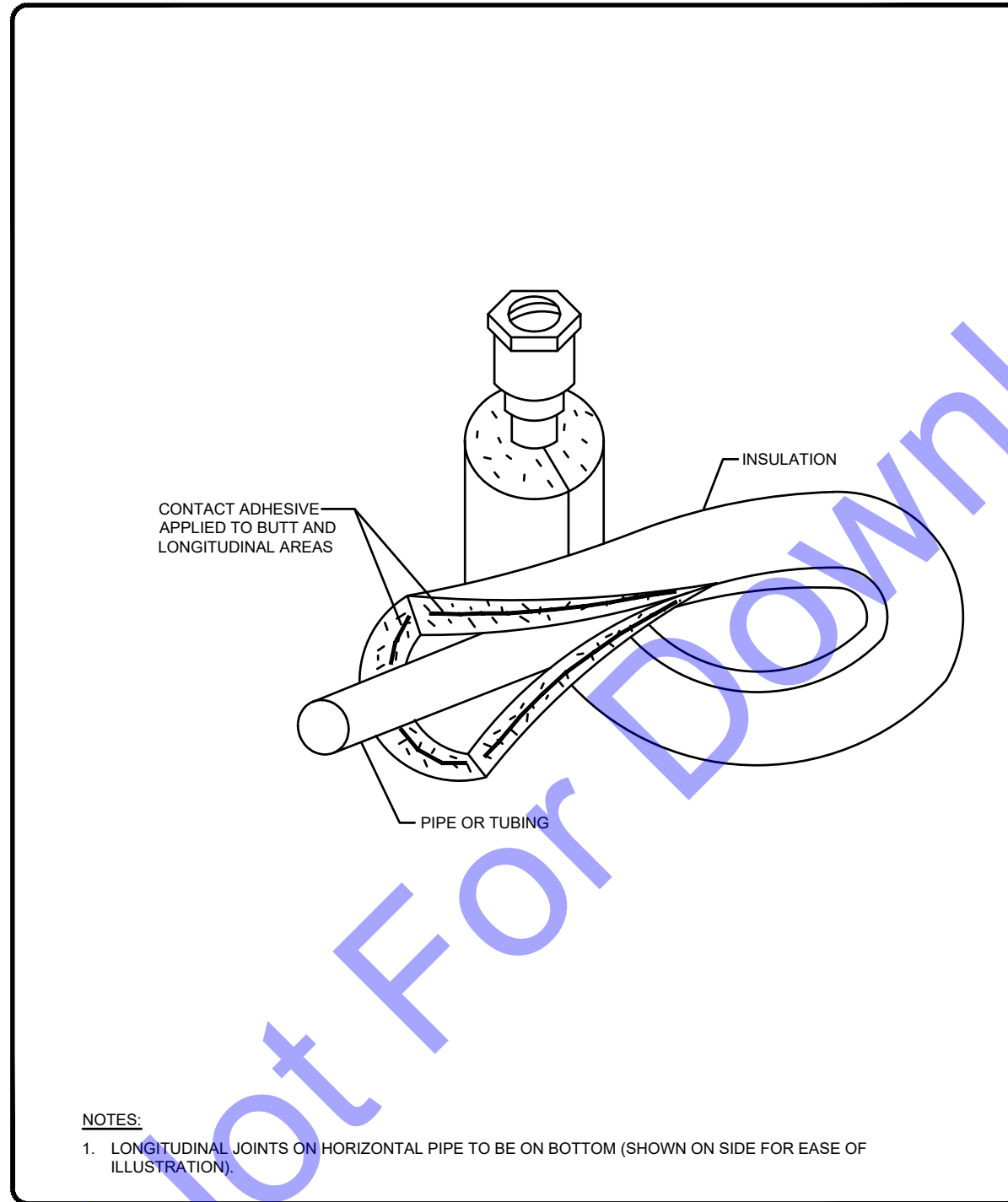
Drawing No:  
**M1-0**  
Sheet: 62 OF 73



ALL EXHAUST FANS, SUPPLY FANS, DAMPERS, AND RELIEF VENTS SHALL BE MOUNTED 18" BELOW CEILING HEIGHT. IF THERE IS A CONFLICT WITH EQUIPMENT, HEIGHT AND LOCATION ARE FLEXIBLE, COORDINATE NEW LOCATION AND HEIGHT WITH OWNER/RPR.

EF, SF, RELIEF VENTS, AND DAMPER LOCATION HEIGHTS

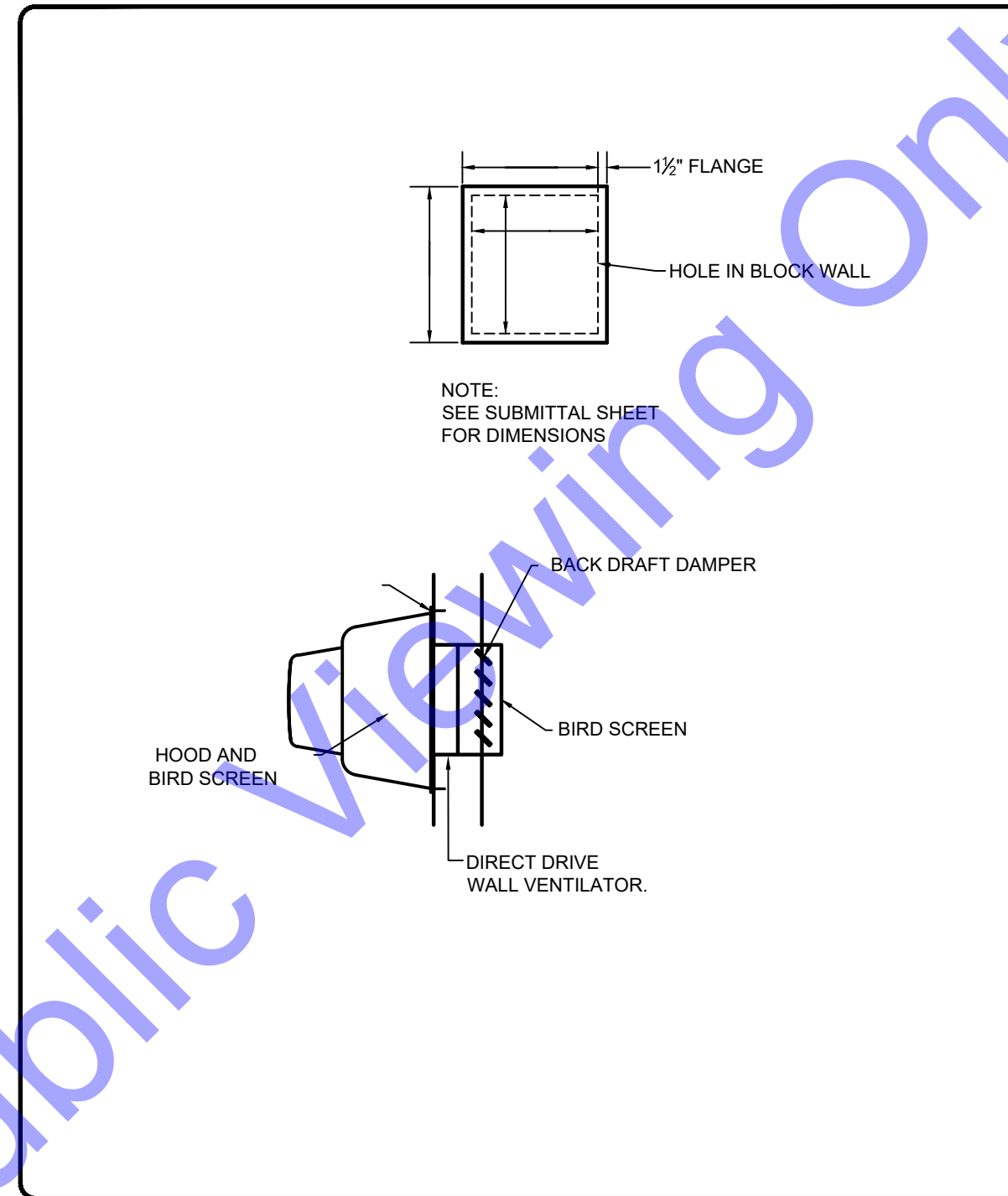
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NOTES:  
 1. LONGITUDINAL JOINTS ON HORIZONTAL PIPE TO BE ON BOTTOM (SHOWN ON SIDE FOR EASE OF ILLUSTRATION).

ELASTOMERIC TUBING INSULATION

NOT TO SCALE

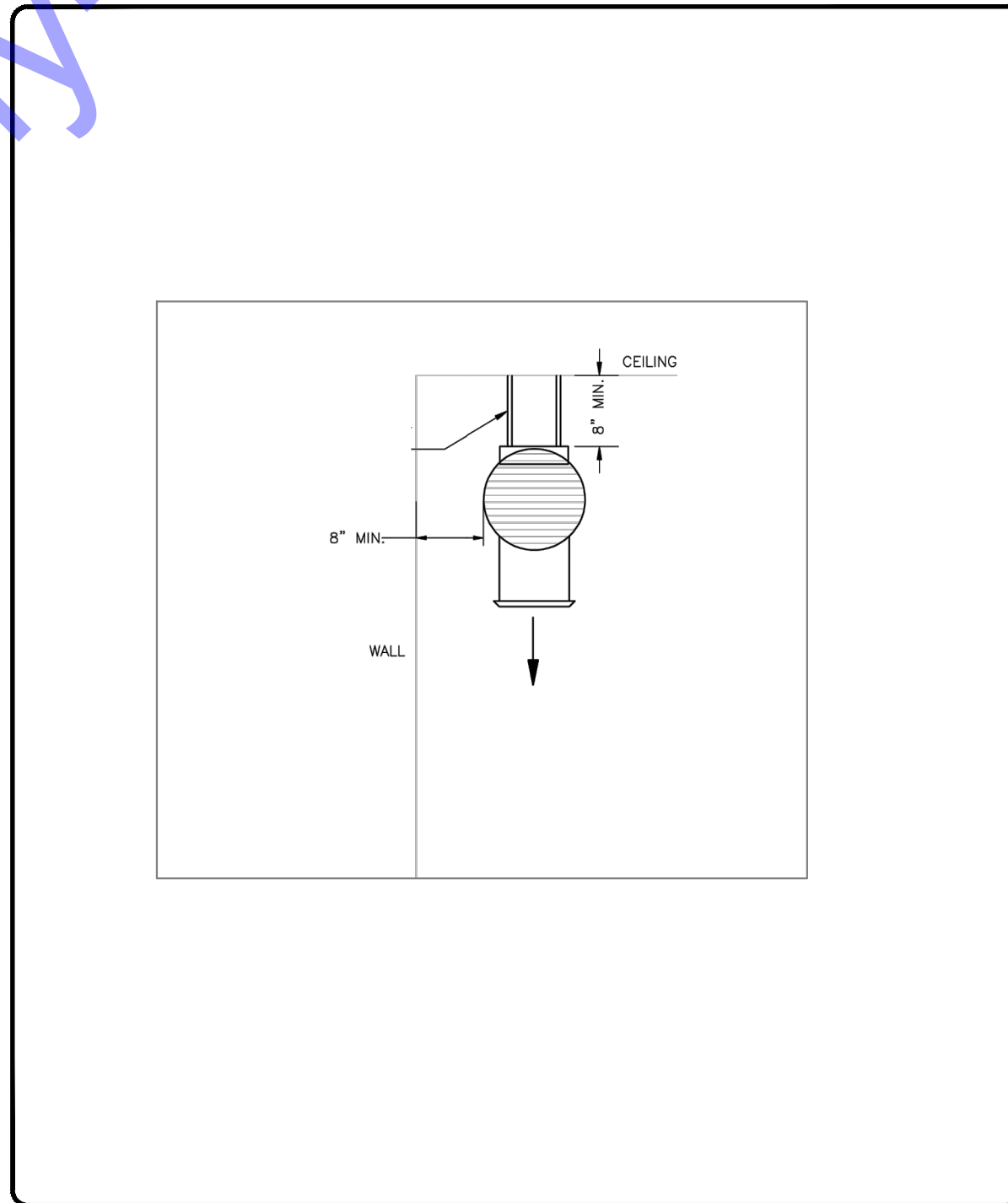


NOTE:  
 SEE SUBMITTAL SHEET FOR DIMENSIONS

HOOD AND BIRD SCREEN  
 BACK DRAFT DAMPER  
 BIRD SCREEN  
 DIRECT DRIVE WALL VENTILATOR

WALL FAN INSTALLATION DETAIL (SF & EF)

NO SCALE



WASH DOWN ELECTRIC UNIT HEATER DETAIL

NO SCALE

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Professional Engineer Seal for Toby Lee Church, State of Indiana, No. 11300603, dated 10/17/2024.

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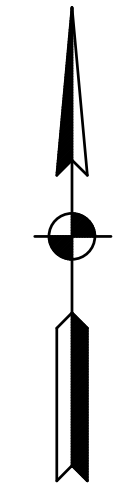
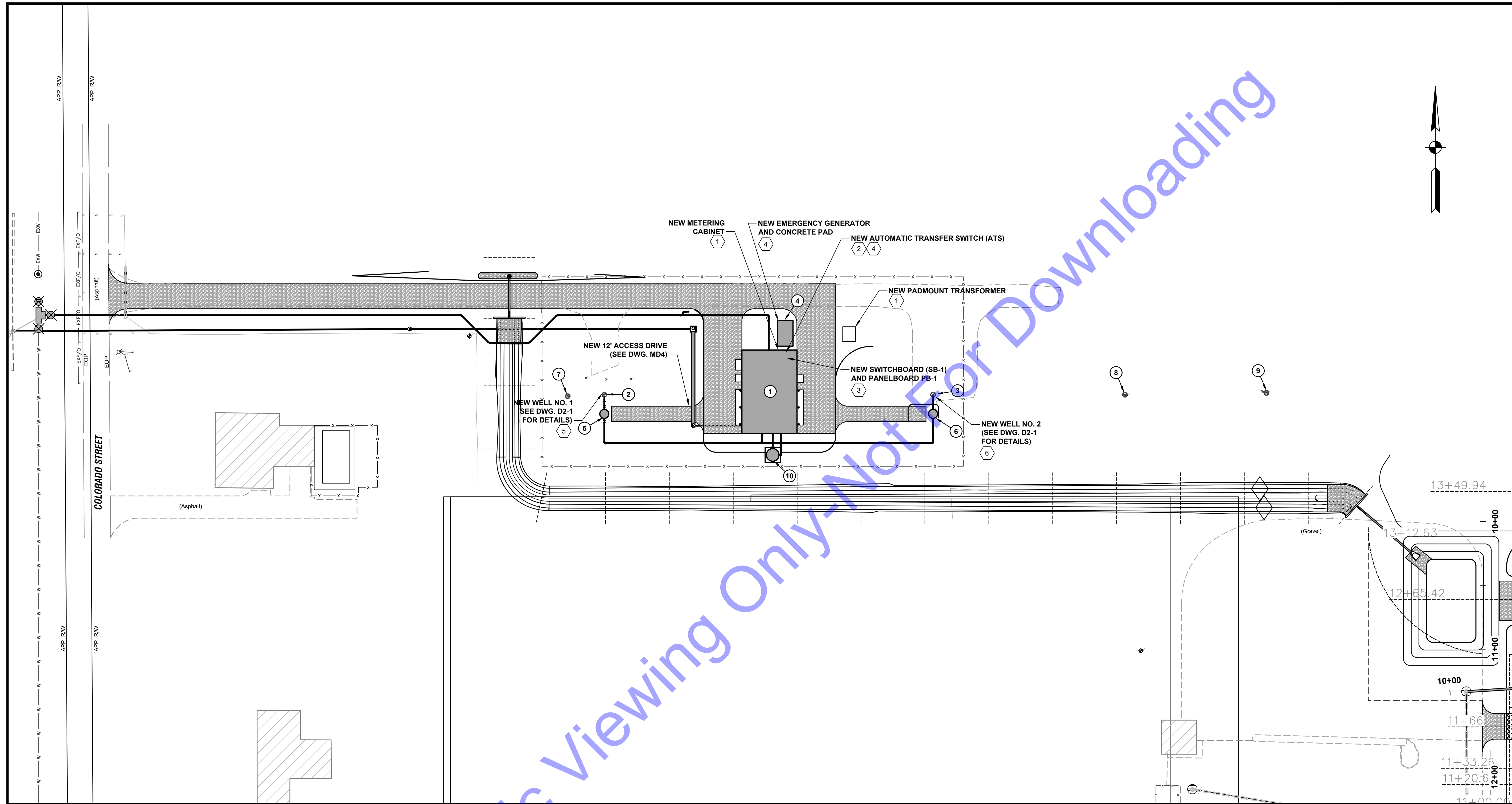
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MECHANICAL DETAILS

Drawing No:  
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 Sheet: 63 OF 73







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 REGISTERED  
 No. 11300603  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER

Signature: \_\_\_\_\_ Date: 10/17/2024

**APPLE VALLEY UTILITIES, INC.**  
 LAKE COUNTY, INDIANA

**APPLE VALLEY UTILITIES EAST  
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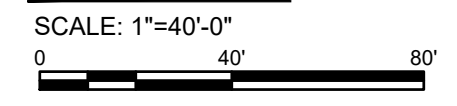
**ELECTRICAL SITE PLAN**

Drawing No:  
**E1-0**  
 Sheet: 65 OF 73

**ELECTRICAL NOTES**

- 1 THE CONTRACTOR IS TO COORDINATE WITH NIPSCO TO INSTALL NEW 480/277 VAC, 3-PHASE, 400-AMP SERVICE. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL AND ALBOR NOT PROVIDED BY UTILITY. CONTRACTOR SHALL COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR BUT NOT LIMITED TO, INSTALLATION AND PROVISION OF PRIMARY CONDUIT, SECONDARY CONDUIT AND WIRE, CONCRETE TRANSFORMER PAD AND CT CABINET, AS REQUIRED.
- 2 THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW NEMA 12 480/277 VAC, 3-PHASE, 400-AMP, SERVICE ENTRANCE RATED, 3-POLE AUTOMATIC TRANSFER SWITCH (ATS). THE NEW ATS IS TO BE MOUNTED ON A HOUSEKEEPING PAD. NEW PAD TO BE INSTALLED BY THE CONTRACTOR.
- 3 THE CONTRACTOR SHALL FURNISH AND INSTALL NEW 480/277 VAC, 3-PHASE 400-AMP NEMA 12 SWITCHBOARD SB-1 AND NEW 120/208 VAC, 3-PHASE 250-AMP PANELBOARD (PB-1) AS SHOWN IN CONTROL BUILDING ON SHEET E1-3.
- 4 THE CONTRACTOR SHALL FURNISH AND INSTALL NEW 150 KW GENERATOR. THE CONTRACTOR SHALL FURNISH AND INSTALL POWER/CONTROL CONDUITS AND WIRE FROM NEW 150 KW GENERATOR TO NEW 400-AMP SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH. NEW GENERATOR PAD TO BE INSTALLED BY CONTRACTOR.
- 5 THE CONTRACTOR SHALL FURNISH AND INSTALL POWER/CONTROL CONDUIT AND WIRE FROM VFD-1 TO IN THE NEW WTP BUILDING ELECTRICAL ROOM TO NEW WELL NO. 1. CONTRACTOR IS RESPONSIBLE FOR WIRE SEIZE BASED UPON CONDUIT ROUTING AND LENGTH OF FINAL WIRE RUN. CONTRACTOR SHALL SIZE WIRE BASED UPON MAXIMUM 3% VOLTAGE DROP. CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED BY INCREASED WIRE SIZE. MINIMUM 3 #6 COPPER CONDUCTORS WITH #8 GROUND IN 3/4" CONDUIT RECOMMENDED BASED ON A WIRE RUN OF 200FT. WIRE CALCULATED BASED ON A 60A 480V CIRCUIT.
- 6 THE CONTRACTOR SHALL FURNISH AND INSTALL POWER/CONTROL CONDUIT AND WIRE FROM VFD-1 TO IN THE NEW WTP BUILDING ELECTRICAL ROOM TO NEW WELL NO. 2. CONTRACTOR IS RESPONSIBLE FOR WIRE SEIZE BASED UPON CONDUIT ROUTING AND LENGTH OF FINAL WIRE RUN. CONTRACTOR SHALL SIZE WIRE BASED UPON MAXIMUM 3% VOLTAGE DROP. CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED BY INCREASED WIRE SIZE. MINIMUM 3 #6 COPPER CONDUCTORS WITH #8 GROUND IN 3/4" CONDUIT RECOMMENDED BASED ON A WIRE RUN OF 200FT. WIRE CALCULATED BASED ON A 60A 480V CIRCUIT.

**SITE PLAN**



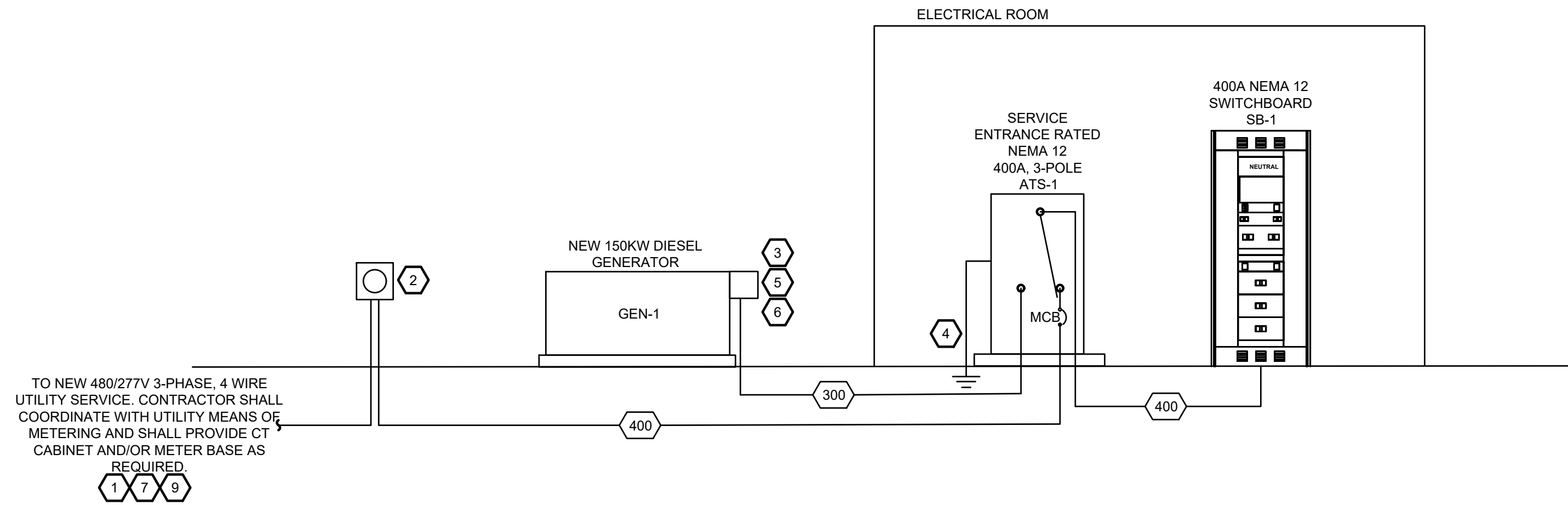
**GENERAL NOTES:**

SEE E0.0 FOR PROJECT CONDUIT REQUIREMENTS.

PLANT IS TO REMAIN FULLY FUNCTIONAL DURING DEMOLITION AND CONSTRUCTION.

CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER RELATED SECTIONS. VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. CLAIMS FOR LABOR, MATERIAL, OR TIME EXTENSIONS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.

NEW STRUCTURE LEGEND	
STRUCTURE	DESCRIPTION
1	NEW WATER TREATMENT FACILITY (SEE DWG. D1-1)
2	NEW WELL NO. 1 (SEE DWG. D2-1)
3	NEW WELL NO. 2 (SEE DWG. D2-1)
4	NEW EMERGENCY GENERATOR (SEE ELECTRICAL DETAILS)
5	NEW WELL NO. 1 FLOW METER VAULT (SEE DWG. D2-2)
6	NEW WELL NO. 2 FLOW METER VAULT (SEE DWG. D2-2)
7	EXISTING TEST WELL
8	EXISTING COMFORT INN WELL NO. 1
9	EXISTING COMFORT INN WELL NO. 2
10	BACKWASH TANK (SEE DWG. D7-1)



RISER DIAGRAM  
SCALE: NTS

GENERATOR	
MINIMUM RATED CAPACITY: 150kW	
BASIS OF DESIGN: MANUFACTURER: CUMMINS	MODEL: CUMMINS C150D6R OR EQUAL
RATED VOLTAGE: 480/277 3-PHASE/4-WIRE	
ENCLOSURE RATING: SEE SPECIFICATIONS	FUEL TYPE: DIESEL
FUEL TANK CAPACITY: 24 HOURS	
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES	

AUTOMATIC TRANSFER SWITCH	
TRANSFER SWITCH TYPE: AUTOMATIC	CURRENT RATING: 400A
RATED VOLTAGE: 480/277 3-PHASE/4-WIRE	# OF POLES: 3
NEUTRAL CONFIGURATION: SOLID	IN-SYNC TRANSFER: YES
MAIN CIRCUIT BREAKER: 400A	GROUND FAULT ON MAIN: NO
SERVICE ENTRANCE RATED: YES	REMOTE ANNUNCIATION: YES
BY-PASS/ISOLATION: NO	NEC LOAD BRANCH: 702
	KAIC: 37
SEE SPECIFICATIONS FOR ADDITIONAL FEATURES	
NEMA RATING: 12	CYCLE RATING: 3

FEEDER SCHEDULE				
TYPE NO.	COPPER WIRE		W/O NEUTRAL	SERVICE GROUND
	QUANTITIES	WIRE SIZE		
15	4#12 & #12 GROUND	3/4"	3/4"	#8
20	4#12 & #12 GROUND	3/4"	3/4"	#8
30	4#10 & #10 GROUND	3/4"	3/4"	#8
50	4#8 & #10 GROUND	1"	1"	#8
65	4#6 & #8 GROUND	1-1/4"	1-1/4"	#8
85	4#4 & #8 GROUND	1-1/4"	1-1/4"	#8
100	4#3 & #8 GROUND	1-1/2"	1-1/4"	#8
115	4#2 & #6 GROUND	1-1/2"	1-1/2"	#8
130	4#1 & #6 GROUND	2"	1-1/2"	#6
150	4#1/0 & #6 GROUND	2"	2"	#6
175	4#2/0 & #6 GROUND	2"	2"	#4
200	4#3/0 & #6 GROUND	2-1/2"	2"	#4
225	4#4/0 & #4 GROUND	2-1/2"	2-1/2"	#2
250	4#250MCM & #4 GROUND	3"	2-1/2"	#2
300	4#350MCM & #3 GROUND	3"	3"	#2
380	4#500MCM & #3 GROUND	4"	4"	#1/0
420	4#600MCM & #2 GROUND	4"	4"	#1/0
460	(2 SETS) 4#4/0 & #2 GROUND	2-1/2"	2-1/2"	#1/0
500	(2 SETS) 4#250MCM & #2 GROUND	4"	3"	#1/0
600	(2 SETS) 4#350MCM & #1 GROUND	4"	3"	#2/0
700	(2 SETS) 4#500MCM & #1/0 GND	4"	4"	#2/0
800	(3 SETS) 4#300MCM & #1/0 GND	3"	3"	#2/0
1000	(3 SETS) 4#500MCM & #2/0 GND	4"	4"	#3/0
1200	(4 SETS) 4#350 MCM & #3/0 GND	4"	4"	#3/0
1600	(5 SETS) 4#600 MCM & #3/0 GND	4"	3 1/2"	#3/0
2000	(6 SETS) 4#600MCM & #3/0 GND	4"	3 1/2"	#3/0

ALL FEEDERS ARE ASSUMED TO BE 4 CURRENT CARRYING CONDUCTORS (3 PHASE CONDUCTORS AND 1 NEUTRAL) UNLESS NOTED OTHERWISE.

FEEDER KEY IS AS FOLLOWS (PARENTHESIS DENOTES SUBSCRIPT):

### = 3 PHASES AND NEUTRAL WITH GROUND

###(N) = 3 PHASES, NO NEUTRAL WITH GROUND

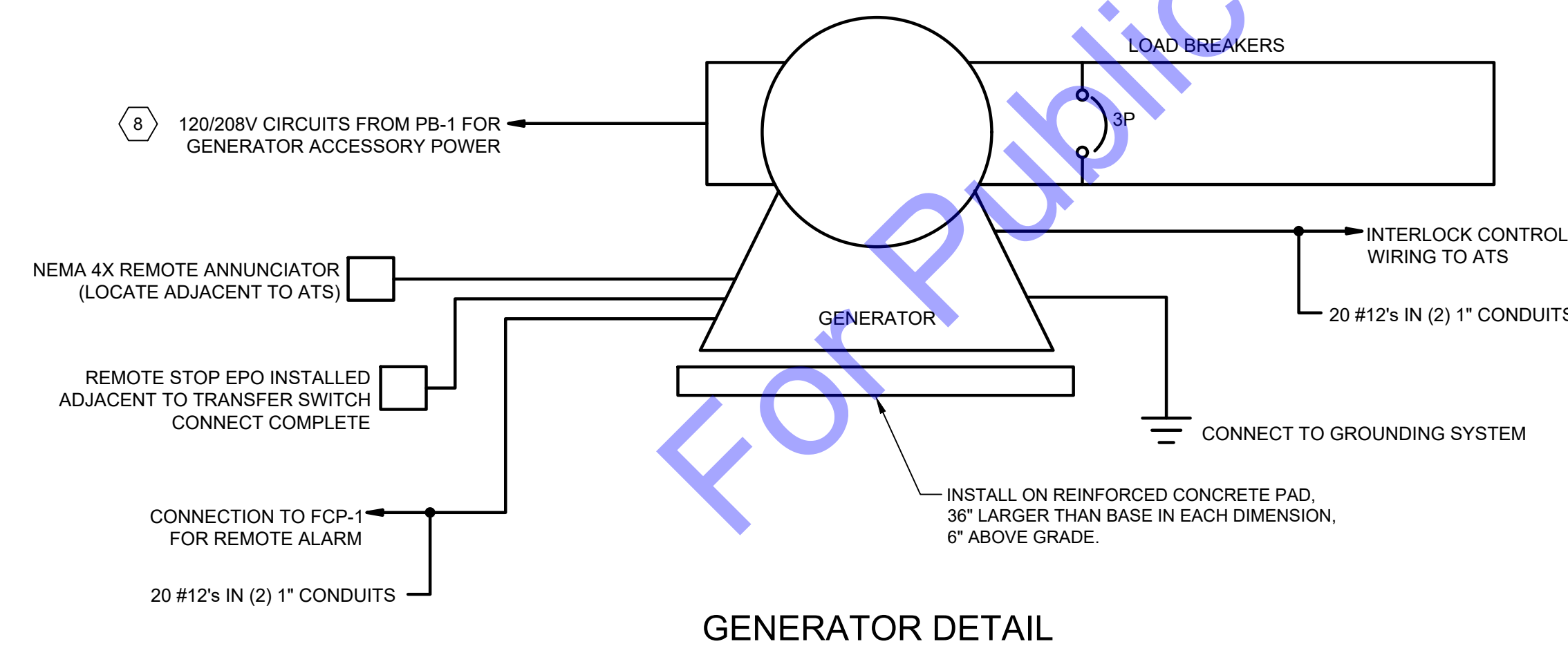
###(2) = 2 PHASES AND NEUTRAL WITH GROUND

ALL CIRCUITS SHALL BE RUN IN PVC BELOW GROUND/PVC COATED RIGID ABOVE GROUND

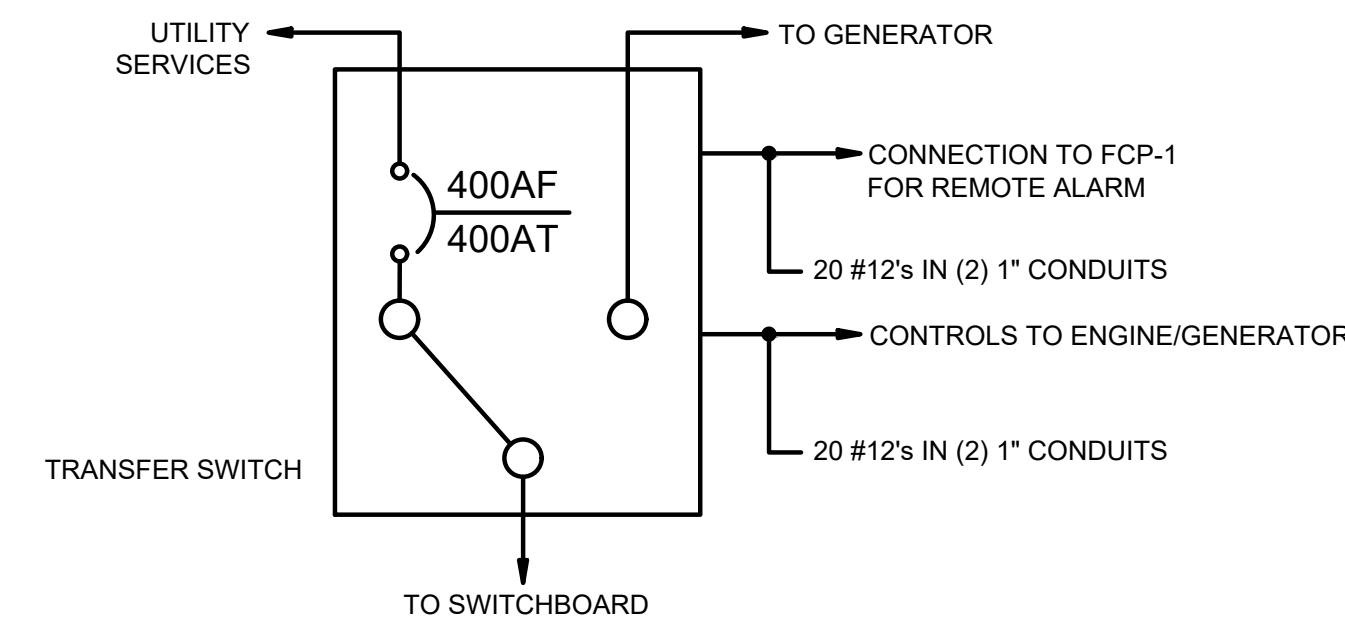
- PLAN NOTES**
- THE CONTRACTOR IS TO COORDINATE WITH NIPSCO TO INSTALL NEW 480/277 VAC, 3-PHASE, 400-AMP SERVICE. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL AND ALBOR NOT PROVIDED BY UTILITY. CONTRACTOR SHALL COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR BUT NOT LIMITED TO, INSTALLATION AND PROVISION OF PRIMARY CONDUIT, SECONDARY CONDUIT AND WIRE, CONCRETE TRANSFORMER PAD AND CT CABINET, AS REQUIRED.
  - ELECTRICAL CONTRACTOR TO PROVIDE METER BASE AND MOUNTING AS REQUIRED BY LOCAL UTILITY. COORDINATE DURING BIDDING AND CONSTRUCTION. PROVIDE CT CABINETS AS REQUIRED BY UTILITY.
  - PROVIDE GENERATOR INTEGRAL CIRCUIT BREAKER TO PROVIDE MEANS OF CURRENT PROTECTION AND DISCONNECTION AT THE GENERATOR.
  - PROVIDE TRIAD GROUNDING SYSTEM.
  - COORDINATE WITH GENERATOR AND ATS SUPPLIER/MANUFACTURER FOR WIRING REQUIREMENTS DURING BIDDING AND CONSTRUCTION.
  - DO NOT BOND NEUTRAL TO GROUND AT GENERATOR. VERIFY THAT THE NEUTRAL TO GROUND IS NOT BONDED AT GENERATOR BY THE GENERATOR MANUFACTURER. NEUTRAL TO BE BONDED TO GROUND AT AUTOMATIC TRANSFER SWITCH ONLY.
  - ATS SHALL BE DESIGNED FOR FRONT ACCESS AND LIMITED TO ONE SIDE ACCESS. REFER TO NOTE ON SHEET E3-0 REQUIRING THE CONTRACTOR TO SUBMIT ELECTRICAL ROOM LAYOUT.
  - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE GENERATOR SUPPLIER/MANUFACTURER FOR POWER REQUIREMENTS TO THE ANCILLARY DEVICES. ANCILLARY POWER REQUIREMENTS VARY BETWEEN GENERATOR MANUFACTURERS. ALL COSTS ASSOCIATED WITH PROVIDING ANCILLARY POWER TO THE GENERATOR SHALL BE BY THE CONTRACTOR.
  - COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION ON TRANSFORMER TYPE (POLE MOUNTED TRANSFORMERS OR PAD MOUNT TRANSFORMER) FOR NEW UTILITY FEED.

**GENERAL NOTES:**  
SEE E0-0 FOR PROJECT CONDUIT REQUIREMENTS.

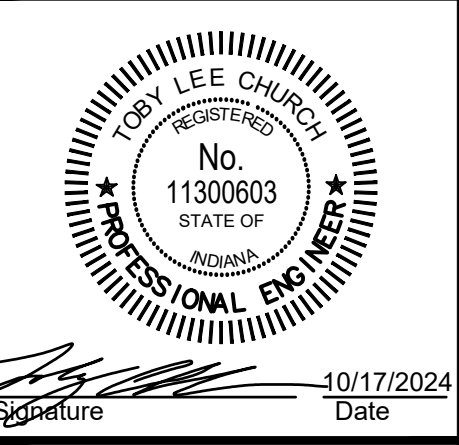
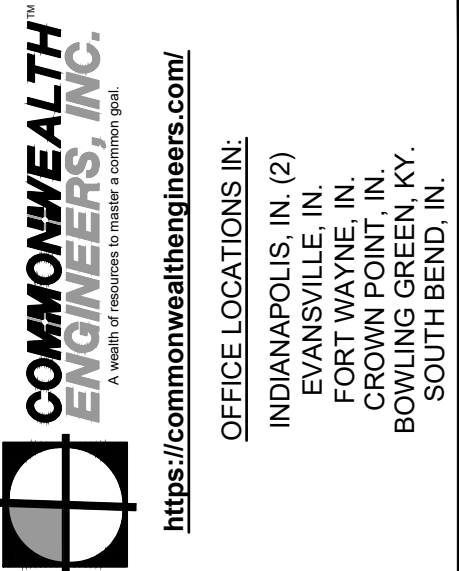
CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER RELATED SECTIONS. VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. CLAIMS FOR LABOR, MATERIAL, OR TIME EXTENSIONS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.



GENERATOR DETAIL



AUTOMATIC TRANSFER SWITCH



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RISER DIAGRAM  
Drawing No:  
**E2-0**  
Sheet: 66 OF 73

FILE: Z:\SHARED\CLIENTS\APPLE VALLEY UTILITIES\WATER UTILITY IMPROVEMENTS\CAD\MCH-ELECT\DRAWINGS\ELECTRICAL DRAWINGS.DWG  
 Sheet: 10/17/2024 4:03:24 PM Plotted: 10/17/2024 4:03:54 PM Current User: Daniel Sabara LabelsBy: dsabara

Load Wiring Schedule		
Type #	Quantity and Wire Size	Conduit
20	3 #12's & #12 Ground	3/4"
30	3 #10's & #10 Ground	3/4"
50	3 #8's & #10 Ground	3/4"
60	3 #6's & #8 Ground	3/4"
80	3 #4's & #8 Ground	1"
100	3 #2's & #6 Ground	1.5"
125	3 #1's & #6 Ground	1.5"
150	3 - 2/0 & #6 Ground	2"
200	3 - 4/0 & #4 Ground	2.5"
250	3 - 300's & #4 Ground	3"

**GENERAL NOTES:**

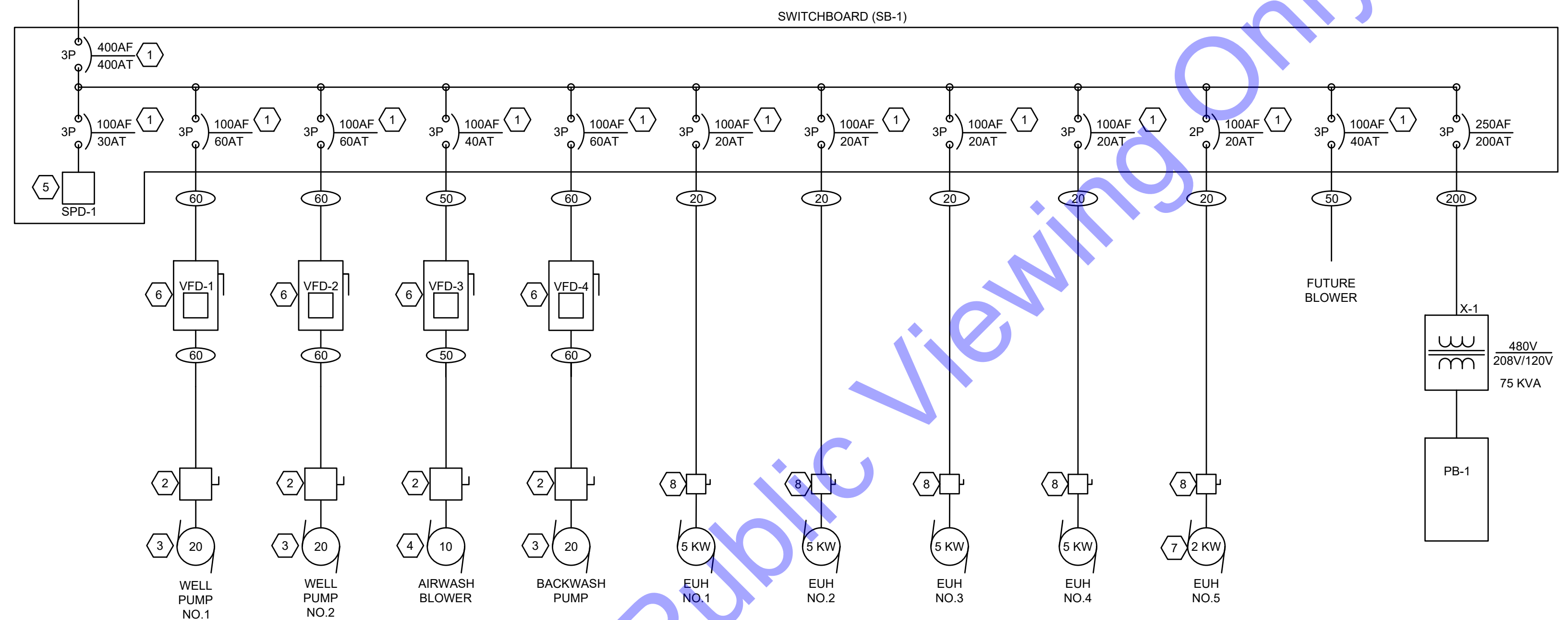
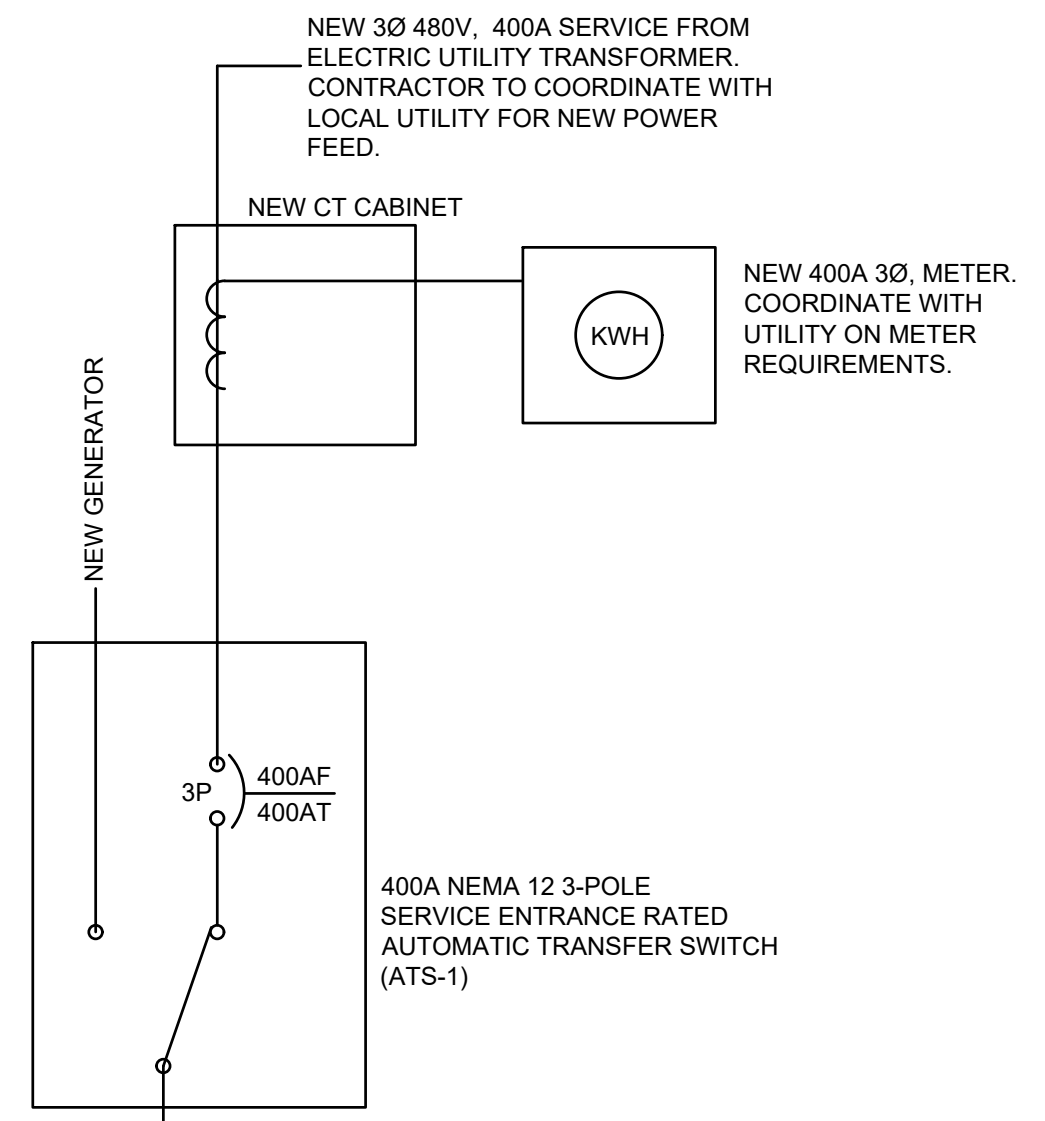
REFER TO E0.0 FOR PROJECT CONDUIT REQUIREMENTS.

THE CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER RELATED SECTIONS. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF THE CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. CLAIMS FOR LABOR, MATERIAL, OR TIME EXTENSIONS REQUIRED FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.

THE CONTRACTOR IS RESPONSIBLE FOR WIRE SIZE BASED UPON CONDUIT ROUTING AND LENGTH OF FINAL WIRE RUN. THE CONTRACTOR SHALL SIZE WIRE BASED ON A MAXIMUM 3% VOLTAGE DROP. THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED BY INCREASED WIRE SIZE.

**PLAN NOTES**

- COORDINATE WITH THE CONTRACTOR AND EQUIPMENT SUPPLIERS WHEN SELECTING THE CIRCUIT BREAKER SIZES TO ENSURE PROPER SIZING. PROVIDE BREAKERS WITH THE MEANS FOR LOCKOUT/TAGOUT.
- NEMA 4X STAINLESS STEEL DISCONNECT SIZED AS REQUIRED FOR THE LOAD PER NEC. PROVIDE DISCONNECT WITH AUXILIARY CONTACTS TO INTERRUPT VFD CONTROL CIRCUIT TO STOP VFD WHEN DISCONNECT IS OPEN.
- WIRE PUMP SAFETIES AS REQUIRED. REFERENCE SPECIFICATIONS AND COORDINATE WITH MANUFACTURER REPRESENTATIVE DURING BIDDING AND CONSTRUCTION. PROVIDE PUMP SAFETY PANEL AS REQUIRED. REFER TO DETAIL ON SHEET E5-0.
- WIRE BLOWER SAFETIES AS REQUIRED. REFERENCE SPECIFICATIONS AND COORDINATE WITH MANUFACTURER REPRESENTATIVE DURING BIDDING AND CONSTRUCTION. PROVIDE BLOWER SAFETY PANEL AS REQUIRED. REFER TO DETAIL ON SHEET E5-0.
- SURGE PROTECTION DEVICE, REFERENCE SPECIFICATIONS AND COORDINATE WITH MANUFACTURER REPRESENTATIVE DURING BIDDING AND CONSTRUCTION. PROVIDE GROUNDING AND INSTALLATION PER MANUFACTURERS RECOMMENDATIONS. SIZE BREAKER PER MANUFACTURERS REQUIREMENTS.
- NEMA 12 WALL MOUNTED VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT SIZED AS REQUIRED FOR THE LOAD PER NEC. DISCONNECT SHALL HAVE THE CAPABILITY FOR A MEANS OF LOCKOUT/TAG OUT.
- EUH-5 - 277 VAC/1-PHASE HEATER.
- NEMA 4X STAINLESS STEEL DISCONNECT SIZED AS REQUIRED FOR THE LOAD PER NEC.



**ONE LINE DIAGRAM**

Panel Name: PB-1		Panel Amperage: 250A	
Voltage & Phase: 120/208V 3-Phase		Panel A.I.C. Rating: 22kAIC	
Mounting: Surface		Other: MCB/250A	
Description	Brk	Phase	Description
EMERGENCY LIGHTING	20	1 A 2	CHEMICAL ROOM INTERIOR LIGHTING
WATER TREATMENT BUILDING EXTERIOR LIGHTING	20	3 B 4	CHEMICAL ROOM RECEPTACLES
WATER TREATMENT BUILDING EXTERIOR RECEPTACLES	30	5 C 6	ELECTRICAL ROOM INTERIOR LIGHTING
EMERGENCY EXIT LIGHTING	20	7 A 8	ELECTRICAL ROOM RECEPTACLES
PROCESS ROOM INTERIOR LIGHTING 1	20	9 B 10	OVERHEAD DOOR 1 (OHD-1)
PROCESS ROOM RECEPTACLES 1	20	11 C 12	OVERHEAD DOOR 1 (OHD-1)
PROCESS ROOM RECEPTACLES 2	20	13 A 14	OVERHEAD DOOR 2 (OHD-2)
PROCESS ROOM RECEPTACLES 3	20	15 B 16	OVERHEAD DOOR 2 (OHD-2)
PROCESS ROOM RECEPTACLES 4	20	17 C 18	OVERHEAD DOOR 3 (OHD-3)
WATER HEATER (HW)	30	19 A 20	OVERHEAD DOOR 3 (OHD-3)
WATER HEATER (HW)	-	21 B 22	OVERHEAD DOOR 4 (OHD-4)
FLOW METER NO.1, NO.2, & NO.3	20	23 C 24	OVERHEAD DOOR 4 (OHD-4)
WELL NO.1: FLOW METER NO.4	20	25 A 26	MCP-1
WELL NO.2: FLOW METER NO.5	20	27 B 28	FCP-1
SCALE CONTROLLER	20	29 C 30	CHLORINE ANALYZER
CHLORINATION PUMP SKID	30	31 A 32	GENERATOR ACCESSORIES
UV-1 CONTROL PANEL	20	33 B 34	GENERATOR ACCESSORIES
UV-1 CONTROL PANEL	-	35 C 36	GENERATOR ACCESSORIES
CELL NO.1: RVM, FEW, BW, BWE, & AM	20	37 A 38	MISSION CELLULAR
CELL NO.2: RVM, FEW, BW, BWE, & AM	20	39 B 40	FCU-1
VALVES: FTW, SRS, & BRs	20	41 C 42	FCU-1
BULK FILL PANEL	20	43 A 44	HP-1
DHMU-1	20	45 B 46	HP-1
DHMU-2	20	47 C 48	EF-1/DA-1
PROCESS ROOM INTERIOR LIGHTING 2	20	49 A 50	EF-2/DA-2
UV-2 CONTROL PANEL	20	51 B 52	EF-3/DA-3
UV-2 CONTROL PANEL	-	53 C 54	BLOWER EXHAUST FAN
HEAT TRACE	20	55 A 56	TFCP-1
HEAT TRACE	20	57 B 58	SPARE
HEAT TRACE	20	59 C 60	SPARE
SPARE	20	61 A 62	SPARE
SPARE	20	63 B 64	SPARE
SPARE	20	65 C 66	SPARE

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Professional Engineer  
 No. 11300603  
 STATE OF INDIANA  
 Signature: [Signature]  
 Date: 10/17/2024

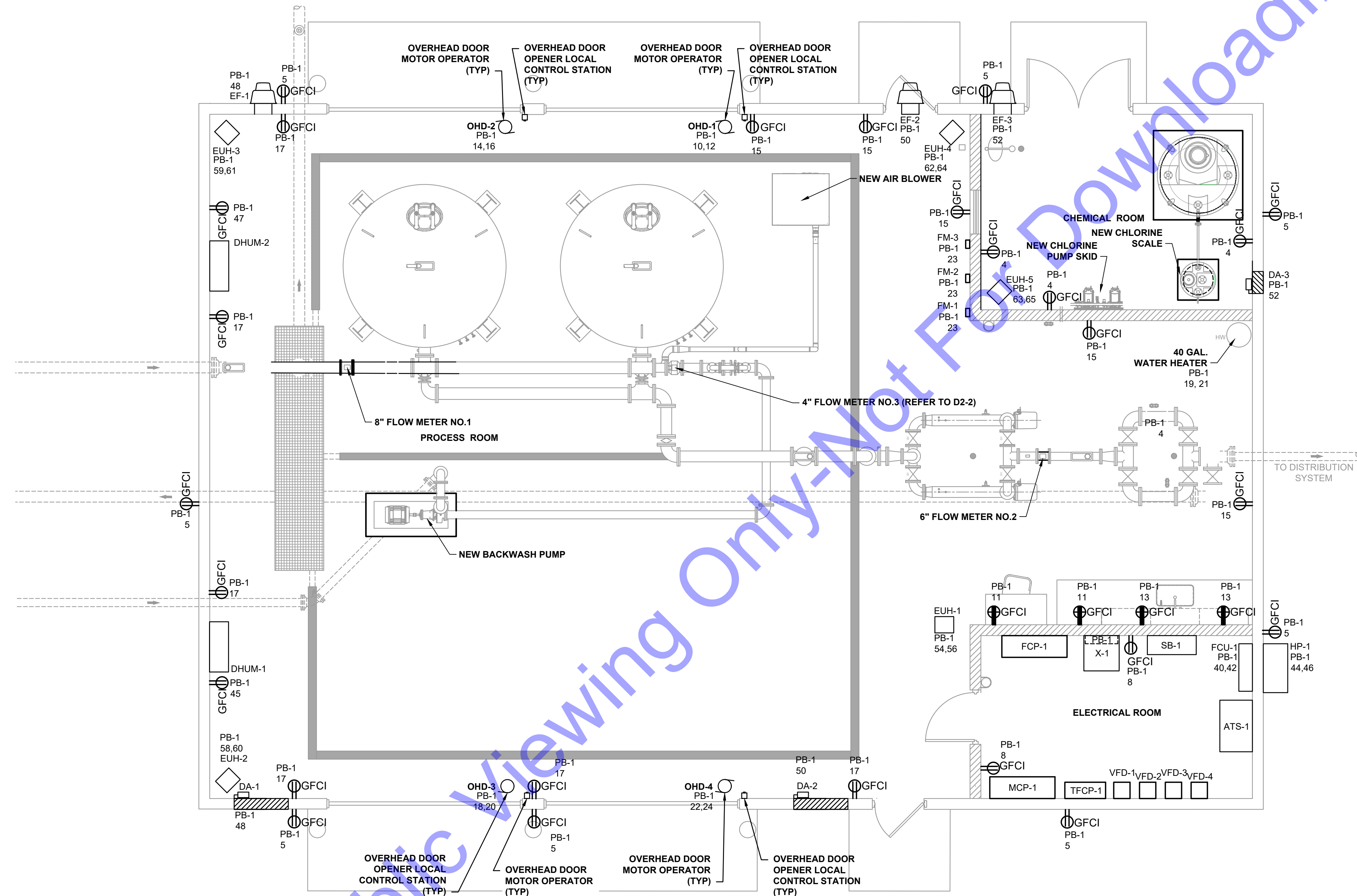
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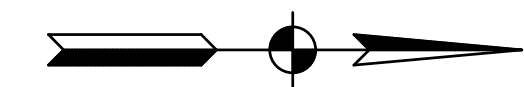
**ONE LINE DIAGRAM**



**PLAN**  
 SCALE: 1/4"=1'-0"  
 0 2' 4' 8'

**GENERAL NOTES:**

1. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING ELECTRICAL ROOM LAYOUT BASED ON SELECTED EQUIPMENT AND EQUIPMENT ACCESS REQUIREMENTS. EQUIPMENT LAYOUT SHALL MAINTAIN CLEARANCES REQUIRED BY NEC AND MANUFACTURER.



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 SOUTH BEND, IN

Professional Engineer Seal for Lee Church, No. 11300603, State of Indiana. Signature and Date: 10/17/2024.

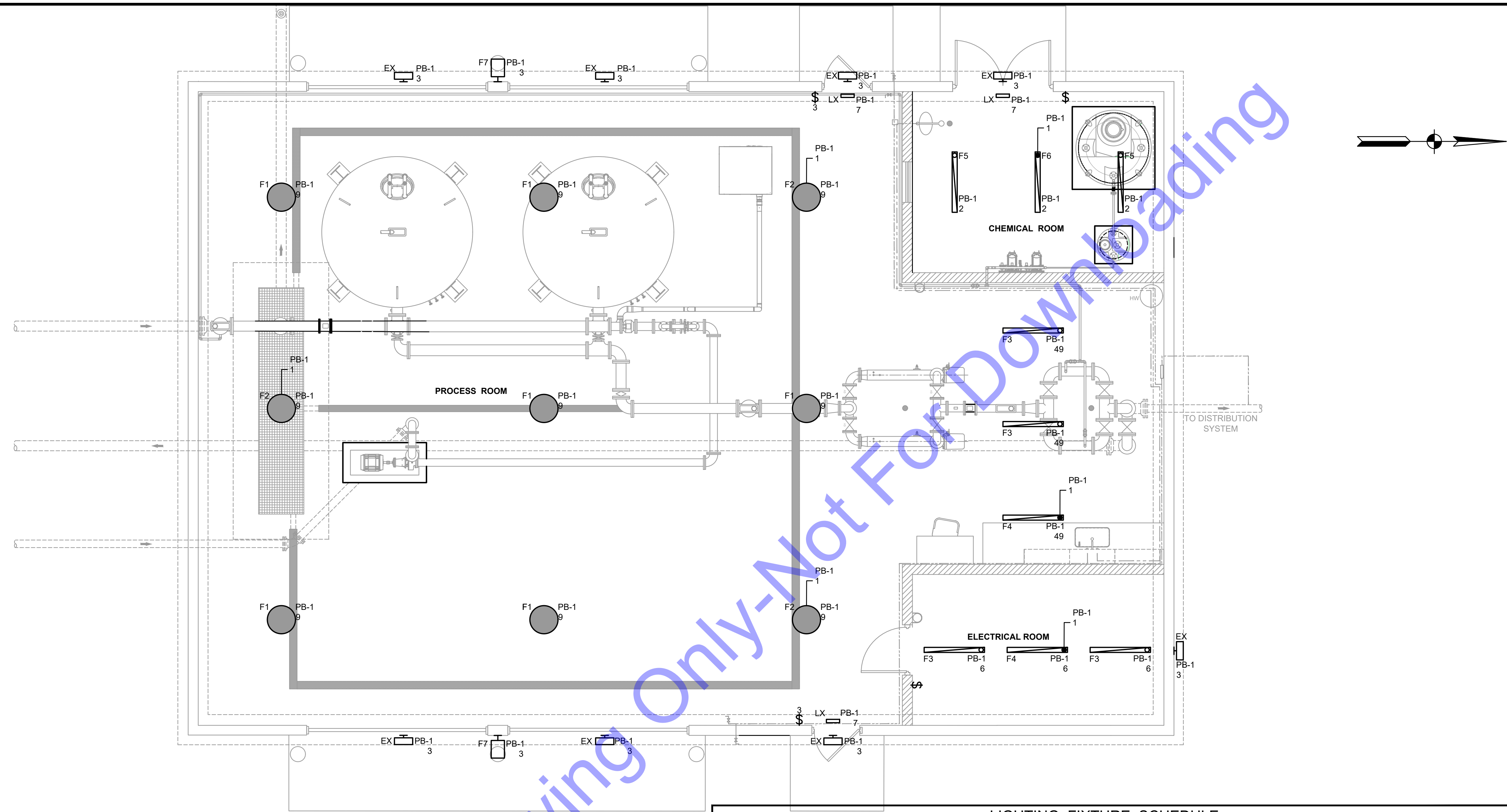
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**NEW WATER TREATMENT PLANT FACILITY ELECTRICAL PLAN**



**PLAN**

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



**LIGHTING FIXTURE SCHEDULE**

IMAGE	TYPE	MFR	CATALOG NUMBER	LAMPS	VOLT	MOUNTING	NOTES
	F1	LITHONIA, CREE, OR EQUAL	JHBL 12000LM PCL WD MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED.
	F2	LITHONIA, CREE, OR EQUAL	JHBL 12000LM PCL WD MVOLT 40K 80CRI E10WCP	LED	120-277	SURFACE	BATTERY BACKED EMERGENCY LIGHT PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED. TWO BALLASTED LIGHT, STANDARD FUNCTION AND EMERGENCY BACKUP.
	F3	LITHONIA, CREE, OR EQUAL	CLX L48 5000LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WITH REQUIRED MOUNTING BRACKETS OR CHAINS AS REQUIRED FOR INSTALLATION.
	F4	LITHONIA, CREE, OR EQUAL	CLX L48 5000LM MVOLT 40K 80CRI PS1050	LED	120-277	SURFACE	PROVIDE WITH REQUIRED MOUNTING BRACKETS OR CHAINS AS REQUIRED FOR INSTALLATION. BATTERY BACKED EMERGENCY LIGHT, STANDARD FUNCTION AND EMERGENCY BACKUP.
	F5	LITHONIA, CREE, OR EQUAL	CSVT L48 5000LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED.
	F6	LITHONIA, CREE, OR EQUAL	CSVT L48 5000LM MVOLT 40K 80CRI IE7WCP	LED	120-277	SURFACE	BATTERY BACKED EMERGENCY LIGHT PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED. TWO BALLASTED LIGHT, STANDARD FUNCTION AND EMERGENCY BACKUP.
	F7	BEACON VIPER OR EQUAL	VP-F-1-132L-135-4K7-2X2-UNV	LED	120-277	SURFACE	PROVIDE MOUNTING BRACKETS/HARDWARE AS REQUIRED FOR INSTALLATION. PROVIDE WITH PHOTOCELL.
	EX	SYLVANIA, CREE, OR EQUAL	TWPL/030/740/CS/UNV/BZ	LED	120-277	SURFACE	WALL MOUNTED OUTDOOR SCENCE WITH TEMPERED GLASS LENS. PROVIDE WITH PHOTOCELL. 2800 LUMENS.
	LX	EMERGI-LITE OR EQUAL	LEDP-1-R	INCLUDED	120	UNIVERSAL	LED EXIT SIGN WITH RED LETTERING ON BRUSHED ALUMINUM PANEL. CHEVRONS SHALL BE REQUIRED AS SHOWN ON DRAWINGS.

PROVIDE BULBS FOR ALL FIXTURES. PROVIDE 10% SPARE BULBS TO THE OWNER AT THE END OF THE PROJECT.

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REGISTERED PROFESSIONAL ENGINEER  
 No. 11300603  
 STATE OF INDIANA  
 Signature: \_\_\_\_\_ Date: 10/17/2024

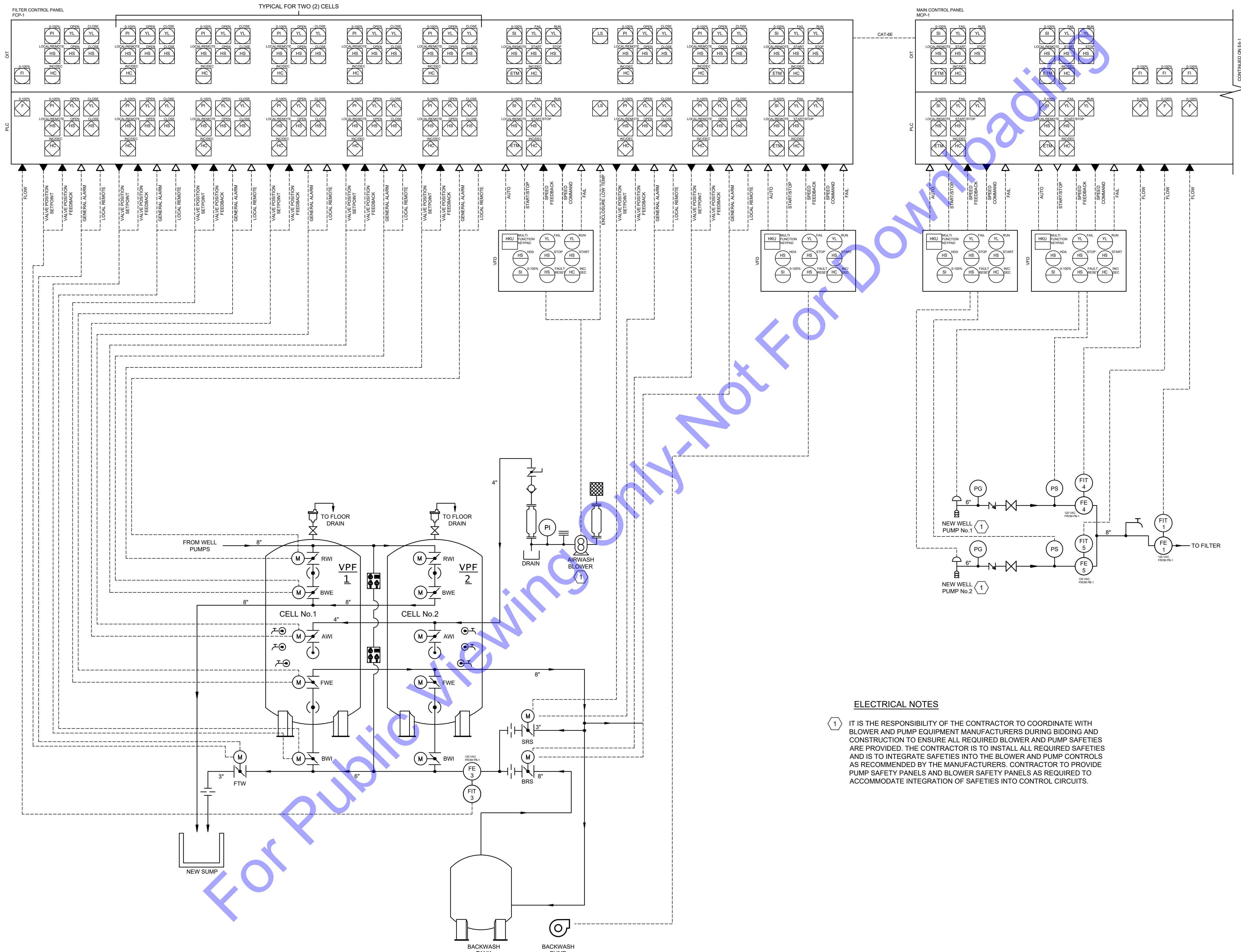
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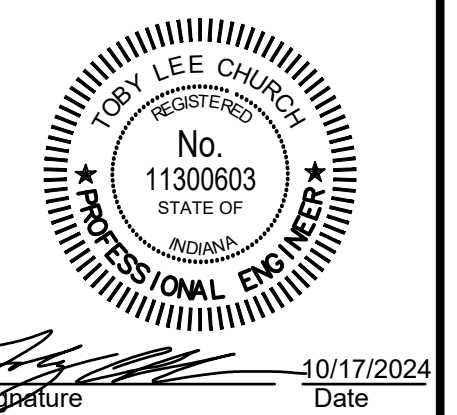
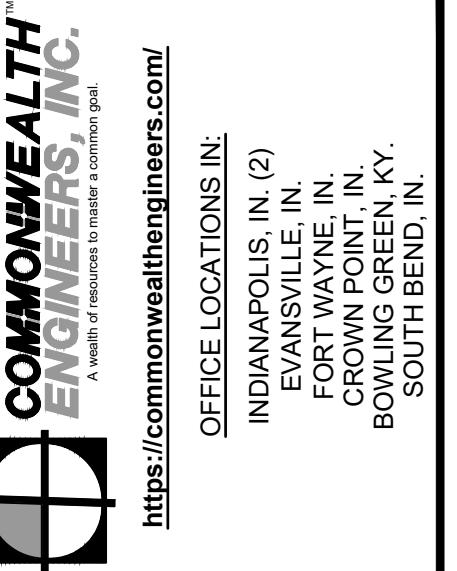
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**NEW WATER TREATMENT PLANT FACILITY LIGHTING PLAN**



**ELECTRICAL NOTES**

1 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH BLOWER AND PUMP EQUIPMENT MANUFACTURERS DURING BIDDING AND CONSTRUCTION TO ENSURE ALL REQUIRED BLOWER AND PUMP SAFETIES ARE PROVIDED. THE CONTRACTOR IS TO INSTALL ALL REQUIRED SAFETIES AND IS TO INTEGRATE SAFETIES INTO THE BLOWER AND PUMP CONTROLS AS RECOMMENDED BY THE MANUFACTURERS. CONTRACTOR TO PROVIDE PUMP SAFETY PANELS AND BLOWER SAFETY PANELS AS REQUIRED TO ACCOMMODATE INTEGRATION OF SAFETIES INTO CONTROL CIRCUITS.



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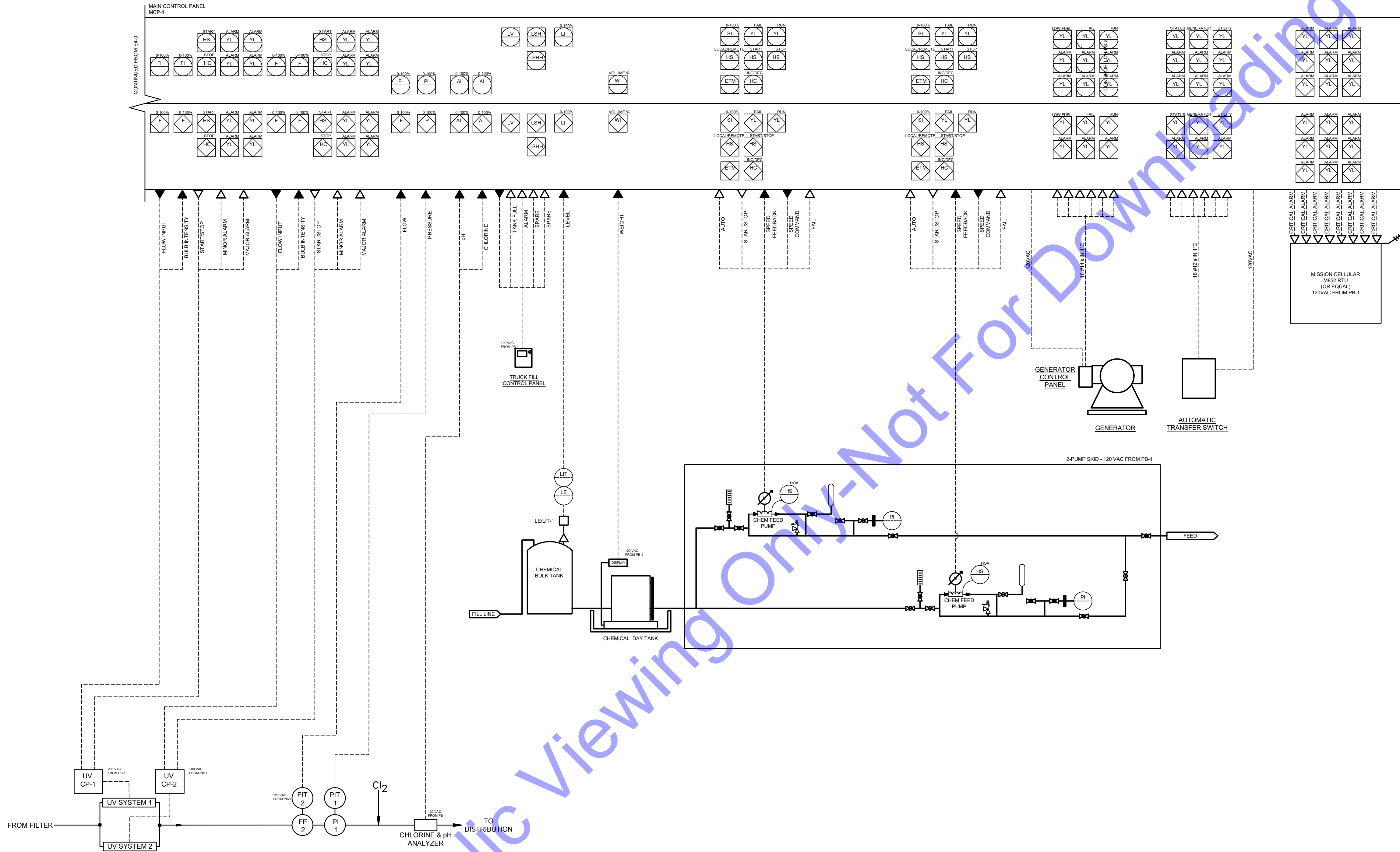
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**PROCESS AND INSTRUMENTATION DRAWING 1**

Drawing No: **E4-0**  
 Sheet: 70 OF 73

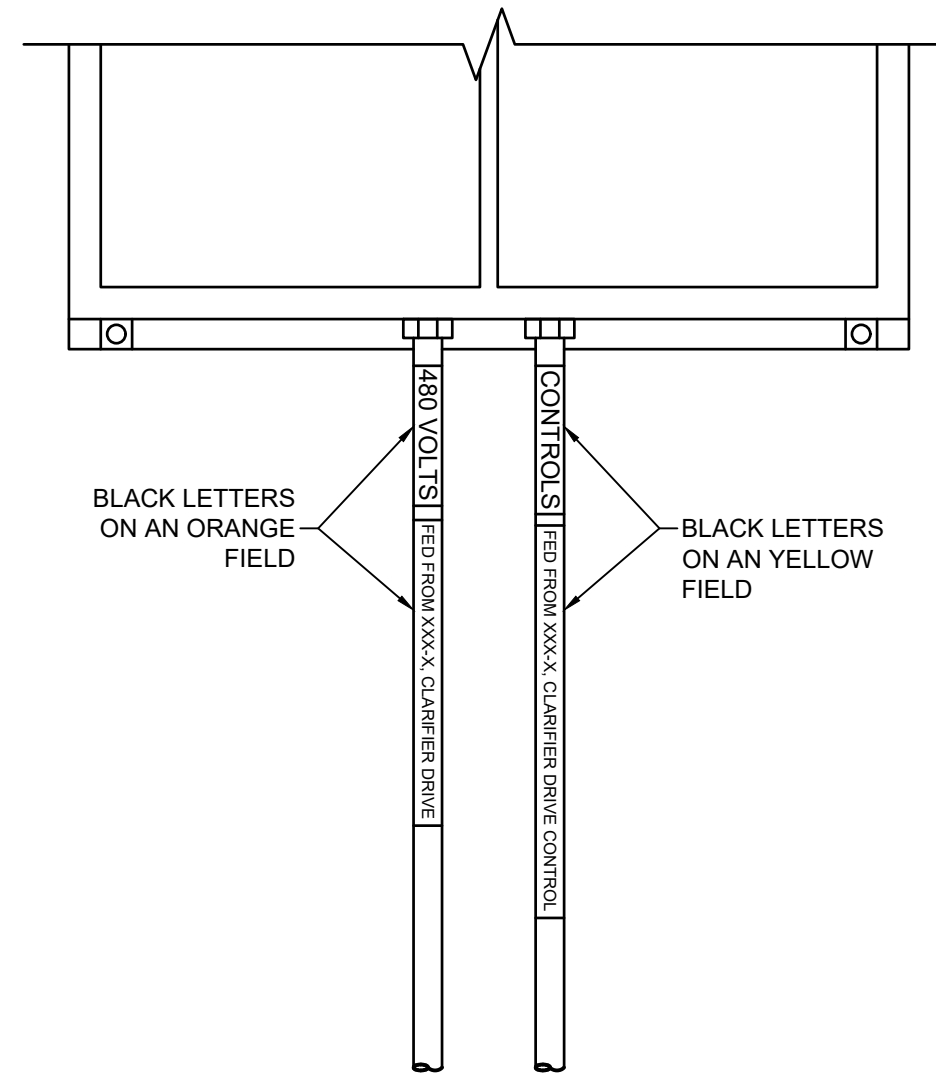


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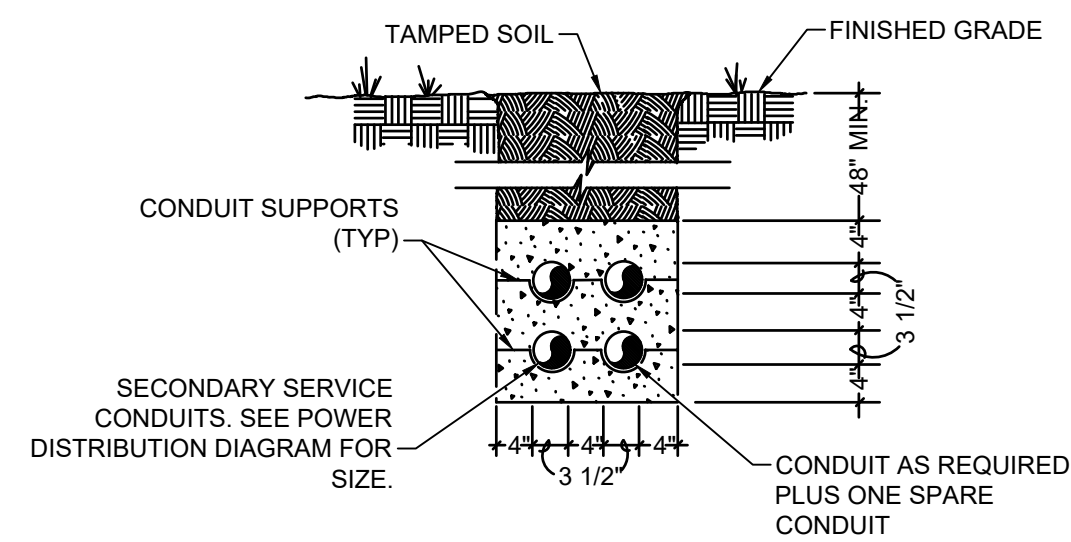
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**PROCESS AND INSTRUMENTATION DRAWING 2**



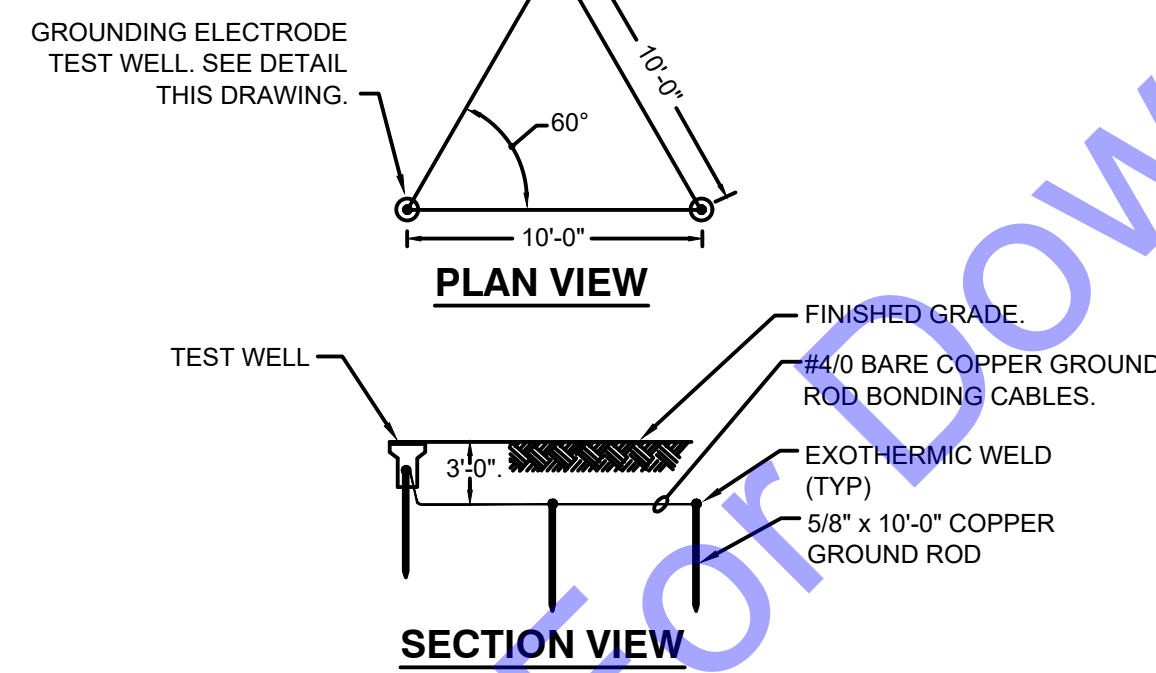
CONDUIT IDENTIFICATION

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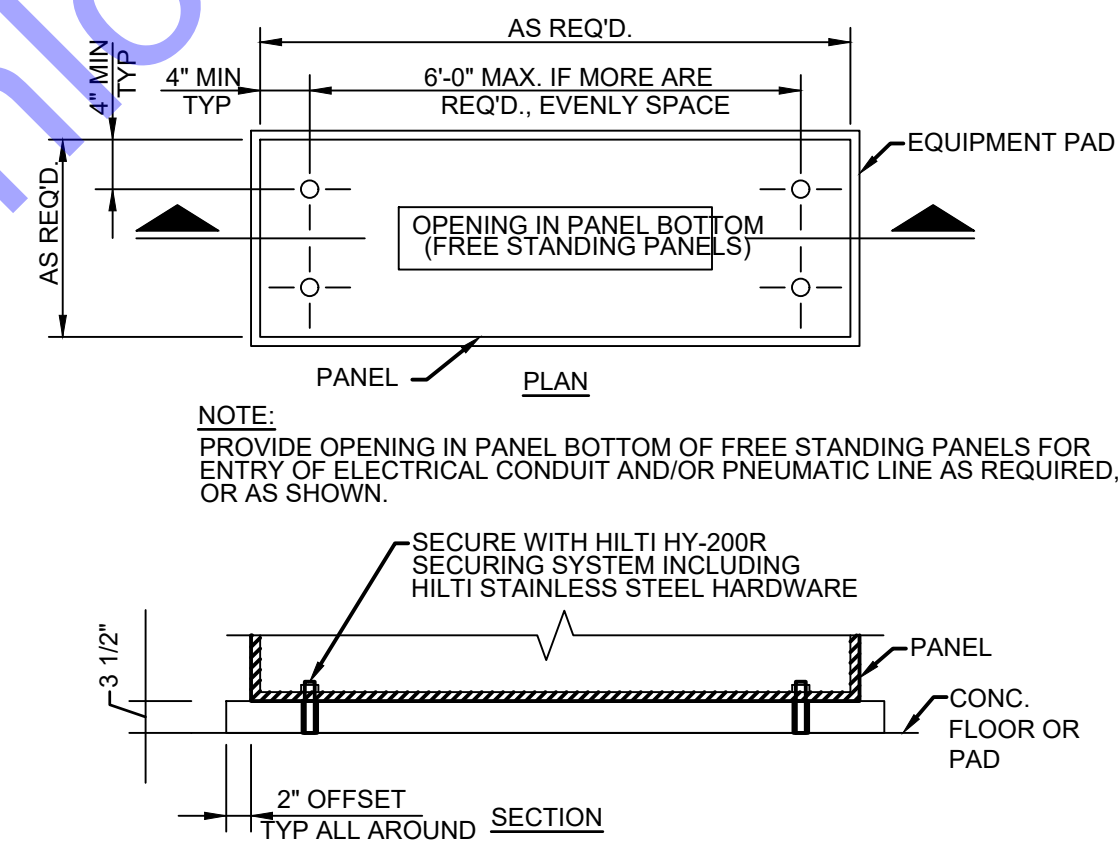
SECONDARY ELECTRICAL SERVICE DUCT BANK

NOT TO SCALE



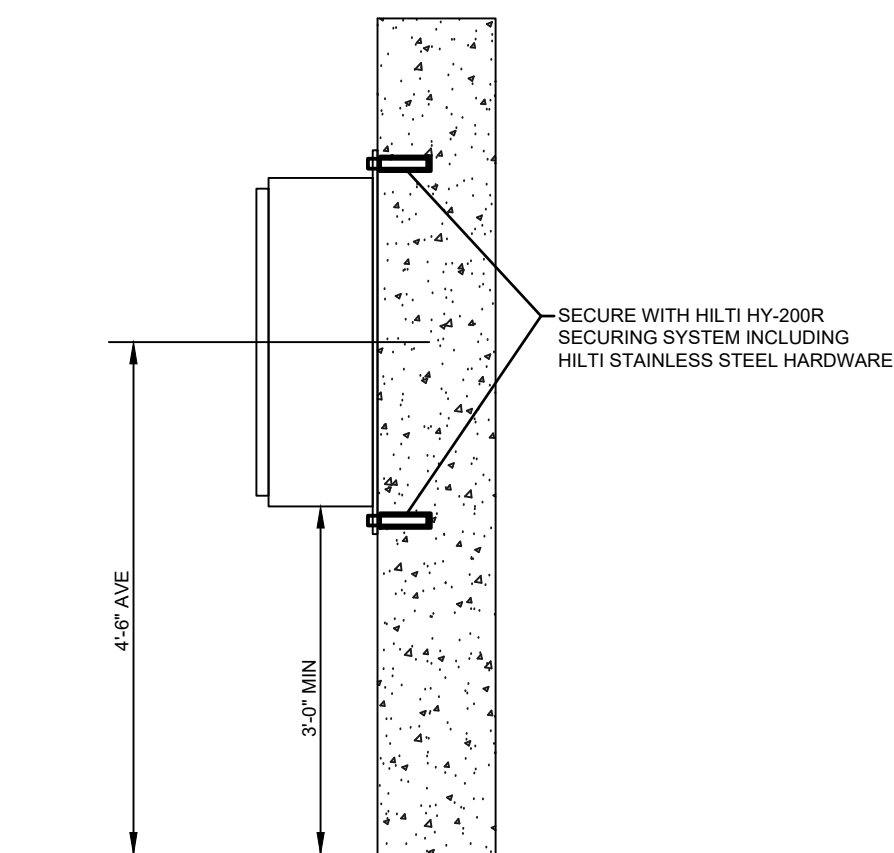
GROUNDING ELECTRODE SYSTEM

NOT TO SCALE



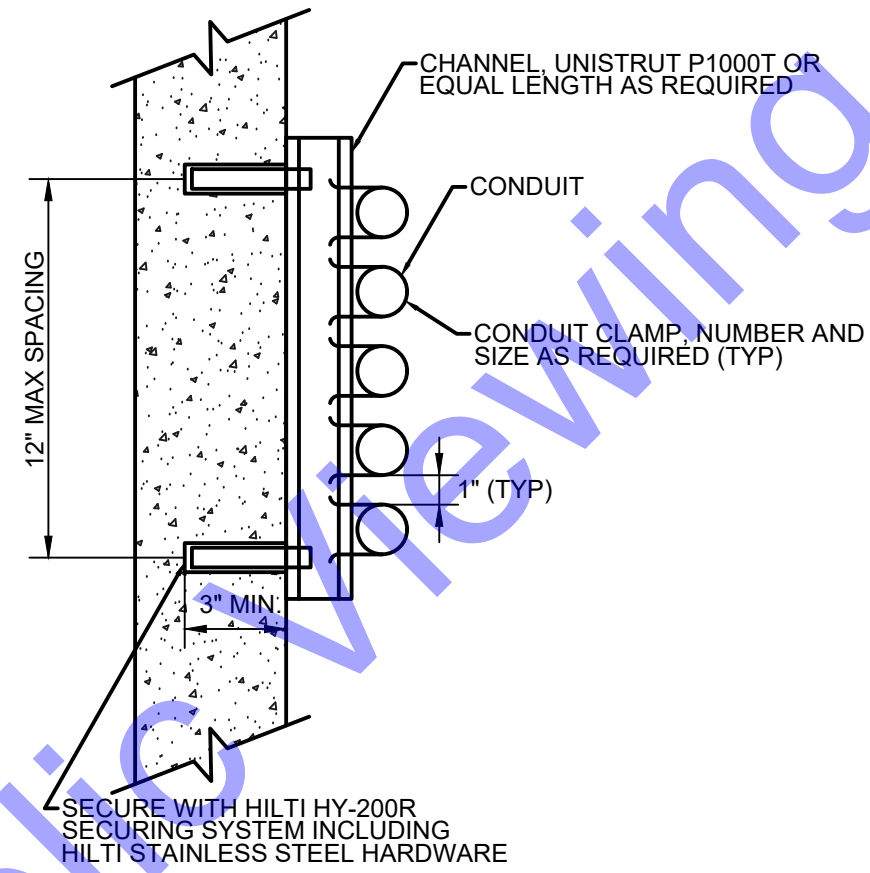
FREE STANDING OR FLOOR MOUNT CONTROL PANEL INSTALLATION

NOT TO SCALE



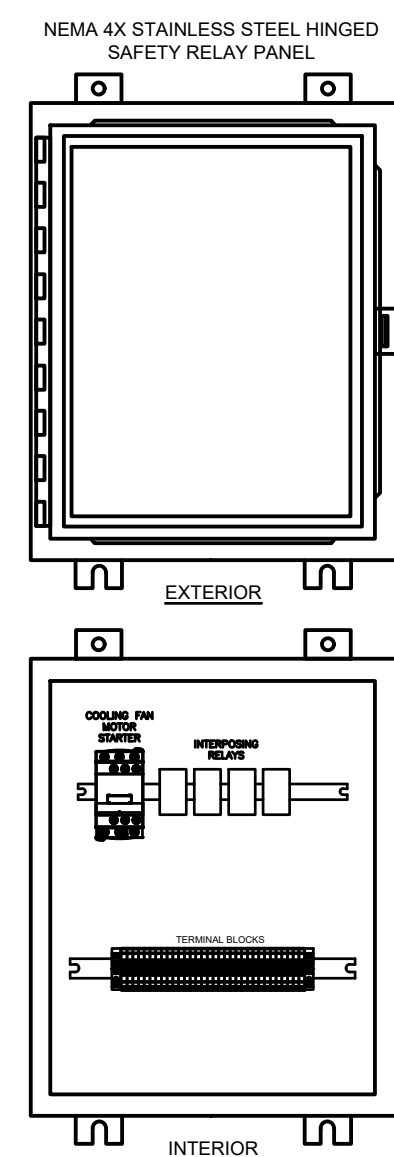
WALL MOUNT CONTROL PANEL INSTALLATION

NOT TO SCALE



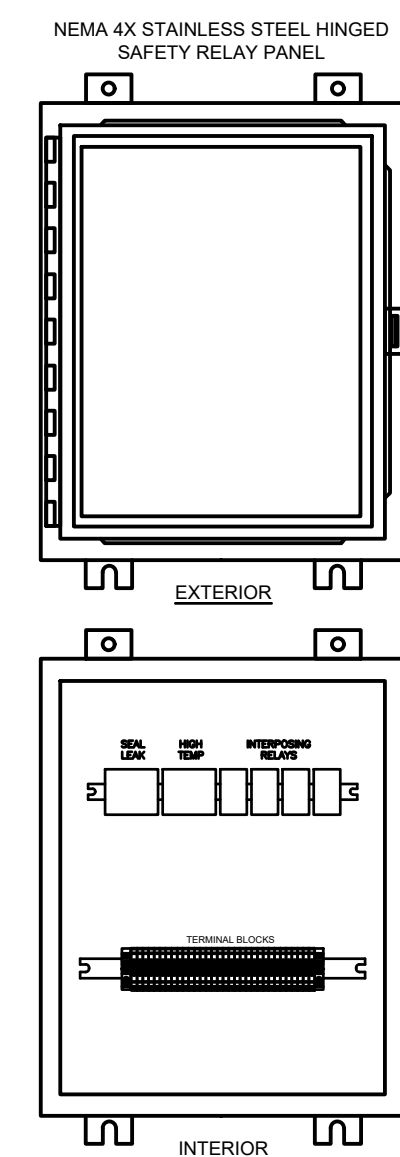
WALL MOUNTED CONDUIT RACK

NOT TO SCALE



BLOWER SAFETY RELAY PANEL

NOT TO SCALE



PUMP SAFETY RELAY PANEL

NOT TO SCALE

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 SOUTH BEND, IN

Professional Engineer  
 No. 11300603  
 STATE OF INDIANA  
 Signature: [Signature]  
 Date: 10/17/2024

APPLE VALLEY UTILITIES, INC.  
 LAKE COUNTY, INDIANA  
 APPLE VALLEY UTILITIES EAST  
 PWS - WATER UTILITY  
 IMPROVEMENTS  
 DIVISION "A" - WELLS AND  
 WATER TREATMENT PLANT

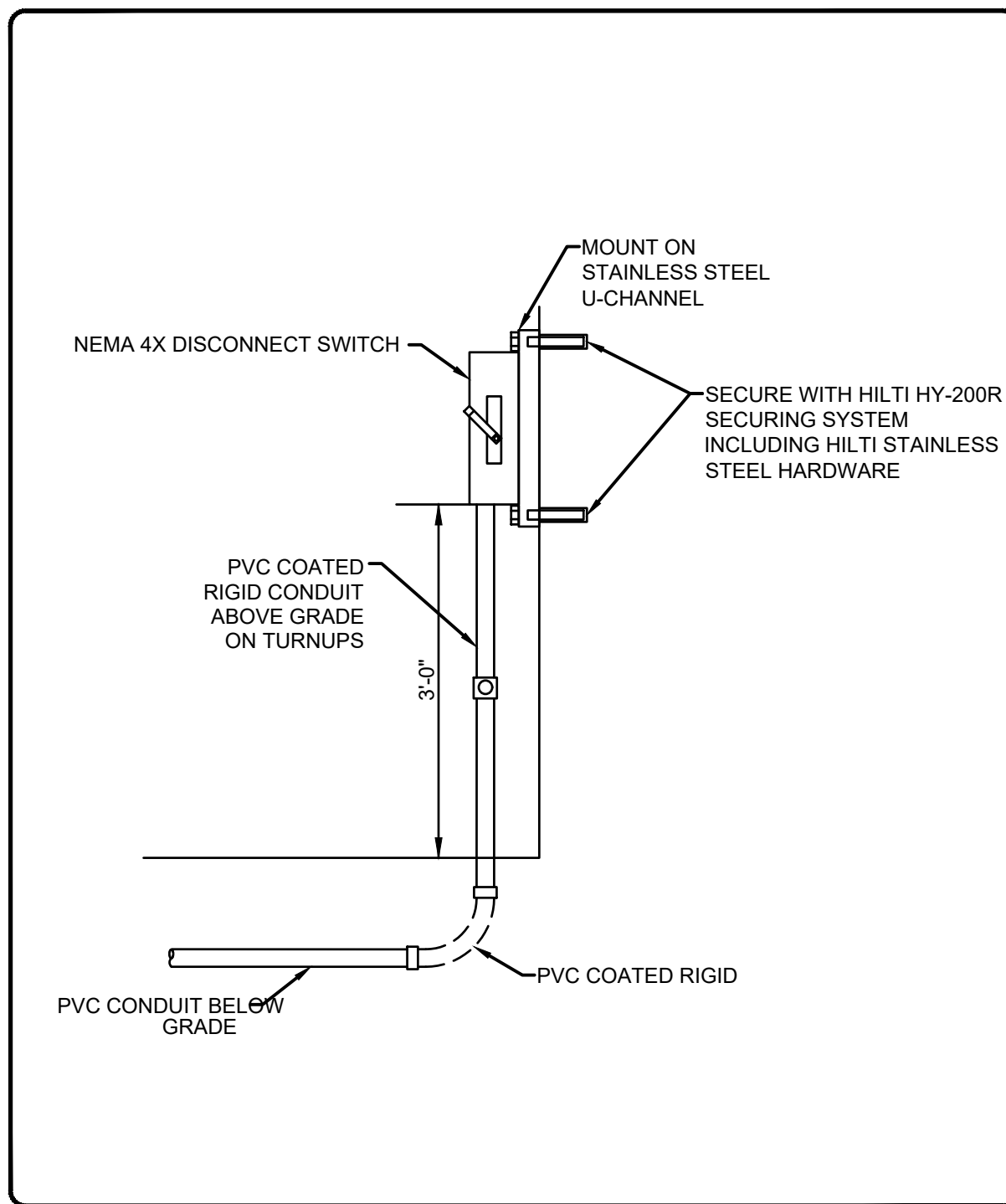
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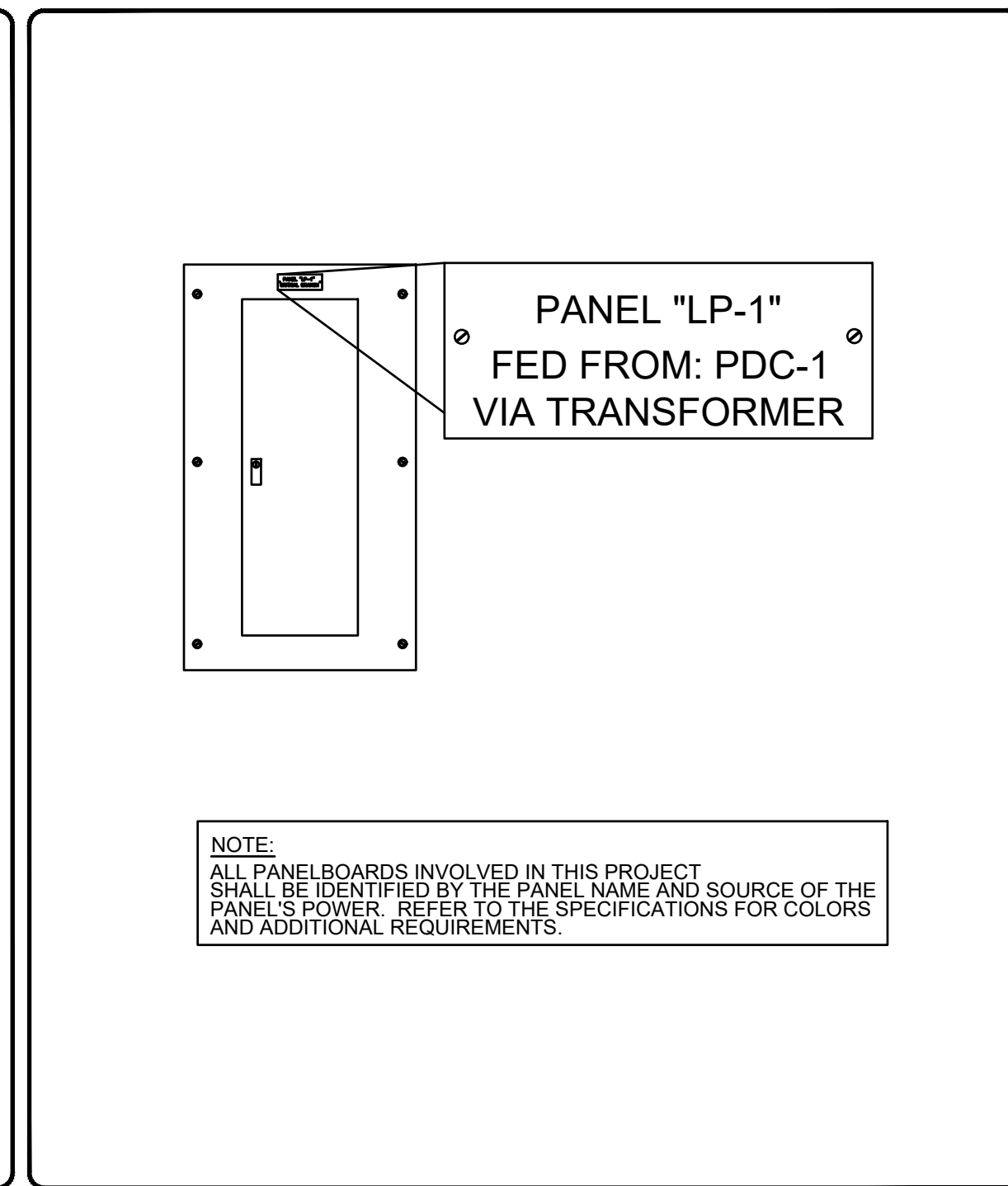
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DS	DS	TLC
Issue Date:	Project No:	Scale:
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ELECTRICAL DETAILS

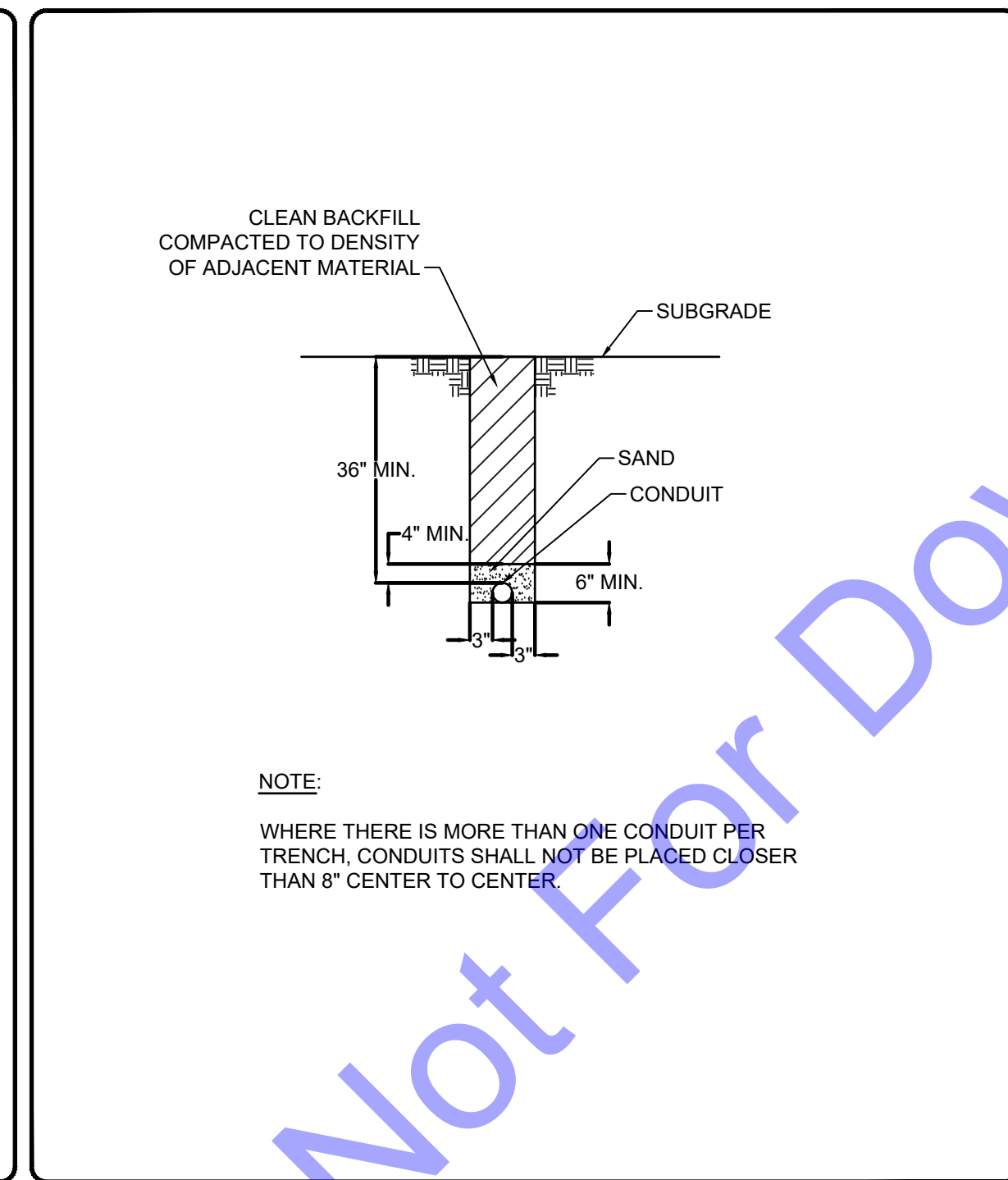




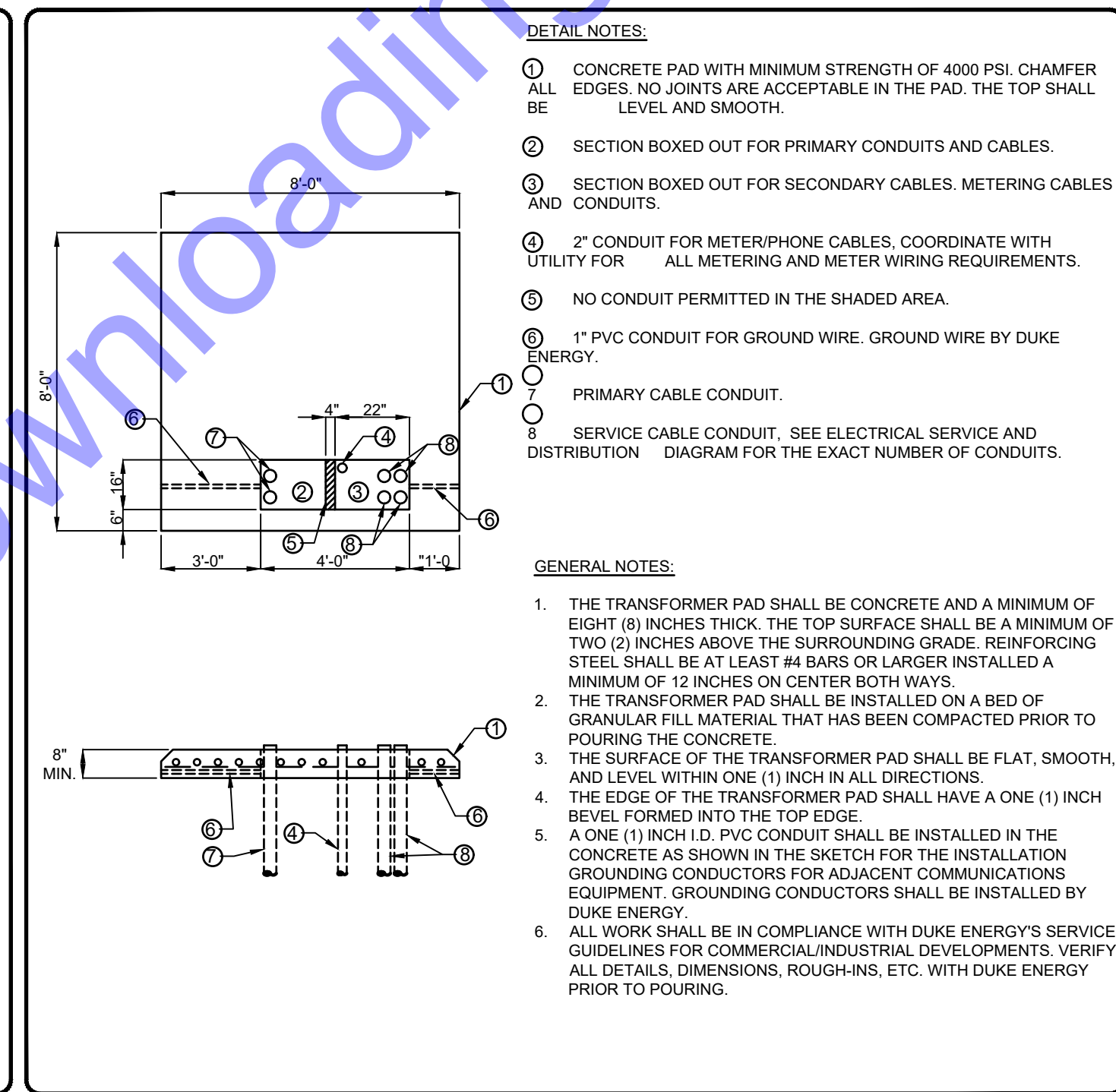
WALL MOUNT DISCONNECT SWITCH/INSTRUMENTATION PANEL  
 NOT TO SCALE



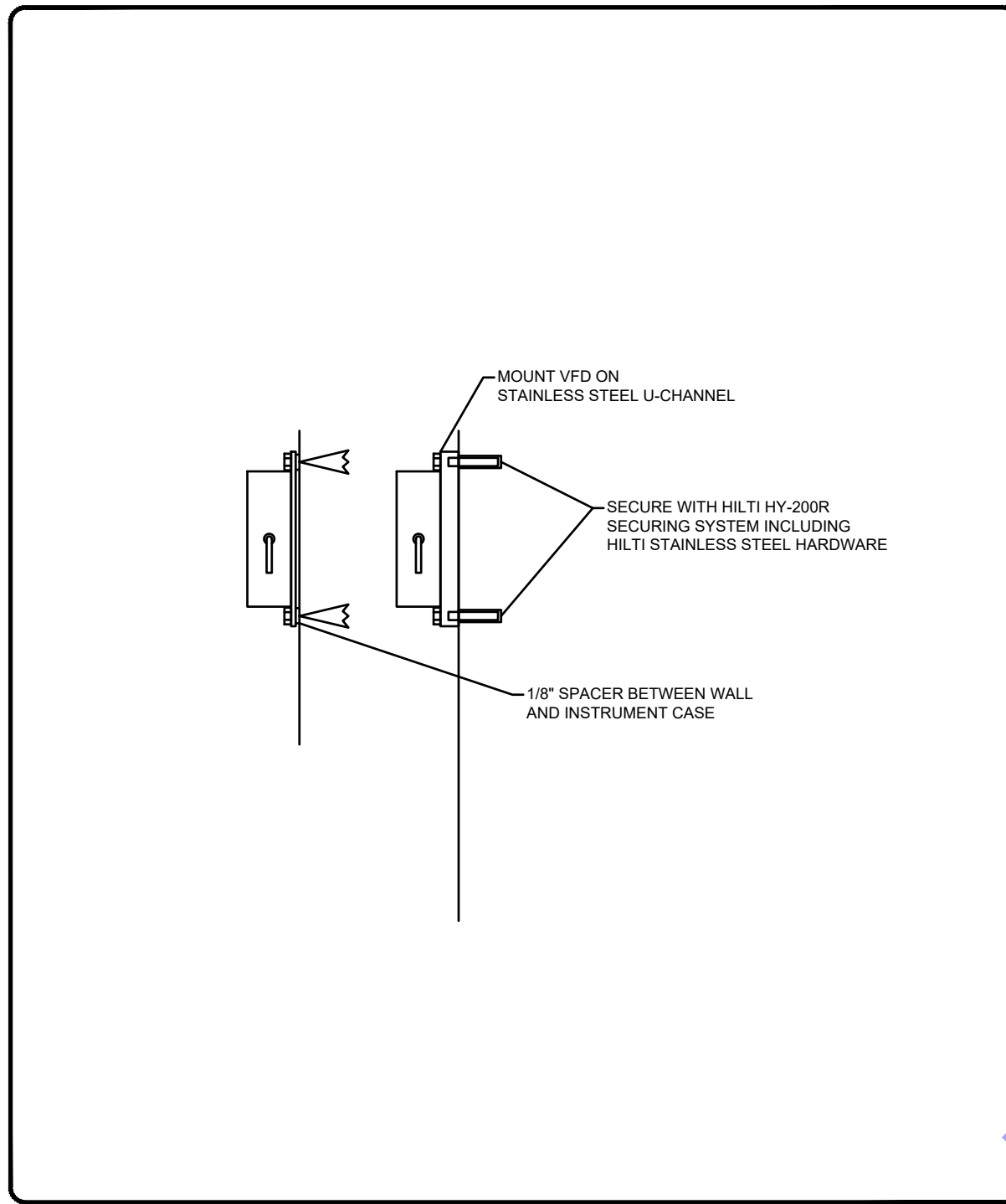
PANELBOARD IDENTIFICATION  
 NOT TO SCALE



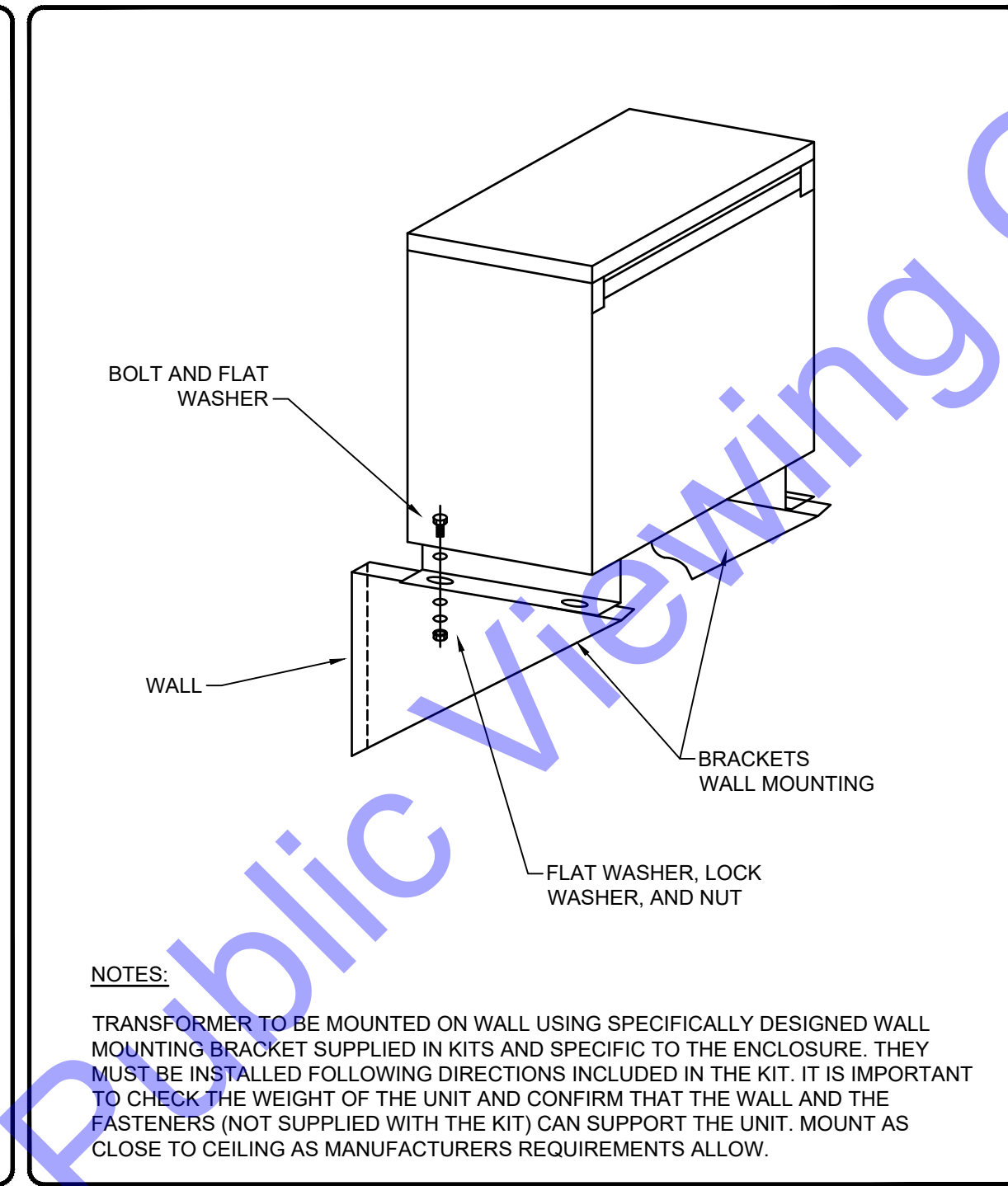
DIRECT BURIAL CONDUIT DETAILS IN EARTH  
 NOT TO SCALE



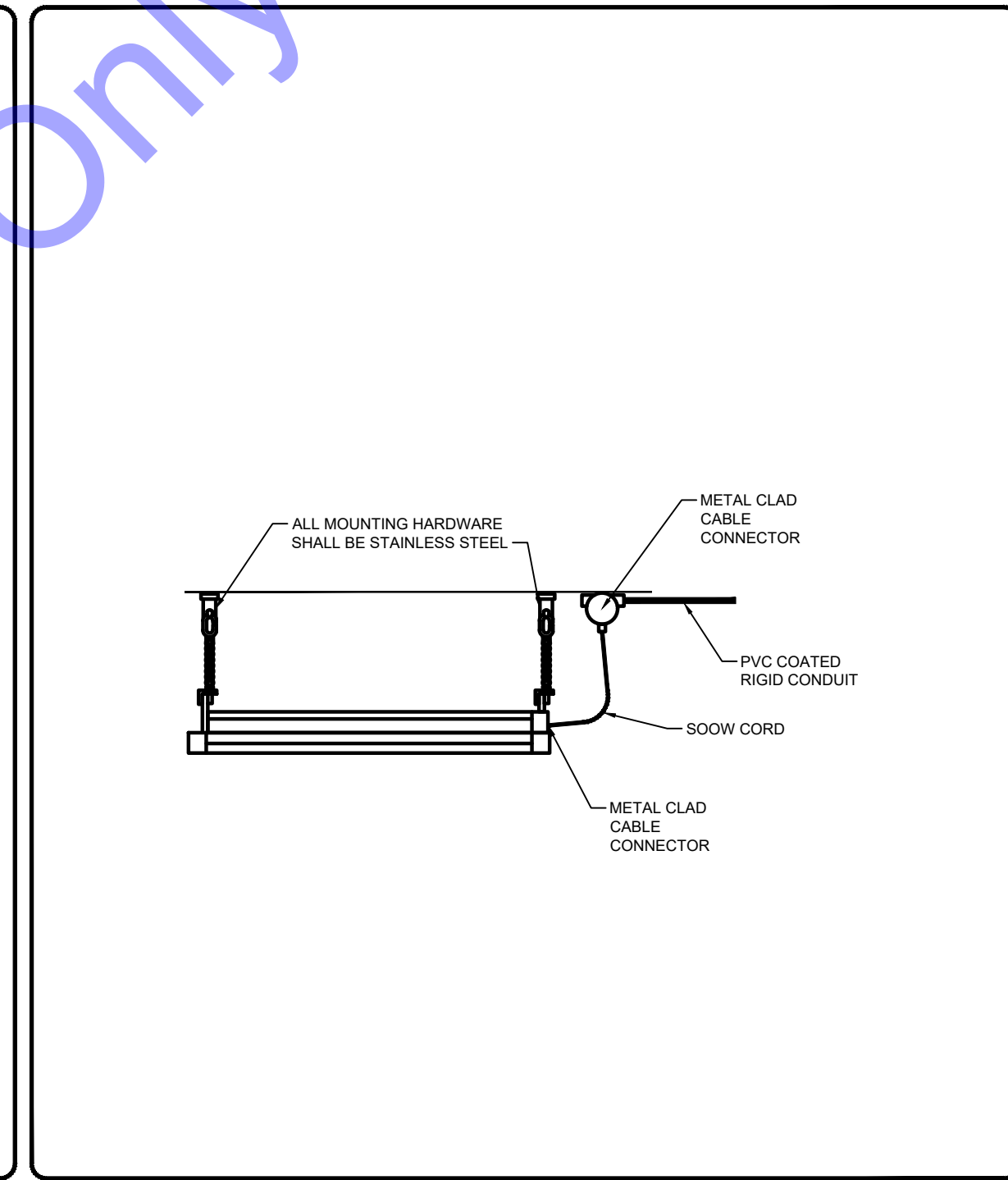
TRANSFORMER PAD DETAIL  
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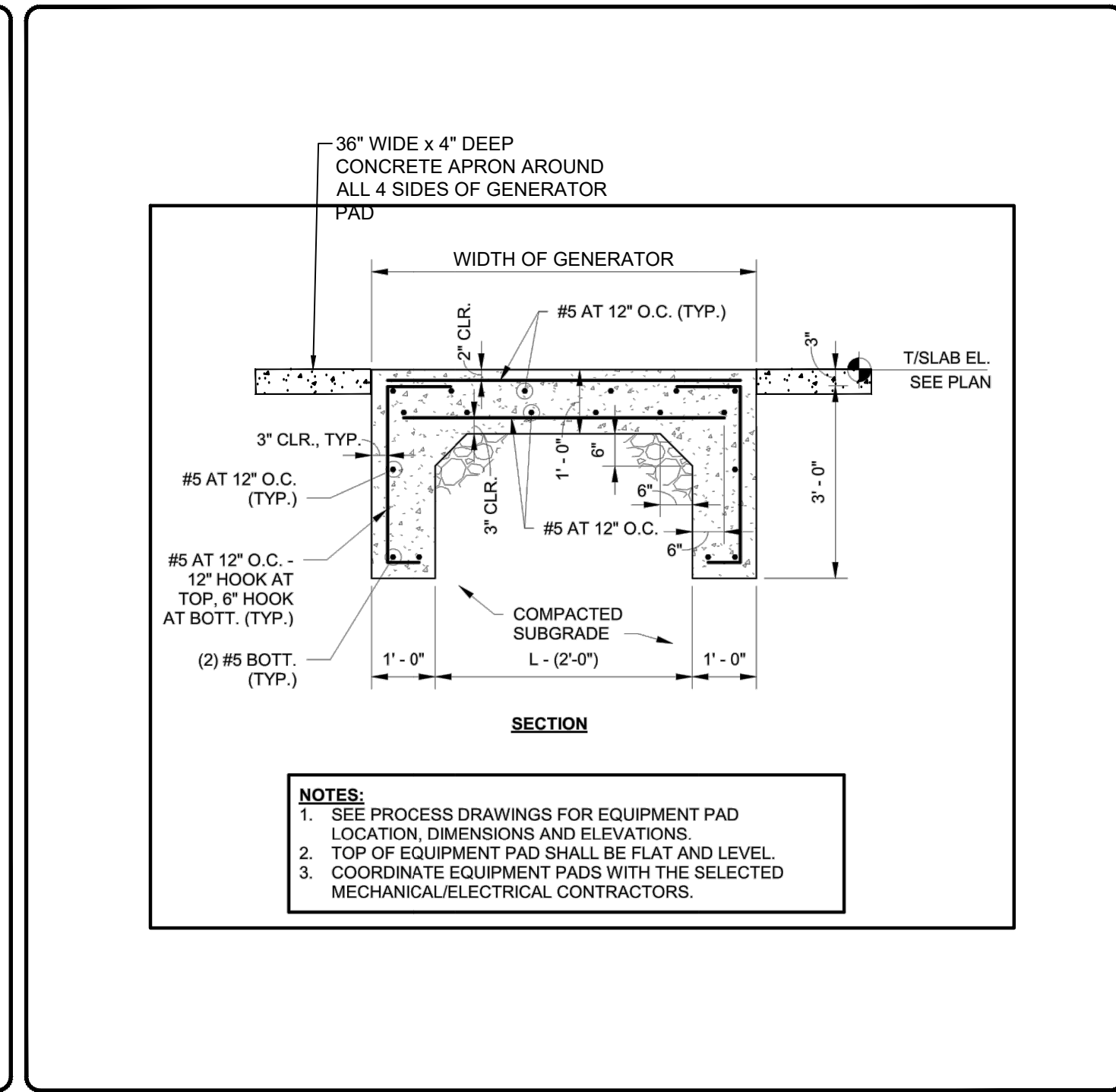
WALL MOUNT VFD INSTALLATION  
 NOT TO SCALE



TRANSFORMER MOUNTING DETAIL  
 NOT TO SCALE



LIGHT FIXTURE MOUNTING DETAIL  
 NOT TO SCALE



GENERATOR/EQUIPMENT PAD DETAIL  
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Professional Engineer Seal for Lee Church, No. 11300603, State of Indiana, dated 10/17/2024.

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 APPLE VALLEY UTILITIES EAST  
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Issue Date:	Project No:	Scale:
	W24026	AS SHOWN

ELECTRICAL DETAILS

Drawing No:  
**E5-1**  
 Sheet: 73 OF 73