# TOWN OF LA CROSSE LAPORTE COUNTY, INDIANA

# WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT

MAY 2025

## **TOWN COUNCIL**

MEMBER

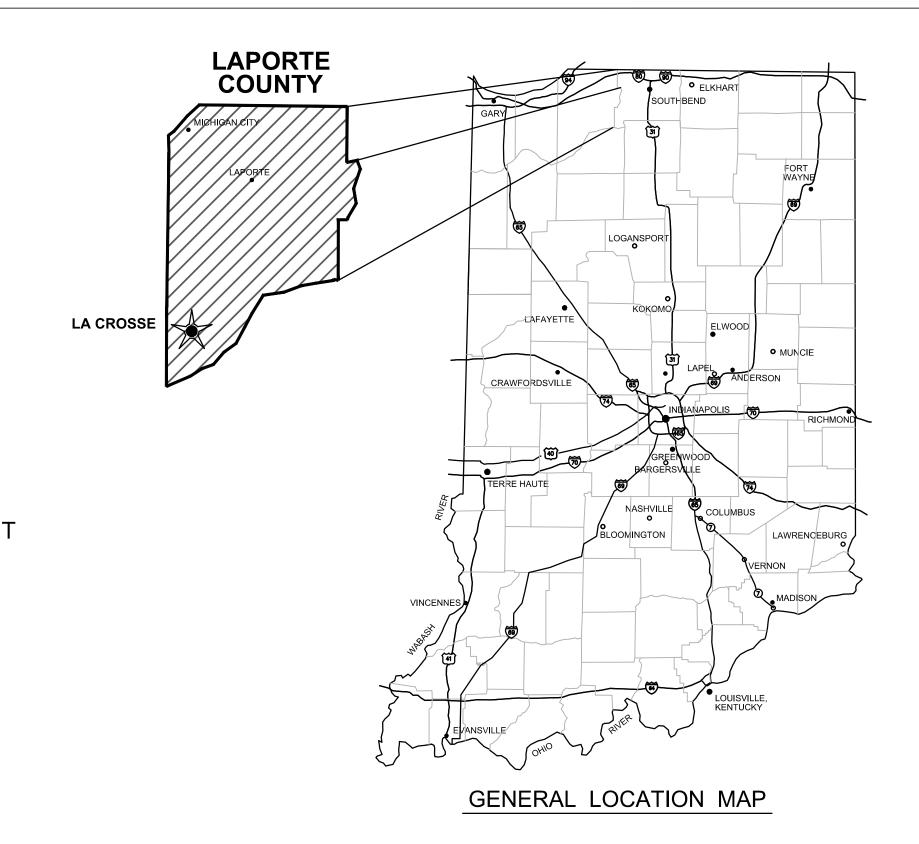
RODNEY COX MEMBER

KELLY KIEL CLERK TREASURER

BRANDON KIEL UTILITIES SUPERINTENDENT

AMBER STALBRINK ATTORNEY

NATHAN HOWELL WASTEWATER OPERATOR





QA/QC BY: ROBERT BELLUCCI

05/29/2025

DATE:

CERTIFIED BY:

CHRIS A. LIMCACO

INDIANA P.E. No. 19700338

05/29/2025 DATE :

25
No. 19700338
STATE OF

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WHITNEY KELLEY.

**CDBG GRANT NUMBER WW-23-125** 

**CONTRACT NO. : \$25052** 



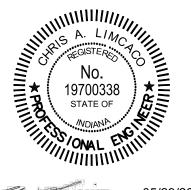
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30	MD2 S0-1	
		STRUCTURAL DRAWINGS
31	S0-1	STRUCTURAL DRAWINGS GENERAL STRUCTURAL NOTES
31 32	\$0-1 \$0-2	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE
31 32 33	\$0-1 \$0-2 \$0-3	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL
31 32 33 34	\$0-1 \$0-2 \$0-3 \$2-1	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL  NEW CHLORINE CONTACT TANK - STRUCTURAL PLANS
31 32 33 34 35	\$0-1 \$0-2 \$0-3 \$2-1 \$2-2	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL  NEW CHLORINE CONTACT TANK - STRUCTURAL PLANS  NEW CHLORINE CONTACT TANK - SECTIONS AND DETAILS
31 32 33 34 35	\$0-1 \$0-2 \$0-3 \$2-1 \$2-2	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL  NEW CHLORINE CONTACT TANK - STRUCTURAL PLANS  NEW CHLORINE CONTACT TANK - SECTIONS AND DETAILS  NEW CHEMICAL BUILDING - FOUNDATION PLAN & DETAILS
31 32 33 34 35 36	\$0-1 \$0-2 \$0-3 \$2-1 \$2-2 \$3-1	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL  NEW CHLORINE CONTACT TANK - STRUCTURAL PLANS  NEW CHLORINE CONTACT TANK - SECTIONS AND DETAILS  NEW CHEMICAL BUILDING - FOUNDATION PLAN & DETAILS  ELECTRICAL DRAWINGS
31 32 33 34 35 36	\$0-1 \$0-2 \$0-3 \$2-1 \$2-2 \$3-1	STRUCTURAL DRAWINGS  GENERAL STRUCTURAL NOTES  TYPICAL STRUCTURAL DETAILS - CONCRETE  TYPICAL STRUCTURAL DETAILS - HANDRAIL DETAIL  NEW CHLORINE CONTACT TANK - STRUCTURAL PLANS  NEW CHLORINE CONTACT TANK - SECTIONS AND DETAILS  NEW CHEMICAL BUILDING - FOUNDATION PLAN & DETAILS  ELECTRICAL DRAWINGS  ELECTRICAL LEGENDS AND SCHEDULES

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Designed By: Drawn By: Checked By: SSE RMB

Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

DRAWING INDEX

G2

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### **GENERAL ABBREVIATIONS**

	GEN	IERAL /	ADDREVIATIONS		
Α	AIR	FLD	FILTRATE DRAIN		MATERIAL
AB	ANCHOR BOLT	FLG	FLANGE	P/L	PROPERTY LINE
AFF	ABOVE FINISH FLOOR	FL	FLUSHING LINE	POJ	PUSH ON JOINT
ALT	ALTERNATE	FLR	FLOOR	PSF	POUNDS PER SQUARE FOOT
ALUM	ALUMINUM	FM	FORCE MAIN	PSI	POUNDS PER SQUARE INCH
@	AT	FRP	FIBER REINFORCED PLASTIC	PVC	POLYVINYL CHLORIDE
APP.	APPARENT	FT	FEET OR FOOT	PW	POTABLE WATER
ATT	AERATION TANK TRANSFER	FTG	FOOTING		
AUTO	AUTOMATIC	FW	FINISHED WATER	R	RECIRULCATION
AVG	AVERAGE			RAD	RADIUS
		G	GAS	RAS	RETURN ACTIVATED SLUDGE
В	BAFFLE	GALV	GALVANIZED	RCP	REINFORCED CONCRETE PIPE
BLDG	BUILDING	GEN	GENERAL	RD	ROOF DRAIN
BM	BENCH MARK	GRD	GROUND OR GRADE	REINF	REINFORCING
BOT	BOTTOM			REQ'D	REQUIRED
BRG	BEARING	НВ	HOSE BIBB		) RIGHT-OF-WAY
		HORIZ	HORIZONTAL		,
CFM	CUBIC FEET PER MINUTE	HP	HORSEPOWER	SAN	SANITARY
CL	CENTERLINE	HW	HOT WATER	SAS	SANITARY SEWER
CO	CLEAN OUT	1100	TIOT WITTER	SCH	SCHEDULE
COL/C	COLUMN	ID	INSIDE DIAMETER	SECT	SECTION
CONC	CONCRETE	IJ	ISOLATION JOINT	SF	SQUARE FEET
COP	COPPER	INV	INVERT	SHT	SHEET
CJ	CONSTRUCTION JOINT	IP	IRON PIN	SL	SAMPLE LINE
CW	COLD WATER	"		SOS	STORM SEWER
CY	CUBIC YARD	LAV	LAVATORY	SP	STOP PLATE
01	CODIC TARD	LAV	POUND	SQ	SQUARE
D	DRAIN	LL	LIVE LOAD	STD	STANDARD
DEC	DECANT	LLV	LONG LEG VERTICAL		STAINLESS STEEL
DIA	DIAMETER	LTG	LIGHTING	STL, SS	STEEL
DIM	DIMENSION	LIG	LIGITING	SUP	
DIWI	DUCTILE IRON PIPE	MAX	MAXIMUM	SY	SUPERNATANT
DL	DEAD LOAD	MCC	MOTOR CONTROL CENTER	SY	SQUARE YARD
DSPT	DOWN SPOUT	MGD	MILLIONS GALLONS PER DAY	TOC	TOD OF CLAD
DWG				TOS	TOP OF SLAB
DVVG	DRAWING	MH	MANHOLE	TOW	TOP OF WALL
_	ELECTRICAL CONDUIT	MIN	MINIMUM, MINUTE	TW	TERTIARY WATER
E	ELECTRICAL CONDUIT	MJ	MECHANICAL JOINT	TYP	TYPICAL
EA EF	EACH	NC	NORMALLY CLOSED	\	\/A CLU
	EACH FACE	NC	NORMALLY CLOSED	V	VACUUM OR VALVE
EFFL	EFFLUENT ELEVATION	NG	NATURAL GAS	VAR	VARIES
EL	ELEVATION	NIC	NOT IN CONTRACT	VERT	VERTICAL
EW	EACH WAY	NO	NORMALLY OPEN	147	WEID
EXISTING	EXISTING	NO.	NUMBER	W	WEIR
EXF	EXHAUST FAN	NPW	NON-POTABLE WATER	W/	WITH
EXP JP	EXPANSION JOINT		ON OFFITED	W/O	WITHOUT
_	EU TED	OC	ON CENTER	WAS	WASTE ACTIVATED SLUDGE
F	FILTER	OD	OUTSIDE DIAMETER	WC	WATER CLOSET
FCAR	FLANGED COUPLING ADAPTER,	OPG	OPENING	WH	WATER HEATER
<b>-</b>	RESTRAINED	OPP	OPPOSITE	WL	WATER LINE
FD	FLOOR DRAIN			WWF	WELDED WIRE FABRIC
FDN	FOUNDATION	PB 	PULL BOX		
FH	FIRE HYDRANT	PE	POLYETHYLENE EXP. JT.	YH	YARD HYDRANT

**BOOSTER PUMP** 

AIR RELIEF VALVE

FLOW CONTROL VALVE

ECCENTRIC PLUG VALVE

INCREASER / REDUCER

PIPE THROUGH FLOOR / WALL

BLIND FLANGE OR PLUG

**BUTTERFLY VALVE** 

BALL VALVE

HOSE BIBB

STOP PLATE

FLOW METER

GATE VALVE

CHECK VALVE

GENERAL SCHEMATIC LEGEND

QUICK DISCONNECT

BALL CHECK VALVE

MOTOR ACTUATOR

90° V-NOTCH WEIR

FLEXIBLE CONNECTION

MAGNETIC FLOW METER

ULTRASONIC SENSOR

SUBMERSIBLE PUMP

NEW PIPING AND EQUIPMENT

EXISTING PIPING AND EQUIPMENT

FUTURE PIPING AND EQUIPMENT

FLANGE FILLER & S.S. MESH SCREEN

PRV

SCR

FLANGED SPOOL SECTION

PRESSURE REDUCER VALVE

FLANGED COUPLING ADAPTER

# **GENERAL NOTES**

- 1. 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.
- 2. EXISTING UTILITY INFORMATION SHOWN IN DRAWING SET, MEETS "ASCE 36-02" QUALITY LEVEL "C", UNLESS OTHERWISE NOTED.
  - UTILITY COORDINATION AND PROJECT DEPICTION 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.
- <u>UTILITY QUALITY LEVEL D</u> INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.
- 3. NORTHING AND EASTING COORDINATES SHOWN ON ALL MANHOLE, INLETS, ETC. ARE SHOWN FROM CENTER OF STRUCTURE NOT CASTING, UNLESS OTHERWISE NOTED.
- 4. 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.

# DRAWING SET LEGEND

	-CMU WALL (PLAN VIEW) -GRANULAR BACKFILL (PROFILE VIEW)
	- DEMOLITION (CONTRACTOR SHALL REFER TO DETAILED SPECIFICATIONS)
	- GROUT
4 4 4 4	- CONCRETE
	- STEEL
	- COMPACTED GRANULAR BACKFILL OR COMPACTED FOUNDATION
	- ABANDONED IN PLACE

	DIVAVIIN
——— EXOHT ———— EXOHT ————	EXISTING OVERHEAD TELEPHONE LIN
——————————————————————————————————————	EXISTING GAS LINE AND VALVE
——— EXW ————————————————————————————————	EXISTING WATER LINE AND VALVE
EXF/O EXF/O	EXISTING FIBER OPTIC LINE
EXOHE	EXISTING OVERHEAD ELECTRIC LINE
——————————————————————————————————————	EXISTING BURIED ELECTRIC
NPW NPW	EXISTING NON-POTABLE WATER LINE
—— POT ——— POT ——	EXISTING POTABLE WATER LINE
EXBT	EXISTING BURIED TELEPHONE LINE
— x — x — x — x —	EXISTING FENCE
APP. R/W	APPARENT RIGHT-OF-WAY
APP. P/L	APPARENT PROPERTY LINE
<u> </u>	EDGE OF ROAD
<u></u>	EDGE OF ROAD WITH CURB
— — — 785 — — —	EXISTING MAJOR CONTOUR LINE
	EXISTING MINOR CONTOUR LINE
— w — — w —	NEW WATER LINE
785	PROPOSED MAJOR CONTOUR LINE
784	PROPOSED MINOR CONTOUR LINE

_EGI	END		
0	AC UNIT	1	TELEPHONE MANHOLE
0	BOLLARD	$\Diamond$	TELEPHONE LINE MARKER
$\Diamond$	BOULDER / LARGE ROCK	TR	TRAFFIC MANHOLE
⊠CL	CENTER LINE MONUMENT	<b>₩</b>	WATER LINE MARKER
⊠RW	ROW MONUMENT	<b>(</b>	WATER METER
<b></b>	CONTROL POINT / BENCH MARK	₩V	VALVE
$\odot$	DRILL HOLE	×	IRRIGATION CONTROL VALVE
MB	MAIL BOX	$\Diamond$	FIRE HYDRANT
D	FLAG POLE	F	FLUSH HYDRANT
0	POST	Q	YARD HYDRANT
0	STUMP	M	WALL SPIGOT
£3	BUSH / HEDGE	_	EXISTING PIPE PLUG
	DECIDUOUS TREE		STORM CATCH BASIN (SQUARE)
	CONIFEROUS TREE		STORM CATCH BASIN (ROUND)
_	SIGN		STORM CURB INLET
₫	UTILITY LOCATE FLAG		STORM MANHOLE
<b>©</b>	GAS LINE MARKER	S	SANITARY MANHOLE
₩	GAS VALVE	sv Ø	SANITARY VALVE
	GAS METER	•	CLEANOUT
-①	GUY POLE	X	VENT
Ø	POWER POLE	×	NEW VALVE
어	LIGHT POLE	Q	NEW FIRE HYDRANT
(	GUY WIRE	F	NEW FLUSH HYDRANT
EM	ELECTRIC METER		NEW WET SADDLE AND VALVE BODY
	ELECTRIC PANEL		NEW PLUG
ET	ELECTRIC TRANSFORMER	LS	NEW LINE STOP
	HAND HOLE BOX	00	NEW CUT AND CAP
<b>₽</b>	FIBER OPTIC MARKER	<b>⊗</b>	NEW SANITARY MH
TP	TEL/TV PEDESTAL	~	





WASTEWATER TREATMENT PLANT
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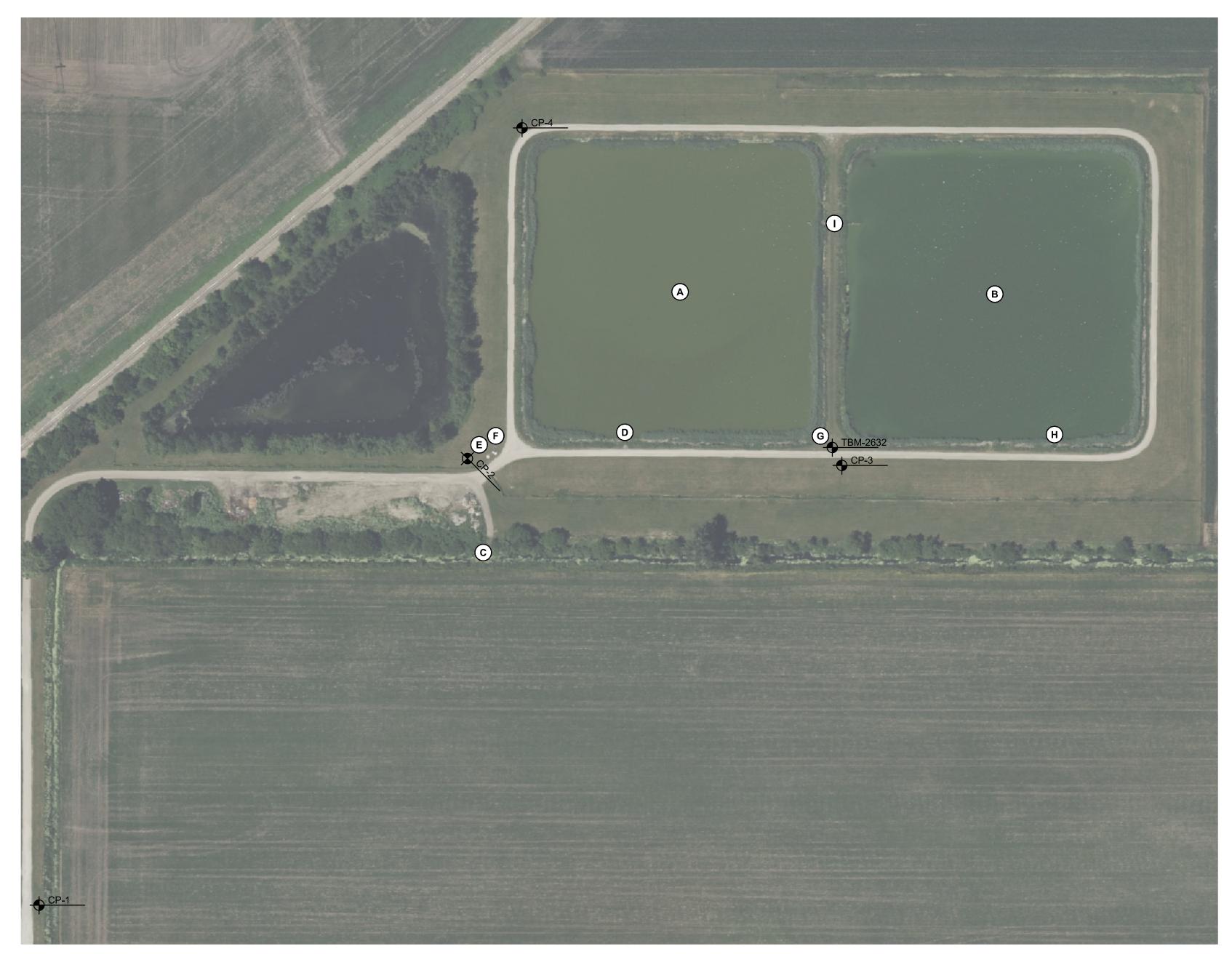
GENERAL ABBREVIATIONS, SYMBOLS, LEGENDS, AND NOTES

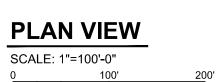
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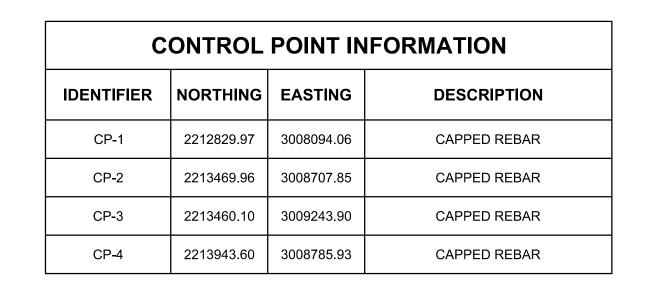
Drawing No:

G3

Sheet: 03 OF 40







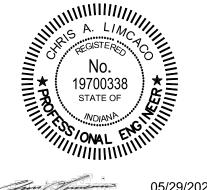
TEMPORARY BENCHMARK INFORMATION			
IDENTIFIE	R	ELEVATION	DESCRIPTION
TBM-2632	<u>.</u>	683.10	CUT X NE CORNER RIM OF SQUARE METAL LID

EXISTING STRUCTURE LEGEND		
IDENTIFIER	DESCRIPTION	
Α	EXISTING LAGOON #1	
В	EXISTING LAGOON #2	
С	EXISTING OUTFALL STRUCTURE	
D	EXISTING MANHOLE 1000 - LAGOON #1 EFFLUENT STRUCTURE	
E	EXISTING MANHOLE 1001	
F	EXISTING MANHOLE 1002 - EFFLUENT FLOW METER STRUCTURE	
G	EXISTING MANHOLE 1003 - INFLUENT STRUCTURE	
н	EXISTING MANHOLE 1004 - LAGOON #2 EFFLUENT STRUCTURE	
ı	EXISTING MANHOLE 1005 - LAGOON TRANSFER STRUCTURE	

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LAPORTE COUNTY, INDIANA WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT

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WWTP SITE SURVEY DATA DRAWING

Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

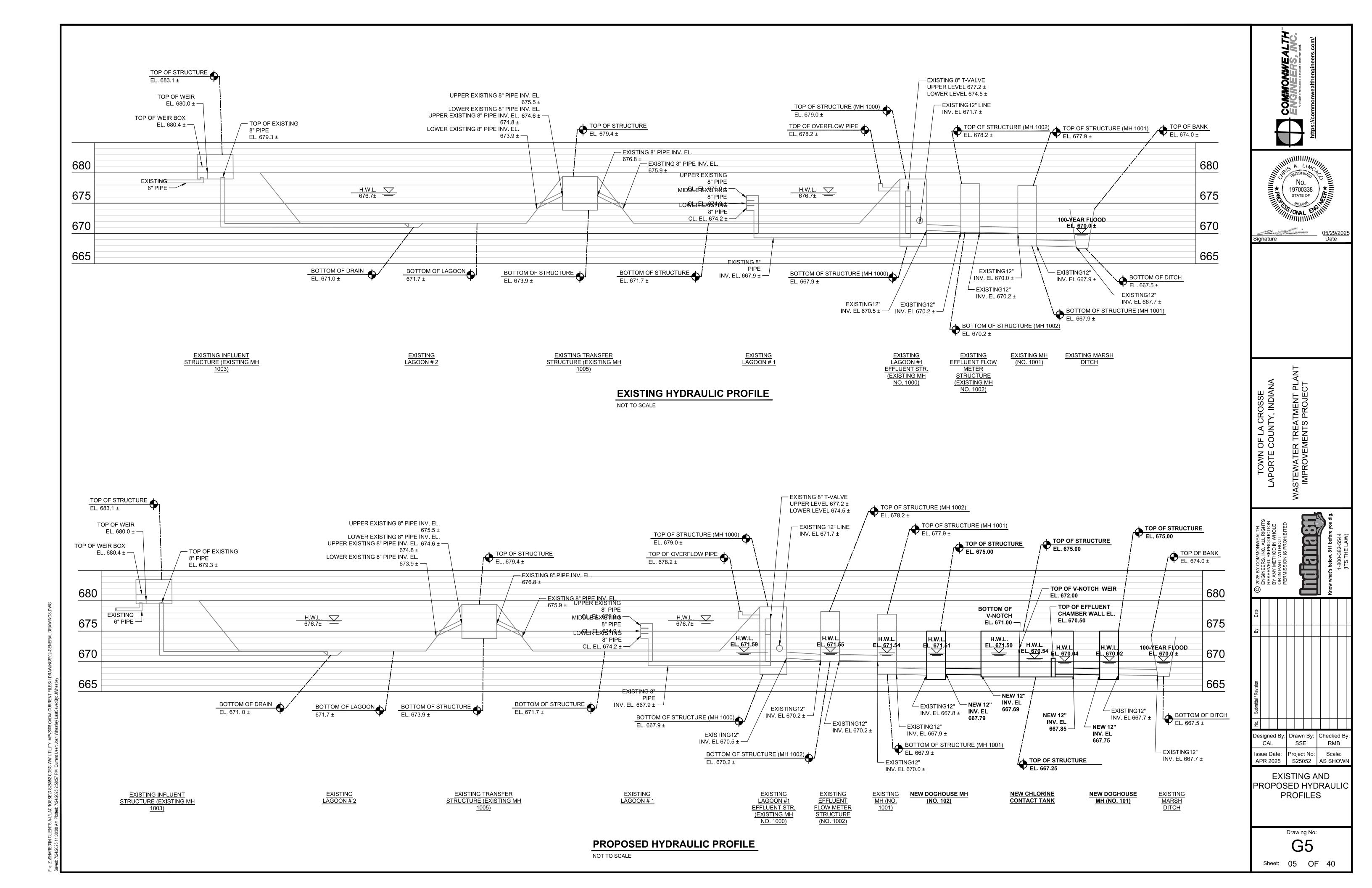
Drawing N

G4

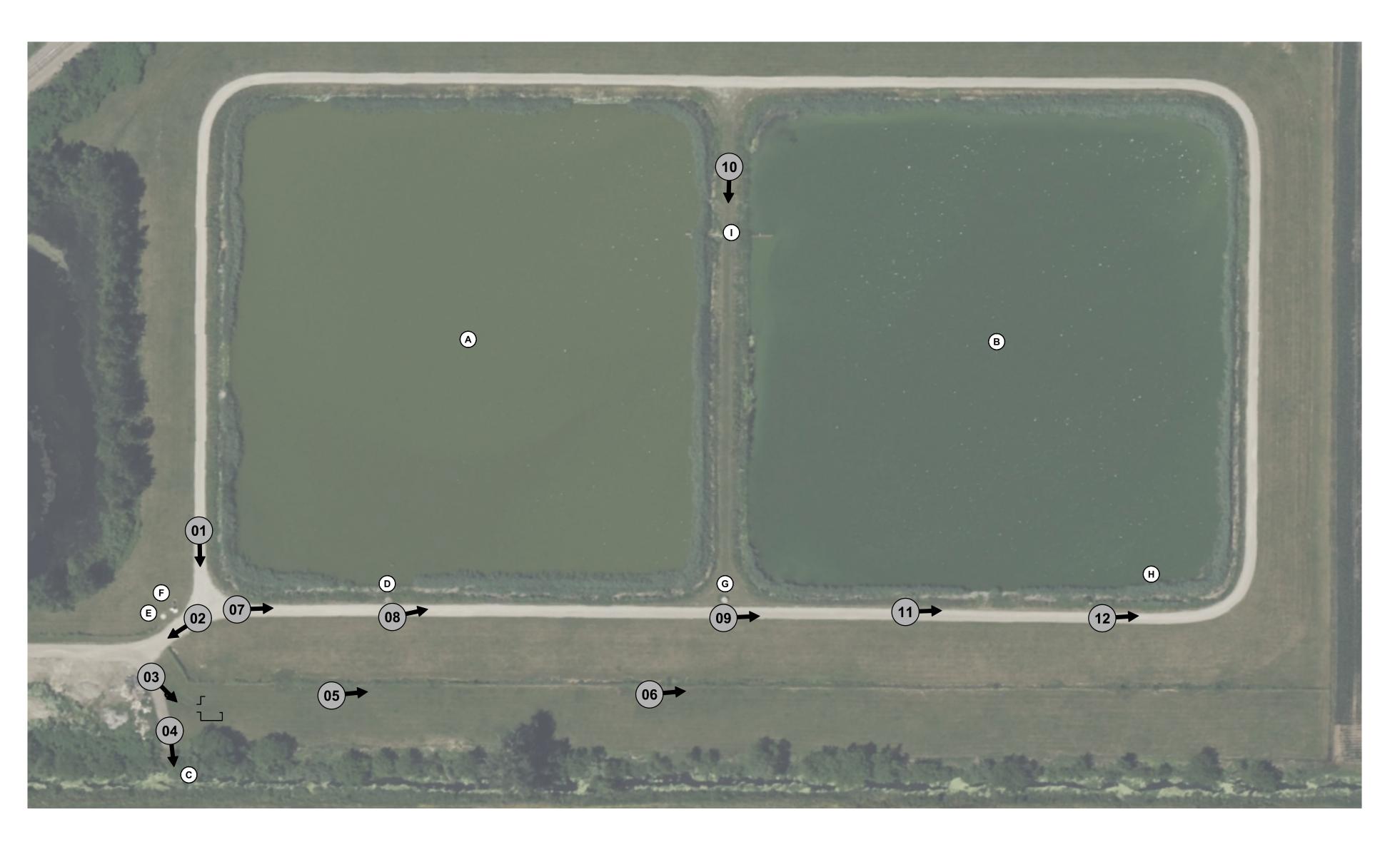
Project coordinates are based on the following:

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)







SCALE: 1"=60'-0"	SITE	PLAN	_
0 60'	SCALE:	1"=60'-0"	
	0	60'	

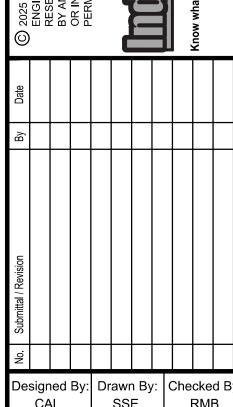
EXISTING STRUCTURE LEGEND			
IDENTIFIER	DESCRIPTION	DEMO NOTES	
А	EXISTING LAGOON #1	TO REMAIN	
В	EXISTING LAGOON #2	TO REMAIN	
С	EXISTING OUTFALL STRUCTURE	TO REMAIN	
D	EXISTING MANHOLE 1000 - LAGOON #1 EFFLUENT SEWER	TO BE MODIFIED	
E	EXISTING MANHOLE 1001	TO REMAIN	
F	EXISTING MANHOLE 1002 - EFFLUENT FLOW METER STRUCTURE	TO REMAIN	
G	EXISTING MANHOLE 1003 - INFLUENT STRUCTURE	TO REMAIN	
Н	EXISTING MANHOLE 1004 - LAGOON #2 EFFLUENT STRUCTURE	TO REMAIN	
I	EXISTING MANHOLE 1005 - LAGOON TRANSFER STRUCTURE	TO REMAIN	

### **LEGEND**:

INDICATES PHOTO NUMBER AND DIRECTION OF PHOTO (PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC. ON 04/07/25)



WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT



Designed By: Drawn By: Checked By CAL SSE RMB Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

EXISTING AERIAL SITE PLAN AND PHOTO LOG INDEX

> Drawing No: C01

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PHOTO #3



PHOTO #4

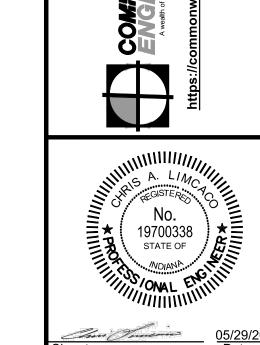


PHOTO #2









PHOTO #5

PHOTO #6

PHOTO #7

PHOTO #8



PHOTO #9







**PHOTO #12** 

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PHOTO LOG

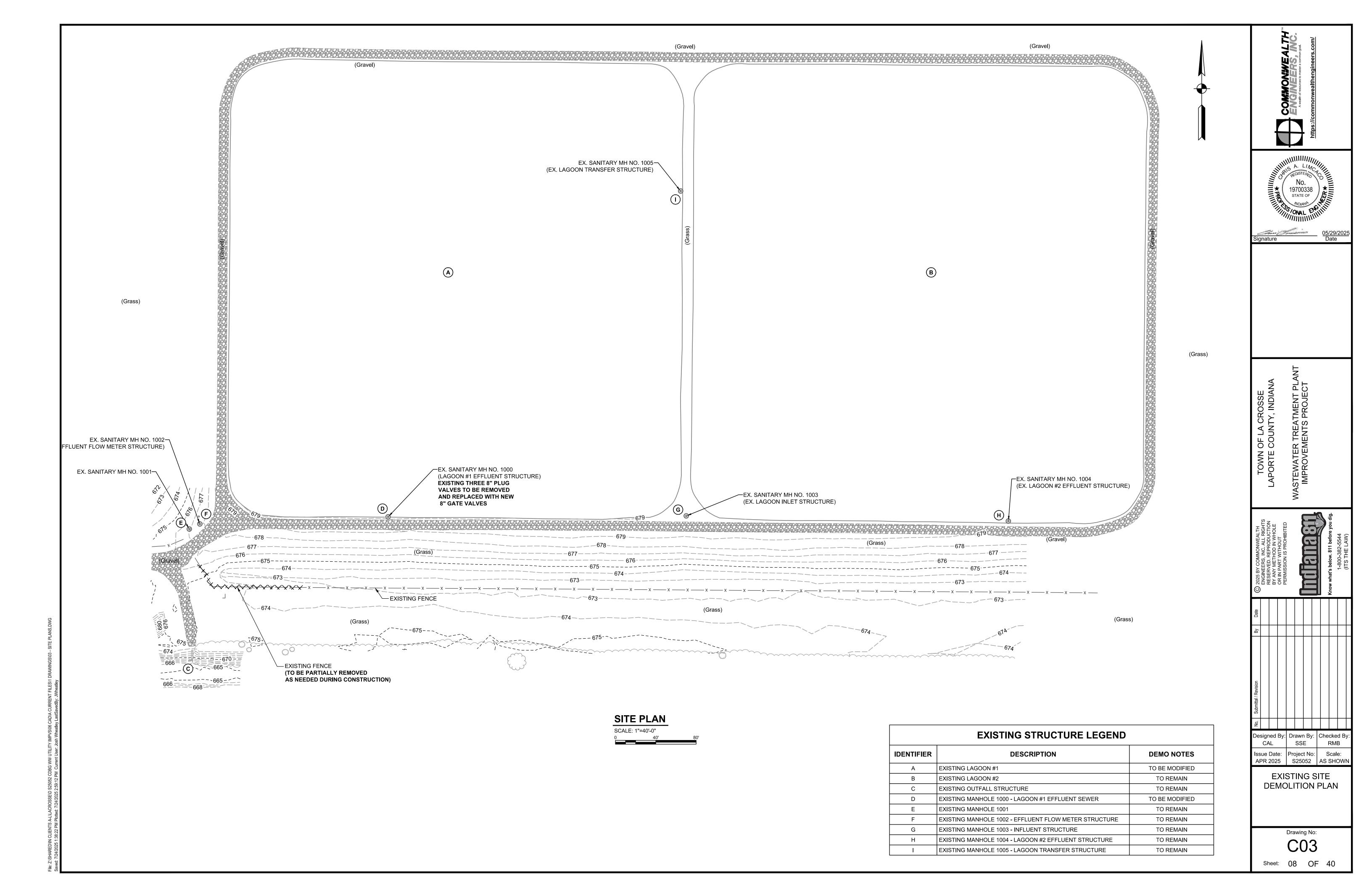
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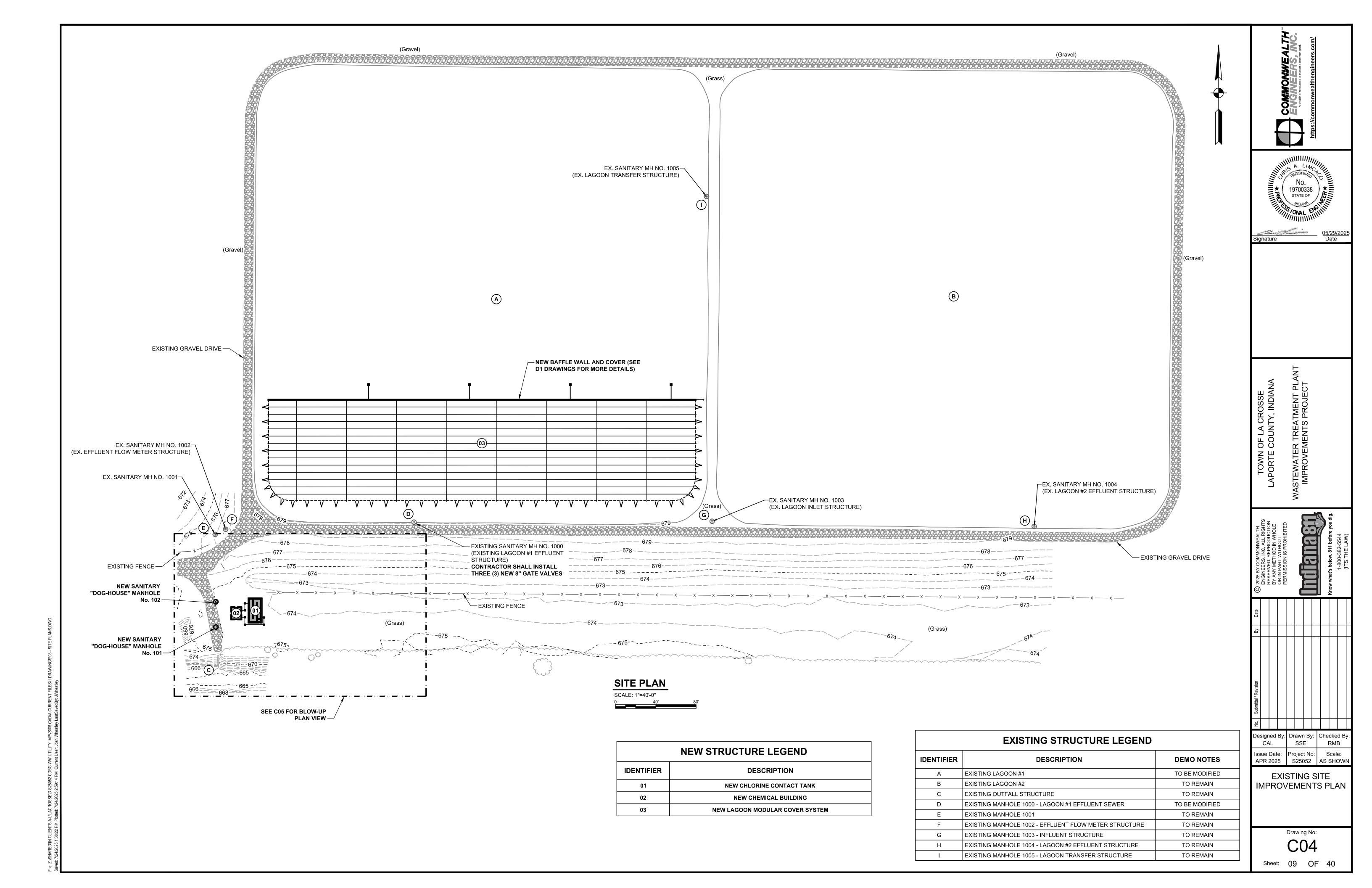
PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC. IN APRIL 2025.

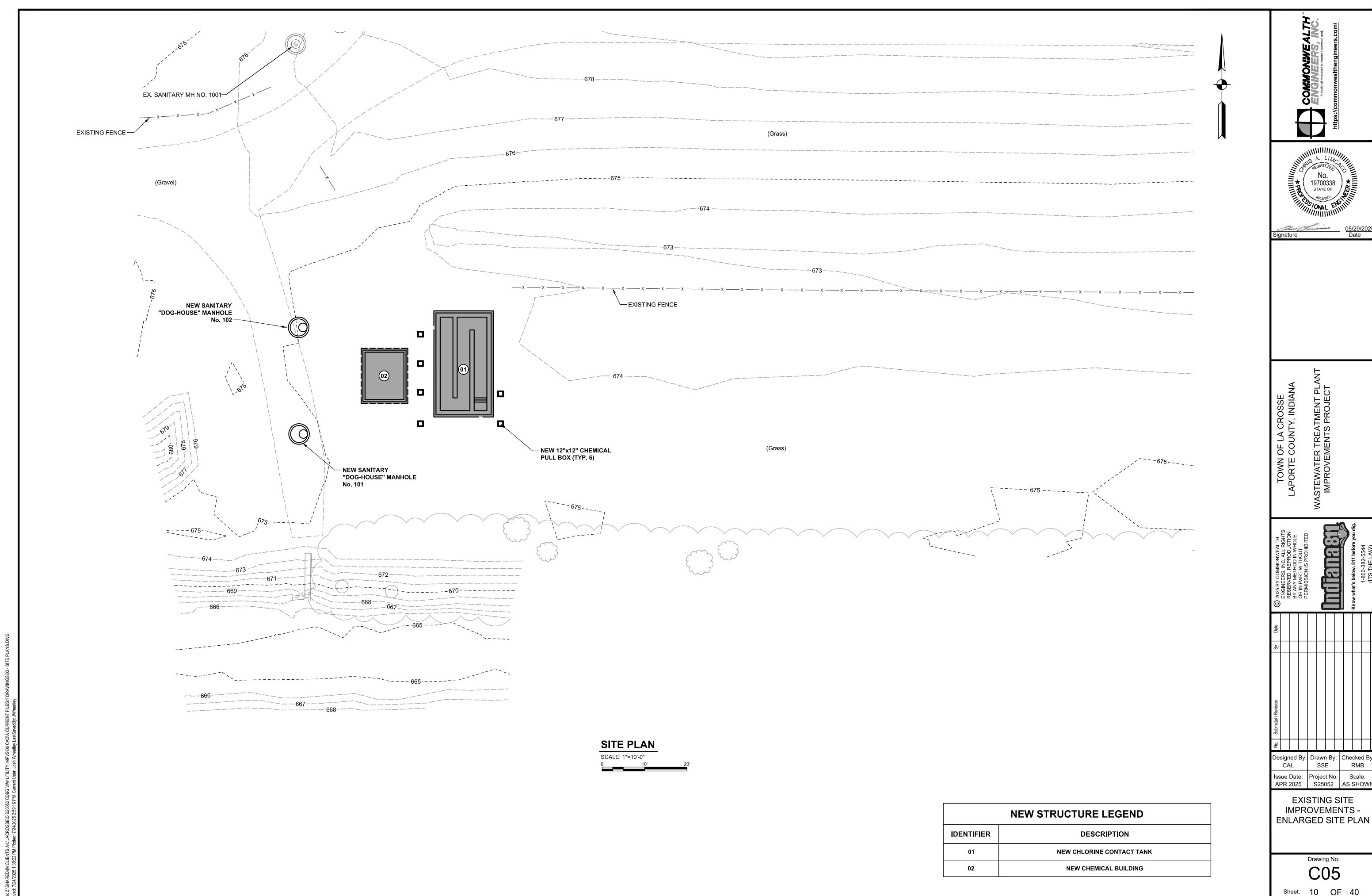
Drawing No: C02 Sheet: 07 OF 40

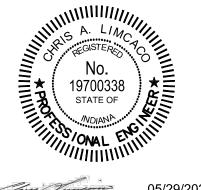
PHOTO #10

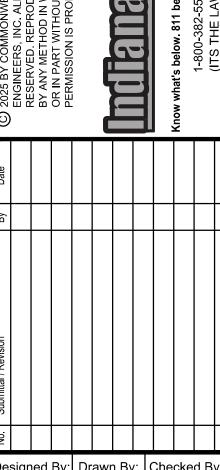
PHOTO #11



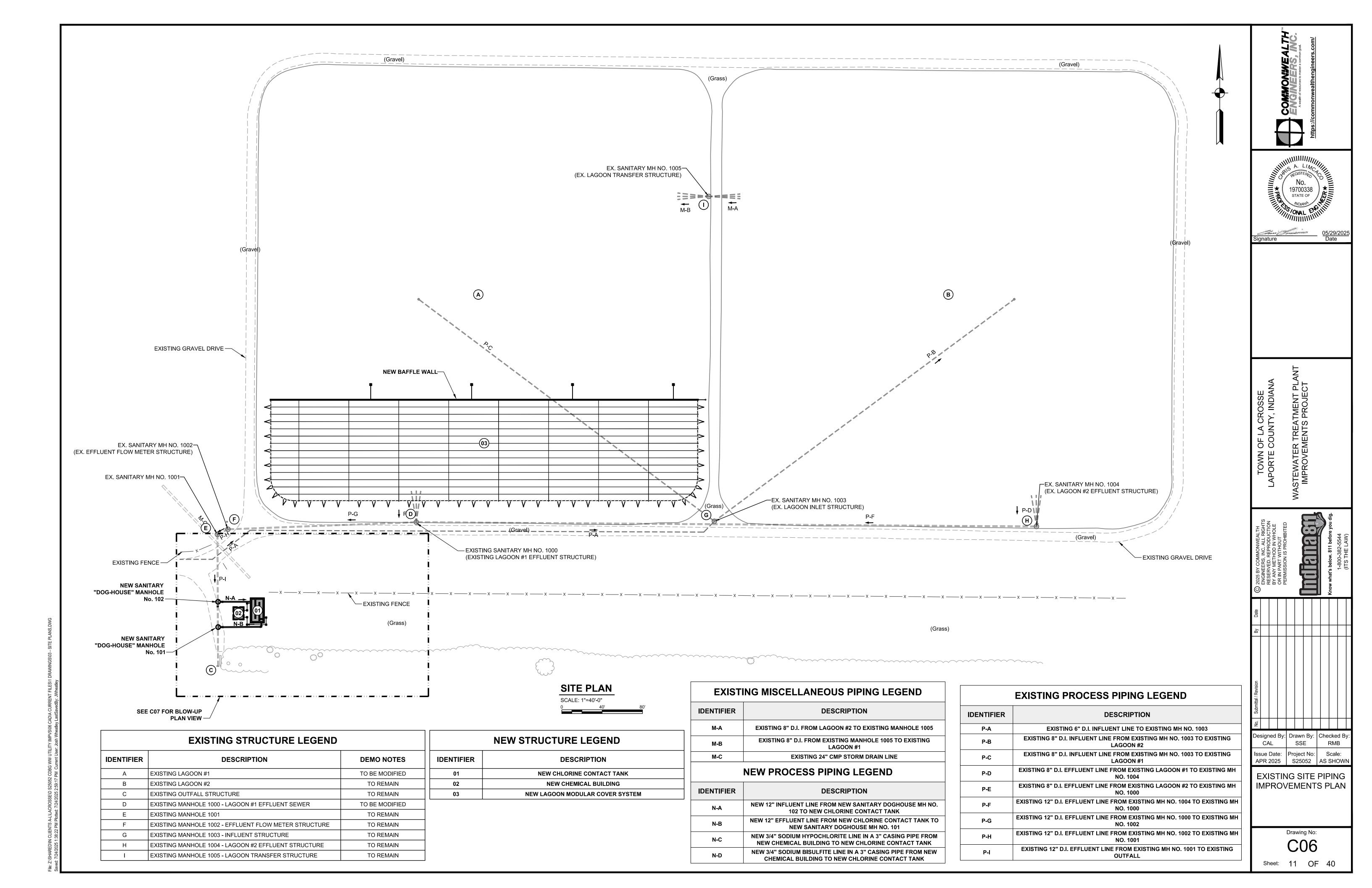


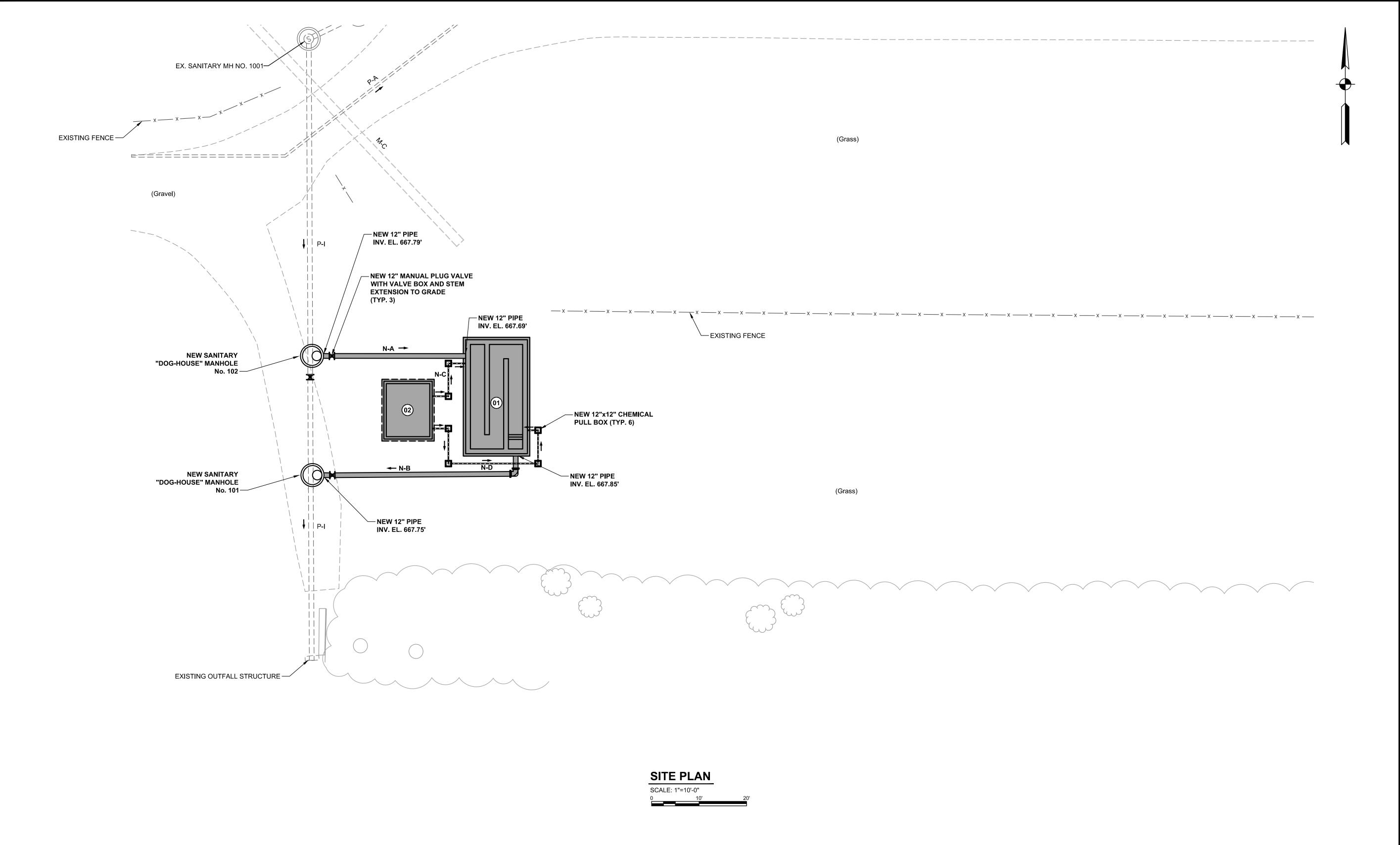






**EXISTING SITE** IMPROVEMENTS -**ENLARGED SITE PLAN** 

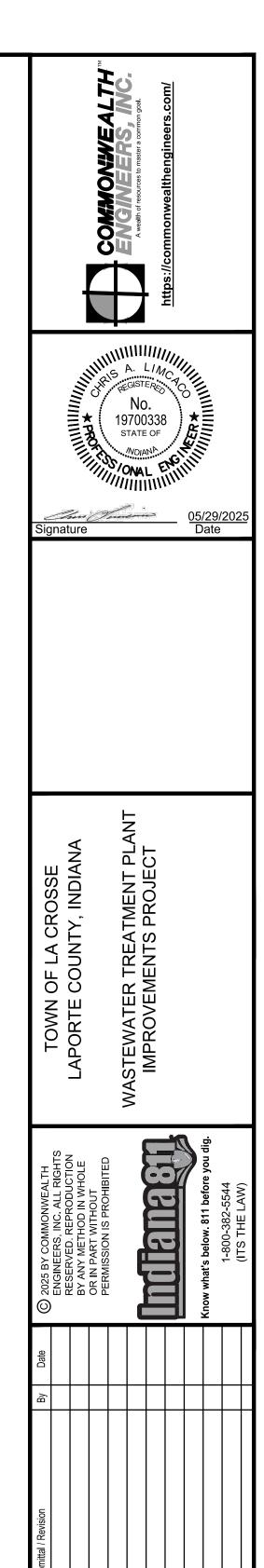




	NEW STRUCTURE LEGEND
IDENTIFIER	DESCRIPTION
01	NEW CHLORINE CONTACT TANK
02	NEW CHEMICAL BUILDING

NEW PROCESS PIPING LEGEND		
IDENTIFIER	DESCRIPTION	
N-A	NEW 12" INFLUENT LINE FROM NEW SANITARY DOGHOUSE MH NO. 102 TO NEW CHLORINE CONTACT TANK	
N-B	NEW 12" EFFLUENT LINE FROM NEW CHLORINE CONTACT TANK TO NEW SANITARY DOGHOUSE MH NO. 101	
N-C	NEW 3/4" SODIUM HYPOCHLORITE LINE IN A 3" CASING PIPE FROM NEW CHEMICAL BUILDING TO NEW CHLORINE CONTACT TANK	
N-D	NEW 3/4" SODIUM BISULFITE LINE IN A 3" CASING PIPE FROM NEW CHEMICAL BUILDING TO NEW CHLORINE CONTACT TANK	

EXI	EXISTING MISCELLANEOUS PIPING LEGEND		
IDENTIFIER	DESCRIPTION		
M-C	EXISTING 24" CMP STORM DRAIN LINE		
	EXISTING PROCESS PIPING LEGEND		
IDENTIFIER	DESCRIPTION		
P-A	EXISTING 6" D.I. INFLUENT LINE TO EXISTING MH NO. 1003		
P-I	EXISTING 12" D.I. EFFLUENT LINE FROM EXISTING MH NO. 1001 TO EXISTING OUTFALL		



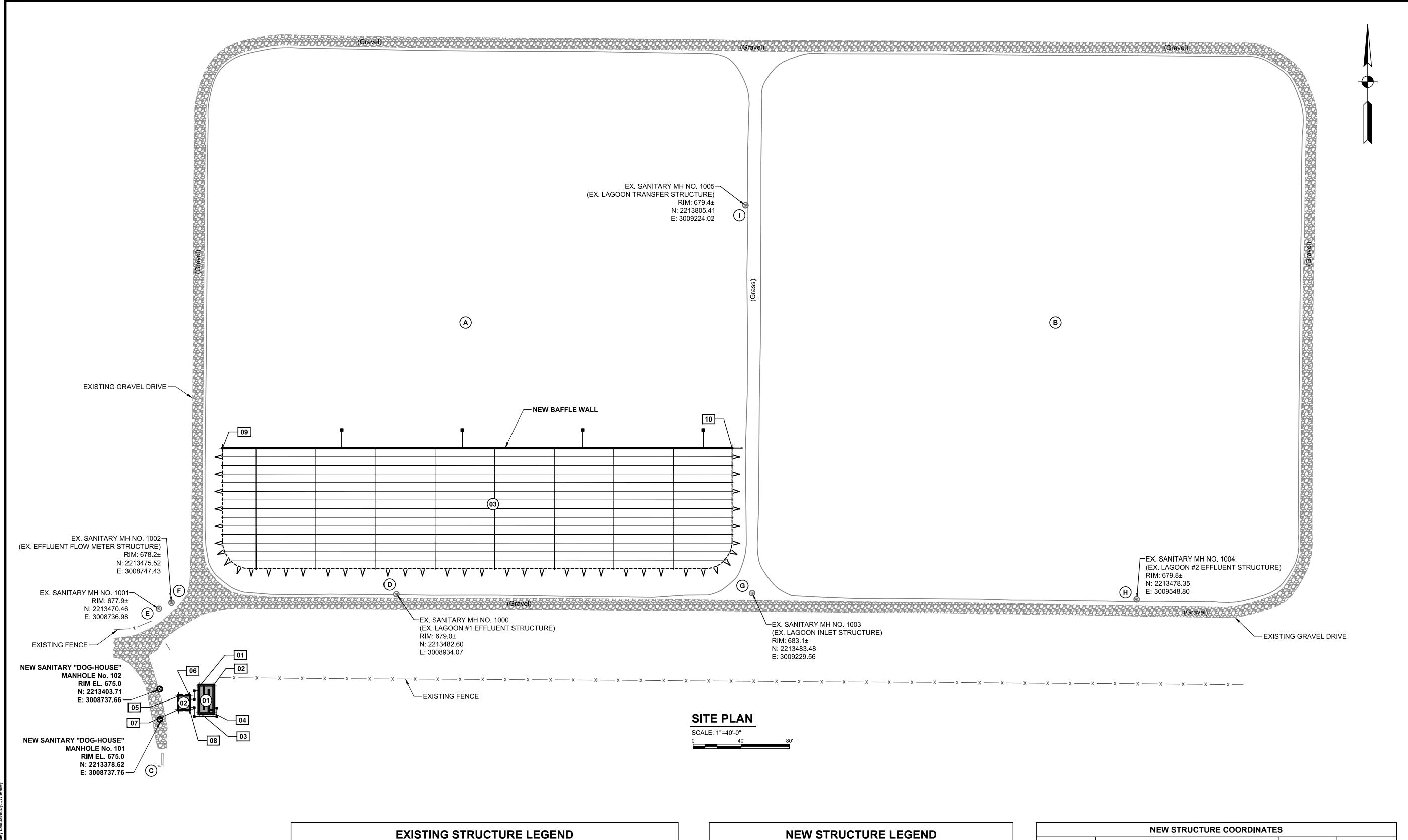
Designed By: CAL SSE RMB

Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

EXISTING SITE PIPING IMPROVEMENTS -ENLARGED SITE PLAN

Drawing No:

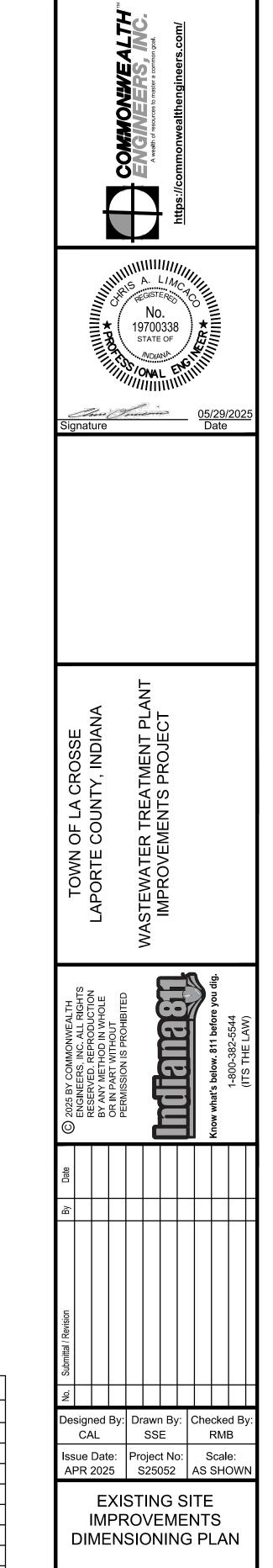
sheet: 12 OF



EXISTING STRUCTURE LEGEND					
IDENTIFIER	DESCRIPTION	DEMO NOTES			
Α	EXISTING LAGOON #1	TO BE MODIFIED			
В	EXISTING LAGOON #2	TO REMAIN			
С	EXISTING OUTFALL STRUCTURE	TO REMAIN			
D	EXISTING MANHOLE 1000 - LAGOON #1 EFFLUENT SEWER	TO BE MODIFIED			
E	EXISTING MANHOLE 1001	TO REMAIN			
F	EXISTING MANHOLE 1002 - EFFLUENT FLOW METER STRUCTURE	TO REMAIN			
G	EXISTING MANHOLE 1003 - INFLUENT STRUCTURE	TO REMAIN			
Н	EXISTING MANHOLE 1004 - LAGOON #2 EFFLUENT STRUCTURE	TO REMAIN			
ı	EXISTING MANHOLE 1005 - LAGOON TRANSFER STRUCTURE	TO REMAIN			

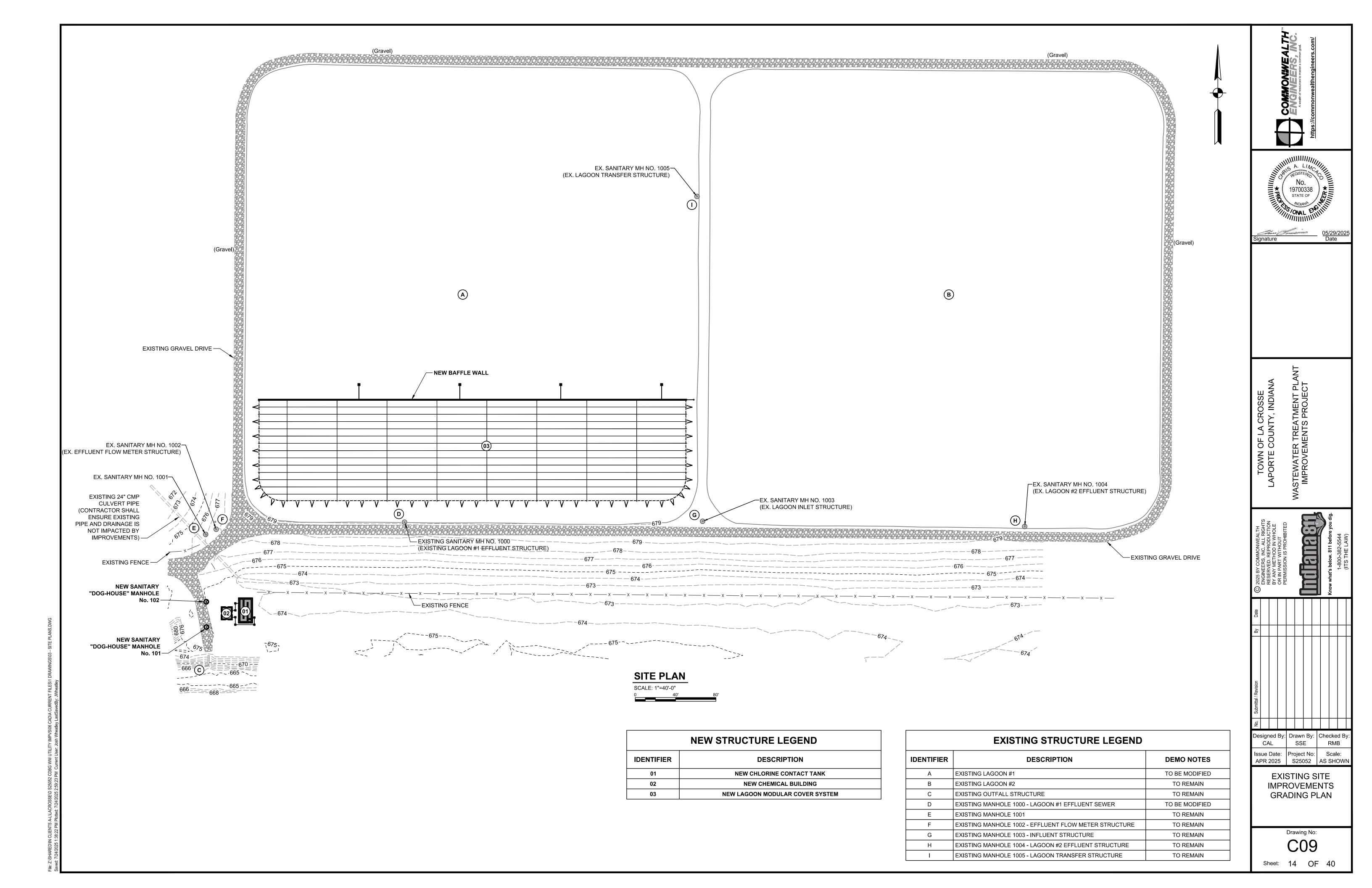
NEW STRUCTURE LEGEND				
IDENTIFIER	DESCRIPTION			
01	NEW CHLORINE CONTACT TANK			
02	NEW CHEMICAL BUILDING			
03	NEW LAGOON MODULAR COVER SYSTEM			

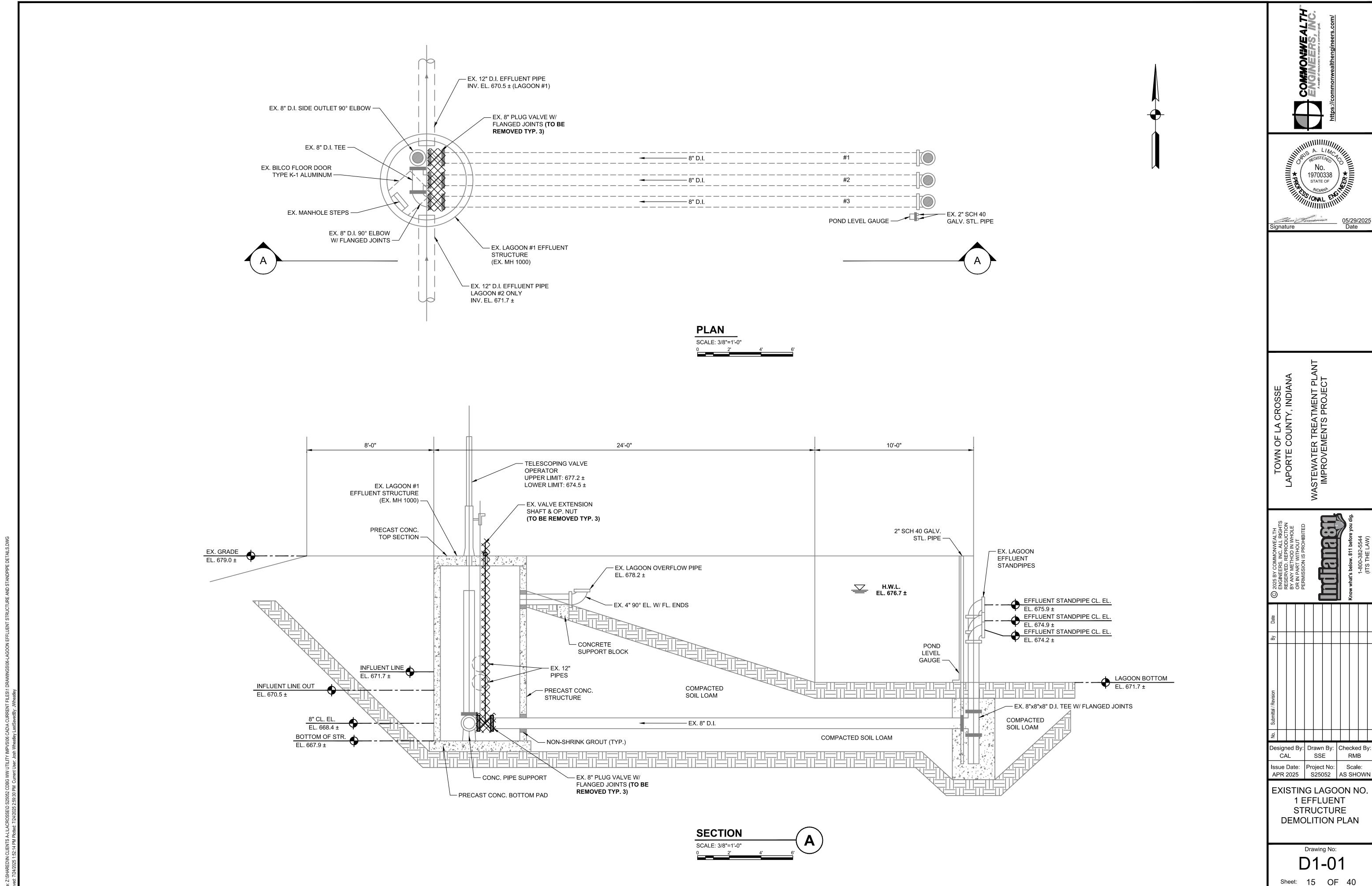
<u>IDENTIFIER</u>	<u>DESCRIPTION</u>	<u>NORTHING</u>	<b>EASTING</b>
01	NEW CHLORINE CONTACT TANK - NW CORNER	2213406.13	3008771.00
02	NEW CHLORINE CONTACT TANK - NE CORNER	2213406.13	3008782.00
03	NEW CHLORINE CONTACT TANK - SW CORNER	2213384.13	3008771.00
04	NEW CHLORINE CONTACT TANK - SE CORNER	2213384.13	3008782.00
05	NEW CHEMICAL BUILDING - NW CORNER	2213397.88	3008753.29
06	NEW CHEMICAL BUILDING - NE CORNER	2213397.88	3008762.45
07	NEW CHEMICAL BUILDING - SW CORNER	2213386.71	3008753.29
08	NEW CHEMICAL BUILDING - SE CORNER	2213386.71	3008762.45
09	NEW LAGOON BAFFLE WALL - NW CORNER	2213603.92	3008789.92
10	NEW LAGOON BAFFLE WALL - NE CORNER	2213603.92	3009212.92

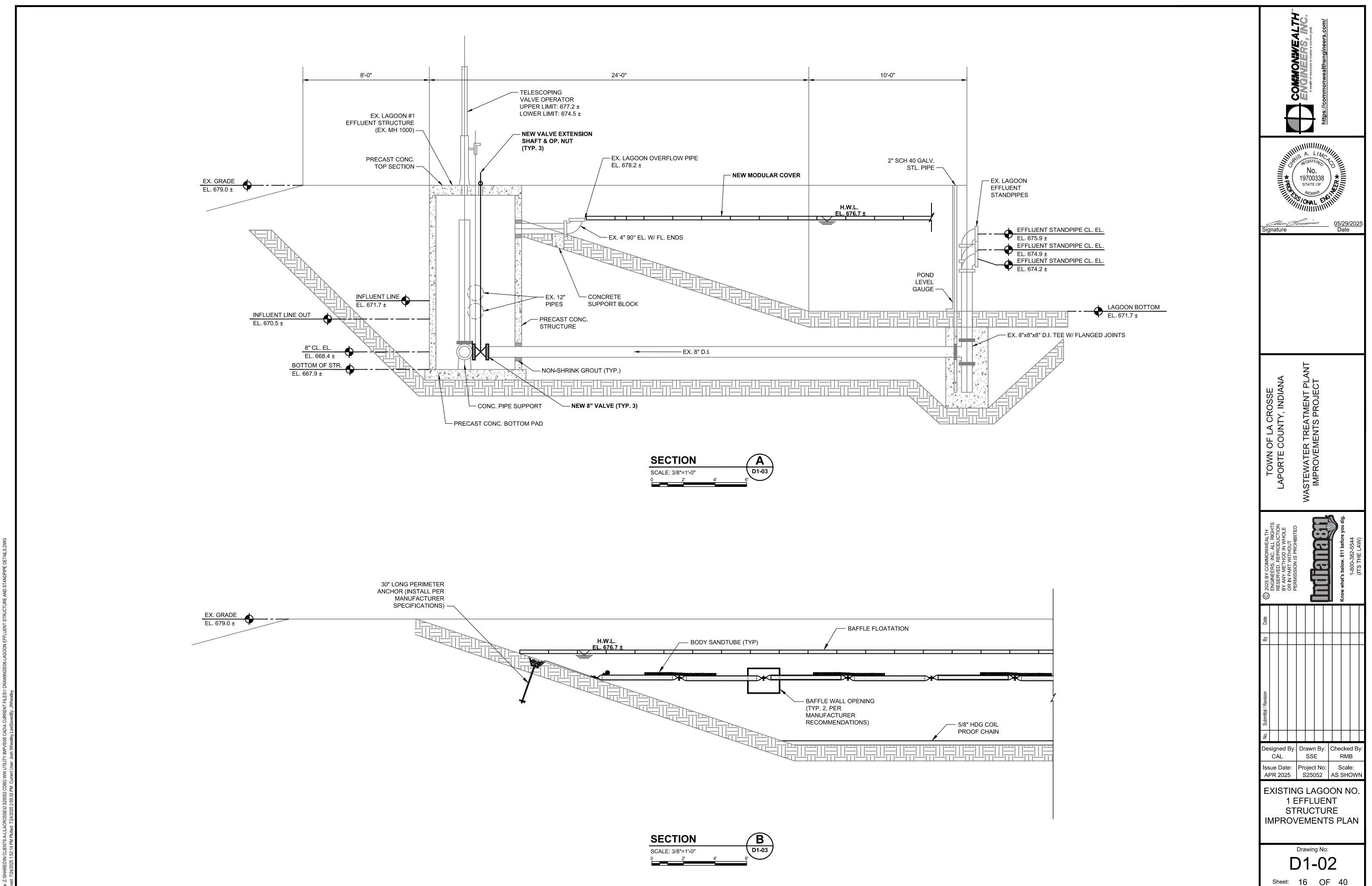


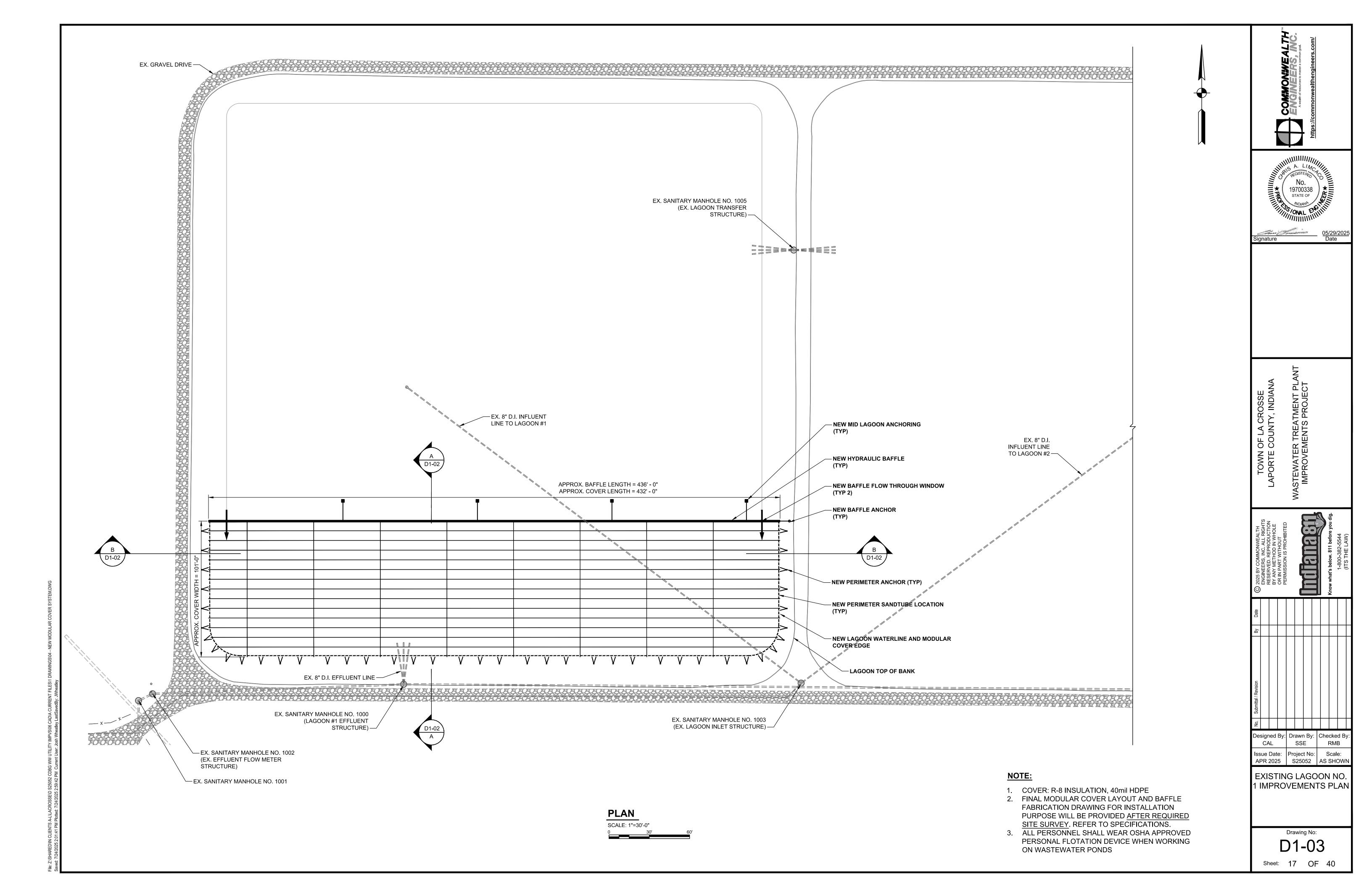
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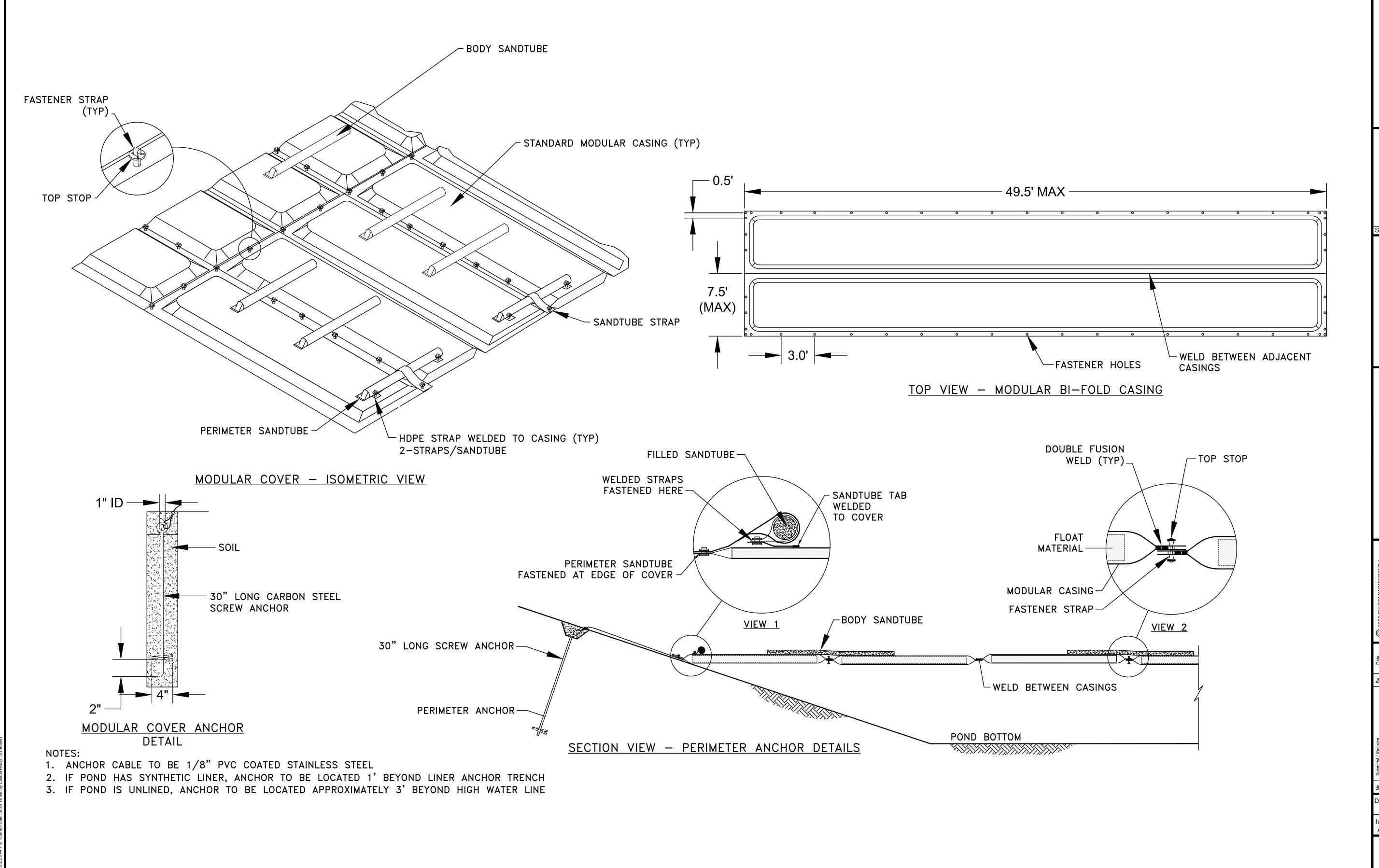
Sheet: 13 OF 40











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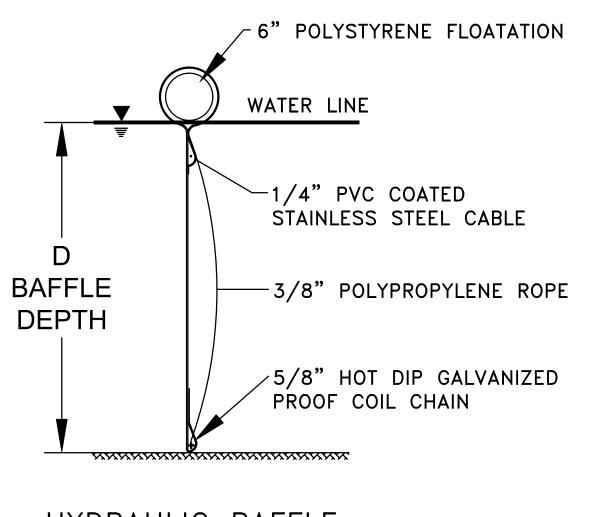
COMMONIMEALTH
ENGINEERS INC.
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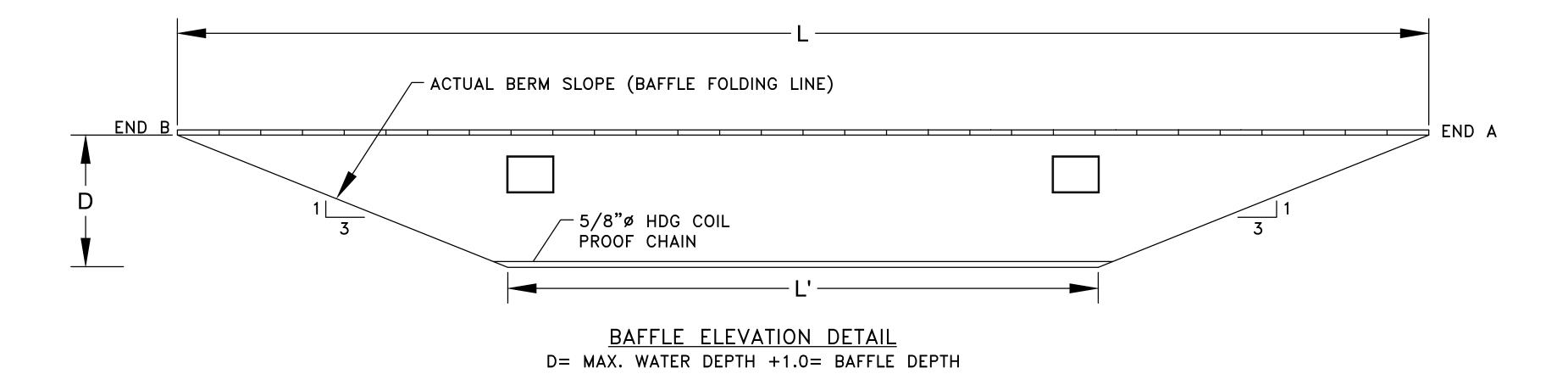
Designed By: Drawn By: Checked By Issue Date: Project No: Scale:
APR 2025 S25052 AS SHOWN

LAGOON MODULAR **COVER DETAILS** 

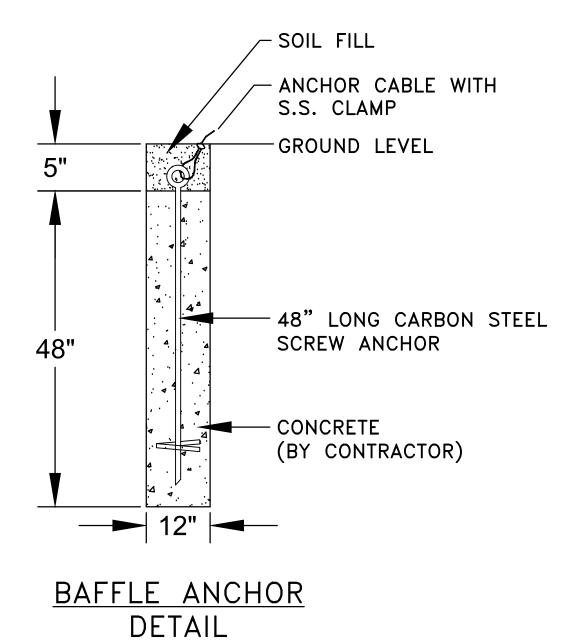
Drawing No: D1-04

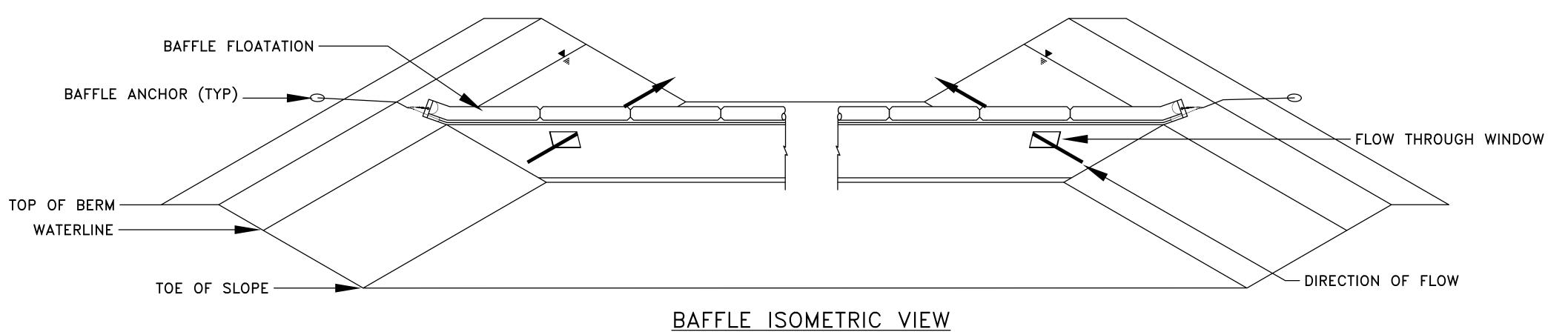
Sheet: 18 OF 40





# HYDRAULIC BAFFLE SECTION





**DISCLAIMER NOTE:** 

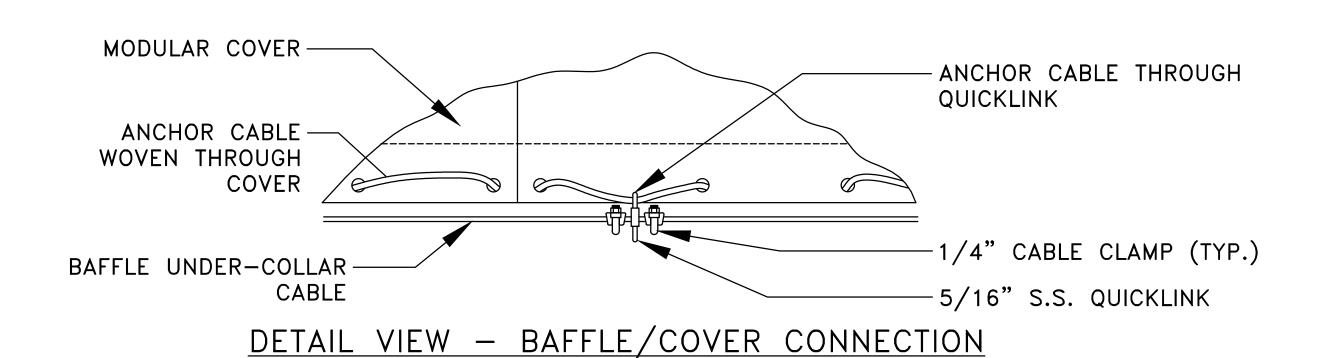
1. ALL DETAILS WERE OBTAINED FROM LEMTEC AND SHALL BE USED AS REFERENCE ONLY.

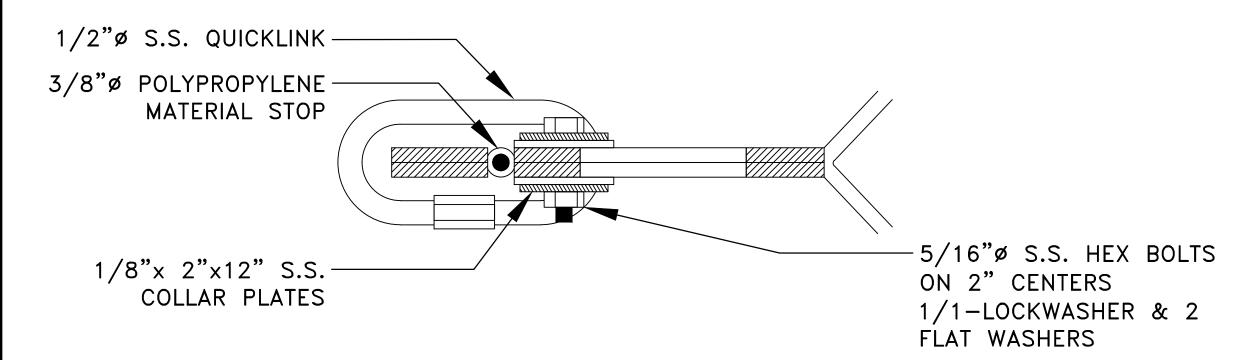
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Designed By: Drawn By: Checked By CAL SSE RMB

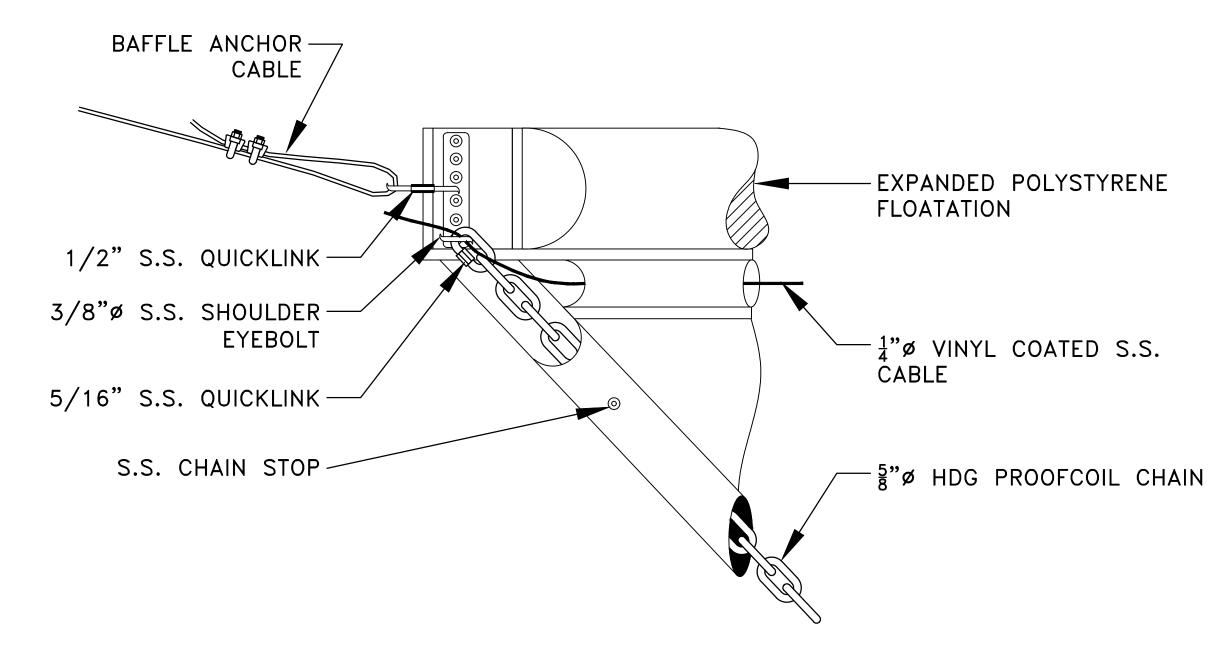
LAGOON BAFFLE **DETAILS** 

Drawing No: D1-05 Sheet: 19 OF 40

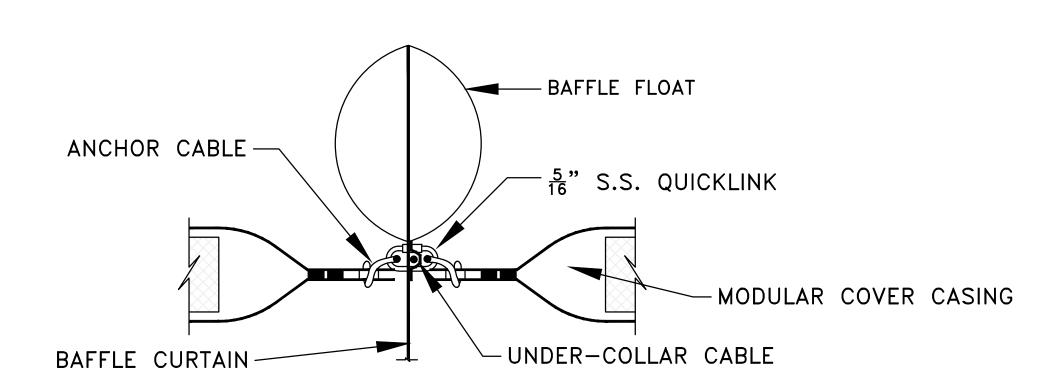




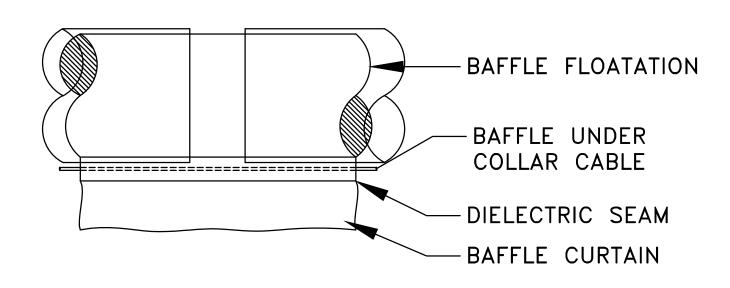
# <u>DETAIL VEW - BAFFLE ANCHOR CONNECTION</u>



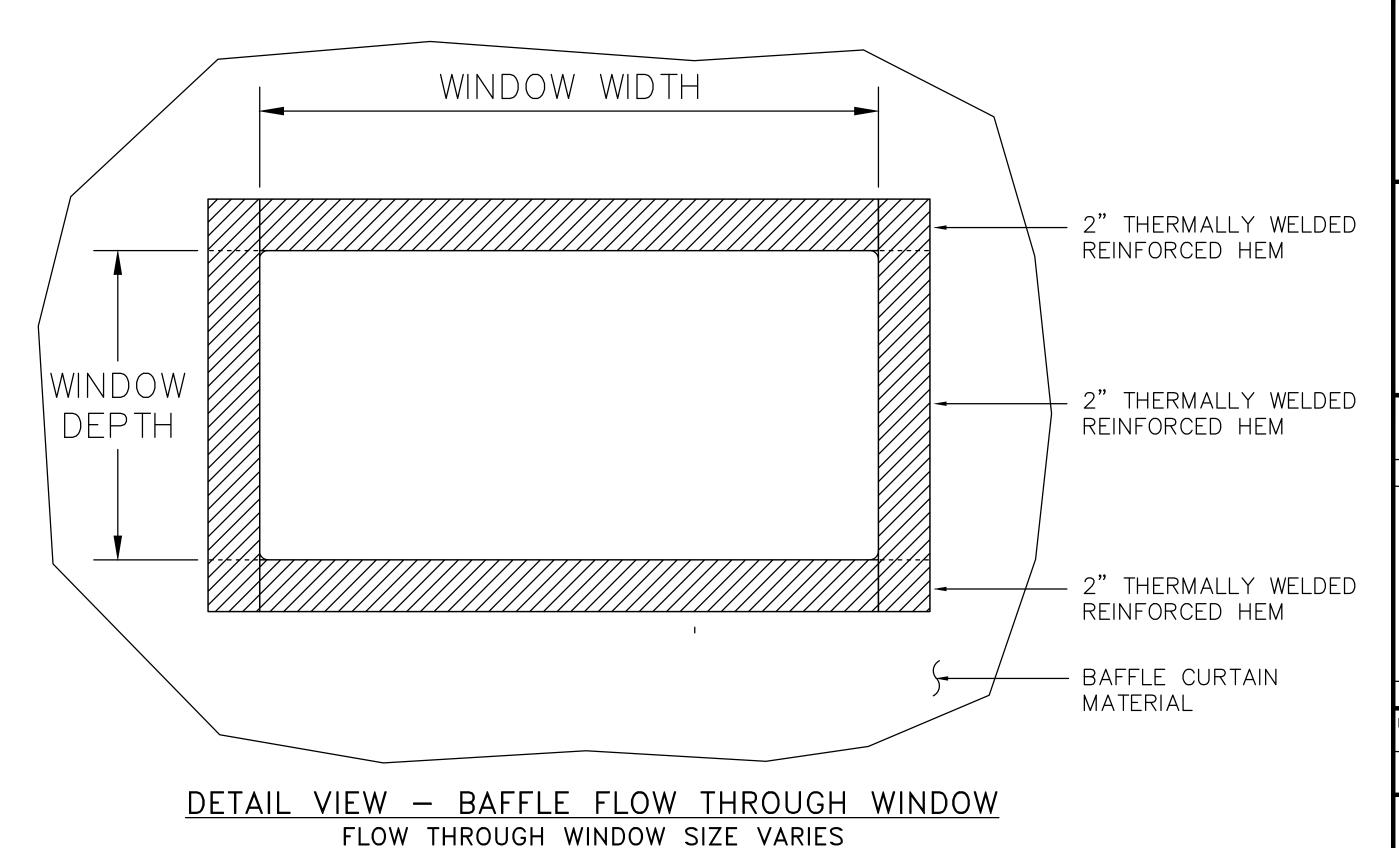
<u>DETAIL VIEW - BAFFLE ANCHOR CONNECTION</u>



# SECTION VIEW - BAFFLE/COVER



# SECTION VIEW - BAFFLE UNDERCOLLAR CABLE SUPPORT



**DISCLAIMER NOTE:** 

1. ALL DETAILS WERE OBTAINED FROM LEMTEC AND SHALL BE USED AS REFERENCE ONLY.





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Date

LAPORTE COUNTY, INDIANA
WASTEWATER TREATMENT PLANT
IMPROVEMENTS PROJECT

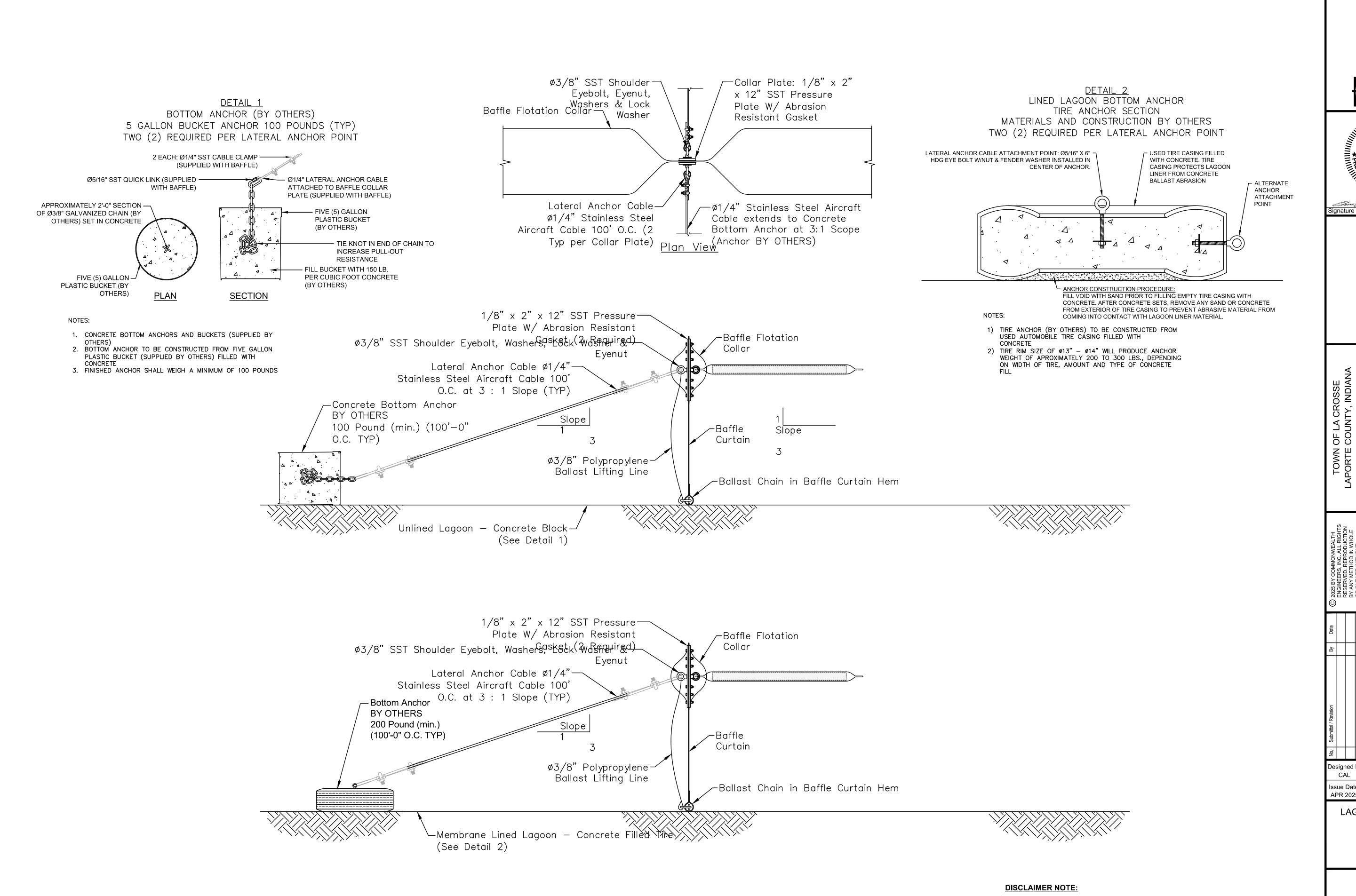
© 2025 BY COMMONWEALTH	ENGINEERS, INC. ALL RIGHTS DESEBYED BEDDONI ICTION	BY ANY METHOD IN WHOLE	OR IN PART WITHOUT PERMISSION IS PROHIBITED						Know wnat's below. 811 before you dig	1-800-382-5544 (ITS THE   AM)	
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Drawing No: **D1-06** 

Sheet: 20 OF 40

LAGOON BAFFLE

COVER DETAILS



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TOWN OF LA CROSSE
LAPORTE COUNTY, INDIANA
WASTEWATER TREATMENT PLANT
IMPROVEMENTS PROJECT

Designed By: Drawn By: Checked B KMB

Issue Date: Project No: Scale: APR 2025 S25052

Who what's the project No: Scale: APR 2025 S25052

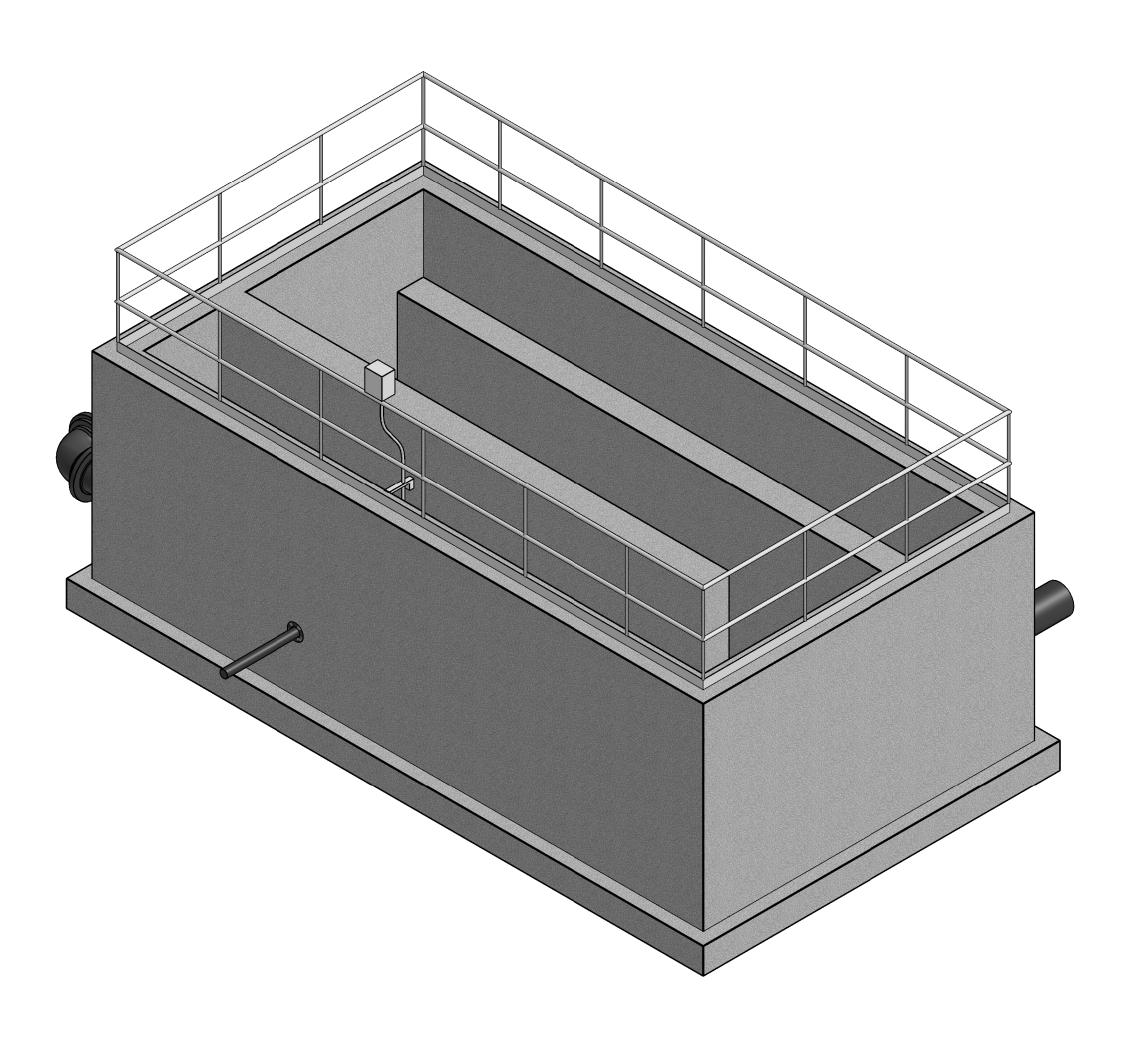
Issue Date: Project No: Scale: AS SHOW

LAGOON ANCHOR DETAILS

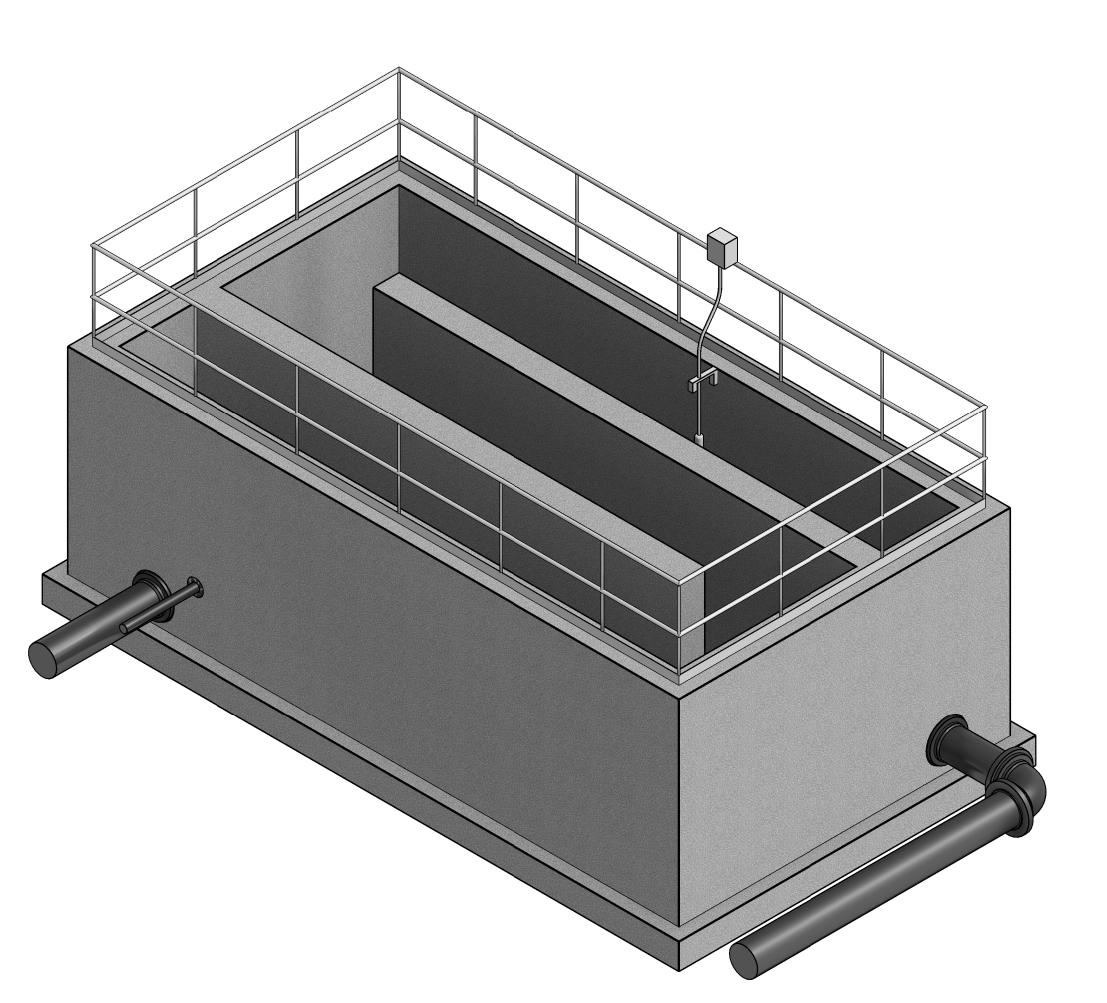
Drawing No: **D1-07** 

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Sheet: 21 OF 40



NORTHEAST ISOMETRIC
SCALE: NOT TO SCALE



SOUTHWEST ISOMETRIC
SCALE: NOT TO SCALE

| 05/29/2025 | Signature | Date WASTEWATER TREATMENT PLANT IMPROVEMENTS PROJECT TOWN OF LA CROSSE LAPORTE COUNTY, INDIANA

Date

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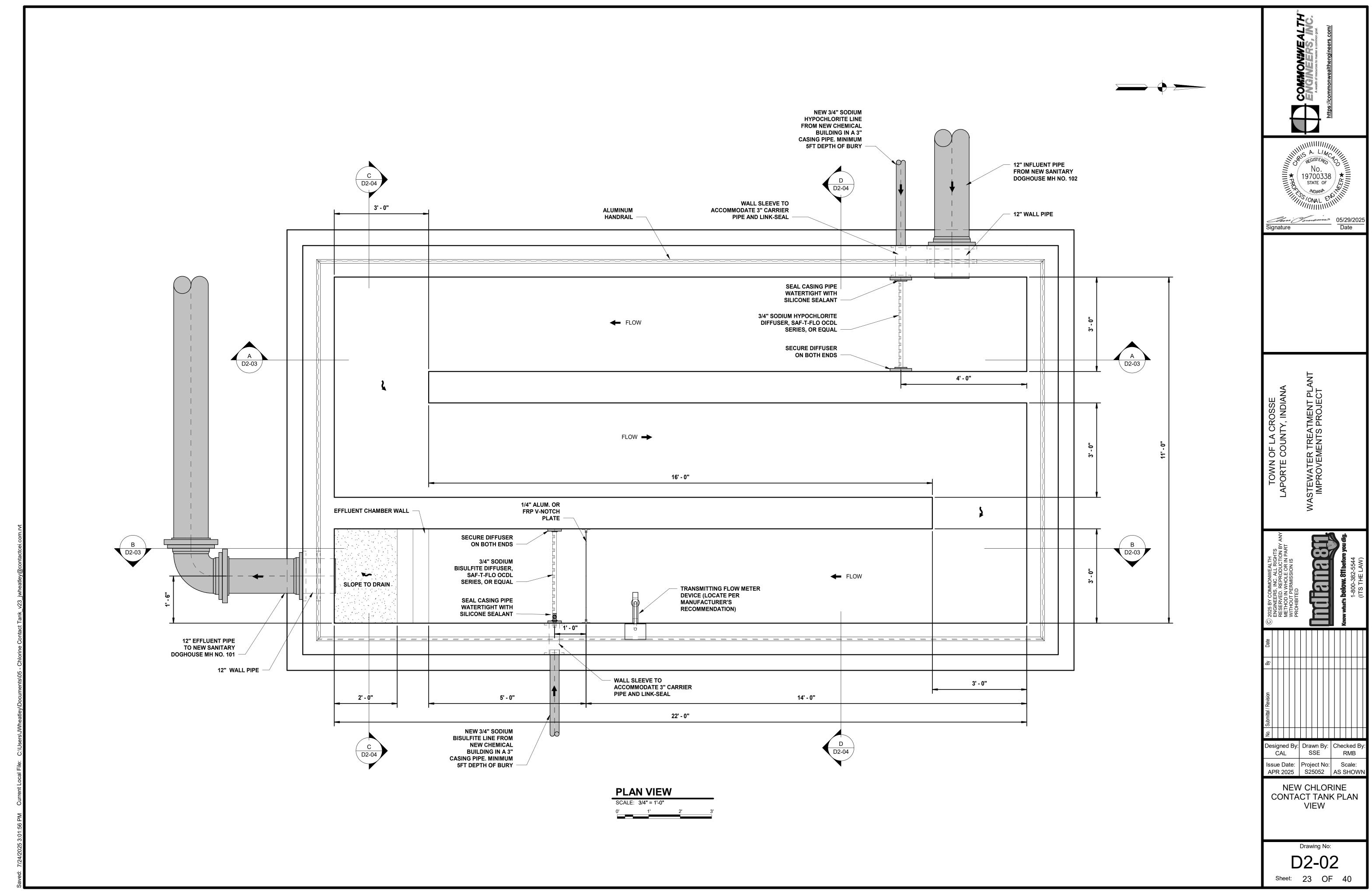
Designed By: Drawn By: Checked By: SSE RMB

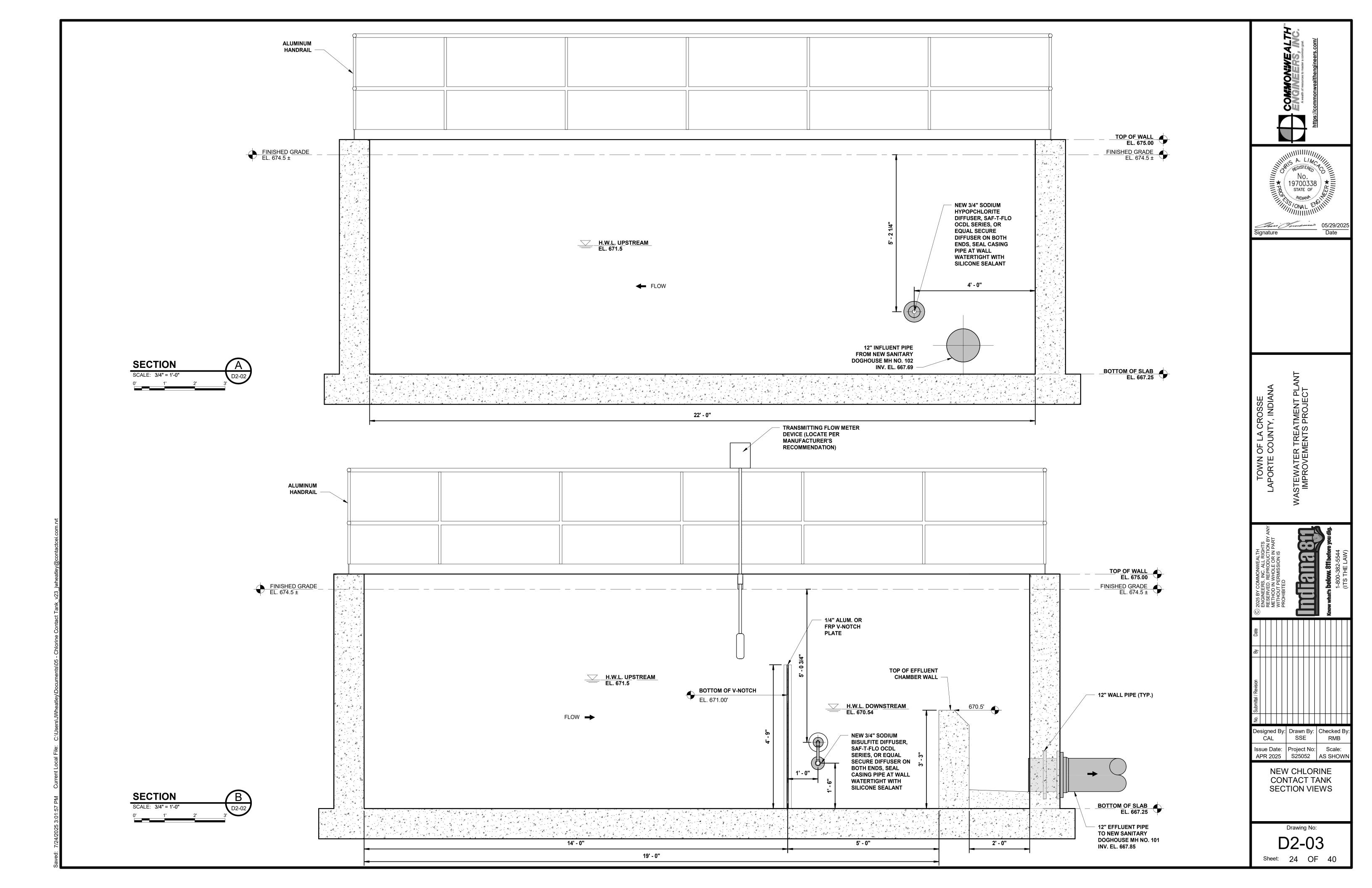
Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

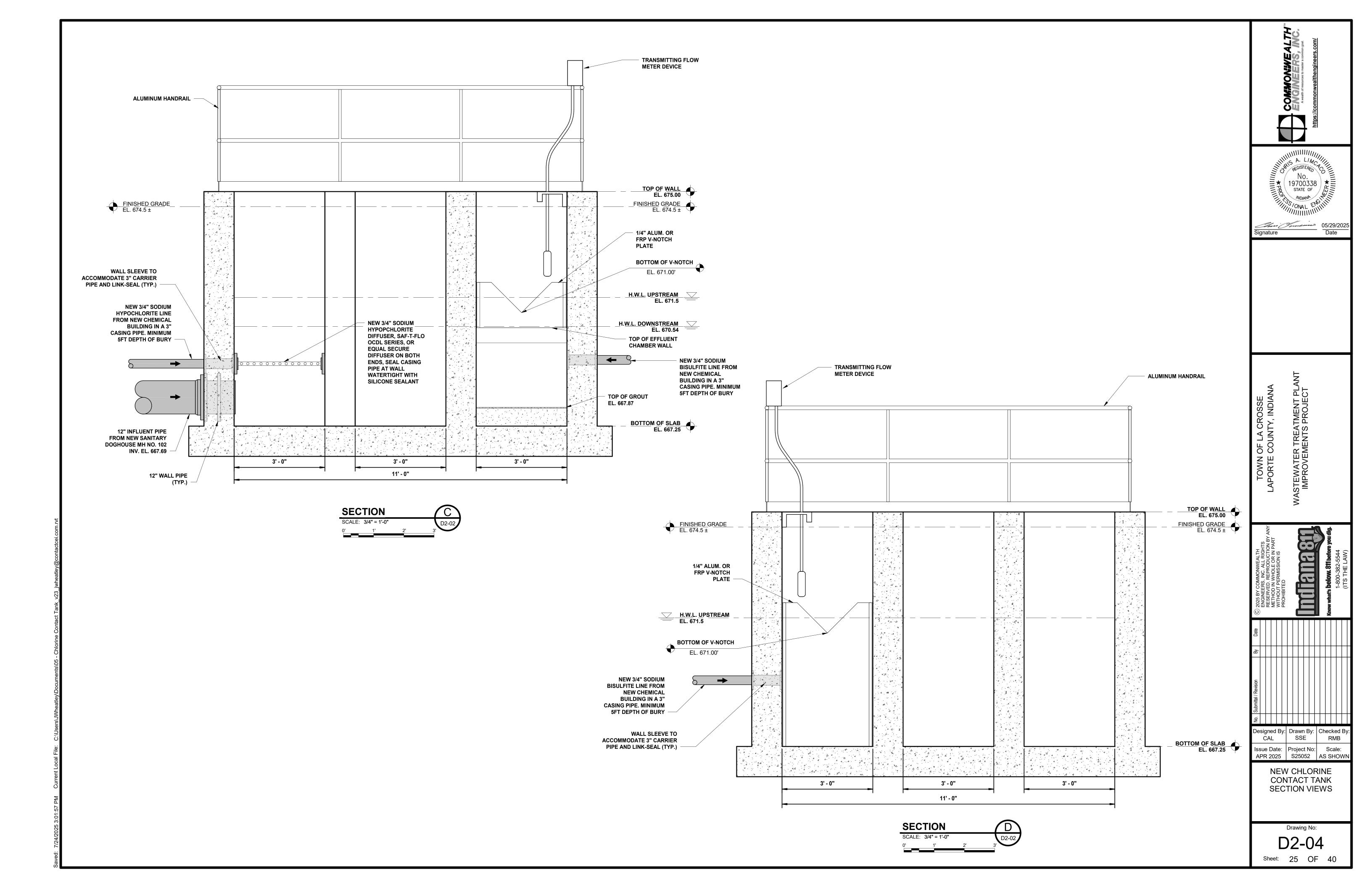
NEW CHLORINE CONTACT TANK ISOMETRIC VIEWS

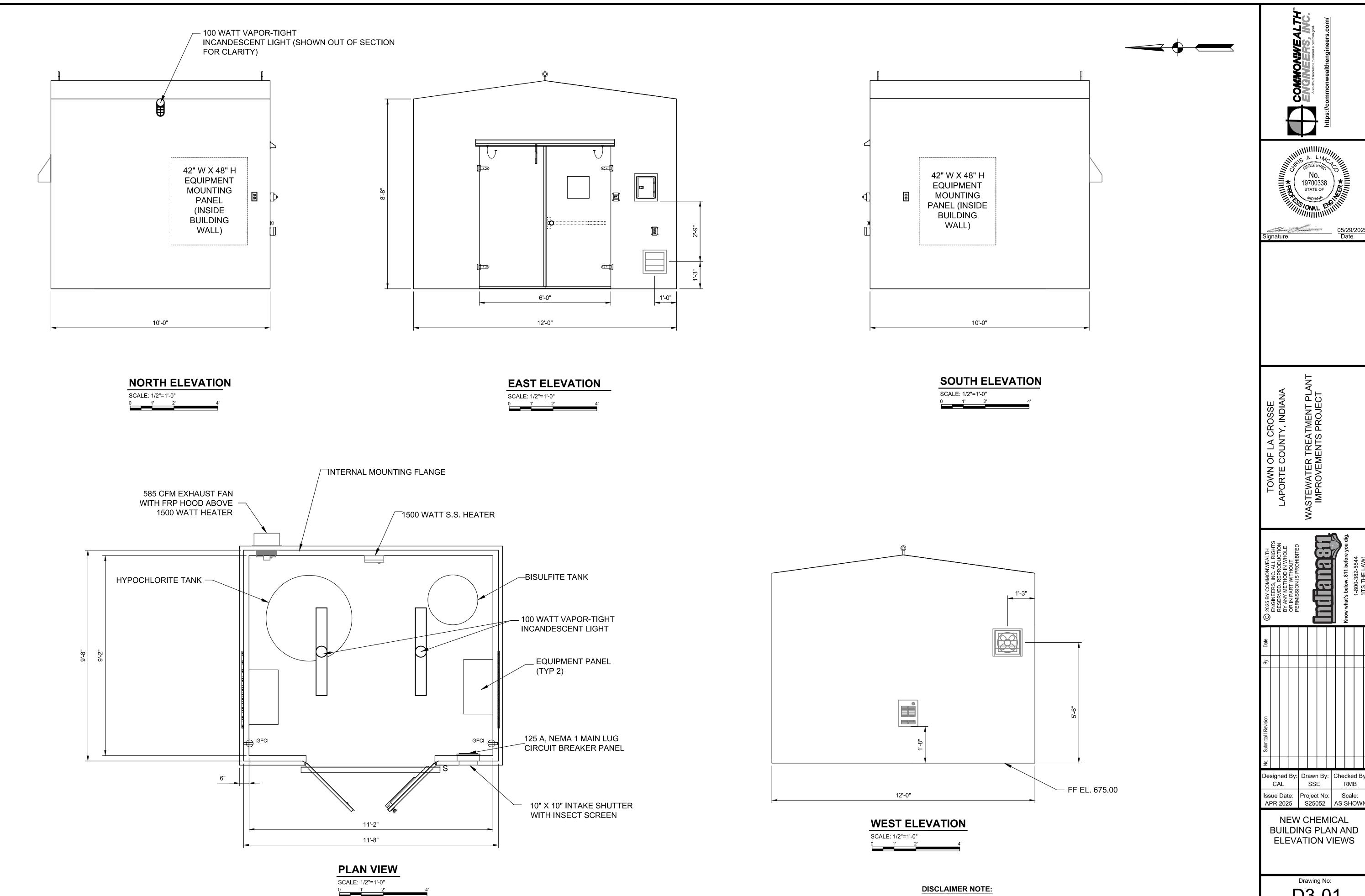
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1. ALL DETAILS WERE OBTAINED FROM TRACOM AND SHALL BE USED AS REFERENCE ONLY.



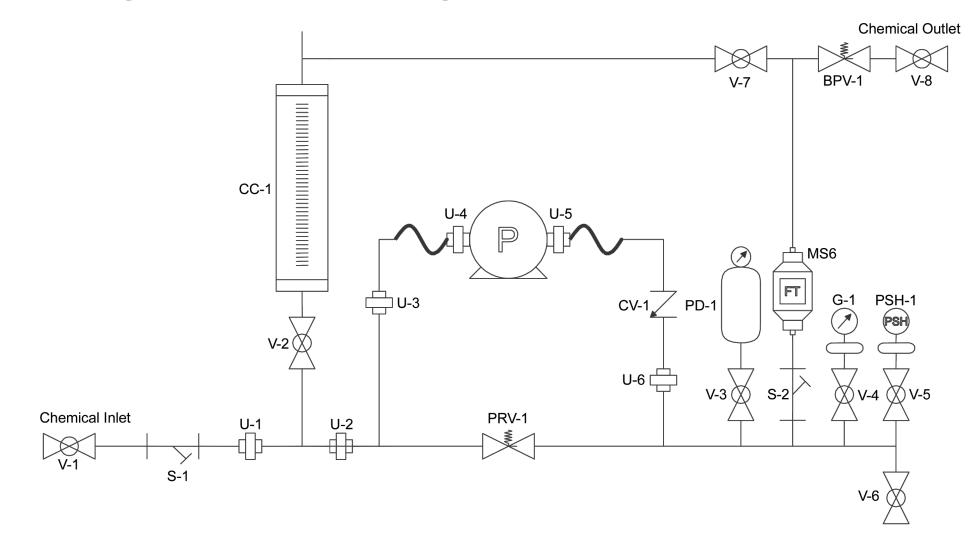
WASTEWATER TREATMENT PL. IMPROVEMENTS PROJECT

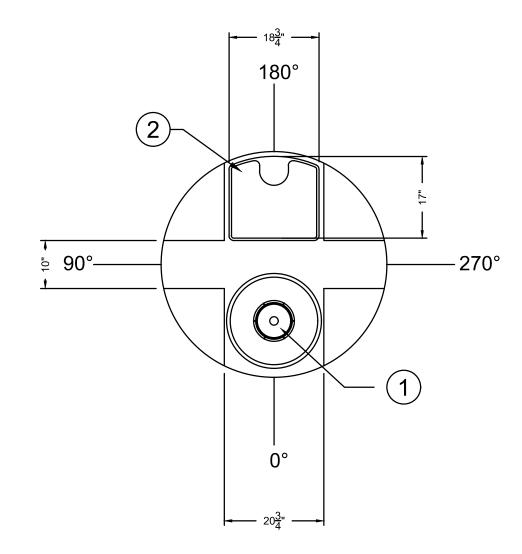
Designed By: Drawn By: Checked By

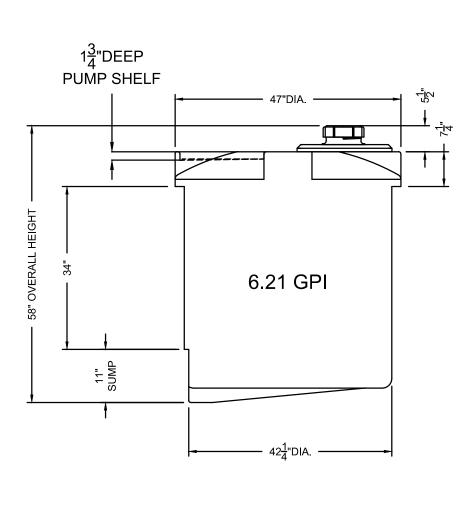
**NEW CHEMICAL BUILDING PLAN AND ELEVATION VIEWS** 

Drawing No: D3-01 Sheet: 26 OF 40

# Piping and Instrumentation Diagrams

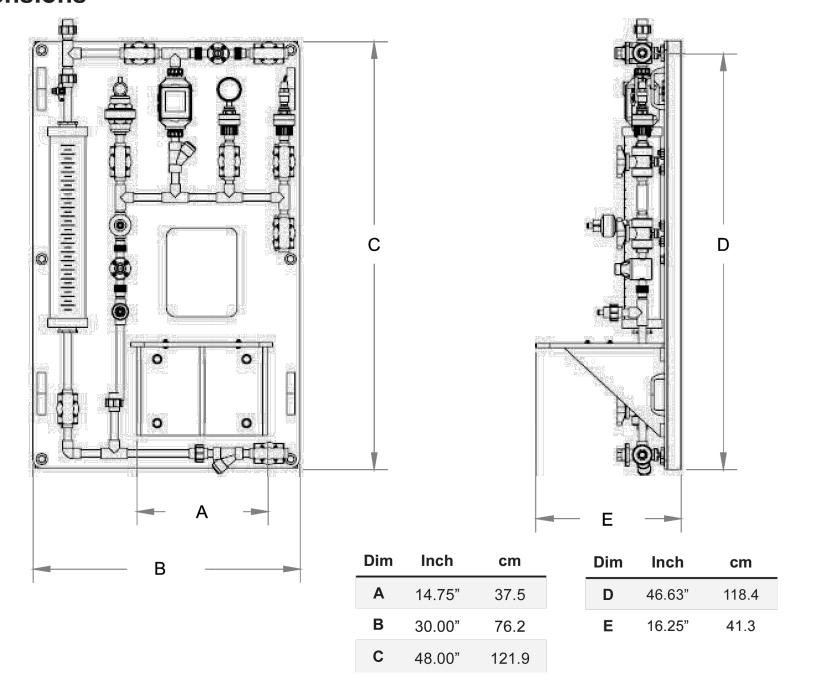


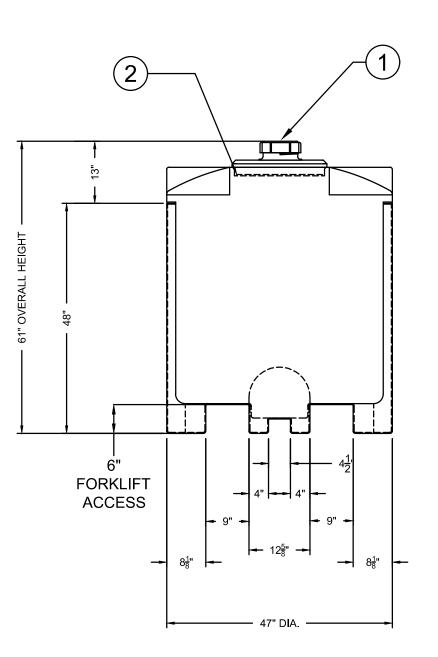


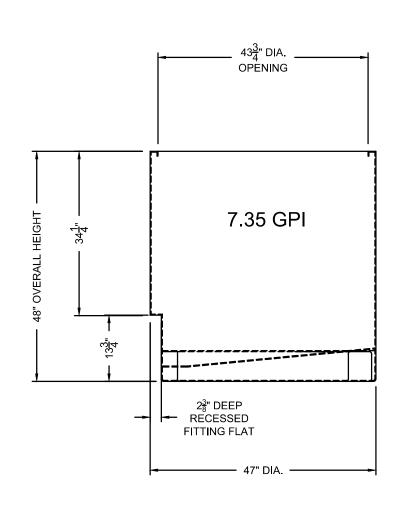


# **Dimensions**

NOT TO SCALE







### NOTES:

- 1 7" ACCESS W/ THREADED LID AND RIM
- 2 MOLDED IN PUMP SHELF
- 3 PRIMARY CALCULATED GALLONS PER INCH: 6.21 GPI
- 4 CALCULATED STRAIGHT SIDE CAPACITY: 250 GAL.
- 5 SECONDARY CALCULATED GALLONS PER INCH: 7.35 GPI 6 CALCULATED STRAIGHT SIDE CAPACITY: 336 GAL.

TOWN OF LA CROSSE
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IMPROVEMENTS PROJECT

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NEW CHEMICAL BUILDING EQUIPMENT DETAILS

Drawing No:

SODIUM HYPOCHLORITE WALL MOUNT SIMPLEX SKID SYSTEM DETAIL

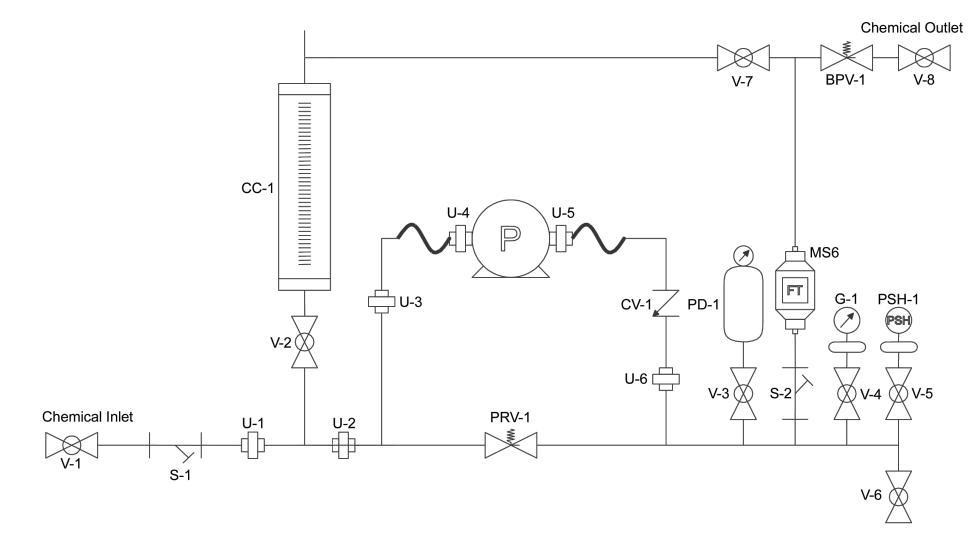
SODIUM HYPOCHLORITE TANK DETAIL

NOT TO SCALE

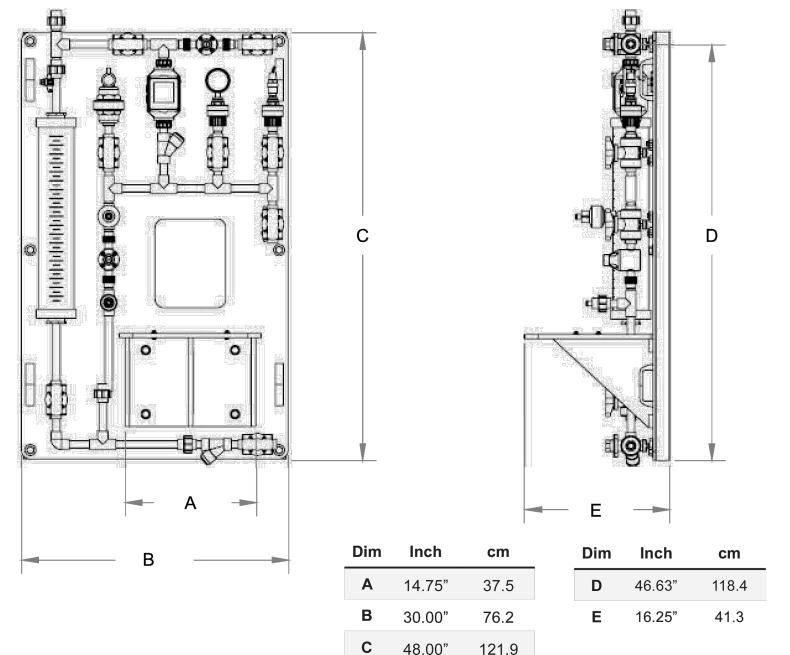
DISCLAIMER NOTE:

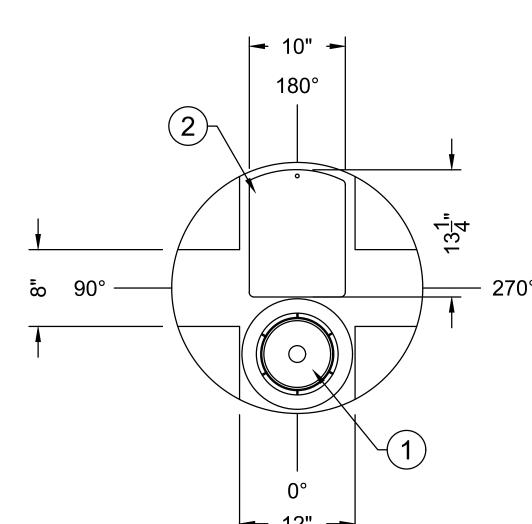
1. ALL DETAILS WERE OBTAINED FROM ASSMANN AND SHALL BE USED AS REFERENCE ONLY.

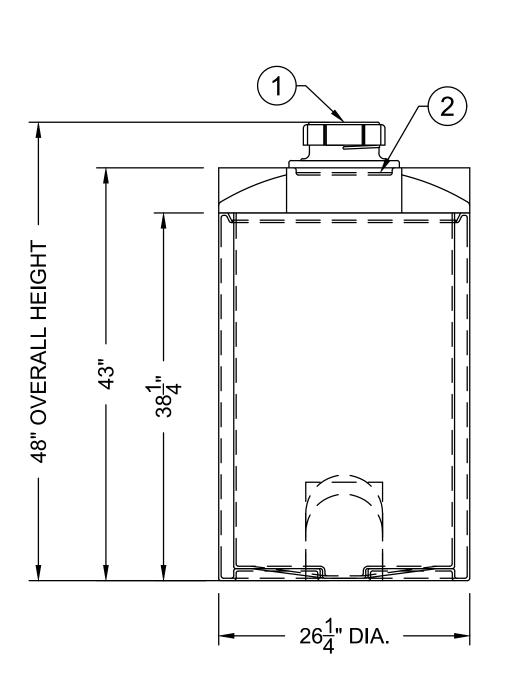
# **Piping and Instrumentation Diagrams**

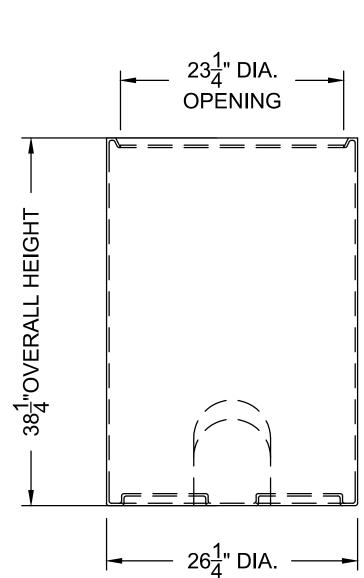


# **Dimensions**









NOTES:

- 1 7" ACCESS W/ THREADED LID AND RIM
- 2 MOLDED IN PUMP SHELF
- 3 PRIMARY CALCULATED GALLONS PER INCH: 1.743 GPI 4 CALCULATED STRAIGHT SIDE CAPACITY: 64.141 GAL.

5 SECONDARY CALCULATED GALLONS PER INCH: 2.257 GPI 6 CALCULATED STRAIGHT SIDE CAPACITY: 83.509 GAL.

> **NEW CHEMICAL** BUILDING EQUIPMENT **DETAILS**

Designed By: Drawn By: Checked By

Issue Date: Project No: Scale: APR 2025 S25052 AS SHOWN

WASTEWATER TREATMENT PLIMPROVEMENTS PROJECT

D3-03 Sheet: 28 OF 40

SODIUM BISULFITE TANK DETAIL

 $47\frac{1}{4}$ "OVERALL

**DISCLAIMER NOTE:** 

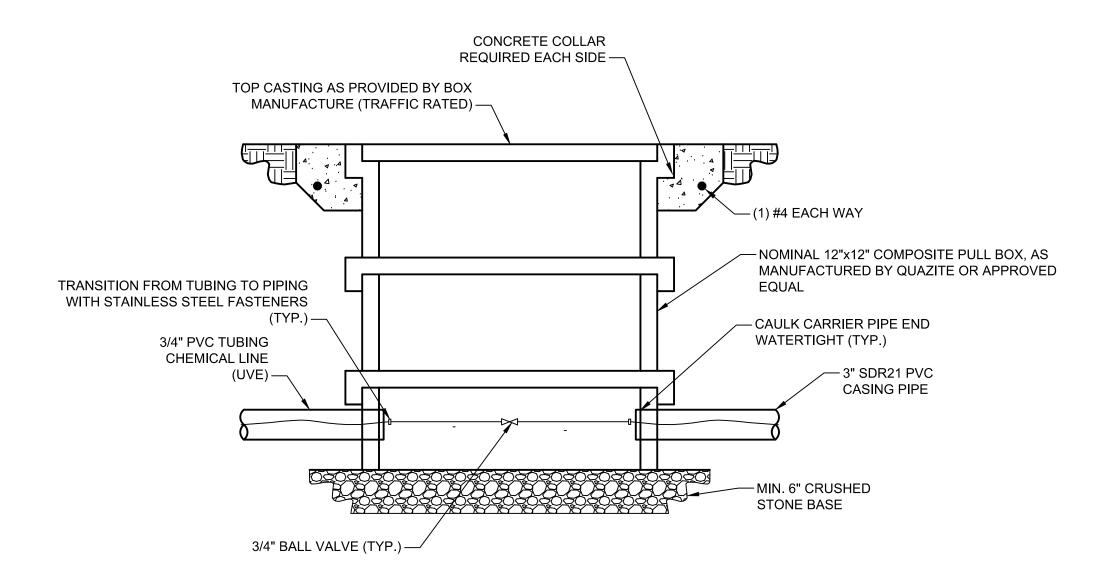
1. ALL DETAILS WERE OBTAINED FROM ASSMANN AND SHALL BE USED AS REFERENCE ONLY.

SODIUM BISULFITE WALL MOUNT SIMPLEX SKID SYSTEM DETAIL NOT TO SCALE

NOT TO SCALE

**C** 48.00" 121.9

### SANITARY SEWER MANHOLE FRAME AND COVER- STANDARD MANHOLE SCALE: 1"=1'-0"

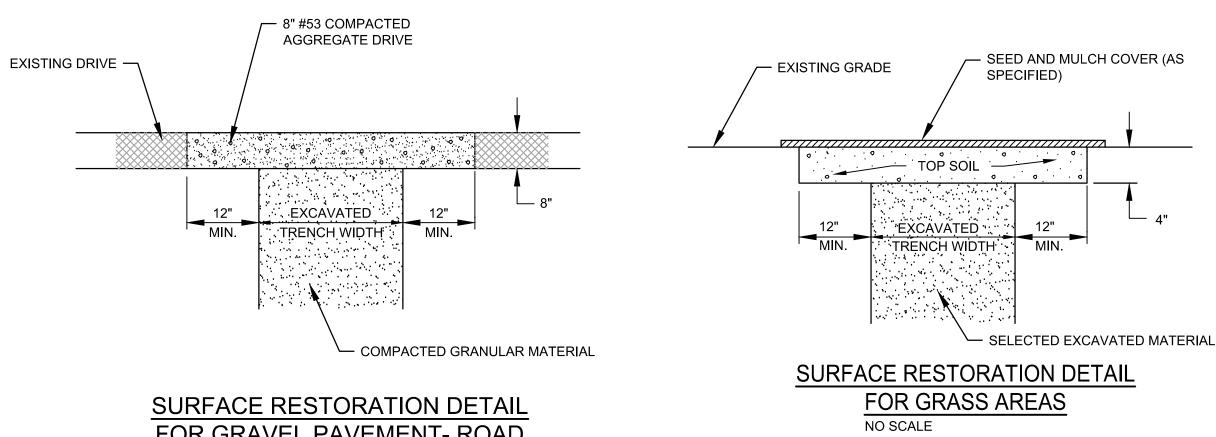


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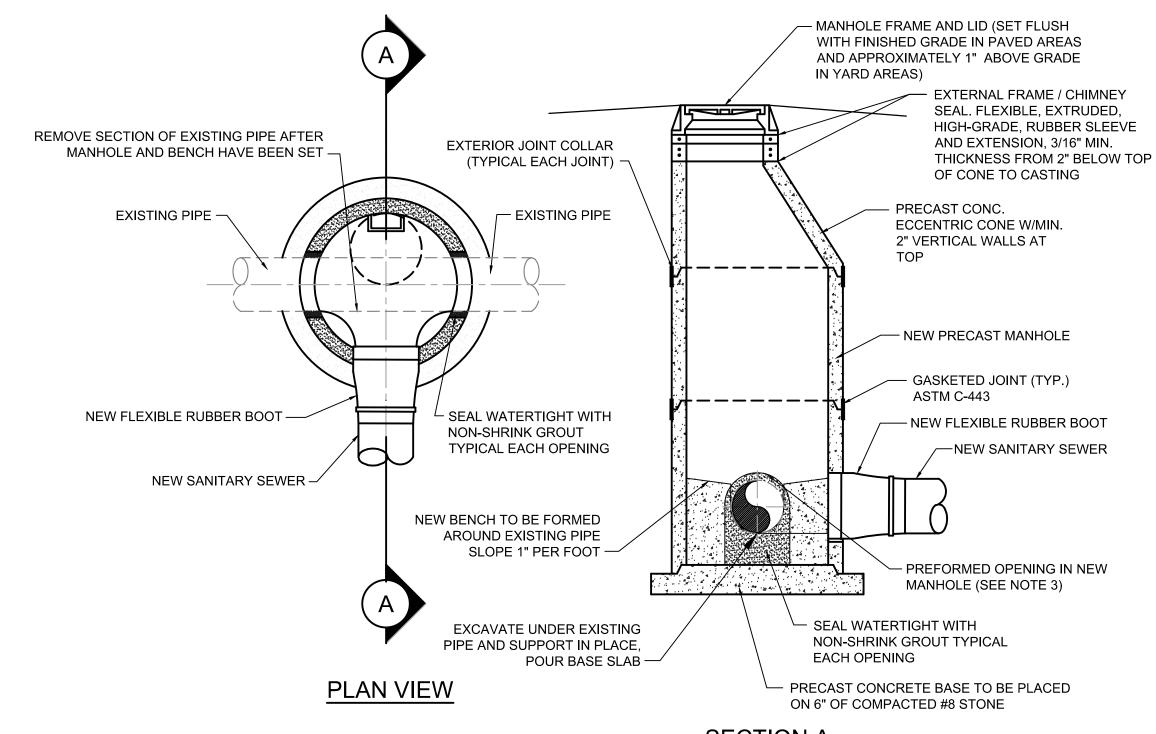
1. THIS DETAIL SHOWS A TYPICAL PULL BOX INSTALLATION. ADDITIONS. ALL BRANCHES OFF OF ANY TEE INSTALLATION TO BE INSTALLED WITH BALL VALVES.

- 2. AT CHEMICAL DELIVERY POINT. INSTALL CHEMICAL SCHEDULE 80 PVC PIPING THROUGH BOX, CAULK WATERTIGHT, AND RUN CHEMICAL PIPING TO FEED POINT, HEAT TRACE PIPING ABOVE GRADE AND TO POINT IT EXITS BOX BELOW GRADE.
- 3. PULL BOXES THAT ARE INSTALLED WITHIN VEHICLE TRAFFIC LOCATIONS SHALL BE INSTALLED WITH A TRAFFIC RATED LID. REFER TO MANUFACTURER RECOMMENDATIONS FOR ACCEPTABLE LID.

CHEMICAL LINE PULL BOX DETAIL



FOR GRAVEL PAVEMENT- ROAD AND PARKING LOTS NO SCALE



**GENERAL NOTES:** 

**SECTION A** 

1. NEW "DOG-HOUSE" MANHOLE SHALL BE AS SPECIFIED FOR STANDARD MANHOLES IN WM-9 "STANDARD MANHOLES"

2. ALL REINFORCING SHALL MEET ASTM C-478

3. HOLES IN PRECAST UNITS SHALL BE 4" MIN. TO 8" MAX. LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE

# NEW "DOG-HOUSE" MANHOLE OVER EXISTING SEWER DETAIL

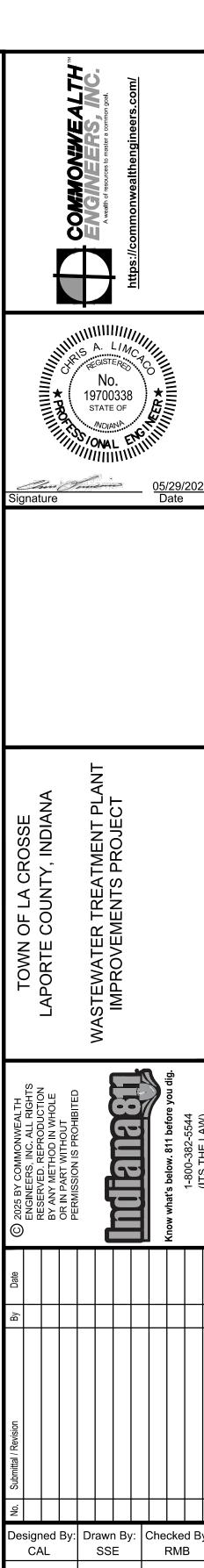
NO SCALE

**GENERAL NOTES:** 

1. MANHOLE CONFORMS TO ASTM C-478

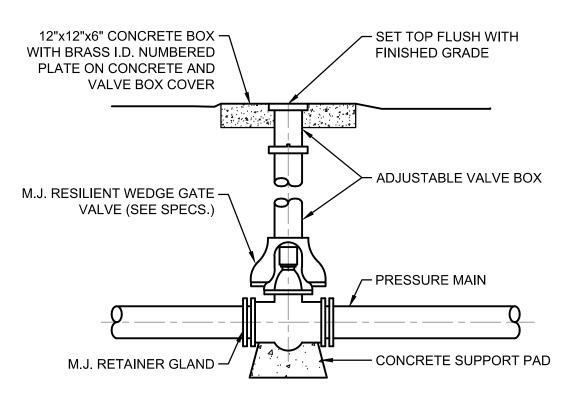
2. NO BRICK OR BLOCK WILL BE ALLOWED IN MANHOLE

3. O-RING GASKETED JOINT BETWEEN ALL RISER AND CONE SECTIONS PER ASTM C-443 PLUS 1/2" EXTRUDABLE GASKET (KENT SEAL OR EQUAL)

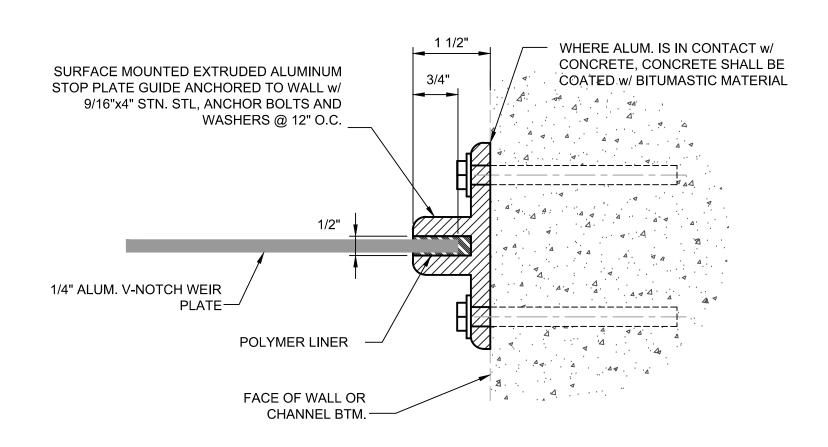


ssue Date: Project No: Scale: APR 2025 | S25052 | AS SHOWN MISCELLANEOUS DETAILS

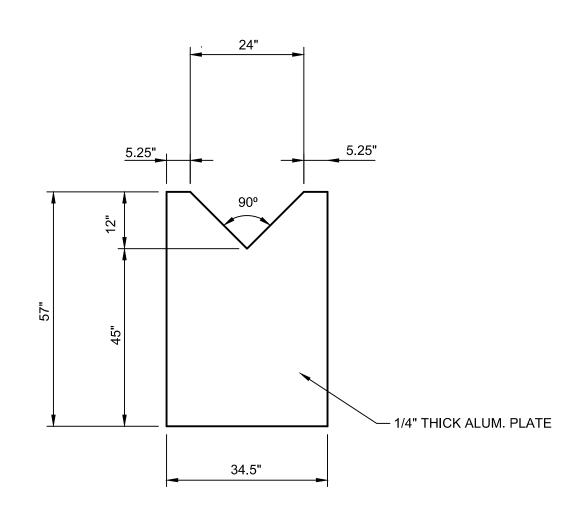
Drawing No: Sheet: 29 OF 40



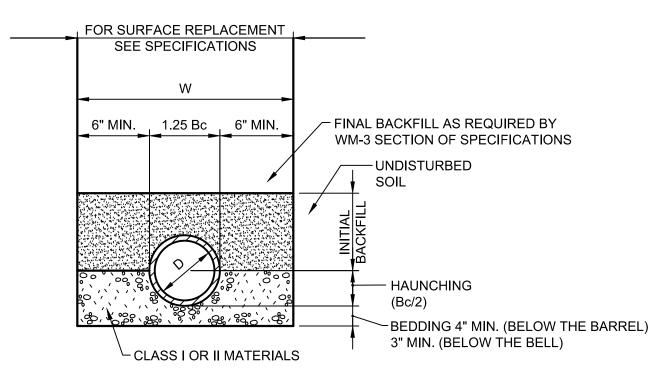
# BURIED PLUG/GATE VALVE AND BOX DETAIL



# V-NOTCH WEIR GUIDE DETAIL



V-NOTCH WEIR PLATE DETAIL NO SCALE



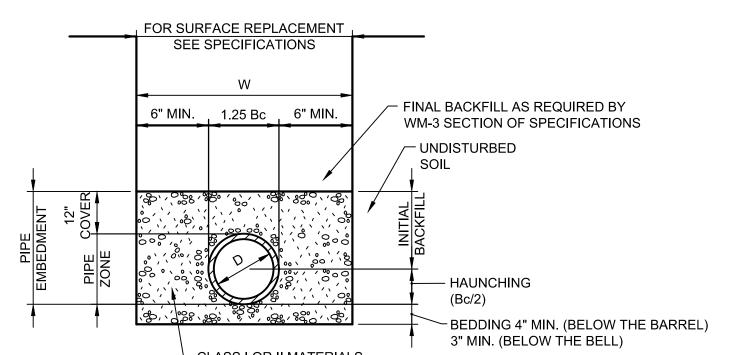
W= MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM NOT TO EXCEED FOUR (4) FEET FOR 6" THROUGH 24" PIPE NOT SIX (6) FEET FOR 27" THROUGH 48" PIPE D= PIPE DIAMETER (INTERNAL)

Bc= PIPE DIAMETER (EXTERNAL)

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, COMPACTION MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING.
- 3. WHEN CLASS II MATERIAL IS USED FOR BEDDING, COMPACTION SHALL BE ACCOMPLISHED ONLY BY HAND OR MECHANICAL TAMPING TO A MIN. OF 95% STANDARD PROCTOR DENSITY.
- 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 BACKFILL MATERIAL SHALL BE USED WITHIN 5 FEET OF THE EDGE OF THE PAVEMENT.
- 5. TRENCH WIDTHS BELOW THE BOTTOM OF TRENCH BOX OR SHORING USED FOR TRENCH SUPPORT. BOTTOM OF TRENCH BOX OR SHORING SHALL BE PLACED NO LOWER THAN THE TOP OF PIPE.

# TRENCH DETAIL FOR RIGID CONDUITS



- CLASS I OR II MATERIALS W= MAXIMUM ALLOWABLE TRENCH WIDTH FOR PIPE AS PER ASTM NOT TO EXCEED FOUR (4) FEET FOR 6" THROUGH 24" PIPE NOT SIX (6) FEET FOR 27" THROUGH 48" PIPE

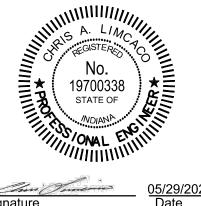
D= PIPE DIAMETER (INTERNAL) Bc= PIPE DIAMETER (EXTERNAL)

1. COMPACTED INITIAL BACKFILL SHALL EXTEND A MINIMUM OF 12" ABOVE THE TOP OF THE PIPE. FINAL BACKFILL ABOVE THIS POINT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS REQUIRED HEREIN.

- 2. WHEN CLASS I MATERIAL IS USED FOR BEDDING, HAUNCHING AND INITIAL BACKFILL COMPACTION MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING, OR BY WALKING, TO A MIN. OF 85% STANDARD PROCTOR DENSITY.
- 3. WHEN CLASS II MATERIAL IS USED FOR BEDDING, HAUNCHING AND INITIAL BACKFILL COMPACTION MAY BE ACCOMPLISHED BY HAND OR MECHANICAL TAMPING TO A MIN. OF 85% STANDARD PROCTOR DENSITY.
- 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 21 FEET OF THE EDGE OF PAVEMENT. FOR ALL OTHER NON-INDOT PAVEMENT AREAS (INCLUDING BOTH HARD SURFACED AND COMPACTED AGGREGATE), COMPACTED GRANULAR BACKFILL MATERIAL SHALL BE USED WITHIN 5 FEET OF THE EDGE OF THE PAVEMENT.
- 5. TRENCH WIDTHS BELOW THE BOTTOM OF TRENCH BOX OR SHORING USED FOR TRENCH SUPPORT. BOTTOM OF TRENCH BOX OR SHORING SHALL BE PLACED NO LOWER THAN THE TOP OF PIPE.

TRENCH DETAIL FOR FLEXIBLE CONDUITS NO SCALE

19700338



ASTEWATER TREAT IMPROVEMENTS F

Designed By: Drawn By: Checked By SSE CAL ssue Date: Project No: Scale: APR 2025 | S25052 | AS SHOWN

> MISCELLANEOUS DETAILS

> > MD2

Sheet: 30 OF 40

### **GENERAL**

- The structure has been designed for the in-service loads only. The methods, procedures, and sequences of construction are the responsibility of the Contractor. Supporting formwork for the concrete construction shall not be removed before the concrete has gained sufficient strength to safely support the dead and superimposed loads which will be subsequently applied. The Contractor shall take all necessary precautions to maintain and ensure the integrity of the structure at all stages of construction.
- 2. All work shall be performed in accordance with the Indiana Building Code, 2014 Edition (2012 International Building Code, first printing, with Indiana Amendments)
- Do not determine dimensions by "scaling" off the plans. The Contractor shall accept all risk associated with "scaling" and shall be responsible for all inadequate work resulting therefrom. Questions regarding missing or conflicting dimensions shall be directed, in writing, to the Structural Engineer.
- All work shall be performed without damage to adjacent retained work. Adequate protection of areas nearby work against dust, dirt and debris accumulation shall be maintained at all times.
- 5. Principal openings in the structure are indicated on the structural drawings. Refer to the architectural, mechanical, electrical, and plumbing drawings for sleeves, curbs, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 10 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
- 6. The location of sleeves or openings not shown in structural members shall be approved by the Structural

### **FOUNDATIONS**

- Exterior footings shall bear 3'-0" minimum below finish grade and shall bear on undisturbed soil.
- 2. Foundation excavation and all other soils related work shall be performed in accordance with the geotechnical engineering report prepared by SME (project number: 099564.00) dated May 14, 2025 and all associated
- Foundation and soils related work shall be performed under the direct supervision of a qualified Geotechnical
- 4. Foundation excavations shall be made to plan elevations. The soil conditions beneath foundations shall then be inspected by a qualified Geotechnical Engineer. If the underlying soils are found to be unacceptable, one of the following procedures shall be followed:
- A. Remove the unacceptable soil and backfill with an engineered structural fill in accordance with the geotechnical engineering report or inspecting Geotechnical Engineer.
- B. Lower the footing to an acceptable soil. Contact the Structural Engineer for potential modifications to the
- Subgrade structural elements subjected to differential lateral soil pressure shall be adequately braced until the
- structural elements which provide lateral restraint have been placed and allowed to cure for a minimum of 7 days. 6. Excavations for continuous footings and mat foundations shall be cleaned and hand tamped to a uniform surface.
- rain, freezing, etc. Surface runoff shall not be allowed to enter the excavation. Foundation conditions noted during construction, which differ from those described in the geotechnical report shall

Foundation excavations shall be adequately protected against detrimental change in condition from disturbance,

be reported to the Structural Engineer and Geotechnical Engineer before further construction is attempted.

### CONCRETE

- Reinforced concrete has been designed in accordance with the latest editions of the Building Code Requirements for Reinforced Concrete (ACI 318) and Environmental Engineering Concrete Structures (ACI 350R) by the American Concrete Institute (ACI).
- Slabs-on-grade shall be constructed in accordance with the latest edition of the Guide for Concrete Floor and Slab Construction (ACI 302.1R).
- Mixing, transporting, and placing of concrete shall conform to the latest edition of the Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (ACI 211.1) and the Standard Specifications for Structural Concrete (ACI 301). The special provisions of ACI 211.1 Appendix 5 (Mass Concrete Mix Proportioning) shall be used in proportioning the concrete mixture for the mat foundation to control temperature rise during hydration. In addition, the provisions of ACI 207.1R (Mass Concrete) shall apply. Concrete curing shall conform to the latest editions of the Standard Practice for Concrete Curing (ACI 308) and the Standard Specification for Curing Concrete (ACI 308.1). In case of a discrepancy, the plans and specifications shall govern.
- Unless noted otherwise, concrete shall have natural sand fine aggregate and normal weight coarse aggregates conforming to ASTM C33, and Type I or III Portland Cement conforming to ASTM C150. Type III Portland Cement shall not be used in mass concrete. The Contractor shall submit a mix design for each proposed class of concrete. Mix designs shall indicate proportions by weight, water-cement ratio, slump, air content, synthetic fiber size and quantity, sieve analyses of fine and coarse aggregates, standard deviation analysis, and required average strength and documentation of average strength verifying compliance with ACI 318. The Contractor shall not vary from the mix design without approval from the Structural Engineer.
- Unless noted otherwise, fly ash may be used as a pozzolan to replace a portion of the Portland Cement in a concrete mix. Fly ash, when used, shall conform to ASTM C618, Type C (except in mass concrete, ASTM C618, Type F shall be used). Concrete mixes using fly ash shall be proportioned to account for the properties of the specific fly ash used and to account for the specific properties of the fly ash concrete thus resulting. The ratio of the amount of the fly ash to the total amount of fly ash plus cement in the mix shall not exceed 25 percent.
- Water-reducing admixtures conforming to ASTM C494 may be used in the concrete mix design. Maximum slump shall be 5 inches for mixes containing water-reducing admixtures and 5 to 8 inches for mixes containing high range water-reducing admixtures.
- Concrete compressive strength tests shall be performed in accordance with ASTM C39. Copies of the test results shall be forwarded to the Structural Engineer. One set of specimens shall be taken for each day's pour of appreciable size and for each 50 cubic yards in accordance with the latest edition of ASTM C31. Each set shall include one specimen tested at 7 days, 2 specimens tested at 28 days and one specimen retained in reserve.
- When the ambient temperature is expected to fall below 40 degrees during the course of a concrete pour or subsequent curing period, it shall be placed and cured in accordance with the latest edition of Cold Weather Concreting (ACI 306R) and an additional set of concrete test cylinders shall be made. These cylinders shall be stored immediately adjacent to, and cured under the same conditions as the building concrete. Special curing boxes are not permitted for these test cylinders.
- Concrete mixed, transported, placed, and cured under conditions of high ambient temperature, low humidity, solar radiation, or high winds shall conform to the latest edition of Hot Weather Concreting (ACI 305R) and an additional set of concrete test cylinders shall be made. These cylinders shall be stored immediately adjacent to, and cured under the same conditions as the building concrete. Special curing boxes are not permitted for these test
- 10. Slump tests shall be made prior to and following the addition of plasticizers. Where concrete is placed by pumping methods, concrete for test cylinders and slump tests shall be taken at the point of final placement.
- 11. Water shall not be added to the concrete at the job site. The Contractor is responsible for coordinating a pumpable and workable mix without the addition of water at the job site. The use of plasticizers, retardants and other additives shall be at the option of the Contractor subject to the approval of the Structural Engineer. Follow the recommendations of the manufacturer for the proper use of additives. Use of calcium chloride or other chloride bearing salts is prohibited.
- 12. Place concrete in a manner so as to prevent segregation of the mix. Delay floating and trowelling operations until the concrete has lost surface water sheen or all free water. Do not sprinkle free cement on the slab surface. Finishing of slab surfaces shall conform to the latest editions of ACI 302.1R and ACI 304R (Guide for Measuring, Mixing, Transporting and Placing Concrete).
- 13. Where an epoxy adhesive is specified for bonding plastic concrete to hardened concrete, it shall conform to the latest edition of the Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive (ACI 503.2).

- 14. Maintain concrete in a moist condition for at least 5 days at ambient temperatures above 70 degrees, and at least 7 days at ambient temperatures above 50 degrees. Curing compounds or moisture retention covers shall be used for all non-formed surfaces. Formed surfaces shall be cured by leaving forms in place. During hot, dry weather, keep forms moist by sprinkling. When forms are removed prior to the end of the curing period, apply curing compound to the exposed surfaces.
- 15. All interior slabs shall receive a hard "troweled finish". Exterior slabs, sidewalks, and stoops shall receive a "broom (or other type of slip resistant) finish". All formed surfaces not exposed to public view shall receive a "rough form finish", exposed surfaces shall receive a "smooth form finish". Concrete finishes shall be as defined in ACI 301.
- 16. Protect finished concrete surfaces from damage, rain, hail, running water, other injurious effects.
- 17. Protect the concrete surface between finishing operations on hot, dry days or any time plastic shrinkage cracks could develop by using wet burlap, plastic membranes or fogging.
- 18. Horizontal and vertical joints are not permitted in concrete construction except where indicated.
- 19. Construction joints and/or contraction joints at locations other than where indicated shall be submitted to the Structural Engineer for approval.
- 20. Construction joints shall be prepared by roughening the contact surface in an approved manner to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
- 21. Control joints shall be made in concrete slabs-on-grade at major column centerlines, at points of discontinuity, at
- 22. Provide 3/4 inch chamfers on all exposed corners of concrete except those abutting masonry.

reentrant corners, and at other locations shown on the plans.

- 23. The Contractor shall verify the location of sleeves, openings, embedded items, etc. and shall ensure that they are in place prior to the placement of the concrete.
- 24. Earth cuts shall not be used as forms ("bank forming") for vertical or sloping surfaces unless otherwise approved by the Structural Engineer. Where bank forming is permitted, the concrete element shall be increased at least 3 inches on all sides exposed to earth to account for possible soil contamination during concrete placement.
- 25. Unless noted otherwise, concrete slab on grade shall have minimum values of flatness, F(F) 30 and levelness F(L) 20, with minimum local values of flatness, F(F) 24 and levelness, F(L) 15.

### CONCRETE SCHEDULE

	CONCRETE SCHEDULE							
CLASS	f' <sub>C</sub>	AIR CONTENT	MIN. CEMENT: LB/CY (SACKS/CY)	MAX. WATER/ CEMENT: RATIO	CONCRETE PLACEMENT	REMARKS		
А	4,500 psi	6% ± 1.5%	611 (6.5)	0.45	Chlorine contact tank	crystalline waterproofing admixture		
В	4,500 psi	6% ± 1.5%	611 (6.5)	0.40	exterior slabs-on-grade, stoops, curbs, & sidewalks exposed to de-icers	synthetic fibers (1.5 lbs/cys)		

### REINFORCING STEEL

- Reinforcing bar detailing, fabricating, and placing shall conform to the latest edition of the following standards: Specifications for Structural Concrete for Buildings (ACI 301), ACI Detailing Manual (SP66). The latest editions of Concrete Reinforcing Steel Institute's Reinforcing Bar Detailing and Placing Reinforcing Bars may also be used.
- Provide standard bar chairs, slab bolsters, spacers, etc. as required to maintain concrete protection specified. Reinforcing steel shall be tied to prevent displacement during concrete placement.
- 3. Reinforcement bars shall not be tack welded, welded, heated or cut unless otherwise indicated or approved by the
- Welding of reinforcement bars, when approved by the Structural Engineer, shall conform to the latest edition of American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233. Class E90XX.
- 5. Unless noted otherwise, synthetic fibers shall be used for temperature and shrinkage reinforcement in concrete slabs-on-grade. Synthetic fibers shall be virgin (non-recycled) nylon or polypropylene fibers conforming to ASTM C1116, Type III. Fibers shall be introduced into the mix at the plant in accordance with the manufacturer's recommendations. The Contractor shall submit the mix design, including the fiber size and quantity, to the Structural Engineer for approval prior to construction. The Contractor shall take adequate measures to manage any difficulty in concrete finishing associated with the use of the fibers.
- Concrete cover over reinforcement, unless otherwise noted, shall be as specified in the latest editions of ACI 318 and ACI 350 with the most stringent requirements governing.
- 7. Unless noted otherwise, splicing of reinforcing bars shall conform to the latest edition of ACI 318.

CONC	CONCRETE REINFORCING STEEL LAP SPLICE SCHEDULE					
DAD CIZE	TENSION	SPLICE	COMPRESSION			
BAR SIZE	TOP BAR	OTHER	SPLICE			
#3	21"	16"	12"			
#4	28"	24"	15"			
#5	35"	30"	19"			
#6	42"	36"	23"			
#7	49"	42"	26"			
#8	56"	48"	30"			
#9	63"	57"	34"			
#10	76"	66"	38"			
#11	93"	72"	42"			

- Horizontal bars in walls, and continuous wall footings shall be bent at corners and intersections in such a way that continuity is provided through the joint. Separate corner bars of the same size and spacing as the horizontal reinforcing may be substituted for the bent portion of the continuous bars.
- 9. Unless noted otherwise, provide 2-#5 bars (one each face) around unframed openings and diagonally at reentrant corners of vertical height offsets in concrete walls. Place bars parallel to the sides of the opening and extend 24 inches beyond corners.

10. Unless noted otherwise, splicing of reinforcing shall conform to the latest edition of ACI 318. Where the length of

the lap is not indicated, provide a class "B" lap at tension splices or box bar diameter at compression splices. If

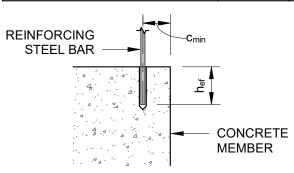
11. The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.

splice type is not defined as tension or compression, provide.

### POST-INSTALLED EXPANSION/ADHESIVE ANCHORS

- 1. Post-installed anchors shall only be used where specified on the Construction Documents. The Contractor shall obtain approval from the Structural Engineer prior to installing the post-installed anchors in place of missing or misplaced cast-in-placed anchors.
- 2. Care shall be taken in placing post-installed anchors to avoid conflicts with existing reinforcing steel.
- 3. Post-installed anchors shall be installed by qualified personnel in accordance with the drawings and specifications.
- 4. Post-installed anchors shall be installed by qualified personnel in accordance with the Manufacturer's Printed Installation Instructions (MPII), the drawings and specifications. Installation of adhesive anchors shall be performed by personnel trained to install adhesive anchors. Contractor shall submit installer training cards with anchor package.
- 5. Post-installed anchors shall be HILTI type as manufactured by HILTI Fastening Systems or approved equivalent. Substitution requests must be submitted by the Contractor to the Structural Engineer for review. Provide back-up technical data that demonstrates that the substituted product is capable of achieving the equivalent performance values (minimum) of the specified products using the appropriate design procedure and/or standard(s) as required by the building code.
- 6. Masonry cores receiving post-installed anchors shall be filled with course grout. Grout must comply with IBC Section 2103.12 or IRC Section R609.1.1, as applicable. Alternatively, the grout must have a minimum compressive strength, when tested in accordance with ASTM C1019, equal to its specified strength, but not less than 2,000 psi. Post-installed anchors shall not be installed in a masonry mortar joints.
- 7. The Contractor shall inspect the masonry or concrete surface at each proposed post-installed anchor location prior to installation. If the anchor locations align with mortar joints or the masonry or concrete is honeycombed, cracked or otherwise unsound, the post-installed anchors shall be repositioned so as to be located in sound material and be in accordance with the manufacturer's minimum spacing and edge distance requirements.
- 8. Adhesive anchors shall be subject to the following additional requirements: A. Anchors shall meet the requirements of ACI 355.2 (mechanical anchors) and ACI 355.4 (adhesive
- B. Proof loading of adhesive anchors is not required.
- C. Anchors shall not be installed in concrete cured less than 21-days
- D. Anchors shall not be installed until the concrete has reached a minimum compressive strength of 2,500
- E. Concrete temperature must be greater than 50 °F and less than 80 °F prior to installation of the anchors unless otherwise permitted by the MPII.
- F. Anchors shall be installed in holes drilled with the HILTI Hollow Drill Bit (TE-CD (SDS Plus) or TE-YD (SDS Max)) and HILTI VC 20/40 Vacuum (VC 20-U or VC 40-U). Follow the MPII for size and depth of holes
- G. The acceptability of certification other than the ACI/CRSI Adhesive Anchor Installer Certification shall be the responsibility of the Structural Engineer.
- H. Adhesive anchors installed in horizontal or upwardly inclined orientations to resist sustained tension loads shall be continuously inspected during installation by an inspector specially approved for that purpose by the building official. The special inspector shall furnish a report to the licensed design professional and building official that the work covered by the report has been performed and that the materials used and the installation procedures used conform to the approved contract documents and MPII.

REINFORCING STEEL EPOXY DOWEL SCHEDULE						
BAR SIZE	#3	#4	#5	#6	#7	#8
STANDED EFFECTIVE EMBED, hef	3-3/8"	4-1/2"	5-5/8"	6-3/4"	7-7/8"	9"
MINIMUM EDGE DISTANCE, c <sub>min</sub>	2"	2-1/2"	3-1/8"	3-3/4"	4-3/8"	5"



NOTES: 1. EPOXY DOWELS SHALL UTILIZE HILTI HIT-HY 200 ADHESIVE SYSTEM OR APPROVED EQUIVALENT

2. STANDARD EMBED DEPTH AND MIN EDGE DISTANCES PROVIDED IN THIS SCHEDULE APPLY AT ALL LOCATIONS UNLESS OTHERWISE NOTED ON SECTIONS AND DETAILS.

### TYPICAL EPOXY DOWEL

### NON-SHRINK GROUT

- 1. Grout shall be a high early strength, non-metallic, shrinkage resistant (when tested in accordance with the latest edition of ASTM C827 or CRD-C621), premixed, non-corrosive, non-staining product conforming to the requirements of the latest edition of ASTM C1107 and containing Portland Cement, silica sands, shrinkage compensating agents and fluidity improving compounds.
- . Grout compressive strength tests shall be performed in accordance with the latest edition of ASTM C109, with a restraining plate placed over the molds.
- 3. Grout shall be installed in accordance with the manufacturer's instructions.
- 4. Grout shall be placed in a non-sag flowable state and shall have forms built around it for confinement. Grout shall be cured according to manufacturer's recommendations.

### **COORDINATION WITH OTHER TRADES**

1. The Contractor shall coordinate and check all dimensions relating to architectural finishes, structural framing, mechanical openings, equipment, etc. The Structural Engineer shall be notified of any discrepancies before proceeding with work in an area under question.

- 1. Building Code: Indiana Building Code, 2014 Edition (2012 International Building Code, first printing, with Indiana
- Soil information:

Risk Category

Allowable net bearing pressure Chlorine Contact Tank Chemical Feed Building 1500 psf Unit weight of soil 115 pcf Soil Subgrade modulus, Ks 150 pci Equivalent fluid pressure on tank walls 95 psf / ft Equivalent surcharge uniform pressure coefficient 0.50 Coefficient of friction between soil and concrete footing 0.30 (assumed)

See Schedule

ASTM A185

As required

Concrete: 28 day compressive strength (f'c)

Welded wire fabric (smooth)

Special Equipment Weight

4. Reinforcing steel (deformed bars of new billet steel): ASTM A615, Grade 60 Stirrup and tie Weldable (Low-Alloy) ASTM A706, Grade 60 Otherwise ASTM A615, Grade 60

5. Non-shrink grout: 28 day compressive strength 5,000 psi

Dead Loads Self Weight of structure As required

8. Seismic loads: Importance factor, I<sub>E</sub> Mapped MCE Seismic Spectral Response Acceleration at Short Periods, S<sub>s</sub> 11.3% g Mapped MCE Seismic Spectral Response Acceleration at 1 Second, S<sub>1</sub> Design Seismic Spectral Response Acceleration at Short Periods, Sps 12.1% g Design Seismic Spectral Response Acceleration at 1 Second, S<sub>D1</sub> 10.3% g Seismic Design Category



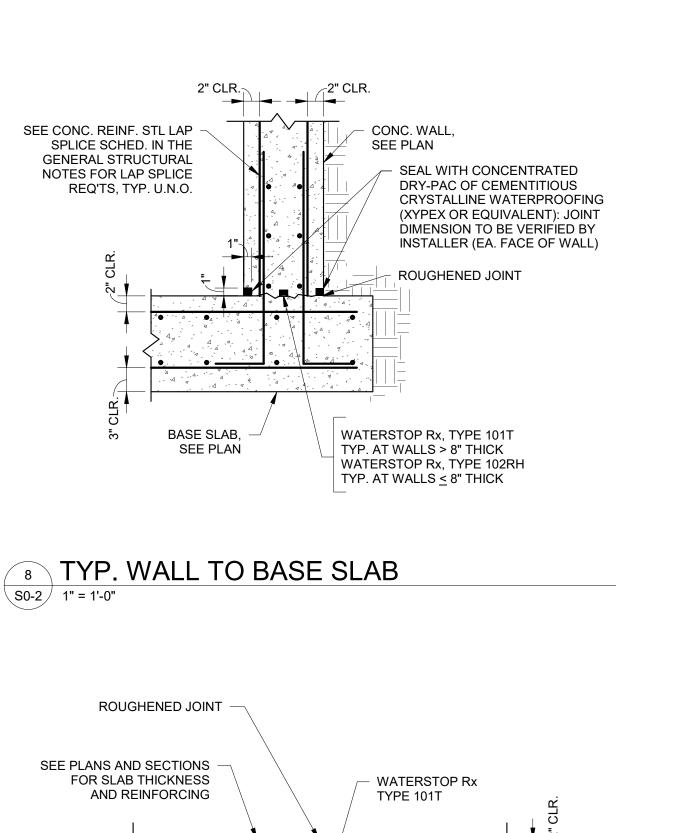
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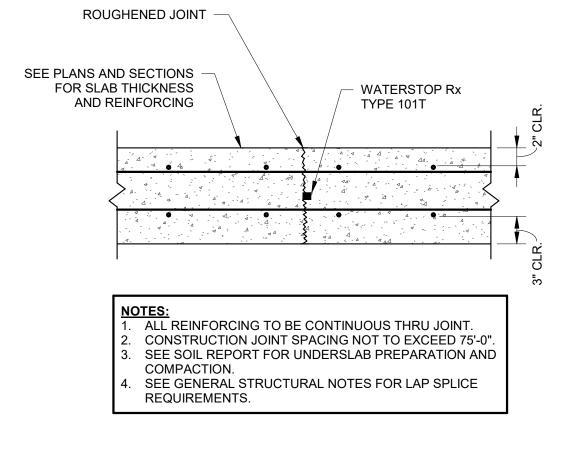
VASTEWATER I

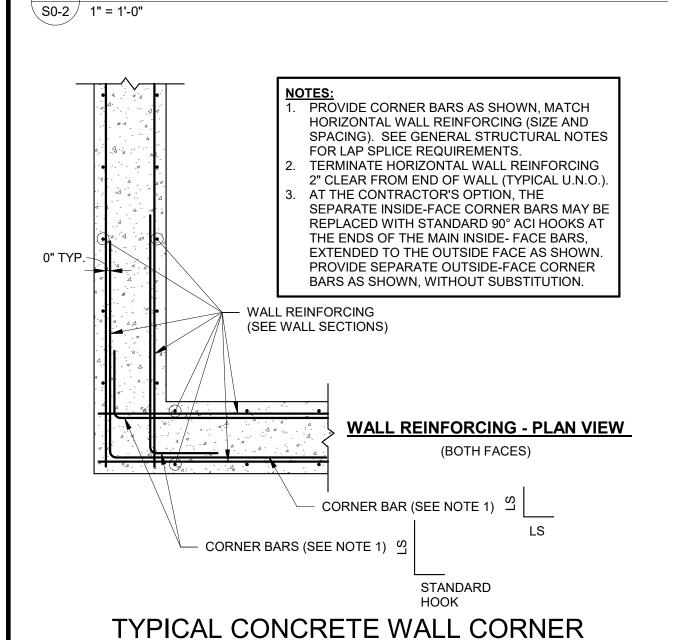
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07/10/2025 | 25-145 | NO SCALE GENERAL STRUCTURAL NOTES

ssue Date: | Project No: | Scale:



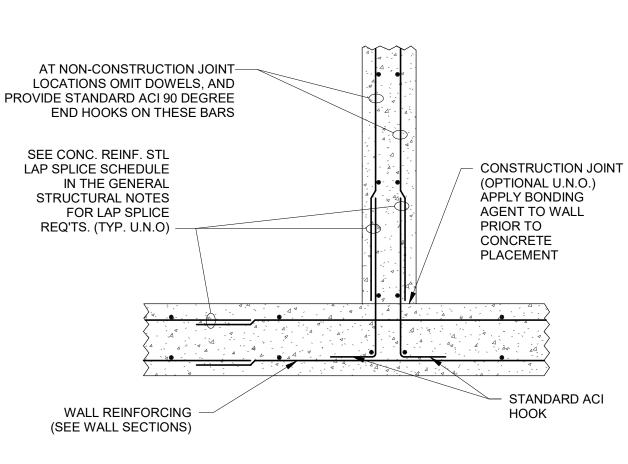




REINFORCEMENT - PLAN VIEW

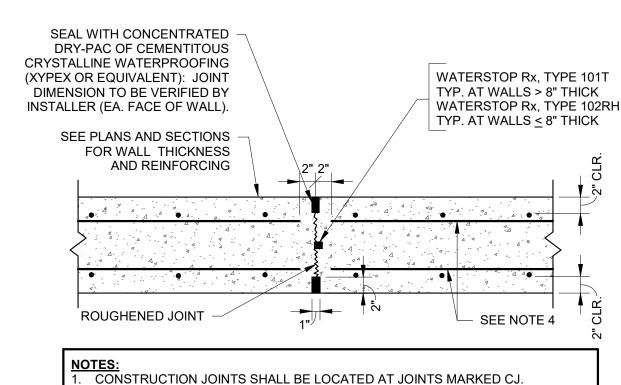
S0-2 3/4" = 1'-0"

TYP. BASE SLAB CONSTRUCTION JT.



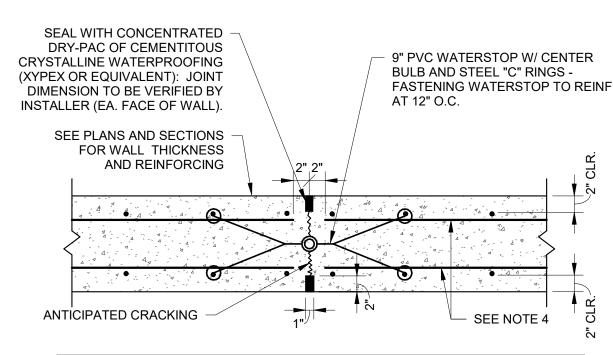
# WALL REINFORCING - PLAN VIEW (BOTH FACES)





WATERSTOPS AND DRY-PAC REQUIRED AT WATER RETAINING WALLS ONLY.
 UNLESS NOTED OTHERWISE, CONSTRUCTION JOINT SPACING NOT TO EXCEED 75 FEET.
 50% OF THE HORIZ. REINF. STEEL SHALL BE CONTINUOUS THRU JOINT. HORIZONTAL BARS THAT STOP SHORT OF JOINT SHALL BE FABRICATED ACCORDINGLY AND SHALL NOT BE FIELD CUT. CONTINUOUS AND DISCONTINUOUS HORIZ. BARS SHALL BE ALTERNATED ALONG WALL HEIGHT.
 SEE SPECIFIC DETAILS AT NOTED STRUCTURES WHERE 100% OF THE HORIZONTAL REINFORCING STEEL IS CONTINUOUS THRU JOINT.
 CONSTRUCTION JOINTS SHALL NOT OCCUR WITHIN 5'-0" OF A CORNER.
 SEE GENERAL STRUCTURAL NOTES FOR LAP SPLICE REQUIREMENTS.

# 6 TYP. WALL CONSTRUCTION JOINT S0-2 1" = 1'-0"



NOTES:

1. CONTRACTION JOINTS SHALL BE LOCATED AT JOINTS MARKED CT.

2. WATERSTOPS AND DRY-PAC REQUIRED AT WATER RETAINING WALLS ONLY.

3. UNLESS NOTED OTHERWISE, CONTRACTION JOINT SPACING NOT TO EXCEED 25 FEET.

4. 50% OF THE HORIZ. REINF. STEEL SHALL BE CONTINUOUS THRU JOINT. HORIZONTAL BARS THAT STOP SHORT OF JOINT SHALL BE FABRICATED ACCORDINGLY AND SHALL NOT BE FIELD CUT. CONTINUOUS AND DISCONTINUOUS HORIZ. BARS SHALL BE ALTERNATED ALONG WALL HEIGHT.

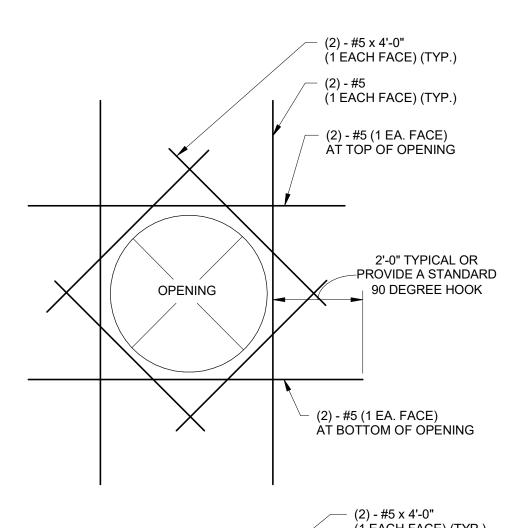
5. SEE SPECIFIC DETAILS AT NOTED STRUCTURES WHERE 100% OF THE HORIZONTAL REINFORCING STEEL IS CONTINUOUS THRU JOINT.

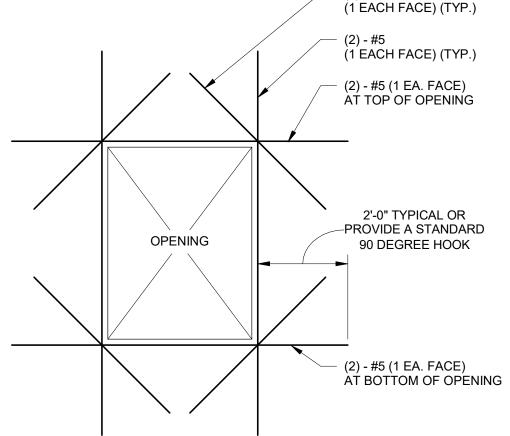
6. CONTRACTION JOINTS SHALL NOT OCCUR WITHIN 5'-0" OF A CORNER.

7. SEE GENERAL STRUCTURAL NOTES FOR LAP SPLICE REQUIREMENTS.

7 TYP. WALL CONTRACTION JOINT

| S0-2 | 1" = 1'-0"



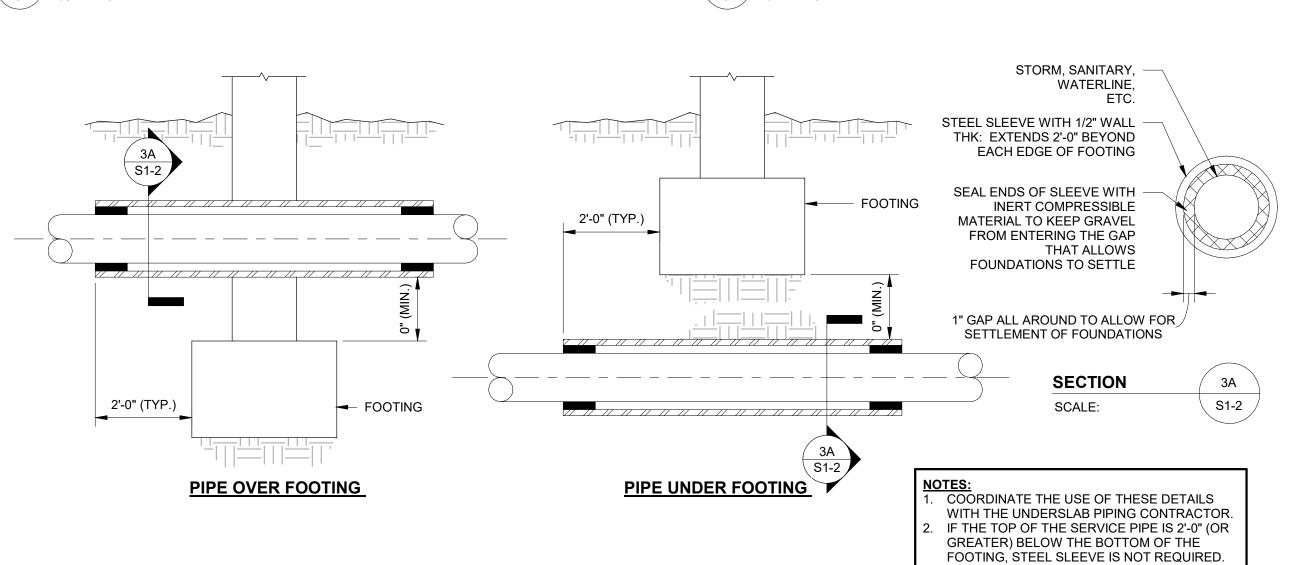


WOTES:

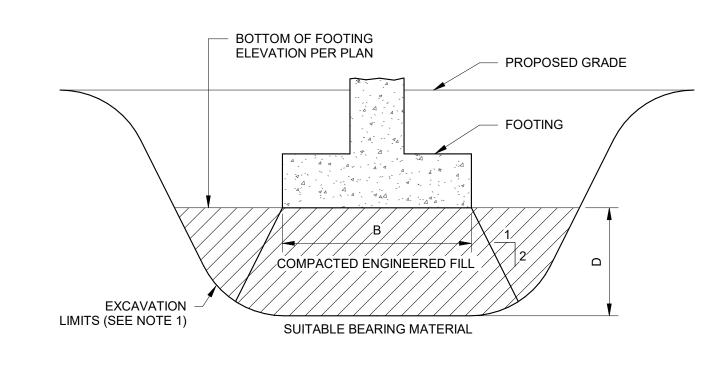
. WHERE VERTICAL REINFORCING IS INTERRUPTED BY THE OPENING, ONE HALF OF THE INTERRUPTED STEEL SHALL BE ADDED TO EACH SIDE OF THE OPENING. USE FULL LENGTH BARS.

2. THIS DETAIL APPLIES TO ALL OPENINGS IN CONCRETE WALLS UNLESS DETAILED OTHERWISE ON THE PLANS.

# 3 TYP. OPENING IN CONCRETE WALL



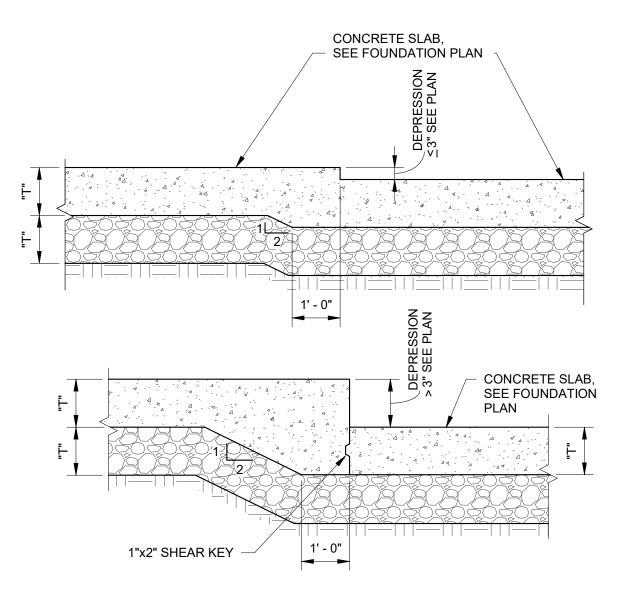




NOTES:

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

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



SLAB DEPRESSION DETAIL

1/2" = 1'-0"

ALL RIGHTS
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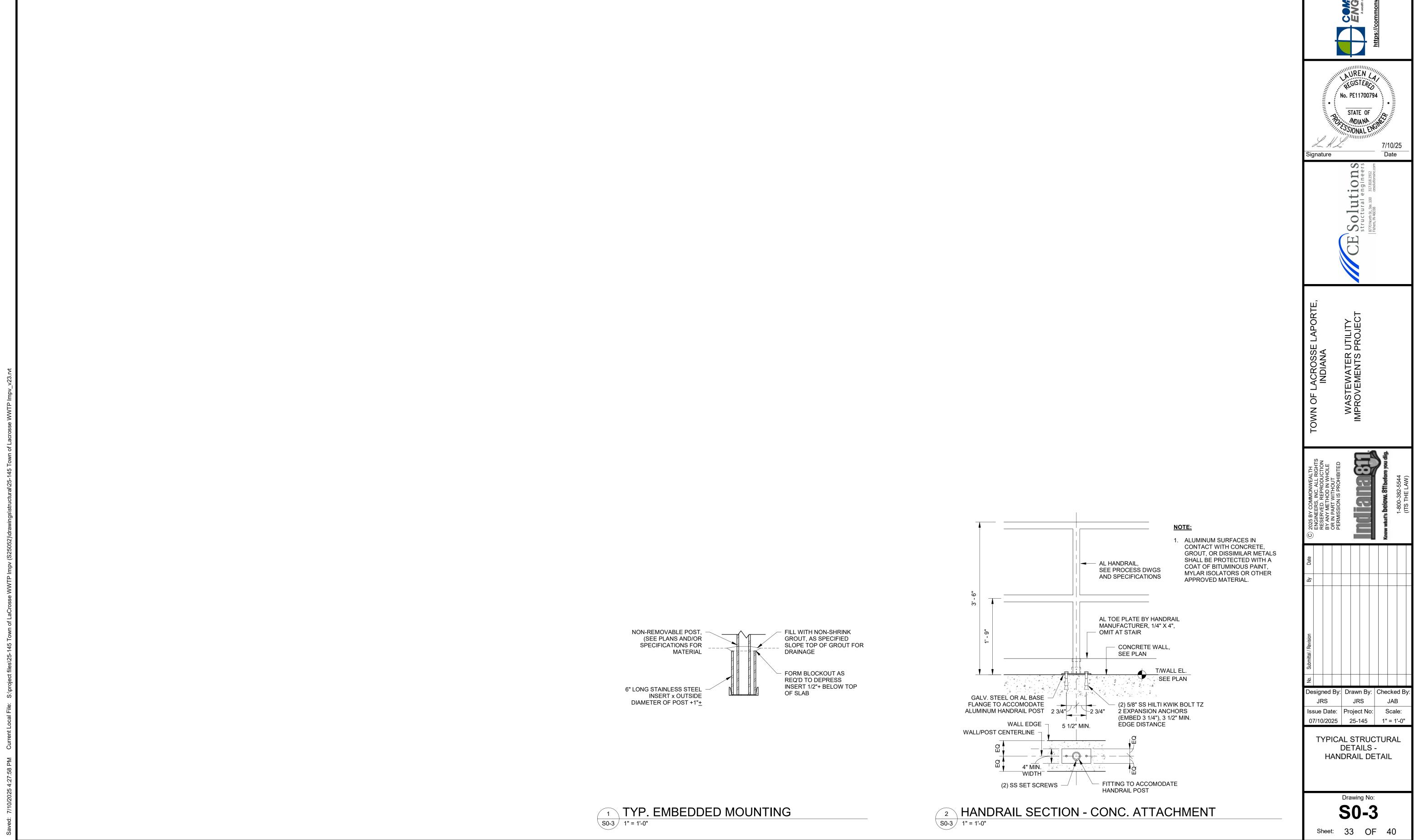
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TYPICAL STRUCTURAL
DETAILS -

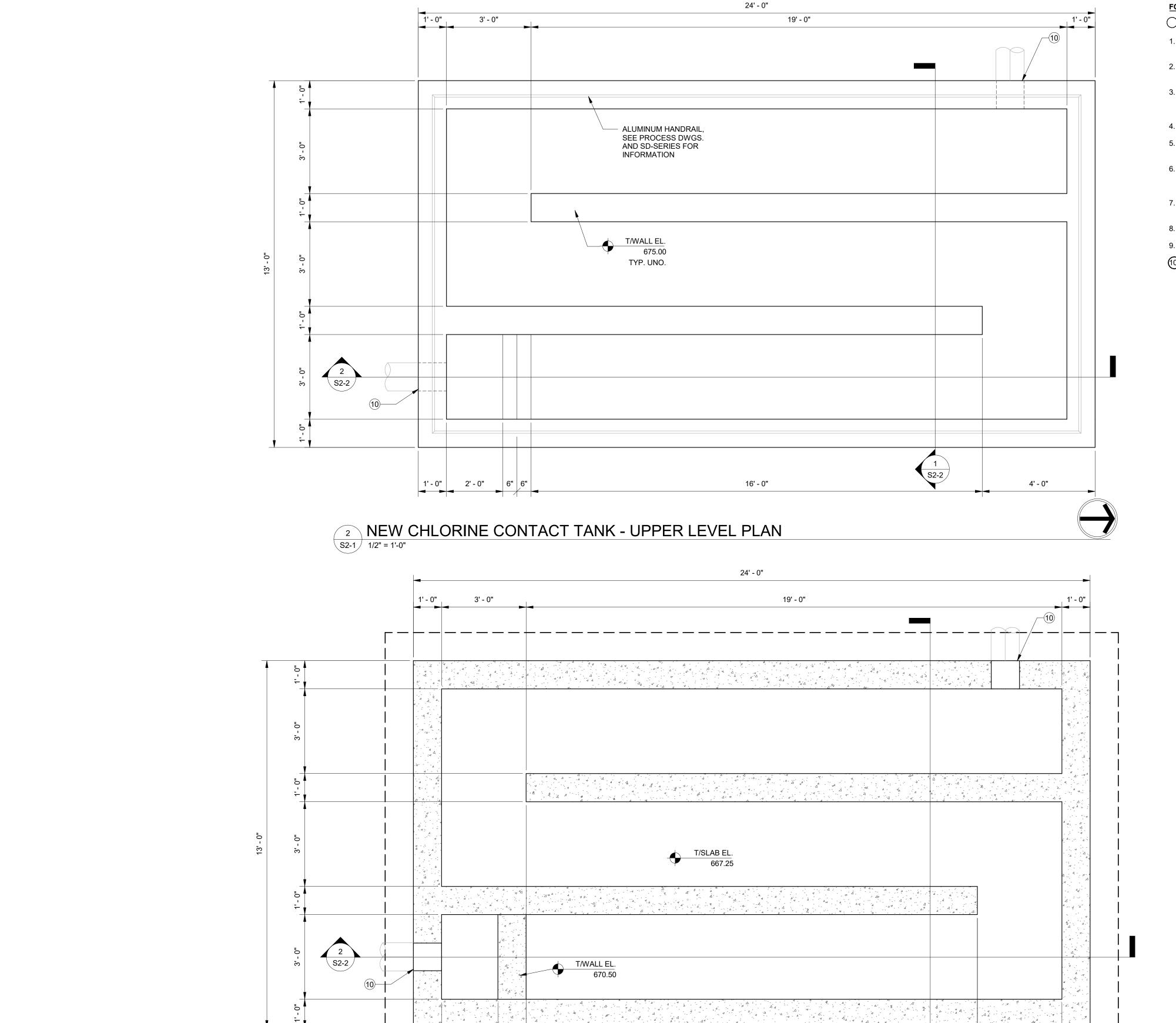
CONCRETE

Drawing No: S0-2

**Su-Z**Sheet: 32 OF 40



ENGINEERS, INC.
Awealth of resources to master a common goal.



2' - 0" 1' - 0"

S2-1 1/2" = 1'-0"

NEW CHLORINE CONTACT TANK - FOUNDATION PLAN

**FOUNDATION PLAN NOTES** 

3' - 0"

### INDICATES NOTE REFERENCED IN PLAN

- 1. SEE THE SO-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS.
- 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
- 4. SEE SITE PLAN FOR ALL FINAL GRADE ELEVATIONS.
- 5. SEE GEOTECHNICAL REPORT FOR ALL BACKFILLING AND COMPACTION REQUIREMENTS BEHIND WALLS AND UNDER BASE SLABS.
- 6. GENERAL CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT (CJ) AND CONTRACTION JOINT (CT) LOCATION PLAN TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
- 7. SEE DETAILS 6/S0-2 AND 7/S0-2 FOR WALL CONSTRUCTION JOINT AND WALL CONTRACTION JOINT REQUIREMENTS.
- 8. MAINTAIN STRUCTURAL SLAB THICKNESSES AT ALL FLOOR SLOPES AND DEPRESSIONS.
- 9. SEE PROCESS AND MECHANICAL DRAWINGS FOR LOCATION OF EQUIPMENT PADS.
- (0) PIPE PENETRATION, SEE PROCESS DRAWINGS FOR OPENING SIZE, ELEVATION, SLEEVES, AND ANY OTHER CONSTRUCTION REQUIREMENT. SEE TYPICAL DETAIL 3/S0-2 FOR ADDITIONAL REINFORCEMENT REQUIRED AROUND OPENING.



Signature

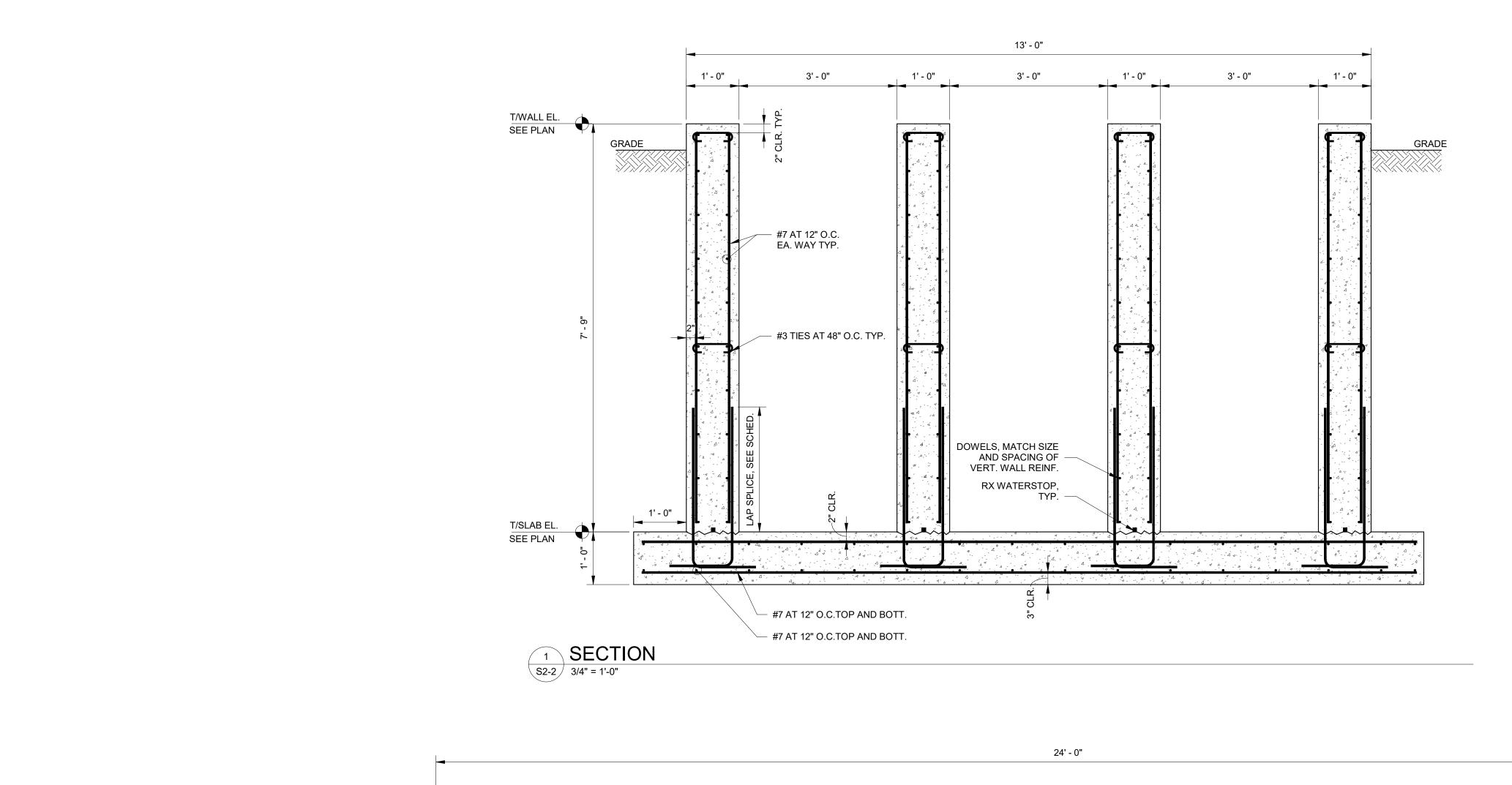
Solution structural engine

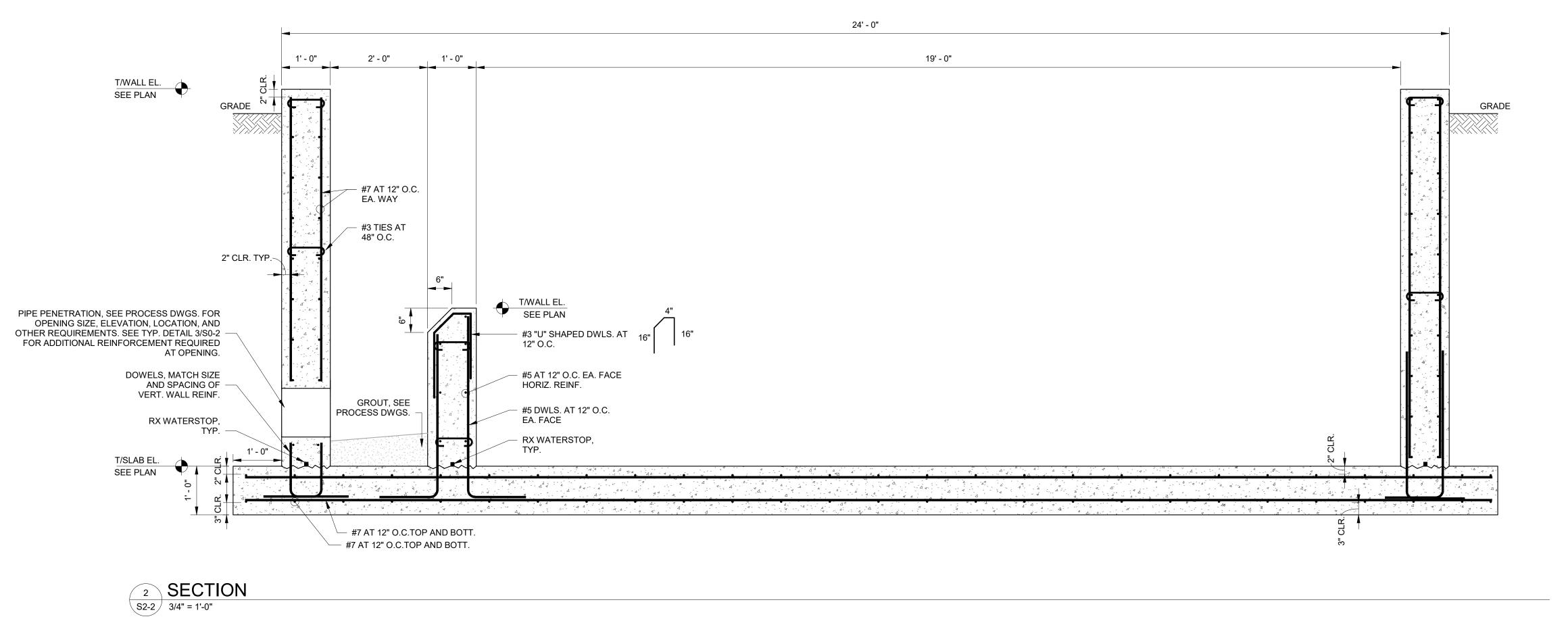
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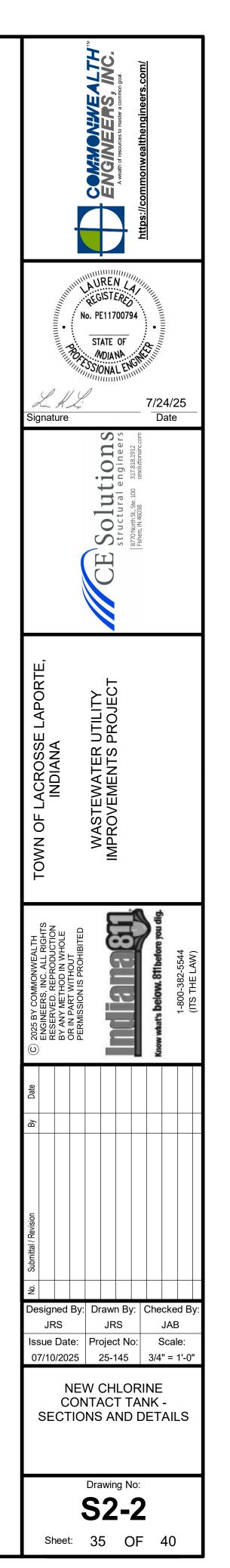
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**NEW CHLORINE** CONTACT TANK -STRUCTURAL PLANS

> Drawing No: **S2-1**







FOUNDATION PLAN NOTES

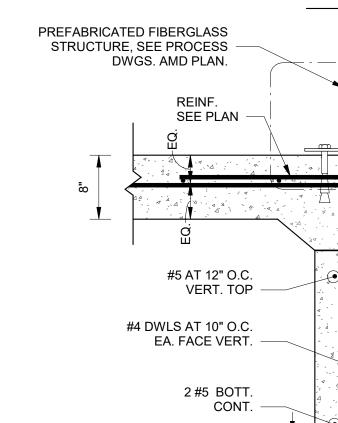
O INDICATES NOTE REFERENCED IN PLAN

- SEE THE S0-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS.
- 2. 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
- 4. SEE SITE PLAN FOR ALL FINAL GRADE ELEVATIONS.
- 5. SEE GEOTECHNICAL REPORT FOR ALL BACKFILLING AND COMPACTION REQUIREMENTS BEHIND WALLS AND UNDER BASE SLABS.
- 6. GENERAL CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT (CJ) AND CONTRACTION JOINT (CT) LOCATION PLAN TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONCRETE
- 7. MAINTAIN STRUCTURAL SLAB THICKNESSES AT ALL FLOOR SLOPES AND DEPRESSIONS.
- 8. PREFABRICATED FIBERGLASS STRUCTURE SHALL BE AS SPECIFIED IN THE PROCESS DRAWINGS AND SPECIFICATIONS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EXTENT OF THE PAD AND THE ANCHORING REQUIREMENTS WITH THE SELECTED FIBERGLASS BUILDING MANUFACTURER PRIOR TO PLACEMENT OF CONCRETE PAD.

1 NEW CHEMICAL BUILDING FOUNDATION PLAN
3/4" = 1'-0"

6" MIN.

GRADE



3 ANCHOR DETAIL
3" = 1'-0"

PREFABRICATED FIBERGLASS STRUCTURE, SEE PROCESS -

DWGS. AMD PLAN.

3/4" DIA. HILTI KB TZ-2 (S.S) WEDGE ANCHOR AT 24" O.C.

2 SECTON

2 SIT 1" = 1'-0"





Signature T/10/25

Date

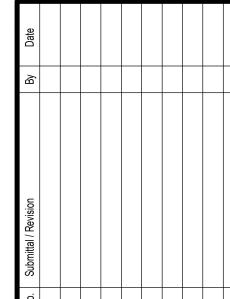
CE Solutions
structural engineers
8770 North, St., Ste. 100 317.818.1912
Fishers, IN 46038 cesolutionsinc.com

WASTEWATER UTILITY IMPROVEMENTS PROJECT

BY ANY METHOD IN WHOLE
OR IN PART WITHOUT
PERMISSION IS PROHIBITED

Know what's below. 811 before you dig.

1-800-382-5544

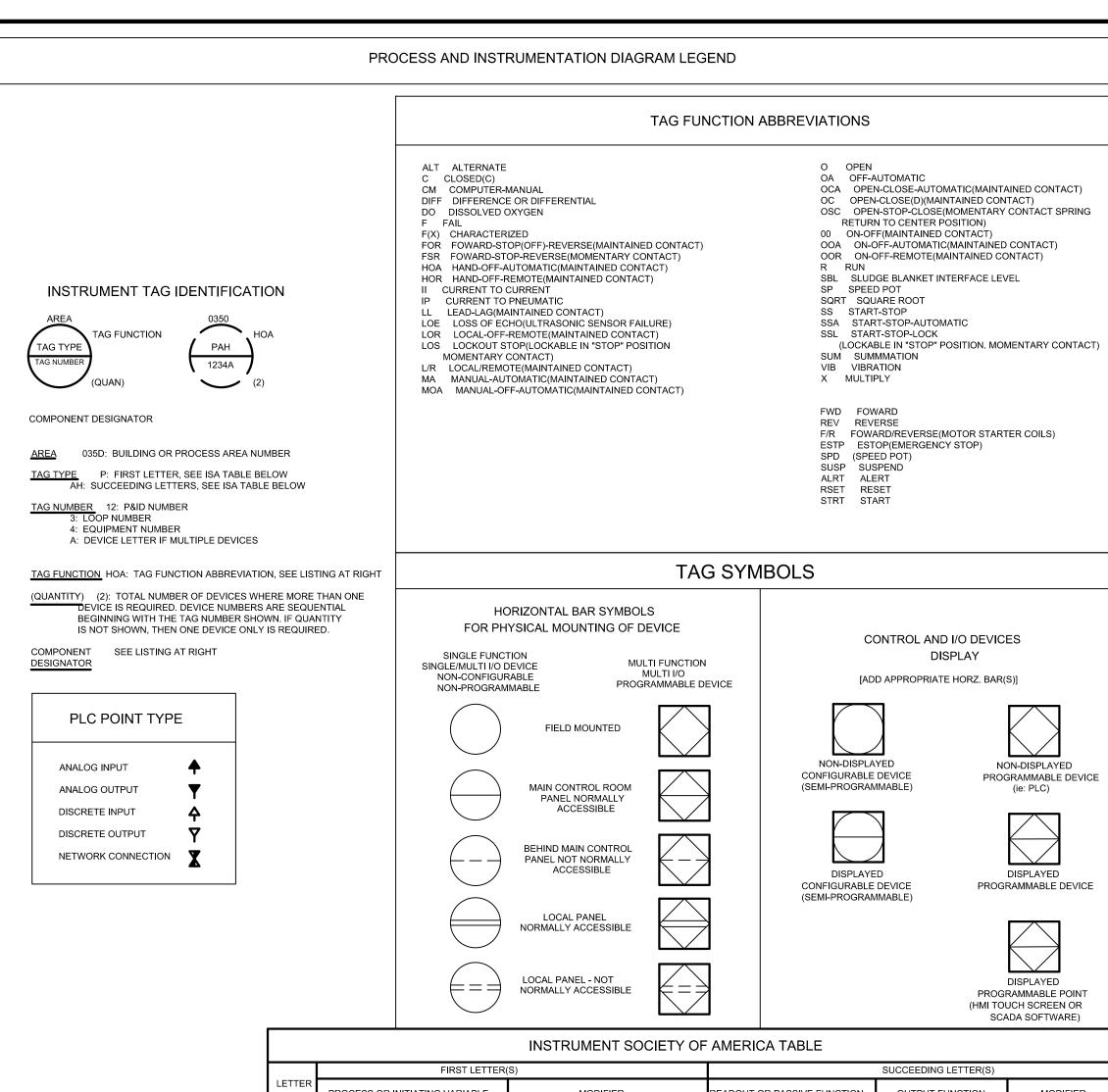


2Image: Control of the con

NEW CHEMICAL BUILDING -FOUNDATION PLAN AND DETAILS

Drawing No:

Sheet: 36 OF 40



		INSTRUMENT SOCIE	TY OF AMERICA TABLE				
FIRST LETTER(S)			SUCCEEDING LETTER(S)				
LETTER	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER		
Α	ANALYSIS	†	ALARM(W. LOGGING)	ANNUNCIATE			
В	BURNER COMBUSTION		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)		
С	USERS CHOICE(*)			CONTROL	CLOSE		
D	USERS CHOICE(*)	DIFFERENTIAL			1		
E	VOLTAGE		PRIMARY ELEMENT				
F	FLOW RATE	RATIO			FEEDBACK		
G	USERS CHOICE(*)		GLASS				
Н	HAND (MANUAL)			Ī	HIGH		
	CURRENT		INDICATE	Ì			
J	POWER	SCAN					
K	TIME OR SCHEDULE	TIME RATE OF CHANGE	KEYPAD(DATA ENTRY)	CONTROL STATION			
L	LEVEL		LIGHT(PILOT)		LOW		
М	MOTOR	MOMENTARY	i i	Ì	MONITORING		
N	USERS CHOICE(*)		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)		
0	USERS CHOICE(*)		ORIFICE				
Р	PRESSURE OR VACUUM		POINT TEST CONNECTION				
Q	QUANTITY	INTEGRATE					
R	RADIATION		RECORD, TREND, LOG				
S	SPEED OR FREQUENCY	SAFETY		SWITCH			
Т	TEMPERATURE			TRANSIT			
U	UNIVERSAL/MULTIVARIABLE(*)		MULTIFUNCTION(*)	MULTIFUNCTION(*)	MULTIFUNCTION(*)		
V	VIBRATION		VALUE	VALVE	i '		
W	WEIGHT, FORCE, TORQUE		WELL	W			
X	UNCLASSIFIED(*)	X AXIS	UNCLASSIFIED(*)	UNCLASSIFIED(*)	UNCLASSIFIED(*)		
Υ	EVENT, STATE	Y AXIS		RELAY OR COMPUTE(*)	i		
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT			

(\*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL

ETM - ELAPSED TIME METER BX - JUNCTION BOX NDX - INDEX # MS - MOTOR STARTER MOR - MOTOR OVERLOAD RELAY

MPR - MOTOR PROTECTION RELAY

### CONDUIT NOTES

PVC SCHEDULE 40 BELOW GRADE.

RIGID ALUMINUM OR PVC COATED RGS CONDUIT ABOVE GRADE OUTDOORS.

RIGID ALUMINUM OR PVC COATED RGS CONDUIT IN CLASSIFIED AND CORROSIVE SPACES. NO CONDUIT SHALL BE INSTALLED ON TOP OF A DECK, ON A WALKWAY, OR IN AN AREA THAT MAY POSE A TRIP HAZARD. NO CONDUIT SHALL BE INSTALLED ABOVE A

DECK, ABOVE A WALKWAY, OR IN AN AREA THAT IS COMMONLY TRAVELED. ALL CONDUIT IN SUCH AREAS SHALL BE COORDINATED WITH THE OWNER/ENGINEER AND SHALL BE INSTALLED BELOW GRADE OR IN THE CONCRETE DECKING OR PAD. CONDUIT INSTALLED IN CONCRETE DECKING OR PAD SHALL BE AVOIDED WHEN POSSIBLE. IF CONDUIT IS TO BE ROUTED IN A STRUCTURAL CONCRETE DECK, PAD, WALL, ETC. IT SHALL BE COORDINATED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. CONDUIT INSTALLED IN CONCRETE CAN IMPACT THE STRUCTURAL INTEGRITY OF CONCRETE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFORM TO ANY REQUIREMENTS REQUIRED OF THE STRUCTURAL ENGINEER TO ACCOMMODATE THE INTEGRITY OF THE INSTALLATION AT NO COST TO THE OWNER. FOR A CONDUIT EMBEDDED IN CONCRETE TO BE CONSIDERED IT MUST BE THE ONLY REASONABLE SOLUTION AS DETERMINED BY THE ENGINEER. ALL PROPOSED INSTALLATIONS MUST COMPLY WITH ACI 318 AND BE ENGINEER APPROVED.

ALL UNDERGROUND CONDUITS SHALL BE SEALED AT BOTH ENDS.

NO CONDUIT PENETRATIONS ON THE TOP OF ANY OUTDOOR PANELS/ENCLOSURES.

EMT IS ACCEPTABLE IN CONDITIONED ELECTRICAL ROOMS AND OFFICE/BREAK AREAS ONLY. EMT SHALL BE TRANSITIONED PRIOR TO EXITING NON CORROSIVE SPACES. EMT SHALL NOT BE USED WHEN IT CAN BE EXPOSED TO ANY CORROSIVE GASES.

### CONTROL WIRING REQUIREMENTS

EACH ANALOG INPUT REQUIRES AN 18/2 TWISTED SHIELDED PAIR IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

EACH ANALOG OUTPUT REQUIRES AN 18/2 TWISTED SHIELDED PAIR IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

EACH DISCRETE INPUT REQUIRES 2 #14's IN 3/4" CONDUIT UNLESS NOTED

EACH DISCRETE OUTPUT REQUIRES 2 #14's IN 3/4" CONDUIT UNLESS NOTED OTHERWISE. CONTROL WIRING OF THE <u>SAME TYPE</u> MAY BE COMBINED INTO THE SAME CONDUIT. EXAMPLES: TWO 4-20MA ANALOG SIGNALS MAY BE COMBINED,

TWO 24VDC DISCRETE SIGNALS MAY BE COMBINED, AND TWO 120VAC

DISCRETE SIGNALS MAY BE COMBINED. NOTE: INSTRUMENTS AND CABLE SHALL BE AS REQUIRED BY THE INSTRUMENT MANUFACTURER.

### INSTRUMENT POWER

NON-DISPLAYED

(ie: PLC)

DISPLAYED

DISPLAYED

PROGRAMMABI E POINT

SCADA SOFTWARE)

PROGRAMMABLE DEVICE

PROGRAMMABLE DEVICE

INSTRUMENTS REQUIRING 120 VAC:

MAGNETIC FLOW METERS

TURRIDITY TRANSMITTERS pH TRANSMITTERS ORP TRANSMITTERS

DO TRANSMITTERS ULTRASONIC LEVEL TRANSMITTERS ULTRASONIC FLOW TRANSMITTERS INFLUENT AND EFFLUENT SAMPLERS

NOTE: THIS LIST IS PROVIDED AS A REFERENCE AND IS NOT ALL INCLUSIVE. COORDINATE WITH THE GENERAL CONTRACTOR AND THE EQUIPMENT SUPPLIERS FOR DETAILED WIRING REQUIREMENTS OF INSTRUMENTS, SENSORS, AND EQUIPMENT

	ELECTRICAL GENERAL NOTES		 LEGEND
	(GENERAL NOTES APPLICABLE TO ALL ELECTRICAL SHEETS)	SYMBOL	DESCRIPTION
1.	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. LATE CLAIMS FOR LABOR AND MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.		OPEN LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO NORMAL POWER: FIXTURE TYPE DETERMINES
2.	THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF REQUIRED CONSTRUCTION, EQUIPMENT, AND MATERIALS. PROVIDE ALL MATERIALS AND WORK NOT SPECIFICALLY MENTIONED, SHOWN, OR CAN BE REASONABLY INFERRED ON THE DRAWINGS BUT WHICH ARE NECESSARY TO FULLY COMPLETE THE WORK.		BATTERY POWERED EMERGENCY LIGHTING UNIT  EXIT SIGN: ARROWS DENOTE DIRECTIONAL INDICATING CHEVRON ROMTS, SHADING DENOTES FACE(S) ORIENTATION.  WALLWASH OR OTHER DIRECTIONALLY ADJUSTABLE/AIMABLE FIXTURE:
3.	WHEN SUBSTITUTING OTHER EQUIPMENT, MATERIALS, AND PRODUCTS THAN SPECIFIED IN THE CONTRACT DOCUMENTS, INCLUDE IN PRICING ALL COSTS FOR OTHER DESIGN CHANGES TO THE PROJECT (ALL DIVISIONS) WHICH WILL RESULT FROM USE OF THE SUBSTITUTED ITEM(S).	<ul><li>□</li><li>○</li><li>□</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li><li>○</li>&lt;</ul>	OPEN SIDE DENOTES ORIENTATION. TYPE DETERMINES MOUNTING.  TRACK LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.  POLE-MOUNTED SITE LIGHTING FIXTURE: TYPE DETERMINES MTG.
4.	REVIEW THE CONTRACT DOCUMENTS OF OTHER DIVISIONS, AND COORDINATE ELECTRICAL AND CONTROL WORK WITH THE WORK OF OTHER DISCIPLINES TO AVOID CONFLICTS AND INTERFERENCE.	<b>≪</b>	FLOOD LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.  PHOTO-CELL
5.	UPON COMPLETION OF THE WORK REQUIRED UNDER THIS CONTRACT, PROVIDE TYPED UPDATED DIRECTORY WITHIN DOOR OF EACH AFFECTED PANELBOARD.		ALL FIXTURES IN THIS SPACE SHALL BE SAME TYPE INDICATED, U.O.N.
	LEAVE "SPARE" BREAKERS IN "OFF" POSITION.	3	SINGLE-POLE TOGGLE SWITCH  SINGLE-POLE TOGGLE SWITCH: SLASH DENOTES ESSENTIAL POWER
6. 7.	ALL MOUNTING HEIGHTS INDICATED ON DRAWINGS ARE TO CENTERLINE, UON.  PROVIDE LIGHTING FIXTURES COMPATIBLE WITH CEILING CONSTRUCTION.  COORDINATE WITH ARCHITECTURAL ROOM FINISH SCHEDULES.	\$ 	SYSTEM CONNECTION - TYPICAL FOR ALL SWITCHES.  DUAL TECHNOLOGY, WALL MNTD OCCUPANCY SENSOR WITH MANUAL OVERRIDE SWITCH
8.	IN AREAS HAVING FINISHED CEILINGS, LOCATE CEILING-MOUNTED ELECTRICAL DEVICES AND FIXTURES ACCORDING TO ARCHITECTURAL REFLECTED CEILING PLAN. DO NOT INSTALL CEILING-MOUNTED SMOKE DETECTORS WITHIN 4 FEET OF	<b>⊚</b> c Sor	DUAL TECHNOLOGY, CEILING MNTD OCCUPANCY SENSOR WITH REMOTE MANUAL OVERRIDE SWITCH  SINGLE-POLE REMOTE OVERRIDE SWITCH FOR CEILING MNTD OCCUPANCY SENSOR
	HVAC SUPPLY DIFFUSERS.	SD	DIMMER SWITCH
9.	IN ELECTRICAL AND MECHANICAL EQUIPMENT SPACES, COORDINATE EXACT LOCATIONS OF LIGHTING FIXTURES WITH CONDUIT BANKS, DUCTWORK, PIPING, STRUCTURE, SUPPORTS, AND OTHER OBSTRUCTIONS. LOCATE FIXTURES SUCH THAT DIALS, GAUGES, METERS, ETC. ARE PROPERLY ILLUMINATED.	S <sub>D</sub> 3	THREE-WAY DIMMER SWITCH SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT
10.	DO NOT USE ANY LIGHTING FIXTURE AS A RACEWAY FOR CONDUCTORS NOT SERVING THAT PARTICULAR FIXTURE.	S <sub>M</sub>	SINGLE-POLE MOTOR-RATED TOGGLE SWITCH DISCONNECT
11.	CONNECT BATTERY-OPERATED EMERGENCY LIGHTING UNITS AND EXIT SIGNS HAVING BATTERY BACK-UP TO UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NEC SUCH THAT	ST S <sub>IR</sub>	SINGLE-POLE OR DOUBLE-POLE MANUAL MOTOR STARTER WITH MELTING ALLOY ELEMENTS FOR THERMAL OVERLOAD PROTECTION OCCUPANCY SENSOR SWITCH
	FAILURE OF CIRCUIT TRANSFERS UNIT FROM NORMAL TO EMERGENCY MODE, CAUSING LAMPS TO RE-ENERGIZE.	Sit	INTERVAL TIMER RESET AND CONTROL SWITCH
12.	DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN NON-RATED PARTITIONS.	\$ <sub>J</sub>	JOG SWITCH
	OFFSET AND SEAL, SIMILAR TO REQUIREMENTS FOR RATED PARTITIONS, TO MINIMIZE SOUND TRANSMISSION.	•	MUSHROOM HEAD TYPE PUSHBUTTON STATION
13.	COORDINATE ROUTING OF ALL LARGE CONDUITS (2" DIA AND LARGER) AND PULL BOX LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION TO AVOID	Р	AUTO DOOR CONTROL PUSHPLATE
	CONFLICTS AND TO GUARANTEE REQUIRED CLEARANCE AND ACCESSIBILITY OF ELECTRICAL AND OTHER SYSTEMS.	Sv S <sub>LV</sub>	VARIABLE INTENSITY CONTROLLER INCLUDED WITH OWNER-FURNISHED-CONTRACTOR-INSTALLED SURGICAL LIGHTING FIXTURE  LOW VOLTAGE CONTROL SWITCH
14.	COORDINATE WITH OWNER OR OWNER'S SELECTED VENDOR PRIOR TO ROUGH-IN FOR EXACT LOCATIONS OF SPECIAL PURPOSE OUTLETS DEDICATED TO SPECIFIC EQUIPMENT. VERIFY REQUIRED NEMA CONFIGURATION OF ALL SUCH OUTLETS.	ws	FACTORY SUPPLIED WALL CONTROLLER FOR CEILING MOUNTED LIGHT-INSTALLED BY ELECTRICAL CONTRACTOR
15.	PROVIDE APPROPRIATE PULL WIRE IN EACH EMPTY SYSTEMS CONDUIT INCLUDED IN THIS PROJECT.	<u></u> ⊕	120V DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT 120V DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED
16.	INCLUDE GREEN-INSULATED GROUNDING CONDUCTOR SIZED PER 2002 NEC TABLE 250-122 WITH ALL BRANCH CIRCUIT CONDUCTORS SERVING LIGHTING FIXTURES, RECEPTACLES, MECHANICAL OR OTHER DEVICES INSTALLED AT OR BELOW 8'-0".	⊕-	120V QUADRUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT 120V QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT
17.	MATCH A.I.C. RATINGS AND OTHER CHARACTERISTICS OF EXISTING DEVICES IN PANELBOARD WHEN ADDING BREAKERS TO EXISTING PANELBOARDS.	<b>⊕</b> ⊕	INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED  120V SINGLE RECEPTACLE, AMP RATING (IF OTHER THAN 20A) SHOWN: STANDARD MOUNTING HEIGHT, OR OTHER HEIGHT AS NOTED
18.	ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE -	<del>G</del> FCI	120V GFCI DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT
	LATEST EDITION ADOPTED BY INDIANA, THE INDIANA CODE AMENDMENT, LOCAL/MUNICIPAL CODE, AND THE AUTHORITIES HAVING JURISDICTION.	<del>GFCI</del>	120V GFCI QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT
19.	ALL CONNECTIONS TO EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT, NOT LESS THAN 12" IN LENGTH, NOR GREATER THAN 36" IN LENGTH.	<b>O</b> -	INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED  120V GFCI DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED  SINGLE RECEPTACLE (OTHER THAN 120V), VOLTAGE, AMP RATING,
20.	ALL CONDUIT PENETRATIONS SHALL BE SEALED WITH APPROPRIATE CONDUIT SEALING MATERIAL.		NEMA CONFIGURATION, AND MOUNTING HEIGHT AS NOTED  RECPTACLE OR J-BOX CONNECTION FOR X-RAY VIEWER: VERIFY CONNECTION ROMTS WITH UNIT FURNISHED PRIOR TO ROUGH-IN
21.	ALL CABLE SIZES SHALL UTILIZE COPPER CONDUCTORS.	•	120V DUPLEX RECEPTACLE IN FLUSH FLOOR-MOUNTED BOX
22.	FIELD VERIFY LOCATIONS OF BUILDING EXPANSION JOINTS WHEN ROUTING CONDUIT. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH THE EXPANSION FITTINGS. EXPANSION FITTINGS SHALL BE INSTALLED IN	TP H	TELE-POWER POLE HALON DUMP STATION
	ACCORDANCE WITH THE NEC AND MANUFACTURERS WRITTEN RECOMMENDATIONS.	F	FIRE ALARM MANUAL PULL STATION
23.	FEEDERS FROM PANELBOARDS BACK TO MAIN SWITCHBOARD, BETWEEN AUTO TRANSFER SWITCHES AND THEIR SOURCES/LOADS, BETWEEN DRY TRANSFORMERS AND THEIR SOURCES/LOADS ARE NOT INDICATED. FEEDERS ARE PART OF THE WORK, AND SHALL BE SIZED AS INDICATED ON THE LINE DIAGRAM.	FK	FIRE ALARM MANUAL PULL STATION, KEY-OPERATED
24.	HOMERUNS SHALL NOT BE COMBINED IN A RACEWAY UNLESS SHOWN ON THE	0	FIRE ALARM CEILING-MOUNTED SMOKE DETECTOR
	CONTRACT DRAWINGS. SINGLE PHASE BRANCH CIRCUIT HOMERUNS MAY BE COMBINED AT THE CONTRACTORS DISCRETION NOT GREATER THAN (3) PHASE CONDUCTORS, NEUTRAL CONDUCTORS, AND A GROUNDING CONDUCTOR.		FIRE ALARM CEILING-MOUNTED HEAT DETECTOR  FIRE ALARM SUPPLY AIR DUCT-MOUNTED SMOKE DETECTOR
25.	EACH SINGLE PHASE BRANCH CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL BACK TO THE PANEL.	D <sub>R</sub>	FIRE ALARM RETURN AIR DUCT-MOUNTED SMOKE DETECTOR
26	ALL PENETRATIONS BELOW GRADE SHALL USE LINK SEALS.		FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - RECEIVER
	WHERE LOW VOLTAGE (CONTROL) CABLING IS ALLOWED TO BE INSTALLED		FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - TRANSMITTER
۷1.	WITHOUT A RACEWAY, IT SHALL BE SUPPORTED NOT EXCEEDING INTERVALS OF 48", AND NOT MORE THAN 6" FROM THE CABINETS, BOXES, FITTINGS, OUTLETS, RACKS,	Y	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM VALVE STATUS SWITCH (TAMPER SWITCH)
	FRAMES AND TERMINALS.	FS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM WATER FLOW SWITCH
28.	ALL MOUNTING HARDWARE INCLUDING NUTS, BOLTS, SCREWS, WASHERS, ETC. SHALL BE STAINLESS STEEL.		FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE-CHIME & STROBE
29.	MOUNT JUNCTION BOXES AND DISCONNECT SWITCHES ON STAINLESS STEEL		FIRE ALARM AUDIO/VISIUAL NOTIFICATION DEVICE-HORN & STROBE
_	UNISTRUT.	(F)	FIRE ALARM VISUAL ONLY NOTIFICATION DEVICE - STROBE LIGHT
30.	ALL UNISTRUT, MOUNTING BRACKETS AND SUPPORTING STRUCTURES SHALL BE		1

31. DO NOT MIX CONTROL AND POWER CONDUCTORS IN THE SAME CONDUIT. DO NOT

MIX DISCRETE AND ANALOG CONTROL CONDUCTORS IN THE SAME CONDUIT.

33. CONTRACTOR SHALL COORDINATE WITH HEAT TRACE MANUFACTURER DURING BIDDING AND CONSTRUCTION AND SHALL PROVIDE ALL CONDUIT, WIRING, AND CIRCUITS AS REQUIRED. HEAT TRACE SHALL BE PROVIDED/INSTALLED COMPLETE.

34. CONTRACTOR SHALL NOT COMBINE POWER FEEDS FOR THREE PHASE LOADS.

35.2. BATHROOMS: GFCI OUTLETS ARE REQUIRED IN BATHROOMS NEAR THE SINK.

35.4. BASEMENTS: UNFINISHED BASEMENTS REQUIRE AT LEAST ONE GFCI OUTLET.

35.5. OUTDOOR SPACES: GFCI OUTLETS ARE REQUIRED IN OUTDOOR AREAS THAT

35.7. CRAWL SPACES: GFCI OUTLETS ARE REQUIRED IN CRAWL SPACES WHERE

36. LIMIT CAT 6E INSTALLATION TO 230' MAXIMUM DISTANCE. CONTRACTOR SHALL

FURNISH AND INSTALL FIBER OPTIC CABLE AND MEDIA CONVERTERS IF CONDUIT

35.3. GARAGES: GFCI OUTLETS ARE REQUIRED IN GARAGES THAT HAVE SINKS.

35. THE BELOW LOCATIONS ARE WHERE GFCI OUTLETS ARE REQUIRED:

32. ADJUSTABLE SPEED DRIVES (ASD) LINE AND LOAD WIRE SHALL BE RUN IN

ALL HEAT TRACE IS REQUIRED TO BE GFI PROTECTED.

STAINLESS STEEL

SEPARATE RACEWAYS.

35.1. KITCHENS: ALL KITCHEN OUTLETS.

ROUTING EXCEEDS CAT 6E LIMITS.

ARE ACCESSIBLE OR AT GRADE LEVEL.

MECHANICAL EQUIPMENT IS LOCATED.

35.8. UTILITY ROOMS: ALL UTILITY ROOM OUTLETS.

35.6. LAUNDRY ROOMS: ALL LAUNDRY ROOM OUTLETS.

7	FLOOD LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.	
PO	PHOTO-CELL	
$\bigcirc$	ALL FIXTURES IN THIS SPACE SHALL BE SAME TYPE INDICATED, U.O.N.	
S	SINGLE-POLE TOGGLE SWITCH	3'-10"
\$	SINGLE-POLE TOGGLE SWITCH: SLASH DENOTES ESSENTIAL POWER SYSTEM CONNECTION - TYPICAL FOR ALL SWITCHES.	3'-10"
<b>®</b> ,	DUAL TECHNOLOGY, WALL MNTD OCCUPANCY SENSOR WITH MANUAL OVERRIDE SWITCH	3'-10"
<b>ම</b> ූ	DUAL TECHNOLOGY, CEILING MNTD OCCUPANCY SENSOR WITH REMOTE MANUAL OVERRIDE SWITCH	
Sor	SINGLE-POLE REMOTE OVERRIDE SWITCH FOR CEILING MNTD OCCUPANCY SENSOR	3'-10"
SD	DIMMER SWITCH	3'-10"
Sp3	THREE-WAY DIMMER SWITCH	3'-10"
SP	SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT	3'-10"
SM	SINGLE-POLE MOTOR-RATED TOGGLE SWITCH DISCONNECT	3'-10"
ST	SINGLE-POLE OR DOUBLE-POLE MANUAL MOTOR STARTER WITH	3'-10"
SIR	MELTING ALLOY ELEMENTS FOR THERMAL OVERLOAD PROTECTION OCCUPANCY SENSOR SWITCH	3'-10"
SIT	INTERVAL TIMER RESET AND CONTROL SWITCH	3'-10"
\$ <sub>J</sub>	JOG SWITCH	3'-10"
•		
	MUSHROOM HEAD TYPE PUSHBUTTON STATION	5'-0"
P	AUTO DOOR CONTROL PUSHPLATE  VARIABLE INTENSITY CONTROLLER INCLUDED WITH OWNER-	
Sv	FURNISHED-CONTRACTOR-INSTALLED SURGICAL LIGHTING FIXTURE	5'-0"
S <sub>LV</sub>	LOW VOLTAGE CONTROL SWITCH FACTORY SUPPLIED WALL CONTROLLER FOR CEILING MOUNTED	3'-10"
ws	LIGHT-INSTALLED BY ELECTRICAL CONTRACTOR	3'-10"
<b>=</b>	120V DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
<del>-</del>	120V DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
<del>=</del>	120V QUADRUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
<b>—</b>	120V QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
0-	120V SINGLE RECEPTACLE, AMP RATING (IF OTHER THAN 20A) SHOWN: STANDARD MOUNTING HEIGHT, OR OTHER HEIGHT AS NOTED	1'-6", UON
<del>Q</del> GFCI	120V GFCI DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
<del>-</del>	120V GFCI QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
<b>D</b> -	120V GFCI DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
<b>₽</b>	SINGLE RECEPTACLE (OTHER THAN 120V), VOLTAGE, AMP RATING, NEMA CONFIGURATION, AND MOUNTING HEIGHT AS NOTED	
₽	RECPTACLE OR J-BOX CONNECTION FOR X-RAY VIEWER: VERIFY CONNECTION ROMTS WITH UNIT FURNISHED PRIOR TO ROUGH-IN	
•	120V DUPLEX RECEPTACLE IN FLUSH FLOOR-MOUNTED BOX	
TP	TELE-POWER POLE	
Н	HALON DUMP STATION	
F	FIRE ALARM MANUAL PULL STATION	3'-10"
FK	FIRE ALARM MANUAL PULL STATION, KEY-OPERATED	3'-10"
 	FIRE ALARM CEILING-MOUNTED SMOKE DETECTOR	
$\overline{\mathbb{H}}$	FIRE ALARM CEILING-MOUNTED HEAT DETECTOR	
	FIRE ALARM SUPPLY AIR DUCT-MOUNTED SMOKE DETECTOR	
	FIRE ALARM RETURN AIR DUCT-MOUNTED SMOKE DETECTOR	
	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - RECEIVER	AS NOTED
 □ <b>T</b> 4	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - TRANSMITTER	
	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM VALVE STATUS	AS NOTED
_=_	SWITCH (TAMPER SWITCH) FIRE ALARM CONNECTION TO SPRINKLER SYSTEM WATER	- <del></del>
FS	FLOW SWITCH	
FD FD	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE-CHIME & STROBE	6'-8"
FN C	FIRE ALARM AUDIO/VISIUAL NOTIFICATION DEVICE-HORN & STROBE	6'-8"
F C	FIRE ALARM VISUAL ONLY NOTIFICATION DEVICE - STROBE LIGHT	6'-8"
	FIRE ALARM SPEAKER: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
	FIRE ALARM HORN, WALL-MOUNTED	AS NOTED
RI HRI	DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
SAI HSAI	DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT AND TEST SWITCH: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
Z	FIRE ALARM ZONE ADDRESSABLE MODULE	
	FIRE ALARM INDIVIDUAL ADDRESSABLE MODULE	
•	FIRE ALARM ELECTRO-MAGNETIC DOOR HOLDER	6'-4"
FR	FIRE RELAY	
	DESK MOUNTED INTERCOM	<u> </u>
(ID)		+
 	WALL MOUNTED INTERCOM	<del></del>
<b>®</b>	WALL MOUNTED INTERCOM  EXPLOSION PROOF SWITCH	3'-10"
<b>w</b> \$ <sub>X</sub>		
\$ <sub>X</sub>	EXPLOSION PROOF SWITCH  3 WAY SWITCH	3'-10"
<b>®</b> \$ <sub>X</sub>	EXPLOSION PROOF SWITCH	

MAGNETIC FLOW METER

SONIC FLOW METER

CENTRIFUGAL PUMP

PERISTALTIC PUMP UBMERSIBLE PUMP

GRINDER PUMP

LOBE PUMP

MTG HGT AFF TO CL, UON

	LEG	END		
	_	VIATIONS		
ABV	ABOVE	IG	ISOLATED GROUND	
AFF	ABOVE FINISHED FLOOR	MON	MONITOR	
ACLG	ABOVE FINISHED CEILING	MTG	MOUNTING	
BFC	BELOW FINISHED CEILING	MV	MULTI-VIEWER	
С	CRITICAL BRANCH OR EMERG PWR- RED DEVICE & PLATE, UON.	MW	MICROWAVE OVEN	
CL	CENTER-LINE	NEC	NATIONAL ELECTRICAL CO	DE
CLG	CEILING-MOUNTED	OCPD	OVERCURRENT PROTECTIV	√E DEVI
COF	COFFEE MAKER	OFCI	OWNER-FURNISHED-CONTI	RACTOR
COP	COPIER	OFE	OWNER-FURNISHED EQUIP	'MENT
CTR	COUNTER	PRT	PRINTER	
ECB	ENCLOSED CIRCUIT BREAKER	PTS	PNEUMATIC TUBE STATION	ı
EMER	EMERGENCY	Q	EQUIP BRANCH OR EMERG RED DEVICE & PLATE, UON	
EWC	ELECTRIC WATER COOLER	REF	REFRIGERATOR	
EWH	ELECTRIC WATER HEATER	RQMTS	REQUIREMENTS	
FAX	FACSIMILE MACHINE	Т	TAMPERPROOF DEVICE	
FBO	FURNISHED BY OTHERS	TSP	TWISTED SHIELDED PAIR	
GFCI	GROUND FAULT CIRCUIT INTERRUPT- ING - PERSONNEL PROTECTION	UON	UNLESS OTHERWISE NOTE	.D
GFI	GROUND FAULT INTERRUPTING - EQUIPMENT PROTECTION	UCR	UNDER-COUNTER REFRIGE	RATOR
HGT	HEIGHT	WP	WEATHERPROOF	
FPMR	FUSED PER MANUFACTURE'S RECOMMENDATIONS			
			   MT	G HGT A
SYMBOL	DESC	RIPTION		O CL, UC
	EXPOSED RACEWAY			
	RACEWAY CONCEALED IN OR ABOVE CE		WITHIN WALLS	

SYMBOL	DESCRIPTION	MTG HGT AFF TO CL, UON
	EXPOSED RACEWAY	
	RACEWAY CONCEALED IN OR ABOVE CEILINGS AND WITHIN WALLS	
	BRANCH CIRCUIT RACEWAY CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE	
	FEEDER RACEWAY CONCEALED BELOW FLOOR SLAB OR BELOW GRADE	
	LIGHTNING PROTECTION CABLING	
	HOMERUN RACEWAY: NUMBER OF ARROWHEADS DENOTES NUMBER OF CIRCUITS.	
~	RACEWAY TURNING UP AS VIEWED FROM THE LOAD	
_	RACEWAY TURNING DOWN AS VIEWED FROM THE LOAD	
~	RACEWAY VERTICAL RISER WITH HORIZONTAL CONTINUATION AT TWO LEVELS SHOWN	
~>>	CAPPED RACEWAY	
	GENERAL LIGHTING OR OUTLET CIRCUIT - MAY BE DAISY CHAINED	
<u> </u>	JUNCTION BOX	AS NOTED
	ENCLOSED BREAKER	
□	FUSIBLE SAFETY SWITCH (AMP RATING, POLES, FUSE SIZE, AND NEMA ENCLOSURE TYPE IF OTHER THAN 1 NOTED)	
	NON-FUSIBLE SAFETY SWITCH (AMP RATING, POLES, AND NEMA ENCLOSURE TYPE IF OTHER THAN 1 NOTED)	
⊠₁	COMBINATION MAGNETIC ACROSS-THE-LINE STARTER WITH MOTOR CIRCUIT PROTECTOR (NEMA STARTER SIZE NOTED)	
<b>***</b>	CONTROL PANEL FURNISHED INTEGRAL TO EQUIPMENT (SINGLE-POINT ELECTRICAL CONNECTION REQUIRED)	
<b>⊘</b>	MOTOR	
<del>-</del> ~	FLEXIBLE CONDUIT CONNECTION	
	SURFACE- OR FLUSH-MOUNTED LIGHTING/RECEPTACLE PANELBOARD	
	POWER DISTRIBUTION PANELBOARD	
ТТ	DRY TYPE TRANSFORMER	
XXX	MISCELLANEOUS SYSTEMS PANEL OR CABINET: REFER TO ABBREVIATIONS.	

MOTOR CONTROLLER LEGEND		
SYMBOL	DESCRIPTION	
MS	ACROSS THE LINE MOTOR STARTER	
ss	SOFT STARTER	
VFD	VARIABLE FREQUENCY DRIVE	
MS ]	ACROSS THE LINE MOTOR STARTER WITH INTEGRAL DISCONNECT	
SS	SOFT STARTER WITH INTEGRAL DISCONNECT	
VFD	SOFT STARTER WITH INTEGRAL DISCONNECT  VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT	

		LIGHTING LEGEND		
ı	SYMBOL	DESCRIPTION		
	0	FIXTURE WITH STANDARD BALLAST.		
FIXTURE WITH STANDARD BALLAST AND EMERGENCY BALLAST.		FIXTURE WITH STANDARD BALLAST AND EMERGENCY BALLAST.		

Designed By:| Drawn By: | Checked B CM sue Date: |Project No:| Scale: APR 2025 | S25052 | AS SHOWN

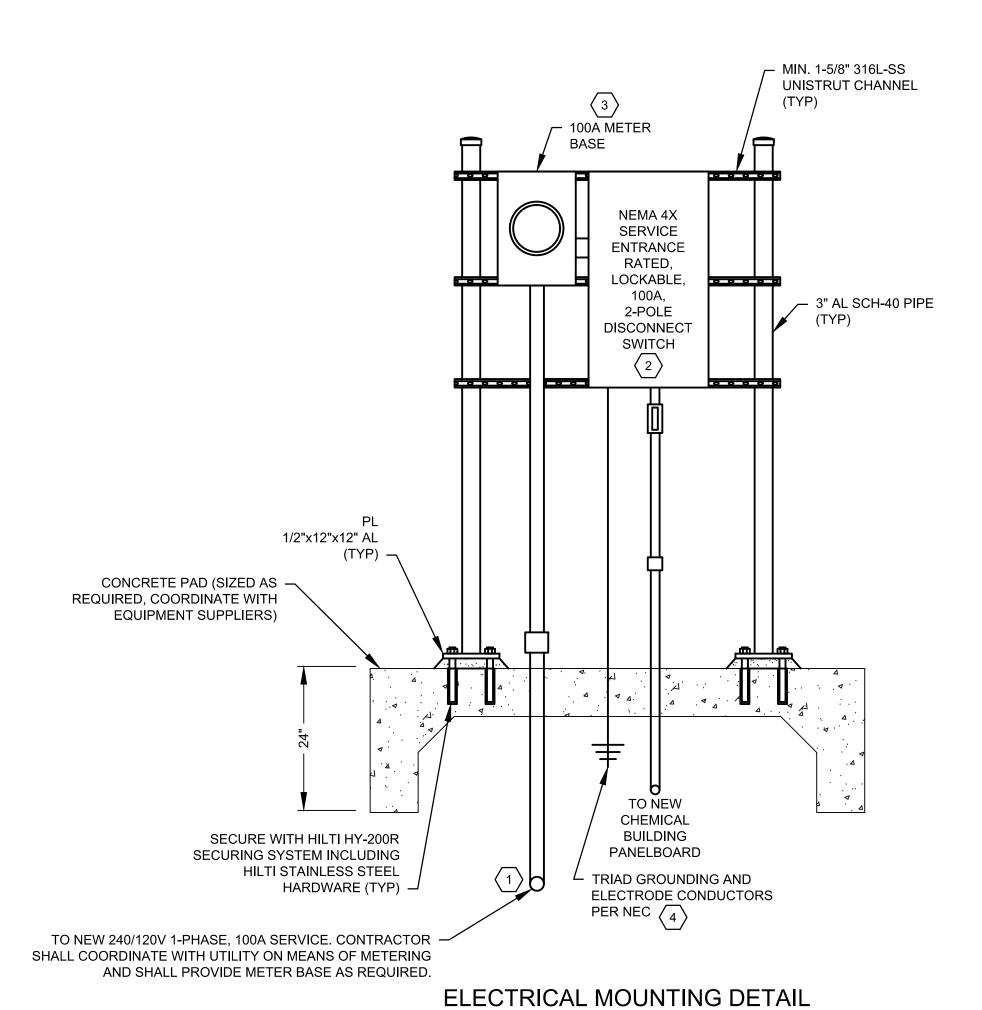
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STATE OF

ELECTRICAL LEGENDS AND SCHEDULES

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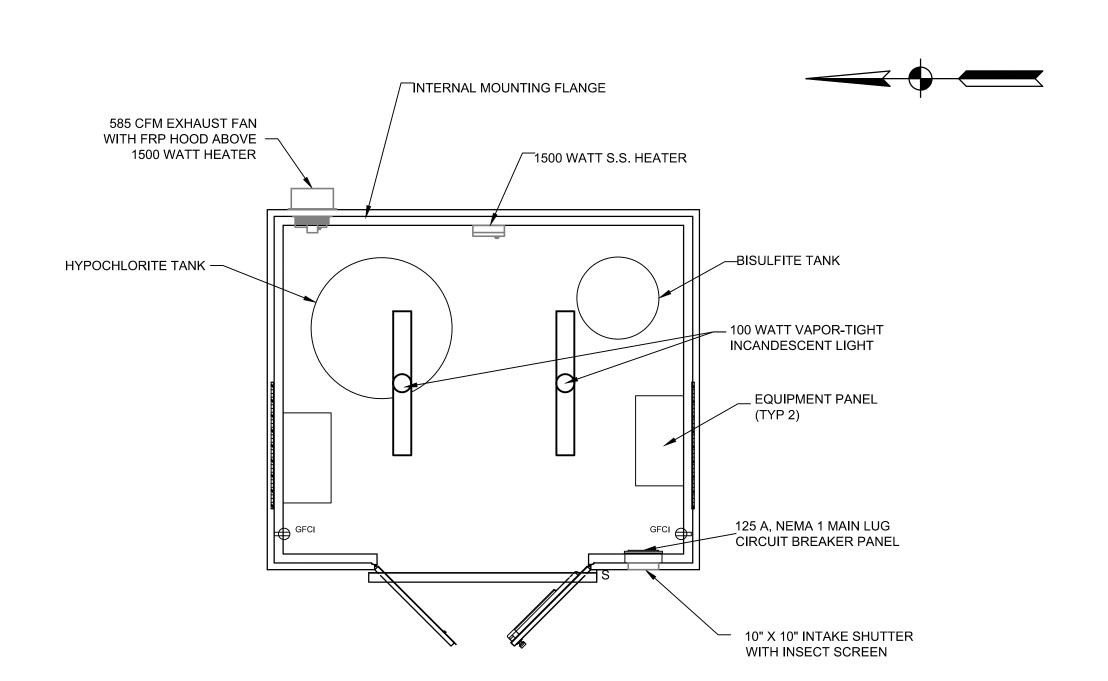
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### **ELECTRICAL NOTES**

- CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY TO INSTALL NEW 120/240 VAC, 1-PHASE,100-AMP SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL AND LABOR NOT PROVIDED BY UTILITY. THE CONTRACTOR SHALL COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BUT NOT LIMITED TO; INSTALLATION AND PROVISION OF PRIMARY CONDUIT AND SECONDARY CONDUIT AND WIRE AS REQUIRED.
- THE CONTRACTOR SHALL FURNISH AND INSTALL NEW SERVICE ENTRANCE RATED NEMA 4X 120/240 VAC, 1-PHASE, 100-AMP DISCONNECT SWITCH.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE METER BASE AND MOUNTING AS REQUIRED BY LOCAL UTILITY. COORDINATE DURING BIDDING AND CONSTRUCTION.
- 4 PROVIDE TRIAD GROUNDING SYSTEM.

### **GENERAL NOTES:**

1. SEE E0.0 FOR PROJECT CONDUIT REQUIREMENTS.



### **NEW CHEMICAL BUILDING - PLAN VIEW**

SCALE: 3/8"=1'-0" 0 2' 4' 6'



Adul A. Minde I 07/11/2025

Tature 07/11/2025

TOWN OF LA CROSSE
LAPORTE COUNTY, INDIANA
ASTEWATER TREATMENT PLANT
IMPROVEMENTS PROJECT

Designed By: CW Submittal / Revision By Date COMMONW ENGINEERS, INC. A RESERVED. REPROBY BY ANY METHOD IN OR IN PART WITHC PERMISSION IS PROBY BY ANY METHOD IN OR IN PART WITHC PERMISSION IS PROBY BY ANY METHOD IN OR IN PART WITHC PERMISSION IS PROBY BY ANY METHOD IN OR IN PART WITHC PERMISSION IS PROBY BY: (ITS THE L. 1-800-382-6 (ITS THE L. 1)

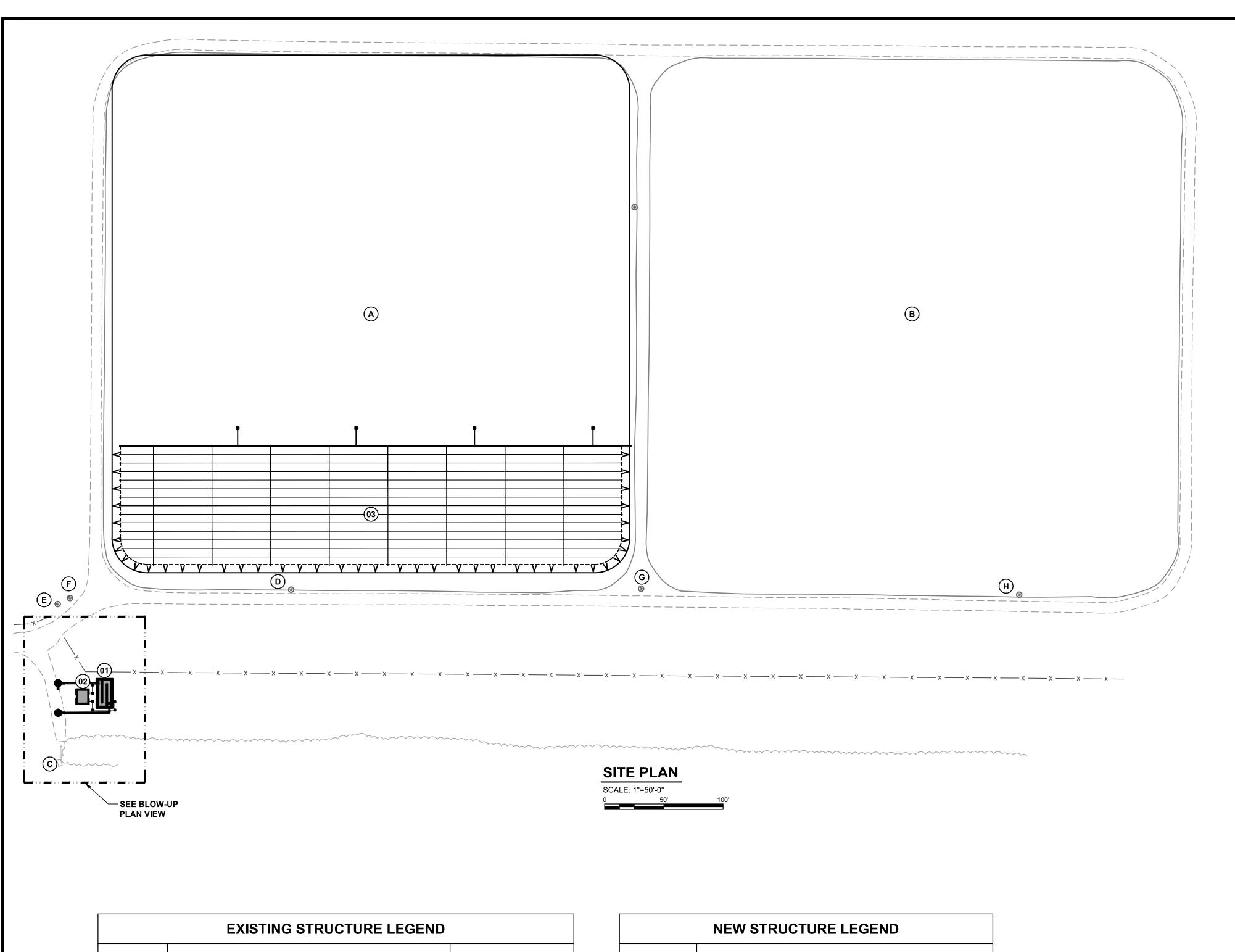
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Sheet: 38 OF 40

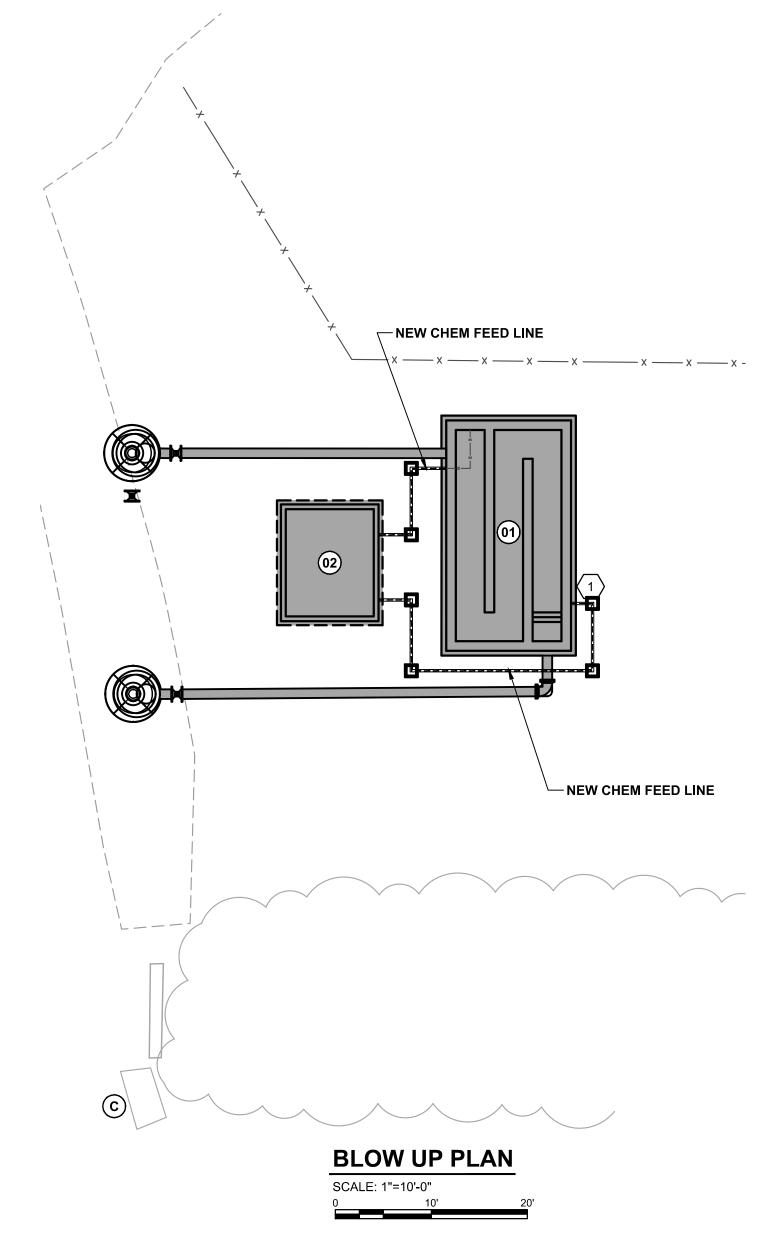


EXISTING STRUCTURE LEGEND				
IDENTIFIER	DESCRIPTION	DEMO NOTES		
А	EXISTING LAGOON #1	TO BE MODIFIED		
В	EXISTING LAGOON #2	TO REMAIN		
С	EXISTING OUTFALL STRUCTURE	TO REMAIN		
D	EXISTING MANHOLE 1000 - LAGOON #1 EFFLUENT SEWER	TO BE MODIFIED		
E	EXISTING MANHOLE 1001	TO REMAIN		
F	EXISTING MANHOLE 1002 - EFFLUENT FLOW METER STRUCTURE	TO REMAIN		
G	EXISTING MANHOLE 1003 - INFLUENT STRUCTURE	TO REMAIN		
Н	EXISTING MANHOLE 1004 - LAGOON #2 EFFLUENT STRUCTURE	TO REMAIN		
I	EXISTING MANHOLE 1005 - LAGOON TRANSFER STRUCTURE	TO REMAIN		

	NEW STRUCTURE LEGEND		
IDENTIFIER	DESCRIPTION		
01	NEW CHLORINE CONTACT TANK		
02	NEW CHEMICAL BUILDING		
03	NEW LAGOON MODULAR COVER SYSTEM		

### **ELECTRICAL NOTES**

CONTRACTOR TO HANDRAIL MOUNT RECEPTACLE IN OUTDOOR RATED ENCLOSURE FOR SUMP PUMP. RUN 120V POWER FROM PANELBOARD LOCATED IN CHEMICAL BUILDING.



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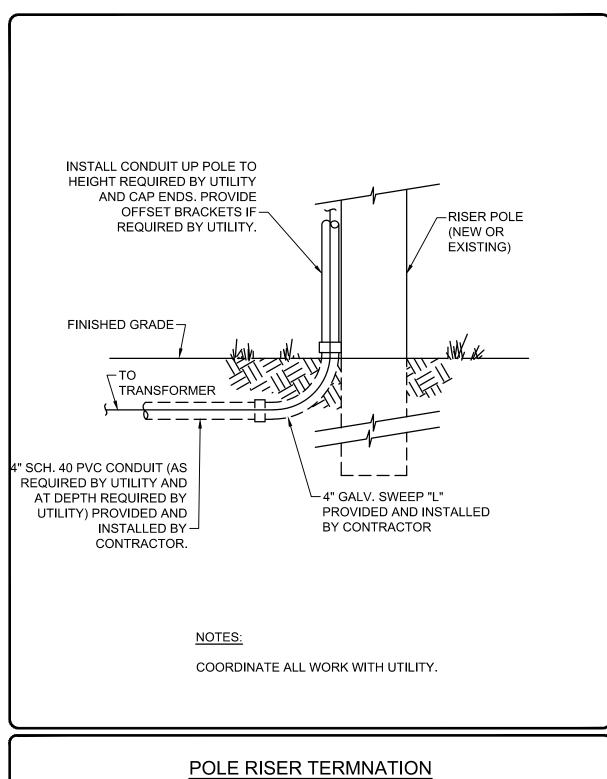
WASTEWATER TREATMENT PLIMPROVEMENTS PROJECT

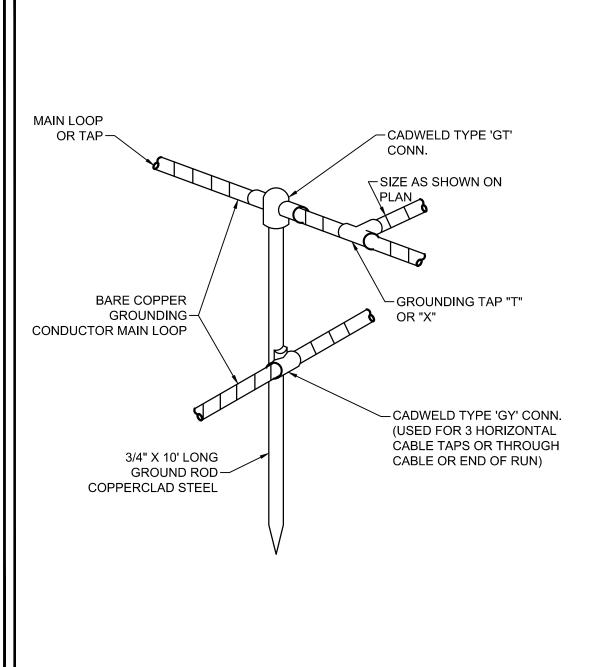
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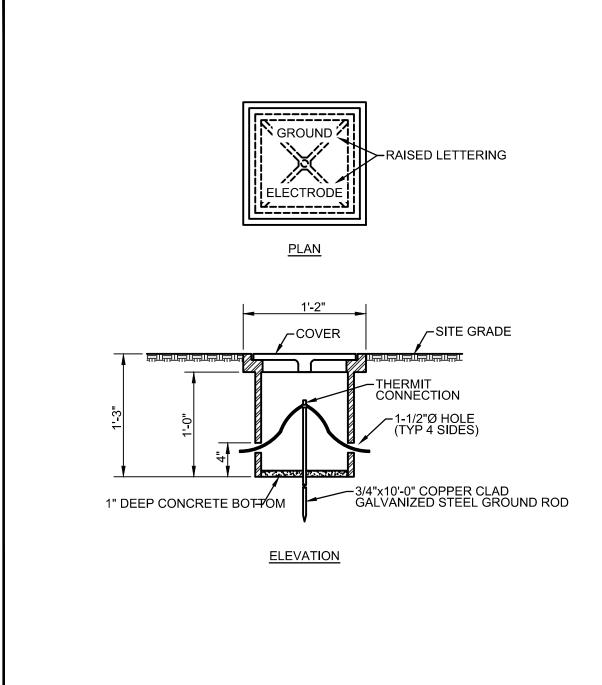
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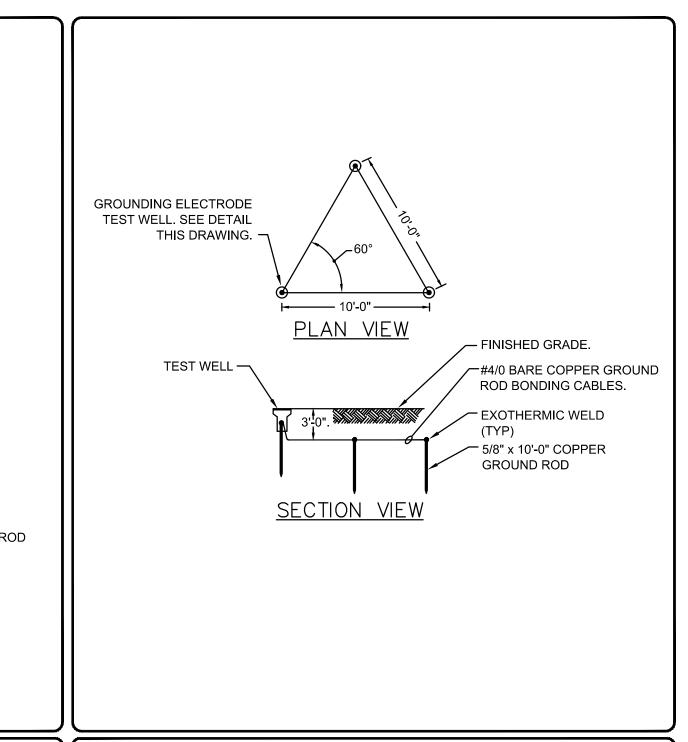
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ELECTRICAL SITE PLAN









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CONDUCTOR TO GROUND ROD CONNECTION DETAIL
NOT

TYPICAL GROUND ROD AND ACCESS BOX DETAIL
NOT TO S

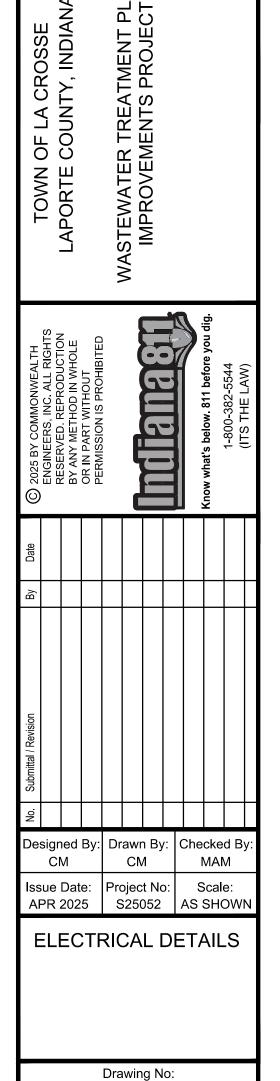
GROUNDING ELECTRODE SYSTEM

NOT TO SCALE

-SECURE INSTRUMENT TO SPACE AS REQUIRED -SECURE TO HANDRAILS TOP FOR CONDUIT ENTRY & BOTTOM W/4-1/4" SS 6" MIN.— U-BOLTS ← 2-1 5/8" ALUMINUM UNISTRUT & BOTTOM W/4-1/4" SS U-BOLTS TOP HANDRAIL -REQUIREMENTS BOTTOM HANDRAIL — ROUND OFF EXPOSED HANDRAIL POST — CORNERS OF UNISTRUT INSTALL DOUBLE UNISTRUT TO ACT AS OFFSET

HANDRAIL MOUNT SMALL CASE INSTRUMENTATION

NOT TO SCALE



E3-0

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