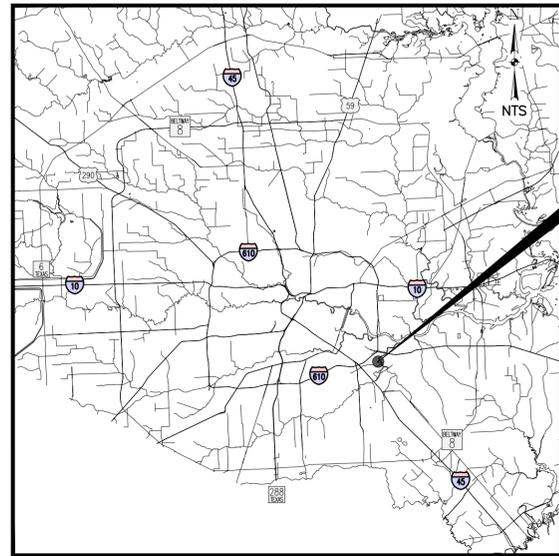


# CITY OF HOUSTON HOUSTON PUBLIC WORKS CAPITAL PROJECTS

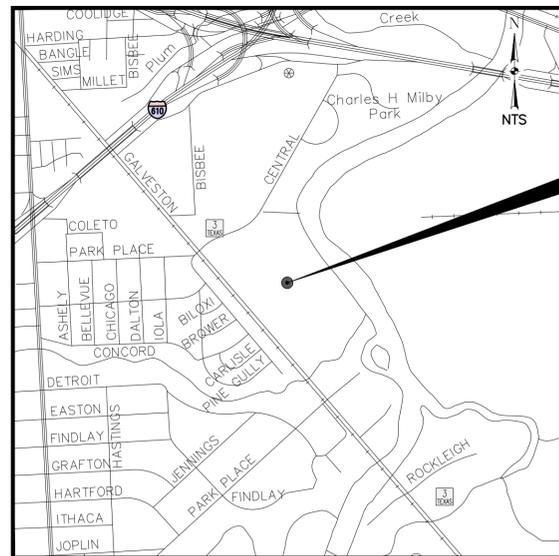
**60% SUBMITTAL**

## SIMS BAYOU SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS PACKAGE 3 WBS NO: R-000265-0154-4 NOVEMBER 2025



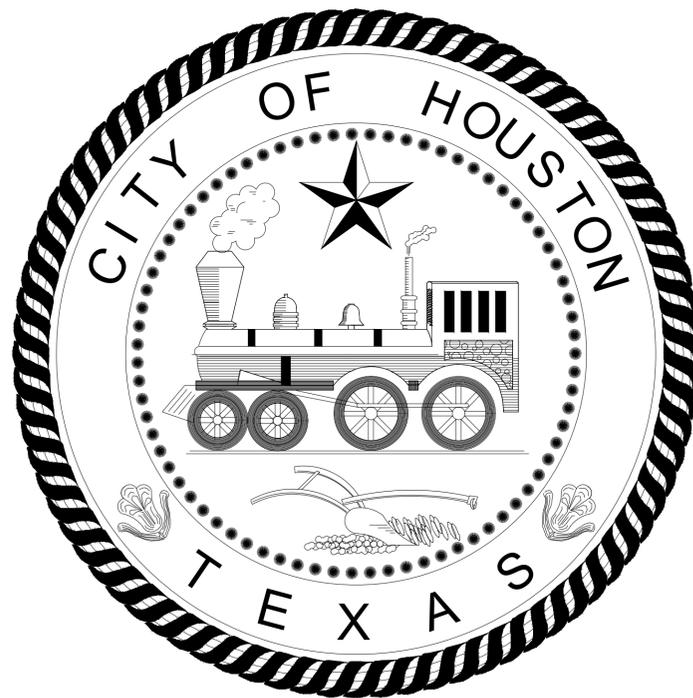
LOCATION MAP

SIMS BAYOU SOUTH WWTP  
3005 OLD GALVESTON ROAD  
HOUSTON, TX 77017  
KEY MAP: 535L  
COUNCIL DISTRICT: I



VICINITY MAP  
KEY MAP NO: 535L  
FACET MAP NO: 5655D

SIMS BAYOU SOUTH WWTP  
3005 OLD GALVESTON ROAD  
HOUSTON, TX 77017  
KEY MAP: 535L  
COUNCIL DISTRICT: I



MAYOR  
JOHN WHITMIRE

CONTROLLER  
CHRIS HOLLINS

DISTRICT  
COUNCIL MEMBERS

- |                                |                                 |                                   |                                     |
|--------------------------------|---------------------------------|-----------------------------------|-------------------------------------|
| AMY PECK<br>DISTRICT A         | TARSHA JACKSON<br>DISTRICT B    | ABBIE KAMIN<br>DISTRICT C         | CAROLYN EVANS-SHABAZZ<br>DISTRICT D |
| FRED FLICKINGER<br>DISTRICT E  | TIFFANY D. THOMAS<br>DISTRICT F | MARY NAN HUFFMAN<br>DISTRICT G    | MARIO CASTILLO<br>DISTRICT H        |
| JOAQUIN MARTINEZ<br>DISTRICT I | EDWARD POLLARD<br>DISTRICT J    | MARTHA CASTEX-TATUM<br>DISTRICT K |                                     |

COUNCIL MEMBERS  
AT-LARGE

- |                              |                               |
|------------------------------|-------------------------------|
| JULIAN RAMIREZ<br>POSITION 1 | WILLIE DAVIS<br>POSITION 2    |
| TWILA CARTER<br>POSITION 3   | LETITIA PLUMMER<br>POSITION 4 |
| SALLIE ALCORN<br>POSITION 5  |                               |

TDLR EABPR \_\_\_\_\_

NO.	DATE	REVISION	APP.
DESIGN ENGINEER NAME RAMESH KALLURI 16300 KATY FREEWAY, SUITE 172 ADDRESS HOUSTON, TEXAS 77094 TELEPHONE NUMBER (713)-365-9288 TX FIRM NUMBER F-665			
 TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264			
SURVEYED BY: AGS ENGINEERING AND CONSTRUCTION FB NO.			
PARKS-FORESTRY DEPT.			
METRO			
HOUSTON WATER			
TRANSPORTATION & DRAINAGE OPERATIONS			
CAPITAL PROJECTS		SURVEY	
CITY ENGINEER		DATE	
DIRECTOR OF HOUSTON PUBLIC WORKS		DATE	
SHEET NO 1 OF 271 SHEETS		FOR CITY OF HOUSTON USE ONLY	

DWG NO  
G-C-1

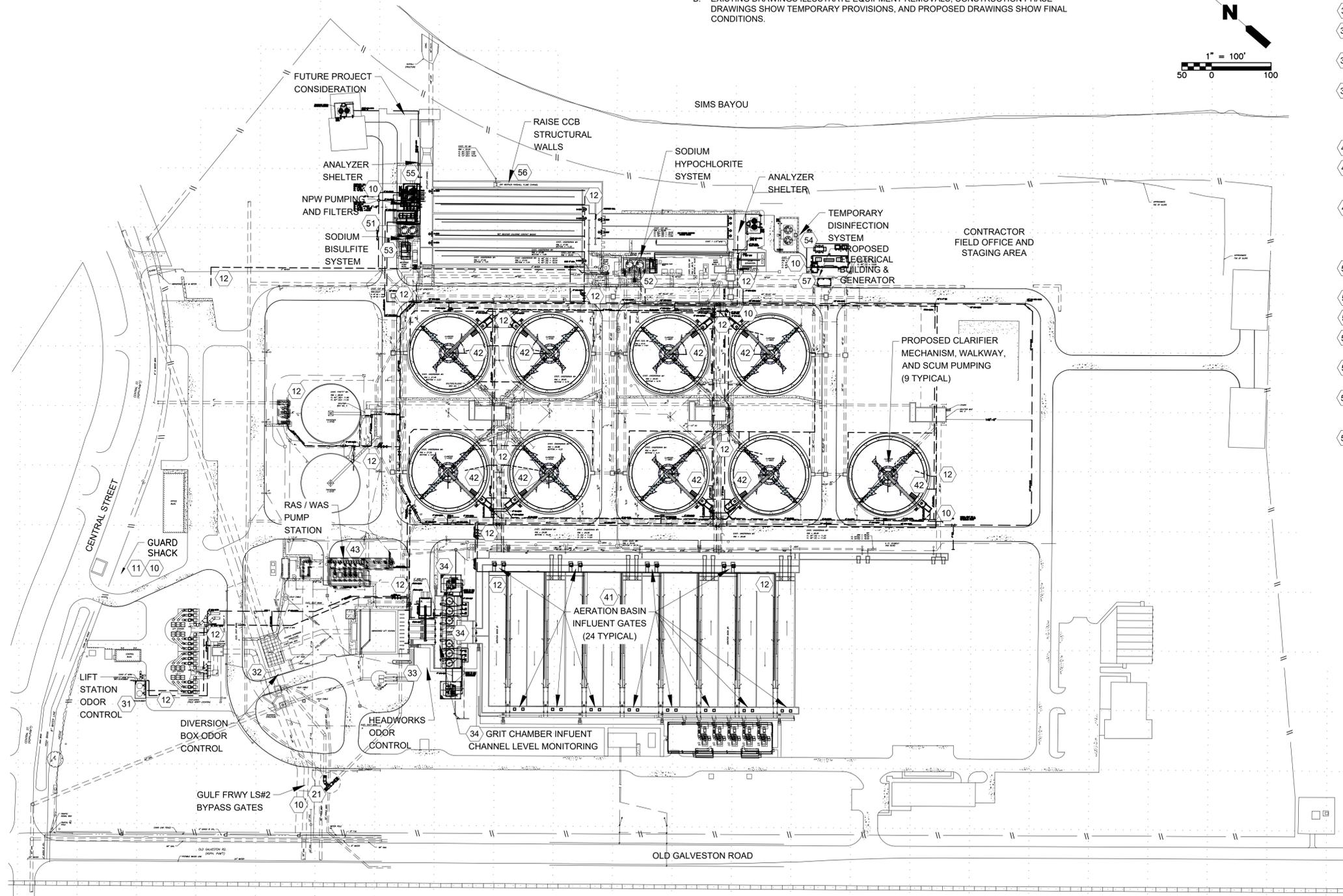
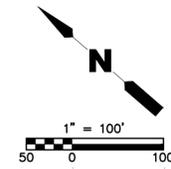




APP.	
REVISION	
DATE	
NO.	

**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE PROPOSED FACILITIES RELATED TO THIS PROJECT AND CONTRACTORS LAY DOWN AREA. WORK AREA LOCATIONS AND DRAWING DESIGNATORS ARE SHOWN AS KEYED NOTES. THE KEYED NOTE NUMBERS PROVIDE THE DRAWING SECTIONS FOR EACH WORK AREA. NOT ALL WORK REQUIRED IS SHOWN HERE, INFORMATION IS GENERAL FOR OVERVIEW OF LOCATIONS AND DRAWING ARRANGEMENT.
- B. EXISTING DRAWINGS ILLUSTRATE EQUIPMENT REMOVALS, CONSTRUCTION PHASE DRAWINGS SHOW TEMPORARY PROVISIONS, AND PROPOSED DRAWINGS SHOW FINAL CONDITIONS.



OVERALL SITE WORK LOCATION  
**PLAN**  
1"=100'

**PLANT WIDE FACILITY IMPROVEMENTS (10-SERIES):**

- 10 CONTRACTOR SHALL PROVIDE SWPP IN ALL AREAS REQUIRED.
- 11 DEMOLISH SECURITY GUARD BUILDING, AT CENTRAL STREET ENTRANCE, AND RESTORE AREA DRAINAGE AND GRASS.
- 12 NEW PLANT WIDE NPW UNDERGROUND AND EXPOSED PIPING DISTRIBUTION SYSTEM, WITH PRESSURE CONTROL AND HEAT TRACE.

**GULF FREEWAY LS NO. 2 BYPASS VALVES (20-SERIES):**

- 21 REMOVE EXISTING VALVES, PROVIDE NEW VALVES, ELECTRIC ACTUATORS, CONCRETE FOUNDATIONS AND AREA CIVIL WORK.

**PRE-TREATMENT AREA (30-SERIES):**

- 31 LIFT STATION ODOR CONTROL SYSTEM IMPROVEMENTS.
- 32 DIVERSION BOX ODOR CONTROL SYSTEM IMPROVEMENTS AND STRUCTURAL GRATING REPLACEMENT.
- 33 HEADWORKS ODOR CONTROL SYSTEM IMPROVEMENTS AND STRUCTURAL GRATING REPLACEMENT.
- 34 GRIT SYSTEM IMPROVEMENTS INCLUDING BUT NOT LIMITED TO INSTALLATION OF NEW NPW PIPING, INFLUENT CHANNEL LEVEL MONITORING AND OVERALL GRIT EQUIPMENT REHABILITATION.

**SECONDARY TREATMENT AREA (40-SERIES):**

- 41 EXISTING AERATION BASIN INFLUENT GATES (24) REMOVAL AND REPLACEMENT.
- 42 IMPROVEMENT OF FINAL CLARIFICATION INCLUDING BUT NOT LIMITED TO REMOVAL OF EXISTING CLARIFIER MECHANISMS (9) AND REPLACEMENT WITH NEW SPIRAL TYPE SCRAPER MECHANISMS AND INSTALLATION OF (9) NEW SCUM PUMP STATIONS.
- 43 EXISTING RAS / WAS PUMP STATION IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO PUMP REPLACEMENTS, INSTALLATION OF NEW TSS ANALYZER ON WAS DISCHARGE PIPING AND PIPING COATINGS.

**DISINFECTION AREA (50-SERIES):**

- 51 NPW SYSTEM IMPROVEMENTS INCLUDING BUT NOT LIMITED TO FILTER FEED PUMPS, DISC TYPE FILTERS, DISTRIBUTION PUMPS AND HYDROPNEUMATIC TANK SYSTEM.
- 52 COMPLETE SODIUM HYPOCHLORITE SYSTEM REMOVAL AND REPLACEMENT.
- 53 COMPLETE SODIUM BISULFITE SYSTEM REMOVAL AND REPLACEMENT.
- 54 PROVIDE TEMPORARY DISINFECTION SYSTEM, TO BE USED FOR SODIUM HYPO AND SODIUM BISULFITE CHEMICALS.
- 55 REMOVE EXISTING CHLORINE ANALYZER AND PROVIDE NEW SHELTER ON RAISED PLATFORM.
- 56 THE EXISTING CHLORINE CONTACT BASIN EXTERIOR WALL IS TO BE RAISED, FORM AND PLACE NEW CONCRETE TO ELEVATIONS MEETING CURRENT FLOOD ELEVATION REQUIREMENTS.
- 57 THE EXISTING ELECTRICAL BUILDING #3 IS TO BE REPLACED WITH A NEW ELECTRICAL BUILDING #3 AND A GENERATOR ADDED.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

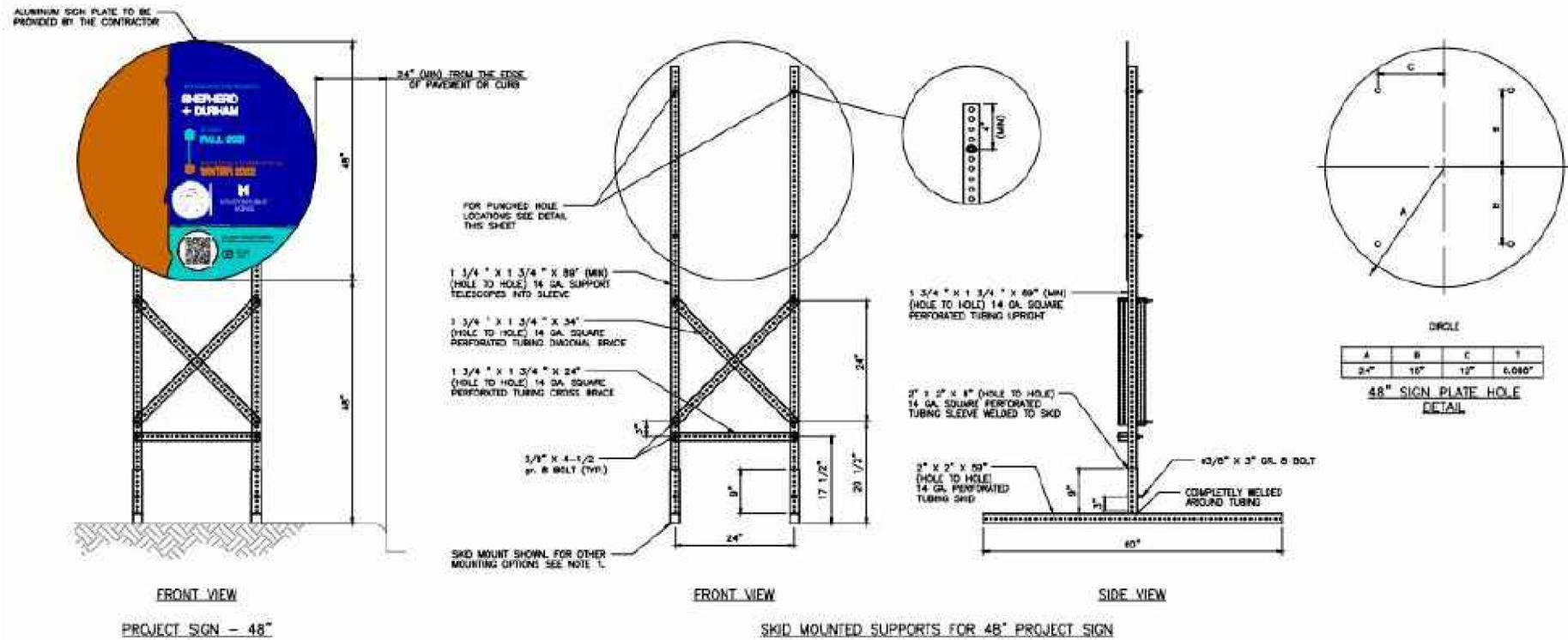
SIMS BAYOU SOUTH WWTTP  
IMPROVEMENTS PACKAGE 3

**SCOPE OF WORK  
LOCATION MAP**

GENERAL

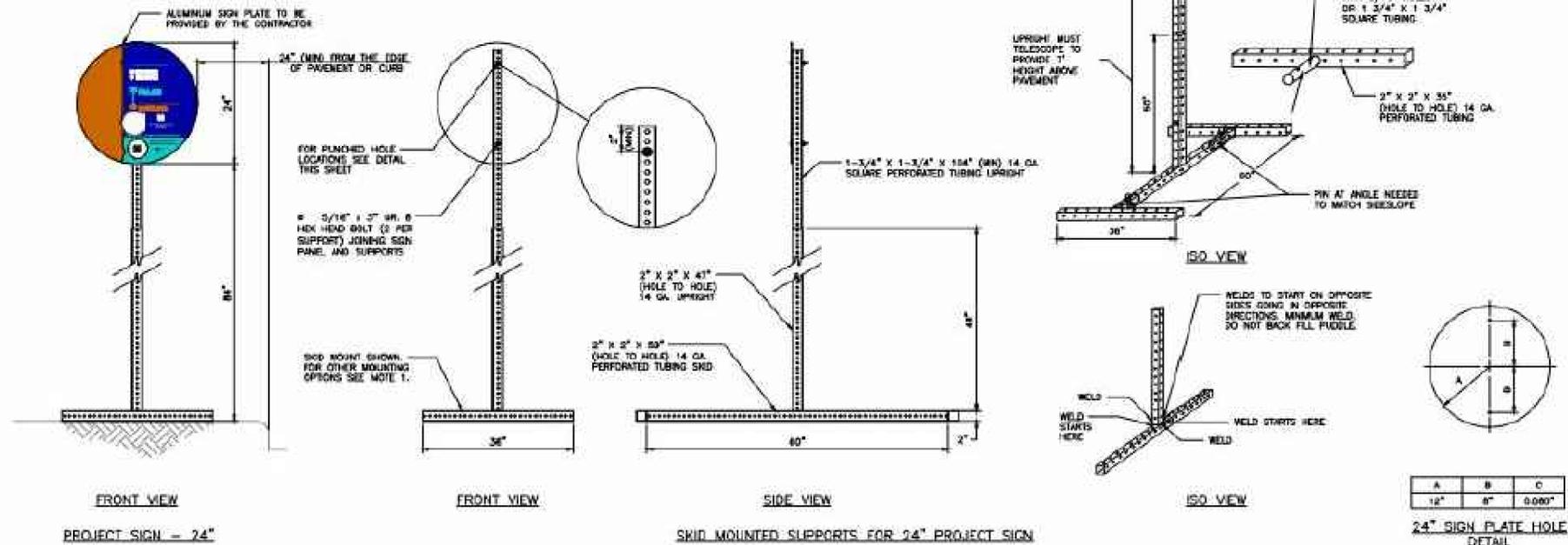
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
G-G-3	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 4 OF 271	

NO.	DATE	REVISION	APP.



**GENERAL NOTES:**

1. ALLOWABLE POST INSTALLATION METHODS ARE: CONCRETE FOLLOWING SURFACE MOUNTING, SKID MOUNTING AND PILE DRIVEN POSTS.
2. FOR POST INSTALLATION WITH CONCRETE FOOTING, REFER TO DETAIL 01554-01.
3. FOR SURFACE MOUNTED POST INSTALLATION, REFER TO DETAIL 01554-02.
4. FOR SKID MOUNTING REQUIREMENTS REFER TO SPECIFICATION 01582.
5. PILE DRIVEN POSTS MUST BE DRIVEN TO A MINIMUM DEPTH OF 4-FEET INTO EXISTING GROUND.
6. LAYOUT, TEXT SIZE AND OVERALL DESIGN OF THE SIGN WILL BE THE RESPONSIBILITY OF THE BUILD HOUSTON COORDINATOR.
7. ALL SIGN POSTS, SIGN TUNING, AND SIGN FASTENERS SHALL BE GALVANIZED STEEL PER SPECIFICATION 01582.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**CONSTRUCTION SIGN**

GENERAL

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	DRAWING SCALE NTS	
DWG NO G-G-4	CITY OF HOUSTON PM TAHA LOTIA	SHEET NO. 5 OF 271



GENERAL ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AA	AERATION AIR	COL	COLUMN	FLX	FLEXIBLE	LOU	LOUVER	PSU	POWER SUPPLY UNIT	STP	SLUDGE TRANSFER PUMP		
ABAND	ABANDONED	COMB	COMBINATION	FM	FORCE MAIN	LP	LOW POINT OF FLOOR/SLAB/PAVEMENT	PT	POINT (OF TANGENCY)	STR	STRAINER - Y OR BASKET TYPE		
AB	ANCHOR BOLT OR AERATION BASIN	COMP	COMPRESSIBLE	FMM	FLOW METER MAGNETIC	LPT	LOW POINT OF TRENCH	PTSAP	POST-DECHLORINATION POINT SAMPLE PUMP	STRUC	STRUCTURE (S, URAL)		
ABV	ABOVE	CONC	CONCRETE	FMS	FLOW METERING STATION	LS	LEVEL SWITCH	PTD	PAINTED	SYM	SYMMETRICAL		
AC	AIR COMPRESSOR	CONN	CONNECTION	FMT	FLOW METER TURBINE	LSM	LEAK SENSOR MONITOR	PTT	PUSH TO TEST LIGHT	T	TANK OR TRACE (HEAT)		
ACC, ACCM	ACCUMULATOR	CONST	CONSTRUCTION	FRP	FIBER REINFORCED PLASTIC	LT	LEFT	PVC	POLYVINYL CHLORIDE	T	TREAD		
ACL	ANALYZER CHLORINE RESIDUAL	COR	CORNER (S)	FS	FLOW SWITCH	LW	LIGHTWEIGHT	PWM	PAVEMENT	TEMP	TEMPERATURE		
ACOND	ANALYZER CONDUCTIVITY	CORR	CORRUGATED	FT	FLOW TRANSMITTER OR FOOT/FEET	MAS	MASONRY	PW	PLANT WATER	TF	TOP FACE		
AD	AIR DRYER	CPSAP	PRE-DECHLORINATION POINT SAMPLE PUMP	FTG	FOOTING	MATL	MATERIAL	PWL	PEAK WATER LEVEL	THK	THICK (NESS)		
ADD'L	ADDITIONAL	CRA	CHLORINE RESIDUAL ANALYZER	fc	CONCRETE COMPRESSION STRESS (28 DAYS UNO)	MAX	MAXIMUM	PWP	PLANT WATER PUMP	TI	TEMPERATURE INDICATOR		
ADJ	ADJUSTABLE	CRS	COURSE (S)	fm	MASONRY PRISM STRESS	MB	MACHINE BOLTS	QD	QUICK DISCONNECT	TIT	TEMPERATURE INDICATION TRANSMITTER		
ADV	AUTOMATIC DRAIN VALVE	C TO C	CENTER TO CENTER	fy	STEEL YIELD STRESS	MC	MISCELLANEOUS CHANNEL {STEEL}	R	RISER	TIS	TEMPERATURE INDICATING SWITCH		
AFC	ADJUSTABLE FREQUENCY CONTROLLER	CT	CERAMIC TILE	FUM	FUME HOOD	MCC	MOMENT CONNECTION	RAD, R	RADIUS	TO	TOP OF		
AFF	ABOVE FINISHED FLOOR	CTG	COATING	FWR	FULL VOLTAGE NONREVERSING MOTOR STARTER	MCI	MOTOR CONTROL CENTER	RAS	RETURN ACTIVATED SLUDGE	TOC	TOP OF CONCRETE		
AGG	AGGREGATE	CTJ	CONTROL JOINT	GA	GAGE	MECH	MECHANICAL	RASP	RAS PUMP	TOF	TOP OF FOOTING		
AH	ACCESS HATCH	CTR	CENTER (ED)	GC	GAUGE COCK	MFR	MANUFACTURER	RC	REINFORCED CONCRETE	TOG	TOP OF GRATING		
A/VRV	AIR/VACUUM RELIEF VALVE	CTS	COUNTERSINK	GD	GAS DETECTOR	MGO	MILLION GALLON PER DAY	RCF	REINFORCED CONCRETE PIPE	TOS	TOP OF STEEL OR SLAB		
ALT	ALTERNATE	CY	CUBIC YARD	GEN	GENERAL	MH	MANHOLE	RD	ROOF DRAIN	TOW	TOP OF WALL		
ALUM	ALUMINUM	D	DEEP	QLV	GALVANIZED	MIN	MINIMUM	ROWD	REDWOOD	TR EL	TRENCH ELEVATION		
ANOD	ANODIZED	DAP	DAMPER	GI	GALVANIZED IRON	ML	MIXED LIQUOR	REA	RESIDUAL ANALYZER	TRANS	TRANSVERSE		
Aph	ANALYZER pH	DES	DOUBLE EXTRA STRONG STEEL PIPE	GLB	GLASS BLOCK	MTL	METAL	RECP	RECEPTACLE	TS	TEMPERATURE SWITCH		
ASV	ANTI SIPHON VALVE	DET	DETAIL	GIO	GATE INDICATION OPEN	MO	MASONARY OPENING	REF	REDUCER	TS	STRUCTURAL TUBING (STEEL UNO)		
ATURB	ANALYZER TURBIDITY	DF	DIFFUSER	GIC	GATE INDICATION CLOSED	MISC	MISCELLANEOUS	REF	REFERENCE/REFER	TWAS	THICKENED WASTE ACTIVATED SLUDGE		
AV	ANGLE VALVE	DH	DEHUMIDIFIER	GMS	GATE MOTOR STOP	MI	MOTOR INDICATION	REIN	REINFORCING	TYP	TYPICAL		
APPROX	APPROXIMATE	DIA	DIAMETER	GMO	GATE MOTOR OPEN	MOL	MOTOR OVERLOAD	REM	REMOVE	T & B	TOP AND BOTTOM		
AR	ANCHOR	DIAG	DIAGONAL	GMC	GATE MOTOR CLOSED	MSS	MOTOR STARTER STOP	REQD	REQUIRED	UH	UNIT HEATER		
ARCH	ARCHITECT (URAL) (URE)	DIR	DIRECTION	GR	GRADE	MSR	MOTOR STARTER RUN	REV	REVISION	UN	UNION		
ARND	AROUND	DIV	DIVISION	GRG	GRATING	MW	MANWAY	RO	REVERSE OSMOSIS	UNO	UNLESS NOTED OTHERWISE		
ASD	ADJUSTABLE SPEED DRIVE	DCU	DISTRIBUTED CONTROL UNIT	GST	GROUND STORAGE TANK	MX	MIXER	RM	ROOM	UPS	UNINTERRUPTED POWER SUPPLY		
ASHT	AERATED SLUDGE HOLDING TANK	DL	DEAD LOAD	GVL	GRAVEL	N	NORTH	RND	ROUND	V	VIBRATOR, VENT OR VAPOR (RETURN)		
ASPH	ASPHALT	DM	DENSITY METER	HAS	HEADED ANCHOR STUD	NC	NORMALLY CLOSED	RO	ROUGH OPENING	VB	VACUUM BREAKER		
ASSOC	ASSOCIATION	DN	DOWN	HB	HOSE BIB	NIC	NOT IN CONTRACT	RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR	VCU	VALVE CONTROL UNIT		
AVAIL	AVAILABLE	DO	DITTO	HCO	HYDRAULIC CYLINDER OPERATOR	NO	NORMALLY OPEN OR NUMBER	RR	RAILROAD	VERT	VERTICAL		
AVE	AVENUE	DPP	DILUTE POLYMER FEED PUMP	HD	HYDRAULIC DRIVE UNIT	NOM	NOMINAL	RS	RAW SEWAGE	VFD	VARIABLE FREQUENCY DRIVE		
AVG	AVERAGE	DR	DOOR OPENER	HDR	HEADER	NPW	NON POTABLE WATER	RSLP	RAW SEWAGE LIFT PUMP	VWC	VINYL WALL COVERING		
AWL	AVERAGE WATER LEVEL	DS	DOWNSPOUT	HOGS	HOT DIPPED GALVANIZED STEEL	NPWST	NON POTABLE WATER STORAGE TANK	RST	REINFORCING STEEL	VIO	VALVE INDICATION OPEN		
BC	BELT CONVEYOR	DWG	DRAWING	HDWR	HARDWARE	NSG	NON-SHRINK GROUT	ROW	RIGHT OF WAY	VIC	VALVE INDICATION CLOSED		
BO	BOARD	DWL	DOWEL	HES	HIGH EARLY STRENGTH	NTS	NOT TO SCALE	RT	RIGHT	VMS	VALVE MOTOR STOP		
BEL	BELOW	E	EAST	HK	HOOK	O TO O	OUT TO OUT	RVC	REVERSE BELT CONVEYOR	VMO	VALVE MOTOR OPEN		
BF	BOTTOM FACE	EA	EACH	HM	HOLLOW METAL	OC	ON CENTER	S	SLOPE OR STEEL {AM. STD. SHAPE}	VMC	VALVE MOTOR CLOSE		
BFPP	BELT FILTER FEED PRESS	EB	EXPANSION BOLT	HOR	HORIZONTAL	OC	OVERHEAD CRANE	SA	SURGE ARRESTOR OR SAMPLE	VRG	VACUUM REGULATORS		
BFPP	BELT FILTER PRESS FEED PUMP	ED	EQUIPMENT DRAIN	HP	HIGH POINT OF FLOOR/SLAB/PAVEMENT	OD	OUTSIDE DIAMETER	SB	SODIUM BISULFITE	VS	VIBRATION SWITCH, VARIABLE SPEED		
BLDG	BUILDING	EF	EACH FACE OR EXHAUST FAN OR EFFLUENT FILTERS	HPT	HIGH POINT OF TRENCH	OF	OUTSIDE FACE	SBP	SODIUM BISULFITE METERING PUMP	W	WIDE		
BLK	BLOCK (ING)	EJ	EXPANSION JOINT	HR	HANDRAIL OR HOUR	OF	OVERFLOW	SBS	SODIUM BISULFITE SOLUTION	W	STEEL WIDE FLANGE		
BM	BEAM	EL, ELEV	ELEVATION	HS	HIGH STRENGTH {STRUCTURAL}	OH	OPPOSITE HAND	SBT	SODIUM BISULFITE TANK	WAS	WASTE ACTIVATED SLUDGE		
BOF	BOTTOM OF FOOTING	ELEC	ELECTRIC (AL)	HS	HAND SWITCH MAINTENANCE POSITION {ELECTRICAL}	OP	OIL PUMP UNIT	SC	SCUM	WASP	WAS PUMP		
BOP	BOTTOM OF PIPE	ENGR	ENGINEER	HT	HEIGHT	OPNG	OPENING	SCE	SECONDARY CLARIFIER EFFLUENT	W/	WITH		
BOT	BOTTOM	EQ	EQUAL	HTI	HEAT TRACED AND INSULATED	OPT	OPTIONAL	SCHD	SCHEDULE	W/O	WITHOUT		
BOW	BOTTOM OF WALL	EQUIP	EQUIPMENT	HVAC	HEATING/VENTILATION/AIR CONDITIONING	OVF	OVERFLOW	SCJ	SLAB CONTROL JOINT	WC	WALL COLLAR		
BP	BELT FILTER PRESS/FEED PUMP	ES	EACH SIDE OR EXTRA STRONG STEEL PIPE	HWT	HOT WATER HEATER	P	PILASTER	SCM	STREAMING CURRENT METER	WL	WATER LEVEL		
BPS	BOOSTER PUMP STATION	ESEW	EMERGENCY SHOWER AND EYEWASH	I	INSULATED	PA	PROCESS AIR	SCP	SCUM PUMP	WP	WATERPROOF (ING)		
BPWP	BELT PRESS WASH WATER BOOSTER PUMP	EST	ESTIMATE	IAW	IN ACCORDANCE WITH	PAU	POLYMER ACTIVATION UNIT	SDS	SCUM DEWATERING SCREEN	WPT	WORKING POINT		
BRG	BEARING	ETC	ETCETERA	ID	INSIDE DIAMETER	PAUBP	POLYMER ACTIVATION UNIT BOOSTER PUMP	SEC	SECTION	WS	WATER SURFACE		
BS	BAR SCREEN	EVP	EVAPORATOR	IF	INSIDE FACE	PAT	POLYMER AGING TANK	SEJ	SLAB EXPANSION JOINT	WSTP	WATERSTOP		
BSMT	BASEMENT	EW	EACH WAY	IG	INSULATED/ISOLATED GROUND CONDUCTOR	PC	POINT OF CURVATURE	SF	SQUARE FOOT	WT	STEEL T SHAPE		
BTWN	BETWEEN	EW	ELECTRIC WATER COOLER	INA	INSTRUMENT AIR	PC	PORTLAND CEMENT CONCRETE	SFR	SYNTHETIC FIBER REINFORCED	WT	WEIGHT		
BPRS	BACK PRESSURE REGULATING STATION	EXIST	EXISTING	INJ	INSTRUMENT AIR	PCF	PORTLAND CEMENT CONCRETE	SG	SLIDE GATE	WW	WASHWATER		
BU	BACK UP	EXP	EXPANSION	INS	INSIDE	PCV	PRESSURE CONTROL VALVE	SH	SODIUM HYPOCHLORITE	W	WATER		
BUR	BUILT UP ROOF (ING)	EXT	EXTERIOR	INSUL	INSULATION	PDI	PRESSURE DIFFERENTIAL INDICATOR	SHC	SODIUM HYPOCHLORITE	WWF	WELDED WIRE FABRIC		
BVL	BEVEL (ED)	F	FAN	INT	INTERIOR	PE	PLANT EFFLUENT	SHP	SODIUM HYPOCHLORITE METERING PUMP	WWP	WATER WELL PUMP		
C	CHLORINATOR	FAB	FABRICATE (ED)	INT	INTERIOR	PF	PARSHALL FLUME	SHG	SHEAR GATE	YD	YARD		
C	CHANNEL {STRUCTURAL}	FBW	FILTER BACKWASH	ITC	INSTRUMENTATION TERMINAL CABINET	PI	POINT OF INTERSECTION	SHT	SHEET, SODIUM HYPOCHLORITE TANK	YH	YARD HYDRANT		
CAP	CAPACITY	FC	FLOW CONTROLLER	INV	INVERT	PI (RANGE)	PRESSURE GAGE WITH OR WITHOUT SEAL	SN	SIMILAR	&	AND		
COB	CHLORINE CONTACT BASIN	FCA	FLANGED COUPLING ADAPTER	JT	JOINT	PIS	PRESSURE INDICATION SWITCH	SP	SPACE (S, ED)	∠	ANGLE {STEEL UNLESS NOTED}		
COSP	CLARIFIER DRAIN PUMP	FCB	FLEXIBLE CONNECTION BELLOWS TYPE	JT FLR	JOINT FILLER	PJF	PREMOLDED JOINT FILLER	SPEC	SPECIFICATION	⊙	AT		
CE	CERAMIC	FD	FLOOR DRAIN	KO	KNOCKOUT	PL	PLATE OR PROPERTY LINE	SPEC0	SPECIFIED	⊘	DIAMETER		
CFT	CUBIC FOOT	FDN	FOUNDATION	KSI	KIPS (1000 POUNDS) PER SQUARE INCH	PLAS LAM	PLASTIC LAMINATE	SO	SQUARE	⊕	DELTA		
CGV	CHLORINE GAS VALVE	FE	FLOOR ELEMENT	LB	LAG BOLT	PLYWD	PLYWOOD	SRS	SCREENED RAW SEWAGE	Δ	NUMBER		
CHAM	CHAMFER	FEC	FIRE EXTINGUISHER CABINET	LE	LEVEL ELEMENT	PMP	POLYMER METERING PUMP	SS	STAINLESS STEEL	#	PENNY		
CHKD PL	CHECKERED PLATE	FHC	FINISHED FLOOR OR FACE TO FACE	LF	LINEAR FEET	PNL	PANEL	SSG	SANITARY SEWER GRAVITY	d	PERPENDICULAR TO		
CI	CAST IRON	FH	FIRE HOSE CABINET	LI	LINEAR FEET	POL	POLISHED	SSF	SANITARY SEWER FORCE MAIN	ST	STREET		
CIR	CIRCLE	FHW	FIRE HYDRANT	LL	LIVE LOAD	FPW	FLATHEAD MACHINE SCREW	ST	STATION	STA	STATION		
CIRC	CIRCUMFERENTIAL	FHS	FLATHEAD WOOD SCREW	LLH	LONG LEG HORIZONTAL	PR	PRESSURE RELIEF VALVE	STC	SHUTTER CONVEYOR	STD	STANDARD		
CJ	CONSTRUCTION JOINT	FIN	FINISH (ED)	LLV	LONG LEG VERTICAL	PRC	POINT OF REVERSE CURVATURE	STIFF	STIFFENER	STIR	STIRRUP (S)		
CL	CENTERLINE	FIN CR, FG	FINISH GRADE	LNDG	LANDING	PRCST	PRECAST	STL	STEEL	STM	STORM SEWER		
CLG	CEILING	FL	FLOW LINE	LNTL	LINTEL	PRS	PRESSURE REDUCING STATION						
CLD	CHLORINE DETECTOR	FLR	FLOOR	LOC	LOCATION/LOCATED	PS	PRESSURE SWITCH OR PUMP STATION						
CLV	CHLORINE LIQUID/GAS VALVE	FLASH	FLASHING	LONG	LONGITUDINAL	PSF	POUND PER SQUARE FOOT						
CLR	CLEAR (ANCE)	FLG	FLANGE			PSI	PER SQUARE INCH						
CMU	CONCRETE MASONRY UNITS												
CO	CLEAN-OUT												

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
 <p><b>KGI</b> Kalluri Group, Inc.</p> <p>TBPE Registration No. F-665 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	
<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>	

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**GENERAL ABBREVIATIONS**

GENERAL

<p>VERIFY SCALE</p>  <p>BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	<p>WBS NUMBER</p> <p>R-000265-0154-4</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
	<p>DRAWING SCALE</p> <p>NTS</p>	
<p>DWG NO</p> <p>G-G-6</p>	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>	
	<p>SHEET NO. 7 OF 271</p>	

REV	DATE	DESCRIPTION

GATE SCHEDULE

S. NO.	GATE NO.	P&ID NO.	SIZE	GATE TYPE	GATE TYPE	PROCESS LIQUID	DESCRIPTION	SEATING HEAD/ UNSEATING	OPERATOR	TYPE OF OPERATION	COMMENTS
1	G-4405	I-41-02	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
2	G-4406	I-41-02	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
3	G-4415	I-41-03	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
4	G-4416	I-41-03	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
5	G-4425	I-41-04	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 3	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
6	G-4426	I-41-04	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 3	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
7	G-4435	I-41-05	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 4	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
8	G-4436	I-41-05	4'-0"W X 4'-0"H	SLUICE	CAST IRON OR SS	RS	RAW CHANNEL - AERATION BASIN NO. 4	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
9	G-4401	I-41-02	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
10	G-4402	I-41-02	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
11	G-4411	I-41-03	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
12	G-4412	I-41-03	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
13	G-4421	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 3	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
14	G-4422	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 3	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
15	G-4431	I-41-05	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 4	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
16	G-4432	I-41-05	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	RAS + RS	MIX CHANNEL - AERATION BASIN NO. 4	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
17	G-4409	I-41-02	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 1 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
18	G-4410	I-41-02	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 1 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
19	G-4419	I-41-03	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 2 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
20	G-4420	I-41-03	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 2 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
21	G-4429	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 3 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
22	G-4430	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 3 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
23	G-4439	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 4 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
24	G-4440	I-41-04	4'-0"W X 5'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - AERATION BASIN NO. 4 EFFLUENT GATE	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
25	G-4101	I-41-02	6'-0"W X 6'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - 72" MLQ SPLITTER BOX NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
26	G-4101A	I-41-02	3'-0"W X 3'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - 36" MLQ SPLITTER BOX NO. 1	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
27	G-4102	I-41-04	6'-0"W X 6'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - 72" MLQ SPLITTER BOX NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
28	G-4102A	I-41-04	3'-0"W X 3'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - 36" MLQ SPLITTER BOX NO. 2	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
29	G-4103	I-41-06	7'-0"W X 7'-0"H	SLUICE	CAST IRON OR SS	MLQ (MLSS)	EFFLUENT CHANNEL - 84" MLQ SPLITTER BOX NO. 3	16 FT/ 16 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
27	G-5423	I-57-05	72" W X 48" H	SLIDE	SS	CHLORINATED CLARIFIER	DRY WEATHER CCB NO. 1 INFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM

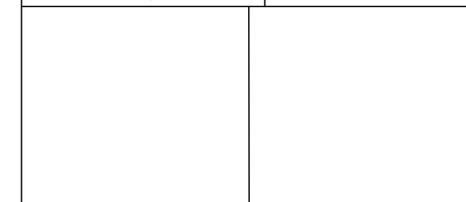
GATE SCHEDULE

S. NO.	GATE NO.	P&ID NO.	SIZE	GATE TYPE	GATE TYPE	PROCESS LIQUID	DESCRIPTION	SEATING HEAD/ UNSEATING	OPERATOR	TYPE OF OPERATION	COMMENTS
28	G-5424	I-57-05	72" W X 48" H	SLIDE	SS	CHLORINATED CLARIFIER	DRY WEATHER CCB NO. 2 INFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
29	G-5425	I-57-05	72" W X 48" H	SLIDE	SS	CHLORINATED CLARIFIER	DRY WEATHER CCB NO. 2 INFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
30	G-5427	I-57-04	24" W X 36" H	SLIDE	SS	CHLORINATED CLARIFIER	DRY WEATHER CCB NO. 1 EFFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
31	G-5428	I-57-04	24" W X 36" H	SLIDE	SS	CHLORINATED CLARIFIER	DRY WEATHER CCB NO. 2 EFFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
32	G-5201	I-57-03	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 1 INFLUENT GATE	13 FT/ 13 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
33	G-5202	I-57-03	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 2 INFLUENT GATE	13 FT/ 13 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
34	G-5203	I-57-03	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 3 INFLUENT GATE	13 FT/ 13 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
35	G-5204	I-57-02	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 1 EFFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
36	G-5205	I-57-02	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 2 EFFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM
37	G-5206	I-57-02	72" W X 72" H	SLIDE	SS	CHLORINATED CLARIFIER	WET WEATHER CCB NO. 3 EFFLUENT GATE	7 FT/ 7 FT	ELECTRIC MOTOR	OPEN/ CLOSE	FLOORSTAND WITH RISING STEM

NOTES:

- Contractor shall perform an existing-conditions survey to determine whether the existing wall thimble is suitable for re-use before removing and replacing the existing gate with new gate. Contractor may re-use the thimble only if a warranty for the re-used thimble is provided with the new sluice gate. Provide calculations as required.
- Where removal and replacement of the wall thimble are required to install the new sluice gate, the Contractor shall perform such removal and replacement at no additional cost to the Owner. Work shall include removal, furnishing and installing replacement thimble(s) or repairs as required, restoring adjacent finishes, disposal of removed materials, and any necessary coordination with the Owner. Replacement materials and workmanship shall equal or exceed existing quality and shall be subject to the Owner's acceptance.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



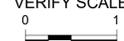
 TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SCHEDULES-SHEET 1**

GENERAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	NTS	
DWG NO	CITY OF HOUSTON PM	
G-G-7	TAHA LOTIA	
	SHEET NO. 8 OF 271	

APP.
REVISION
DATE
NO.



PRESSURE GAGES								
TYPE	P&ID NO.	ISA ABBREV.	TAG NO.	SERVICE	LINE NUMBER/ DESCRIPTION	RANGE, PSIG	SPEC REFERENCE	COMMENTS
CLARIFIER AND SCUM PUMP STATIONS								
PRESSURE GAGE	I-42-05	PI	4701-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4701 DISCHARGE
PRESSURE GAGE	I-42-06	PI	4702-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4702 DISCHARGE
PRESSURE GAGE	I-42-07	PI	4703-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4703 DISCHARGE
PRESSURE GAGE	I-42-08	PI	4704-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4704 DISCHARGE
PRESSURE GAGE	I-42-09	PI	4801-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4801 DISCHARGE
PRESSURE GAGE	I-42-10	PI	4802-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4802 DISCHARGE
PRESSURE GAGE	I-42-11	PI	4803-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4803 DISCHARGE
PRESSURE GAGE	I-42-12	PI	4804-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4804 DISCHARGE
PRESSURE GAGE	I-42-13	PI	4902-1	SCUM	6"-SC-DI/F	0 - 30	13343	LOCATED ON SCP-4902 DISCHARGE
NPW SYSTEM								
PRESSURE GAGE	I-51-02	PI	5101	NON POTABLE WATER	10"-FE-DI/F	0 - 30	13343	LOCATED ON NPWP-5101 DISCHARGE
PRESSURE GAGE	I-51-02	PI	5102	NON POTABLE WATER	10"-FE-DI/F	0 - 30	13343	LOCATED ON NPWP-5101 DISCHARGE
PRESSURE GAGE	I-51-02	PI	5103	NON POTABLE WATER	10"-FE-DI/F	0 - 30	13343	LOCATED ON NPWP-5101 DISCHARGE
PRESSURE GAGE	I-51-05	PI	5104	NON POTABLE WATER	10"-FE-DI/F	0 - 100	13343	LOCATED ON NPWP-5104 DISCHARGE
PRESSURE GAGE	I-51-05	PI	5105	NON POTABLE WATER	10"-FE-DI/F	0 - 100	13343	LOCATED ON NPWP-5105 DISCHARGE
PRESSURE GAGE	I-51-05	PI	5106	NON POTABLE WATER	10"-FE-DI/F	0 - 100	13343	LOCATED ON NPWP-5106 DISCHARGE
PRESSURE GAGE	I-51-06	PI	AC-1	COMPRESSED AIR	1/2"-A-SS/T	0 - 150	13343	LOCATED ON NPW-AC-1 DISCHARGE
PRESSURE GAGE	I-51-06	PI	AC-2	COMPRESSED AIR	10"-FE-DI/F	0 - 150	13343	LOCATED ON NPW-AC-1 DISCHARGE
SODIUM HYPOCHLORITE SYSTEM								
PRESSURE GAGE	I-52-01	PI	52-01	SODIUM HYPOCHLORITE STORAGE TANK	2"-SHC-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SHC-5204 TRUCK UNLOADING STATION
PRESSURE GAGE	I-52-01	PI	52-02	SODIUM HYPOCHLORITE STORAGE TANK	2"-SHC-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SHCT-5202 TRUCK UNLOADING STATION
PRESSURE GAGE	I-52-02	PI	52-01	SODIUM HYPOCHLORITE STORAGE TANK	2"-SHC-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-02	SODIUM HYPOCHLORITE STORAGE TANK	SHCP-5201	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-04	SODIUM HYPOCHLORITE STORAGE TANK	1"-SHC-CPVC/V	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-06	SODIUM HYPOCHLORITE STORAGE TANK	2"-SHC-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-07	SODIUM HYPOCHLORITE STORAGE TANK	SHCP-5202	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-09	SODIUM HYPOCHLORITE STORAGE TANK	1"-SHC-CPVC/V	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-11	SODIUM HYPOCHLORITE STORAGE TANK	2"-SHC-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-12	SODIUM HYPOCHLORITE STORAGE TANK	SHCP-5203	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-52-02	PI	52-14	SODIUM HYPOCHLORITE STORAGE TANK	1"-SHC-CPVC/V	0 - 90	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE SH STORAGE TANKS
PRESSURE GAGE	I-53-01	PI	53-03	SODIUM HYPOCHLORITE STORAGE TANK	2"-SBS-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE TRUCK UNLOADING STATION
PRESSURE GAGE	I-53-01	PI	53-04	SODIUM HYPOCHLORITE STORAGE TANK	2"-SBS-CPVC/V	0 - 30	13343	LOCATED ON SODIUM HYPOCHLORITE BULK STORAGE TRUCK UNLOADING STATION
PRESSURE GAGE	I-53-02	PI	53-38	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-02	PI	53-39	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-02	PI	53-41	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-02	PI	53-43	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-02	PI	53-44	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-02	PI	53-46	SODIUM BISULPHITE METERING PUMPS	3/4"-SBS-CPVC/V		13343	LOCATED ON SODIUM BISULPHITE METERING SB STORAGE TANKS
PRESSURE GAGE	I-53-03	PI	53-39	SODIUM BISULPHITE METERING PUMPS	SBSP - 5303	0 - 60	13343	LOCATED ON SODIUM BISULPHITE CONTAINMENT SUMP PUMP

PRESSURE TRANSMITTERS							
TYPE	P&ID NO.	ISA ABBREV.	TAG NO.	SERVICE	LINE NUMBER/ DESCRIPTION	SPEC REFERENCE	COMMENTS
PRESSURE TRANSMITTER	I-42-04	PT	5422	SCUM PUMP STATION		13343	
PRESSURE TRANSMITTER	I-51-05	PT	5104	NON POTABLE WATER	10"-FE-DI/F	13343	LOCATED ON NPWP-5104 DISCHARGE
PRESSURE TRANSMITTER	I-51-05	PT	5105	NON POTABLE WATER	10"-FE-DI/F	13343	LOCATED ON NPWP-5105 DISCHARGE
PRESSURE TRANSMITTER	I-51-05	PT	5106	NON POTABLE WATER	10"-FE-DI/F	13343	LOCATED ON NPWP-5106 DISCHARGE
PRESSURE TRANSMITTER	I-51-06	PT	5101	HYDROPNEUMATIC TANK	NPW-T-5101	13343	EXISTING
PRESSURE TRANSMITTER	I-51-06	PT	5102	HYDROPNEUMATIC TANK	NPW-T-5102	13343	PROPOSED
PRESSURE TRANSMITTER	I-51-06	PT	5107	NON POTABLE WATER	12"-FE-DI/F	13343	LOCATED ON NPW-T-5101 INFLUENT/EFFLUENT LINE
PRESSURE TRANSMITTER	I-51-06	PT	5108	NON POTABLE WATER	12"-FE-DI/F	13343	LOCATED ON NPW-T-5102 INFLUENT/EFFLUENT LINE

APP.	
REVISION	
DATE	
NO.	

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
	
<p>TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264</p>	
<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>	

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SCHEDULES-SHEET 3**  
 GENERAL

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	R-000265-0154-4	
	DRAWING SCALE	
	NTS	
DWG NO	CITY OF HOUSTON PM	
G-6-9	TAHA LOTIA	
	SHEET NO. 10 OF 271	





**KEY NOTES**

- 1 2" AIR VENT
- 2 4" AIR VENT
- 3 6" AIR VENT
- 4 2" HORIZONTAL PIPE
- 5 1" PIPE
- 6 2" PIPE
- 7 3" PIPE
- 8 4" PIPE
- 9 6" PIPE
- 10 24" RCP OUTFALL
- 11 8" ROUND GRATE INLET TOP ELEV.=29.78' (NO MEASURE DOWN)
- 12 8" ROUND GRATE INLET TOP ELEV.=30.13' (NO MEASURE DOWN)
- 13 10" ROUND METAL LID "GROUND"
- 14 2" VENT
- 15 1" VERTICAL PIPE
- 16 2" VERTICAL PIPE
- 17 3" VERTICAL PIPE
- 18 4" VERTICAL PIPE
- 19 6" VERTICAL PIPE
- 20 1.0'X1.5' BASE
- 21 1.0'X0.5'X0.7' KEY PAD
- 22 2.5'X2.5'X4.5' MOTOR
- 23 4.0'X4.0'X5.0' ELECTRICAL TRANSFORMER BOX
- 24 ADMIRAL VALVE
- 25 DOWN SPOUT
- 26 ELECTRICAL ENCLOSURE BOX WITH METAL COVER
- 27 ELECTRICAL METAL CABINET - TWO DOOR
- 28 FILTER
- 29 FLOW CONTROL
- 30 MOTOR MIXER
- 31 LADDER 1.5' WIDE
- 32 LADDER 2.5' WIDE
- 33 LOADING CRANE
- 34 PRESSURE METER
- 35 PUMP
- 36 SHOWER
- 37 SODIUM BISULFITE STORAGE TANK
- 38 STEEL CANOPY
- 39 TANK ON CONCRETE
- 40 WOODEN PERGOLA
- 41 VALVE
- 42 VANTON PUMP
- 43 VENT VALVE
- 44 WATER LEVEL READER
- 45 WATER PUMP
- 46 YELLOW TEST STATION

**FLOODPLAIN NOTE:**

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48201C0885N, MAP REVISED DATE OF MAY 2, 2019 AND A DETERMINATION DOCUMENT OF LETTER OF MAP REVISION CASE NO. 19-06-2522P, ISSUE DATE JUNE 6, 2019 AND EFFECTIVE DATE OCTOBER 21, 2019, INDICATES THAT TRACT LIES WITHIN AREA:

ZONE "AE" - WITH BASE FLOOD ELEVATION(BFE) OR DEPTH.

ZONE "AE" - REGULATORY FLOODWAY.

ZONE "X" (SHADED) - 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.

ZONE "X" (UNSHADED) - AREA OF MINIMAL FLOOD HAZARD.

IN ADDITION THIS MAP STATES "THIS MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. CERTAIN AREAS NOT IN "SPECIAL FLOOD HAZARD AREAS MAY BE PROTECTED BY FLOOD CONTROL STRUCTURES". THE APPROXIMATE LIMITS OF SAID ZONES AS DETERMINED HEREON ARE SCALED FROM SAID MAP. THIS INFORMATION IS NOT INTENDED TO IDENTIFY SPECIFIC FLOOD CONDITIONS.

**MA CALLAHAN & ALLEN VINCE SURVEY,  
 ABSTRACT NO. 9**

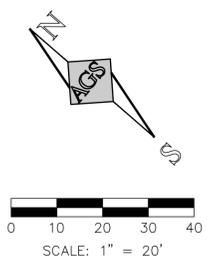
**BENCHMARKS:**

ELEVATIONS ARE BASED ON TWO CITY OF HOUSTON SITE CONTROL MONUMENTS AND ONE HARRIS COUNTY FLOODPLAIN REFERENCE MARK:

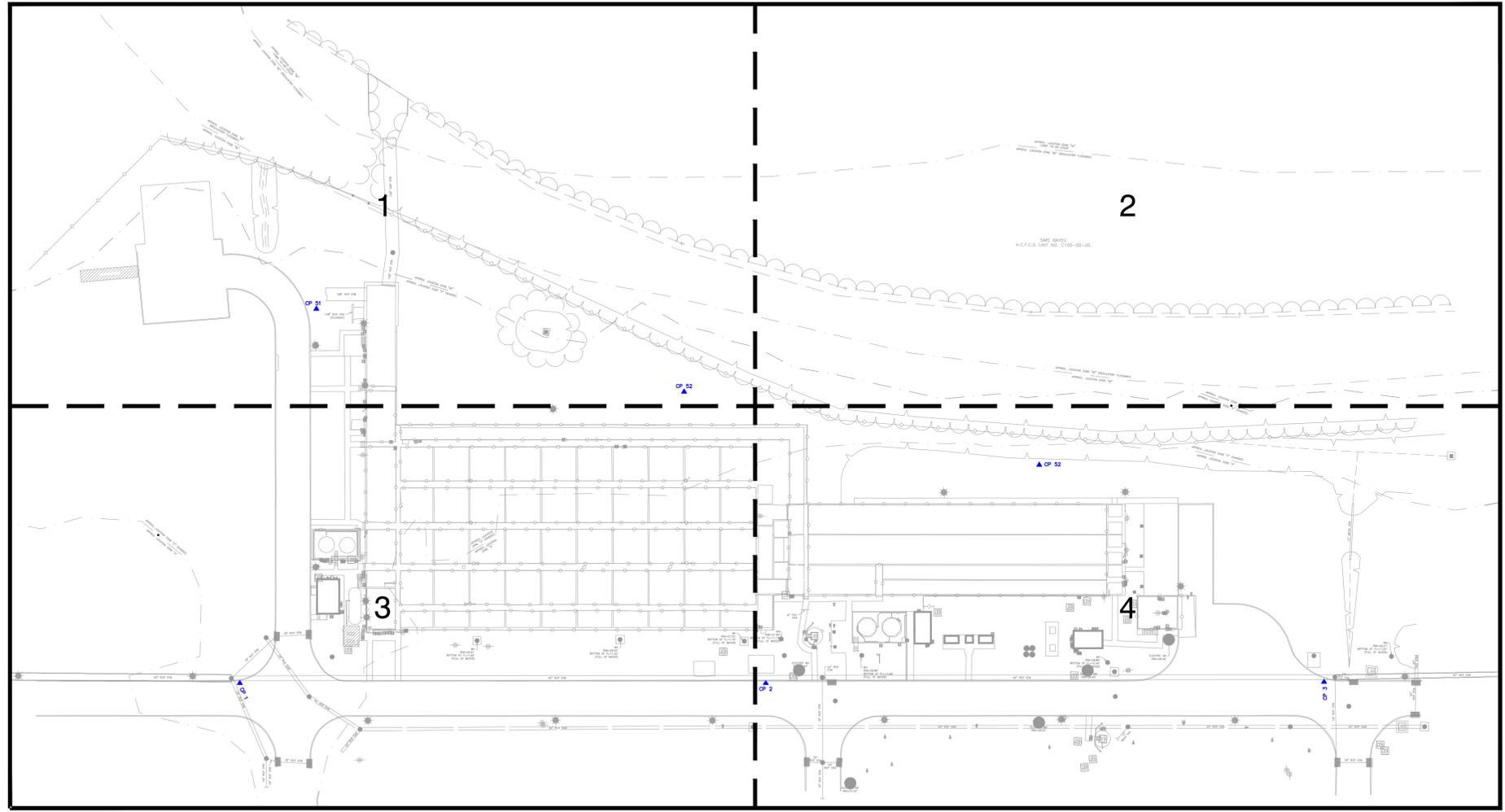
SITE CONTROL MONUMENT 5654-8115R1:  
 ON EAST SIDE OF BRIDGE AT GALVESTON ROAD AND SIMS BAYOU APPROX. 540' NORTHWEST OF ROCKLEIGH INTERSECTION.  
 PUBLISHED (GRID) X = 3,155,015.84 Y = 13,818,317.95 ELEV = 27.28'  
 FIELD MEASURED X = 3,155,374.51 Y = 13,819,888.55 ELEV = 27.36'

SITE CONTROL MONUMENT 5655-0704:  
 INTERSECTION OF PARK TERRACE BOULEVARD AND OLD GALVESTON ROAD CLOSE TO RAIL TRACK.  
 PUBLISHED (GRID) X = 3,152,291.13 Y = 13,821,284.43 ELEV = 31.22'  
 FIELD MEASURED X = 3,152,649.40 Y = 13,822,855.37 ELEV = 31.50'

REFERENCE MARK 030190:  
 FROM THE INTERSECTION OF PARK PLACE BOULEVARD AND GALVESTON ROAD, TRAVEL NORTHWEST 0.1 MILE ON GALVESTON ROAD TO BRIDGE. MONUMENT IS LOCATED ON THE EAST SIDEWALK.  
 PUBLISHED (GRID) X = 3,153,950.74 Y = 13,819,539.44 ELEV = 23.22'  
 FIELD MEASURED X = 3,154,309.32 Y = 13,821,110.31 ELEV = 23.33'

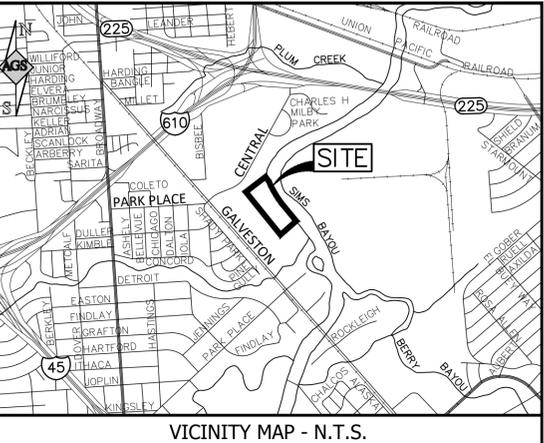


NO.	DATE	REVISION	APP.



**GENERAL NOTES:**

1. ALL BEARINGS AND COORDINATES SHOWN HEREON THIS MAP ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, TEXAS SOUTH CENTRAL ZONE (4204), NAD 83 (2011 ADJ.). ALL SURFACE DISTANCES AND SURFACE COORDINATES MAY BE CONVERTED TO GRID BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999886349. (SURFACE X 0.999886349 = GRID).
2. ALL COORDINATE VALUES AND BEARING SHOWN HERE ON THIS MAP ARE BASED ON VRS GPS OBSERVATIONS USING THE ALLTERRA CENTRAL RTKNET TRIMBLE VRS NETWORK.
3. ELEVATIONS SHOWN HEREON THIS MAP ARE BASED DIFFERENTIAL LEVEL LOOPS USING A TRIMBLE DINI DIGITAL LEVEL USING HARRIS COUNTY FLOODPLAIN REFERENCE MARK - 030190 AND TWO CITY OF HOUSTON SITE CONTROL MONUMENTS - 5654-8115R1 AND 5655-0704.
4. ALL SURVEY MEASUREMENTS ARE US SURVEY FEET.
5. THE SURVEYOR MADE A TEXAS811 REQUEST: TICKET NO. 2563674359 DATED MAY 16, 2025. AGS IS NOT RESPONSIBLE FOR UTILITY COMPANIES RESPONDING TO DESIGNATE THEIR UNDERGROUND UTILITIES
6. THE FIELD WORK FOR THE TOPOGRAPHIC SURVEY WAS COMPLETED IN JUNE 2025.
7. ONLY VISIBLE EVIDENCE OF IMPROVEMENTS AND UTILITIES ARE SHOWN HEREON. UTILITY RECORD INFORMATION IS SHOWN HEREON THIS MAP WAS NOT PHYSICALLY LOCATED BY AN ON THE GROUND SURVEY.
8. THE FEMA LINE SHOWN WAS NOT DRAWN BY AGS. IT WAS SCALED AND OVERLAID ON THE SITE PLAN APPROXIMATELY, BASED ON FEMA'S ORIGINAL GIS DRAWING.
9. THIS SURVEY DOES NOT PROVIDE A DETERMINATION OR OPINION CONCERNING THE LOCATION OR EXISTENCE OF WETLANDS, FAULT LINES, TOXIC OR HAZARDOUS WASTE AREAS, SUBSIDENCE, OVERHEAD, SUBSURFACE AND ENVIRONMENTAL CONDITIONS OR GEOLOGICAL ISSUES. NO STATEMENT IS MADE CONCERNING THE SUITABILITY OF THE SUBJECT TRACT FOR ANY INTENDED USE, PURPOSE, OR DEVELOPMENT.
10. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.



**LEGEND**

B.L.	BUILDING LINE
B.M.	BENCHMARK
CM	CONCRETE CONTROLLING MONUMENT
CONC.	CONCRETE
DRNG.	DRAINAGE
EL	ELEVATION
ESMT.	EASEMENT
F.C.	FILM CODE
FF	FINISH FLOOR
FL	FLOW LINE
FND.	FOUND
H.C.C.F.	HARRIS COUNTY CLERK FILE
H.C.D.R.	HARRIS COUNTY DEED RECORDS
H.C.M.R.	HARRIS COUNTY MAP RECORDS
H.C.T.	HARRIS COUNTY TEXAS
I.R.	IRON ROD
I.R.C.	IRON ROD CAPPED
LP	OFFICIAL PUBLIC RECORDS OF REAL PROPERTY
O.P.R.R.P.	OFFICIAL PUBLIC RECORDS OF REAL PROPERTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCING
PS	PAGE
RCP	REINFORCED CONCRETE PIPE
RM	REFERENCE MARK
R.O.W.	RIGHT-OF-WAY
SAN. SWR.	SANITARY SEWER
S.C.M.	SITE CONTROL MONUMENT
STM.	STORM
STM. SWR.	STORM SEWER
T.O.W.	TOP OF WALL
VOL.	VOLUME
CL	CHAIN LINK FENCE
FEMA	FEMA
HB	HIGH BANK

**SYMBOL LEGEND**

●	FND IRON ROD
⊙	FND IRON PIPE
○	SET IRON ROD
⊗	X CUT

**SYMBOL LEGEND**

■	BB INLET
●	BOLLARD
⊙	CLEAN OUT
■	COLUMN
■	ELECTRIC BOX
■	ELECTRIC CONDUIT
■	ELECTRIC JUNCTION BOX
■	ELECTRIC METER
●	GATE POST
■	GRATE INLET
●	LIGHT POLE
●	MANHOLE
○	MISCELLANEOUS
⊙	TEMPORARY BENCHMARK
+	TIC
■	WATER METER
⊙	WATER FAUCET
⊙	WATER VALVE

**MAP INDEX**

**CONTROL POINTS**

NO.	NORTHING (Surface)	EASTING (Surface)	NORTHING (Grid)	EASTING (Grid)	ELEVATION	DESCRIPTION
AGS 901	13,822,855.37	3,152,649.40	13,821,284.39	3,152,291.10	31.50'	COH TYPE 4A MONUMENT
CP 1	13,823,129.05	3,153,781.19	13,821,558.04	3,153,422.76	24.90'	SET MAG NAIL W/ SHINNER
CP 2	13,822,852.14	3,154,022.16	13,821,281.13	3,153,663.73	26.57'	SET MAG NAIL W/ SHINNER
CP 3	13,822,558.80	3,154,278.54	13,820,987.85	3,153,920.06	26.24'	SET MAG NAIL W/ SHINNER
CP 51	13,823,259.76	3,154,012.89	13,821,688.74	3,153,654.43	20.69'	SET 5/8" I.R.C. "ALLY"
CP 52	13,823,028.31	3,154,137.81	13,821,457.32	3,153,779.39	23.62'	SET 5/8" I.R.C. "ALLY"
CP 53	13,822,807.90	3,154,262.08	13,821,236.93	3,153,903.61	27.89'	SET 5/8" I.R.C. "ALLY"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

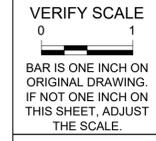
**AGS**  
 ENGINEERING & CONSTRUCTION  
 Ally General Solutions, LLC  
 dba AGS Engineering & Construction  
 5300 Hollister Rd. Ste. 111  
 Houston, Texas 77040  
 Phone: (281) 888-7682  
 TX Engineer Firm No. 13574  
 TBPELS Firm No. 10194392  
 Certified: DBE/SBE/HBE/HUB/8(A)

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

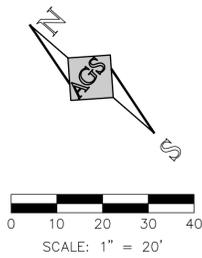
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 TOPOGRAPHIC SURVEY (1 OF 5)



WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
DWG NO	CITY OF HOUSTON PM
G-G-12	TAHA LOTIA
SHEET NO.	13 OF 271

# MA CALLAHAN & ALLEN VINCE SURVEY, ABSTRACT NO. 9

SYMBOL LEGEND	
■	BB INLET
●	BOLLARD
☐	CLEAN OUT
■	COLUMN
⊞	ELECTRIC BOX
⊞	ELECTRIC CONDUIT
⊞	ELECTRIC JUNCTION BOX
⊞	ELECTRIC METER
⊞	GATE POST
⊞	GRATE INLET
⊞	LIGHT POLE
⊞	MANHOLE
○	MISCELLANEOUS
⊞	TEMPORARY BENCHMARK
+	TIC
⊞	WATER METER
⊞	WATER FAUCET
⊞	WATER VALVE



SYMBOL LEGEND	
●	FND IRON ROD
○	FND IRON PIPE
○	SET IRON ROD
⊞	X CUT

LEGEND	
B.L.	BUILDING LINE
B.M.	BENCHMARK
CM	CONTROLLING MONUMENT
CONC.	CONCRETE
DRNG.	DRAINAGE
EL	ELEVATION
ESMT.	EASEMENT
F.C.	FILM CODE
FF	FINISH FLOOR
FL	FLOW LINE
FND.	FOUND
H.C.C.F.	HARRIS COUNTY CLERK FILE
H.C.D.R.	HARRIS COUNTY DEED RECORDS
H.C.M.R.	HARRIS COUNTY MAP RECORDS
H.C.T.	HARRIS COUNTY TEXAS
I.R.	IRON ROD
I.R.C.	IRON ROD CAPPED
I.P.	IRON PIPE
O.P.R.R.P.	OFFICIAL PUBLIC RECORDS OF REAL PROPERTY
P.O.B.	POINT OF BEGINNING
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PG.	PAGE
RCP	REINFORCED CONCRETE PIPE
RM	REFERENCE MARK
R.O.W.	RIGHT-OF-WAY
SAN. SWR.	SANITARY SEWER
S.C.M.	SITE CONTROL MONUMENT
STM.	STORM
STM. SWR.	STORM SEWER
T.O.W.	TOP OF WALL
VOL.	VOLUME
⊞	CHAIN LINK FENCE
⊞	FEMA
⊞	HIGH BANK



### KEY NOTES

- |   |   |                                       |                        |
|---|---|---------------------------------------|------------------------|
| ① 2" AIR VENT   | ⑭ 2" VENT                                   | ⑳ ELECTRICAL METAL CABINET - TWO DOOR | ④① WOODEN PERGOLA      |
| ② 4" AIR VENT   | ⑮ 1" VERTICAL PIPE                          | ㉑ FILTER                              | ④② VALVE               |
| ③ 6" AIR VENT   | ⑯ 2" VERTICAL PIPE                          | ㉒ FLOW CONTROL                        | ④③ VANTON PUMP         |
| ④ 2" HORIZONTAL PIPE                                      | ⑰ 3" VERTICAL PIPE                          | ㉓ MOTOR MIXER                         | ④④ VENT VALVE          |
| ⑤ 1" PIPE   | ⑱ 4" VERTICAL PIPE                          | ㉔ LADDER 1.5' WIDE                    | ④⑤ WATER LEVEL READER  |
| ⑥ 2" PIPE   | ⑲ 6" VERTICAL PIPE                          | ㉕ LADDER 2.5' WIDE                    | ④⑥ WATER PUMP          |
| ⑦ 3" PIPE   | ⑳ 1.0'X1.5' BASE                            | ㉖ LOADING CRANE                       | ④⑦ YELLOW TEST STATION |
| ⑧ 4" PIPE   | ㉑ 1.0'X0.5'X0.7' KEY PAD                    | ㉗ PRESSURE METER                      |                        |
| ⑨ 6" PIPE   | ㉒ 2.5'X2.5'X4.5' MOTOR                      | ㉘ PUMP                                |                        |
| ⑩ 24" RCP OUTFALL   | ㉓ 4.0'X4.0'X5.0' ELECTRICAL TRANSFORMER BOX | ㉙ SHOWER                              |                        |
| ⑪ 8" ROUND GRATE INLET TOP ELEV.=29.78' (NO MEASURE DOWN) | ㉔ ADMIRAL VALVE                             | ㉚ SODIUM BISULFITE STORAGE TANK       |                        |
| ⑫ 8" ROUND GRATE INLET TOP ELEV.=30.13' (NO MEASURE DOWN) | ㉕ DOWN SPOUT                                | ㉛ STEEL CANOPY                        |                        |
| ⑬ 10" ROUND METAL LID "GROUND"                            | ㉖ ELECTRICAL ENCLOSURE BOX WITH METAL COVER | ㉜ TANK ON CONCRETE                    |                        |

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

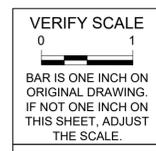
**AGS**  
ENGINEERING & CONSTRUCTION  
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dba AGS Engineering & Construction  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 TOPOGRAPHIC SURVEY (2 OF 5)

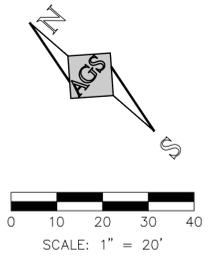


WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 14 OF 271	

DWG NO	G-G-13
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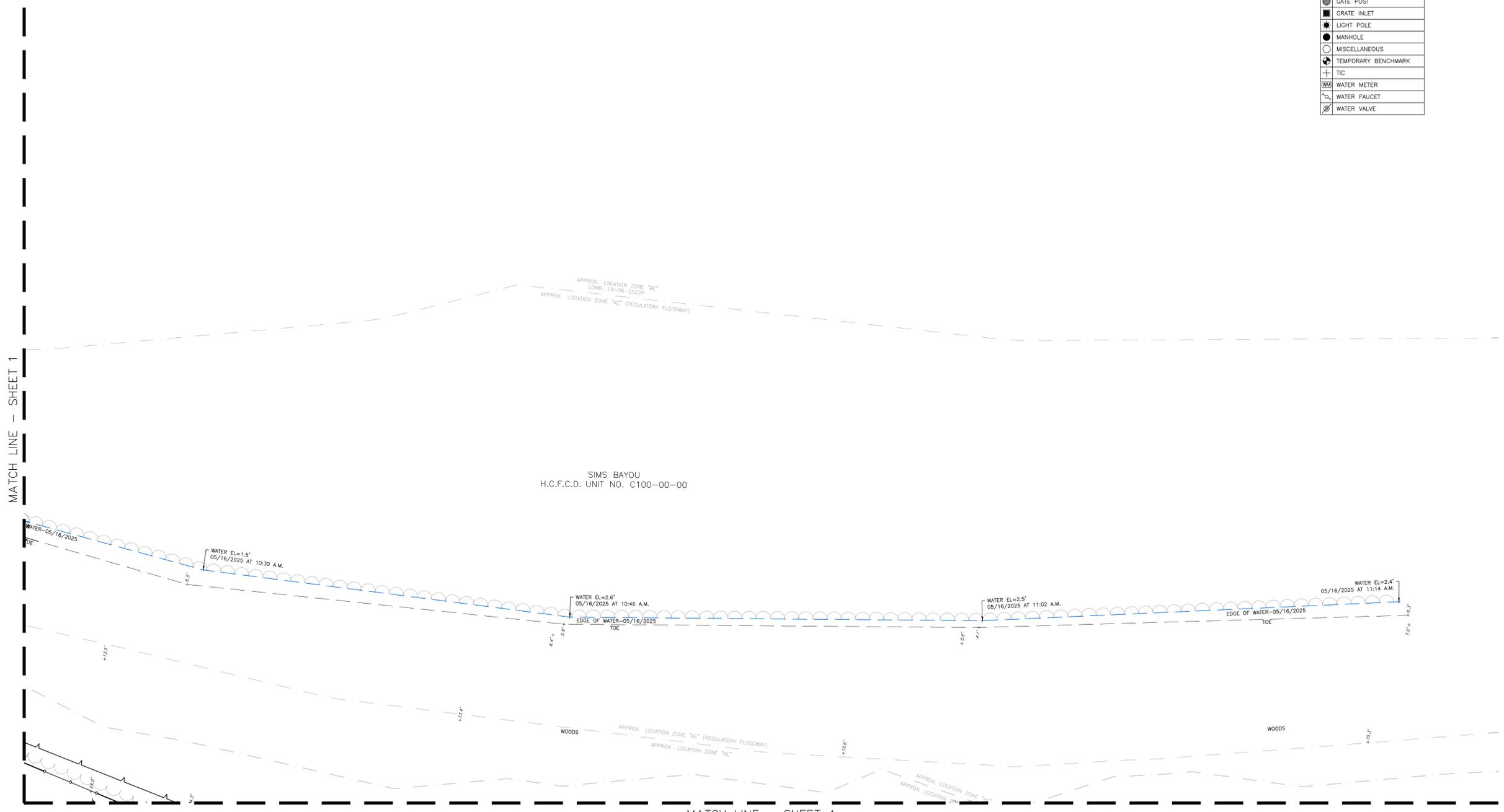
# MA CALLAHAN & ALLEN VINCE SURVEY, ABSTRACT NO. 9

SYMBOL LEGEND	
■	BB INLET
●	BOLLARD
⊙	CLEAN OUT
■	COLUMN
□	ELECTRIC BOX
▭	ELECTRIC CONDUIT
▭	ELECTRIC JUNCTION BOX
EM	ELECTRIC METER
⊙	GATE POST
■	GRATE INLET
★	LIGHT POLE
●	MANHOLE
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⊕	TEMPORARY BENCHMARK
+	TIC
WM	WATER METER
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SYMBOL LEGEND	
●	FND IRON ROD
⊙	FND IRON PIPE
○	SET IRON ROD
⊕	X CUT

LEGEND	
B.L.	BUILDING LINE
B.M.	BENCHMARK
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VOL.	VOLUME
—○—	CHAIN LINK FENCE
- - -	FEMA
—∨—	HIGH BANK



KEY NOTES			
1	2" AIR VENT	14	2" VENT
2	4" AIR VENT	15	1" VERTICAL PIPE
3	6" AIR VENT	16	2" VERTICAL PIPE
4	2" HORIZONTAL PIPE	17	3" VERTICAL PIPE
5	1" PIPE	18	4" VERTICAL PIPE
6	2" PIPE	19	6" VERTICAL PIPE
7	3" PIPE	20	1.0'X1.5' BASE
8	4" PIPE	21	1.0'X0.5'X0.7' KEY PAD
9	6" PIPE	22	2.5'X2.5'X4.5' MOTOR
10	24" RCP OUTFALL	23	4.0'X4.0'X5.0' ELECTRICAL TRANSFORMER BOX
11	8" ROUND GRATE INLET TOP ELEV.=29.78' (NO MEASURE DOWN)	24	ADMIRAL VALVE
12	8" ROUND GRATE INLET TOP ELEV.=30.13' (NO MEASURE DOWN)	25	DOWN SPOUT
13	10" ROUND METAL LID "GROUND"	26	ELECTRICAL ENCLOSURE BOX WITH METAL COVER
27	ELECTRICAL METAL CABINET - TWO DOOR	40	WOODEN PERGOLA
28	FILTER	41	VALVE
29	FLOW CONTROL	42	VANTON PUMP
30	MOTOR MIXER	43	VENT VALVE
31	LADDER 1.5' WIDE	44	WATER LEVEL READER
32	LADDER 2.5' WIDE	45	WATER PUMP
33	LOADING CRANE	46	YELLOW TEST STATION
34	PRESSURE METER		
35	PUMP		
36	SHOWER		
37	SODIUM BISULFITE STORAGE TANK		
38	STEEL CANOPY		
39	TANK ON CONCRETE		

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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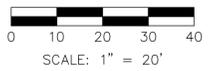
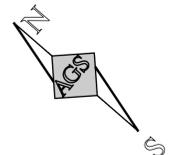
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 TOPOGRAPHIC SURVEY (3 OF 5)

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO G-G-14	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	SHEET NO. 15 OF 271	

2025/12/04 12:29p FILE PATH: T:\0219-002-25-S COH Sims WWTP BAC-KGI\01\_0219-002-25-S COH Sims WWTP BAC-KGI\_Topog.dwg - 3 PLOT STYLE: KGI Full Size (Mono).ctb PLOTTED: 12/4/2025 12:28 PM

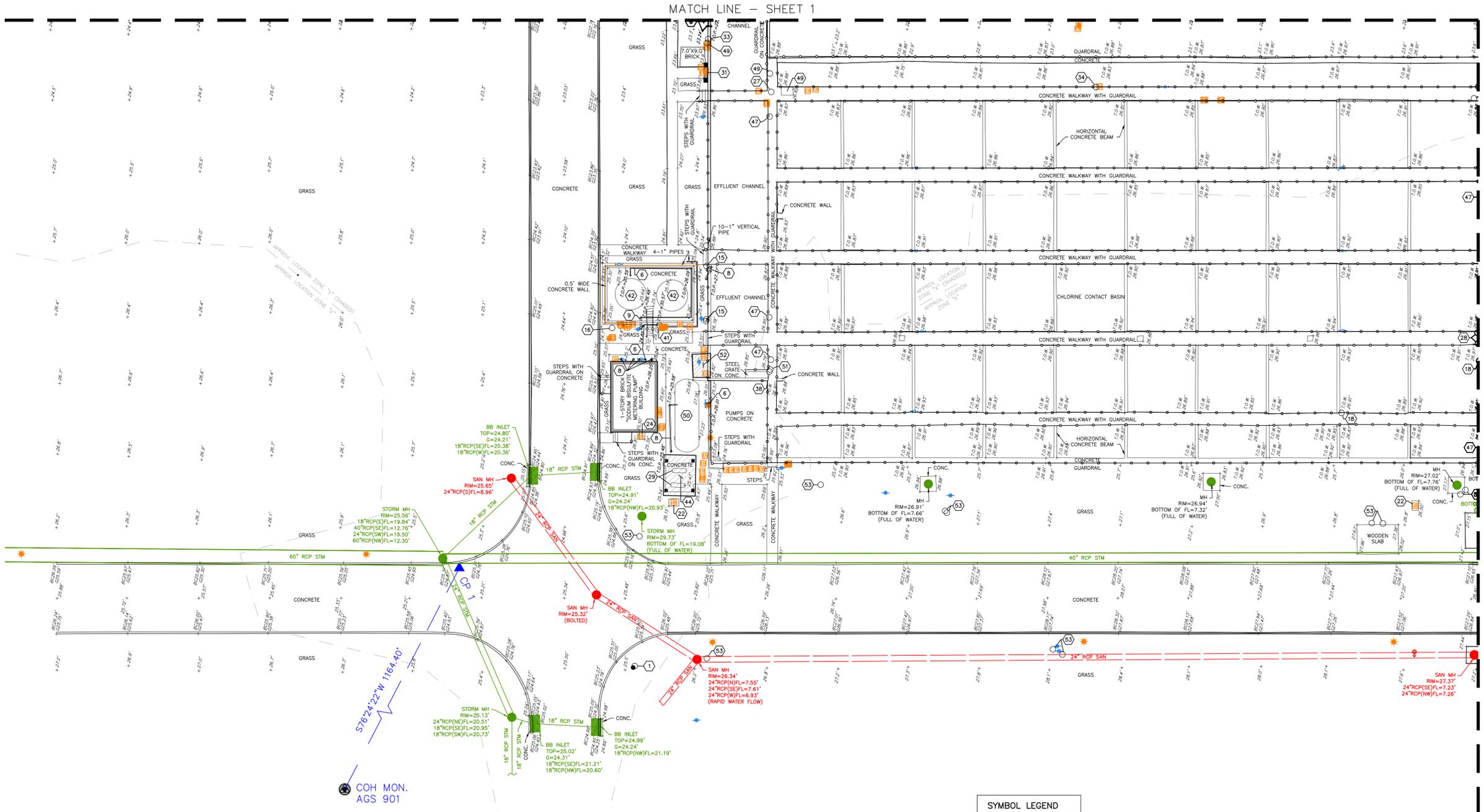
# MA CALLAHAN & ALLEN VINCE SURVEY, ABSTRACT NO. 9



NO.	DATE	REVISION	APP.

SYMBOL LEGEND	
●	FND IRON ROD
○	FND IRON PIPE
○	SET IRON ROD
○	X CUT

LEGEND	
B.L.	BUILDING LINE
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T.O.W.	TOP OF WALL
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- KEY NOTES**
- 1 2" AIR VENT
  - 2 4" AIR VENT
  - 3 6" AIR VENT
  - 4 2" HORIZONTAL PIPE
  - 5 1" PIPE
  - 6 2" PIPE
  - 7 3" PIPE
  - 8 4" PIPE
  - 9 6" PIPE
  - 10 24" RCP OUTFALL
  - 11 8" ROUND GRATE INLET TOP ELEV.=29.78' (NO MEASURE DOWN)
  - 12 8" ROUND GRATE INLET TOP ELEV.=30.13' (NO MEASURE DOWN)
  - 13 10" ROUND METAL LID "GROUND"
  - 14 2" VENT
  - 15 1" VERTICAL PIPE
  - 16 2" VERTICAL PIPE
  - 17 3" VERTICAL PIPE
  - 18 4" VERTICAL PIPE
  - 19 6" VERTICAL PIPE
  - 20 1.0'X1.5' BASE
  - 21 1.0'X0.5'X0.7' KEY PAD
  - 22 2.5'X2.5'X4.5' MOTOR
  - 23 4.0'X4.0'X5.0' ELECTRICAL TRANSFORMER BOX
  - 24 ADMIRAL VALVE
  - 25 DOWN SPOUT
  - 26 ELECTRICAL ENCLOSURE BOX WITH METAL COVER
  - 27 ELECTRICAL METAL CABINET - TWO DOOR
  - 28 FILTER
  - 29 FLOW CONTROL
  - 30 MOTOR MIXER
  - 31 LADDER 1.5' WIDE
  - 32 LADDER 2.5' WIDE
  - 33 LOADING CRANE
  - 34 PRESSURE METER
  - 35 PUMP
  - 36 SHOWER
  - 37 SODIUM BISULFITE STORAGE TANK
  - 38 STEEL CANOPY
  - 39 TANK ON CONCRETE
  - 40 WOODEN PERGOLA
  - 41 VALVE
  - 42 VANTON PUMP
  - 43 VENT VALVE
  - 44 WATER LEVEL READER
  - 45 WATER PUMP
  - 46 YELLOW TEST STATION

SYMBOL LEGEND	
■	BB INLET
●	BOLLARD
○	CLEAN OUT
■	COLUMN
□	ELECTRIC BOX
—	ELECTRIC CONDUIT
□	ELECTRIC JUNCTION BOX
○	ELECTRIC METER
■	GATE POST
■	GRATE INLET
●	LIGHT POLE
○	MANHOLE
○	MISCELLANEOUS
○	TEMPORARY BENCHMARK
+	TIC
○	WATER METER
○	WATER FAUCET
○	WATER VALVE

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**AGS**  
**ENGINEERING & CONSTRUCTION**  
 Ally General Solutions, LLC  
 dba AGS Engineering & Construction  
 5300 Hollister Rd. Ste. 111  
 Houston, Texas 77040  
 Phone: (281) 888-7682  
 TX Engineer Firm No. 13574  
 TBPELS Firm No. 10194392  
 Certified: DBE/SBE/HBE/HUB/8(A)

**KGI**  
**Kalluri Group, Inc.**  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-865-8288  
**PROJECT 4264**

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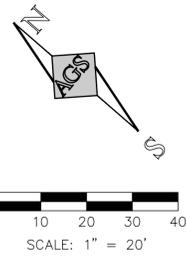
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 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 TOPOGRAPHIC SURVEY (4 OF 5)

**VERIFY SCALE**  
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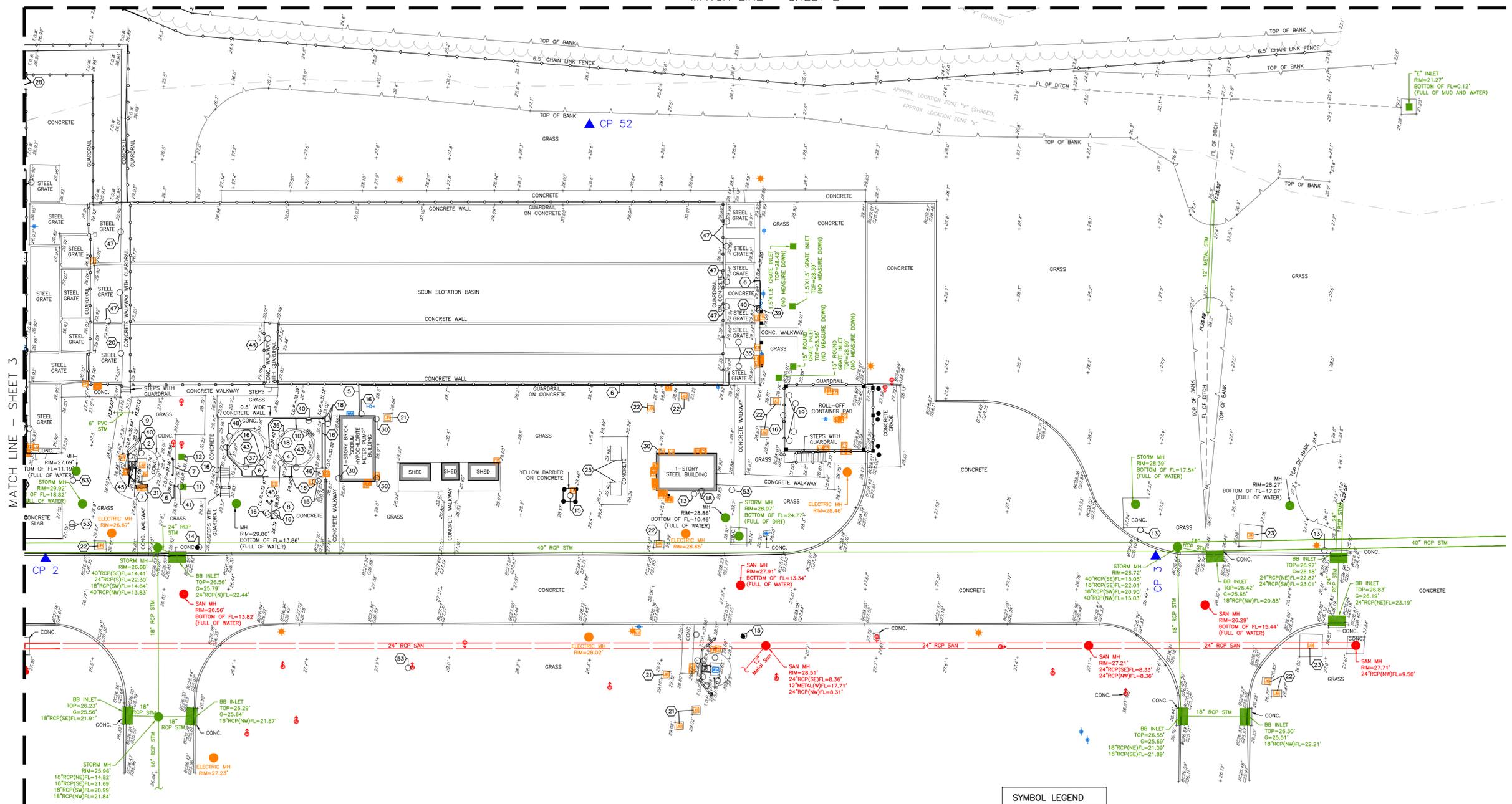
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DWG NO	CITY OF HOUSTON PM	
G-G-15	TAHA LOTIA	
SHEET NO.	16	OF 271

# MA CALLAHAN & ALLEN VINCE SURVEY, ABSTRACT NO. 9



NO.	DATE	REVISION	APP.

MATCH LINE - SHEET 2



**SYMBOL LEGEND**

●	FND IRON ROD
○	FND IRON PIPE
○	SET IRON ROD
⊗	X CUT

**LEGEND**

B.L.	BUILDING LINE
B.M.	BENCHMARK
CM	CONTROLLING MONUMENT
CONC.	CONCRETE
DRNG.	DRAINAGE
EL	ELEVATION
ESMT.	EASEMENT
F.C.	FILM CODE
FF	FINISH FLOOR
FL	FLOW LINE
FND.	FOUND
H.C.C.F.	HARRIS COUNTY CLERK FILE
H.C.D.R.	HARRIS COUNTY DEED RECORDS
H.C.M.R.	HARRIS COUNTY MAP RECORDS
H.C.T.	HARRIS COUNTY TEXAS
I.R.	IRON ROD
I.R.C.	IRON ROD CAPPED
I.P.	IRON PIPE
O.P.R.R.P.	OFFICIAL PUBLIC RECORDS OF REAL PROPERTY
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCING
PG.	PAGE
RCP	REINFORCED CONCRETE PIPE
RM	REFERENCE MARK
R.O.W.	RIGHT-OF-WAY
SAN. SWR.	SANITARY SEWER
S.C.M.	SITE CONTROL MONUMENT
STM.	STORM SEWER
STM. SWR.	STORM SEWER
T.O.W.	TOP OF WALL
VOL.	VOLUME
—	CHAIN LINK FENCE
—	HIGH BANK

MATCH LINE - SHEET 3

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**AGS**  
ENGINEERING & CONSTRUCTION  
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dba AGS Engineering & Construction  
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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 TOPOGRAPHIC SURVEY (5 OF 5)

**KEY NOTES**

1	2" AIR VENT	14	2" VENT	27	ELECTRICAL METAL CABINET - TWO DOOR	40	WOODEN PERGOLA
2	4" AIR VENT	15	1" VERTICAL PIPE	28	FILTER	41	VALVE
3	6" AIR VENT	16	2" VERTICAL PIPE	29	FLOW CONTROL	42	VANTON PUMP
4	2" HORIZONTAL PIPE	17	3" VERTICAL PIPE	30	MOTOR MIXER	43	VENT VALVE
5	1" PIPE	18	4" VERTICAL PIPE	31	LADDER 1.5' WIDE	44	WATER LEVEL READER
6	2" PIPE	19	6" VERTICAL PIPE	32	LADDER 2.5' WIDE	45	WATER PUMP
7	3" PIPE	20	1.0'X1.5' BASE	33	LOADING CRANE	46	YELLOW TEST STATION
8	4" PIPE	21	1.0'X0.5'X0.7' KEY PAD	34	PRESSURE METER		
9	6" PIPE	22	2.5'X2.5'X4.5' MOTOR	35	PUMP		
10	24" RCP OUTFALL	23	4.0'X4.0'X5.0' ELECTRICAL TRANSFORMER BOX	36	SHOWER		
11	8" ROUND GRATE INLET TOP ELEV.=29.78' (NO MEASURE DOWN)	24	ADMIRAL VALVE	37	SODIUM BISULFITE STORAGE TANK		
12	8" ROUND GRATE INLET TOP ELEV.=30.13' (NO MEASURE DOWN)	25	DOWN SPOUT	38	STEEL CANOPY		
13	10" ROUND METAL LID "GROUND"	26	ELECTRICAL ENCLOSURE BOX WITH METAL COVER	39	TANK ON CONCRETE		

**SYMBOL LEGEND**

■	BB INLET
●	BOLLARD
⊗	CLEAN OUT
■	COLUMN
□	ELECTRIC BOX
▭	ELECTRIC CONDUIT
▭	ELECTRIC JUNCTION BOX
⊙	ELECTRIC METER
⊙	GATE POST
⊙	GRATE INLET
⊙	LIGHT POLE
⊙	MANHOLE
⊙	MISCELLANEOUS
⊙	TEMPORARY BENCHMARK
+	TIC
⊙	WATER METER
⊙	WATER FAUCET
⊙	WATER VALVE

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CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	17 OF 271	

DWG NO  
G-G-16

NO.	DATE	REVISION	APP.

**LIFT STATION FACILITY**  
 UNIT QTY: 2  
 ACTIVE VOL: 75,000 GAL  
 CAP: 17.5 MGD PER PUMP  
 FIRM CAP: 15 MGD  
 TOTAL CAP/LS: 105 MGD

**ON-SITE WET WEATHER LIFT STATION**  
 UNIT QTY: 1  
 CAP: 15 MGD PER PUMP  
 FIRM CAP: 15 MGD  
 TOTAL CAP: 30 MGD

**BAR SCREENS**  
 MECHANICAL NUMBER: 3  
 CHANNEL WIDTH: 8'-0" CHANNEL WIDTH: 8'-0" SPACING: 1/2"  
 MANUAL NUMBER: 1  
 CHANNEL WIDTH: 8'-0" SPACING: 1"

**HEADCELL GRIT CHAMBERS**  
 NUMBER: 6  
 TYPE: GRAVITY  
 SIZE/UNIT: 12'-0" DIA, 11 TRAYS, 1,243 SQ. FT.

**AERATION BASINS**  
 NUMBER: 4  
 SIZE: 225'-0" x 127'-6" x 15'-3.6" SWD  
 VOLUME/BASIN: 438,919 CU. FT. (3.28 MG)  
 TOTAL VOLUME: 1,755,676 CU. FT. (13.12 MG)

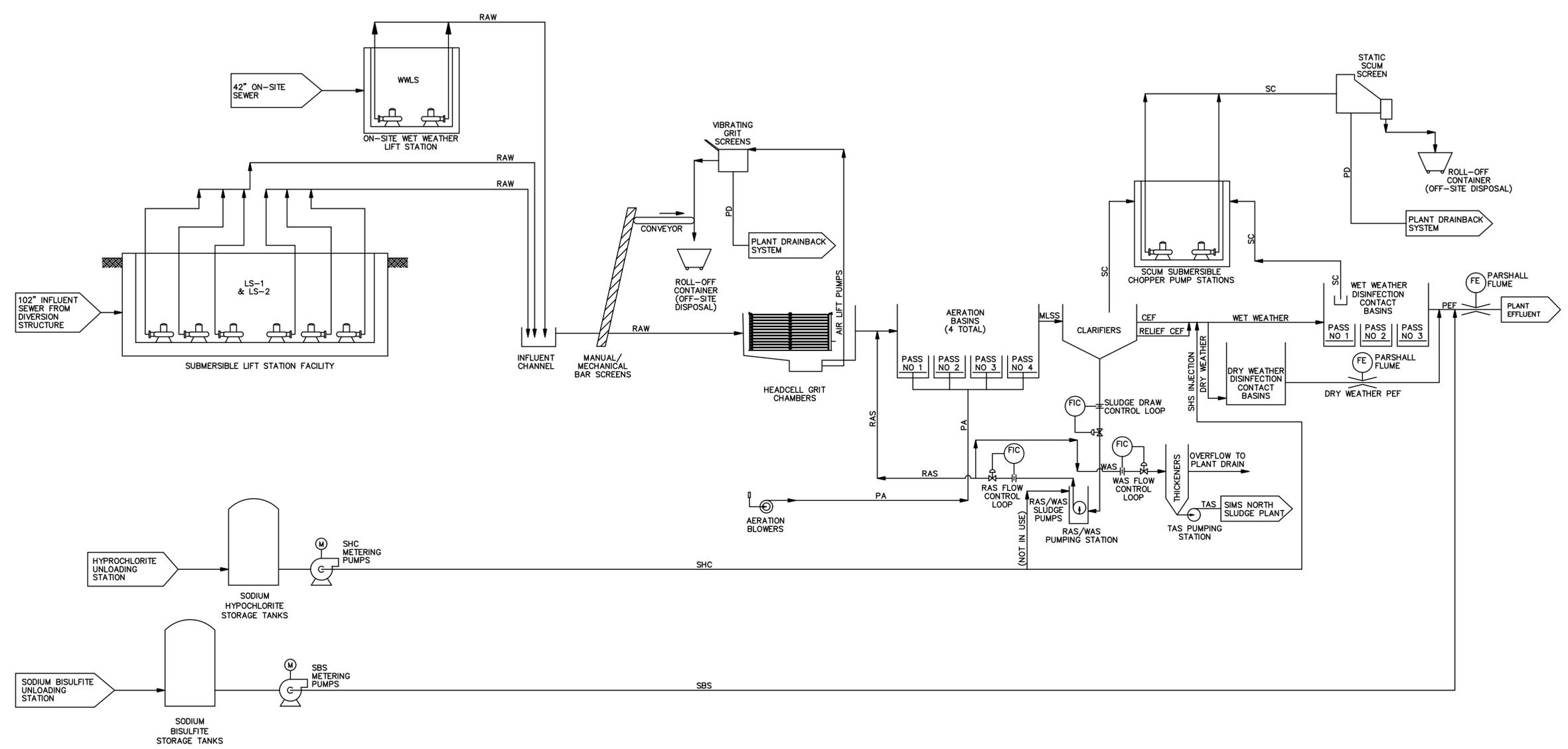
**CLARIFIERS**  
 NUMBER: 9  
 SIZE: 138'-0" x 14'-9.84" SWD  
 SURFACE AREA/CLARIFIER: 14,950 SQ. FT.  
 TOTAL SURFACE AREA: 89,700 SQ. FT.

**DRY WEATHER CHLORINE CONTACT BASINS**  
 NUMBER: 2  
 SIZE: 208'-0" x 20'-0" x 7'-9" SWD  
 VOLUME/BASIN: 32,240 CU. FT. (0.24 MG)  
 TOTAL VOLUME: 64,480 CU. FT. (0.48 MG)

**DISINFECTION CONTACT BASINS**  
 NUMBER: 3  
 SIZE: 250'-0" x 39'-0" x 7'-11.28" SWD  
 VOLUME/BASIN: 69,673 CU. FT. (0.521 MG)  
 TOTAL VOLUME: 209,019 CU. FT. (1.56 MG)  
 \* SWD VARIES FROM 7.94" AT NO FLOW TO 11.83" AT 190 MGD

**EFFLUENT PARSHALL FLUME**  
 NUMBER: 1  
 CHANNEL WIDTH: 20'-0" THROAT WIDTH: 12'-0"

**DRY WEATHER PARSHALL FLUME**  
 NUMBER: 1  
 CHANNEL WIDTH: 10'-0" THROAT WIDTH: 5'-0"



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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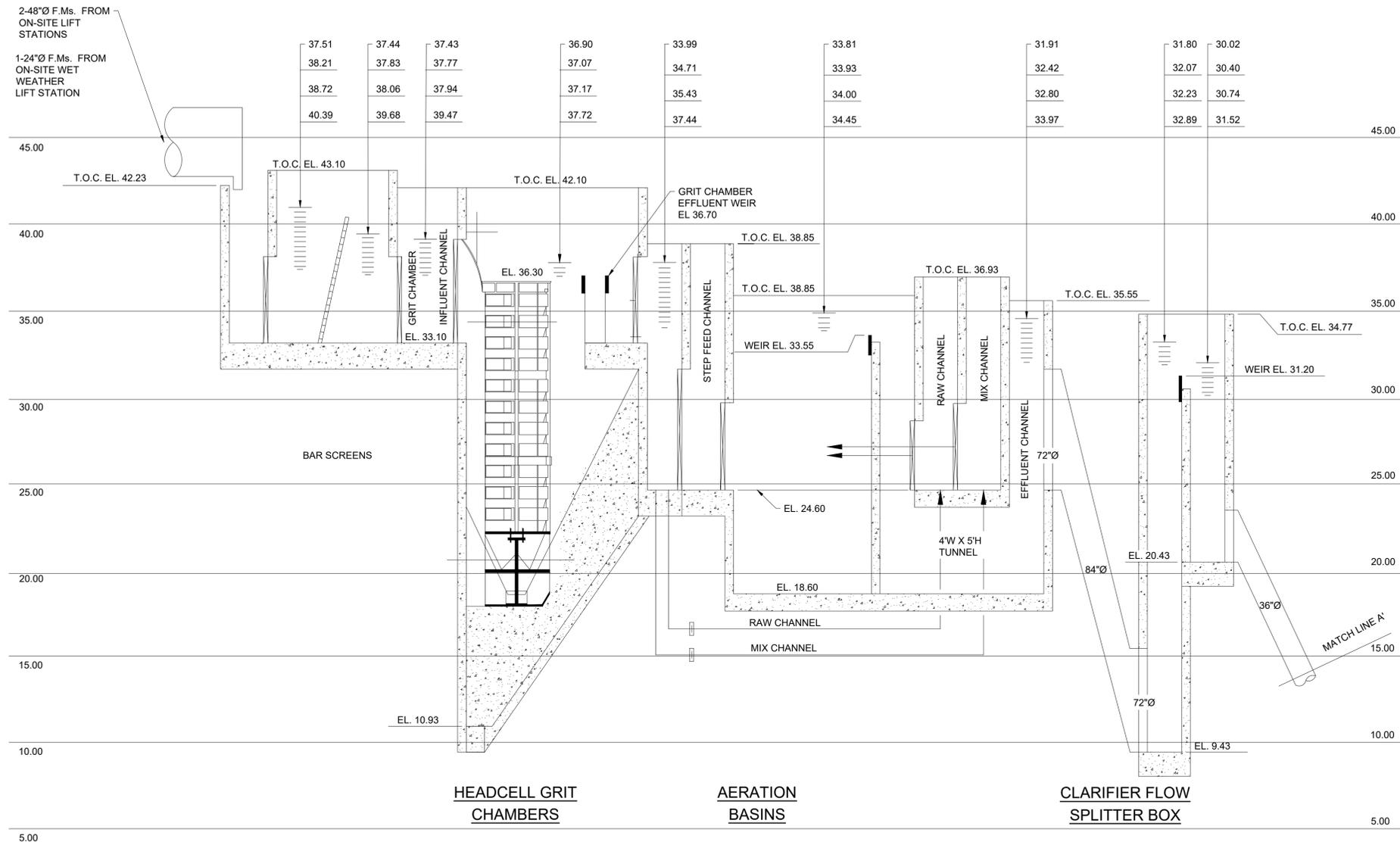
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROCESS FLOW DIAGRAM**

- LEGEND:**
- CEF CLARIFIED EFFLUENT
  - FE FLOW ELEMENT
  - FIC FLOW INDICATE CONTROL
  - LS LIFT STATION
  - MLSS MIXED LIQUOR SUSPENDED SOLIDS
  - PA PROCESS AIR
  - PD PLANT DRAIN
  - PEF PLANT EFFLUENT
  - RAS RETURN ACTIVATED SLUDGE
  - RAW RAW WASTEWATER
  - SBS SODIUM BISULFITE
  - SC SCUM
  - SHC SODIUM HYPOCHLORITE
  - TAS THICKENED ACTIVATED SLUDGE
  - WAS WASTE ACTIVATED SLUDGE
  - WWLS WET WEATHER LIFT STATION

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CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 18 OF 271	



2-48"Ø F.Ms. FROM ON-SITE LIFT STATIONS  
 1-24"Ø F.Ms. FROM ON-SITE WET WEATHER LIFT STATION

37.51	37.44	37.43	36.90	33.99	33.81	31.91	31.80	30.02
38.21	37.83	37.77	37.07	34.71	33.93	32.42	32.07	30.40
38.72	38.06	37.94	37.17	35.43	34.00	32.80	32.23	30.74
40.39	39.68	39.47	37.72	37.44	34.45	33.97	32.89	31.52

**LEGEND**

30.02	CASE 1 - HGL AT AN AVERAGE DAILY FLOW OF 36 MGD WITH ALL UNITS IN OPERATION ( INTERM PHASE I & II PERMIT)
30.40	CASE 2 - HGL AT A PEAK FLOW OF 90.0 MGD WITH ALL UNITS IN OPERATION
30.74	CASE 3 - HGL AT A FLOW OF 126.0 MGD WITH ALL UNITS IN OPERATION
31.52	CASE 4 - HGL AT A PEAK FLOW OF 190.0 MGD WITH ALL UNITS IN OPERATION

**HYDRAULIC PROFILE**  
 HORIZONTAL: NONE  
 VERTICAL : 1/4" = 1' - 0"

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DESIGNED BY: RK, SJ	DRAWN BY: DM

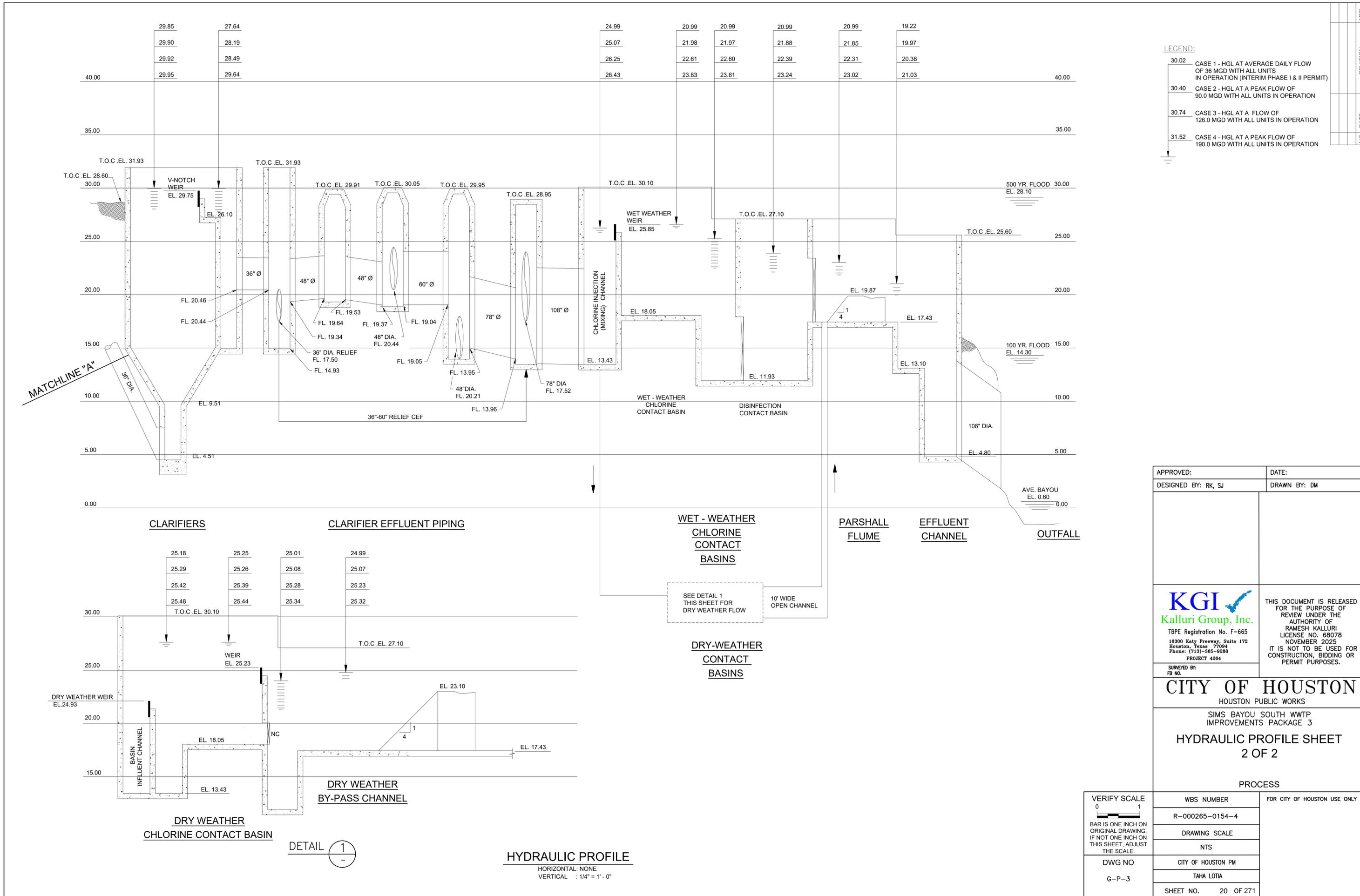
**KGI**  
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 Houston, Texas 77094  
 Phone: (713)-365-9288  
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 HOUSTON PUBLIC WORKS  
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**HYDRAULIC PROFILE SHEET 1 OF 2**

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DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
G-P-2	SHEET NO. 19 OF 271	

NO.	DATE	REVISION	APP.



**LEGEND:**

30.02	CASE 1 - HGL AT AVERAGE DAILY FLOW OF 36 MGD WITH ALL UNITS IN OPERATION (INTERIM PHASE I & II PERMIT)
30.40	CASE 2 - HGL AT A PEAK FLOW OF 90.0 MGD WITH ALL UNITS IN OPERATION
30.74	CASE 3 - HGL AT A FLOW OF 126.0 MGD WITH ALL UNITS IN OPERATION
31.52	CASE 4 - HGL AT A PEAK FLOW OF 190.0 MGD WITH ALL UNITS IN OPERATION

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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**HYDRAULIC PROFILE SHEET**  
2 OF 2

PROCESS

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G-P-3	TAHA LOTIA	
SHEET NO.	20 OF 271	

DETAIL 1

**HYDRAULIC PROFILE**  
HORIZONTAL: NONE  
VERTICAL : 1/4" = 1' - 0"

CIVIL/SITE SYMBOLS

GENERAL LEGEND

SYMBOL	FEATURE
	CHAINLINK FENCE, HOG WIRE FENCE, WOOD FENCE
	GUARD RAIL
	PROPERTY LINE (PL)
	EASEMENT LINE
	RIGHT OF WAY (R/W)
	IRON PIPE BOUNDARY MARKER
	IRON ROD BOUNDARY MARKER
	CONCRETE MONUMENT BOUNDARY MARKER
	STONE MONUMENT BOUNDARY MARKER
	BENCHMARK
	TEMPORARY BENCHMARK
	TURNING POINT
	TRIANGULATION POINT
	BORING
	SOUNDING
	COORDINATE

SYMBOL	FEATURE
	PAVED ROADWAY, SIZE AND TYPE
	PAVED ROADWAY W/ CURB, SIZE AND TYPE
	CONCRETE ROAD/PAVEMENT
	RAILROAD TRACKS
	RAILROAD TRACK (DOUBLE)
	TREELINE
	HEDGE
	STREAM
	DITCH
	DIRECTION OF FLOW FOR SWALE/STORMWATER
	CULVERT END W/ WINGWALLS
	DEPRESSION CONTOUR
	EXISTING INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
	EXISTING INDEX CONTOUR LINE AND ELEVATION DESIGNATION
	PROPOSED INTERMEDIATE CONTOUR LINE AND ELEVATION DESIGNATION
	PROPOSED INDEX CONTOUR LINE AND ELEVATION DESIGNATION
	EXISTING ELEVATION
	SPOT ELEVATION
	SIGNS
	EXISTING EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)
	PROPOSED EMBANKMENT (REVERSE SYMBOLS FOR CHANNEL)

SYMBOL	FEATURE
	6" FM-PVC/POR FORCE MAIN AND DIRECTION OF FLOW
	12" SS-PVC/PO SANITARY SEWER AND MANHOLE
	CLEANOUT
	12" STM-PVC/PO STORM DRAIN AND MANHOLE
	JUNCTION BOX
	DRAIN INLET
	GRATED INLET
	UNDERGROUND WATER
	WATER VALVE
	UNDERGROUND SPRINKLER SYSTEM
	YARD HYDRANT
	FIRE LINE
	FIRE LINE W/ FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
	SPRINKLER HEAD
	FIRE HYDRANT
	WATER METER
	WATER METER BOX
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRICAL
	LIGHT POLE OR POWER POLE
	POWER POLE W/ GUY
	ELECTRIC VAULT
	ELECTRIC MANHOLE
	UNDERGROUND TELEPHONE
	OVERHEAD TELEPHONE
	SIGNAL LINE
	CABLE TV
	OVERHEAD TV
	TELEPHONE RISER
	GAS REGULATOR
	GAS METER
	UNDERGROUND PROCESS LINE

NOTE:  
EXISTING FEATURES SHOWN, PROPOSED FEATURES ARE SIMILAR WITH HEAVY LINE WEIGHTS AND BOLD CALLOUTS.

SYMBOL	FEATURE
	NORTH ARROW
	EXISTING PIPE, STRUCTURE OR OTHER ITEM
	NEW/PROPOSED (ALSO BOLD CALLOUTS)
	FUTURE
	ELEVATION MARKER
	KEYNOTE SYMBOL
	COLUMN BUBBLE
	REVISION MARKER

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--	--

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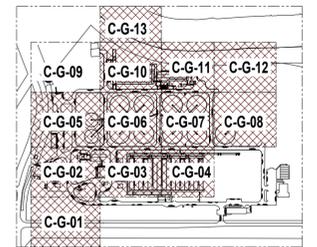
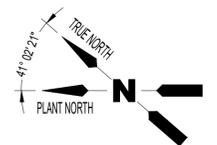
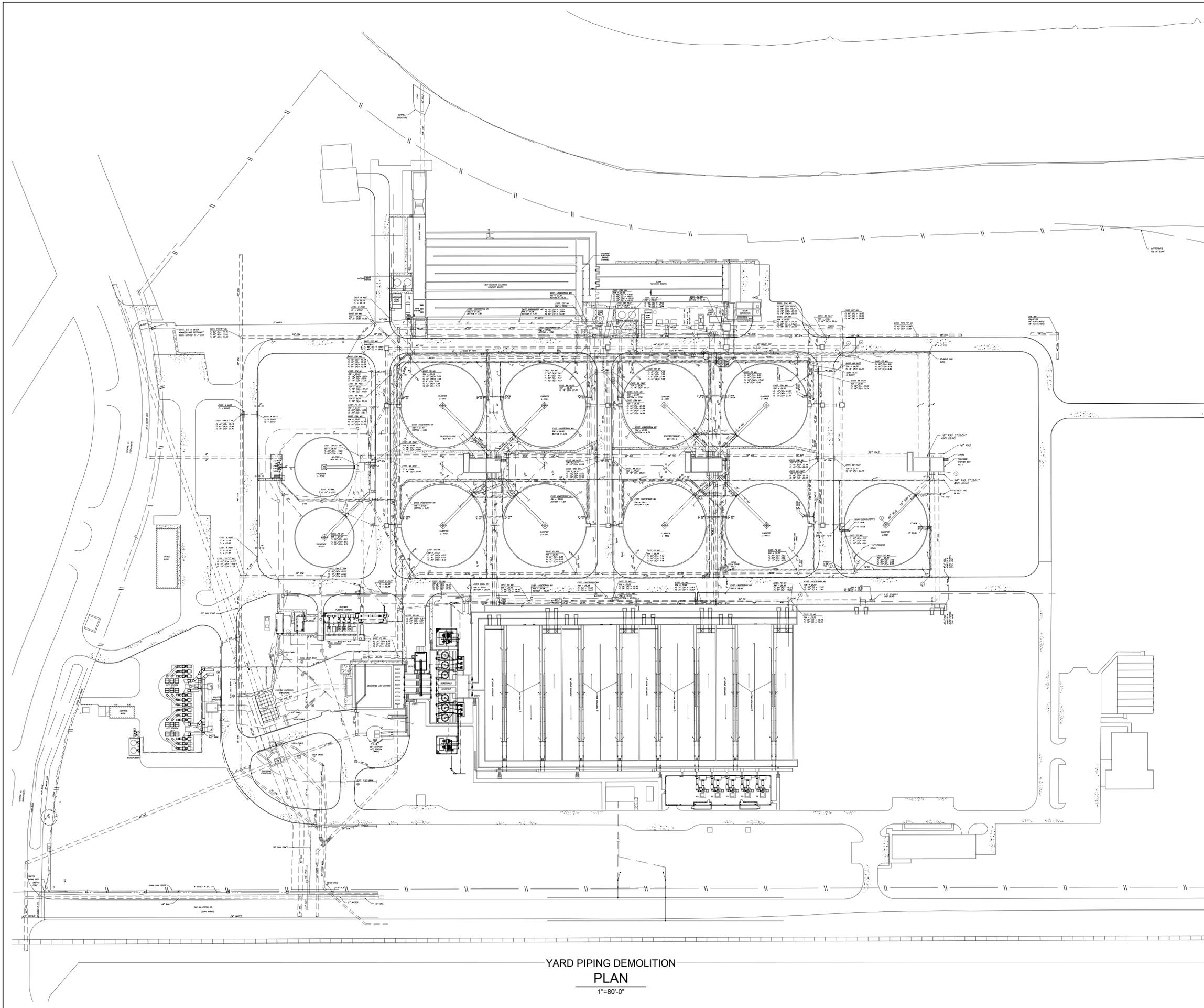
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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GENERAL LEGEND & SYMBOLS**

CIVIL

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	TAHA LOTIA	
	SHEET NO. 21 OF 271	

NO.	DATE	REVISION	APP.



NO.	DATE	REVISION	APP.

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING OVERALL DEMO PLAN**

CIVIL

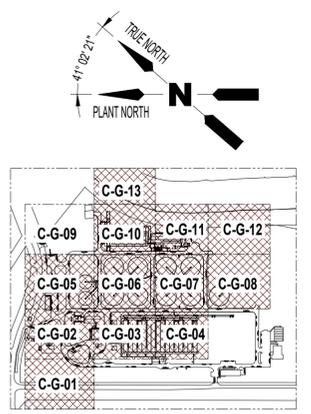
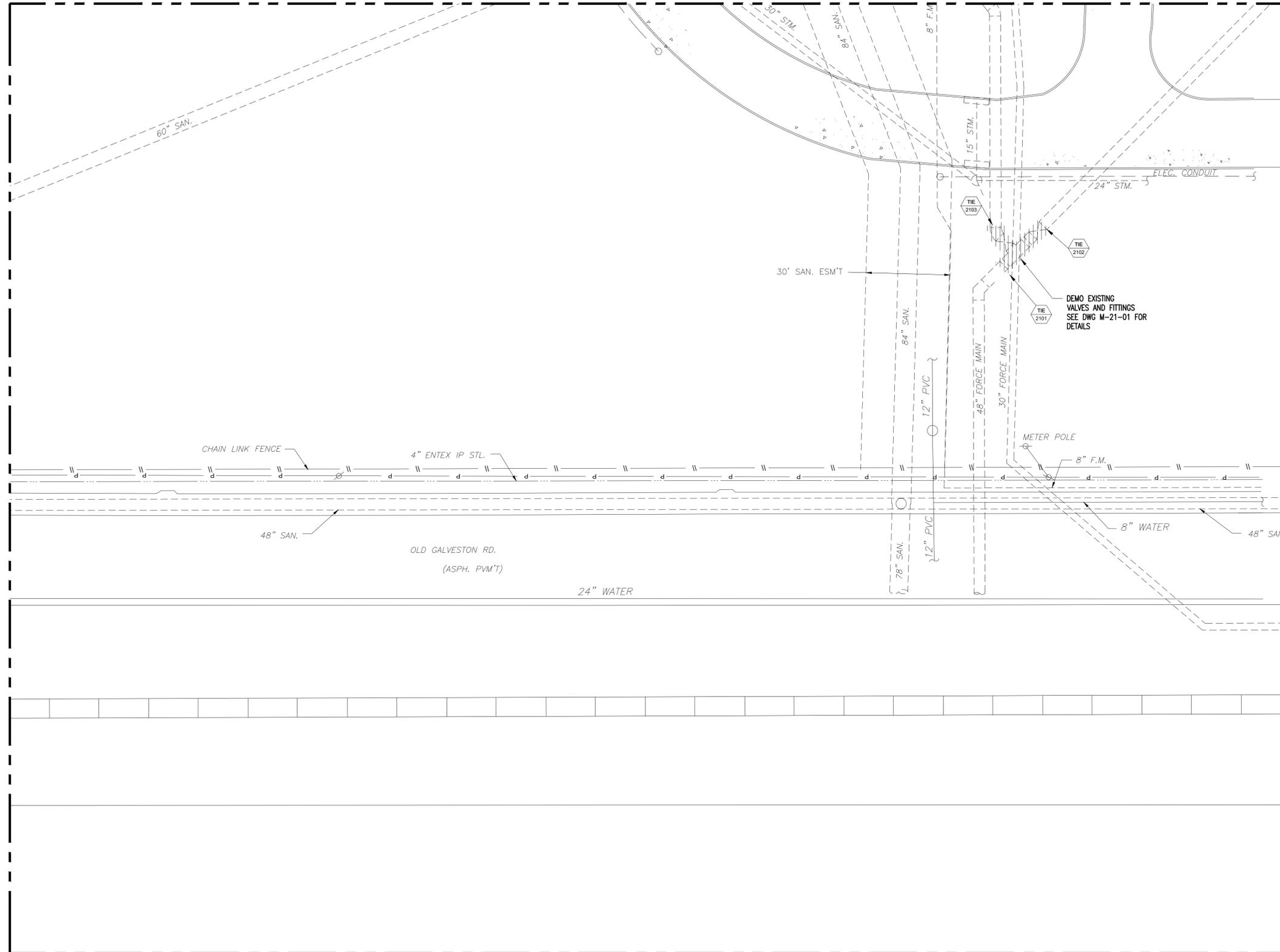
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DRAWING SCALE	1"=80'-0"
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	22 OF 271

FOR CITY OF HOUSTON USE ONLY

**YARD PIPING DEMOLITION PLAN**  
 1"=80'-0"

MATCHLINE - SEE DWG C-GD-02



NO.	DATE	REVISION	APP.

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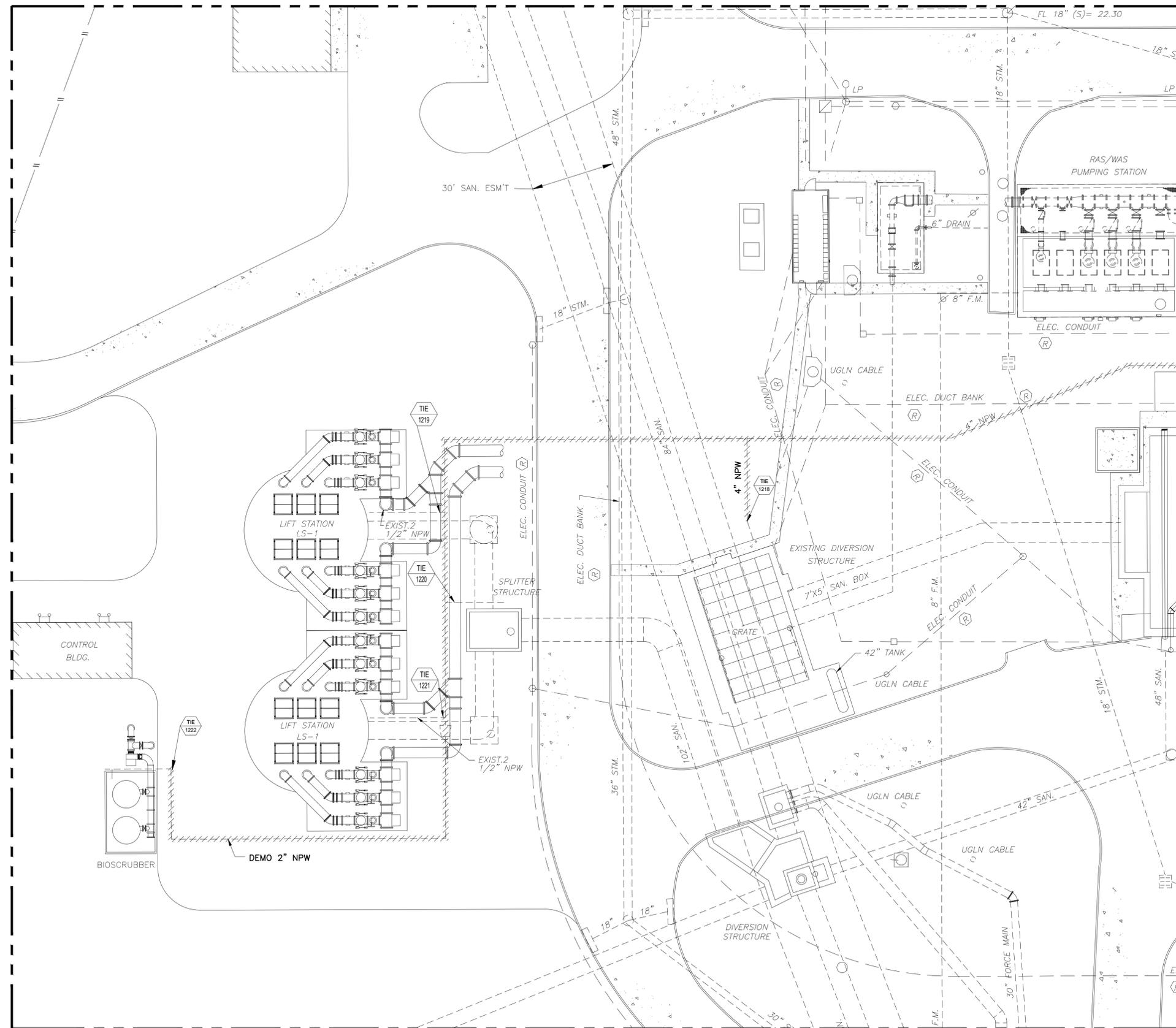
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN**  
 (1 OF 13)  
 CIVIL

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DRAWING SCALE		
1"=20'-0"		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
C-GD-1	SHEET NO. 23 OF 271	

**YARD PIPING ENLARGED DEMOLITION PLAN (1 OF 14)**  
 1"=20'-0"

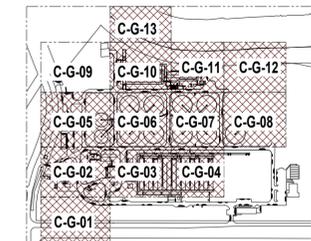
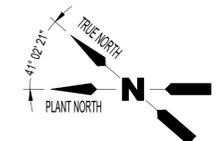
MATCHLINE - SEE DWG C-GD-05



MATCHLINE - SEE DWG C-GD-01

YARD PIPING ENLARGED DEMOLITION  
PLAN (2 OF 14)

1"=20'-0"



MATCHLINE - SEE DWG C-GD-03

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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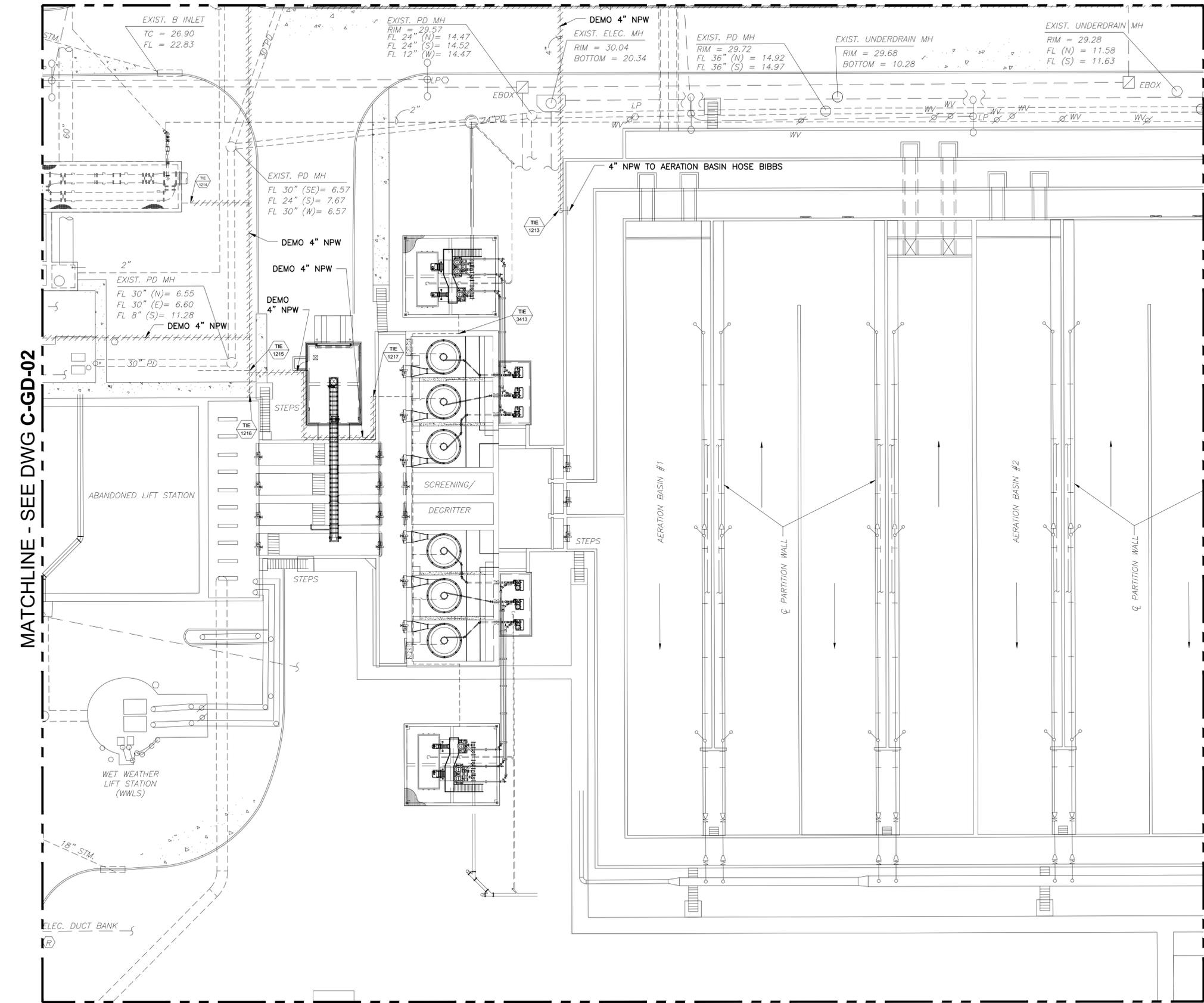
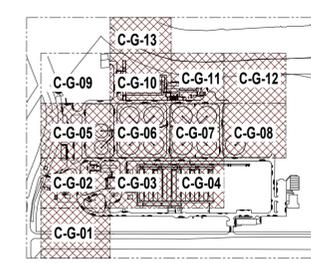
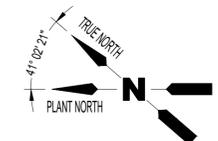
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**YARD PIPING  
ENLARGED DEMO PLAN  
(2 OF 13)**  
CIVIL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO	CITY OF HOUSTON PM	
C-GD-2	TAHA LOTIA	
SHEET NO.	24 OF 271	

NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-GD-04

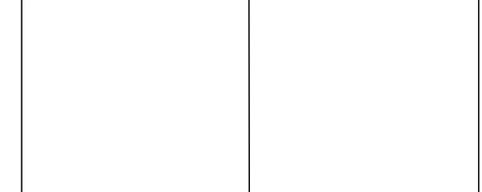


MATCHLINE - SEE DWG C-GD-02

MATCHLINE - SEE DWG C-GD-06

YARD PIPING ENLARGED DEMOLITION  
 PLAN (3 OF 14)  
 1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



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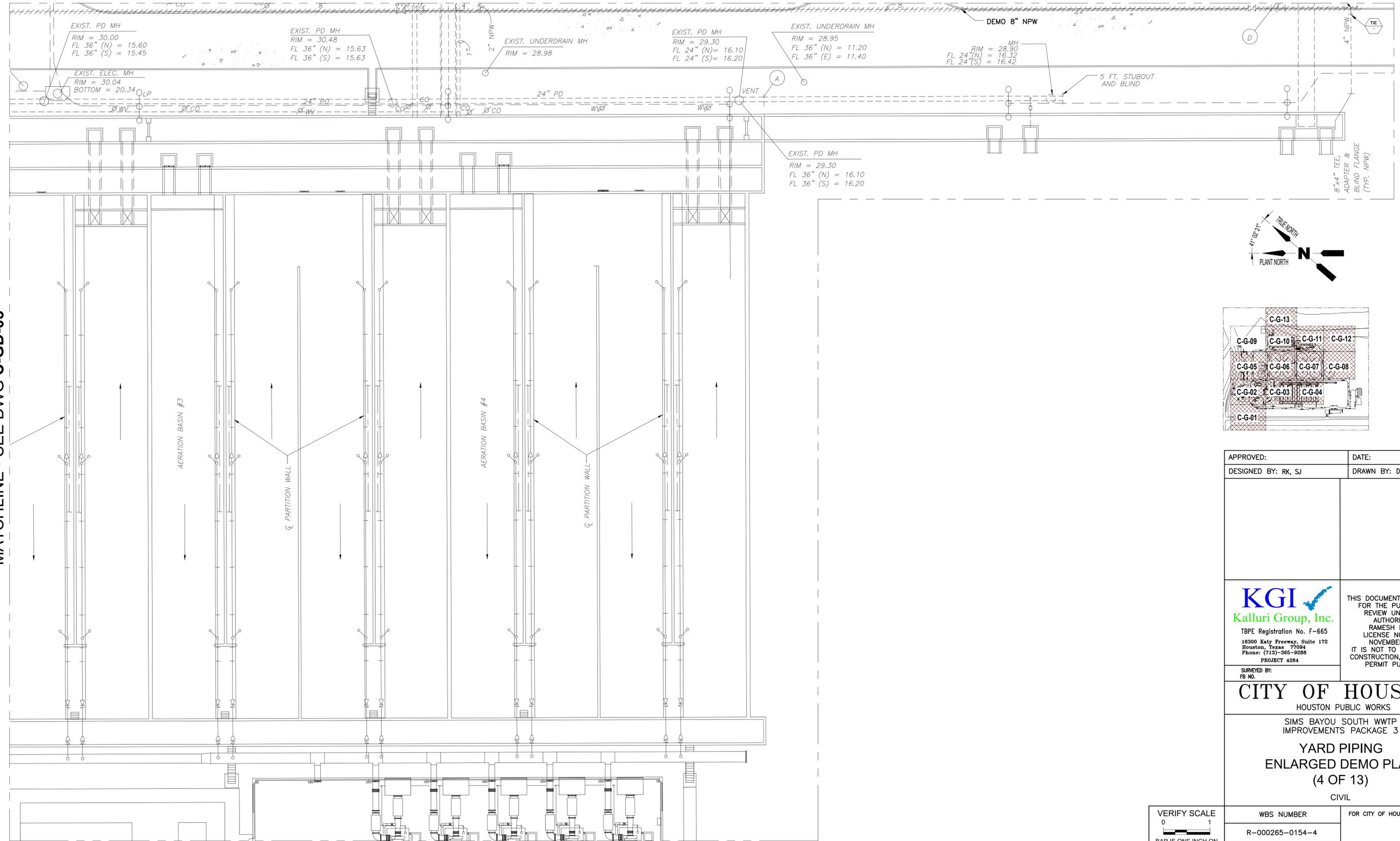
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**YARD PIPING  
 ENLARGED DEMO PLAN  
 (3 OF 13)**  
 CIVIL

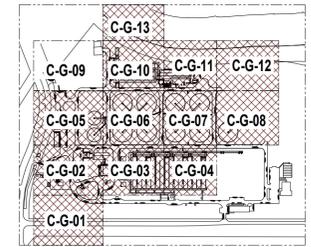
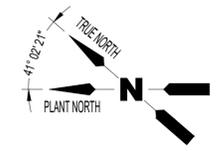
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE		
1"=20'-0"		
DWG NO	CITY OF HOUSTON PM	
C-GD-3	TAHA LOTIA	
SHEET NO.	25 OF 271	

NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-GD-07



MATCHLINE - SEE DWG C-GD-03



YARD PIPING ENLARGED DEMOLITION  
 PLAN (4 OF 14)  
 1"=20'-0"

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

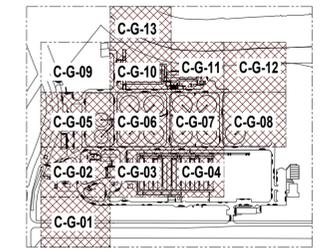
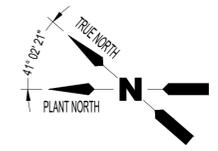
**KGI**  
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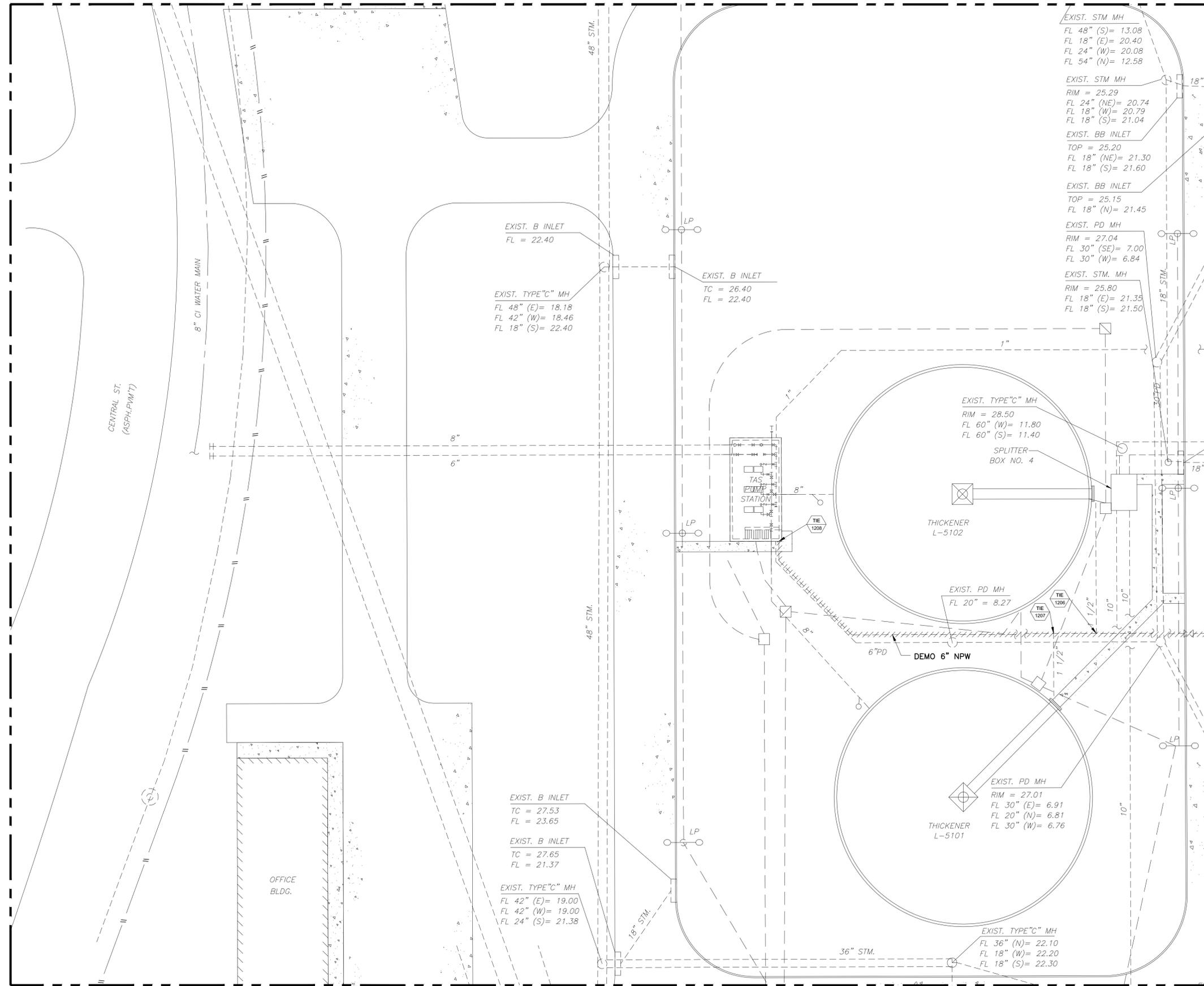
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN**  
 (4 OF 13)  
 CIVIL

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	R-000265-0154-4	
	DRAWING SCALE	
	1"=20'-0"	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	26 OF 271	

MATCHLINE - SEE DWG C-GD-09



NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-GD-06

MATCHLINE - SEE DWG C-GD-02

YARD PIPING ENLARGED DEMOLITION  
PLAN (5 OF 14)  
1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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Kalluri Group, Inc.

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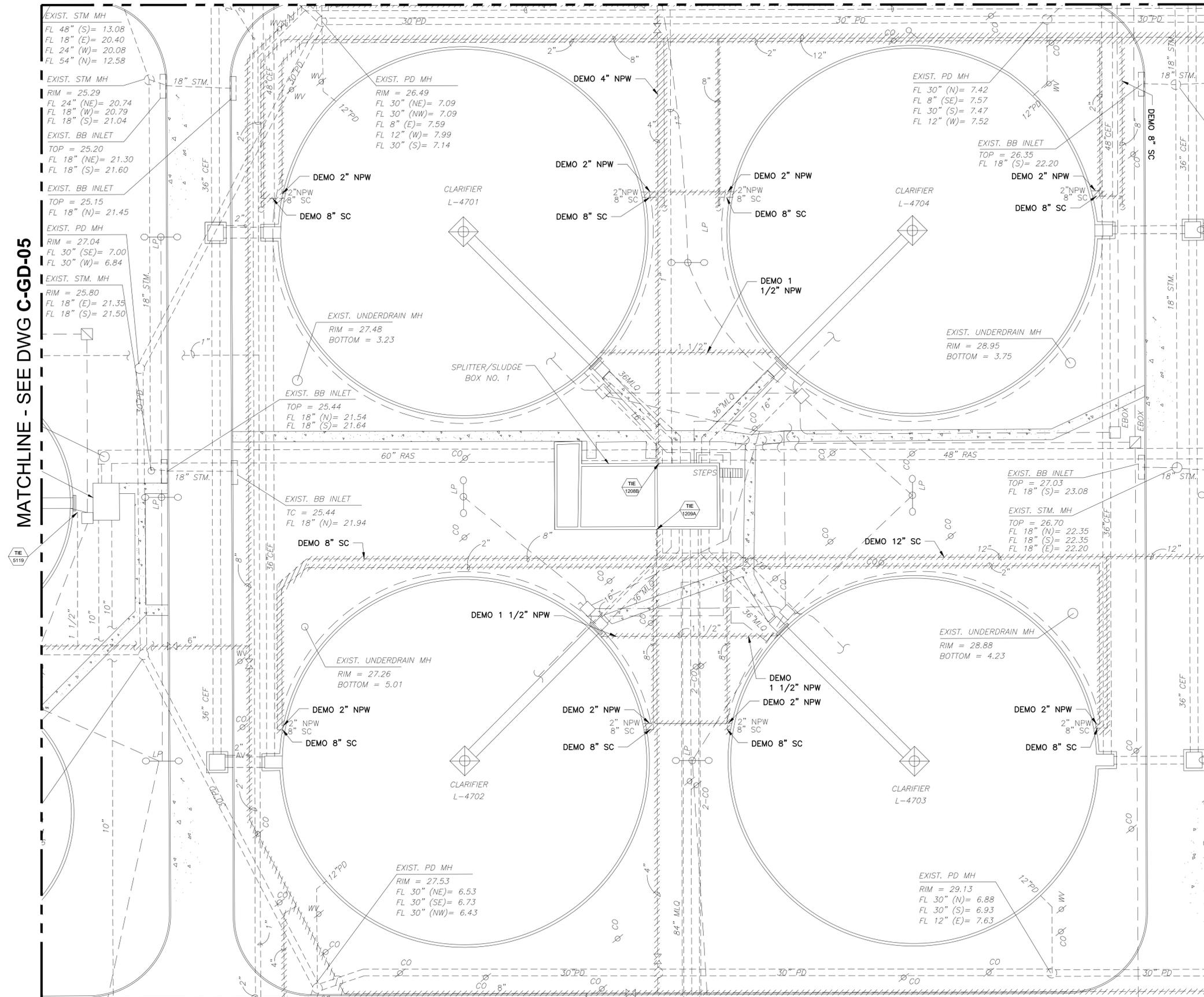
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SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**YARD PIPING  
ENLARGED DEMO PLAN  
(5 OF 13)**  
CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO		
C-GD-5	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 27 OF 271	

MATCHLINE - SEE DWG C-GD-10

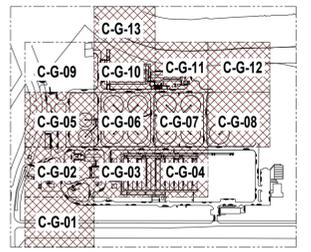
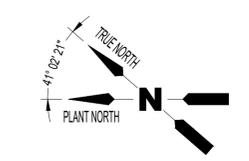


MATCHLINE - SEE DWG C-GD-05

MATCHLINE - SEE DWG C-GD-07

MATCHLINE - SEE DWG C-GD-03

YARD PIPING ENLARGED DEMOLITION  
 PLAN (6 OF 14)  
 1"=20'-0"



NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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 Kalluri Group, Inc.  
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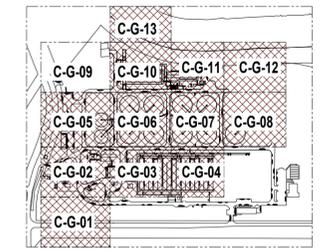
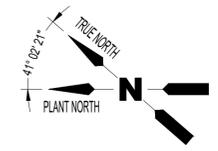
**CITY OF HOUSTON**  
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SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**YARD PIPING  
 ENLARGED DEMO PLAN  
 (6 OF 13)**  
 CIVIL

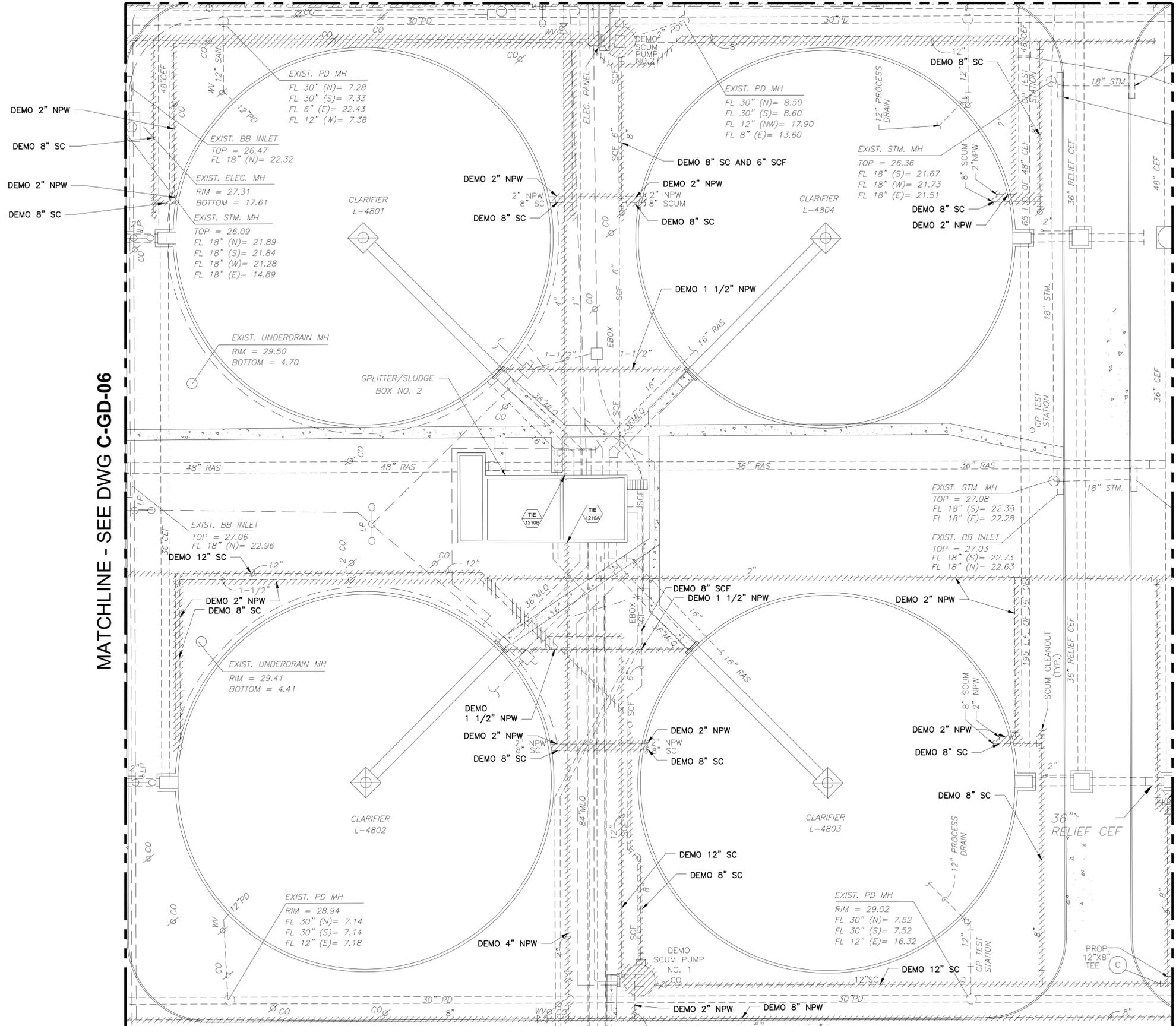
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.
DWG NO C-GD-6

WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE 1"=20'-0"	
CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO. 28 OF 271	

MATCHLINE - SEE DWG C-GD-11



NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-GD-06

MATCHLINE - SEE DWG C-GD-08

MATCHLINE - SEE DWG C-GD-04

YARD PIPING ENLARGED DEMOLITION  
PLAN (7 OF 14)

1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

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**Kalluri Group, Inc.**  
TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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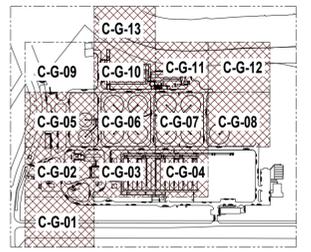
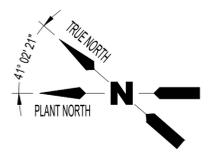
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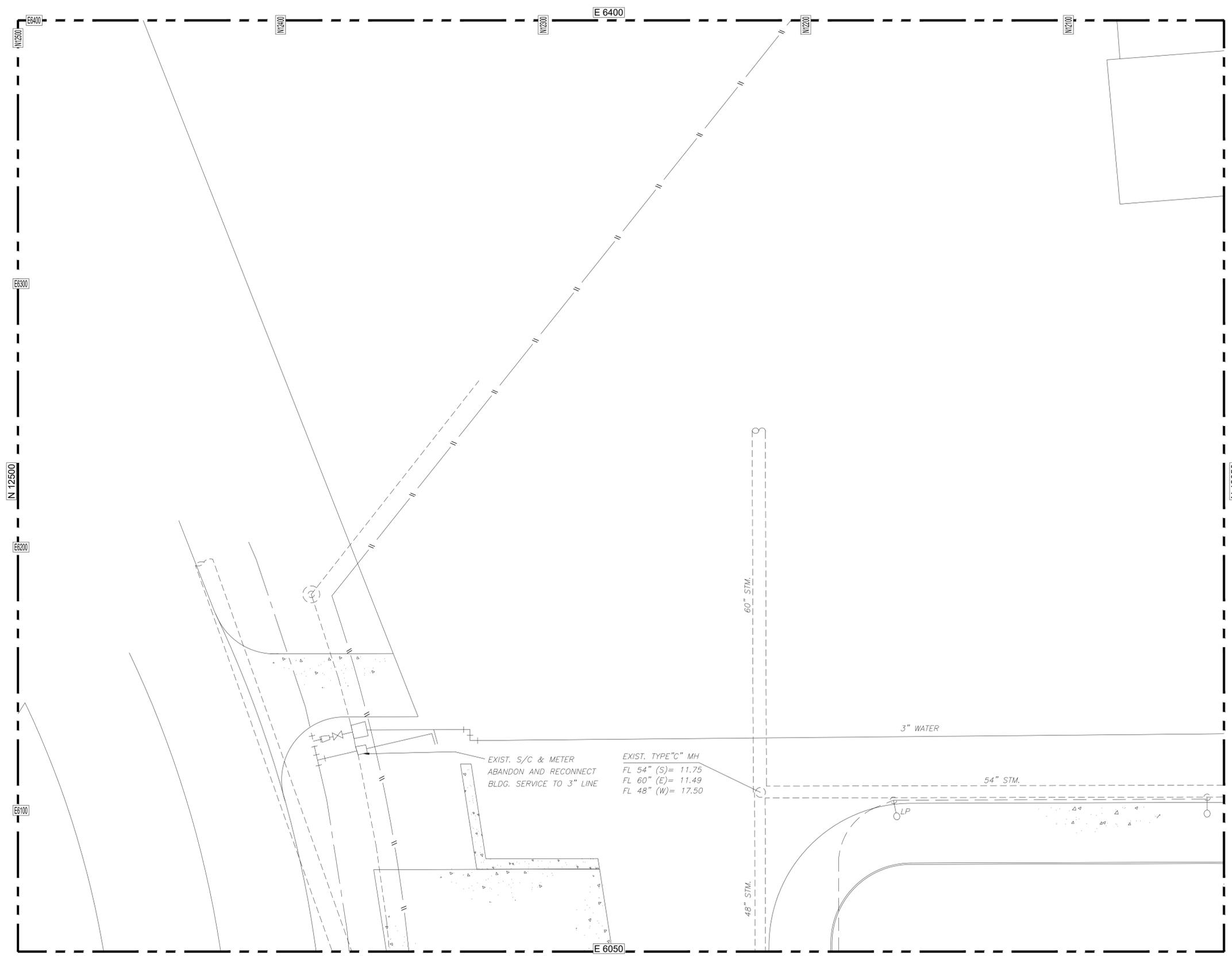
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN (7 OF 13)**  
CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO	CITY OF HOUSTON PM	
C-GD-7	TAHA LOTIA	
SHEET NO.	29 OF 271	





NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-GD-10

**MATCHLINE - SEE DWG C-GD-05**  
 YARD PIPING ENLARGED DEMOLITION  
 PLAN (9 OF 14)  
 1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
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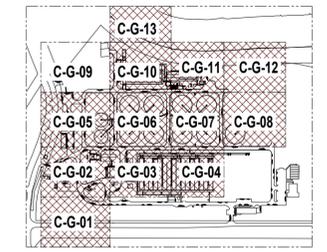
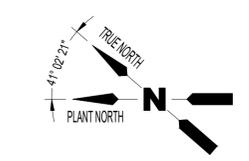
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN (9 OF 13)**  
 CIVIL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.
DWG NO C-GD-9

WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE 1"=20'-0"	
CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO. 31 OF 271	

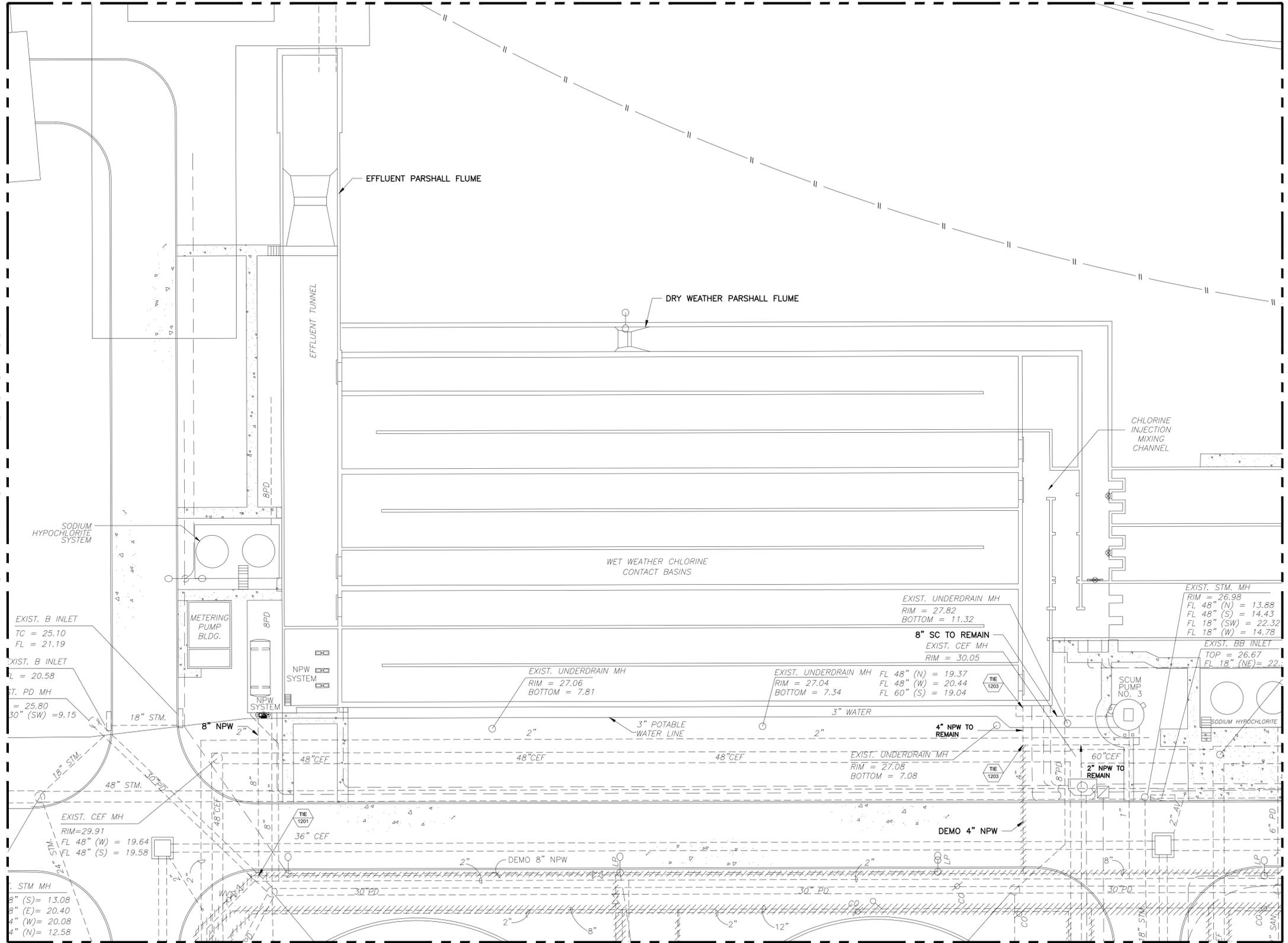


NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-GD-13

MATCHLINE - SEE DWG C-GD-09

MATCHLINE - SEE DWG C-GD-11



MATCHLINE - SEE DWG C-GD-06

YARD PIPING ENLARGED DEMOLITION  
PLAN (10 OF 14)

1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

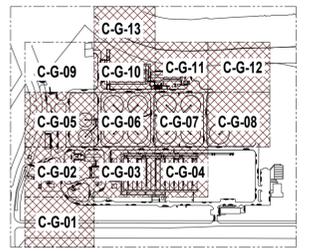
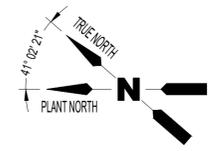
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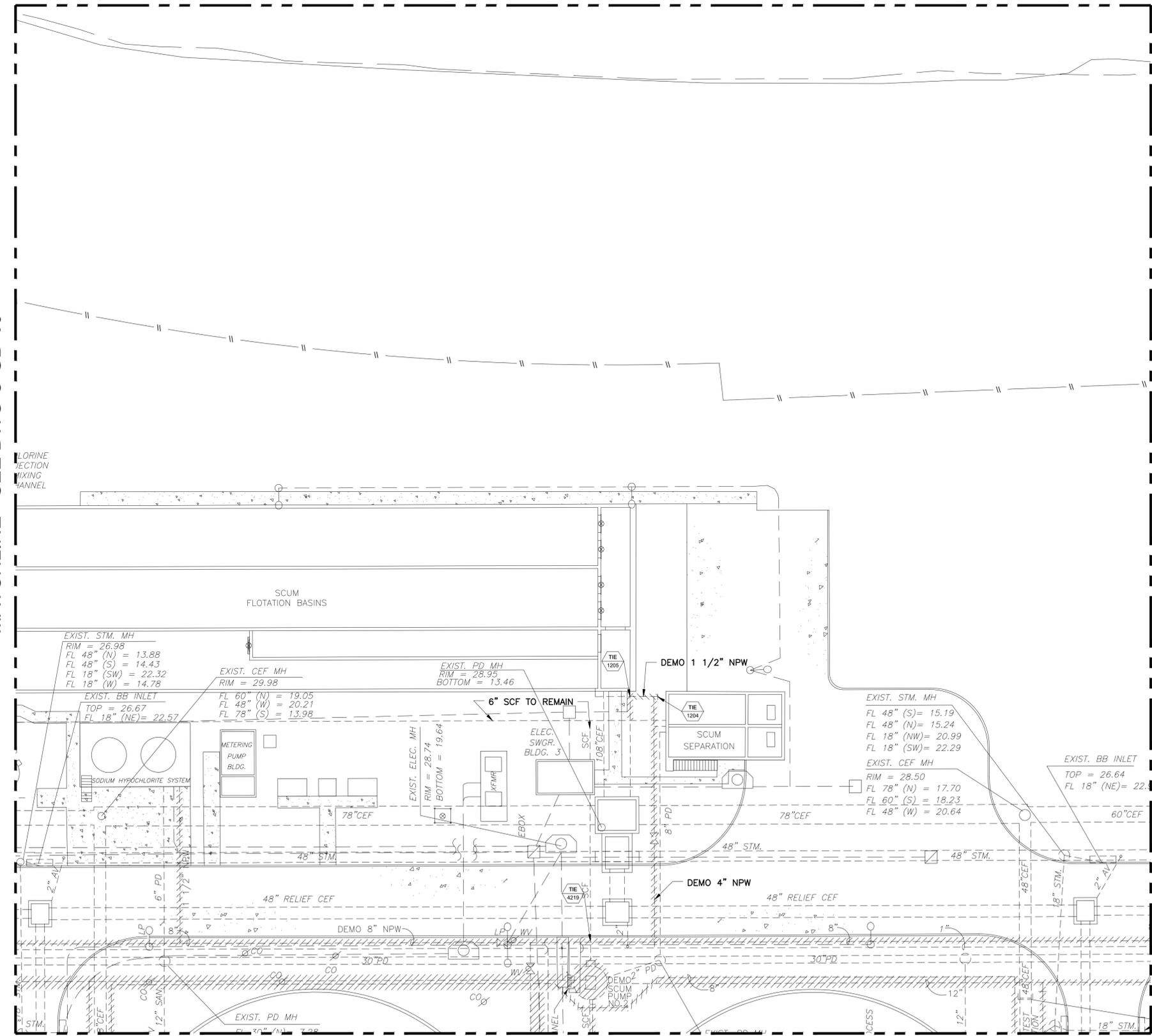
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN (10 OF 13)**  
CIVIL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	TAHA LOTIA
C-GD-10	SHEET NO.	
32	OF 271	



MATCHLINE - SEE DWG C-GD-10

MATCHLINE - SEE DWG C-GD-12



MATCHLINE - SEE DWG C-GD-07

YARD PIPING ENLARGED DEMOLITION  
 PLAN (11 OF 14)  
 1"=20'-0"

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

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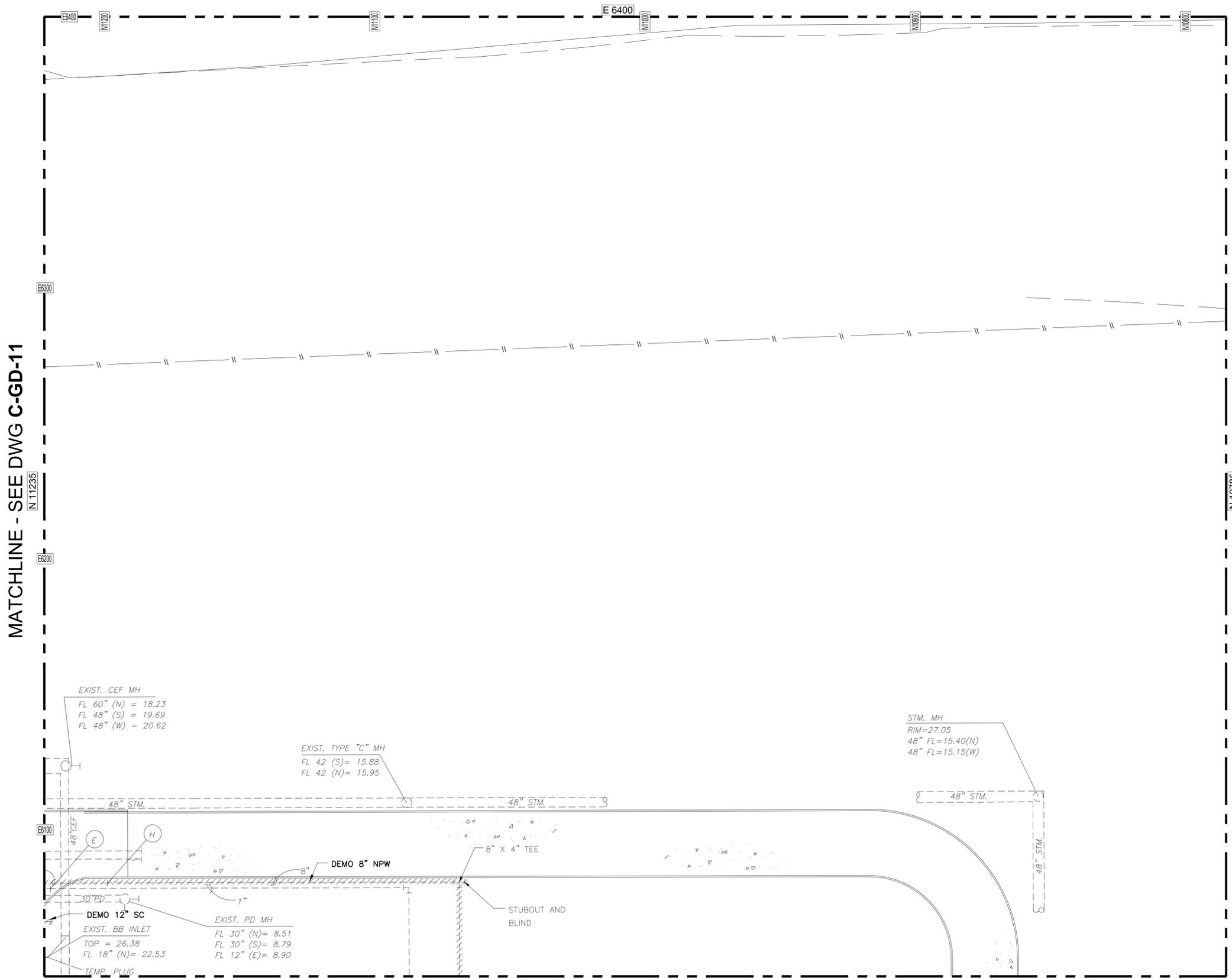
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED DEMO PLAN (11 OF 13)**  
 CIVIL

VERIFY SCALE  
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.  
 DWG NO C-GD-11

WBS NUMBER	R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	1"=20'-0"	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	33 OF 271	

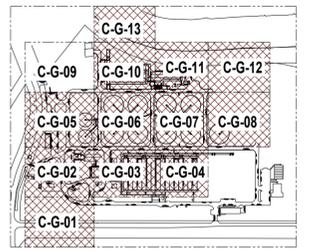
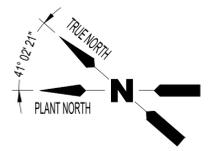
NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-GD-11



MATCHLINE - SEE DWG C-GD-08

YARD PIPING ENLARGED DEMOLITION  
PLAN (12 OF 14)  
1"=20'-0"



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<p>SURVEYED BY: FB NO.</p>	

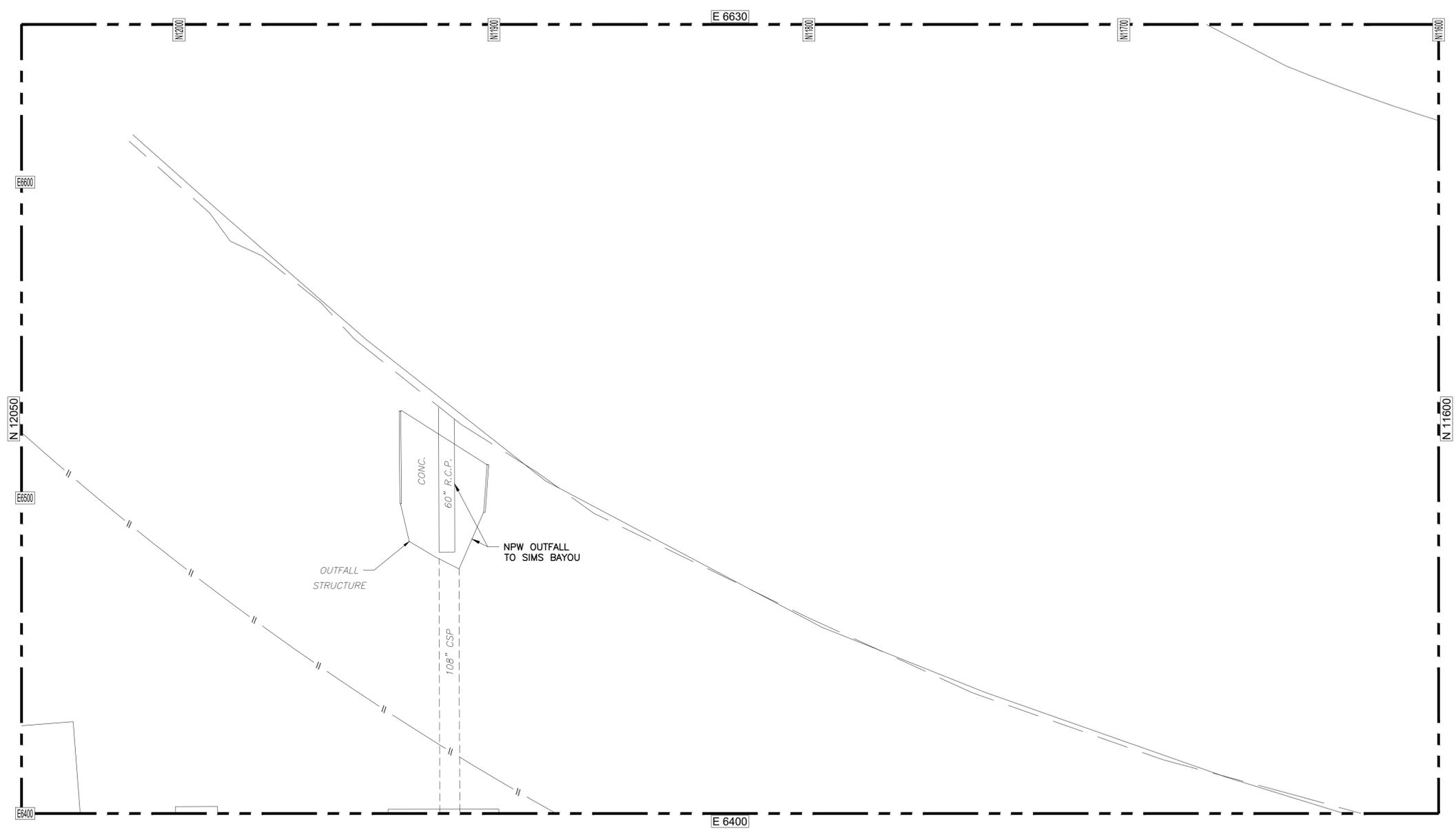
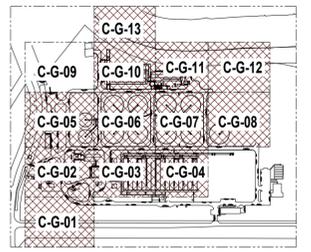
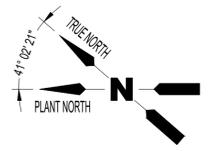
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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**YARD PIPING  
ENLARGED DEMO PLAN  
(12 OF 13)**

CIVIL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO		
C-GD-12	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 34 OF 271	



MATCHLINE - SEE DWG C-GD-10

YARD PIPING ENLARGED DEMOLITION  
 PLAN (13 OF 13)  
 1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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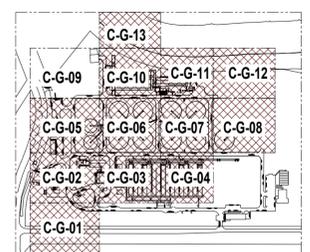
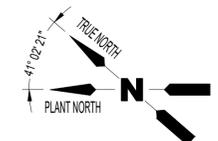
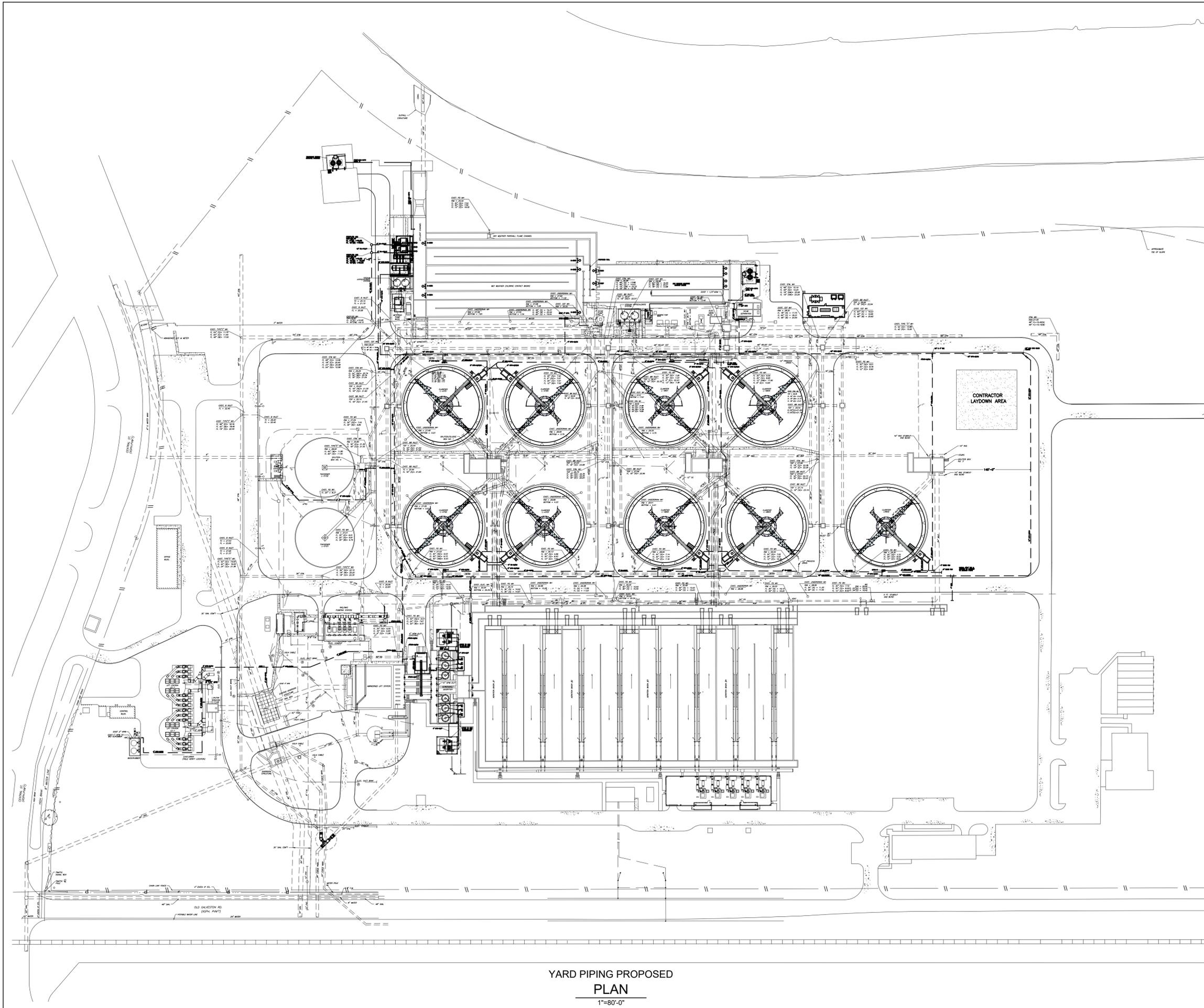
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**YARD PIPING ENLARGED DEMO PLAN (13 OF 13)**

CIVIL

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	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO	CITY OF HOUSTON PM	
C-GD-13	TAHA LOTIA	
	SHEET NO. 35 OF 271	

NO.	DATE	REVISION	APP.



**NOTES:**

- YARD PIPING DRAWINGS ARE BASED ON A COMPILATION OF EXISTING RECORD DRAWINGS. THE EXACT LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD-VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES, INCLUDING THOSE SHOWN AND NOT SHOWN ON THE DRAWINGS, IN THE VICINITY OF THE PROPOSED IMPROVEMENTS PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
**Kalluri Group, Inc.**  
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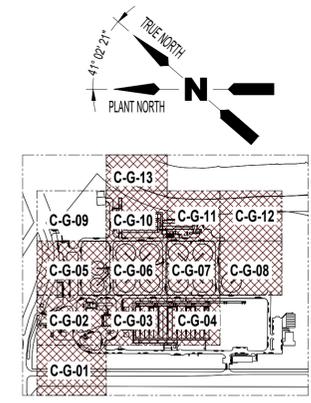
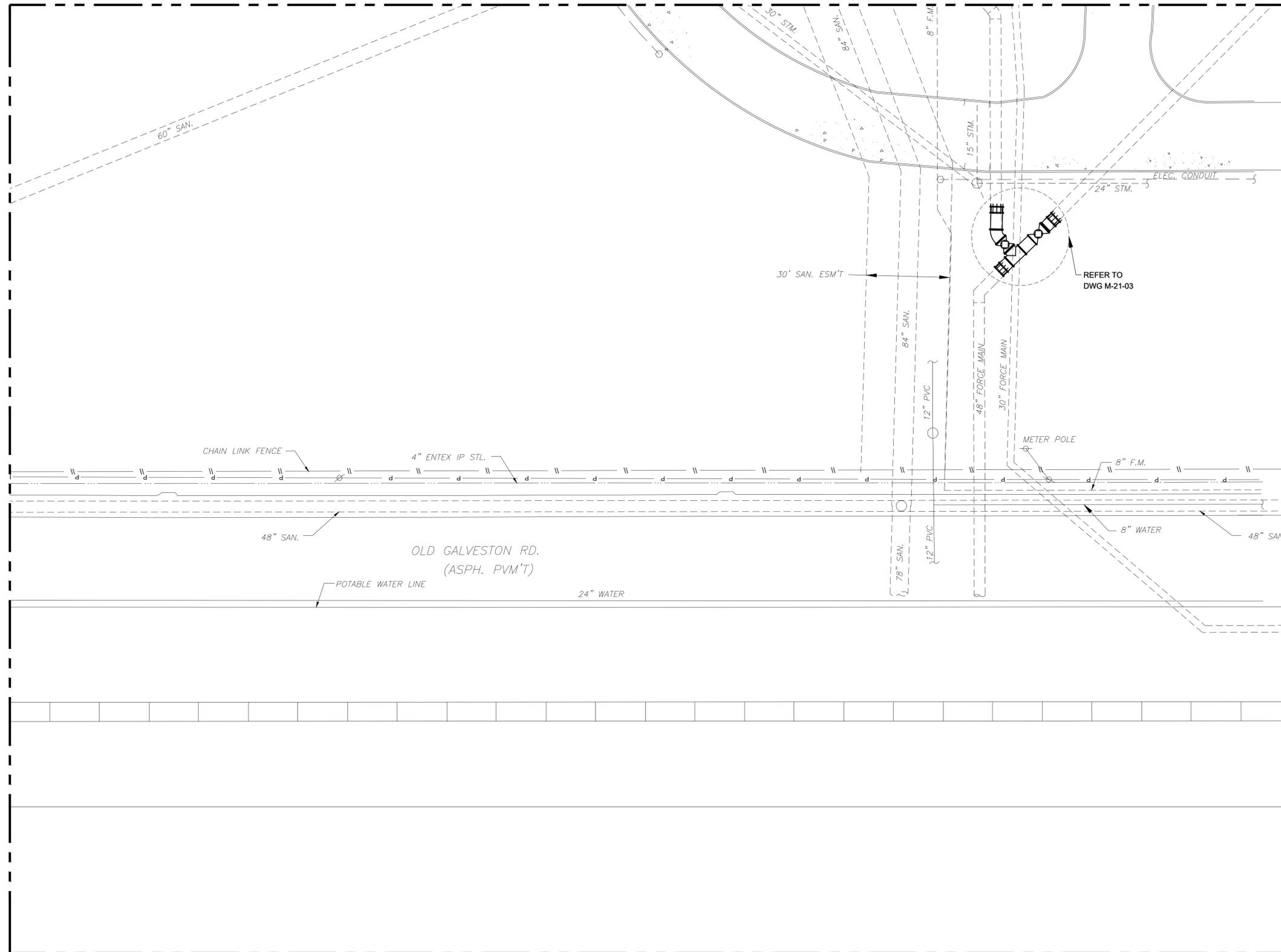
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING OVERALL PROPOSED PLAN**  
 CIVIL

VERIFY SCALE  
 0 1  
 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.  
 DWG NO  
 C-G-0

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
1"=80'-0"	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 36 OF 271	

**YARD PIPING PROPOSED PLAN**  
 1"=80'-0"

MATCHLINE - SEE DWG C-G-02



NO.	DATE	REVISION	APP.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING**  
**ENLARGED PROPOSED PLAN**  
 (1 OF 13)  
 CIVIL

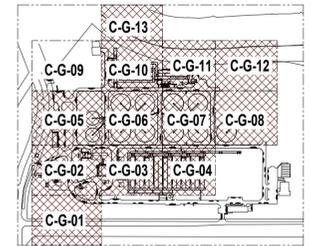
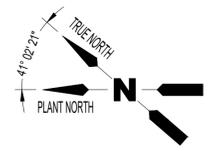
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER	R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	1"=20'-0"	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	37 OF 271	

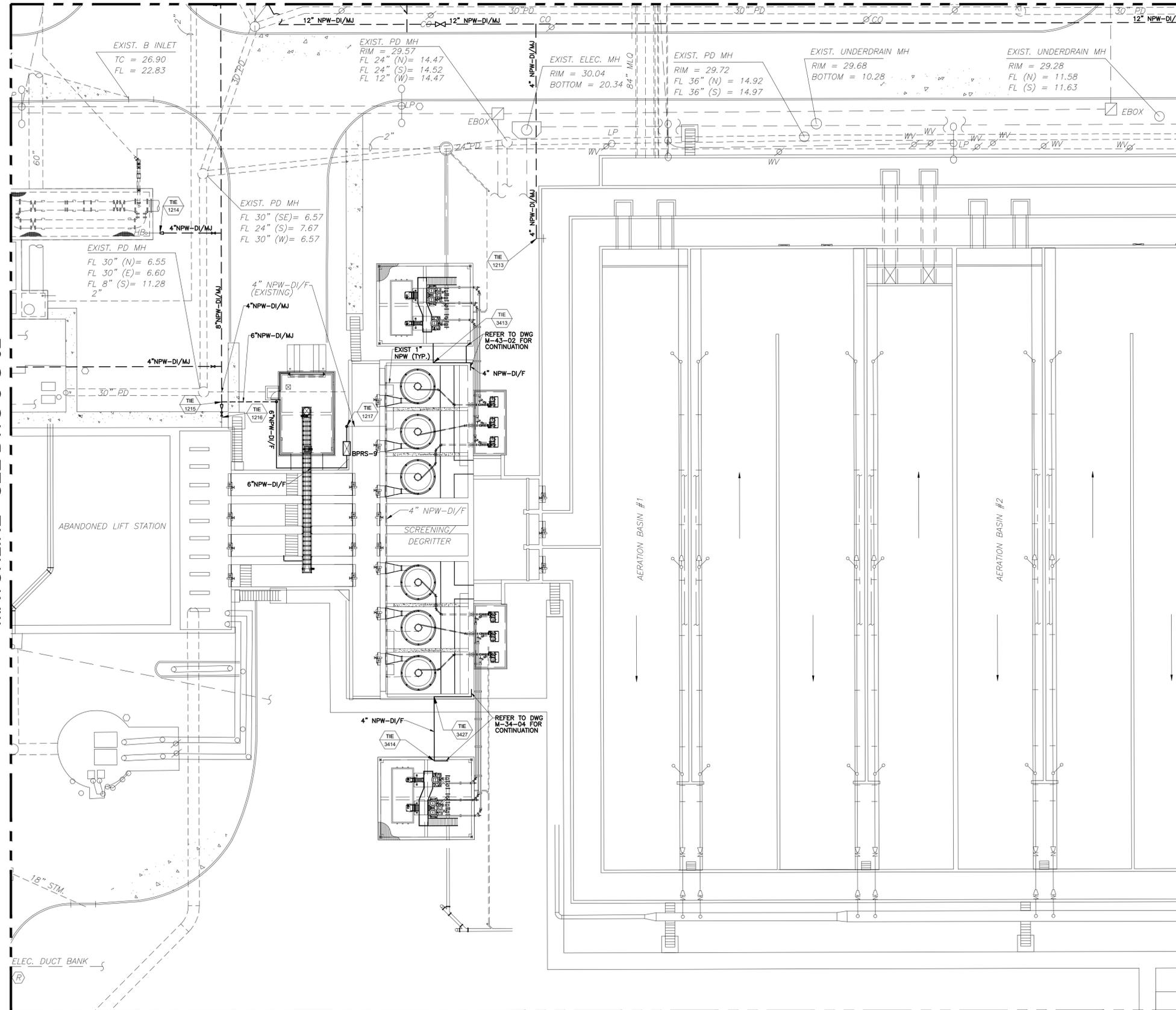
YARD PIPING ENLARGED PROPOSED PLAN (1 OF 14)  
 1"=20'-0"



MATCHLINE - SEE DWG C-G-06



MATCHLINE - SEE DWG C-G-02



MATCHLINE - SEE DWG C-G-04

YARD PIPING ENLARGED PROPOSED  
PLAN (3 OF 14)  
1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

<p><b>KGI</b> Kalluri Group, Inc.</p> <p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

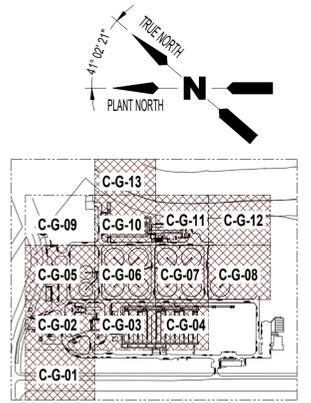
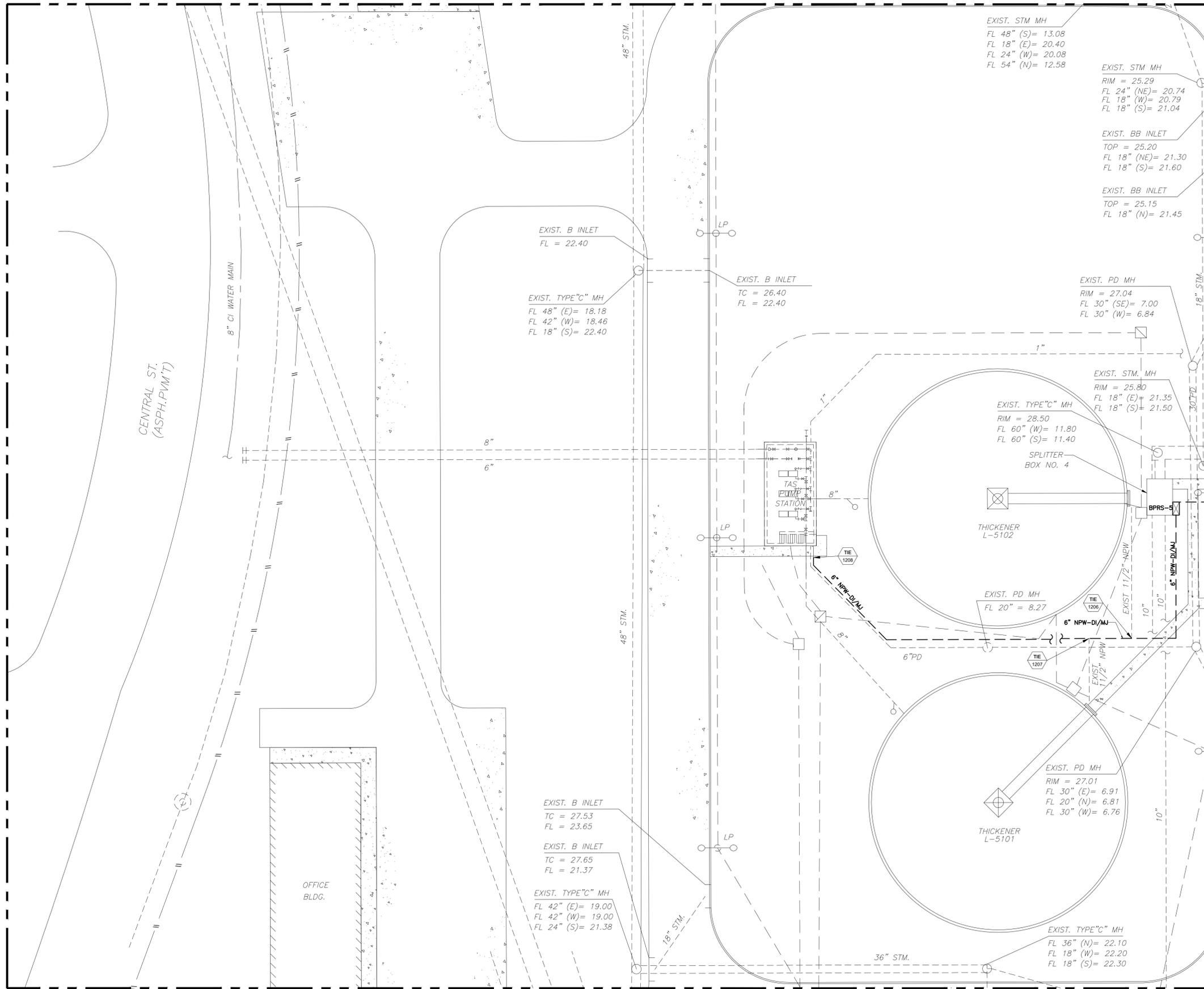
**YARD PIPING**  
**ENLARGED PROPOSED PLAN**  
(3 OF 13)  
CIVIL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO		
C-G-3	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 39 OF 271	

NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-G-09



MATCHLINE - SEE DWG C-G-06

MATCHLINE - SEE DWG C-G-02  
YARD PIPING ENLARGED PROPOSED  
PLAN (5 OF 14)  
1"=20'-0"

APPROVED:	DATE:
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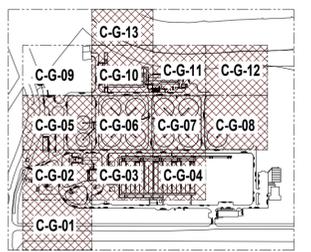
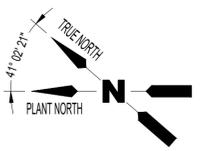
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (5 OF 13)**  
CIVIL

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
C-G-5	TAHA LOTIA	
SHEET NO.	41 OF 271	

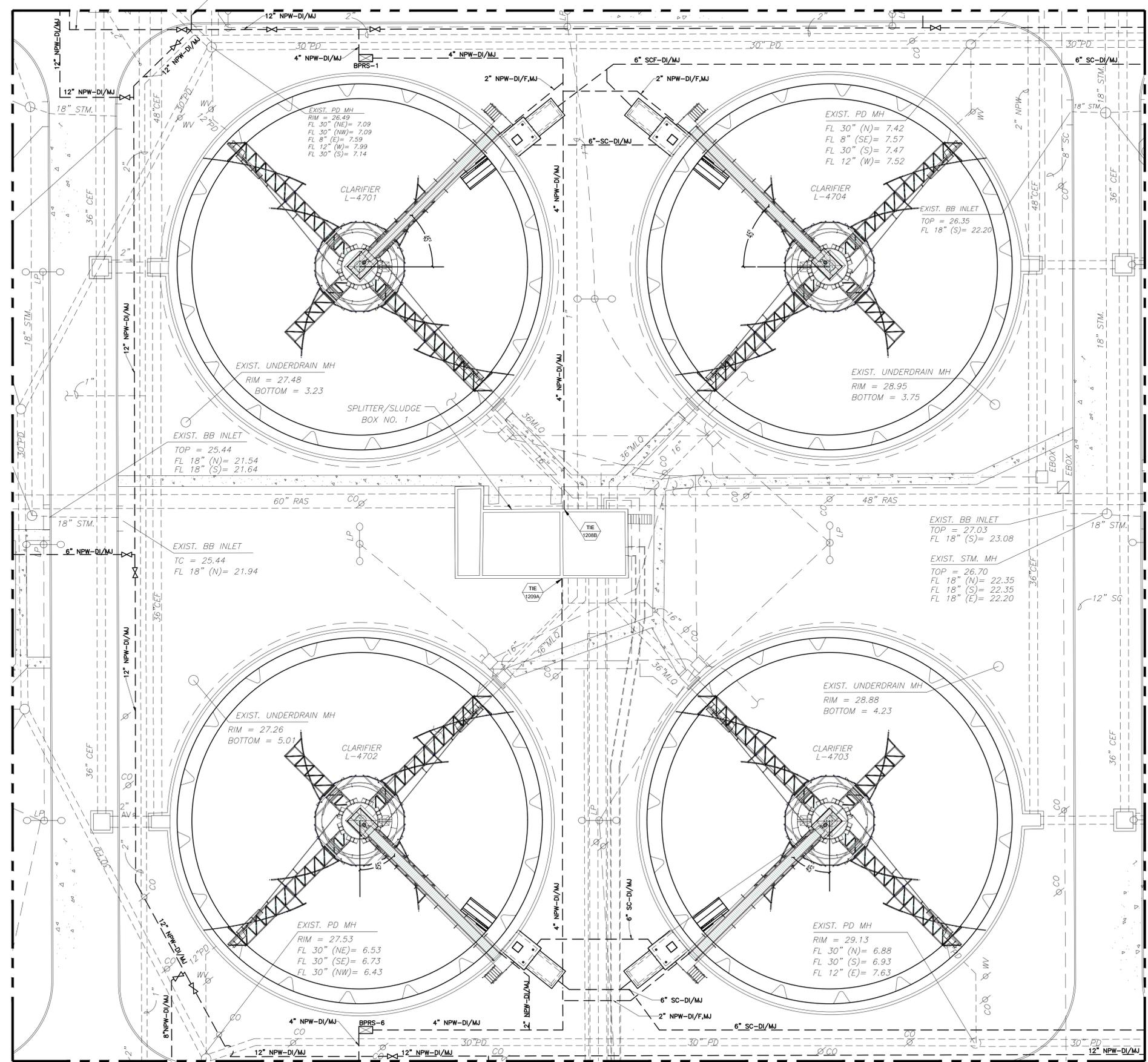
NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-G-10



MATCHLINE - SEE DWG C-G-05

MATCHLINE - SEE DWG C-G-07



MATCHLINE - SEE DWG C-G-03

YARD PIPING ENLARGED PROPOSED  
PLAN (6 OF 14)  
1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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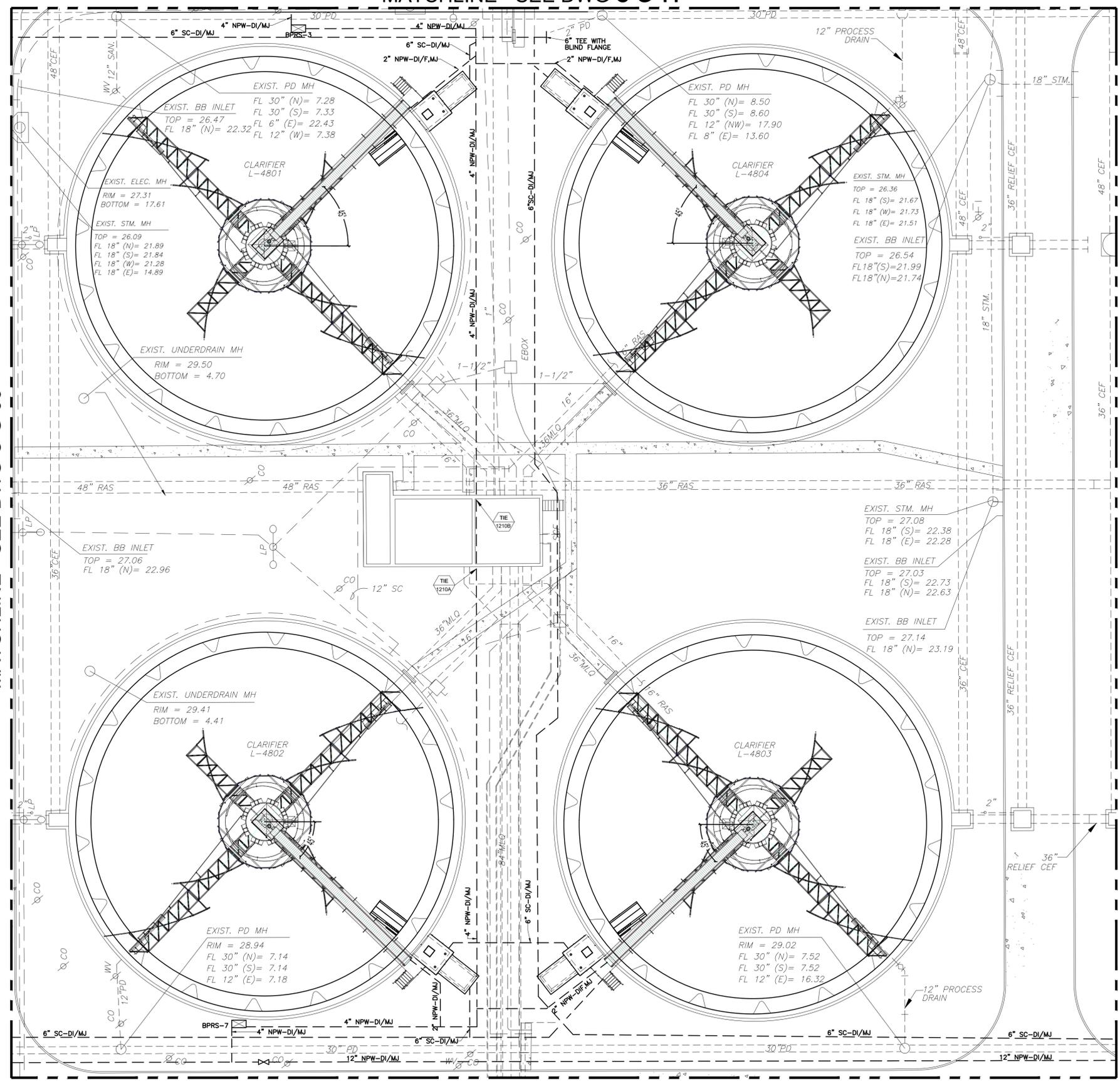
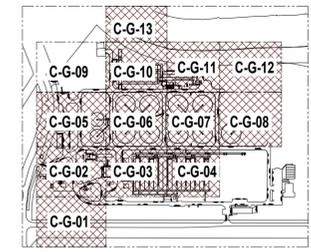
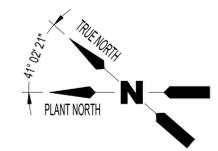
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (6 OF 13)**  
CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
C-G-6	1"=20'-0"	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 42 OF 271	

MATCHLINE - SEE DWG C-G-11



MATCHLINE - SEE DWG C-G-06

MATCHLINE - SEE DWG C-G-08

MATCHLINE - SEE DWG C-G-04

YARD PIPING ENLARGED PROPOSED PLAN (7 OF 14)

1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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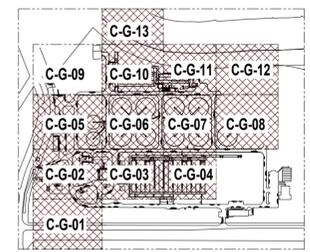
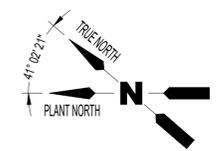
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (7 OF 13)**  
CIVIL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	CITY OF HOUSTON PM
	1"=20'-0"	
C-G-7	CITY OF HOUSTON PM	TAHA LOTIA
	SHEET NO.	

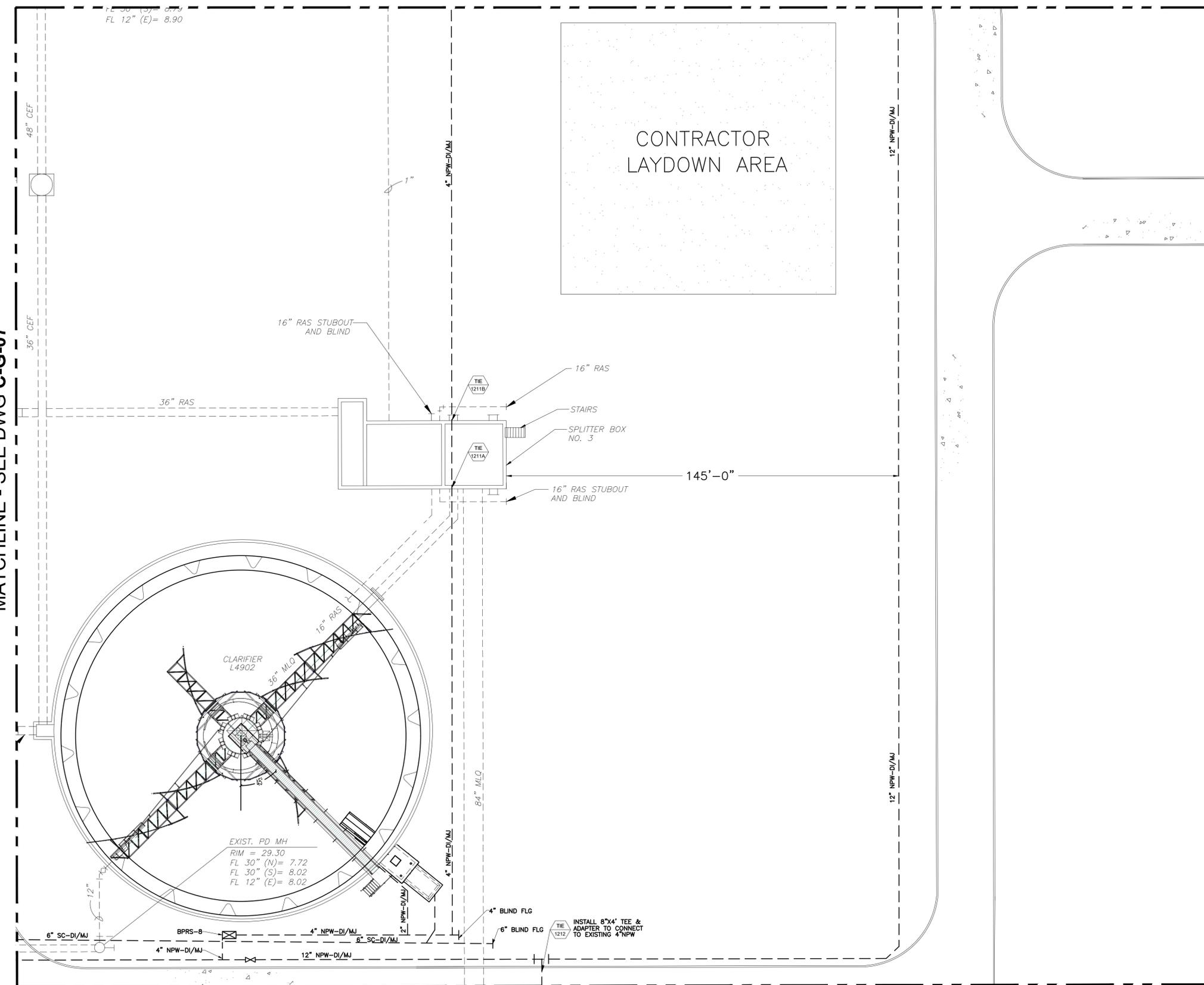
NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-G-12



NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-G-07



MATCHLINE - SEE DWG C-G-01

YARD PIPING ENLARGED PROPOSED  
PLAN (8 OF 14)  
1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

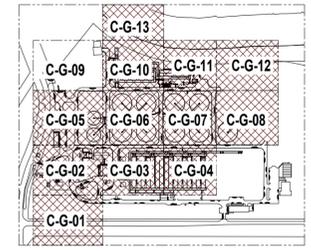
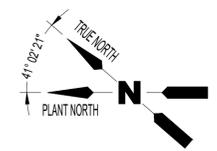
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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PROJECT 4264

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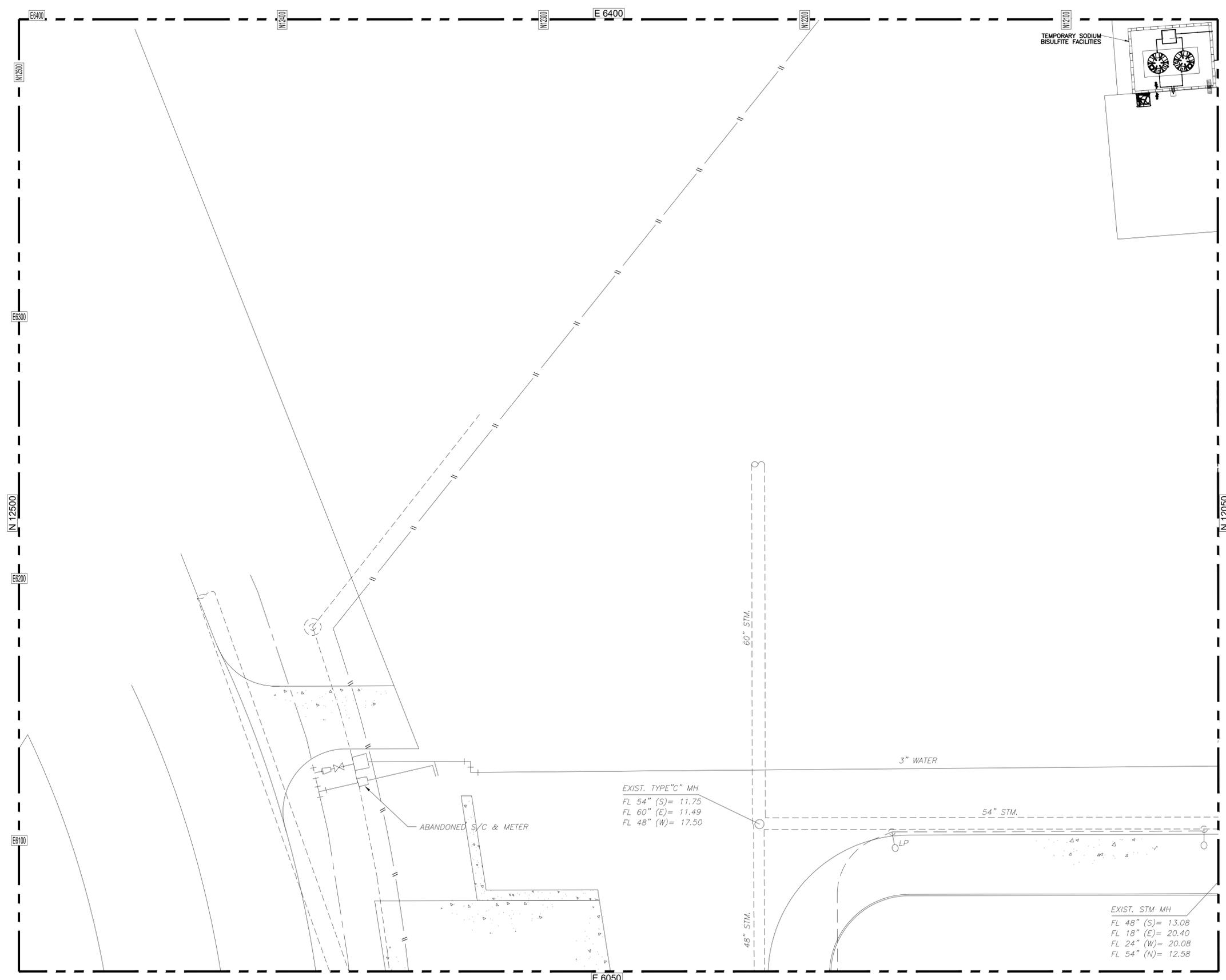
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (8 OF 13)**  
CIVIL

VERIFY SCALE	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	R-000265-0154-4	
DWG NO	DRAWING SCALE	
C-G-8	1"=20'-0"	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 44 OF 271	



NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-G-10

MATCHLINE - SEE DWG C-G-05

YARD PIPING ENLARGED PROPOSED  
PLAN (9 OF 14)

1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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PROJECT 4264

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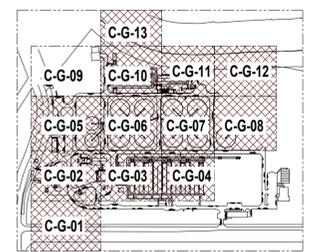
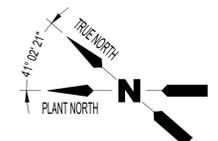
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (9 OF 13)**  
CIVIL

VERIFY SCALE  
0 1  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
1"=20'-0"	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO.	45 OF 271

DWG NO	C-G-9
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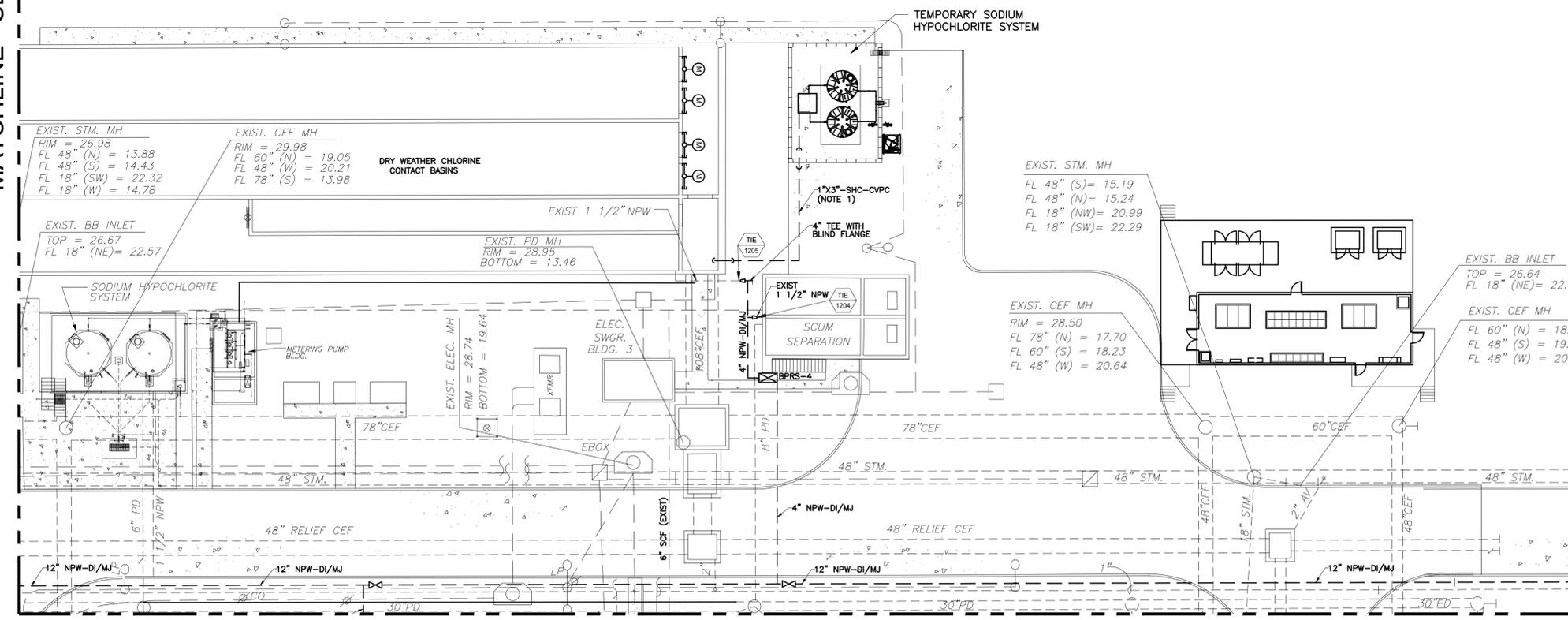




NO.	DATE	REVISION	APP.

MATCHLINE - SEE DWG C-G-10

MATCHLINE - SEE DWG C-G-12



MATCHLINE - SEE DWG C-G-07

**YARD PIPING ENLARGED PROPOSED PLAN (11 OF 14)**  
1"=20'-0"

**NOTES:**

- ALL UNDERGROUND PIPING SHALL BE DOUBLE-WALL PIPE WITH MANUAL LEAK DETECTION. CONTRACTOR SHALL INSTALL 1" X 3" DOUBLE-WALL PVC PIPE PER MANUFACTURER'S INSTRUCTIONS. ACCEPTABLE MANUFACTURERS: GF PIPING SYSTEMS, ASAHI AMERICA SPEARS, OR EQUAL. SUBMIT A SHOP DRAWING CONTAINING, AT A MINIMUM, THE FOLLOWING INFORMATION:
  - THE EXACT LOCATION OF THE PROPOSED PIPING SHALL BE DETERMINED BY THE CONTRACTOR BASED ON VERIFIED EXISTING UTILITY LOCATIONS AND OVERALL CONSTRUCTABILITY.
  - MANUFACTURER-RECOMMENDED INSTALLATION METHODS INCLUDING TESTING PROCEDURES.
- ALTERNATIVELY, TEMPORARY CHEMICAL PIPING CAN BE INSTALLED ALONG THE EXISTING CCB WALL USING UNI-STRUT PIPE SUPPORTS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

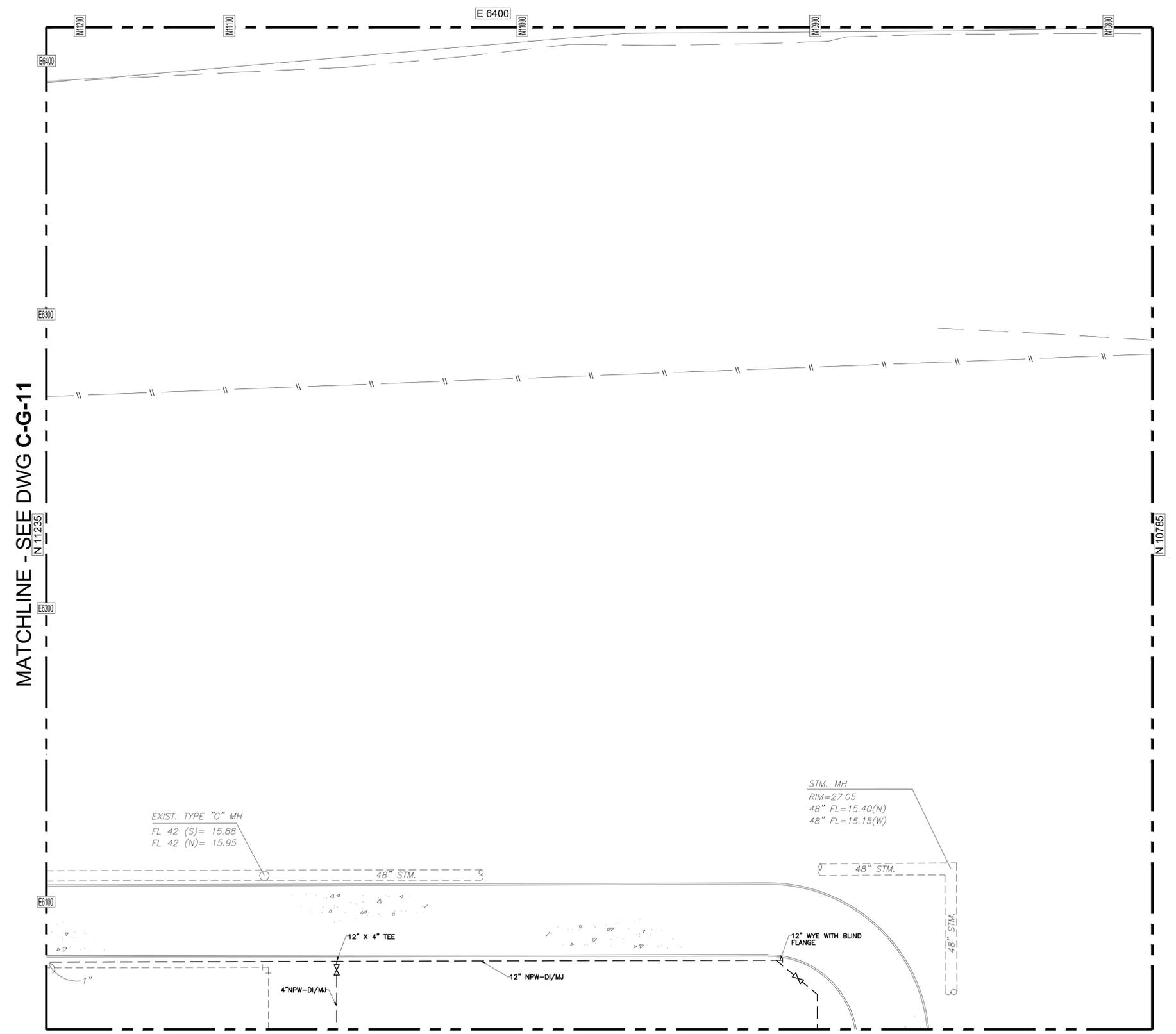
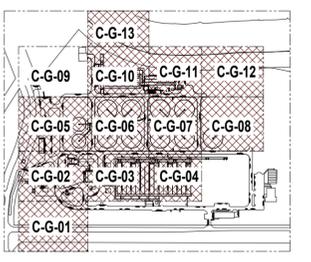
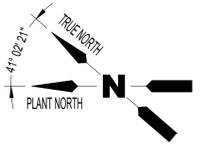
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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PROJECT 4264

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**YARD PIPING ENLARGED PROPOSED PLAN (11 OF 13)**  
CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
C-G-11	TAHA LOTIA	
SHEET NO.	47 OF 271	



MATCHLINE - SEE DWG C-G-11

EXIST. TYPE "C" MH  
 FL 42 (S) = 15.88  
 FL 42 (N) = 15.95

STM. MH  
 RIM = 27.05  
 48" FL = 15.40(N)  
 48" FL = 15.15(W)

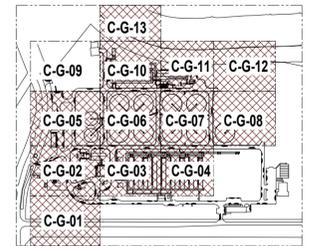
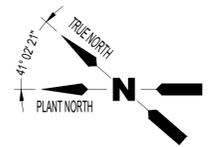
MATCHLINE - SEE DWG C-G-08  
 YARD PIPING ENLARGED PROPOSED  
 PLAN (12 OF 14)  
 1" = 20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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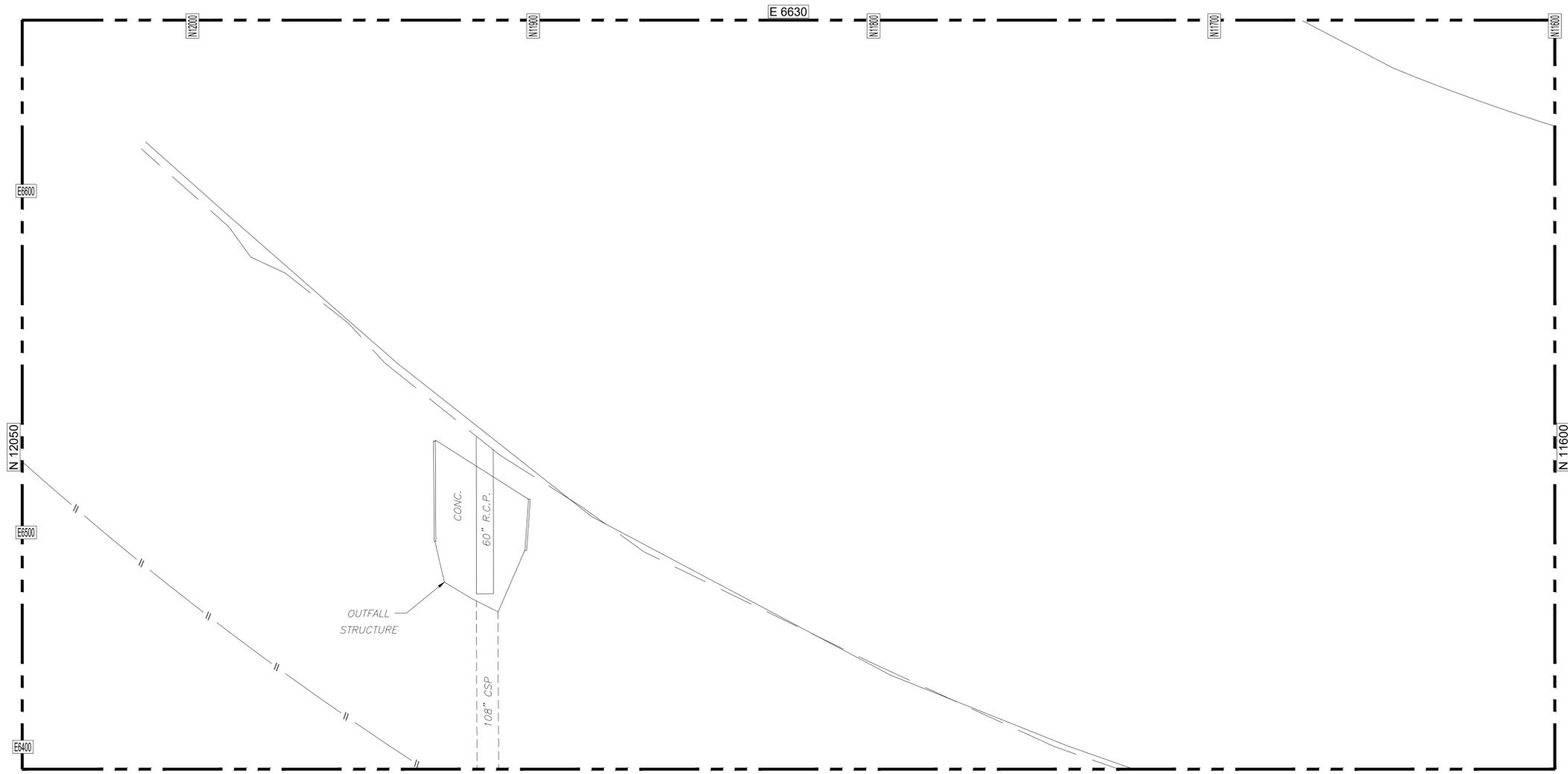
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**YARD PIPING**  
**ENLARGED PROPOSED PLAN**  
 (12 OF 13)  
 CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1" = 20'-0"		
DWG NO		
C-G-12	CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO.	48 OF 271	

NO.	DATE	REVISION	APP.



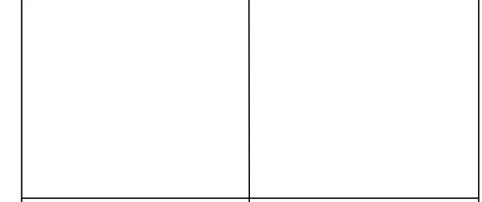
NO.	DATE	REVISION	APP.



MATCHLINE - SEE DWG C-G-10

YARD PIPING ENLARGED PROPOSED  
 PLAN (14 OF 14)  
 1"=20'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



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 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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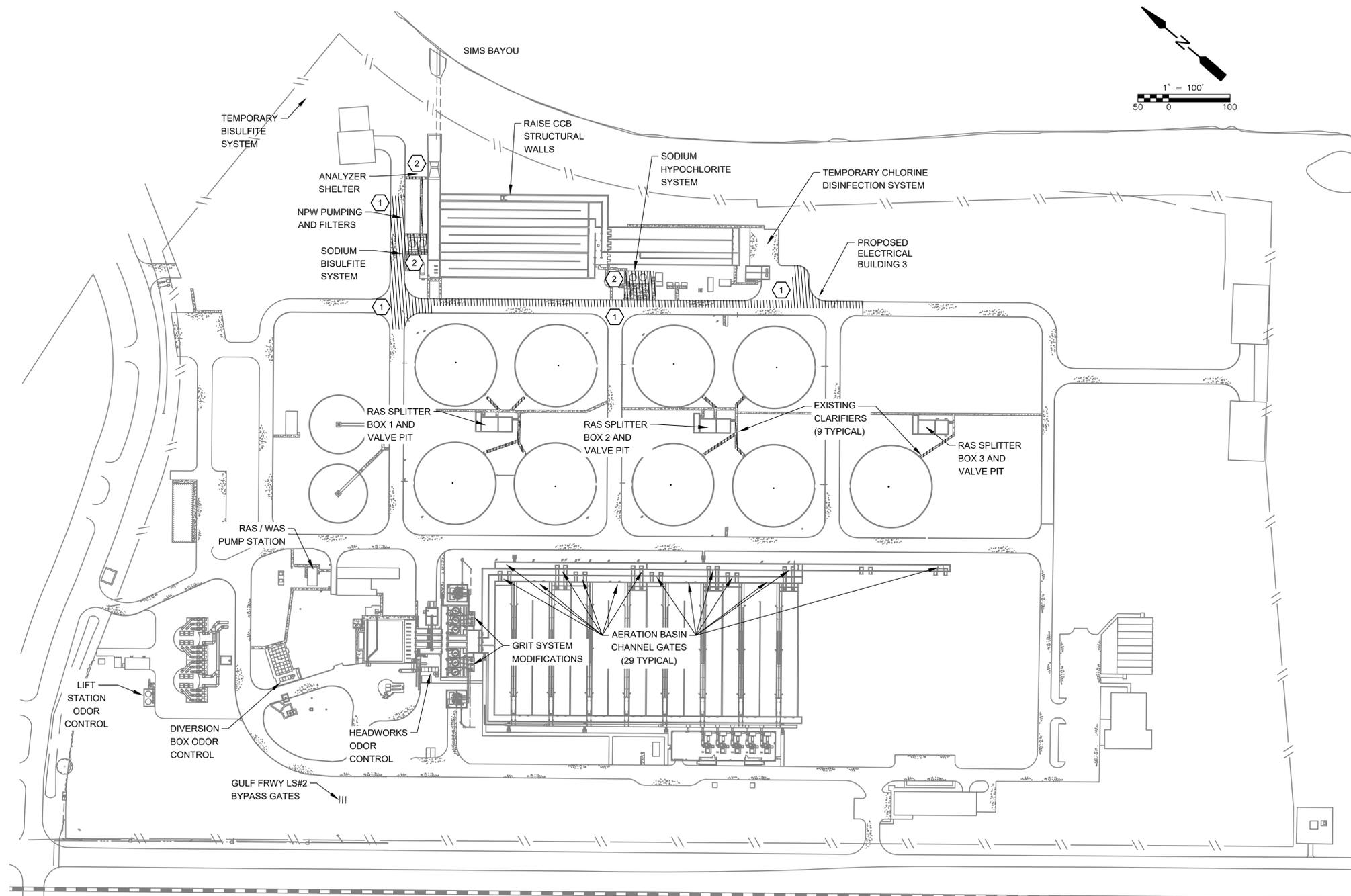
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SURVEYED BY:  
 FB NO.

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 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**YARD PIPING  
 ENLARGED PROPOSED PLAN  
 (13 OF 13)**  
 CIVIL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1"=20'-0"		
DWG NO	CITY OF HOUSTON PM	
C-G-13	TAHA LOTIA	
SHEET NO.	49 OF 271	

NO.	DATE	REVISION	APP.



- KEYED NOTES**
- 1 ROADWAY AND CURBING ARE TO BE REMOVED AND PROPER ACCESS MAINTAINED FOR PLANT OPERATIONS.
  - 2 SLABS, CONTAINMENT WALLS, SIDEWALKS, EQUIPMENT PADS AND FOUNDATIONS ARE TO BE REMOVED.

- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO GENERALLY DESCRIBE AND ILLUSTRATE THE LOCATION OF KNOWN AND PROBABLE CONCRETE REMOVAL TASKS REQUIRED TO CONSTRUCT PROPOSED FACILITIES IN THIS PROJECT.
  - B. THE KEYED NOTE NUMBERS PROVIDE SIMPLIFIED DESCRIPTIONS FOR EACH WORK AREA. NOT ALL WORK REQUIRED IS SHOWN HERE, INFORMATION IS GENERAL FOR OVERVIEW AND INTENT.
  - C. OTHER EXISTING DRAWINGS ILLUSTRATE EQUIPMENT REMOVALS. CONSTRUCTION PHASE DRAWINGS SHOW TEMPORARY PROVISIONS, AND PROPOSED DRAWINGS SHOW FINAL CONDITIONS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

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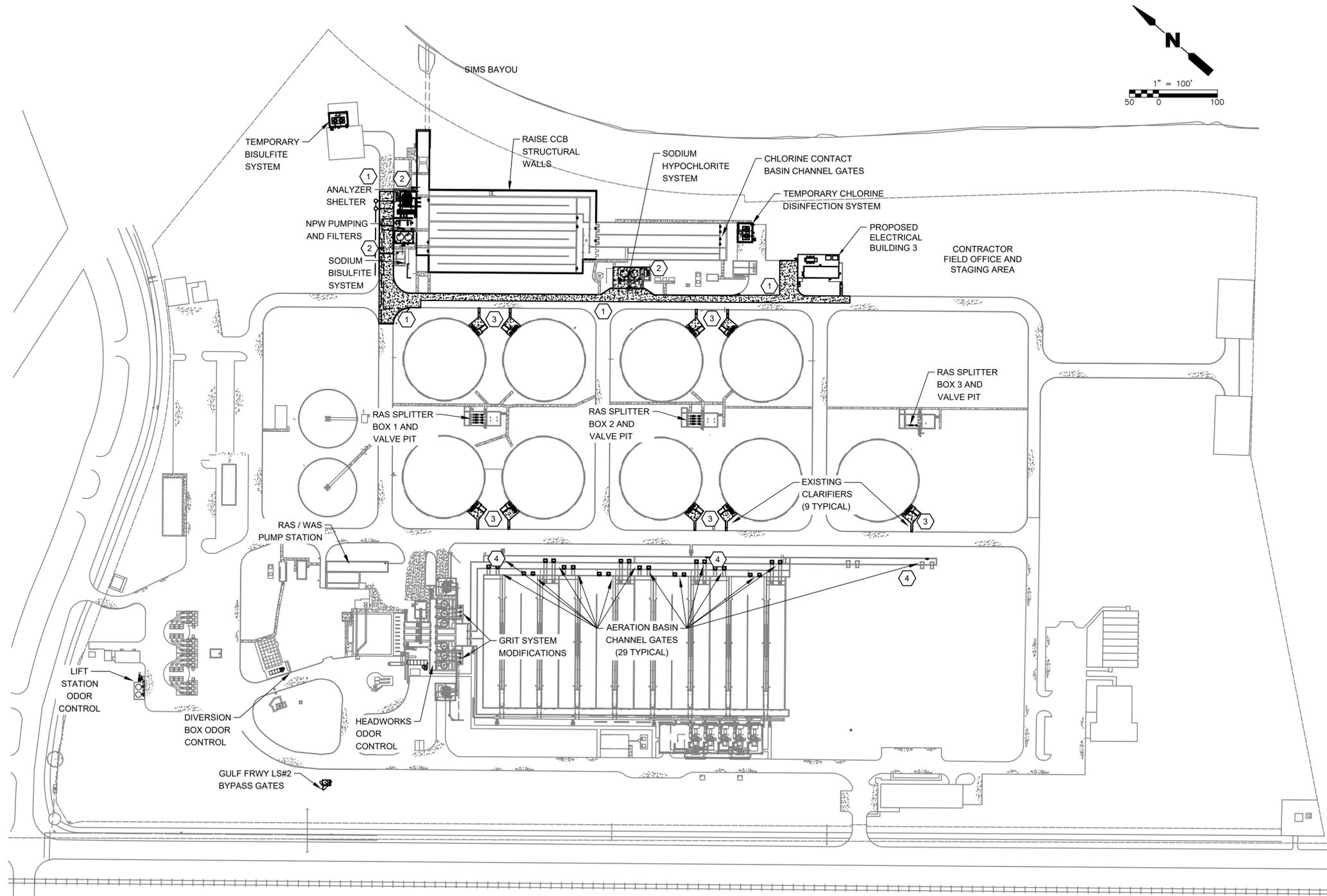
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**EXISTING OVERALL PAVING PLAN**  
CIVIL

<p>VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 500F		

**EXISTING OVERALL PAVING PLAN**  
NTS

NO.	DATE	REVISION	APP.



- KEYED NOTES**
- 1 NEW ROADWAY AND CURBING ARE TO BE PROVIDED AND PROPER ACCESS MAINTAINED FOR PLANT OPERATIONS.
  - 2 NEW SLABS, CONTAINMENT WALLS, SIDEWALKS, EQUIPMENT PADS AND FOUNDATIONS ARE TO BE PROVIDED.
  - 3 NEW EQUIPMENT PADS, FOUNDATIONS, AND SIDEWALK ARE TO BE PROVIDED.
  - 4 CONCRETE LANDINGS AND SIDEWALKS FOR NEW STAIRWAYS TO ACCESS PROPOSED EFFLUENT GATES.

- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO GENERALLY DESCRIBE AND ILLUSTRATE THE LOCATION OF KNOWN AND PROBABLE CONCRETE TASKS REQUIRED TO CONSTRUCT PROPOSED FACILITIES IN THIS PROJECT.
  - B. THE KEYED NOTE NUMBERS PROVIDE SIMPLIFIED DESCRIPTIONS FOR EACH WORK AREA. NOT ALL WORK REQUIRED IS SHOWN HERE, INFORMATION IS GENERAL FOR OVERVIEW AND INTENT.
  - C. OTHER EXISTING DRAWINGS ILLUSTRATE EQUIPMENT REMOVALS. CONSTRUCTION PHASE DRAWINGS SHOW TEMPORARY PROVISIONS, AND PROPOSED DRAWINGS SHOW FINAL CONDITIONS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

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<p> <b>KGI</b>  <b>Kalluri Group, Inc.</b>          TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77084          Phone: (713)-365-9288          PROJECT 4264       </p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**PROPOSED OVERALL PAVING PLAN**

CIVIL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	<p>WBS NUMBER</p> <p>R-000265-0154-4</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
	<p>DRAWING SCALE</p> <p>AS SHOWN</p>	
<p>DWG NO</p> <p>C-10-02</p>	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>	
<p>SHEET NO.</p> <p>510F</p>		

**PROPOSED OVERALL PAVING PLAN**  
1"=100'

# GENERAL STRUCTURAL NOTES

## GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ARCHITECTURAL, ELECTRICAL, HVAC, PLUMBING AND SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HVAC, AND PLUMBING DRAWINGS FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES WHILE PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT EXISTING AND NEW STRUCTURES DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING, ET CETERA FOR ALL CONSTRUCTION PHASE LOADS.
- ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURE.
- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
- STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

## DESIGN CRITERIA

- DESIGN BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE
- REINFORCED CONCRETE: WATER RETAINING ENVIRONMENTAL STRUCTURES: ACI 350-20 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" ALL OTHER STRUCTURES: ACI 318-19 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
- MASONRY: TMS 402-602-22 "BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES"
- STRUCTURAL STEEL: AISC MANUAL OF STEEL CONSTRUCTION, 15TH EDITION
- ALUMINUM: ADM1-2020, ALUMINUM DESIGN MANUAL
- DEAD LOADS: ACTUAL WEIGHT
- LIVE LOADS:
  - PROCESS RELATED STRUCTURES:
 

WALKWAYS, STAIRWAYS AND LANDINGS:	100 PSF
ELEVATED SLABS AT PROCESS AREAS:	200 PSF
SLABS ON GRADE	300 PSF
  - BUILDINGS:
 

ROOF	20 PSF
STORAGE AREAS (HEAVY), ELECTRICAL ROOMS	300 PSF
- RISK CATEGORY: III
- WIND DESIGN CRITERIA:
 

ULTIMATE DESIGN WIND SPEED, V <sub>ULT</sub>	156 MPH
NOMINAL DESIGN WIND SEED, V <sub>ASD</sub>	111 MPH
EXPOSURE CATEGORY	C
ENCLOSURE CLASSIFICATION (BUILDINGS)	ENCLOSED STRUCTURE
INTERNAL PRESSURE COEFFICIENT, GC <sub>pi</sub>	+ / - 0.18
- SNOW LOAD: N/A
- SEISMIC DESIGN CRITERIA: N/A

## FOUNDATIONS

### GEOTECHNICAL REPORT:

- GEOTECHNICAL REPORT "GEOTECHNICAL INVESTIGATION CITY OF BAYTOWN EAST DISTRICT WWTP IMPROVEMENTS PHASE II" PREPARED BY GEOTEST ENGINEERING, INC. GEOTEST ENGINEERING, INC. PROJECT NUMBER 1140281201, DATED AUGUST 11, 2023 (INCLUDING ALL ADDENDA), ANY INTERPRETATION OF THE CONTENTS OF THE GEOTECHNICAL REPORT IS THE RESPONSIBILITY OF THE CONTRACTOR.

## CONCRETE (CAST-IN-PLACE)

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRAINED WITH A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.
- WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
- ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING METHOD AS SOON AS FINISHING IS COMPLETED OR FORMS ARE REMOVED.
- ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.
- THE MAXIMUM NOMINAL SIZES OF COARSE AGGREGATE SHALL BE AS FOLLOWS:
 

ALL CONCRETE	1"
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- CONCRETE SLUMPS SHALL BE AS FOLLOWS:
 

ALL CONCRETE	4"±1"; 5" MAX.
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- MAXIMUM WATER/CEMENT RATIO FOR ALL BEAMS AND SLABS SHALL BE 0.45.

## REINFORCING STEEL

- REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064 REQUIREMENTS. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:
 

a. CONCRETE CAST AGAINST EARTH	3"
b. FORMED SURFACE IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER	2"
- LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL.
- THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.
- UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR WALLS AND SLABS SHALL BE AS FOLLOWS.

MINIMUM REINFORCING						
THICKNESS	6"	8"	10"	12" - 16"	18" - 22"	24"
REINF. EACH WAY	#4 @ 12"	#5 @ 12"	#5 @ 12"	#5 @ 12"	#6 @ 12"	#7 @ 12"
LOCATION	CTR	CTR	EF	EF	EF	EF

## STRUCTURAL STEEL

- DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND THE DESIGN DRAWINGS.
- STEEL MATERIAL:
  - W-SHAPED SECTIONS : ASTM A992, GRADE 50
  - HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B
  - ALL OTHER STRUCTURAL STEEL: ASTM A36
  - ALL PIPE: ASTM A53, GRADE B
- WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. ELECTRODES SHALL BE E-70XX. SUBMIT CERTIFICATIONS THAT WELDERS ARE QUALIFIED IN ACCORDANCE WITH AWS D1.1 ON THE SHOP AND FIELD WELDED PROCEDURES TO BE USED. CERTIFICATION SHALL BE WITHIN PREVIOUS 12 MONTHS.
- BOLTED CONNECTIONS:
  - MAIN CONNECTIONS: 3/4" DIA, ASTM A325 BOLTS. HOLES: 13/16" DIA CONNECTION SHALL BE "BEARING" TYPE WITH THREADS EXCLUDED FROM THE SHEAR PLANE.
  - SECONDARY CONNECTION: 3/4" DIA, ASTM A307 GRADE A BOLTS.
  - ALL CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS. GUSSET PLATES SHALL BE A MINIMUM OF 3/8" THICK.
  - ALL COLUMNS AND POSTS SHALL HAVE MILLED ENDS FOR FULL BEARING AT BASE PLATES.
  - ALL FIELD WELDS MUST BE TOUCHED-UP WITH A HEAVY COAT OF ZINC RICH PAINT IN ACCORDANCE WITH ASTM A780.
- ALL STEEL FABRICATIONS SHALL BE MATCH MARKED FOR FIELD ASSEMBLY.
- FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
- WELDED CONSTRUCTION SHALL CONFORM TO AWS D-1.1, "STRUCTURAL WELDING CODE" LATEST EDITION. WELDING PROCESSES AND OPERATORS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATIONS PROCEDURES".
- ALL WELDING SHALL BE DONE WITH E70XX ELECTRODES PER AWS AND AISC.
- ALL WELDED CONNECTIONS SHALL DEVELOP THE FULL STRENGTH OF MEMBER UNLESS NOTED OTHERWISE.
- ALL CONNECTIONS SHALL BE SHOP WELDED AND FIELD BOLTED UNLESS NOTED OTHERWISE. WELDED JOINTS SHALL BE SEAL WELDED. ALL FIELD WELDS SHALL BE CLEANED AND PAINTED AFTER COMPLETION.
- ALL SHOP JOINTS SHALL BE SEAL WELDED IN ADDITION TO STRENGTH WELDS SHOWN.
- STRUCTURAL STEEL SHALL BE NEW DOMESTIC STEEL AND SHALL CONFORM TO THE AISC "SPECIFICATION FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- ANY HOLES REQUIRED FOR FIELD ERECTION SHALL BE DRILLED OR PUNCHED. NO BURNING SHALL BE PERMITTED UNLESS APPROVED BY OWNER.
- ALL CLIP ANGLES ARE TO BE MINIMUM 5/16" THICKNESS, UNO
- STEEL MEMBERS SHALL NOT BE SPLICED EXCEPT WHERE SHOWN ON THE DRAWINGS.
- ALL STEEL BEAMS SHALL BE ERECTED WITH NATURAL CAMBER UP.
- ALL STEEL SHALL HAVE MINIMUM OF 2 COATS OF SHOP PAINT, GREY IN COLOR.
- ALL STRUCTURAL STEEL INCLUDING GRATING, HANDRAILS, LADDERS, PLATES, BOLTS, PLATFORMS AND RELATED HARDWARE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- ALL STRUCTURAL STEEL WHERE GALVANIZING HAS BEEN BURNED OFF OR OTHERWISE DAMAGED DURING TRANSPORTATION OR ERECTION SHALL BE REPAIRED BY COATING W/ 'GALVACON' IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- ALL GALVANIZING SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ZINC COATING (HOT DIP) ASTM DESIGNATION A-123, A-153, A-383 AND A-386 LATEST REVISIONS. (MINIMUM 2 OZ. PER SQUARE FOOT UNLESS SPECIFIED OTHERWISE). RETHREAD NUTS AFTER GALVANIZING IN ACCORDANCE WITH ASTM A-563.

## ALUMINUM

- ALUMINUM DESIGN, DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL.
- ALUMINUM IN CONTACT WITH OR EMBEDDED IN CONCRETE OR MASONRY SURFACES SHALL BE COATED WITH A HEAVY COATING OF ALKALI RESISTANT BITUMINOUS PAINT.
- ALL BOLTS USED IN CONNECTIONS WITH ALUMINUM MEMBERS SHALL BE STAINLESS STEEL TYPE 316, UNLESS NOTED OTHERWISE.
- ALL WELDING OF ALUMINUM STRUCTURES SHALL CONFORM TO "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, LATEST EDITION.

## STAINLESS STEEL

- STAINLESS STEEL MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
  - EXTERIOR AND SUBMERGED USE: TYPE 316 TYPE 316L (WHERE WELDED)
  - INTERIOR AND ARCHITECTURAL USE : TYPE 304 TYPE 304L (WHERE WELDED)
- ALL WELDING OF STRUCTURAL STAINLESS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STAINLESS STEEL", AWS D1.6, LATEST EDITION. ELECTRODES SHALL BE E-318 316L STAINLESS STEEL.
- STAINLESS STEEL PLATES, SHEETS AND WASHERS SHALL BE IN ACCORDANCE TO ASTM A240.
- STAINLESS STEEL W SHAPES, CHANNELS AND ANGLES SHALL BE IN ACCORDANCE TO ASTM A276.
- ALL BUILT-UP ASSEMBLIES SHALL BE FUSED BY LASER IN ACCORDANCE WITH ASTM A1069 FOR NON TUBULAR SHAPES OR WELDED IN ACCORDANCE WITH ASTM A554 FOR TUBULAR SHAPES.
- STAINLESS STEEL BOLTS AND THREADED RODS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F593 UNLESS NOTED OTHERWISE.
- STAINLESS STEEL NUTS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F594 UNLESS NOTED OTHERWISE.

## PRE-ENGINEERED METAL BUILDING

- FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO DESIGN, FABRICATE, DELIVER TO JOB SITE AND ERECT THE PRE-ENGINEERED METAL BUILDING AS SHOWN ON THE CONTRACT DOCUMENTS.
- SUBMIT TO THE ENGINEER AS PROVIDED COMPLETE PLANS SHOWING SUPERSTRUCTURE COLUMN LINES SET TO COORDINATE WITH CONCRETE DIMENSIONS SHOWN. INDICATE ANCHOR BOLT SIZE AND LOCATIONS AND FOUNDATION REACTIONS IN KIPS AT ALL COLUMNS. FOUNDATION SIZE AND REINFORCEMENT FOR PRE-ENGINEERED METAL BUILDING ARE PRELIMINARY AND ARE SUBJECT TO CHANGE UNTIL FINAL REACTIONS ARE PROVIDED BY BUILDING MANUFACTURER AND APPROVED BY THE ENGINEER OF RECORD.
- SUBMIT LETTER AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS CERTIFYING THAT THE STRUCTURAL FRAMING AND COVERING PANELS PROPOSED MEET THE DESIGN CRITERIA.
- PRIOR TO FOUNDATION CONSTRUCTION, PRE-ENGINEERED METAL BUILDING SUBMITTAL MUST BE APPROVED. CONSTRUCTION DETAILS MAY BE VARIED TO SUIT MANUFACTURER'S STANDARD DESIGN.
- ALL BUILDING COLUMNS SHALL BE DESIGNED AS "PIN" CONNECTED. COLUMN ENDS SHALL NOT TRANSFER MOMENTS TO FOUNDATION. ANCHOR BOLTS SHALL BE DESIGNED BY THE BUILDING MANUFACTURER AND FURNISHED BY THE CONTRACTOR.
- SEE SPECIFICATION SECTION 13341 "PRE-ENGINEERED METAL BUILDING" FOR REQUIREMENT IN ADDITION TO THESE NOTES.

## FLOTATION CONSIDERATION

- STRUCTURES WERE DESIGNED TO BE NON-BUOYANT AFTER THEY ARE PLACED INTO OPERATION. THEREFORE THE STRUCTURES MAY BE BUOYANT DURING CONSTRUCTION. GENERAL CONTRACTOR SHALL PROTECT ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION REGARDLESS OF GROUND WATER LEVELS UNTIL STRUCTURES ARE PLACED INTO OPERATION.

## WATERTIGHTNESS OF REINFORCED CONCRETE WATER RETAINING STRUCTURES

- HYDROSTATICALLY TEST REINFORCED CONCRETE STRUCTURES WHICH WILL CONTAIN WATER PER SPECIFICATION SECTION 03081 AND IN ACCORDANCE TO ACI 350.1-TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING STRUCTURES. ALL REPAIRS AND RETESTING OF TANKS SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE OWNER.

## DEFERRED SUBMITTALS

- DEFERRED SUBMITTALS MUST BE PREPARED BY OR UNDER THE DIRECT SUPERVISION OF A DELEGATED ENGINEER. THE CONTRACTOR SHALL SUBMIT THE DEFERRED SUBMITTALS TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL SUBMIT THE APPROVED DEFERRED SUBMITTAL DOCUMENTS TO THE BUILDING OFFICIAL FOR APPROVAL. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
- A DELEGATED ENGINEER IS DEFINED AS AN ENGINEER IN THE STATE OF TEXAS WHO SPECIALIZES IN AND UNDERTAKES THE DESIGN OF STRUCTURAL COMPONENTS OR STRUCTURAL SYSTEMS IN A SPECIFIC SUBMITTAL PREPARED FOR THIS PROJECT AND IS AN EMPLOYEE OR CONSULTANT TO THE CONTRACTOR, FABRICATOR, OR MANUFACTURER RESPONSIBLE FOR THE SUBMITTAL. THE DELEGATED ENGINEER SHALL SIGN AND SEAL THE SUBMITTAL INCLUDING CALCULATIONS AND DRAWINGS. SEE PROJECT SPECIFICATIONS FOR MORE SPECIFIC CRITERIA.
- THE FOLLOWING PORTION OF THE PROJECT ARE DEFERRED SUBMITTAL ITEMS AND HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW.
  - PRE-ENGINEERED METAL BUILDING
  - PRE-ENGINEERED PRECAST CONCRETE BUILDINGS
  - EXTERIOR DOORS
  - ROOFING

# STRUCTURAL ABBREVIATIONS

&	AND	EXIST	EXISTING	PL	PLATE
@	EXPANSION	EXP	EXPANSION	PLF	POUND PER LINEAR
#	NUMBER	FE	FIRE EXTINGUISHER		FOOT
ADDTL	ADDITIONAL	FG	FINISHED GRADE	PT	PRESSURE TREATED
AFF	ABOVE FINISHED	FT	FOOT	PROJ	PROJECTION
ALUM	FLOOR	FTG	FOOTING	PSF	POUNDS PER SQUARE
ALT	ALUMINUM	FV	FIELD VERIFY		FOOT
BM	ALTERNATE	GA	GAGE	PSI	POUNDS PER SQUARE
BOT	BEAM	GALV	GALVANIZED		INCH
CJ	BOTTOM	HORIZ	HORIZONTAL	PVC	POLYVINYL CHLORIDE
CL	CONTROL JOINT	HSS	HOLLOW STRUCTURAL	R	RADIUS
CMU	CENTER LINE	CL	CONCRETE MASONRY	HP	REINFORCING
	UNIT	ID	INSIDE DIAMETER	REQD	REQUIRED
COL	COLUMN	JT	JOINT	RO	ROUGH OPENING
CONC	CONCRETE	LB(S)	POUND(S)	SCHED	SCHEDULE(D)
CONN	CONNECTION	LONG	LONGITUDINAL	SIM	SIMILAR
CONST JT	CONSTRUCTION JOINT	LP	LOW POINT	SJ	SAWCUT JOINT
CONT	CONTINUOUS	MANUF	MANUFACTURER	SPECS	SPECIFICATIONS
CTR	CENTER	MATL	MATERIAL	SS	STAINLESS STEEL
DIA	DIAMETER	MAX	MAXIMUM	STD	STANDARD
DIM	DIMENSION	MECH	MECHANICAL	STL	STEEL
DEG	DEGREE(S)	MFR	MANUFACTURER	T/	TOP OF
DWG	DRAWING	MIN	MINIMUM	TB	TIE BEAM
DWL	DOWEL(S)	MISC	MISCELLANEOUS	T&B	TOP AND BOTTOM
(E)	EXISTING	MTL	METAL	THK	THICK
EA	EACH	NO	NUMBER	THRU	THROUGH
EF	EACH FACE	NTS	NOT TO SCALE	TOC	TOP OF CONCRETE
EJ	EXPANSION JOINT	OC	ON CENTER	TOS	TOP OF STEEL
EL	ELEVATION	OD	OUTSIDE DIAMETER	TYP	TYPICAL
EMBED	EMBEDMENT	OPNG	OPENING	UNO	UNLESS NOTED
EQ	EQUAL	PEMB	PRE-ENGINEERED	VERT	VERTICAL
EW	EACH WAY	PERP	PERPENDICULAR	WT	WEIGHT
				WWF	WELDED WIRE FABRIC

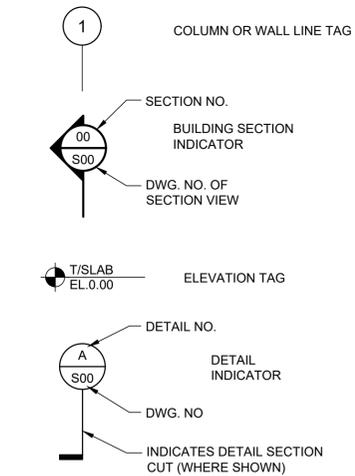
## LEGEND

STRUCTURAL LEGEND APPLIES TO "S" SHEETS ONLY

	EARTH FILL		CONCRETE
	UNDISTURBED EARTH		EXISTING CONCRETE
	COMPACTED GRANULAR FILL		DEMOLITION
	GROUT OR SAND (AS NOTED)		STEEL
	GRATING		PRECAST CONCRETE

## SYMBOLS

SYMBOLS APPLY TO "S" SHEETS ONLY



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
SURVEYED BY: FB NO.	

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CITY OF HOUSTON HOUSTON PUBLIC WORKS	
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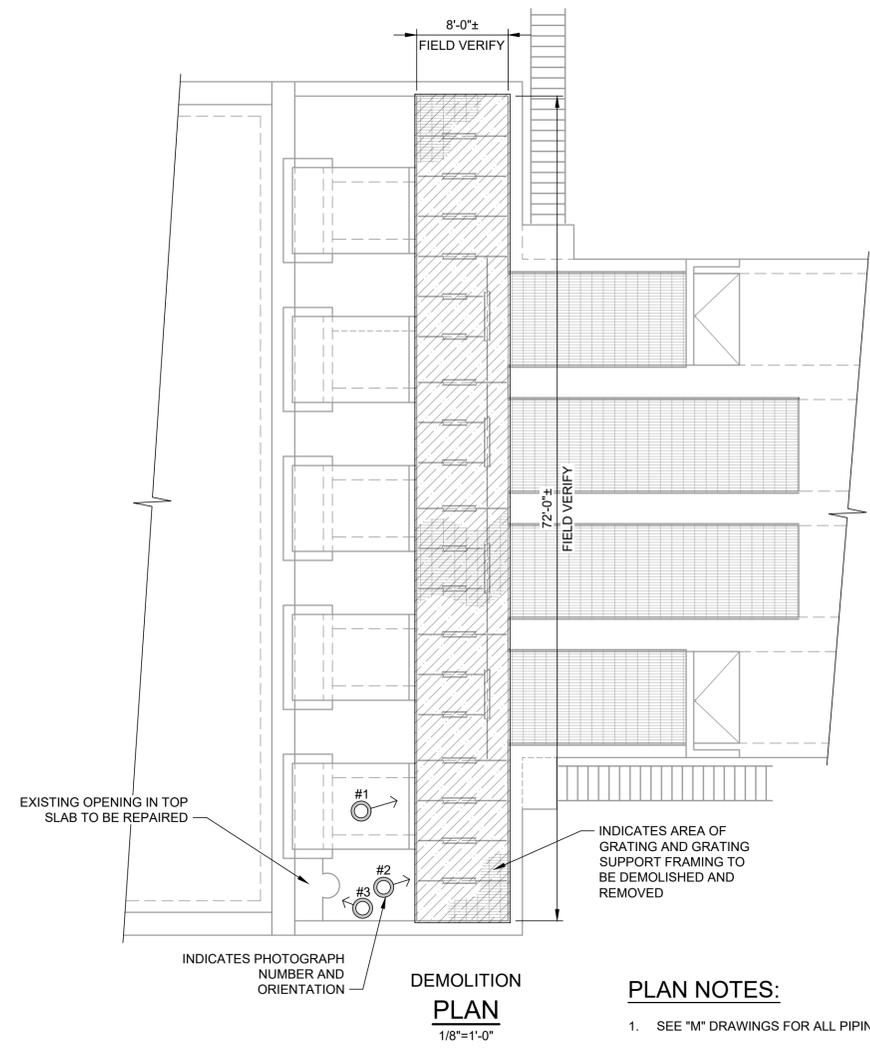
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3	
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STANDARD STRUCTURAL NOTES SHEET 1 STRUCTURAL	
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VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
DWG NO	CITY OF HOUSTON PM	
S-G-01	TAHA LOTIA	
SHEET NO.	52	OF 271

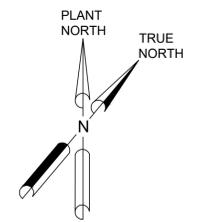






**PLAN NOTES:**

- SEE "M" DRAWINGS FOR ALL PIPING, EQUIPMENT, LOCATIONS, ETC.



NO.	DATE	REVISION	APP.



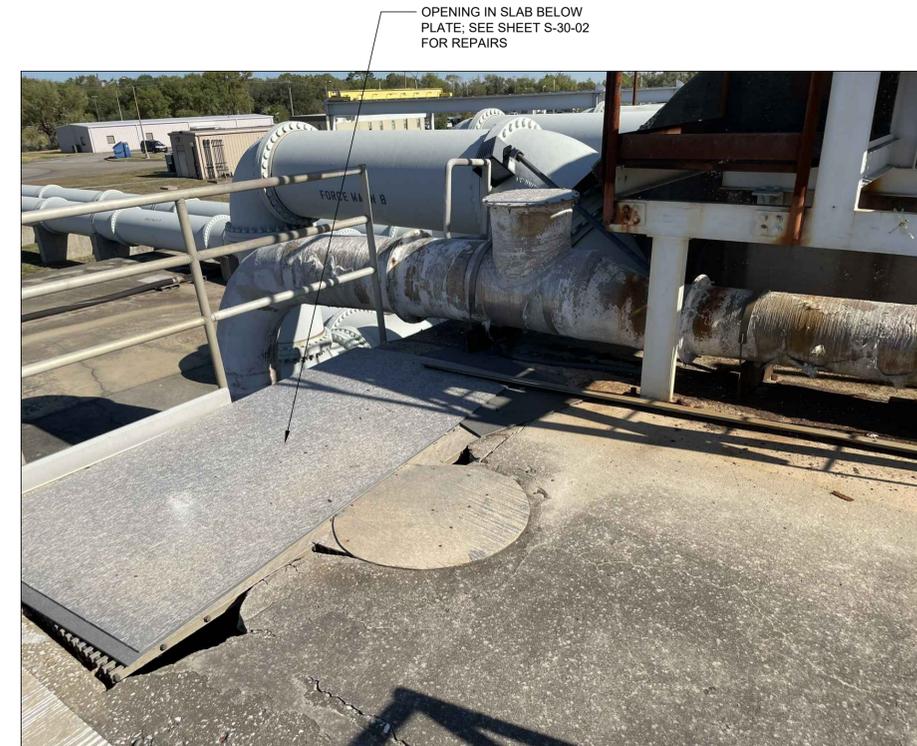
EXISTING GRATING AND SUPPORT FRAMING TO BE REMOVED AS REPLACED; SEE PLAN

**PHOTOGRAPH - #1**



CRACKING AND SPALLING TO BE REPAIRED PER SHEET S-30-02

**PHOTOGRAPH - #2**



OPENING IN SLAB BELOW PLATE; SEE SHEET S-30-02 FOR REPAIRS

**PHOTOGRAPH - #3**

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
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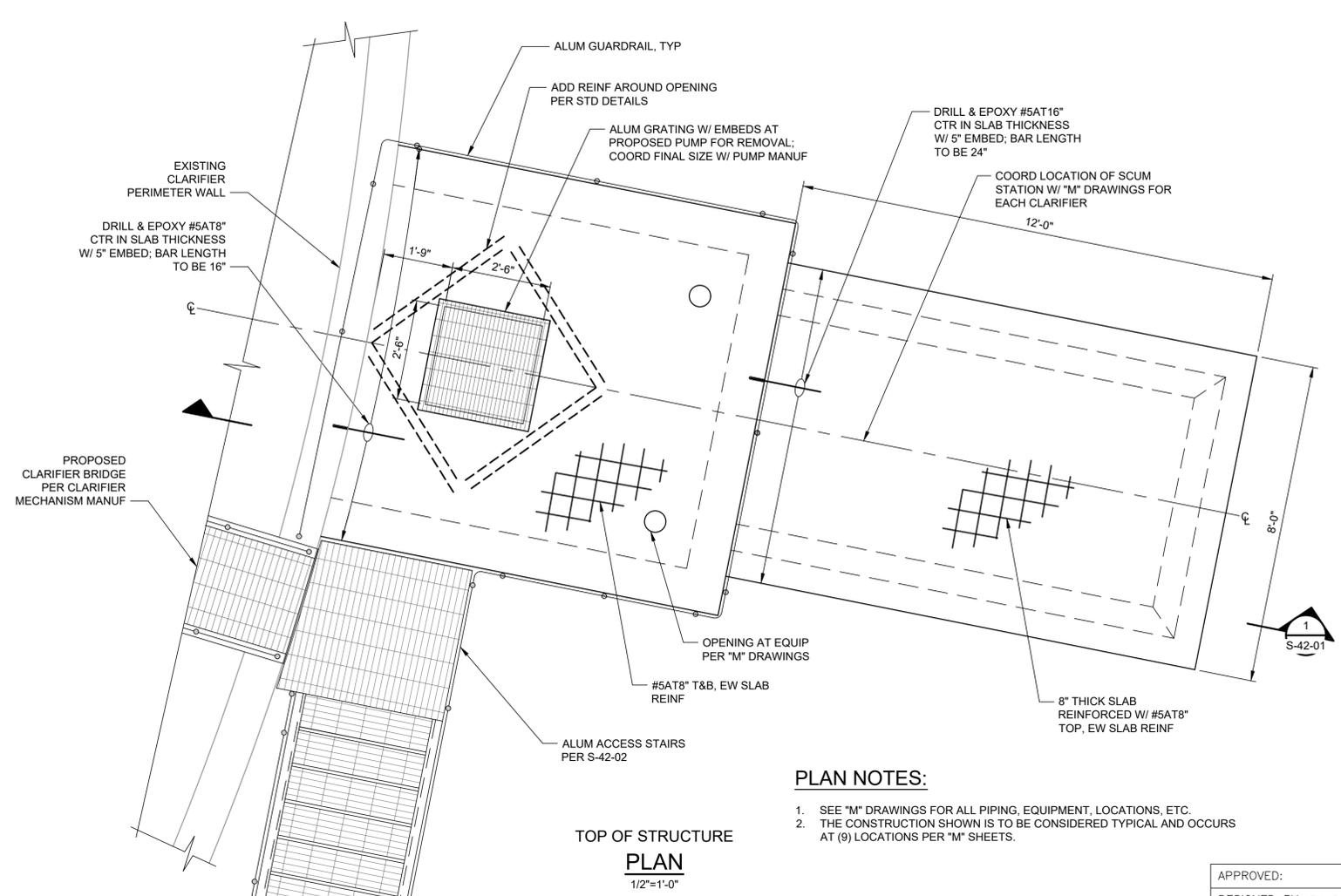
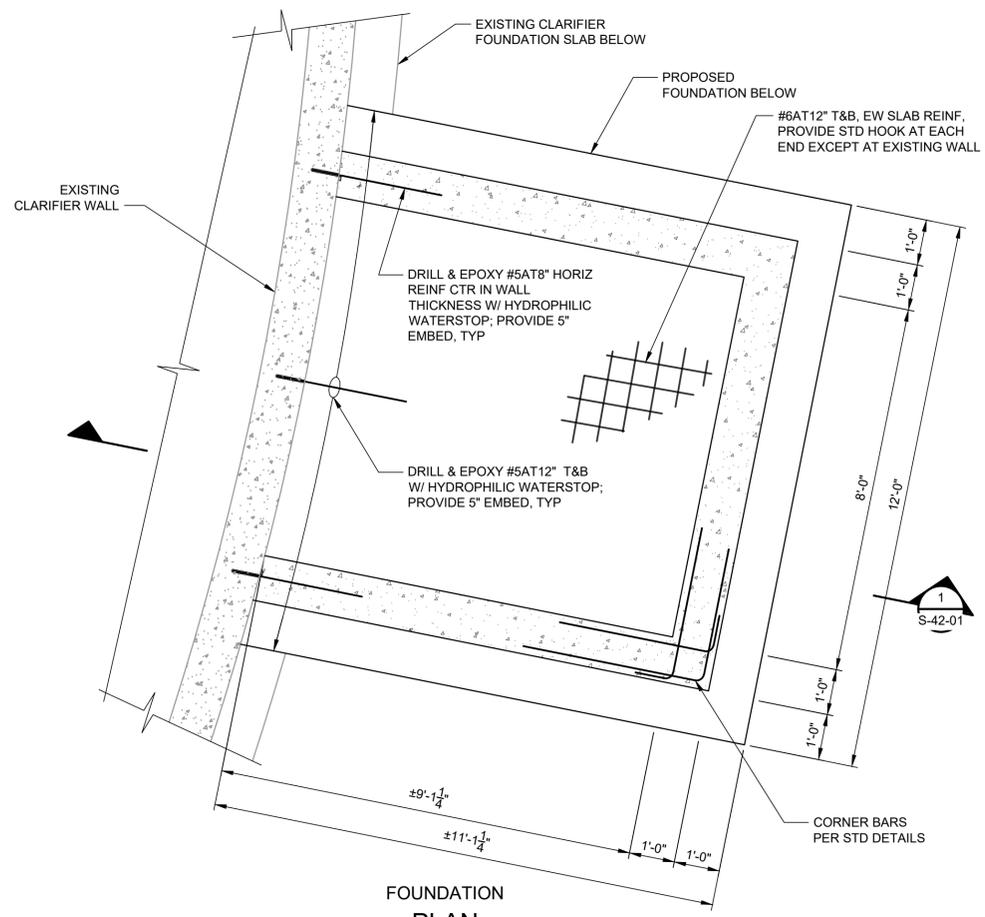
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

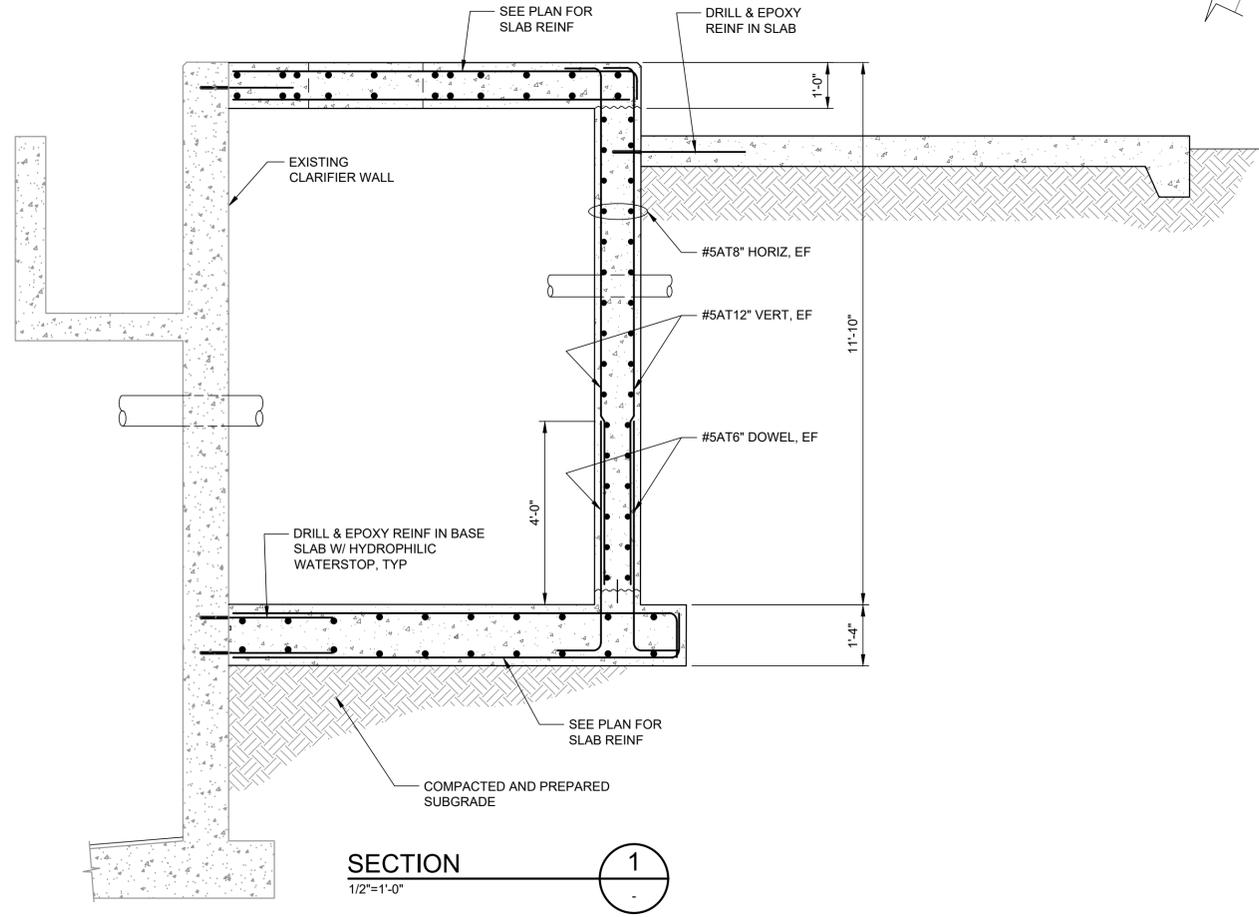
**HEADWORKS DEMOLITION PLAN AND PHOTOGRAPHS**  
STRUCTURAL

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO S-30-01	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
	SHEET NO. . 55 OF 271	





- PLAN NOTES:**
- SEE "M" DRAWINGS FOR ALL PIPING, EQUIPMENT, LOCATIONS, ETC.
  - THE CONSTRUCTION SHOWN IS TO BE CONSIDERED TYPICAL AND OCCURS AT (9) LOCATIONS PER "M" SHEETS.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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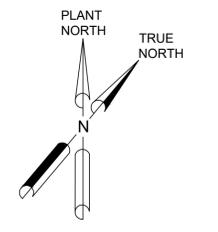
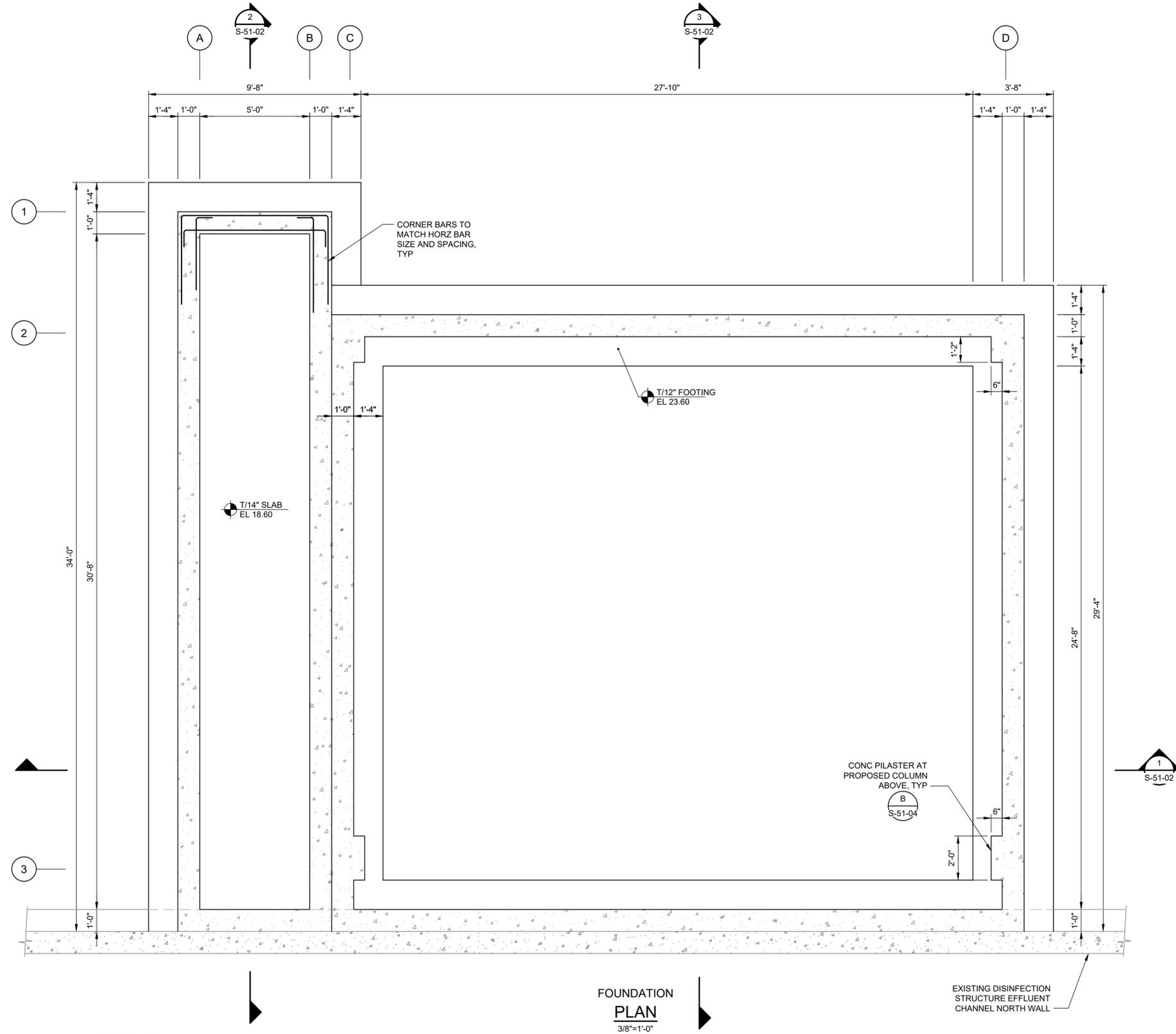
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**TYPICAL CLARIFIER SCUM STATION PLANS**  
STRUCTURAL

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
<b>DWG NO</b> S-42-01	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
	SHEET NO. ... 57 OF 271	

NO.	DATE	REVISION	APP.



NO.	DATE	REVISION	APP.

**PLAN NOTES:**  
 1. SEE "M" DRAWINGS FOR ALL PIPING, EQUIPMENT, LOCATIONS, ETC.

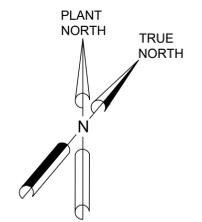
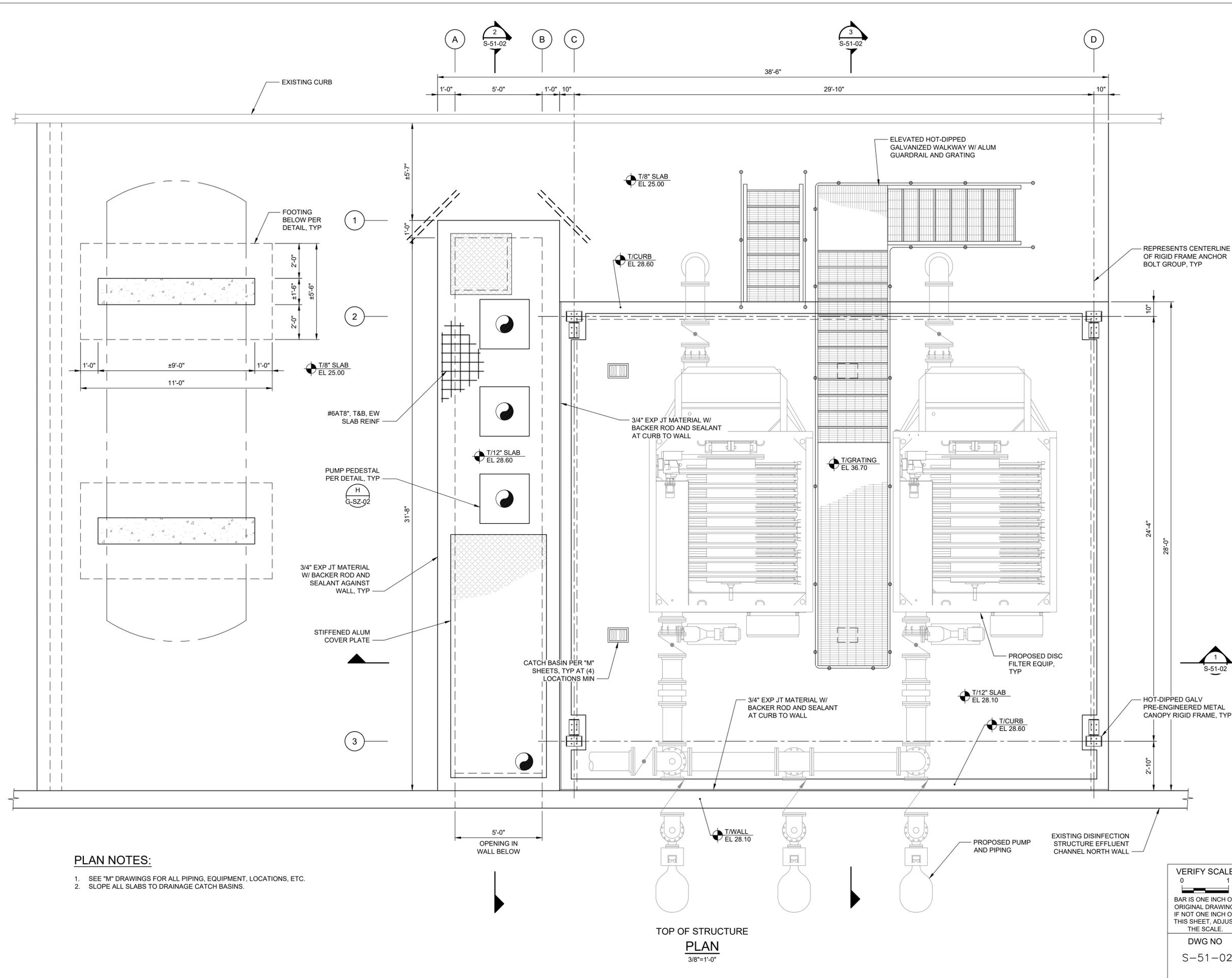
**FOUNDATION PLAN**  
 3/8"=1'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
	
TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW SYSTEM FOUNDATION PLAN**  
 STRUCTURAL

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	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
S-51-01		
SHEET NO.	58 OF 271	



NO.	DATE	REVISION	APP.

- PLAN NOTES:**
- SEE "M" DRAWINGS FOR ALL PIPING, EQUIPMENT, LOCATIONS, ETC.
  - SLOPE ALL SLABS TO DRAINAGE CATCH BASINS.

TOP OF STRUCTURE  
**PLAN**  
 3/8"=1'-0"

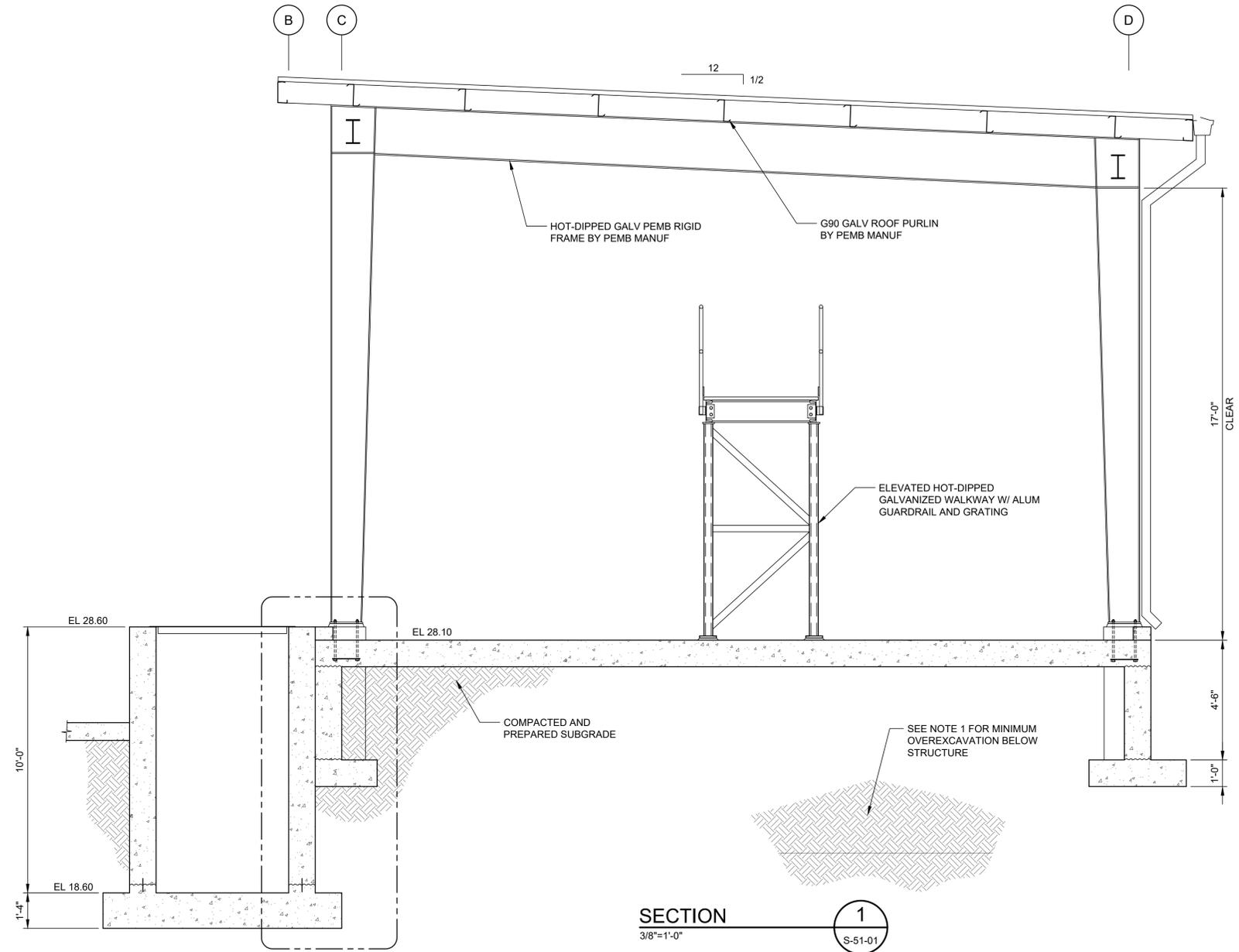
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
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 Houston, Texas 77094  
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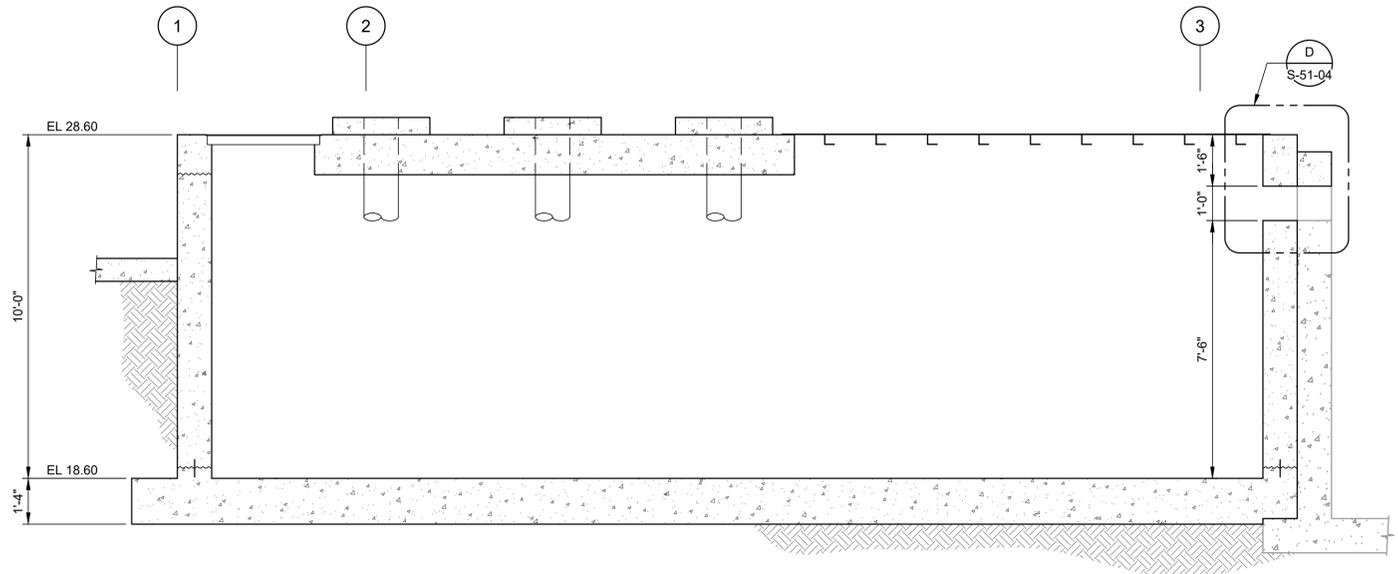
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW SYSTEM**  
**TOP OF STRUCTURE PLAN**  
 STRUCTURAL

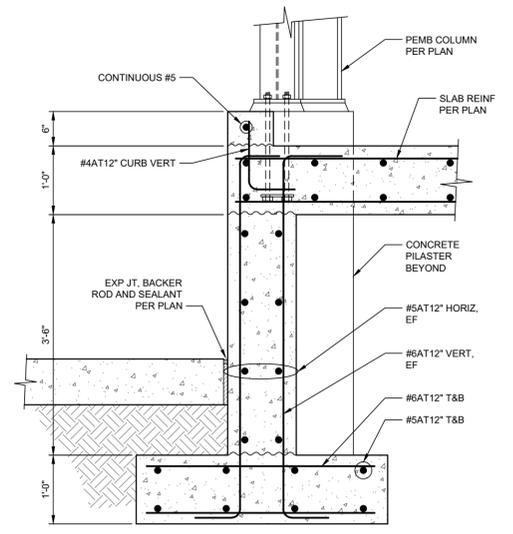
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
S-51-02	TAHA LOTIA	
SHEET NO.	59	OF 271



**SECTION 1**  
3/8"=1'-0"  
S-51-01



**SECTION 2**  
3/8"=1'-0"  
S-51-01



**DETAIL A**  
1"=1'-0"  
S-51-01

**NOTES:**

1. THE CONTRACTOR SHALL OVER-EXCAVATE THE AREA BELOW PROPOSED SLAB-ON-GRADE AND WALL FOUNDATIONS PLUS 5FT ON ALL SIDES. THE OVER-EXCAVATION SHALL EXTEND TO EL 20.00 AT A MINIMUM. BACKFILL AND COMPACT IN ACCORDANCE WITH THE GEOTECHNICAL REPORT(S) AND THE SPECIFICATIONS.

**VERIFY SCALE**

0 1  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO  
S-51-03

WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS SHOWN	
CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO. 60 OF 271	

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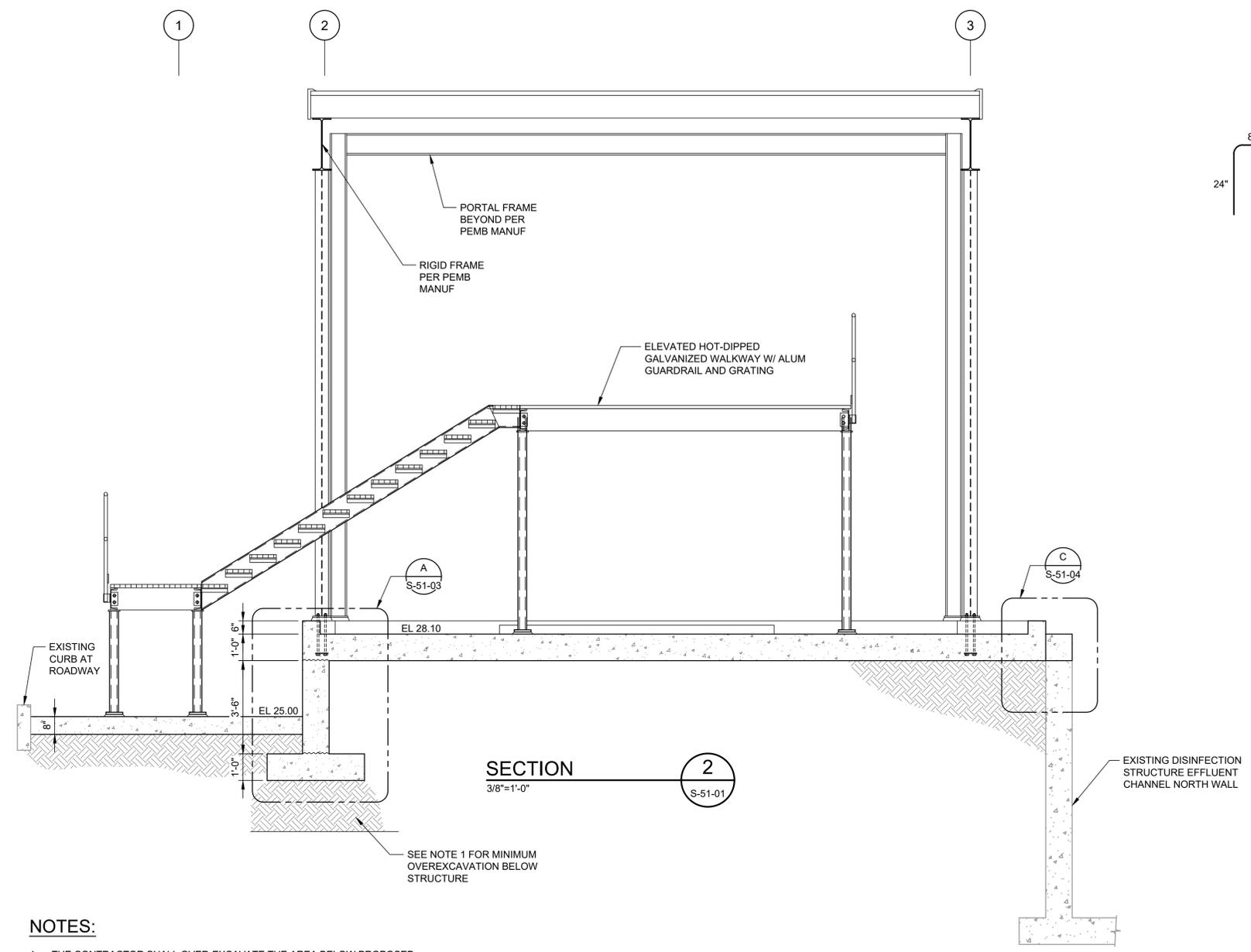
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**NPW SYSTEM SECTIONS AND DETAIL**

STRUCTURAL

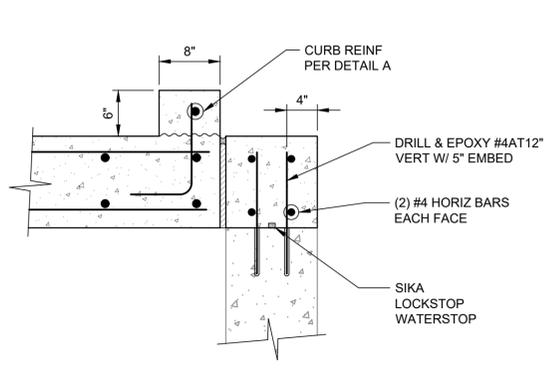
NO.	DATE	REVISION	APP.



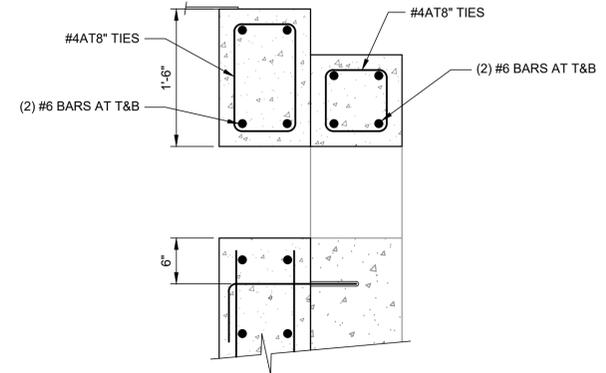
**NOTES:**

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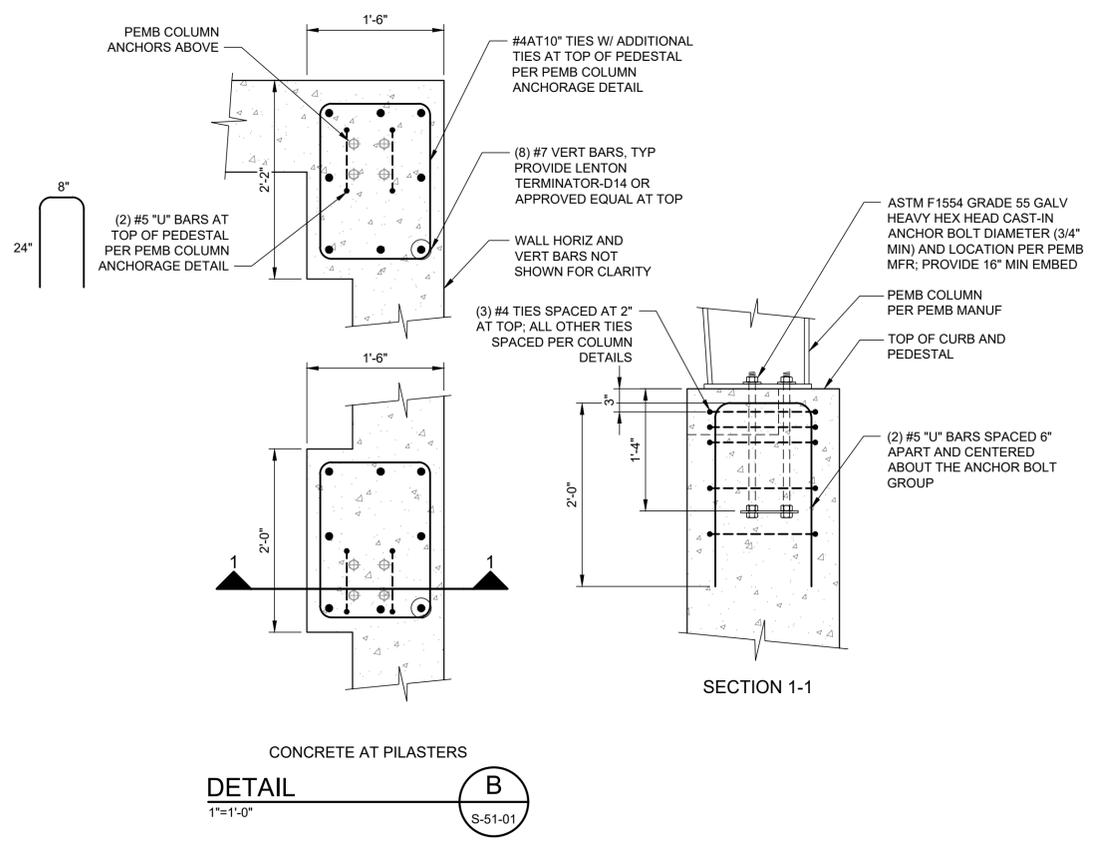
SEE NOTE 1 FOR MINIMUM OVEREXCAVATION BELOW STRUCTURE



**DETAIL C**  
 CURB AT EXISTING DISINFECTION STRUCTURE  
 1"=1'-0" S-51-01



**DETAIL D**  
 WEIR AT EXISTING DISINFECTION STRUCTURE  
 1"=1'-0" S-51-01



**DETAIL B**  
 CONCRETE AT PILASTERS  
 1"=1'-0" S-51-01

**SECTION 1-1**

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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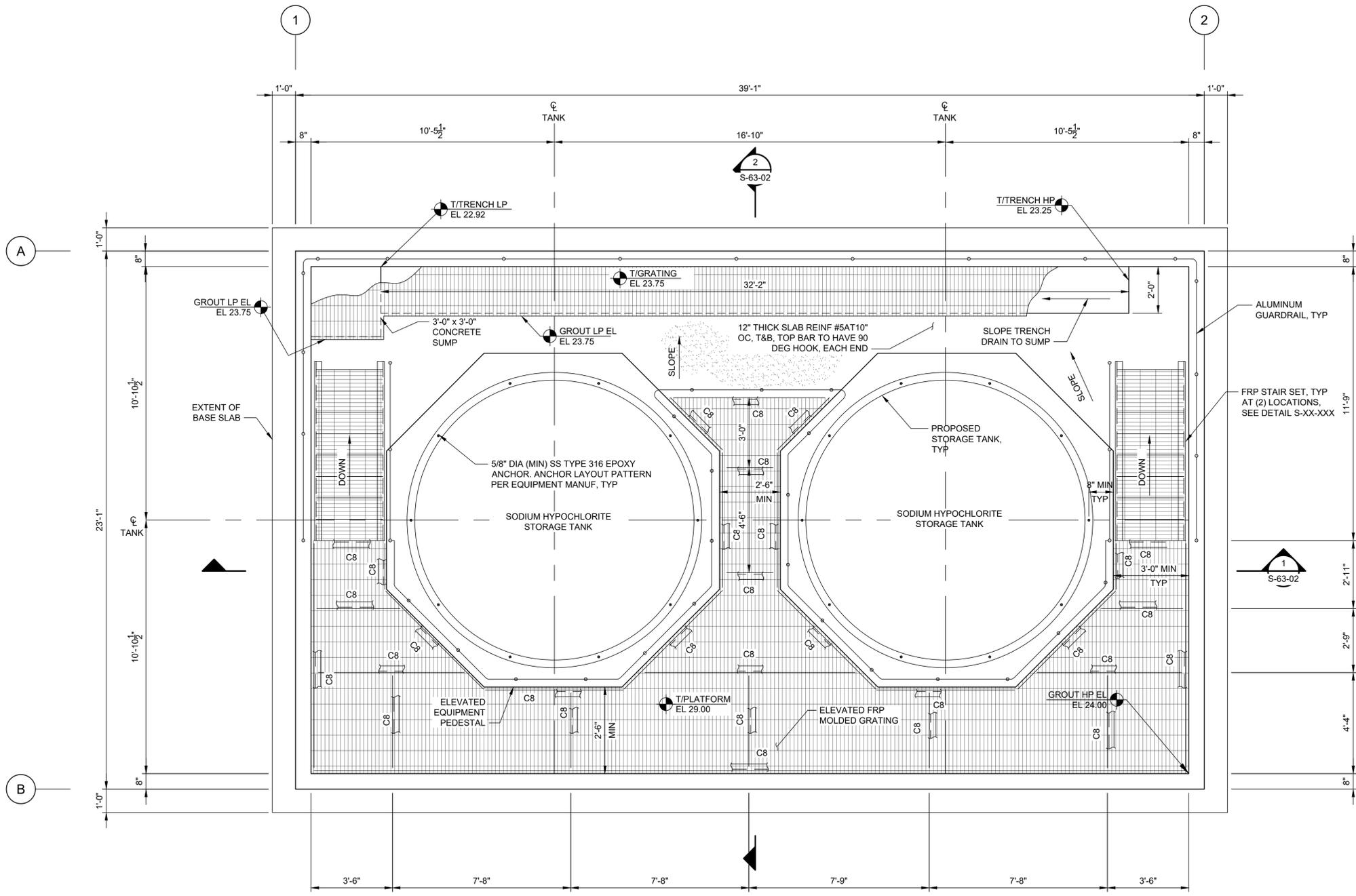
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**NPW SYSTEM SECTION AND DETAILS**  
 STRUCTURAL

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	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 61 OF 271	

NO.	DATE	REVISION	APP.



**SHAPE LEGEND FIBER REINFORCED POLYMER (FRP)**

- C8 = 8"x2.1875"x3/8" CHANNEL MEMBER W/ SECTION MODULUS = 8.94 in<sup>3</sup>

**NOTES:**

- REFER TO "M" DWGS FOR ALL EQUIPMENT LOCATIONS.
- ALL DIMENSIONS SHALL BE VERIFIED WITH EQUIPMENT MFR AND FIELD CONDITIONS PRIOR TO FABRICATION OF PLATFORM AND WALKWAYS.
- ALL PLATFORM FRAMING SHALL BE FIBER REINFORCED POLYMER (FRP) WITH STAINLESS STEEL TYPE 316L HARDWARE UNLESS NOTED OTHERWISE.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
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Houston, Texas 77094  
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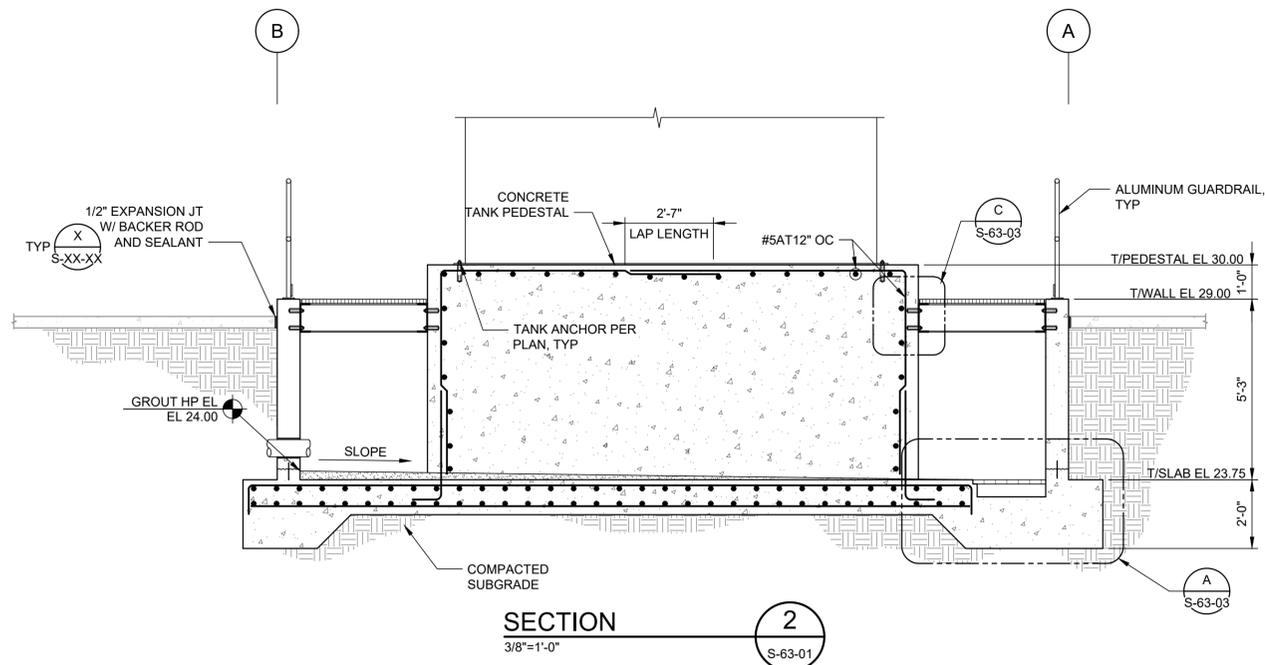
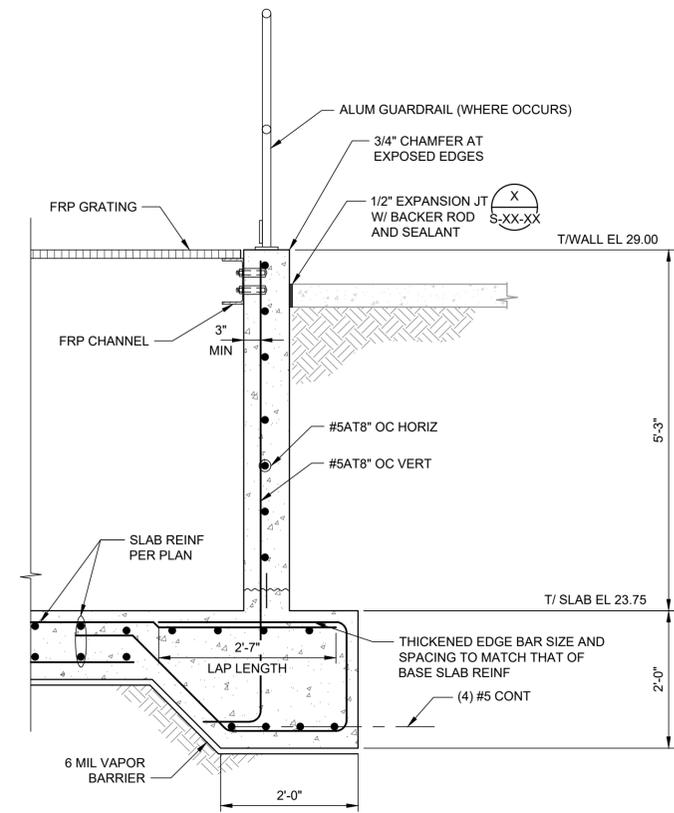
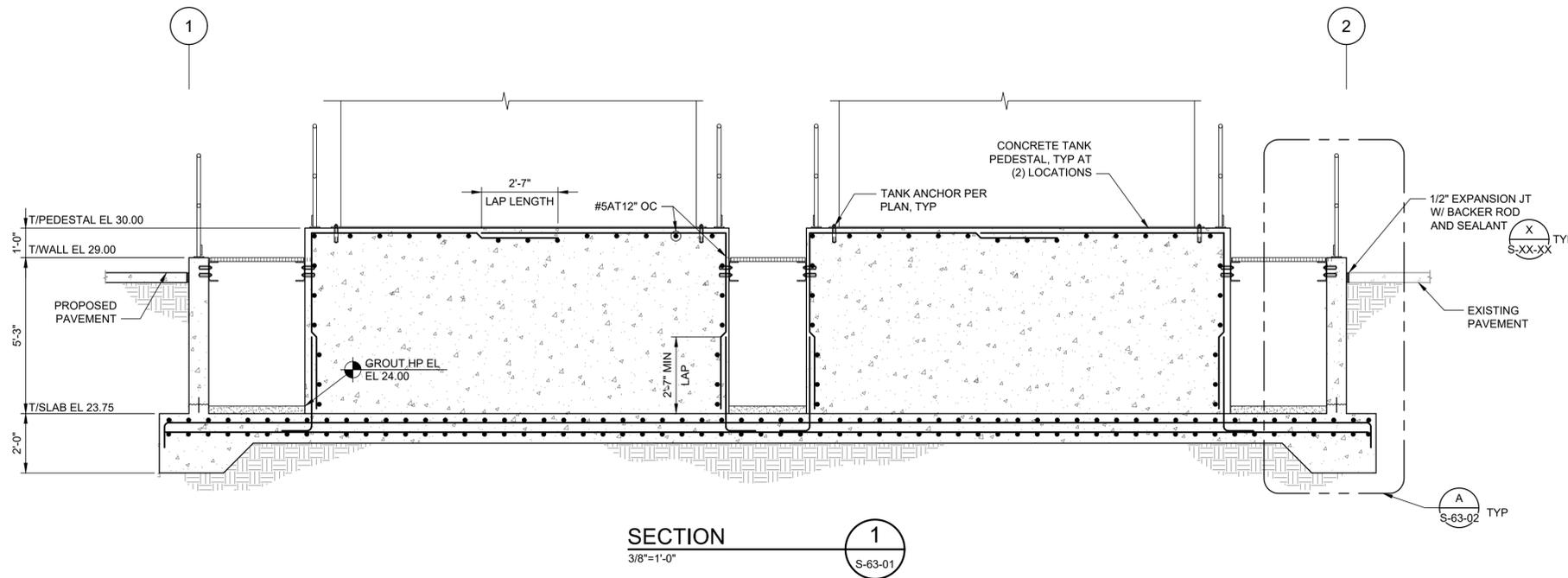
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SODIUM HYPOCHLORITE PLAN**

**STRUCTURAL**

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
<b>DWG NO</b> S-52-01	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
	SHEET NO. 62 OF 271	

T/STRUCTURE PLAN  
**PLAN**  
3/8"=1'-0"

NO.	DATE	REVISION	APP.



TYPICAL WALL AND THICKENED EDGE REINFORCEMENT  
**DETAIL A**  
 3/4"=1'-0"  
 S-63-02

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

<p><b>KGI</b> Kalluri Group, Inc.</p> <p>TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF JOHN V. SOBczAK LICENSE NO. 111021 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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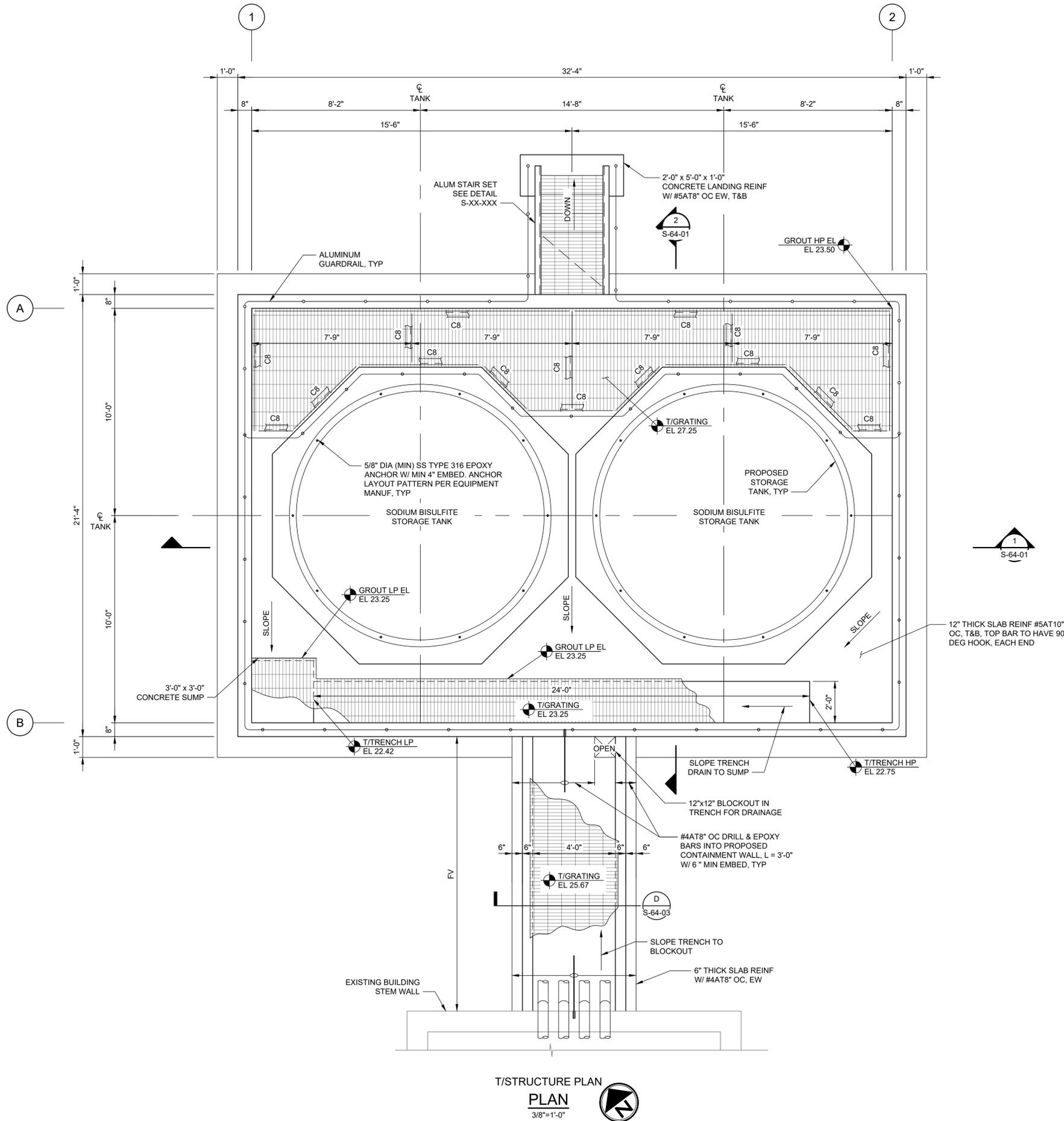
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SODIUM HYPOCHLORITE SECTIONS AND DETAIL**  
 STRUCTURAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p> <p>DWG NO S-52-02</p>	<p>WBS NUMBER</p> <p>R-000265-0154-4</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
	<p>DRAWING SCALE</p> <p>AS SHOWN</p>	
	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>	
	<p>SHEET NO. XX 63 OF 271</p>	

NO.	DATE	REVISION	APP.





**SHAPE LEGEND FIBER REINFORCED POLYMER (FRP)**

- C8 = 8"x2.1875"x3/8" CHANNEL MEMBER W/ SECTION MODULUS = 8.94 in<sup>2</sup>

**NOTES:**

- REFER TO "M" DWGS FOR ALL EQUIPMENT LOCATIONS.
- ALL DIMENSIONS SHALL BE VERIFIED WITH EQUIPMENT MFR AND FIELD CONDITIONS PRIOR TO FABRICATION OF PLATFORM AND WALKWAYS.
- ALL PLATFORM FRAMING SHALL BE FIBER REINFORCED POLYMER (FRP) WITH STAINLESS STEEL TYPE 316L HARDWARE UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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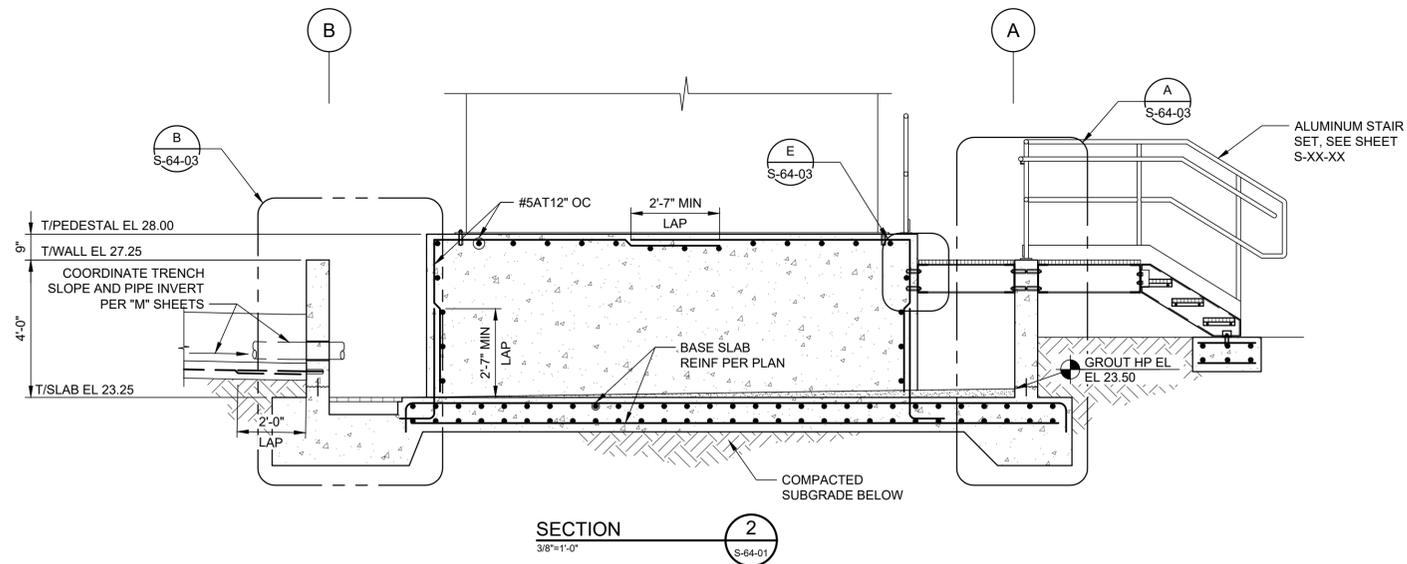
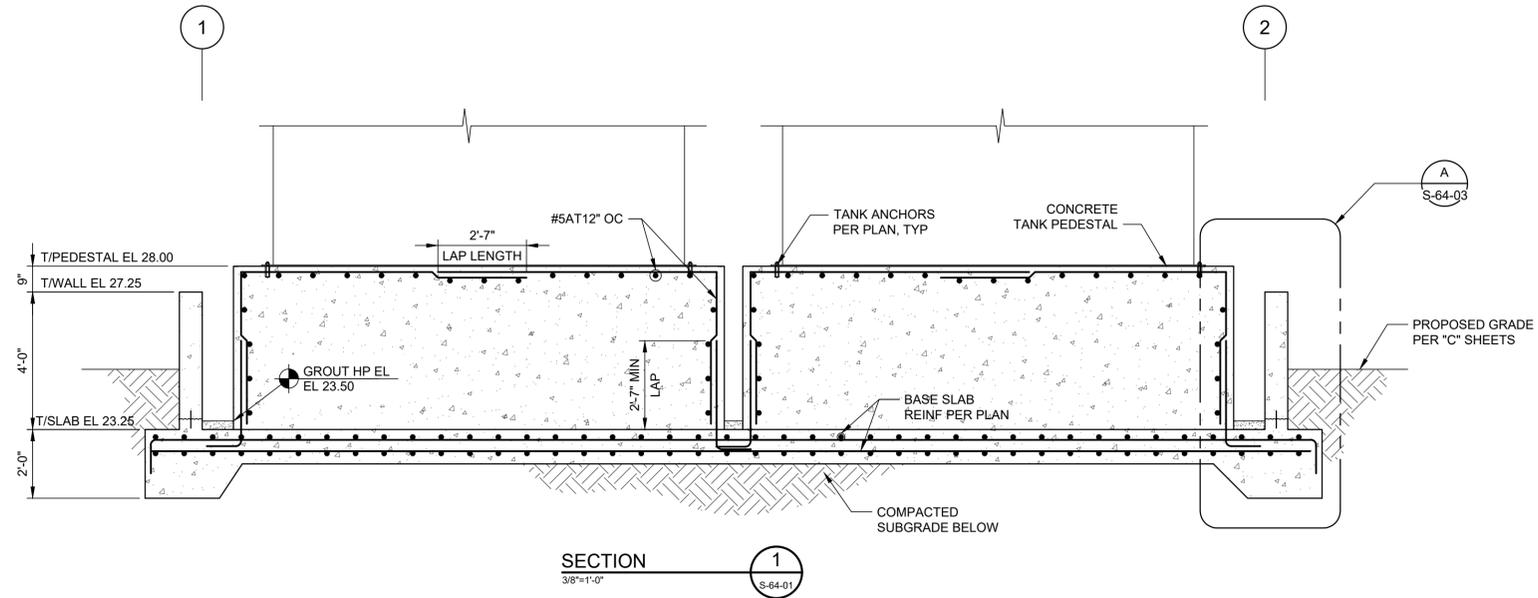
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SODIUM BISULFITE PLAN**

**STRUCTURAL**

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO <b>S-53-01</b>	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
SHEET NO.	65	OF 271

T/STRUCTURE PLAN  
**PLAN**  
3/8"=1'-0"



NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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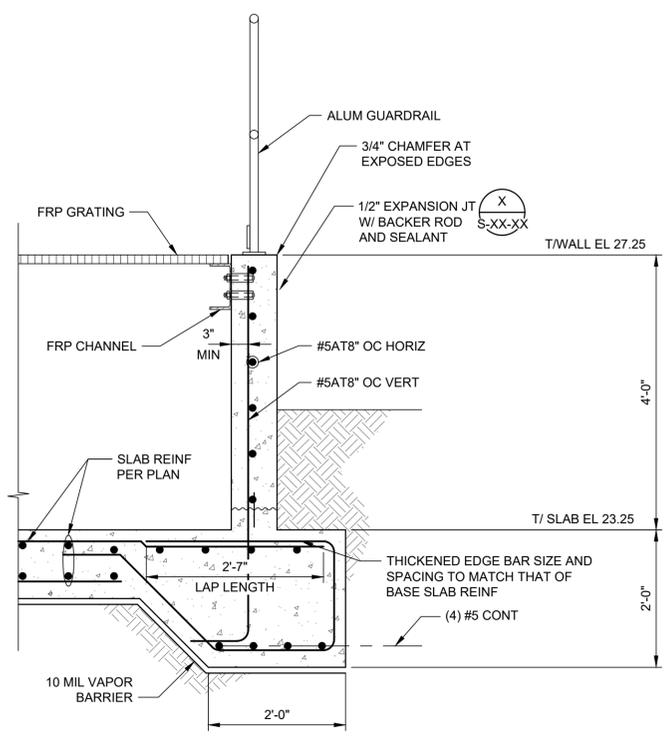
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SODIUM BISULFITE SECTIONS**

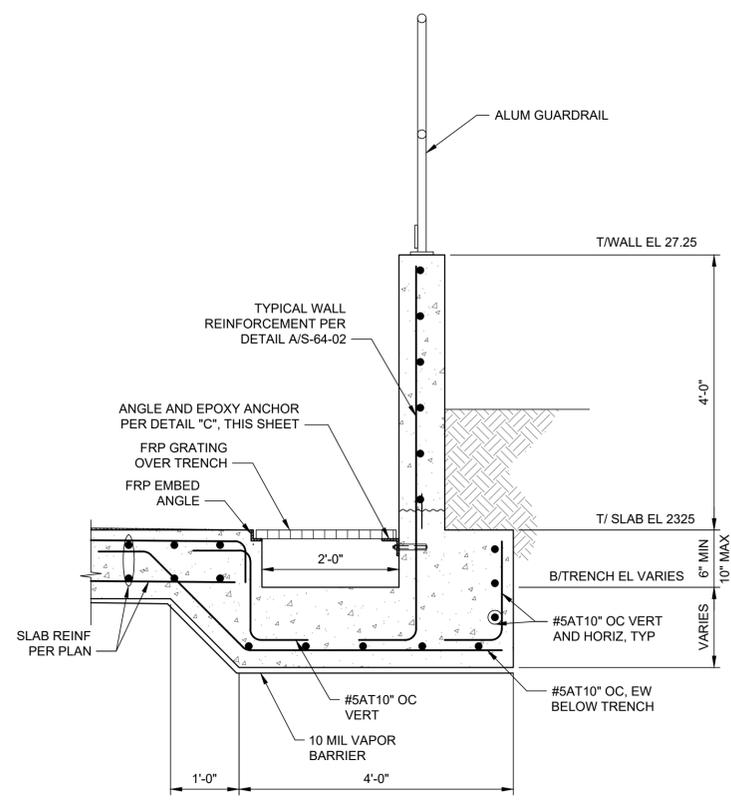
STRUCTURAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
DWG NO	CITY OF HOUSTON PM	
S-53-02	TAHA LOTIA	
SHEET NO.	66 OF 271	

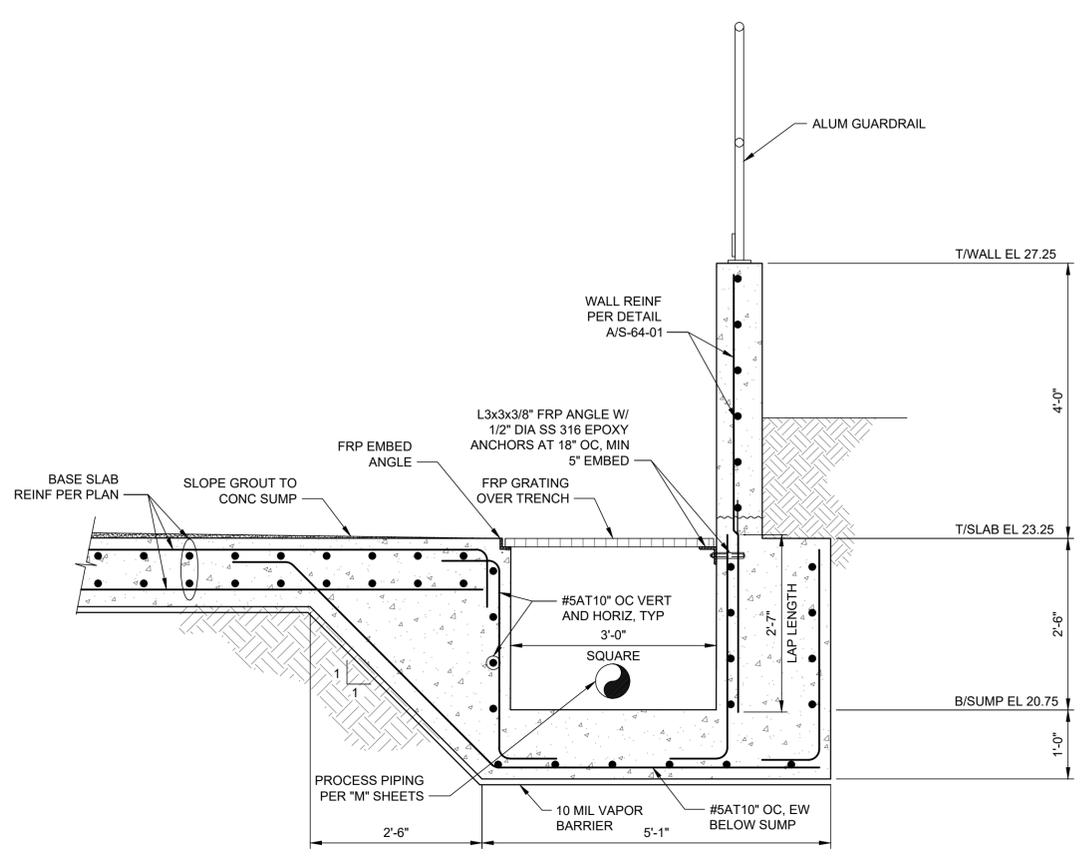
NO.	DATE	REVISION	APP.



**TYPICAL WALL AND THICKENED EDGE REINFORCEMENT**  
**DETAIL A**  
 3/4"=1'-0" S-64-02



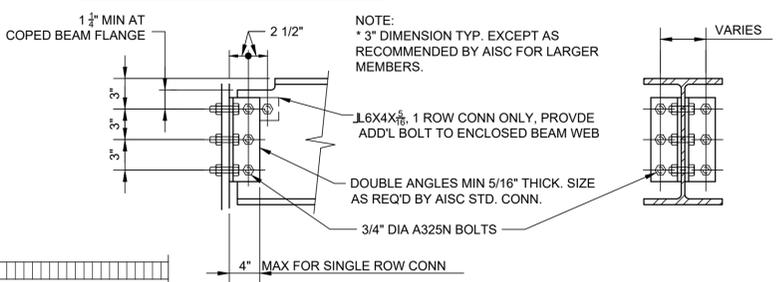
**CONCRETE TRENCH**  
**DETAIL B**  
 3/4"=1'-0" S-64-02



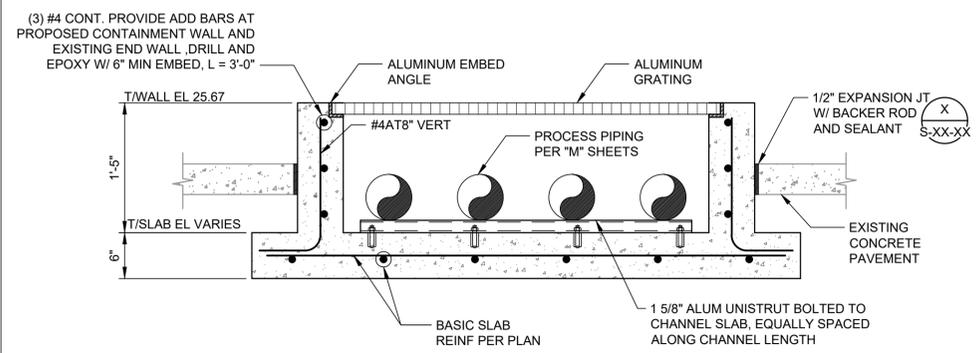
**CONCRETE SUMP**  
**DETAIL C**  
 3/4"=1'-0" S-64-02

NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
36	7	1'-8 1/2"
30-33	6	1'-5 1/2"
24-27	5	1'-2 1/2"
16-21	4	11 1/2"
12-15	3	8 1/2"
8-10	2	5 1/2"
6	1	3"

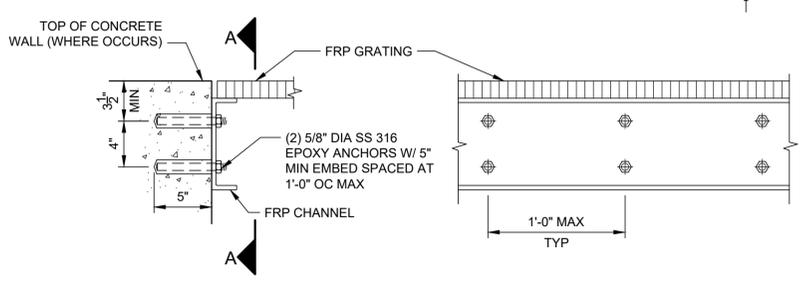
- NOTES:**
- NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSE WEB.
  - ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING DRAWINGS.
  - ADD 1 1/2" TO ANGLE LENGTH FOR STAGGERED BOLT CONNECTIONS.
  - USE SS BOLTS FOR ALL FRP FRAMING.
  - USE WASHERS ON NUTS.



**TYPICAL FRAMING CONNECTION**  
**DETAIL F**  
 NTS S-64-03



**PLATFORM TO CONCRETE CONNECTION**  
**DETAIL D**  
 1"=1'-0" S-64-01



**PLATFORM TO CONCRETE CONNECTION**  
**DETAIL E**  
 1 1/2"=1'-0" S-64-02

**VERIFY SCALE**  
 0 1  
 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

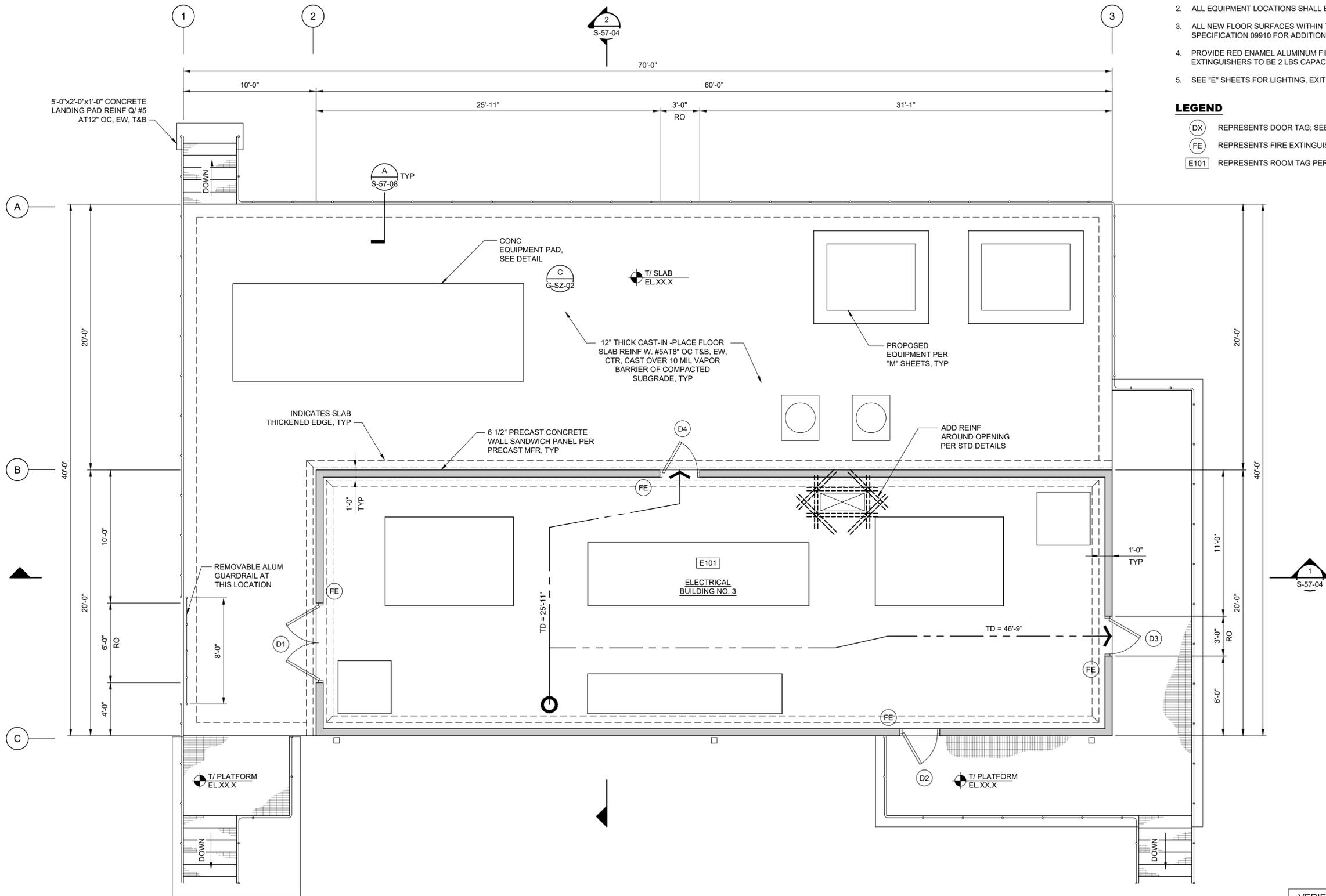
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**K KGI**  
 Kalluri Group, Inc.  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SODIUM BISULFITE DETAILS**  
 STRUCTURAL

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS SHOWN
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	OF 2767



**NOTES:**

- CONTRACTOR SHALL INDICATE ANY PROPOSED BLOCKOUTS IN BASE SLAB FOR CONDUIT IN THE REINFORCEMENT SHOP DRAWINGS. ALL BLOCKOUTS SIZE AND LOCATIONS ARE SUBJECT TO THE ENGINEER'S APPROVAL AND SHALL BE FILLED WITH CONCRETE GROUT. CONDUIT WILL NOT BE PERMITTED TO BE RUN WITHIN THE SLAB THICKNESS. COORDINATE ALL PENETRATIONS IN BUILDING WITH OTHER DISCIPLINE DRAWINGS. ALL OPENINGS AND PENETRATIONS MUST BE REPRESENTED ON PEMB SHOP DRAWINGS.
- ALL EQUIPMENT LOCATIONS SHALL BE COORDINATED W/ THE "M" DWGS.
- ALL NEW FLOOR SURFACES WITHIN THE BUILDING ARE TO RECEIVE AN EPOXY COATING. REFER TO SPECIFICATION 09910 FOR ADDITIONAL REQUIREMENTS.
- PROVIDE RED ENAMEL ALUMINUM FIRE EXTINGUISHERS WHERE INDICATED ON PLAN. FIRE EXTINGUISHERS TO BE 2 LBS CAPACITY WITH A MINIMUM UL RATING OF 10A80BC.
- SEE "E" SHEETS FOR LIGHTING, EXIT SIGNS, ETC.

**LEGEND**

- (DX) REPRESENTS DOOR TAG; SEE SHEET S-57-07
- (FE) REPRESENTS FIRE EXTINGUISHER; SEE NOTE 4
- [E101] REPRESENTS ROOM TAG PER SHEET S-57-07

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

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
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TBPE Registration No. F-665  
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Houston, Texas 77094  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**ELECTRICAL BUILDING NO. 3**  
FLOOR PLAN  
STRUCTURAL

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	R-000265-0154-4	
DWG NO S-57-01	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
	SHEET NO. 68 OF 271	

NO.	DATE	REVISION	APP.

BUILDING DATA:			
THIS BUILDING IS A ELECTRICAL BUILDING AT THE SIMS BAYOU SOUTH WASTEWATER TREATMENT FACILITY IN HOUSTON, TEXAS, AND IS NOT MEANT FOR REGULAR HUMAN HABITATION. EMPLOYEE ACCESS IS FOR SERVICE AND MONITOR ONLY.			
<p><b>GOVERNING CODES:</b> 2021 INTERNATIONAL BUILDING CODE (IBC) 2021 INTERNATIONAL FIRE CODE (IFC)</p>			
OCCUPANT LOAD			
GROSS BUILDING AREA	OCCUPANCY USE (IBC 312)	FLOOR AREA IN SQ. FT. PER OCCUPANT (AFP-B TABLE 1004.5)	NO. OF OCCUPANTS
1200 SF	U (UTILITY; IBC 312)	100 SF GROSS	12
EXITS			
EGRESS WIDTH (IBC 1005)	= 0.2' / PERSON		
MIN EXIT DOOR WIDTH	32"		
MAX ALLOWABLE TRAVEL DISTANCES (IBC TABLE 1017.2)	U: 300 FT (W/O SPRINKLERS)		
MIN CORRIDOR WIDTH (IBC TABLE 1020.2)	44"		
MIN NUMBER OF EXITS (IBC 1022)	1 REQUIRED		
MIN NUMBER OF EXITS PROVIDED	4 PROVIDED		
MAX DEAD END CORRIDORS (IBC 1020.4)	20 FT		
CONSTRUCTION			
CONSTRUCTION TYPE (IBC 601)	TYPE II-B		
MAX ALLOWABLE SQ FOOTAGE (IBC TABLE 506.2)	U = 8,500 SF		
MAX ALLOWABLE HEIGHT (IBC TABLE 504.3)	U = 55 FT		
NO. FLOORS PERMITTED (IBC TABLE 504.4)	U: 2 FLRS		
OCCUPANCY SEPARATION	NOT REQUIRED		
AUTOMATIC FIRE SPRINKLERS (IBC 903)	NOT REQUIRED		
HANDICAP (ADA) ACCESSIBLE	NO		
FIRE PROTECTION			
FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (IBC TABLE 601)			
PRIMARY STRUCTURAL FRAME	0 HOURS		
BEARING WALLS (EXTERIOR)	0 HOURS		
BEARING WALLS (INTERIOR)	0 HOURS		
NONBEARING WALLS (EXTERIOR)	0 HOURS		
NONBEARING WALLS (INTERIOR)	0 HOURS		
FLOOR CONSTRUCTION	0 HOURS		
ROOF CONSTRUCTION	0 HOURS		
FLAME SPREAD			
THE INTERIOR FINISHES SHALL BE REQUIRED TO MEET A CLASS C FLAME SPREAD INDEX OF 76-200, SMOKE-DEVELOPED INDEX OF 0-450 (IBC 803).			
INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450.			

ELECTRICAL PRECAST CONCRETE BUILDING						
WIND DESIGN PRESSURES						
COMPONENTS CLADDING, PSF (LFRD)						
ROOF						
EFFECTIVE AREA (SF)	ZONE 1		ZONE 2		ZONE 3	
	(+)	(-)	(+)	(-)	(+)	(-)
10	18.20	-71.10	18.20	-93.80	18.20	-127.80
25	16.60	-64.90	16.60	-85.80	16.60	-111.90
50	16.00	-60.20	16.00	-79.80	16.00	-99.80
100	16.00	-55.50	16.00	-73.80	16.00	-87.80
> 200	16.00	-50.80	16.00	-67.70	16.00	-75.70
WALLS						
EFFECTIVE AREA (SF)	ZONE 4 (FIELD)		ZONE 5 (CORNERS)			
	(+)	(-)	(+)	(-)		
<10	40.80	-44.30	40.80	-54.50		
50	36.60	-40.10	36.60	-46.10		
200	33.0	-36.40	33.0	-38.80		
>500	30.60	-34.00	30.60	-34.00		

**ROOF ZONE PLAN**

**WALL ZONE ELEVATIONS**

**WIND PRESSURE NOTES:**

- SEE "WIND DESIGN CRITERIA" NOTES ON S-G-01.
- "a" = 3'-0", OH = OVERHANG ZONE PRESSURES.
- DESIGN PRESSURES ARE PROVIDED AT ULTIMATE DESIGN WIND SPEEDS. TO CONVERT TO NOMINAL DESIGN WIND SPEEDS (ASD) MULTIPLE PRESSURE BY A FACTOR OF 0.60.
- THE EFFECTIVE AREA SHALL BE DETERMINED AS FOLLOWS UNLESS OTHERWISE NOTED:
  - THE SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN ONE THIRD THE SPAN LENGTH.
  - THE AREA THAT IS TRIBUTARY TO AN INDIVIDUAL FASTENER.
- NEGATIVE SIGN INDICATES PRESSURE ACTING OUTWARD FROM SURFACE.

ENCLOSURE CLASSIFICATION: INTERNAL PRESSURE COEFFICIENT,  $G_{ci}$       ENCLOSED STRUCTURE: ± 0.18

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
<p><b>KGI</b> Kalluri Group, Inc.</p> <p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	
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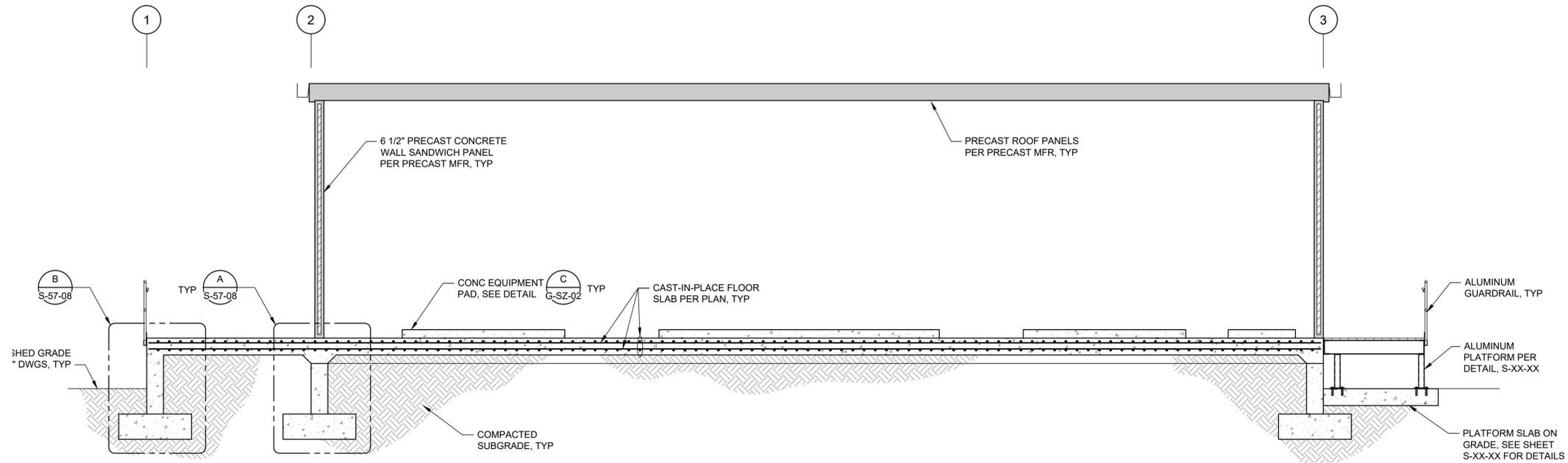
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

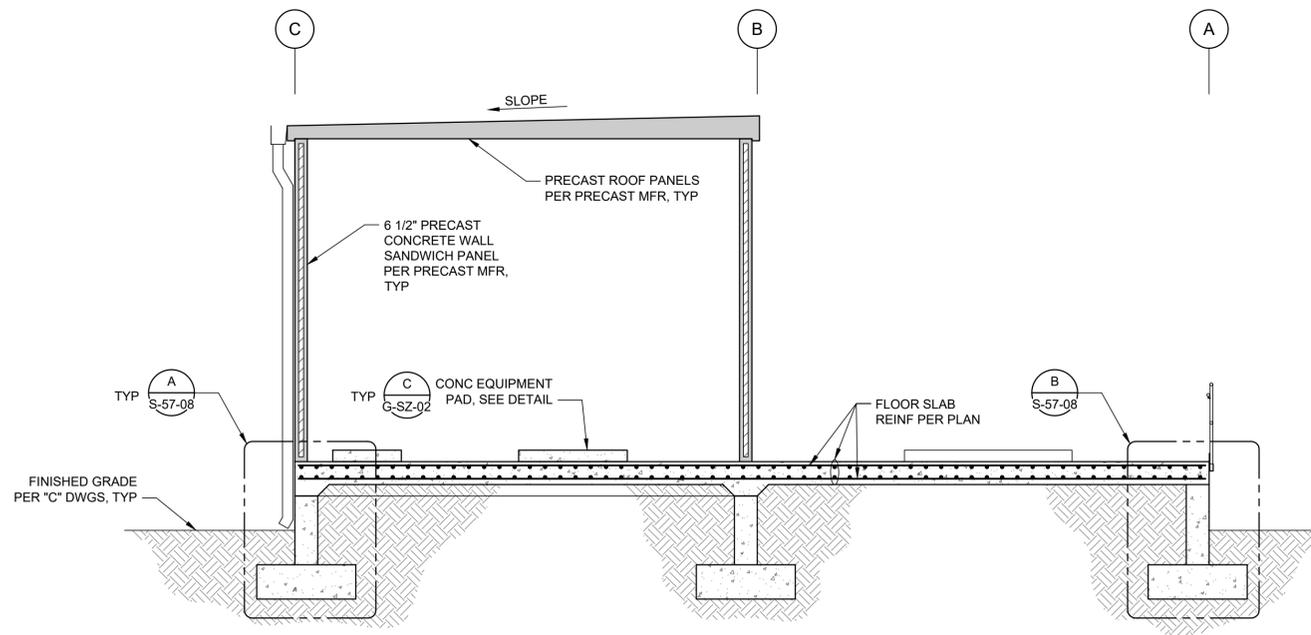
**ELECTRICAL BUILDING NO. 3**  
**BUILDING DATA AND WIND LOADING**  
STRUCTURAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
S-57-02	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 69 OF 271	

NO.	DATE	REVISION	APP.



**SECTION 1**  
1/4"=1'-0"  
S-57-01



**SECTION 2**  
1/4"=1'-0"  
S-57-01

NOTES:

1. THE CONTRACTOR SHALL OVER-EXCAVATE THE AREA BELOW PROPOSED WALL FOOTINGS AND STAIR LANDINGS PLUS 2FT ON ALL SIDES. THE OVER-EXCAVATION SHALL EXTEND 3FT BELOW THE BOTTOM OF THE FOOTING/LANDING. BACKFILL AND COMPACT IN ACCORDANCE WITH NOTE 2 AND THE SPECIFICATIONS. PROVIDE 8" COMPACTED CLAYEY CAP AT TOP OF EXCAVATION AT FINISHED GRADE AROUND ENTIRE STRUCTURE AND ENSURE POSITIVE SLOPE AWAY FROM THE STRUCTURE.
2. STRUCTURAL FILL BENEATH THE BUILDING AREA MAY CONSIST OF OFF-SITE INORGANIC LEAN CLAYS (CL) WITH A LIQUID LIMIT OF LESS THAN 40 AND A PLASTICITY INDEX BETWEEN 12 AND 20. OTHER TYPES OF STRUCTURAL FILL AVAILABLE LOCALLY, AND ACCEPTABLE TO THE GEOTECHNICAL ENGINEER AND WHICH ARE IN CONFORMANCE WITH THE SPECIFICATIONS, CAN ALSO BE USED. THESE SOILS SHOULD BE PLACED IN LOOSE LIFTS NOT EXCEEDING 4" IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED BY ASTM D 698 (STANDARD PROCTOR). THE MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHOULD BE BETWEEN OPTIMUM AND +3% OF THE OPTIMUM VALUE.

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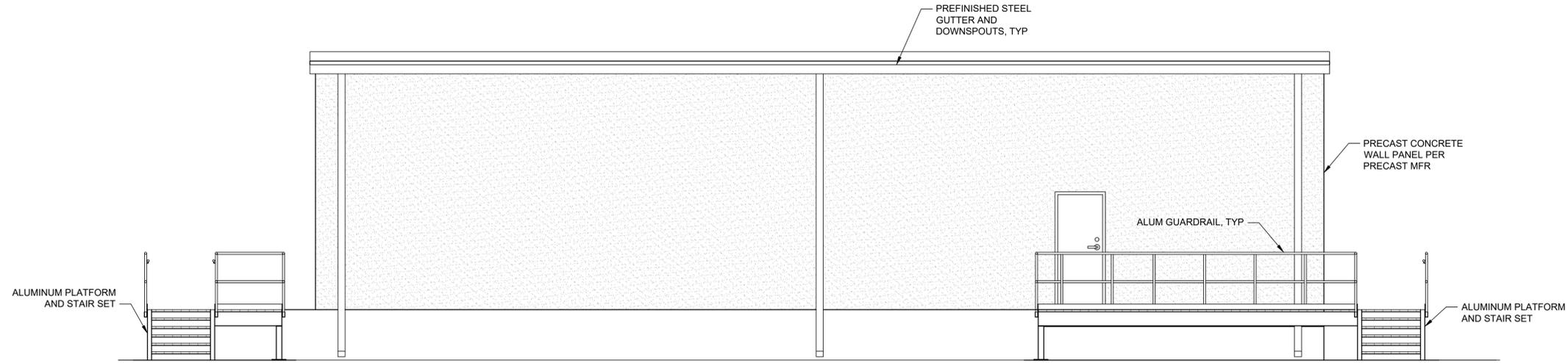
<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>		<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF JOHN V. SOBczAK LICENSE NO. 111021 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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<p><b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS</p> <p>SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3</p> <p><b>ELECTRICAL BUILDING NO. 3</b> <b>STRUCTURAL SECTIONS</b> STRUCTURAL</p>	
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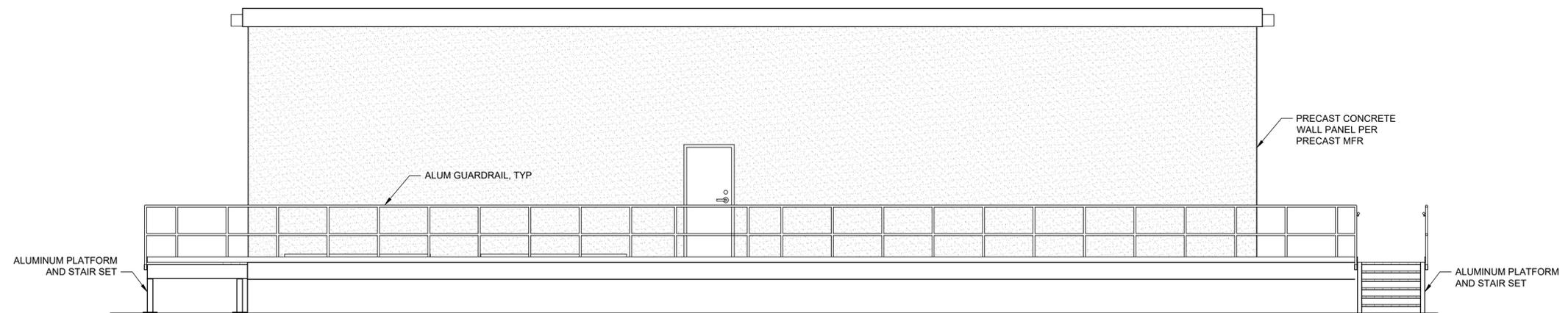
<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>
<p>DWG NO</p> <p><b>S-57-03</b></p>

<p>WBS NUMBER</p> <p>R-000265-0154-4</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>DRAWING SCALE</p> <p>AS SHOWN</p>	
<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>	
<p>SHEET NO. 70 OF 271</p>	

NO.	DATE	REVISION	APP.



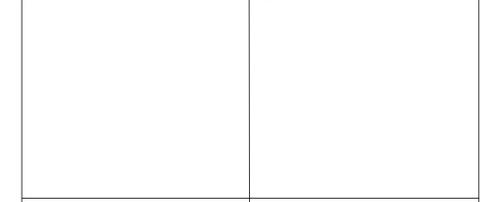
(INSERT) ELEVATION  
ELEVATION  
1/4"=1'-0"



(INSERT) ELEVATION  
ELEVATION  
1/4"=1'-0"

NO.	DATE	REVISION	APP.

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**ELECTRICAL BUILDING NO. 3**  
**STRUCTURAL ELEVATIONS**  
STRUCTURAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.
DWG NO <b>S-57-04</b>

WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS SHOWN	
CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO. 71 OF 271	



INTERIOR FINISH SCHEDULE										
BUILDING	ROOM NUMBER	ROOM NAME	FLOOR	WALL BASE	WALLS				CEILING	COMMENTS
					NORTH	SOUTH	EAST	WEST		
ELECTRICAL BUILDING	101	ELECTRICAL ROOM	PF	NONE	CONC/P	CONC/P	CONC/P	CONC/P	CONC/P	-

**ABBREVIATIONS**  
 CONC = CONCRETE      CMU = EXPOSED CONCRETE BLOCK      GB = GYPSUM BOARD  
 N/A = NOT APPLICABLE      PF = EPOXY FLOOR      P = PAINT  
 SL = SEALED CONCRETE      S = SHEATHING

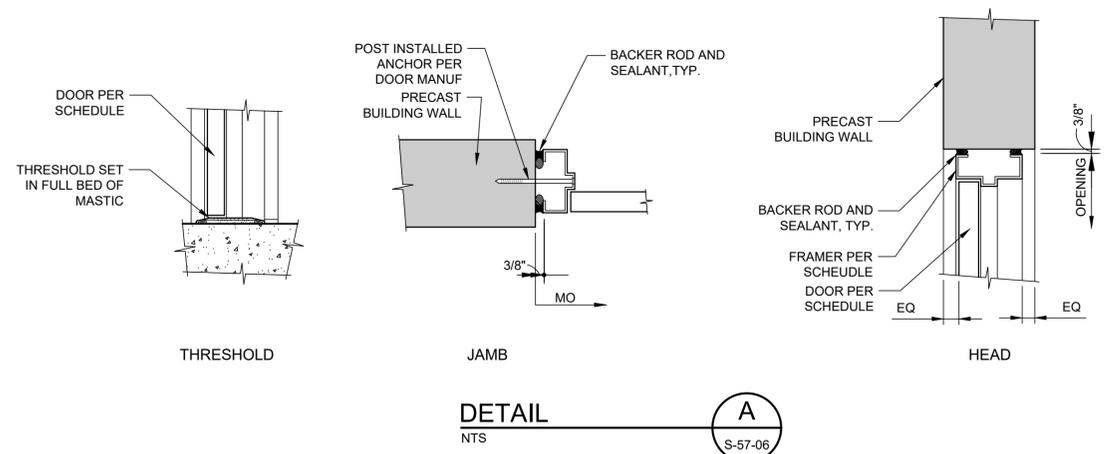
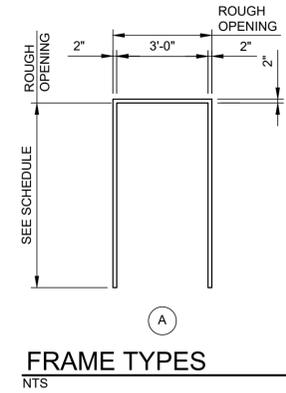
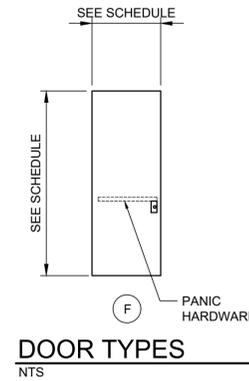
**NOTES:**  
 1. ALL INTERIOR SURFACES SHALL BE PAINTED WITH INTERIOR MASONRY OR CONCRETE PAINT SYSTEM PER SPECIFICATION 09910.

DOOR SCHEDULE														
BUILDING	NUMBER	DOOR SIZE		DOOR			FRAME			DETAILS			FIRE RATING (HOURS)	DESIGN WIND PRESSURE
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	HEAD	JAMB	THRES-HOLD		
ELECTRICAL	D1	6'-0"	8'-0"	F	STL	P	A	STL	P	A	A	A	-	+41/-44
	D2	3'-0"	7'-0"	F	STL	P	A	STL	P	A	A	A	-	+41/-44
	D3	3'-0"	7'-0"	F	STL	P	A	STL	P	A	A	A	-	+41/-44
	D4	3'-0"	7'-0"	F	STL	P	A	STL	P	A	A	A	-	+41/-44

**GENERAL NOTES**

**NOTES:**  
 1. REFER TO SPECIFICATION SECTION 08710 FOR HARDWARE SET SCHEDULE.  
 2. DOOR COLOR TO BE CHOSEN BY OWNER.  
 3. DETAILS SHOWN ARE SCHEMATIC, DETAILS USED FOR CONSTRUCTION SHALL BE PER MANUFACTURER'S OWN DETAILS.  
 4. ALL DOORS AND DOOR HARDWARE SHALL HAVE PRODUCT EVALUATIONS APPROVED BY THE TEXAS DEPARTMENT OF INSURANCE AND NOA FOR MIAMI DADE COUNTY, FL FOR THE WIND LOADING SPECIFIED.  
 5. PROVIDE EXIT DEVICE ON ALL DOORS.

**LIST OF ABBREVIATIONS:**  
 P = PAINTED/PREFINISHED  
 FRP = FIBERGLASS REINFORCED PLASTIC  
 OH = OVERHEAD DOOR  
 AL = ALUMINUM



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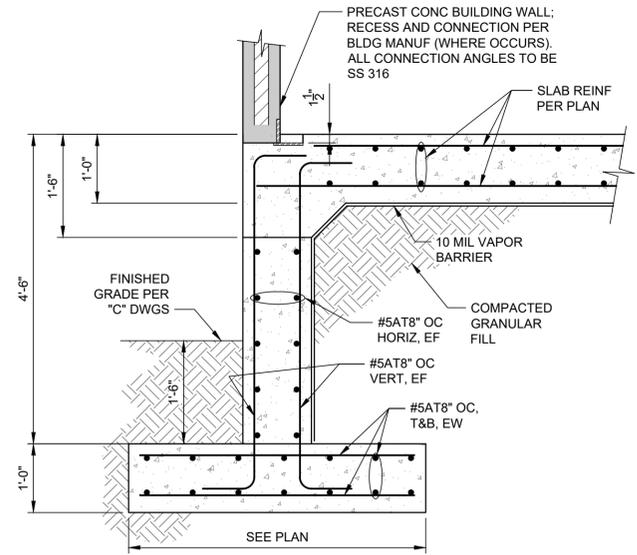
**CITY OF HOUSTON**  
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

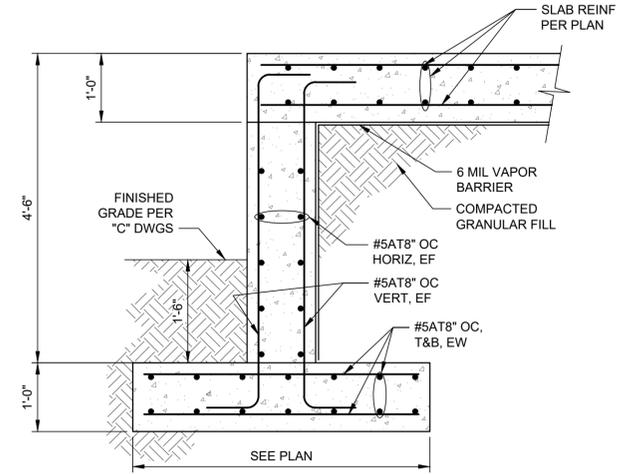
**ELECTRICAL BUILDING NO. 3**  
**SCHEDULES AND DETAILS**  
 STRUCTURAL

VERIFY SCALE	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO	DRAWING SCALE	
S-57-06	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 73 OF 271	

NO.	DATE	REVISION	APP.



WALL FOOTING WF1  
**DETAIL**  
 3/4"=1'-0"  
 A  
 S-57-01



WALL FOOTING WF2  
**DETAIL**  
 3/4"=1'-0"  
 B  
 S-57-01

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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**PROJECT 4264**

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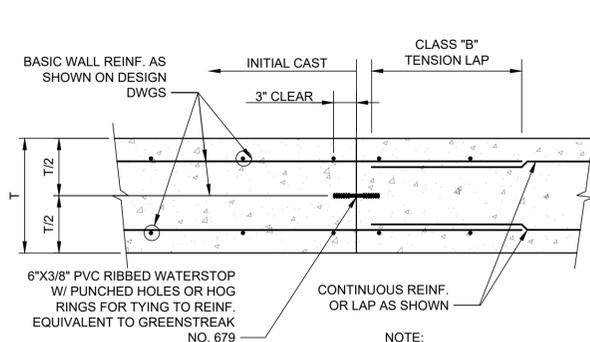
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**ELECTRICAL BUILDING NO. 3**  
**STRUCTURAL DETAILS**  
 STRUCTURAL

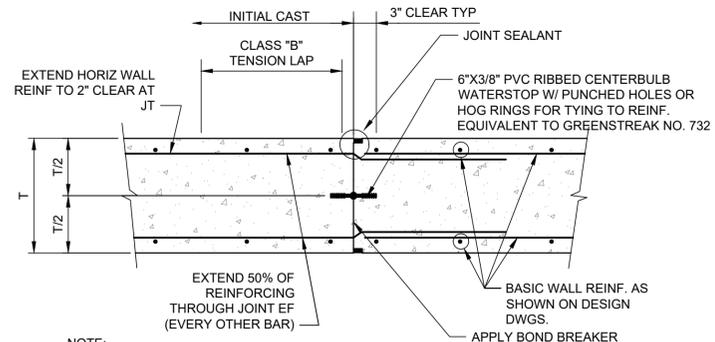
**VERIFY SCALE**  
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 74 OF 271	

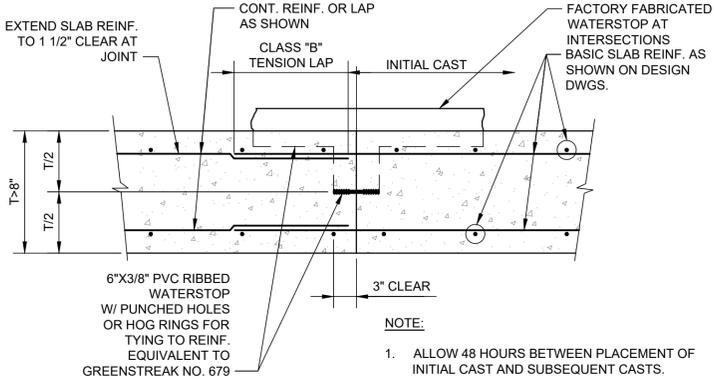
DWG NO  
**S-57-07**



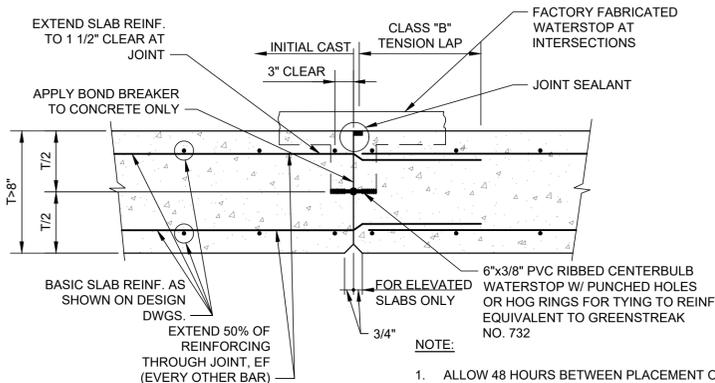
**WALL CONSTRUCTION JOINT**  
**DETAIL A**  
 NTS



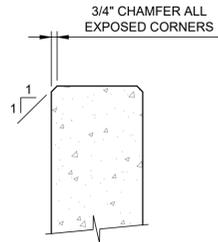
**WALL CONTROL JOINT**  
**DETAIL B**  
 NTS



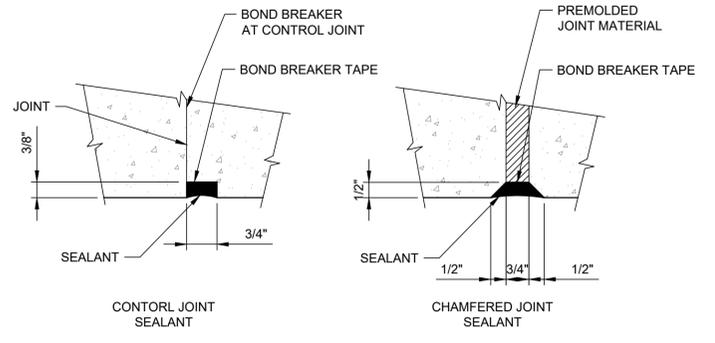
**BASE/ELEVATED SLAB CONSTRUCTION JOINT**  
**DETAIL C**  
 NTS



**BASE/ELEVATED SLAB CONTROL JOINT**  
**DETAIL D**  
 NTS



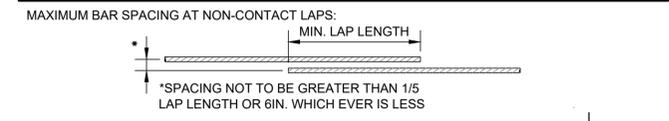
**CHAMFER**  
**DETAIL H**  
 NTS



**JOINT SEALANTS**  
**DETAIL I**  
 NTS

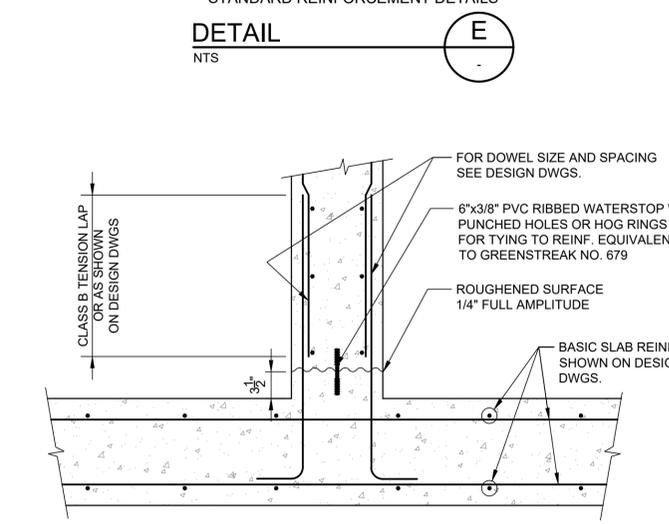
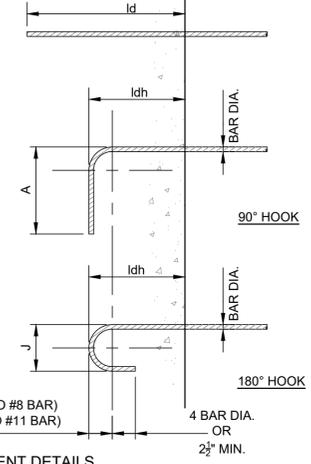
REBAR MINIMUM TENSION DEVELOPMENT & LAP LENGTHS					
CONCRETE STRENGTH $f_c \geq 4,000$ PSI OR GREATER					
BAR SIZE	DEVELOPMENT LENGTH, $l_d$		LAP LENGTH (CLASS B SPLICE)		BAR SIZE
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	1'-7"	1'-3"	2'-0"	1'-7"	#3
#4	2'-1"	1'-7"	2'-8"	2'-0"	#4
#5	2'-7"	2'-0"	3'-4"	2'-7"	#5
#6	3'-1"	2'-4"	4'-0"	3'-1"	#6
#7	4'-6"	3'-6"	5'-10"	4'-6"	#7
#8	5'-2"	3'-11"	6'-8"	5'-2"	#8
#9	5'-10"	4'-6"	7'-6"	5'-10"	#9
#10	6'-6"	5'-0"	8'-6"	6'-6"	#10
#11	7'-3"	5'-7"	9'-6"	7'-3"	#11

NOTES:  
 1. GRADE 60 UNCOATED REINFORCEMENT  
 2. SPLICE LENGTHS GIVEN ABOVE ARE TO BE USED UNLESS NOTED OTHERWISE ON DESIGN DRAWINGS.  
 3. "TOP BARS" INCLUDE ALL TOP BARS IN SLABS AND ALL WALL HORIZONTALS.

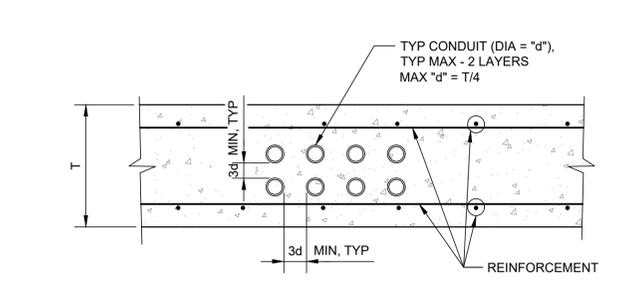
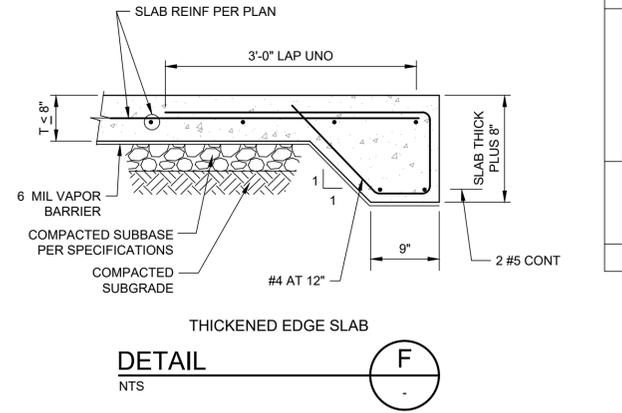


STANDARD HOOK DEVELOPMENT LENGTH			
BAR SIZE	90° STD HOOK "A"	180° STD HOOK "J"	DEVELOPMENT LENGTH, $l_{dh}$
#3	6"	3"	6"
#4	8"	4"	7"
#5	10"	5"	9"
#6	1'-0"	6"	10"
#7	1'-2"	7"	1'-0"
#8	1'-4"	8"	1'-2"
#9	1'-7"	11 1/2"	1'-3"
#10	1'-10"	1'-1 1/2"	1'-5"
#11	2'-0"	1'-2 3/4"	1'-7"

\*FOR STD HOOK BAR GEOMETRY NOT SHOWN REFER TO MINIMUM ACI REQUIREMENTS



**WALL BASE CONSTRUCTION JOINT**  
**DETAIL J**  
 NTS



- NOTES:  
 1. COORDINATE W/ ENGINEER FOR PLACEMENT OF CONDUIT WHERE DIMENSION REQUIREMENTS SHOWN CAN NOT BE MET.  
 2. NO REINFORCEMENT MAY BE CUT, RELOCATED, OR BENT TO ALLOW FOR CONDUIT PLACEMENT WITHOUT PERMISSION FROM ENGINEER.

**TYPICAL CONDUIT PLACEMENT IN SLAB**  
**DETAIL G**  
 NTS

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
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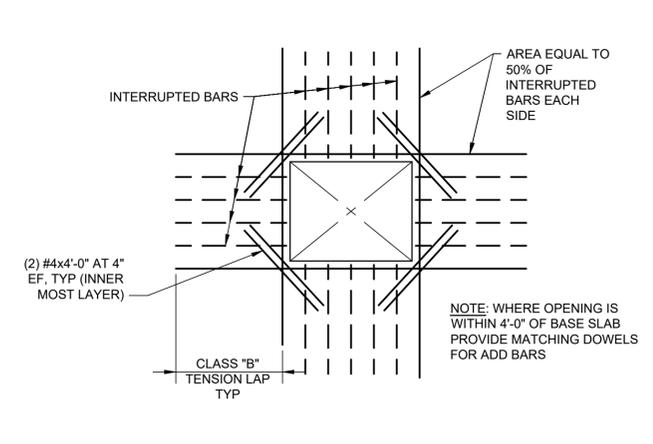
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 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

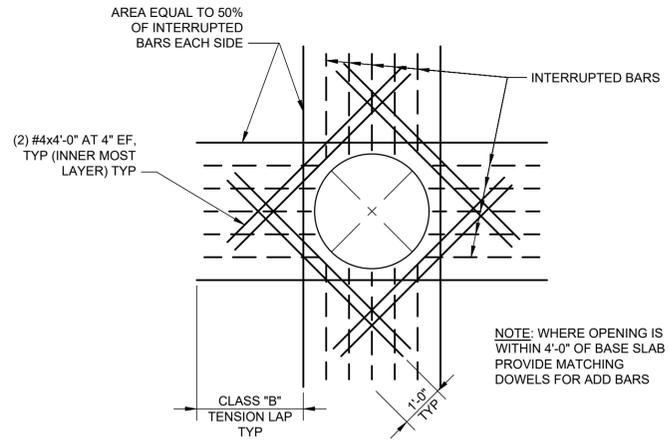
**STANDARD DETAILS SHEET 1**  
 STRUCTURAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE. DWG NO G-SZ-01	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 75 OF 271	

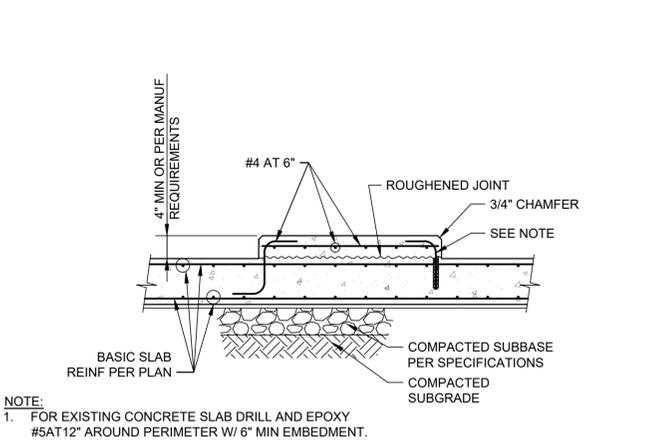
NO.	DATE	REVISION	APP.



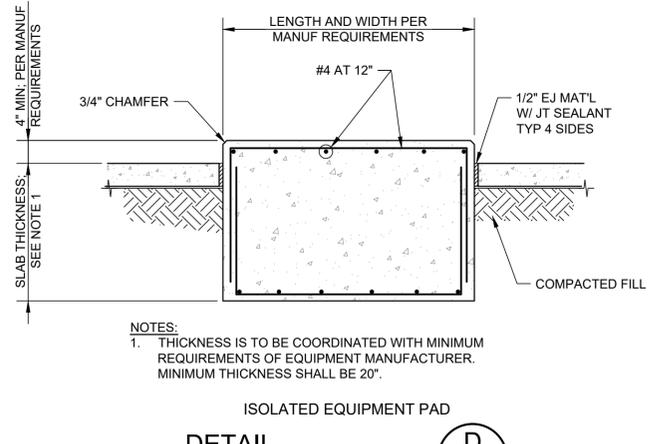
REINFORCING AT RECTANGULAR OPENINGS 12" AND GREATER  
**DETAIL A**  
NTS



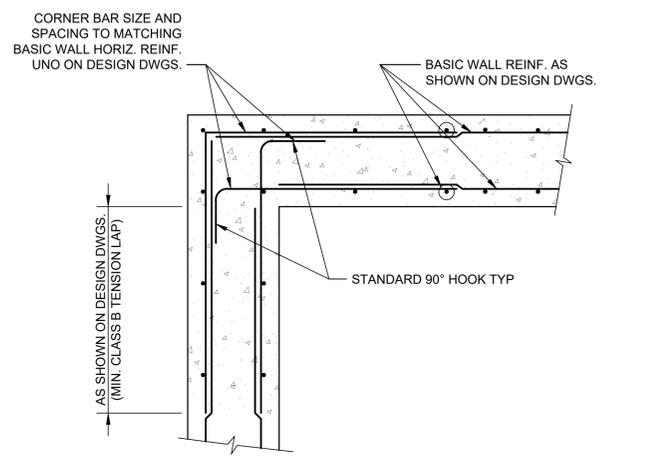
REINFORCING AT CIRCULAR OPENINGS 12" AND GREATER  
**DETAIL B**  
NTS



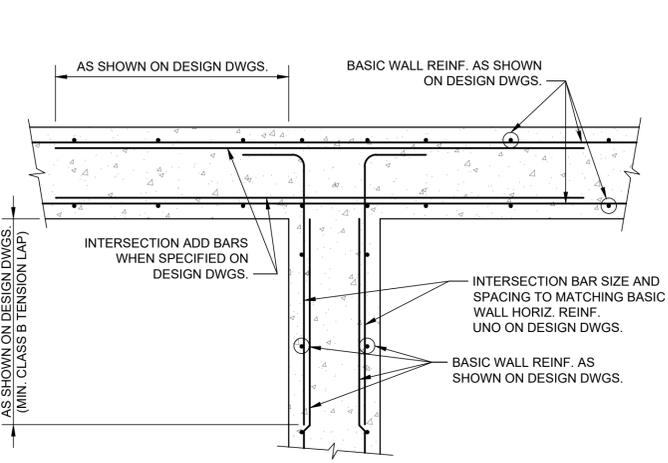
EQUIPMENT PAD  
**DETAIL C**  
NTS



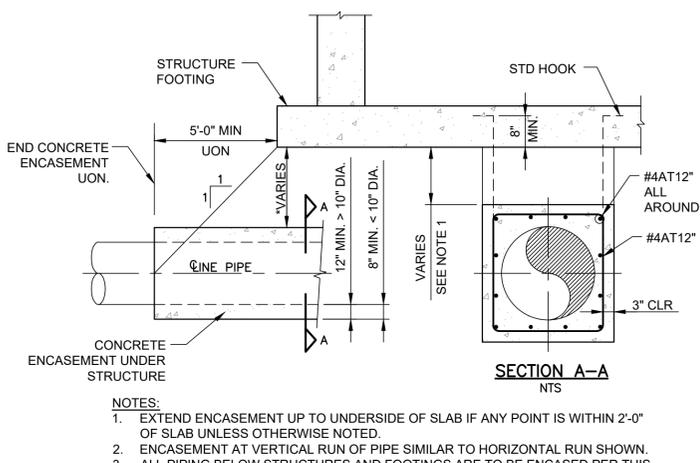
ISOLATED EQUIPMENT PAD  
**DETAIL D**  
NTS



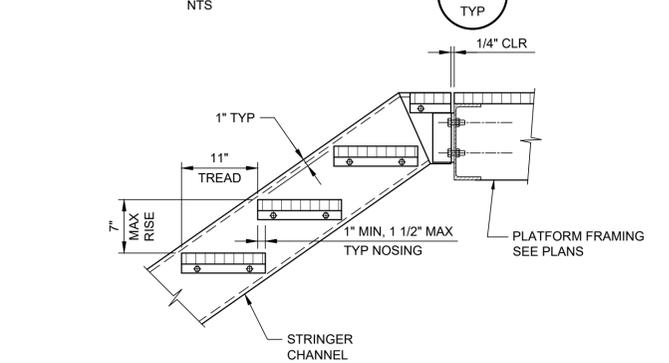
WALL CORNER REINFORCING  
**DETAIL E**  
NTS



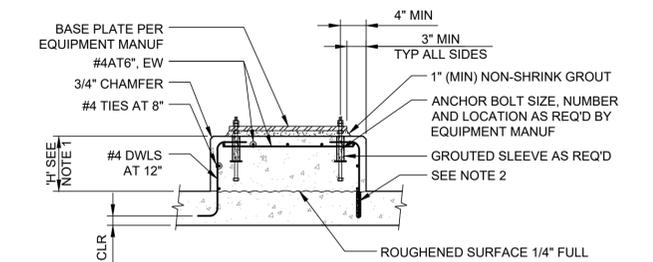
WALL INTERSECTION REINFORCING  
**DETAIL F**  
NTS



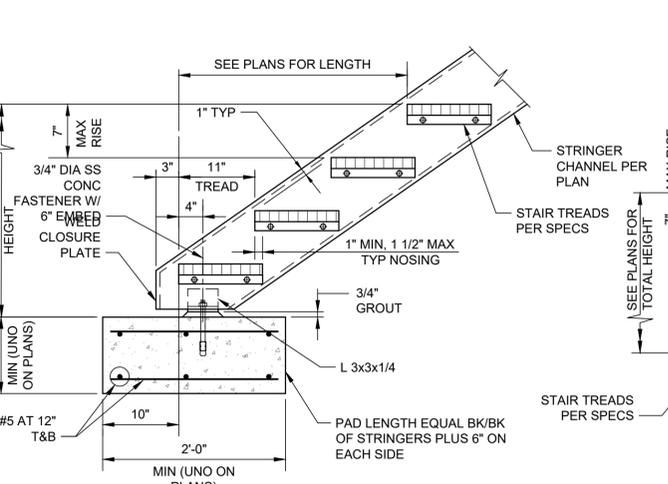
PIPE ENCASEMENT  
**DETAIL G**  
NTS



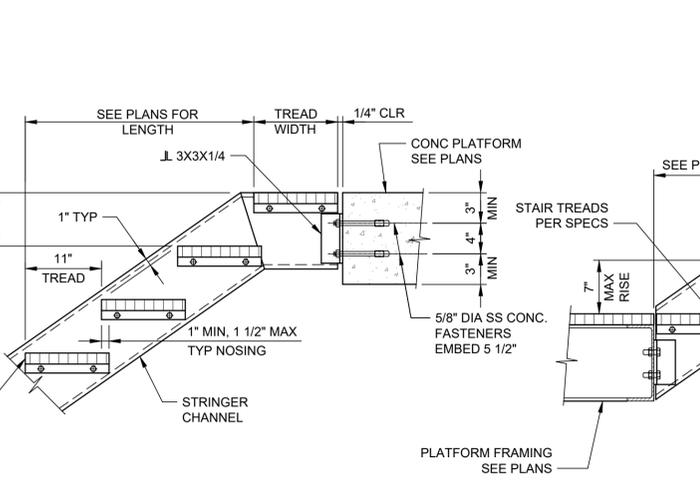
ALUM STAIR STRINGER TO PLATFORM TOP  
**DETAIL L**  
NTS



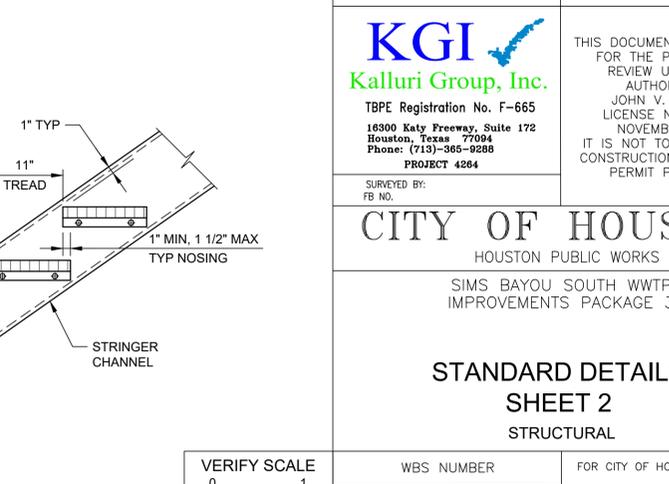
EQUIPMENT BASE  
**DETAIL H**  
NTS



ALUM STAIR STRINGER TO CONCRETE  
**DETAIL I**  
NTS



ALUM STAIR STRINGER TO CONCRETE PLATFORM TOP  
**DETAIL J**  
NTS



ALUM STAIR STRINGER TO LOWER LANDING  
**DETAIL K**  
NTS

- NOTES:**
- "H" VARIES PER EQUIPMENT MANUFACTURER'S AND PIPING LAYOUT REQUIREMENTS UNLESS INDICATED ON DRAWINGS.
  - FOR EXISTING CONCRETE SLAB DRILL AND EPOXY #5AT12" AROUND PERIMETER, EMBED 6" MIN.
  - EQUIPMENT BASE DIMENSIONS SHALL BE AS INDICATED ON THE DRAWINGS OR AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER.
  - THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE EQUIPMENT BASE IS BEING CAST. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL TYPE 316.
  - PIPE SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. PIPE SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER OF 3" GREATER THAN BOLT DIAMETER. SLEEVES SHALL BE STAINLESS STEEL TYPE 316 AND FILLED WITH NON-SHRINK GROUT.

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO G-SZ-02	DRAWING SCALE AS SHOWN	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 76 OF 271	

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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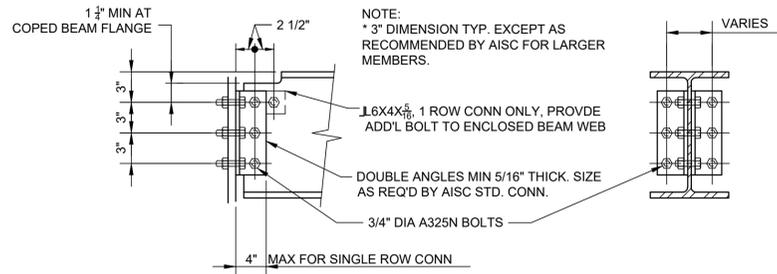
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS SHEET 2**  
STRUCTURAL

NO.	DATE	REVISION	APP.

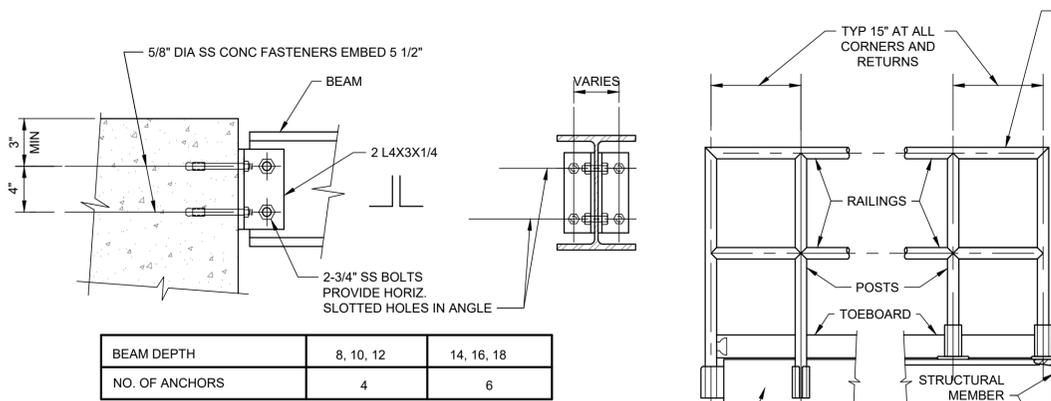
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
36	7	1'-8 1/2"
30-33	6	1'-5 1/2"
24-27	5	1'-2 1/2"
16-21	4	11 1/2"
12-15	3	8 1/2"
8-10	2	5 1/2"
6	1	3"

NOTES:

- NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSE WEB.
- ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING DRAWINGS.
- ADD 1/2" TO ANGLE LENGTH FOR STAGGERED BOLT CONNECTIONS.
- USE SS 316 BOLTS FOR ALL ALUMINUM FRAMING.
- USE WASHERS ON NUTS.

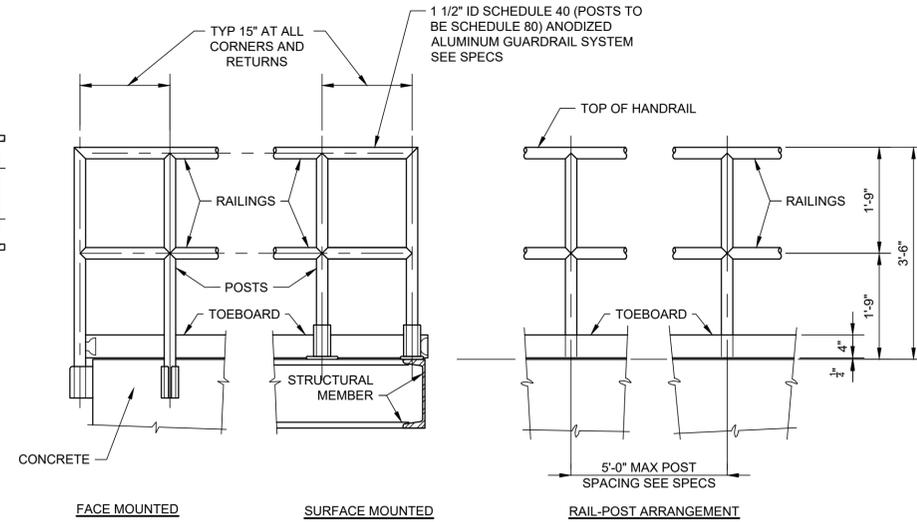


TYPICAL FRAMING CONNECTION  
DETAIL A  
NTS

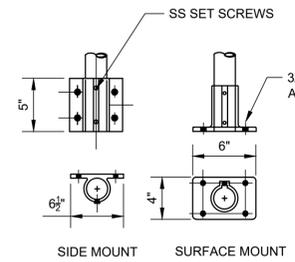


BEAM DEPTH	8, 10, 12	14, 16, 18
NO. OF ANCHORS	4	6

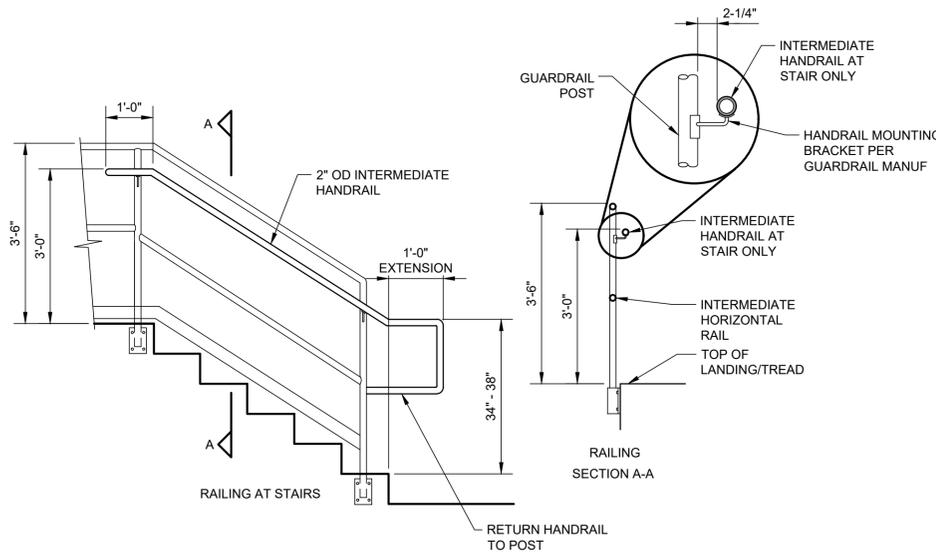
BEAM TO CONCRETE  
DETAIL B  
NTS



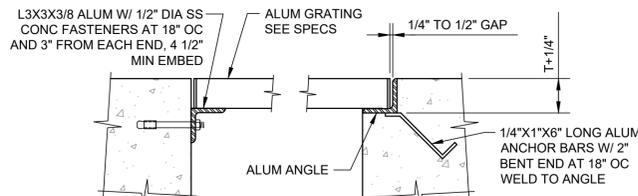
GUARDRAILS  
DETAIL C  
NTS



EXPANSION JT  
CONNECTIONS  
BASE CONNECTION NOTE:  
4 ANCHOR PATTERN SHOWN,  
2 BOLT PATTERN WILL BE  
ACCEPTABLE GIVEN THE  
LOADING REQUIREMENTS  
SPECIFIED ARE SATISFIED  
AND A MINIMUM OF 1/2\"/>



HANDRAIL ATTACHED TO GUARDRAIL SYSTEM  
DETAIL D  
NTS



MAXIMUM SPAN	DEPTH	BEARING BAR	
		THICKNESS	SPACING
3'-0"	1 1/4"	3/16"	1 3/16"
4'-0"	1 1/2"	3/16"	1 3/16"
5'-0"	2"	3/16"	1 3/16"
6'-0"	2 1/4"	3/16"	1 3/16"

ALUM GRATING AND GRATING SUPPORT  
DETAIL E  
NTS

APPROVED: DESIGNED BY: RK, SJ DATE: DRAWN BY: DM

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**STANDARD DETAILS SHEET 3**  
STRUCTURAL

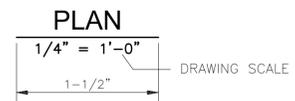
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE. DWG NO G-SZ-03	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE AS SHOWN	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 77 OF 271	

NO.	DATE	REVISION	APP.

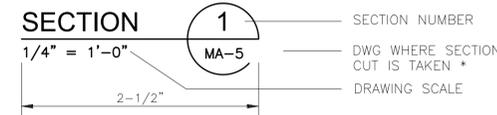
**DRAWING, SECTION AND DETAIL TITLES**

A SUBTITLE IS USED ONLY IF A VIEW IS UNCLEAR. SUBTITLE IS LOCATED ABOVE TITLE.

SUBTITLE OR DESCRIPTION AS REQUIRED



SUBTITLE OR DESCRIPTION AS REQUIRED

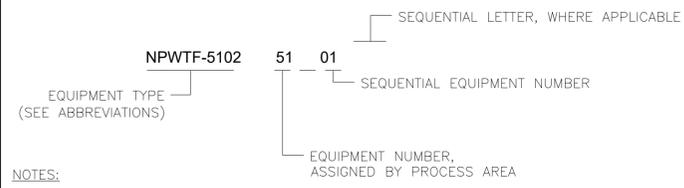


\* IF SECTION, DETAIL, SCHEMATIC OR DIAGRAM IS DRAWN ON THE SAME SHEET THAT IT IS TAKEN FROM, REPLACE THE SHEET NUMBER WITH A HYPHEN. IF THE SECTION IS REFERENCED ON MULTIPLE SHEETS, THE SHEET NUMBER INDICATES THE FIRST SHEET THE SECTION IS TAKEN FROM.

**DESIGN DISCIPLINE DESIGNATIONS**

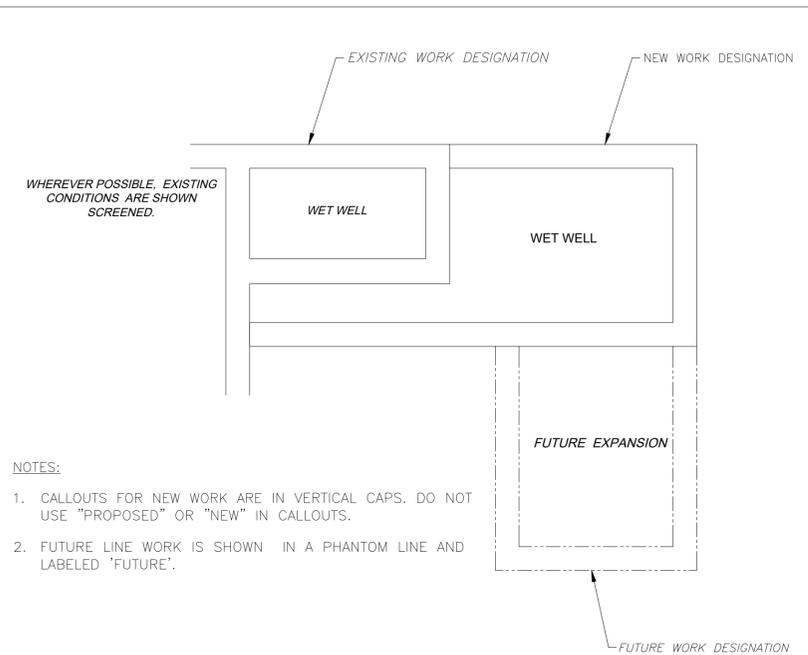
DESIGNATION	DESCRIPTION
G	GENERAL
C	CIVIL
D	DEMOLITION
A	ARCHITECTURAL
S	STRUCTURAL
P	PROCESS
M	MECHANICAL
H	HVAC/BUILDING MECHANICAL
E	ELECTRICAL
I	INSTRUMENTATION

**EQUIPMENT TAGS**



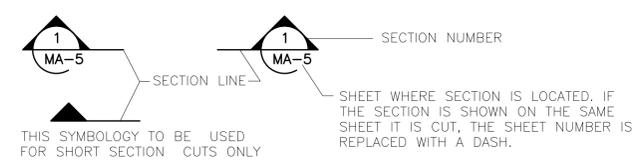
- NOTES:
- EXAMPLE EQUIPMENT TAG SHOWN IS NPW TERTIARY FILTER IN AREA 52, FILTER NO.2
  - CONSECUTIVE ALPHABETICAL LETTERS ARE USED FOR THE SAME TYPE OF EQUIPMENT IN A GIVEN TRAIN OR A GIVEN PROCESS.
  - THE NUMBERING SYSTEM SHOWN IS USED FOR IDENTIFY PROPOSED EQUIPMENT. EXISTING EQUIPMENT NUMBERING IS RETAINED WHERE EXISTING EQUIPMENT IS REPLACED WITH NEW EQUIPMENT.

**EXISTING, NEW OR FUTURE CONDITION DESIGNATION**



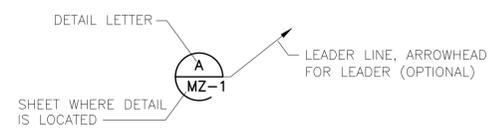
- NOTES:
- CALLOUTS FOR NEW WORK ARE IN VERTICAL CAPS. DO NOT USE "PROPOSED" OR "NEW" IN CALLOUTS.
  - FUTURE LINE WORK IS SHOWN IN A PHANTOM LINE AND LABELED 'FUTURE'.

**SECTION CUT SYMBOLS**



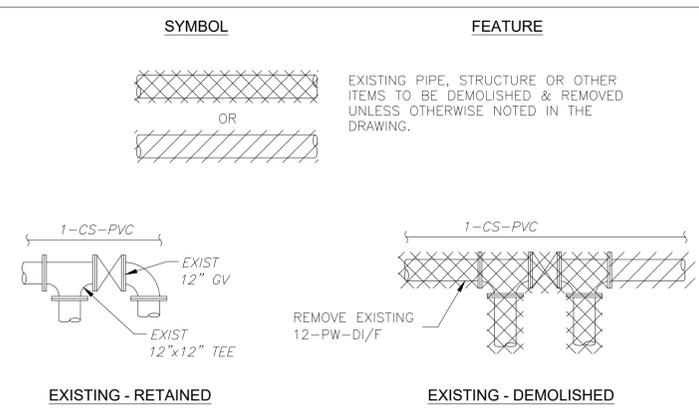
WHEN REFERENCING A SECTION IN A NOTE, USE 1/BPS-M-1 FORMAT INSTEAD OF THE BUBBLE

**DETAIL CALL OUT SYMBOLS**

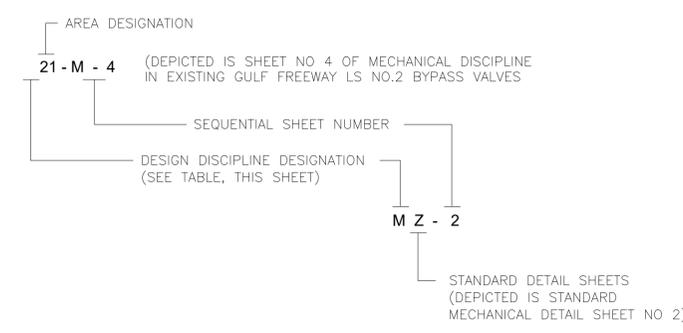


WHERE A NOTE IS REQUIRED FOR CLARITY, A/BPS-M-1 FORMAT IS USED IN THE NOTE INSTEAD OF BUBBLE. IF MULTIPLE DETAILS REFER TO THE SAME AREA OF THE DRAWING, THE BUBBLES ARE STACKED SIDE BY SIDE.

**DEMOLITION/ABANDONMENT LEGEND**



**DRAWING IDENTIFICATION SYSTEM**



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GENERAL LEGEND & SYMBOLS (SHEET 1 OF 3)**

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-G-1	SHEET NO. 78 OF 271	

NO.	DATE	REVISION	APP.



REV.	NO.	DATE	REVISION	APP.

**VALVE SYMBOLS**

SYMBOL	TYPE	SYMBOL	TYPE
	PINCH VALVE		TEMPERATURE & PRESSURE RELIEF VALVE
	BALL VALVE		SELF-CONTAINED REGULATING VALVE
	DIAPHRAGM VALVE		PRESSURE RELIEF VALVE (GAS RELIEF VALVE WHERE NOTED)
	BUTTERFLY VALVE		VACUUM RELIEF VALVE
	GATE VALVE		AIR RELIEF/VACUUM BREAKER
	KNIFE GATE VALVE		EXTERNAL TAP REGULATING VALVE
	CONE VALVE		THREE-WAY BALL VALVE
	PLUG VALVE		FOUR-WAY VALVE
	SWING CHECK VALVE		FLAP VALVE (GATE)
	BALL CHECK VALVE		SHEAR GATE
	GLOBE VALVE		NEEDLE VALVE
	FLOAT ACTUATED VALVE		RUPTURE DISK FOR VACUUM RELIEF
	MUD VALVE		RUPTURE DISK FOR PRESSURE RELIEF
	BACKFLOW PREVENTER		ANGLE VALVE
	TILTING DISC CHECK VALVE		TELESCOPING VALVE (MOTORIZED)
	SPLIT DISC CHECK VALVE		PRESSURE REDUCING REGULATOR (SELF CONTAINED)
	VALVE		PRESSURE CONTROL REGULATOR (SELF CONTAINED)
	LOCKABLE BALL VALVE		CONTROL VALVE
	FLOW BALANCING AND SHUTOFF VALVE		FLOW CONTROL VALVE
	SHOCK ABSORBER W/ ISOLATION VALVE		PRESSURE, AIR, OR SURGE RELIEF VALVE, GENERAL SYMBOL (PRV)
	BALL CHECK VALVE		PRESSURE AND VACUUM RELIEF VALVE, SPRING OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT (PRV)
	SLEEVE VALVE		
	SOLENOID VALVE		
	MOTOR OPERATED VALVE		
	VALVE WITH CAP		

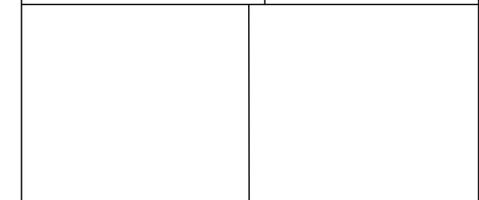
**PROCESS FLOW STREAM NOMENCLATURE AND PIPE TESTING SCHEDULE**

CODE	SERVICE	WORKING PRESSURE (PSIG, UNLESS NOTED OTHERWISE)	TEST PRESSURE (PSIG, UNLESS NOTED OTHERWISE)
AA	AERATION AIR	100-150	150
DR	DRAIN	20	25
ML	MIXED LIQUOR	10	15
NPW	NON POTABLE WATER	90	125
OF	OVERFLOW	10-40	20-60
PA	PLANT AIR	100-150	150
PE	PLANT EFFLUENT	10	15
PPW	PLANT POTABLE WATER	80	125
RAS	RETURN ACTIVATED SLUDGE	10-15	20-25
RS	RAW SEWAGE	10-30	45
SA	SAMPLE	10-15	20-25
SAN	SANITARY	-	5
SBS	SODIUM BISULFITE SOLUTION	100	150
SC	SCUM	5-15	8-23
SCE	SECONDARY CLARIFIER EFFLUENT	10	15
SHC	SODIUM HYPOCHLORITE	150	225
SRS	SCREENED RAW SEWAGE	10	15
SSF	SANITARY SEWER - FORCE MAIN	55	100
SSG	SANITARY SEWER - GRAVITY	-	5
STM	STORM SEWER	-	5
TS	THICKENED SLUDGE	10	15
TWAS	THICKENED WASTE ACTIVATED SLUDGE	50	75

**VALVE ABBREVIATIONS**

ABBREVIATION	DESCRIPTION
ARV	AIR RELEASE VALVE
AV	ANGLE VALVE
AVRV	AIR/VACUUM RELEASE VALVE
BCV	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BGV	BUTTERFLY GATE VALVE
BPV	BACK PRESSURE REGULATING VALVE
BV	BALL VALVE
CV	SWING CHECK VALVE
CSCV	AIR OR OIL CUSHIONED SWING CHECK VALVE
DGV	DEGASSING VALVE
DV	DIAPHRAGM VALVE
FCV	FLOW CONTROL VALVE
FLV	FLOAT VALVE
FLPV	FLAP VALVE
GLV	GLOBE VALVE
GRV	GAS RELIEF VALVE
GV	GATE VALVE
ICV	INLINE CHECK VALVE
KGV	KNIFE GATE VALVE
MV	MUD VALVE
NV	NEEDLE VALVE
PCV	PRESSURE CONTROL VALVE
PNV	PINCH VALVE
PRV	PRESSURE RELIEF VALVE
PVCV	PRESSURE REDUCING CHECK VALVE
PV	PLUG VALVE
PVRV	PRESSURE VACUUM RELIEF VALVE
SCRV	SELF-CONTAINED REGULATING VALVE
SDCV	SPLIT DISC CHECK VALVE
SRV	SURGE RELIEF VALVE
SV	SOLENOID VALVE
TDCV	TILTING DISC CHECK VALVE
TVLV	TELESCOPING VALVE
VRV	VACUUM RELIEF VALVE

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
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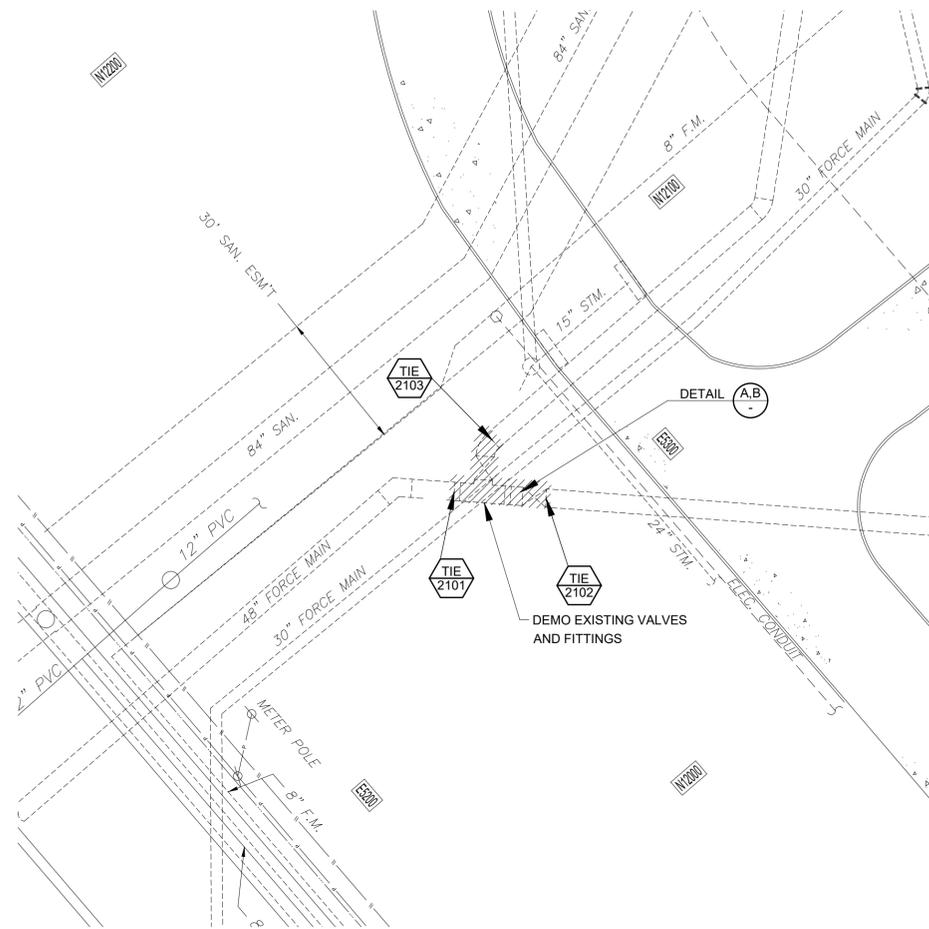
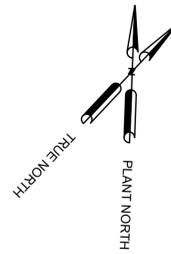
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GENERAL LEGEND & SYMBOLS**  
(SHEET 3 OF 3)

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
DWG NO	SHEET NO. 80 OF 271	
M-G-3		

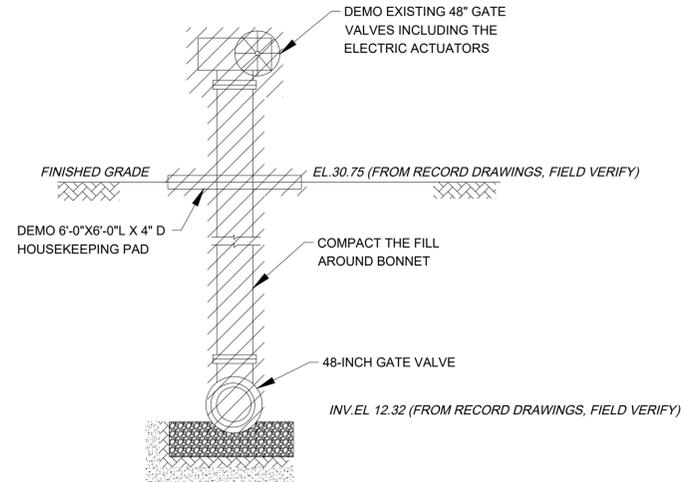




GULF FREEWAY LS2 BYPASS VALVES DEMOLITION

**PLAN - EXISTING**

1" = 20'



EXISTING 48" GATE VALVE (TYP2)

**DETAIL A**

N.T.S.



GULF FREEWAY LS2 BYPASS VALVES PHOTO

**DETAIL B**

N.T.S.

**NOTES:**

1. SUBSURFACE UTILITY INVESTIGATION
    - BEFORE STARTING CONSTRUCTION, PERFORM A DETAILED SUBSURFACE UTILITY INVESTIGATION.
    - IMMEDIATELY NOTIFY THE CITY IF ANY DISCREPANCIES OR UNKNOWN UTILITIES ARE DISCOVERED.
  2. TEMPORARY BYPASS PUMPING REQUIREMENTS
    - DURING CONSTRUCTION, A TEMPORARY BYPASS SYSTEM MUST DIVERT FLOW FROM GULF FREEWAY LIFT STATION NO. 2 TO THE PLANT HEADWORKS.
- LIFT STATION PUMP DATA (PER COH DWG. 51275)
- 4 SUBMERSIBLE PUMPS, EACH RATED AT 11,600 GPM (16.70 MGD).
  - TOTAL FIRM CAPACITY: 34,800 GPM (50.11 MGD).
- BYPASS SYSTEM DESIGN ASSUMPTION (FOR BIDDING):
- MUST ACCOMMODATE FULL FIRM CAPACITY OF 34,800 GPM.
  - THE CONTRACTOR MUST COORDINATE WITH WASTEWATER OPERATIONS STAFF TO OBTAIN HISTORICAL FLOW DATA BEFORE INSTALLING THE BYPASS SYSTEM.
3. REFER TO M-21-03 FOR APPROXIMATE DEPTH OF EXISTING 48" FORCE MAIN AND VALVES.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

<p><b>KGI</b> Kalluri Group, Inc.</p> <p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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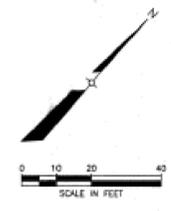
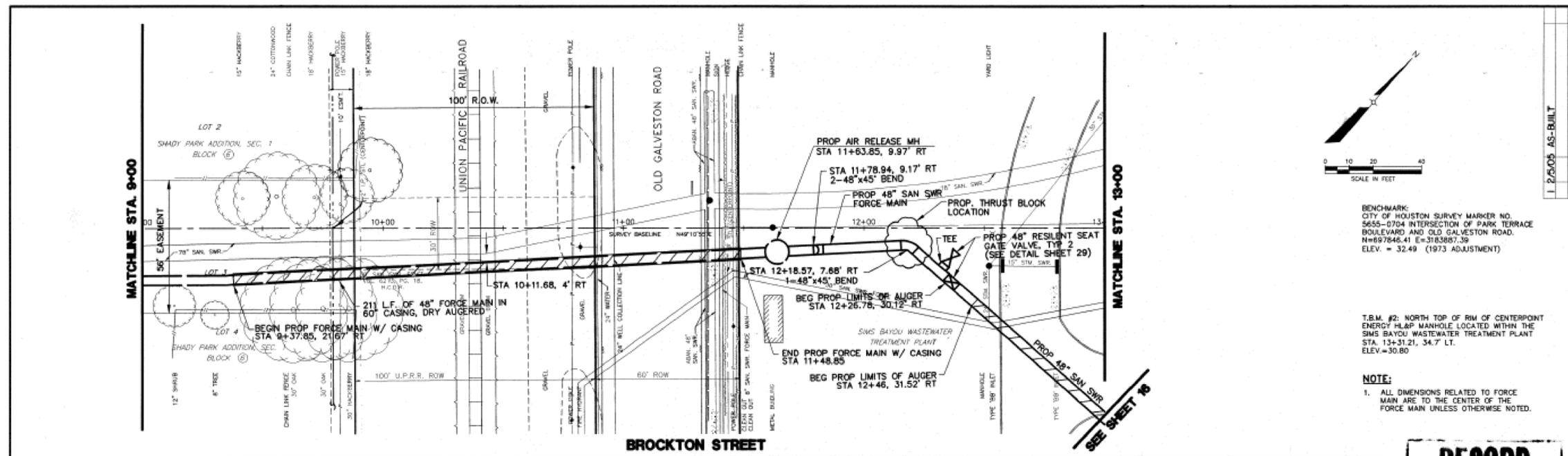
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GULF FREEWAY LS2 BYPASS VALVES DEMOLITION PLAN AND DETAILS**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
DWG NO	SHEET NO. 82 OF 271	
M-21-1		

NO.	DATE	REVISION	APP.

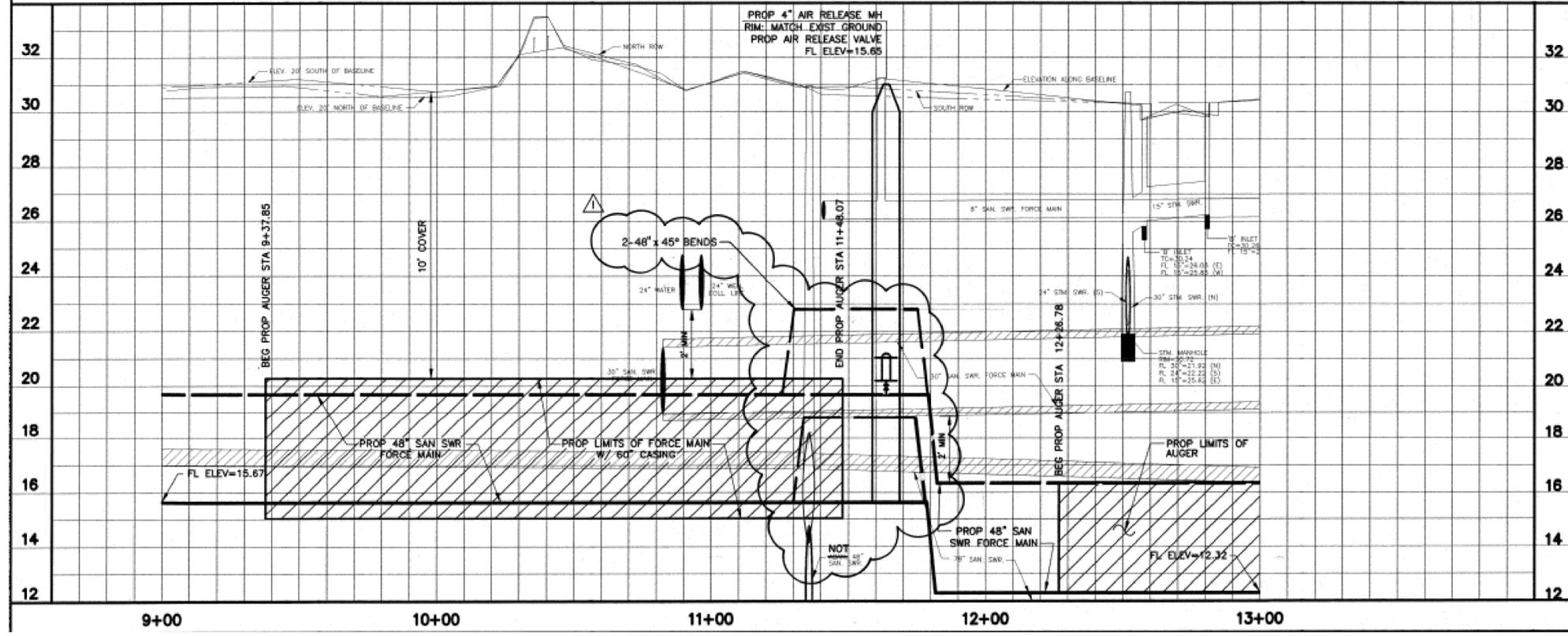
NO.	DATE	REVISION	APP.



BENCHMARK:  
CITY OF HOUSTON SURVEY MARKER NO.  
5655-0704 INTERSECTION OF PARK TERRACE  
BOULEVARD AND OLD GALVESTON ROAD.  
N=697846.41 E=3183887.39  
ELEV. = 32.49 (1973 ADJUSTMENT)

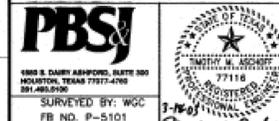
T.B.M. #2: NORTH TOP OF RIM OF CENTERPOINT  
ENERGY H&P MANHOLE LOCATED WITHIN THE  
SIMS BAYOU WASTEWATER TREATMENT PLANT  
STA. 13+31.21, 34.7' LT.  
ELEV.=30.80

NOTE:  
1. ALL DIMENSIONS RELATED TO FORCE  
MAIN ARE TO THE CENTER OF THE  
FORCE MAIN UNLESS OTHERWISE NOTED.



**RECORD DRAWINGS**

PRIVATE UTILITY LINES SHOWN  
*3/25/03*  
CENTERPOINT ENERGY, ENEX  
*3/25/03*  
SEC. TELEPHONE CO.  
APPROVAL ONLY FOR CROSSING UNDERGROUND  
DUCT LINES UNLESS NOTED.  
*3/25/03*  
CENTERPOINT ENERGY HOUSTON LIGHTING & POWER CO.  
APPROVAL ONLY FOR CROSSING UNDERGROUND  
DUCT LINES UNLESS NOTED.  
VALID AT TIME OF REVIEW ONLY



**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
GULF FREEWAY  
#2 LIFT STATION AND  
FM IMPROVEMENTS  
BROCKTON ST. PLAN & PROFILE  
STA. 9+00 TO STA. 13+00

FILE NO. WW4841-01  
GFS NO. R-2011-33-3  
DRAWING SCALE  
VERT. 1"=2' HORIZ. 1"=20'  
CITY OF HOUSTON PM  
G&S: GAJMER KHAN, P.E.  
SHEET NO. 13 OF 32

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

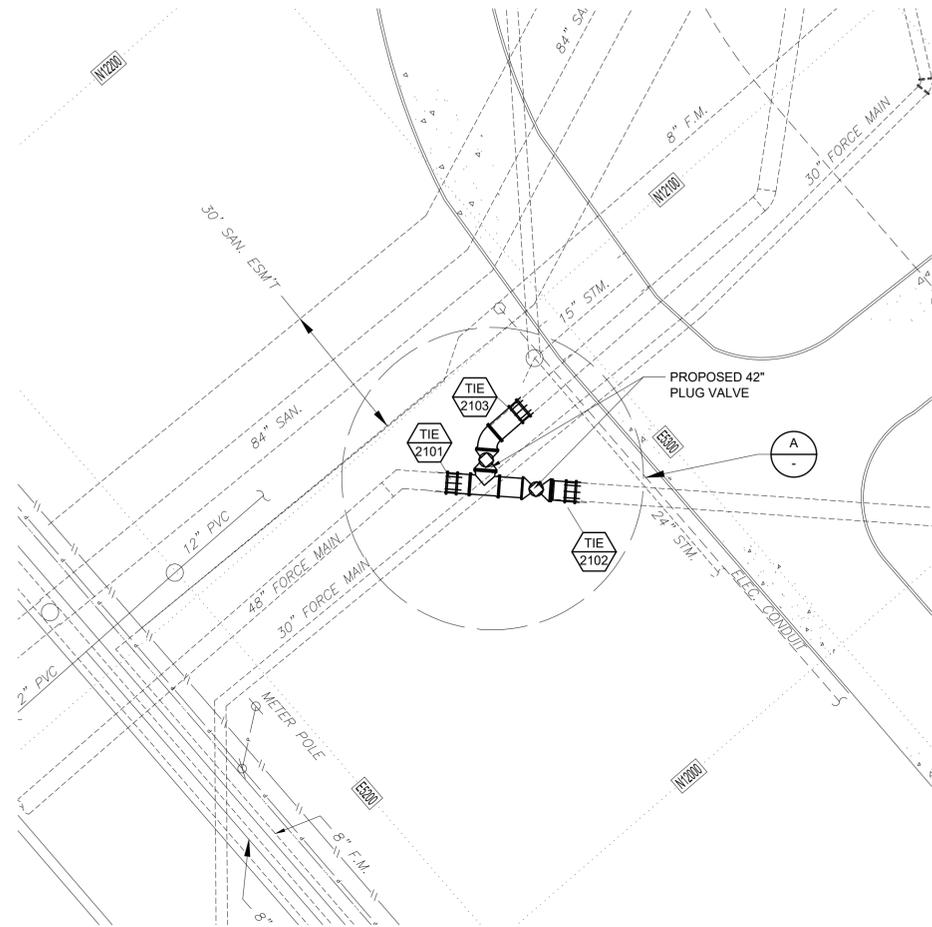
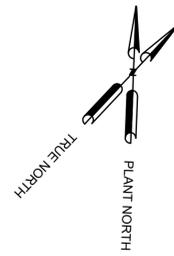
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
GULF FREEWAY LS2  
BYPASS VALVES  
EXISTING RECORD DRAWING  
MECHANICAL

VERIFY SCALE	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	R-000265-0154-4	
DWG NO	DRAWING SCALE	
M-21-2	N.T.S.	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 83 OF 271	

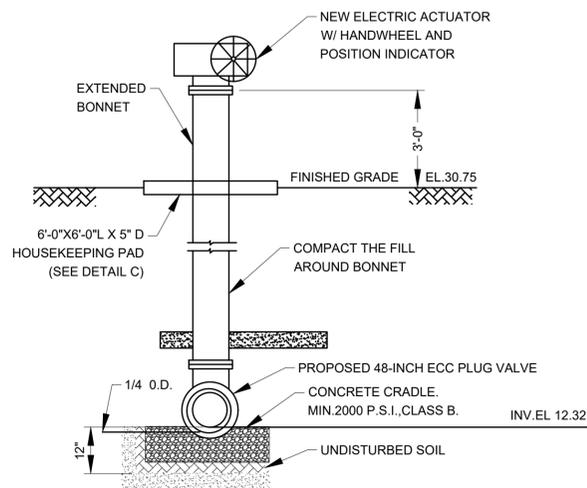
FOR INFORMATION ONLY



GULF FREEWAY LS2 BYPASS VALVES PROPOSED

PLAN

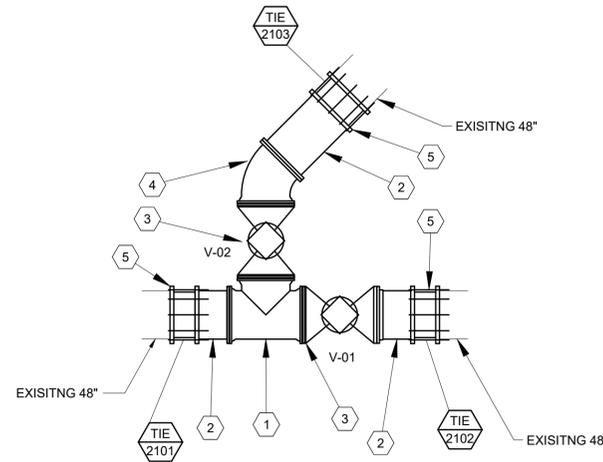
1" = 20'



PROPOSED 48" ECC. PLUG VALVE (TYP. 2)

DETAIL - B

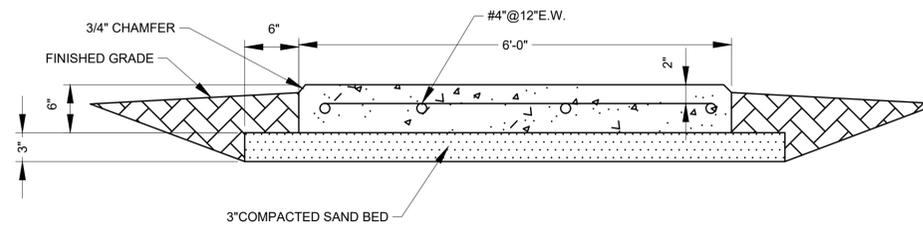
N.T.S.



ENLARGED PROPOSED PLAN

DETAIL - A

1/8" = 1'-0"



HOUSEKEEPING PAD

DETAIL - C

N.T.S.

NO.	PIPE SCHEDULE
1	48" X 48" X 48" TEE, FLG X FLG X FLG, DI
2	48" SPOOL PIECE, FLG X PE, DI
3	48" ECCENTRIC PLUG VALVE, FLG X FLG, CI
4	48" 45° ELBOW, FLG X FLG, DI
5	48" RESTRAINED COUPLING (FIELD VERIFY EXISTING PIPE TYPE)

NOTES:

1. FLANGED PIPING IS SPECIFIED DUE TO SPACE CONSTRAINTS, BASED ON INFORMATION FROM EXISTING RECORD DRAWINGS.
2. BASED ON THE SUBSURFACE UTILITY INVESTIGATION, THE CONTRACTOR MAY USE RESTRAINED MECHANICAL JOINTS FOR IMPROVED CONSTRUCTABILITY, IF PREFERRED. ALL MECHANICAL JOINTS, INCLUDING INTERMEDIATE FITTINGS, SHALL BE RESTRAINED.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

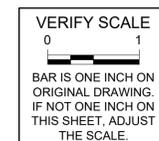


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 Houston, Texas 77094  
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CITY OF HOUSTON  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
 GULF FREEWAY LS2 BYPASS VALVES PROPOSED PLAN AND DETAILS  
 MECHANICAL

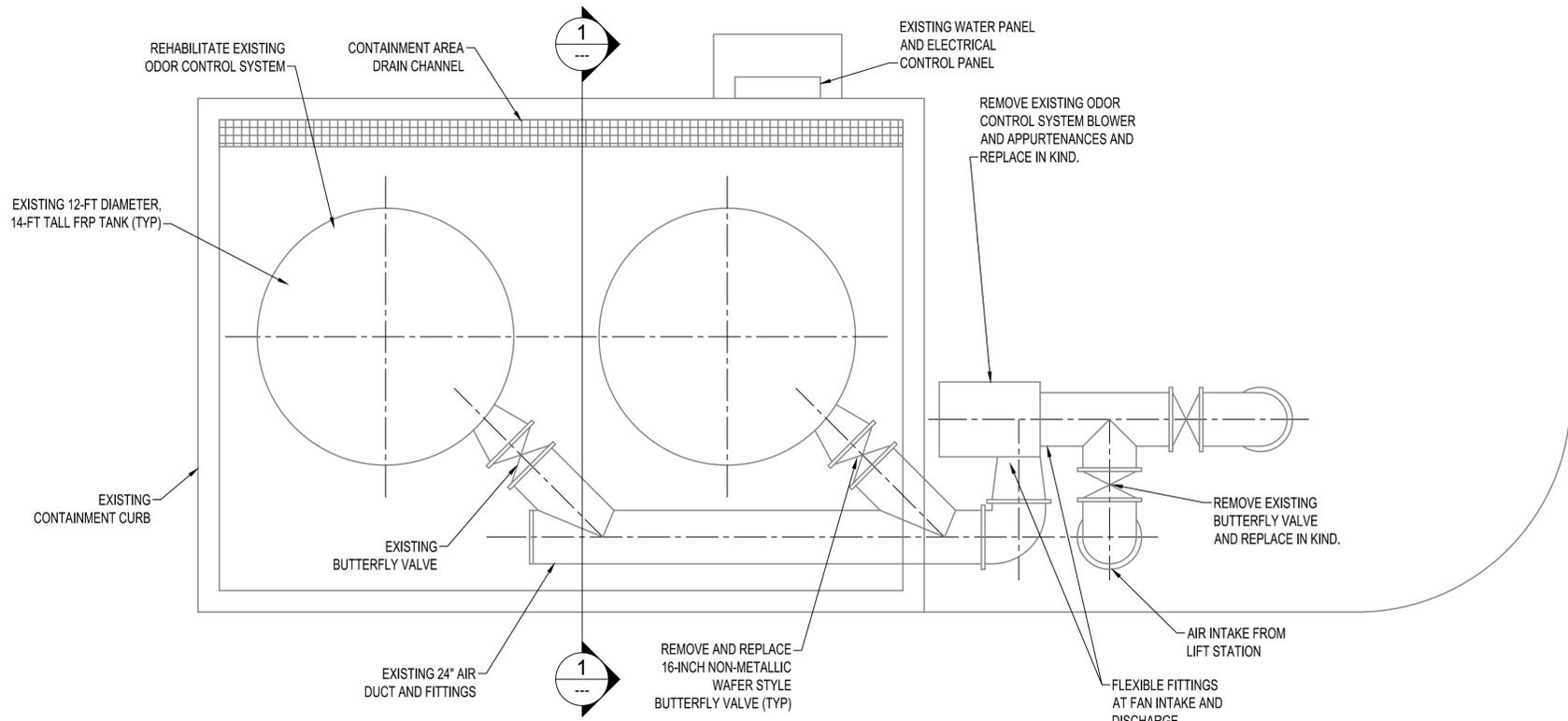


DWG NO  
 M-21-3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 84 OF 271	

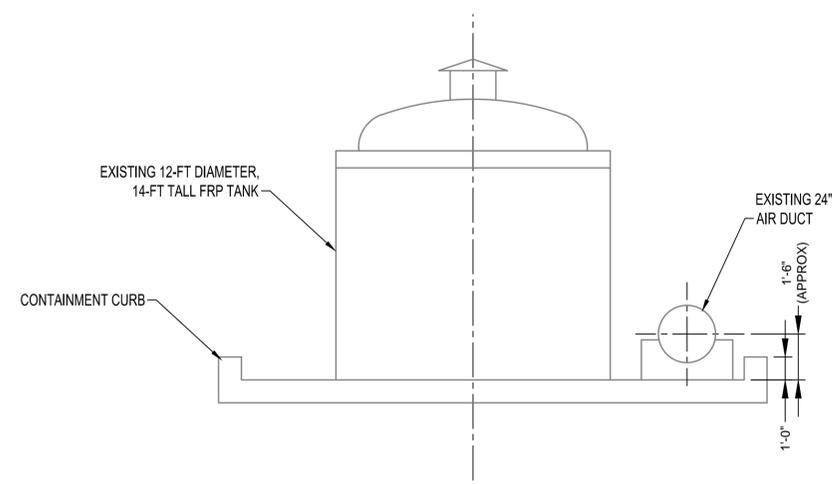
NO.	DATE	REVISION	APP.

APP.	
REVISION	
NO.	DATE



**EXISTING LIFT STATION ODOR CONTROL SYSTEM REHABILITATION PLAN**  
SCALE: 1/4" = 1'-0"

- NOTES:**
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS. PRIOR TO BEGINNING WORK.
  - REHABILITATION OF THE LIFT STATION ODOR CONTROL SYSTEM IS TO BE COMPLETED BASED ON MANUFACTURER'S RECOMMENDATIONS.
  - CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING BIOFILTER MEDIA IN ACCORDANCE WITH APPLICABLE REGULATIONS.
  - CONTRACTOR SHALL REHABILITATE THE EXISTING BIOLOGICAL ODOR CONTROL SYSTEM. WORK INCLUDES MEDIA REMOVAL AND REPLACEMENT IN THE TWO 12-FOOT DIAMETER TANKS, BLOWER AND VALVE REPLACEMENT, INSTALLATION OF NEW WATER SYSTEM, STARTUP, TESTING, AND TRAINING.



**EXISTING LIFT STATION ODOR CONTROL SYSTEM REHABILITATION SECTION**  
SCALE: 1/4" = 1'-0"

APPROVED: RAC	DATE: 10/23/2025
DESIGNED BY: ELV	DRAWN BY: JPH



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Kalluri Group, Inc.  
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PROJECT 4264

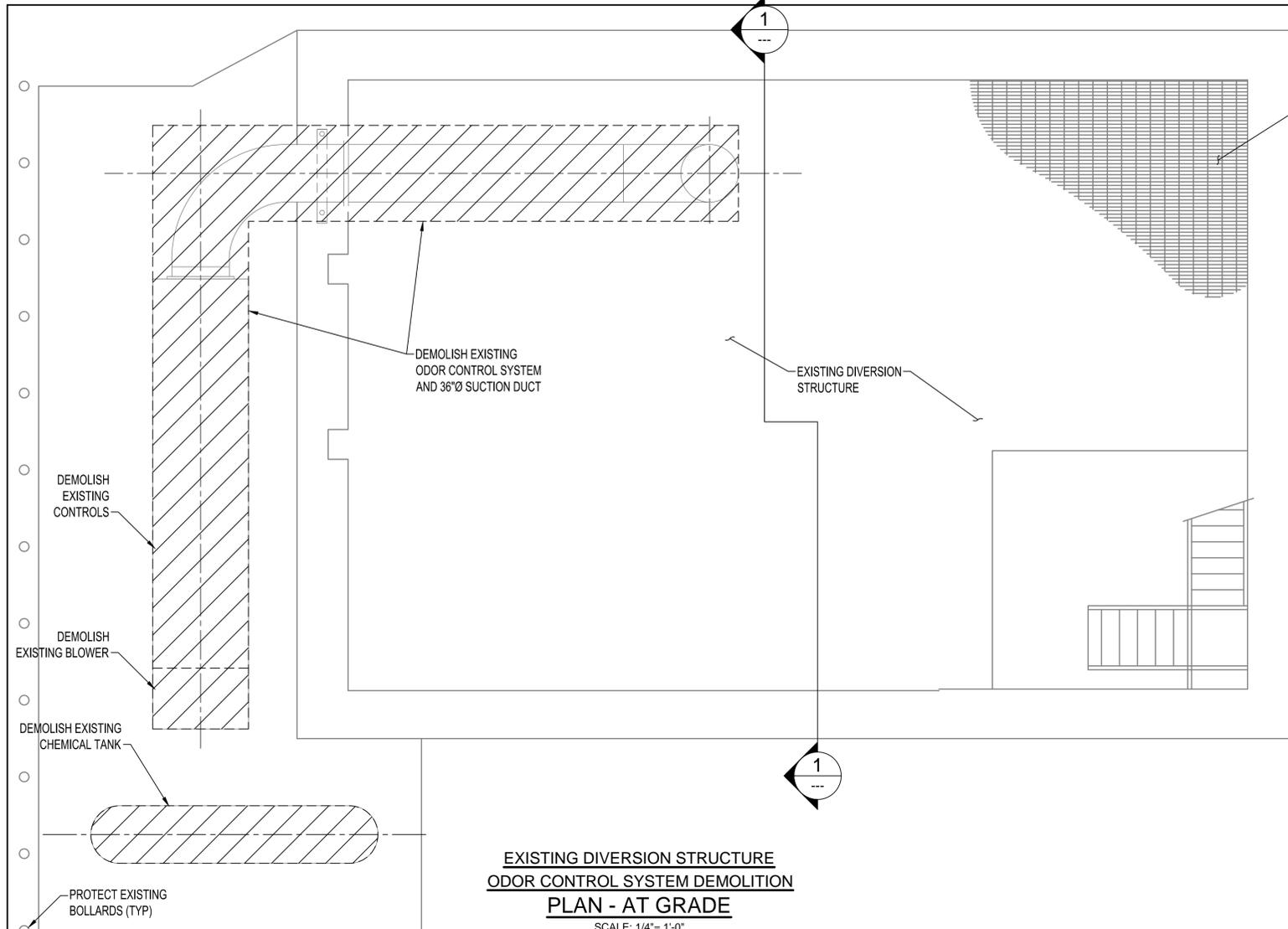
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

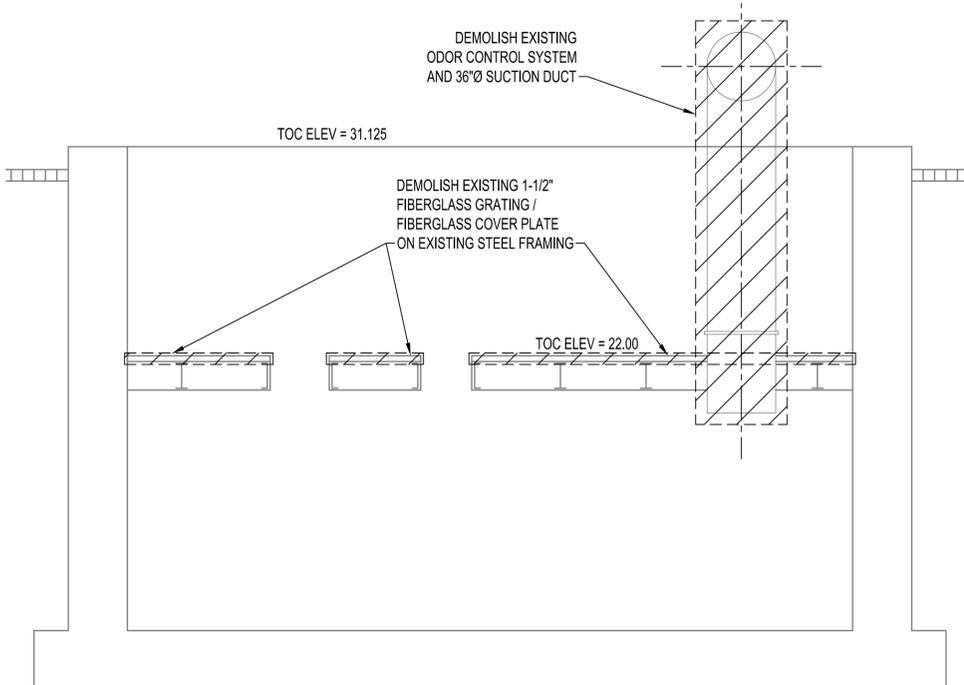
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 MECHANICAL  
**EXISTING LIFT STATION ODOR CONTROL SYSTEM REHABILITATION PLAN**

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 85 OF 271		
DWG NO		
M-31-01		

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**EXISTING DIVERSION STRUCTURE  
ODOR CONTROL SYSTEM DEMOLITION  
PLAN - AT GRADE**  
SCALE: 1/4" = 1'-0"



**PROPOSED DIVERSION STRUCTURE  
ODOR CONTROL SYSTEM  
SECTION**  
SCALE: 1/4" = 1'-0"



- NOTES:**
- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INCLUDING DIMENSIONS AND SIZING IN THE FIELD PRIOR TO DEMOLITION. WHERE DEMOLITION WORK CONFLICTS WITH UTILITIES NOT SHOWN, CONTRACTOR SHALL VERIFY AND COORDINATE WITH ENGINEER AT NO ADDITIONAL COST.
  - CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, EQUIPMENT, UTILITIES, AND SURFACES DESIGNATED TO REMAIN. DEMOLITION WORK SHALL BE CARRIED OUT IN A MANNER TO MINIMIZE VIBRATION, NOISE, AND DISTURBANCE TO ADJACENT STRUCTURES. RESTORE OR REPAIR ANY DAMAGE CAUSED BY DEMOLITION TO ORIGINAL OR ACCEPTABLE CONDITION AT NO ADDITIONAL COST.
  - DISCONNECT, ISOLATE, CAP, AND SEAL EXISTING SERVICES (PIPES, CABLES, DUCTS, WIRING, ETC.) BEFORE REMOVAL. WHEREVER NECESSARY, MAINTAIN CONTINUITY OR TEMPORARY SERVICE FOR ADJACENT SYSTEMS NOT BEING DEMOLISHED.
  - REMOVE EXISTING ODOR CONTROL EQUIPMENT AS SHOWN; ALSO REMOVE ASSOCIATED BLOWER, CHEMICAL STORAGE TANK, CONTROLS, ANCHORS AND SLEEVES UNLESS OTHERWISE NOTED.
  - DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
  - DEMOLITION SEQUENCE SHALL NOT COMPROMISE THE OPERATION OF THE PLANT.

APPROVED: RAC      DATE: 10/23/2025  
DESIGNED BY: ELV      DRAWN BY: JPH



**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
MECHANICAL  
EXISTING DIVERSION STRUCTURE  
ODOR CONTROL SYSTEM  
DEMOLITION PLAN

VERIFY SCALE  
0 1  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

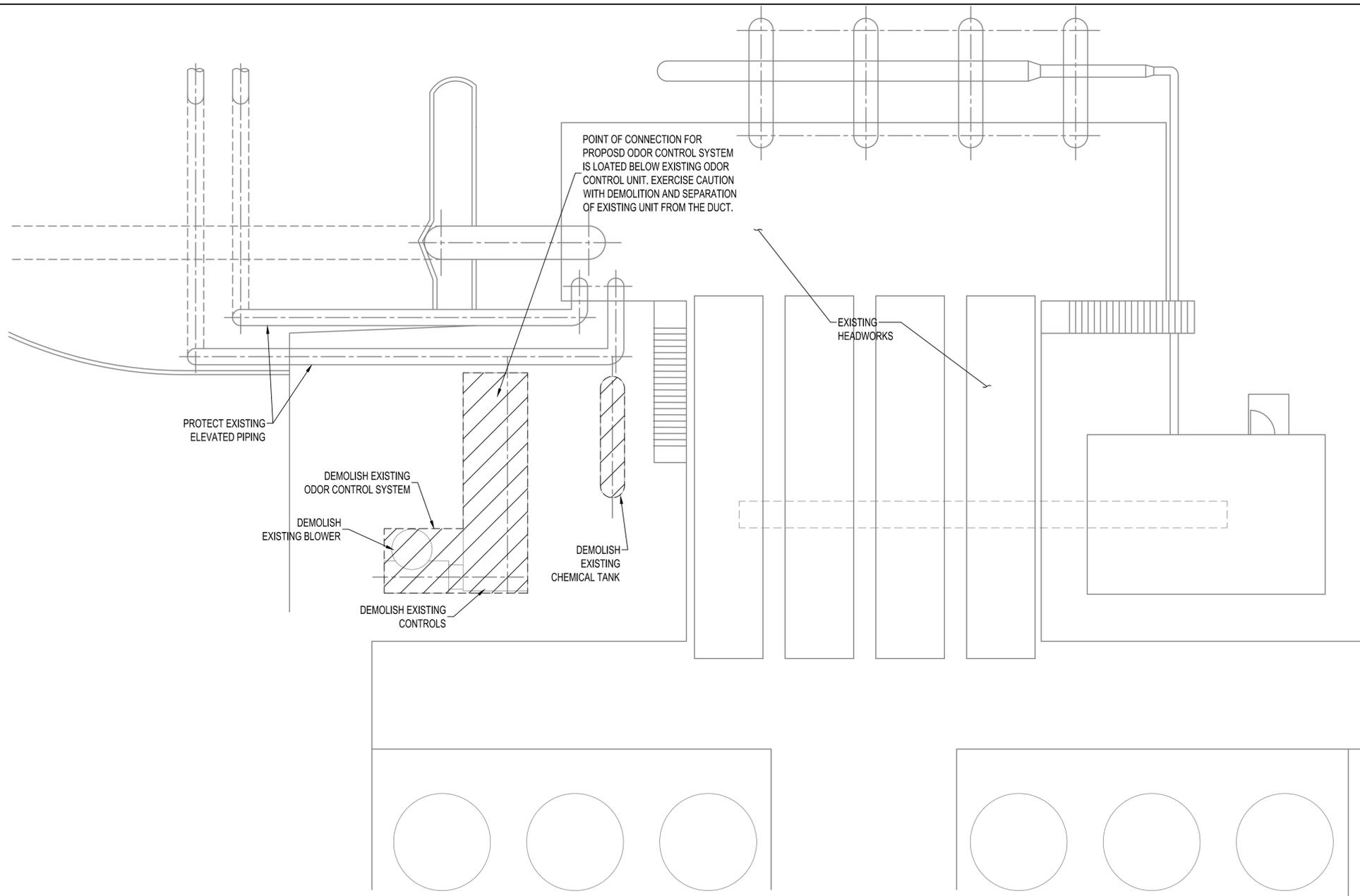
WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS SHOWN
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	86 OF 271

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NO.	DATE	REVISION	APP.

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**EXISTING HEADWORKS ODOR CONTROL SYSTEM DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"

- NOTES:**
1. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INCLUDING DIMENSIONS AND SIZING IN THE FIELD PRIOR TO DEMOLITION. WHERE DEMOLITION WORK CONFLICTS WITH UTILITIES NOT SHOWN, CONTRACTOR SHALL VERIFY AND COORDINATE WITH ENGINEER AT NO ADDITIONAL COST.
  2. CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, EQUIPMENT, UTILITIES, AND SURFACES DESIGNATED TO REMAIN. DEMOLITION WORK SHALL BE CARRIED OUT IN A MANNER TO MINIMIZE VIBRATION, NOISE, AND DISTURBANCE TO ADJACENT STRUCTURES. RESTORE OR REPAIR ANY DAMAGE CAUSED BY DEMOLITION TO ORIGINAL OR ACCEPTABLE CONDITION AT NO ADDITIONAL COST.
  3. DISCONNECT, ISOLATE, CAP, AND SEAL EXISTING SERVICES (PIPES, CABLES, DUCTS, WIRING, ETC.) BEFORE REMOVAL. WHEREVER NECESSARY, MAINTAIN CONTINUITY OR TEMPORARY SERVICE FOR ADJACENT SYSTEMS NOT BEING DEMOLISHED.
  4. REMOVE EXISTING ODOR CONTROL EQUIPMENT AS SHOWN; ALSO REMOVE ASSOCIATED BLOWER, CHEMICAL STORAGE TANK, CONTROLS, ANCHORS AND SLEEVES UNLESS OTHERWISE NOTED.
  5. DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
  6. DEMOLITION SEQUENCE SHALL NOT COMPROMISE THE OPERATION OF THE PLANT.

APPROVED: RAC	DATE: 10/23/2025
DESIGNED BY: ELV	DRAWN BY: JPH

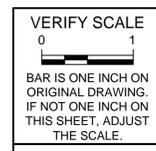


TBPE Registration No. F-665  
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Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 MECHANICAL  
**EXISTING HEADWORKS ODOR CONTROL SYSTEM DEMOLITION PLAN**



DWG NO  
M-33-01

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS SHOWN
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	88 OF 271

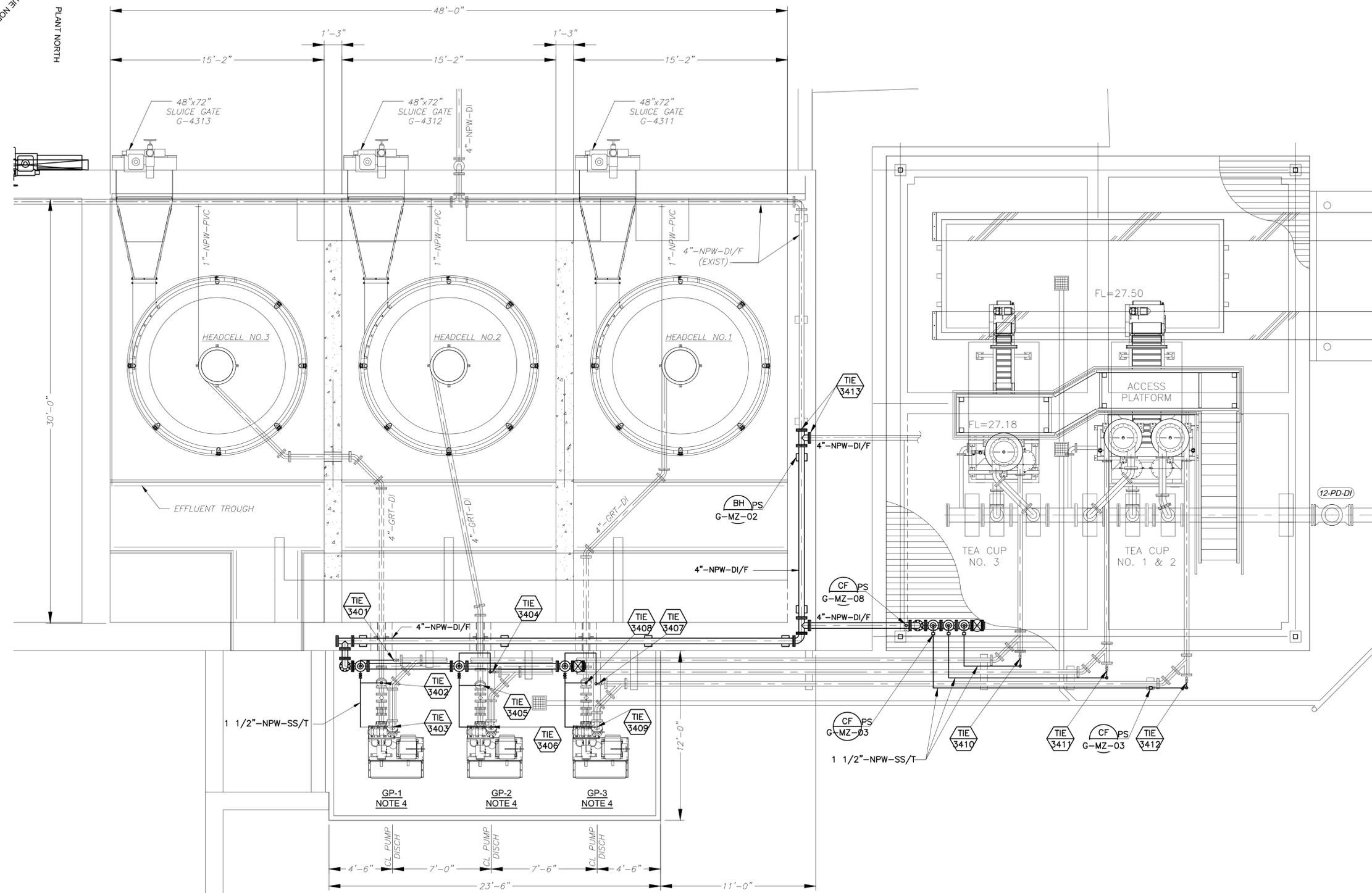
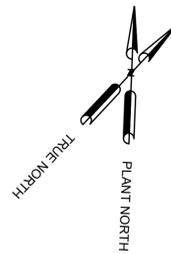
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NO.	DATE	REVISION	APP.

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NOTES:

1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY. FIELD VERIFY PRIOR TO DEMOLITION.
2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.
3. SUPPORT PROPOSED 1 1/2"-NPW-SS/T, UNDER THE EXISTING I-BEAM USING HANGER SUPPORTS.
4. REMOVE AND REPLACE EXISTING PUMPS GP-1 THROUGH GP-6 WITH NEW PUMPS IN ACCORDANCE WITH SPECIFICATION 11320, EXISTING GRIT SYSTEM REHABILITATION. COORDINATE WITH THE PUMP MANUFACTURER/ SUPPLIER AND PERFORM ALL REQUIRED MODIFICATIONS TO THE EXISTING PUMP FOUNDATIONS, PIPING LAYOUT, ELECTRICAL CONNECTIONS, AND ALL ASSOCIATED APPURTENANCES, AS NECESSARY AND AS RECOMMENDED BY THE EQUIPMENT SUPPLIER.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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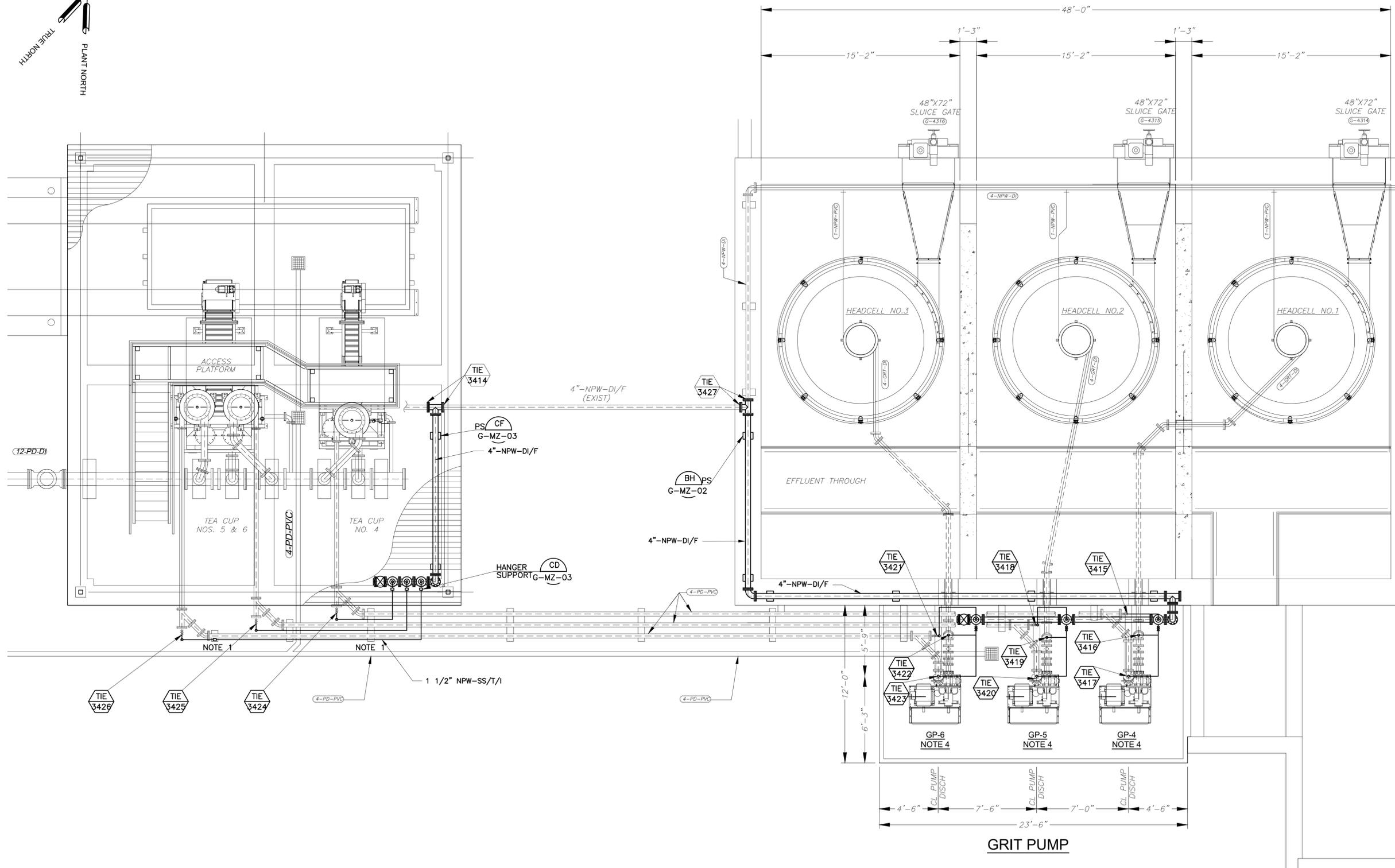
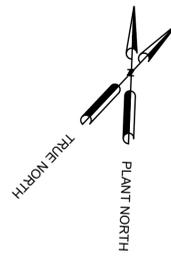
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT REMOVAL FACILITY PLAN (EAST)**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1/4"=1'-0"		
DWG NO	CITY OF HOUSTON PM	
M-34-2	TAHA LOTIA	
SHEET NO.	91 OF 271	

**GRIT REMOVAL FACILITY EAST PLAN**  
1/4"=1'-0"

NO.	DATE	REVISION	APP.





- NOTES:**
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  2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.
  3. SUPPORT PROPOSED 1 1/2"-NPW-SS/T,I UNDER THE EXISTING I-BEAM USING HANGER SUPPORTS.
  4. REMOVE AND REPLACE EXISTING PUMPS GP-1 THROUGH GP-6 WITH NEW PUMPS IN ACCORDANCE WITH SPECIFICATION 11320, "EXISTING GRIT SYSTEM REHABILITATION." COORDINATE WITH THE PUMP MANUFACTURER/ SUPPLIER AND PERFORM ALL REQUIRED MODIFICATIONS TO THE EXISTING PUMP FOUNDATIONS, PIPING LAYOUT, ELECTRICAL CONNECTIONS, AND ALL ASSOCIATED APPURTENANCES, AS NECESSARY AND AS RECOMMENDED BY THE EQUIPMENT SUPPLIER.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT REMOVAL FACILITY PLAN (WEST)**  
 MECHANICAL

**GRIT REMOVAL FACILITY (WEST)**  
**PLAN**  
 1/4"=1'-0"

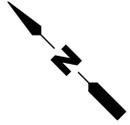
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO  
 M-34-4

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	93 OF 271

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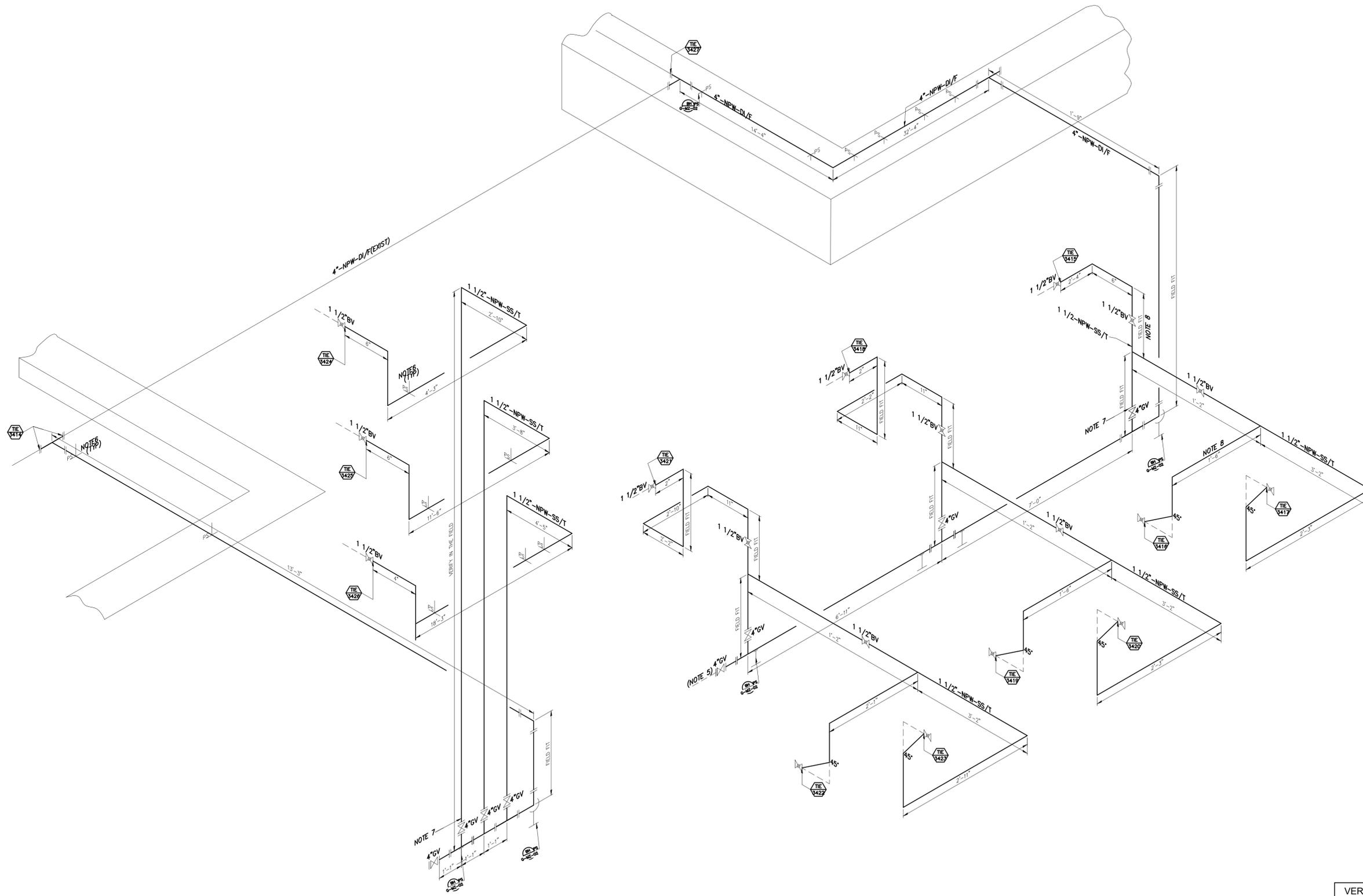
NO.	DATE	REVISION	APP.



NOTES:

1. THE CONTRACTOR SHALL FIELD-VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING PIPING TIE-IN POINTS PRIOR TO ANY SHOP DRAWING SUBMITTALS. DRAWINGS ARE BASED ON AVAILABLE RECORD INFORMATION. CONTRACTOR SHALL SUBMIT A PROPOSED PIPING LAYOUT BASED ON ACTUAL FIELD CONDITIONS AND CONSTRUCTABILITY.
2. MATCH NEW PIPING WITH EXISTING PIPE ELEVATIONS AND ORIENTATIONS. FIELD-VERIFY PRIOR TO INSTALLATION.
3. ALL PIPE LENGTHS SHALL BE FIELD-MEASURED PRIOR TO ANY PIPE FABRICATION.
4. COORDINATE THE LOCATION OF ALL PIPE HANGER SUPPORTS WITH THE CANOPY STRUCTURAL BEAM LOCATIONS. ADJUST SUPPORT LOCATIONS AS REQUIRED BASED ON FIELD CONDITIONS.
5. INSTALL THE CENTERLINE OF THE NPW PIPING AT 3'-0" ABOVE FINISHED GRADE, UNLESS NOTED OTHERWISE. FIELD-VERIFY FINAL ELEVATION PRIOR TO INSTALLATION.
6. SUPPORT 1 1/2" NPW-SS/T/I PIPING USING HANGER DETAIL CD/G-MZ-03 INSTALLED UNDER THE I-BEAMS OF THE EXISTING T-SUPPORTS. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO MEET SPECIFIED SPACING AND LOADING REQUIREMENTS.
7. INSTALL A 4" STAINLESS STEEL BLIND FLANGE WITH A 1 1/2" TAP FOR STAINLESS STEEL PIPING. PROVIDE MATERIAL ISOLATION GASKETS AS REQUIRED PER SPECIFICATIONS.
8. WHERE APPLICABLE, SUPPORT 1 1/2" NPW-SS/T/I USING 316 SS UNI-STRUT PIPE SUPPORTS. FINAL SUPPORT LOCATIONS SHALL BE BASED ON THE APPROVED PIPING LAYOUT AND FIELD CONDITIONS.
9. THE CONTRACTOR SHALL COORDINATE ALL PIPING ROUTING, SUPPORT LOCATIONS, AND ELEVATIONS WITH EXISTING CONDITIONS AND OTHER TRADES PRIOR TO INSTALLATION.

NO.	DATE	REVISION	APP.



**GRIT REMOVAL FACILITY WEST NEW NPW PIPING**  
**ISOMETRIC**  
NTS

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
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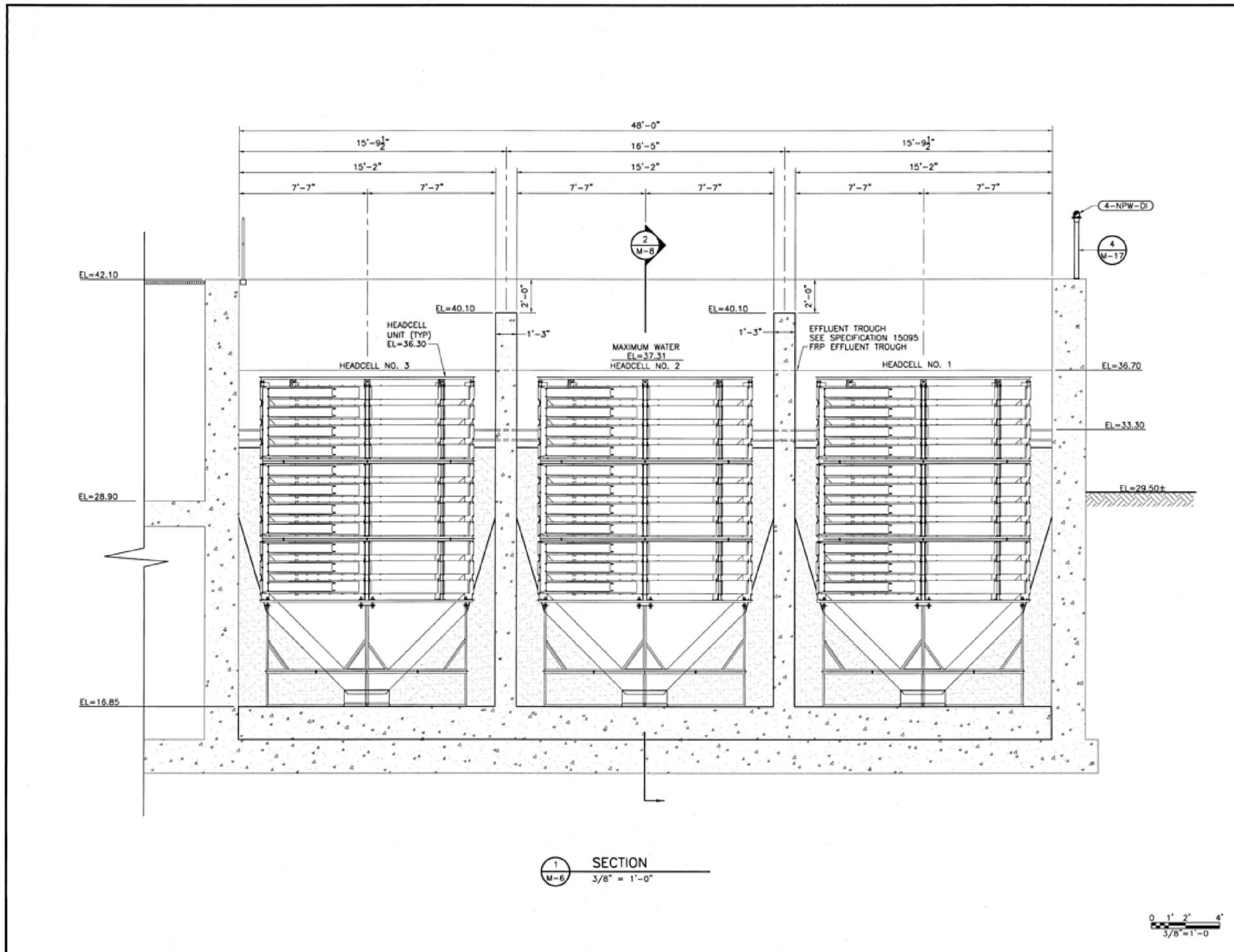
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**GRIT REMOVAL FACILITY WEST**  
**NEW NPW PIPING ISOMETRIC**

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
M-34-5	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 94 OF 271	

NO.	DATE	REVISION	APP.



1 SECTION  
M-6 3/8" = 1'-0"

**GENERAL NOTES:**

- THE DEPTH AND SLOPE OF THE EXISTING AERATED GRIT CHAMBER BASINS ARE BASED ON RECORD DRAWINGS. CONTRACTOR SHALL FIELD VERIFY THE INSIDE DIMENSIONS AFTER EXCAVATING THE ACCUMULATED GRIT AND PRIOR TO ANY CONSTRUCTION.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT AT 713-207-2222

PRIVATE UTILITY LINES SHOWN  
AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE ONE STAR NOTIFICATION 713-223-4567

Date: \_\_\_\_\_  
CenterPoint Energy/Electric Facilities  
Signature indicates underground electric lines are properly shown. No approval for construction is given.

Date: \_\_\_\_\_  
Approved for SBC underground conduit facilities only.  
Signature valid for one year.

Date: \_\_\_\_\_  
CenterPoint Energy/Gas Facilities/ENTEX Incorporated  
(Gas service lines are not shown)

CABLE COMPANY

**FREESE NICHOLS**  
10497 Town and Country Way,  
Suite 500  
Houston, Texas 77024  
Phone - (713) 805-6900  
Fax - (713) 805-1801  
Freeze and Nichols, Inc.  
E-2142

SURVEYED BY: AMAR ENGINEERING, INC.  
FB NO: P-5780

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**SIMS BAYOU SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MECHANICAL  
GRIT REMOVAL FACILITY  
SECTION (EAST)

WBS NUMBER  
R-00265-0092-4

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

CITY OF HOUSTON PM  
IRAJ RANJBAR, P.E. (M)

DRAWING NO. M-7

SHEET NO. 24 OF 86

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DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713) 365-9288  
PROJECT 4264

SURVEYED BY:  
FB NO.

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**GRIT REMOVAL FACILITY SECTION (EAST)**  
RECORD DRAWING

MECHANICAL

**NOTES:**

- INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY. FIELD VERIFY PRIOR TO DEMOLITION.
- FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.

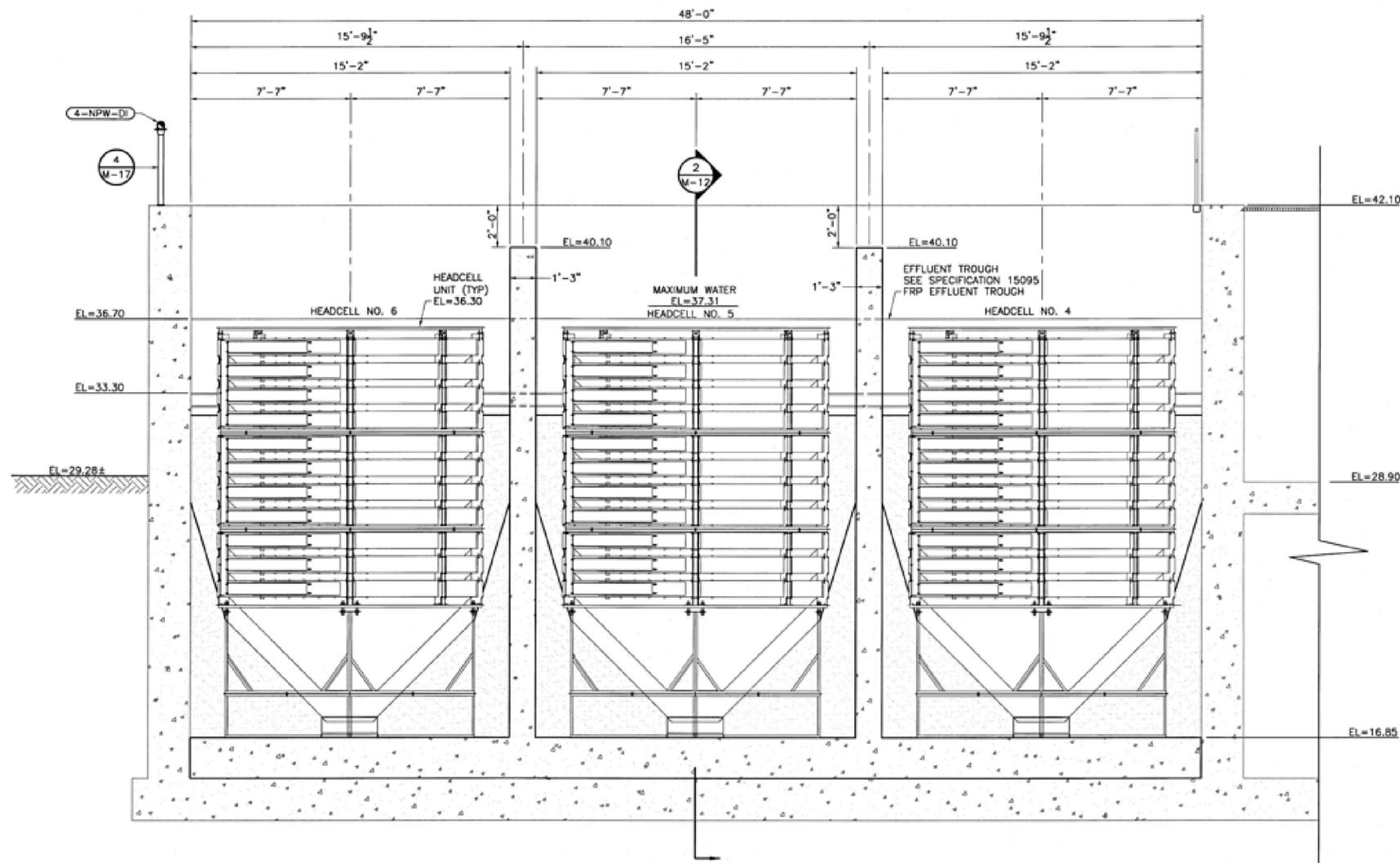
FOR REFERENCE ONLY. REFER TO SPECIFICATIONS FOR GRIT SYSTEM REHABILITATION REQUIREMENTS

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-34-6	DRAWING SCALE NTS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 95 OF 271	





NO.	DATE	REVISION	APP.



SECTION  
3/8" = 1'-0"

**GENERAL NOTES:**

1. THE DEPTH AND SLOPE OF THE EXISTING AERATED GRIT CHAMBER BASINS ARE BASED ON RECORD DRAWINGS. CONTRACTOR SHALL FIELD VERIFY THE INSIDE DIMENSIONS AFTER EXCAVATING THE ACCUMULATED GRIT AND PRIOR TO ANY CONSTRUCTION.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT AT 713-207-2222

PRIVATE UTILITY LINES SHOWN  
AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE LONE STAR NOTIFICATION 713-223-4567

Date: \_\_\_\_\_  
CenterPoint Energy/Electric Facilities  
Signature indicates underground electric lines are properly shown. No approval for construction is given.

Date: \_\_\_\_\_  
Approved for SBC underground conduit facilities only.  
Signature valid for one year.

Date: \_\_\_\_\_  
CenterPoint Energy/Gas Facilities/ENTEX Incorporated  
(Gas service lines are not shown)

CABLE COMPANY

**FREESE NICHOLS**  
16427 Tean and Country Way,  
Suite 600,  
Houston, Texas 77024  
Phone - (713) 600-6900  
Fax - (713) 600-6801  
Freeze and Nichols, Inc.  
01-03-2014



**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
**SIMS BAYOU SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MECHANICAL  
**GRIT REMOVAL FACILITY SECTION (WEST)**

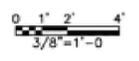
WBS NUMBER  
R-00265-0092-4

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

CITY OF HOUSTON PM  
IRAJ RANJBAR, P.E.

DRAWING NO. M-11

SHEET NO. 28 OF 86



**NOTES:**

1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY. FIELD VERIFY PRIOR TO DEMOLITION.
2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

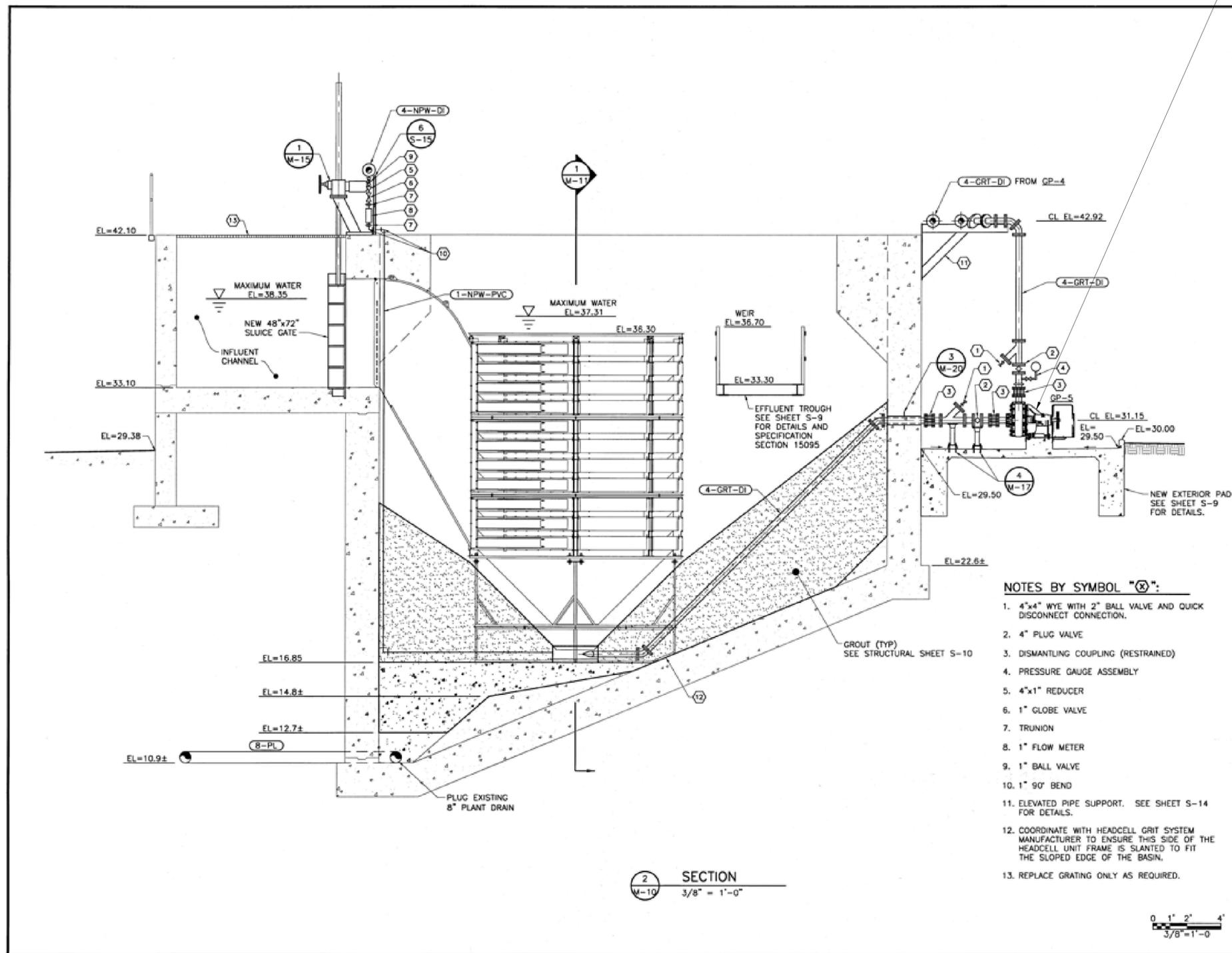
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT REMOVAL FACILITY SECTION (WEST)**  
**RECORD DRAWING**  
MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-34-9	DRAWING SCALE NTS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 98 OF 271	

FOR REFERENCE ONLY. REFER TO SPECIFICATIONS FOR GRIT SYSTEM REHABILITATION REQUIREMENTS

NOTES:

1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY. FIELD VERIFY PRIOR TO DEMOLITION.
2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.
3. REMOVE AND REPLACE EXISTING PUMPS GP-1 THROUGH GP-6 WITH NEW PUMPS IN ACCORDANCE WITH SPECIFICATION 11320. EXISTING GRIT SYSTEM REHABILITATION. COORDINATE WITH THE PUMP MANUFACTURER/ SUPPLIER AND PERFORM ALL REQUIRED MODIFICATIONS TO THE EXISTING PUMP FOUNDATIONS, PIPING LAYOUT, ELECTRICAL CONNECTIONS, AND ALL ASSOCIATED APPURTENANCES, AS NECESSARY AND AS RECOMMENDED BY THE EQUIPMENT SUPPLIER.



GENERAL NOTES:

1. REDUCER, GLOBE VALVE, FLOW METER, TRUNION, AND BALL VALVE ARE TO BE SUPPORTED BY UNISTRUT OR PIPE CLAMPS ATTACHED TO NEW GUARDRAIL.
2. THE DEPTH AND SLOPE OF THE EXISTING AERATED GRIT CHAMBER BASINS ARE BASED ON RECORD DRAWINGS. CONTRACTOR SHALL FIELD VERIFY THE INSIDE DIMENSIONS AFTER EXCAVATING THE ACCUMULATED GRIT AND PRIOR TO ANY CONSTRUCTION.
3. ATTACHMENT OF THE GRIT PUMP SUCTION PIPE TO THE GRIT SUMP OF HEADCELL UNIT SHALL BE PER HEADCELL GRIT SYSTEM MANUFACTURER'S RECOMMENDATIONS.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT AT 713-207-2222

PRIVATE UTILITY LINES SHOWN AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE LONE STAR NOTIFICATION 713-223-4567

Date: \_\_\_\_\_  
 CenterPoint Energy/Electric Facilities  
 Signature indicates underground electric lines are properly shown. No approval for construction is given.

Date: \_\_\_\_\_  
 Approved for SBC underground conduit facilities only. Signature valid for one year.

Date: \_\_\_\_\_  
 CenterPoint Energy/Gas Facilities/ENXET Incorporated  
 (Gas service lines are not shown)

**FRESE NICHOLS**  
 30497 Town and Country Way,  
 Suite 600  
 Houston, Texas 77024  
 Phone - (713) 600-6900  
 Fax - (713) 600-6901  
 Freese and Nichols, Inc.  
 P-2144



SURVEYED BY: ANAM ENGINEERING, INC.  
 FB NO.: P-5760

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
**SIMS BAYOU SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 MECHANICAL  
**GRIT REMOVAL FACILITY SECTION (WEST)**

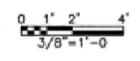
WBS NUMBER  
 R-00265-0092-4  
 DRAWING SCALE  
 3/8" = 1'-0"  
 CITY OF HOUSTON PM  
 IRAJ RANIBAR, P.E.  
 DRAWING NO. M-12  
 SHEET NO. 29 OF 86



NOTES BY SYMBOL "X":

1. 4"x4" WYE WITH 2" BALL VALVE AND QUICK DISCONNECT CONNECTION.
2. 4" PLUG VALVE
3. DISMANTLING COUPLING (RESTRAINED)
4. PRESSURE GAUGE ASSEMBLY
5. 4"x1" REDUCER
6. 1" GLOBE VALVE
7. TRUNION
8. 1" FLOW METER
9. 1" BALL VALVE
10. 1" 90° BEND
11. ELEVATED PIPE SUPPORT. SEE SHEET S-14 FOR DETAILS.
12. COORDINATE WITH HEADCELL GRIT SYSTEM MANUFACTURER TO ENSURE THIS SIDE OF THE HEADCELL UNIT FRAME IS SLANTED TO FIT THE SLOPED EDGE OF THE BASIN.
13. REPLACE GRATING ONLY AS REQUIRED.

SECTION  
 2  
 W-10  
 3/8" = 1'-0"



FOR REFERENCE ONLY. REFER TO SPECIFICATIONS FOR GRIT SYSTEM REHABILITATION REQUIREMENTS

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

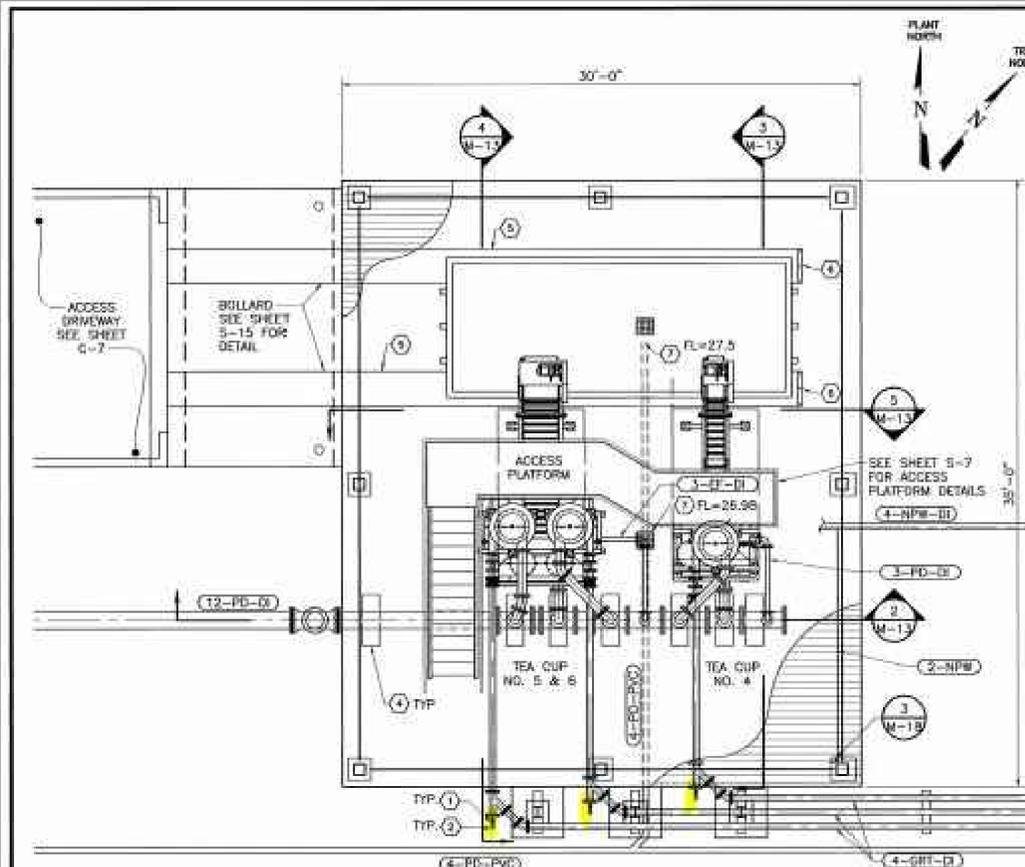
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT REMOVAL FACILITY SECTION (WEST)**  
 RECORD DRAWING  
 MECHANICAL

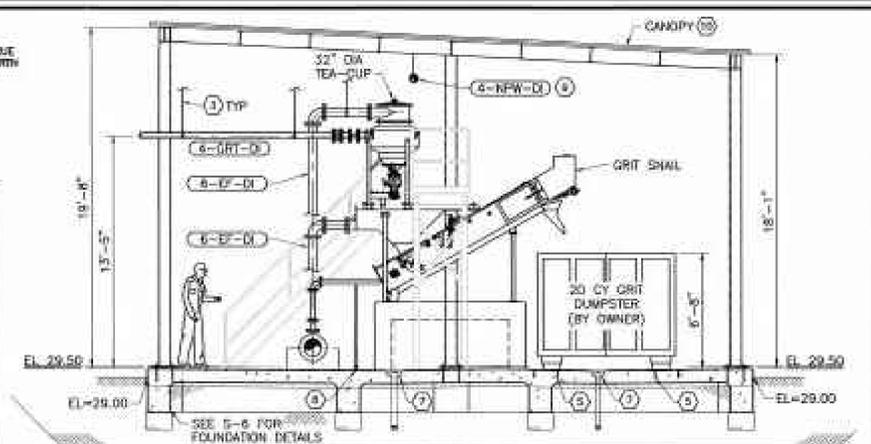
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-34-10	DRAWING SCALE NTS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 99 OF 271	

NO.	DATE	REVISION	APP.

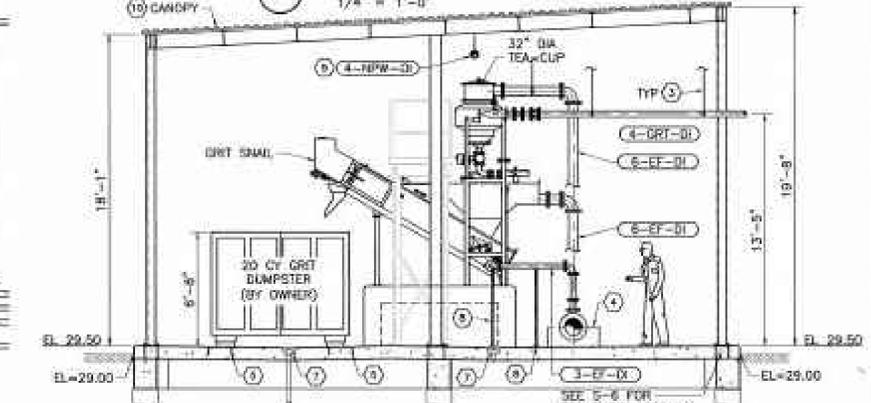
NO.	DATE	REVISION	APP.



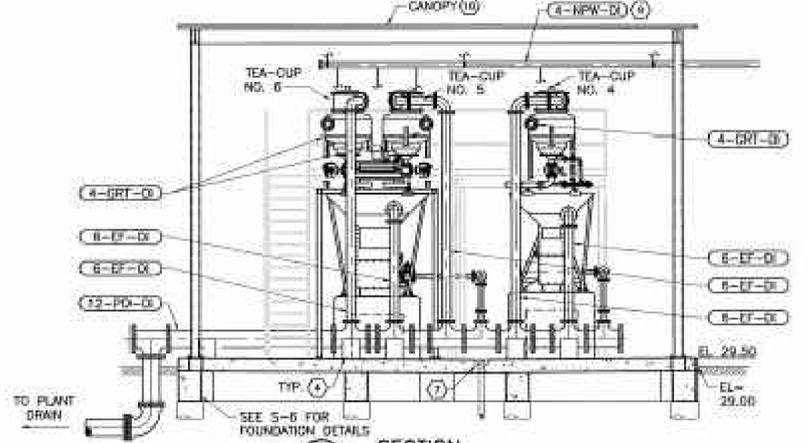
1 PLAN  
1/4" = 1'-0"



TEA-CUP NO. 4  
GRIT-SNAIL SECTION  
1/4" = 1'-0"



TEA-CUP NO. 5 AND NO. 6  
GRIT-SNAIL SECTION  
1/4" = 1'-0"



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

NOTE: DUMPSTER NOT SHOWN FOR CLARITY.

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

NOTES BY SYMBOL "ⓧ":

- 1 1/2" BALL VALVE
- HOSE CONNECT
- PIPE HANGING SUPPORT. SEE DETAIL 1 ON SHEET M-17.
- CONCRETE PIPE SUPPORT. SEE SHEET S-14 FOR DETAILS.
- EMBEDDED STAINLESS STEEL PLATES. SEE SHEET S-6 FOR DETAILS.
- WHEEL STOPS. SEE SHEET S-6 FOR DETAILS.
- 12"x12" STAINLESS STEEL ZURN FLOOR DRAIN, MODEL NO.: ZM1749-RD
- PIPE SUPPORT. SEE DETAIL 1 ON SHEET M-18.
- PROVIDE NPW CONNECTIONS WITH ISOLATION VALVES TO TEA-CUPS AND GRIT-SNAILS UNITS FROM (4-NPW-D) PER MANUFACTURER RECOMMENDATIONS.
- SEE SPECIFICATION SECTION 1.312B AND STRUCTURAL SHEET S-6 FOR DETAILS.

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT AT 713-207-2222

PRIVATE UTILITY LINES SHOWN AT LEAST 48 HOURS BEFORE EXCAVATING BY STREET R.O.W. OR EXISTENTS CALL THE LINE SCAN NOTIFICATION 713-225-4567

Date: \_\_\_\_\_  
CenterPoint Energy/Electric Facilities  
Signature indicates underground electric lines are properly shown. No approval for excavation is given.

Date: \_\_\_\_\_  
Approved for TDC underground metal facilities only.  
Signature valid for one year.

Date: \_\_\_\_\_  
CenterPoint Energy/Gas Facilities/DMTR Incorporated  
(Line service lines are not shown)

CABLE COMPANY

**FRESE NICHOLS**  
Civil and Surveying  
1200 West Loop West, Suite 500  
Houston, Texas 77028  
Phone: (713) 600-8800  
Fax: (713) 600-8801  
www.fn.com



SURVEYED BY: HANH ENGINEERING, INC.  
FB NO. A-5780

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
**SIMS BAYOU SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MECHANICAL  
**GRIT DEWATERING SYSTEM PLAN AND SECTIONS (WEST)**

REG. NUMBER	R-00265-0092-4
DRAWING SCALE	1/4" = 1'-0"
CITY OF HOUSTON PM	IRAN RANJBAR, P.E. (M)
DRAWING NO.	M-13
SHEET NO.	30 OF 85



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713) 365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT DEWATERING SYSTEM PLAN AND SECTION (WEST)**  
RECORD DRAWING  
MECHANICAL

VERIFY SCALE	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	R-000265-0154-4	
DWG NO	DRAWING SCALE	
M-34-11	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 100 OF 271	

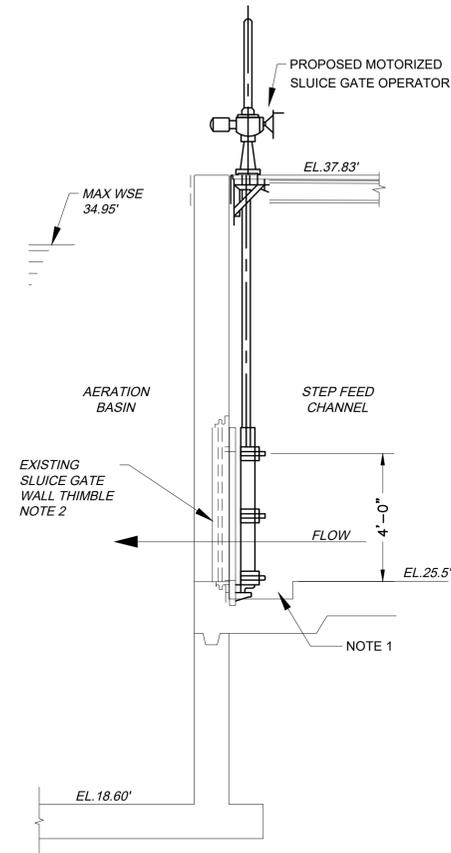
FOR REFERENCE ONLY. REFER TO SPECIFICATIONS FOR GRIT SYSTEM REHABILITATION REQUIREMENTS



NO.	DATE	REVISION	APP.

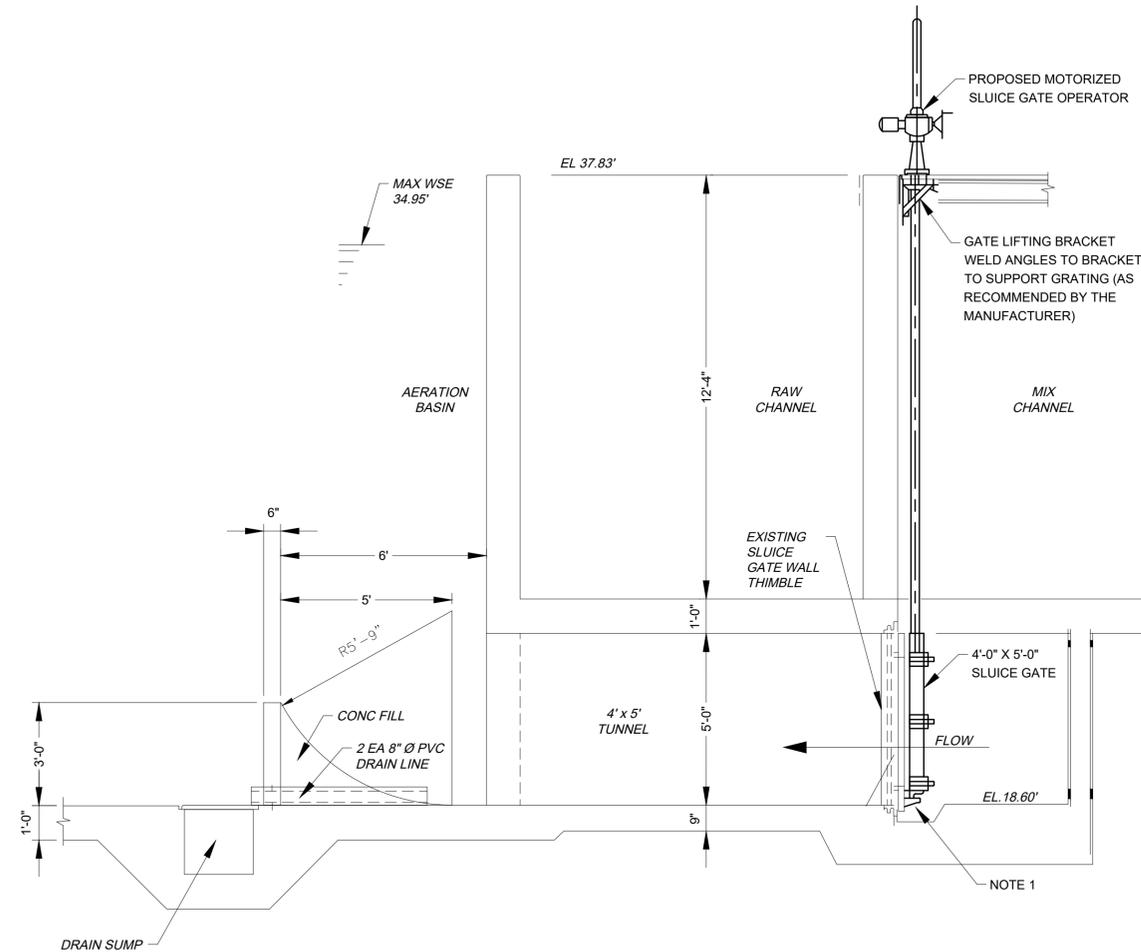
**NOTES:**

1. FIELD VERIFY EXISTING SLUICE GATE RECESS FOR DIMENSIONS. ADJUST RECESS AS RECOMMENDED BY THE GATE MANUFACTURER. FILL RECESS WITH ASPHALT AFTER GATE IS IN PLACE.
2. AFTER DRAINING BASIN AND CHANNEL, INSPECT EXISTING WALL THIMBLE. REPLACE IF DEFECTIVE AT NO ADDITIONAL COST TO OWNER.



AERATION BASIN RAW CHANNEL INFLUENT GATE

**DETAIL A**  
3/8"=1'-0"  
M-41-01



AERATION BASIN MIX CHANNEL INFLUENT GATE

**DETAIL B**  
3/8"=1'-0"  
M-41-01

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**AERATION BASIN GATE DETAILS**

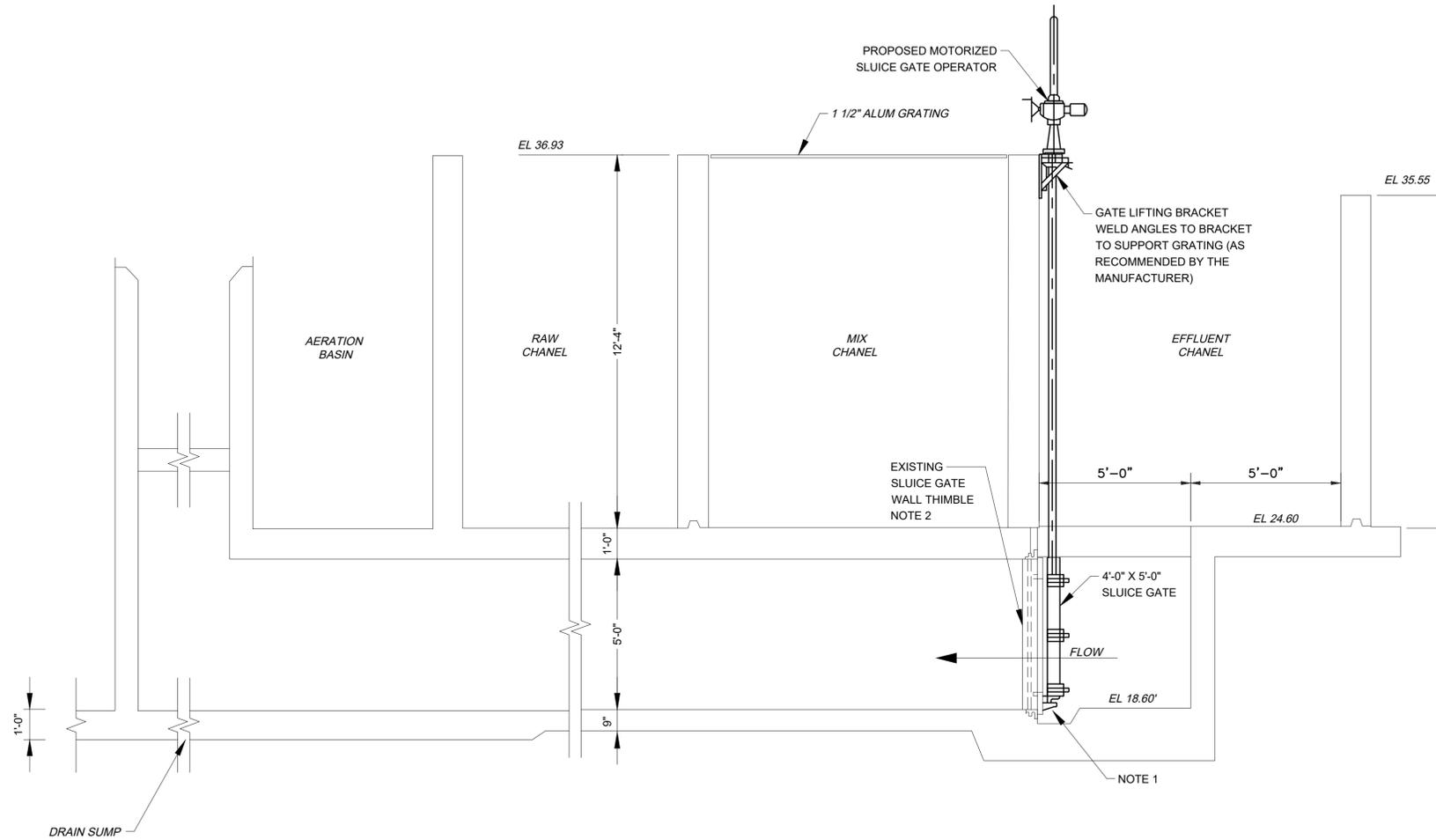
MECHANICAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
<p>DWG NO</p> <p>M-41-2</p>	DRAWING SCALE	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p> <p>SHEET NO. 102 OF 271</p>
	NTS	

NO.	DATE	REVISION	APP.

**NOTES:**

1. FIELD VERIFY EXISTING SLUICE GATE RECESS FOR DIMENSIONS. ADJUST RECESS AS RECOMMENDED BY THE GATE MANUFACTURER. FILL RECESS WITH ASPHALT AFTER GATE IS IN PLACE.
2. AFTER DRAINING BASIN AND CHANNEL, INSPECT EXISTING WALL THIMBLE. REPLACE IF DEFECTIVE AT NO ADDITIONAL COST TO OWNER.



AERATION BASIN EFFLUENT CHANNEL GATE

DETAIL

3/8"=1'=0"



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

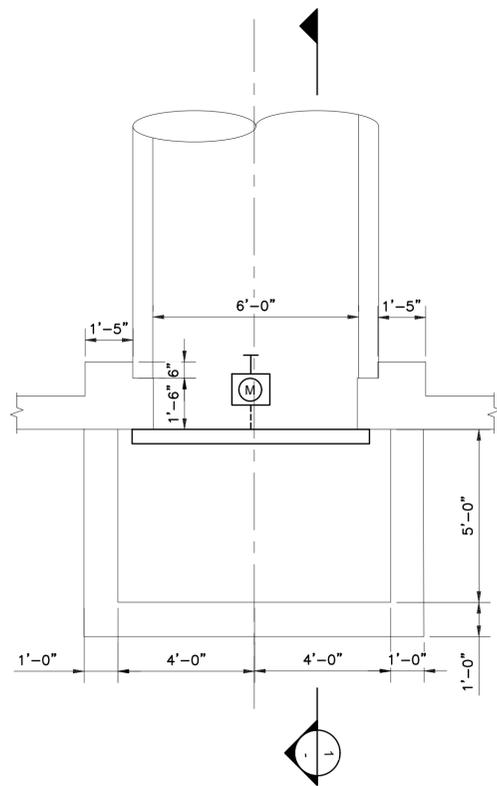
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

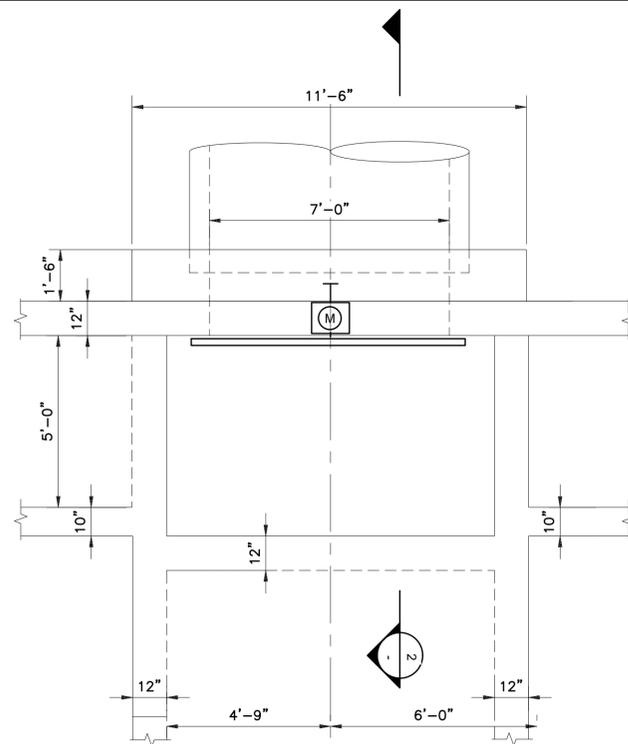
**AERATION BASIN GATE  
DETAILS**

MECHANICAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
DWG NO	SHEET NO. 103 OF 271	
M-41-3		



72" MLQ GATES (4101&4102)  
**PLAN**  
 3/8"=1'-0"

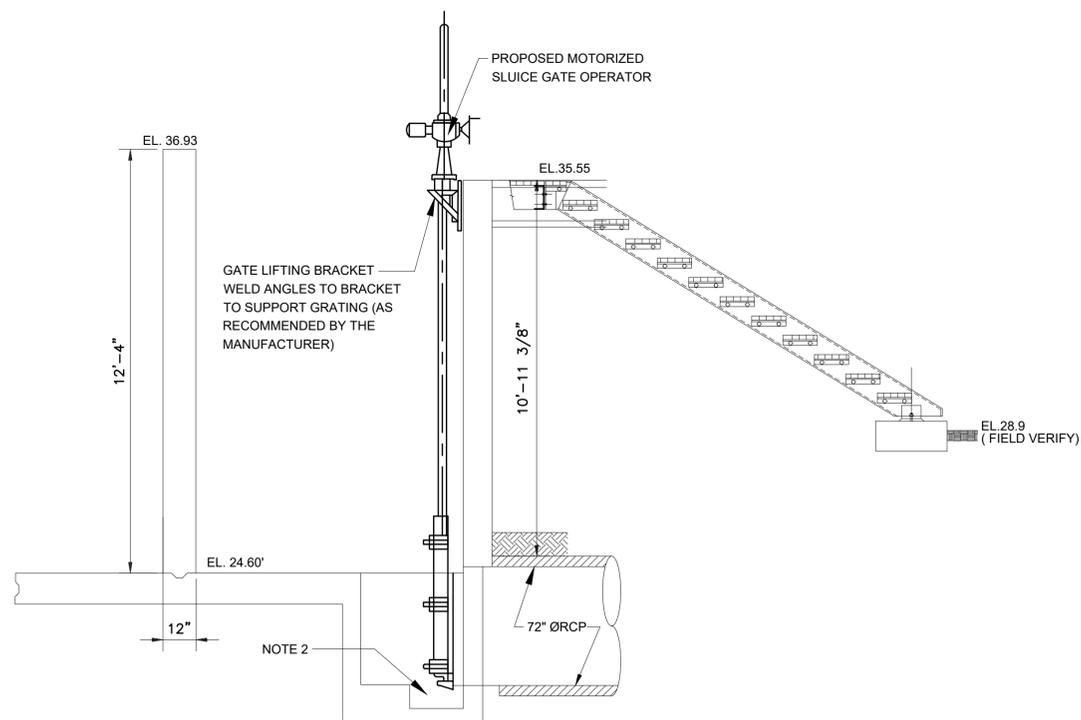


84" MLQ GATES (4103)  
**PLAN**  
 3/8"=1'-0"

NOTES:

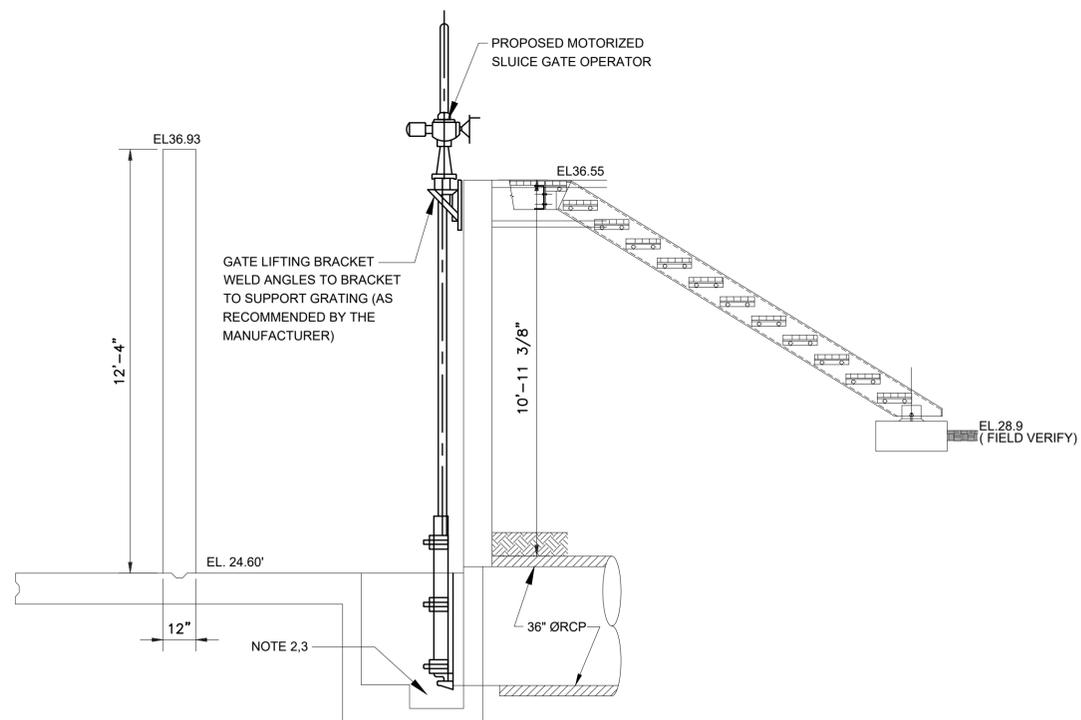
1. FIELD VERIFY EXISTING SLUICE GATE RECESS FOR DIMENSIONS. ADJUST RECESS AS RECOMMENDED BY THE GATE MANUFACTURER. FILL RECESS WITH ASPHALT AFTER GATES IS IN PLACE.
2. PROVIDE A RECESS IN THE EXISTING CONCRETE SLAB AS RECOMMENDED BY THE GATE MANUFACTURER.
3. BEFORE PLACING A PURCHASE ORDER FOR THE 36" X 36" SLUICE GATE, THE CONTRACTOR SHALL DRAIN THE AERATION BASIN EFFLUENT CHANNEL AND FIELD VERIFY SIZE AND LOCATION OF EXISTING THE TWO 36" MLQ LINES EXITING THE AERATION BASIN. THESE LINES WERE INSTALLED IN THE FIELD AND NO RECORDS DRAWINGS ARE AVAILABLE.

NO.	DATE	REVISION	APP.



72" MLQ GATES (4101&4102)  
**SECTION 1**  
 3/8"=1'-0"

**DETAIL D**  
 3/8" = 1'-0" M-41-01



84" MLQ GATES (4103)  
**SECTION 2**  
 3/8"=1'-0"

**DETAIL E**  
 3/8" = 1'-0" M-41-01

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

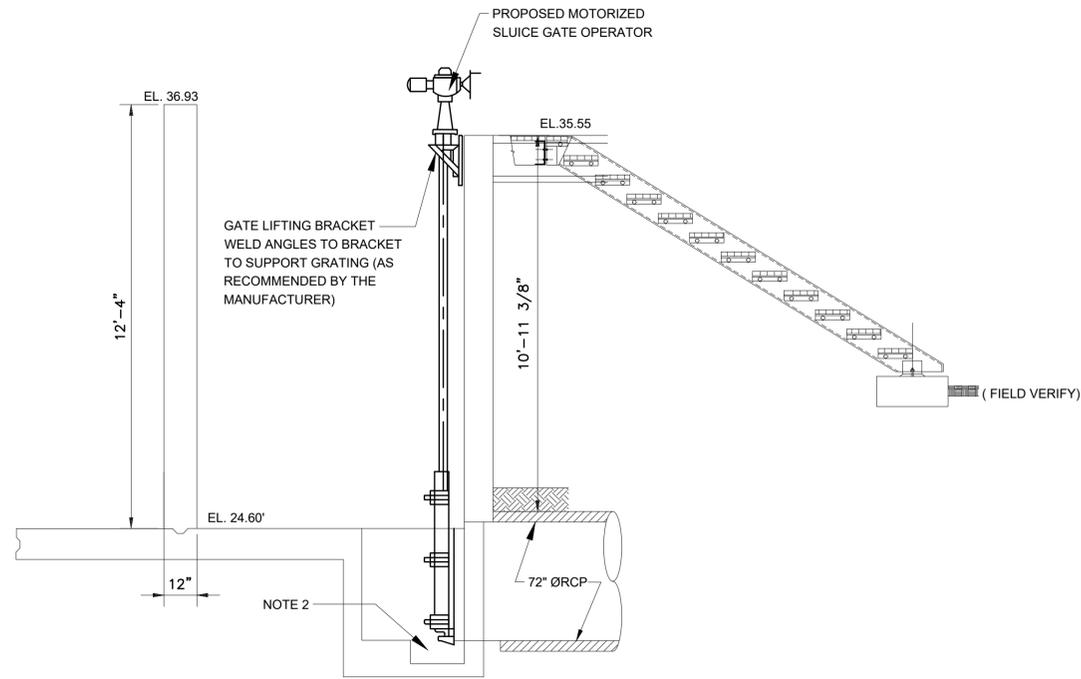
**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN GATE DETAILS**  
 MECHANICAL

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO M-41-4	DRAWING SCALE	NTS CITY OF HOUSTON PM TAHA LOTIA SHEET NO. 104 OF 271



36" MLQ GATES (4101&4102)

SECTION  
3/8" = 1' = 0"

DETAIL F  
3/8" = 1' = 0" M-41-01

NOTES:

1. FIELD VERIFY EXISTING SLUICE GATE RECESS FOR DIMENSIONS. ADJUST RECESS AS RECOMMENDED BY THE GATE MANUFACTURER. FILL RECESS WITH ASPHALT AFTER GATES IS IN PLACE.
2. PROVIDE A RECESS IN THE EXISTING CONCRETE SLAB AS RECOMMENDED BY THE GATE MANUFACTURER.
3. BEFORE PLACING A PURCHASE ORDER FOR THE 36" X 36" SLUICE GATE, THE CONTRACTOR SHALL DRAIN THE AERATION BASIN EFFLUENT CHANNEL AND FIELD VERIFY SIZE AND LOCATION OF EXISTING THE TWO 36" MLQ LINES EXITING THE AERATION BASIN. THESE LINES WERE INSTALLED IN THE FIELD AND NO RECORDS DRAWINGS ARE AVAILABLE.

NO.	DATE	REVISION	APP.

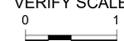
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
	
TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
SURVEYED BY: FB NO.	

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**AERATION BASIN GATE  
DETAILS**

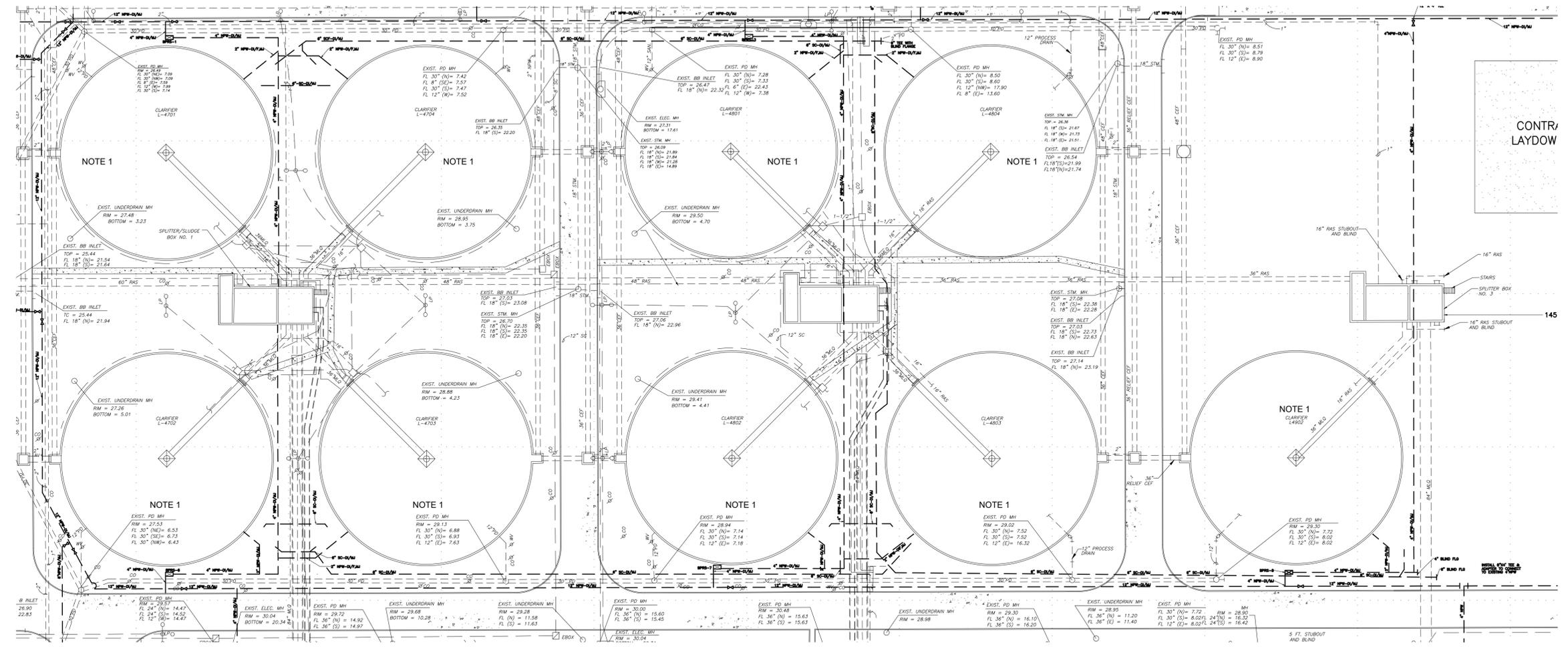
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	NTS	
DWG NO	CITY OF HOUSTON PM	
M-41-5	TAHA LOTIA	
SHEET NO.	105 OF 271	



NO.	DATE	REVISION	APP.

- NOTES:
1. DEMO EXISTING MECHANISM (TYPICAL) FOR NINE (9) CLARIFIERS.



CLARIFIER AREA ENLARGED SITE  
**PLAN**  
 1"=40'-0"

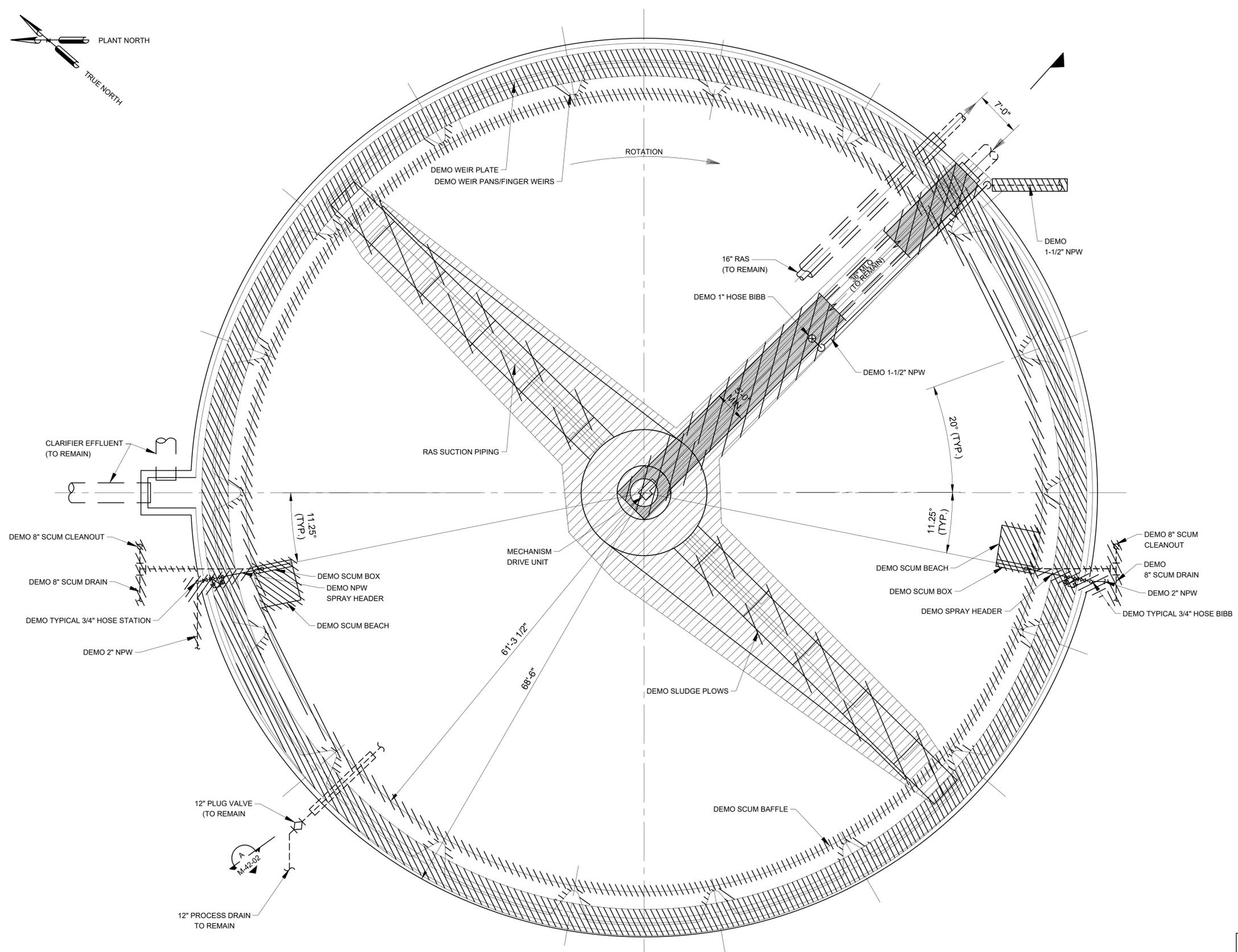
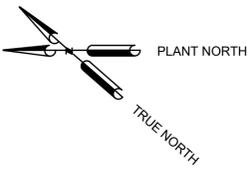
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 18300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**CLARIFIER AREA ENLARGED SITE PLAN**

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-42-1	DRAWING SCALE 1"=40'-0"	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 107 OF 271	



**NOTES:**  
 1. REFER TO YARD PIPING DEMOLITION DRAWINGS FOR CONTINUATION AND ADDITIONAL DETAILS.

NO.	DATE	REVISION	APP.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
**Kalluri Group, Inc.**  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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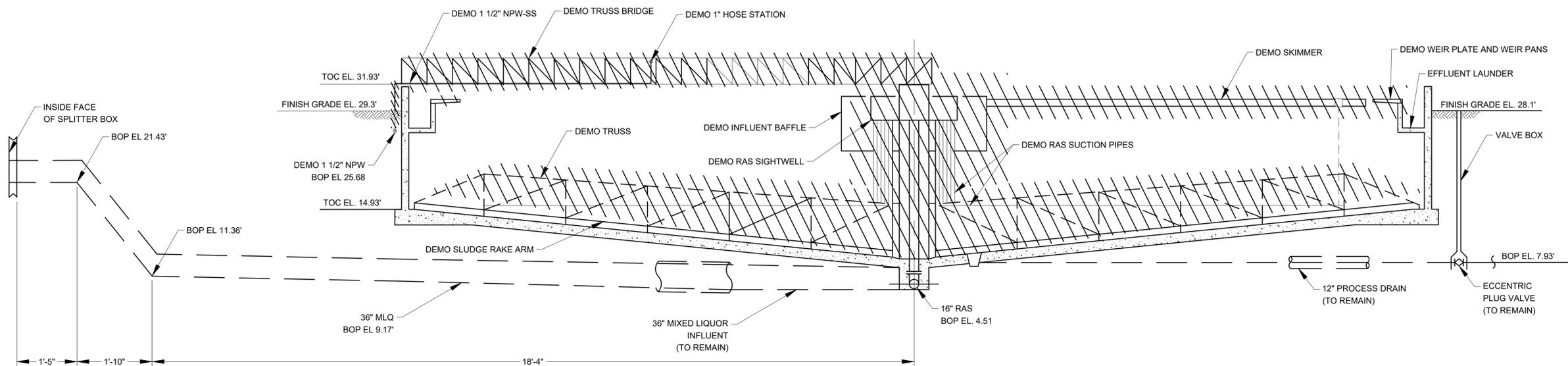
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER DEMOLITION PLAN (L-4902 SHOWN) UPPER LEVEL**  
 MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO M-42-2	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	1/8"=1'-0"	
SHEET NO. 108 OF 271		

TYPICAL CLARIFIER DEMOLITION (L-4902 SHOWN) UPPER LEVEL

**PLAN**  
 1/8"=1'-0"

NO.	DATE	REVISION	APP.



TYPICAL CLARIFIER DEMOLITION (L-4902 SHOWN)

SECTION 1  
1/8"=1'-0" M-42-02

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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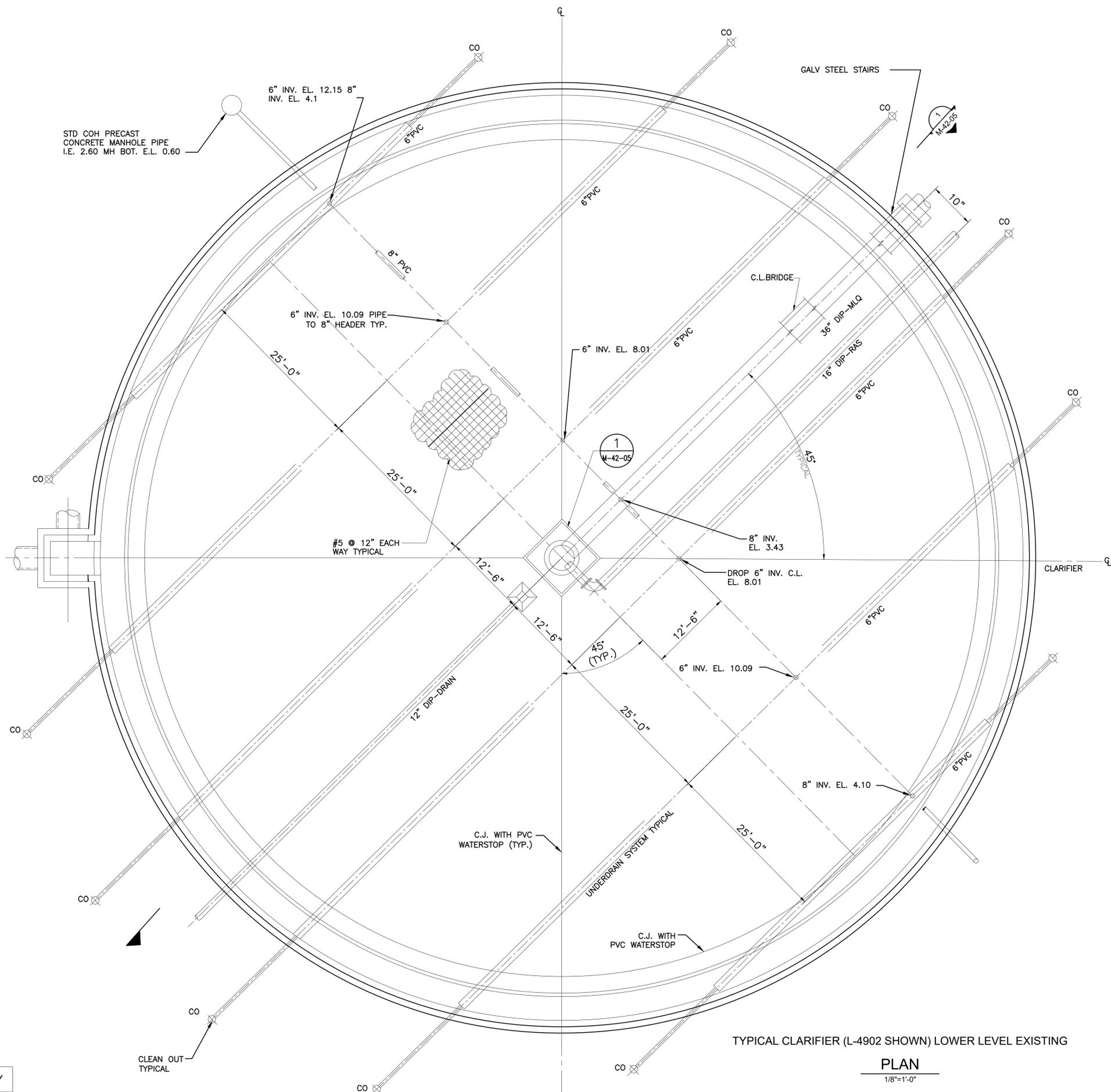
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER DEMOLITION SECTION**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO M-42-3	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA SHEET NO. 109 OF 271
	1/8"=1'-0"	



STD COH PRECAST  
CONCRETE MANHOLE PIPE  
I.E. 2.60 MH BOT. E.L. 0.60

6" INV. EL. 12.15 8"  
INV. EL. 4.1

6" INV. EL. 10.09 PIPE  
TO 8" HEADER TYP.

6" INV. EL. 8.01

8" INV.  
EL. 3.43

DROP 6" INV. C.L.  
EL. 8.01

6" INV. EL. 10.09

8" INV. EL. 4.10

C.J. WITH PVC  
WATERSTOP (TYP.)

C.J. WITH  
PVC WATERSTOP

TYPICAL CLARIFIER (L-4902 SHOWN) LOWER LEVEL EXISTING

PLAN  
1/8"=1'-0"

FOR INFORMATION ONLY

NO.	DATE	REVISION	APP.

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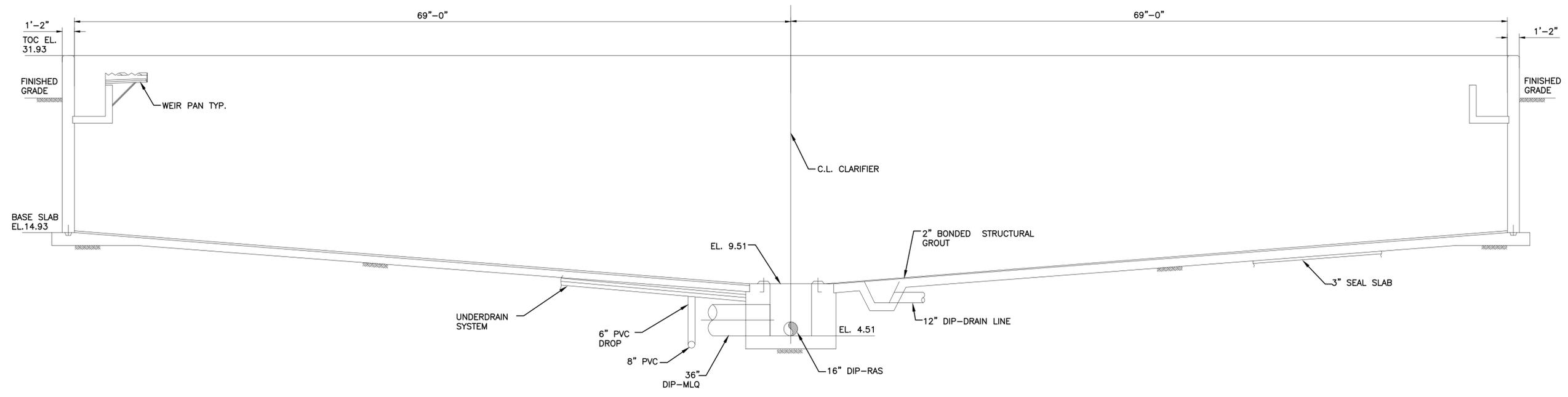
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SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER  
(L-4902 SHOWN)  
LOWER LEVEL EXISTING PLAN**  
MECHANICAL

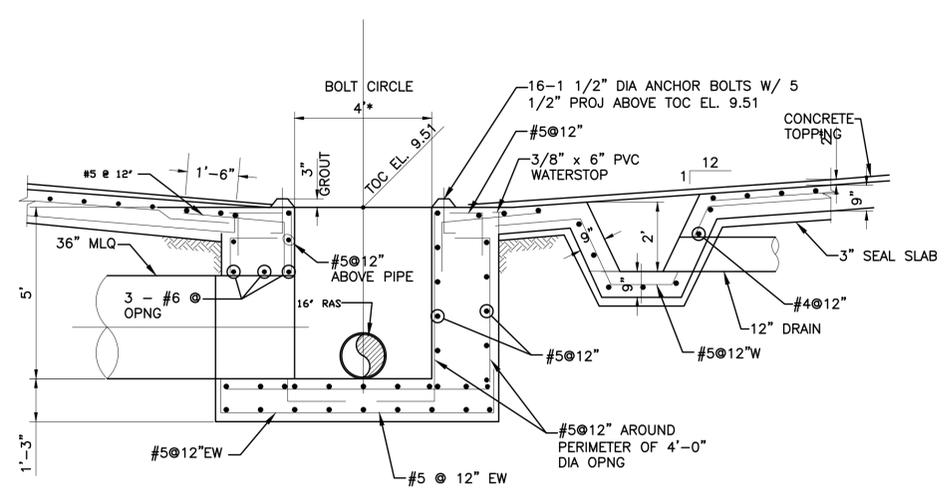
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	R-000265-0154-4	
DWG NO M-42-4	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	1/8"=1'-0"	
SHEET NO. 110 OF 271		

NO.	DATE	REVISION	APP.



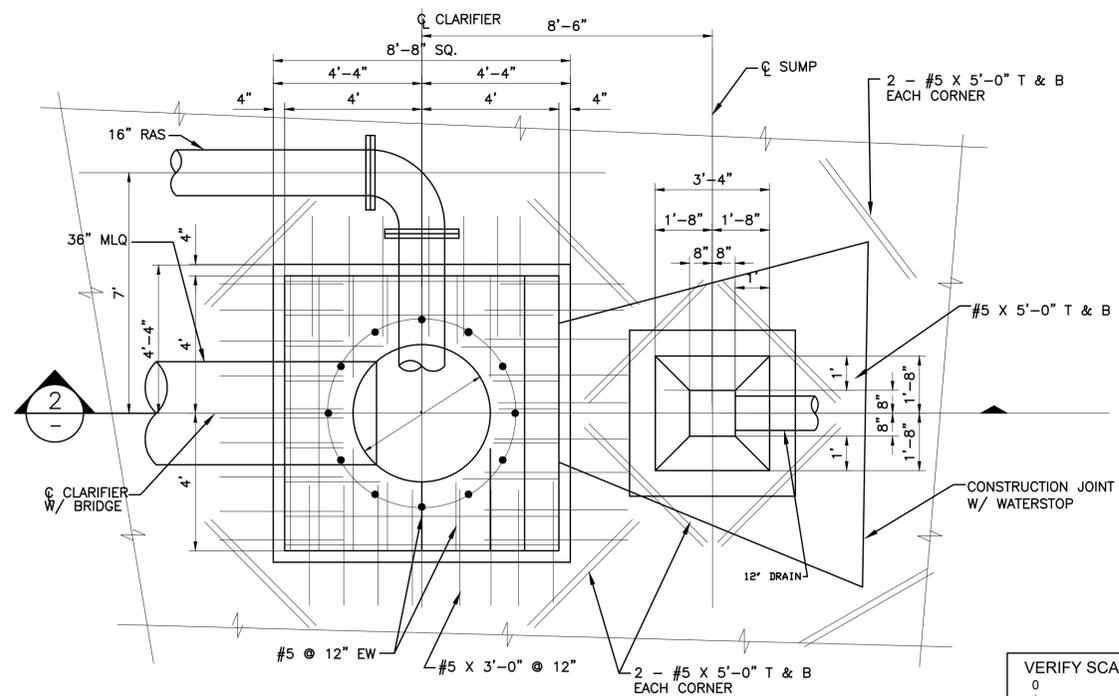
FOR INFORMATION ONLY

**SECTION 1**  
SCALE: 3/16" = 1'-0"  
M-42-04



FOR INFORMATION ONLY

**SECTION 2**  
SCALE: 3/8" = 1'-0"



FOR INFORMATION ONLY

ENLARGED PARTIAL  
**PLAN 1**  
SCALE: 3/8" = 1'-0"

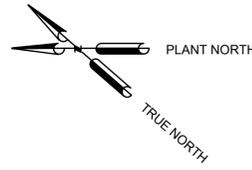
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DESIGNED BY: RK, SJ	DRAWN BY: DM

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER SECTION WITHOUT MECHANISM**  
MECHANICAL

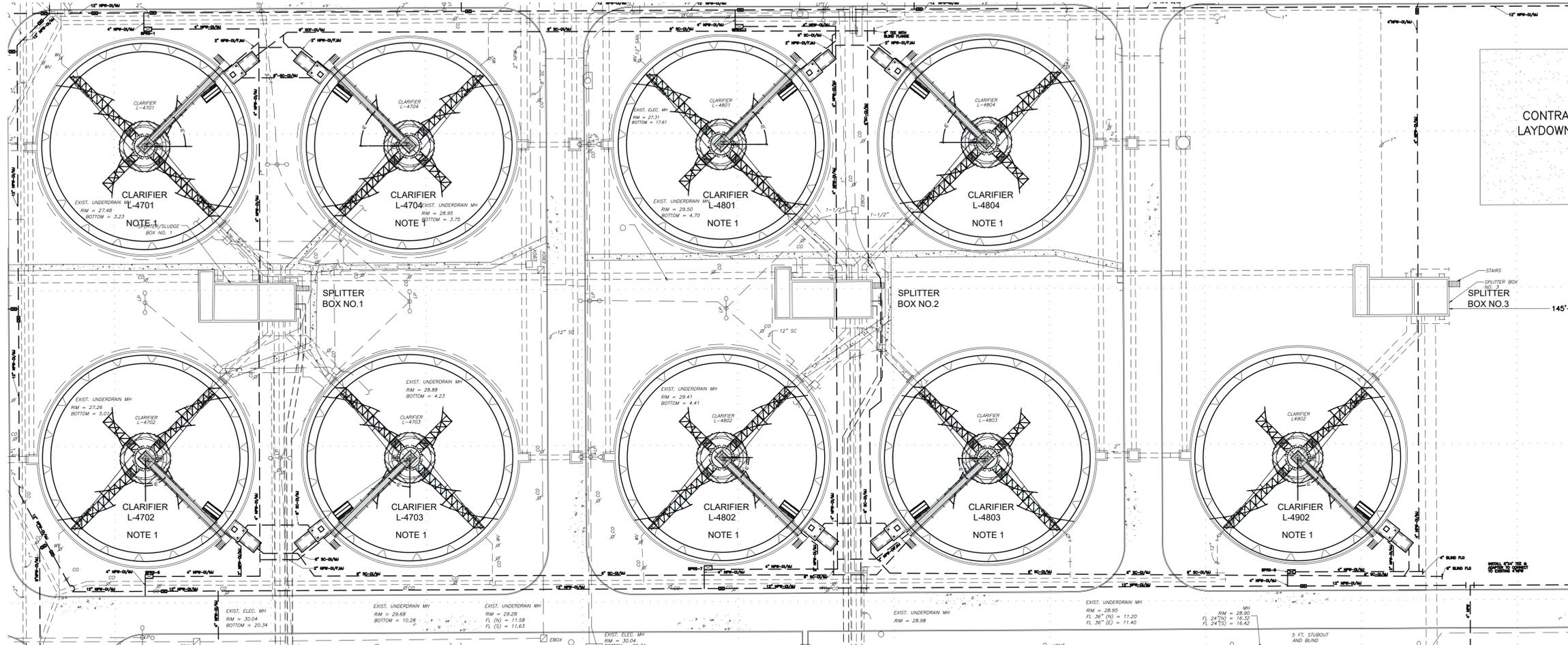
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-42-5	DRAWING SCALE NTS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 111 OF 271	



**NOTES:**

1. INSTALL NEW CLARIFIER MECHANISMS (TYPICAL) FOR NINE (9) CLARIFIERS AND A NEW SCUM PUMP STATION ATTACHED TO EACH CLARIFIER.

NO.	DATE	REVISION	APP.



CLARIFIER AREA PROPOSED SITE

**PLAN**

1"=40'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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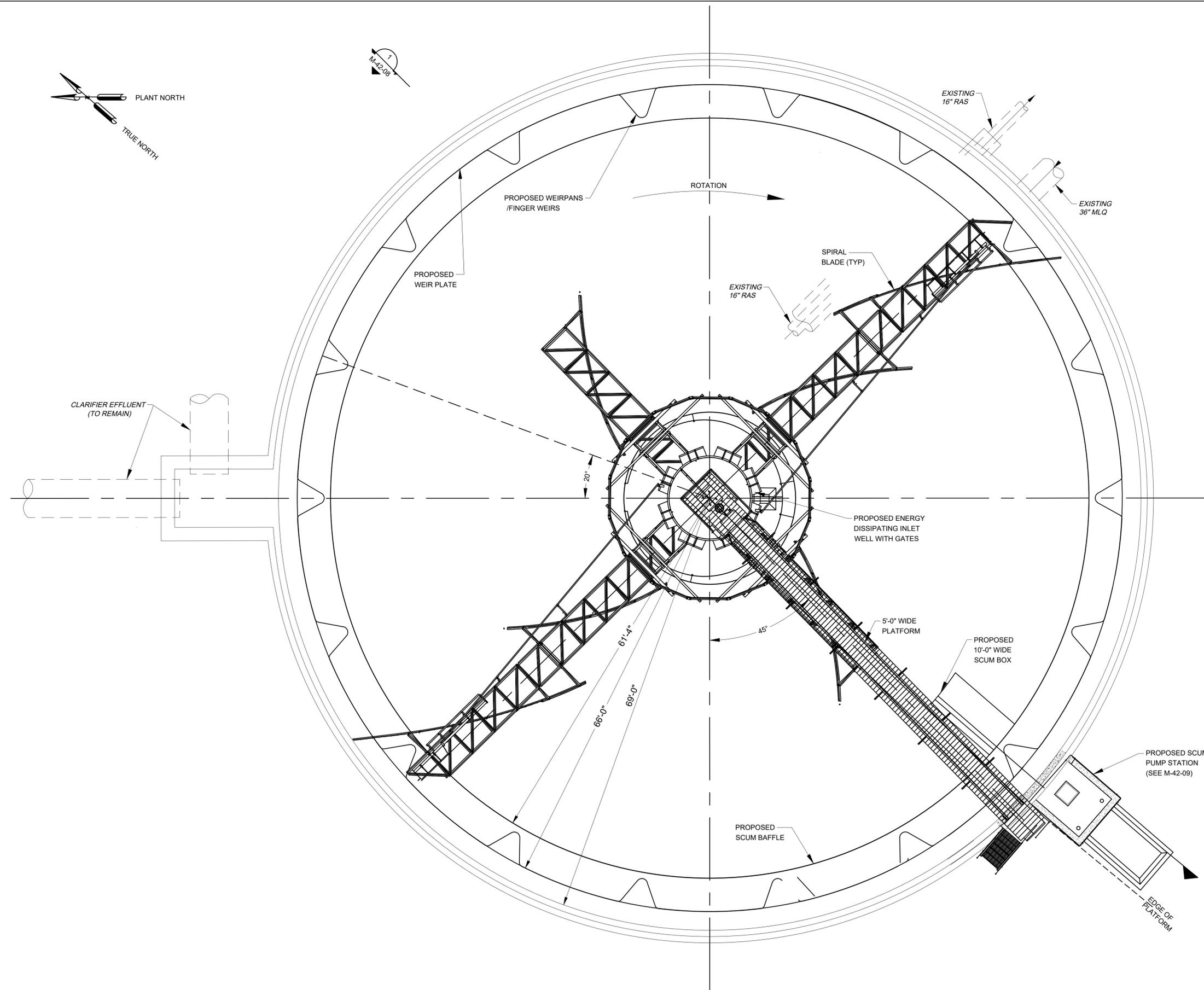
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**CLARIFIER AREA PROPOSED SITE PLAN**  
 MECHANICAL

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	R-000265-0154-4	
DRAWING SCALE		
1"=40'-0"		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-42-6	SHEET NO. 112 OF 271	

NO.	DATE	REVISION	APP.



TYPICAL CLARIFIER PROPOSED (L-4902 SHOWN)

PLAN  
1/8"=1'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

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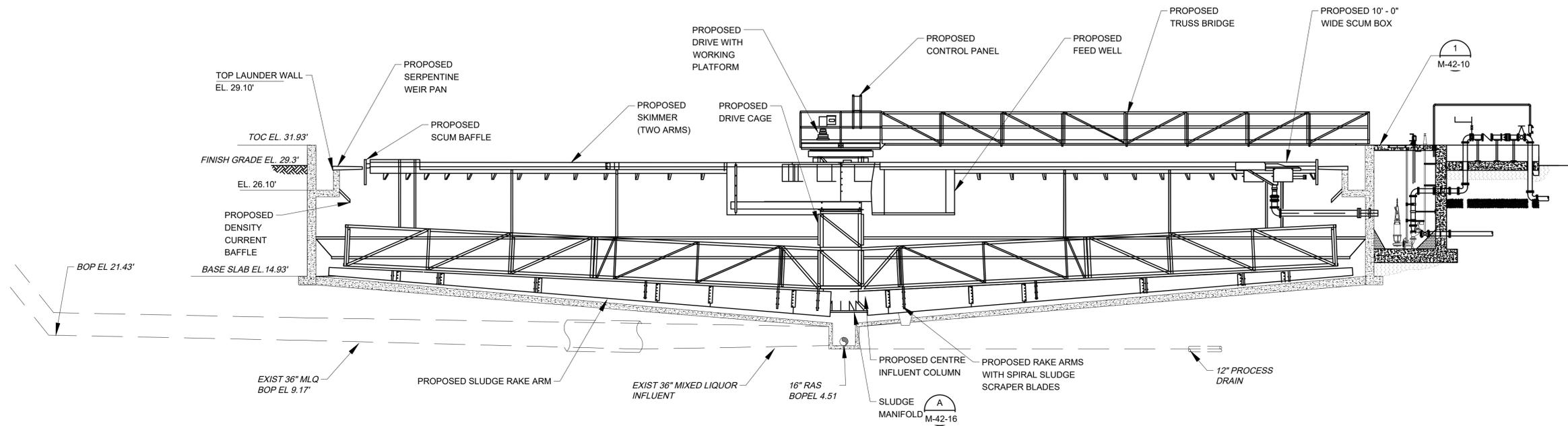
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SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER PROPOSED PLAN (L-4902 SHOWN)**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	CITY OF HOUSTON PM
	1/8"=1'-0"	
M-42-7	CITY OF HOUSTON PM	TAHA LOTIA
	SHEET NO.	113 OF 271

NO.	DATE	REVISION	APP.



TYPICAL CLARIFIER PROPOSED (L-4092) SHOWN

SECTION 1  
1/8" = 1'-0" M-42-07

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

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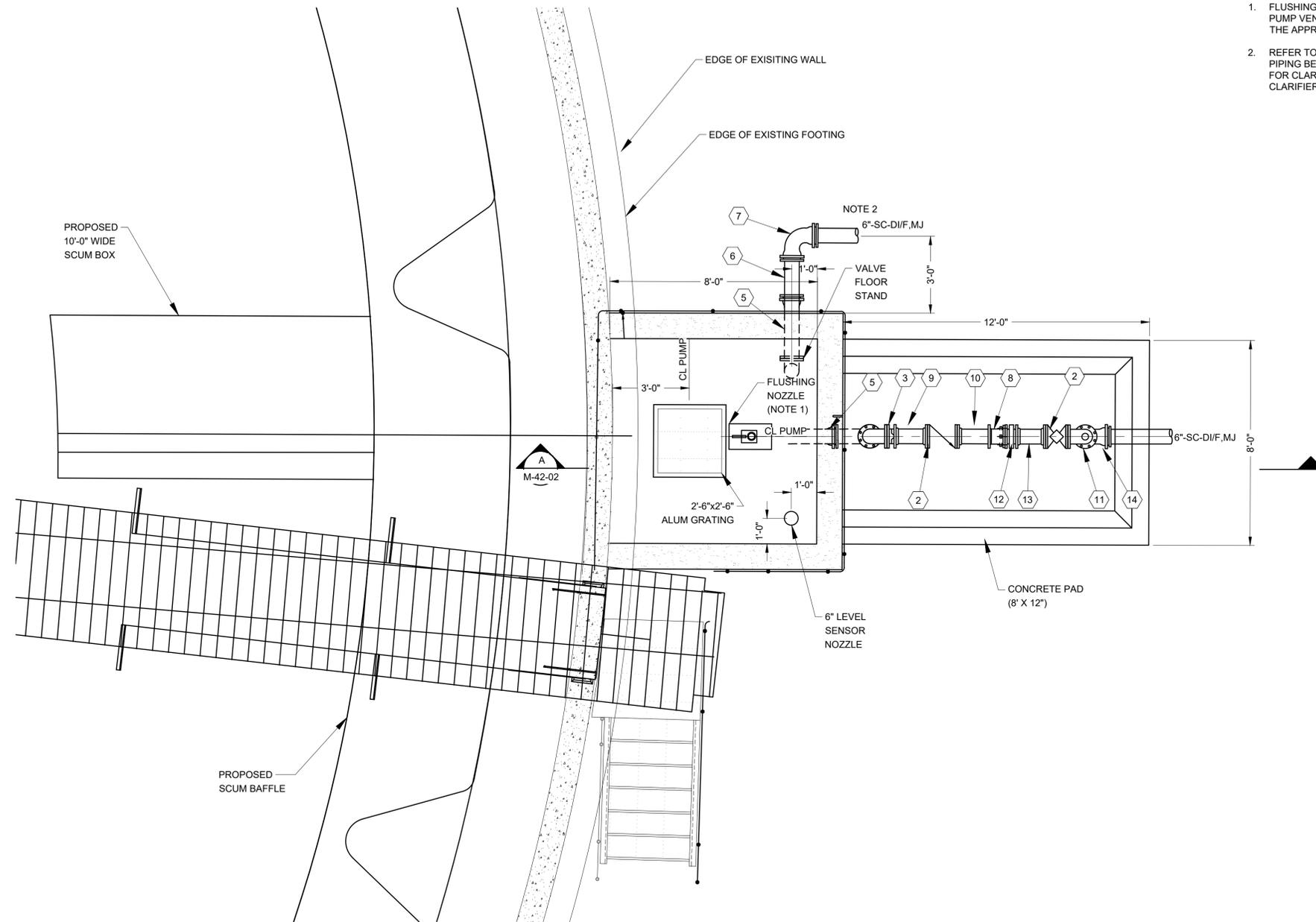
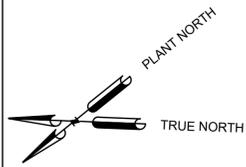
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**TYPICAL CLARIFIER PROPOSED SECTION ( L-4092 SHOWN)**

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	CITY OF HOUSTON PM
	1/8"=1'-0"	
M-42-8	TAHA LOTIA	SHEET NO. 114 OF 271



**NOTES:**

1. FLUSHING NOZZLE MOUNTING PLATE SHALL BE SUPPLIED BY THE PUMP VENDOR. COORDINATE THE REQUIRED OPENING SIZE WITH THE APPROVED SHOP DRAWINGS.
2. REFER TO SITE PLAN FOR LOCATION OF SCUM INTERCONNECT PIPING BETWEEN TWO ADJACENT CLARIFIER SUMPS. FOR CLARIFIER L-4902, INSTALL A BLIND FLANGE FOR FUTURE CLARIFIER CONNECTION.

NO.	DATE	REVISION	APP.

TYPICAL CLARIFIER SCUM PUMP STATION (L-4902 SHOWN)

**PLAN**  
3/8" = 1'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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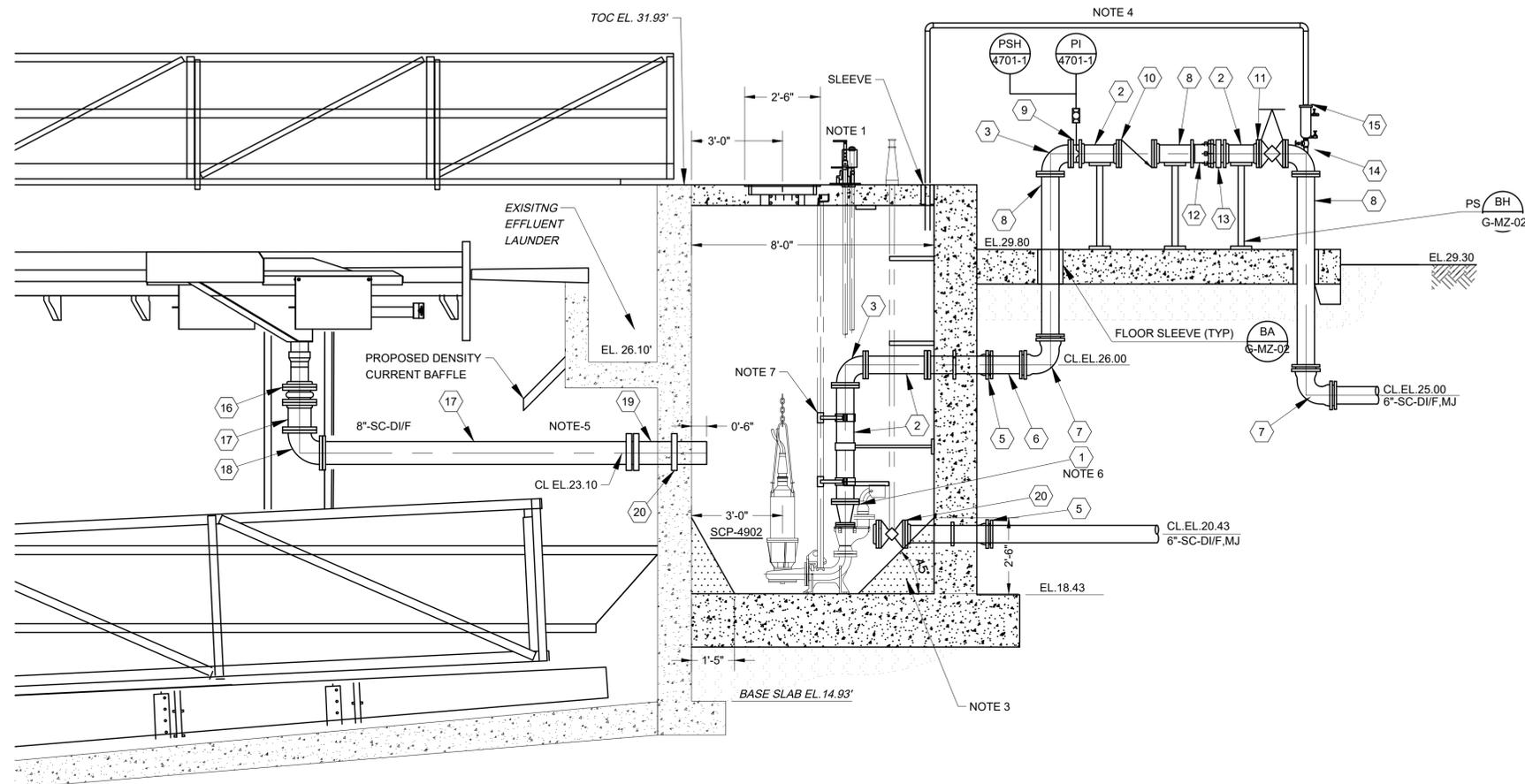
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**TYPICAL CLARIFIER SCUM STATION PLAN**

MECHANICAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
<p>DWG NO</p> <p>M-42-9</p>	DRAWING SCALE	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>
	3/8" = 1'-0"	
	SHEET NO.	115 OF 271

NO.	DATE	REVISION	APP.



- NOTES:**
- SECTION SHOWS VAUGHAN CO. FLUSHING VALVE WITH HANDLE OPERATORS TO ADJUST ANGLE OF VALVE. ACCEPTABLE ALTERNATIVE DESIGNS MAY NOT REQUIRE SUURFACE ACCESS HANDLES.
  - ALTERNATIVE FLUSH VALVE DESIGN FLYGT AND HOME, SHOWS INSTALLATION FROM VOLUTE OF PUMP.
  - CONTRACTOR SHALL ENSURE THAT CONCRETE FILLETS HAVE CUT OUTS TO ALLOW THE PUMPS, FOOTING, PIPEWORK AND FLUSHING VALVE (INCLUDING ITS MOVEMENTS AS SHOW IN THE SECTION) AS WELL AS A PATH TO THE 6" PLUG VALVE ALLOW 3" OF CLEARANCE BETWEEN FILLET CONCRETE AND THE PIPE WORK, PUMP AND VALVES.
  - ROUTE AARV BLOWOFF LINE FROM THE AARV TO THE SUMP USING 1/2-INCH STAINLESS STEEL TUBING. INSTALL THE TUBING WITH A CONTINUOUS SLOPE OF 1/8 INCH PER FOOT (1%) TOWARD THE SUMP. SUPPORT TUBING USING STAINLESS STEEL UNISTRUT CHANNEL AND SECURE IT WITH APPROPRIATE STAINLESS STEEL CLAMPING OR TUBING STRAPS. AT SUMP SLAB PENETRATION, INSTALL A SLEEVE AROUND THE TUBING AND SEAL THE ANNULAR SPACE WITH NON-SHRINK GROUT OR SUITABLE SEALANT.
  - SCUM PIPING LAYOUT SHALL BE COORDINATED WITH THE DENSITY CURRENT BAFFLE TO AVOID CONFLICTS. IT IS RECOMMENDED THAT THE PROPOSED SCUM PIPING LAYOUT BE INCLUDED IN THE CLARIFIER MECHANISM SUBMITTAL FOR REVIEW.
  - INSTALL REDUCER AS REQUIRED TO MATCH PUMP DISCHARGE NOZZLE SIZE
  - SUPPORT GUIDE BARS USING 316L SS. INTERMEDIATE GUIDE BAR BRACKETS INSTALLED IN ACCORDANCE W/SELECTED PUMP MANUFACTURE'S REQUIREMENTS. EQUALLY SPACE AT MAX OF 5'-0". WHEN SPACING IS LESS THAN 5'-0", 2 GUIDES MAY BE USED INSTEAD OF 3.

NO.	PIPE SCHEDULE
1	6" X 4" FLG REDUCER, DI (NOTE 6)
2	6" SPOOL PIECE, FLG X FLG, DI
3	6" EQUAL TEE, FLG X FLG, DI
4	6" WALL PIPE, FLG X PE, DI
5	6" WALL PIPE, FLG X MJ, DI
6	6" SPOOL PIECE, PE X PE, DI
7	6" ELBOW, MJ X MJ, DI
8	6" SPOOL PIECE, FLG X PE, DI
9	6" INLINE PRESSURE SENSOR
10	6" SWING CHECK VALVE, FLG X FLG
11	6" ECC. PLUG VALVE, FLG X FLG
12	6" FLG. COUPLING ADAPTER (RESTRAINED)
13	6" FLG. MAG METER
14	6" X 6" X 6" TEE, FLG X FLG X FLG. INSTALL BLIND FLANGE WITH TAP FOR AARV
15	2" AIR/VACUUM RELEASE VALVE
16	8" FLEXIBLE ARCHED RUBBER WITH 316 SS RETAINING RING
17	8" SPOOL PIECE, FLG X FLG, DI
18	8" ELBOW, FLG X FLG, DI
19	8" WALL PIPE, FLG X PE, DI
20	6" ECC. PLUG VALVE, FLG X FLG WITH EXTENSION STEM AND FLOOR STAND

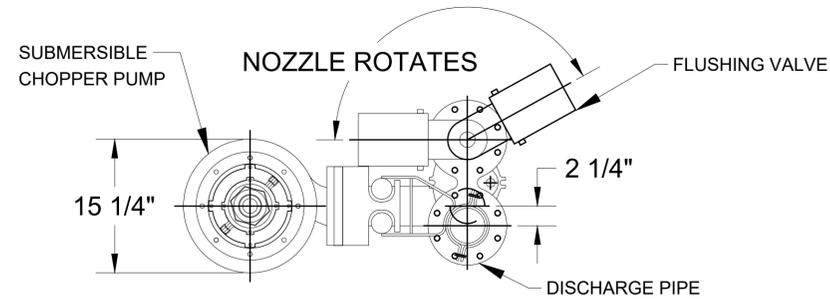
TYPICAL CLARIFIER SCUM PUMP STATION (L-4902) SHOWN

**SECTION A**  
3/8" = 1'-0" M-42-10

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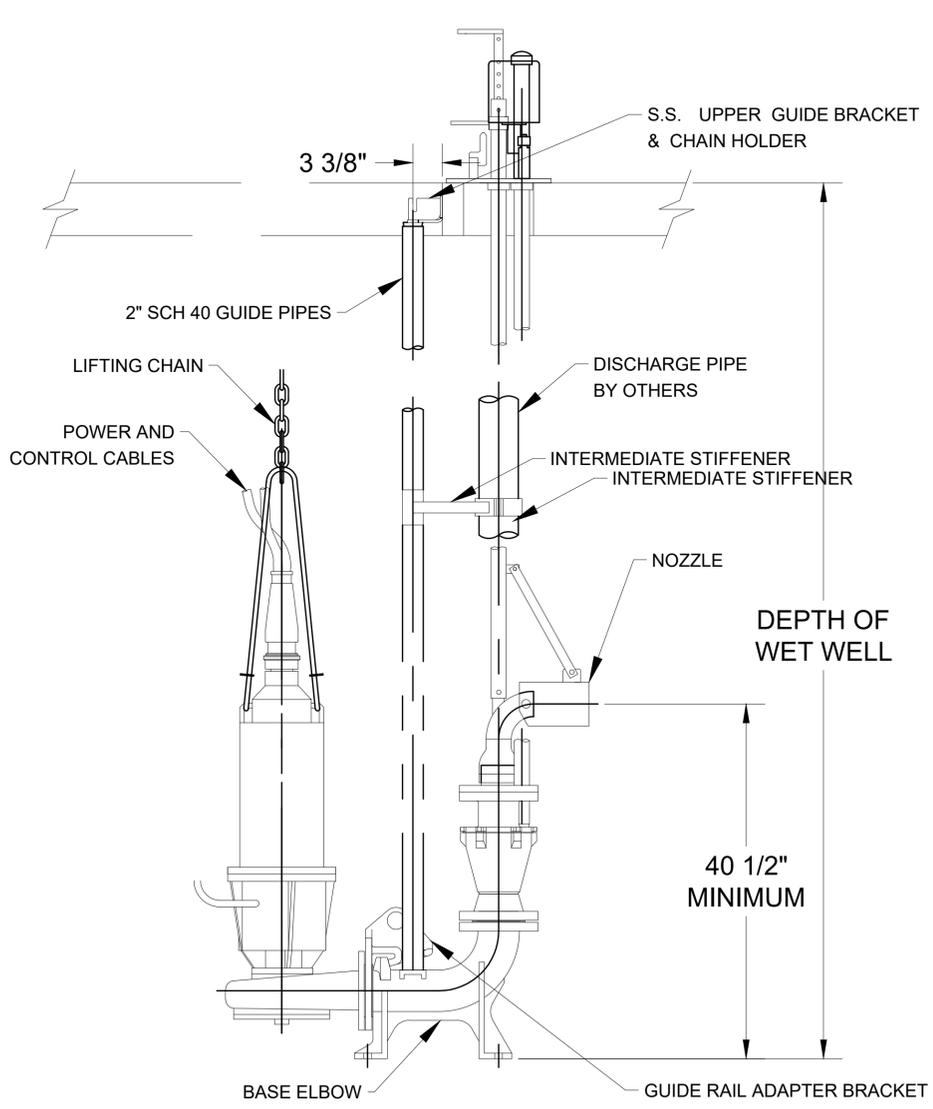
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HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER PROPOSED SECTION ( L-4902 SHOWN)**  
MECHANICAL

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	R-000265-0154-4	
DWG NO	DRAWING SCALE	116 OF 271
	M-42-10	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO.	

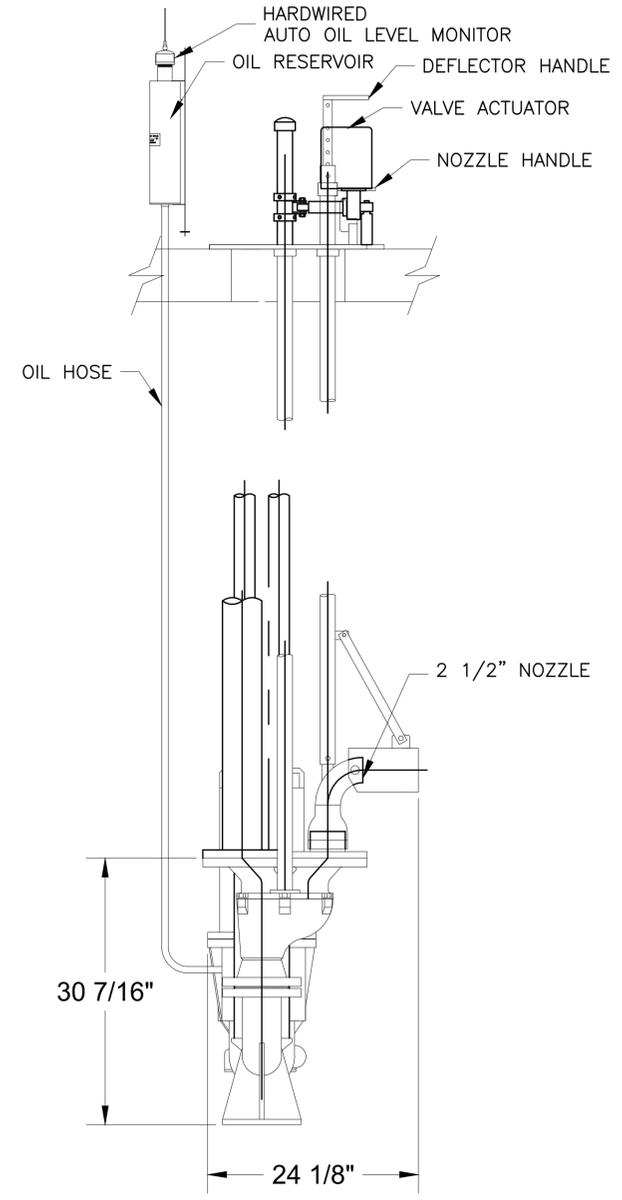


PLAN  
NTS

- NOTES:
1. NOZZLE WILL BE DIRECTED TOWARDS WATER SURFACE.
  2. THIS VALVE SHALL BE MOUNTED DIRECTLY ON THE PUMP VOLUTE, SO THAT IT CAN BE REMOVED FROM THE SUMP ALONG WITH PUMP DURING NORMAL AND ROUTINE MAINTENANCE CHECKS.



ELEVATIONS  
NTS



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DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
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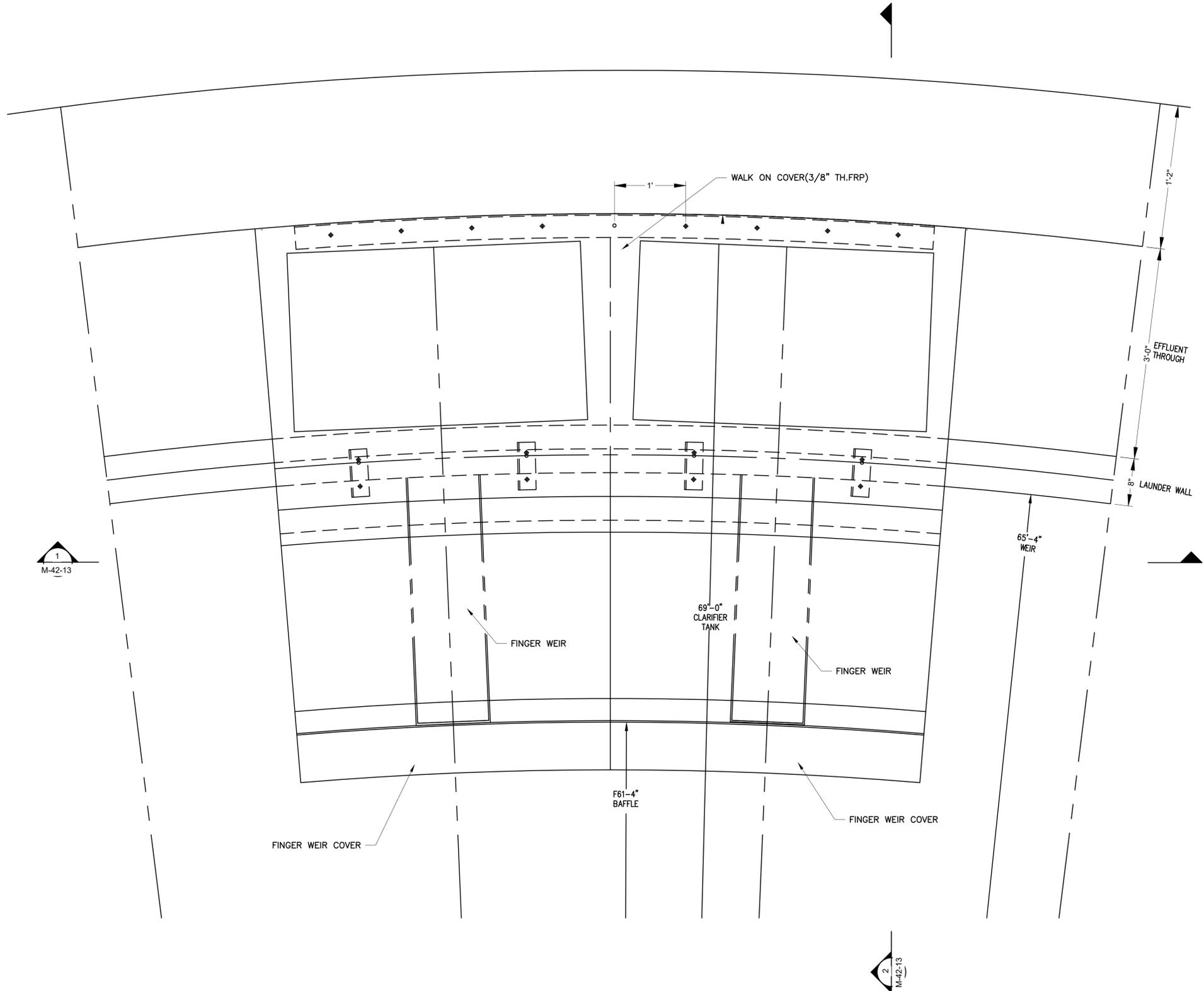
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SCUM PUMP STATION DETAILS**  
MECHANICAL

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DRAWING SCALE		
NS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 117 OF 271		

NO.	DATE	REVISION	APP.



TYPICAL CLARIFIER LAUNDRY AND WEIR PANS COVER CONCEPTUAL  
**PLAN**  
 NTS

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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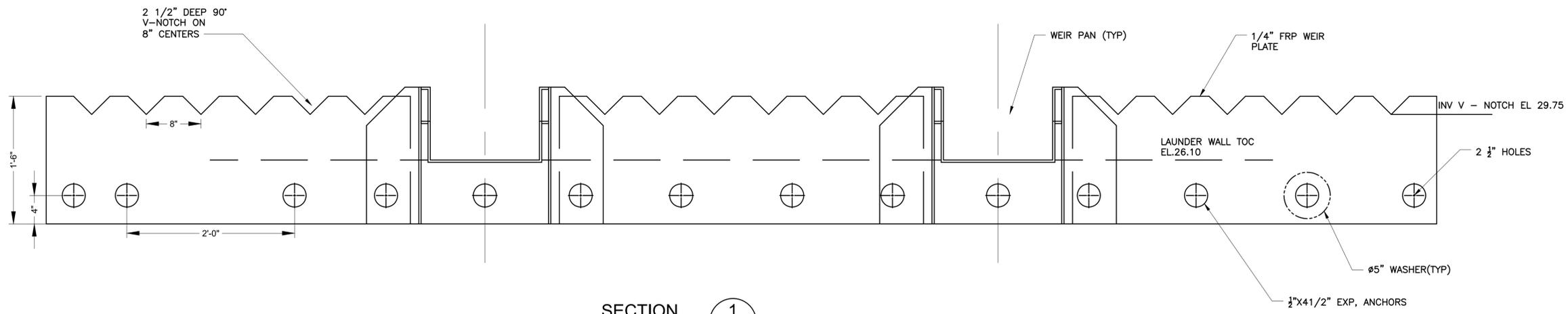
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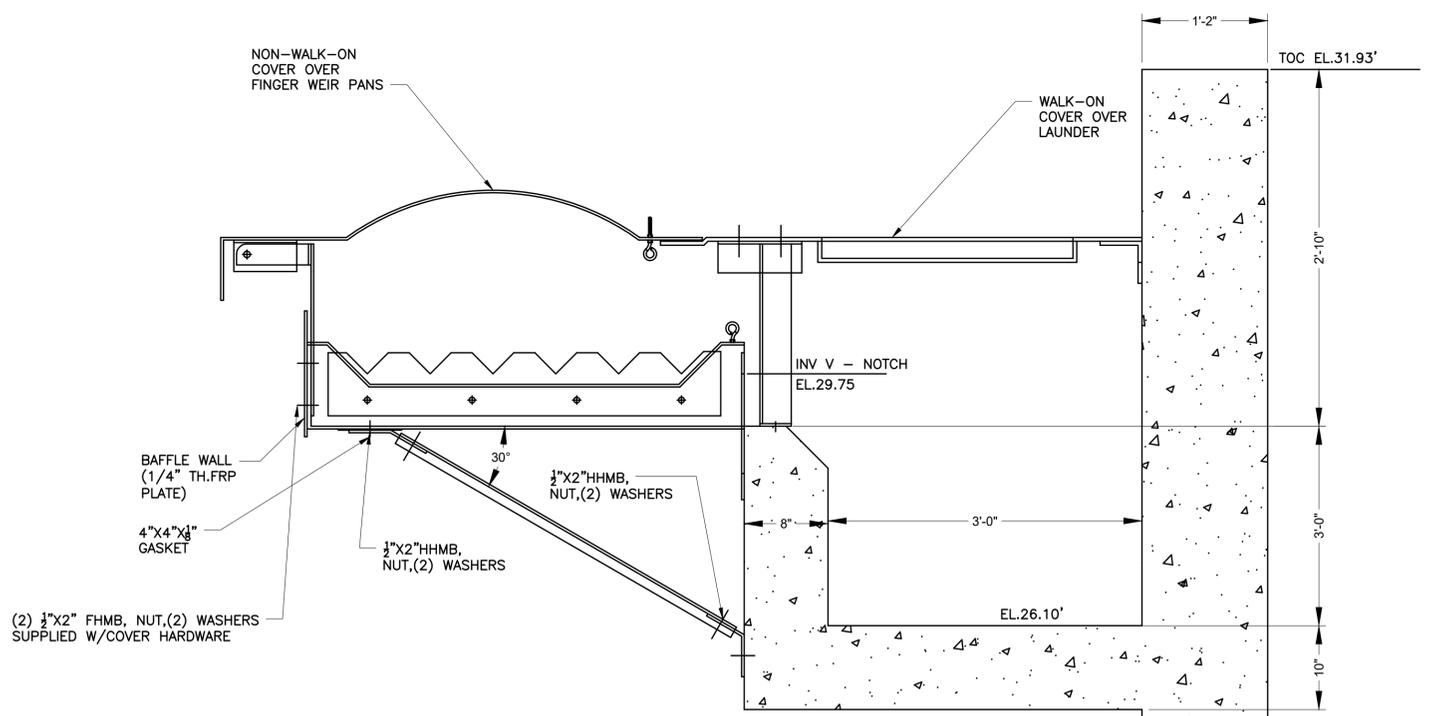
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**TYPICAL CLARIFIER LAUNDRY AND WEIR PANS COVER CONCEPTUAL PLAN**  
 MECHANICAL

<p>VERIFY SCALE            BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
M-42-12	NS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 118 OF 271	

NO.	DATE	REVISION	APP.



SECTION 1  
NTS



SECTION 2  
NTS

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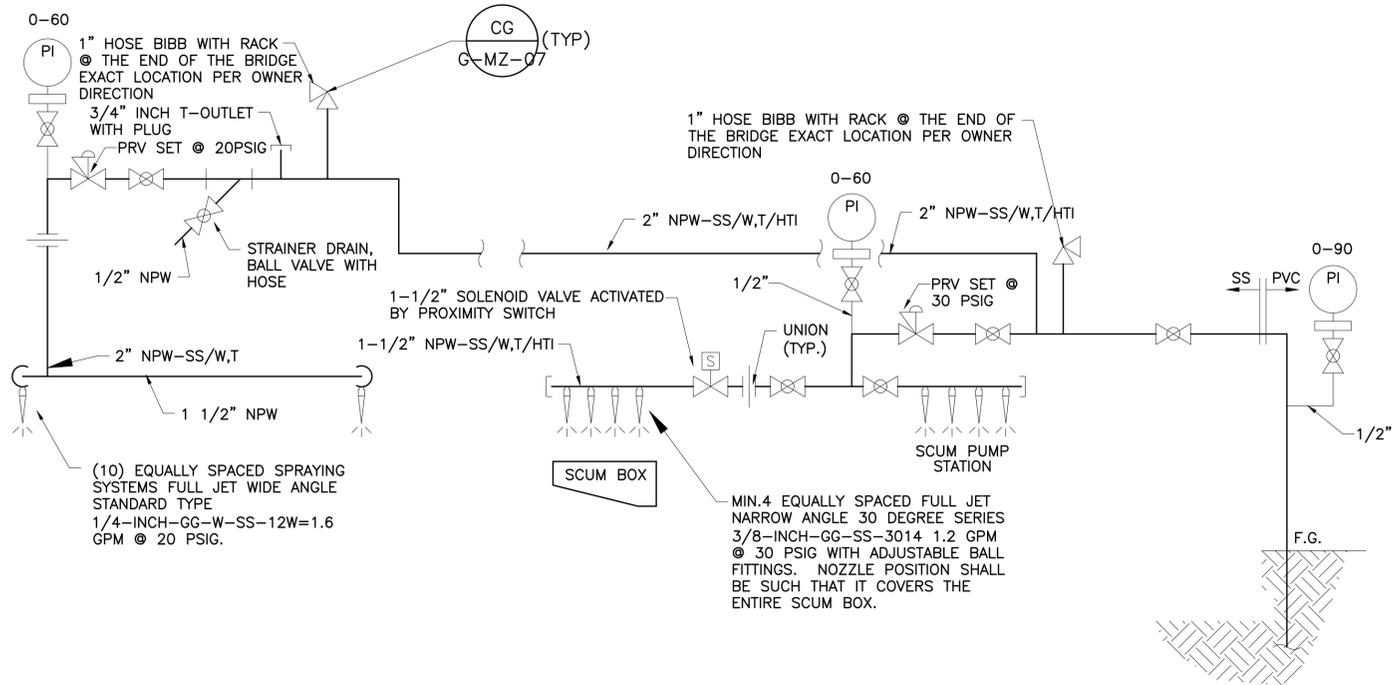
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TYPICAL CLARIFIER LAUNDRER AND WEIR PANS COVER SECTIONS**  
MECHANICAL

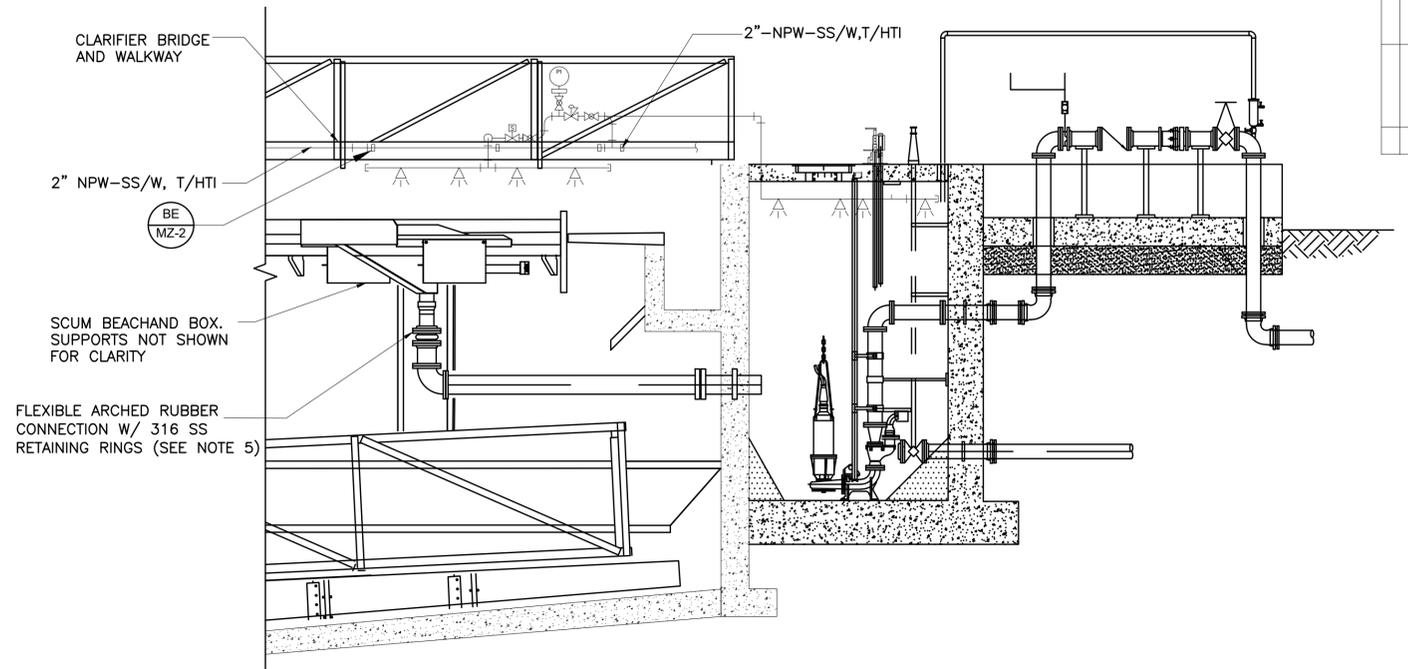
VERIFY SCALE  
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BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	119 OF 271

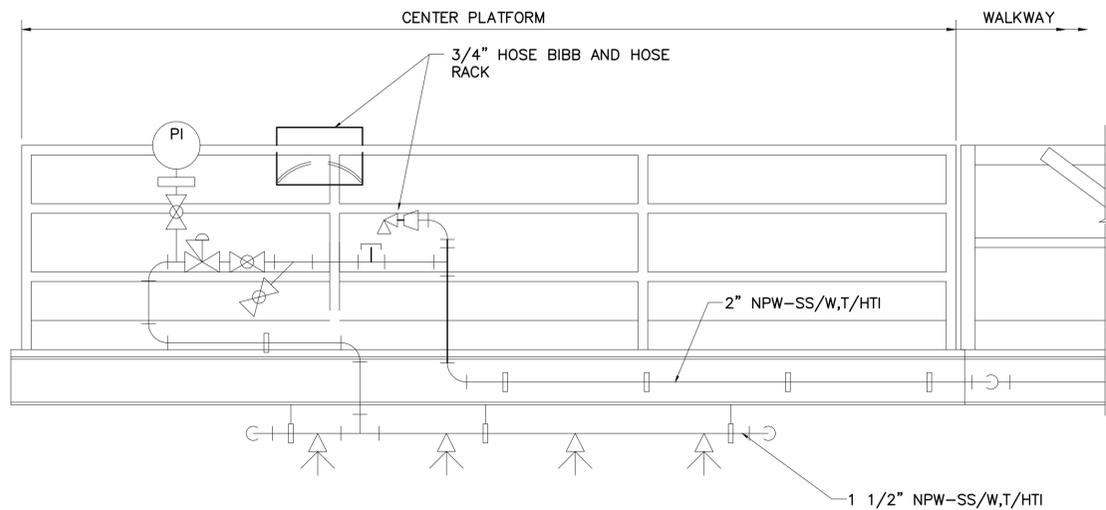
DWG NO  
M-42-13



NPW SCHEMATIC (A)  
NTS



SCUM BOX AND SCUM PUMP STATION NPW  
DETAIL (B)  
1/8" = 1'-0"



CLARIFIER FEED WELL NPW  
DETAIL (C)  
NTS

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

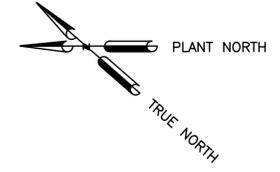
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**CLARIFIER DETAILS  
SHEET 1**  
MECHANICAL

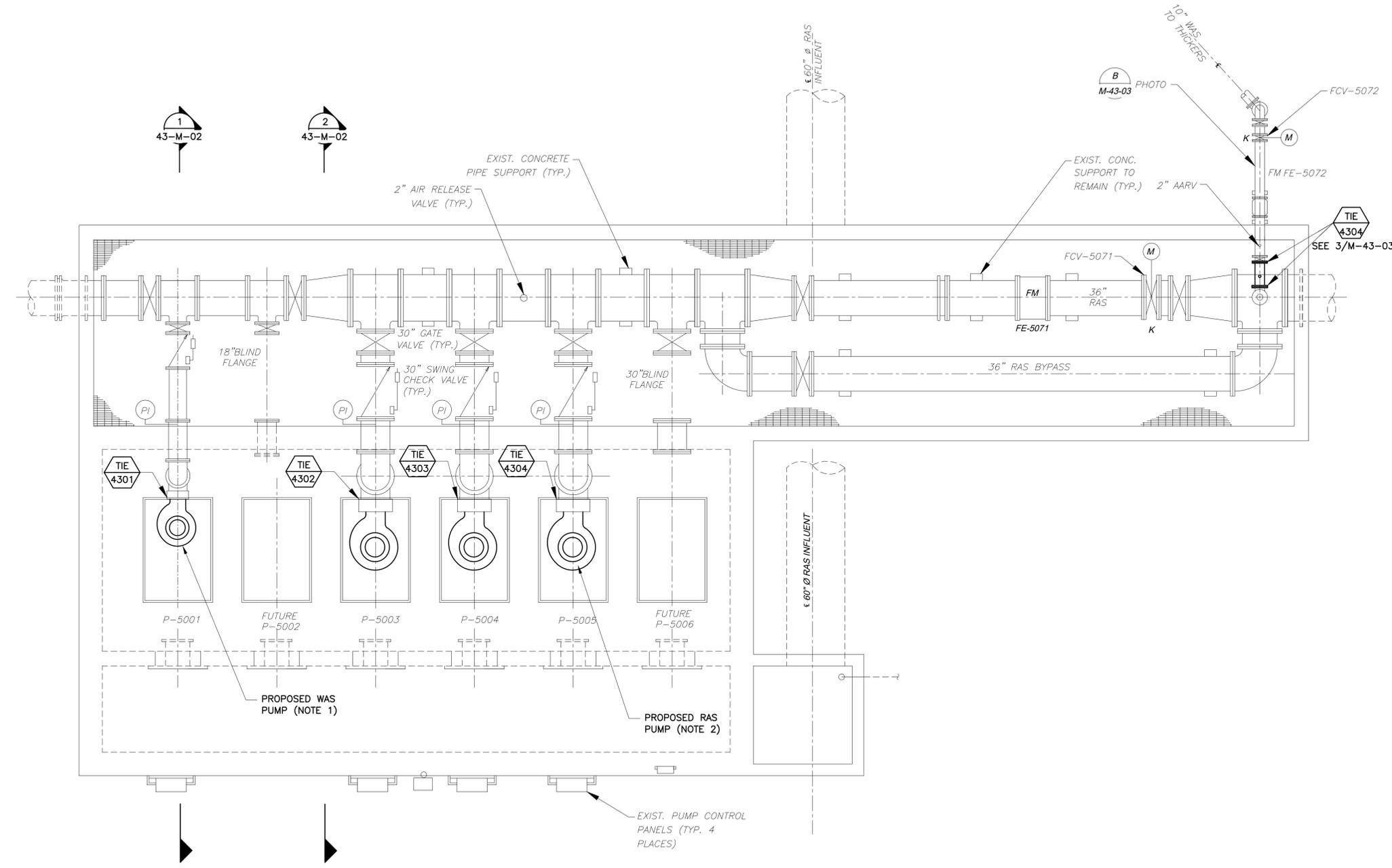
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	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	TAHA LOTIA
M-42-14	SHEET NO. 120 OF 271	



APP.	
REVISION	
DATE	
NO.	



- NOTES:**
- REMOVE ONE (1) EXISTING WAS PUMP AND INSTALL NEW PUMP IN ITS PLACE.
  - REMOVE THREE (3) EXISTING RAS PUMPS AND INSTALL NEW PUMPS IN ITS PLACE.
  - CONTRACTOR TO FIELD VERIFY PUMP DISCHARGE CONNECTION SIZE, CONDITION OF UPPER GUIDE BAR BRACKET, VOLTAGE AND THE REQUIRED POWER CABLE LENGTHS PRIOR TO ISSUE OF PUMP SUBMITTALS.
  - BEFORE BEGINNING ANY CONSTRUCTION, THE CONTRACTOR MUST SUBMIT A DETAILED CONSTRUCTION IMPLEMENTATION (SEQUENCING) PLAN OUTLINING THE REMOVAL OF EXISTING EQUIPMENT AND INSTALLATION OF NEW EQUIPMENT. THE EXISTING PUMP STATION MUST REMAIN OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD. IF A FULL SHUTDOWN OF THE SYSTEM IS NECESSARY, THE PLAN MUST CLEARLY STATE THIS AND SPECIFY THE DURATION. ANY COMPLETE SHUTDOWN MUST NOT EXCEED 4 HOURS AND MUST BE APPROVED IN ADVANCE BY THE CITY OF HOUSTON DWO STAFF.
  - THE CITY RESERVES THE FIRST RIGHT OF REFUSAL TO RETAIN OR SALVAGE ANY EQUIPMENT OR ITEMS SCHEDULED FOR DEMOLITION AND/OR REMOVAL. BEFORE ANY DEMOLITION BEGINS, THE CONTRACTOR AND CITY ENGINEER MUST CONDUCT A JOINT INSPECTION OF THE EQUIPMENT TO BE REMOVED TO IDENTIFY ITEMS THE CITY INTENDS TO KEEP FOR SALVAGE OR REUSE. ANY ITEMS NOT RETAINED BY THE CITY WILL BECOME THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND DISPOSE OF PROPERLY. IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, DO NOT DISCARD ANY EQUIPMENT UNTIL THE CITY HAS MADE ITS RETENTION DECISION.



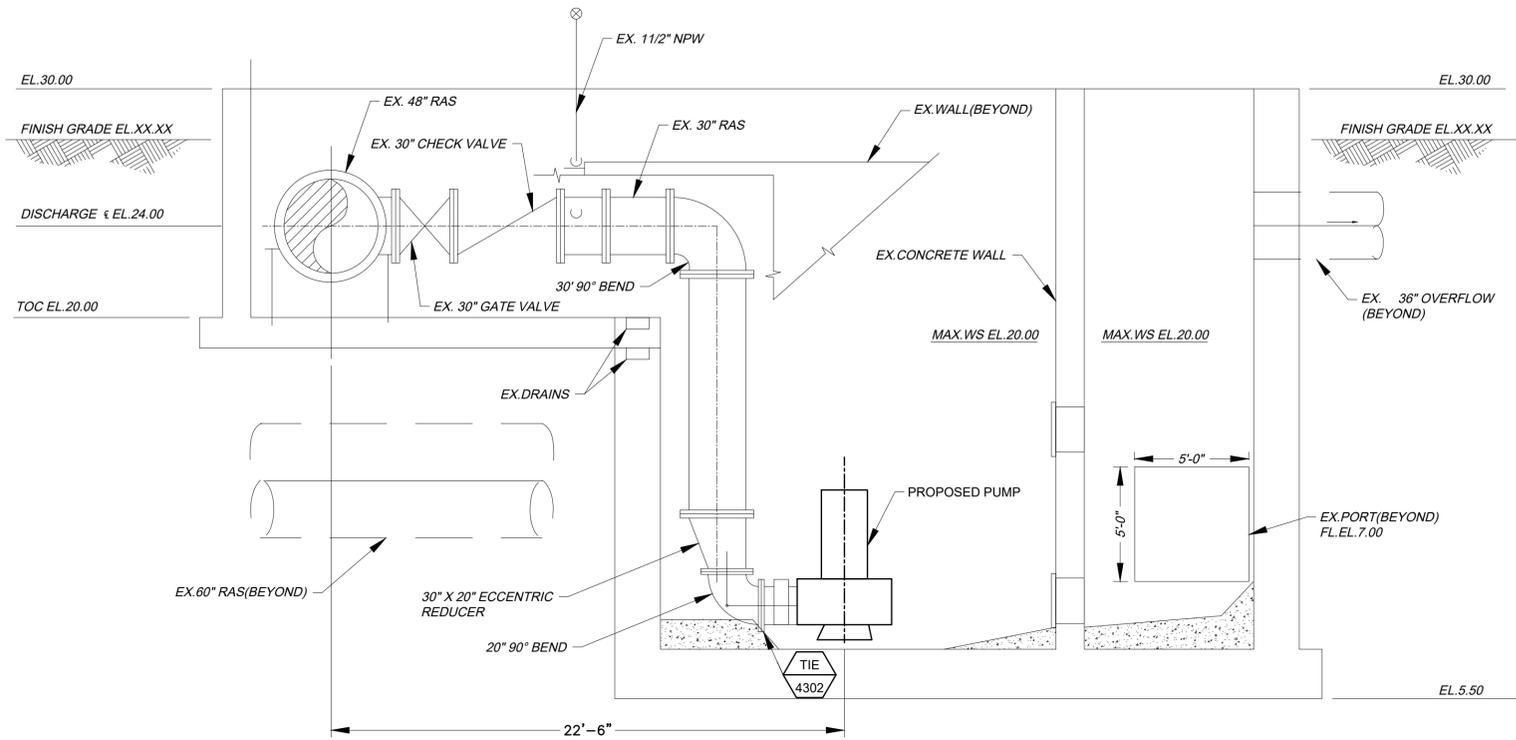
**RAS/WAS PUMP STATION**

**PLAN**  
SCALE: 3/16" = 1'-0"

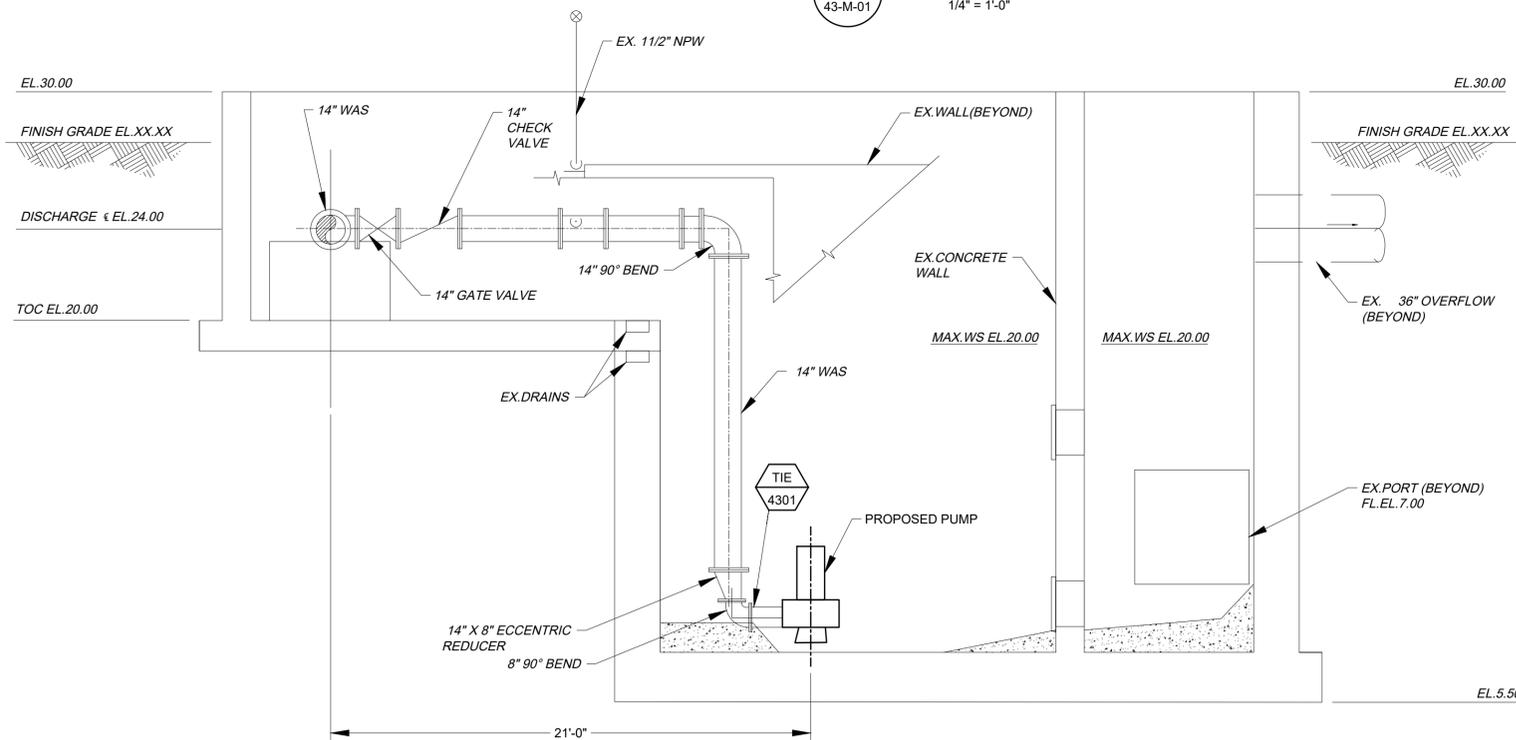
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**RAS/WAS PUMP STATION PLAN**  
MECHANICAL

<p>VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
3/16" = 1'-0"		
DWG NO		
M-43-1	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 122 OF 271	



1  
RAS SECTION  
43-M-01 1/4" = 1'-0"



2  
WAS SECTION  
43-M-01 1/4" = 1'-0"

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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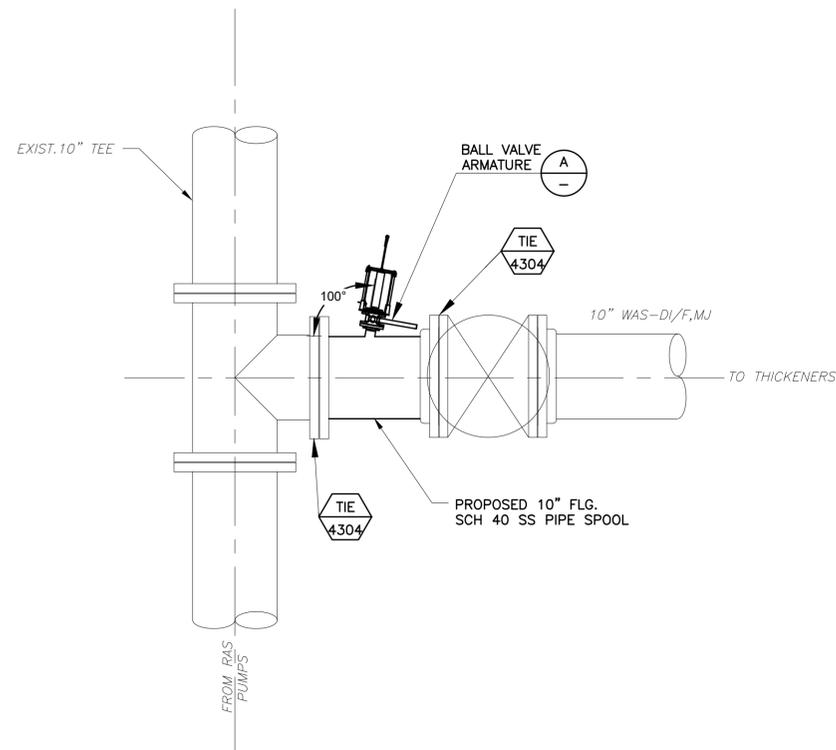
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

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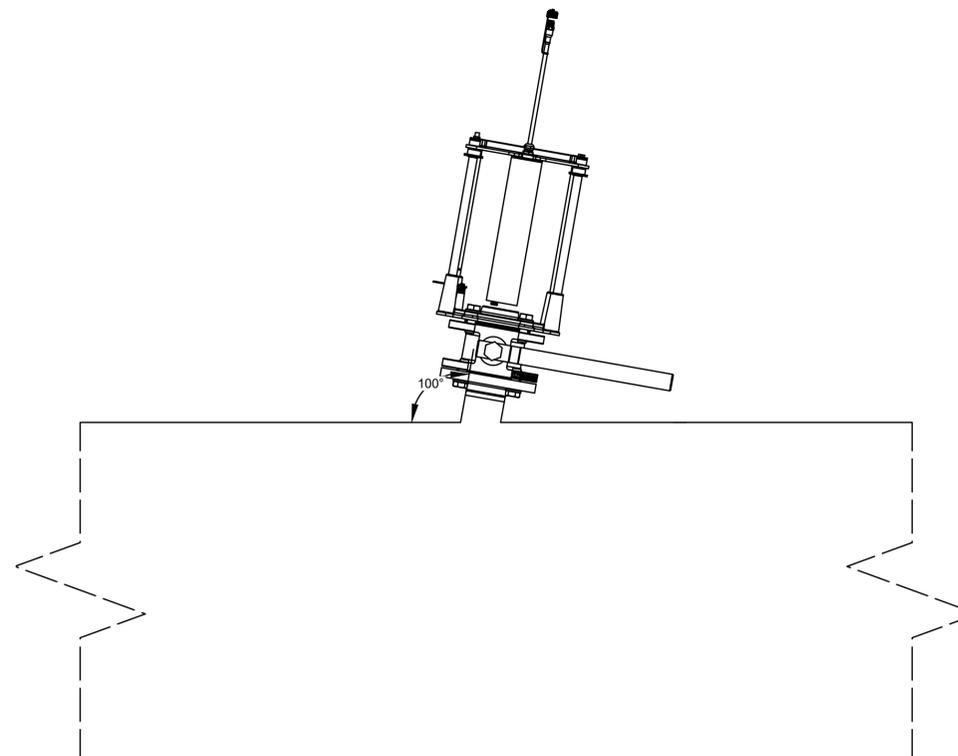
**RAS/WAS PUMP STATION SECTIONS**

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO M-43-2	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	1/4" = 1'-0"	
	SHEET NO.	123 OF 271



**3 SECTION**  
43-M-01 1"=1'-0"



TYPICAL BALL VALVE ARMATURE INSTALLATION

**DETAIL A**

**NOTES:**

1. REMOVE EXISTING 10" DUCTILE IRON (DI) FLANGED SPOOL PIECE AND REPLACE WITH NEW 10" SCHEDULE 40, 316L STAINLESS STEEL (SS) FLANGED SPOOL PIECE WITH BALL VALVE ASSEMBLY FOR INSTALLATION OF TOTAL SUSPENDED SOLIDS (TSS) PROBE. THE COMPLETE ASSEMBLY, INCLUDING VALVE AND PROBE MOUNTING ARRANGEMENT, SHALL BE FURNISHED BY THE TSS PROBE SUPPLIER.
2. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS OF THE 10" DUCTILE IRON SPOOL PIECE, INCLUDING FACE-TO-FACE LENGTH, FLANGE BOLT CIRCLE, BOLT HOLE SIZE, AND BOLT PATTERN, TO ENSURE FULL COMPATIBILITY WITH THE NEW 10" SCH. 40 316L SS FLANGED SPOOL PIECE.
3. INSTALL INSULATING GASKETS, SLEEVES, AND WASHERS AT ALL FLANGED JOINTS BETWEEN STAINLESS STEEL AND DUCTILE IRON PIPING TO PREVENT GALVANIC CORROSION.
4. ALL NEW FLANGED COMPONENTS SHALL BE ASME B16.5 CLASS 150 UNLESS OTHERWISE NOTED.
5. STAINLESS STEEL SURFACES SHALL BE CLEANED AND PASSIVATED AFTER FABRICATION AND PRIOR TO INSTALLATION.
6. CONTRACTOR SHALL CONFIRM ALIGNMENT AND ELEVATION OF NEW SPOOL PIECE AND VALVE ASSEMBLY WITH EXISTING PIPELINE PRIOR TO FINAL INSTALLATION.

NO.	DATE	REVISION	APP.



EXISTING 10" WAS PIPING PHOTO

**DETAIL B**  
M-43-01

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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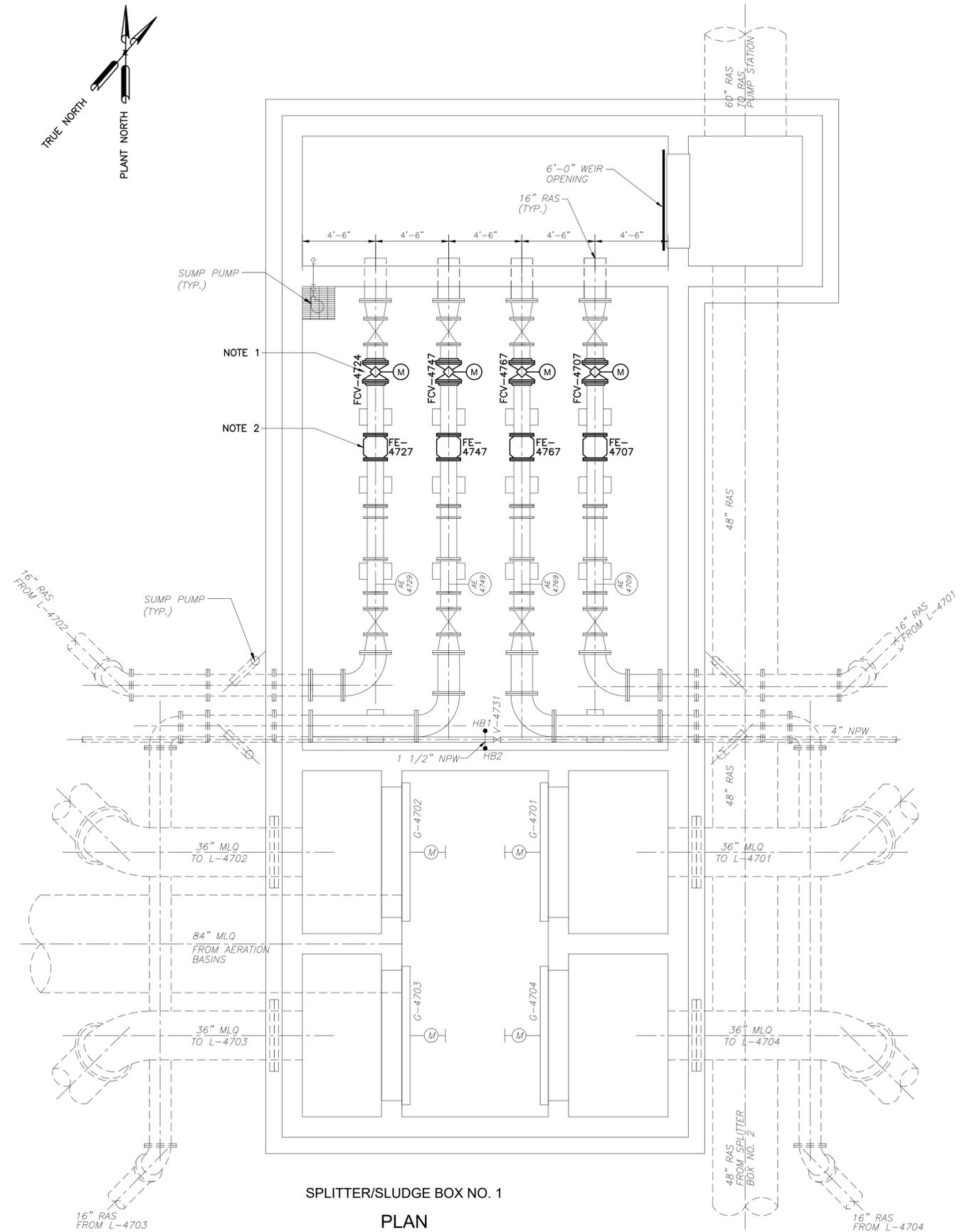
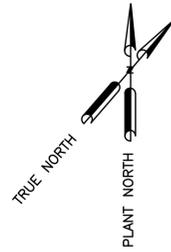
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**TSS ANALYZER SECTION  
AND DETAILS**

MECHANICAL

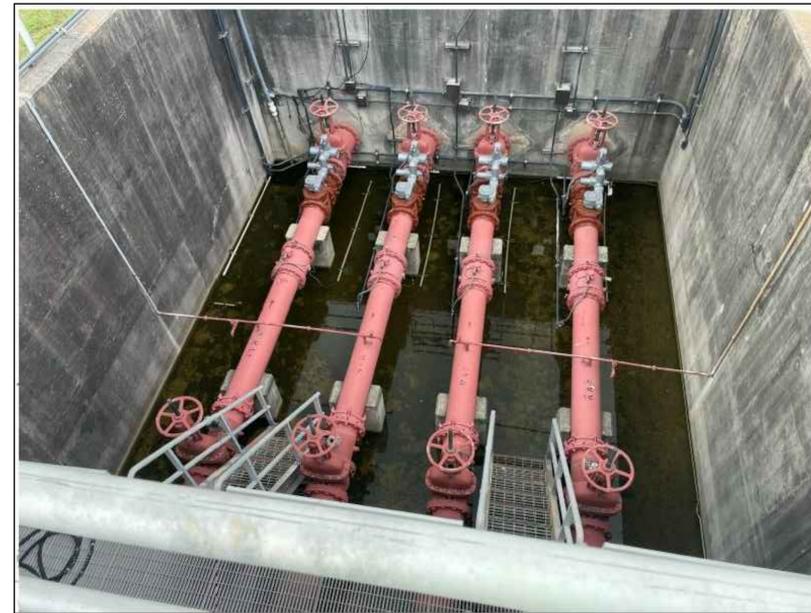
<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NS		
DWG NO	CITY OF HOUSTON PM	
M-43-3	TAHA LOTIA	
SHEET NO. 124 OF 271		



SPLITTER/SLUDGE BOX NO. 1

PLAN

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



SPLITTER BOX NO.1 PHOTO

DETAIL

1" = 1'-0"



NOTES:

1. REMOVE AND REPLACE EXISTING VALVE WITH NEW 12" MOTOROPERATED (ACTUATED) PLUG VALVE.
2. REMOVE AND REPLACE EXISTING 12" MAGNETIC FLOW METER WITH NEW 12" MAG METER.
3. THE CONTROL VALVE AND FLOW METER REPLACEMENT SHOULD BE COMPLETE WITH ALL REQUIRED ELECTRICAL CONNECTIONS, CONTROLS AND ACCESSORIES FOR FULL OPERATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CALIBRATION AND INTEGRATION WITH EXISTING INSTRUMENTATION AND CONTROL SYSTEMS

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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Kalluri Group, Inc.

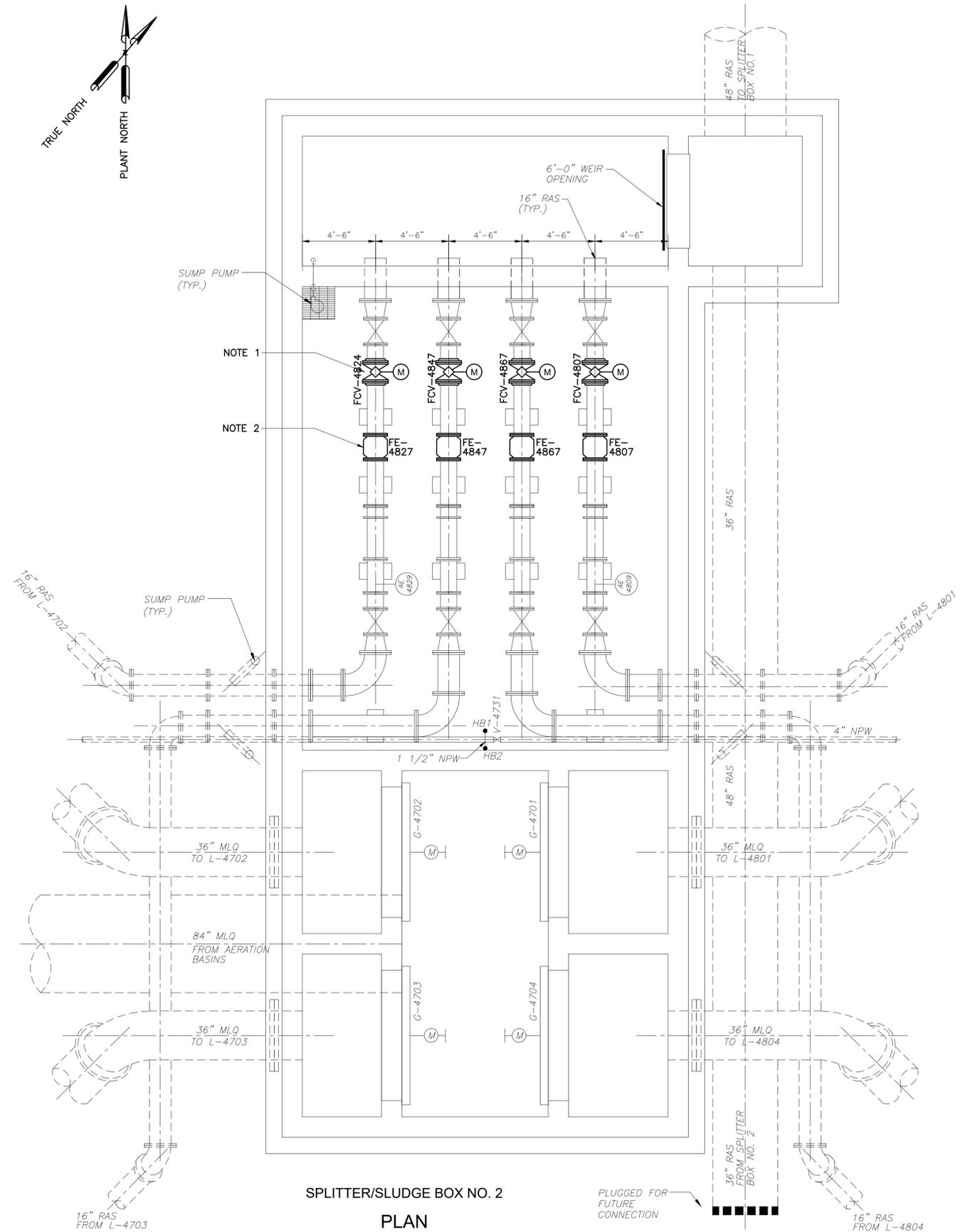
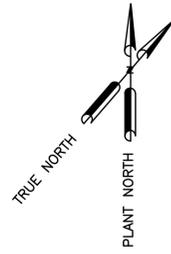
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**CLARIFIER SPLITTER/SLUDGE BOX NO.1 PLAN**  
MECHANICAL

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	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
M-44-1	TAHA LOTIA	
SHEET NO.	125 OF 271	



**SPLITTER/SLUDGE BOX NO. 2**  
**PLAN**  
 SCALE: 1/4" = 1'-0"



SPLITTER BOX NO.2 PHOTO

**DETAIL** A  
 N.T.S.

**NOTES:**

1. REMOVE AND REPLACE EXISTING VALVE WITH NEW 12" MOTOROPERATED (ACTUATED) PLUG VALVE.
2. REMOVE AND REPLACE EXISTING 12" MAGNETIC FLOW METER WITH NEW 12" MAG METER.
3. THE CONTROL VALVE AND FLOW METER REPLACEMENT SHOULD BE COMPLETE WITH ALL REQUIRED ELECTRICAL CONNECTIONS, CONTROLS AND ACCESSORIES FOR FULL OPERATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CALIBRATION AND INTEGRATION WITH EXISTING INSTRUMENTATION AND CONTROL SYSTEMS

NO.	DATE	REVISION	APP.

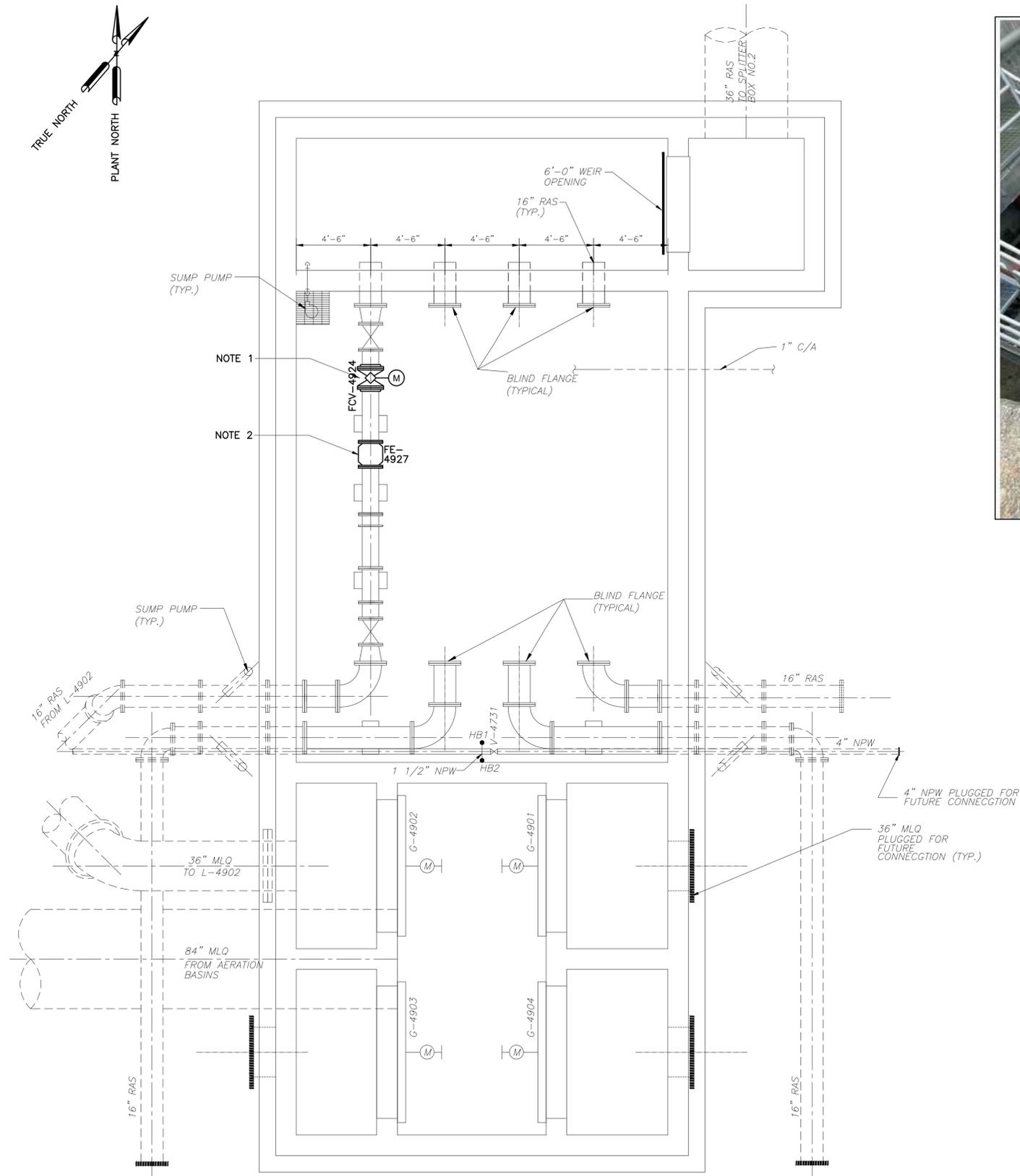
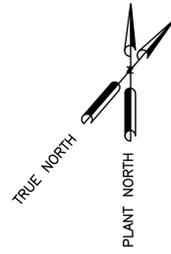
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
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 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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**CLARIFIER SPLITTER/SLUDGE BOX NO.2 PLAN**  
 MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO M-44-2	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	NS	
SHEET NO. 126 OF 271		



SPLITTER/SLUDGE BOX NO. 3

**PLAN**

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



SPLITTER BOX NO.3 PHOTO

**DETAIL**

N.T.S



**NOTES:**

1. REMOVE AND REPLACE EXISTING VALVE WITH NEW 12" MOTOROPERATED (ACTUATED) PLUG VALVE.
2. REMOVE AND REPLACE EXISTING 12" MAGNETIC FLOW METER WITH NEW 12" MAG METER.
3. THE CONTROL VALVE AND FLOW METER REPLACEMENT SHOULD BE COMPLETE WITH ALL REQUIRED ELECTRICAL CONNECTIONS, CONTROLS AND ACCESSORIES FOR FULL OPERATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CALIBRATION AND INTEGRATION WITH EXISTING INSTRUMENTATION AND CONTROL SYSTEMS

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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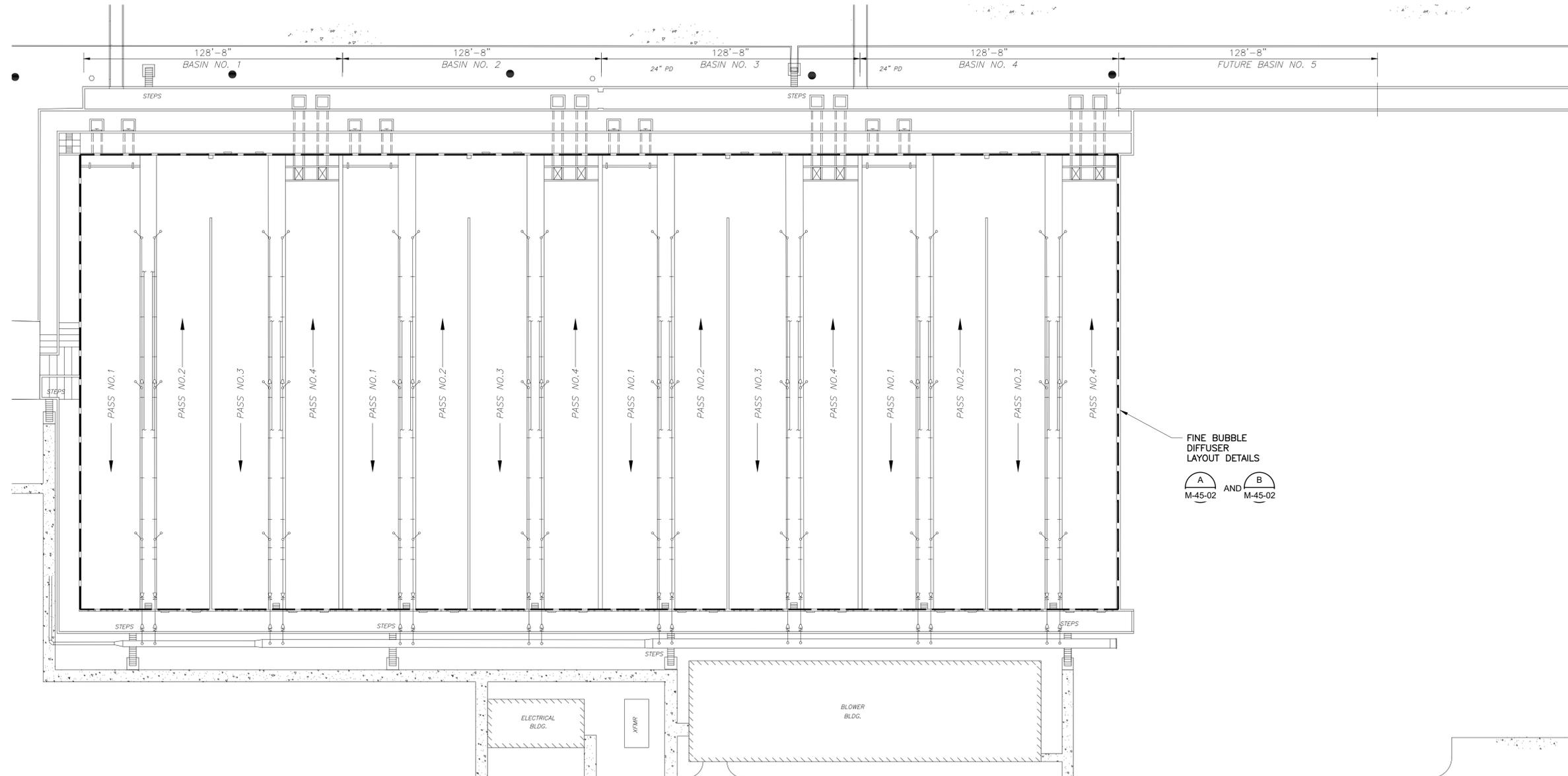
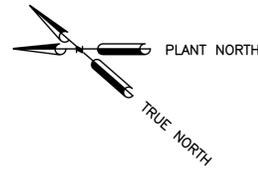
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**CLARIFIER SPLITTER/SLUDGE BOX NO.3 PLAN**

MECHANICAL

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<p>DWG NO</p> <p>M-44-3</p>	DRAWING SCALE	<p>CITY OF HOUSTON PM</p> <p>TAHA LOTIA</p>
	NS	
SHEET NO. 127 OF 271		



FINE BUBBLE  
DIFFUSER  
LAYOUT DETAILS

**A** AND **B**  
M-45-02 AND M-45-02

AERATION BASINS OVERALL

PLAN

1"=30'-0"

NO.	DATE	REVISION	APP.

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DESIGNED BY: RK, SJ	DRAWN BY: DM

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**KGI**  
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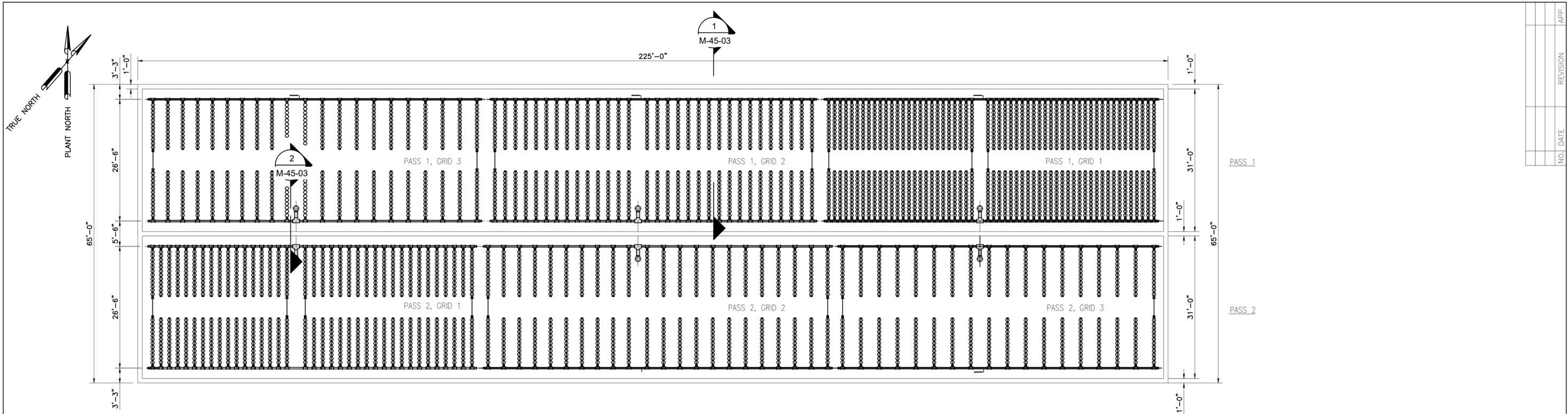
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IMPROVEMENTS PACKAGE 3

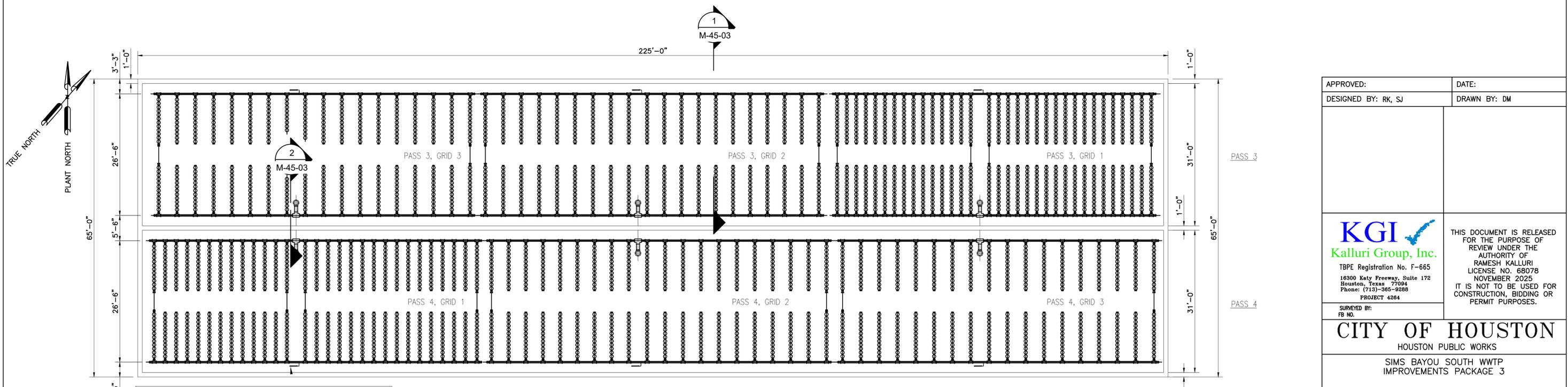
**AERATION BASIN LAYOUT  
OVERALL PLAN**

MECHANICAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-45-1	SHEET NO. 128 OF 271	



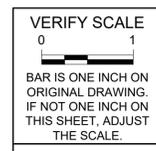
PASSES 1 & 2 AERATION SYSTEM MECHANICAL LAYOUT  
SCALE: 3/32" = 1'-0"



PASSES 3 & 4 AERATION SYSTEM MECHANICAL LAYOUT  
SCALE: 3/32" = 1'-0"

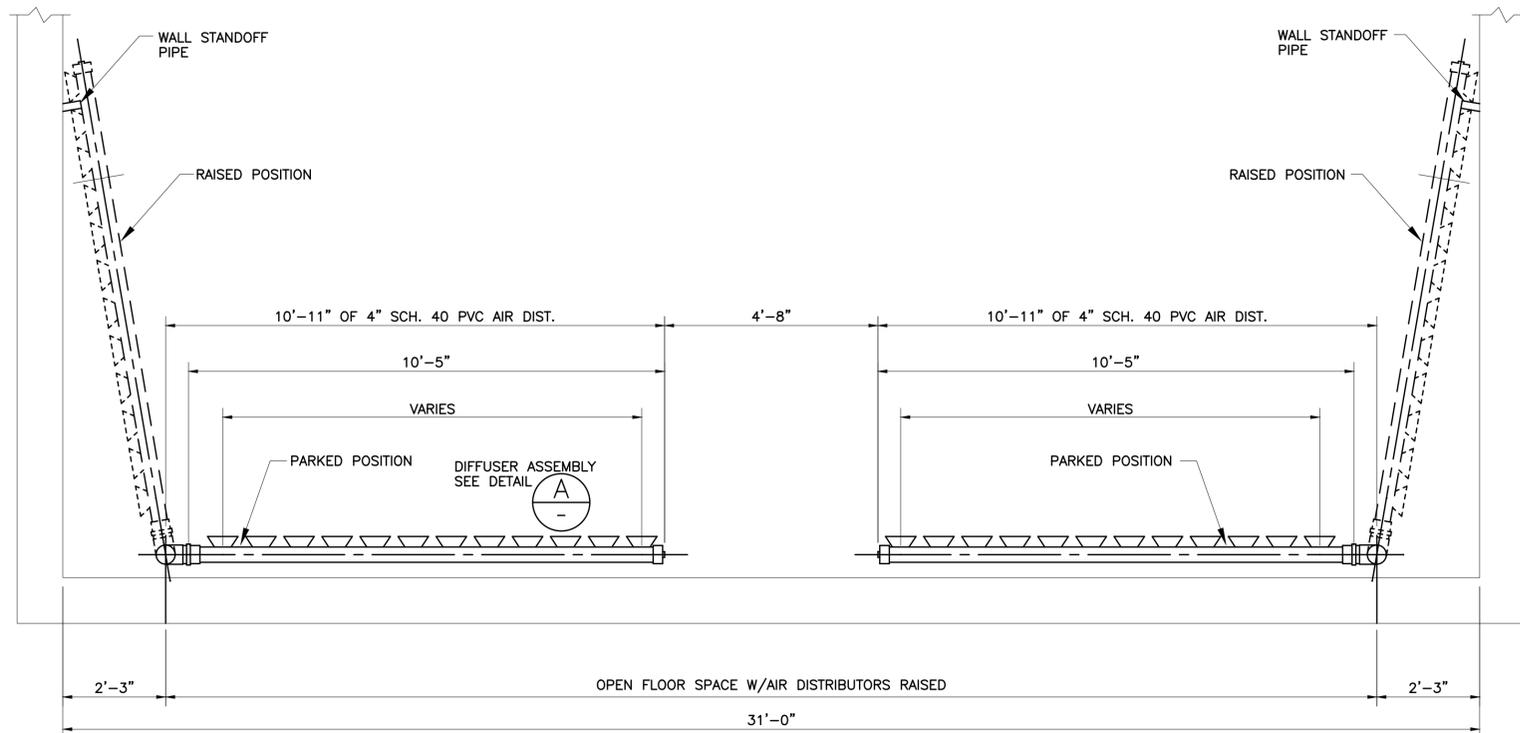
CERAMIC AERATION MATERIAL AND MANUFACTURING SPECIFICATIONS			
ITEM	MATERIAL SPECIFICATION	MANUFACTURING SPECIFICATION	NOTES
DROPLET	PVC, ASTM D1784 COMPOUND 12454-B	PIPE FITTINGS: ASTM D1785 ASTM D2468	FLANGE AT TOP OF DROPLET FOR CONNECTION TO STAINLESS DRIPPER
SUPPORTS	304L STAINLESS STL	---	1" GRADE NOT REQUIRED FOR NON-WELDED PARTS
BOLTS, NUTS, WASHERS	1/8"-8 STAINLESS STL	---	---
FIXED JOINT O-RING	NATURAL RUBBER/SBR	---	45 ± 5 DUROMETER SHORE A COMPRESSION SET 5% MAX
EXPANSION JOINT O-RING	NATURAL RUBBER/SBR	---	40 ± 5 DUROMETER SHORE A 6.0 COEFFICIENT OF FRICTION MAX.
DIFFUSER HOLDER O-RING	POLYSOPRENE	---	40 ± 5 DUROMETER SHORE A 500% ELONGATION
AIR MANIFOLD	PVC, ASTM D1784 COMPOUND 12454-B	PIPE FITTINGS: ASTM D1785 ASTM D2468	---
AIR HEADERS	PVC, ASTM D3815 COMPOUND 12452A	PIPE & FITTINGS: ASTM D3024	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER HOLDER	PVC, ASTM D3815 COMPOUND 12452A	---	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER ELEMENT	FUSED ALUMINA	---	---
PVC SOLVENT WELDING	ASTM D2564	ASTM D2855	---

EXISTING DIFFUSER QUANTITIES	
GRID LOCATION	7" DIFFUSERS/GRID
PASS 1, GRID 1	1,344
PASS 1, GRID 2	744
PASS 1, GRID 3	504
PASS 2, GRID 1	888
PASS 2, GRID 2	528
PASS 2, GRID 3	432
PASS 3, GRID 1	792
PASS 3, GRID 2	480
PASS 3, GRID 3	360
PASS 4, GRID 1	696
PASS 4, GRID 2	480
PASS 4, GRID 3	360
TOTAL/BASIN	7,608
TOTAL (4) BASINS	30,432

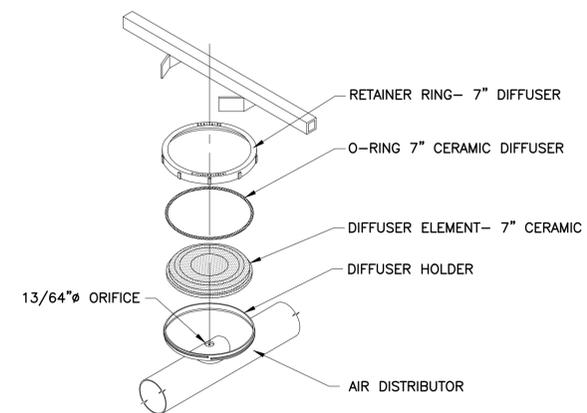


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SURVEYED BY: FB NO.	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 <b>TYPICAL AERATION          BASIN DIFFUSER LAYOUT</b> MECHANICAL	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	
DWG NO	CITY OF HOUSTON PM
M-45-2	TAHA LOTIA
SHEET NO.	129 OF 271

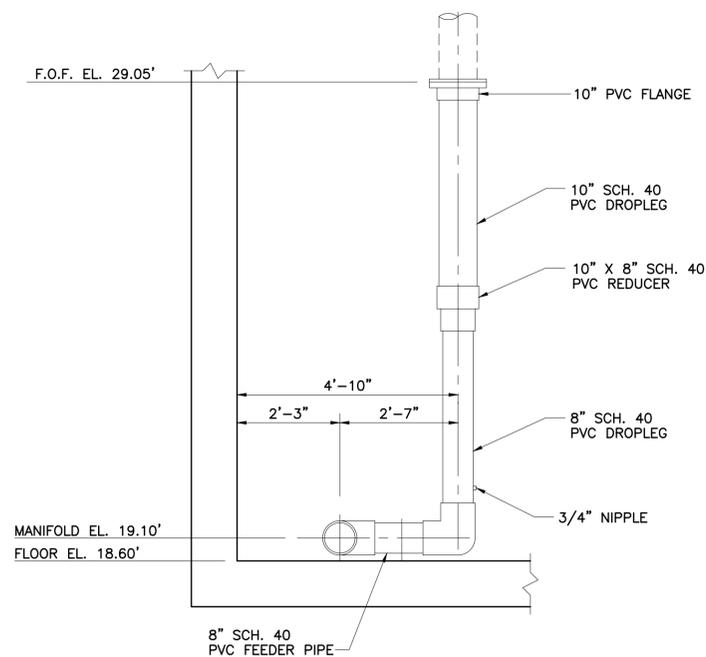
NO.	DATE	REVISION	APP.



SECTION 1  
SCALE: 1/2" = 1'-0" M-45-02



7" NOM. DIA. DIFFUSER ASSEMBLY DETAIL A  
SCALE: NTS



SECTION 2  
SCALE: 1/2" = 1'-0" M-45-02

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



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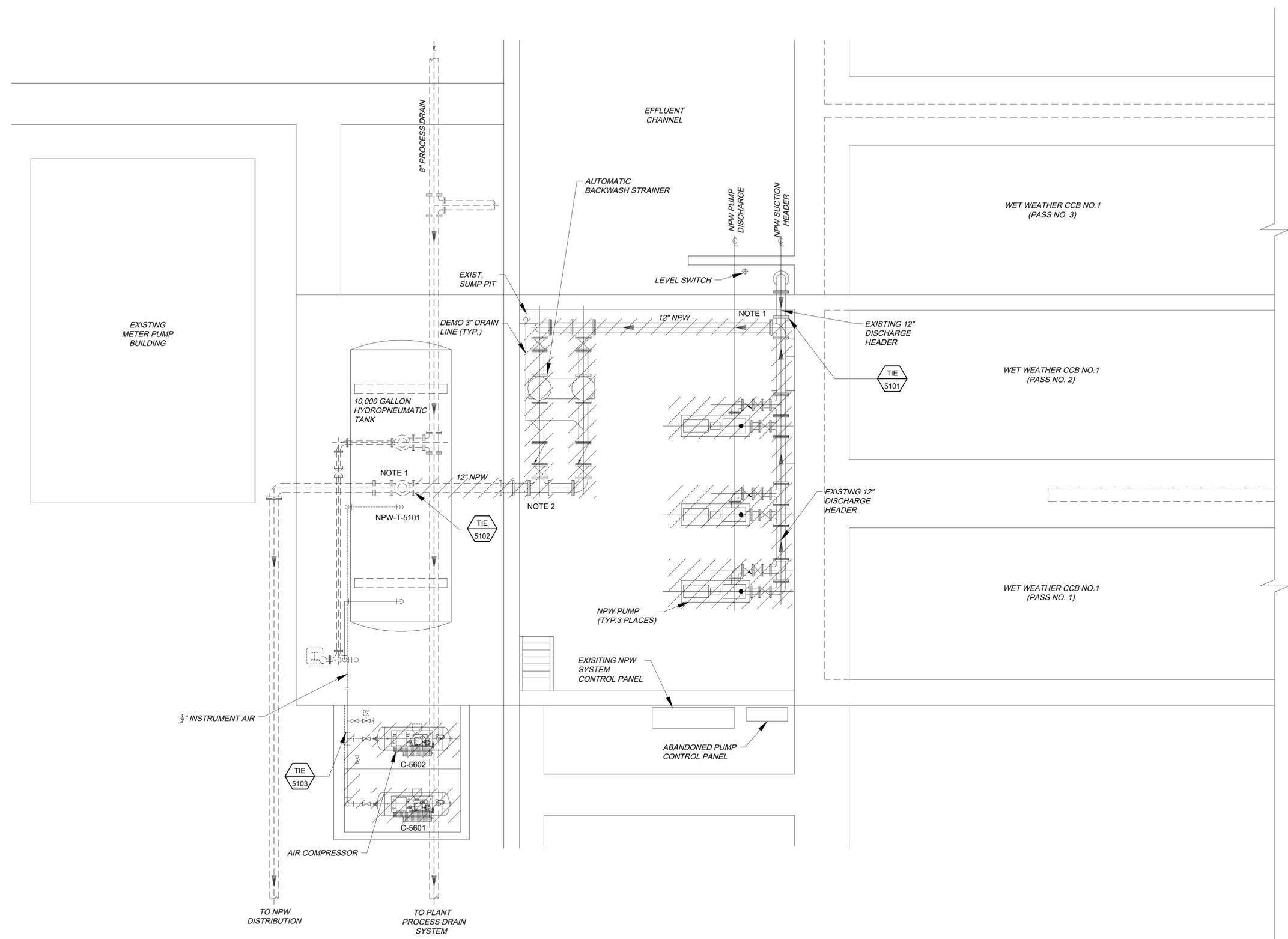
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**TYPICAL AERATION  
BASIN DIFFUSER SECTIONS  
AND DETAILS**

MECHANICAL

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DRAWING SCALE		
NS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-45-3	SHEET NO. 130 OF 271	

NO.	DATE	REVISION	APP.



- NOTES:**
- INSTALL A 12" BLIND FLANGE AFTER THE EXISTING NPW PIPING HAS BEEN DEMOLISHED.
  - FILL THE EXISTING 12-INCH WALL PIPE WITH GROUT. INSTALL 12-INCH BLIND FLANGES ON BOTH SIDES OF THE EXISTING WALL PIPE.

**EXISTING NPW SYSTEM DEMOLITION  
PLAN**  
SCALE 1/4"=1'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

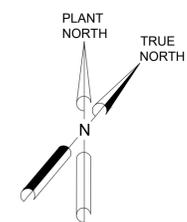
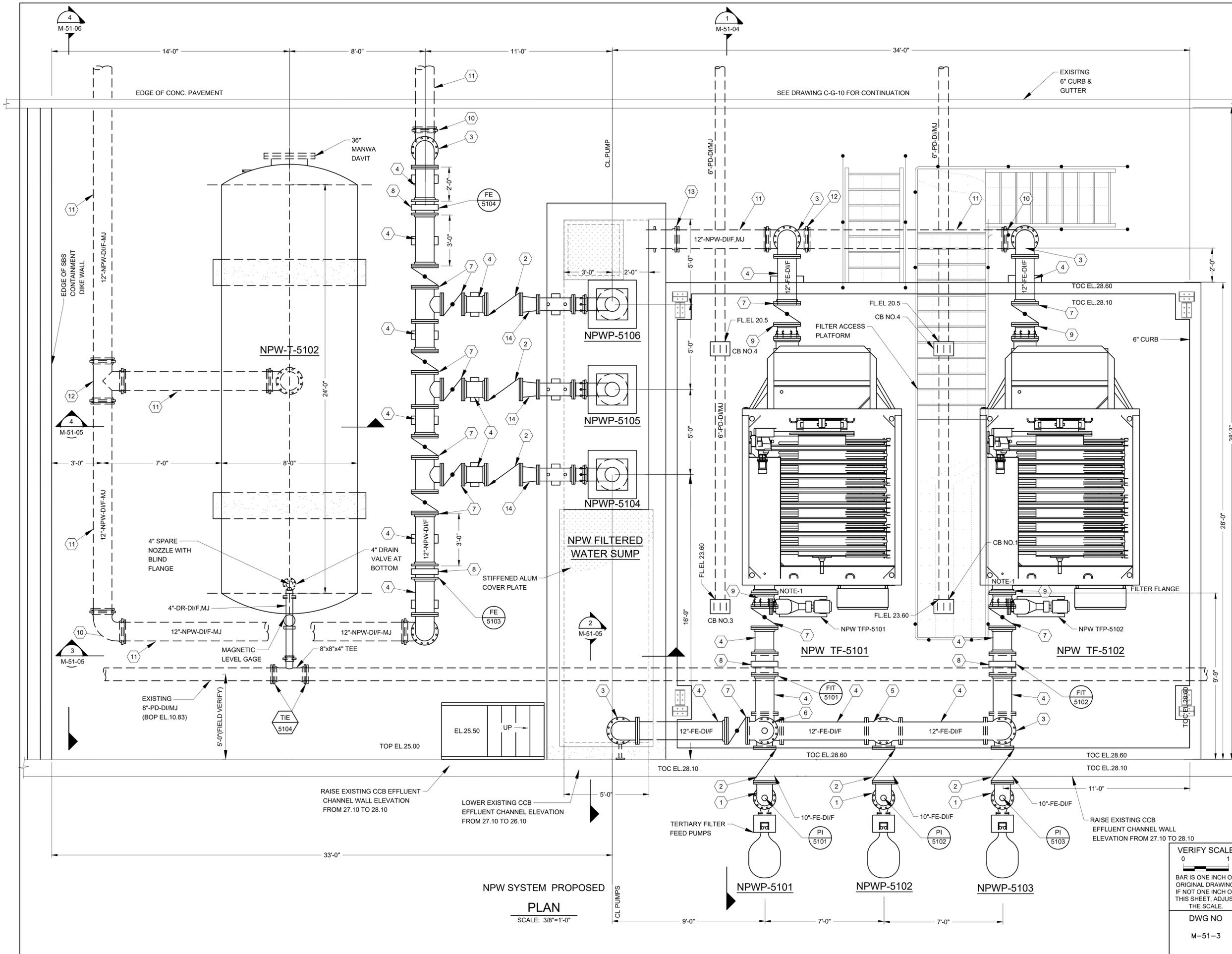
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**EXISTING NPW SYSTEM DEMOLITION PLAN**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
1/4"=1'-0"		
DWG NO		
M-51-1	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 131 OF 271	





NO.	PIPE SCHEDULE
1	10" ELBOW WITH PRESSURE GAGE TAP, FLG X FLG, DI
2	10" SWING CHECK VALVE, FLG X FLG
3	12" ELBOW, FLG X FLG, DI
4	10" SPOOL PIECE, FLG X FLG, DI
5	12" X 12" X 12" FLG TEE, DI
6	12" ELBOW WITH 2" FLG TAP FOR AARV, FLG X FLG, DI
7	12" BUTTERFLY VALVE
8	12" MAG FLOW METER, FLG X FLG
9	12" FLG COUPLING ADAPTER (RESTRAINED)
10	12" ELBOW, MJ X MJ, DI
11	12" SPOOL PIECE, PE X PE, DI
12	12" X 12" X 12" TEE (MJ X MJ X MJ), DI, RESTRAINED
13	12" WALL PIPE (MJ X PE), DI
14	10" X 8" ECCENTRIC REDUCER, FLG X FLG, DI, FLAT FACE UP

**NOTES:**

1. FILTER BACKWASH PUMPS SHALL BE PROVIDED BY THE FILTER MANUFACTURER (SUPPLIER). THE PUMP DISCHARGE PIPING, INCLUDING ASSOCIATED VALVES (CHECK VALVE AND PLUG VALVE), SHALL ALSO BE SUPPLIED BY THE FILTER MANUFACTURER. ROUTE THE PUMP DISCHARGE PIPING TO THE NEAREST CATCH BASIN.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
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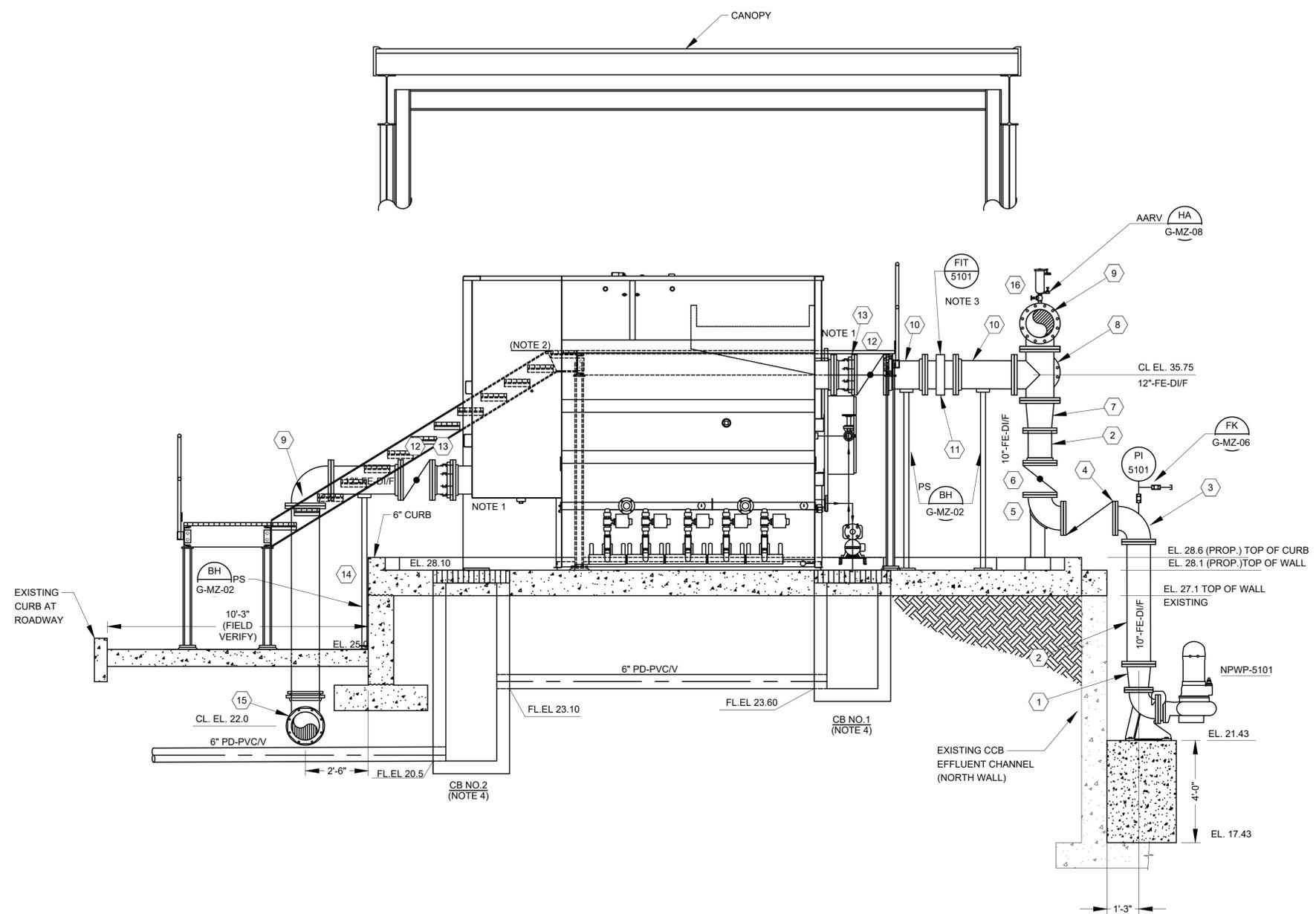
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW SYSTEM PROPOSED PLAN**  
 MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
M-51-3	TAHA LOTIA	
SHEET NO.	133 OF 271	

**NPW SYSTEM PROPOSED PLAN**  
 SCALE: 3/8"=1'-0"

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.



NO.	PIPE SCHEDULE
1	10" X 8" REDUCER, FLG X FLG, DI
2	10" SPOOL PIECE, FLG X FLG, DI
3	10" ELBOW WITH PRESSURE GAGE TAP, FLG X FLG, DI
4	10" SWING CHECK VALVE, FLG X FLG
5	10" BASE ELBOW, FLG X FLG, DI
6	10" BUTTERFLY VALVE
7	12" X 10" REDUCER, FLG X FLG, DI
8	12" X 12" X 12" X 12" SIDE OUTLET FLG TEE, DI
9	12" ELBOW, FLG X FLG, DI
10	12" SPOOL PIECE, FLG X FLG, DI
11	12" MAG FLOW METER, FLG X FLG
12	12" BUTTERFLY VALVE WITH CHAINWHEEL
13	12" FLG. COUPLING ADAPTER (RESTRAINED)
14	12" SPOOL PIECE, FLG X PE, DI
15	12" ELBOW, MJ X MJ, DI
16	2" AIR/VACUUM RELEASE VALVE

- NOTES:
- COORDINATE WITH THE FILTER MANUFACTURER'S APPROVED SUBMITTAL TO CONFIRM THE FLANGE SIZE AND TYPE.
  - PRIOR TO START OF FABRICATION, COORDINATE WITH THE FILTER MANUFACTURER'S APPROVED SUBMITTAL TO CONFIRM PLATFORM ELEVATION.
  - MOUNT FIT 3'-0" ABOVE GRADE ON FILTER PLATFORM COLUMN.
  - CATCH BASIN PER COH STD DETAIL NO. 02084-08 STORM SEWER TYPE "A" INLET GRATE AND FRAME.

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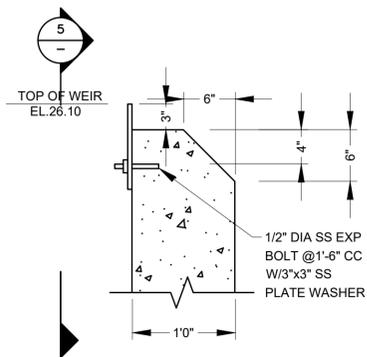
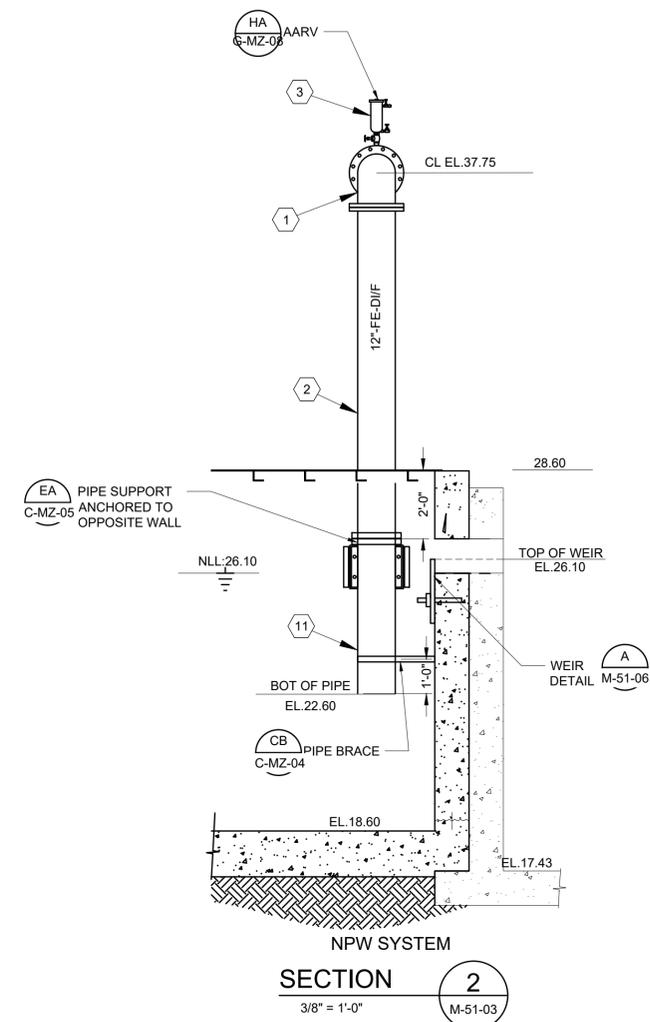
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW SYSTEM SECTION**  
MECHANICAL

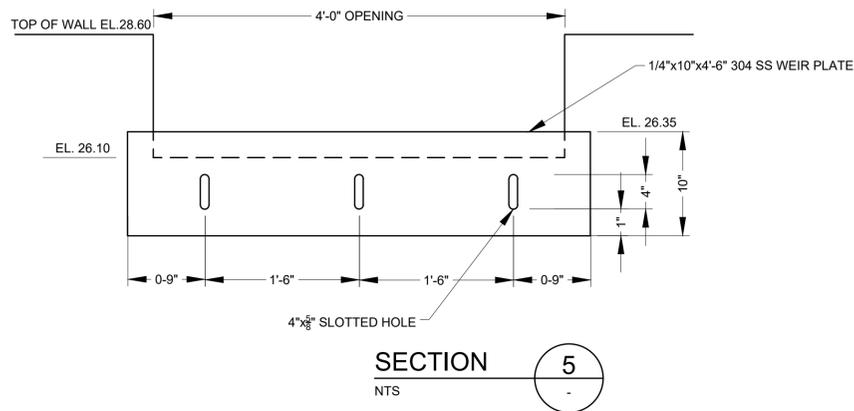
NPW SYSTEM  
**SECTION 1**  
3/8" = 1'-0" M-51-03

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
3/8" = 1'-0"		
DWG NO	CITY OF HOUSTON PM	
M-51-4	TAHA LOTIA	
SHEET NO.	134 OF 271	



NPW FILTERED WATER SUMP OVERFLOW WEIR

DETAIL A  
NTS



SECTION 5  
NTS

NOTES:

- SUPPORT BRACING FOR PUMP COLUMN PER PUMP MANUFACTURER'S RECOMMENDATION.

NO.	PIPE SCHEDULE
1	12" ELBOW, FLG X FLG, DI
2	12" SPOOL PIECE, FLG X FLG, DI
3	2" AIR/VACUUM RELEASE VALVE
4	8" FLG. COUPLING ADAPTER (RESTRAINED), MATCH PUMP DISCHARGE HEAD SIZE
5	8" SPOOL PIECE, FLG X FLG, DI, MATCH PUMP DISCHARGE HEAD SIZE
6	10" X 8" ECCENTRIC REDUCER (FLAT FACE UP), FLG X FLG, DI
7	10" SWING CHECK VALVE, FLG X FLG
8	10" SPOOL PIECE, FLG X FLG, DI
9	10" BUTTERFLY VALVE
10	12" X 12" X 10" FLG TEE, DI
11	12" SPOOL PIECE, FLG X PE, DI
12	12" ELBOW, MJ X MJ, DI
13	12" SPOOL PIECE, PE X PE, DI
14	12" ELBOW, FLG X FLG, DI
15	12" FLG. GATE VALVE
16	4" FLG. GATE VALVE
17	4" FLG. COUPLING ADAPTER (RESTRAINED)
18	4" SPOOL PIECE, PE X PE, DI
19	4" ELBOW, MJ X MJ, DI

APPROVED:	DATE:
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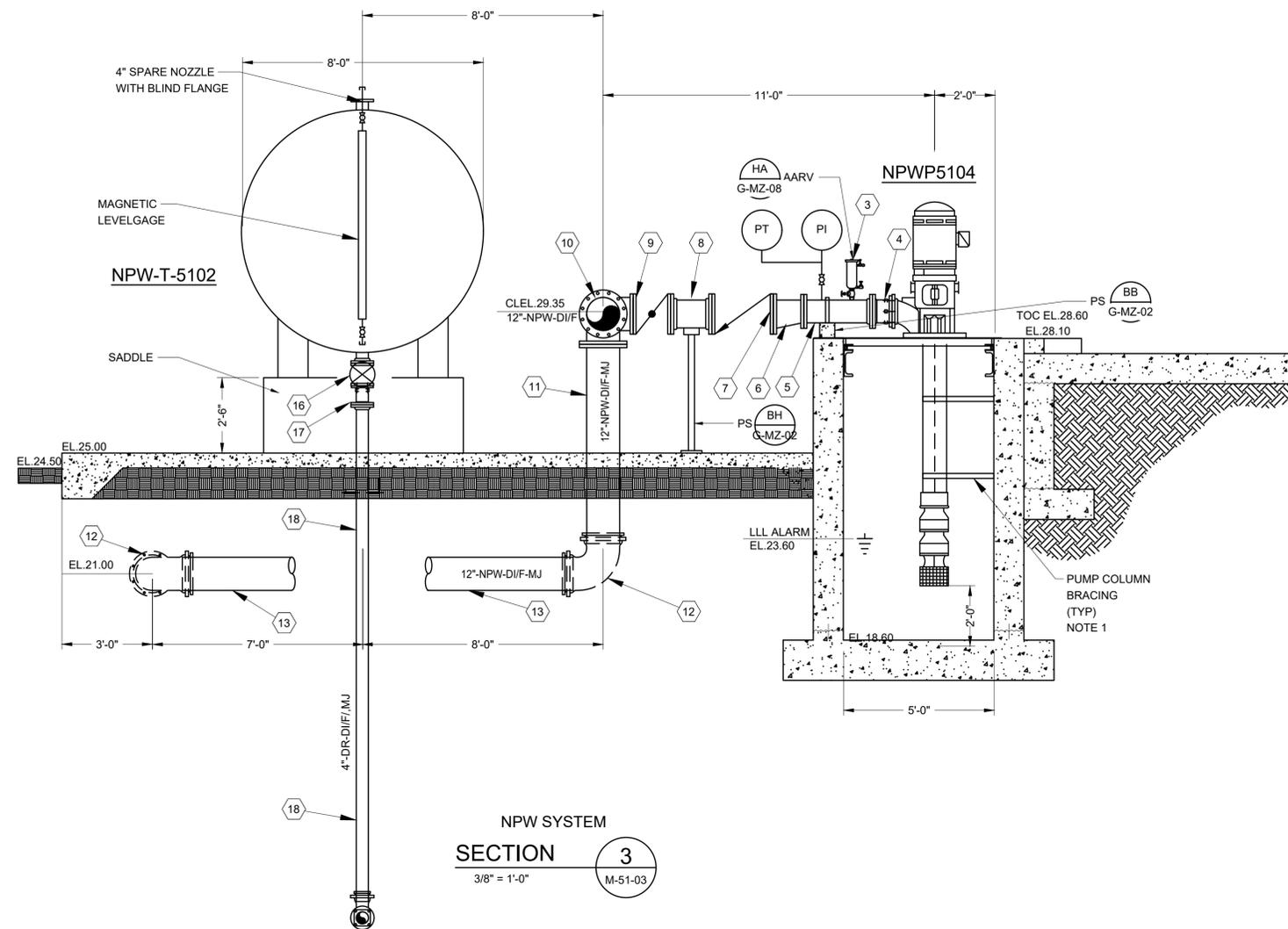
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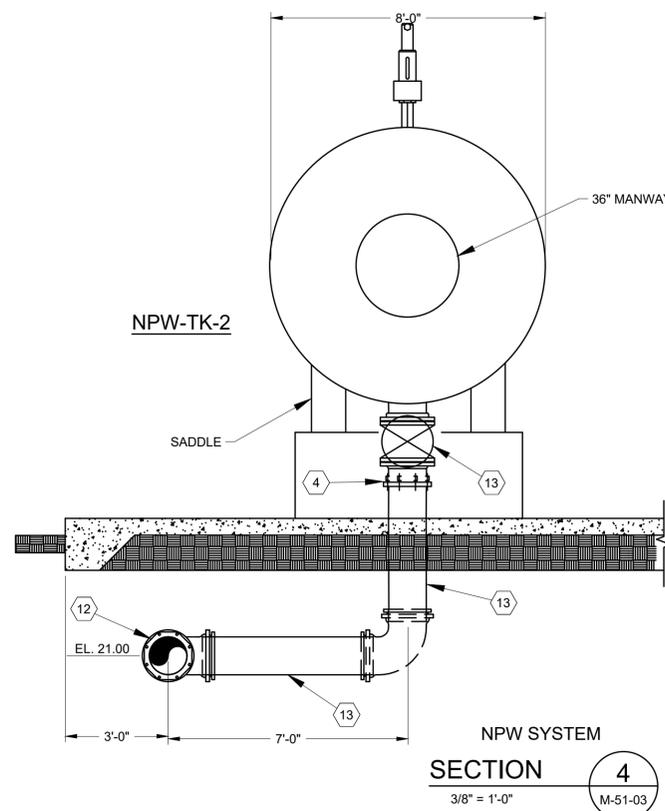
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW DISTRIBUTION PUMPS AND HYDROPNEUMATIC TANK SECTIONS SHEET-1**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
3/8" = 1'-0"		
DWG NO	CITY OF HOUSTON PM	
M-51-5	TAHA LOTIA	
	SHEET NO. 135 OF 271	

NO.	DATE	REVISION	APP.



NPW SYSTEM  
SECTION 3  
3/8" = 1'-0" M-51-03



NPW SYSTEM  
SECTION 4  
3/8" = 1'-0" M-51-03

NOTES:

- SUPPORT BRACING FOR PUMP COLUMN PER PUMP MANUFACTURER'S RECOMMENDATION.

NO.	PIPE SCHEDULE
1	12" ELBOW, FLG X FLG, DI
2	12" SPOOL PIECE, FLG X FLG, DI
3	2" AIR/VACUUM RELEASE VALVE
4	8" FLG. COUPLING ADAPTER (RESTRAINED), MATCH PUMP DISCHARGE HEAD SIZE
5	8" SPOOL PIECE, FLG X FLG, DI, MATCH PUMP DISCHARGE HEAD SIZE
6	10" X 8" ECCENTRIC REDUCER (FLAT FACE UP), FLG X FLG, DI
7	10" SWING CHECK VALVE, FLG X FLG
8	10" SPOOL PIECE, FLG X FLG, DI
9	10" BUTTERFLY VALVE
10	12" X 12" X 10" FLG TEE, DI
11	12" SPOOL PIECE, FLG X PE, DI
12	12" ELBOW, MJ X MJ, DI
13	12" SPOOL PIECE, PE X PE, DI
14	12" ELBOW, FLG X FLG, DI
15	12" FLG. GATE VALVE
16	4" FLG. GATE VALVE
17	4" FLG. COUPLING ADAPTER (RESTRAINED)
18	4" SPOOL PIECE, PE X PE, DI
19	4" ELBOW, MJ X MJ, DI

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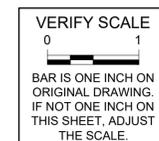


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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
NPW DISTRIBUTION PUMPS AND HYDROPNEUMATIC TANK SECTIONS SHEET 2  
MECHANICAL



DWG NO M-51-6

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	3/8" = 1'-0"
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	136 OF 271

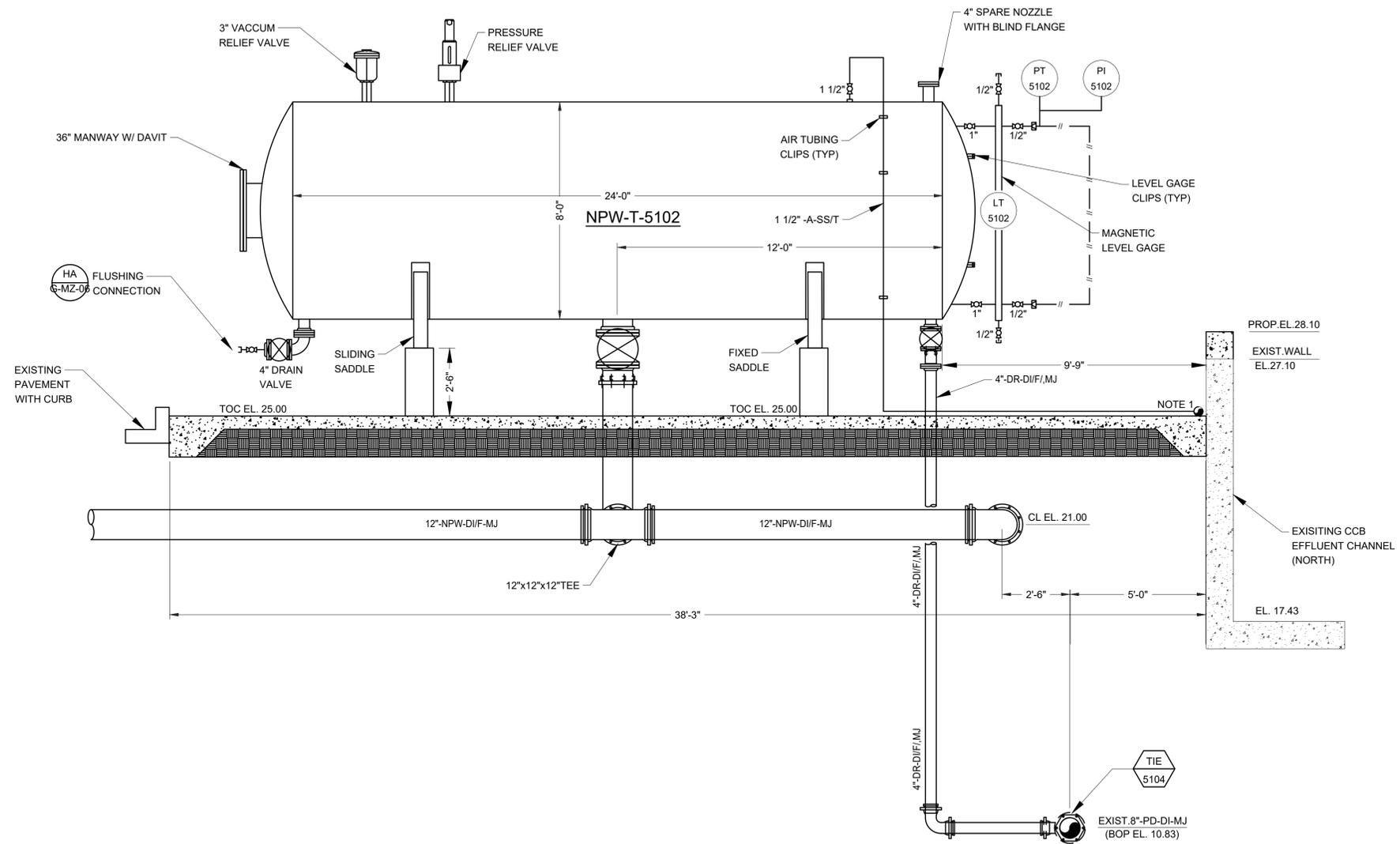
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NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.

**NOTES:**

- ROUTE THE 1 1/2" AIR LINE IN THE FIELD TO THE AIR COMPRESSORS. SUPPORT THE LINE ALONG THE EXISTING CCB EFFLUENT CHANNEL WALL. WHERE THE PIPE RUNS ABOVE GRADE, INSTALL PROTECTIVE RAMPS TO PREVENT TRIPPING HAZARDS AND PROTECT THE PIPE FROM DAMAGE.



NPW SYSTEM  
SECTION 5  
3/8" = 1'-0" M-51-03

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

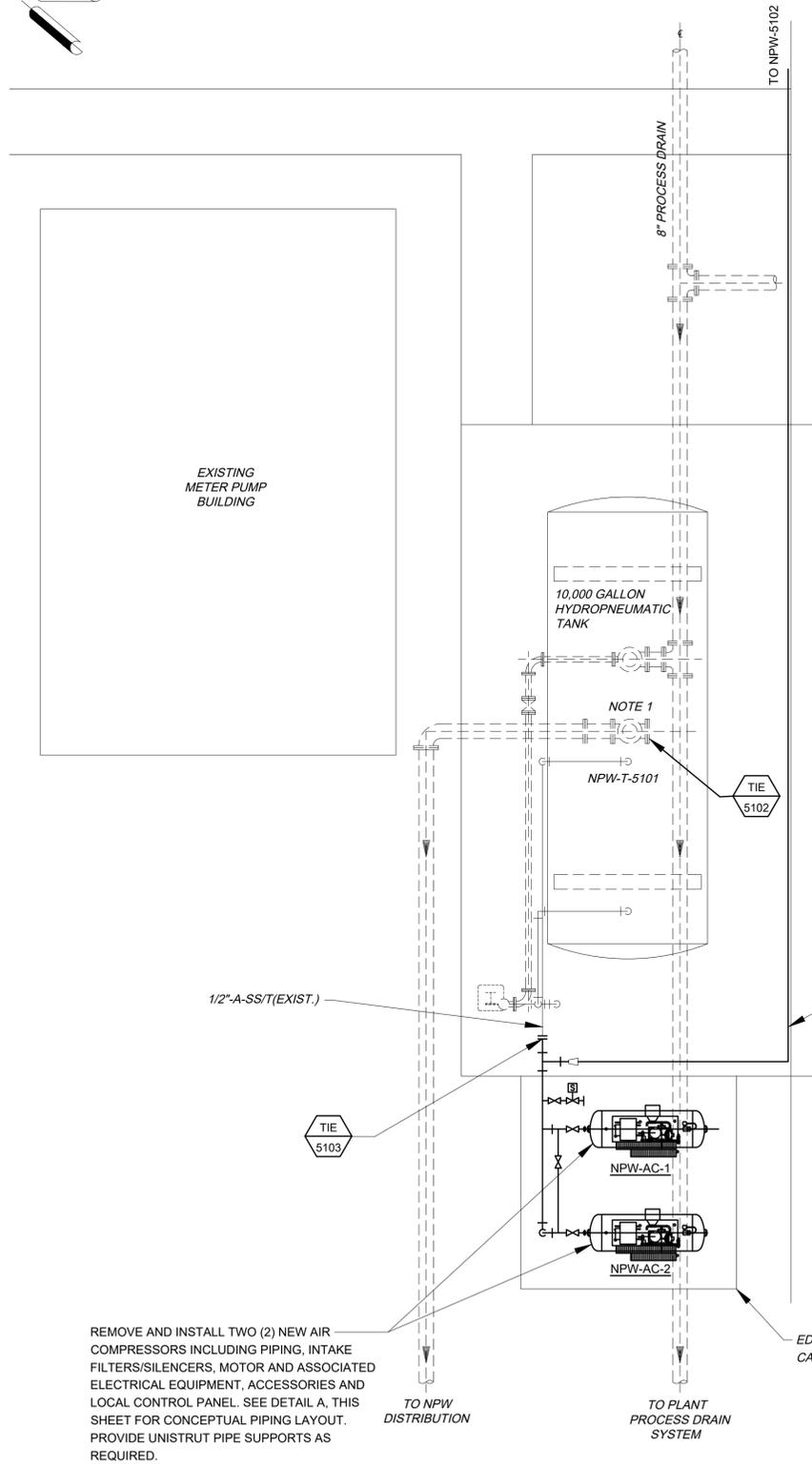
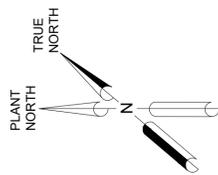
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**HYDROPNEUMATIC TANK SECTION**  
MECHANICAL

<p>VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
<p>DWG NO M-51-7</p>	DRAWING SCALE	<p>CITY OF HOUSTON PM TAHA LOTIA</p>
	3/8" = 1'-0"	
SHEET NO. 137 OF 271		

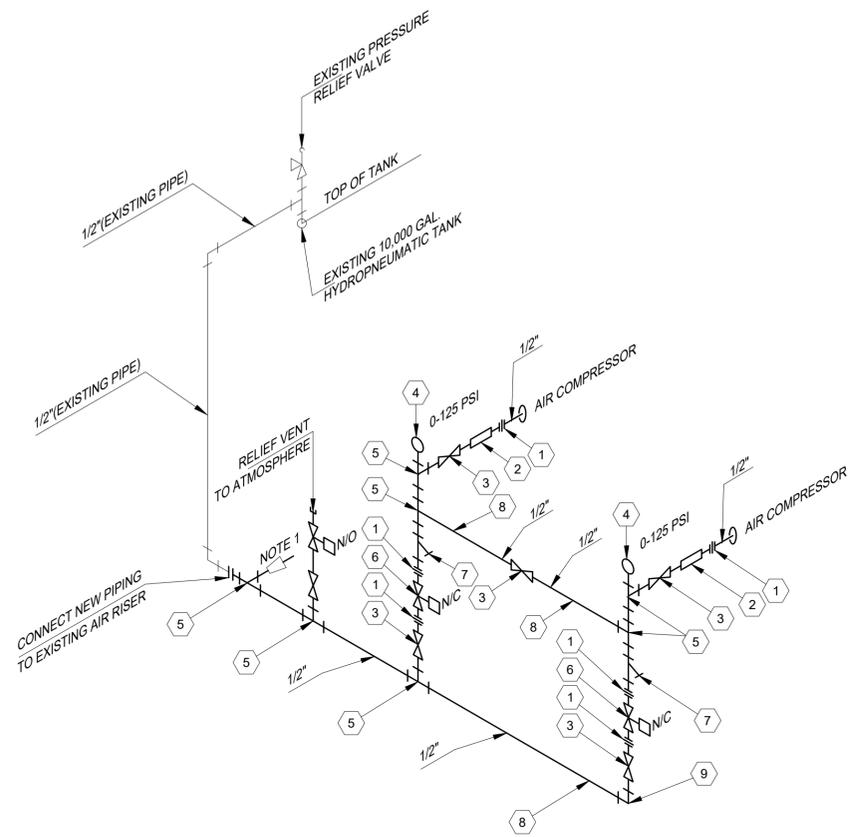


NPW AIR COMPRESSORS ENLARGED

**PLAN**

SCALE 1/4"=1'-0"

REMOVE AND INSTALL TWO (2) NEW AIR COMPRESSORS INCLUDING PIPING, INTAKE FILTERS/SILENCERS, MOTOR AND ASSOCIATED ELECTRICAL EQUIPMENT, ACCESSORIES AND LOCAL CONTROL PANEL. SEE DETAIL A, THIS SHEET FOR CONCEPTUAL PIPING LAYOUT. PROVIDE UNISTRUT PIPE SUPPORTS AS REQUIRED.



**NPW AIR COMPRESSORS PIPING DIAGRAM**



NOTE : UNLESS OTHERWISE NOTED, ALL COMPRESSED AIR PIPING SHALL BE SCH.40, 304 STAINLESS STEEL, NPT.

**NOTES:**

1. FIELD ROUTE 1 1/2" A-SS/T TO PROPOSED NPW-T-5102.
2. CONNECT PROPOSED SOLENOID VALVES TO EXISTING CONDUIT AND WIRE. CONTRACTOR SHALL PERFORM A CONTINUITY TEST OF THE EXISTING WIRE. IF THE CONTINUITY TEST FAILS, REPLACE WIRING WITH NEW WIRING AND REPEAT THE TEST UNTIL CONTINUITY IS CONFIRMED.
3. PROVIDE SUPPORTS FOR 1 1/2" Ø STAINLESS STEEL AIR TUBING AT MAXIMUM 5'-0" SPACING ON HORIZONTAL RUNS AND 8'-0" SPACING ON VERTICAL RUNS. USE STAINLESS STEEL OR CUSHIONED CLAMPS MOUNTED ON UNISTRUT OR APPROVED EQUAL. ENSURE TUBING IS ALIGNED, SECURE, AND FREE FROM VIBRATION OR STRESS.

**MECHANICAL SCHEDULE**

ITEM	DESCRIPTION
1	1/2" DIA. REDUCER
2	1/2" DIA. VIBRATION ISOLATOR
3	1/2" DIA. 304 SS BALL VALVE
4	PRESSURE GAUGE, 0-125 PSI
5	1/2" STRAIGHT TEE
6	1/2" SOLENOID VALVE
7	1/2" STRAINER
8	1/2" DIA. SCH 40, 304 SS PIPE
9	1"x1/2" REDUCER

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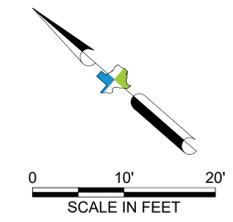
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW AIR COMPRESSORS PLAN AND DETAIL**  
MECHANICAL

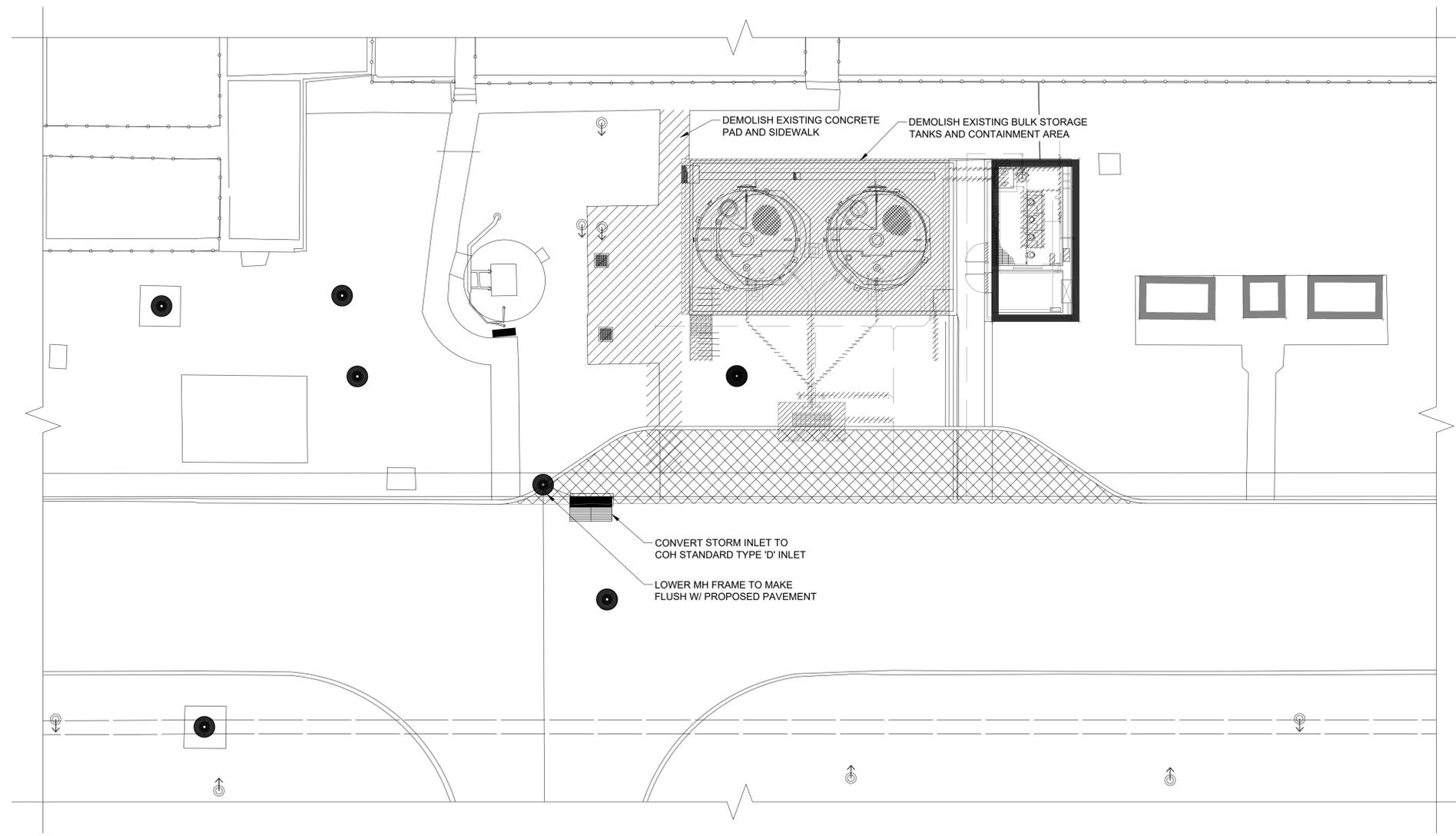
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	R-000265-0154-4	
DWG NO M-51-8	DRAWING SCALE	SHEET NO. 138 OF 271
	1/4"=1'-0"	
	CITY OF HOUSTON PM	
	TAHA LOTIA	

NO.	DATE	REVISION	APP.



**GENERAL NOTES:**

- COORDINATE DEMOLITION WITH TEMPORARY DISINFECTION SYSTEMS. SEE SHEET XX-XXX



1 SODIUM HYPOCHLORITE PLAN  
1" = 10'-0"

NO.	DATE	REVISION	APP

**5e 5engineering**  
TBPE FIRM NO. F-13748

**KGI**  
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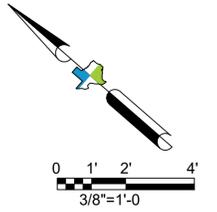
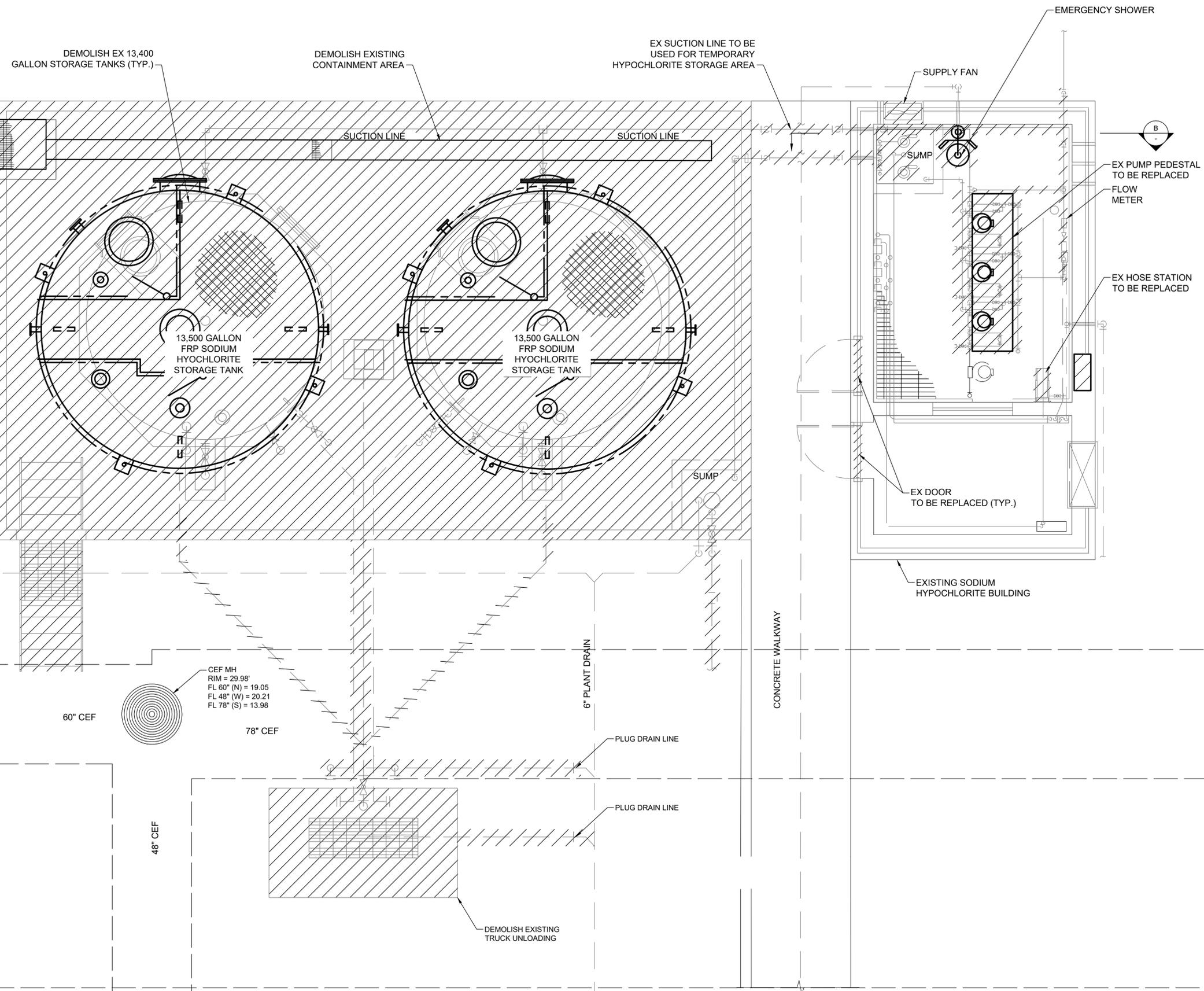
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

SODIUM HYPOCHLORITE OVERALL DEMOLITION PLAN

MECHANICAL

VERIFY SCALE  
0 1  
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WBS NUMBER	R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	AS NOTED	
DWG NO	CITY OF HOUSTON PM	
M-52-01	SHEET NO. 139F 271	



NO.	DATE	REVISION	APP



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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

SODIUM HYPOCHLORITE ENLARGED DEMOLITION PLAN

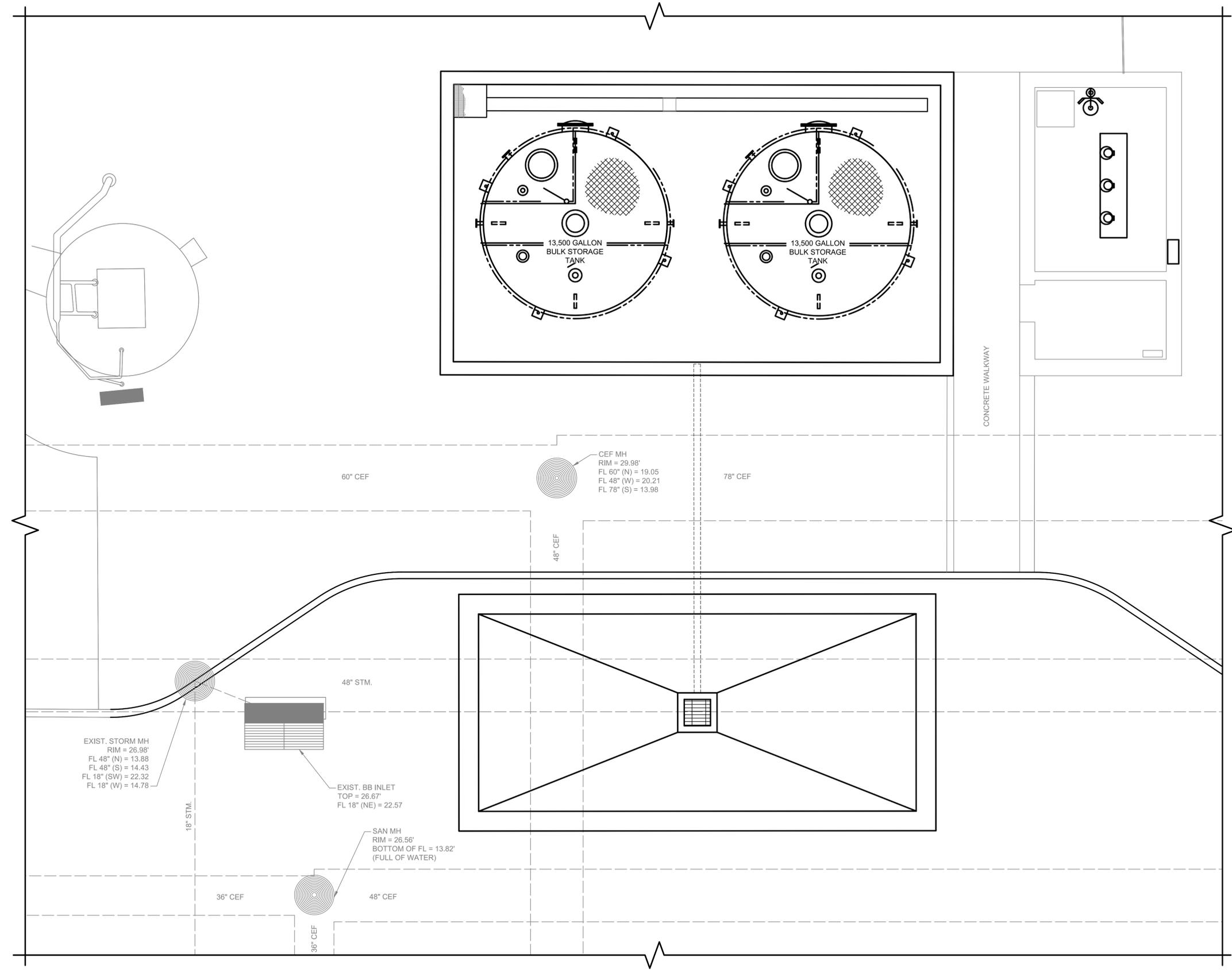
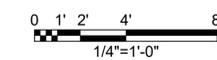
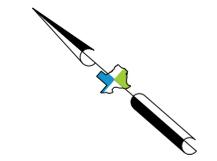
MECHANICAL

VERIFY SCALE  
0 1  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.  
DWG NO  
M-52-02

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	
SHEET NO.	140F 271

FOR CITY OF HOUSTON USE ONLY

**SODIUM HYPOCHLORITE GENERAL PLAN**  
1  
3/8"=1'-0"



1  
**SODIUM HYPOCHLORITE OVERALL PLAN**  
 1/4" = 1'-0"

NO.	DATE	REVISION	APP



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 TEXAS P.E. NO 104104  
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SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3

**SODIUM HYPOCHLORITE OVERALL PROPOSED PLAN**

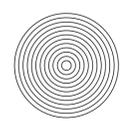
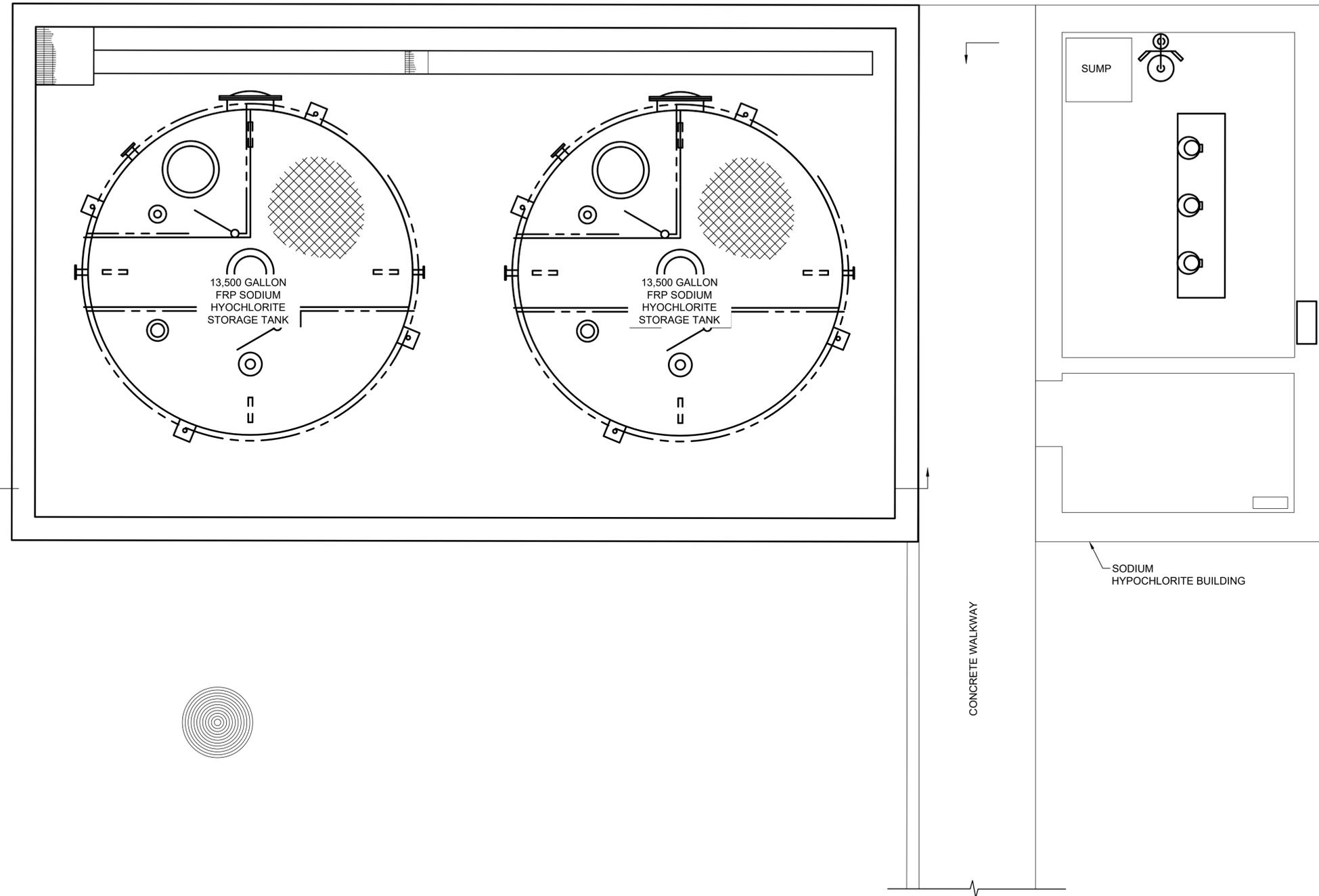
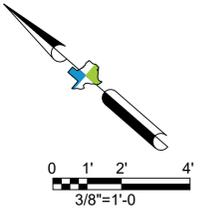
MECHANICAL

VERIFY SCALE  
  
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DWG NO  
 M-52-03

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHEET NO.	140F 271

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**SODIUM HYPOCHLORITE  
GENERAL PLAN**  
 3/8"=1'-0"

NO.	DATE	REVISION	APP



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 FRANK STEPHENS, P.E.  
 TEXAS P.E. NO 104104  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3

**SODIUM HYPOCHLORITE  
ENLARGED PROPOSED PLAN**

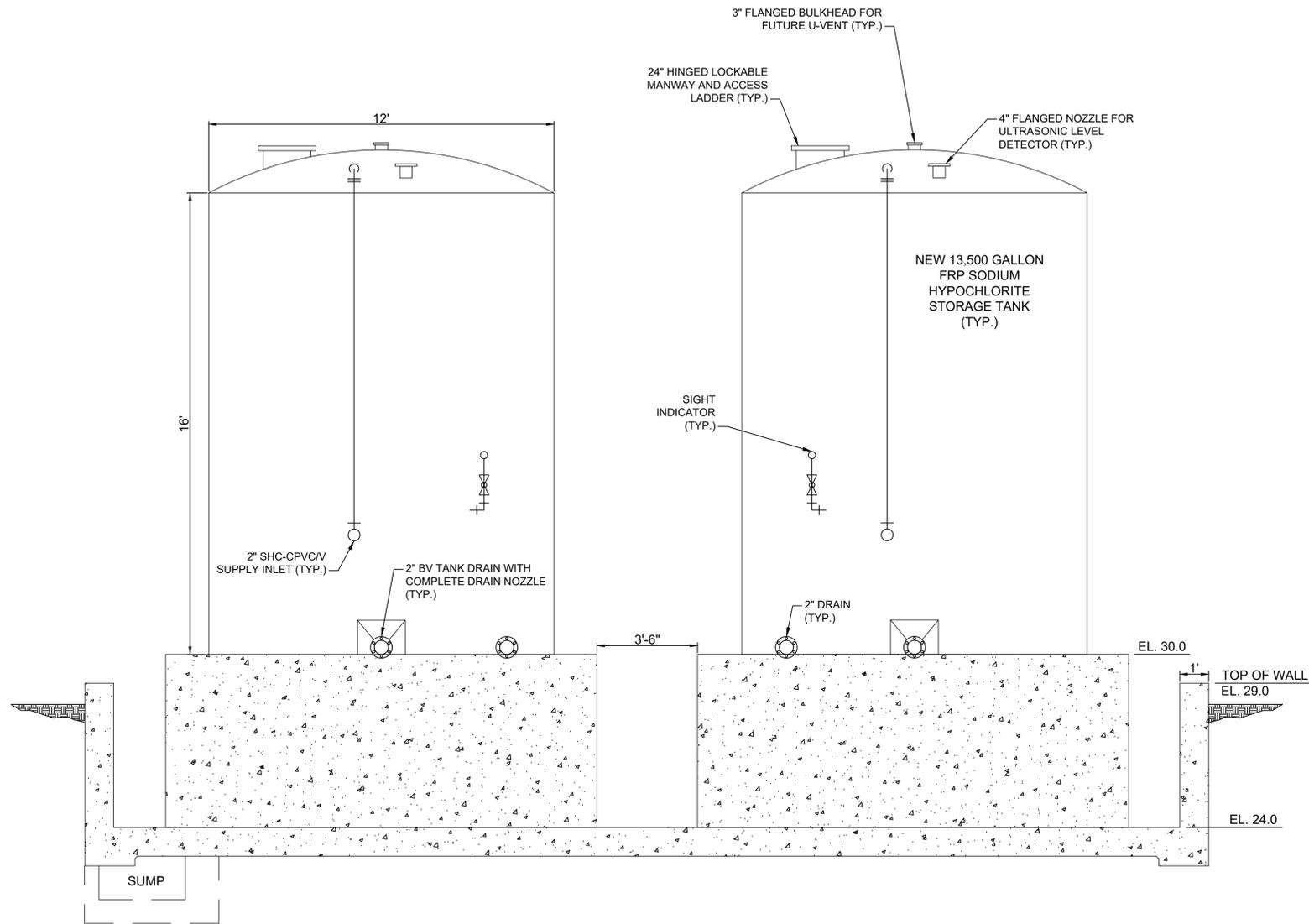
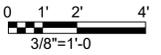
MECHANICAL

**VERIFY SCALE**  
  
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 THIS SHEET, ADJUST  
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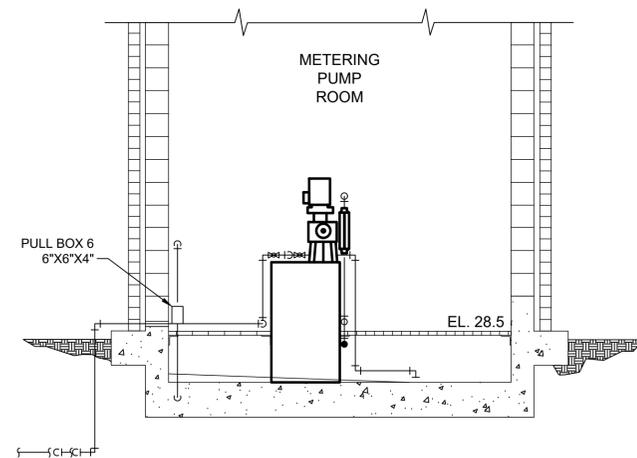
WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	
SHEET NO.	142F 271

FOR CITY OF HOUSTON USE ONLY

DWG NO  
 M-52-04



**A** SODIUM HYPOCHLORITE TANK  
3/8"=1'-0"



**B** EXISTING SODIUM  
HYPOCHLORITE BUILDING  
3/8"=1'-0"

**NOTES:**

1. TANKS CONTAINMENT WALL HEIGHT TO BE VERIFIED IF NEEDED TO BE RAISED IN DETAIL DESIGN.

NO.	DATE	REVISION	APP



**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**SODIUM HYPOCHLORITE  
PROPOSED SECTIONS**

**MECHANICAL**

VERIFY SCALE  
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DWG NO  
M-52-05

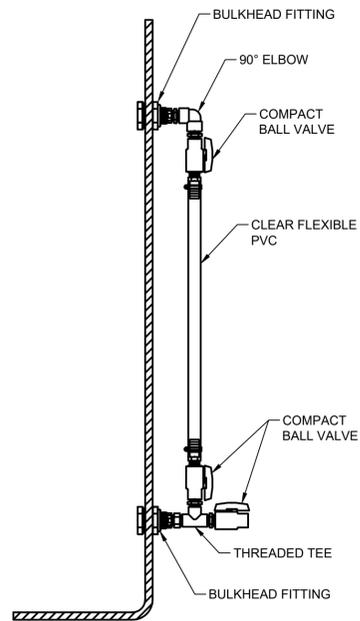
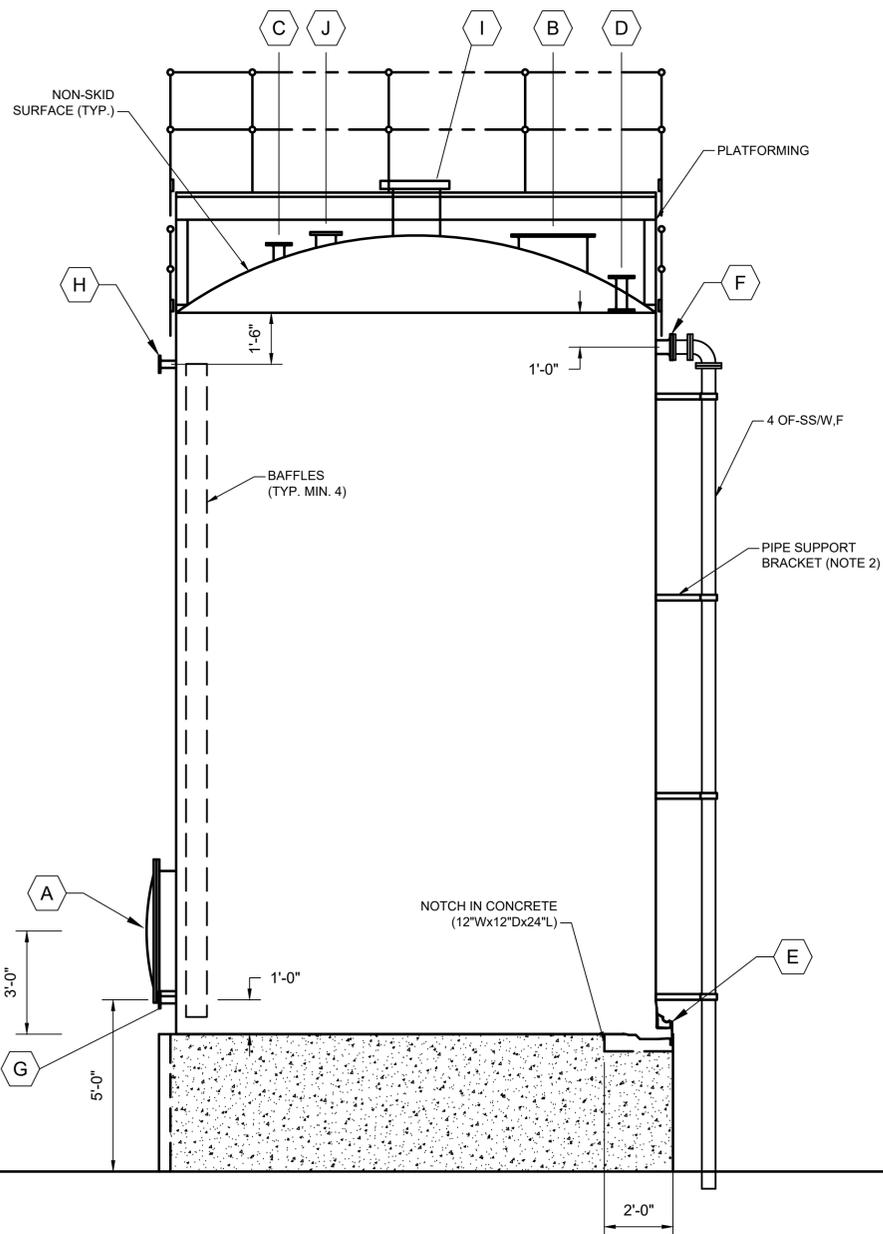
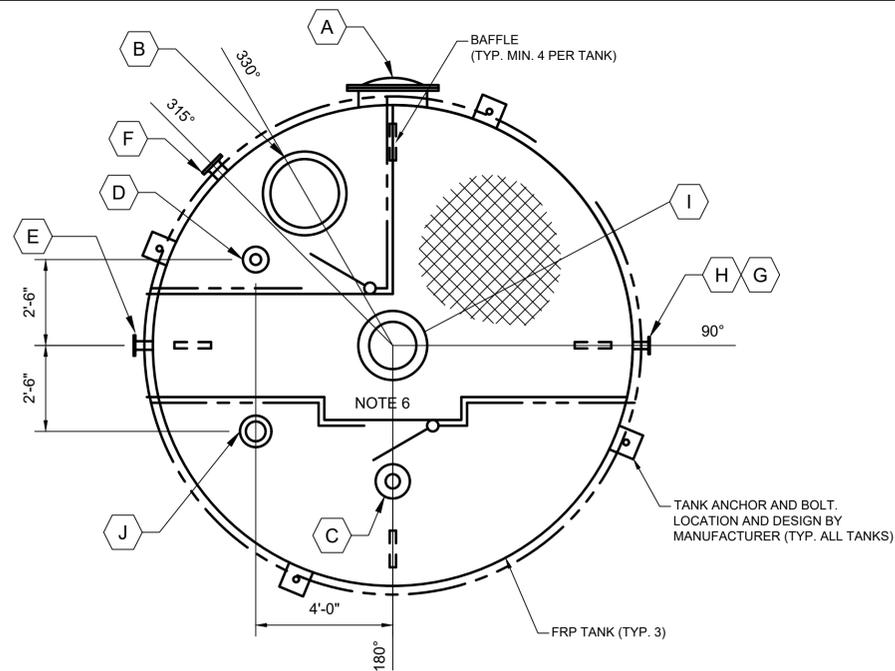
WBS NUMBER  
R-000265-0154-4

DRAWING SCALE  
AS NOTED

CITY OF HOUSTON PM

SHEET NO. 140F 271

FOR CITY OF HOUSTON USE ONLY



**SIGHT GLASS DETAIL**  
NTS

BULK STORAGE TANK PIPE & APPURTENANCE SIZES		
	BLEACH	SODIUM BISULFITE
A. TANK FILL	1.5"	1.0"
B. MANWAY	24"	24"
C. LEVEL SENSOR BULKHEAD	2.5"	2.5"
D. LEVEL SWITCH BULKHEAD	2.5"	2.5"
E. SIGHT GLASS BULKHEAD	2.0"	2.0"
F. TANK OUTLET	1.5"	1.0"
G. GOOSENECK VENT	3.0"	3.0"
H. DRAIN	1.5"	1.5"
I. OVERFLOW	2.0"	2.0"

**NOTES:**

1. ALL EXPOSED CONCRETE SURFACES, INCLUDING FLOORS AND WALLS SHALL BE COATED WITH A CHEMICALLY RESISTANT COATING SYSTEM.
2. EXTERIOR PIPE SUPPORTS SHALL BE UV RESISTANT FRP RESISTANT TO THE CHEMICALS IN USE.
3. THE LAYOUT OF CHEMICAL PIPING IS CONCEPTUALLY SHOWN, CONTRACTOR SHALL ROUTE PIPE TO MAINTAIN ACCESS TO EQUIPMENT AND TO AVOID TRIP HAZARDS.
4. COORDINATE TANK DETAILS, INCLUDING ACCESS LADDER SAFETY REQUIREMENTS, WITH SPECIFICATION SECTION 11246 FRP TANKS.

FILE PATH: P:\0109\001 Sims South WWTP\04 Codd-GIS\03 SHEETS\07 Process Mech\M-63-501.dwg

NO.	DATE	REVISION	APP



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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SODIUM HYPOCHLORITE DETAILS**

**MECHANICAL**

VERIFY SCALE  
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DWG NO  
M-52-06

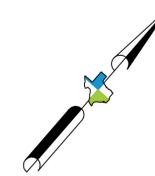
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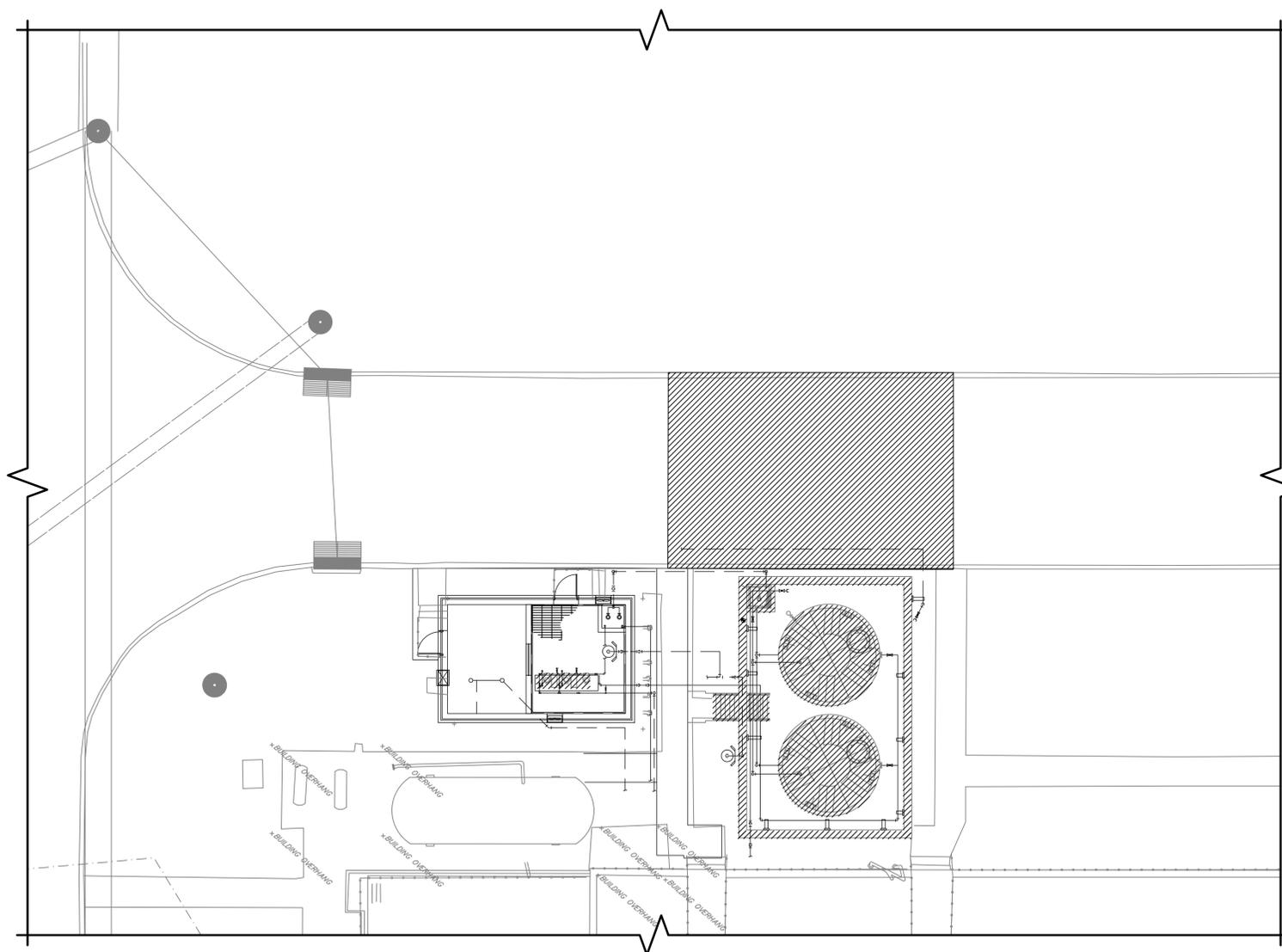
CITY OF HOUSTON PM

SHEET NO. 140F 271

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0 10' 20'  
SCALE IN FEET



1  
-  
SODIUM BISULFITE  
MECHANICAL PLAN  
1" = 10'-0"

NO.	DATE	REVISION	APP



TBPE FIRM NO. F-13748



TBPE Registration No. F-665  
Houston, Texas 77094  
Phone: (713)-365-9288  
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**CITY OF HOUSTON**

HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

SODIUM BISULFITE  
OVERALL DEMOLITION PLAN

MECHANICAL

VERIFY SCALE  
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DWG NO  
M-53-01

WBS NUMBER

R-000265-0154-4

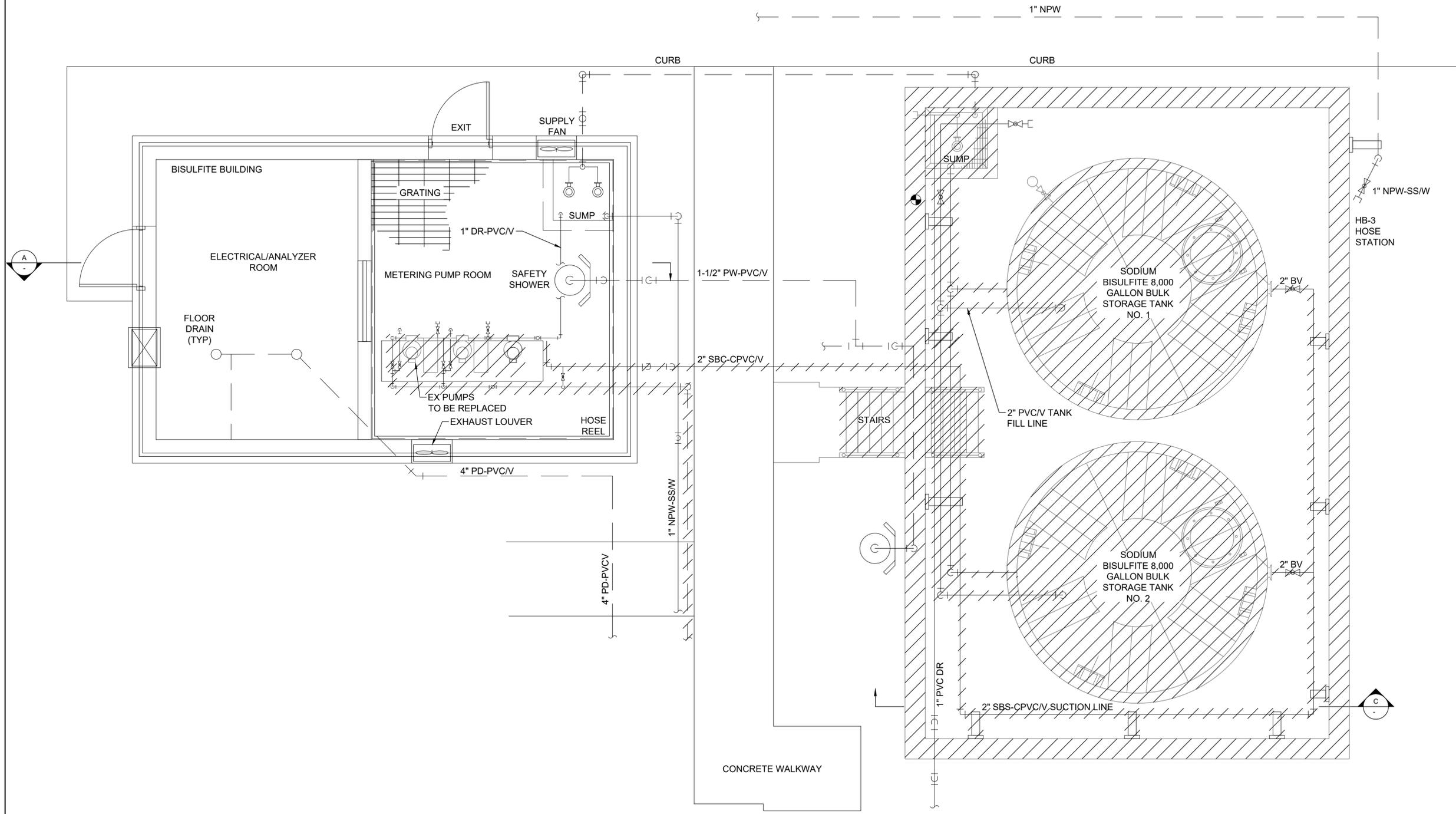
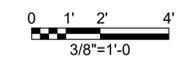
DRAWING SCALE

AS NOTED

CITY OF HOUSTON PM

SHEET NO. 140F 271

FOR CITY OF HOUSTON USE ONLY



1  
-  
SODIUM BISULFITE  
GENERAL PLAN  
3/8"=1'-0"

NO.	DATE	REVISION	APP



**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

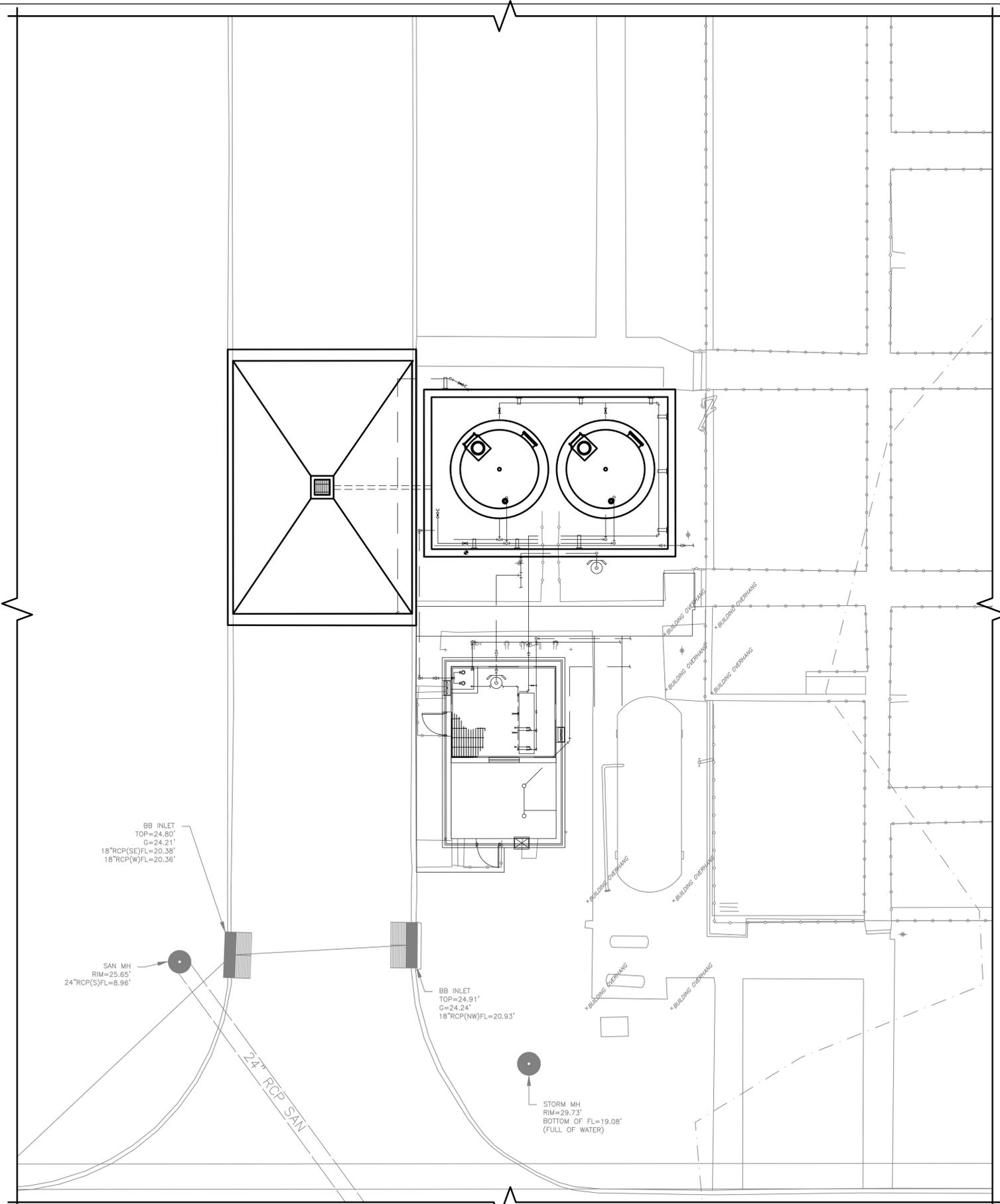
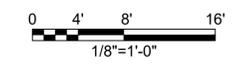
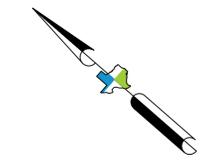
SODIUM BISULFITE  
ENLARGED DEMOLITION PLAN

MECHANICAL

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DWG NO  
M-53-02

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	
SHEET NO.	146F 271

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BB INLET  
TOP=24.80'  
G=24.21'  
18"RCP(SE)FL=20.38'  
18"RCP(W)FL=20.36'

SAN MH  
RIM=25.65'  
24"RCP(S)FL=8.96'

BB INLET  
TOP=24.91'  
G=24.24'  
18"RCP(NW)FL=20.93'

STORM MH  
RIM=29.73'  
BOTTOM OF FL=19.08'  
(FULL OF WATER)

24" RCP SAN

1  
-  
1/8"=1'-0"

FILE PATH: P:\0109\001 Sims South WWTP\04 Cadd-GIS\03 SHEETS\07 Process Mech\M-64-101.dwg

NO.	DATE	REVISION	APP

**5e 5engineering**  
TBPE FIRM NO. F-13748

**KGI**  
**Kalluri Group, Inc.**  
TBPE Registration No. F-665  
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Houston, Texas 77094  
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IMPROVEMENTS PACKAGE 3

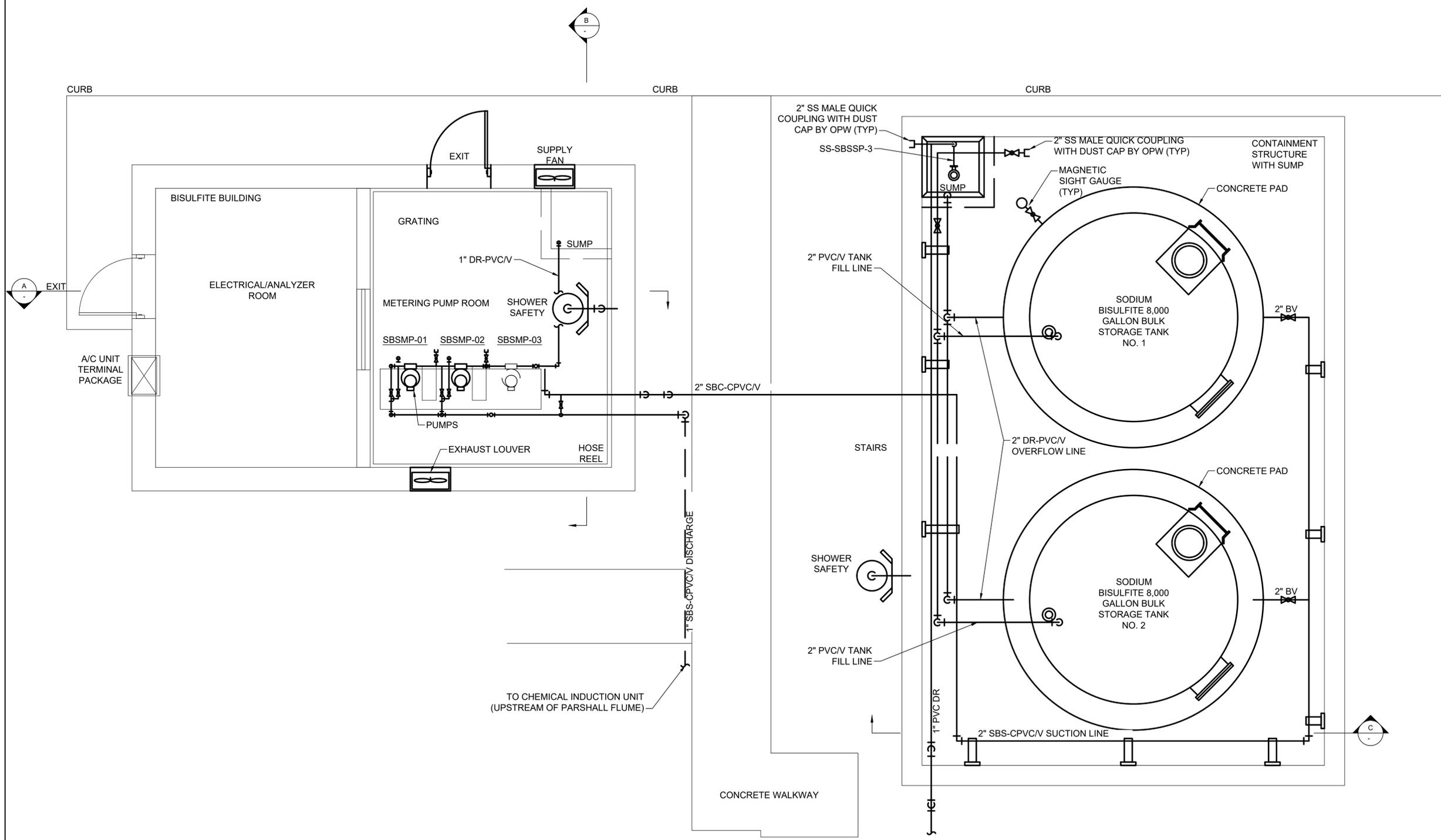
**SODIUM BISULFITE  
OVERALL PROPOSED PLAN**

MECHANICAL

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	<b>DRAWING SCALE</b> AS NOTED	
<b>DWG NO</b> M-53-03	<b>CITY OF HOUSTON PM</b>	
<b>SHEET NO.</b> 140F 271		

**SODIUM BISULFITE  
OVERALL PLAN**

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**SODIUM BISULFITE GENERAL PLAN**  
 3/8"=1'-0"

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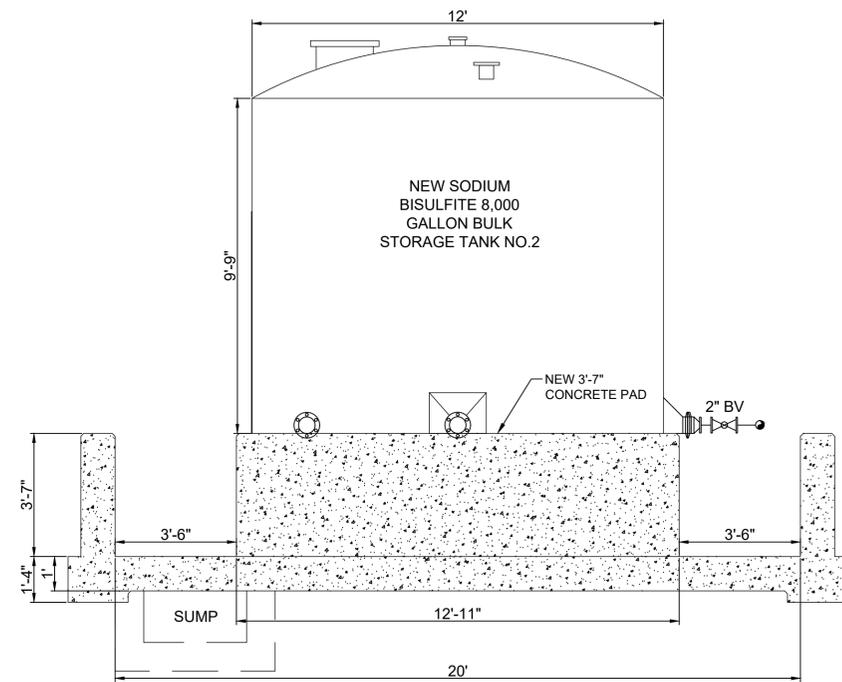
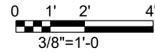
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SODIUM BISULFITE ENLARGED PROPOSED PLAN**  
 MECHANICAL

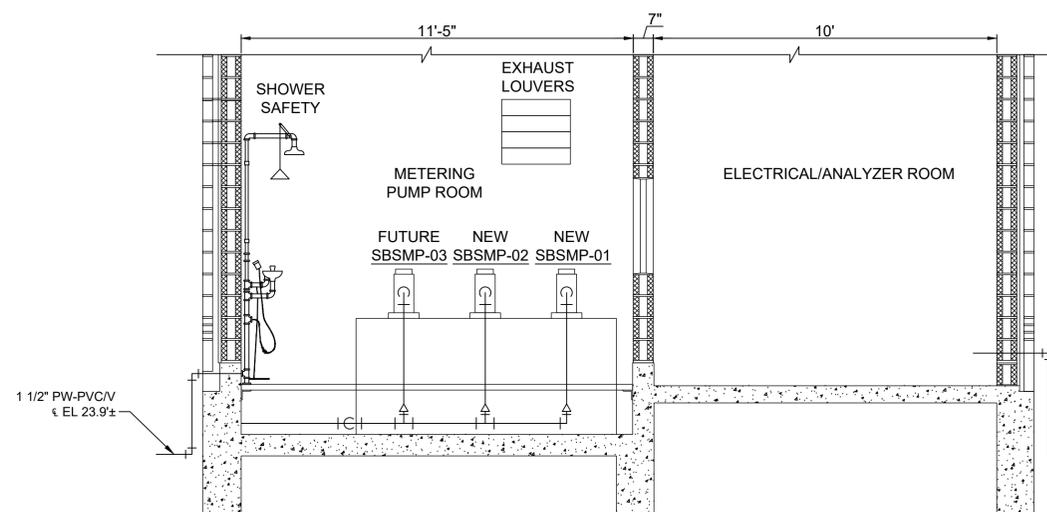
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 DWG NO  
 M-53-04

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	
SHEET NO.	140F 271

FOR CITY OF HOUSTON USE ONLY



**A**  
SODIUM BISULFITE TANK SECTION  
3/8"=1'-0"



**B**  
SODIUM BISULFITE BUILDING SECTION  
3/8"=1'-0"

**NOTES:**

1. REPLACE TWO EXISTING 12-FT DIAMETER SODIUM BISULFITE TANKS WITH TALLER TANKS.
2. REPLACE TWO EXISTING SODIUM BISULFITE (SBS) METERING PUMPS WITH LARGER SIZE PUMPS.
3. CONTAINMENT WALL HEIGHT TO BE VERIFIED IF NEEDED TO BE RAISED.

NO.	DATE	REVISION	APP



TBPE Registration No. F-665  
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Houston, Texas 77094  
Phone: (713)-365-9288  
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HOUSTON PUBLIC WORKS

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**SODIUM BISULFITE SECTIONS**

MECHANICAL

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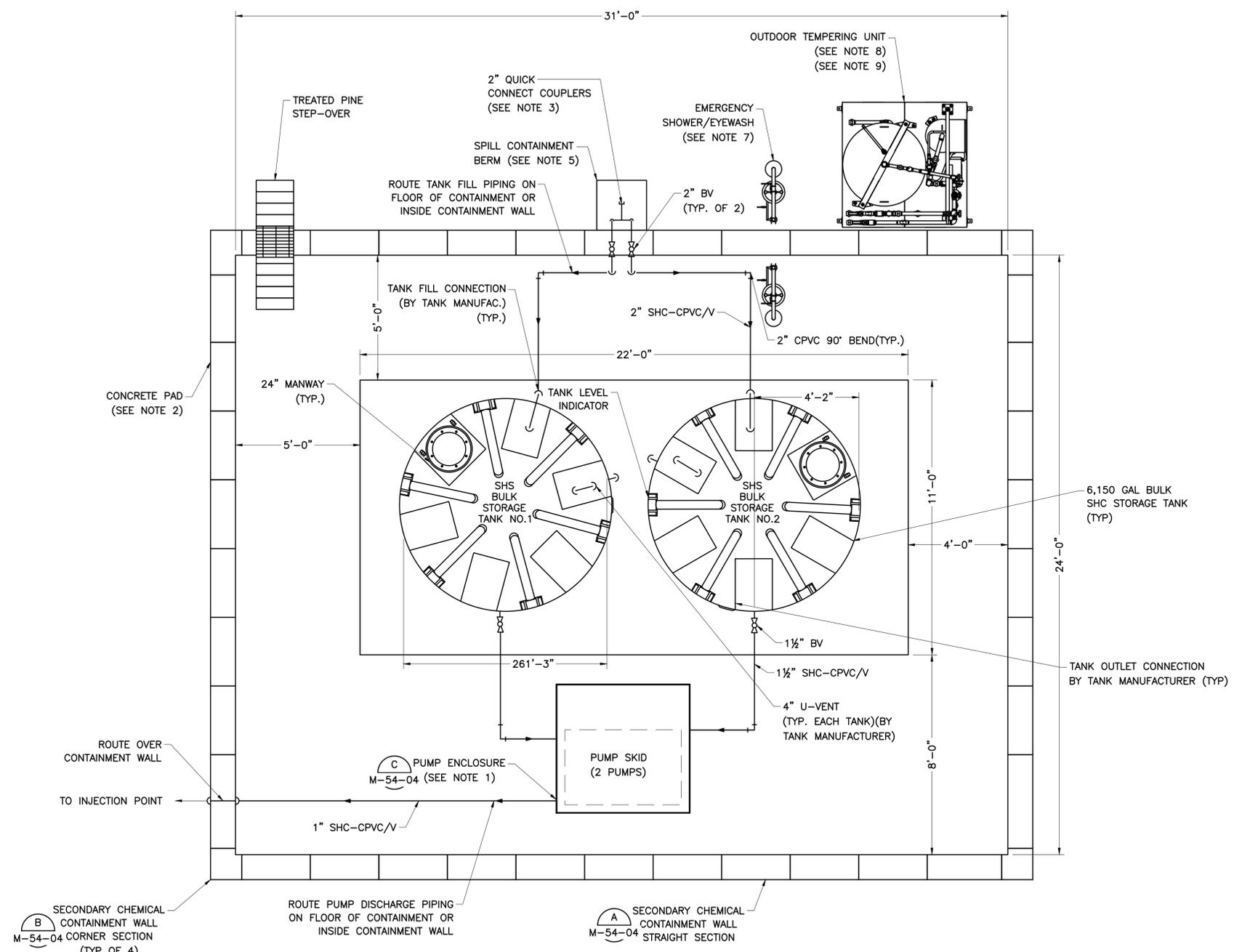
WBS NUMBER  
R-000265-0154-4

DRAWING SCALE  
AS NOTED

CITY OF HOUSTON PM

SHEET NO. 140F 271

FOR CITY OF HOUSTON USE ONLY



**PLAN**  
3/8" = 1'-0"

**NOTES:**

- PUMP SKID SHALL BE HOUSED INSIDE A WEATHER PROOF ENCLOSED SUCH AS THE ULTRA-HARD TOP P4 PLUS BY ULTRATECH BRANDS OR APPROVED EQUAL. SEE SECTION 11500 FOR DETAILS. PIPE PENETRATION PER MANUFACTURER'S RECOMMENDATIONS.
- TANK FOUNDATION SLAB SHALL BE 22'-0"x11'-0"x14" AND REINFORCED WITH #6AT12" TOP AND BOTTOM, EACH WAY. ALL TANK ANCHORS SHALL BE SS TYPE 316 THREADED RODS POST-INSTALLED USING HILTI HIT-RE 500 V3 ADHESIVE SYSTEM WITH A MINIMUM EMBEDMENT OF 8". ANCHOR SHALL HAVE A MINIMUM EDGE DISTANCE TO THE EDGE OF CONCRETE OF 5". ANCHOR DIAMETER AND QUANTITY SHALL BE COORDINATED WITH THE TANK MANUFACTURER. CONCRETE SHALL BE DESIGNED TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000PSI. COMPACT ALL SUBGRADE FOUNDATION SOILS BELOW TANKS PRIOR TO CASTING SLAB. PROVIDE LIQUID-TIGHT CONNECTION AT CONTAINMENT MATERIAL AND FOUNDATION SLAB.
- CONTRACTOR TO CONFIRM CONNECTION TYPE WITH CHEMICAL SUPPLIER.
- CONTRACTOR SHALL SUPPLY ONE LADDER PER CHEMICAL CONTAINMENT AREA SUITABLE FOR ACCESS TO MANWAY OF TANKS. LADDER SHALL BE MOVABLE AND ABLE TO BE SECURED TO TANK FOR ENTRY.
- SPILL CONTAINMENT AT FILL STATION SHALL BE ULTRA-CONTAINMENT BERM MINI FOAM WALL MODEL (60 GAL) OR APPROVED EQUAL.
- THE CONTRACTOR SHALL PERFORM A THERMAL ANALYSIS BASED ON THE FINAL PIPING LAYOUT WHICH SHOWS THE LOCATION OF THERMAL EXPANSION LOOPS AND JOINTS AND SUBMIT A FINAL PIPING LAYOUT TO THE ENGINEER FOR APPROVAL.
- CONTRACTOR SHALL PROVIDE SAFETY SHOWER/EYEWASH UNITS INSIDE OF CONTAINMENT AND OUTSIDE AT TRUCK OFF-LOADING AREA. UNITS SHALL BE PLUMBED TO OUTDOOR TEMPERING SYSTEM. SEE SECTION 11500 FOR DETAIL. CO-ORDINATE WITH OWNER TO ROUTE TEMPORARY POTABLE LINE TO THE SAFETY SHOWERS.
- REFER TO SECTION 11500 FOR DETAILS OF OUTDOOR TEMPERING UNIT.
- CONTRACTOR SHALL FIELD ROUTE 1-1/4" SCH 80 PVC PIPING FROM OUTDOOR TEMPERING UNIT TO EMERGENCY EYEWASH STATIONS. ALL PIPING SHALL BE INSULATED WITH ALUMINUM JACKET. PROVIDE ISOLATION VALVES AT EACH EYEWASH STATION.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**TEMPORARY SODIUM  
HYPOCHLORITE  
CONTAINMENT PLAN**

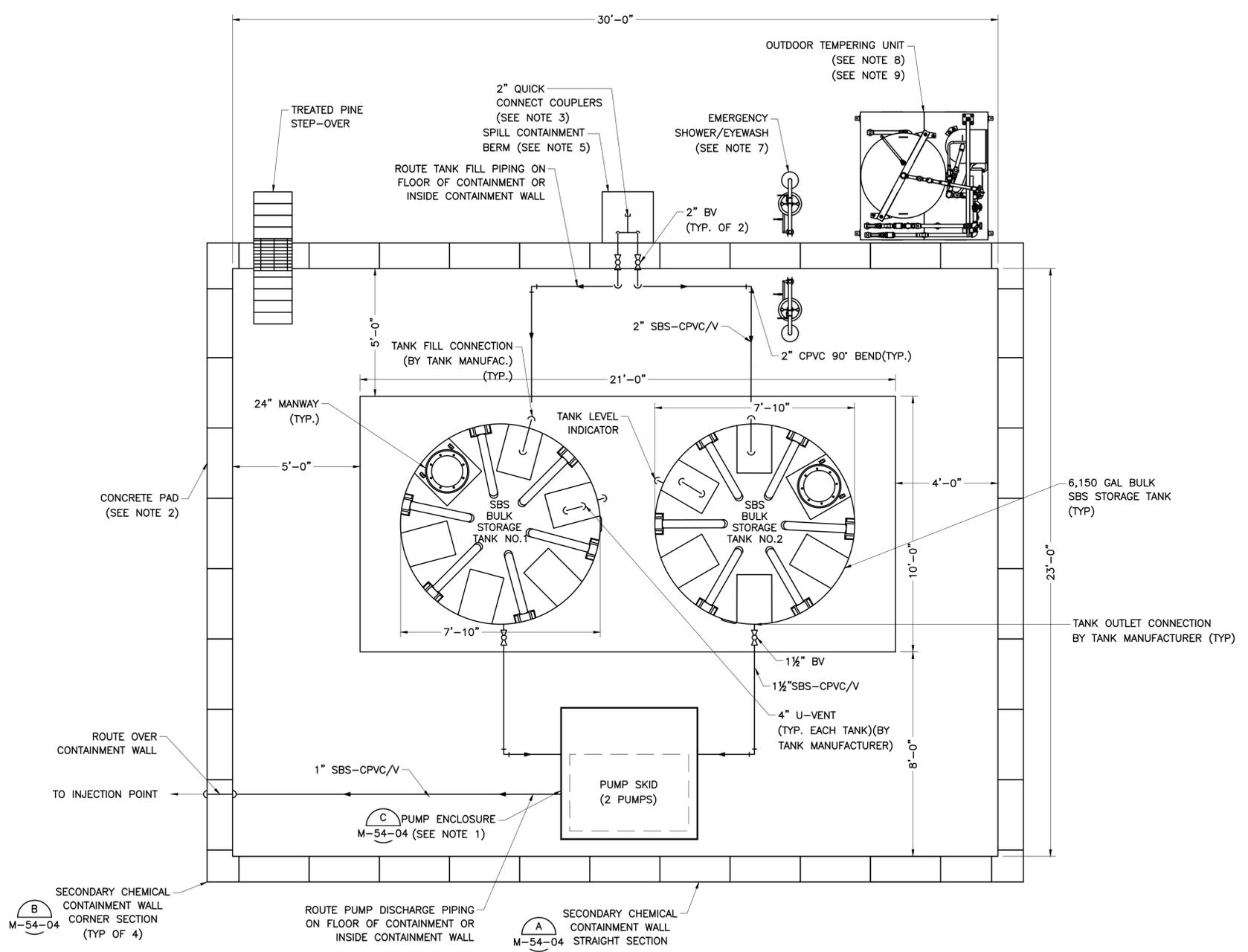
MECHANICAL

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	R-000265-0154-4	
DWG NO M-54-1	DRAWING SCALE	3/8" = 1'-0" CITY OF HOUSTON PM TAHA LOTIA
	SHEET NO. 150 OF 271	

NO.	DATE	REVISION	APP.



NO.	DATE	REVISION	APP.



NOTES:

- PUMP SKID SHALL BE HOUSED INSIDE A WEATHER PROOF ENCLOSED SUCH AS THE ULTRA-HARD TOP P4 PLUS BY ULTRATECH BRANDS OR APPROVED EQUAL. SEE SECTION 11500 FOR DETAILS. PIPE PENETRATION PER MANUFACTURER'S RECOMMENDATIONS.
- TANK FOUNDATION SLAB SHALL BE 21'-0"x10'-0"x14" AND REINFORCED WITH #6AT12" TOP AND BOTTOM, EACH WAY. ALL TANK ANCHORS SHALL BE SS TYPE 316 THREADED RODS POST-INSTALLED USING HILTI HIT-RE 500 V3 ADHESIVE SYSTEM WITH A MINIMUM EMBEDMENT OF 8". ANCHOR SHALL HAVE A MINIMUM EDGE DISTANCE TO THE EDGE OF CONCRETE OF 5". ANCHOR DIAMETER AND QUANTITY SHALL BE COORDINATED WITH THE TANK MANUFACTURER. CONCRETE SHALL BE DESIGNED TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000PSI. COMPACT ALL SUBGRADE FOUNDATION SOILS BELOW TANKS PRIOR TO CASTING SLAB. PROVIDE LIQUID-TIGHT CONNECTION AT CONTAINMENT MATERIAL AND FOUNDATION SLAB.
- CONTRACTOR TO CONFIRM CONNECTION TYPE WITH CHEMICAL SUPPLIER.
- CONTRACTOR SHALL SUPPLY ONE LADDER PER CHEMICAL CONTAINMENT AREASUITABLE FOR ACCESS TO MANWAY OF TANKS. LADDER SHALL BE MOVABLE AND ABLE TO BE SECURED TO TANK FOR ENTRY.
- SPILL CONTAINMENT AT FILL STATION SHALL BE ULTRA-CONTAINMENT BERM MINI FOAM WALL MODEL (60 GAL) OR APPROVED EQUAL.
- THE CONTRACTOR SHALL PERFORM A THERMAL ANALYSIS BASED ON THE FINAL PIPING LAYOUT WHICH SHOWS THE LOCATION OF THERMAL EXPANSION LOOPS AND JOINTS AND SUBMIT A FINAL PIPING LAYOUT TO THE ENGINEER FOR APPROVAL.
- CONTRACTOR SHALL PROVIDE SAFETY SHOWER/EYEWASH UNITS INSIDE OF CONTAINMENT AND OUTSIDE AT TRUCK OFF-LOADING AREA. UNITS SHALL BE PLUMBED TO OUTDOOR TEMPERING SYSTEM. SEE SECTION 11500 FOR DETAIL. CO-ORDINATE WITH OWNER TO ROUTE TEMPORARY POTABLE LINE TO THE SAFETY SHOWERS.
- REFER TO SECTION 11500 FOR DETAILS OF OUTDOOR TEMPERING UNIT.
- CONTRACTOR SHALL FIELD ROUTE 1-1/4" SCH 80 PVC PIPING FROM OUTDOOR TEMPERING UNIT TO EMERGENCY EYEWASH STATIONS. ALL PIPING SHALL BE INSULATED WITH ALUMINUM JACKET. PROVIDE ISOLATION VALVES AT EACH EYEWASH STATION.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
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SURVEYED BY:  
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IMPROVEMENTS PACKAGE 3

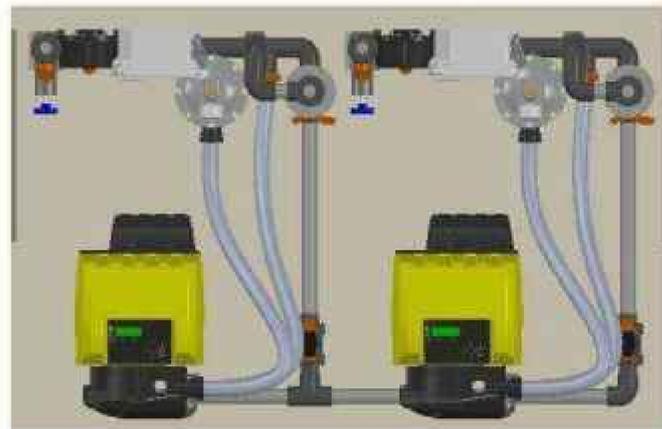
**TEMPORARY SODIUM  
BISULFITE CONTAINMENT PLAN**

MECHANICAL

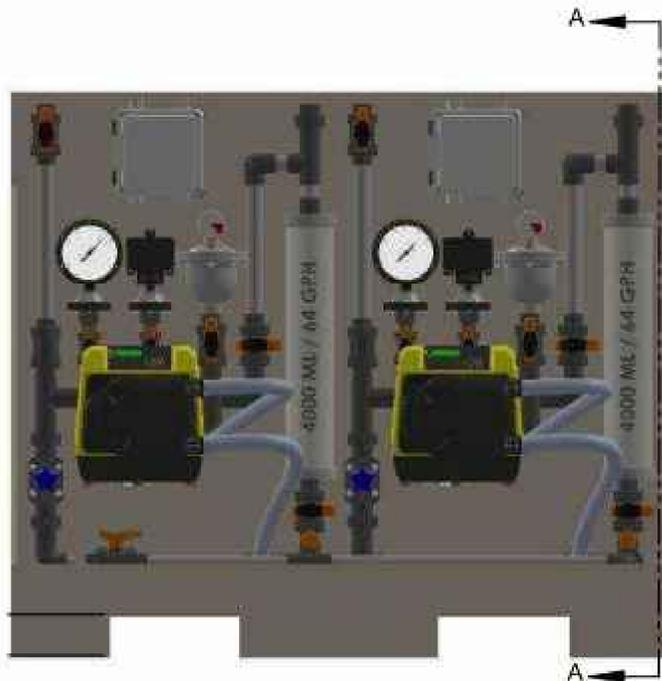
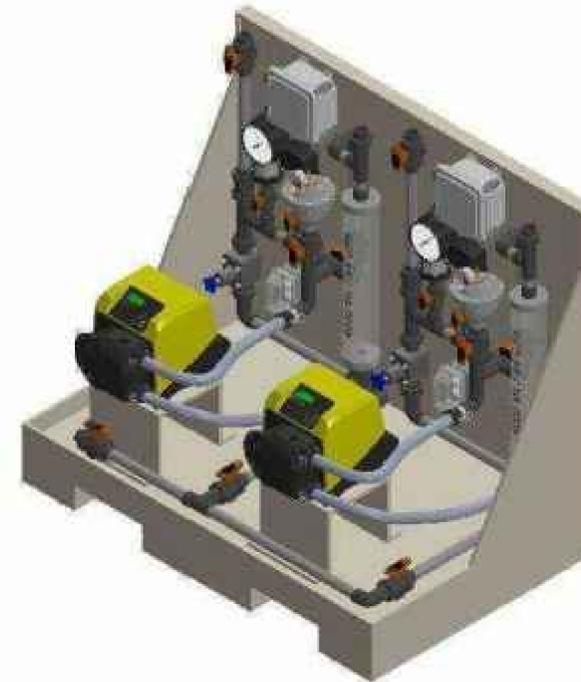
**PLAN**  
3/8" = 1'-0"

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO M-54-2	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	3/8" = 1'-0"	
	SHEET NO.	151 OF 271

NO.	DATE	REVISION	APP.



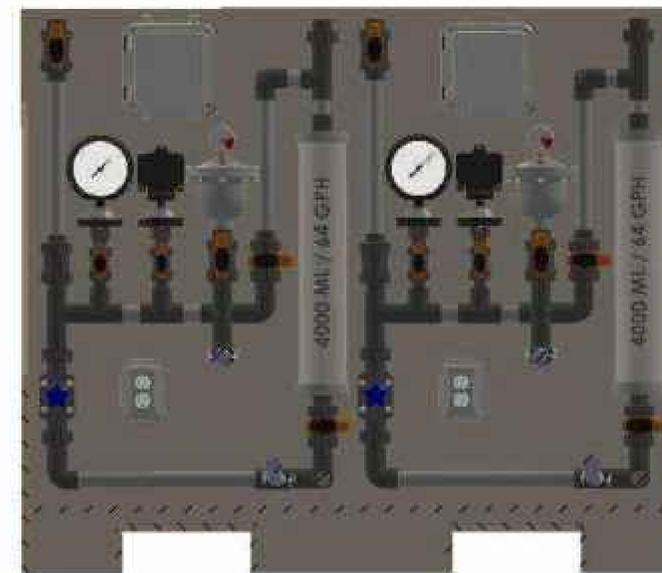
**PLAN VIEW**



**FRONT VIEW**



**SECTION A-A  
SCALE**



**SECTION B-B  
SCALE**

- NOTES:
- THE PUMP SKID SHALL BE DESIGNED TO BE HOUSED INSIDE THE PUMP SKID ENCLOSURE AS SHOWN ON THE DRAWINGS AND ON DETAIL-C/M-54-04.
1. THE METERING PUMP SKID DETAILS ARE INCLUDED HERE FOR REFERENCE PURPOSES AND INTENDED TO ILLUSTRATE A GENERAL CONCEPT OF EQUIPMENT AND PIPING LAYOUT. CONTRACTOR SHALL USE THIS IN CONJUNCTION WITH MECHANICAL DRAWINGS AND P&ID AND SPECIFICATION SECTION 11500 TO PROVIDE ALL REQUIRED COMPONENTS TO MAKE FULL FUNCTIONAL SYSTEM.
  2. METERING PUMP SKID MANUFACTURE SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL EQUIPMENT AND APPURTENANCES ON THE SKIDS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

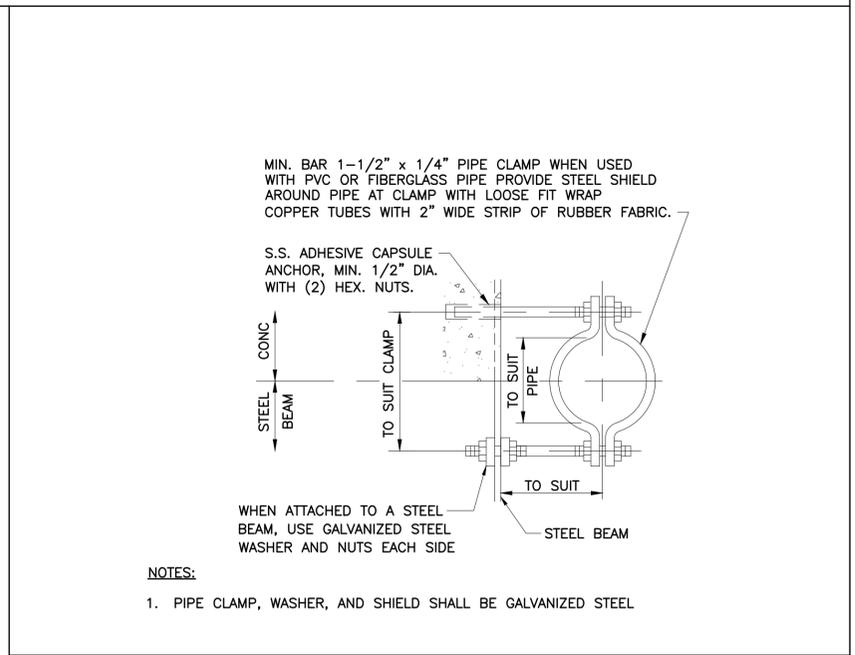
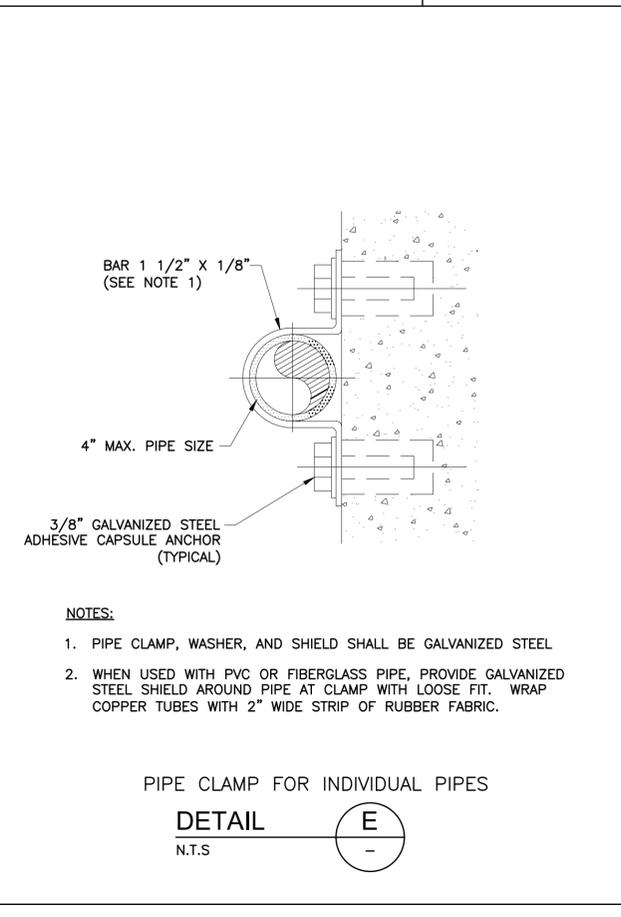
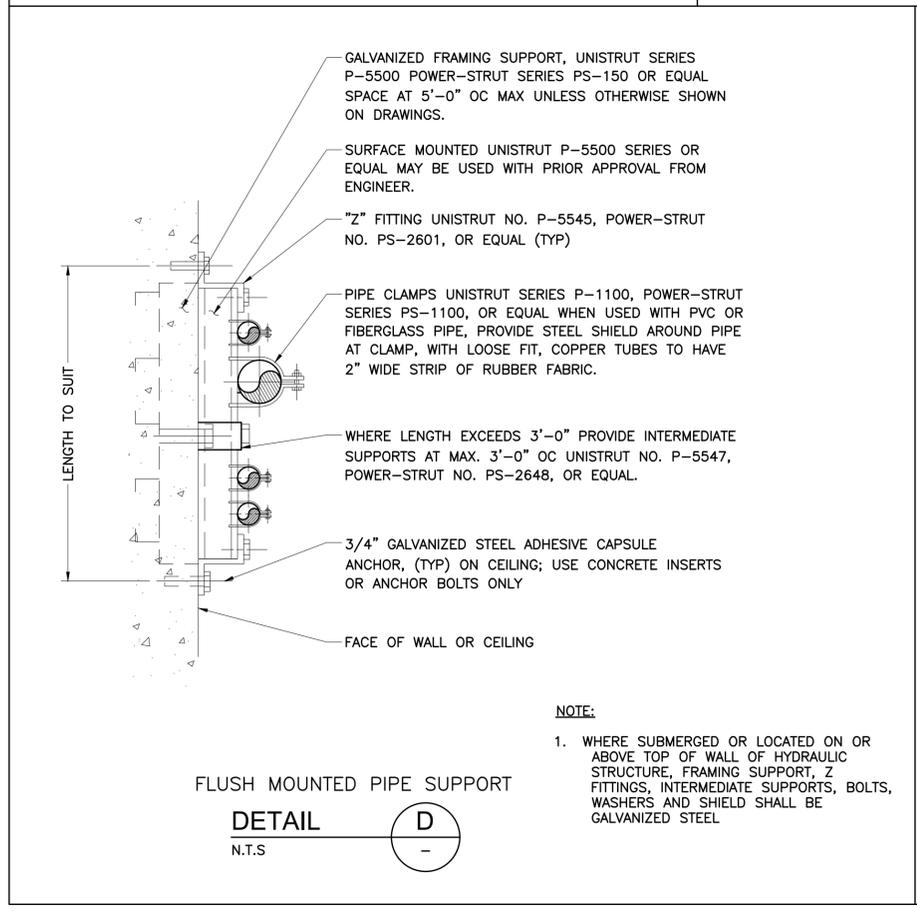
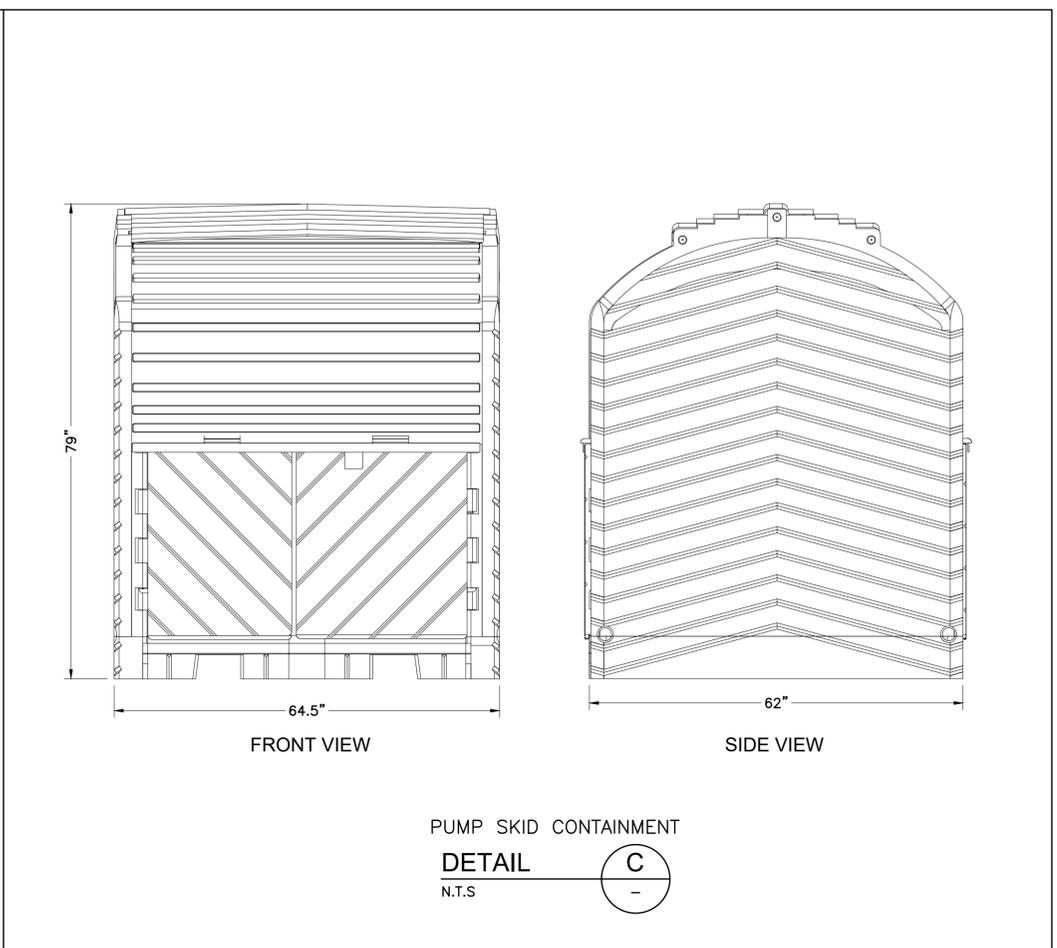
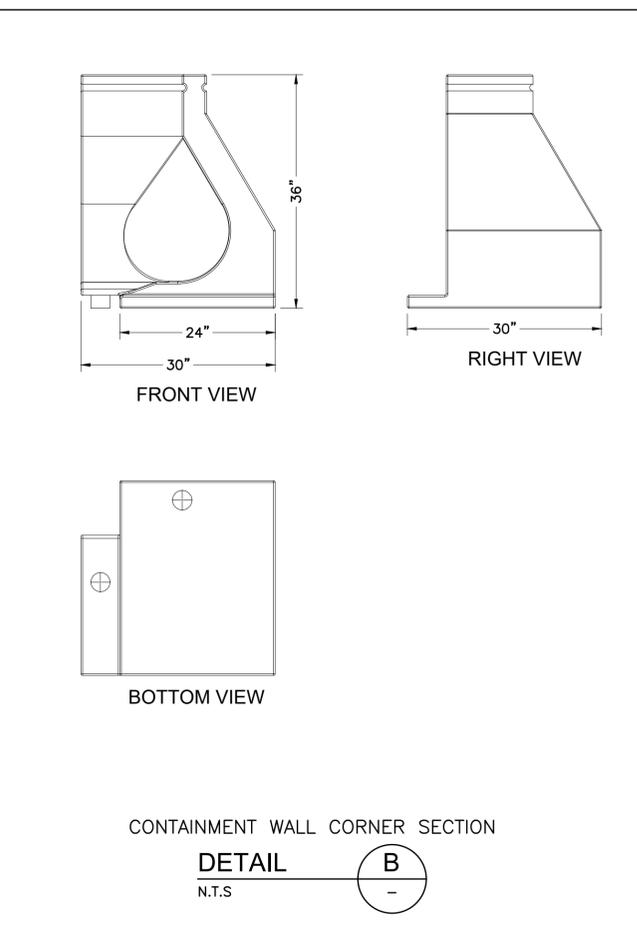
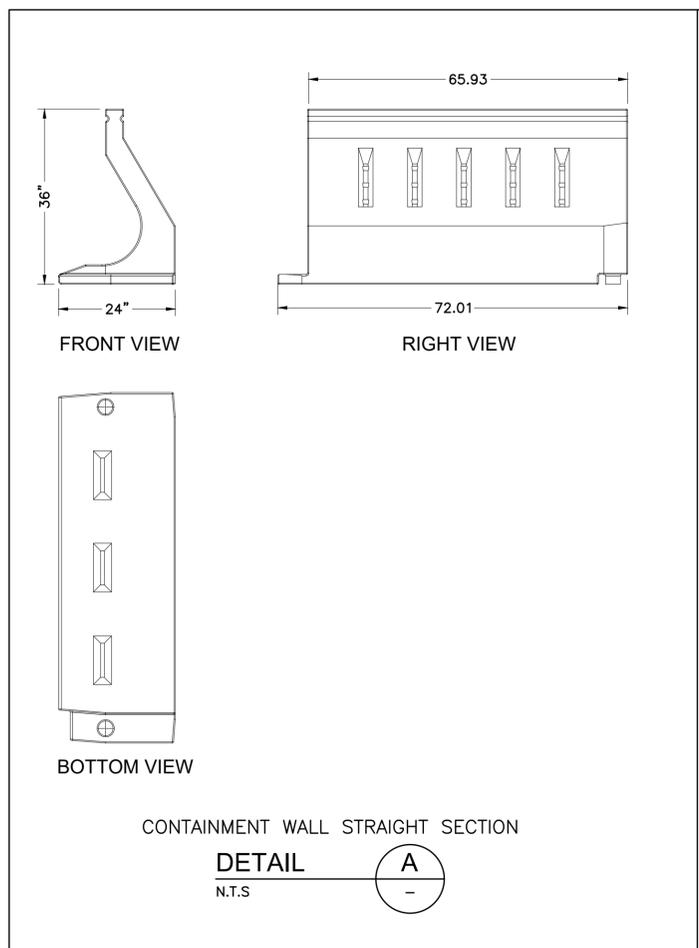
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**TYPICAL CHEMICAL METERING PUMP SKID PLAN & SECTION**

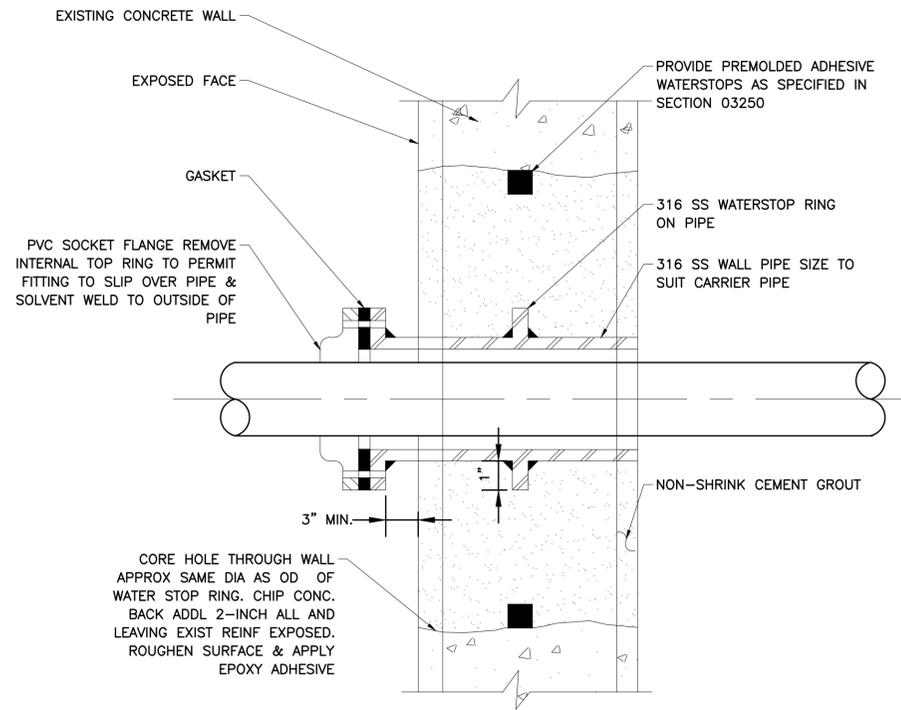
MECHANICAL

<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-54-3	SHEET NO. 152 OF 271	

NO.	DATE	REVISION	APP.

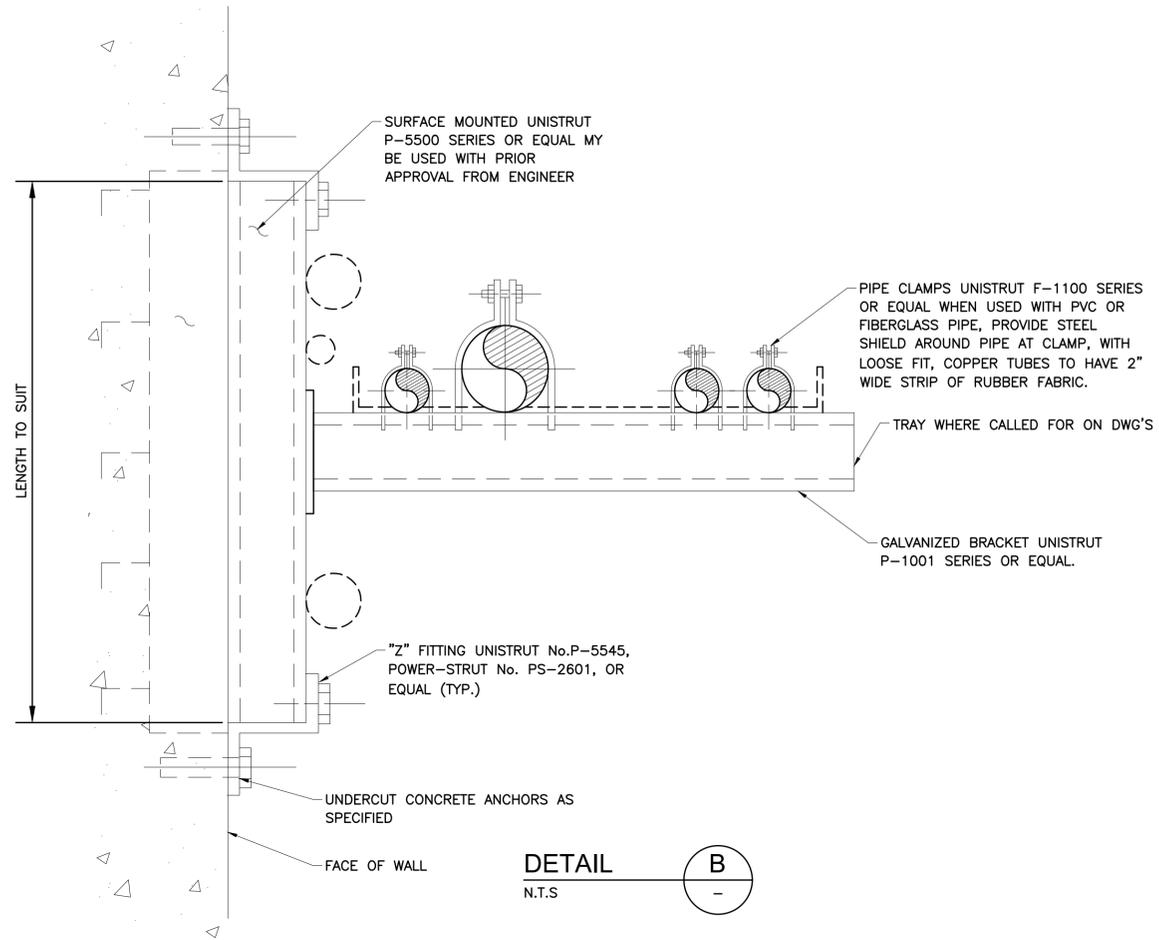


APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
 TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3 <b>TEMPORARY DISINFECTION FACILITIES STANDARD</b> <b>DETAILS SHEET 1</b> MECHANICAL	
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4 DRAWING SCALE NTS CITY OF HOUSTON PM TAHA LOTIA SHEET NO. 153 OF 271
DWG NO M-54-4	FOR CITY OF HOUSTON USE ONLY



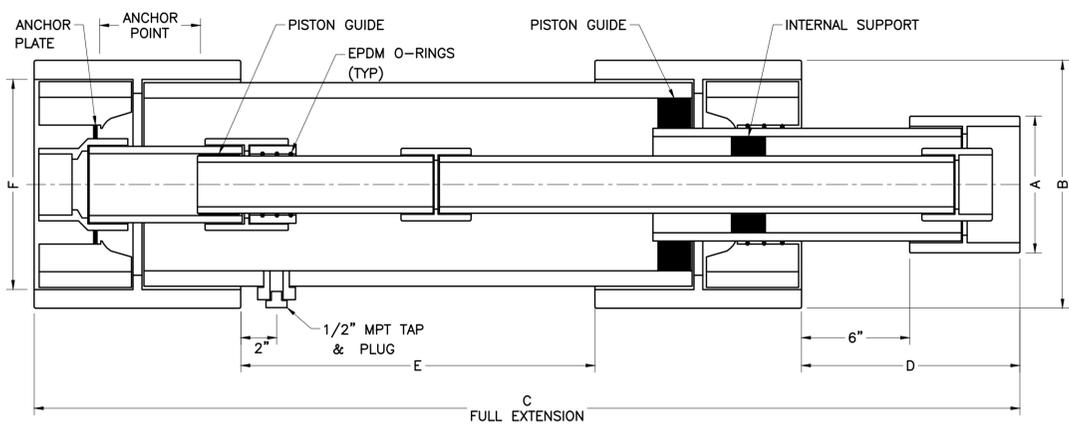
PVC PIPE WALL PENETRATION

DETAIL A  
N.T.S.



DETAIL B  
N.T.S.

- NOTES:
- WHERE SUBMERGED OR LOCATED ON OR ABOVE TOP OF WALL OF HYDRAULIC STRUCTURE, FRAMING SUPPORT, Z FITTINGS, INTERMEDIATE SUPPORTS, BOLTS, WASHERS AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL.
  - MAY BE COMBINED WITH RACKING PIPE IN VERTICAL AND WITH RUBBER HOSE IN TRAY.



CPVC DOUBLE CONTAINMENT EXPANSION JOINT

DETAIL C  
N.T.S.

SCHEDULE 80 PVC/CPVC		
NOMINAL PIPE SIZE (in)	MAXIMUM O.C. SUPPORT SPACING (ft)	EXPANSION LENGTH "L" (in)**
1/2"	3'-0"	18
3/4"	3'-0"	22
1"	3'-6"	24
1-1/4"	3'-6"	28
1-1/2"	3'-6"	30
2"	4'-0"	34
2-1/2"	4'-6"	38
3"	4'-6"	42
4"	5'-0"	48
6"	6'-0"	60
8"	6'-6"	68
10"	8'-6"	76

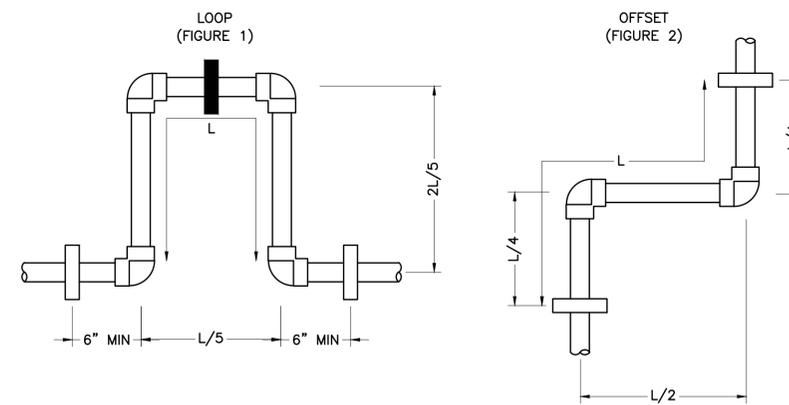
\*\*BASED ON 100-ft STRAIGHT RUN AND ΔT OF 50°F

GENERAL NOTE:

MATERIALS OF CONSTRUCTION SHOWN HEREIN ARE FOR REFERENCE PURPOSES ONLY. SUBCONTRACTOR SHALL FOLLOW MATERIALS OF CONSTRUCTION SPECIFIED IN THE AREA CLASSIFICATION AND MATERIALS SCHEDULE SHOWN ON THE DRAWINGS.

NOTES:

- CONTRACTOR SHALL COORDINATE PIPE SUPPORT LENGTHS AND EXPANSION LENGTHS WITH SELECTED PIPE MANUFACTURER. PROVIDE THE NECESSARY EXPANSION SUPPORT SPACING FOR EACH CONDITION SHOWN. PROVIDE EXPANSION LOOPS AT LEAST EVERY 100-FT FOR STRAIGHT RUNS OF PIPE.



TYPICAL PIPE SUPPORT AND EXPANSION

DETAIL D  
N.T.S.

APPROVED: DESIGNED BY: RK, SJ DATE: DRAWN BY: DM

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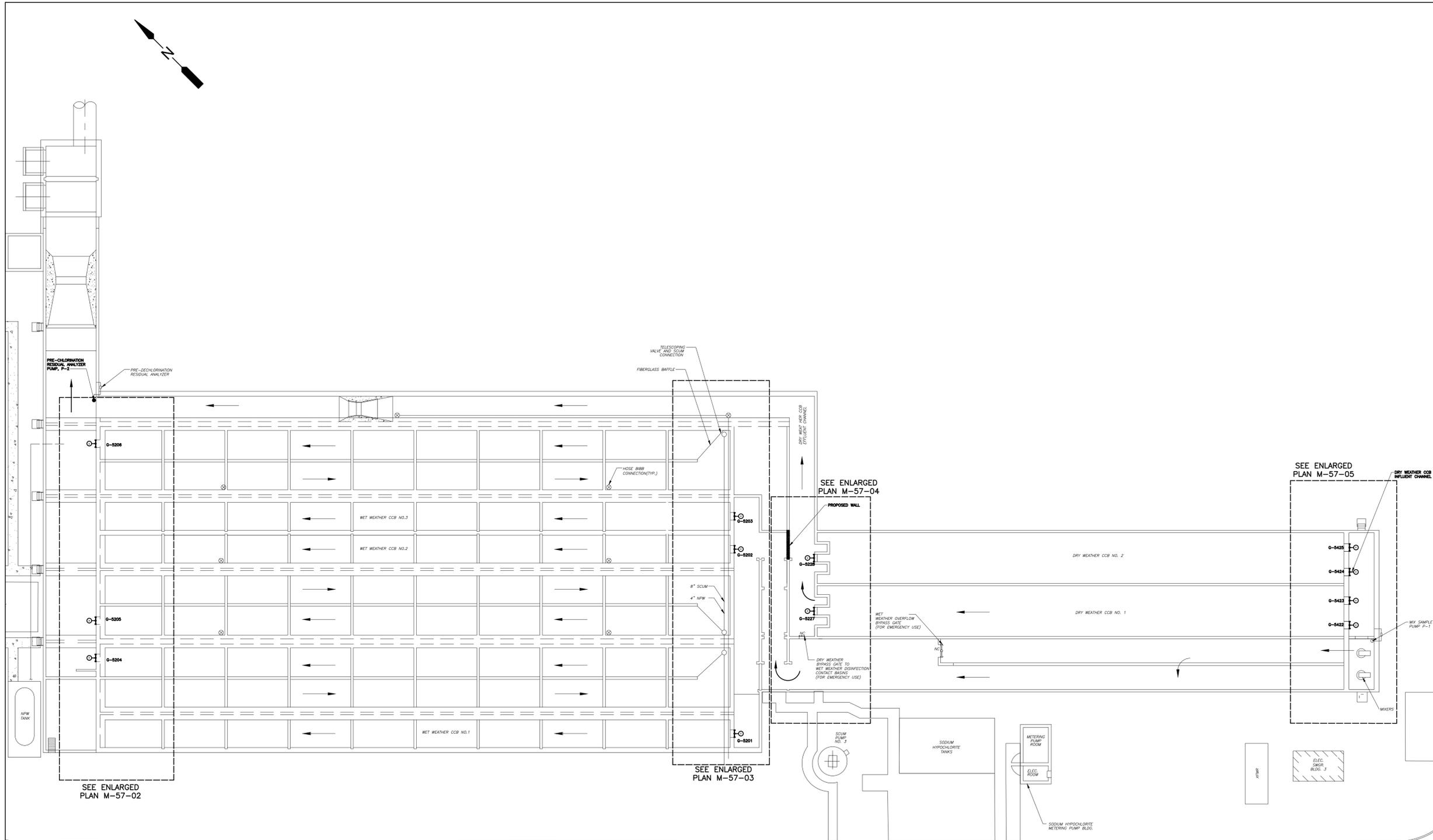
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HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TEMPORARY DISINFECTION FACILITIES STANDARD**  
**DETAILS SHEET 2**  
MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE NTS	
DWG NO M-54-5	CITY OF HOUSTON PM TAHA LOTIA	SHEET NO. 154 OF 271

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

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SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**CHLORINE CONTACT BASINS  
SLIDE GATES OVERALL PLAN**

MECHANICAL

CHLORINE CONTACT BASINS SLIDE GATES OVERALL

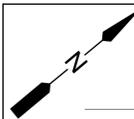
**PLAN**  
1/4" = 1'-0"

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO	CITY OF HOUSTON PM
M-57-1	TAHA LOTIA

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	
SHEET NO.	155 OF 271

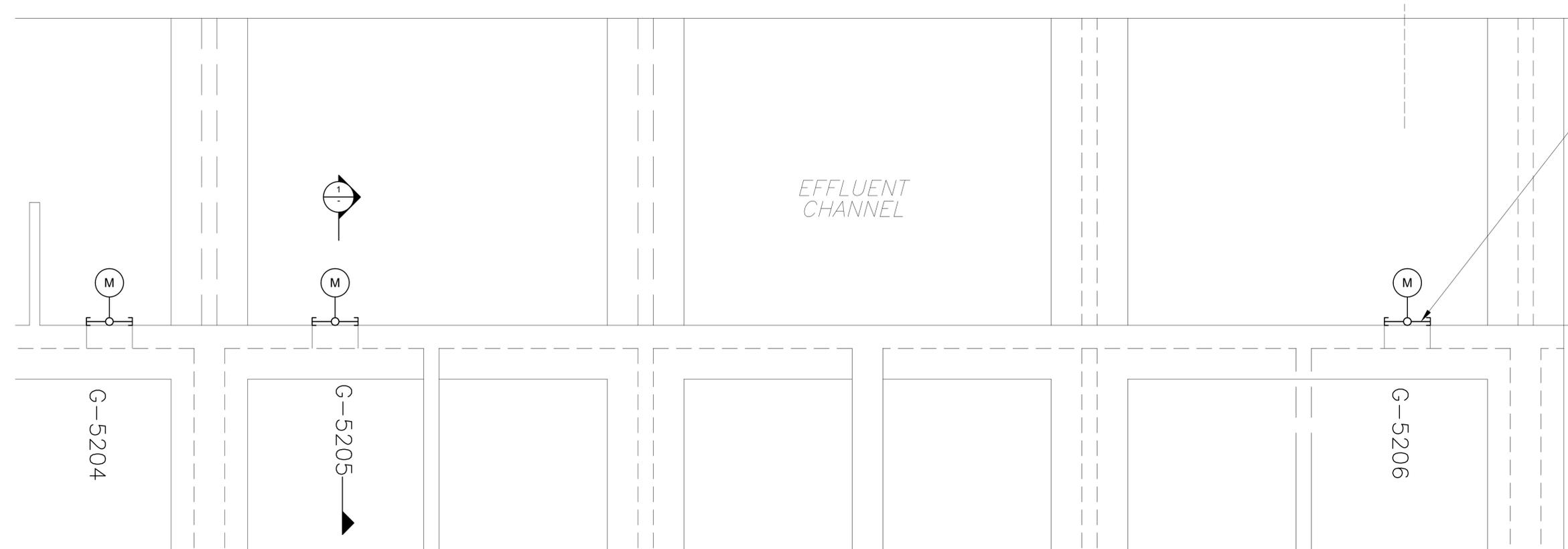


**NOTES:**

1. REMOVE EXISTING SLIDE GATES AND REPLACE WITH NEW SLIDE GATES EQUIPPED WITH ELECTRIC MOTOR ACTUATORS.



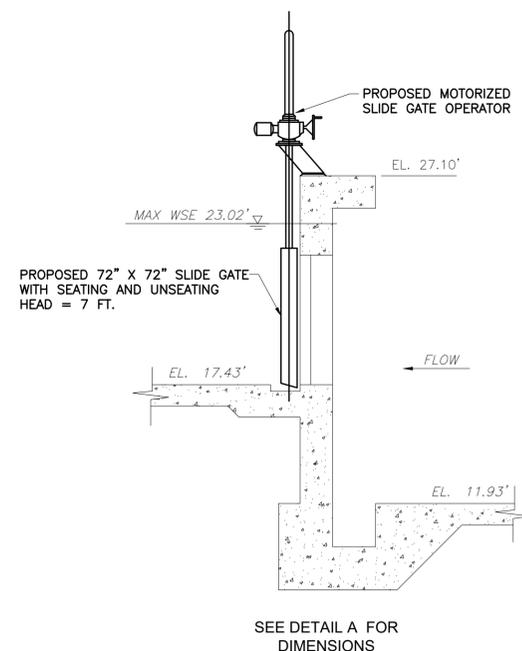
NOTE 1



CCB WET WEATHER INFLUENT GATES ENLARGED

**PLAN**

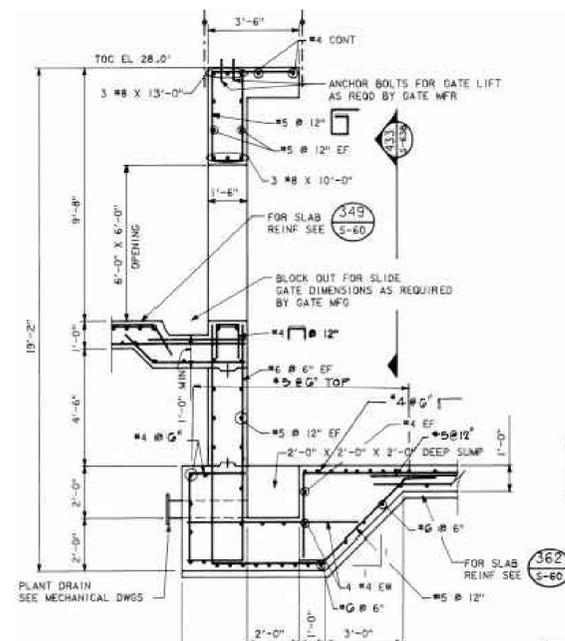
1/4" = 1'-0"



WET WEATHER CCB INFLUENT GATES

**SECTION 1**

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



RECORD DWG NO.28544 S-62, FOR INFORMATION ONLY

**DETAIL A**



G-5206 PHOTO

**DETAIL B**



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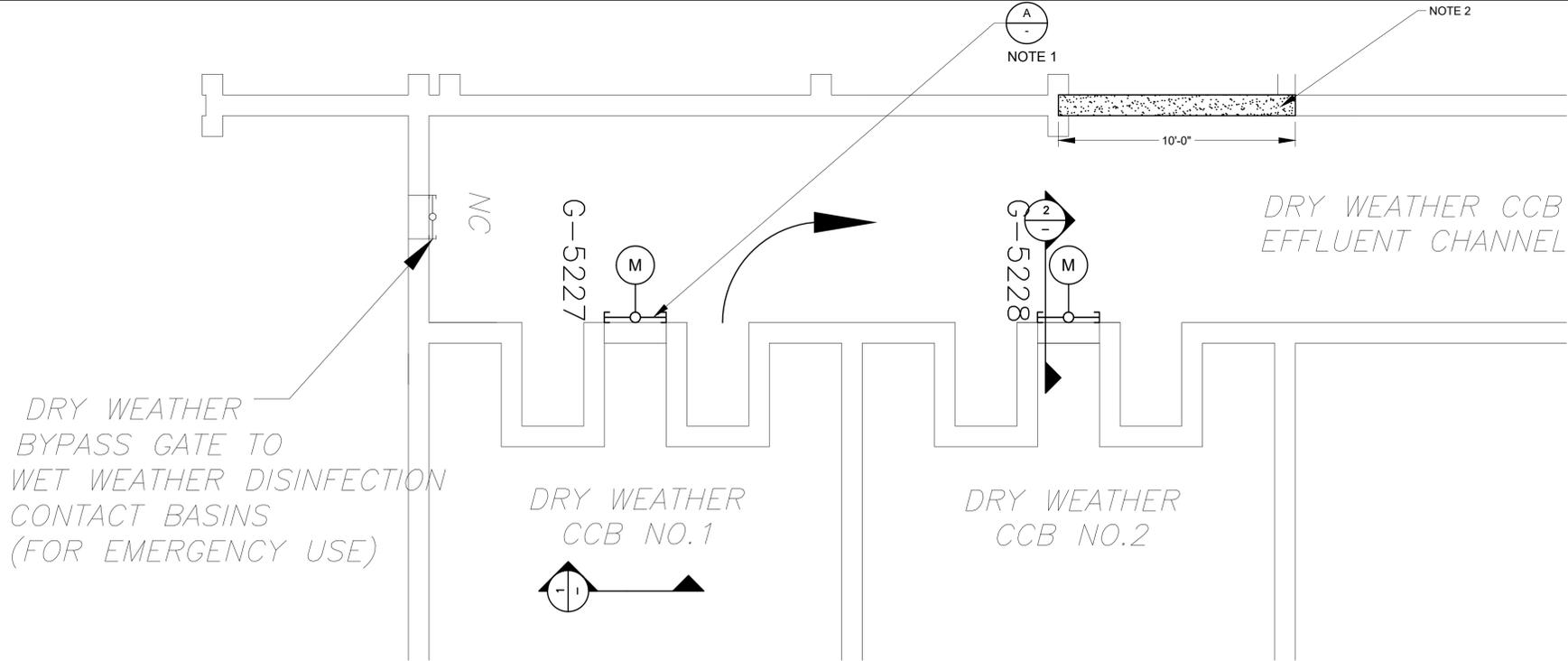
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**WET WEATHER CCB EFFLUENT CHANNEL GATES PLAN, SECTION & DETAILS**  
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NS		
DWG NO	CITY OF HOUSTON PM	
M-57-2	TAHA LOTIA	
SHEET NO.	156 OF 271	

NO.	DATE	REVISION	APP.

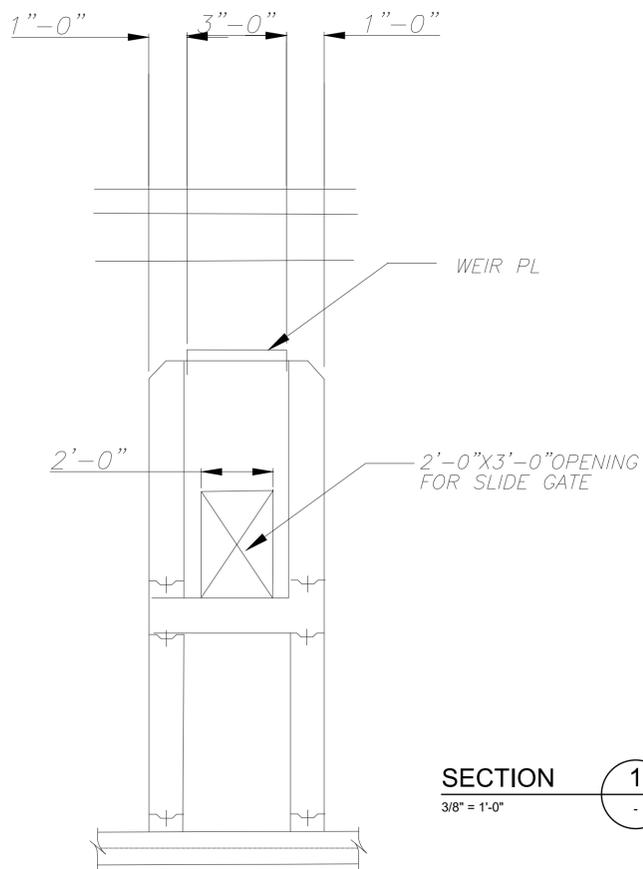




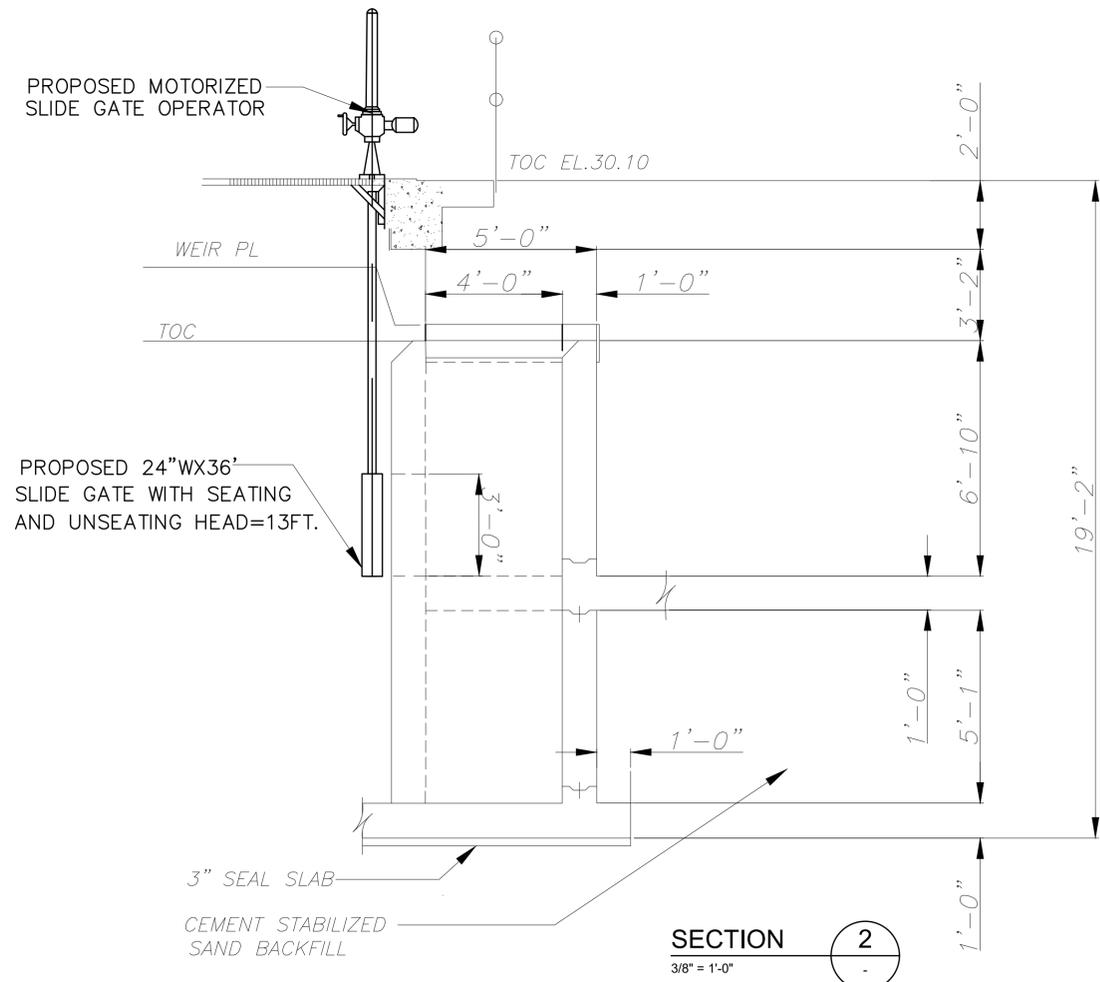
G-5227 AND G-5228 PHOTO  
DETAIL A

CCB WET WEATHER EFFLUENT GATES ENLARGED

PLAN  
1/4" = 1'-0"



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



SECTION 2  
3/8" = 1'-0"

- NOTES:
1. REMOVE EXISTING SLIDE GATES AND REPLACE WITH NEW SLIDE GATES EQUIPPED WITH ELECTRIC MOTOR ACTUATORS.
  2. REMOVE EXISTING STOP LOG AND INSTALL NEW STRUCTURAL WALL.SEE STRUCTURAL DRAWING DETAILS.

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.

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HOUSTON PUBLIC WORKS

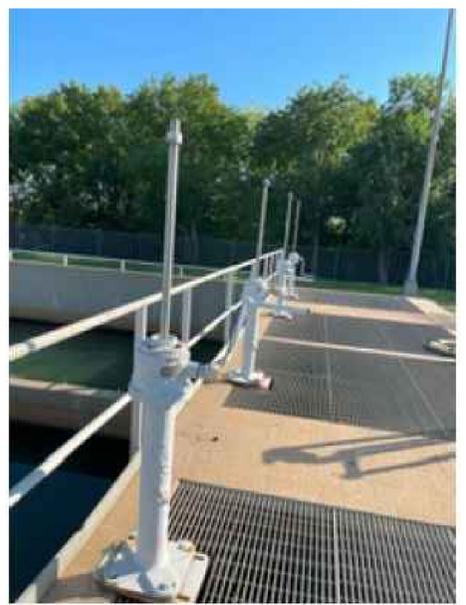
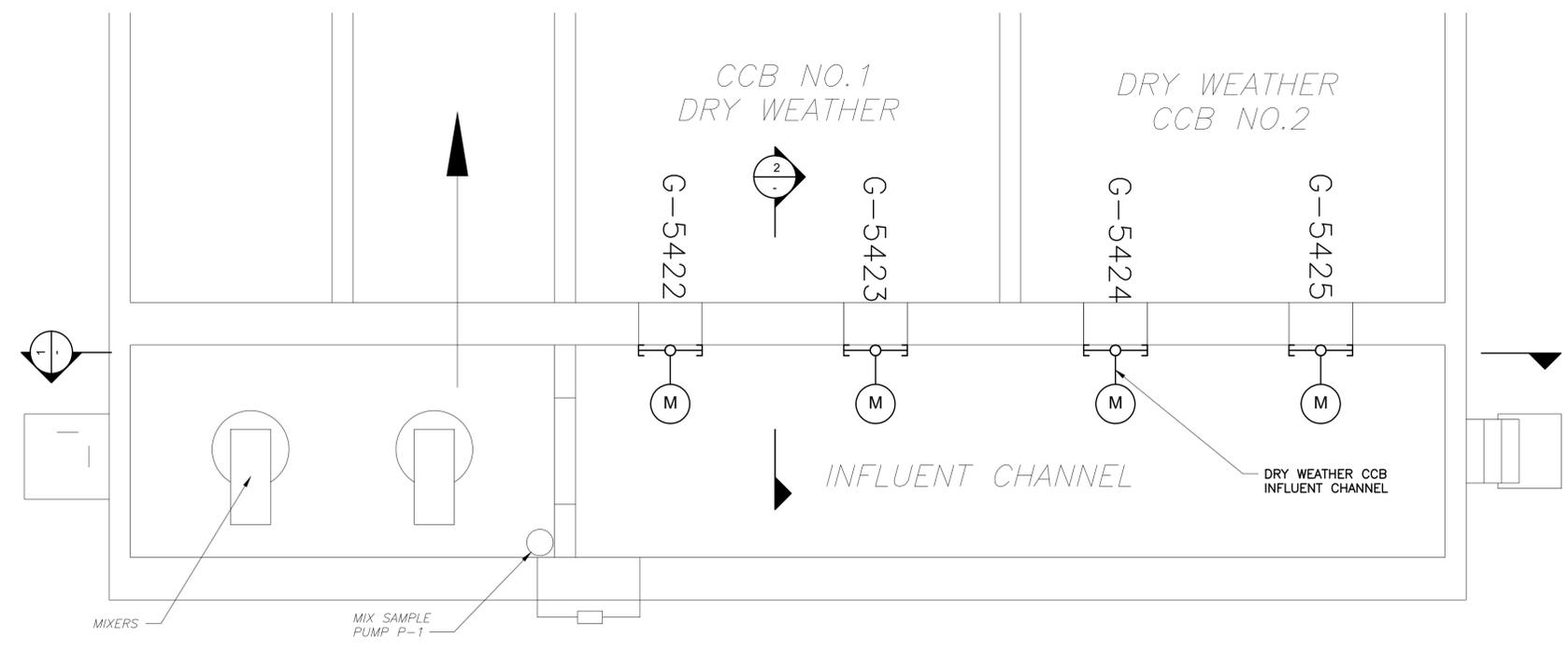
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**DRY WEATHER CCB EFFLUENT CHANNEL GATES PLAN, SECTION & DETAILS**

MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
M-57-4	TAHA LOTIA	
SHEET NO.	158 OF 271	

NO.	DATE	REVISION	APP.



CCB DRY WEATHER INFLUENT GATES PHOTO

DETAIL A

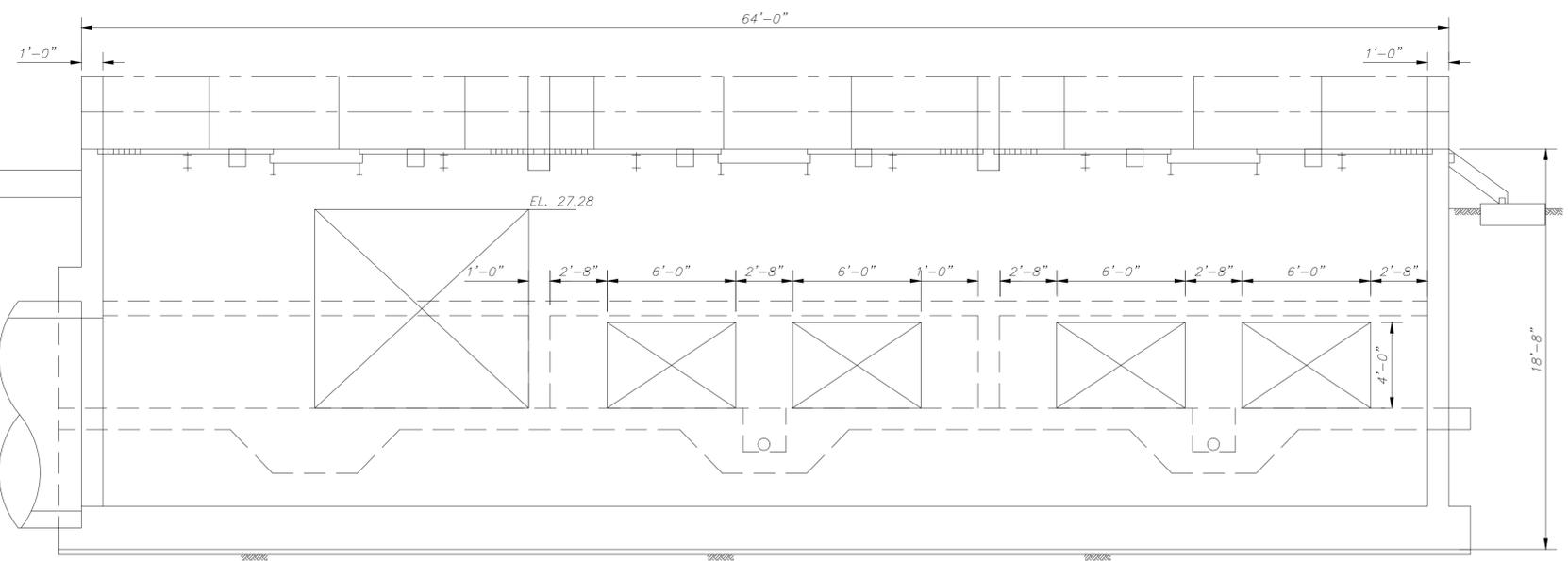
NOTES:

1. REMOVE EXISTING SLIDE GATES AND REPLACE WITH NEW SLIDE GATES EQUIPPED WITH ELECTRIC MOTOR ACTUATORS.

CCB WET WEATHER INFLUENT GATES ENLARGED

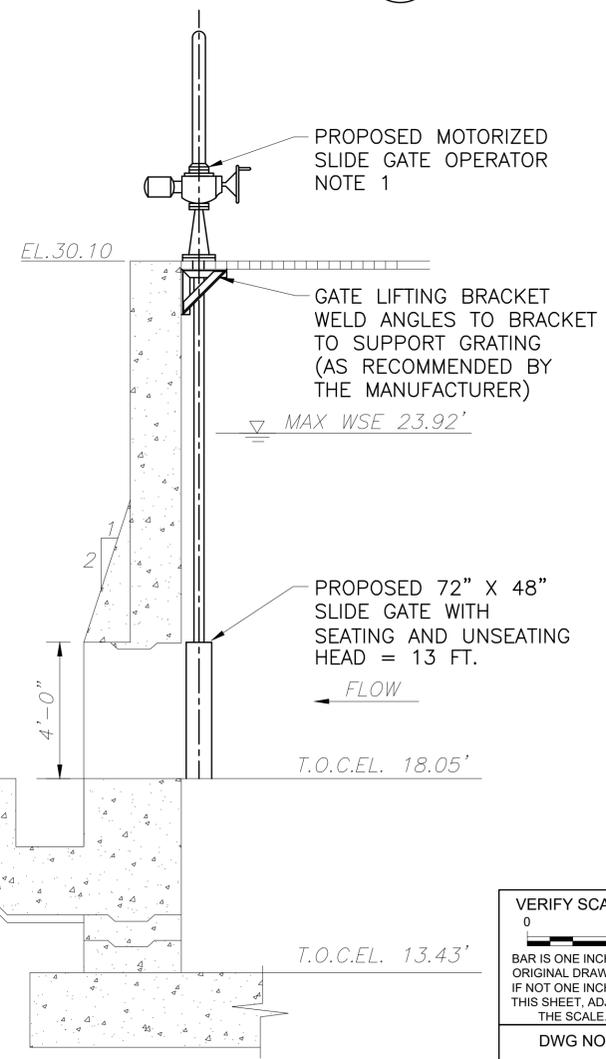
PLAN

1/4" = 1'-0"



SECTION 1

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



SECTION 2

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

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**DRY WEATHER CCB  
EFFLUENT CHANNEL GATES  
PLAN, SECTION & DETAILS**  
MECHANICAL

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

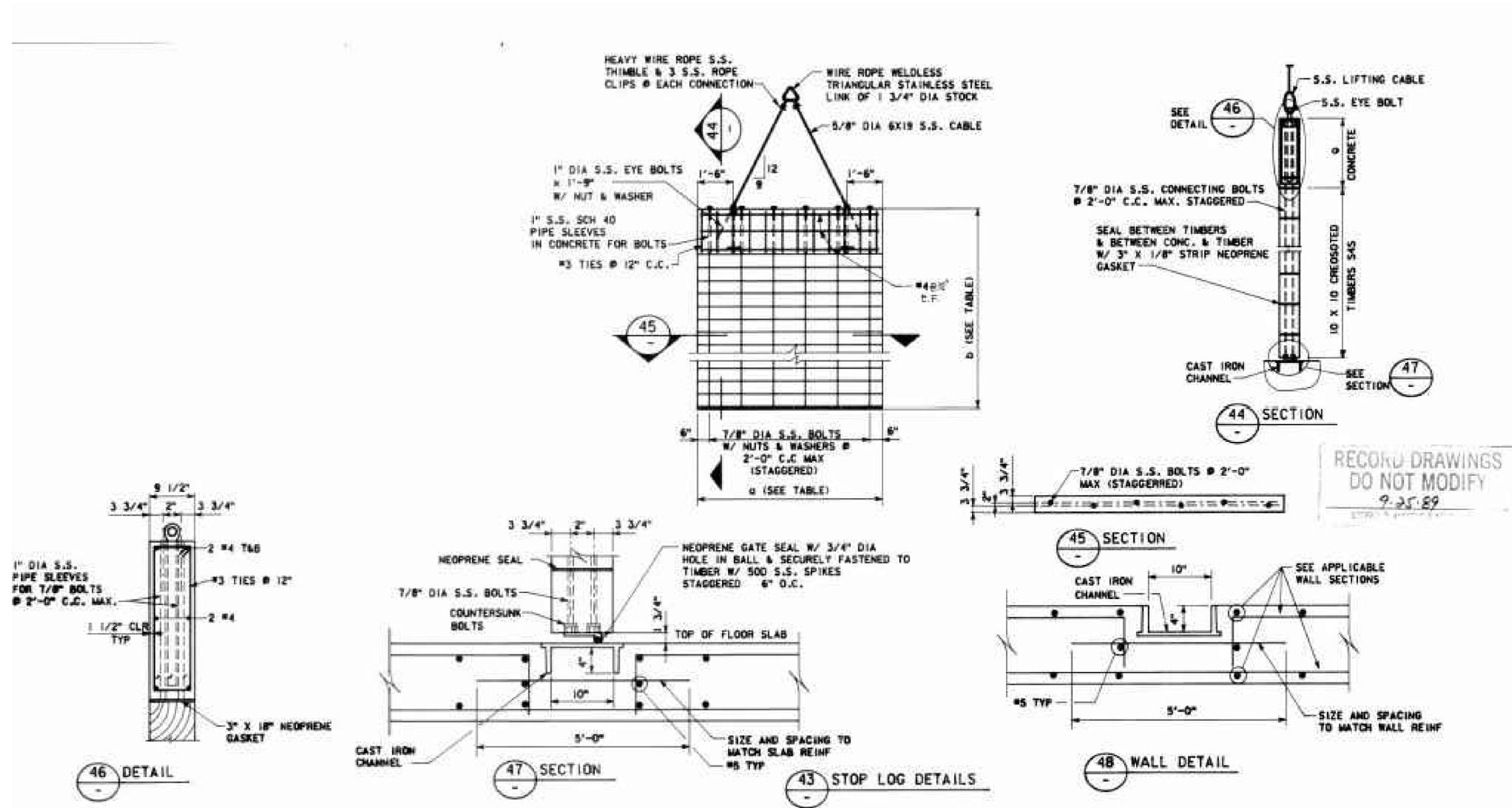
DWG NO	CITY OF HOUSTON PM
M-57-5	TAHA LOTIA
SHEET NO.	159 OF 271

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	

NOTES:

- REMOVE EXISTING STOP LOG AND CONSTRUCT A NEW STRUCTURAL WALL AS SHOWN IN STRUCTURAL DRAWINGS.

NO.	DATE	REVISION	APP.



RECORD DWG NO. 43005 24SO2 FOR INFORMATION ONLY

DETAIL A

APPROVED:	DATE:
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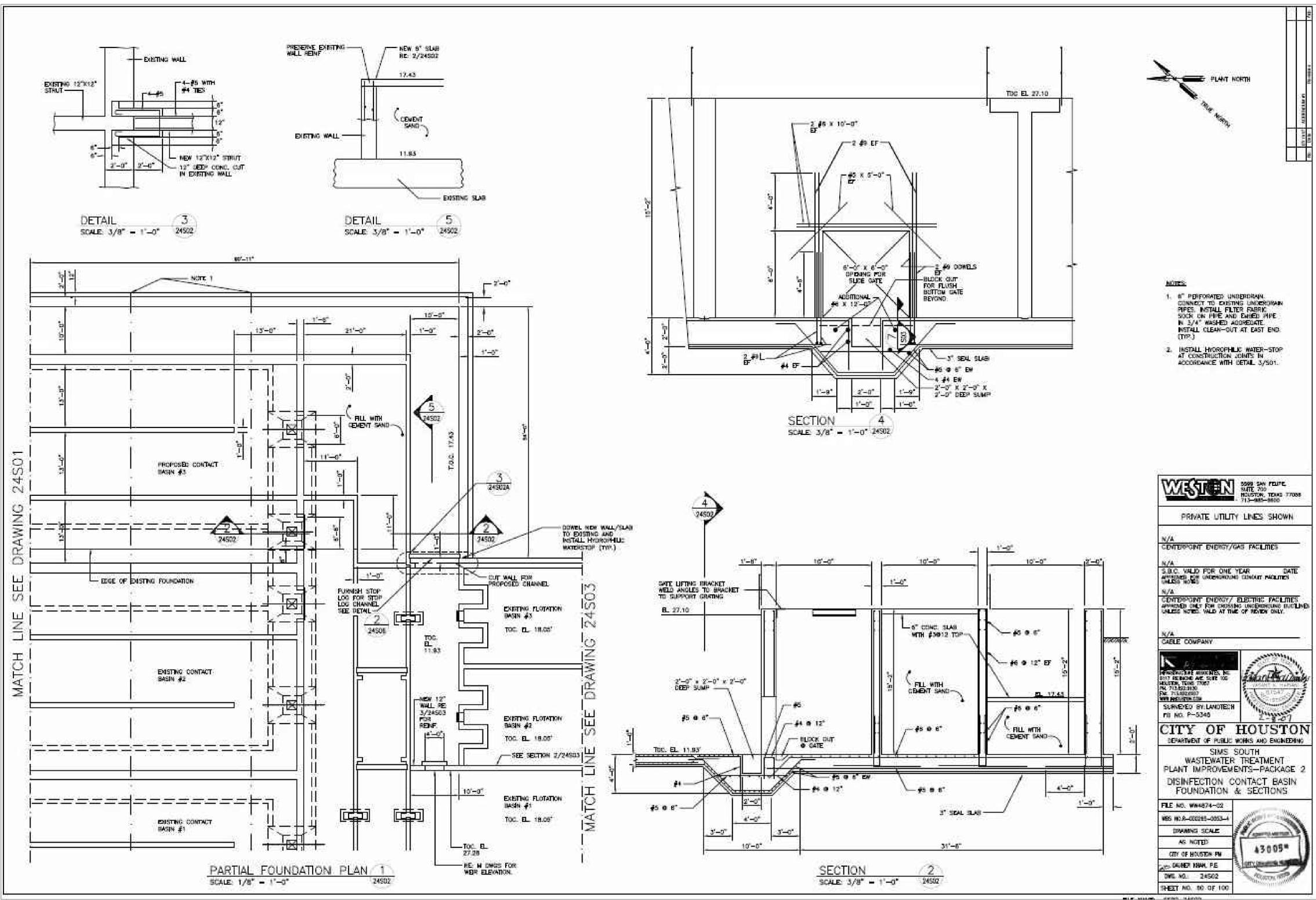
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**DRY WEATHER CCB EFFLUENT CHANNEL STOP LOG DEMOLITION DETAILS**  
MECHANICAL

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DRAWING SCALE		
NS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-57-6	SHEET NO. 160 OF 271	

NO.	DATE	REVISION	APP.



**WESTON** 5008 SAN FELIX SUITE 300 HOUSTON, TEXAS 77008 713-985-8800

PRIVATE UTILITY LINES SHOWN

N/A  
CENTERPOINT ENERGY/GAS FACILITIES

N/A  
S.B.C. VALID FOR ONE YEAR DATE APPROVED FOR UNDERGROUND CONTACT FACILITIES UNLESS NOTED

N/A  
CENTERPOINT ENERGY/ELECTRIC FACILITIES APPROVED ONLY FOR CROSSING UNDERGROUND FACILITIES UNLESS NOTED, VALID AT TIME OF REVIEW ONLY.

N/A  
CABLE COMPANY

**PHOTODUPLICATION SERVICES, INC.**  
1117 DELMONTE AVE SUITE 100 HOUSTON, TEXAS 77057 PH: 713-822-3130 FAX: 713-822-3000 WWW.PHOTO-DUP.COM

SURVEYED BY LANDTECH PLS NO. P-0345

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SIMS SOUTH WASTEWATER TREATMENT PLANT IMPROVEMENTS—PACKAGE 2 DISINFECTION CONTACT BASIN FOUNDATION & SECTIONS

FILE NO. WWS274-02  
WBS NO. A-000265-0053-4  
DRAWING SCALE  
AS NOTED  
CITY OF HOUSTON PM  
DRAWN BY: CALEB BHAH, P.E.  
DWS NO.: 24502  
SHEET NO. 80 OF 100

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

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Phone: (713)-365-9288  
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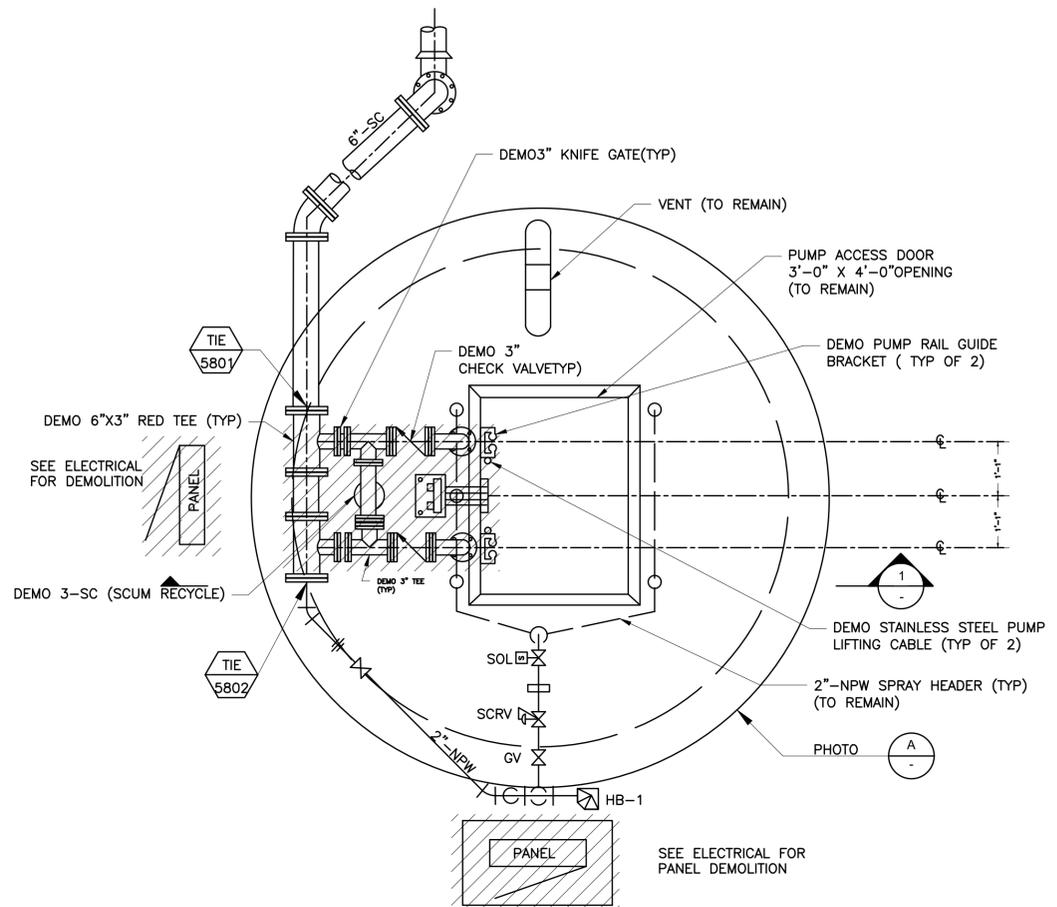
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**DRY WEATHER CCB EFFLUENT CHANNEL EXISTING STOP LOG DETAILS**  
MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-57-7	DRAWING SCALE NS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 161 OF 271	

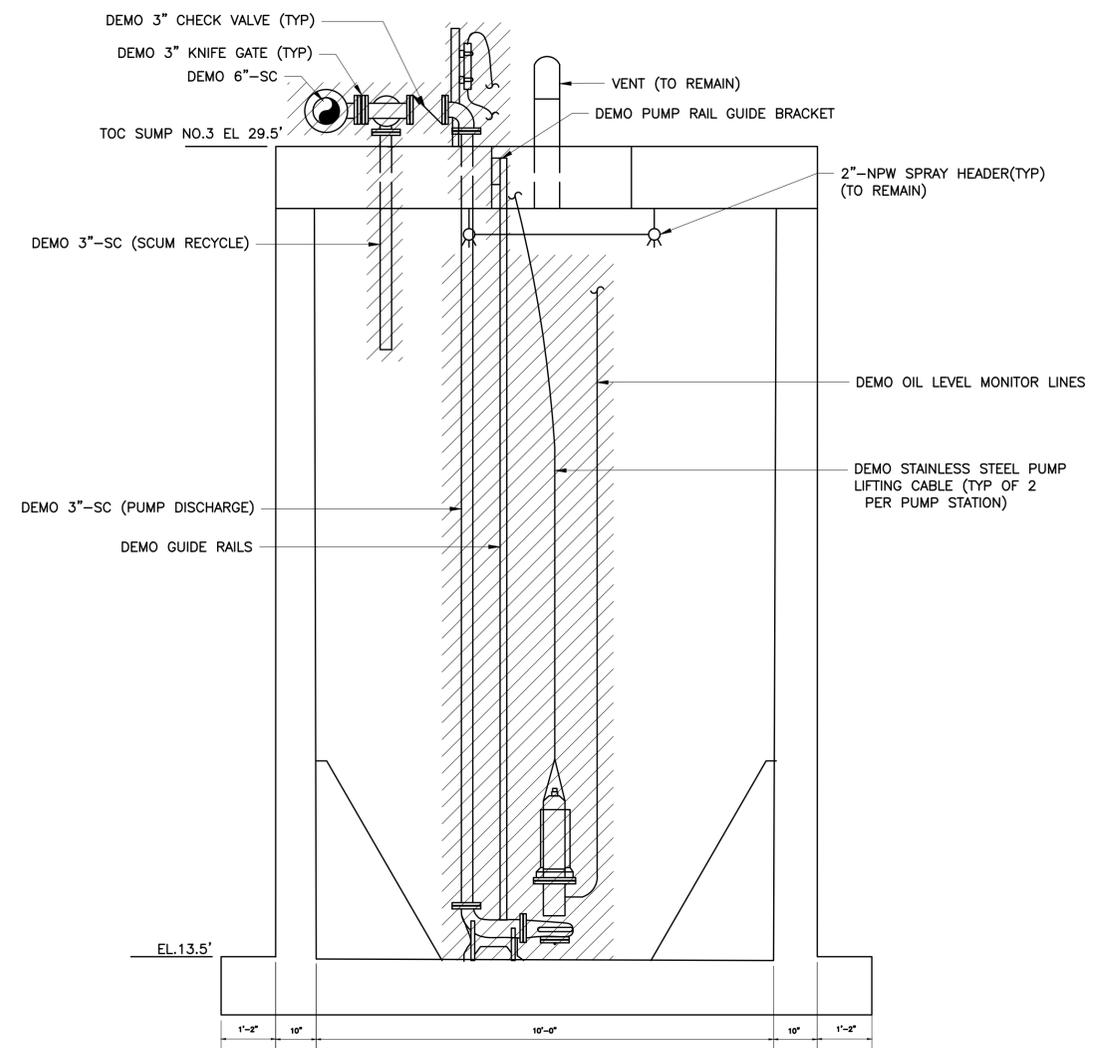
FOR REFERENCE ONLY ISSUED TO AID CONSTRUCTABILITY



SCUM PS NO.3 DEMOLITION  
**PLAN**  
 1/2"=1'-0"



SCUM PS NO. 3 PHOTO  
**DETAIL** **A**



SCUM PS NO.3 DEMOLITION  
**SECTION 1**  
 1/2"=1'-0"

**NOTES:**

1. AFTER DEMOLITION AND REMOVAL OF EXISTING PIPES, FILL RESULTING HOLES IN CONCRETE SLAB WITH HIGH-STRENGTH NON-SHRINK GROUT. FINISH FLUSH WITH ADJACENT SURFACE.
2. THE EXISTING NPW SYSTEM SHALL BE RE-USED. ANY DAMAGE TO THE NPW SYSTEM SHALL BE REPLACED IN KIND AT NO ADDITIONAL COST TO THE OWNER.

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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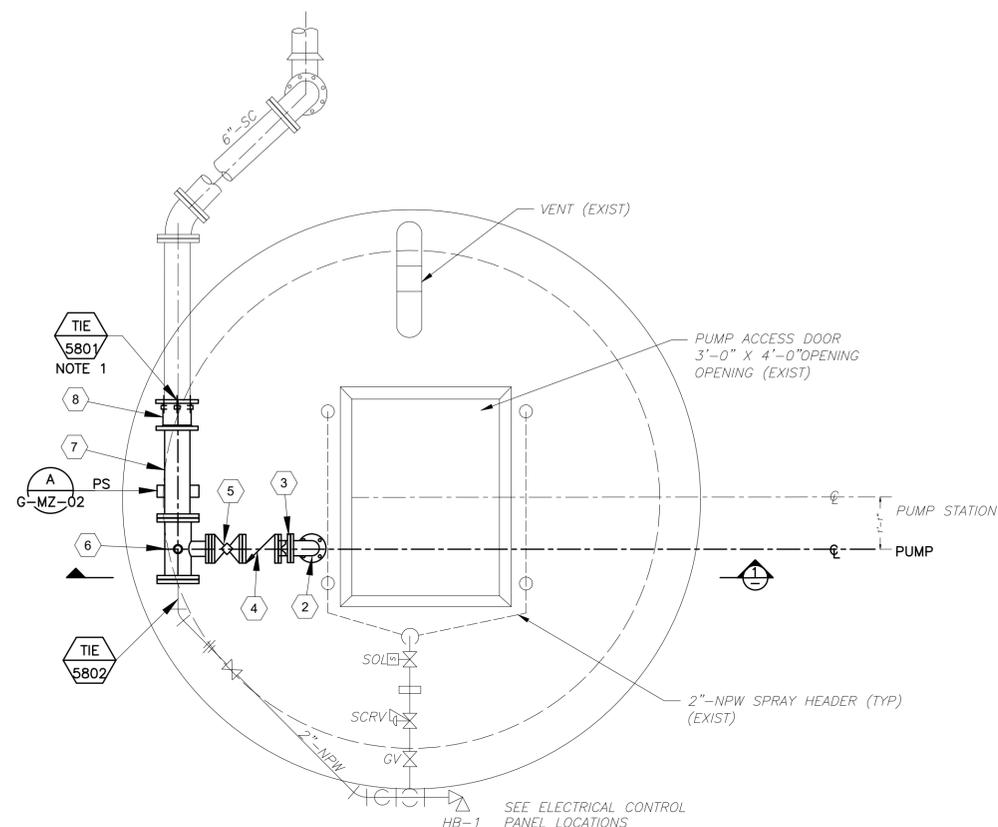
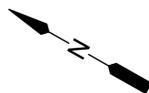
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SCUM PUMP STATION NO.3 DEMOLITION PLAN, SECTION AND DETAILS**  
 MECHANICAL

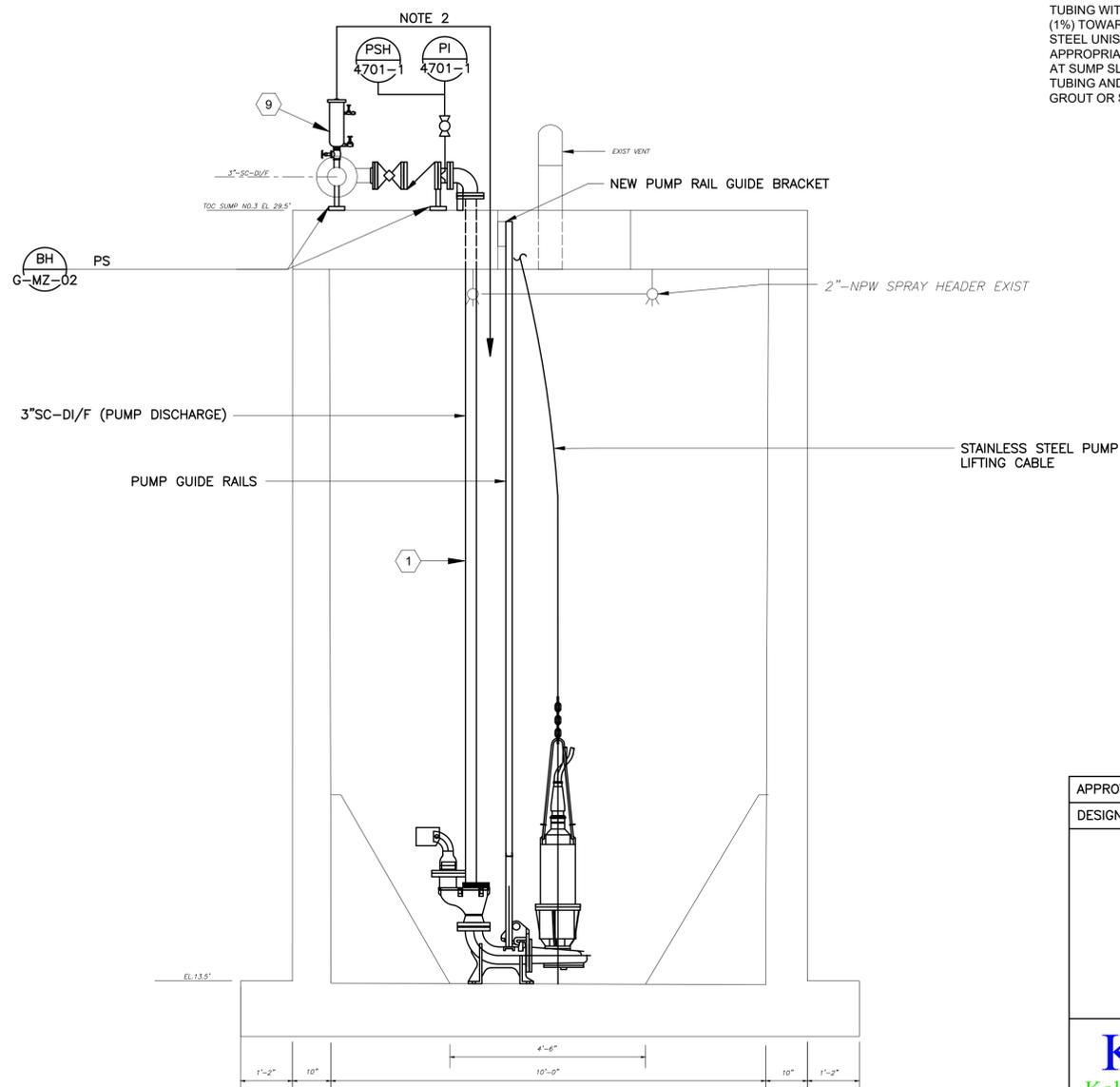
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 162 OF 271		

DWG NO  
 M-58-1



SCUM PS NO.3 DEMOLITION  
**PLAN**  
 1/2"=1'-0"

NO.	PIPE SCHEDULE
1	3" SPOOL PIECE, FLG X FLG, DI
2	3" ELBOW, FLG X FLG, DI
3	3" INLINE PRESSURE SENSOR
4	3" SWING CHECK VALVE, FLG X FLG
5	3" ECC. PLUG VALVE, FLG X FLG
6	6" X 6" X 3" TEE, FLG X FLG X FLG. INSTALL BLIND FLANGE WITH TAP FOR 2" NPW. INSTALL TAP FOR TAP FOR 2" AARV ON TOP
7	6" SPOOL PIECE, FLG X PE, DI
8	6" FLG. COUPLING ADAPTER (RESTRAINED)
9	2" AIR/VACCUM RELEASE VALVE



SCUM PS NO.3 DEMOLITION  
**SECTION 1**  
 1/2"=1'-0"

**NOTES:**

- CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING PIPING PRIOR TO FABRICATING ANY PROPOSED PIPING.
- ROUTE AARV BLOWOFF LINE FROM THE AARV TO THE SUMP USING 1/2- INCH STAINLESS STEEL TUBING. INSTALL THE TUBING WITH A CONTINUOUS SLOPE OF 1/8 INCH PER FOOT (1%) TOWARD THE SUMP. SUPPORT TUBING USING STAINLESS STEEL UNISTRUT CHANNEL AND SECURE IT WITH APPROPRIATE STAINLESS STEEL CLAMPS OR TUBING STRAPS. AT SUMP SLAB PENETRATION, INSTALL A SLEEVE AROUND THE TUBING AND SEAL THE ANNULAR SPACE WITH NON-SHRINK GROUT OR SUITABLE SEALANT.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

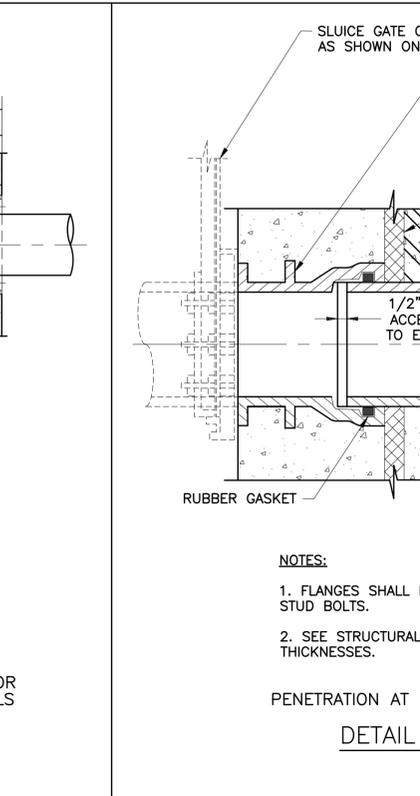
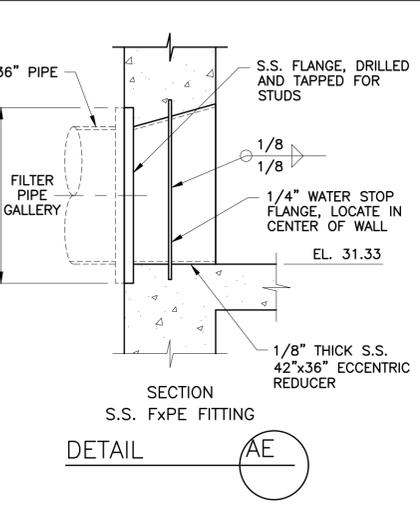
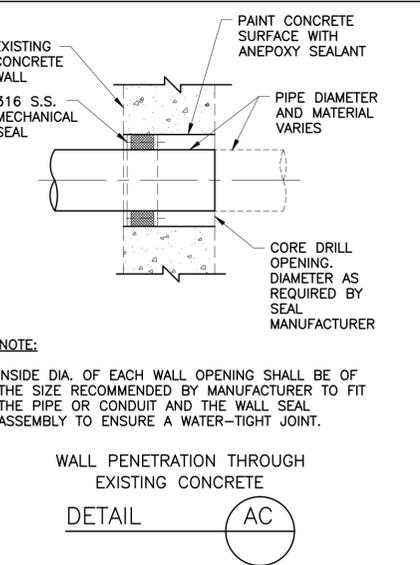
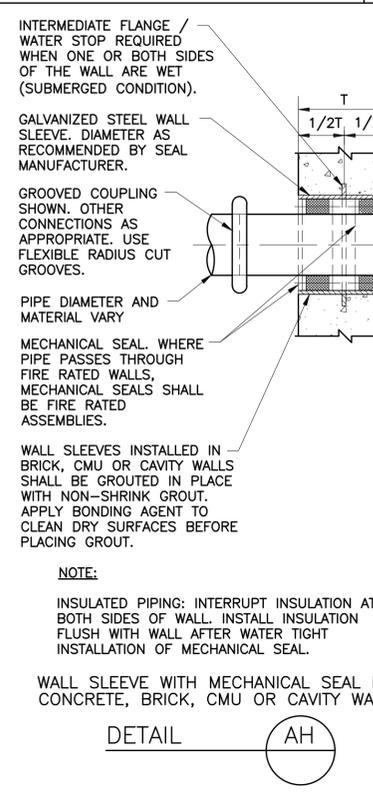
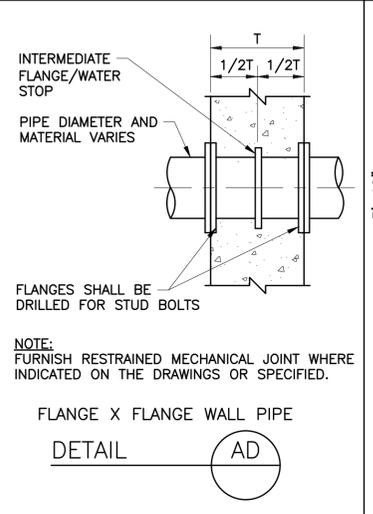
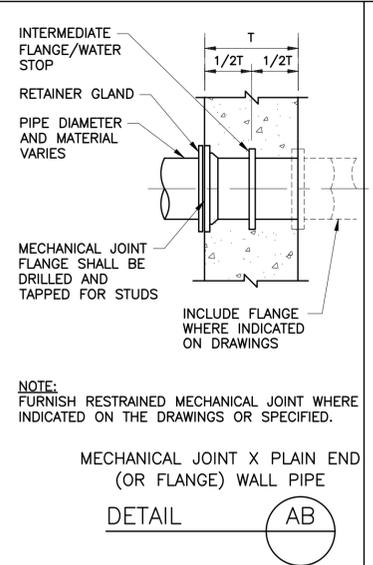
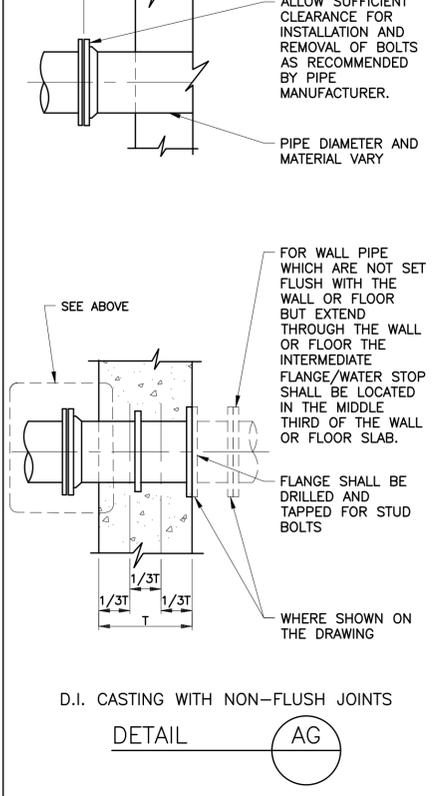
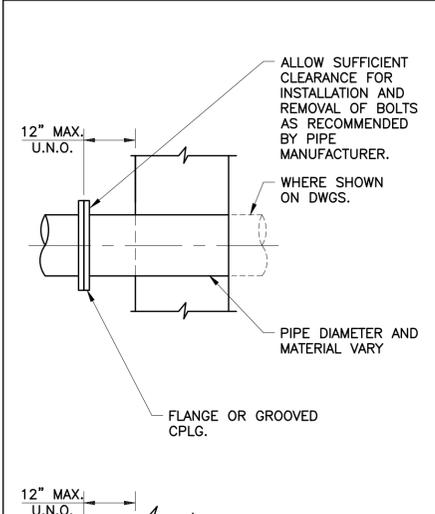
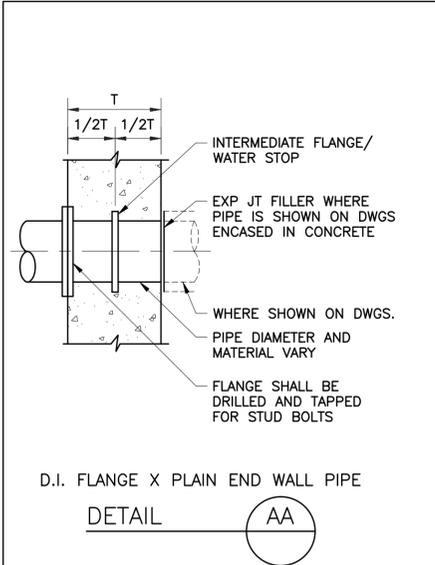
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SCUM PUMP STATION NO.3**  
**PROPOSED PLAN, SECTION**  
**AND DETAILS**  
 MECHANICAL

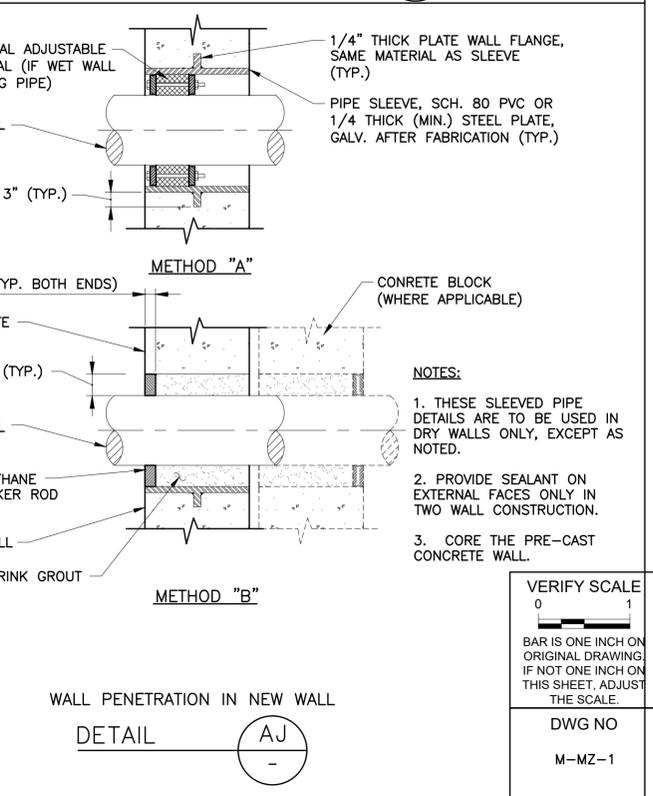
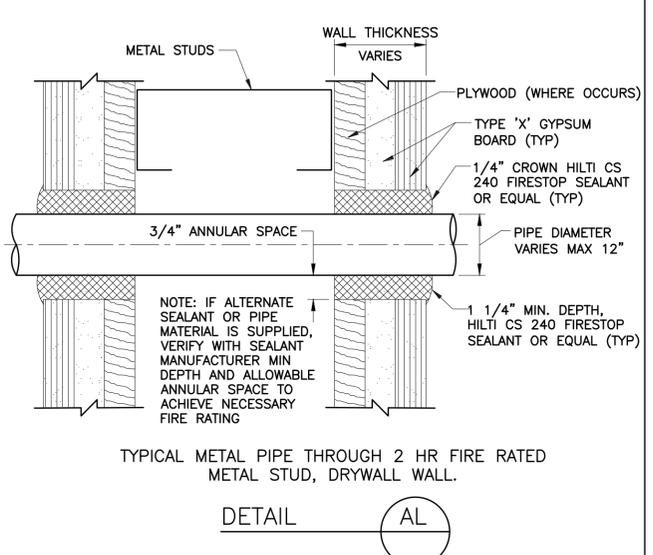
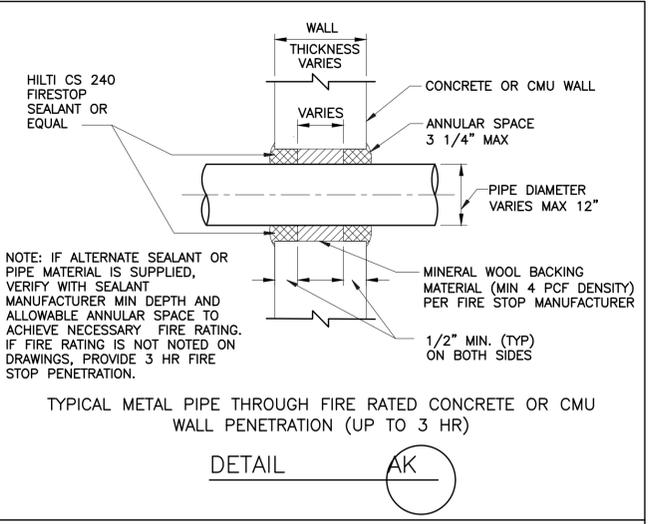
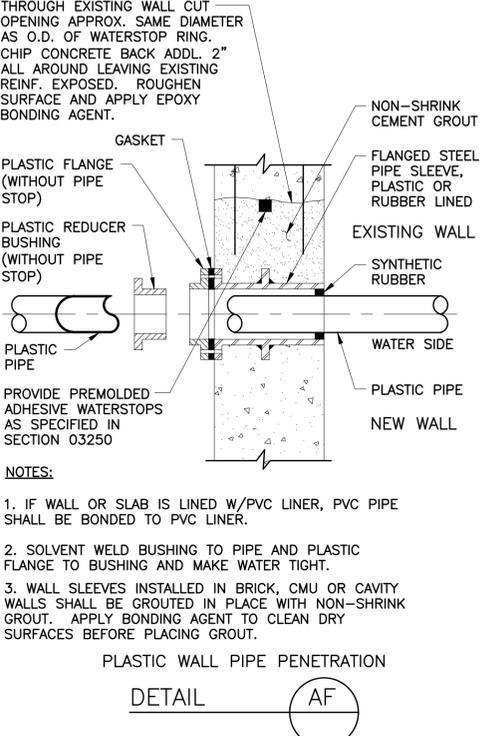
VERIFY SCALE  
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO M-58-2	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE NTS	
CITY OF HOUSTON PM TAHA LOTIA		
SHEET NO. 163 OF 271		

NO.	DATE	REVISION	APP.



PLASTIC PIPE SIZE	OUTSIDE DIAMETER	WALL SLEEVE SIZE	FLANGE DIAMETER
3/4"	1.050"	2"	6"
1"	1.315"	2"	6"
1 1/4"	1.660"	3"	7 1/2"
1 1/2"	1.900"	3"	7 1/2"
2"	2.375"	4"	9"
3"	3.500"	4"	9"
4"	4.500"	6"	11"
6"	6.625"	8"	13 1/2"
8"	8.625"	10"	16"



- THROUGH EXISTING WALL CUT OPENING APPROX. SAME DIAMETER AS O.D. OF WATERSTOP RING. CHIP CONCRETE BACK ADDL. 2" ALL AROUND LEAVING EXISTING REINF. EXPOSED. ROUGHEN SURFACE AND APPLY EPOXY BONDING AGENT.
1. IF WALL OR SLAB IS LINED W/PVC LINER, PVC PIPE SHALL BE BONDED TO PVC LINER.
2. SOLVENT WELD BUSHING TO PIPE AND PLASTIC FLANGE TO BUSHING AND MAKE WATER TIGHT.
3. WALL SLEEVES INSTALLED IN BRICK, CMU OR CAVITY WALLS SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. APPLY BONDING AGENT TO CLEAN DRY SURFACES BEFORE PLACING GROUT.

- NOTE: IF ALTERNATE SEALANT OR PIPE MATERIAL IS SUPPLIED, VERIFY WITH SEALANT MANUFACTURER MIN DEPTH AND ALLOWABLE ANNULAR SPACE TO ACHIEVE NECESSARY FIRE RATING. IF FIRE RATING IS NOT NOTED ON DRAWINGS, PROVIDE 3 HR FIRE STOP PENETRATION.
- NOTE: IF ALTERNATE SEALANT OR PIPE MATERIAL IS SUPPLIED, VERIFY WITH SEALANT MANUFACTURER MIN DEPTH AND ALLOWABLE ANNULAR SPACE TO ACHIEVE NECESSARY FIRE RATING.

- NOTES:**
- THE DETAILS ILLUSTRATED ON SHEETS STD-M-1 TO STD-M-21 ARE PART OF SEWPP - PHASE 1 80 MGD EXPANSION PROJECT STANDARD DETAILS.
  - THESE DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.
  - DETAILS NOT PERTAINING TO THE PROJECT ARE MARKED THUS N.I.C. (NOT IN CONTACT). NOT ALL N.I.C. DETAILS MAY BE MARKED.
  - DETAILS SHOWN ARE INTENDED TO COVER A WIDE RANGE OF PROJECT SITUATIONS. ALL DETAILS MAY NOT APPLY TO THIS PROJECT.
  - STAINLESS STEEL ADHESIVE CAPSULE ANCHORS SHALL BE A TWO-PART STUD AND CAPSULE RESIN ANCHORING SYSTEM. CAPSULES SHALL BE SELF-CONTAINED, SEALED GLASS UNITS CONTAINING PREMEASURED AMOUNTS OF RESIN, AGGREGATES, AND HARDENER, STUD ASSEMBLIES SHALL BE ALL-THREAD ANCHOR ROD WITH NUT AND WASHER. INSTALL WASHER IN FALL COMPLIANCE WITH THE MFR'S RECOMMENDATIONS. ANCHORS SHALL BE HILTI "HVA ADHESIVE ANCHOR", MOLLY "PARABOUND CAPSULE ANCHOR", OR EQUAL PROVIDE MINIMUM EMBEDMENT OF 10 BOLT DIAMETERS IN CONC.
  - PIPE TO WALL PENETRATION CLOSURES SHALL BE OF THE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING SYNTHETIC RUBBER LINKS SHAPED TO FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING. A PRESSURE PLATE SHALL BE PROVIDED UNDER EACH BOLT HEAD AND NUT WITH THE SEAL CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN WALL AND PIPE. WALL SEAL ASSEMBLY SHALL BE LINK SEAL AS MFR. BY THUNDERLINK CORP., WAYNE MICHIGAN, OR EQUAL. PROVIDE ESCUTCHEONS IN FINISHED SPACES.
  - STANDARD MECHANICAL DETAILS SHALL BE USED AT ALL APPLICABLE LOCATIONS, UNLESS NOTED OTHERWISE ON DRAWINGS. ALL DETAILS AND NOTES MARKED "TYPICAL" APPLY TO SIMILAR CONDITIONS THROUGHOUT THE PROJECT WHETHER SPECIFICALLY NOTED OR NOT.
  - PIPE PENETRATIONS ARE SHOWN AND CALLED OUT AS GOING THROUGH WALLS. THE SAME DETAIL MAY APPLY TO A PIPE PENETRATION THROUGH A FLOOR.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

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 TBPE Registration No. F-665  
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 Houston, Texas 77094  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
 SHEET 1

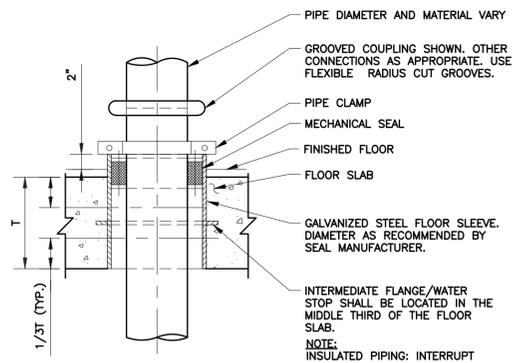
MECHANICAL

VERIFY SCALE  
 0 1  
 BAR IS ONE INCH ON ORIGINAL DRAWINGS IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER: R-000265-0154-4  
 DRAWING SCALE: NS  
 CITY OF HOUSTON PM: TAHA LOTIA  
 SHEET NO. 164 OF 271

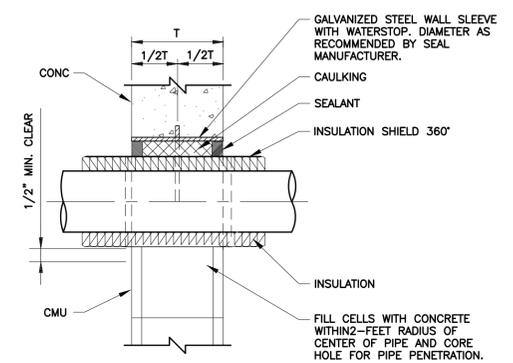
FOR CITY OF HOUSTON USE ONLY

NO. DATE REVISION APP.



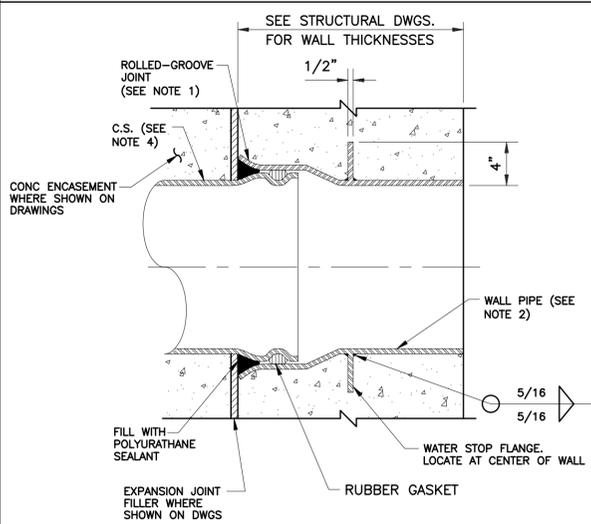
FLOOR SLEEVE WITH MECHANICAL SEAL

DETAIL BA



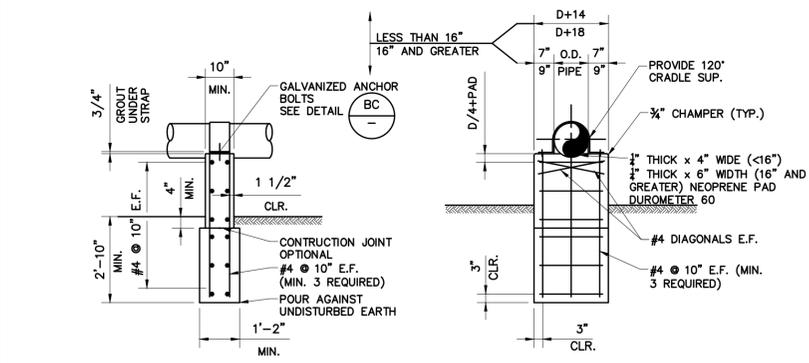
CAULKED SLEEVE FOR INSULATED PIPING

DETAIL BD

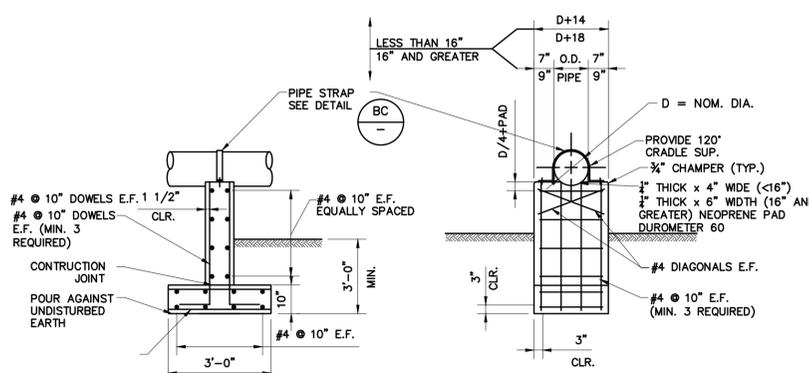


FABRICATED WALL PIPE

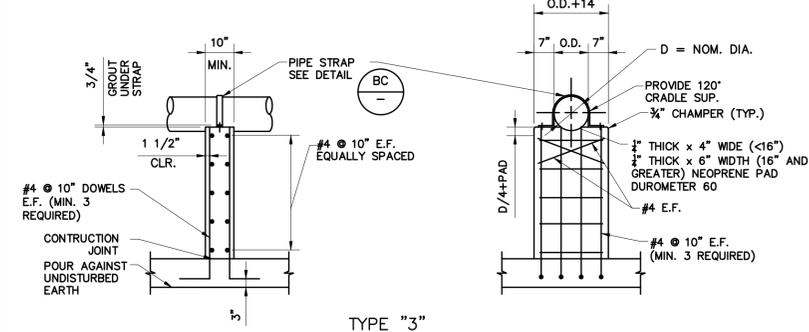
DETAIL BG



TYPE "1"



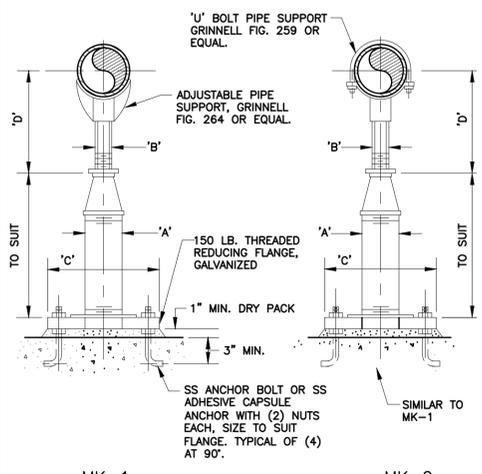
TYPE "2"



CONCRETE PIPE SUPPORT DETAIL

\*AS SHOWN FOR PIPES 16" DIAMETER OR SMALLER

DETAIL BB



MK-1

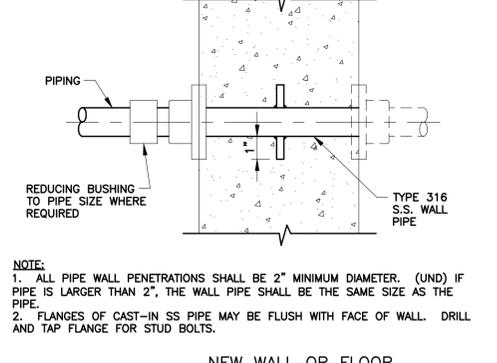
MK-2

ADJUSTABLE PIPE SUPPORT

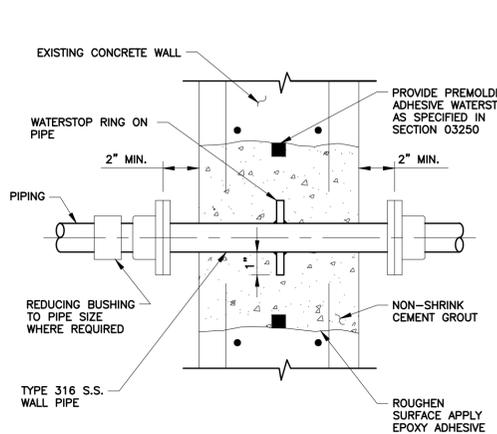
DETAIL BH

PIPE SIZE	APPROX DIMENSIONS IN INCHES				
	A	B	C	D MIN.	D MAX.
2 1/2	2 1/2	1 1/2	9	8	11 1/2
3	2 1/2	1 1/2	9	8 1/4	11 3/4
3 1/2	2 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	10 1/4	14
6	3	2 1/2	9	11 5/8	15 1/4
8	3	2 1/2	9	13 5/8	16 1/2
10	3	2 1/2	9	14 5/8	18 1/4
12	3	2 1/2	9	15 5/8	19 3/4
14	4	3	11	18 5/8	20 3/4
16	4	3	11	19 7/8	22 1/4
18	6	3 1/2	13 1/2	21 1/4	24
20	6	3 1/2	13 1/2	23 1/4	25 1/2
24	6	4	13 1/2	26 1/2	28 1/4
30	6	4	13 1/2	29 5/8	31 1/2
32	6	4	13 1/2	30 5/8	32 3/4
36	6	4	13 1/2	32 5/8	34 3/4

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



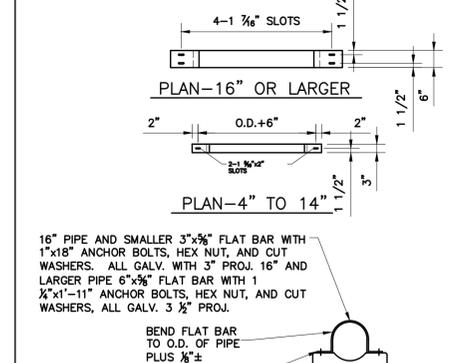
NEW WALL OR FLOOR



EXISTING WALL OR FLOOR

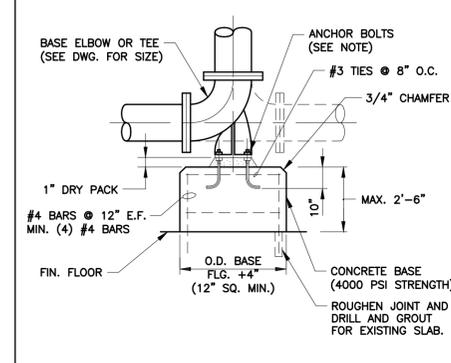
PIPE PENETRATION

DETAIL BE



PIPE HOLD DOWN STRAP DETAIL

DETAIL BC

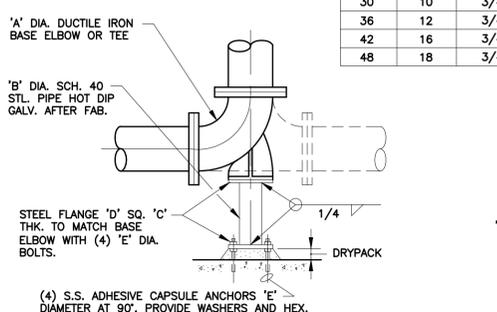


CONCRETE FLOOR SUPPORT

DETAIL BF

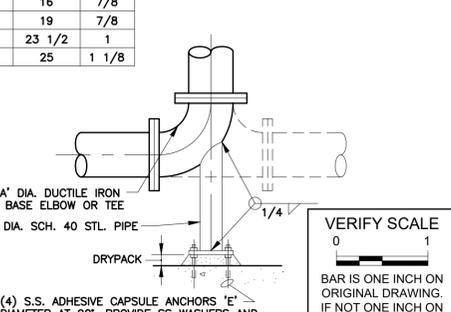
ELBOW OR TEE 'A' DIA.	DIMENSIONS IN INCHES			
	'B' DIA.	'C' THICK	'D' SQ.	'E' DIA.
4	2	3/8	6	3/8
6	2 1/2	3/8	7	3/8
8	4	1/2	9	3/8
10	4	1/2	9	3/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

NOTE: MATERIAL FINISH TO MATCH PIPE.



DUCTILE IRON ELBOW OR TEE FLOOR SUPPORT

DETAIL BI



STEEL



VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
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TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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Phone: (713)-365-9288  
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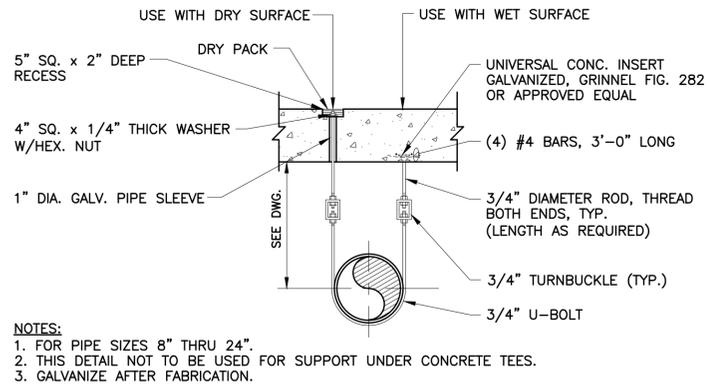
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
SHEET 2  
MECHANICAL

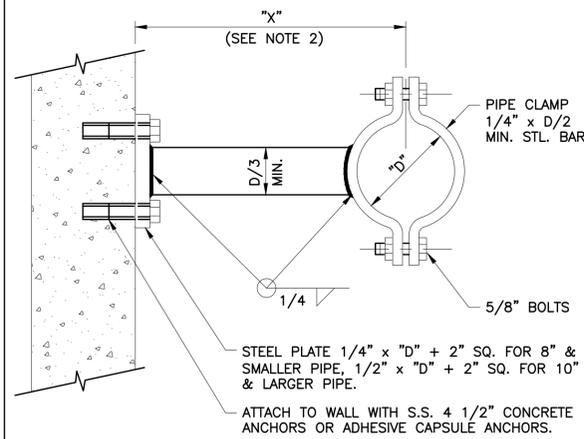
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	
DWG NO	CITY OF HOUSTON PM
M-MZ-2	TAHA LOTIA
SHEET NO.	165 OF 271

NO.	DATE	REVISION	APP.

PIPE HANGER RODS & SUPPORT SPACING					
PIPE DIA. (INCHES)	ROD DIA. (INCHES)	MAX. SUPPORT SPACING (FEET)		WEIGHT LIMIT (LBS.)	
		STL. PIPE	C.I./D.I. PIPE	TYPE 'A'	TYPE 'B'
1 & SMALLER	3/8	5	5	610	---
1 1/2 TO 2	3/8	5	5	610	---
2 1/2 TO 3 1/2	1/2	10	10	1130	---
4 TO 5	5/8	10	10	1430	---
6	3/4	10	10	1430	3800
8,10,12	7/8	10	10	---	3800
14,16	1	10	10	---	3800



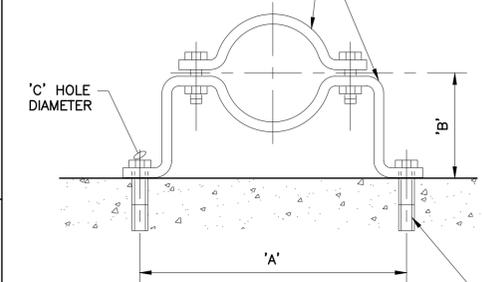
DUAL ROD PIPE HANGER  
DETAIL CA



PIPE SWAY BRACE  
DETAIL CB

DIMENSIONS IN INCHES					
PIPE DIA.	'A'	'B' SEE NOTE 3 BELOW	'C' HOLE DIA.	'D' FLAT BAR SIZE	LOAD RATING LBS.*
3/4	5-15/16	2-1/2	7/16	3/16 X 1-1/4	300
1	6-1/4	2-5/8	7/16	3/16 X 1-1/4	300
1-1/4	6-11/16	2-3/4	7/16	3/16 X 1-1/4	300
1-1/2	6-15/16	3	7/16	3/16 X 1-1/4	300
2	8-5/16	3-3/16	7/16	1/4 X 1-1/4	500
2-1/2	8-7/8	3-7/16	7/16	1/4 X 1-1/4	500
3	9-1/8	3-3/4	7/16	1/4 X 1-1/4	500
3-1/2	10-1/16	4	7/16	1/4 X 1-1/4	500
4	10-9/16	4-1/4	9/16	1/4 X 1-1/2	600
5	11-3/4	4-3/4	9/16	1/4 X 1-1/2	600
6	14-3/8	5-5/16	9/16	3/8 X 1-1/2	850
8	16-5/8	6-5/16	9/16	3/8 X 1-1/2	850

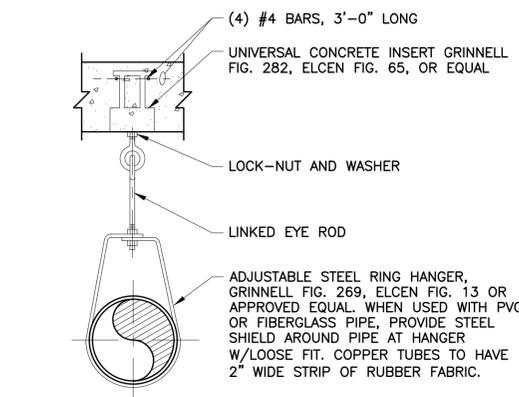
\* SAFETY FACTOR OF 5



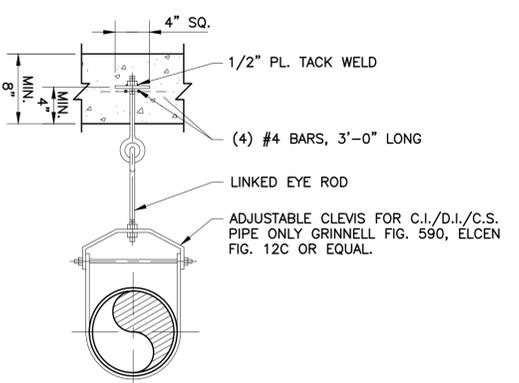
S.S. ADHESIVE CAPSULE ANCHOR (TYP.) 3/8" DIA. FOR 3/4" TO 3" PIPE 1/2" DIA. FOR 4" TO 8" PIPE.

NOTES:  
1. WHERE SUBMERGED OR LOCATED ON OR ABOVE TOP OF WALL OF HYDRAULIC STRUCTURE, PIPE CLAMP, WASHER AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL.  
2. WHEN USED WITH PVC OR FIBERGLASS PIPE PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC.  
3. FOR FLANGED PIPING INCREASE 'B' DIMENSION AS REQUIRED.

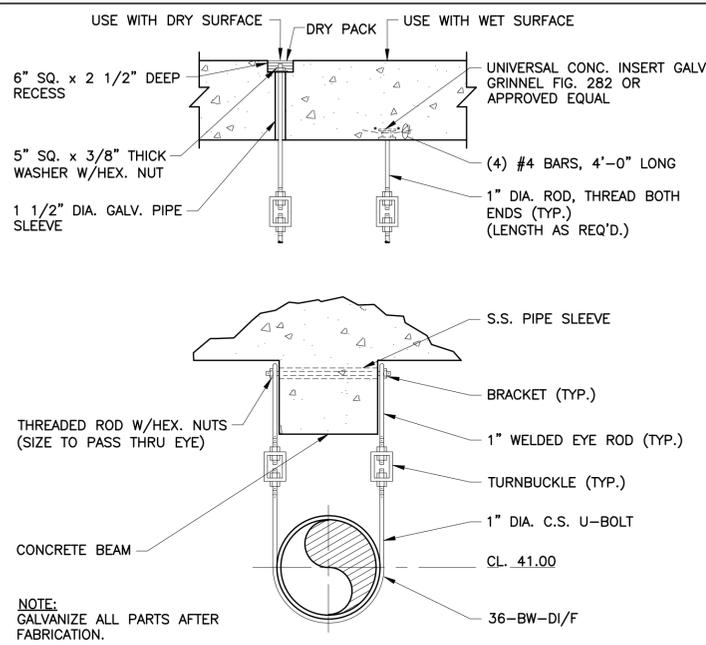
PIPE CLAMP  
DETAIL CE



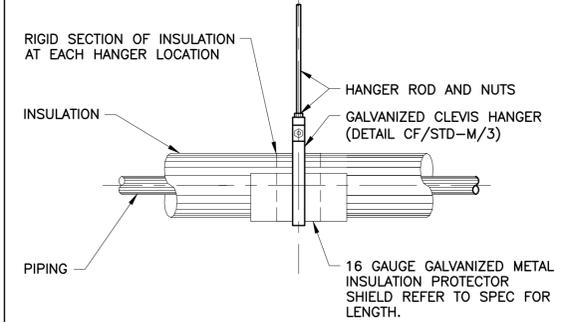
TYPE 'A' FOR HANGER RODS  
3/4" DIAMETER AND SMALLER



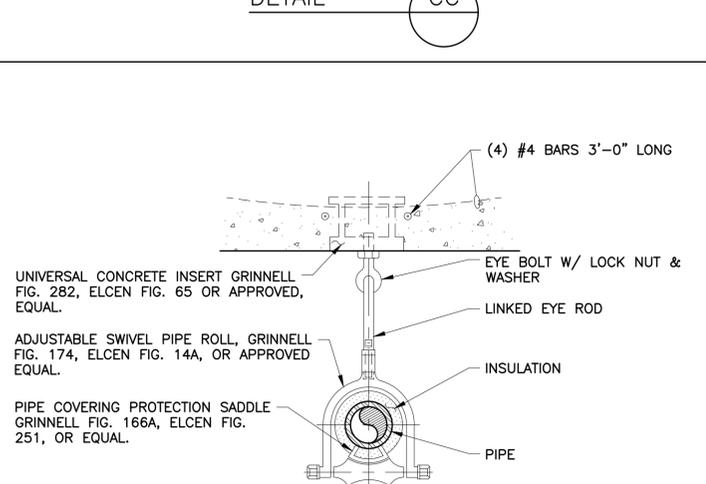
HANGER FOR INSULATED PIPE  
DETAIL CG



B.W. HEADER HANGER ALT. B  
DETAIL CC

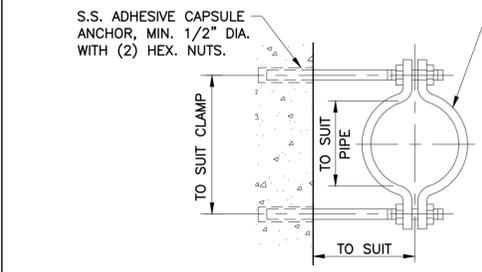


HANGER SUPPORT SYSTEM INSULATED HORIZONTAL PIPING  
DETAIL CD



SLEEVE AND COVER PLATE  
DETAIL CH

MIN. BAR 1-1/2" x 1/4" PIPE CLAMP WHEN USED WITH PVC OR FIBERGLASS PIPE PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP WITH LOOSE FIT WRAP COPPER TUBES WITH 2" WIDE STRIP OF RUBBER FABRIC.



NOTE:  
GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED OR LOCATED ON OR ABOVE TOP OF WALL OF HYDRAULIC STRUCTURE, PIPE CLAMP, WASHER, AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL.

PIPE CLAMP  
DETAIL CI

VERIFY SCALE	0 1
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	
DWG NO	M-MZ-3

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

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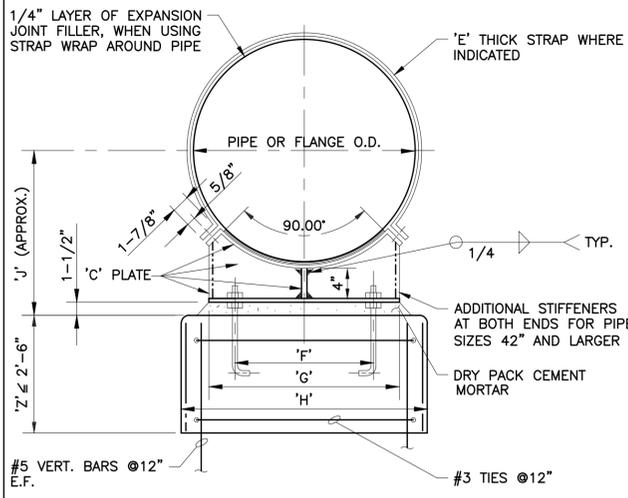
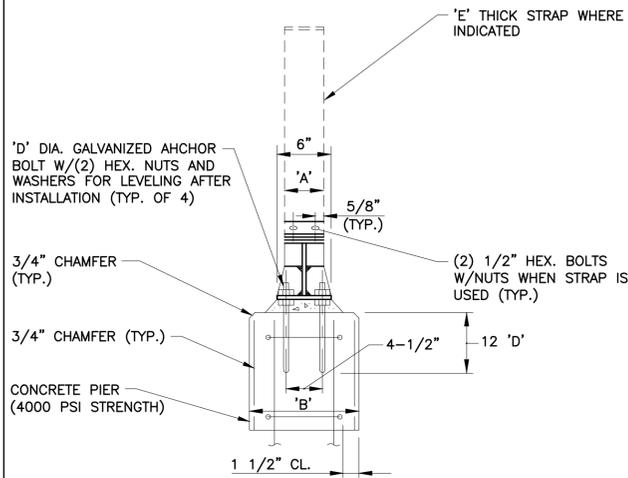
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
SHEET 3  
MECHANICAL

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	166 OF 271

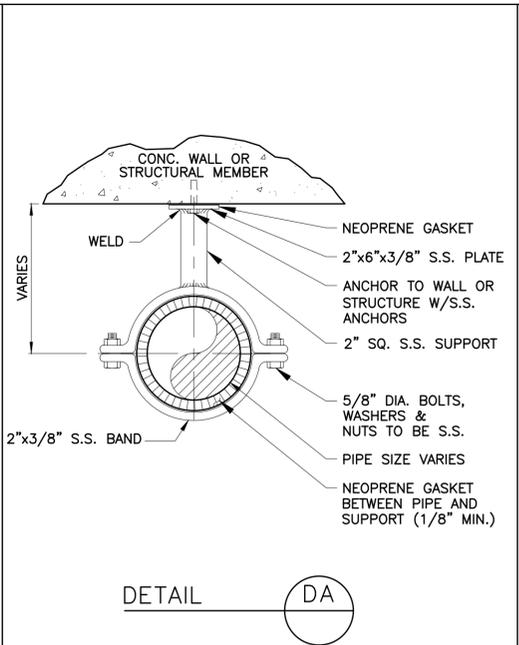
NO.	DATE	REVISION	APP.

NOMINAL PIPE SIZE	DIMENSIONS IN INCHES														
	SUPPORTING PIPE						FLANGE								
	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'F'	'G'	'H'	'J'		
6	4	12	3/8	5/8	1/4	4	8	14	10	6	?	11	16	13	
8	4	12	3/8	5/8	1/4	5	9	?	14	11	7	?	13	18	14
10	4	12	3/8	5/8	1/4	6	11	16	12	9	15	20	15		
12	4	12	3/8	5/8	1/4	7	13	18	13	10	17	22	16		
14	4	12	3/8	5/8	1/4	8	13	18	14	11	18	23	17		
16	4	12	3/8	5/8	1/4	9	15	21	15	12	20	26	18		
18	4	12	3/8	5/8	1/4	10	16	22	16	13	21	26	19		
20	5	12	3/8	5/8	3/8	10	18	24	17	15	23	28	21		
22	5	12	3/8	5/8	3/8	12	19	24	18	16	25	30	22		
24	5	12	3/8	5/8	3/8	13	21	26	19	16	26	32	23		
26	5	12	3/8	5/8	3/8	14	22	28	20	18	28	34	24		
30	5	12	3/8	5/8	3/8	16	25	30	22	20	31	36	26		
34	5	15	3/8	5/8	3/8	18	28	33	24	22	35	41	29		
36	6	15	3/8	5/8	3/8	19	29	34	25	24	36	42	30		
42	6	18	1/2	1	3/8	21	33	39	28	27	41	47	33		
48	6	18	1/2	1	3/8	24	38	44	31	30	46	52	37		
54	6	18	1/2	1	3/8	28	42	48	34	34	50	56	40		
60	6	18	1/2	1	3/8	28	42	54	37	34	50	56	40		

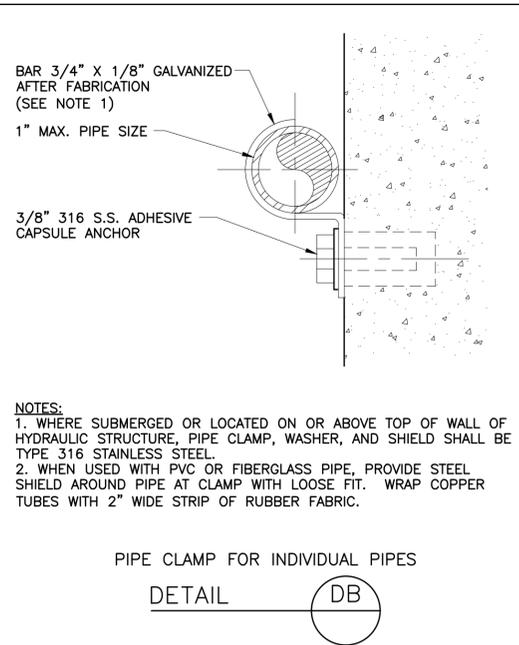


**NOTES:**  
 1. WHEN SUPPORTING PIPE & FLANGE ALTERNATELY ON THE SAME LINE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSIONS 'H' FOR FLANGE SUPPORT.  
 2. GALVANIZE AFTER FABRICATION.  
 3. WHERE UTILIZED UNDER BENDS, OR OTHERWISE SKEWED, DIMENSIONS TO BE INCREASED & SADDLE FABRICATED AS ACCEPTABLE TO ENGINEER.  
 4. IF 'Z' IS 6" OR LESS, OMIT REINF. STEEL. ANCHOR BOLTS TO PROJECT MIN. 6" INTO FLOOR.

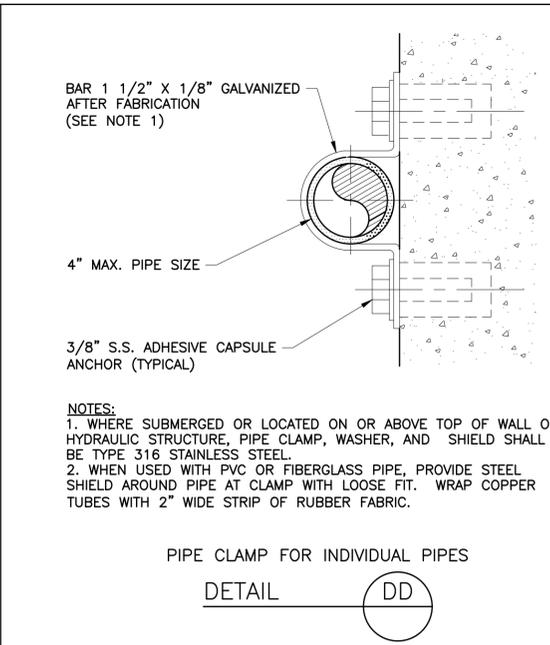
SADDLE PIPE SUPPORT WITH OR WITHOUT STRAP  
 DETAIL (DC)



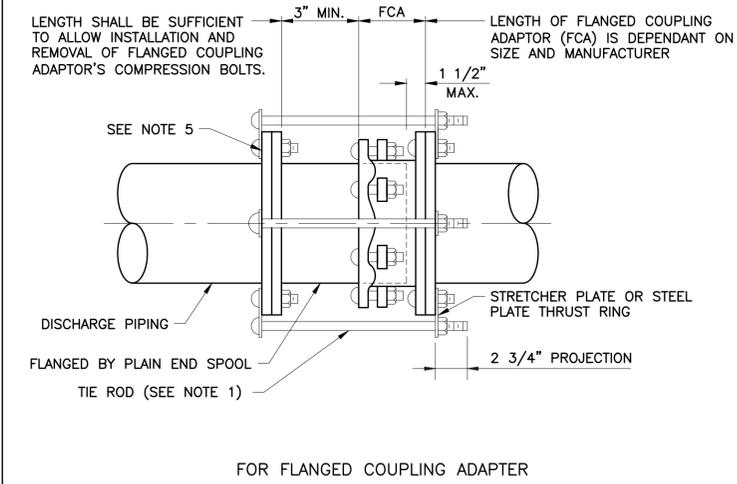
PIPE CLAMP FOR INDIVIDUAL PIPES  
 DETAIL (DA)



PIPE CLAMP FOR INDIVIDUAL PIPES  
 DETAIL (DB)

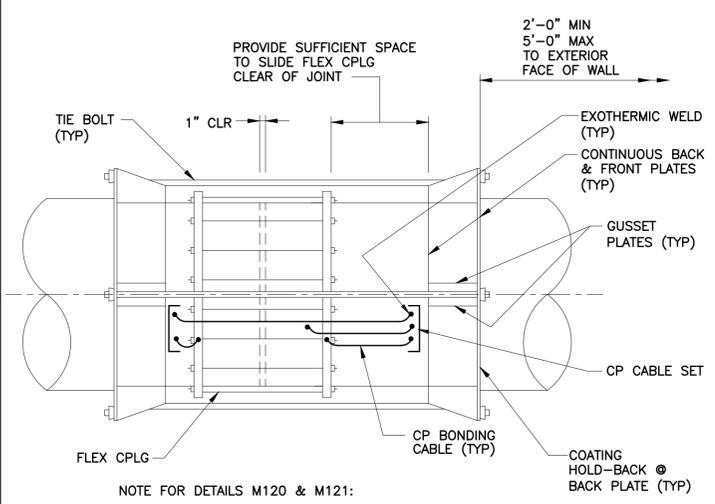


PIPE CLAMP FOR INDIVIDUAL PIPES  
 DETAIL (DD)



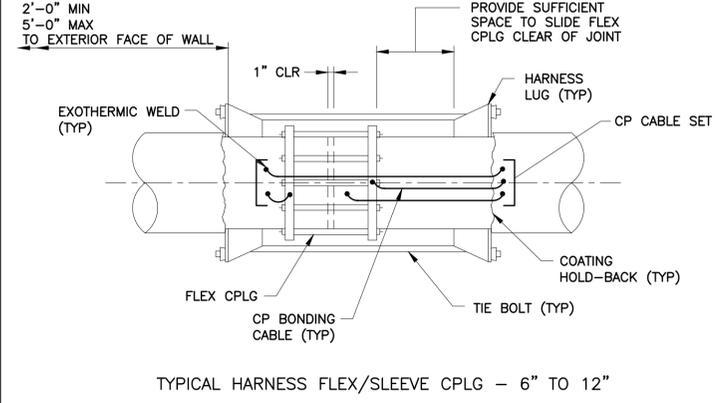
**NOTES:**  
 1. PROVIDE NUMBER AND DIAMETER OF TIE RODS PER AWWA MANUAL M-11 REQUIREMENTS. EVENLY SPACE INSTALLATION OF THE TIE RODS. LENGTH OF TIE RODS TO BE DETERMINED BY CONTRACTOR BASED ON SIZE AND FLANGED COUPLING ADAPTOR AND FINAL LENGTH OF SPOOL PIECE.  
 2. PROVIDE STRETCHER PLATE FOR ATTACHMENT OF TIE RODS. FOR SIZE SEE AWWA M-11 MANUAL.  
 3. MATERIALS - BOLTS: ASTM A-307 HOT DIP GALVANIZED. STRETCHER PLATE: ASTM A36 STEEL. HOT DIP GALVANIZED. FLEXIBLE COUPLING: PER SPECIFICATIONS

THRUST HARNESS FOR FLEXIBLE CONNECTION  
 DETAIL (DE)



**NOTE FOR DETAILS M120 & M121:**  
 1. HARNESS LUG DESIGN CRITERIA PER AWWA MANUAL M11.  
 2. EXCEPT FOR INSULATING CPLG'S, EACH FLEX CPLG SLEEVE & FOLLOWER RINGS SHALL BE ELECTRICALLY BONDED TO THE PIPE WITH TYPE CP COPPER CATHODIC PROTECTION CABLES.  
 3. SEE ALSO CP DRAWINGS AND RELATED SPECIFICATIONS.

TYPICAL HARNESS FLEX/SLEEVE CPLG - 14" AND LARGER



TYPICAL HARNESS FLEX/SLEEVE CPLG - 6" TO 12"

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

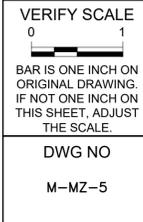
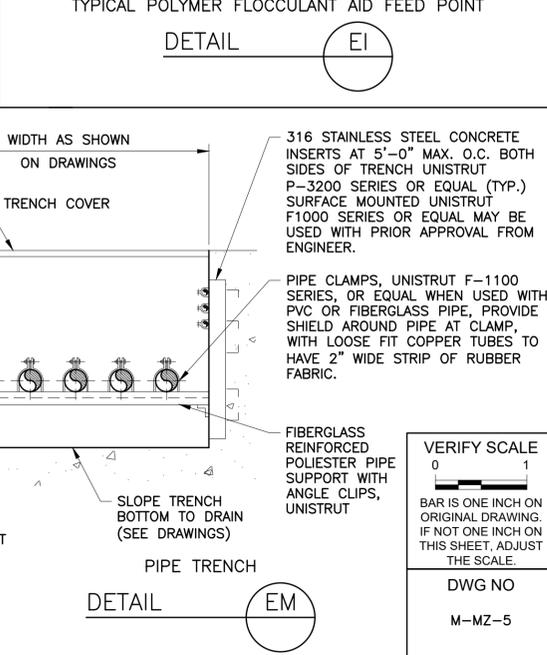
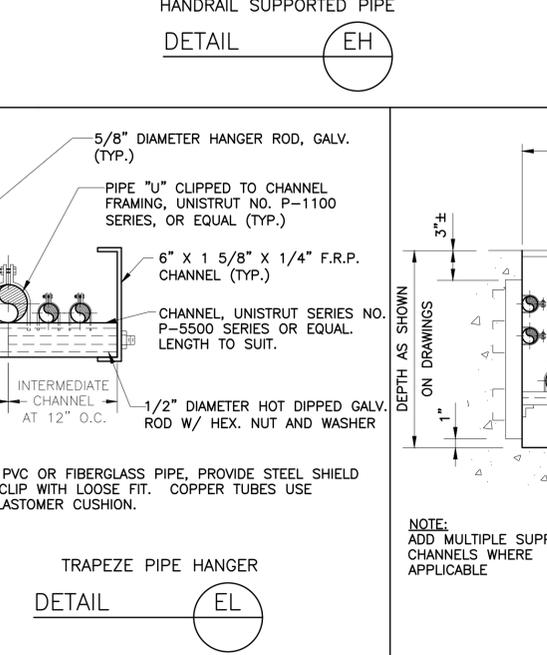
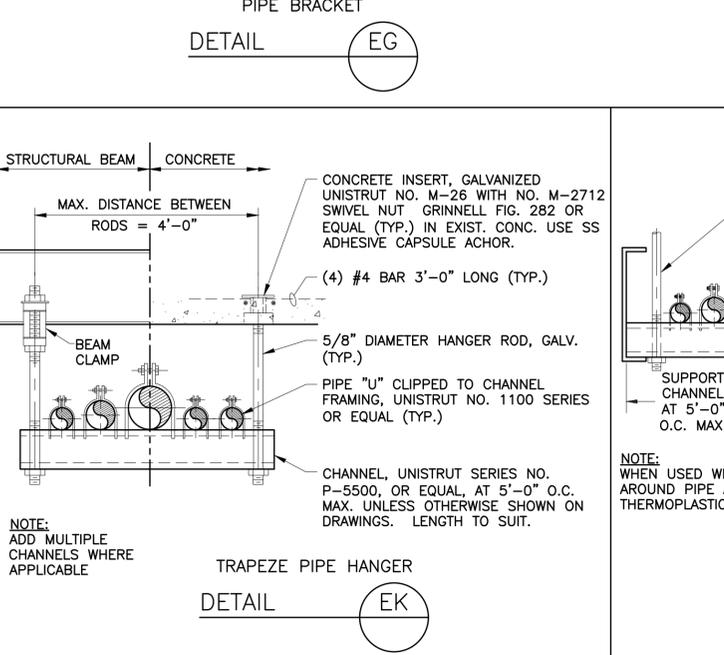
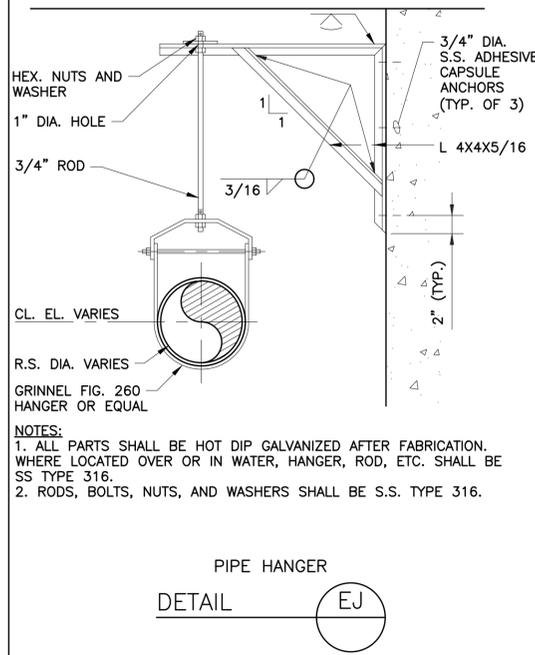
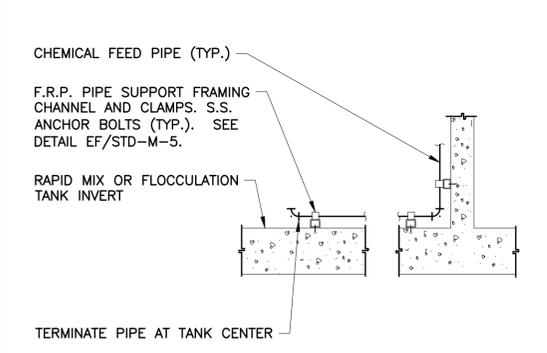
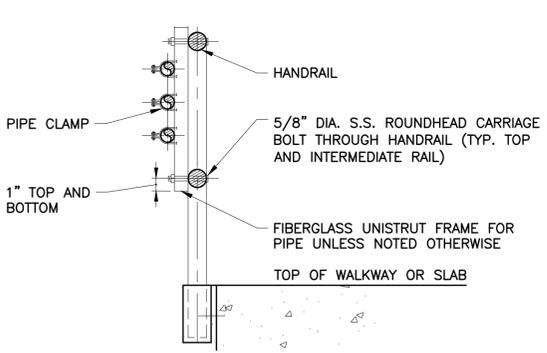
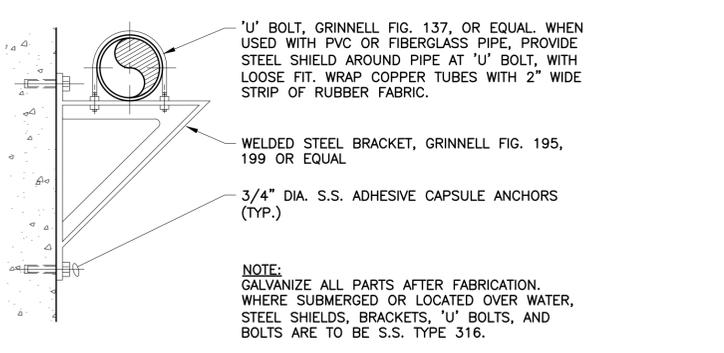
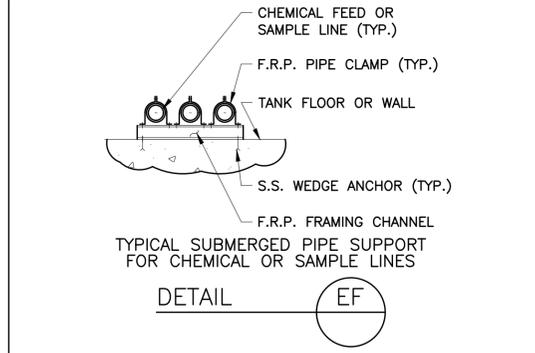
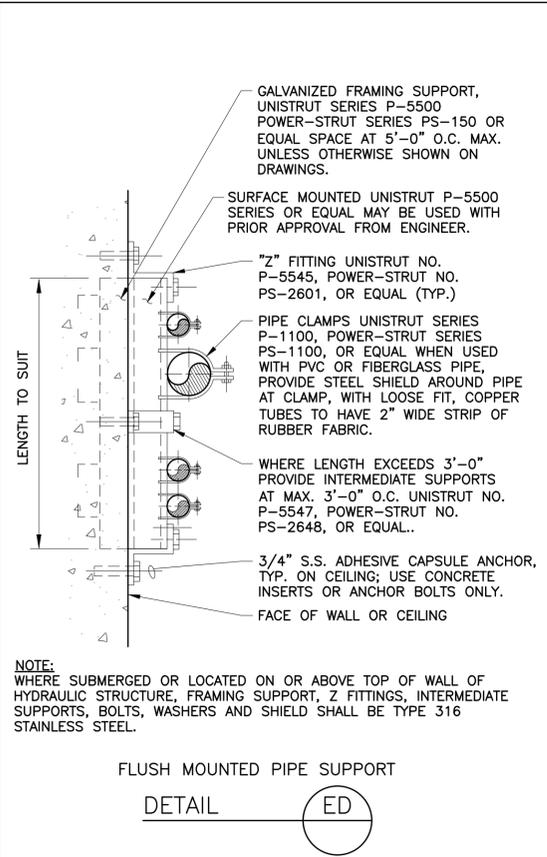
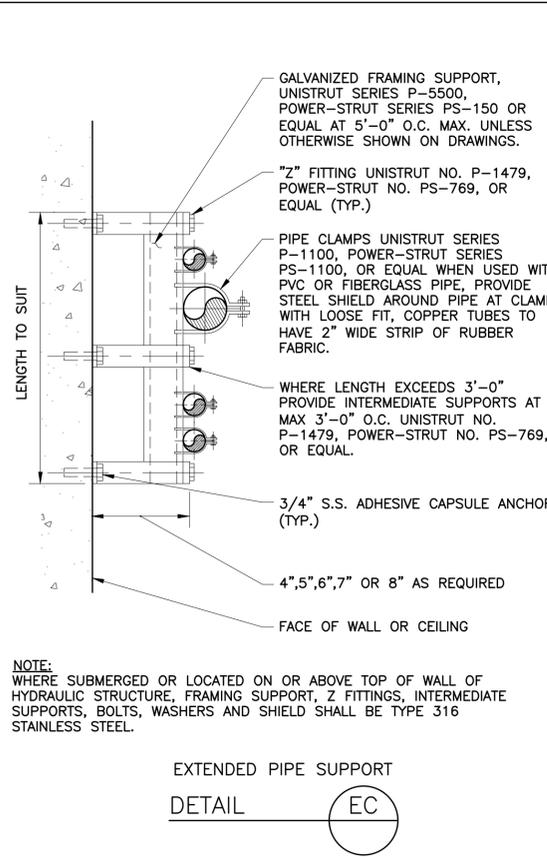
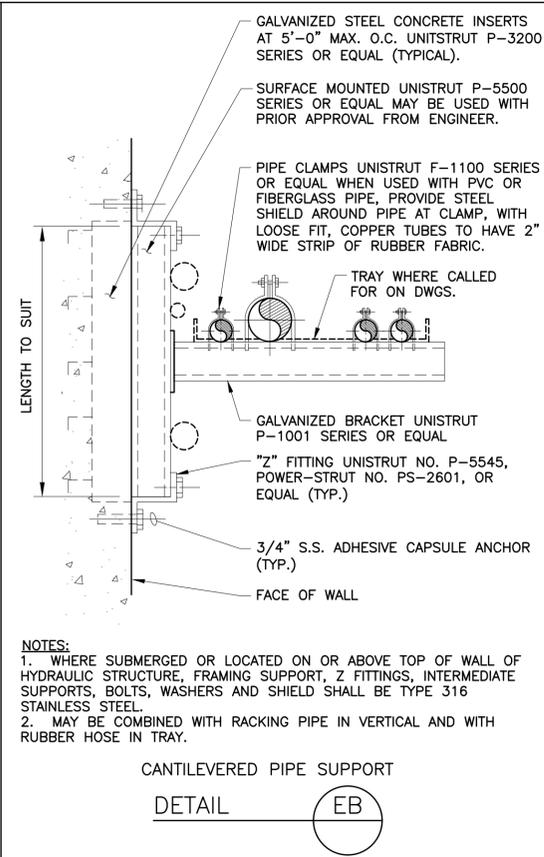
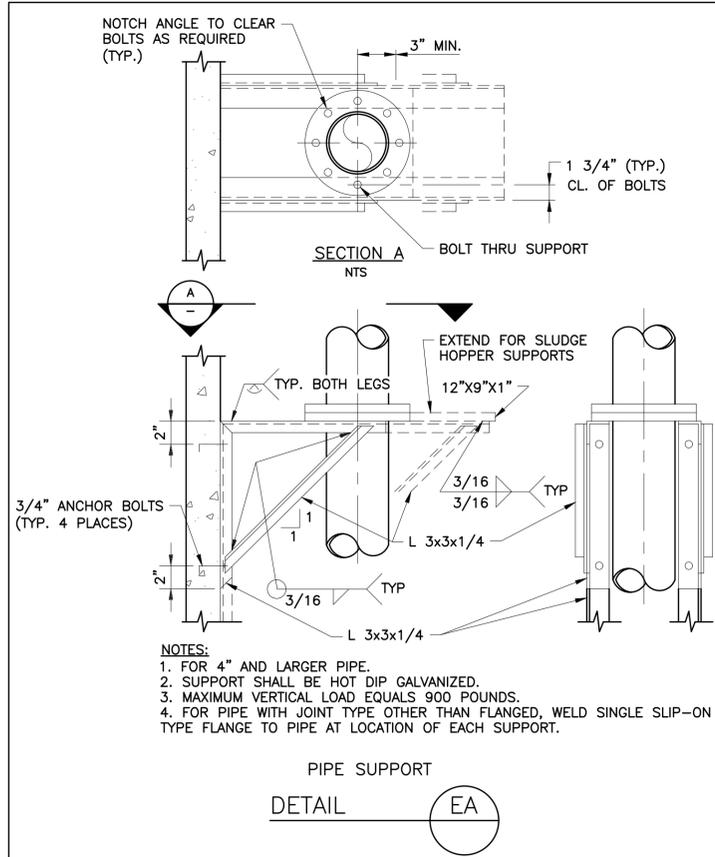
**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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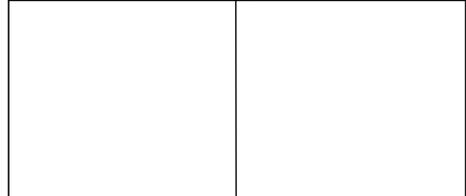
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS SHEET 4**  
 MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE NS	
DWG NO M-MZ-4	CITY OF HOUSTON PM TAHA LOTIA	SHEET NO. 167 OF 271

NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM



**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

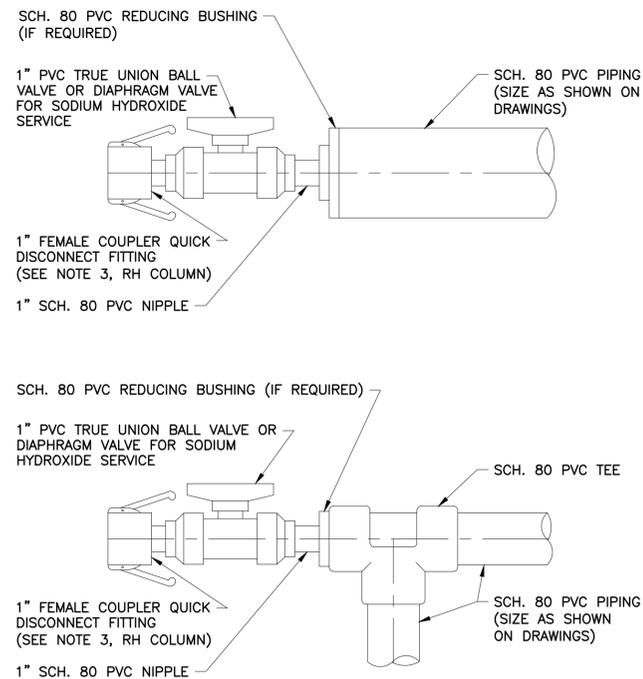
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**STANDARD DETAILS**  
SHEET 5

MECHANICAL

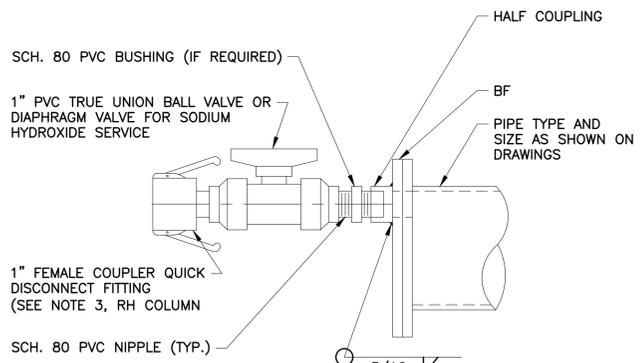
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 168 OF 271	

NO.	DATE	REVISION	APP.



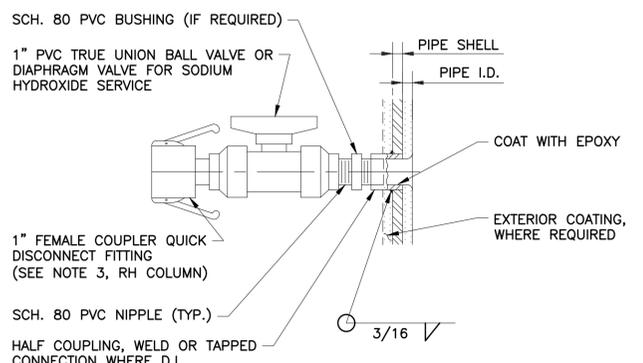
FLUSHING CONNECTIONS FOR CHEMICAL FEED SERVICE

DETAIL (FA)

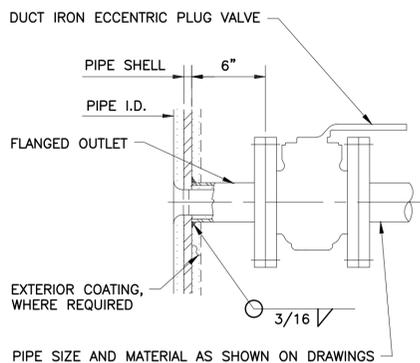


FLUSHING CONNECTION (FD)

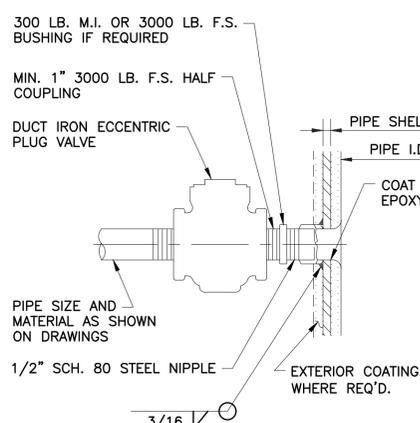
NOTE: FLUSHING CONNECTION SHALL BE 1" DIA. UNLESS SHOWN OTHERWISE



FLUSHING CONNECTION (FH)

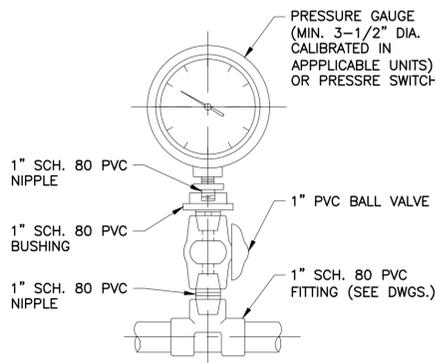


4" AND LARGER

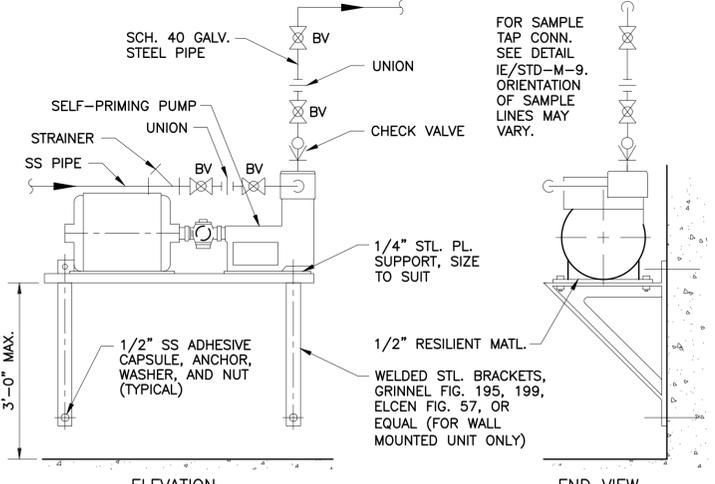


3" AND SMALLER

PIPE LINE CONNECTION (FE)

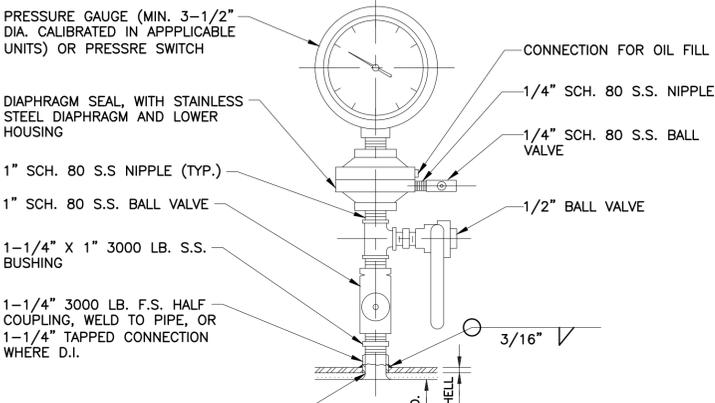


PRESSURE GAUGE OR SWITCH WITHOUT DIAPHRAGM SEAL (FI)



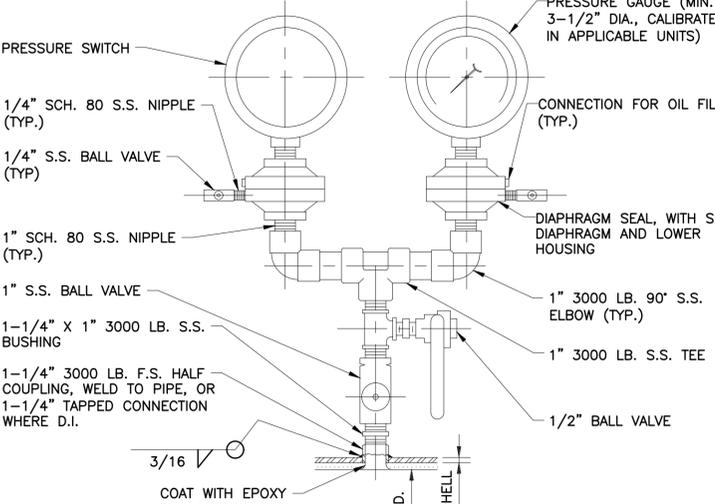
SAMPLE PUMP (FB)

NOTES:  
1. BRACKETS AND SUPPORT PLATE TO BE GALVANIZED AFTER FABRICATION.  
2. PIPE SIZES SHOWN ON DWGS.



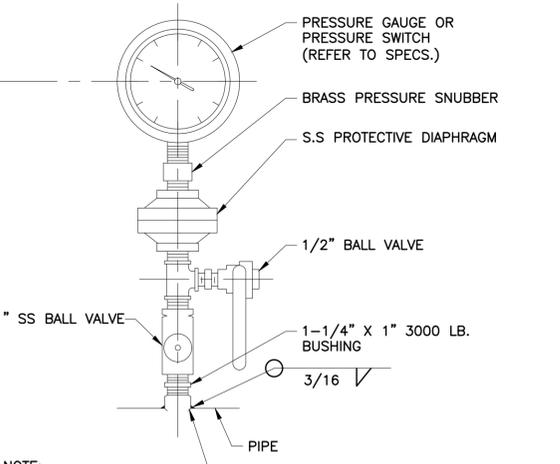
PRESSURE GAUGE OR PRESSURE SWITCH WITH DIAPHRAGM SEAL (FF)

NOTE: SEE NOTES 1 AND 2.



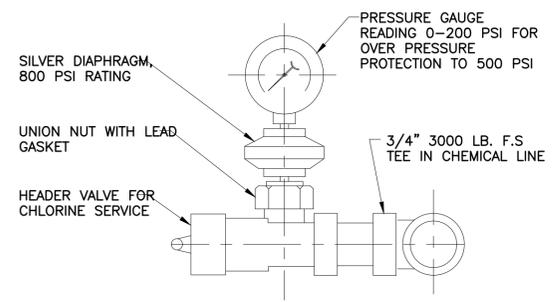
PRESSURE GAUGE AND PRESSURE SWITCH WITH DIAPHRAGM SEAL (FJ)

NOTE: SEE NOTES 1 AND 2.



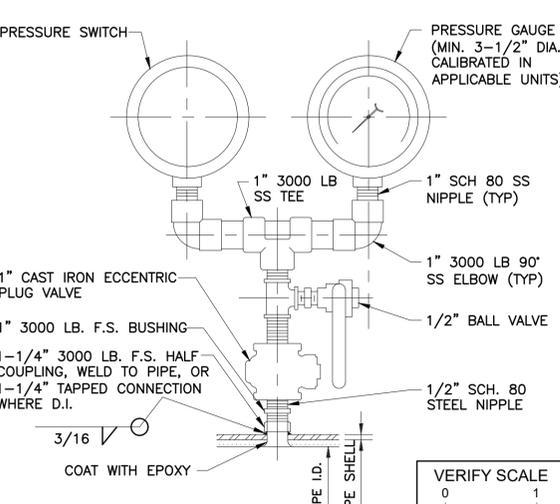
PRESSURE GAUGE OR SWITCH WITH DIAPHRAGM SEAL (FC)

NOTE: USE DIAPHRAGM SEALS AND VALVES FOR ALL CHEMICALS, SLUDGE AND OTHER LIQUIDS CONTAINING SOLIDS.



CHLORINE SERVICE PRESSURE GAUGE OR SWITCH WITH DIAPHRAGM SEAL (FG)

NOTE: FOR USE IN GAS AND LIQUID PRESSURE LINES (FOR CHLORINE SERVICE ONLY).



PRESSURE GAUGE AND PRESSURE SWITCH WITHOUT DIAPHRAGM SEAL (FK)

NOTE: SEE NOTES 1 AND 2.

NOTES:  
1. USE PVC PIPE, VALVES, DIAPHRAGMS, AND FITTINGS WHERE SHOWN ON DRAWINGS.  
2. WHERE SWITCH AND/OR GAUGE IS CONNECTED TO A PVC PIPE USE DETAIL FI/STD-M-6.  
3. FEMALE COUPLER SHALL BE PVDF W/ SS CAMS AND BE COMPATIBLE WITH PROCESS FLUID AS MANUFACTURED BY THE DYMAX GROUP, PLEASANTON, CA., OR EQUAL.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

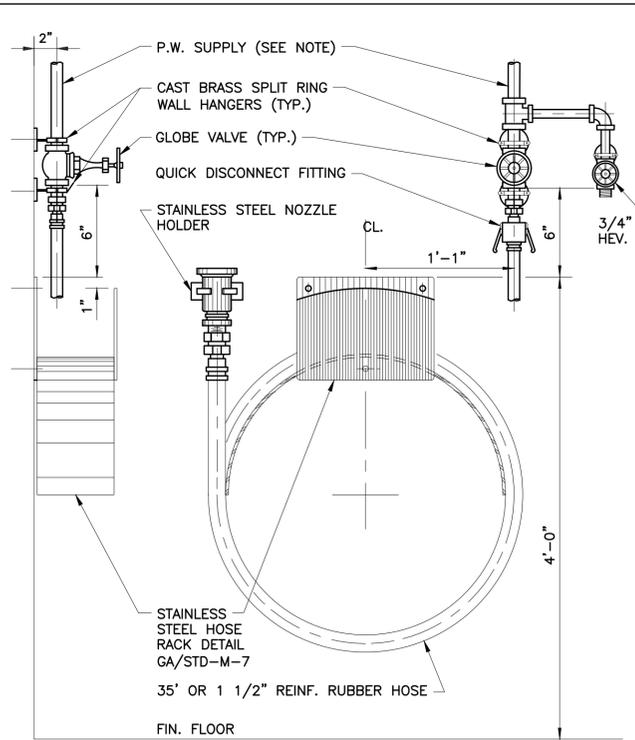
**KGI**  
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PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
SHEET 6  
MECHANICAL

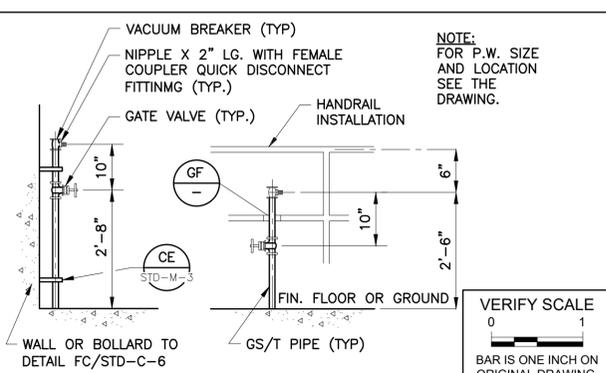
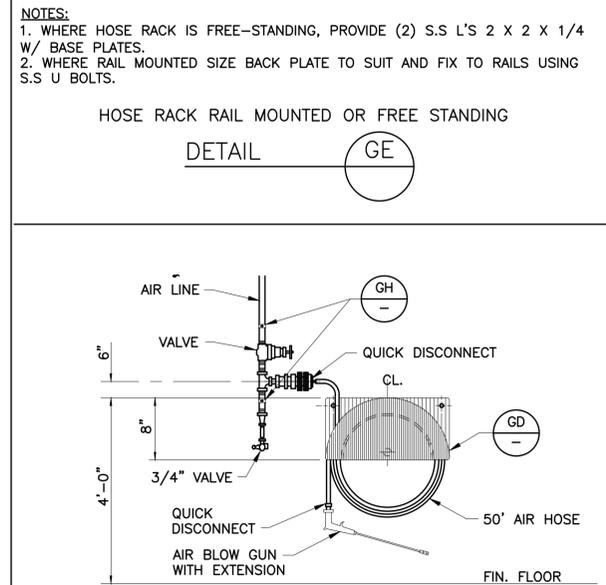
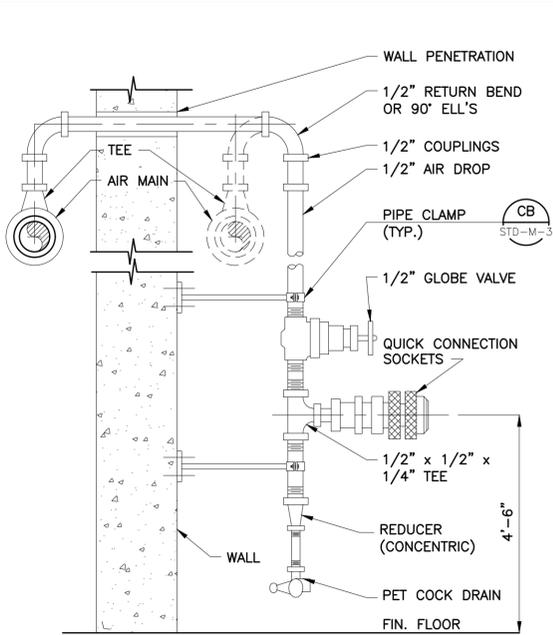
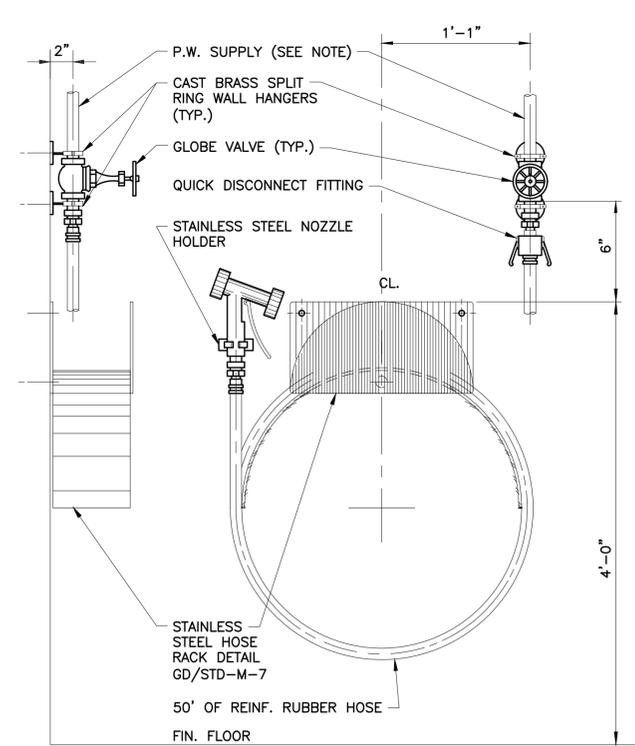
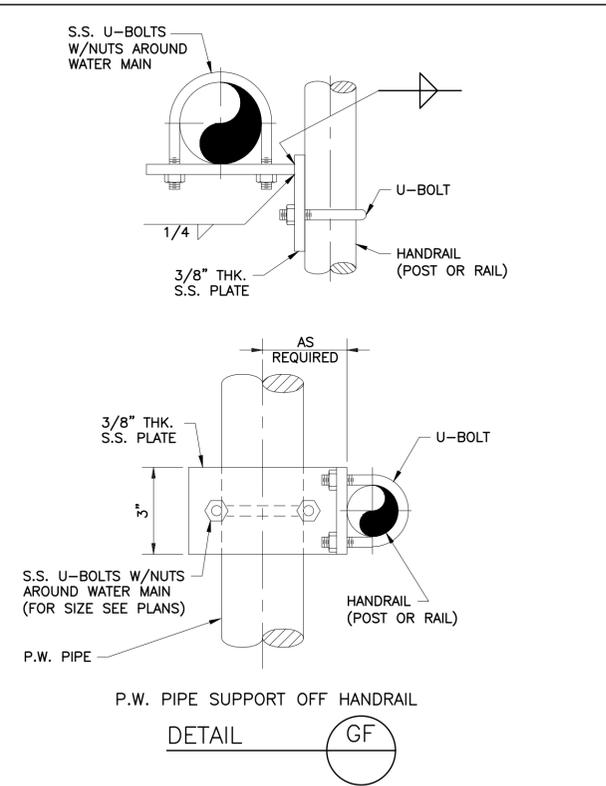
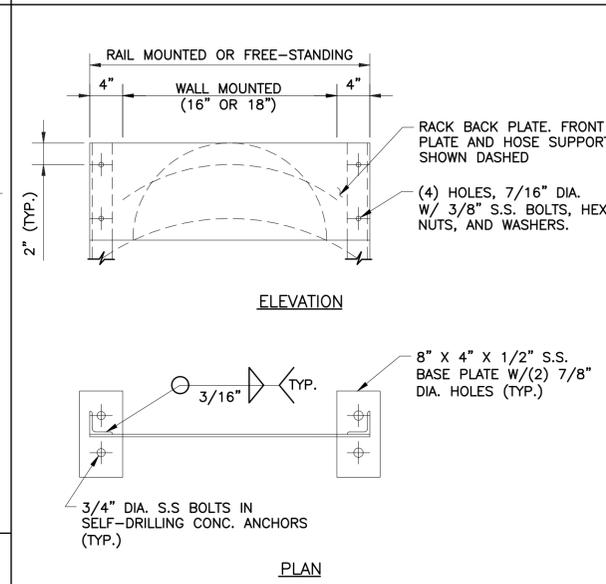
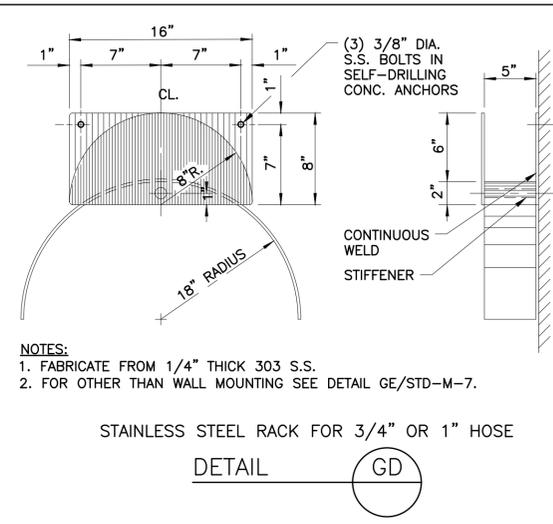
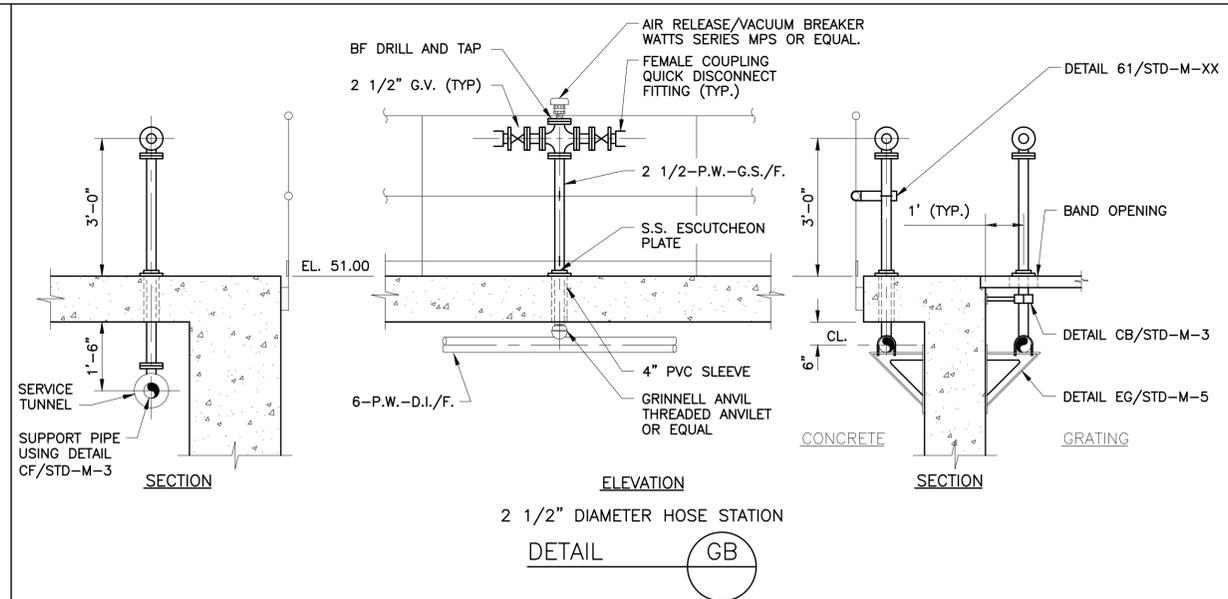
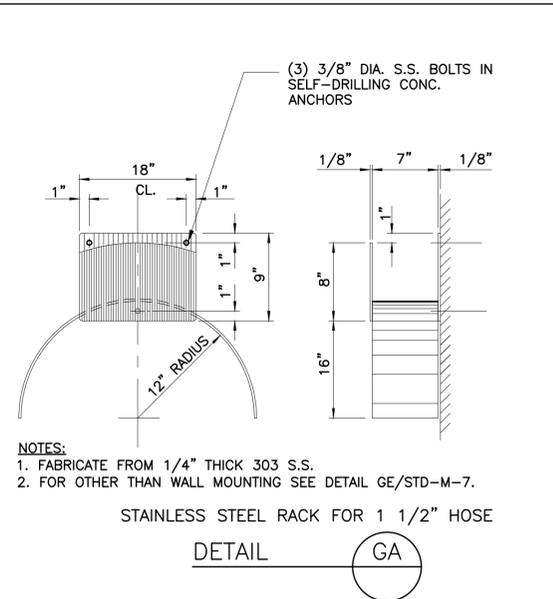
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-MZ-6	DRAWING SCALE NS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 169 OF 271	

NO.	DATE	REVISION	APP.



**NOTES:**  
 1. FOR P.W. SUPPLY SIZE AND LOCATION, SEE DRAWINGS.  
 2. PROVIDE REDUCER WHERE REQUIRED.  
 3. IN SOME CASES P.W. MAY COME UP THROUGH FLOOR. IN SUCH CASE USE FLOOR PENETRATION DETAIL BE/STD-M-2

1 1/2" WASH HOSE STATION  
 DETAIL (GA)



**NOTES:**  
 1. FOR P.W. SUPPLY SIZE AND LOCATION, SEE DRAWINGS.  
 2. PROVIDE REDUCER WHERE REQUIRED.  
 3. IN SOME CASES P.W. MAY COME UP THROUGH FLOOR. IN SUCH CASES USE FLOOR PENETRATION DETAIL BE/STD-M-2.

**NOTES:**  
 1. FABRICATE FROM 1/4" THICK 303 S.S.  
 2. FOR OTHER THAN WALL MOUNTING SEE DETAIL GE/STD-M-7.

**NOTES:**  
 1. WHERE HOSE RACK IS FREE-STANDING, PROVIDE (2) S.S. L'S 2 X 2 X 1/4 W/ BASE PLATES.  
 2. WHERE RAIL MOUNTED SIZE BACK PLATE TO SUIT AND FIX TO RAILS USING S.S. U BOLTS.

**NOTE:** WHERE THERE IS NO WALL OR HR, PROVIDE BOLLARD SUPPORT TO DETAIL HB/STD-C-8

NO.	DATE	REVISION	APP.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

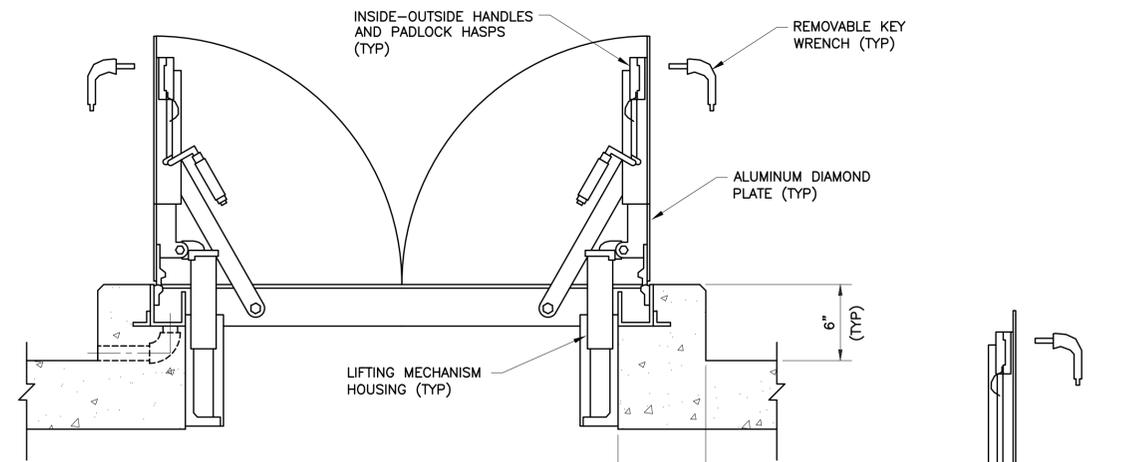
**KGI**  
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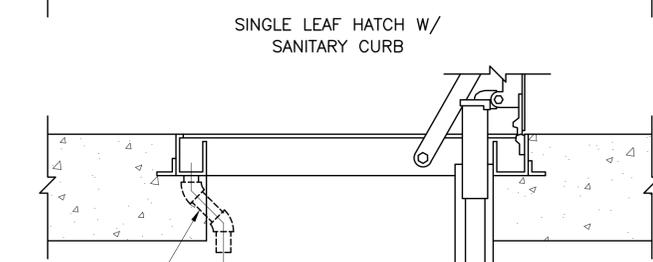
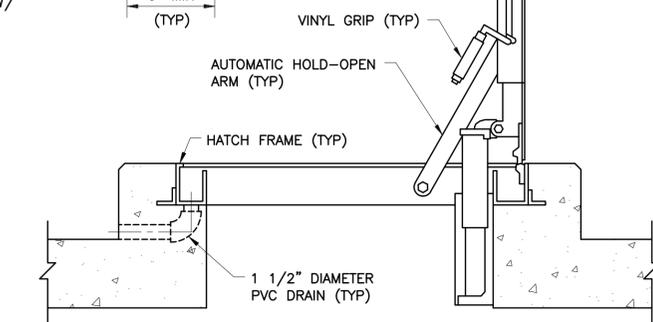
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS SHEET 7**  
 MECHANICAL

VERIFY SCALE	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	R-000265-0154-4	
DWG NO	DRAWING SCALE	
M-MZ-7	NS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 170 OF 271	

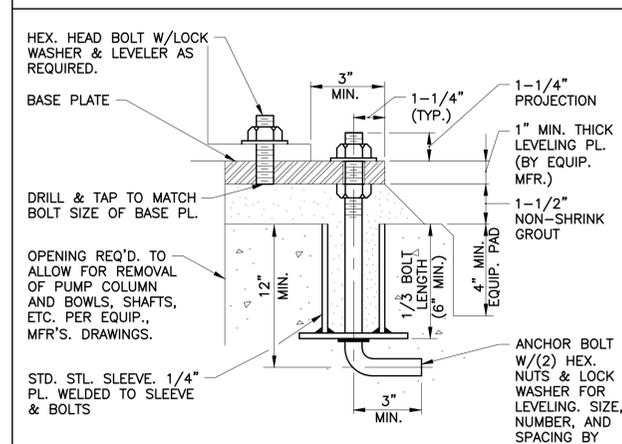




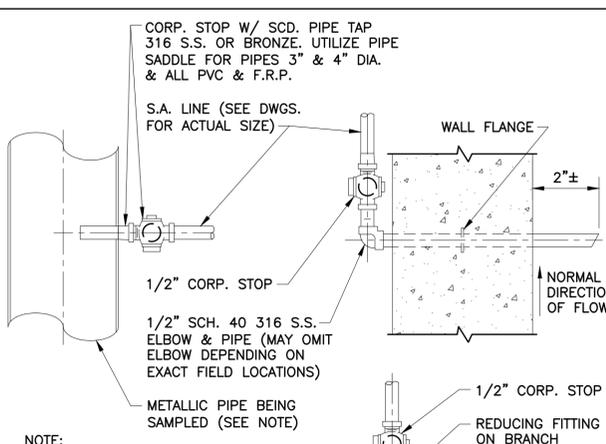
- NOTES:
1. ALL ACCESS HATCHES LOCATED ABOVE POTABLE WATER TREATMENT PROCESS BASINS, CHANNELS, PUMP WELLS, CLEAR WELLS, ETC. SHALL BE INSTALLED ON A SANITARY CONTROL CURB WITH ACCESS HATCH DRAINAGE CHANNEL PIPED OUTSIDE CURB.
  2. ALL ACCESS HATCH HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
  3. ALL ACCESS HATCHES SHALL BE EQUIPPED WITH REMOVABLE SAFETY NETS OR SAFETY GRATING.
  4. CONTRACTOR SHALL COORDINATE ALL INSTALLATION DETAILS REQUIRED TO SUIT INSTALLATION. REFER TO DRAWINGS FOR LOCATION SIZE, AND QUANTITY OF PROPOSED ACCESS HATCHES.
  5. FOR ACCESS HATCHES TIED INTO SECURITY SYSTEM REFER TO THE SECURITY SERIES DRAWINGS FOR ADDITIONAL DETAIL.
  6. FOR ACCESS HATCH INSTALLATIONS WHERE HATCH IS FLUSH WITH TOP OF CONCRETE PIPE DRAINAGE CHANNEL TO INSIDE FACE OF CONCRETE OPENING.
  7. ALL DOUBLE LEAF HATCHES 4' X 4' AND LARGER SHALL ALSO BE EQUIPPED WITH TYPE 316 STAINLESS SAFETY CHAINS.



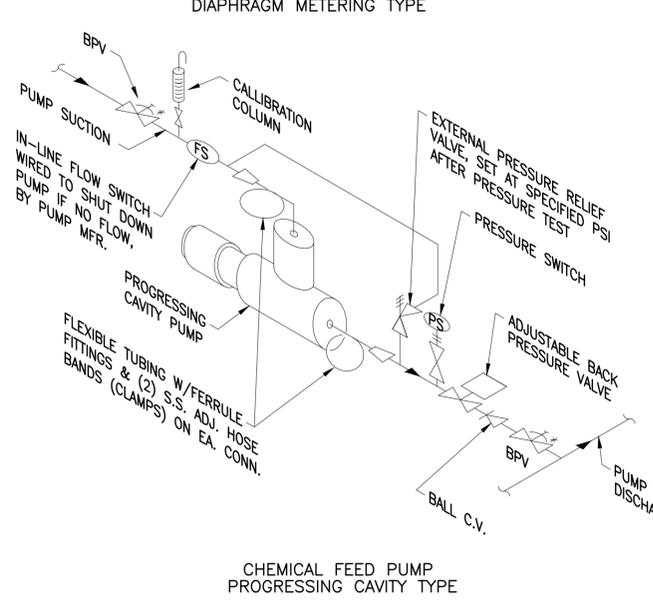
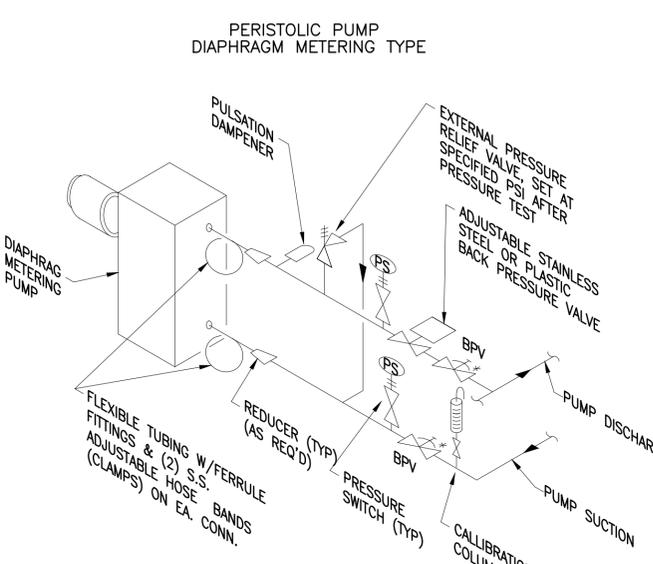
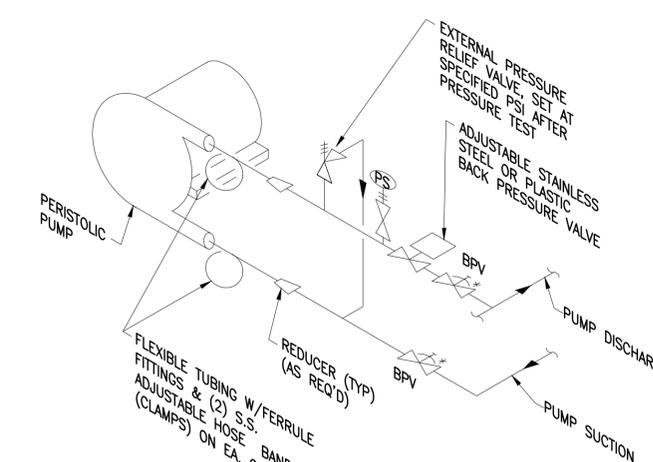
TYPICAL HATCH DETAILS  
DETAIL **IC**



EQUIPMENT MOUNTING BASE  
DETAIL **ID**

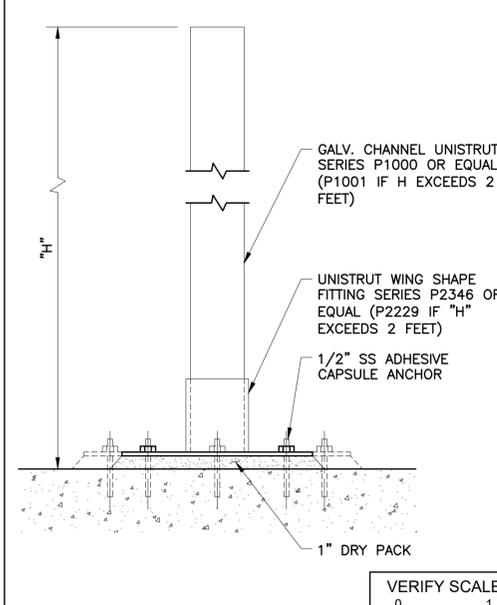
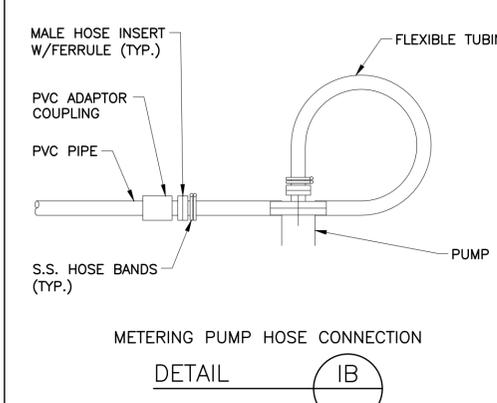
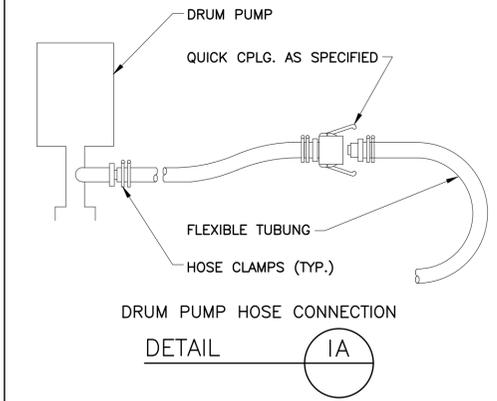


SAMPLE TAP CONNECTION  
DETAIL **IE**



CHEMICAL FEED PUMP  
PROGRESSING CAVITY TYPE  
DETAIL **IF**

- NOTES:
1. PROVIDE PIPE SUPPORTS AT ALL VALVES.
  2. \* THESE VALVE TYPES ARE AS SHOWN ON PROCESS DWGS.
  3. ALL S.S. TO BE TYPE 316 (UNLESS MFR. CERTIFIES OTHER MATERIAL).



PIPE SUPPORT POST  
DETAIL **IG**

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

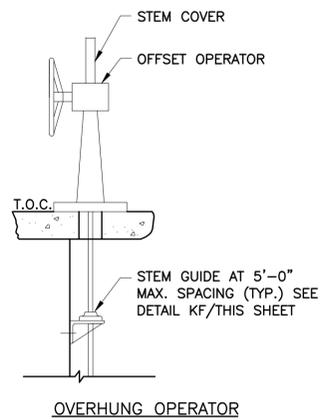
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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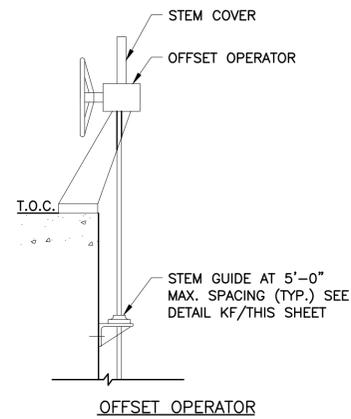
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
SHEET 9  
MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO M-MZ-9	DRAWING SCALE NS	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. 172 OF 271	

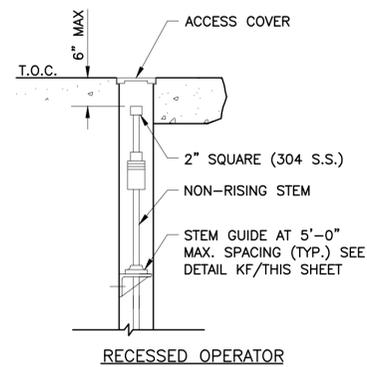
NO.	DATE	REVISION	APP.



OVERHUNG OPERATOR



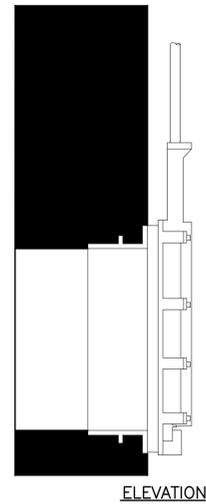
OFFSET OPERATOR



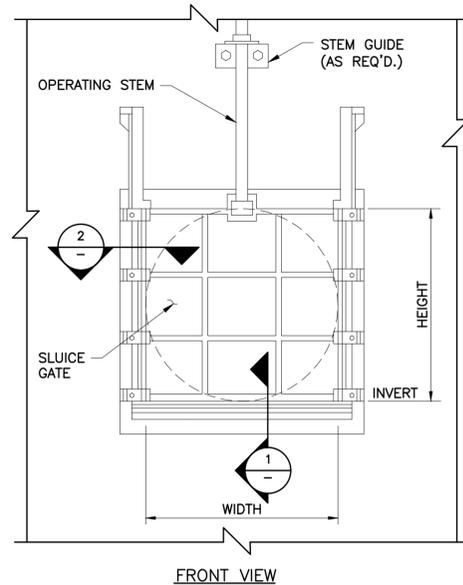
RECESSED OPERATOR

GATE OPERATORS

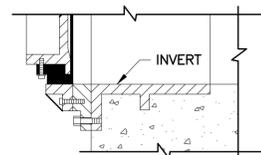
DETAIL (KD)



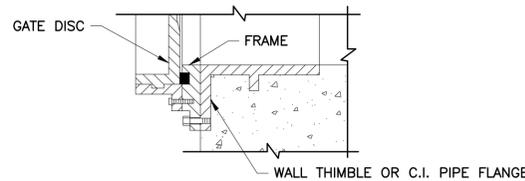
ELEVATION



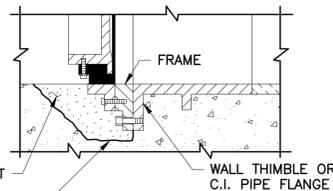
FRONT VIEW



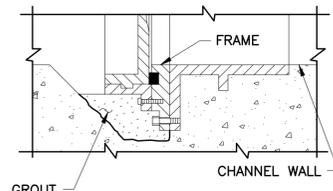
FACE MOUNTED



FACE MOUNTED GUIDE



FLUSH MOUNTED



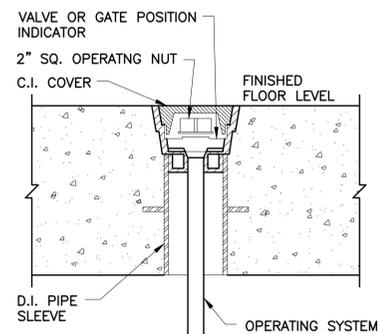
OPEN CHANNEL GUIDE

SECTION 1

SECTION 2

SLUCE GATE

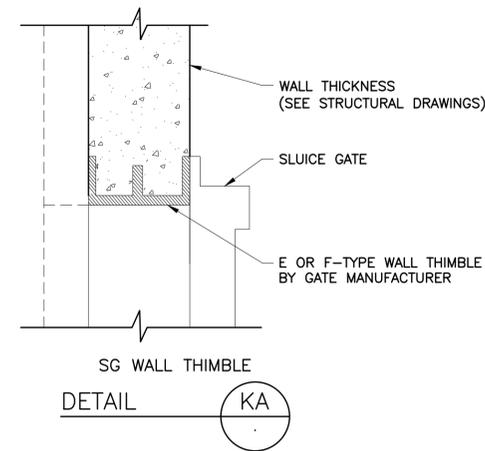
DETAIL (KC)



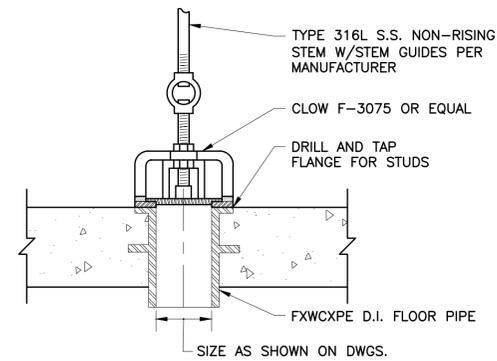
- NOTES:
1. SIZE OF PIPE SLEEVE TO MATCH FLOOR VALVE OPERATOR NUT COVER.
  2. USE ONLY WHERE NO AXIAL THRUST IS TAKEN BY OPERATING SYSTEM.

NUT OPERATOR

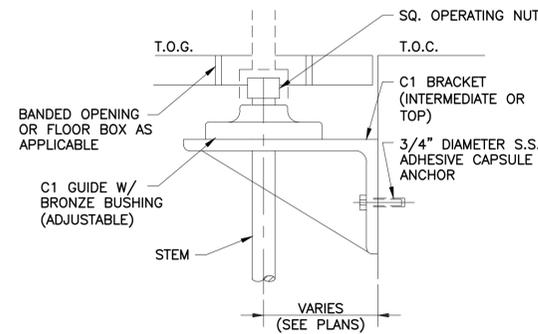
DETAIL (KE)



DETAIL (KA)



MUD VALVE  
DETAIL (KB)



- NOTES:
1. SPACE STEM GUIDES PER MANUFACTURER'S RECOMMENDATIONS.
  2. CERTAIN LOCATIONS MAY CALL FOR 316SS BRACKETS.

VALVE OR GATE STEM GUIDE

DETAIL (KF)

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

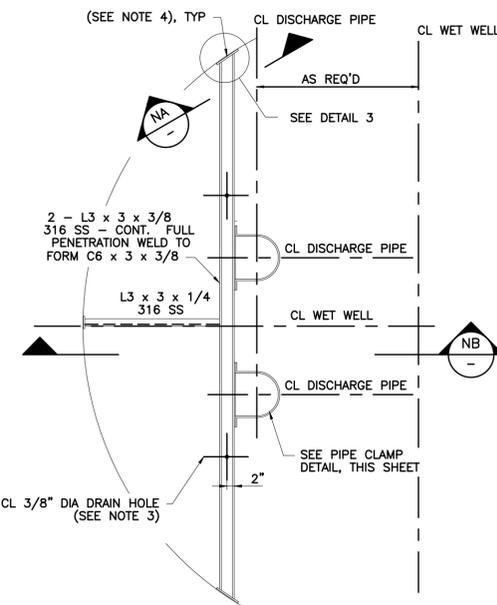
**KGI**  
Kalluri Group, Inc.  
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Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
SHEET 10  
MECHANICAL

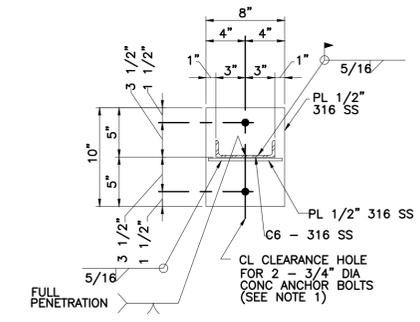
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
M-MZ-10	TAHA LOTIA	
	SHEET NO. 173 OF 271	

NO.	DATE	REVISION	APP.



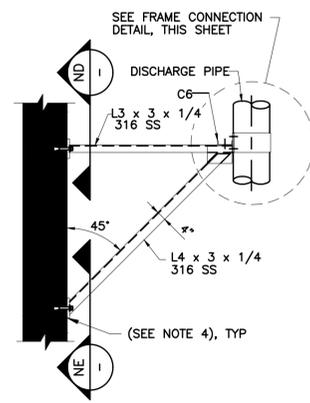
TYP DISCHARGE PIPING SUPPORT FOR 2 PUMPS - PLAN

NTS



SECTION NA

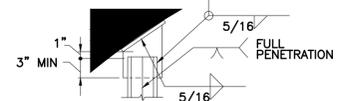
NTS



TYP LATERAL PIPE SUPPORT FRAME

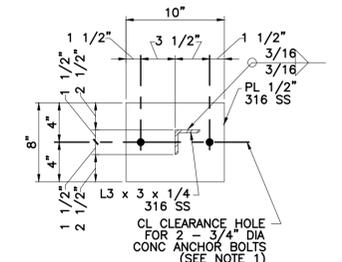
SECTION NB

NTS



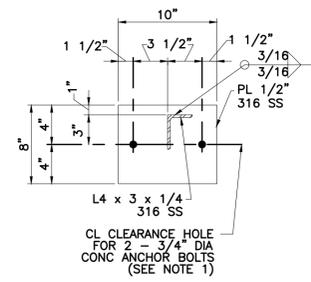
FRAME DETAIL NC

NTS



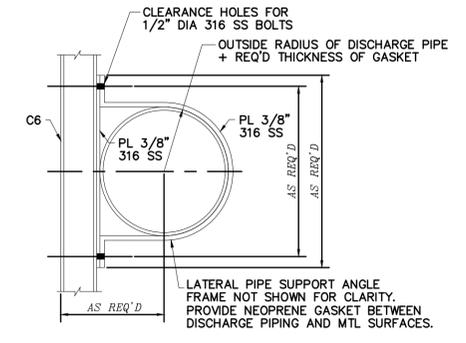
SECTION ND

NTS



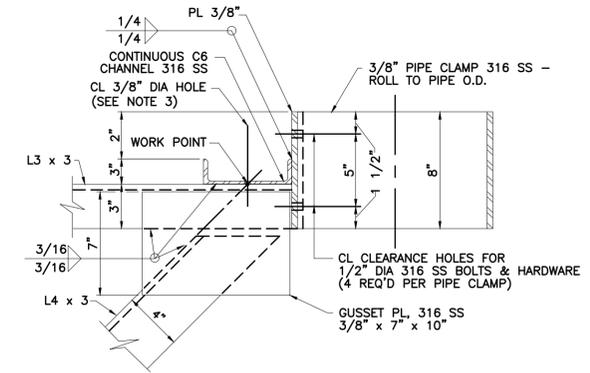
FRAME SECTION NE

NTS



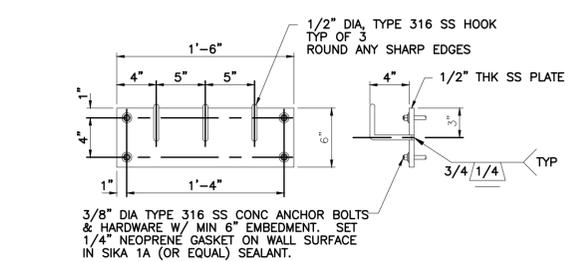
PIPE CLAMP DETAIL NF

NTS



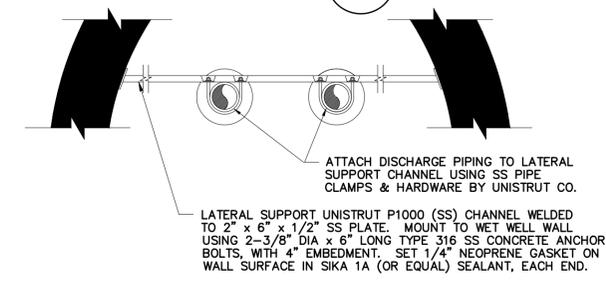
FRAME CONNECTION DETAIL NG

NTS



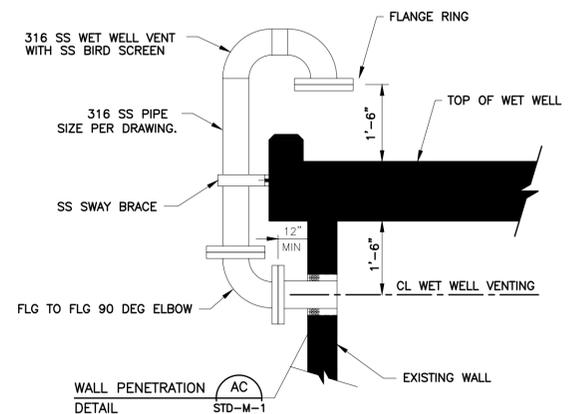
DETAIL NH

NTS



DISCHARGE PIPING SUPPORT DETAIL

NTS



TYPICAL WET WELL VENTING INSTALLATION NJ

NTS

- NOTES:
1. CONCRETE ANCHOR BOLTS SHALL HAVE 6" MINIMUM EMBEDMENT AND SHALL BE TYPE 316 STAINLESS STEEL, PER SPECIFICATIONS.
  2. SEE STATION AND STRUCTURAL DRAWINGS FOR DIMENSIONS AND INFORMATION NOT SHOWN.
  3. DRILL 3/8" DIA HOLES, 1" OFF CL OF C6 AT MIDSPAN BETWEEN LATERAL PIPE SUPPORTS TO ALLOW FOR DRAINAGE. 3 HOLES PER CHANNEL WHERE 2 LATERAL SUPPORTS REQUIRED; 2 HOLES PER CHANNEL WHERE 1 LATERAL SUPPORT REQUIRED.
  4. SET 1/4" NEOPRENE GASKET ON WALL SURFACE IN SIKA 1A (OR EQUAL) SEALANT.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
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Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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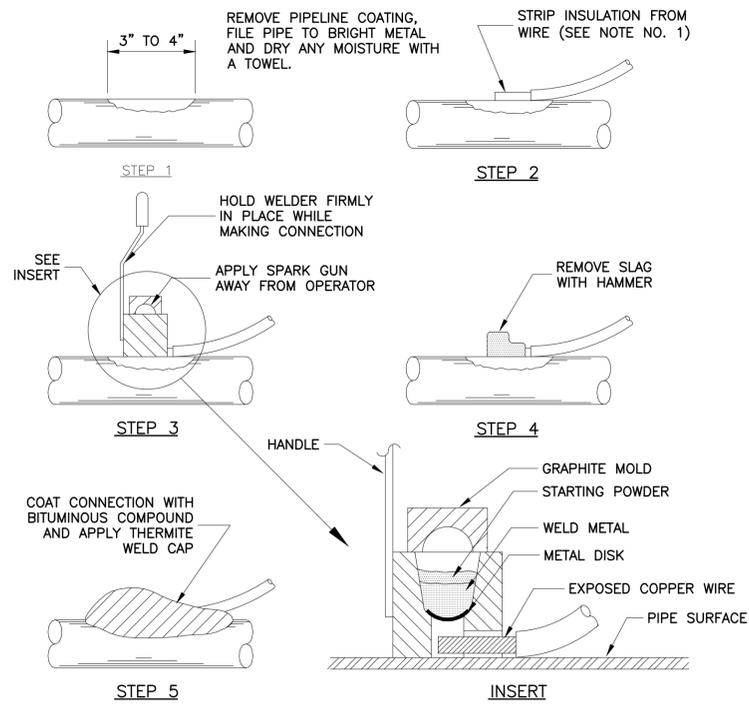
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**STANDARD DETAILS**  
**SHEET 11**

MECHANICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE NS	
DWG NO M-MZ-11	CITY OF HOUSTON PM TAHA LOTIA	SHEET NO. 174 OF 271

NO.	DATE	REVISION	APP.

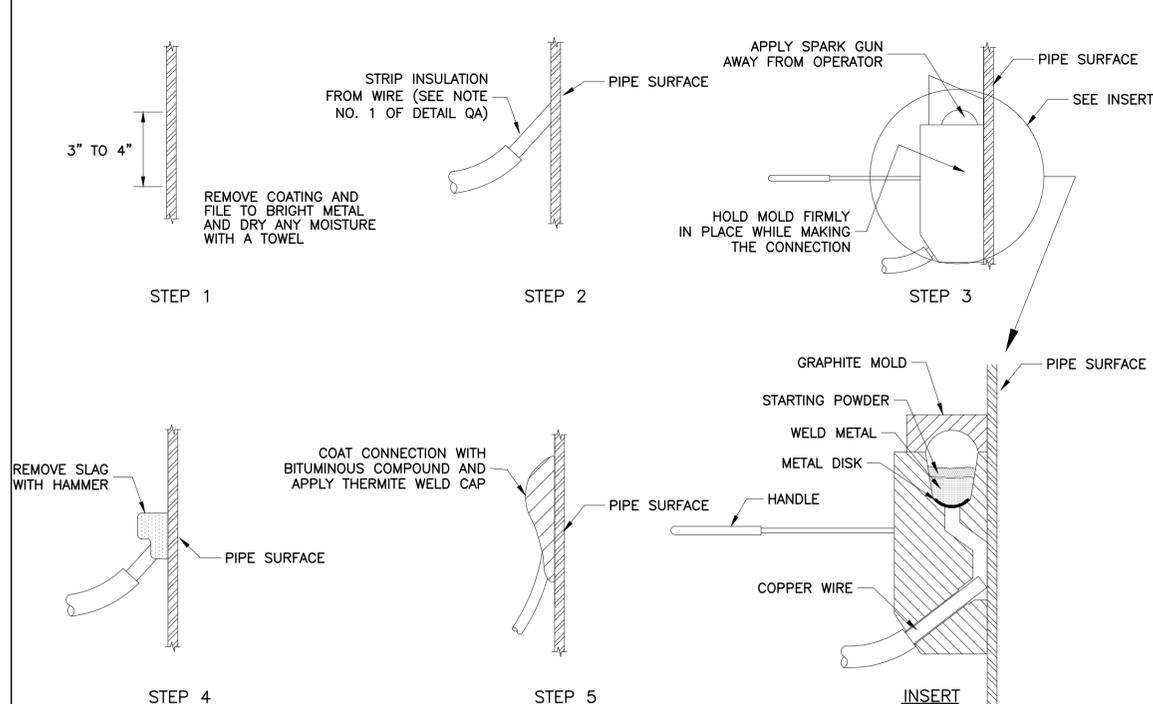


NOTES:

1. WHEN #14 AWG SOLID TO #10 STRANDED WIRE IS USED, IT WILL BE NECESSARY TO INSTALL A COPPER SLEEVE OF ADEQUATE SIZE OVER BARE SECTION OF WIRE BEFORE CONNECTION IS ATTEMPTED.
2. THERMITE WELD PROCEDURES SIMILAR FOR "L" BRACKETS.
3. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

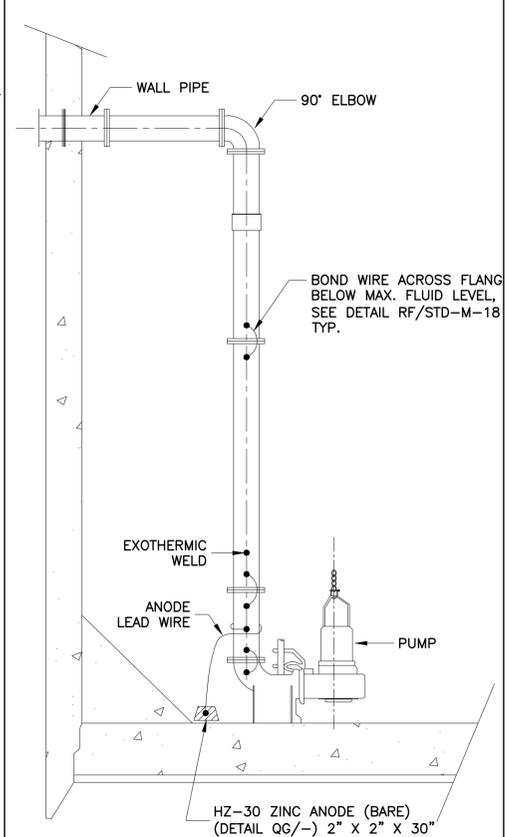
**HORIZONTAL THERMITE BRAZED CONNECTION**

NOT TO SCALE SEE DETAIL QE FOR VERTICAL CONNECTION



**VERTICAL THERMITE BRAZED CONNECTION**

NOT TO SCALE SEE DETAIL QA FOR HORIZONTAL CONNECTION



**WET WELL DIRECT CONNECT ANODE INSTALLATION**

NOT TO SCALE



NO.	DATE	REVISION	APP.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

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 FB NO. \_\_\_\_\_

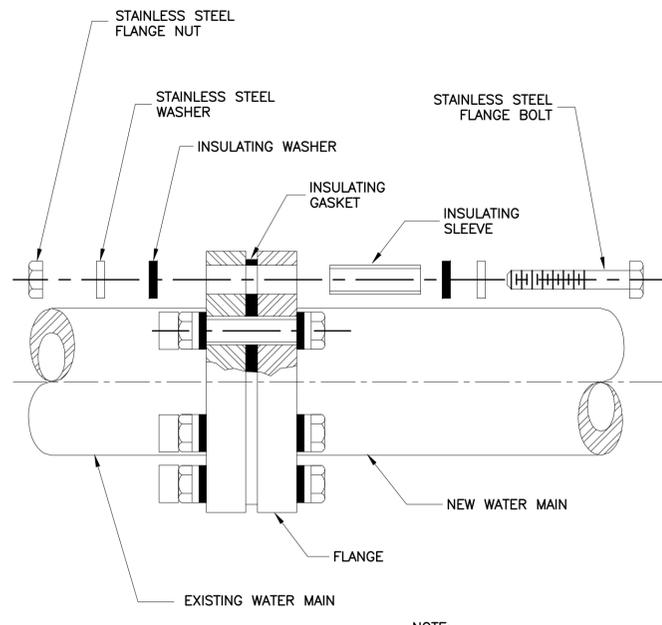
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3

**STANDARD DETAILS**  
**SHEET 12**

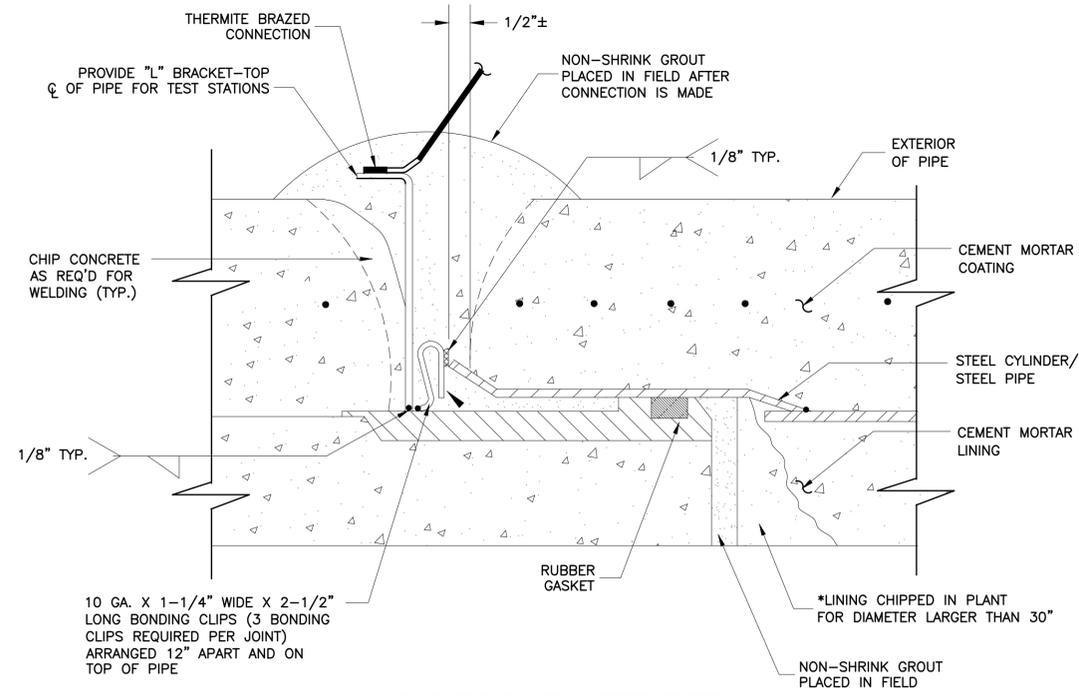
MECHANICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
M-MZ-12	SHEET NO. 175 OF 271	



NOTE:  
1. SEE DETAIL SA/STD-M-19 FOR BOLT TIGHTENING SEQUENCE

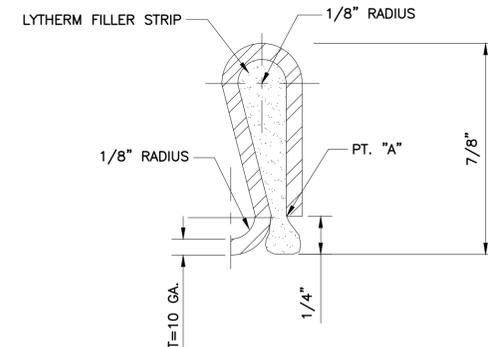
ISOLATION FLANGE (RA)  
NOT TO SCALE



10 GA. X 1-1/4" WIDE X 2-1/2" LONG BONDING CLIPS (3 BONDING CLIPS REQUIRED PER JOINT) ARRANGED 12" APART AND ON TOP OF PIPE

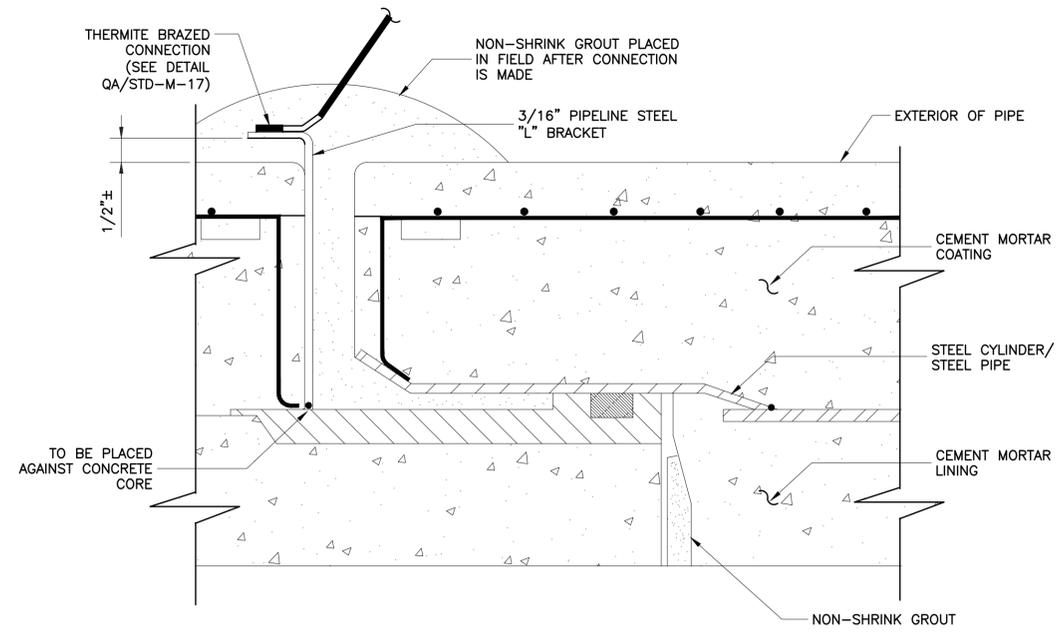
\* PLACE BONDING CLIPS IN INTERIOR OF PIPE FOR DIAMETERS LARGER THAN 30"

BONDED JOINT-MORTAR COATED STEEL PIPE (RB)  
NOT TO SCALE

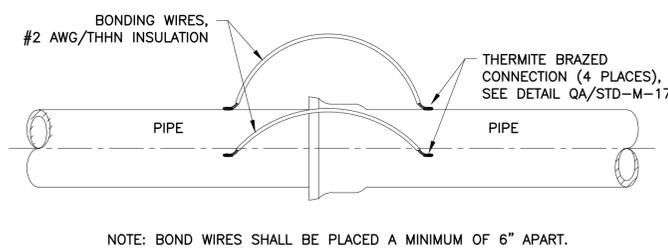


STEEL BONDING CLIP DETAIL

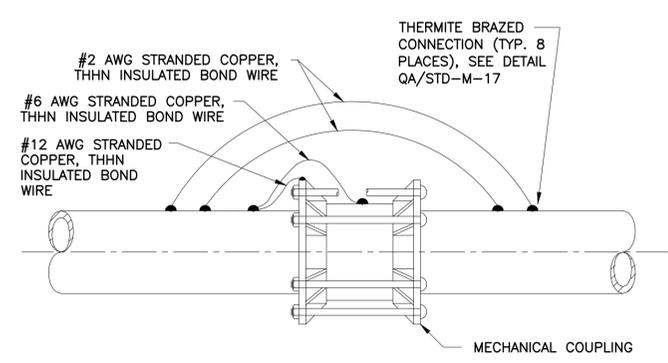
- NOTES:
- STEEL BONDING CLIP: MATERIAL SPECIFICATION ----- ASTM A36 (COMMERCIAL QUALITY)  
CUT LENGTH ----- 2 1/2" ± 1/16"  
WIDTH ----- 1 1/4" ± 1/16"
  - LYTHERM FILLER STRIP TO BE 1" x 1 1/2" WIDE TO OVERLAP SIDES OF CLIP.
  - CRIMP JUMPER OVER FILLER AT "A" TO COMPRESS FILLER CLOSE AT PT. "A" AS MUCH AS POSSIBLE WITHOUT CUTTING FILLER PAD.
  - BONDING CLIP TO BE INSTALLED IN THE INTERIOR OF PIPE FOR DIAMETERS LARGER THAN 30". FOR 30" AND SMALLER, BONDING CLIP IS TO BE INSTALLED ON EXTERIOR OF PIPE.
  - ARRANGE BONDING CLIPS ON TOP OF PIPE, 12 INCHES APART.
  - THREE REQUIRED PER JOINT (TYPICAL).



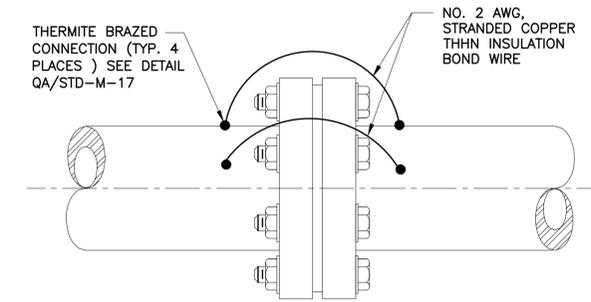
TEST LEAD CONNECTION DETAIL (RC)  
NOT TO SCALE



ELECTRICAL BONDING ACROSS BELL & SPIGOT DETAIL (RD)  
NOT TO SCALE



ELECTRICAL BONDING ACROSS MECHANICAL COUPLING DETAIL (RE)  
NOT TO SCALE



ELECTRICAL BONDING ACROSS FLANGE DETAIL (RF)  
NOT TO SCALE

VERIFY SCALE	0 1
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	
DWG NO	M-MZ-13

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**STANDARD DETAILS SHEET 13**

MECHANICAL

WBS NUMBER	R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	NS	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	176 OF 271	

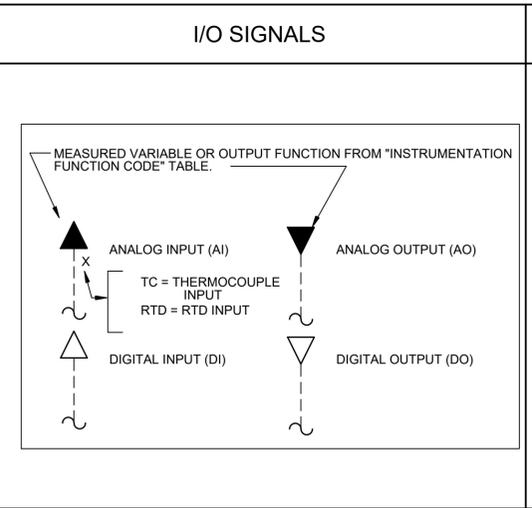
NO.	DATE	REVISION	APP.

GENERAL INSTRUMENT OR FUNCTION SYMBOLS				
SHARED DISPLAY/ SHARED CONTROL		COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
PRIMARY CHOICE	SECONDARY CHOICE			
				FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE

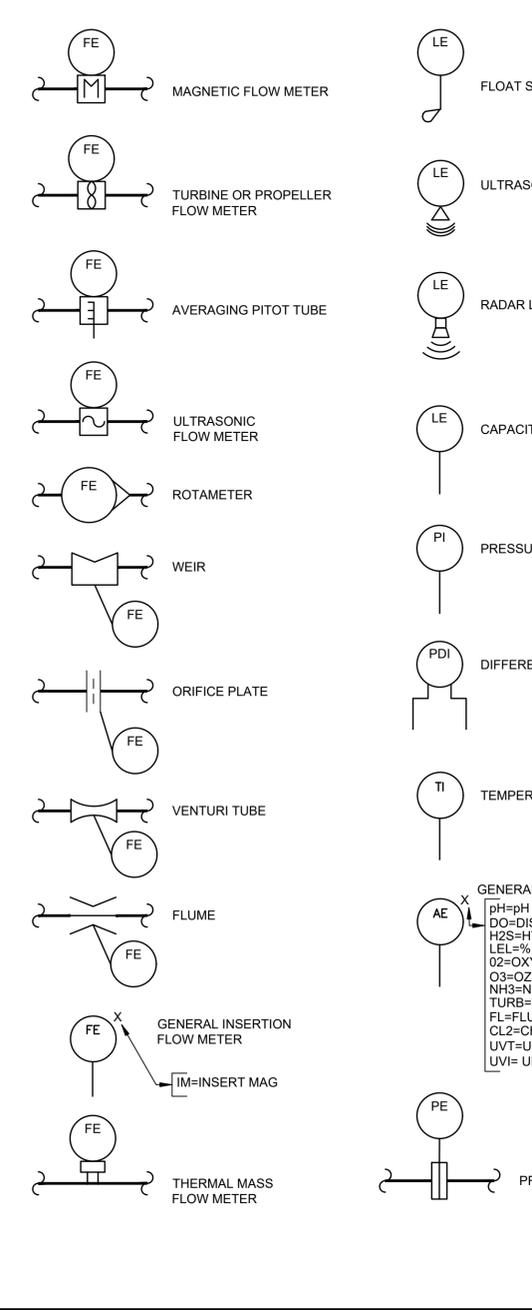
	INSTRUMENTS SHARING COMMON HOUSING
	PILOT LIGHT

INSTRUMENTATION FUNCTION CODE				
FIRST LETTERS		SUCCEEDING LETTERS		
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
MEASURED/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CLOSED
D	USER'S CHOICE	DIFFERENCE, DIFFERENTIAL		DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT	
F	FLOW, FLOW RATE	RATIO		
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE	
H	HAND			HIGH
I	CURRENT		INDICATE	
J	POWER		SCAN	
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL		LIGHT	LOW
M	MOISTURE			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION	OPEN
P	PRESSURE		POINT (TEST CONNECTION)	
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE	
R	RADIATION		RECORD	RUN
S	SPEED, FREQUENCY	SAFETY		STOP
T	TEMPERATURE		TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	
V	VIBRATION, MECHANICAL, ANALYSIS		VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE	
X	UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT



GENERAL ABBREVIATIONS	
AI	ANALOG IN
AO	ANALOG OUT
ASD	ADJUSTABLE SPEED DRIVE
CPU	CENTRAL PROCESSOR UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DIGITAL OUTPUT
FC	FAIL CLOSED
FO	FAIL OPEN OR FIBER OPTIC
HMI	HUMAN MACHINE INTERFACE
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NPW	NON-POTABLE WATER
NO	NORMALLY OPEN
PLC	PROGRAMMABLE LOGIC CONTROLLER
PW	PLANT WATER
RIO	REMOTE INPUT/OUTPUT
UPS	UNINTERRUPTIBLE POWER SUPPLY
OC	OPEN/CLOSE

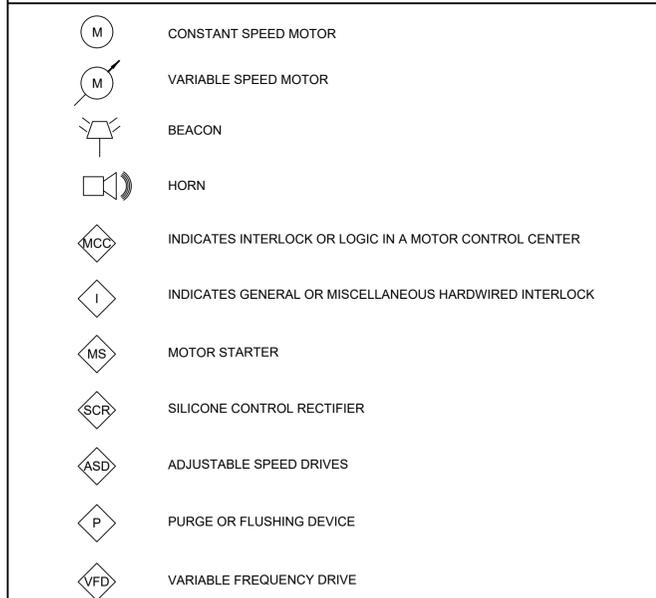
**PRIMARY ELEMENTS**



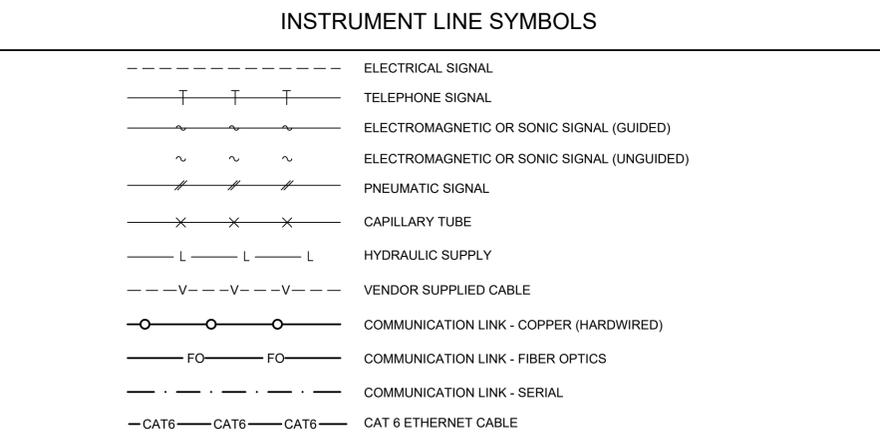
**GENERAL NOTES:**

- THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
- IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTS AND CONTROL. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
- SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.
- SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- LIGHTER WEIGHT LINES, SHOWN AS ----, INDICATE EXISTING EQUIPMENT, INSTRUMENT OR PIPING, THAT ARE EXISTING. WEIGHTED LINES, SHOWN AS OR HEAVIER ----, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE NEW. DASHED WEIGHTED LINES, SHOWN AS ---- INDICATED EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE GROUPED AS A PACKAGE.
- HATCHED INSTRUMENTS ARE PROVIDED BY EQUIPMENT SUPPLIER PER SPECIFICATIONS.
- P&IDS ARE NOT INTENDED TO SHOW ALL DETAILS OF PIPING, JOINTS, SUPPORTS, ETC. CONTRACTOR SHALL INSTALL A COMPLETE SYSTEM PER THE CONTRACT DOCUMENTS AND AS REQUIRED TO PROVIDE A FULLY FUNCTIONING SYSTEM.

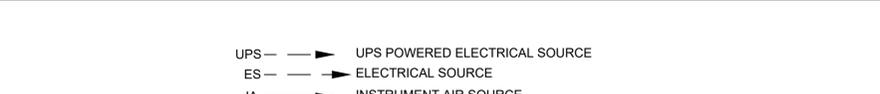
**MISCELLANEOUS SYMBOLS**



**INSTRUMENT LINE SYMBOLS**



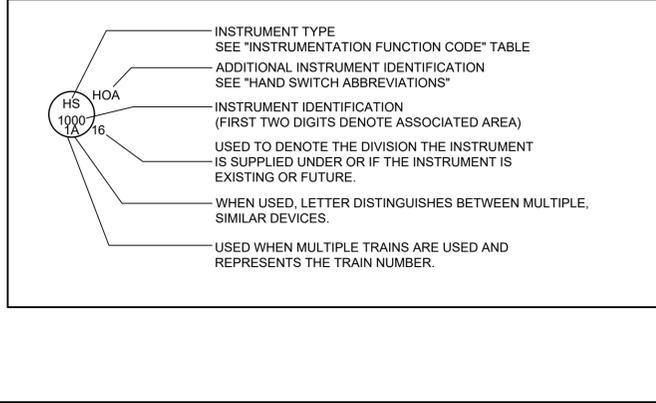
**ELECTRICAL / AIR SOURCES**



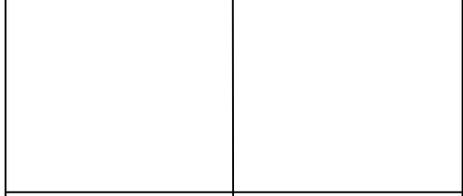
**HAND SWITCH ABBREVIATIONS**

A/O = AUTO/OFF	L/O/R = LOCAL/OFF/REMOTE
A/M = AUTO/MANUAL	L/O/S = LOCKOUT/STOP
C/M = COMPUTER/MANUAL	L/A = LOCAL/AUTO
C/L = COMPUTER/LOCAL	
D/S = DUTY/STANDBY	L/R = LOCAL/REMOTE
E-STOP = EMERGENCY STOP	O/C = OPEN/CLOSE
F/R = FORWARD/REVERSE	O/C/A = OPEN/CLOSE/AUTO
F/O/R = FORWARD/OFF/REVERSE	O/O = ON/OFF
F/S = FAST/SLOW	O/O/A = ON/OFF/AUTO
F/O/S = FAST/OFF/SLOW	O/S/C = OPEN/STOP/CLOSE
H/O/A = HAND/OFF/AUTO	R/S/L = RAISE/STOP/LOWER
L/L/S = LEAD/LAG/STANDBY	S/S = START/STOP
L/O/C = LOCAL/OFF/COMPUTER	S/O/R = START/OFF/RESET

**TYPICAL TAG NUMBERS & DESIGNATION**



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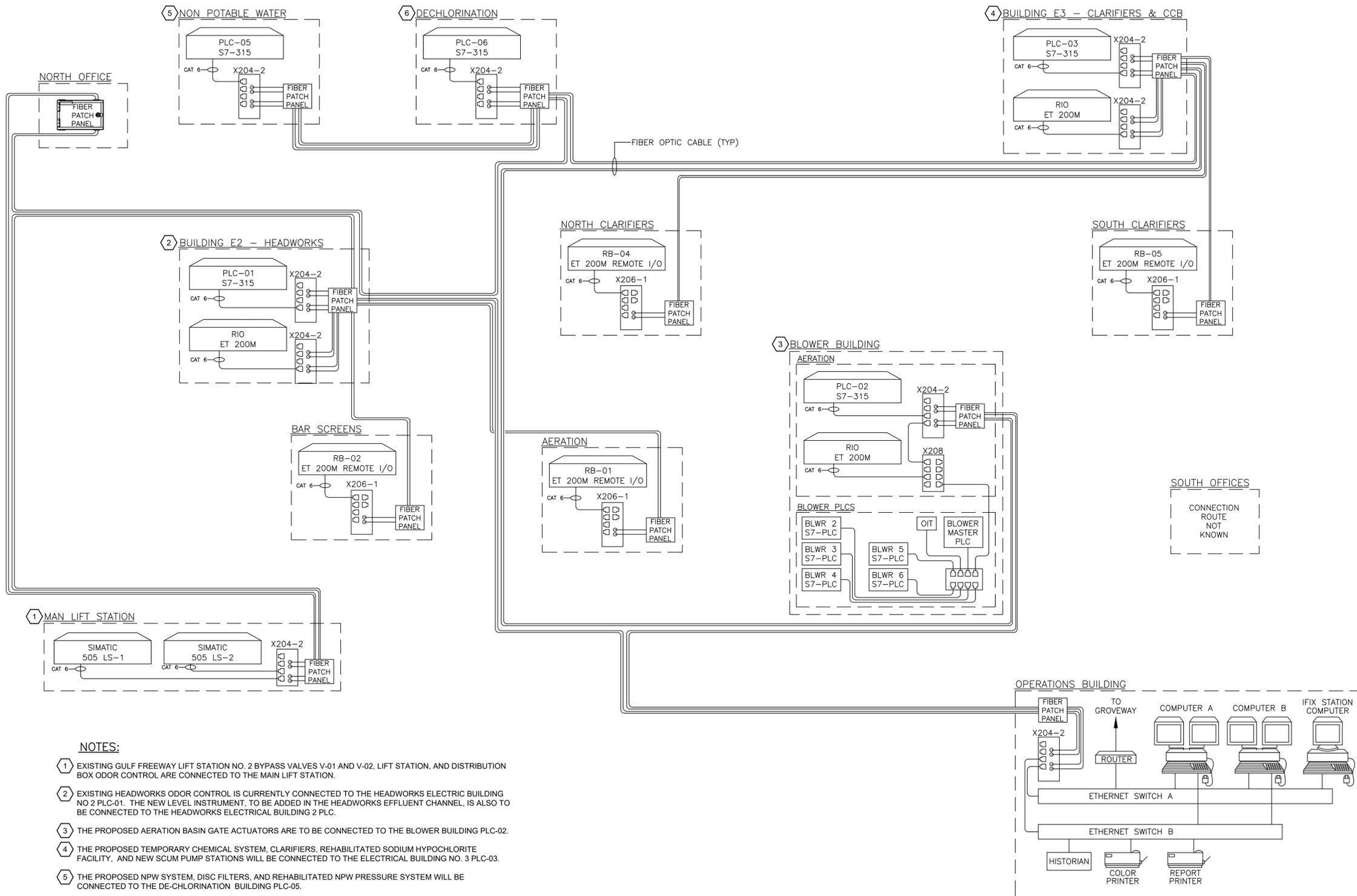
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**LEGENDS AND SYMBOLS SHEET 1**  
INSTRUMENTATION

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DWG NO I-10-01	DRAWING SCALE AS SHOWN	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. XX770F X2X1	





D:\Kalluri Group - Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\1-10-04 Proposed Overall SCADA Network Diagram.dwg, 11/30/2025 4:40:02 PM, DWG To PDF.pc3



**NOTES:**

- 1 EXISTING GULF FREEWAY LIFT STATION NO. 2 BYPASS VALVES V-01 AND V-02, LIFT STATION, AND DISTRIBUTION BOX ODOR CONTROL ARE CONNECTED TO THE MAIN LIFT STATION.
- 2 EXISTING HEADWORKS ODOR CONTROL IS CURRENTLY CONNECTED TO THE HEADWORKS ELECTRIC BUILDING NO 2 PLC-01. THE NEW LEVEL INSTRUMENT, TO BE ADDED IN THE HEADWORKS EFFLUENT CHANNEL, IS ALSO TO BE CONNECTED TO THE HEADWORKS ELECTRICAL BUILDING 2 PLC.
- 3 THE PROPOSED AERATION BASIN GATE ACTUATORS ARE TO BE CONNECTED TO THE BLOWER BUILDING PLC-02.
- 4 THE PROPOSED TEMPORARY CHEMICAL SYSTEM, CLARIFIERS, REHABILITATED SODIUM HYPOCHLORITE FACILITY, AND NEW SCUM PUMP STATIONS WILL BE CONNECTED TO THE ELECTRICAL BUILDING NO. 3 PLC-03.
- 5 THE PROPOSED NPW SYSTEM, DISC FILTERS, AND REHABILITATED NPW PRESSURE SYSTEM WILL BE CONNECTED TO THE DE-CHLORINATION BUILDING PLC-05.
- 6 THE REHABILITATED SODIUM BISULFITE FACILITY WILL BE CONNECTED TO THE DE-CHLORINATION BUILDING PLC-06.

**GENERAL NOTES:**

- A. THIS EXHIBIT IS INCLUDED TO ILLUSTRATE THE EXISTING PLANT NETWORK ARCHITECTURE AND DESCRIBE PLC LOCATIONS. PROPOSED EQUIPMENT IS ILLUSTRATED ON THE PROPOSED SCADA DIAGRAM.
- B. PRIOR TO SCHEDULING OF ANY CONSTRUCTION THE CONTRACTOR SHALL COORDINATE WITH PLANT OPERATIONS AND WASTEWATER ELECTRICAL MAINTENANCE TO PRODUCE AN "AS FOUND" CONDITIONS "SURVEY". THE NAMING, LOCATION AND OPERATIONAL STATUS OF EXISTING INSTRUMENTATION TO REMAIN AVAILABLE DURING CONSTRUCTION AND EQUIPMENT TO BE REMOVED. PROVIDE A LIST OF ANY DEVIATIONS BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS PRIOR TO SCHEDULING WORK.
- C. REMOVE, PROTECT, AND RETAIN ALL ANCILLARY DEVICES REMOVED FROM SERVICE. PRESENT REMOVED EQUIPMENT, DEVICES AND INSTRUMENTS TO THE CITY FOR FIRST RIGHT OF REFUSAL.
- D. COORDINATE POWER AND CONTROL CHANGE OVERS, PROVIDE TEMPORARY EQUIPMENT LABELS AND SIGNAGE TO INDICATE STATUS OF EQUIPMENT IMPACTED OR IN THE CONSTRUCTION PROCESS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**MODIFIED OVERALL SCADA NETWORK DIAGRAM**

INSTRUMENTATION

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	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. XX800F X2X1	

MODIFIED OVERALL SCADA NETWORK  
**DIAGRAM**  
NTS

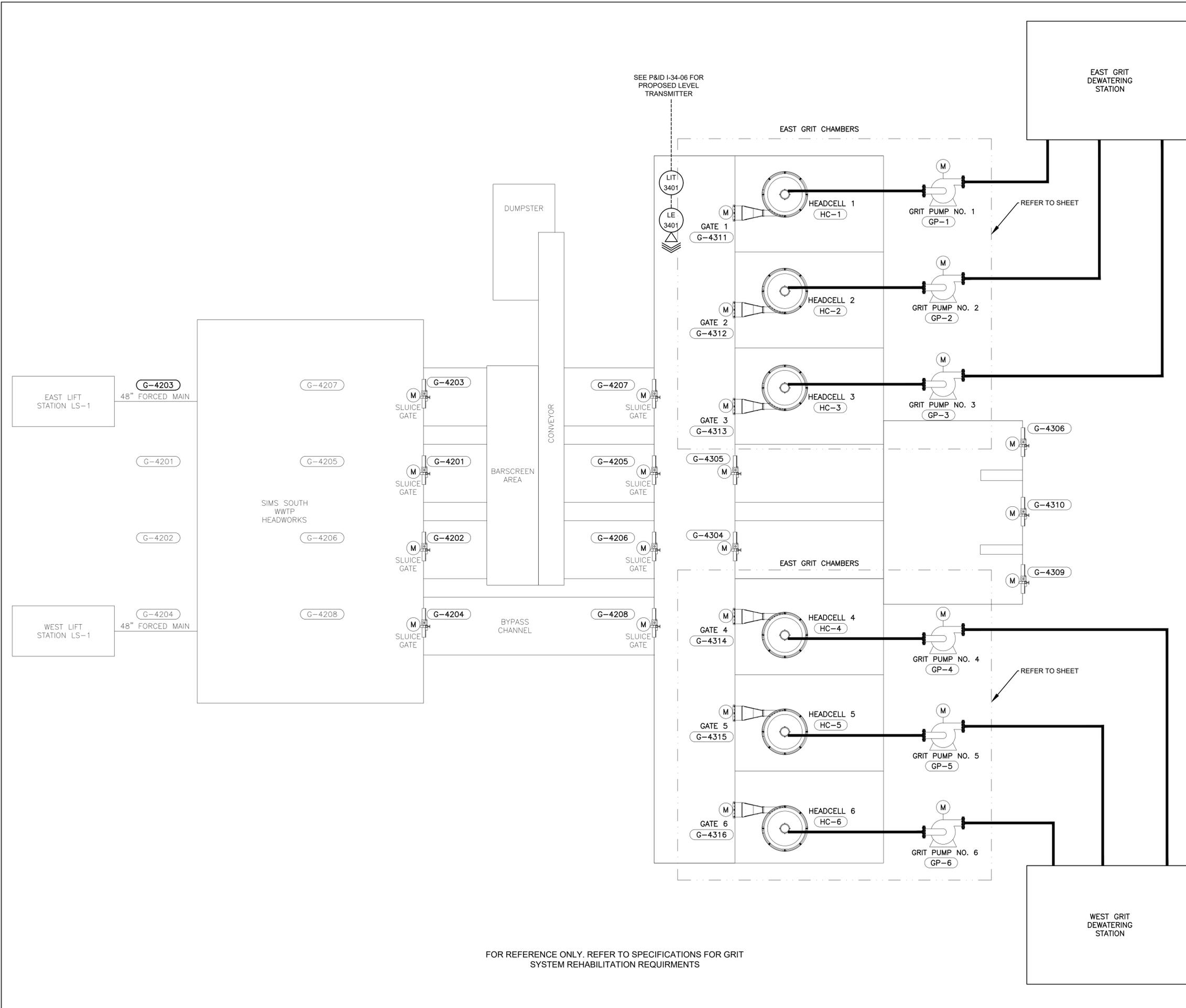
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SEE P&ID I-34-06 FOR PROPOSED LEVEL TRANSMITTER

**NOTES:**

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2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 5230.

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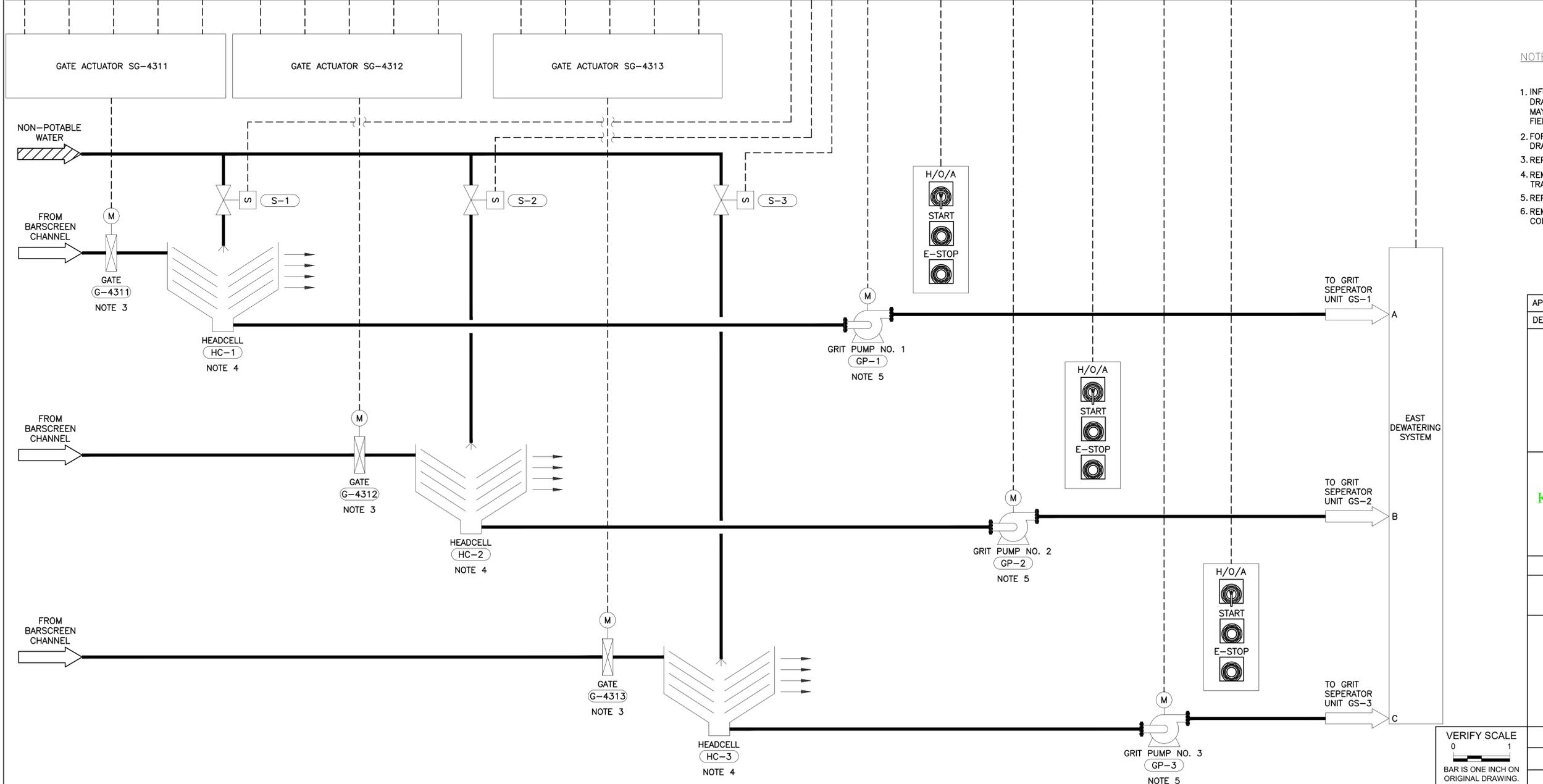
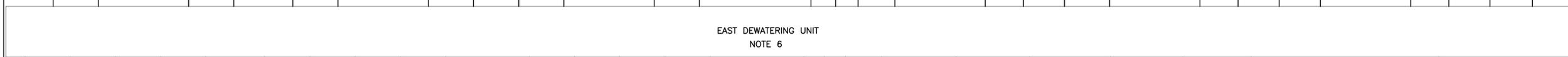
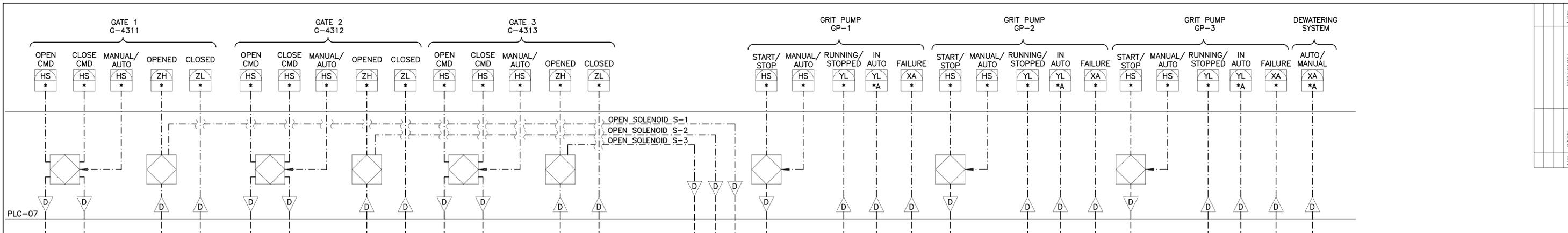
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**HEADWORKS OVERALL**  
**PROCESS FLOW DIAGRAM**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO I-34-1	DRAWING SCALE	
	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 185 OF 271	

FOR REFERENCE ONLY. REFER TO SPECIFICATIONS FOR GRIT SYSTEM REHABILITATION REQUIREMENTS

NO.	DATE	REVISION	APP.



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  2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.
  3. REPAIR GRIT CHAMBER INFLUENT GATES
  4. REMOVE AND REPLACE TOP THREE HEADCELL GRIT TRAYS WITH NEW ONES.
  5. REPLACE EXISTING GRIT PUMPS WITH NEW ONES.
  6. REMOVE AND REPLACE EXISTING GRIT SYSTEM CONTROL PANELS WITH NEW ONES.

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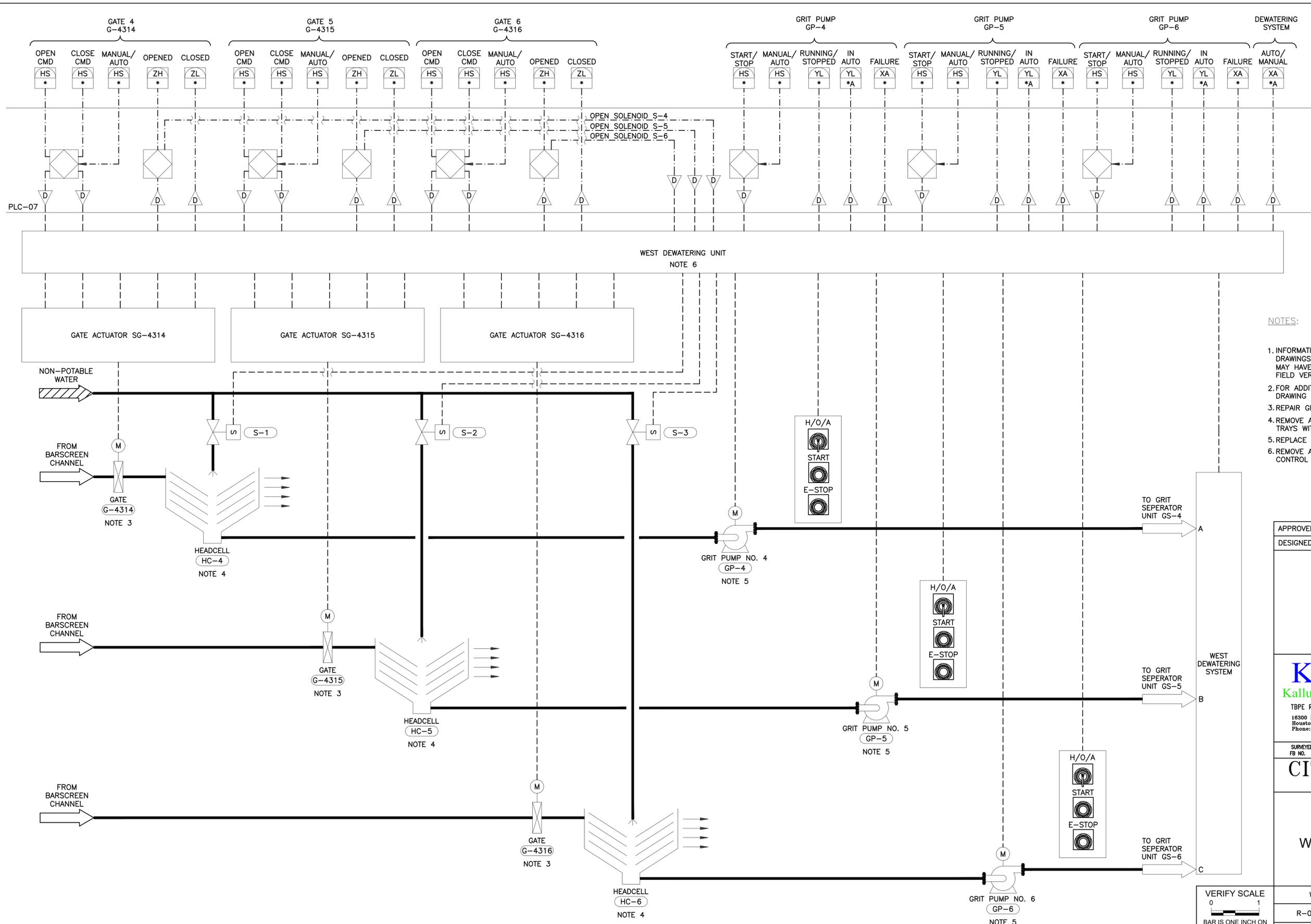
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT SYSTEM**  
**EAST GRIT CHAMBERS P&ID**

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	_186 OF 271

VERIFY SCALE  
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 DWG NO  
 1-34-2

FOR REFERENCE ONLY. REFER TO SPECIFICATION 11320 GRIT SYSTEM REHABILITATION

NO.	DATE	REVISION	APP.



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5. REPLACE EXISTING GRIT PUMPS WITH NEW ONES.
6. REMOVE AND REPLACE EXISTING GRIT SYSTEM CONTROL PANELS WITH NEW ONES.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
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 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT SYSTEM**  
**WEST GRIT CHAMBERS P&ID**

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	187 OF 271

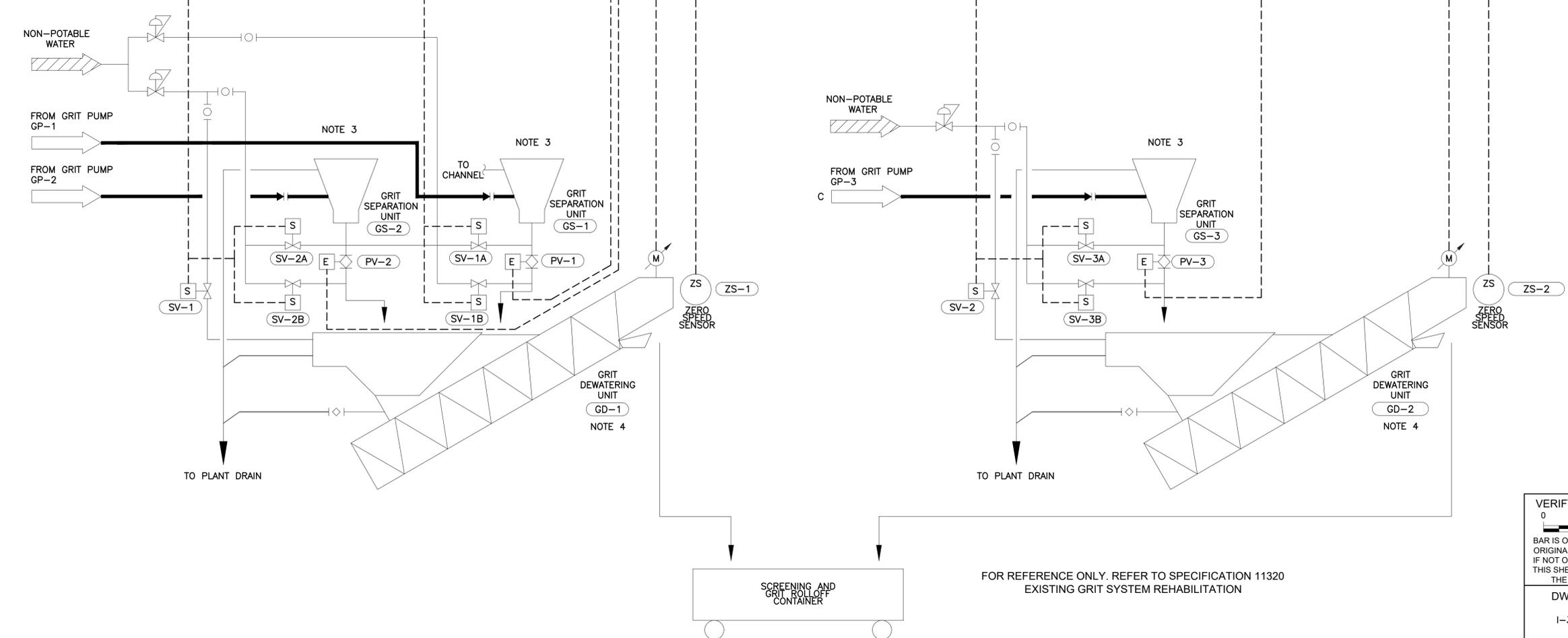
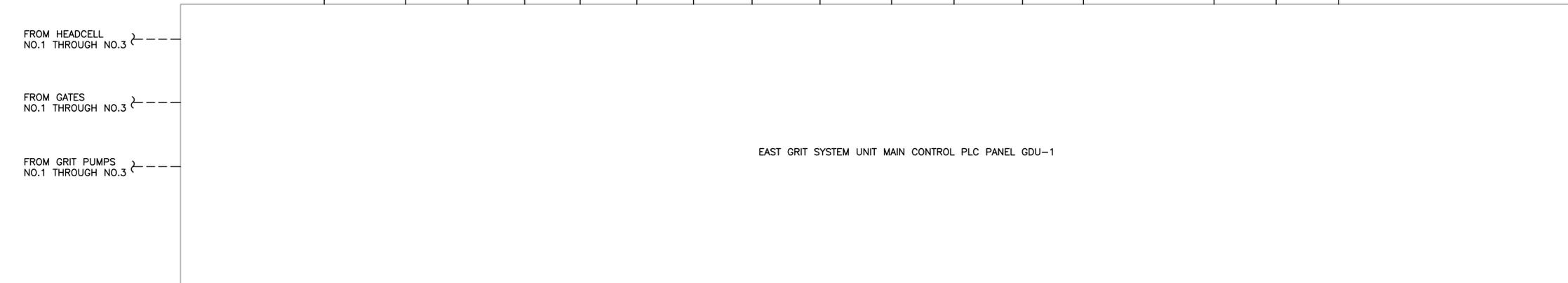
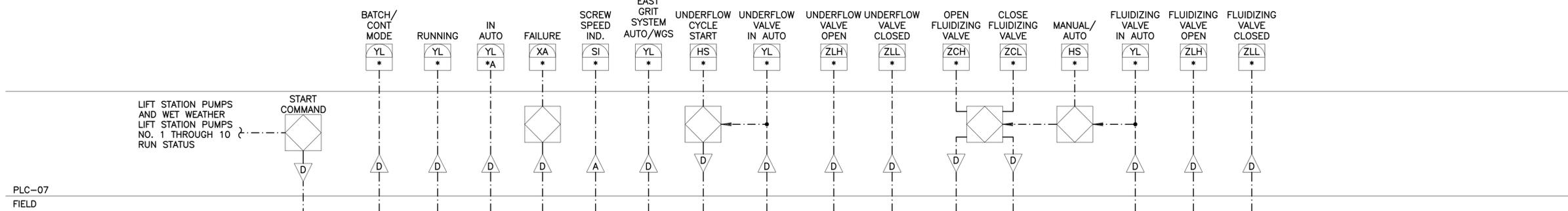
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DWG NO  
 I-34-3

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NO.	DATE	REVISION	APP.

EAST GRIT DEWATERING UNIT



NOTES:

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2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO 52309.
3. REMOVE AND REPLACE EXISTING GRIT SEPARATION TEACUPS WITH OP-TEA-CUPS.
4. REPLACE THE GRIT SNAIL DEWATERING BELTS, MOTORS AND GEAR DRIVES, DRIVE SHAFT BEARINGS, TAIL ROLL BEARINGS, BELT SUPPORT PIPES, AND DISCHARGE CHUTES

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TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**GRIT SYSTEM-EAST GRIT DEWATERING STATION P&ID**  
 INSTRUMENTATION

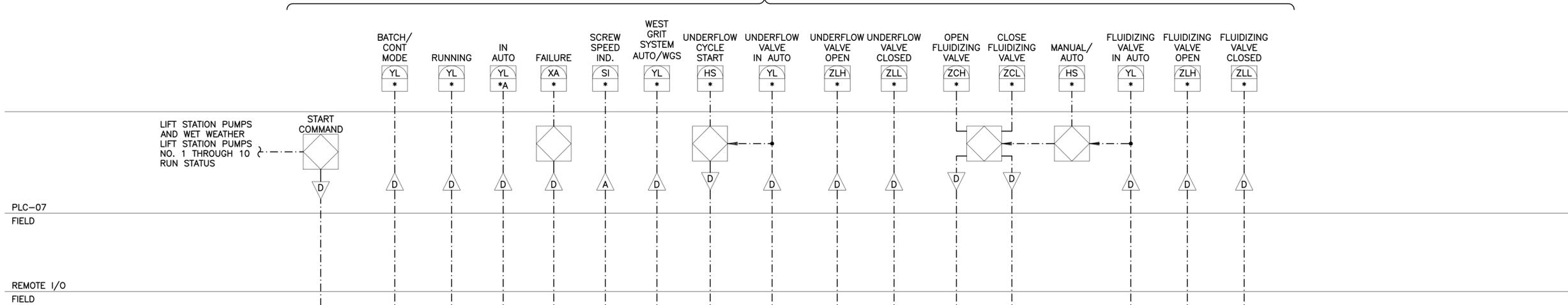
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO	DRAWING SCALE	
I-34-4	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 188 OF 271	

NO.	DATE	REVISION	APP.

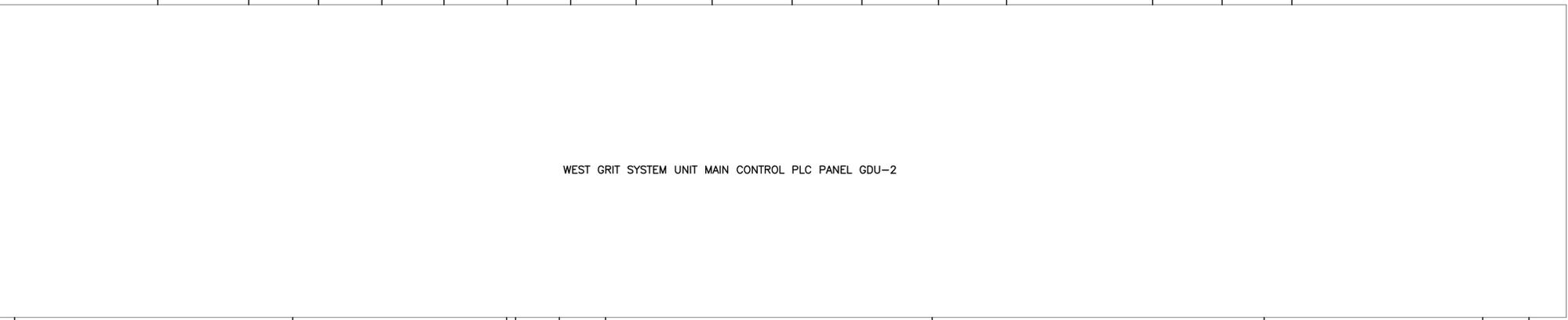
FOR REFERENCE ONLY. REFER TO SPECIFICATION 11320 EXISTING GRIT SYSTEM REHABILITATION



EAST GRIT DEWATERING UNIT

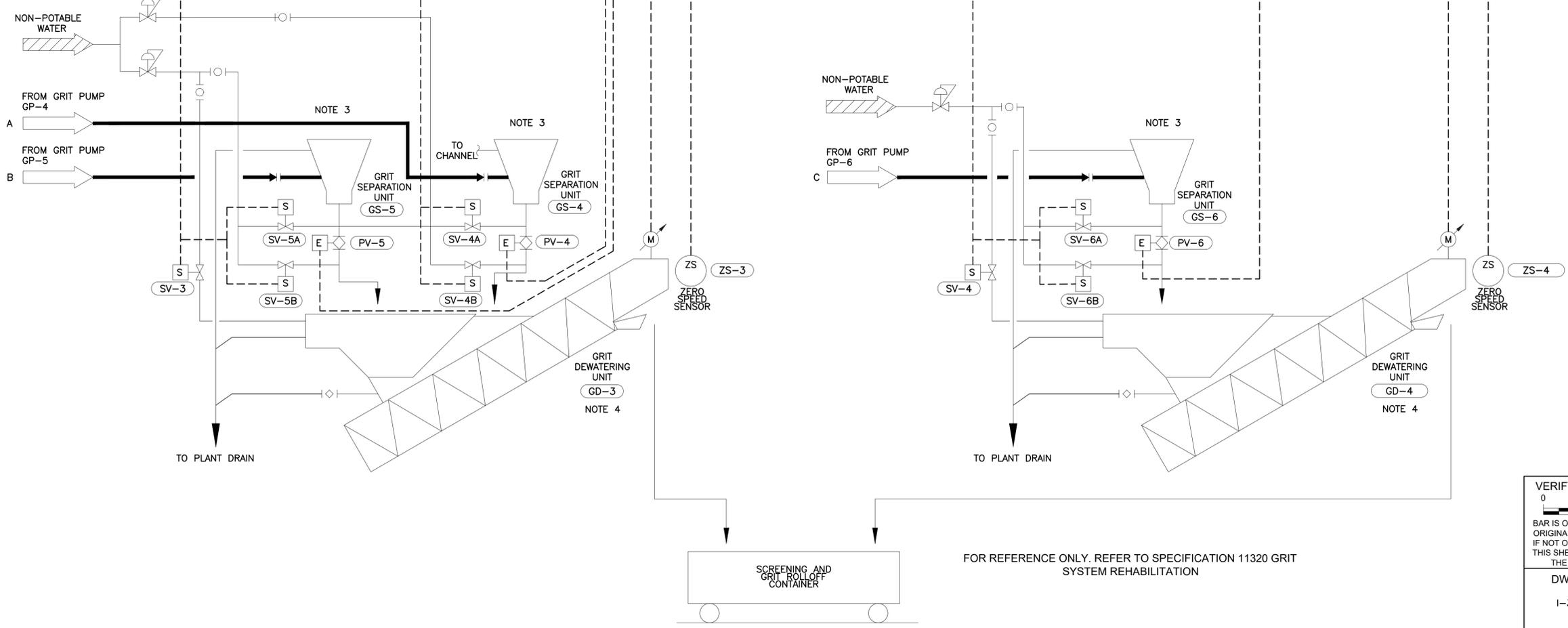


LIFT STATION PUMPS AND WET WEATHER LIFT STATION PUMPS NO. 1 THROUGH 10 RUN STATUS



NOTES:

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**GRIT SYSTEM-WEST GRIT DEWATERING STATION P&ID**

INSTRUMENTATION

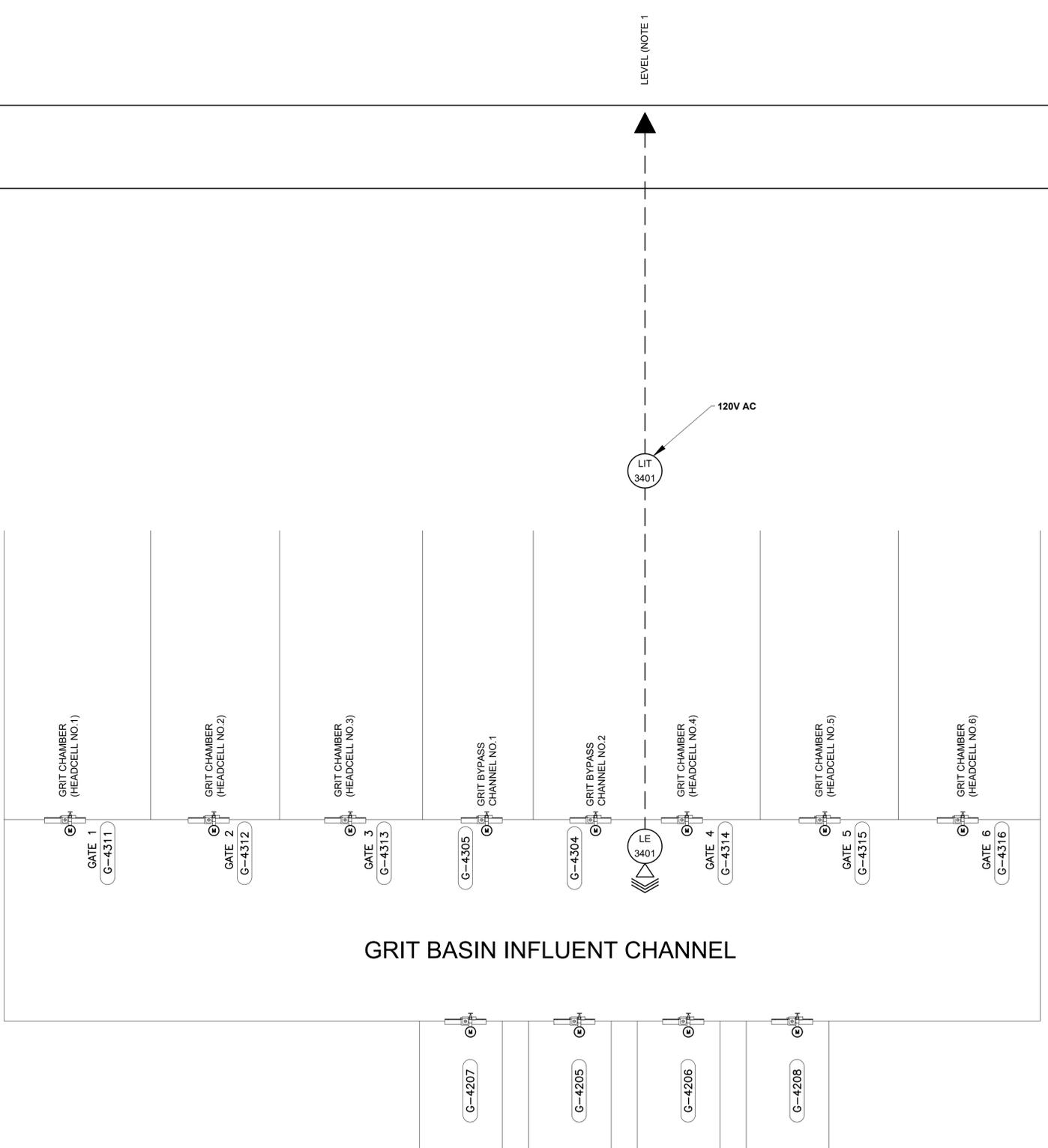
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.
DWG NO I-34-5

WBS NUMBER R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE NTS	
CITY OF HOUSTON PM TAHA LOTIA	
SHEET NO. 189 OF 271	

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NO.	DATE	REVISION	APP.

HMI		HMI		HMI		HMI	
PLC CABINET		PLC CABINET		PLC CABINET		PLC CABINET	



- NOTES:**
- GRIT BASIN INFLUENT CHANNEL LIQUID LEVEL CONTROL:
    - WHEN THE LIQUID LEVEL IN THE INFLUENT CHANNEL REACHES 12.3 FT (ELEVATION 36.90 FT), ACTIVATE ALARM.
    - WHEN THE LIQUID LEVEL REACHES 12.5 FT (ELEVATION 37.10 FT), OPEN GRIT CHAMBER BYPASS GATES G-4304 AND G-4305.

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<p>SURVEYED BY: FB NO.</p>	

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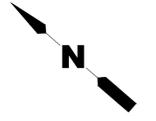
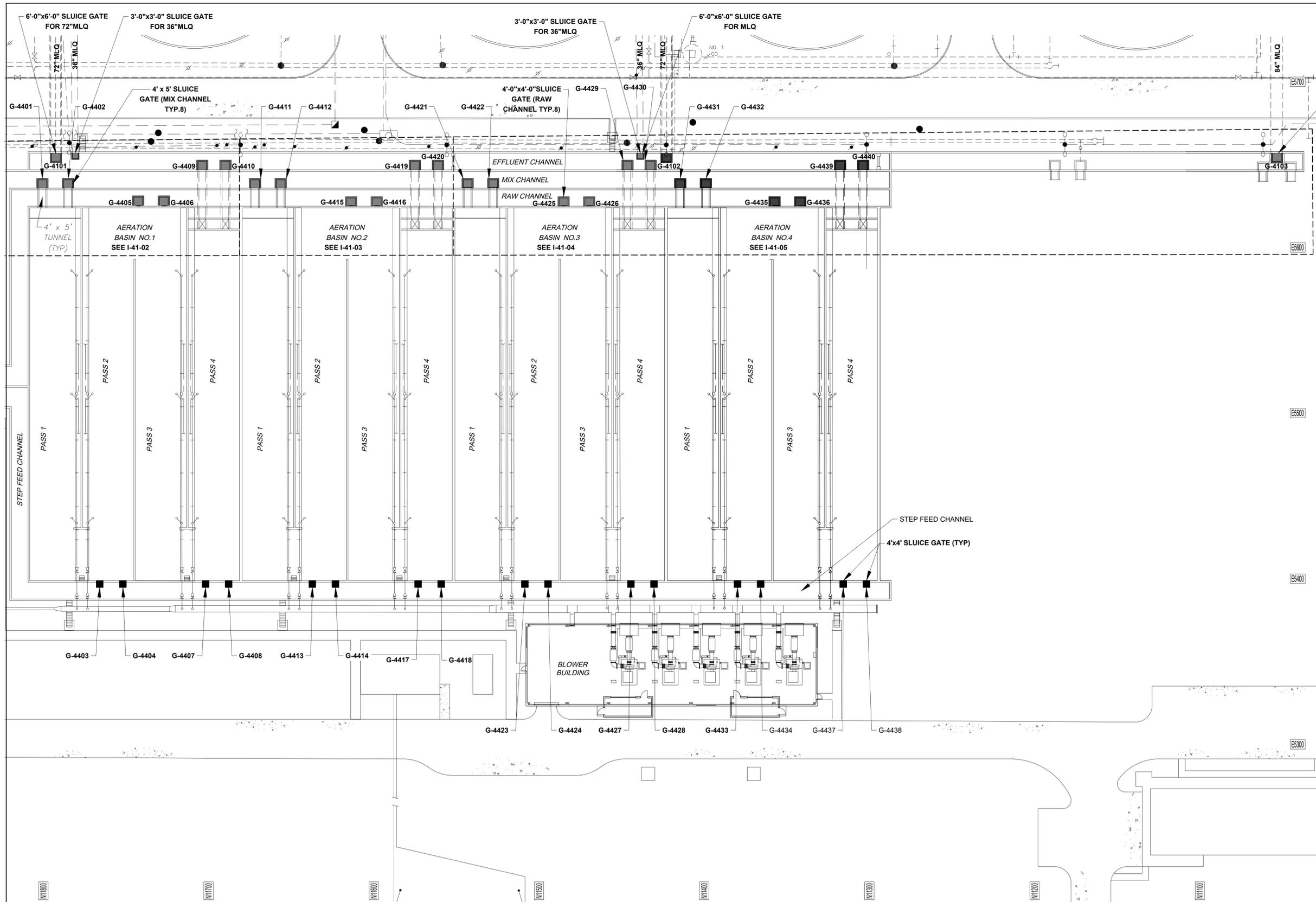
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**GRIT CHAMBER INFLUENT  
CHANNEL PROPOSED LEVEL  
TRANSMITTER P&ID**

INSTRUMENTATION

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DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 190 OF 271		
DWG NO		
1-34-6		

**BAR SCREEN EFFLUENT CHANNELS**



NO.	DATE	REVISION	APP.

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SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**AERATION BASIN  
GATES OVERALL PLAN**

INSTRUMENTATION

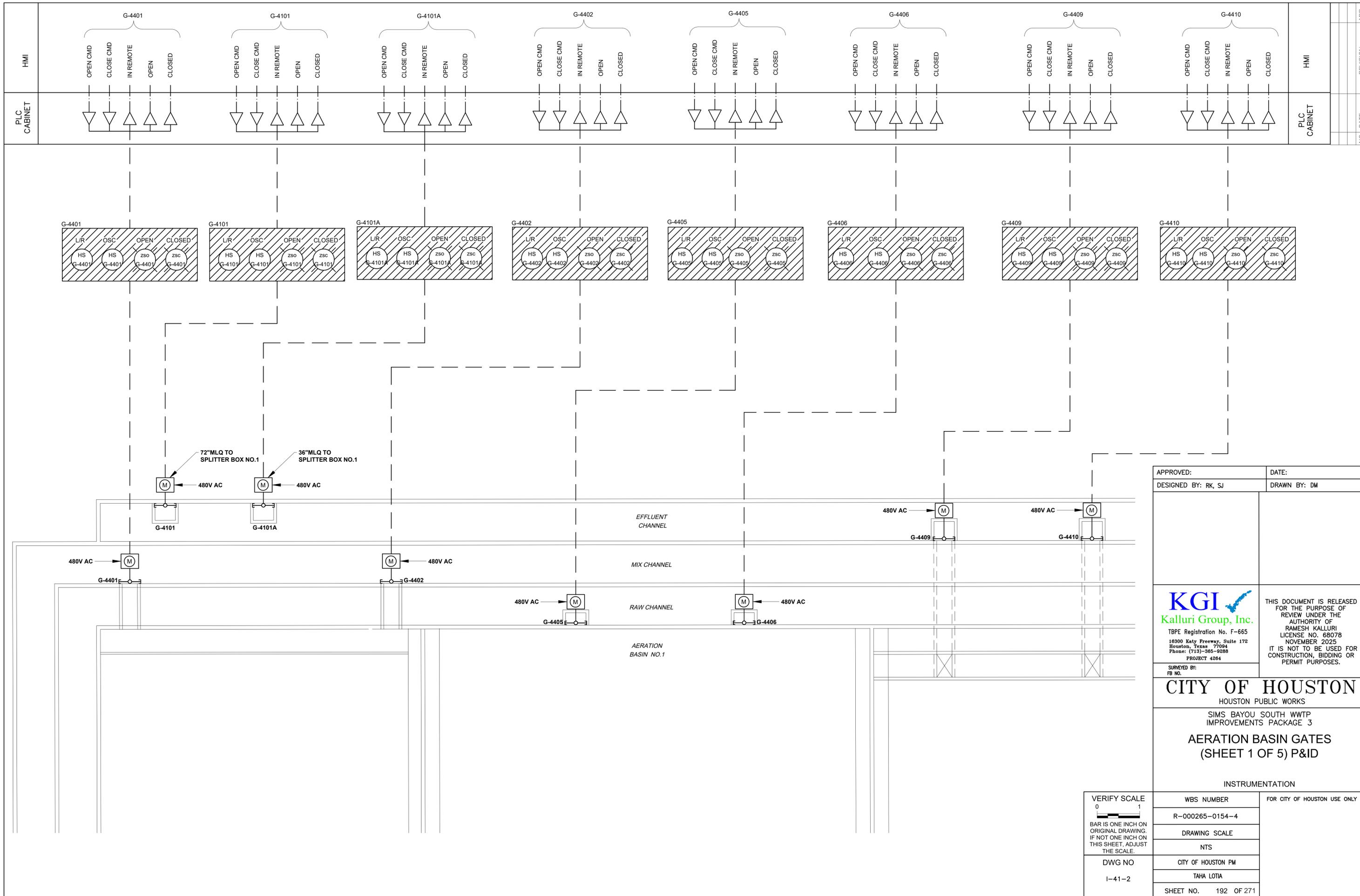
AERATION BASIN GATES OVERALL

PLAN  
1"=30'-0"

VERIFY SCALE  
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DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 191 OF 271	



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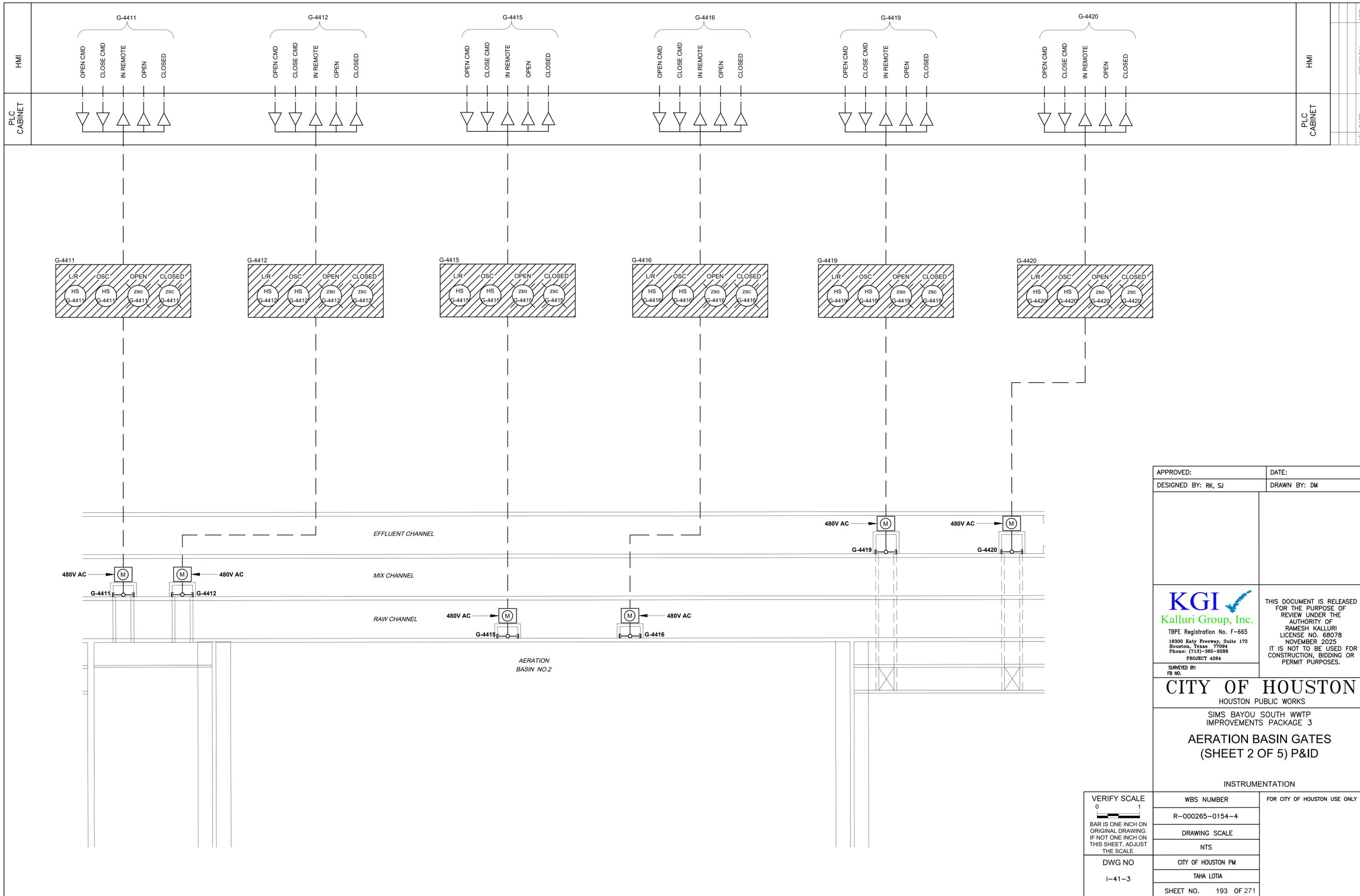
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN GATES (SHEET 1 OF 5) P&ID**

INSTRUMENTATION		FOR CITY OF HOUSTON USE ONLY
WBS NUMBER	R-000265-0154-4	
DRAWING SCALE	NTS	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	192 OF 271	

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 I-41-2

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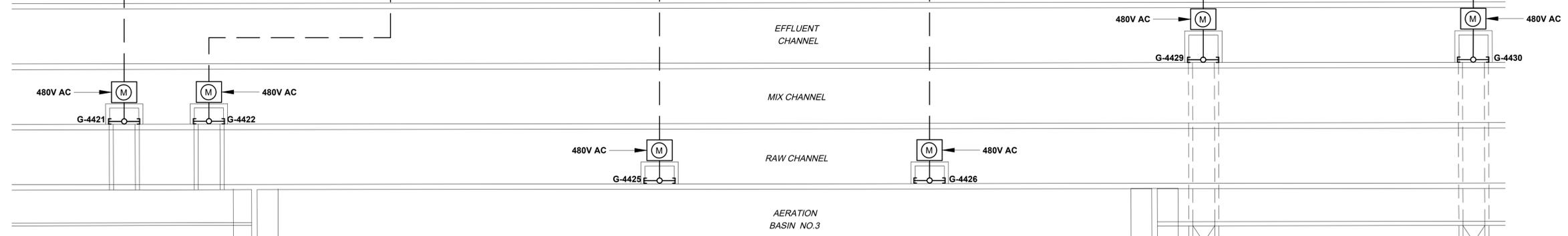
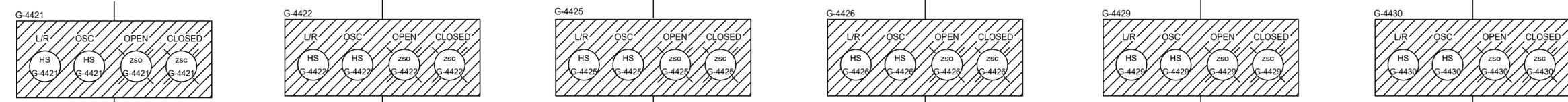
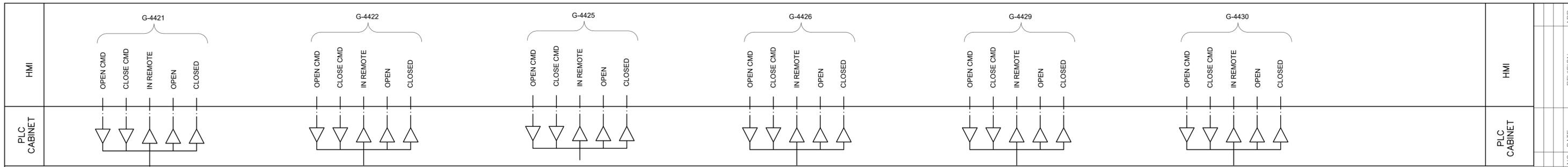
**KGI**  
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 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN GATES (SHEET 2 OF 5) P&ID**

INSTRUMENTATION	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 193 OF 271	

VERIFY SCALE  
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.  
 DWG NO 1-41-3



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

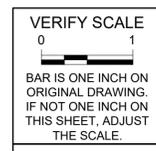
**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN GATES**  
 (SHEET 3 OF 5) P&ID

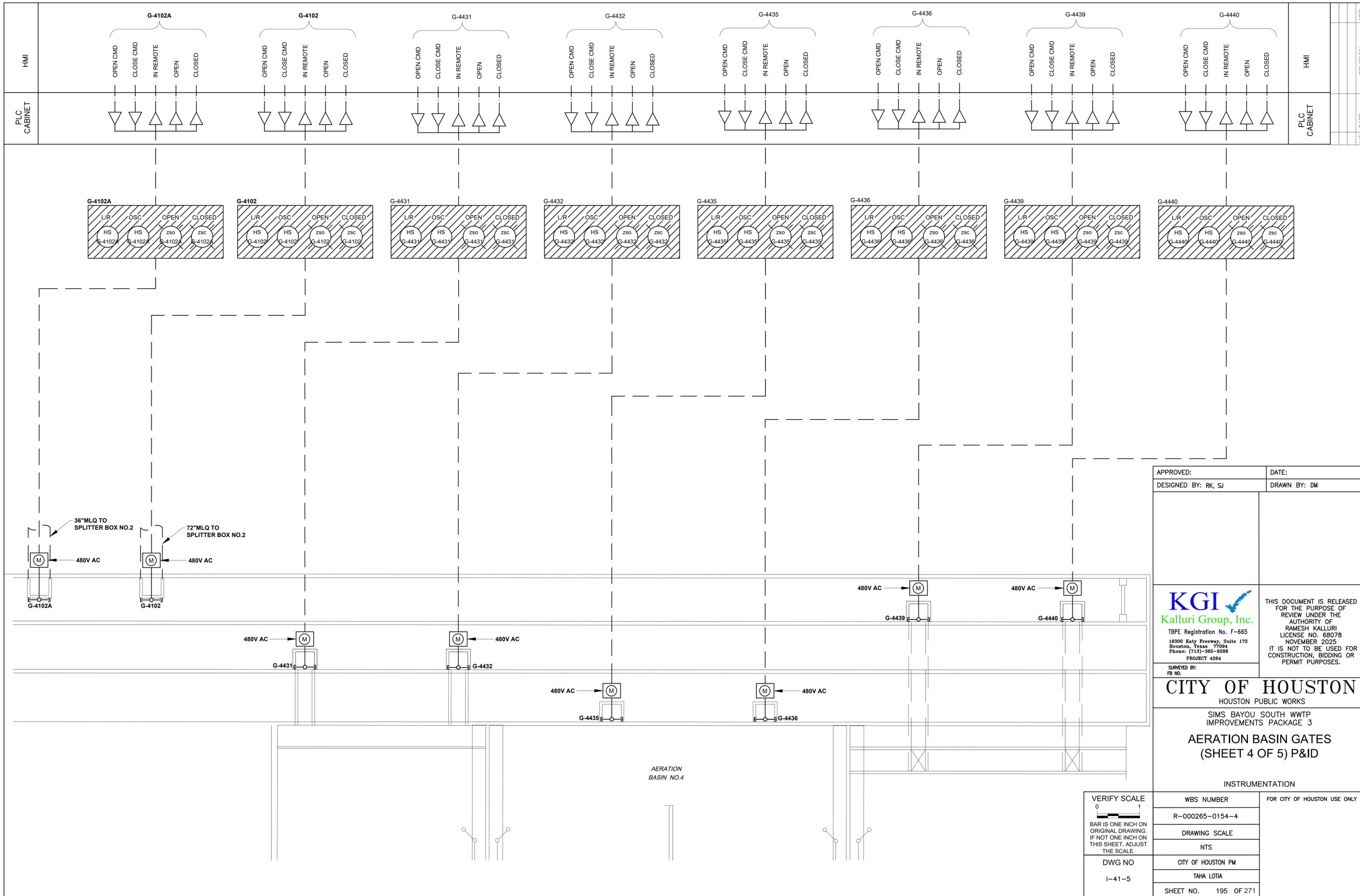
INSTRUMENTATION



DWG NO  
 I-41-4

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	194 OF 271

NO.	DATE	REVISION	APP.



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN GATES (SHEET 4 OF 5) P&ID**

INSTRUMENTATION	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 195 OF 271	

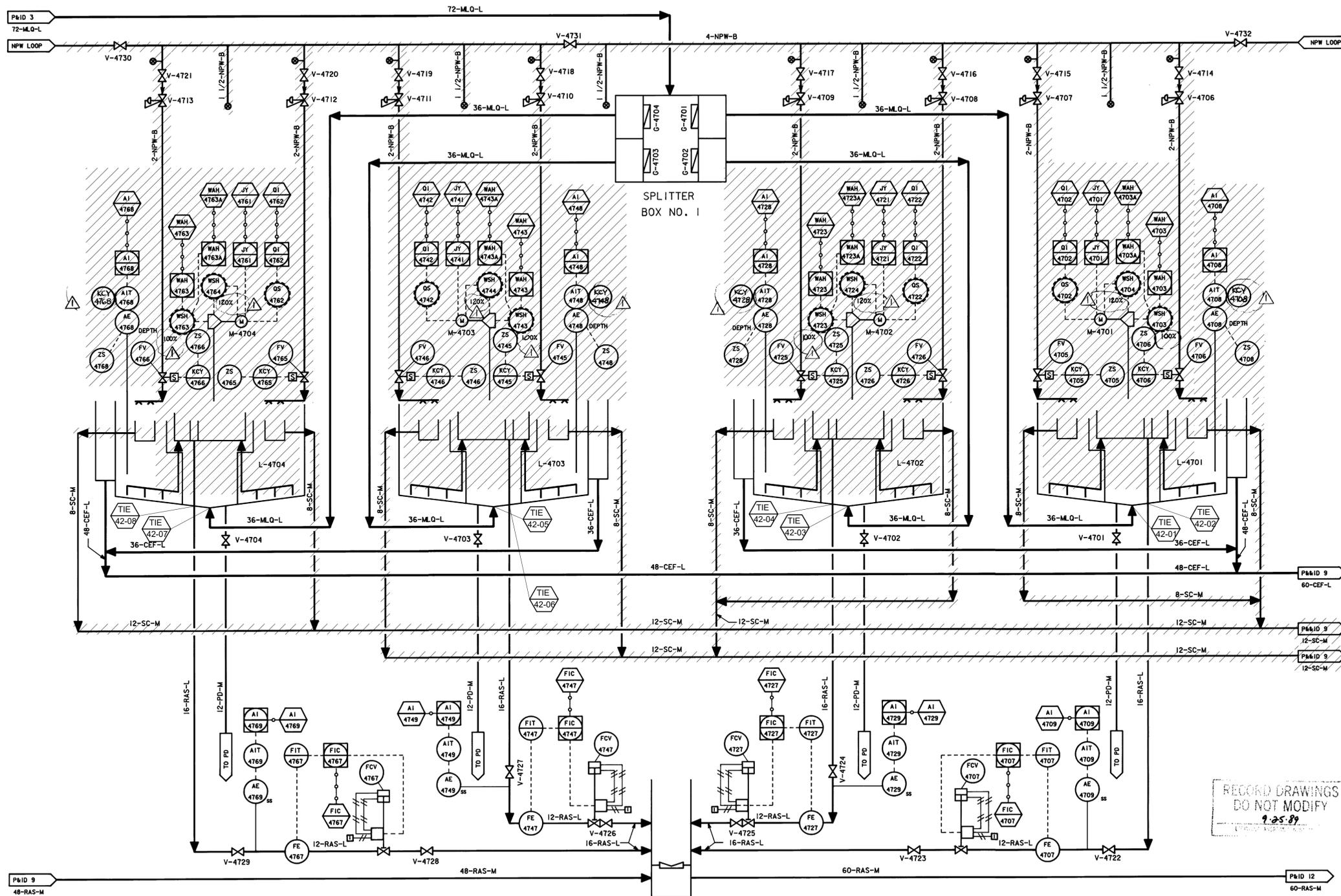
VERIFY SCALE  
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 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO  
 I-41-5

NO. DATE REVISION APP.



NO.	DATE	REVISION	APP.



**NOTES:**

1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS. SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY FIELD VERIFY PRIOR TO DEMOLITION.
2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO.28544 "CLARIFIERS L-4701 THRU 4704 P&ID 8"

RECORD DRAWINGS  
DO NOT MODIFY  
9.25.89

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
18300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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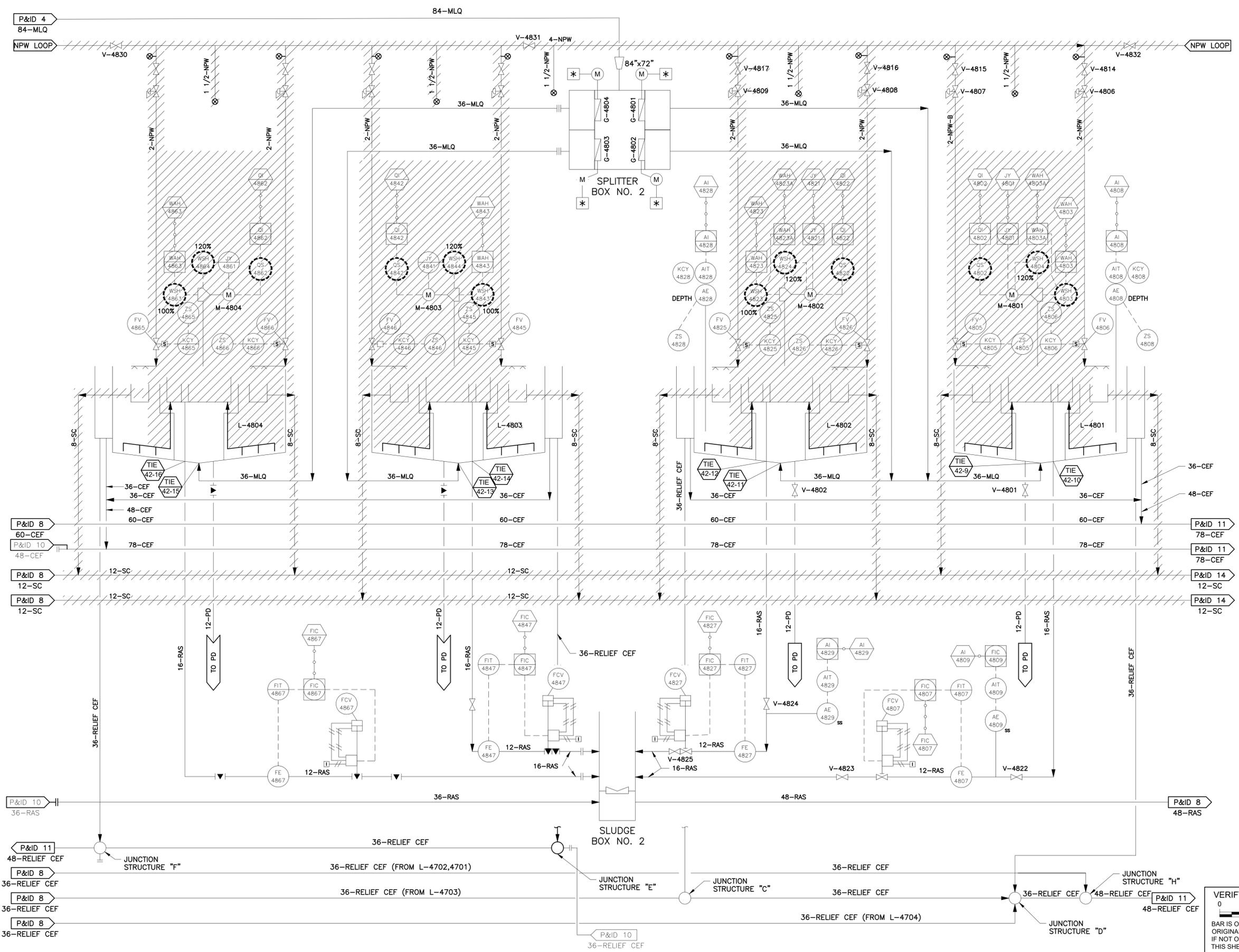
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3  
**CLARIFIERS L-4701 THRU 4704  
DEMOLITION P&ID**

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	197 OF 271



DWG NO	I-42-1
--------	--------

NO.	DATE	REVISION	APP.



- NOTES:**
1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS. SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY FIELD VERIFY PRIOR TO DEMOLITION.
  2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO.43005 "CLARIFIERS L-4801 THRU 4804 P&ID 9"

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**KGI**  
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 TBPE Registration No. F-665  
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 Houston, Texas 77094  
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 PROJECT 4264

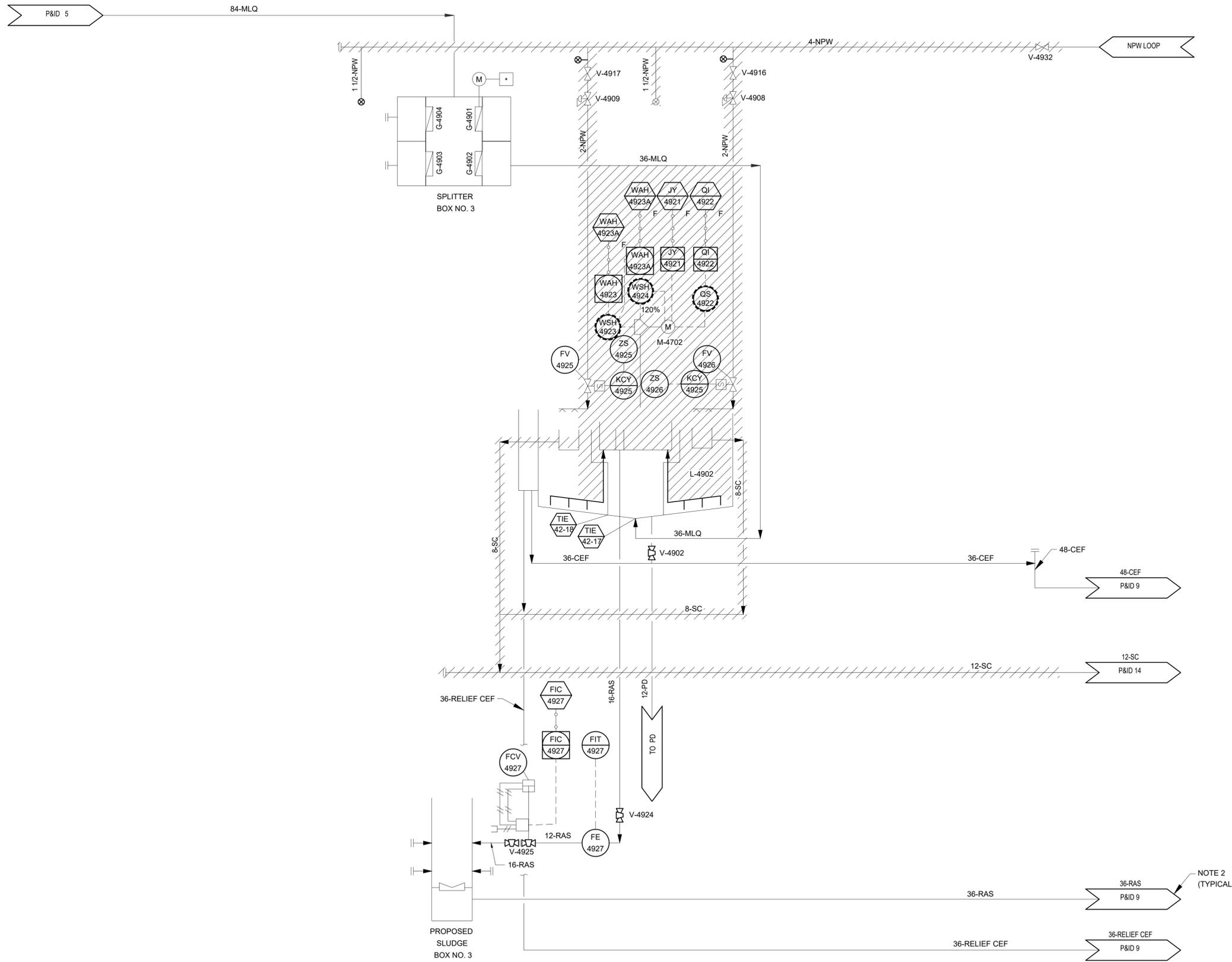
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**CLARIFIERS L-4801 THRU 4804  
 DEMOLITION P&ID**

INSTRUMENTATION	
WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	198 OF 271

VERIFY SCALE  
 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

DWG NO  
 I-42-2



**NOTES:**

1. INFORMATION OBTAINED FROM EXISTING RECORD DRAWINGS. SOME EQUIPMENT AND/OR INSTRUMENTS MAY HAVE BEEN REMOVED OR ALTERED BY THE CITY FIELD VERIFY PRIOR TO DEMOLITION.
2. FOR ADDITIONAL INFORMATION REFER TO RECORD DRAWING NO.43005 "CLARIFIER L-4902 P&ID 10"

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
**Kalluri Group, Inc.**  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**CLARIFIERS L-4902 DEMOLITION P&ID**

INSTRUMENTATION

VERIFY SCALE  
 0 1  
 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	199 OF 271

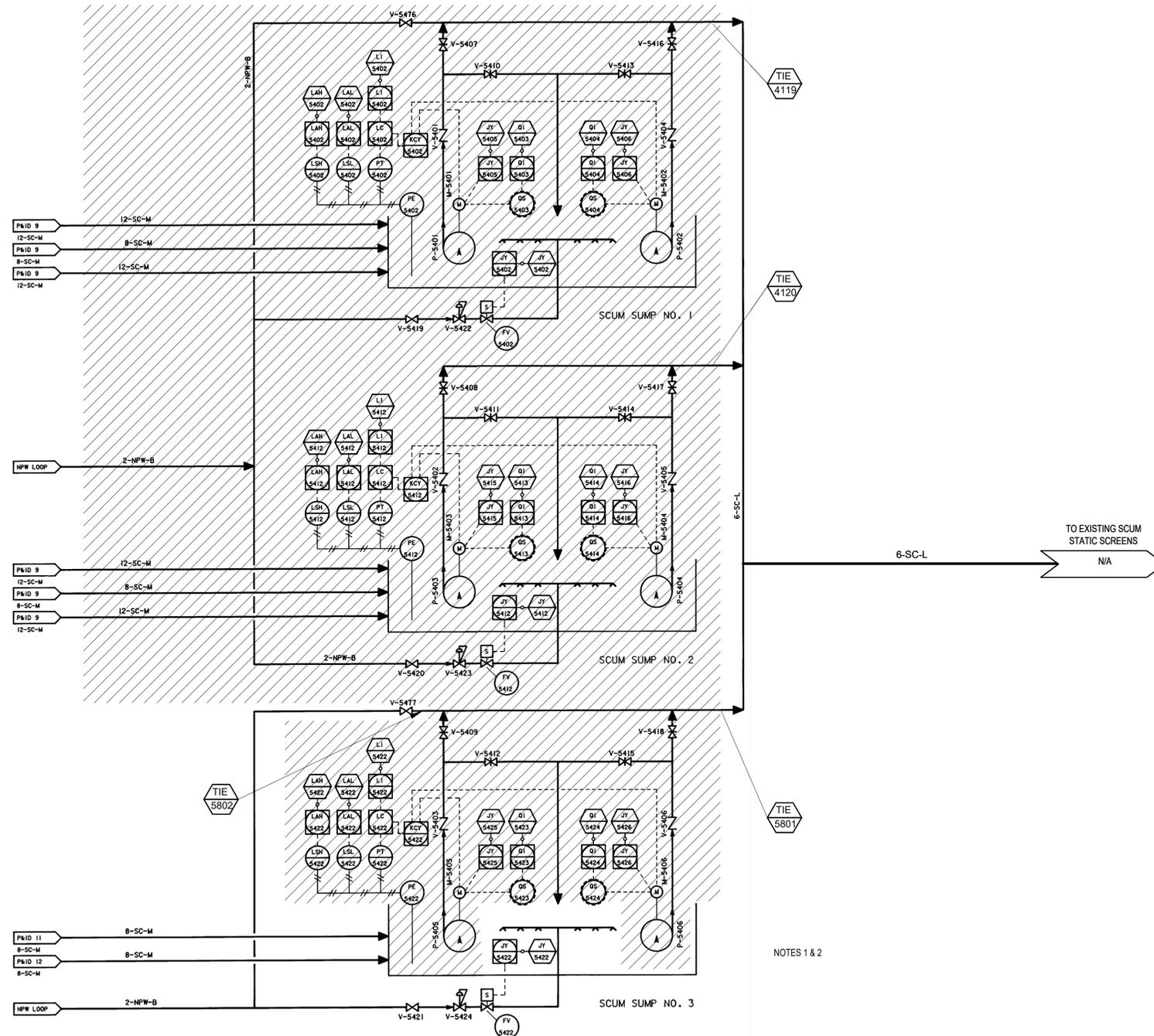
DWG NO  
 1-42-3

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.

**NOTES:**

1. THE EXISTING PUMPS IN SCUM PUMP STATION NO. 3 SHALL BE REMOVED AND ONE NEW SCUM PUMP SHALL BE INSTALLED.
2. SCUM PUMP STATION NOS. 1 AND 2 SHALL BE COMPLETELY DEMOLISHED, INCLUDING THE CONCRETE SUMP, PIPING, AND ALL ASSOCIATED ELECTRICAL COMPONENTS..



NOTES 1 & 2

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
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TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SCUM PUMP STATION NOS.1 THRU 3**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 200 OF 271		

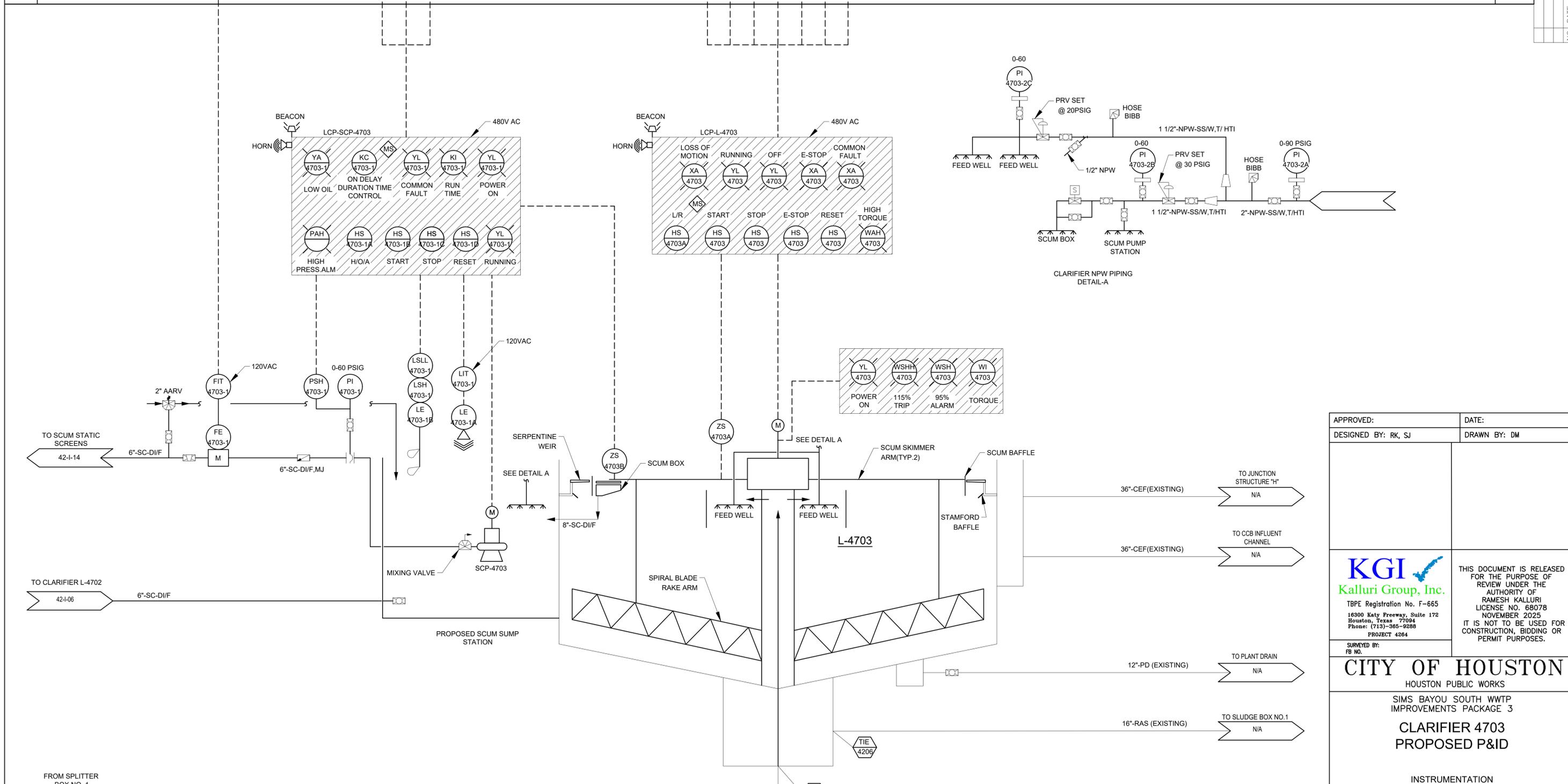
DWG NO  
I-42-4





	HMI		HMI
	PLC CABINET		PLC CABINET

NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

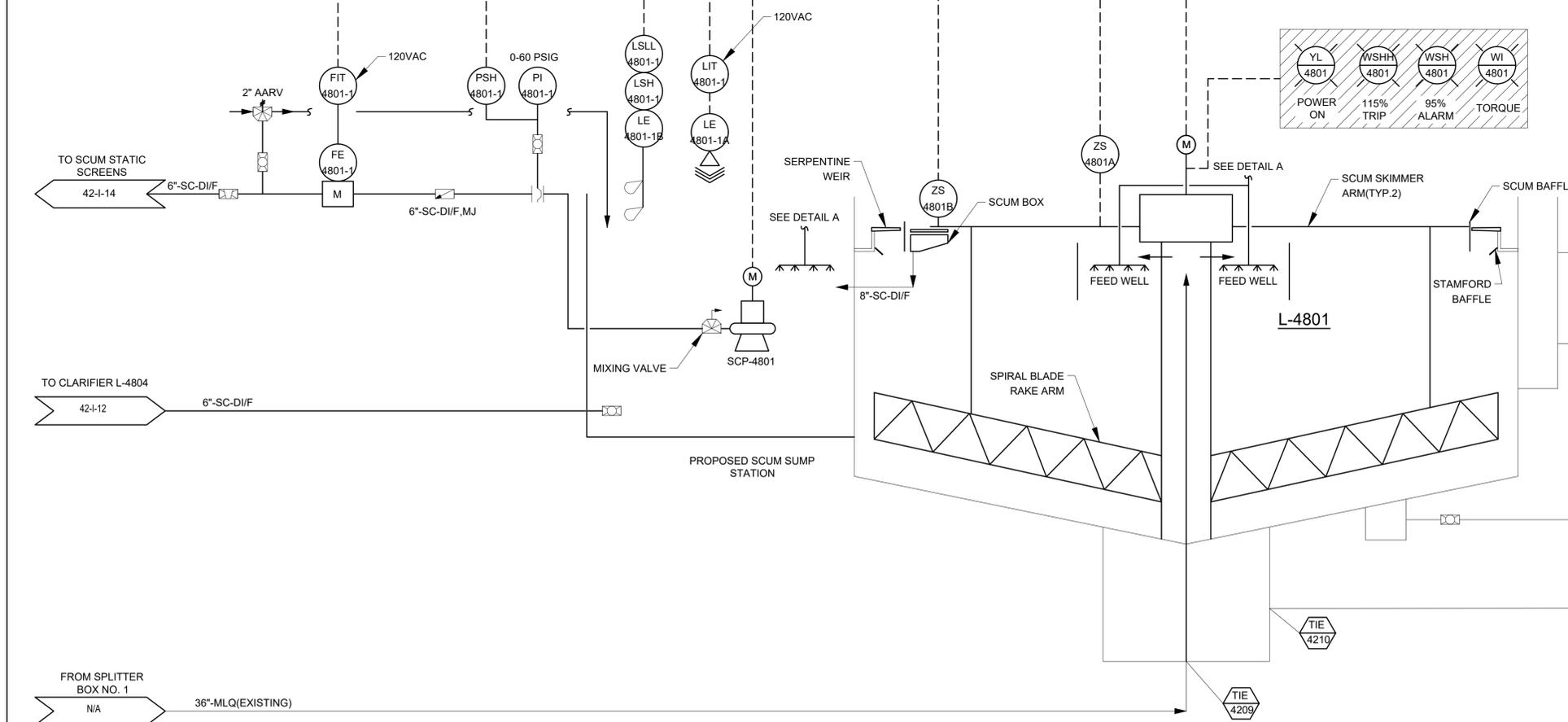
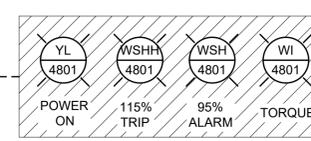
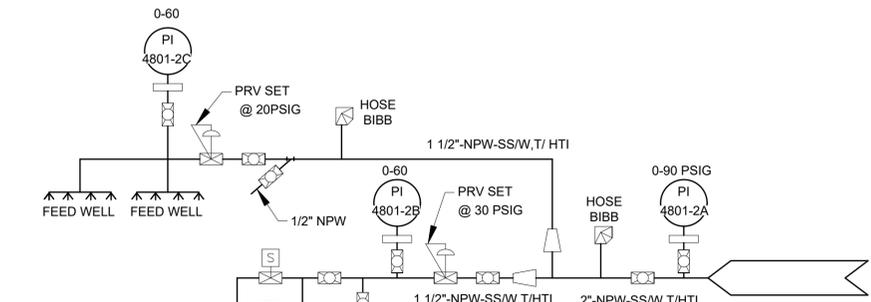
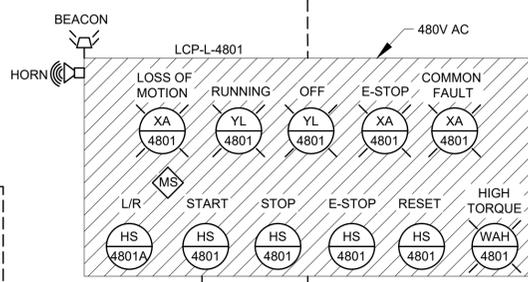
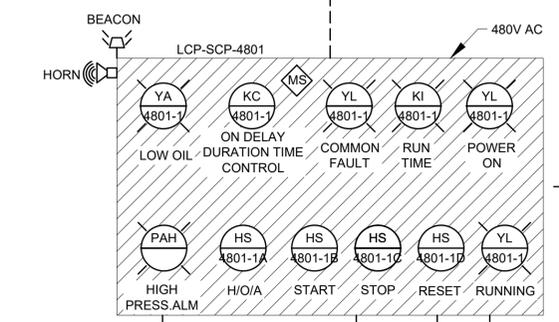
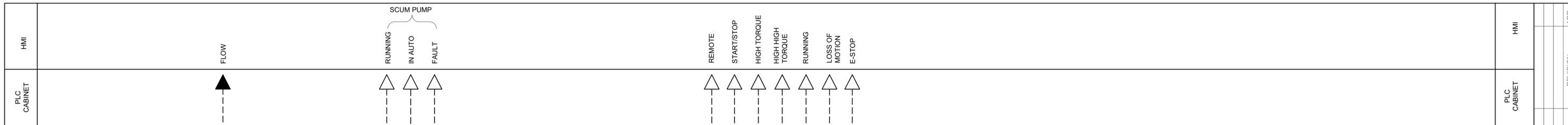
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**CLARIFIER 4703 PROPOSED P&ID**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
1-42-7	TAHA LOTIA	
SHEET NO.	203 OF 271	





APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

TO JUNCTION STRUCTURE 'H'	N/A
TO CCB INFLUENT CHANNEL	N/A

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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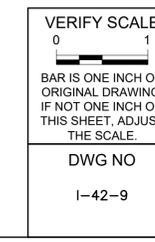
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

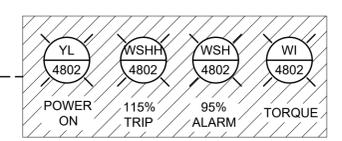
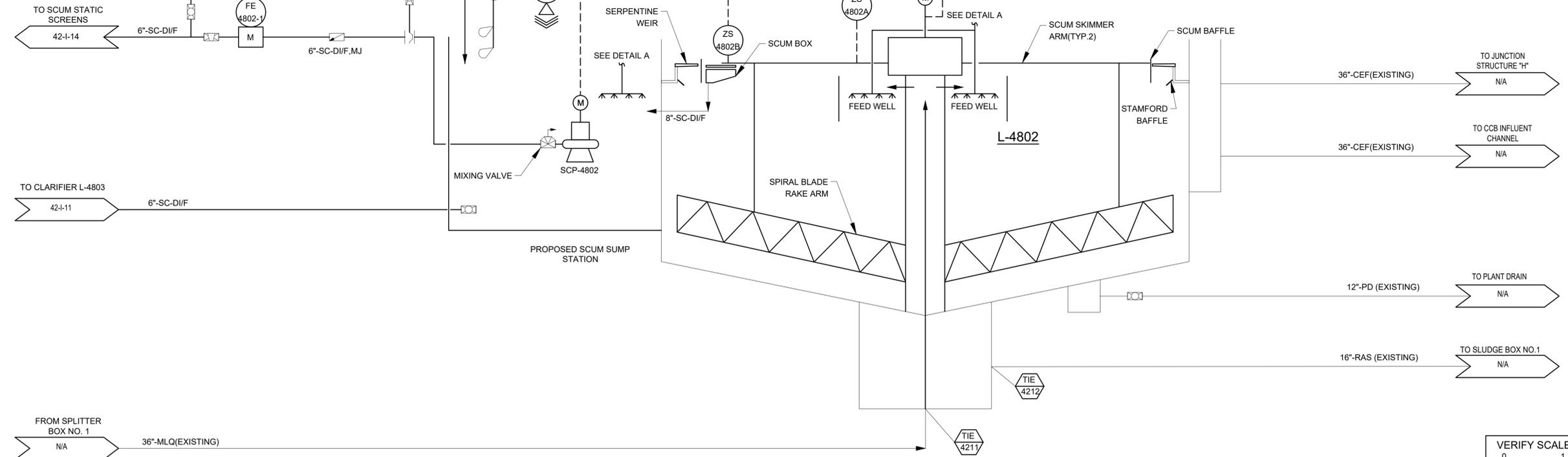
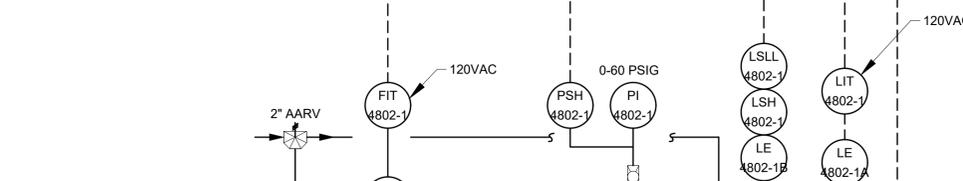
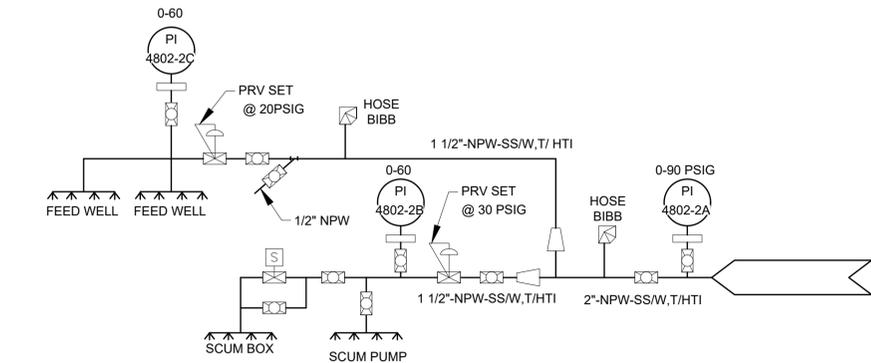
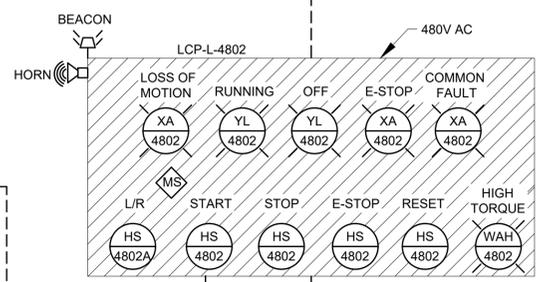
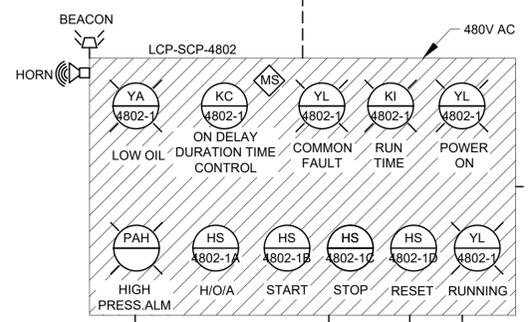
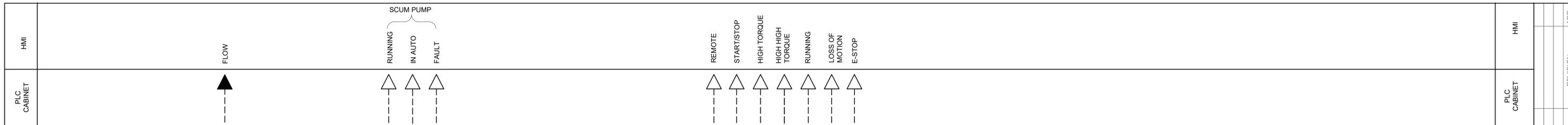
**CLARIFIER 4801 PROPOSED P&ID**

INSTRUMENTATION

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	205 OF 271



TO PLANT DRAIN	N/A
TO SLUDGE BOX NO.1	N/A



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

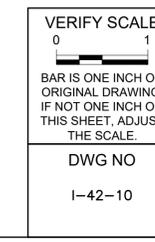
TO SCUM STATIC SCREENS 42-1-14	TO JUNCTION STRUCTURE 'H'
TO CLARIFIER L-4803 42-1-11	TO CCB INFLUENT CHANNEL
FROM SPLITTER BOX NO. 1 N/A	TO PLANT DRAIN
	TO SLUDGE BOX NO.1

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

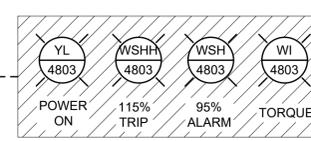
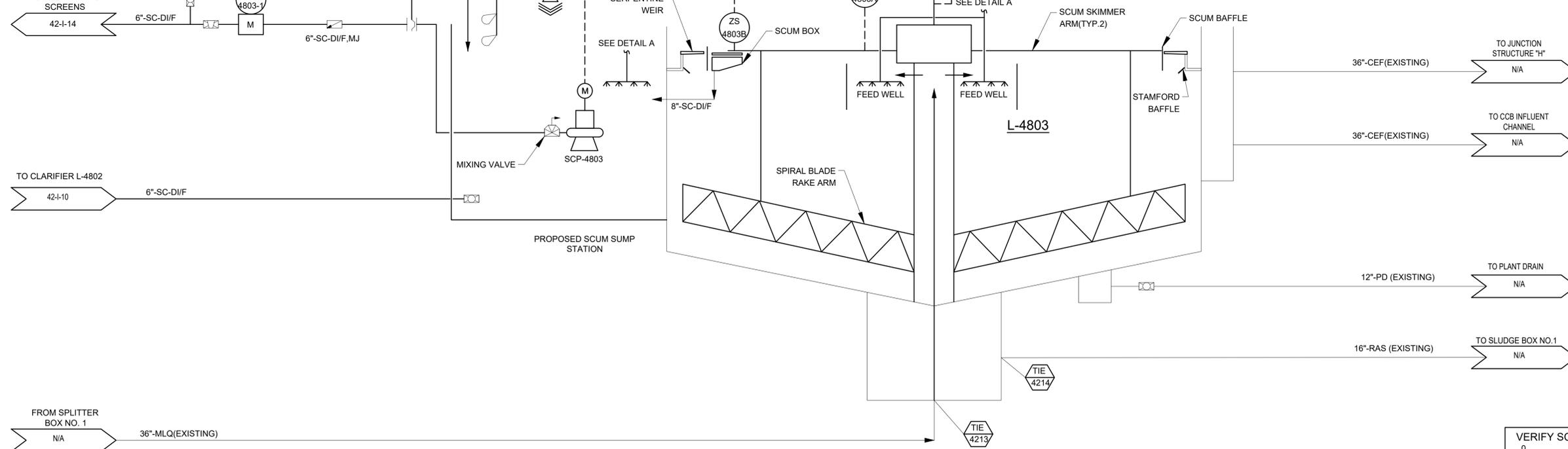
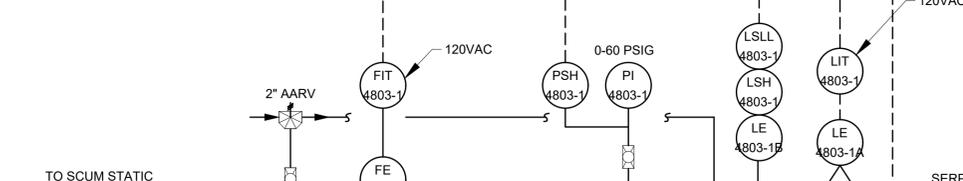
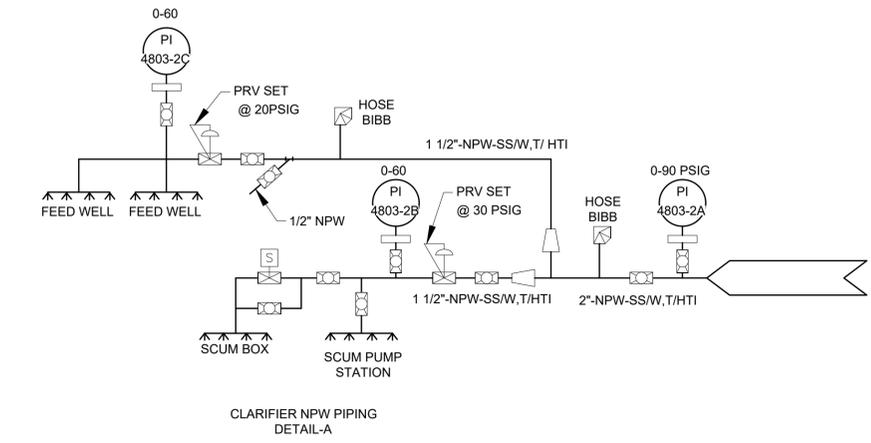
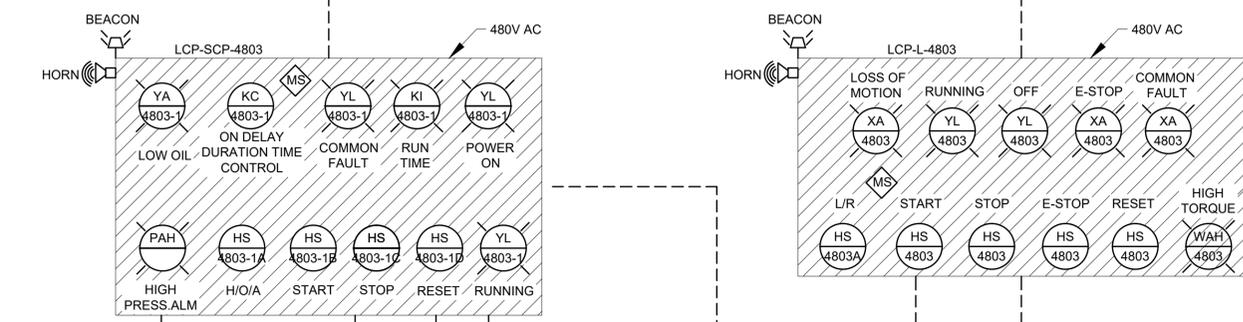
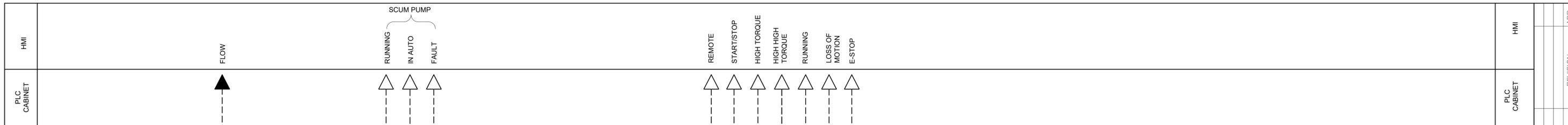
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**CLARIFIER 4802 PROPOSED P&ID**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 206 OF 271	



NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

TO SCUM STATIC SCREENS 42-1-14	6"-SC-DI/F	TO JUNCTION STRUCTURE "H"	N/A
TO CLARIFIER L-4802 42-4-10	6"-SC-DI/F	TO CCB INFLUENT CHANNEL	N/A
FROM SPLITTER BOX NO. 1	36"-MLQ(EXISTING)	TO PLANT DRAIN	N/A
		TO SLUDGE BOX NO.1	N/A

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**CLARIFIER 4803 PROPOSED P&ID**

INSTRUMENTATION

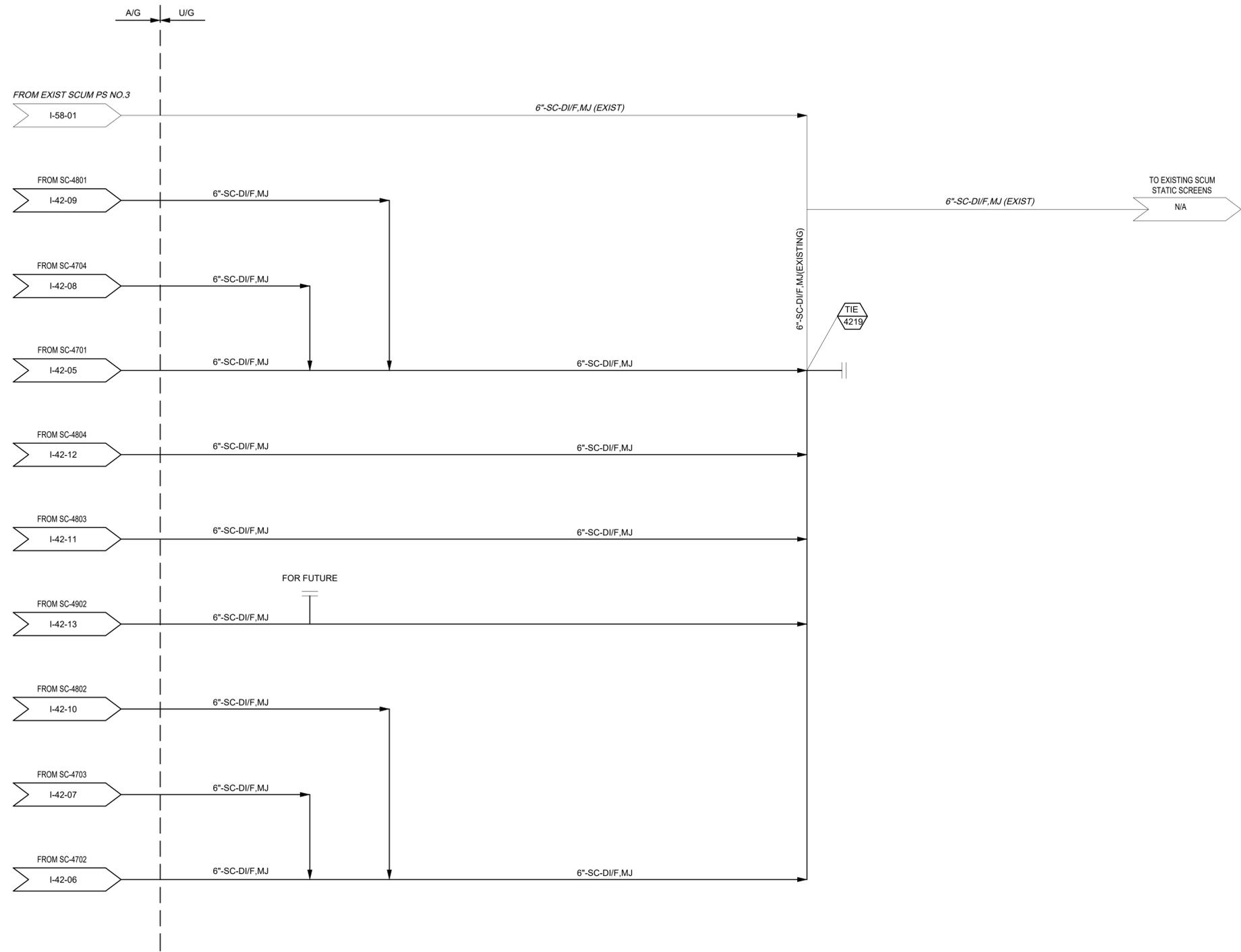
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	CITY OF HOUSTON PM	
I-42-11	TAHA LOTIA	
	SHEET NO. 207 OF 271	





HMI	HMI
PLC CABINET	PLC CABINET

NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
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SURVEYED BY:  
FB NO.

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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**SCUM DISCHARGE  
PIPING P&ID**

INSTRUMENTATION

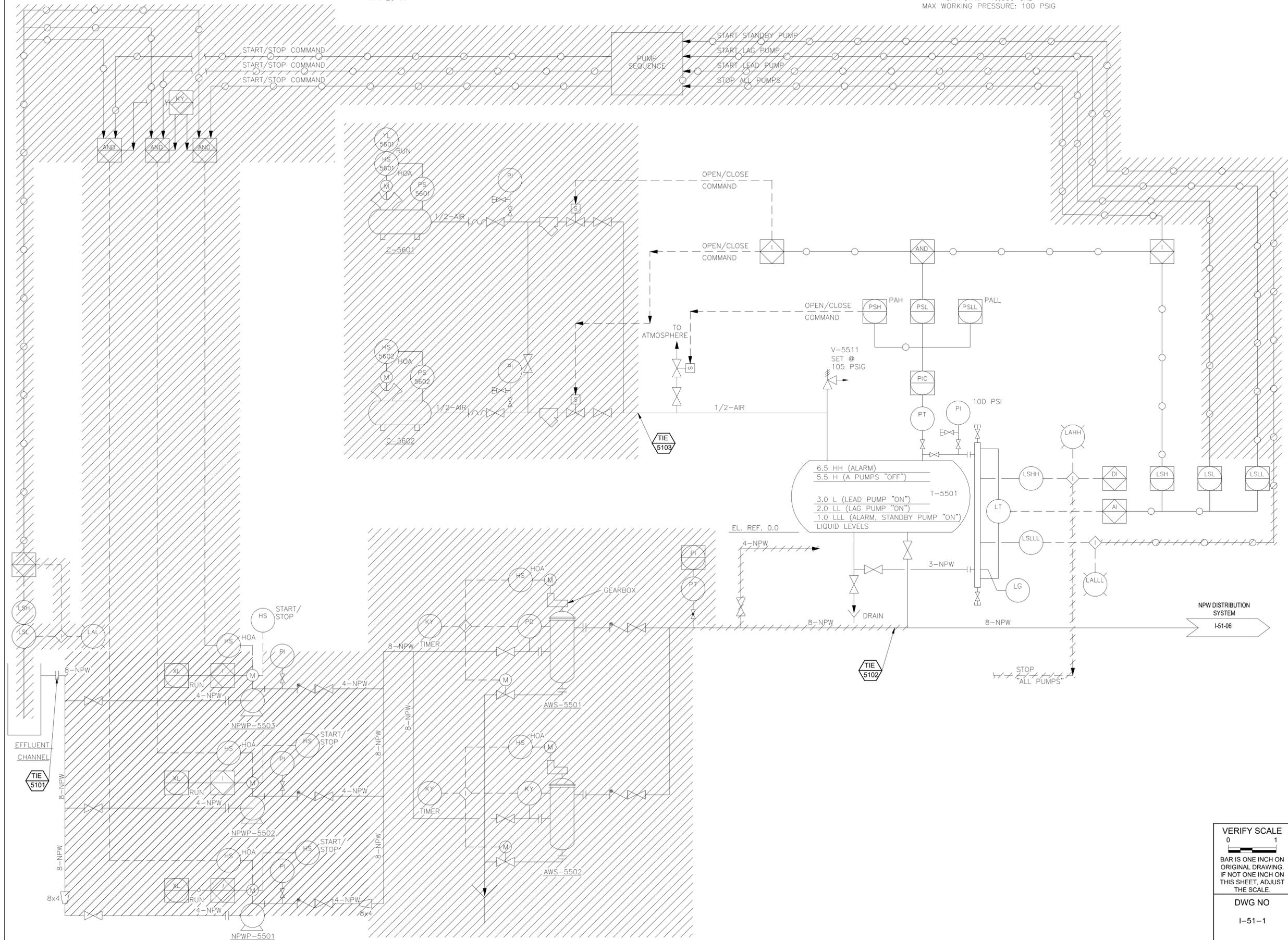
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
DWG NO		
I-42-14	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 210 OF 271	

EXISTING  
 NPWP-5501, 5502, 5503  
 NON-POTABLE WATER PUMPS  
 NO. OF PUMPS: 3  
 CAPACITY: 350 GPM @ 200' FT TDH (EACH)  
 HP: 25 HP

EXISTING  
 C-5601, 5602  
 AIR COMPRESSORS  
 NO. OF COMPRESSORS: 2  
 CAPACITY: 100 CFM

EXISTING  
 AWS-5501, 5502  
 AUTOMATIC WATER STRAINER  
 NO. OF STRAINERS: 2

EXISTING  
 T-5501  
 HYDROPNEUMATIC TANK  
 NO. OF TANKS: 1  
 SIZE: 9'-0" DIA x 20'-0" T/T  
 CAPACITY: 10,000 GAL  
 MAX WORKING PRESSURE: 100 PSIG



NO.	DATE	REVISION	APP.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
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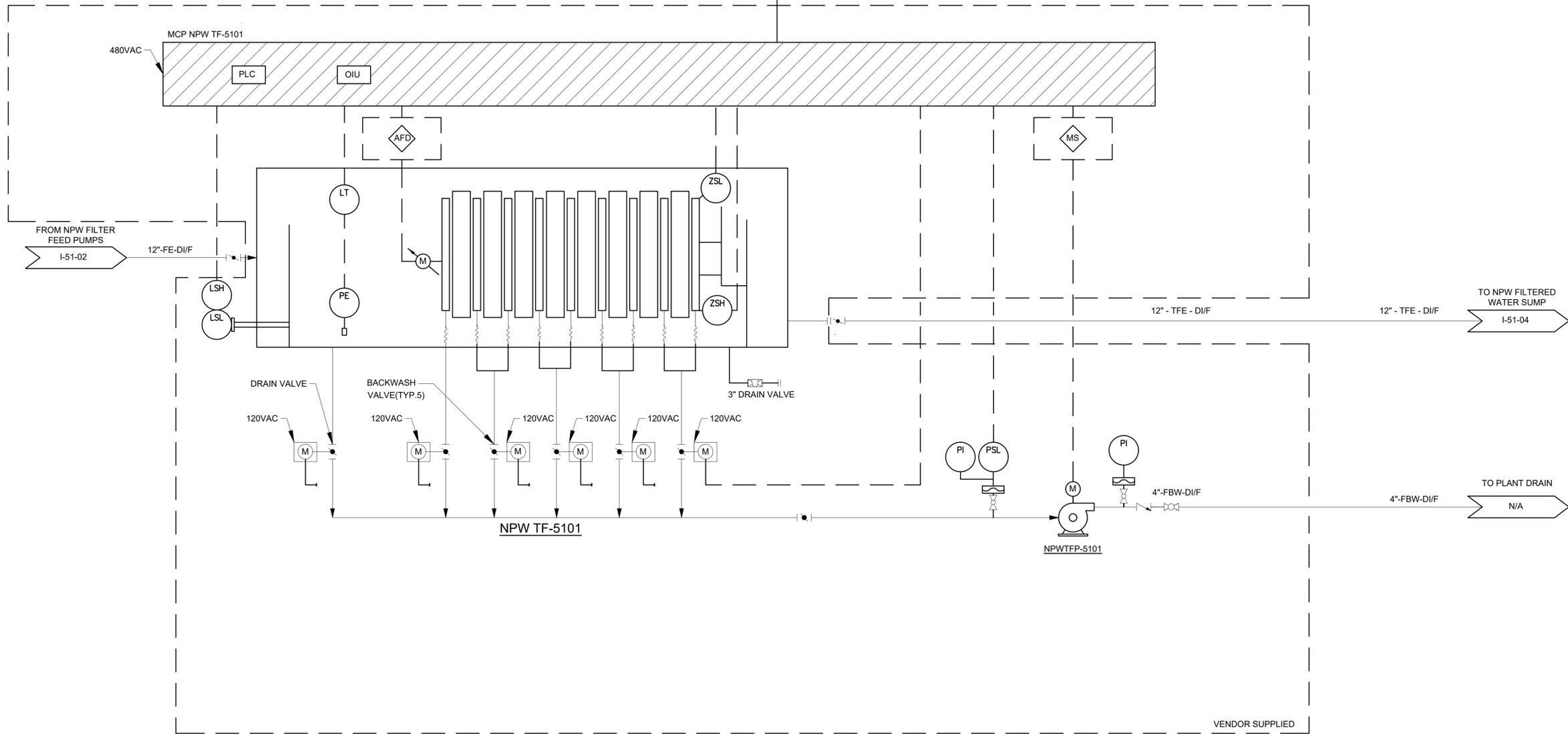
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**EXISTING NPW SYSTEM DEMOLITION P&ID**  
 INSTRUMENTATION

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
1-51-1	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 211 OF 271	



HMI	LEVEL HIGH LEVEL LOW LEVEL  FORWARD REVERSE FAULT RUNNING START/STOP AUTO  SYSTEM COMMON ALARM  OPENED CLOSED FAIL  LOSS OF SUCTION  FAULT RUNNING START/STOP FAULT RUNNING START/STOP	HMI
PLC CABINET		PLC CABINET

NO.	DATE	REVISION	APP.

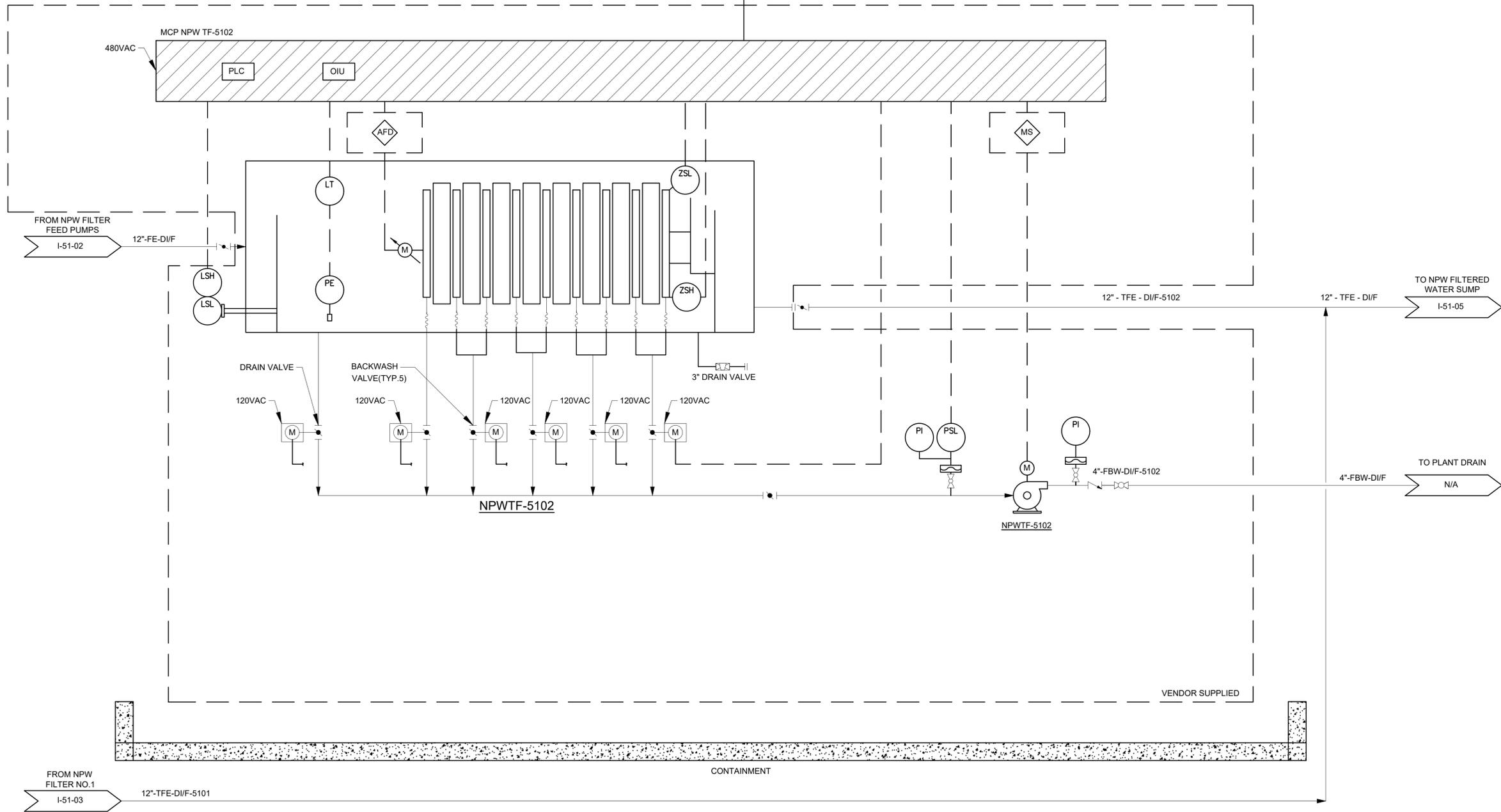


APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
 TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**NPW FILTER NO.1 P&ID**  
 INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
I-51-3	SHEET NO. 213 OF 271	

HMI	LEVEL HIGH LEVEL LOW LEVEL FORWARD REVERSE FAULT RUNNING START/STOP AUTO SYSTEM COMMON ALARM OPENED CLOSED FAIL LOSS OF SUCTION FAULT RUNNING START/STOP FAULT RUNNING START/STOP	HMI
PLC CABINET		PLC CABINET

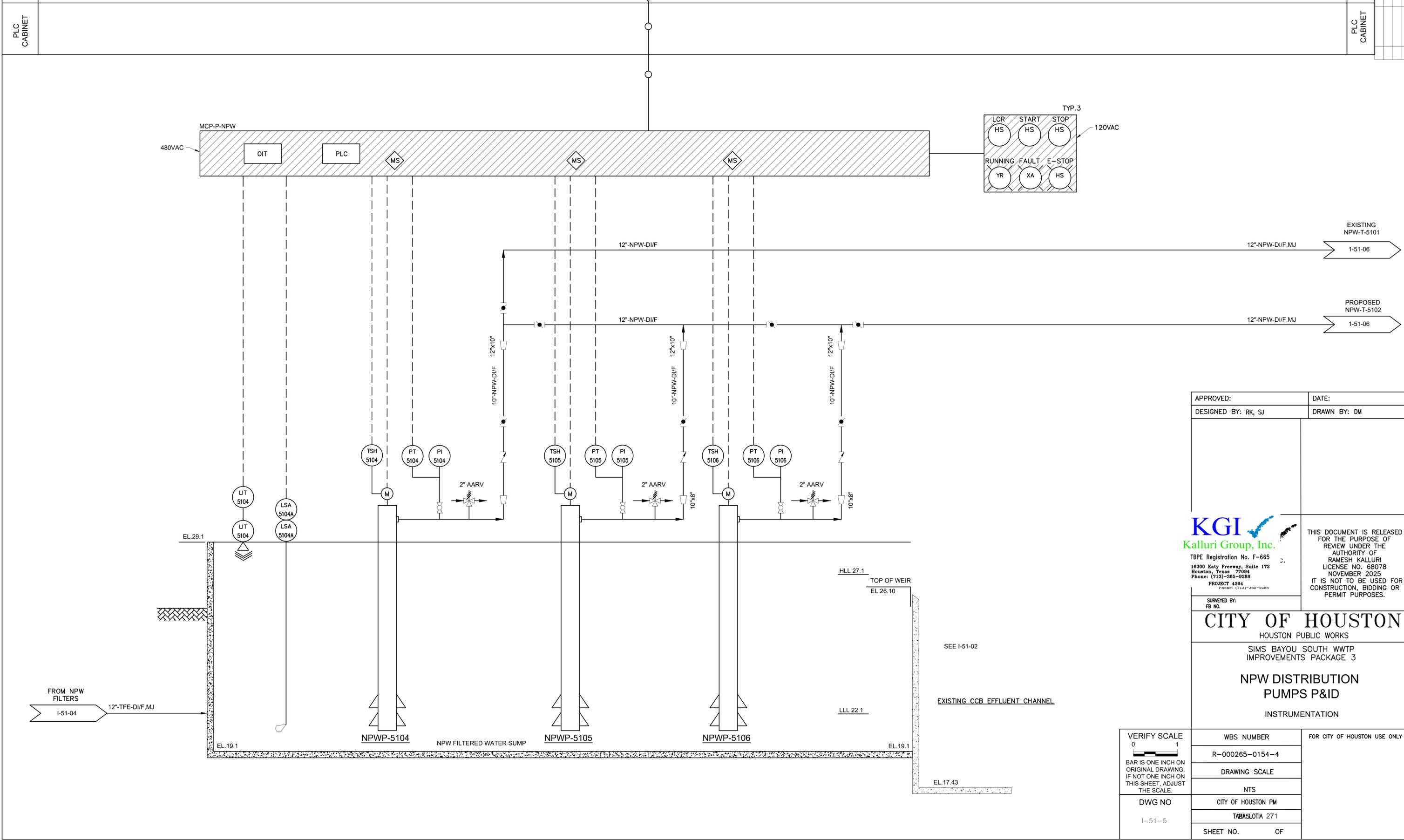


APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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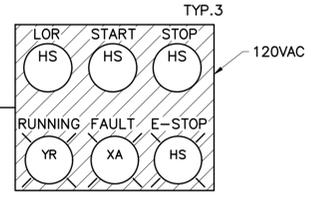
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
  
**NPW FILTER NO.2 P&ID**  
 INSTRUMENTATION

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
I-51-4	SHEET NO. 214 OF 271	

HMI	
PLC CABINET	



LEVEL  
LOW LEVEL  
E-STOP  
FAULT  
RUNNING  
IN REMOTE  
START  
STOP  
HIGH TEMPERATURE  
HIGH PRESSURE  
TYP. FOR 3 PUMPS



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DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288

PROJECT 4264  
REVISED: (11-13)-365-9288

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WTP IMPROVEMENTS PACKAGE 3  
**NPW DISTRIBUTION PUMPS P&ID**  
INSTRUMENTATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
TABASLOTIA 271	
SHEET NO. OF	

VERIFY SCALE
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BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.
DWG NO
I-51-5

SEE I-51-02

EXISTING CCB EFFLUENT CHANNEL



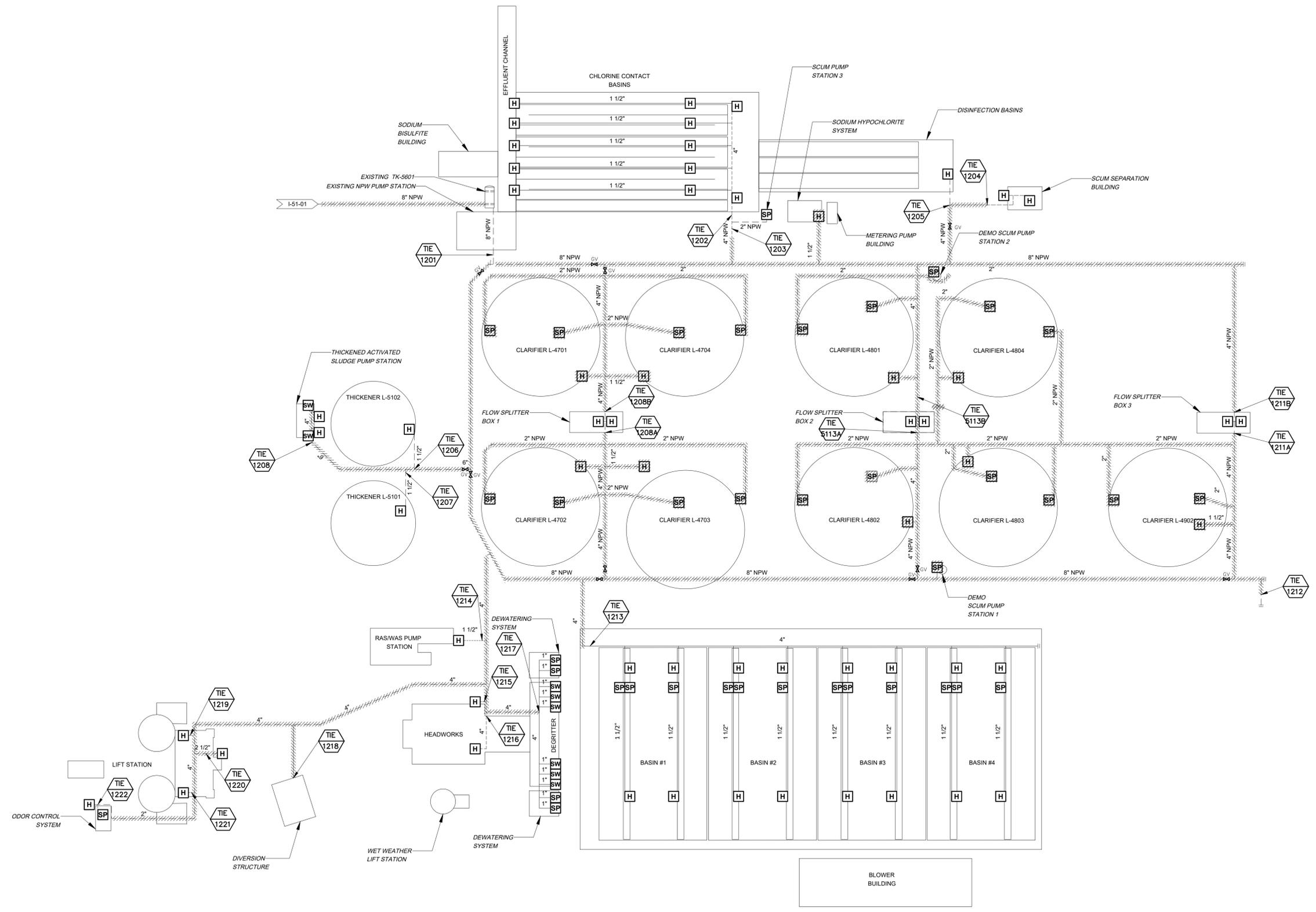
NO.	DATE	REVISION	APP.

**NOTE:**  
ALL OF THE EXISTING UNDERGROUND NPW DISTRIBUTION SYSTEM WILL BE REPLACED WITH NEW NPW DISTRIBUTION SYSTEM UNLESS OTHERWISE INDICATED ON DRAWINGS.

- LEGEND:**
- EXPOSED NPW
  - - - BURIED NPW
  - I- BLIND FLANGE
  - [H] HOSE BIB (HOSE STATION TYPE)
  - [SP] SPRAY NOZZLE
  - [SW] SEAL WATER/PROCESS WATER

**NOTES:**

- EXISTING STRUCTURES, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE, BASED ON AVAILABLE RECORD DRAWINGS, AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION.



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: DM

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IMPROVEMENTS PACKAGE 3

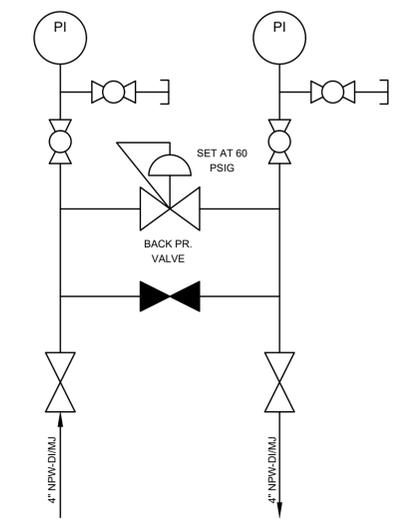
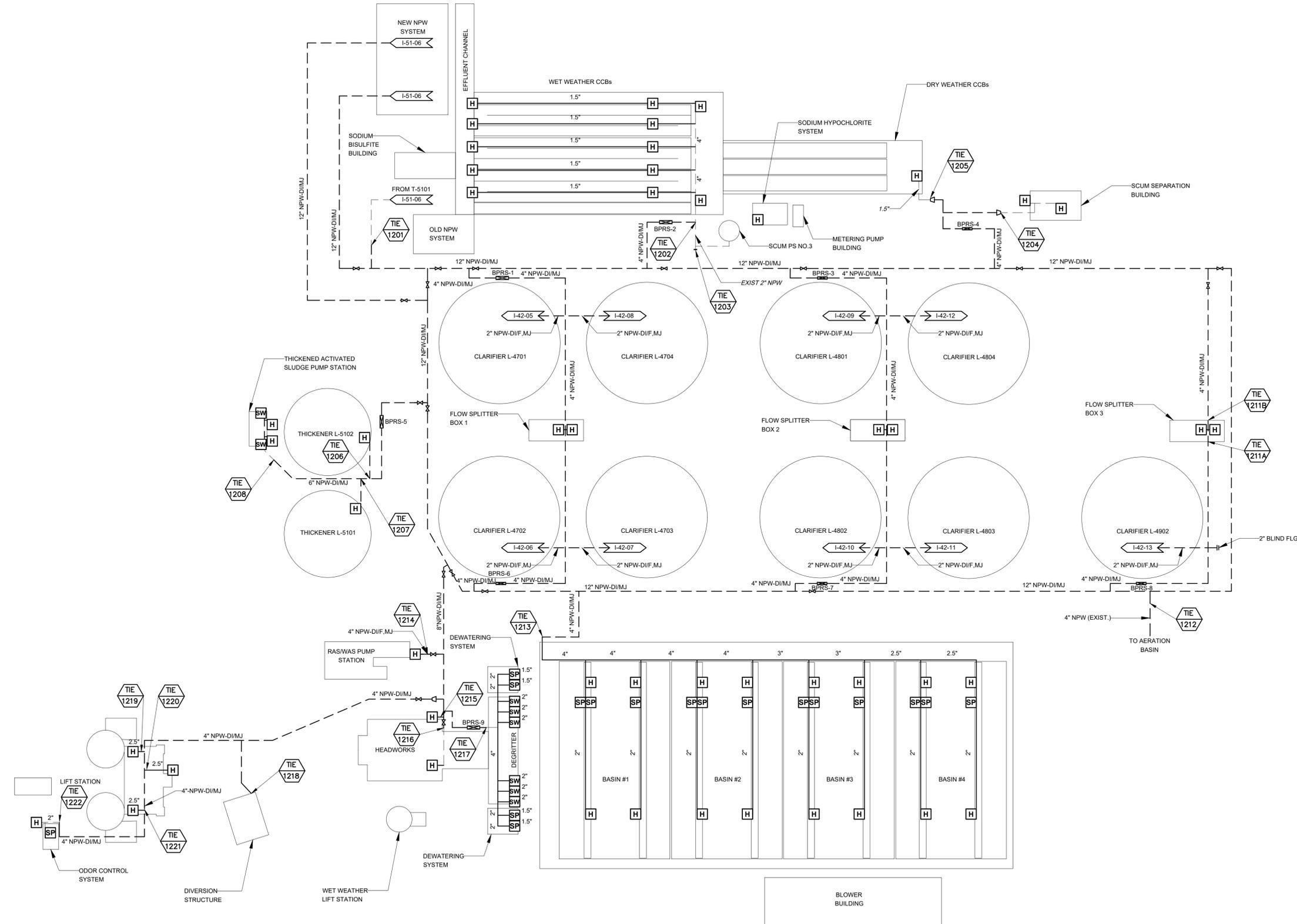
**EXISTING NPW  
DISTRIBUTION SYSTEM**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
I-51-7	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 217 OF 271	

NO.	DATE	REVISION	APP.

- LEGEND:
- EXPOSED NPW
  - - - BURIED NPW
  - [H] HOSE BIB (HOSE STATION TYPE)
  - [SP] SPRAY NOZZLE
  - [SW] SEAL WATER/PROCESS WATER



BACK PRESSURE REGULATING STATION(BPRS)  
**DETAIL A**  
 NTS

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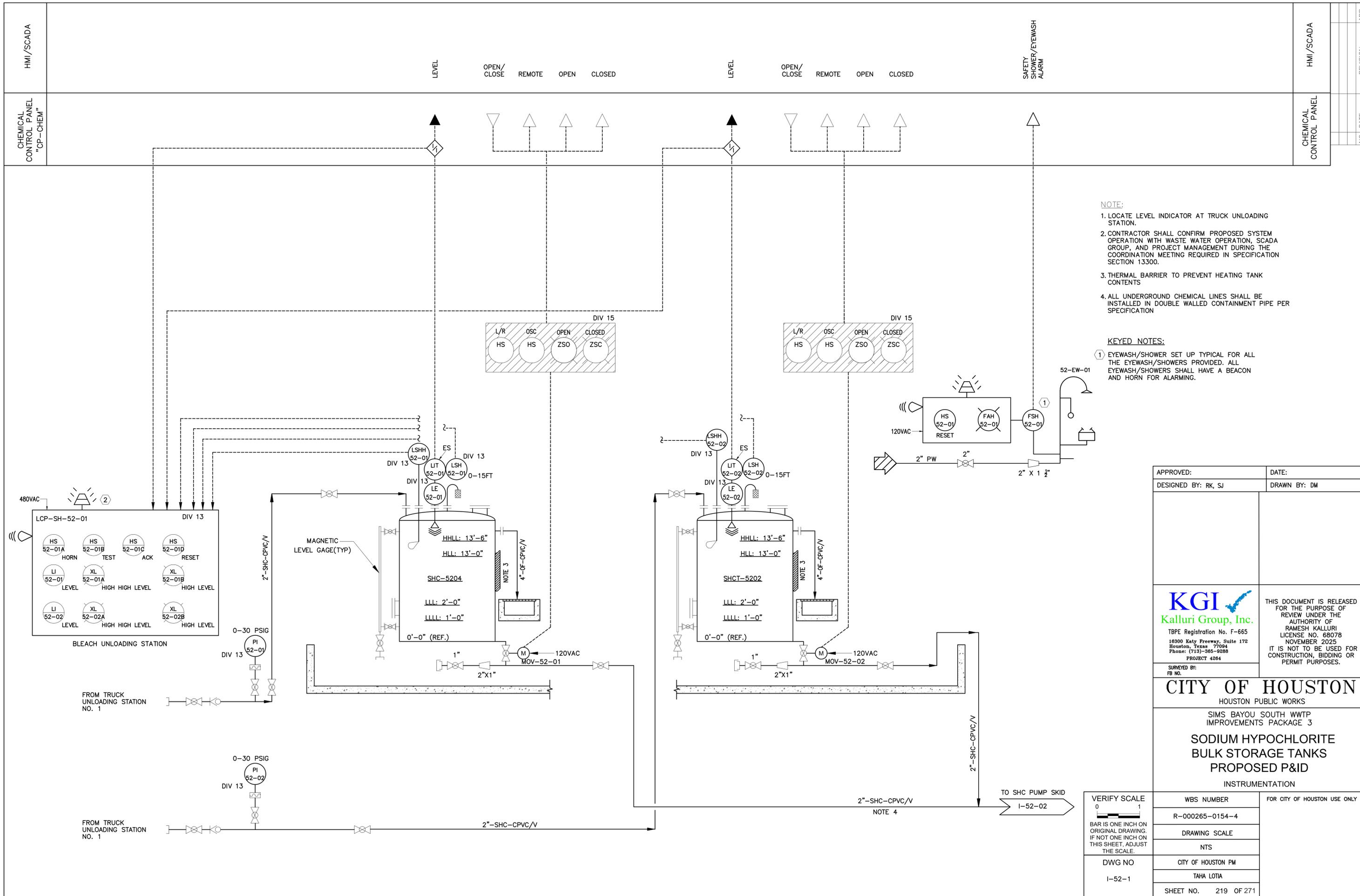
**KGI**  
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 TBPE Registration No. F-665  
 18300 Katy Freeway, Suite 172  
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**CITY OF HOUSTON**  
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED NPW DISTRIBUTION SYSTEM**  
 INSTRUMENTATION

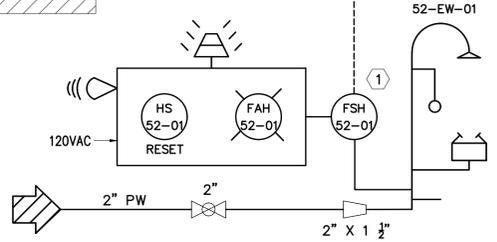
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO	DRAWING SCALE	
1-51-8	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 218 OF 271	



- NOTE:**
1. LOCATE LEVEL INDICATOR AT TRUCK UNLOADING STATION.
  2. CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING REQUIRED IN SPECIFICATION SECTION 13300.
  3. THERMAL BARRIER TO PREVENT HEATING TANK CONTENTS
  4. ALL UNDERGROUND CHEMICAL LINES SHALL BE INSTALLED IN DOUBLE WALLED CONTAINMENT PIPE PER SPECIFICATION

**KEYED NOTES:**

① EYEWASH/SHOWER SET UP TYPICAL FOR ALL THE EYEWASH/SHOWERS PROVIDED. ALL EYEWASH/SHOWERS SHALL HAVE A BEACON AND HORN FOR ALARMING.



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 DESIGNED BY: RK, SJ DRAWN BY: DM

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 TBPE Registration No. F-665  
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SODIUM HYPOCHLORITE BULK STORAGE TANKS PROPOSED P&ID**  
 INSTRUMENTATION

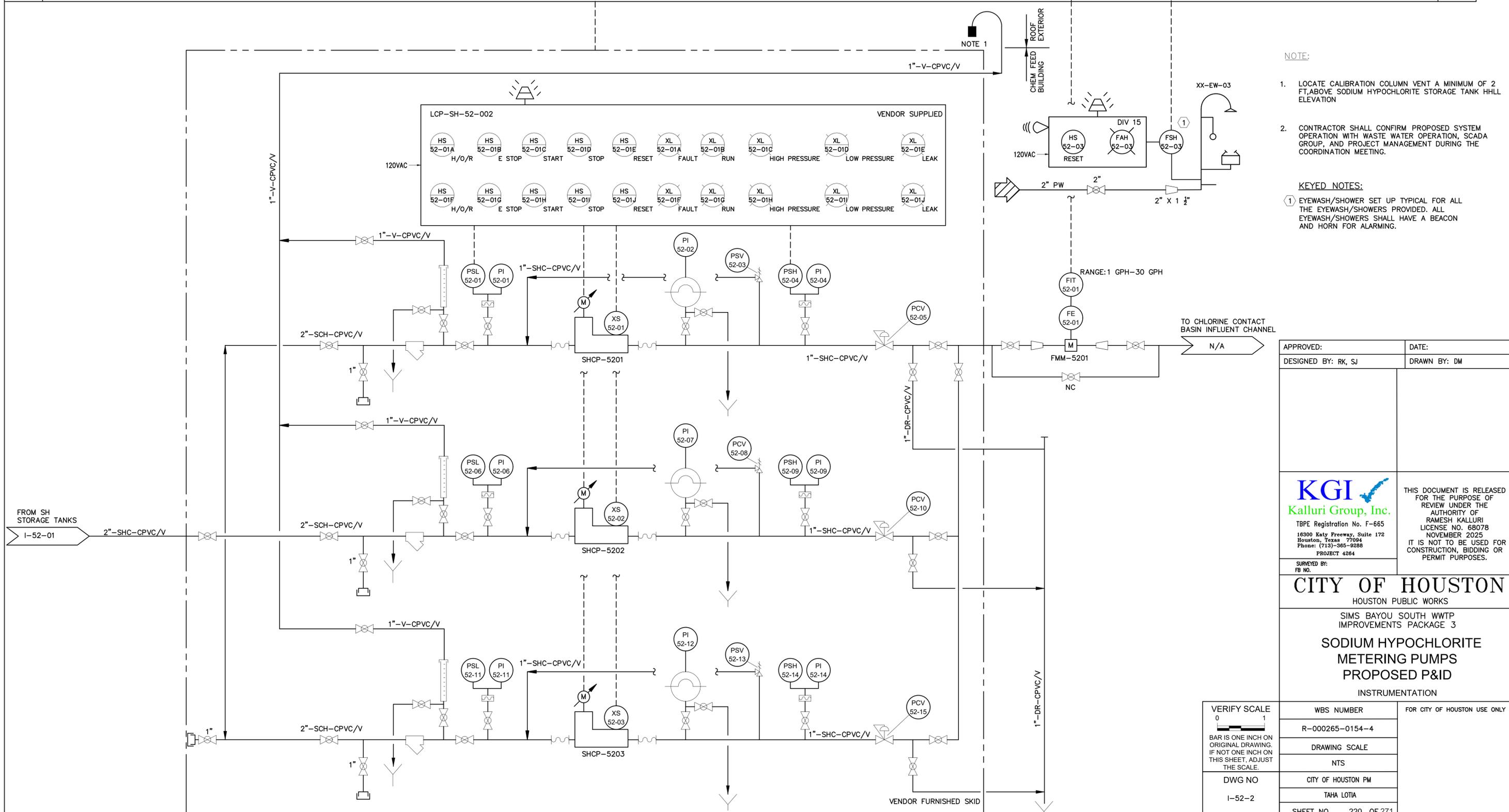
VERIFY SCALE  
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DWG NO  
 I-52-1

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	219 OF 271

FOR CITY OF HOUSTON USE ONLY

HMI/SCADA	<p>TYPICAL FOR 3 PUMPS</p> <p>LOW SUCTION PRESSURE    IN REMOTE    START/STOP    FAULT    RUNNING    SPEED    SPEED COMMAND    HIGH DISCHARGE PRESSURE    LEAK</p>	HMI/SCADA
CHEMICAL CONTROL PANEL "CP-CHEM"		CHEMICAL SYSTEM



- NOTE:**
- LOCATE CALIBRATION COLUMN VENT A MINIMUM OF 2 FT. ABOVE SODIUM HYPOCHLORITE STORAGE TANK HULL ELEVATION
  - CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING.
- KEYED NOTES:**
- ① EYEWASH/SHOWER SET UP TYPICAL FOR ALL THE EYEWASH/SHOWERS PROVIDED. ALL EYEWASH/SHOWERS SHALL HAVE A BEACON AND HORN FOR ALARMING.

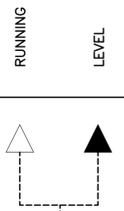
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PROJECT 4264

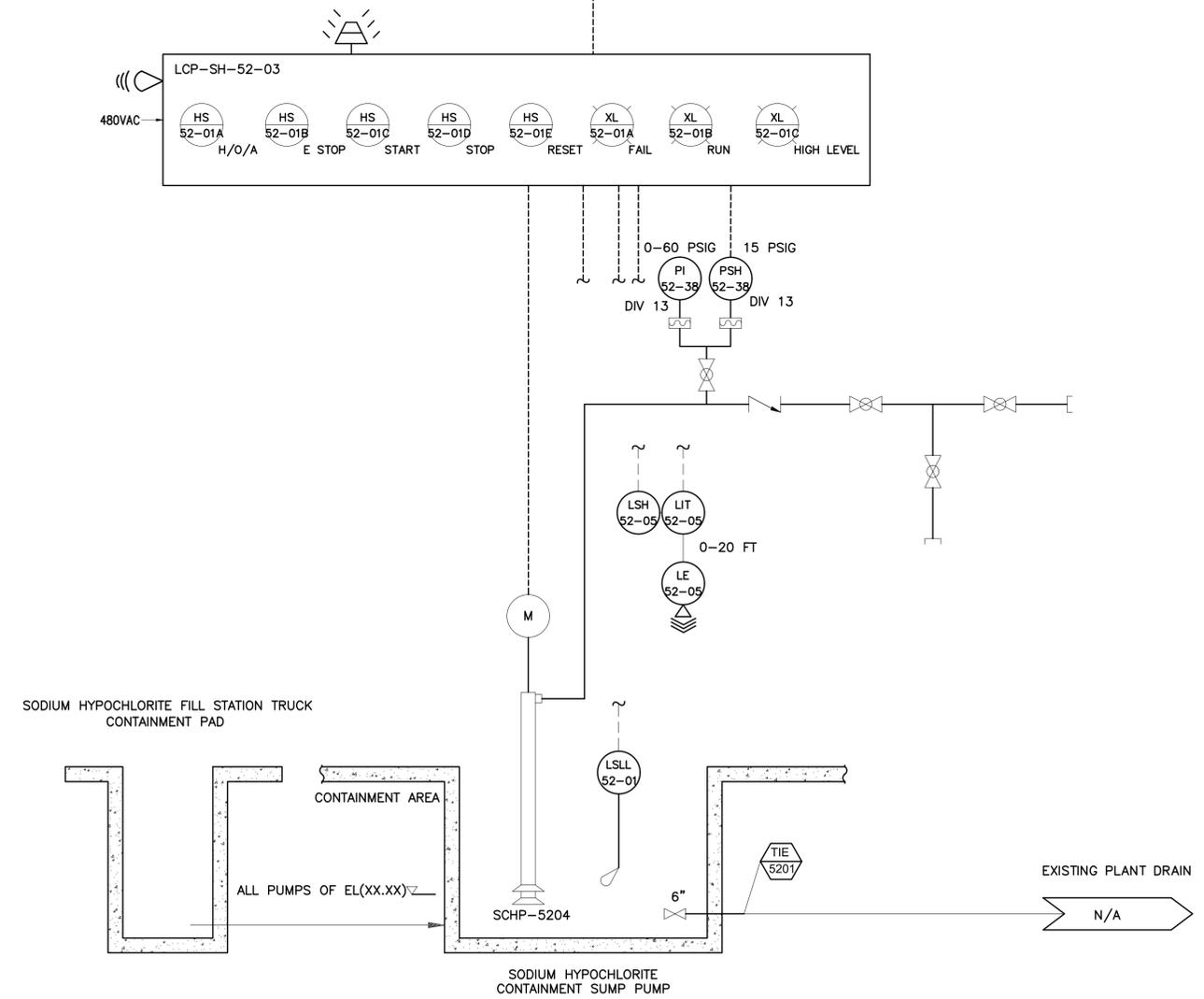
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<b>CITY OF HOUSTON</b>																							
HOUSTON PUBLIC WORKS																							
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3																							
<b>SODIUM HYPOCHLORITE METERING PUMPS PROPOSED P&amp;ID</b>																							
INSTRUMENTATION																							
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VERIFY SCALE	WBS NUMBER																						
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DWG NO	CITY OF HOUSTON PM																						
I-52-2	TAHA LOTIA																						
	SHEET NO. 220 OF 271																						
NO.	DATE	REVISION	APP.																				

HMI/SCADA		HMI/SCADA
CHEMICAL CONTROL PANEL "CP-CHEM"		CHEMICAL CONTROL PANEL



**NOTE:**  
 1. CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING REQUIRED IN SPECIFICATION SECTION 13300.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
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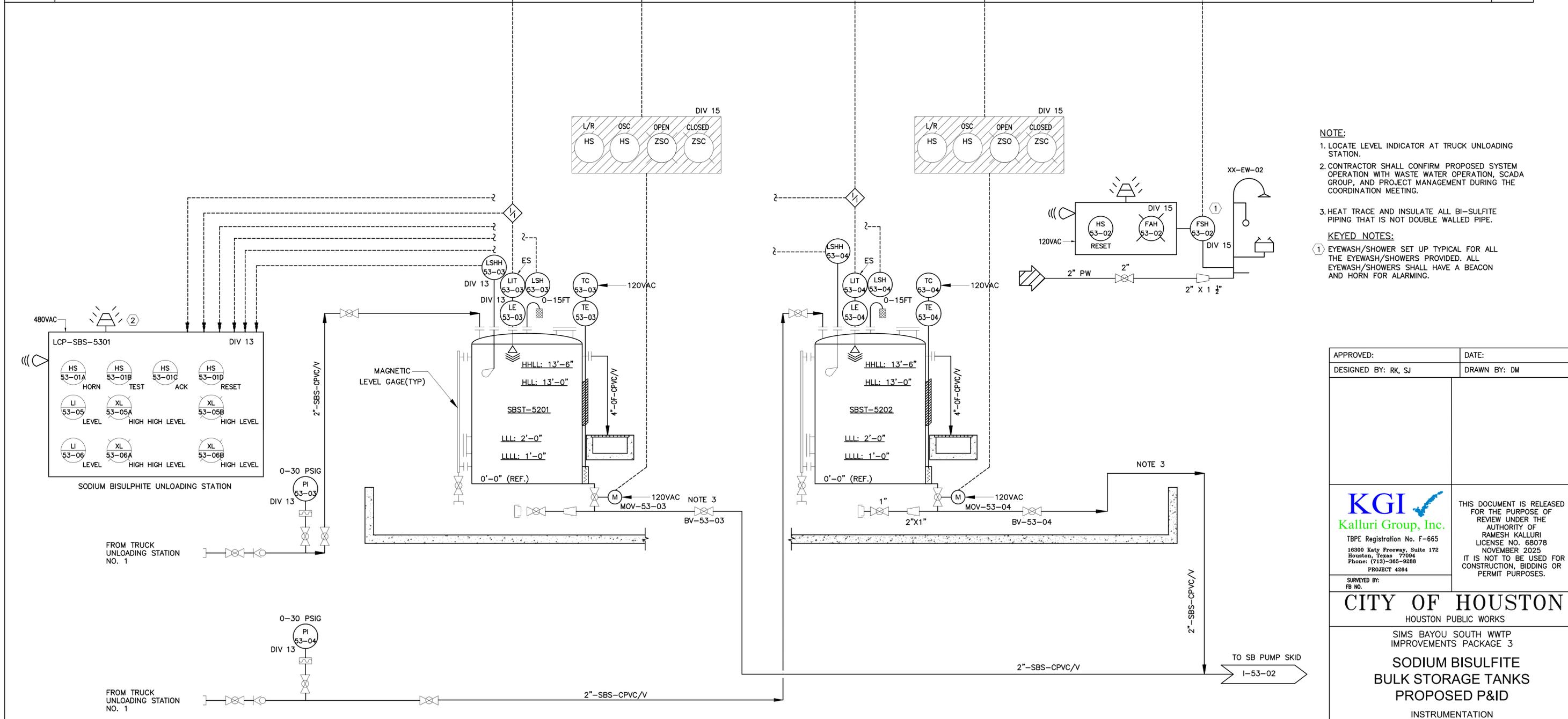
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**SODIUM HYPOCHLORITE BULK STORAGE SUMP PUMPS PROPOSED P&ID**  
 INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 221 OF 271		

DWG NO  
 I-52-3

HMI/SCADA	HMI/SCADA
CHEMICAL CONTROL PANEL "CP-CHEM"	CHEMICAL CONTROL PANEL



**NOTE:**

1. LOCATE LEVEL INDICATOR AT TRUCK UNLOADING STATION.
2. CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING.
3. HEAT TRACE AND INSULATE ALL BI-SULFITE PIPING THAT IS NOT DOUBLE WALLED PIPE.

**KEYED NOTES:**

① EYEWASH/SHOWER SET UP TYPICAL FOR ALL THE EYEWASH/SHOWERS PROVIDED. ALL EYEWASH/SHOWERS SHALL HAVE A BEACON AND HORN FOR ALARMING.

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**KGI**  
Kalluri Group, Inc.

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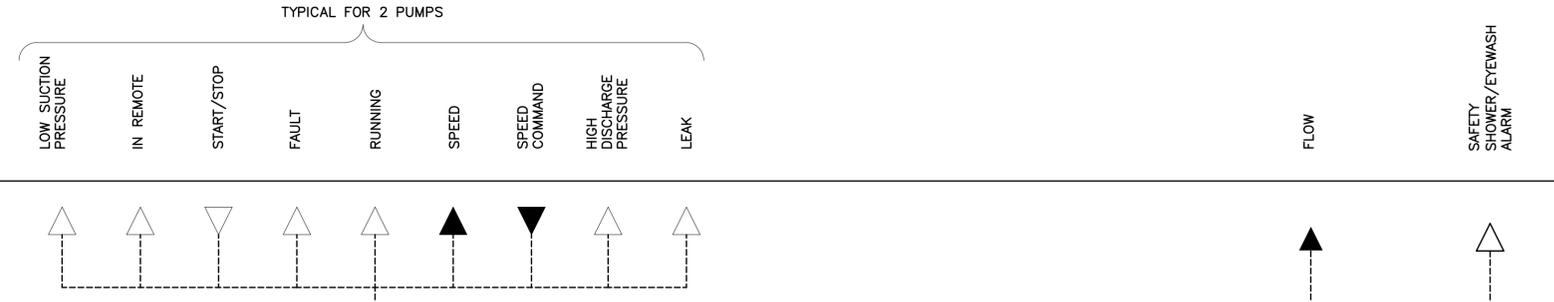
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

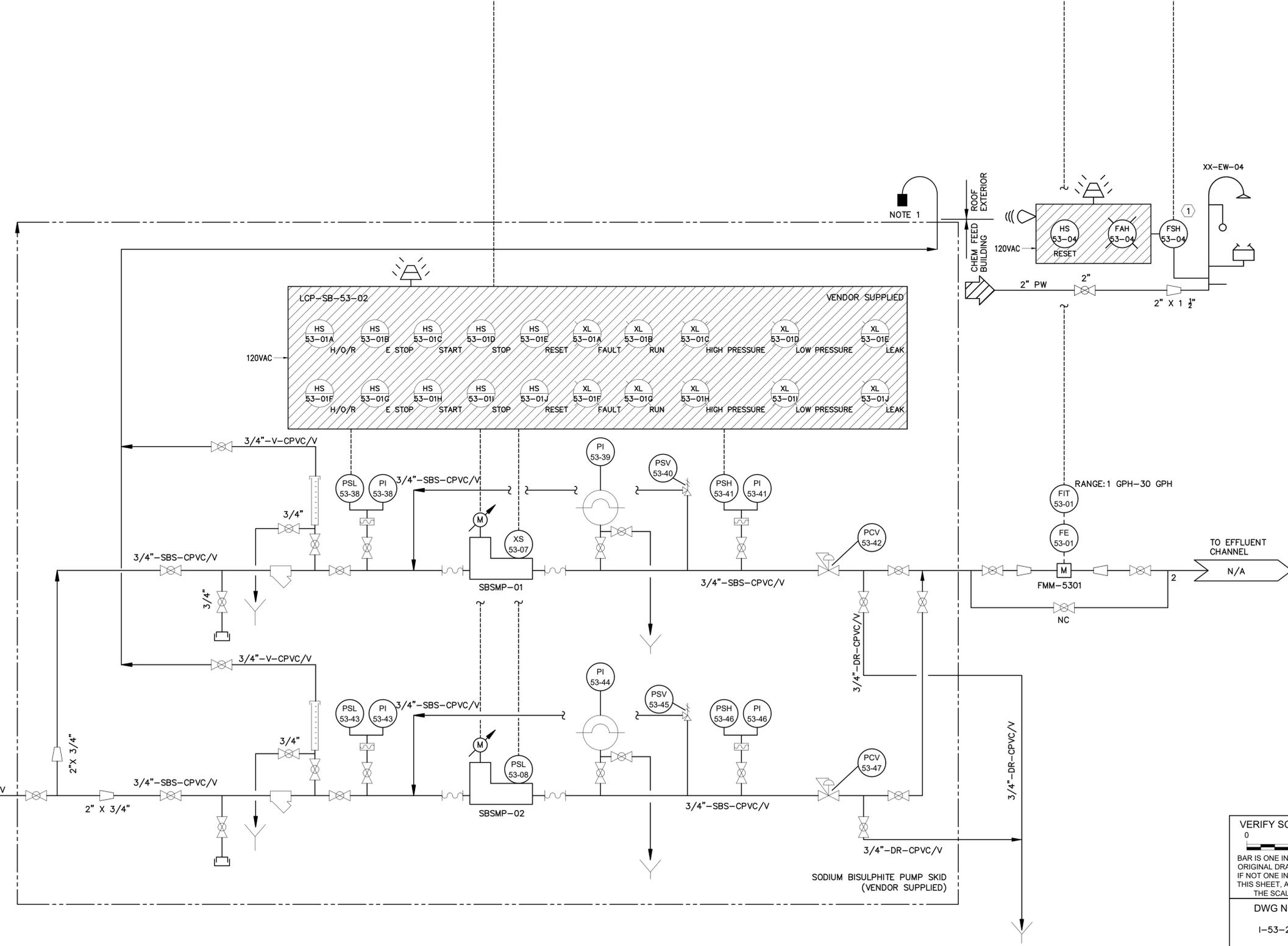
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**SODIUM BISULFITE BULK STORAGE TANKS PROPOSED P&ID**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
I-53-1	NTS	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 222 OF 271	

HMI/SCADA		HMI/SCADA
CHEMICAL CONTROL PANEL "CP-CHEM"	<p style="text-align: center;">TYPICAL FOR 2 PUMPS</p> 	CHEMICAL CONTROL PANEL



**NOTE:**  
 1. CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING.

**KEYED NOTES:**  
 ① EYEWASH/SHOWER SET UP TYPICAL FOR ALL THE EYEWASH/SHOWERS PROVIDED. ALL EYEWASH/SHOWERS SHALL HAVE A BEACON AND HORN FOR ALARMING.

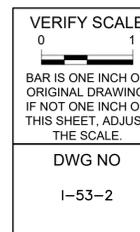
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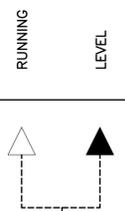
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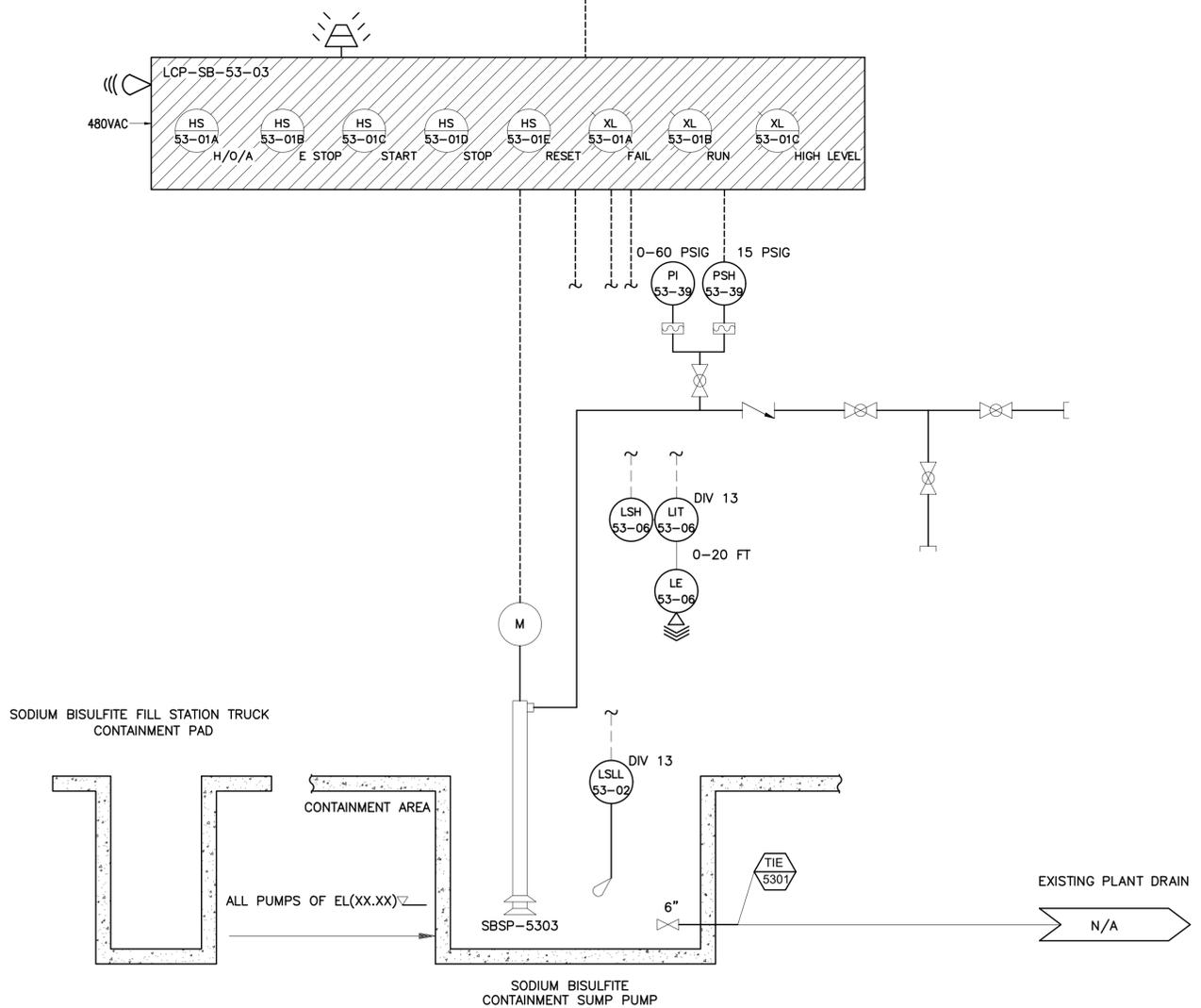
<b>CITY OF HOUSTON</b>		
HOUSTON PUBLIC WORKS		
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3		
<b>SODIUM BISULFITE METERING PUMPS PROPOSED P&amp;ID</b>		
INSTRUMENTATION		
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	R-000265-0154-4	
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	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 223 OF 271	



HMI/SCADA		HMI/SCADA
CHEMICAL CONTROL PANEL "CP-CHEM"		CHEMICAL CONTROL PANEL



**NOTE:**  
 1. CONTRACTOR SHALL CONFIRM PROPOSED SYSTEM OPERATION WITH WASTE WATER OPERATION, SCADA GROUP, AND PROJECT MANAGEMENT DURING THE COORDINATION MEETING REQUIRED IN SPECIFICATION SECTION 13300.



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 HOUSTON PUBLIC WORKS

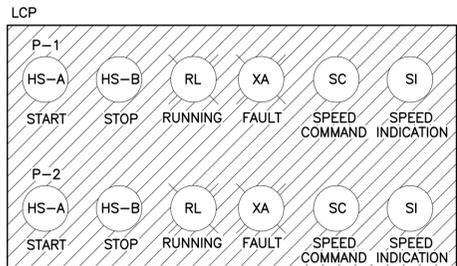
SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3

**SODIUM BISULFITE BULK  
 STORAGE SUMP PUMPS  
 PROPOSED P&ID**

INSTRUMENTATION

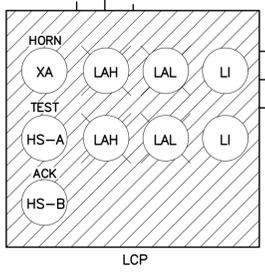
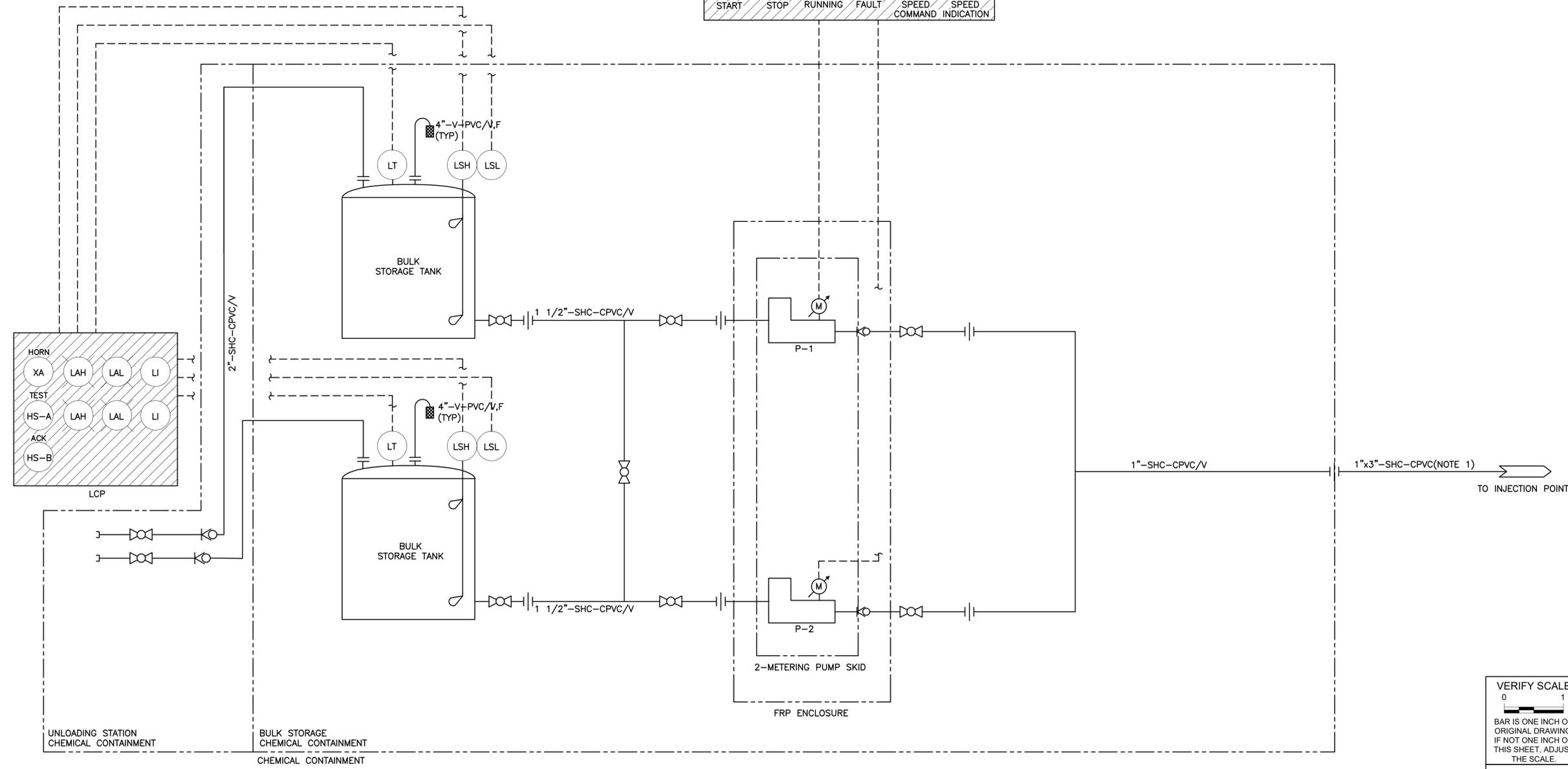
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DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
I-53-3	SHEET NO. 224 OF 271	

HMI		HMI	
PLC CABINET		PLC CABINET	
			NO. DATE
			REVISION
			APP.



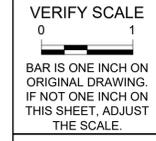
NOTES:

- ALL UNDERGROUND TEMPORARY CHEMICAL PIPING SHALL BE DOUBLE-WALL PIPE EQUIPPED WITH MANUAL LEAK DETECTION.



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 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**TEMPORARY SODIUM HYPOCHLORITE SYSTEM P&ID**  
 INSTRUMENTATION



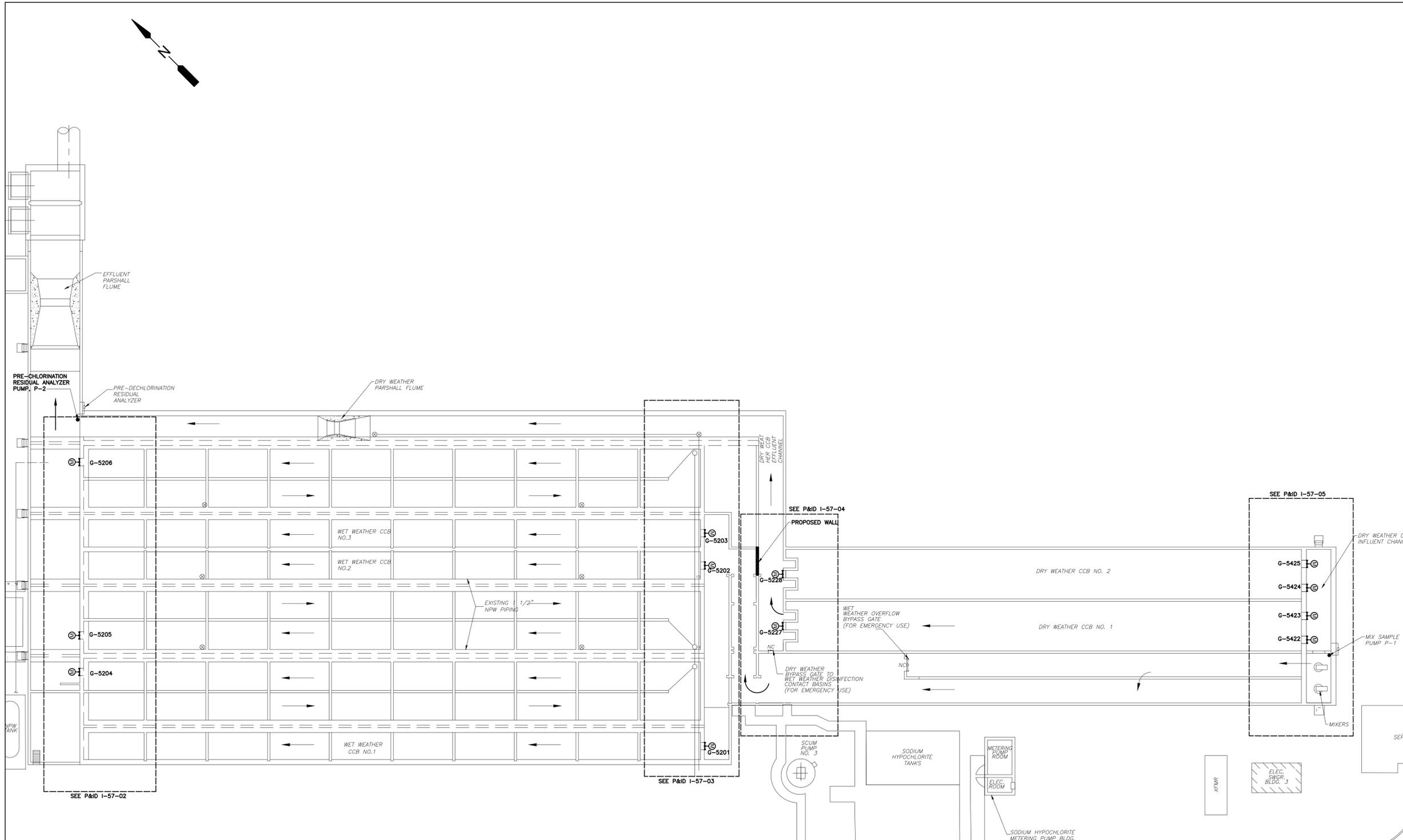
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R-000265-0154-4	
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CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 225 OF 271	

UNLOADING STATION CHEMICAL CONTAINMENT

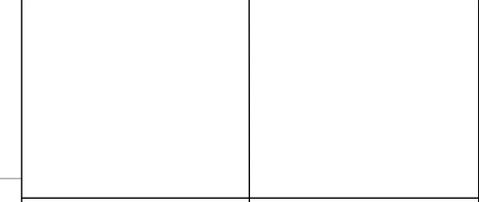
BULK STORAGE CHEMICAL CONTAINMENT



NO.	DATE	REVISION	APP.



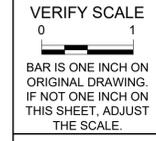
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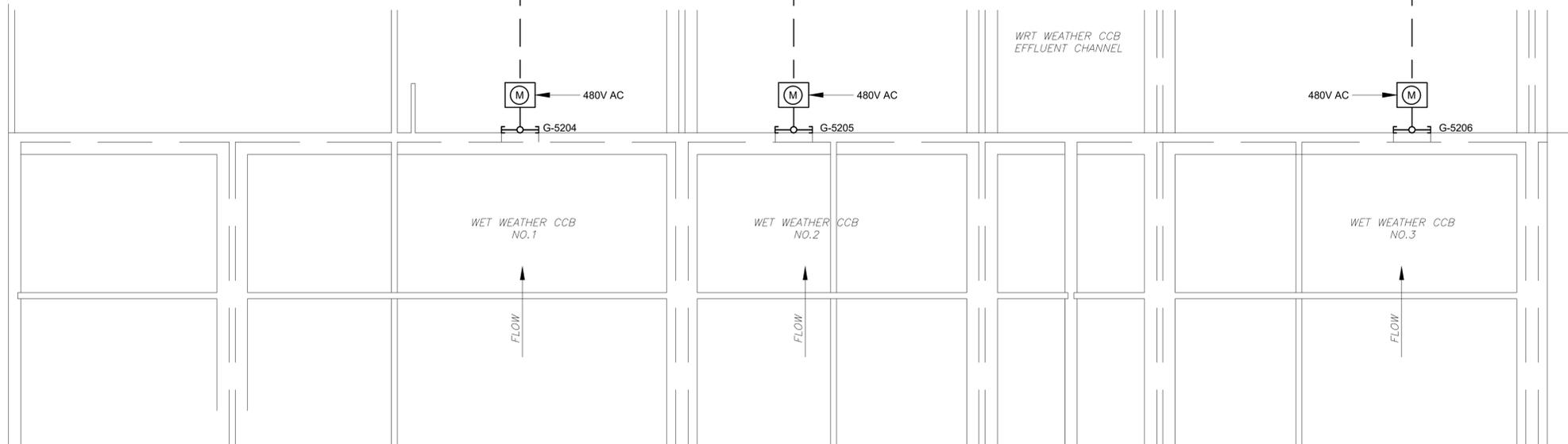
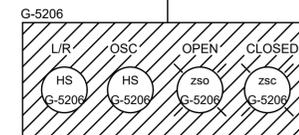
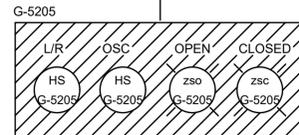
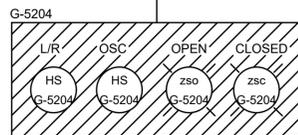
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**CHLORINE CONTACT BASINS SLIDE GATES OVERALL PLAN**  
INSTRUMENTATION

VERIFIED BY:  
FB NO.



WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
NS	
CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. 227 OF 271	

CHLORINE CONTACT BASINS SLIDE GATES OVERALL  
**PLAN**  
1/4" = 1'-0"



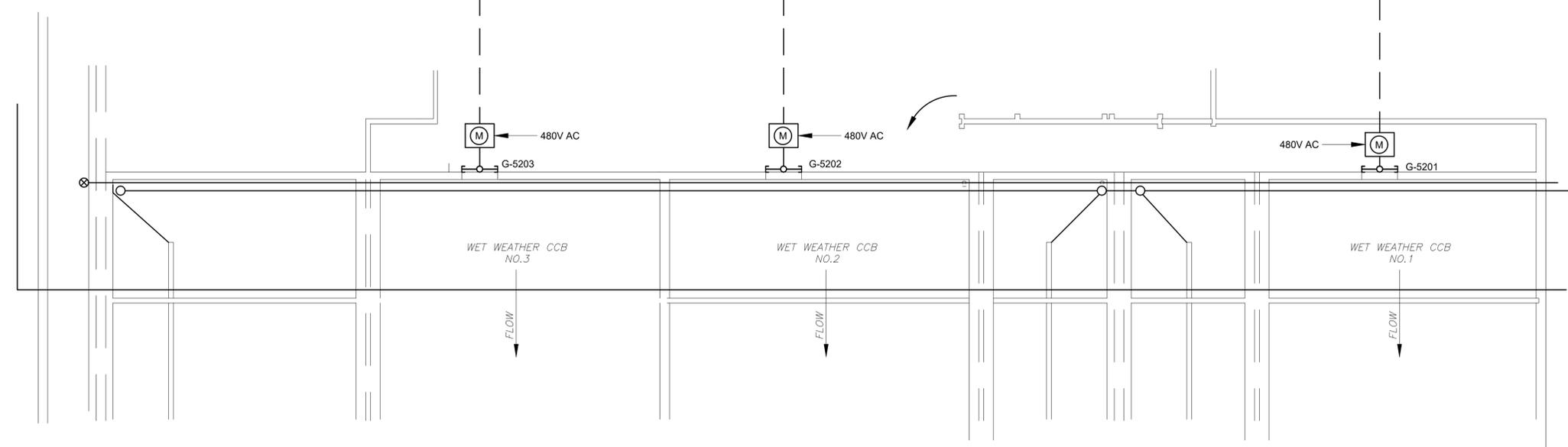
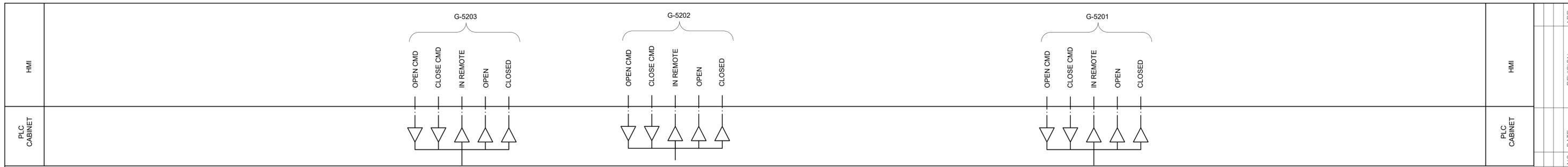
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: DM

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**WET WEATHER CCB EFFLUENT CHANNEL GATES P&ID**  
 INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
1-57-2	SHEET NO. 228 OF 271	



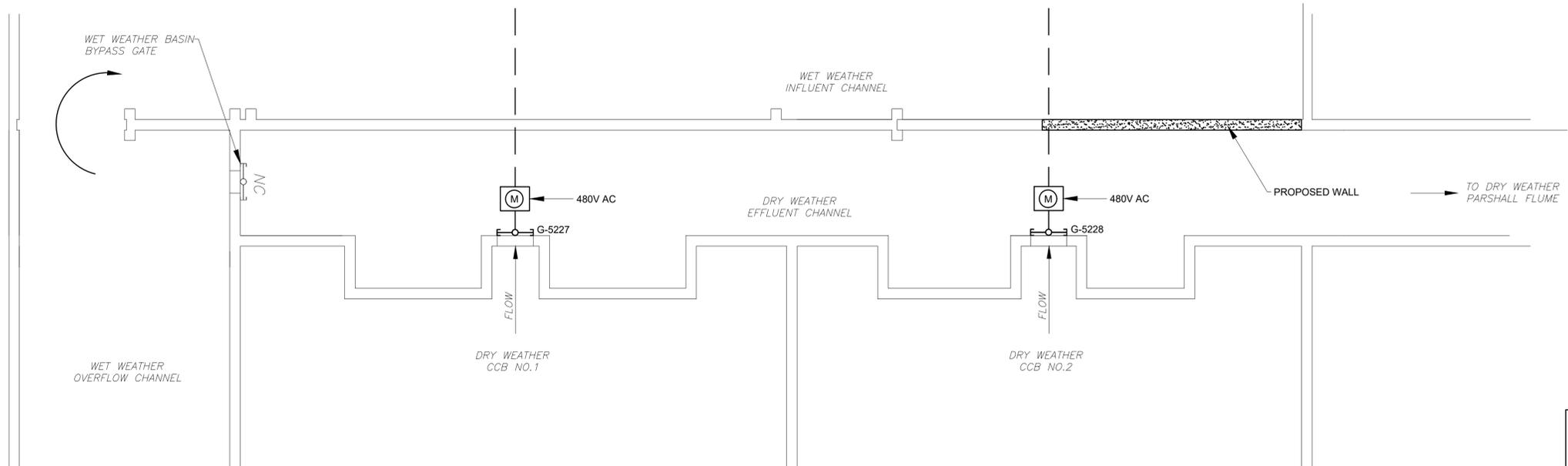
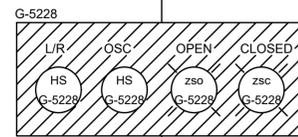
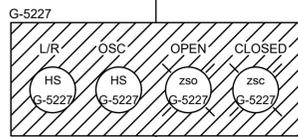
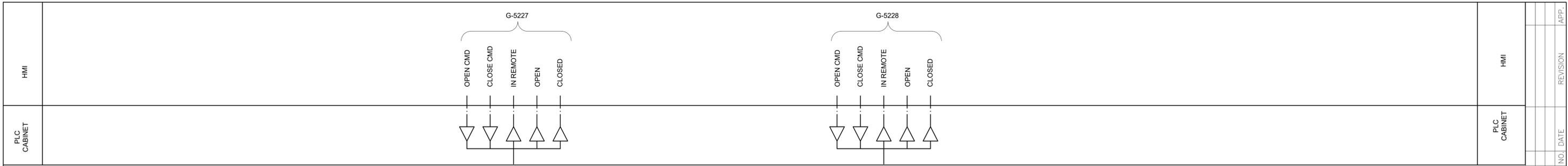
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM
<p>TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264</p>	
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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**WET WEATHER CCB INFLUENT CHANNEL GATES P&ID**  
 INSTRUMENTATION

	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 229 OF 271		

DWG NO  
1-57-3

HMI	PLC CABINET
NO.	DATE
REVISION	APP.



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 DESIGNED BY: RK, SJ DRAWN BY: DM

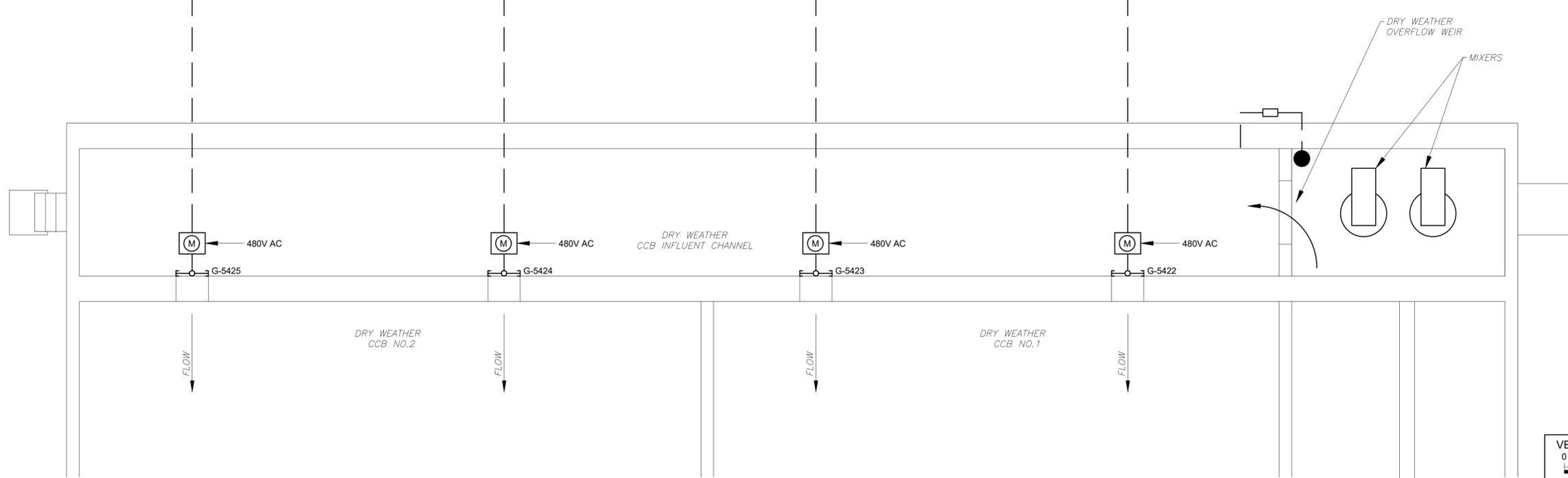
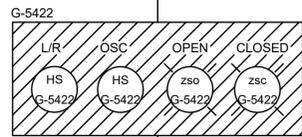
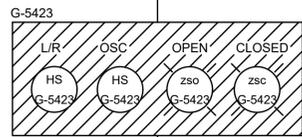
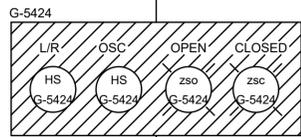
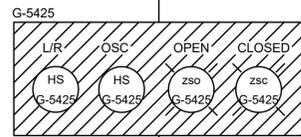
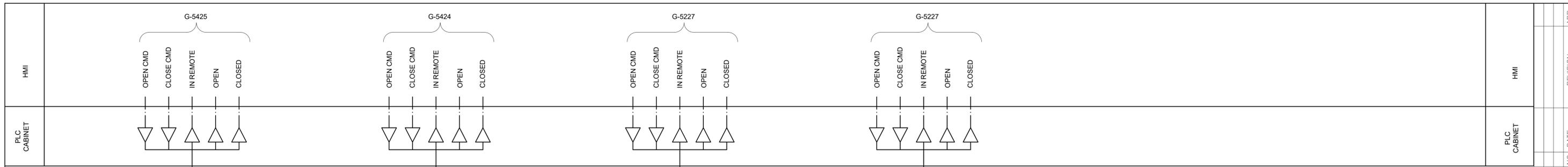
**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**DRY WEATHER CCB EFFLUENT CHANNEL GATES P&ID**  
 INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 230 OF 271		

DWG NO  
 I-57-4



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

DESIGNED BY: RK, SJ DRAWN BY: DM

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Kalluri Group, Inc.

TBPE Registration No. F-665  
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Houston, Texas 77094  
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PROJECT 4264

SURVEYED BY: \_\_\_\_\_  
FB NO. \_\_\_\_\_

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**DRY WEATHER CCB INFLUENT CHANNEL GATES P&ID**

INSTRUMENTATION

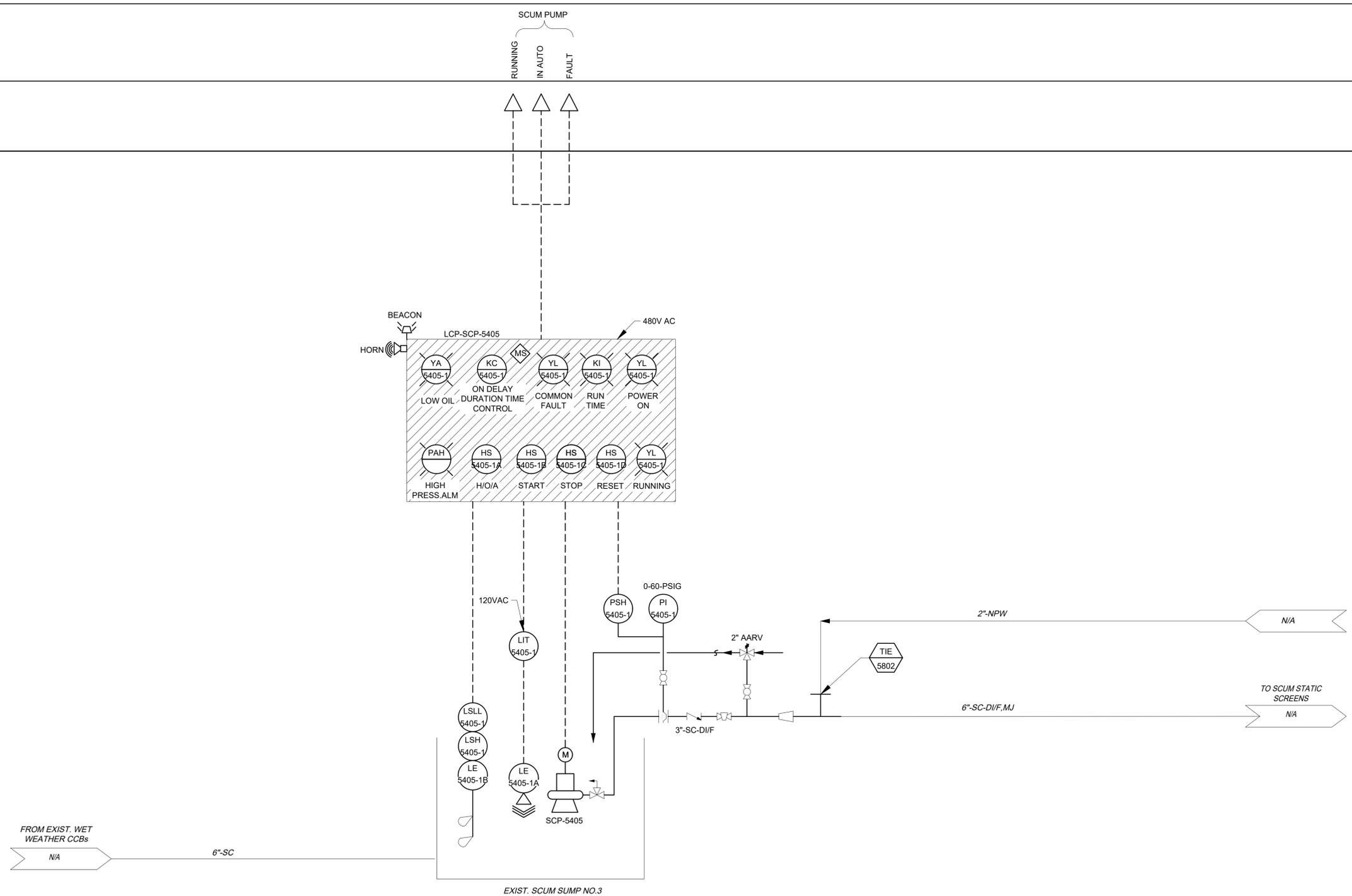
VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. 231 OF 271		

DWG NO  
I-57-5

HMI	NO.	DATE	REVISION	APP.
PLC CABINET				

HMI		HMI
PLC CABINET		PLC CABINET

NO.	DATE	REVISION	APP.



APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: DM

--	--

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**SCUM PUMP STATION NO.3  
PROPOSED P&ID**

INSTRUMENTATION

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
NTS		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
1-58-1	SHEET NO. 232 OF 271	

SYMBOLS	DESCRIPTION
	DRAWOUT TYPE POWER CIRCUIT BREAKER, MEDIUM VOLTAGE CS - CONTROL SWITCH
	LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED. LSIG IF NOTED MCP IF NOTED ERMS IF NOTED
	COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED: * FVR - FULL VOLTAGE REVERSING RVNR-REDUCED VOLTAGE NON-REVERSING 2S1W-TWO SPEED, ONE WINDING 2S2W-TWO SPEED, TWO WINDING RVAT - REDUCED VOLTAGE AUTOTRANSFORMER RVSS - REDUCED VOLTAGE SOLID STATE
	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE * AMPERE RATING NOTED IF OTHER THAN 30A
	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED: * AMPERE RATING NOTED IF OTHER THAN 30A FUSE RATING
	MOTOR ISOLATION SWITCH, HORSEPOWER RATED
	DRAWOUT TYPE EQUIPMENT OR DEVICE
	MEDIUM VOLTAGE CABLE TERMINATION
	AIR INTERRUPTER SWITCH, MEDIUM VOLTAGE
	NON DRAWOUT FUSED AIR INTERRUPTER SWITCH, MEDIUM VOLTAGE
	DRAWOUT VACUUM CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND VACUUM CONTACTOR, MEDIUM VOLTAGE
	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED, UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 13. ALL OTHER DRY TYPE TRANSFORMERS SHALL HAVE A K-4 RATING. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING
	CURRENT TRANSFORMER: * QUANTITY A= PRIMARY AMPERES
	POTENTIAL TRANSFORMER: * QUANTITY PV= PRIMARY VOLTAGE SV= SECONDARY VOLTAGE
	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
	AUTOMATIC TRANSFER SWITCH (EG ATS-1) OR MANUAL TRANSFER SWITCH (EG MTS-1) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY OR ALTERNATE SOURCE "L" INDICATES LOAD 100A INDICATES CONTINUOUS CURRENT RATING
	VARIABLE SPEED DRIVE CONTROLLER * D.C.= D.C. DRIVE CONTROLLER SCR= SILICON CONTROLLED RECTIFIER VFD= VARIABLE FREQUENCY DRIVE AFD= ADJUSTABLE FREQUENCY DRIVE ASD= ADJUSTABLE SPEED DRIVE
	UNIT HEATER - ELECTRIC HEATING COIL AND FAN
	UNIT HEATER - STEAM OR WATER HEATING COIL AND FAN
	MOTOR, NUMERAL INDICATES HORSEPOWER
	SURGE PROTECTION DEVICE
	VARIABLE FREQUENCY DRIVE
	UNIT HEATER - ELECTRICAL HEATING COIL AND FAN # - RATING

SYMBOLS	DESCRIPTION
	VOLTMETER (WITH SWITCH IF 3-PHASE)
	AMMETER (WITH SWITCH IF 3-PHASE)
	METER * WM- WATTMETER WHM- WATTHOUR METER WHDM- WATTHOUR DEMAND METER WHDR- WATTHOUR DEMAND RECORDER PF- POWER FACTOR METER RT- RUNNING TIME METER TRANSDUCER AX- CURRENT TRANSDUCER WX- WATT TRANSDUCER
	RELAY, NO. AS INDICATED 25 - SYNCHRONISM CHECK RELAY 27 - UNDER VOLTAGE RELAY 32 - DIRECTIONAL POWER RELAY 38 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR/PILOT RELAY 46 - REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 - PHASE SEQUENCE VOLTAGE RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50 - INSTANTANEOUS OVERCURRENT RELAY 50G - INSTANTANEOUS GROUND 51 - TIME OVER CURRENT RELAY 51G - TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE 51N - TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 59 - OVERVOLTAGE RELAY 60 - NEGATIVE SEQUENCE VOLTAGE RELAY 62 - TIME DELAY RELAY 63 - OVER PRESSURE RELAY 67 - AC DIRECTIONAL OVERCURRENT RELAY 83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 86 - LOCKING-OUT RELAY 87 - DIFFERENTIAL PROTECTIVE RELAY B - SUFFIX INDICATES "BUS" G - SUFFIX INDICATES "GENERATOR" GF - GROUND FAULT ST - SHUNT TRIP T - SUFFIX INDICATES "TRANSFORMER" X - SUFFIX INDICATES "AUXILIARY"
	SPECIAL CAPACITOR * SC- SURGE CAPACITOR PF- POWER FACTOR CORRECTION CAPACITOR
	TUNED POWER FACTOR CORRECTION CAPACITOR
	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
	EMERGENCY STOP PUSH BUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
	STOP PUSH BUTTON WITH RED HEAD OPERATOR (MAINTAINED CONTACT) WITH LOCKABLE OPTION * : E-STOP * : STOP
	START-STOP PUSH BUTTON CONTROL STATION (MOMENTARY CONTACT) "L" DENOTES LOCKOUT TYPE
	START-STOP PUSH BUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
	OFF/ON SELECTOR SWITCH
	LOCAL/REMOTE SELECTOR SWITCH
	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED
	NAMEPLATE (A/B/C) HOA- HAND/OFF/AUTO HOR- HAND/OFF/REMOTE LOR- LOCAL/OFF/REMOTE RSL- RAISE/STOP/LOWER TOA- TEST/OFF/AUTO
	MOTOR STARTER COIL, NUMBER AS INDICATED
	CONTROL RELAY COIL, NUMBER AS INDICATED
	RVSS: REDUCED VOLTAGE SOLID STATE SOFT STARTER

SYMBOLS	DESCRIPTION
	PILOT LIGHT, COLOR AS NOTED * R- RED G- GREEN B- BLUE W- WHITE A- AMBER
	PILOT LIGHT, PUSH-TO-TEST TYPE, COLOR AS NOTED ABOVE.
	TIME DELAY RELAY RANGE AS NOTED SET POINT AS NOTED
	TDD - TIME DELAY AFTER DE-ENERGIZATION-OFF DELAY
	TDE - TIME DELAY AFTER ENERGIZATION-ON DELAY
	NOTC - NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED
	NCTO - NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED
	NOTO - NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED
	NCTC - NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED
	FIELD INSTRUMENT, TAG NO. OR LOOP # AS INDICATED * INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS ## - INDICATES LOOP NO.
	LIQUID LEVEL (FLOAT) SWITCH
	NORMALLY OPEN, CLOSING ON RISING LEVEL
	NORMALLY CLOSED, OPENS ON RISING LEVEL
	NORMALLY OPEN, CLOSING ON DROPPING LEVEL
	NORMALLY CLOSED, OPENS ON DROPPING LEVEL
	PRESSURE OR VACUUM SWITCH
	NORMALLY OPEN, CLOSING ON RISING PRESSURE
	NORMALLY CLOSED, OPENS ON RISING PRESSURE
	NORMALLY OPEN, CLOSING ON DROPPING PRESSURE
	NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
	TEMPERATURE SWITCH OR THERMOSTAT
	NORMALLY OPEN, CLOSING ON RISING TEMPERATURE
	NORMALLY CLOSED, OPENS ON RISING TEMPERATURE
	NORMALLY OPEN, CLOSING ON DROPPING TEMPERATURE
	NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
	FLOW SWITCH (AIR, WATER, ETC.)
	NORMALLY OPEN, CLOSING ON INCREASED FLOW
	NORMALLY OPEN, CLOSING ON DROPPING FLOW
	NORMALLY CLOSED, OPENS ON INCREASED FLOW
	NORMALLY CLOSED, OPENS ON DROPPING FLOW
	POSITION (LIMIT) SWITCH
	NORMALLY OPEN
	NORMALLY OPEN - HELD CLOSED
	NORMALLY CLOSED
	NORMALLY CLOSED - HELD OPEN
	TORQUE SWITCH
	NORMALLY CLOSED, OPENS ON HIGH TORQUE
	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
	CONDUCTORS ELECTRICALLY CONNECTED
	RVAT: REDUCED VOLTAGE AUTO-TRANSFORMER SOFT STARTER
	SOLENOID VALVE

SYMBOLS	DESCRIPTION
	LIGHTNING ARRESTER/SURGE CAPACITOR
	GROUND ROD
	GROUND ROD WELL
	FUSE, AMPERE RATING AS NOTED
	STRIP HEATER OR HEATING ELEMENT
	INDUCTOR
	TACHOMETER GENERATOR
	CONTACT, NORMALLY OPEN (NO)
	CONTACT, NORMALLY CLOSED (NC)
	OVERLOAD RELAY HEATER
	* K = KEY INTERLOCK
	E = ELECTRICAL INTERLOCK
	TERMINAL OR TEST BLOCK
	RESISTANCE TEMPERATURE DETECTOR
	VIBRATION DETECTOR
	DAMPER MOTOR
	ELAPSED TIME METER
	MOTOR OPERATED VALVE
	PUSH BUTTON STATION, REFER TO ELECTRICAL SCHEMATIC FOR NUMBER OF DEVICES.
	JUNCTION BOX
	POWER JUNCTION BOX
	4-20mA SIGNAL JUNCTION BOX
	CONTROL JUNCTION BOX
	PULL BOX
	TERMINATION CABINET
	REMOTE DEVICES
	MOV WITHOUT INTEGRATED DISCONNECT
	MOV WITH INTEGRATED DISCONNECT

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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## CITY OF HOUSTON

HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

### LEGENDS AND SYMBOLS SHEET 1

ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO <b>E-00-01</b>	DRAWING SCALE	CITY OF HOUSTON PM TAHA LOTIA
	AS SHOWN	
	SHEET NO. 2330F 271	

NO.	DATE	REVISION	APP.

SYMBOLS	DESCRIPTION
	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE FIXTURE: "A"- FIXTURE TYPE "b"- CONTROLLED BY SWITCH "b" "LA-3"- CIRCUIT 3 FROM PANEL LA
	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE FIXTURE, NOTATIONS SAME AS ABOVE
	INDICATES LIGHT FIXTURES WHICH ARE NONSWITCHED, NOTATIONS SAME AS ABOVE "NS" - NONSWITCHED
	WALL MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	POLE MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE
	REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE
	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
	WALL OUTLET EXIT SIGN. ARROW INDICATES DIRECTION OF EGRESS, NOTATIONS SAME AS ABOVE. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
	CONDUIT, EXPOSED/SURFACE MOUNTED
	CONDUIT OR DUCTBANK, CONCEALED
	CONDUIT, EXPOSED/SURFACE MOUNTED, TURNING UP
	CONDUIT, EXPOSED/SURFACE MOUNTED, TURNING DOWN
	CONDUIT STUBBED OUT AND CAPPED
	FLEXIBLE METAL CONDUIT "WHIP" (#12, #12G, 3/4"C UNLESS OTHERWISE NOTED) FOR RECESSED LIGHTING FIXTURES AND LIQUID TIGHT MOTOR CONNECTIONS
	HOMERUN, CIRCUITS 1 AND 3 RUN TO PANEL LP-1
	SINGLE POLE SWITCH "b"- INDICATES SWITCH LEG SHALL CONTROL LIGHT FIXTURES WITH "b" DESIGNATION
	MULTI POLE SWITCH "x"- INDICATES NUMBER OF POLE "b"- NOTATIONS SAME AS ABOVE
	SINGLE POLE SWITCH AND PILOT LIGHT, "b"- NOTATIONS SAME AS ABOVE
	DIMMER LIGHTING CONTROL SWITCH, "b"- NOTATIONS SAME AS ABOVE
	TIME SWITCH, "b"-NOTATIONS SAME AS ABOVE
	MANUAL MOTOR STARTER /DISCONNECT
	SINGLE POLE SWITCH WITH OCCUPANCY SENSOR
	SINGLE POLE DIMMER SWITCH
	SWITCH ENCLOSURE "x"- NOTATIONS SAME AS ABOVE "b"- NOTATIONS SAME AS ABOVE "xx"- INDICATES ENCLOSURE TYPE
	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED

SYMBOLS	DESCRIPTION
	LIGHTING PANELBOARD (TYPICAL 120V/240V OR 120V/208V)
	DISTRIBUTION PANELBOARD (TYPICAL 277V/480V)
	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W * GFI- GROUND FAULT INTERRUPTER TYPE WP- WEATHERPROOF "LA-3"- CIRCUIT 3 FROM PANEL LA
	WELDING RECEPTACLE
	20A, 240V, 2P, 3W, RECEPTACLE
	CLASS 1, DIVISION 1, RATED TWIST LOCK RECEPTACLE, VOLTAGE AND AMPERAGE RATING AS NOTED
	SINGLE FACE, SINGLE GANG PEDESTAL WITH 20A, 120V, 2P, 3W DUPLEX RECEPTACLE, FURNISHED AND INSTALLED UNDER DIVISION 16 UNLESS OTHERWISE NOTED. * DENOTES FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS BUT INSTALLED UNDER DIVISION 16
	DOUBLE FACE, SINGLE GANG PEDESTAL WITH 20A, 120V, 2P, 3W DUPLEX RECEPTACLE AND 20A, 240V, 2P, 3W SINGLE RECEPTACLE, FURNISHED AND INSTALLED UNDER DIVISION 16 UNLESS OTHERWISE NOTED. * DENOTES FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS BUT INSTALLED UNDER DIVISION 16
	DOUBLE RECEPTACLE, 20A, 120V, 2P, 3W MOUNTED IN BOX CURB FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS BUT INSTALLED UNDER DIVISION 16
	SINGLE GANG 20A, 120V, 3P, 3W RECEPTACLE
	QUAD RECEPTACLE
	OCCUPANCY SENSOR CAPABLE OF VACANCY
	PHOTOCELL
	COAX JACK
	HDMI
	INDICATED EQUIPMENT AND MATERIALS TO BE DEMOLISHED OR REMOVED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN.

SYMBOLS	DESCRIPTION
COMMUNICATIONS SYSTEMS	
	TELEPHONE OUTLET
	DATA OUTLET
	DATA INPUT/OUTPUT CABLE OUTLET. "P" DENOTES PROCESS COMPUTER SYSTEM
	VOICE/DATA OUTLET
	PAGING SPEAKER HORN
	PAGING SPEAKER BI-DIRECTIONAL
	PAGING SPEAKER, CEILING MOUNTED TYPE
	PAGING SPEAKER, WALL MOUNTED TYPE
SECURITY SYSTEMS	
	SECURITY ALARM CONTROL PANEL
	SECURITY ALARM DOOR SWITCH
	SECURITY ALARM KEY PAD
	SECURITY SYSTEM CARD ACCESS READER
	SECURITY ALARM WINDOW SWITCH
	SECURITY ALARM MOTION DETECTOR
	SECURITY CAMERA * CCTV- CLOSED CIRCUIT TV CAMERA PTZ- PAN, TILT, ZOOM CAMERA LENS CONTROLS
	GLASS BREAK DETECTOR
	ACCESS CONTROL PANEL
FIRE ALARM SYSTEMS	
	FIRE ALARM CONTROL PANEL
	SMOKE DETECTOR *: D- DENOTES DUCT SMOKE DETECTOR R- DENOTES FIXED TEMPERATURE RATE-OF-RISE TYPE.
	FIRE ALARM MANUAL PULL STATION, MOUNT AT 4'-0"
	ALARM HORN, MOUNT AT 7'-6" *: F- DENOTES FIRE ALARM
	ALARM STROBE, MOUNT AT 6'-8" *: F- DENOTES FIRE ALARM
	ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT AT 6'-8" *: F- DENOTES FIRE ALARM

**GENERAL NOTE**  
THIS IS A STANDARD LEGEND AND SYMBOLS SHEET. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

ABBREVIATIONS			
AC	ALTERNATING CURRENT	PFR	PHASE FAILURE RELAY
AFD	ADJUSTABLE FREQUENCY DRIVE	PH	PHASE
AFB	ABOVE FINISHED FLOOR	PNLBD	PANELBOARD
AG	ABOVE GRADE	PR	PAIR
ALUM	ALUMINUM	PT	POTENTIAL TRANSFORMER
AMPA/A	AMPERE	PTT	PUSH TO TEST TYPE
ATS	AUTOMATIC TRANSFER SWITCH	PVC	POLYVINYL CHLORIDE
AUTO	AUTOMATIC	QTY	QUANTITY
AUX	AUXILIARY	RCP	RELAY CONTROL PANEL
AWG	AMERICAN WIRE GAUGE	RECP	RECEPTACLE
C	CONDUIT	RVSS	REDUCED VOLTAGE SOFT STARTER
CB	CIRCUIT BREAKER	SC	SURGE CAPACITOR
CKT	CIRCUIT	SCCR	SHORT CIRCUIT CURRENT RATING
CLF	CURRENT LIMITING FUSE	SEC	SECONDS OR SECONDARY
CP	CONTROL PANEL	SH	SHIELDED OR SHEET
CPT	CONTROL POWER TRANSFORMER	SHT	SHEET
CR	CONTROL RELAY	SM	MOTOR RATED SWITCH
CS	CONTROL SWITCH	SN	SOLID NEUTRAL
CT	CURRENT TRANSFORMER	SS	STAINLESS STEEL
CU	COPPER	ST	STARTER
DC	DIRECT CURRENT	SV	SOLENOID VALVE
DI	DOOR INTERLOCK	SW	SWITCH
DN	DOWN	SWBD	SWITCHBOARD
DWG	DRAWING	SWGR	SWITCHGEAR
EHH	ELECTRICAL HANDHOLE	TC	TERMINATION CABINET
EC	EMPTY CONDUIT	TEL	TELEPHONE
ELEC	ELECTRICAL	TDO	TIME DELAY ON OPENING
ELEV	ELEVATION	TS	TEMPERATURE SWITCH
EM	EMERGENCY	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EMH	ELECTRICAL MANHOLE	TSP	TWISTED SHIELDED PAIR WIRE
EO	ELECTRICALLY OPERATED	TYP	TYPICAL
ERMS	ENERGY-REDUCING MAINTENANCE SWITCH	UG	UNDERGROUND
FBO	FURNISHED BY OTHERS	V	VOLTS
FO	FIBER OPTIC	VFD	VARIABLE FREQUENCY DRIVE
FMR	FEEDER MANAGEMENT RELAY	W	WIRE
FRP	FIBERGLASS REINFORCED POLYESTER	WP	WEATHERPROOF
FU	FUSE	XFMR	TRANSFORMER
GCP	GENERATOR CONTROL PANEL		
GEN	GENERATOR		
G, GND	GROUND		
GFI	GROUND FAULT INTERRUPTER		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER		
GO	GATE OPERATOR		
GPR	GENERATOR PROTECTION RELAY		
GRS	GALVANIZED RIGID STEEL		
HH	HANDHOLE		
HT	HEIGHT		
HTP	HEAT TRACE PANEL		
HZ	HERTZ		
IMH	INSTRUMENT MAN HOLE		
INST	INSTRUMENT		
LA	LIGHTNING ARRESTER		
LC	LIGHTNING CONTACTOR		
LCP	LOCAL CONTROL PANEL		
LGTS	LIGHTS		
LP	LIGHTING PANEL		
LSIG	LONG TIME/SHORT TIME/ INSTANTANEOUS/GROUND FAULT FEATURE INCLUDED		
MCC	MOTOR CONTROL CENTER		
MCP	MOTOR CIRCUIT PROTECTOR		
MFR	MANUFACTURER		
MH	MANHOLE		
MLO	MAIN LUGS ONLY		
MMR	MAIN MANAGEMENT RELAY		
MTG	MOUNTING		
MTD	MOUNTED		
MTS	MANUAL TRANSFER SWITCH		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN OR NUMBER		
NTS	NOT TO SCALE		
OL	OVERLOAD		
OLX	OVERLOAD CONTROL RELAY		
PB	PUSH BUTTON OR PULL BOX		
	CONTINUED ABOVE RIGHT		

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW
 TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264	
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**LEGENDS AND SYMBOLS SHEET 2**  
ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DWG NO	DRAWING SCALE	
E-00-02	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. 2340F 271	

NO.	DATE	REVISION	APP.

**ELECTRICAL GENERAL NOTES**

- ELECTRICAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL LAYOUT OF THE WORK TO BE PERFORMED UNDER THIS CONTRACT WITHOUT ATTEMPTING TO SHOW ALL DETAILS. FURNISH LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM, AS SHOWN ON THE CONTRACT DRAWINGS.
- THE PLANS DO NOT SHOW RACEWAYS AND CONDUCTORS BETWEEN RECEPTACLES, LIGHTING FIXTURES AND SWITCHES. HOWEVER, THE CONTRACTOR SHALL FURNISH AND INSTALL THESE CONNECTIONS IN ACCORDANCE WITH THE ASSIGNED FIXTURE OR RECEPTACLE CIRCUIT NUMBER AND SWITCH DESIGNATIONS. HOMERUNS SHALL BE CONCEALED OR EXPOSED AT CONTRACTOR DISCRETION, UNLESS OTHERWISE NOTED. CONCEALED RUNS SHALL BE INSTALLED CONCEALED FOR THE ENTIRE CIRCUIT INSTALLATION. THE SAME APPLIES FOR EXPOSED RUNS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
- CONTRACTOR'S WORK SHALL INCLUDE TESTING OF THE EQUIPMENT AND WIRING INCLUDING MAKING MINOR CORRECTIONS, CHANGES, OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY; SUBSTANDARD WORK WILL BE REJECTED.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND IN ACCORDANCE WITH LOCAL CODES.
- CONDUITS SHALL NOT BE ROUTED ACROSS THE WALKWAYS, PATHS OF ACCESS, TRAVEL OR EGRESS. ROUTE CONDUITS BENEATH GRATING, IN CONCRETE STRUCTURES OR AROUND EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS ASSOCIATED WITH THE PROPOSED WORK. THE COSTS OF THE PERMITS, IS ANY, SHALL BE BORNE BY THE CONTRACTOR.
- DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR EXACT LOCATION OF THE EQUIPMENT. EXCEPT WHERE DIMENSIONS ARE SHOWN, LOCATIONS OF EQUIPMENT, FIXTURES, OUTLETS, AND SIMILAR DEVICES ARE APPROXIMATE.
- COORDINATE SEQUENCE OF CONSTRUCTION WITH CIVIL, MECHANICAL, AND STRUCTURAL DISCIPLINES. PROVIDE TEMPORARY POWER AND CONTROL CIRCUITS AS REQUIRED TO MAINTAIN FACILITY IN OPERATION.
- ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHERPROOF AND RATED FOR THE AREA INSTALLED.
- WHERE LOCAL DISCONNECTS AND CONTROL PANELS ARE SHOWN ON PLAN VIEWS, LOCATIONS ARE APPROXIMATE. ADJUST LOCATIONS AS REQUIRED TO COMPLY WITH NEC ARTICLE 110 FOR REQUIRED WORKING SPACE CLEARANCES.
- THE EXISTING FACILITIES INFORMATION PRESENTED ON THE DRAWINGS IS BASED ON THE RECORD DRAWINGS AND HAS NOT BEEN FIELD VERIFIED. EXACT LOCATION OF EXISTING DUCT BANKS IS NOT KNOWN. CONTRACTOR SHALL HAND EXCAVATE TO LOCATE DUCT BANKS IN THE FIELD. CONTRACTOR SHALL FIELD VERIFY ALL THE PROPOSED DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD BEFORE START OF WORK. CONTRACTOR SHALL REPORT ANY DISCREPANCIES, BETWEEN THE DRAWINGS AND EXISTING CONDITIONS TO THE CONSTRUCTION MANAGER IN AN RFI IN A TIMELY MANNER.
- DETAILED CIRCUIT AND WIRING RESEARCH IS REQUIRED FOR EQUIPMENT TO BE REPLACED IN THIS PROJECT. THE RESEARCH AND RESULTING "AS FOUND CONDITIONS" DOCUMENTATION SHALL BE PROVIDED TO THE EQUIPMENT MANUFACTURER PRIOR TO CREATION OF RELATED SHOP DRAWINGS. THE CONTRACTOR SHALL DOCUMENT THE OPERATIONAL STATUS, AND WIRING CONFIGURATION OF EACH EXISTING LOAD, WITH THE COMPONENTS REQUIRED IN THE RELATED CONTROL CIRCUITRY (FOR EACH SECTION OF GEAR, MCC BUCKET OR SYSTEM TO BE REPLACED). THE RESEARCH SHALL BE PERFORMED BY A COMPOSITE RESEARCH CREW OF SUB-CONTRACTORS; ELECTRICAL, PROCESS CONTROL SYSTEM INTEGRATOR, AND SOFTWARE ENGINEER WHO SHALL CREATE THE "AS FOUND CONDITIONS" DOCUMENTS.
- ALL EQUIPMENT WIRING, RACEWAYS, ETC. SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), LOCAL CODES, AND INDUSTRY STANDARDS (IE. UL, NEMA, IEEE, ANSI, ETC.) THE DRAWING NOTES AND DETAILS SHALL BE COMPLIED WITH IN ADDITION TO THE REQUIREMENTS IN THE SPECIFICATIONS. REFER TO EACH SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS.
- ALL RACEWAY INSTALLATIONS SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. ALL EXPOSED RACEWAY SHALL BE INSTALLED PARALLEL TO BEAMS, CEILINGS, FLOORS AND WALLS. SEE SPECIFICATION ON RACEWAYS FOR ADDITIONAL REQUIREMENTS.
- CONDUITS SHALL BE TERMINATED IN A NEAT MANNER AND STRICTLY IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWING DETAILS.
- CONDUITS TERMINATED INTO ENCLOSURES SHALL BE PERPENDICULAR TO THE WALLS OF THE ENCLOSURE. THE USE OF SHORT SEALTIGHT ELBOW FITTINGS FOR SUCH TERMINATIONS IS NOT PERMITTED.
- ALL RACEWAY INSTALLATIONS, CROSSING EXPANSION JOINTS OR TRANSITIONS FROM BELOW GRADE TO EXPOSED ABOVE GRADE, SHALL HAVE EXPANSION OR EXPANSION/DEFLECTION TYPE FITTINGS AS SPECIFIED FOR THE APPLICATION. SEE THE DRAWINGS AND THE SPECIFICATION ON RACEWAYS FOR THE EXACT TYPE OF FITTING TO BE USED.
- NO CONDUIT SMALLER THAN 3/4", NOR WIRE SMALLER THAN NO. 12 AWG, SHALL BE USED UNLESS SPECIFICALLY NOTED.
- ALL UNDERGROUND SINGLE CONDUITS AND DUCTBANKS OF MULTIPLE CONDUITS SHALL BE RIGID PVC CONDUIT ENCASED IN REINFORCED RED CONCRETE. CONCRETE DYED RED BEFORE PLACEMENT. FIELD VERIFY THE ROUTING OF ALL EXISTING UNDERGROUND CONDUIT AND DUCTBANKS. COORDINATE ROUTING OF NEW CONDUIT AND DUCTBANKS TO AVOID INTERFERENCE WITH EXISTING CONDUIT, DUCTBANKS, AND OTHER UNDERGROUND UTILITIES.
- ALL CHANGES OF DIRECTION GREATER THAN 20 DEGREES IN UNDERGROUND SINGLE, OR DUCTBANKS OF MULTIPLE CONDUITS, SHALL BE ACCOMPLISHED USING PVC COATED RIGID ALUMINUM LONG RADIUS BENDS. BENDS OF PVC CONDUIT GREATER THAN 20 DEGREES, OR THE USE OF FLEXIBLE CONDUIT OF ANY TYPE, WILL NOT BE PERMITTED. SEE THE SPECIFICATIONS FOR MORE REQUIREMENTS.
- LIQUID TIGHT FLEXIBLE ALUMINUM CONDUIT SHALL BE USED FOR THE PRIMARY AND SECONDARY OF TRANSFORMERS, GENERATOR TERMINATIONS AND OTHER EQUIPMENT WHERE VIBRATION IS PRESENT. USE IN OTHER LOCATIONS IS NOT PERMITTED, EXCEPT FOR CONNECTIONS TO INSTRUMENTATION TRANSMITTERS, WHERE MULTIPLE PENETRATIONS ARE REQUIRED. LIQUID TIGHT FLEXIBLE ALUMINUM CONDUIT SHALL HAVE A MAXIMUM LENGTH NOT GREATER THAN THAT OF A FACTORY MANUFACTURED LONG RADIUS ELBOW OF THE CONDUIT SIZE BEING USED. THE MAXIMUM BENDING RADIUS SHALL NOT BE LESS THAN THAT SHOWN IN THE NEC CHAPTER 9, TABLE 2, "OTHER BENDS". BX OR AC TYPE PREFABRICATED CABLES WILL NOT BE PERMITTED.
- THE WIRING DIAGRAMS, BLOCK DIAGRAMS, QUANTITY/SIZES OF WIRES/CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY APPROVED. ALL MODIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFIED.
- SEAL ALL RACEWAYS ENTERING JUNCTION BOXES OR CONTROL PANELS CONTAINING ELECTRICAL OR INSTRUMENTATION EQUIPMENT WITH WATERTIGHT SEALANT. REFER TO THE SPECIFICATIONS FOR DETAILS.
- ALL PROCESS EQUIPMENT AND ELECTRICAL EQUIPMENT ENCLOSURE LOCATIONS, OR TERMINAL BOX LOCATIONS ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER, DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
- ALL PROCESS EQUIPMENT AND ELECTRICAL EQUIPMENT ENCLOSURES DIMENSIONS ARE APPROXIMATE. ALL EQUIPMENT AND ELECTRICAL EQUIPMENT ENCLOSURES OR TERMINAL BOX DIMENSIONS SHALL BE VERIFIED WITH THE EQUIPMENT SUPPLIER. ALLOW FOR LOCATION CHANGES AND INCLUDE IN THE CONTRACT PRICE. THE EXACT LOCATIONS OF ALL ELECTRICAL EQUIPMENT AND ROUTING OF ALL CABLES AND CONDUITS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER DURING CONSTRUCTION.
- CORING OF AN EXISTING STRUCTURE SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER. CORING THROUGH STRUCTURAL BEAMS IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER/ENGINEER.
- THE DUCTBANK ROUTING AS SHOWN ON THE DRAWING IS APPROXIMATE. FIELD VERIFY THE EXACT DUCTBANK ROUTING, CABLE LENGTH AND CONDUIT LENGTH.

- PROVIDE CONDUIT SEALS FOR CONDUIT PENETRATIONS AS PER NFPA 70 (NEC) AND NFPA 820.
- ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC. AND SHALL BEAR APPROPRIATE UL LISTING MARK OR CLASSIFICATION MARKING. EQUIPMENT, MATERIALS, ETC, UTILIZED NOT BEARING A UL CERTIFICATION SHALL BE FIELD OR FACTORY UL CERTIFIED PRIOR TO EQUIPMENT ACCEPTANCE AND USE.
- COORDINATE WORK WITH OTHER TRADES AND THE OWNER.
- LOCATE ALL UNDERGROUND UTILITIES BEFORE DIGGING. COORDINATE THE EFFORT WITH THE OWNER.
- ALL SLOTTED CHANNEL, SLOTTED CHANNEL SUPPORT MATERIAL, WASHERS, SCREWS, NUTS, CONDUIT CLAMPS, ALL THREAD SPRING NUTS AND MISC. MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.
- LIGHTING FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS. THE MOUNTING HEIGHT SHALL BE MEASURED FROM THE BOTTOM OF THE LIGHTING FIXTURE TO THE FINISHED FLOOR.
- CONDUITS AND WIRES SHOWN ON THE INTERFACE DIAGRAM SHALL BE INSTALLED BY THE CONTRACTOR. GROUPING OF CONDUIT AND WIRE MAY BE CHANGED, IF APPROVED BY THE ENGINEER AND OWNER.
- ALL CONDULETS SHALL BE FORM 7 AND SHALL HAVE 316 SS CLAMP COVERS WITH 316 SS CLAMPS AND SCREWS. SCREW DOWN COVERS ARE UNACCEPTABLE. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.
- ALL BARE GROUNDING CONDUCTORS SHALL BE COPPER, ALL GROUND RODS SHALL BE 3/4" BY 20' LONG. ALL EXPOSED COPPER GROUND CABLES SHALL BE GREEN INSULATED CONDUCTORS. PROVIDE XHHW INSULATION.
- IF DURING PERFORMANCE OF WORK, THERE IS A CONFLICT, ERROR, OR DISCREPANCY BETWEEN OR AMONG CONTRACT DOCUMENTS, LAWS, AND REGULATIONS, PROVIDE THE HIGHER PERFORMANCE STANDARD UNLESS OTHERWISE DIRECTED BY ENGINEER.

TYPICAL ENCLOSURE TYPES BY AREA TYPE						
NON-HAZARDOUS AREAS	BOXES & ENCLOSURES					CONDUIT
	1	3R	4X	4X*	12	
OUTDOOR; GENERAL AREAS		X	X			RIGID ALUMINUM
OUTDOOR; CHEMICAL AREAS				X		PVC COATED ALUMINUM
INDOOR; CHEMICAL ROOM				X		SCHEDULE 80 PVC
INDOOR; CONDITIONED SPACE					X	RIGID ALUMINUM
INDOOR; NON-CONDITIONED SHOP SPACE					X	RIGID ALUMINUM
INDOOR; NON-CONDITIONED PROCESS AREA			X			RIGID ALUMINUM
INDOOR, ADMIN BUILDING	X					EMT/RIGID ALUMINUM
CLASS I, DIVISION 1	REFER TO NEC, NFPA-820, AND CONTRACT CONSTRUCTION SPECIFICATIONS					
CLASS I, DIVISION 2	REFER TO NEC, NFPA-820, AND CONTRACT CONSTRUCTION SPECIFICATIONS					
GENERAL NOTES:						
<ul style="list-style-type: none"> <li>EQUIPMENT SUCH AS MOTOR CONTROL CENTER, SWITCHGEAR, ASDS, AND OTHER STAND-ALONE MOTOR STARTERS ARE TO BE SPECIFIED UNIQUELY.</li> <li>NEMA 1 ENCLOSURES ARE TO BE NEMA 1 GASKETED.</li> <li>UNLESS CALLED OTHERWISE, NEMA 4X* ENCLOSURES ARE TO BE NEMA 4X, 316 S.S.</li> <li>CONDUIT INSIDE ADMIN BUILDING LOCATION IS TO BE EMT IF CONCEALED IN DRY WALL (AKA SHEET ROCK WALL); OTHERWISE RIGID ALUMINUM.</li> <li>OUTDOOR GENERAL AREAS COULD BE 3R OR 4X DEPENDING ON OWNER PREFERENCE - REFER TO DRAWINGS.</li> </ul>						

CONDUIT TYPE	LOCATION
RIGID GALVANIZED CONDUIT	NOT ACCEPTABLE FOR USE ON THIS PROJECT EXCEPT FOR THE UTILITY COMPANY'S CONDUCTORS. ALL UTILITY COMPANY'S DUCTS SHALL BE AS SPECIFIED BY UTILITY COMPANY.
PVC COATED ALUMINUM CONDUIT	ALL EMBEDDED CONDUIT BENDS, UNDERGROUND DUCTBANK OF MORE THAN 20 DEGREES, AND ALL CONDUIT STUB-UPS TO A MINIMUM OF 6" ABOVE FINISHED FLOOR OR GRADE AND IN CHLORINE AND CAUSTIC ROOMS.
LIQUID TIGHT FLEXIBLE ALUMINUM CONDUIT	RACEWAY CONNECTION TO VIBRATING EQUIPMENT ONLY, IN ALL AREAS.
RIGID NON-METALLIC, SCHEDULE 80 PVC CONDUIT	UNDERGROUND ENCASED IN RED DYE REINFORCED CONCRETE. (AS WHERE SPECIFIED)
RIGID NON-METALLIC, SCHEDULE 80 PVC CONDUIT	FOR USE IN CHLORINE AND CAUSTIC ROOMS, AND UNDERGROUND.
FLEXIBLE ALUMINUM CONDUIT	FIXTURE WHIP CONNECTION TO LIGHTING FIXTURES IN NEMA 12 AREAS (MAXIMUM 3-FT). BX OR AC TYPE PREFABRICATED CABLES ARE NOT PERMITTED.
ALUMINUM RIGID METAL CONDUIT	ALL ABOVE GRADE AREAS, EXCEPT FOR CONCRETE EMBEDDED AND THOSE AREAS ALREADY DESCRIBED IN THIS TABLE
ELECTRIC METALLIC TUBING (EMT) CONDUIT	FOR USE ONLY ON CONCEALED, ABOVE GROUND, INTERIOR ELECTRICAL WIRING IN AIR-CONDITIONED ADMINISTRATIVE BUILDINGS REMOTE TO THE PROCESS AREA, AND CLEARLY DEFINED AS SUCH ON THE DRAWINGS OR IN THE SPECIFICATIONS.

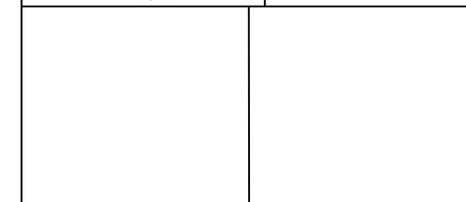
**MCC, CONTROL PANELS, PANELBOARDS**

- THESE NOTES APPLY TO CONTROL PANELS, MCC ETC WHICH HAS TO BE REFURBISHED, MODIFIED, DISCONNECTED & RECONNECTED OR REWORKED. SEE SECTION 16060:
- THE CONTRACTOR SHALL NOT MAKE ANY MODIFICATION UNTIL THE FOLLOWING HAS BEEN DONE:
  - THE OWNER/CONTRACTOR SHALL WITNESS THE CONDITION OF THE EXISTING EQUIPMENT, THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCY.
  - THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.
  - A RECORD OF THE OPERATION AND EXISTING CONDITION SHALL BE KEPT IN A THREE RING BINDER AT THE OWNER/CONTRACTOR TRAILER, IN FORM OF PICTURES AND INFORMATION.
  - A FORM SHALL BE GENERATED BY THE CONTRACTOR TO RECORD THE OBSERVATIONS. BOTH PARTIES SHALL SIGN ON THE FORM.
  - REPLACE ALL MATERIAL OR EQUIPMENT DAMAGED DURING THE COURSE OF WORK.
  - AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO DEMONSTRATE THAT IT FUNCTIONS CORRECTLY.

**DEMOLITION NOTES**

- COORDINATE THE REMOVAL OF ELECTRICAL CONDUIT, WIRE, EQUIPMENT AND DEVICES WITH THE GENERAL DEMOLITION AND SCHEDULE. THE DRAWINGS ARE INTENDED TO CONVEY THE GENERAL NATURE AND SCOPE OF THE DEMOLITION WORK. EVERY ITEM TO BE DEMOLISHED MAY NOT BE SHOWN. FIELD VERIFY, AND INCLUDE ALL DEMOLITION WORK IN THE CONTRACT PRICE.
- PRIOR TO REMOVAL OF ANY ELECTRICAL POWER DISTRIBUTION EQUIPMENT THE CONTRACTOR SHALL CONDUCT RESEARCH TO IDENTIFY ROTATION, EACH CONDUCTORS PHASE AND TAG EACH CONDUCTOR TO ENSURE PROPER RECONNECTION. THE CONTRACTOR SHALL DOCUMENT ANY NON-PLUMBABLE EXISTING CIRCUIT CONDUCTORS CONDITION, PHASE ROTATION AND THE OPERATIONAL STATUS OF EACH CONNECTED LOAD PRIOR TO REMOVAL. A REPLACEMENT PLAN AND SCHEDULE IS REQUIRED, TO BE APPROVED, PRIOR TO THE REMOVAL AND REPLACEMENT OF EACH LINEUP OF EQUIPMENT, OR DISTRIBUTION PANELBOARD.
- PRIOR TO REMOVAL OF ELECTRICAL EQUIPMENT FROM SERVICE THE CONTRACTOR SHALL CONDUCT RESEARCH, TO IDENTIFY AND TAG EACH CONDUCTOR TO ENSURE PROPER RECONNECTION. THE CONTRACTOR SHALL DOCUMENT THE PHASE ROTATION AND THE OPERATIONAL STATUS OF EACH CONNECTED LOAD. EACH CONDUCTORS FUNCTION SHALL BE CONFIRMED FROM FIELD DEVICES, AND TO PLC I/O FOR CONTROL AND OR STATUS INDICATION. A PLAN AND SCHEDULE IS REQUIRED, TO BE APPROVED, PRIOR TO THE REMOVAL AND REPLACEMENT OF EACH ELECTRICAL DEVICE. TO PHYSICALLY REMOVE THE ELECTRICAL DEVICE ALL OVERHEAD CONDUITS ARE TO BE TEMPORARILY SUPPORTED SUCH THAT THE CONDUIT IS ELEVATED ABOVE THE MCC STRUCTURE AND CONDUCTORS CAN BE REMOVED WITHOUT DAMAGE. ALL SPLICES FOR TEMPORARY OPERATION SHALL BE NEATLY COILED AND SUSPENDED ABOVE THE TOP ELEVATION OF THE EQUIPMENT.
- PROVIDE TEMPORARY WIRE AND CONDUIT FOR THE EQUIPMENT WHICH MAY BE AFFECTED BY THE DEMOLITION BUT TO REMAIN IN SERVICE.
- RELOCATE AND RECONNECT POWER AND CONTROL RACEWAYS AND CONDUCTORS TO EQUIPMENT AFFECTED BY DEMOLITION WORK.
- ALL CONDUCTORS BEING REMOVED SHALL BE DISCONNECTED AND REMOVED FROM THE LOAD TO THE SOURCE. SURFACE MOUNTED CONDUITS AND MOUNTING HARDWARE SHALL BE REMOVED. UNDERGROUND CONDUITS WHICH ARE NOT BEING REMOVED OR OTHERWISE NOT BEING MADE UNUSABLE SHALL BE CAPPED AND TAGGED AS SPARE, WITH INFORMATION CLEARLY INDICATING THE LOCATION OF THE OTHER END.
- ALL SURFACES WHERE DEMOLISHED EQUIPMENT OR CONDUIT IS REMOVED SHALL BE CLEANED, PATCHED AND PAINTED TO MATCH THE SURROUNDING SURFACE.
- IF A CONDUCTOR WHICH HAS TO STAY IN SERVICE (NOT BEING REMOVED) IS INSTALLED IN A COMMON CONDUIT WITH CONDUCTORS WHICH ARE BEING REMOVED, THE CONTRACTOR SHALL REMOVE ALL CONDUCTORS FROM THE CONDUIT, PROVIDE NEW CONDUCTORS WHICH ARE REPLACEMENTS FOR THE CONDUCTORS THAT ARE TO REMAIN IN SERVICE AND RE-INSTALL THE NEW CONDUCTORS. AFTER THE CONDUCTORS ARE PULLED, MEGGER OR VFL TEST EACH CONDUCTOR. CONNECT BOTH ENDS OF THE NEW CONDUCTORS AND TEST THE SYSTEM FOR PROPER FUNCTION. DO NOT RE-PULL USED CONDUCTORS UNLESS SPECIFIED.
- WHERE EQUIPMENT IS BEING RE-FED FROM A NEW SOURCE, EXISTING CONDUIT MAY BE REUSED ONLY IF THE CONDUIT AND FITTINGS ARE OF THE TYPE SPECIFIED FOR NEW WORK ON THIS CONTRACT. IF NOT, THE CONDUIT AND CONDUCTORS SHALL BE REPLACED WITH NEW MATERIAL MEETING THE SPECIFICATIONS, AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER/ENGINEER TO FLAG EXISTING UNDERGROUND CONDUITS BEFORE DIGGING.
- THE OWNER HAS THE RIGHT OF FIRST REFUSAL TO THE EQUIPMENT BEING REMOVED. THE CONTRACTOR SHALL DELIVER THE EQUIPMENT WHICH THE OWNER WISHES TO KEEP AT A LOCATION DESIGNATED BY THE OWNER. SEE SPECIFICATIONS.
- DO NOT MAKE ANY MODIFICATIONS TO THE EXISTING ELECTRICAL EQUIPMENT UNTIL THE FOLLOWING HAS BEEN DONE:
  - THE OWNER/CONTRACTOR SHALL WITNESS AND RECORD THE CONDITION OF THE EXISTING EQUIPMENT, THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.
  - THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.
  - AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO DEMONSTRATE THAT IT FUNCTIONS CORRECTLY.
  - NO PORTION OF EXISTING CONDUCTORS SHALL BE SPLICED TO NEW CONDUCTORS FOR RE-USE WITHOUT SPECIFIC APPROVAL FROM THE OWNER/ENGINEER ON A CASE-BY-CASE BASIS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW



<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p><b>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</b></p>
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**GENERAL NOTES**  
ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
DWG NO	CITY OF HOUSTON PM	
E-00-03	TAHA LOTIA	
	SHEET NO. 2350F 271	

APP.	
REVISION	
INC. DATE	

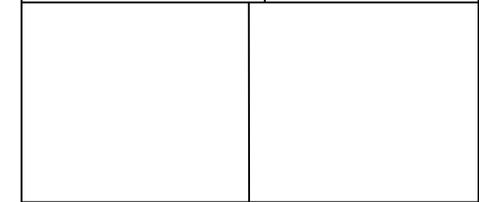
NO.	DATE	REVISION	APP.

**AREA CLASSIFICATION CHART**

**ABBREVIATIONS:**  
 CGD: COMBUSTIBLE GAS DETECTION SYSTEM  
 FAS: FIRE ALARM SYSTEM  
 FE: PORTABLE FIRE EXTINGUISHERS INSTALLED, LOCATED, AND MAINTAINED IN ACCORDANCE WITH NFPA 110  
 H: HYDRANT PROTECTION  
 NC: NONCOMBUSTIBLE MATERIAL  
 LC: LIMITED-COMBUSTIBLE MATERIAL  
 LFS: LOW FLAME SPREAD INDEX MATERIAL  
 N/A: NOT APPLICABLE  
 NR: NO REQUIREMENT

LOCATION	SUB-LOCATION	NFPA 820 REFERENCE	EXTENT OF CLASSIFIED AREA	NEC HAZARDOUS LOCATION CLASSIFICATION (GROUP D)	MATERIALS OF CONSTRUCTION	FIRE PROTECTION MEASURES	REFERENCE FIGURE	NOTES
INFLUENT LIFT STATION	INSIDE WET WELL	TABLE 4.2.2 ROW 14a	ENTIRE ROOM OR SPACE PLUS ENVELOPE 0.9 m (3FT) AROUND VENTS	CLASS I, DMSION 1	NC, LC, OR LFS	CGD	A.4.2(b)	OUTDOOR, WET, CORROSIVE
	DRY WELL	TABLE 4.2.2 ROW 15(b)	ENTIRE SPACE OR ROOM PLUS ENVELOPE 0.9 m (3 FT) AROUND VENTS	CLASS I, DMSION 2	NC, LC, OR LFS	FE	A.4.2(d)	ASSUMPTION: VENTILATED AT LESS THAN SIX AIR CHANGES PER HOUR
HEADWORKS	BELOW DECK (ENCLOSED)	TABLE 5.2.2 ROW 2a	ENCLOSED - ENTIRE SPACE	CLASS I, DMSION 1	NC	FE, H, CGD		ASSUMPTION: VENTILATED AT LESS THAN TWELVE AIR CHANGES PER HOUR
	ABOVE DECK (NOT ENCLOSED, OPEN TO ATMOSPHERE)	TABLE 5.2.2 ROW 2c	NOT ENCLOSED, OPEN TO ATMOSPHERE WITHIN A 3 m (10FT) ENVELOPE AROUND EQUIPMENT AND OPEN CHANNEL	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H		OUTDOOR, WET, CORROSIVE
GRIT HANDLING AREA	GRIT CHAMBER	TABLE 5.2.2 ROW 5(a)	ENCLOSED - ENTIRE SPACE	CLASS I, DMSION 1	NC	FE, H, CGD IF ENCLOSED IN A BUILDING		ENCLOSED, WET, CORROSIVE
	GRIT CLASSIFIER	TABLE 5.2.2 ROW 5 (c)	NOT ENCLOSED, OPEN TO ATMOSPHERE	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H		OUTDOOR, WET, CORROSIVE
AERATION BASINS (NOT PRECEDED BY PRIMARY SEDIMENTATION)	N/A	TABLE 5.2.2 ROW 8 (REFERRED TO ROW 7(c))	INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 m (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 m (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 m (18 IN.) ABOVE GRADE EXTENDING 3 m (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS	CLASS I, DMSION 2	NC, LC, OR LFS	H	A.5.2	OUTDOOR, WET, CORROSIVE
FINAL CLARIFIERS	BASIN	TABLE 5.2.2 ROW 7 (c)	INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 m (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 m (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 m (18 IN.) ABOVE GRADE EXTENDING 3 m (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS	CLASS I, DMSION 2	NC, LC, OR LFS	H	A.5.2	OUTDOOR, WET, CORROSIVE
RAS/WAS PUMP STATION	INSIDE WET WELL		ENTIRE ROOM OR SPACE PLUS ENVELOPE 0.9 m (3FT) AROUND VENTS	CLASS I, DMSION 2	NC, LC, OR LFS	H		OUTDOOR, WET, CORROSIVE
	DRY WELL	TABLE 6.2.2 (a) ROW 9 (a)	ENTIRE DRY WELL WHEN PHYSICALLY SEPERATED FROM A WET WELL	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H		ASSUMPTION: VENTILATED AT LESS THAN SIX AIR CHANGES PER HOUR
AEROBIC DIGESTER	N/A	TABLE 6.2.2 (a) ROW 10 (c)	INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 m (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 m (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 m (18 IN.) ABOVE GRADE EXTENDING 3 m (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS	CLASS I, DMSION 2	NC, LC, OR LFS	NR	A.5.2	OUTDOOR, WET, CORROSIVE
GRAVITY THICKENER/SLUDGE PUMP STATION	N/A	TABLE 6.2.2 (a) ROW 8 (d)	INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46 m (18 IN.) ABOVE THE TOP OF THE TANK AND EXTENDING 0.46 m (18 IN.) BEYOND THE EXTERIOR WALL; ENVELOPE 0.46 m (18 IN.) ABOVE GRADE EXTENDING 3 m (10 FT) HORIZONTALLY FROM THE EXTERIOR TANK WALLS	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H	A.5.2	OUTDOOR, WET, CORROSIVE
SCUM PITS		TABLE 6.2.2 (a) ROW 4 (a)	ENCLOSED - ENTIRE SPACE	CLASS I, DMSION 1	NC	FE, H, CGD IF ENCLOSED IN A BUILDING		
		TABLE 6.2.2 (a) ROW 4 (c)	NOT ENCLOSED, OPEN TO ATMOSPHERE WITHIN A 3 m (10 FT) ENVELOPE AROUND EQUIPMENT AND OPEN CHANNEL	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H		OUTDOOR, WET, CORROSIVE
SCUM PUMPING AREA	WET SIDE OF PUMPING STATION	TABLE 6.2.2 (a) ROW 5 (a)	ENCLOSED - ENTIRE SPACE	CLASS I, DMSION 1	NC	FE, H, CGD IF ENCLOSED IN A BUILDING		
	WET SIDE OF PUMPING STATION	TABLE 6.2.2 (a) ROW 5 (c)	NOT ENCLOSED, OPEN TO ATMOSPHERE WITHIN A 3 m (10 FT) ENVELOPE AROUND EQUIPMENT AND OPEN CHANNEL	CLASS I, DMSION 2	NC, LC, OR LFS	FE, H		OUTDOOR, WET, CORROSIVE
DEWATERING BUILDING	BELT FILTER PRESS AREA	TABLE 6.2.2 (a) ROW 12 (b)	ENTIRE ROOM	CLASS I, DMSION 2	NC, LC, OR LFS	H, FE, AND FAS		INDOOR, WET, CORROSIVE. ASSUMPTION: VENTILATED AT LESS THAN SIX AIR CHANGES PER HOUR
CHLORINE CONTACT BASINS EFFLUENT	PARSHAL FLUME	TABLE 5.2.2 ROW 19	N/A	UNCLASSIFIED	NR	H		OUTDOOR, WET, CORROSIVE
CHEMICAL STORAGE AREA	CONTAINMENT AREA	N/A	N/A	UNCLASSIFIED	NR	H		OUTDOOR, WET, CORROSIVE
	METERING PUMP BUILDING	N/A	N/A	UNCLASSIFIED	NR			INDOOR, WET, CORROSIVE
BLOWER BUILDING	N/A	N/A	N/A	UNCLASSIFIED	NR			INDOORS, DRY
NEW OPERATIONS BUILDING	N/A	N/A	N/A	UNCLASSIFIED	NR			INDOORS, DRY
NEW ELECTRICAL BUILDING	N/A	N/A	N/A	UNCLASSIFIED	NR			INDOORS, DRY

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DESIGNED BY: RK, SJ DRAWN BY: HW

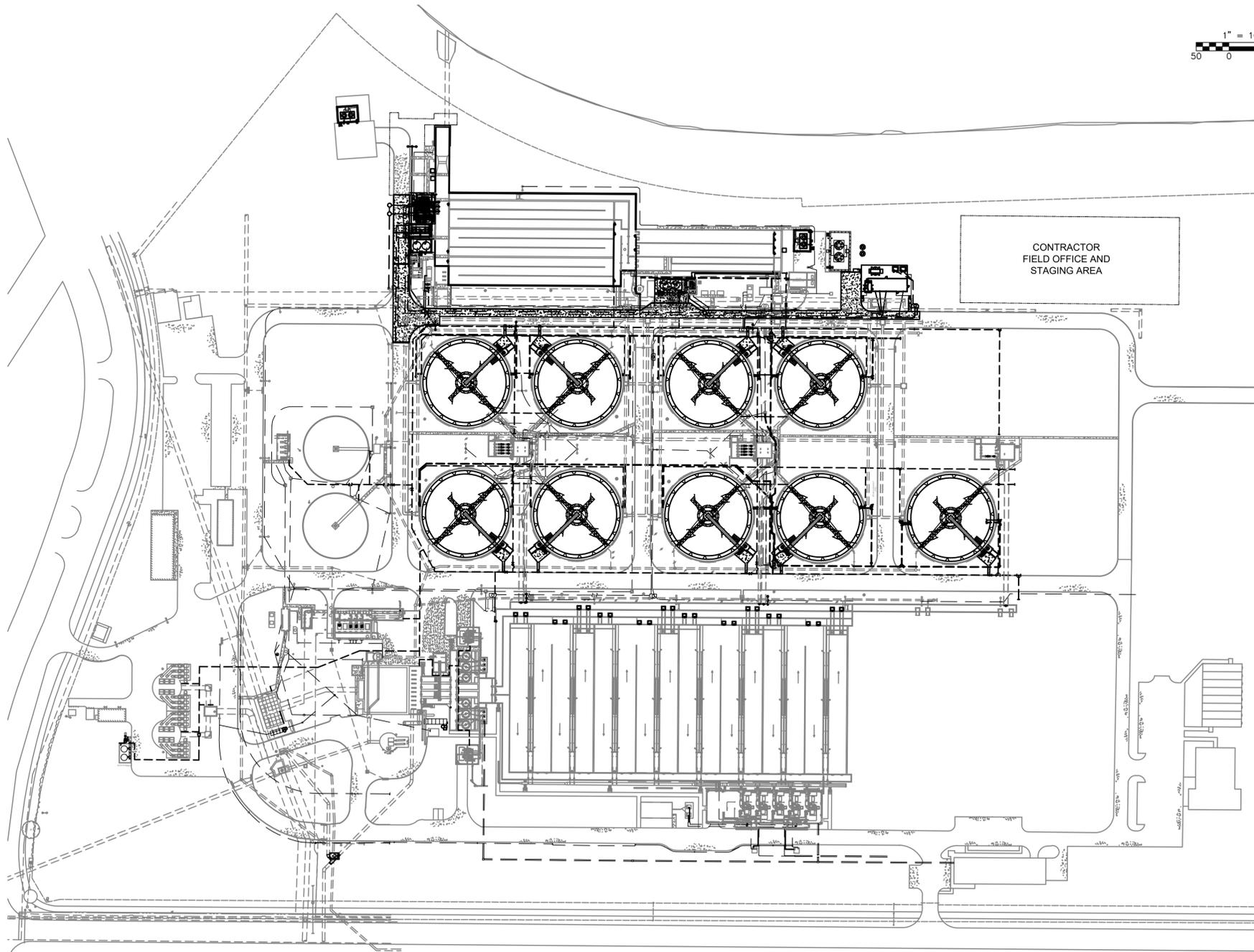
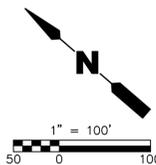


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**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AREA CLASSIFICATION DATA SHEET**  
 ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
DWG NO	SHEET NO. 2360F 271	
E-00-04		

NO.	DATE	REVISION	APP.



**VENTILATION CODES:**

- A: NO VENTILATION OR VENTILATED AT LESS THAN 12 AIR CHANGES PER HOUR.
- B: CONTINUOUSLY VENTILATED AT 12 AIR CHANGES PER HOUR.
- C: CONTINUOUSLY VENTILATED AT 6 AIR CHANGES PER HOUR.
- D: NO VENTILATION OR VENTILATED AT LESS THAN 6 AIR CHANGES PER HOUR.

**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE AREA CLASSIFICATIONS OF THE PLANT.
- B. REFER TO DWG E-04 FOR AREA CLASSIFICATION CHART.
- C. EQUIPMENT, MATERIALS, AND INSTALLATION SHALL COMPLY WITH NEC ARTICLES 500, 501, 502 AND 503.
- D. ELECTRICAL EQUIPMENT PLACED IN CLASS I, DIVISION 1 OR DIVISION 2, GROUP C & D LOCATIONS SHALL MEET "T3" TEMPERATURE RATINGS.

**LEGEND:**

-  CLASS I, DIVISION 1
-  CLASS I, DIVISION 2
-  UNCLASSIFIED

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

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 <p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

AREA CLASSIFICATION  
SITE PLAN

ELECTRICAL

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	<b>DRAWING SCALE</b> AS SHOWN	
<b>DWG NO</b> E-00-05	<b>CITY OF HOUSTON PM</b> TAHA LOTIA	
<b>SHEET NO.</b> 2370F 271		

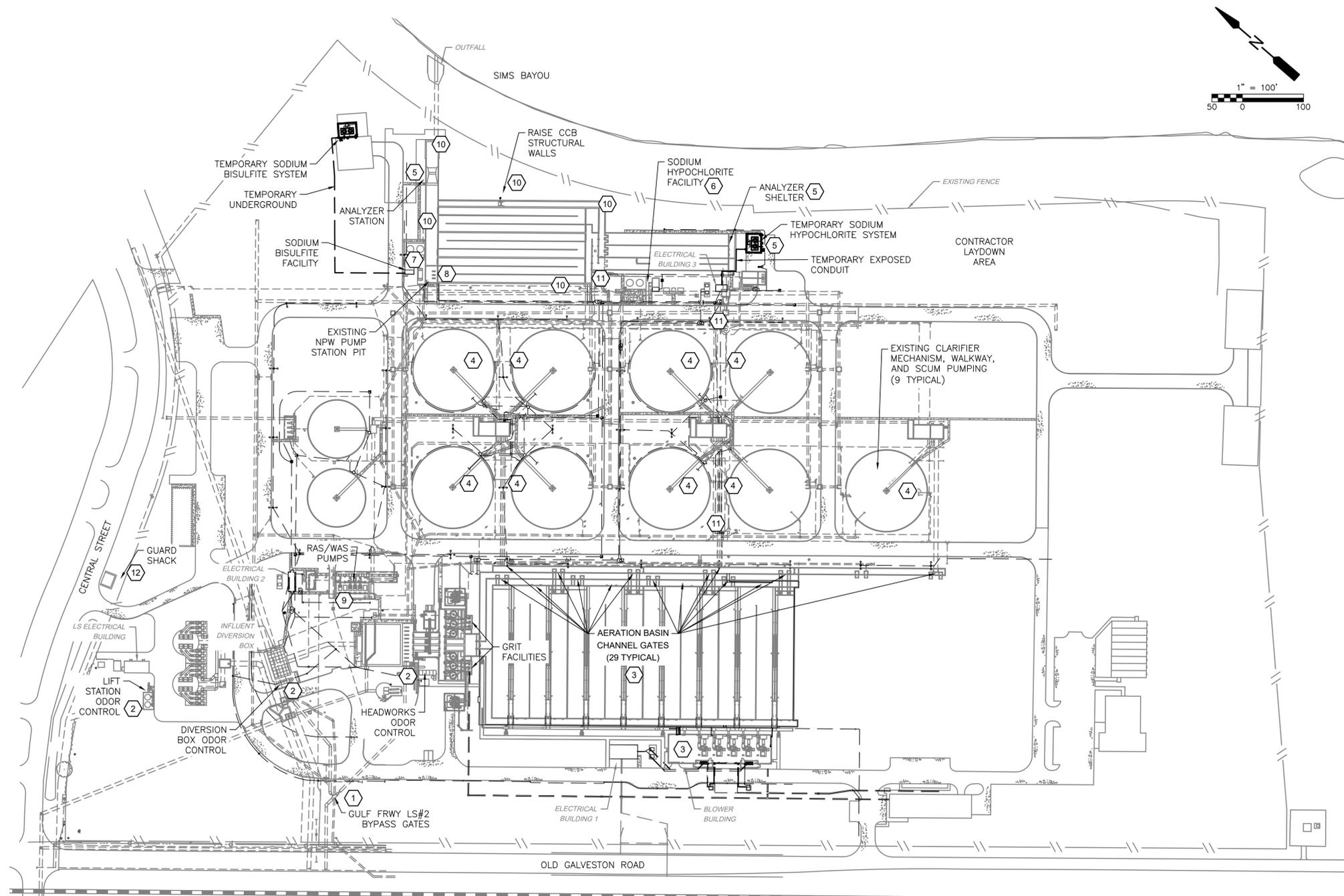
OVERALL SITE WORK LOCATION  
**PLAN**  
1"=100'

**ELECTRICAL TASKS NOTES:**

- 1 EXISTING GULF FREEWAY LIFT STATION #2 INFLUENT GATE'S AND ELECTRIC ACTUATORS ARE TO BE REMOVED AND REPLACED WITH NEW GATES AND ELECTRIC ACTUATORS. CONTRACTOR SHALL RESEARCH HOME RUN PATH FOR NEW CONDUCTORS TO BE INSTALLED.
- 2 THE LIFT STATION, DIVERSION BOX, AND HEADWORKS ODOR CONTROL SYSTEMS ARE EACH TO BE REHABILITATED OR REMOVED AND REPLACED. CONTRACTOR SHALL RESEARCH HOME RUN PATH FOR NEW CONDUCTORS TO BE INSTALLED. CONCRETE EMBEDDED CONDUIT MAY BE UTILIZED. CONTRACTOR SHALL COORDINATE REPLACEMENT OF ELECTRICAL ASPECTS FOLLOWING ACCEPTED MECHANICAL EQUIPMENT REPLACEMENT SCOPE.
- 3 EXISTING AERATION BASIN GATES ARE TO BE REMOVED AND REPLACED, WITH ELECTRIC ACTUATORS ADDED. CONTRACTOR SHALL RESEARCH THE BLOWER BUILDING AND AERATION BASINS FOR POWER AND CONTROL CONDUIT ROUTES TO SOURCES.
- 4 EXISTING CLARIFIER MECHANISMS ARE TO BE REMOVED REPLACED, NEW WALKWAYS, AND SCUM PUMPING ARE TO BE PROVIDED AT EACH OF THE NINE FINAL CLARIFIERS. CONTRACTOR SHALL RESEARCH AND BECOME FAMILIAR WITH EXISTING DUCT BANK ROUTES AND PULL BOXES FOR CONNECTION OF NEW DUCT BANKS AND INSTALLATION OF NEW CONDUCTORS TO THE NEW ELECTRICAL BUILDING 3.
- 5 CONTRACTOR SHALL RESEARCH FOR TWO TEMPORARY CHEMICAL SYSTEMS THAT WILL EACH REQUIRE TEMPORARY POWER AND CONTROL. WITH TEMPORARY ANALYZERS, METERING PUMPS AND MAINTENANCE IS TO BE PROVIDED. ALL TEMPORARY POWER, INSTRUMENTATION, AND CONTROLS ARE TO BE REMOVED, AFTER PROPOSED SYSTEMS ARE ACCEPTED AND IN SERVICE.
- 6 EXISTING SODIUM HYPOCHLORITE STORAGE AND PUMPING SYSTEMS ARE ALL TO BE REMOVED AND REPLACED WITH ALL NEW ELECTRICAL, MECHANICAL AND INSTRUMENTATION EQUIPMENT. CHEMICAL STORAGE TANK STRUCTURE IS TO BE DEMOLISHED AND NEW STORAGE TANK CONTAINMENT STRUCTURE BUILT.

**ELECTRICAL TASKS NOTES CONT:**

- 7 THE EXISTING SODIUM BISULFITE STORAGE AND PUMPING SYSTEMS ARE TO BE REMOVED AND REPLACED WITH ALL NEW ELECTRICAL, MECHANICAL AND INSTRUMENTATION EQUIPMENT. CHEMICAL STORAGE TANK STRUCTURE IS TO BE DEMOLISHED AND NEW STORAGE TANK CONTAINMENT STRUCTURE BUILT.
- 8 CONTRACTOR SHALL RESEARCH DUCT BANK PATH FOR A NEW NPW SUBMERSIBLE PUMP STATION, ELEVATED DISK FILTERS, AND HYDRO PNEUMATIC TANK PRESSURE SYSTEM ARE TO BE INSTALLED WHILE KEEPING THE EXISTING NPW SYSTEM ON LINE. EXISTING NPW PUMP SYSTEM IS TO BE REMOVED UPON ACCEPTANCE OF THE PROPOSED.
- 9 CONTRACTOR SHALL RESEARCH POWER AND CONTROL SOURCES FOR EACH OF THE SUBMERSIBLE PUMPS, IN THE RAS/WAS PUMP STATION, IS TO BE REMOVED AND REPLACED WITH NEW PUMP.
- 10 PORTIONS OF THE CHLORINE CONTACT BASIN PERIMETER WALLS ARE TO RAISED, FOR FLOOD MITIGATION. ALL POWER, CONTROL, INSTRUMENTATION AND MISCELLANEOUS CONDUIT ROUTED ON THE SIDE OF THE WALL, ABOVE OR ON TOP OF THE PERIMETER WALLS SHALL BE REMOVED AND TEMPORARY PROVISIONS PROVIDED FOR WALL REPLACED ABOVE THE NEW CONCRETE ELEVATION. UPON COMPLETION OF THE WALL MODIFICATION NEW CONDUIT AND CONDUCTORS SHALL BE PROVIDED, AND ALL TEMPORARY SHALL BE REMOVED.
- 11 UPON COMPLETION OF THE RELATED CLARIFIER'S AND SCUM SYSTEM LINES, EACH OF THE THREE SCUM PUMP STATIONS, ARE TO BE DEMOLISHED AND ALL RELATED ELECTRICAL ASPECTS REMOVED. DUCT BANK RISERS ARE TO BE PROTECTED AND IDENTIFIED
- 12 THE CENTRAL STREET GUARD SHACK IS TO BE REMOVED AND THE AREA RETURNED TO NATURAL STATE.



**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE EXISTING SITE, WITH EXISTING ELECTRICAL UNDERGROUND AND SOME ABOVE GROUND FACILITIES RELATED TO THIS PROJECT ARE SHOWN DARK FOR CLARITY. THE DRAWING WAS CREATED FROM MULTIPLE PROJECT BACKGROUNDS AND IS NOT COMPLETE IN ALL AREAS.
- B. EARLY RESEARCH WORK IS DESCRIBED HERE. TEMPORARY WORK IS GENERALLY DESCRIBED HERE. LOCATIONS AND KNOWN E&C FACILITIES, RELATED TO THIS PROJECT. EXISTING DEMOLITIONS, EQUIPMENT REMOVALS, AND TEMPORARY PROVISIONS, FACILITIES LOCATIONS ARE ALSO SHOWN HERE.
- C. FOR PROPOSED WORK EXISTING DUCT BANK MAY BE UTILIZED, WITH ENGINEERS APPROVAL. POWER FEEDER, AND CONTROL CIRCUIT CONDUCTORS ARE TO BE REMOVED AND REPLACED EVERYWHERE EQUIPMENT IS REPLACED OR RELOCATED.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

EXISTING OVERALL SITE PLAN

ELECTRICAL

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DWG NO E-10-01	DRAWING SCALE AS SHOWN	
	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. XX2380F X2X1	

EXISTING OVERALL SITE PLAN  
NTS

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.

- DISINFECTION AREA (50-SERIES):**
- 51 NPW SYSTEM IMPROVEMENTS INCLUDING BUT NOT LIMITED TO FILTER FEED PUMPS, DISC TYPE FILTERS, DISTRIBUTION PUMPS AND HYDROPNEUMATIC TANK SYSTEM.
  - 52 COMPLETE SODIUM HYPOCHLORITE SYSTEM REMOVAL AND REPLACEMENT.
  - 53 COMPLETE SODIUM BISULFITE SYSTEM REMOVAL AND REPLACEMENT.
  - 54 PROVIDE A TEMPORARY DISINFECTION SYSTEM FOR THE SODIUM HYPO AND THE SODIUM BISULFITE CHEMICALS, COMPLETE.
  - 55 REMOVE (2) CHLORINE ANALYZERS AND PROVIDE NEW SHELTERS FOR EACH ON RAISED PLATFORM.
  - 56 THE EXISTING CHLORINE CONTACT BASIN EXTERIOR WALL IS TO BE RAISED. REMOVE ALL ELECTRICAL CONDUIT AND REROUTE NEW CONDUIT ABOVE THE NEW WALL.
  - 57 THE EXISTING ELECTRICAL BUILDING 3 IS TO BE REPLACED WITH A NEW ELECTRICAL BUILDING 3. INCLUDE A DISINFECTION SYSTEM GENERATOR ALTERNATE BID ITEM.
  - 58 TWELVE CHLORINE CONTACT BASIN GATES ARE TO BE REPLACED AND HAVE ELECTRIC ACTUATORS ADDED.

- PLANT WIDE FACILITY IMPROVEMENTS (10-SERIES):**
- 10 ELECTRICAL CONTRACTOR SHALL COORDINATE UNDERGROUND WORK WITH CIVIL IN ALL AREAS REQUIRED.
  - 11 DISCONNECT CENTRAL ST. GUARD SHACK POWER; REMOVE CONDUCTORS AND LABEL BREAKERS "SPARE" AT SOURCE.
  - 12 COORDINATE UNDERGROUND ELECTRICAL WORK WITH NEW PLANT WIDE NPW SYSTEM UNDERGROUND.

- GULF FREEWAY LS NO. 2 BYPASS VALVES (20-SERIES):**
- 21 REMOVE EXISTING, AND REPLACE THE TWO GULF FREEWAY LIFT STATION FORCE MAIN ELECTRIC ACTUATORS.

- PRE-TREATMENT AREA (30-SERIES):**
- 31 REHABILITATE THE EXISTING LIFT STATION ODOR CONTROL SYSTEMS.
  - 32 REMOVE EXISTING AND REPLACE DIVERSION BOX ODOR CONTROL SYSTEMS.
  - 33 REMOVE EXISTING, AND REPLACE HEADWORKS ODOR CONTROL SYSTEMS.
  - 34 GRIT SYSTEM IMPROVEMENTS SHALL INCLUDE AND NOT LIMITED TO; PUMP REPLACEMENTS, TESTING, AND INSTALLATION OF A NEW GRIT INFLUENT CHANNEL LEVEL SENSOR.
  - 35 INSTALL A PLANT DRAIN PUMP STATION WET WELL HIGH LEVEL ALARM.

- SECONDARY TREATMENT AREA (40-SERIES):**
- 41 EXISTING AERATION BASIN CHANNEL GATES (29) SHALL BE ADDED OR REMOVED AND REPLACED, WITH NEW ELECTRIC ACTUATED GATES.
  - 42 CLARIFIER IMPROVEMENTS INCLUDE BUT NOT LIMITED TO REMOVAL AND REPLACEMENT OF (9) EXISTING CLARIFIER MECHANISMS AND THE INSTALLATION OF (9) NEW SCUM PUMP STATIONS.
  - 43 EXISTING RAS / WAS PUMP STATION IMPROVEMENTS INCLUDE PUMP REPLACEMENTS AND INSTALLATION OF A NEW TSS ANALYZER, ON THE DISCHARGE PIPING.
  - 44 RAS SPLITTER BOX VALVE PITS ARE TO HAVE NINE ELECTRIC ACTUATORS AND NINE FLOW METERS REMOVED AND REPLACED.

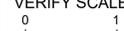
- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE LOCATION OF PROPOSED FACILITIES IN THIS PROJECT, AND SHOW CONTRACTORS LAY DOWN AREA. WORK AREA DRAWING DESIGNATORS ARE SHOWN AS KEYED NOTES. THE KEYED NOTE NUMBERS PROVIDE THE DRAWING SECTIONS FOR EACH WORK AREA. NOT ALL WORK REQUIRED IS SHOWN HERE. INFORMATION IS GENERAL FOR OVERVIEW OF LOCATIONS AND DRAWING ARRANGEMENT.
  - B. EXISTING DRAWINGS ILLUSTRATE EQUIPMENT REMOVALS. CONSTRUCTION PHASE DRAWINGS SHOW TEMPORARY PROVISIONS, AND PROPOSED DRAWINGS SHOW FINAL CONDITIONS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

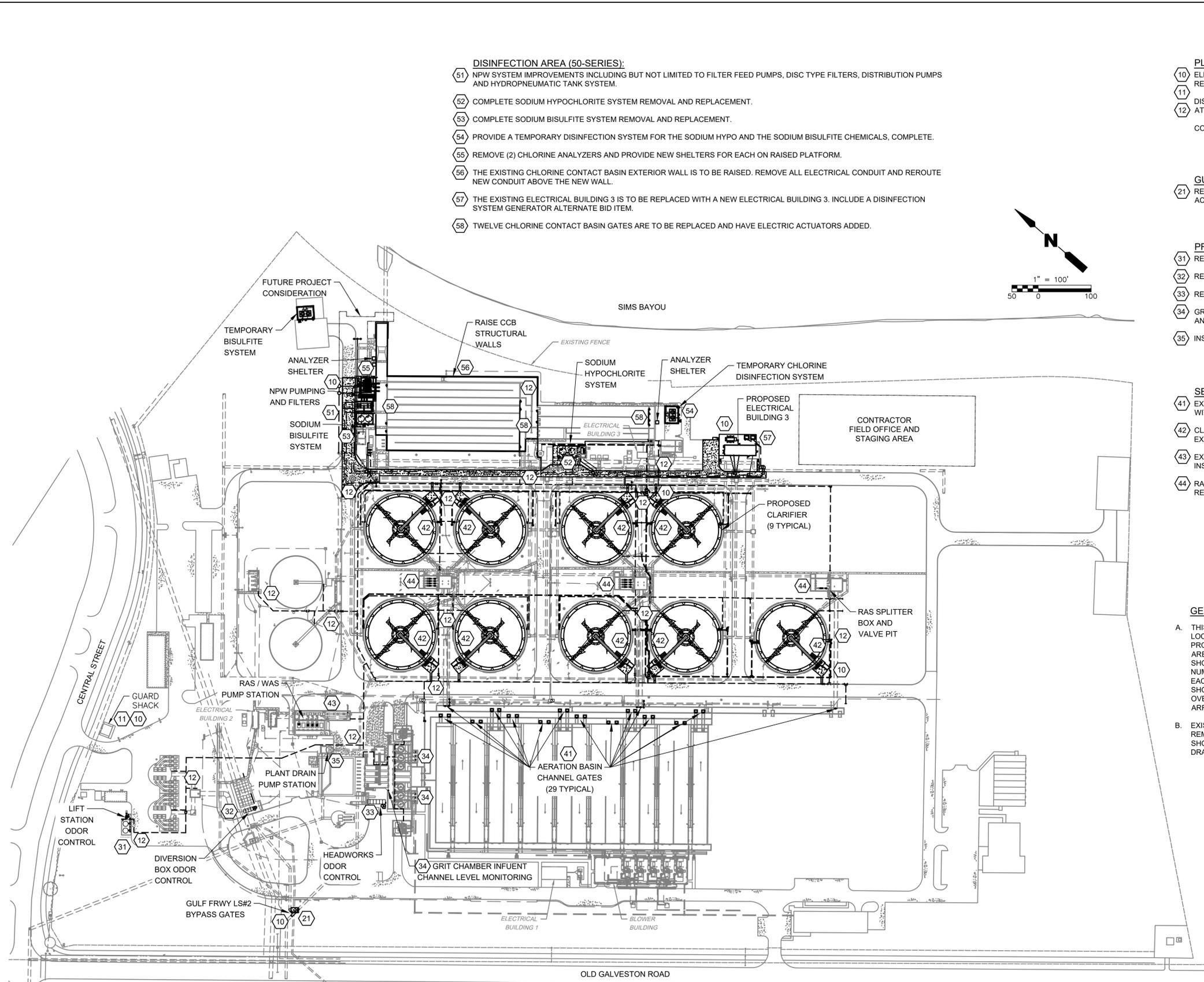
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 <p> <b>KGI</b>  <b>Kalluri Group, Inc.</b>          TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264       </p>	<p>         THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.       </p>
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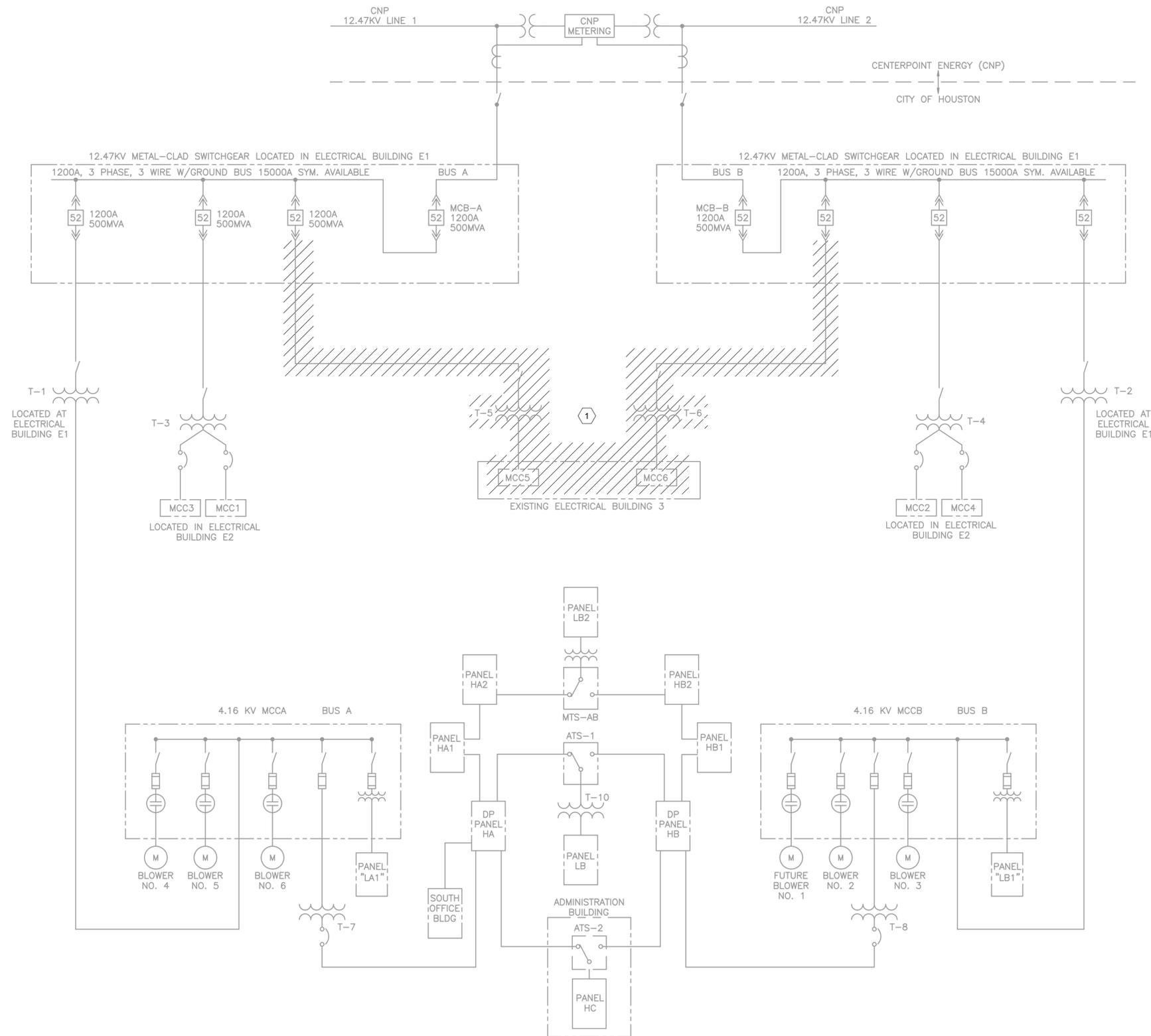
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED OVERALL SITE PLAN**  
 ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	<b>WBS NUMBER</b> R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	<b>DRAWING SCALE</b> AS SHOWN	
<b>DWG NO</b> E-10-02	<b>CITY OF HOUSTON PM</b> TAHA LOTIA	
<b>SHEET NO.</b> XX2390F X2X1		

**ELECTRICAL PROPOSED OVERALL SITE PLAN**  
 1"=100'



NO.	DATE	REVISION	APP.



**KEYED NOTES:**  
 1 UPON COMPLETION OF THE PROPOSED ELECTRICAL BUILDING 3 ALL HATCHED FACILITIES SHOWN ARE TO BE REMOVED.

- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE EXISTING SIMPLIFIED OVERALL PLANT ELECTRICAL POWER DISTRIBUTION SYSTEM.
  - B. EQUIPMENT TO BE REMOVED IS SHOWN WITH HATCHING.
  - C. PRIOR TO SCHEDULING OF ANY CONSTRUCTION THE CONTRACTOR SHALL COORDINATE WITH PLANT OPERATIONS AND WASTEWATER ELECTRICAL MAINTENANCE TO PRODUCE AN "AS FOUND" CONDITIONS "SURVEY". THE NAMING, LOCATION AND OPERATIONAL STATUS OF EXISTING EQUIPMENT TO REMAIN AVAILABLE DURING CONSTRUCTION AND EQUIPMENT TO BE REMOVED. PROVIDE A LIST OF ANY DEVIATIONS BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS PRIOR TO SCHEDULING WORK.
  - D. COORDINATE POWER AND CONTROL CHANGE OVERS, PROVIDE TEMPORARY EQUIPMENT LABELS AND SIGNAGE TO INDICATE STATUS OF EQUIPMENT IMPACTED OR IN THE CONSTRUCTION PROCESS.

EXISTING OVERALL SIMPLIFIED ONE LINE  
**DIAGRAM**  
 NTS

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

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CITY OF HOUSTON

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

EXISTING OVERALL SIMPLIFIED ONE LINE DIAGRAM

ELECTRICAL

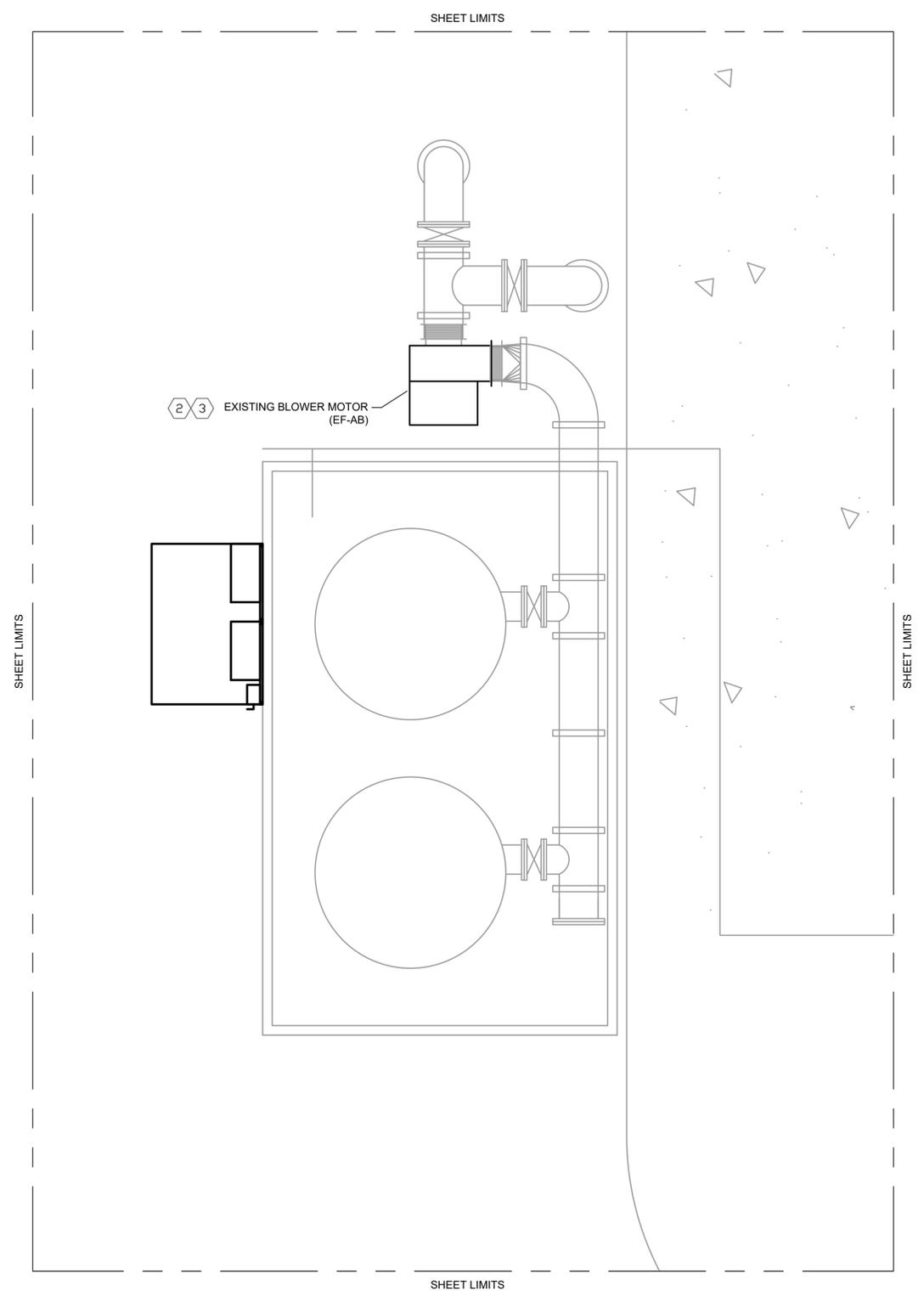
VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE		
AS SHOWN		
DWG NO	CITY OF HOUSTON PM	
E-10-03	TAHA LOTIA	
SHEET NO. XX2400F X274		



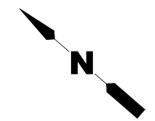








MODIFIED ①  
**PLAN**  
 1/4" = 1'-0"



**NOTES BY SYMBOL**

- ① DESIGN IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE THE EXACT LOCATION OF EXISTING DUCT BANKS, ELECTRICAL EQUIPMENT, AND OTHER ELECTRICAL COMPONENTS. THE CONTRACTOR SHALL RED LINE THIS DRAWING SET FOR RECORD AND RETURN TO ENGINEER OF RECORD TO BE CAPTURED ON AS-BUILT DOCUMENTS.
- ② THE CONTRACTOR SHALL DEMOLISH THE EXISTING BLOWER MOTOR IN ITS ENTIRETY. EXISTING DUCT BANK, PULL BOXES, ELECTRICAL HAND HOLES, CONDUCTORS, AND CONDUIT RUNS SHALL REMAIN IN PLACE AND BE PREPARED FOR REUSE. REFERENCE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. EXHASUT FAN SERVED BY CIRCUIT: (EF-AB) MCCA-VS9-4.
- ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED.

**GENERAL NOTES:**

- A. REFERENCE SHEETS:
- A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.
- A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH



TBPE FIRM NO. 9439

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TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3  
**LIFT STATION MODIFIED POWER PLAN**  
 ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO <b>E-31-01</b>	DRAWING SCALE	
	AS SHOWN	
	CITY OF HOUSTON PM	
	TANA LOTA	
	SHEET NO. 245 OF 271	

NO.	DATE	REVISION	APP.



MODIFIED ①  
**PLAN**  
 1/4" = 1'-0"

**NOTES BY SYMBOL**

- ① DESIGN IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE THE EXACT LOCATION OF EXISTING DUCT BANKS, ELECTRICAL EQUIPMENT, AND OTHER ELECTRICAL COMPONENTS. THE CONTRACTOR SHALL RED LINE THIS DRAWING SET FOR RECORD AND RETURN TO ENGINEER OF RECORD TO BE CAPTURED ON AS-BUILT DOCUMENTS.
- ② THE CONTRACTOR SHALL DEMOLISH THE EXISTING DIVERSION BOX ODOR CONTROL SYSTEM IN ITS ENTIRETY. EXISTING DUCT BANK, PULL BOXES, ELECTRICAL HAND HOLES, CONDUCTORS, AND CONDUIT RUNS SHALL REMAIN IN PLACE AND BE PREPARED FOR REUSE. REFERENCE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ODOR CONTROL SERVED BY CIRCUIT: xxx-xxx-xxx.
- ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED.

**GENERAL NOTES:**

- A. REFERENCE SHEETS:
- A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.
- A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH



TBPE FIRM NO. 9439

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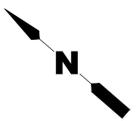
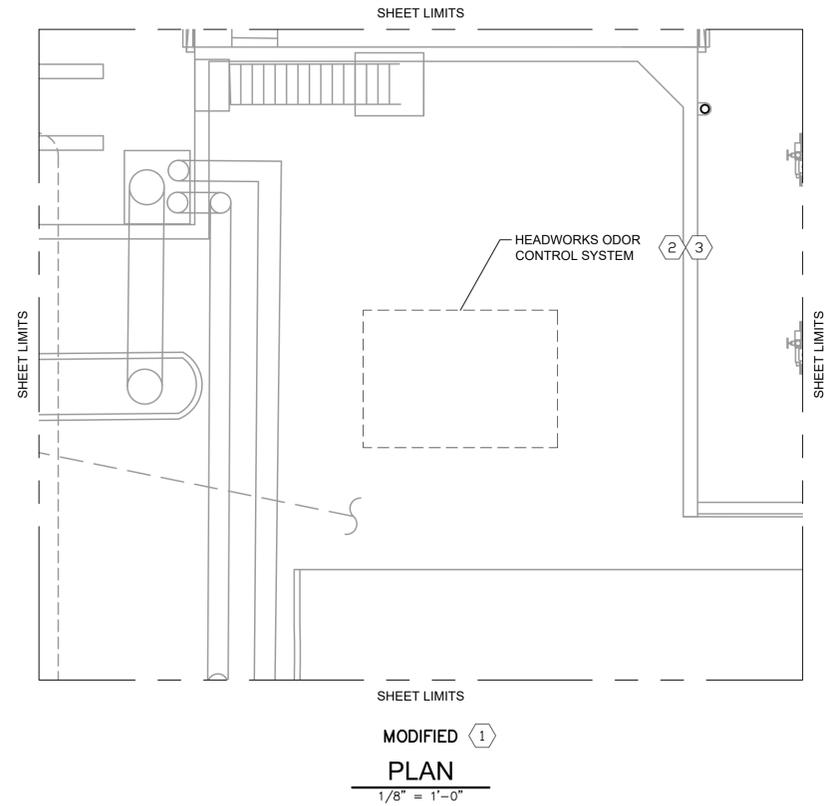


TBPE Registration No. F-665  
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 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**DIVERSION BOX ODOR CONTROL MODIFIED POWER PLAN**  
 ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
DWG NO	CITY OF HOUSTON PM	
E-31-01	TAHA LOTA	
	SHEET NO. 246 OF 271	

NO.	DATE	REVISION	APP.



**NOTES BY SYMBOL**

- ① DESIGN IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE THE EXACT LOCATION OF EXISTING DUCT BANKS, ELECTRICAL EQUIPMENT, AND OTHER ELECTRICAL COMPONENTS. THE CONTRACTOR SHALL RED LINE THIS DRAWING SET FOR RECORD AND RETURN TO ENGINEER OF RECORD TO BE CAPTURED ON AS-BUILT DOCUMENTS.
- ② THE CONTRACTOR SHALL DEMOLISH THE EXISTING HEADWORKS ODOR CONTROL SYSTEM IN ITS ENTIRETY. EXISTING DUCT BANK, PULL BOXES, ELECTRICAL HAND HOLES, CONDUCTORS, AND CONDUIT RUNS SHALL REMAIN IN PLACE AND BE PREPARED FOR REUSE. REFERENCE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ODOR CONTROL SERVED BY CIRCUIT: xxx-xxx-xxx.
- ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED.

**GENERAL NOTES:**

- A. REFERENCE SHEETS:
- A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.
- A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH



TBPE FIRM NO. 9439

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 Phone: (713)-365-9288  
 PROJECT 4264

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTp IMPROVEMENTS PACKAGE 3

HEADWORKS ODOR CONTROL MODIFIED POWER PLAN

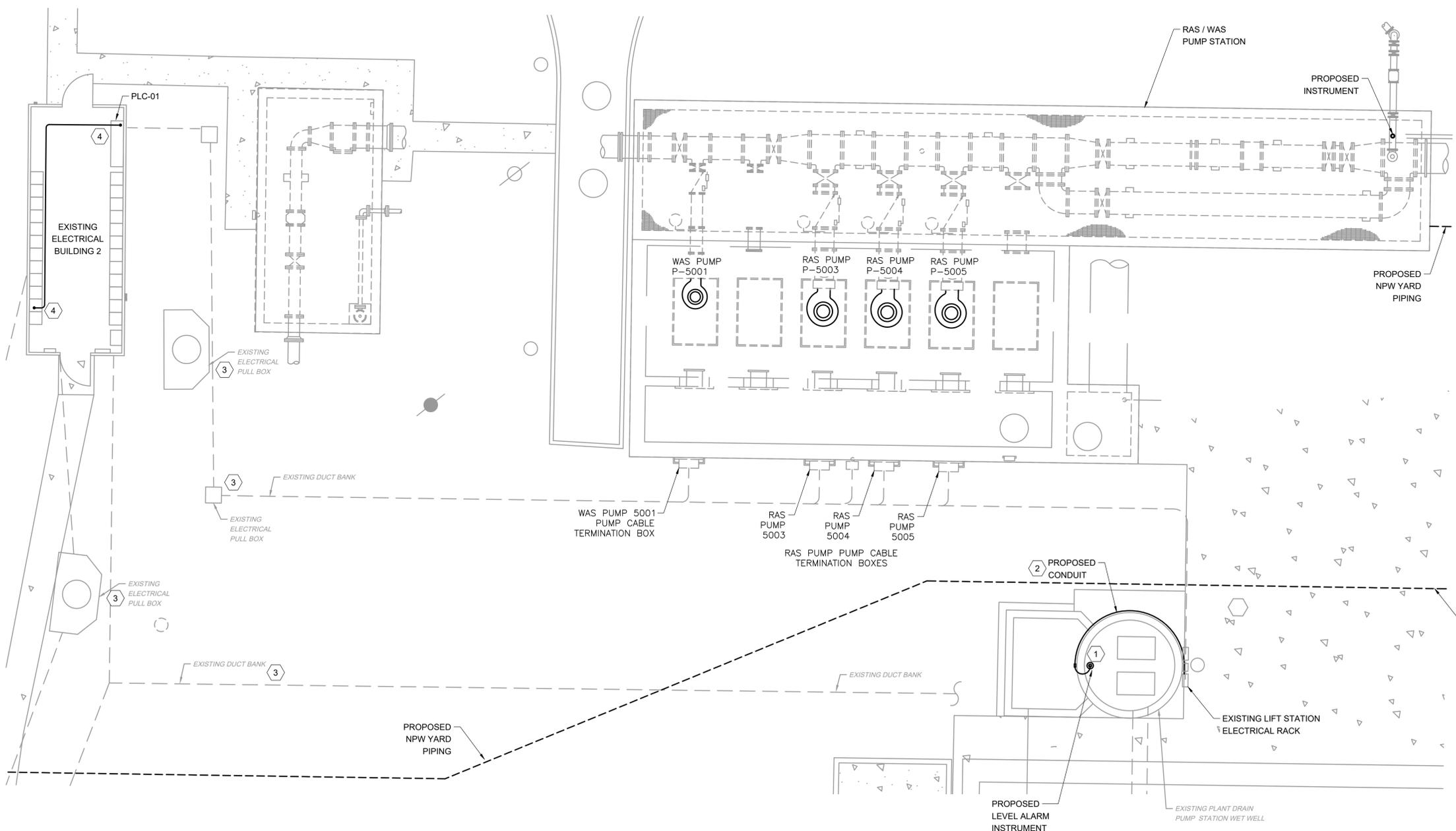
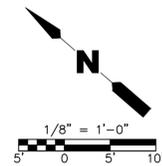
ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
	DRAWING SCALE	
	AS SHOWN	
DWG NO	CITY OF HOUSTON PM	
E-33-01	TAHA LOTA	
	SHEET NO. 247 OF 271	

NO.	DATE	REVISION	APP.



NO.	DATE	REVISION	APP.



- KEYED NOTES:**
- 1 CORE DRILL WET WELL TOP AND INSTALL A FLOAT IN THE WET WELL TO PROVIDE HIGH LEVEL ALARM SIGNAL TO PLC-01, IN ELECTRICAL BUILDING 2.
  - 2 ROUTE EXPOSED CONDUIT AROUND THE WET WELL TOP, FROM THE FLOAT TO THE CONTROLS JUNCTION BOX.
  - 3 ROUTE OF EXISTING CONDUCTORS FROM THE LIFT STATION TO ELECTRICAL BUILDING 2 ARE NOT KNOWN. CONTRACTOR SHALL RESEARCH ROUTE AND ADD HIGH LEVEL ALARM CIRCUIT CONDUCTORS, IN EXISTING DUCT BANK, TO THE PLC IN ELECTRICAL BUILDING 2.
  - 4 ROUTE CONDUIT OVERHEAD FROM THE MCC TO THE PLC-01 CONTROL PANEL.

- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE PLANT DRAIN PUMP STATION MODIFICATIONS IN THIS PROJECT. NOT ALL WORK IN THIS AREA OF THE PLANT IS SHOWN HERE.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW
<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>	

**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

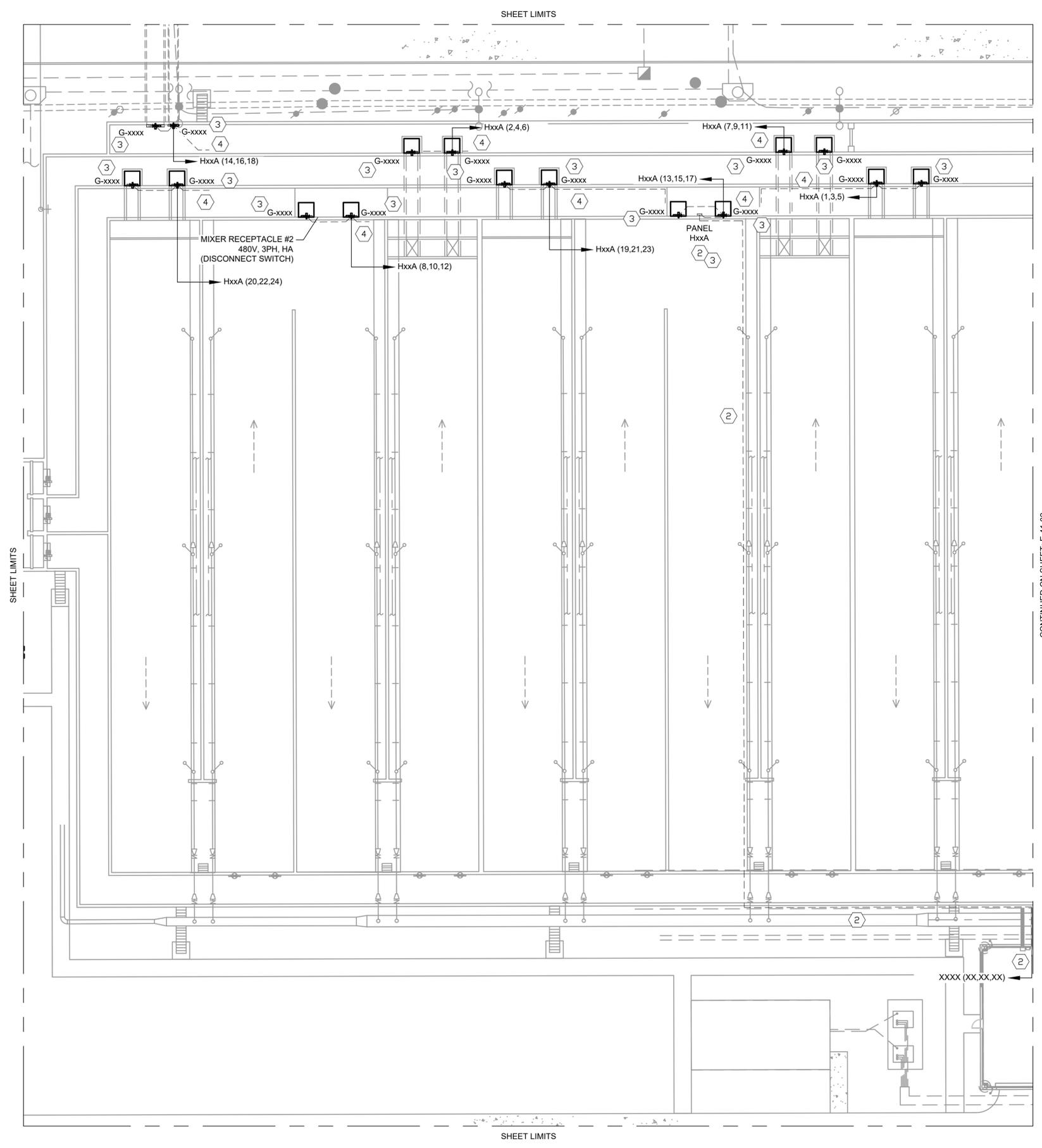
**PLANT DRAIN LIFT STATION MODIFICATION PLAN**

ELECTRICAL

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
DWG NO		
E-35-01		
SHEET NO. XX2490F X271		

**PLANT DRAIN PUMP STATION MODIFICATION**  
**PLAN**  
1/8" = 1'-0"

C:\Users\Howard\Kalluri Group, Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\E-35-01 Plant Drain Lift Station Plan.dwg, 12/5/2025 7:23:29 AM



CONTINUED ON SHEET: E-41-02

- NOTES BY SYMBOL**
- ① DESIGN IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE THE EXACT LOCATION OF EXISTING DUCT BANKS, ELECTRICAL EQUIPMENT, AND OTHER ELECTRICAL COMPONENTS. THE CONTRACTOR SHALL RED LINE THIS DRAWING SET FOR RECORD AND RETURN TO ENGINEER OF RECORD TO BE CAPTURED ON AS-BUILT DOCUMENTS.
  - ② THE CONTRACTOR SHALL INSTALL (1) RACK TO SUPPORT NEW 480V PANELBOARD. ROUTE NEW CONDUIT ALONG OUTSIDE OF PLATFORM, OUTSIDE OF BRIDGE, AND OUTSIDE OF WALKWAY TO EXISTING DISTRIBUTION PANEL WITHIN EXISTING BLOWER BUILDING. SEE CABLE SCHEDULE FOR CONNECTION POINTS.
  - ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED IF AVAILABLE. IF NO EXISTING IS FOUND, THE CONTRACTOR SHALL CONNECT A NEW #2 GROUNDING ELECTRICAL CONDUCTOR PER THE ELECTRICAL SPECIFICATIONS TO THE EXISTING GROUNDING ELECTRODE SYSTEM.
  - ④ THE CONTRACTOR SHALL ROUTE THE NEW CONDUIT FROM THE NEW SUB-PANELBOARD "HxxA" TO THE ACTUATOR OUTSIDE THE PLATFORM AND WALKWAYS TO AVOID TRIPPING HAZARDS. SEE CABLE SCHEDULE AND PANEL SCHEDULES FOR CIRCUIT AND CONDUCTOR DETAILS.

**GENERAL NOTES:**  
 A. REFERENCE SHEETS:  
 A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.  
 A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF HANS POURES LICENSE NO. 131630 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

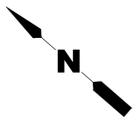
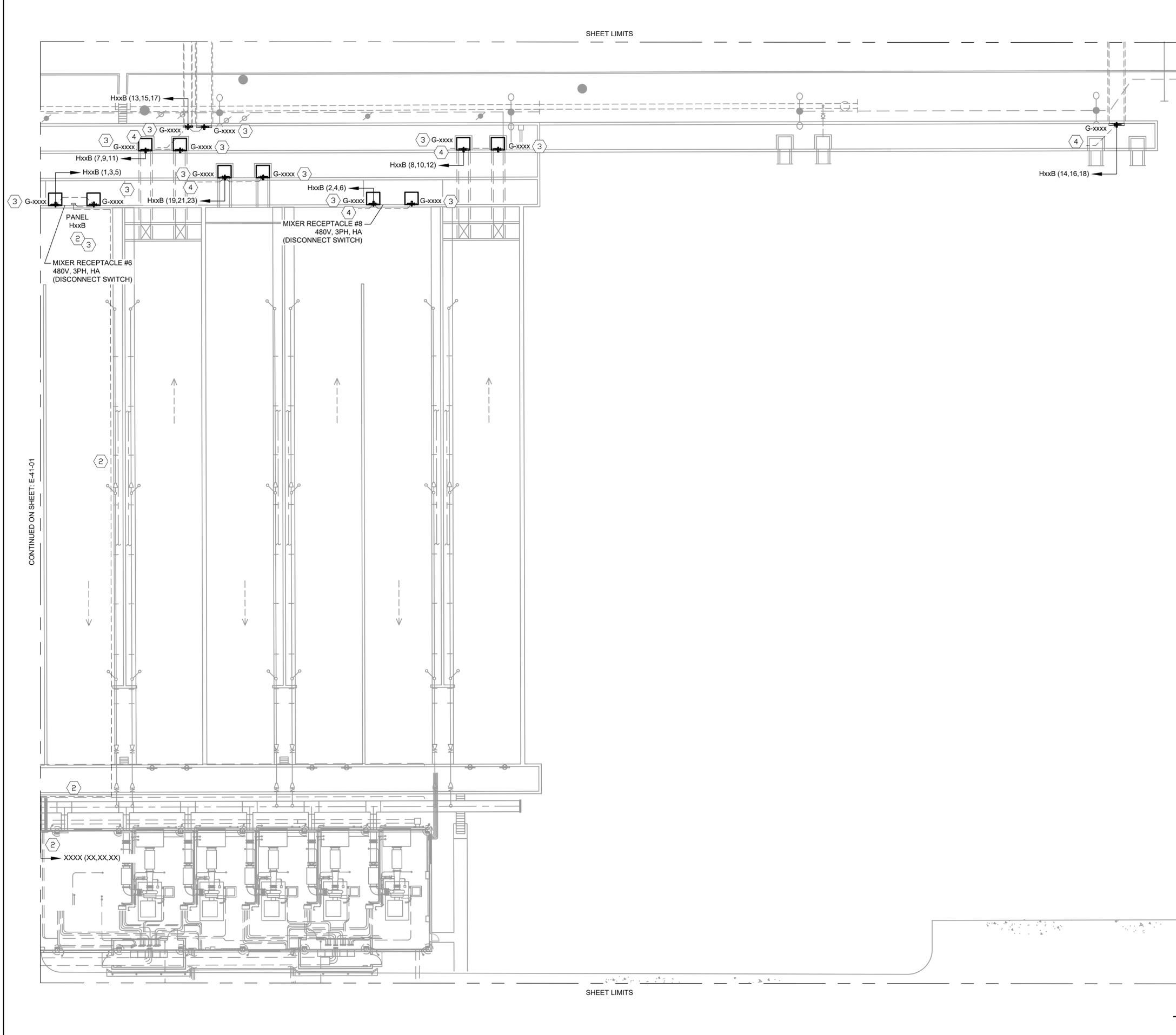
**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN MODIFIED POWER PLAN**  
 ELECTRICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO E-41-01	DRAWING SCALE	AS SHOWN CITY OF HOUSTON PM TANA LOTA
	SHEET NO. 250 OF 271	

MODIFIED ①  
**PLAN**  
 1" = 20'

NO.	DATE	REVISION	APP.



**NOTES BY SYMBOL**

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- ② THE CONTRACTOR SHALL INSTALL (1) RACK TO SUPPORT NEW 480V PANELBOARD AND EXISTING DISCONNECT SWITCH. ROUTE NEW CONDUIT ALONG OUTSIDE OF PLATFORM, OUTSIDE OF BRIDGE, AND OUTSIDE OF WALKWAY TO EXISTING DISTRIBUTION PANEL WITHIN EXISTING BLOWER BUILDING. SEE CABLE SCHEDULE FOR CONNECTION POINTS.
- ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED IF AVAILABLE. IF NO EXISTING IS FOUND, THE CONTRACTOR SHALL CONNECT A NEW #2 GROUNDING ELECTRICAL CONDUCTOR PER THE ELECTRICAL SPECIFICATIONS TO THE EXISTING GROUNDING ELECTRODE SYSTEM.
- ④ THE CONTRACTOR SHALL ROUTE THE NEW CONDUIT FROM THE NEW SUB-PANELBOARD "HxxB" TO THE ACTUATOR OUTSIDE THE PLATFORM AND WALKWAYS TO AVOID TRIPPING HAZARDS. SEE CABLE SCHEDULE AND PANEL SCHEDULES FOR CIRCUIT AND CONDUCTOR DETAILS.

**GENERAL NOTES:**

- A. REFERENCE SHEETS:  
 A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.  
 A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF HANS POURES LICENSE NO. 131630 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

**KGI**  
 Kalluri Group, Inc.  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4284

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**AERATION BASIN MODIFIED POWER PLAN**  
 ELECTRICAL

VERIFY SCALE  
 0 1  
 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.  
 DWG NO  
**E-41-02**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0154-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
TAHA LOTA	
SHEET NO. 251 OF 271	

MODIFIED ①  
**PLAN**  
 1" = 20'

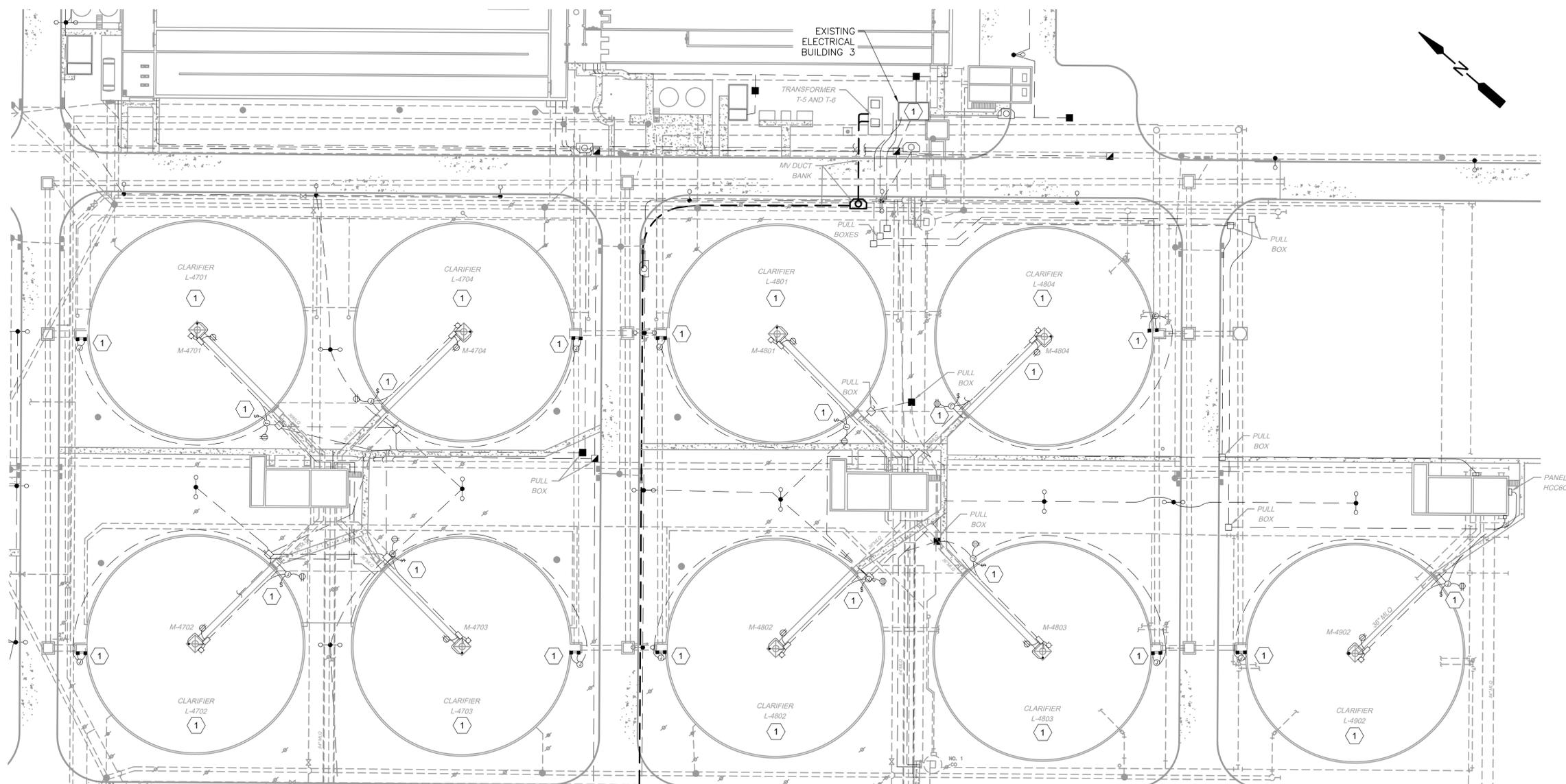
NO.	DATE	REVISION	APP.

**ELECTRICAL TASKS NOTES:**

- 1 NINE EXISTING CLARIFIER MECHANISMS, CONTROL PANELS, AND ANCILLARY COMPONENTS ARE TO BE REMOVED. CONTRACTOR SHALL RESEARCH EACH CLARIFIER'S HOME RUN ROUTES AND REMOVE CONDUCTORS BACK TO THE MCC SERVING IT. CLARIFIERS HAVE ANCILLARY DEVICES THAT ARE TO BE REMOVED FROM SERVICE. ROUTE FOR INSTRUMENTATION AND PLC CONTROL CONDUCTORS SHALL BE RESEARCHED AND ALL ASSOCIATED CONDUCTORS REMOVED.

**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE EXISTING CLARIFIER AREA. DESCRIBE RESEARCH REQUIRED, AND LOCATE THE EQUIPMENT TO BE REMOVED.
- B. EXACT ROUTE OF CIRCUITS TO BE REPLACED IN THIS PROJECT, IN THE EXISTING ELECTRICAL UNDERGROUND DUCT BANKS, IS NOT KNOWN. PRIOR TO REMOVING EQUIPMENT FROM SERVICE THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE RELATED CIRCUITS ROUTING.
- C. TEMPORARY FACILITIES SHOULD NOT BE REQUIRED FOR CLARIFIER REPLACEMENT WORK.
- D. EXISTING DUCT BANK MAY BE UTILIZED, WITH ENGINEERS APPROVAL FOR PROPOSED CONDUCTORS. POWER FEEDER, AND CONTROL CIRCUIT CONDUCTORS ARE TO BE REMOVED AND REPLACED EVERYWHERE EQUIPMENT IS REPLACED OR RELOCATED.



EXISTING CLARIFIER AREA ENLARGED SITE

**PLAN**

1"=40'-0"

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

<p>TBPE Registration No. F-665 16300 Katy Freeway, Suite 172 Houston, Texas 77094 Phone: (713)-365-9288 PROJECT 4264</p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>

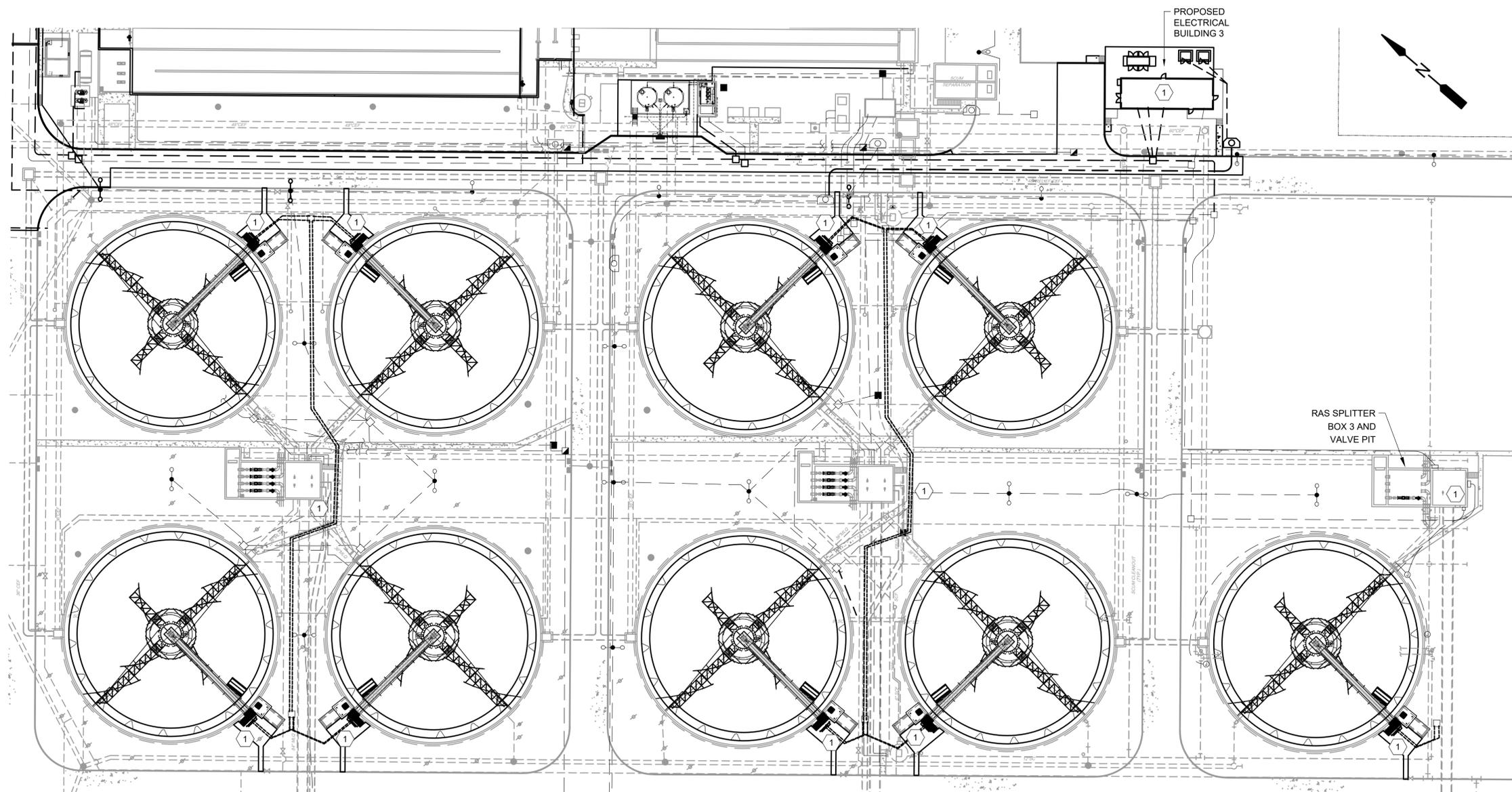
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
EXISTING CLARIFIER AREA ENLARGED SITE PLAN  
ELECTRICAL

<p>VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.</p>	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. XX2520F X274		
DWG NO	E-42-01	

C:\Users\Howard\Kalluri Group, Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\E-42-02 Modified Clarifier Area Enlarged Site Plan.dwg, 12/6/2025 10:58:13 AM

NO.	DATE	REVISION	APP.



- ELECTRICAL TASKS NOTES:**
- 1 THE NINE PROPOSED CLARIFIERS, SCUM PUMP STATIONS, AND EXISTING CLARIFIER AREA LOADS ARE TO BE FED FROM PROPOSED ELECTRICAL BUILDING 3 EQUIPMENT.
- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE MODIFIED CLARIFIER AREA, DESCRIBE TASK REQUIRED, AND LOCATE THE PROPOSED EQUIPMENT.
  - B. FINAL ROUTE OF PROPOSED CIRCUITS IN THIS TASK WILL BE FIELD ADJUSTED AS SPACE ALLOWS. THE EXACT ROUTE OF EXISTING ELECTRICAL UNDERGROUND DUCT BANKS, IS NOT KNOWN.
  - C. EXISTING DUCT BANK MAY BE UTILIZED, WITH ENGINEERS APPROVAL FOR PROPOSED CONDUCTORS. POWER FEEDER, AND CONTROL CIRCUIT CONDUCTORS ARE TO BE REMOVED AND REPLACED EVERYWHERE EQUIPMENT IS REPLACED OR RELOCATED.

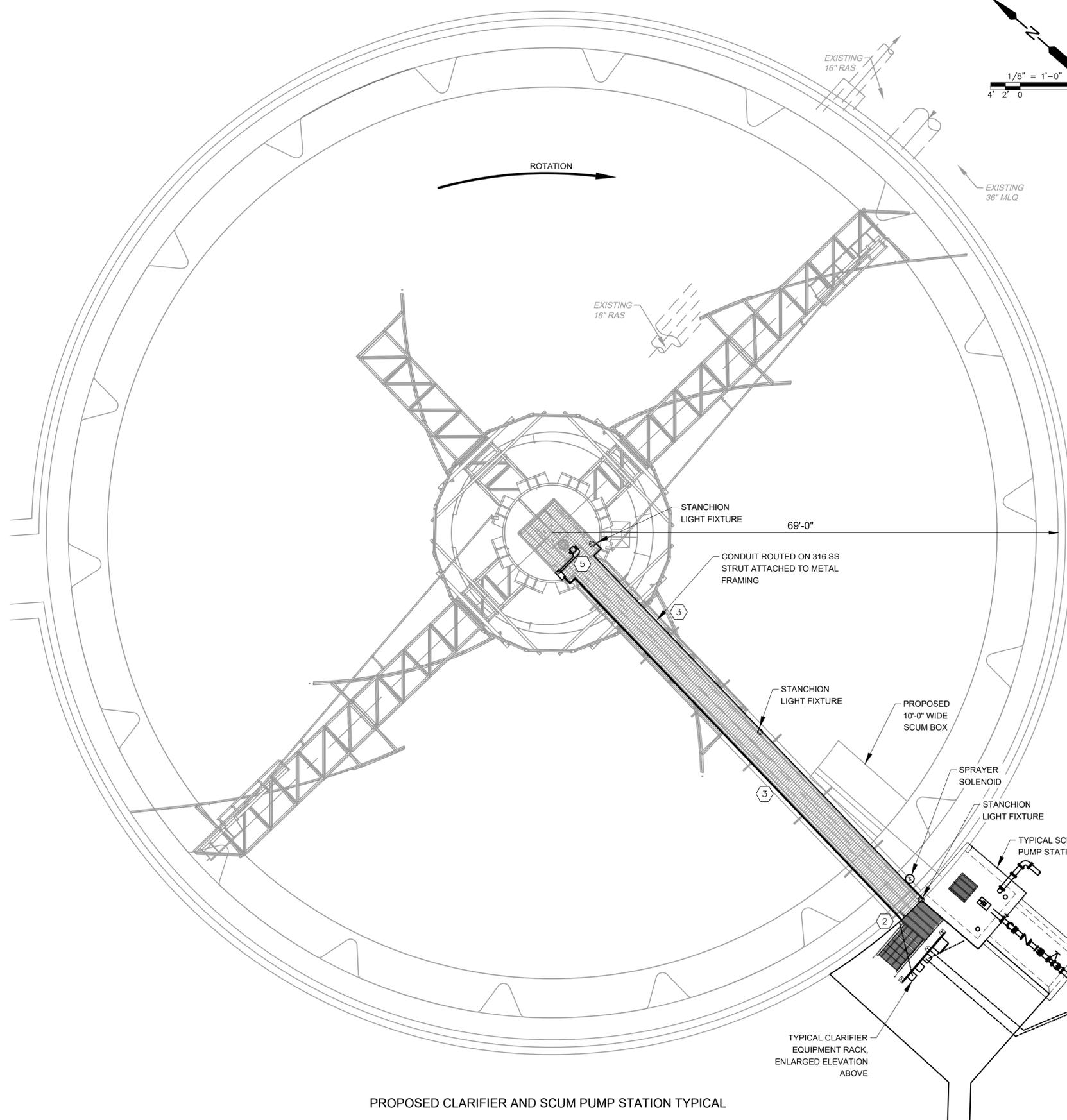
APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW
<p>TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264</p>	
<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>	

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS  
 SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
 MODIFIED CLARIFIER AREA ENLARGED SITE PLAN  
 ELECTRICAL

MODIFIED CLARIFIER AREA ENLARGED SITE  
**PLAN**  
 1"=40'-0"

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. XX2530F X274		
DWG NO		
E-42-02		

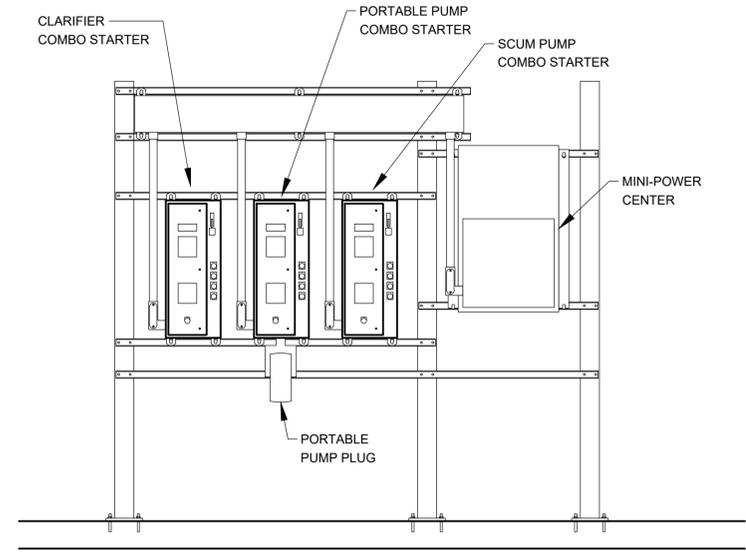
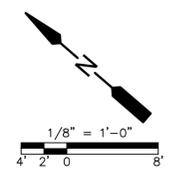
C:\Users\Howard\Kalluri Group, Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\E-42-03 Proposed Clarifier and Scum Pump Station Typical Plan.dwg, 12/6/2025 11:30:17 AM



PROPOSED CLARIFIER AND SCUM PUMP STATION TYPICAL

**PLAN**

1/8" = 1'-0"



TYPICAL CLARIFIER EQUIPMENT RACK

**ELEVATION**

NTS

ELECTRICAL TASKS NOTES:

- ① DUCT BANK TO PROPOSED CLARIFIER EQUIPMENT RACKS SHALL BE INSTALLED ADJACENT TO EXISTING DUCT BANKS.
- ② STUB UP PROPOSED DUCT BANK AT THE WALL OF PROPOSED CLARIFIER BRIDGE. CONCRETE ENCASE DUCT BANK RISERS TO 12 INCHES ABOVE FINISH GRADE AND DOWEL CLARIFIER STRUCTURE SO PROPOSED DUCT BANK RISER IS Poured MONOLITHIC TO THE CLARIFIER TO ENSURE NO DISPROPORTIONATE SETTLING OCCURS.
- ③ CONDUIT SHALL BE ROUTED ON STRUT, ATTACHED TO THE WALKWAY STRUCTURAL STEEL, OUTSIDE OF THE HANDRAIL.
- ④ LED STANCHION TYPE FIXTURES, FED FROM CLARIFIER CONTROL PANEL AND INSTALLED IN ACCORDANCE WITH DETAILS.
- ⑤ FINAL CONNECTIONS TO MOTOR AND DEVICES SHALL BE FLEXIBLE ALUMINUM METALLIC CONDUITS WITH 316SS CONNECTORS.

GENERAL NOTES:

- A. THIS DRAWING IS PROVIDED TO A CLARIFIER, SCUM PUMP STATION AND EQUIPMENT RACK.
- B. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS REQUIRED TO PROTECT THE EXISTING FACILITIES FROM DAMAGE WHILE DIGGING NEW DUCT BANKS. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS RESULT OF CONSTRUCTION SHALL BE CORRECTED BY THE CONTRACTOR AT THE CONTRACTOR EXPENSE.
- C. CONTRACTOR SHALL COORDINATE DURING THE BID PROCESS TO INCLUDE ALL CONDUITS, WIRING AND APPURTENANCES REQUIRED TO CONNECT ALL PROPOSED EQUIPMENT WITH ALL MATERIALS LABOR AND SUPERVISION REQUIRED FOR A COMPLETE AND WORKING SYSTEM.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

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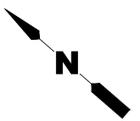
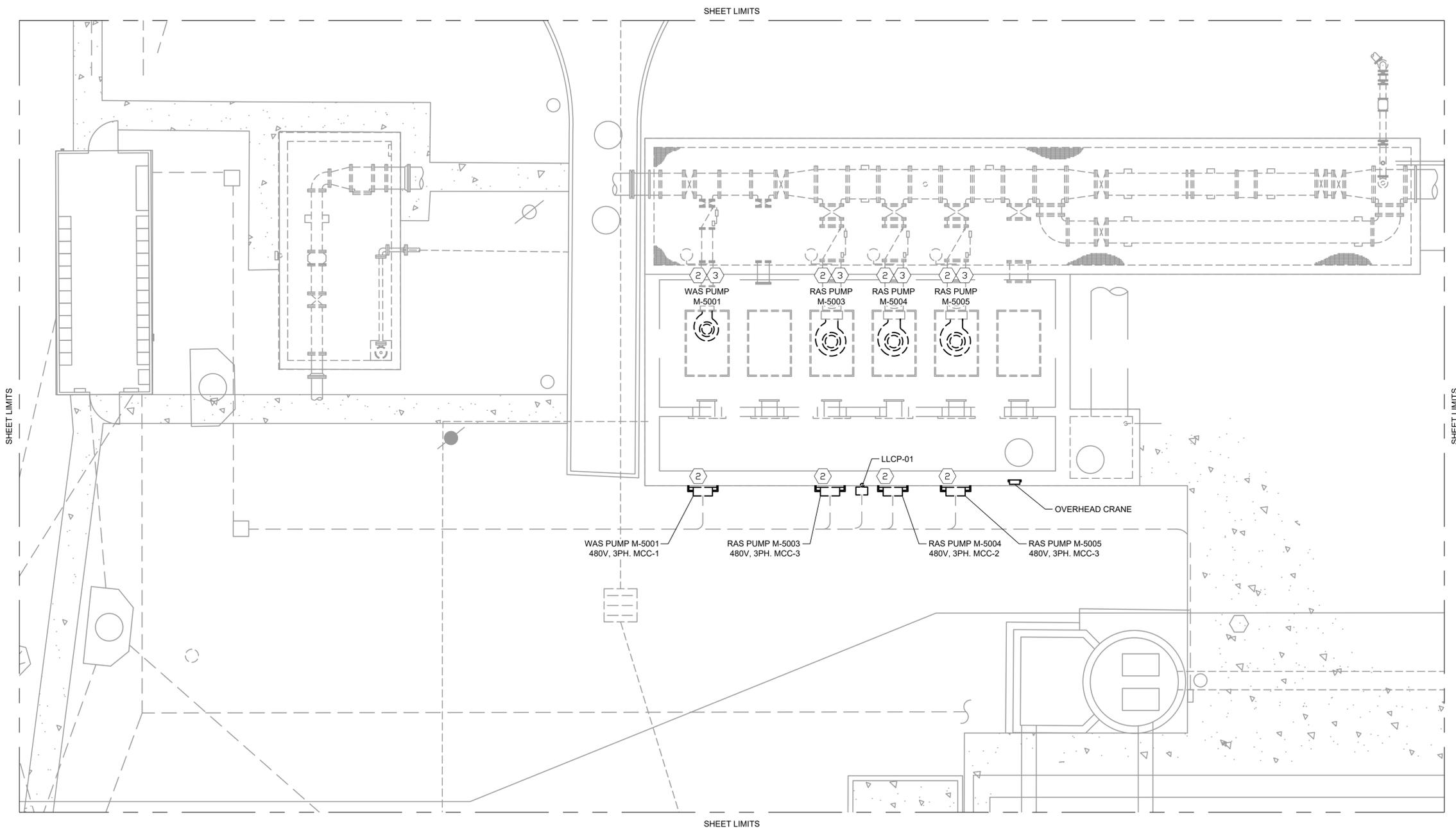
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED CLARIFIER AND SCUM PUMP STATION TYPICAL PLAN**

ELECTRICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. XX2540F X274		
DWG NO	E-42-03	

NO.	DATE	REVISION	APP.



**NOTES BY SYMBOL**

- ① DESIGN IS BASED ON RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY AND DETERMINE THE EXACT LOCATION OF EXISTING DUCT BANKS, ELECTRICAL EQUIPMENT, AND OTHER ELECTRICAL COMPONENTS. THE CONTRACTOR SHALL RED LINE THIS DRAWING SET FOR RECORD AND RETURN TO ENGINEER OF RECORD TO BE CAPTURED ON AS-BUILT DOCUMENTS.
- ② THE CONTRACTOR SHALL DEMOLISH THE EXISTING RAS/WAS PUMP MOTORS WITHIN FACTOR INSTALLED WHIPS IN THEIR ENTIRETY. EXISTING DUCT BANK, PULL BOXES, ELECTRICAL HAND HOLES, AND CONDUIT RUNS SHALL REMAIN IN PLACE AND BE PREPARED FOR REUSE. REFERENCE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.  
NOTE: MOTORS ARE EQUIPPED WITH ELECTRICAL WHIPS. ROUTE NEW WHIPS THROUGH EXISTING PVC CONDUIT TO EXISTING DISCONNECT SWITCH. CONTRACTOR SHALL PROVIDE AND INSTALL NEW BUSHINGS AS REQUIRE FOR CABLE ENTRY INTO ENCLOSURE.
- ③ THE EXISTING GROUNDING ELECTRODE CONDUCTOR SHALL BE REUSED.

**GENERAL NOTES:**

- A. REFERENCE SHEETS:  
 A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.  
 A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH

**MBROH ENGINEERING**  
 TBPE FIRM NO. 9439

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**KGI Kalluri Group, Inc.**  
 TBPE Registration No. F-665  
 16300 Katy Freeway, Suite 172  
 Houston, Texas 77094  
 Phone: (713)-365-9288  
 PROJECT 4264

**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTIP IMPROVEMENTS PACKAGE 3

**RAS WAS PUMP STATION MODIFIED POWER PLAN**

ELECTRICAL

VERIFY SCALE

0 1

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.

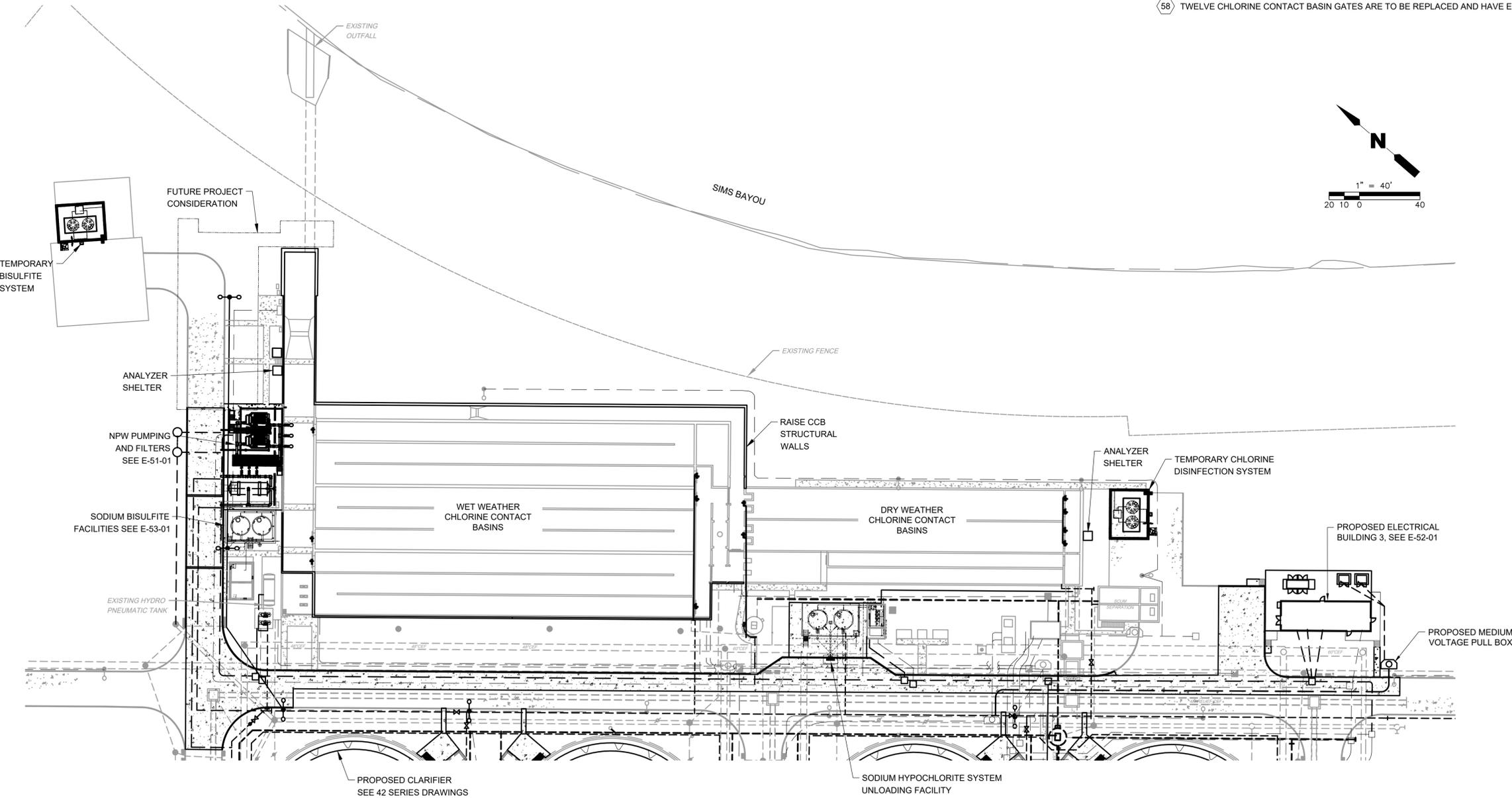
DWG NO	E-43-01
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WBS NUMBER	R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	1/8" = 1'-0"	
CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	255 OF 271	

MODIFIED ①  
**PLAN**  
 1/8" = 1'-0"

NO.	DATE	REVISION	APP.

C:\Users\Howard\Kalluri Group, Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\E-50-01 Proposed Disinfection Facilities Site Plan.dwg, 12/6/2025 11:34:02 AM



- DISINFECTION AREA (50-SERIES):**
- 51 NPW SYSTEM IMPROVEMENTS INCLUDING BUT NOT LIMITED TO FILTER FEED PUMPS, DISC TYPE FILTERS, DISTRIBUTION PUMPS AND HYDROPNEUMATIC TANK SYSTEM.
  - 52 COMPLETE SODIUM HYPOCHLORITE SYSTEM REMOVAL AND REPLACEMENT.
  - 53 COMPLETE SODIUM BISULFITE SYSTEM REMOVAL AND REPLACEMENT.
  - 54 PROVIDE A TEMPORARY DISINFECTION SYSTEM FOR THE SODIUM HYPO AND THE SODIUM BISULFITE CHEMICALS, COMPLETE.
  - 55 REMOVE (2) CHLORINE ANALYZERS AND PROVIDE NEW SHELTERS FOR EACH ON RAISED PLATFORM.
  - 56 THE EXISTING CHLORINE CONTACT BASIN EXTERIOR WALL IS TO BE RAISED. REMOVE ALL ELECTRICAL CONDUIT AND REROUTE NEW CONDUIT ABOVE THE NEW WALL.
  - 57 THE EXISTING ELECTRICAL BUILDING 3 IS TO BE REPLACED WITH A NEW ELECTRICAL BUILDING 3. INCLUDE A DISINFECTION SYSTEM GENERATOR ALTERNATE BID ITEM.
  - 58 TWELVE CHLORINE CONTACT BASIN GATES ARE TO BE REPLACED AND HAVE ELECTRIC ACTUATORS ADDED.

- GENERAL NOTES:**
- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE PROPOSED WORK IN THE DISINFECTION, NPW, AND SCUM HANDLING FACILITIES.
  - B. WORK AREA DRAWING DESIGNATORS ARE SHOWN FOR REFERENCE TO SPECIFIC ENLARGED DRAWINGS. NOT ALL WORK REQUIRED IS SHOWN HERE. INFORMATION IS GENERAL FOR OVERVIEW OF LOCATIONS AND DRAWING ARRANGEMENT.
  - C. EXISTING DRAWINGS ILLUSTRATE EQUIPMENT REMOVALS. CONSTRUCTION PHASE DRAWINGS SHOW TEMPORARY PROVISIONS, AND PROPOSED DRAWINGS SHOW FINAL CONDITIONS.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

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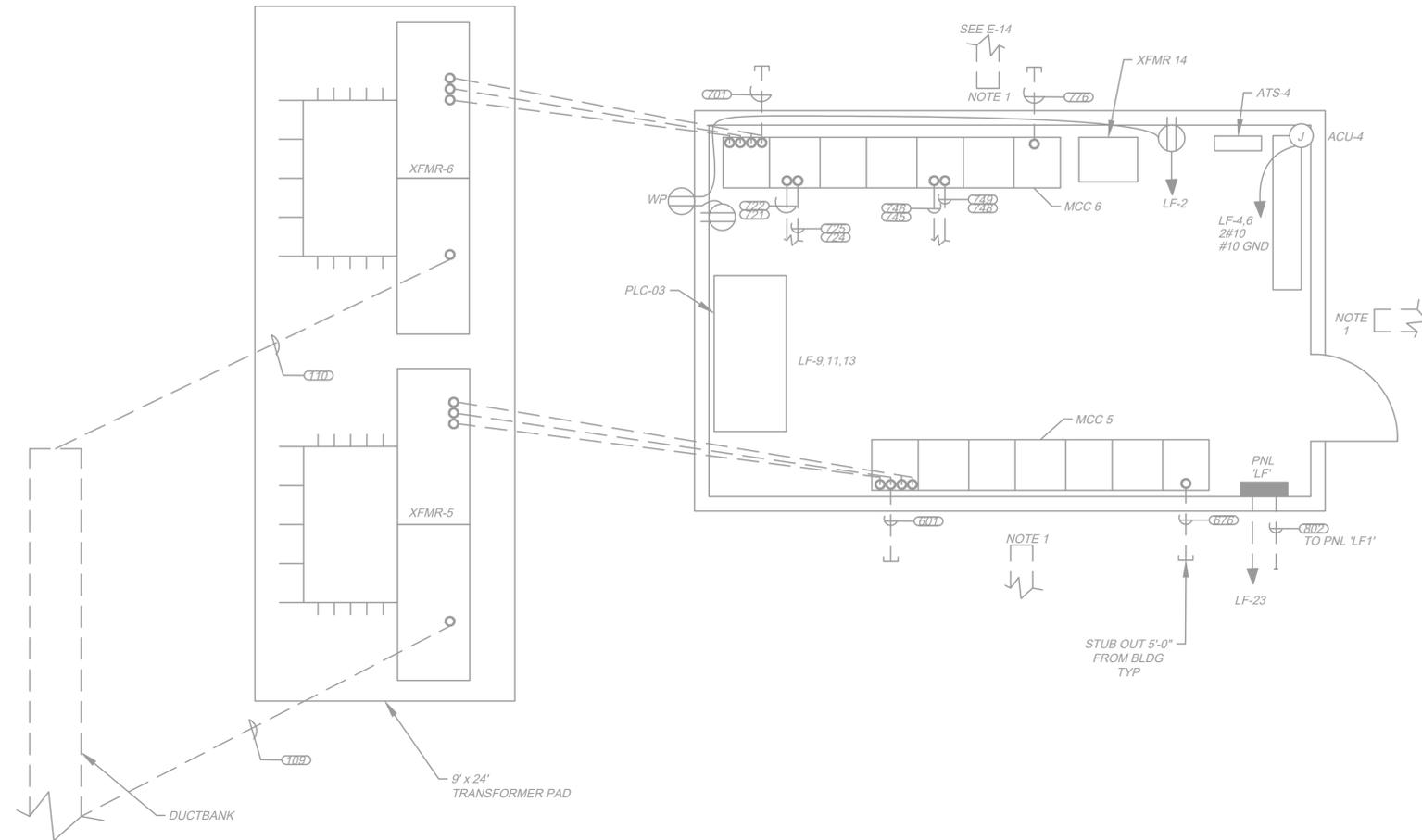
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED DISINFECTION FACILITIES SITE PLAN**  
ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. XX2560F X271		

PROPOSED DISINFECTION FACILITIES SITE  
**PLAN**  
1" = 40'

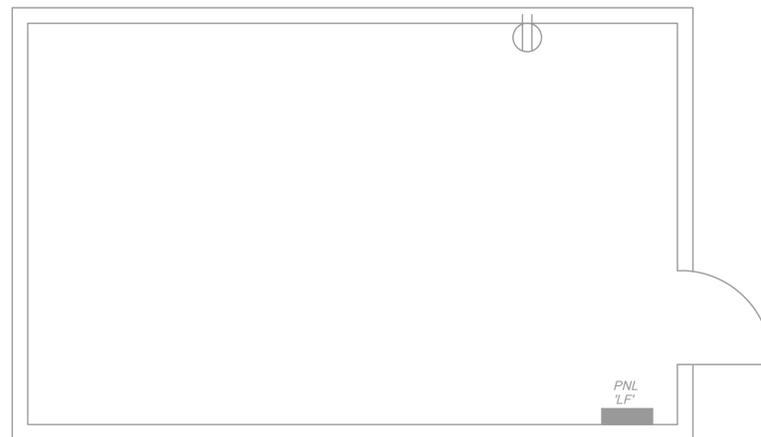
NO.	DATE	REVISION	APP.



EXISTING ELECTRICAL BUILDING 3 AREA

**PLAN**

NTS



MODIFIED STORAGE BUILDING 3

**PLAN**

1"=100'

**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE EXISTING ELECTRICAL BUILDING 3 FACILITIES, AND PROPOSED DISINFECTION AREA STORAGE BUILDING.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

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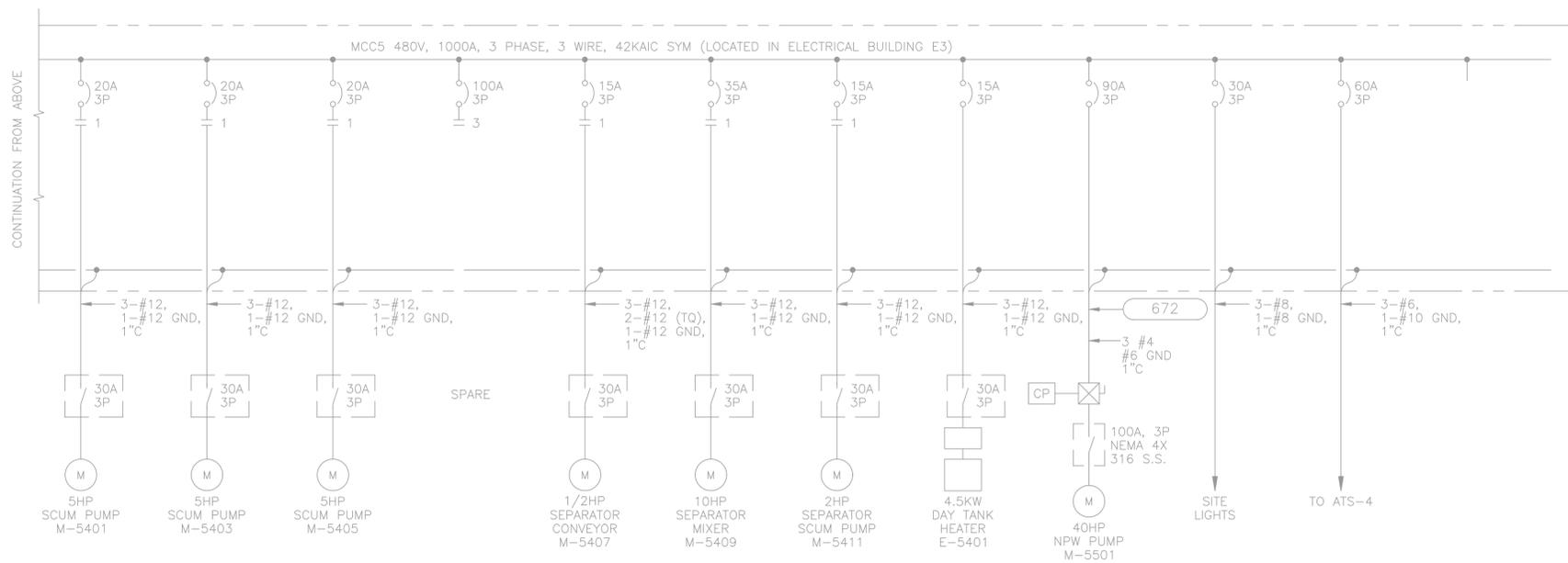
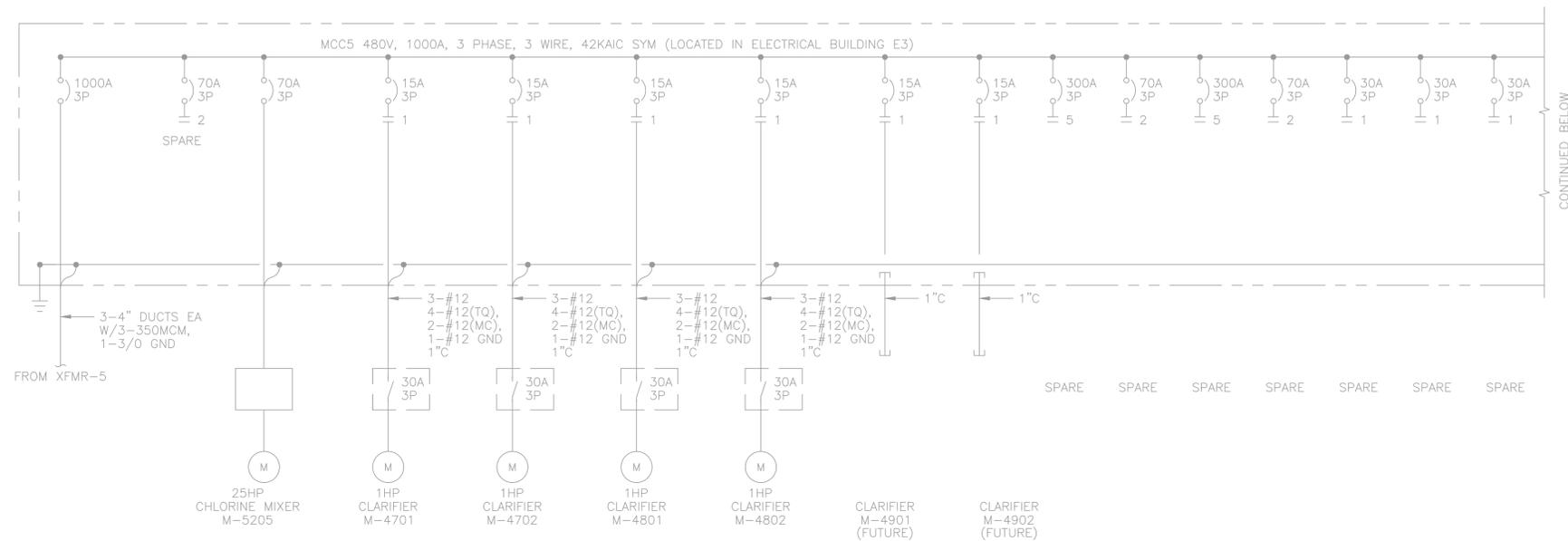
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
EXISTING ELECTRICAL BUILDING 3  
MODIFICATION PLAN

ELECTRICAL

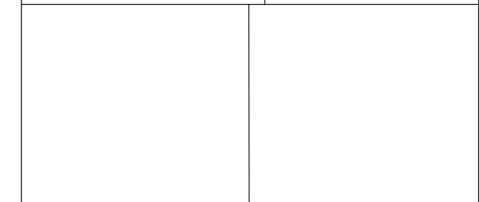
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	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
DWG NO	CITY OF HOUSTON PM	
E-57-01	TAHA LOTIA	
	SHEET NO. XX2570F X271	

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.



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DESIGNED BY: RK, SJ	DRAWN BY: HW



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Kalluri Group, Inc.

TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
PROJECT 4264

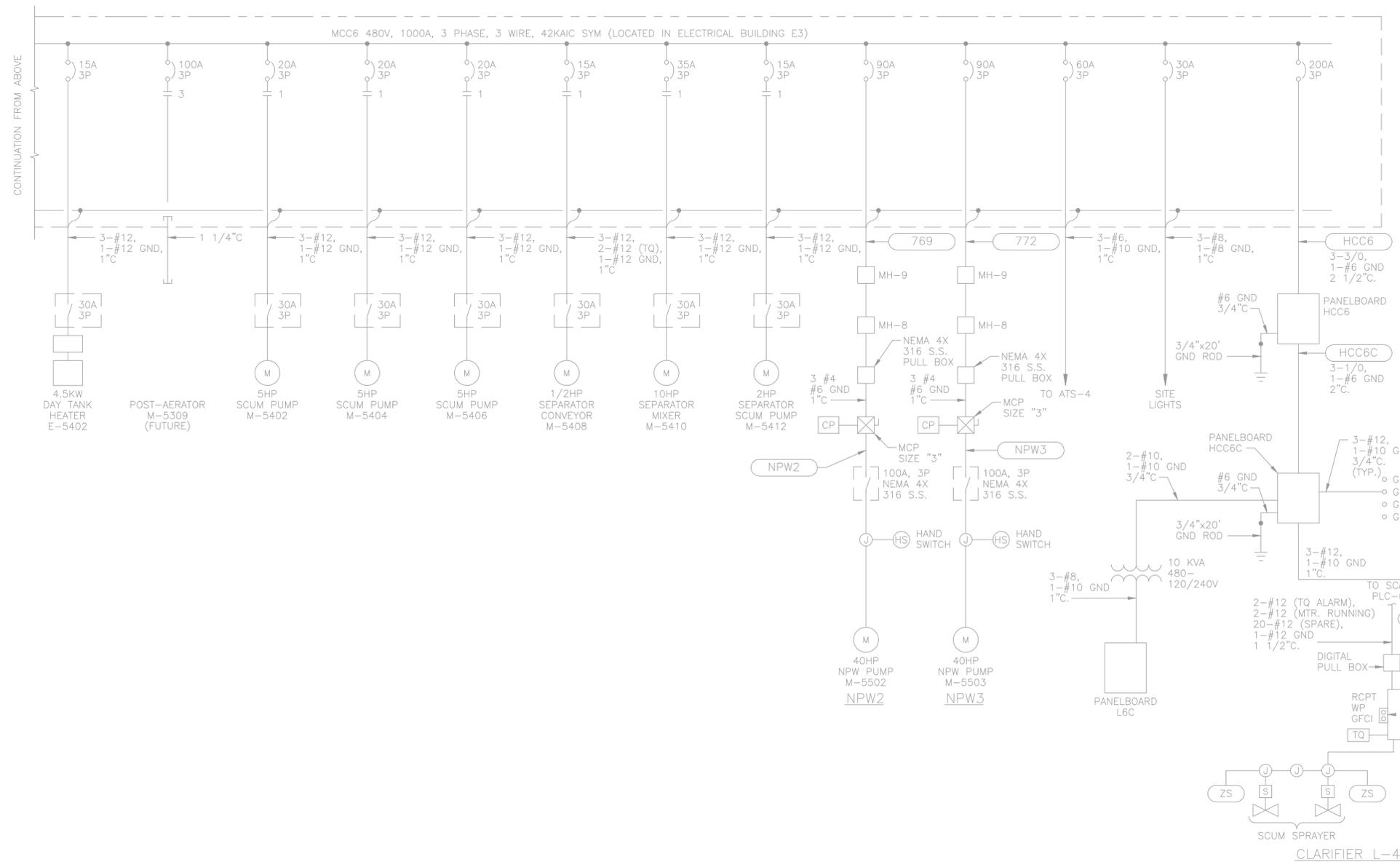
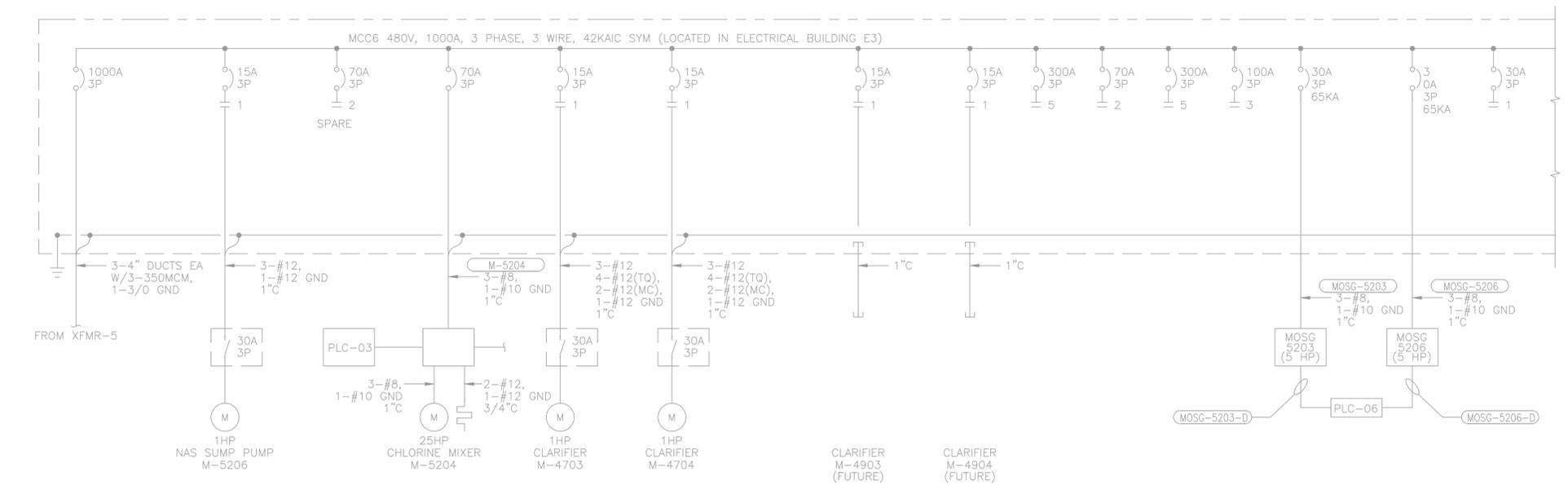
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**CITY OF HOUSTON**  
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**EXISTING MCC-5 ONE LINE DIAGRAM**  
ELECTRICAL

<b>VERIFY SCALE</b>  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DRAWING SCALE		
AS SHOWN		
CITY OF HOUSTON PM		
DWG NO	TAHA LOTIA	
<b>E-57-02</b>	SHEET NO. XX2580F X271	

NO.	DATE	REVISION	APP.



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DESIGNED BY: RK, SJ	DRAWN BY: HW

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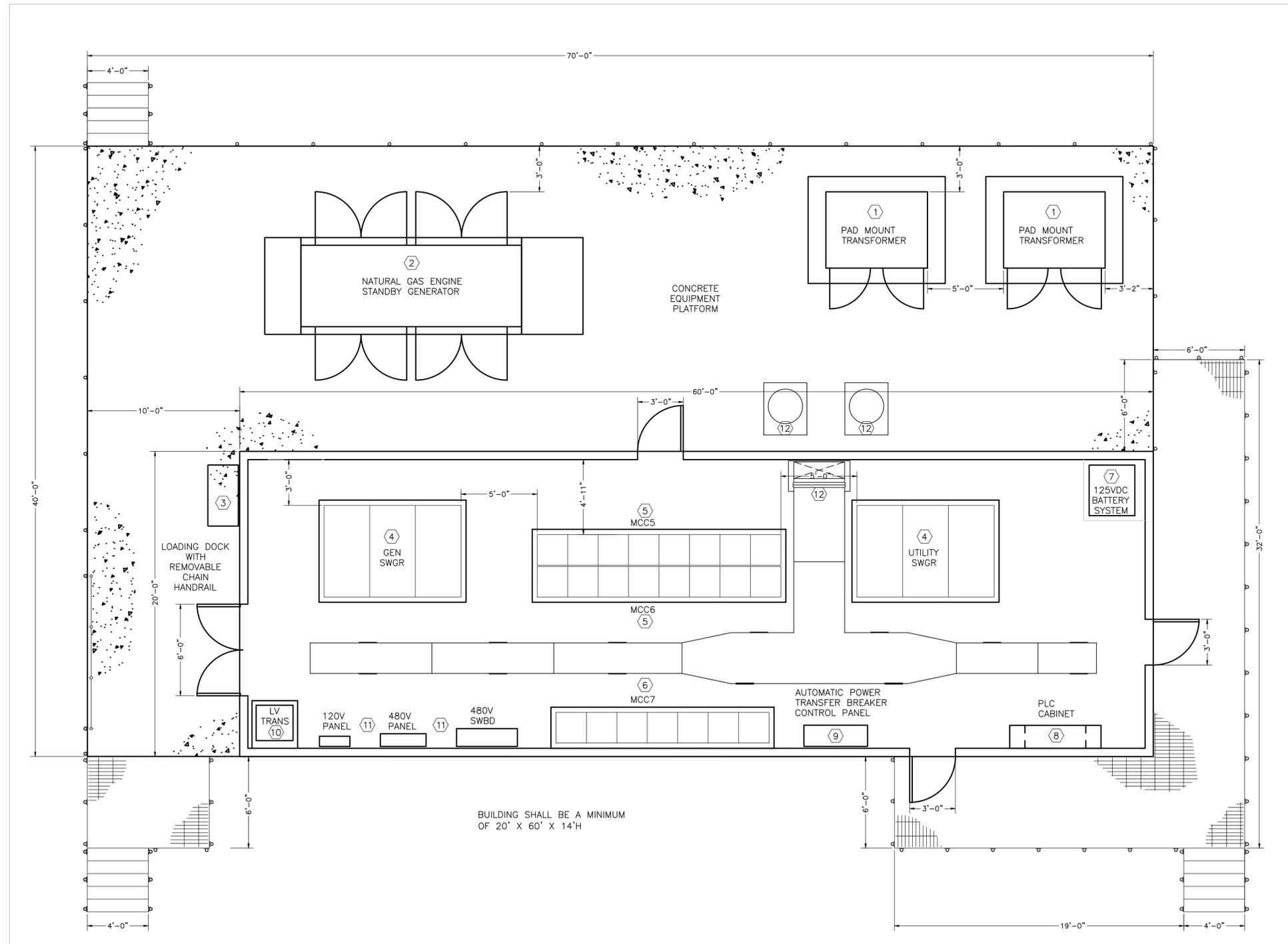
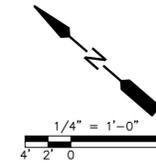
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

**EXISTING MCC-6 ONE LINE DIAGRAM**

ELECTRICAL

VERIFY SCALE 0 1 BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
	R-000265-0154-4	
DWG NO	DRAWING SCALE	
E-57-03	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTIA	
	SHEET NO. XX2590F X274	

NO.	DATE	REVISION	APP.



- EQUIPMENT WEIGHTS**
- ① EACH TRANSFORMER IS 10,000 LBS. MAXIMUM.
  - ② THE GENERATOR WILL BE 12,500 LBS MAXIMUM.
  - ③ THE PORTABLE GENERATOR CONNECTION CABINET WILL WEIGH LESS THAN 1,000 LBS.
  - ④ EACH SWITCHGEAR LINEUP WILL WEIGH LESS THAN 3,000 LBS.
  - ⑤ THESE TWO MCC LINE UPS WILL EACH WEIGH 3,500 LBS MAXIMUM.
  - ⑥ THIS MCC WILL WEIGH A MAXIMUM OF 3,200 LBS MAXIMUM.
  - ⑦ THE BATTERY SYSTEM WILL WEIGH APPROXIMATELY 1,600 LBS.
  - ⑧ THE PLC CABINET WILL WEIGH LESS THAN 800 LBS.
  - ⑨ THE BREAKER CONTROL PANEL WILL WEIGH LESS THAN 300 LBS.
  - ⑩ THE LOW VOLTAGE TRANSFORMER WILL WEIGH LESS THAN 600 LBS.
  - ⑪ THE TOTAL FOR PANELS AND SWITCHBOARDS IS LESS THAN 1,000 LBS.
  - ⑫ THE TOTAL OF HVAC CONDENSING UNITS, DUCT WORK, AND EQUIPMENT INSIDE THE BUILDING WILL BE LESS THAN 1,900 LBS.

**GENERAL NOTES:**

A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE PROPOSED ELECTRICAL BUILDING 3 EQUIPMENT LOCATION AND LAYOUT MINIMUM CLEARANCE DIMENSIONS.

BUILDING SHALL BE A MINIMUM OF 20' X 60' X 14'H

PROPOSED ELECTRICAL BUILDING 3 EQUIPMENT  
**PLAN**  
1/4" = 1'-0"

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
DESIGNED BY: RK, SJ DRAWN BY: HW

KBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
Houston, Texas 77094  
Phone: (713)-365-9288  
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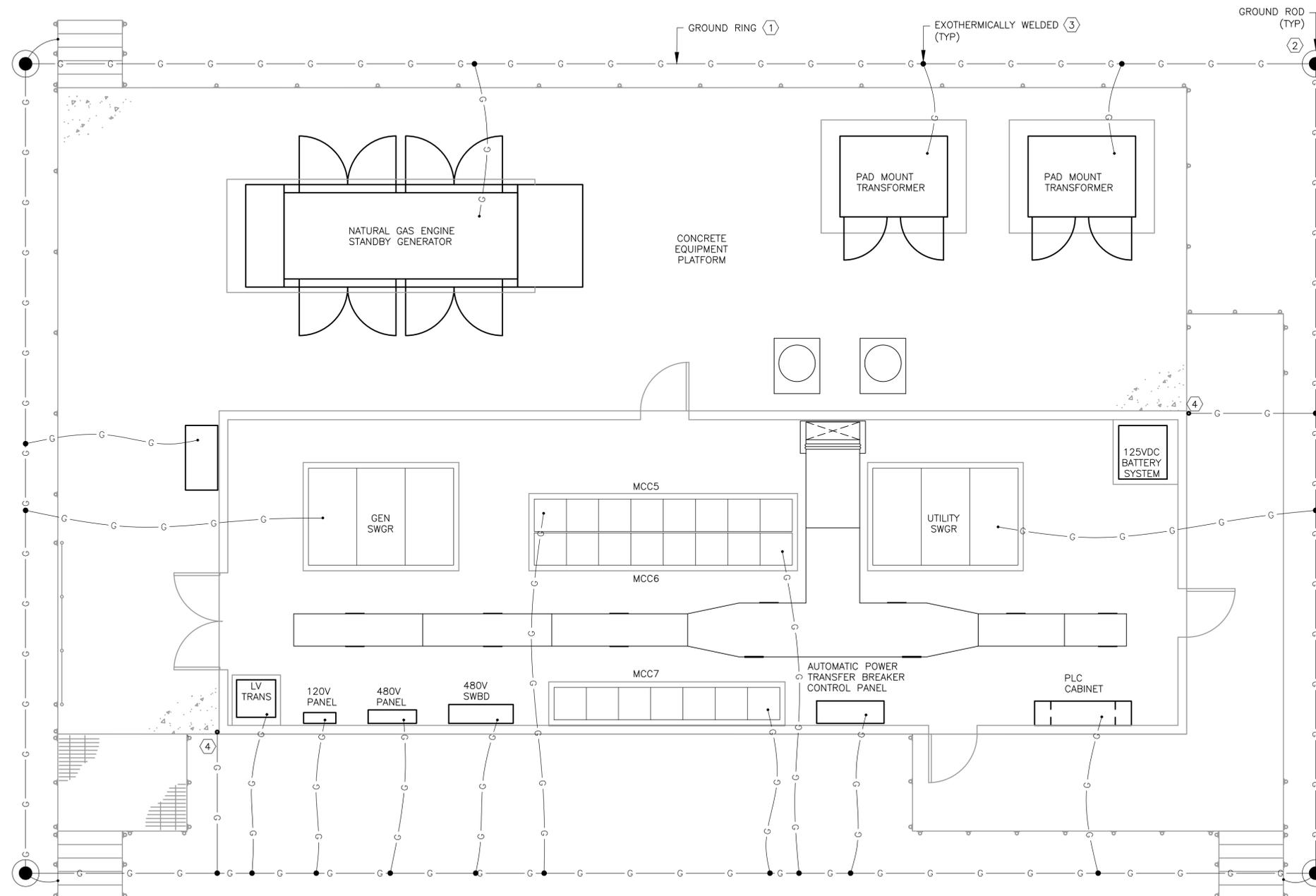
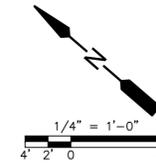
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED ELECTRICAL BUILDING 3 EQUIPMENT PLAN**

ELECTRICAL

VERIFY SCALE  BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	WBS NUMBER <b>R-000265-0154-4</b>	FOR CITY OF HOUSTON USE ONLY
	DRAWING SCALE <b>AS SHOWN</b>	
DWG NO <b>E-57-10</b>	CITY OF HOUSTON PM <b>TAHA LOTIA</b>	
	SHEET NO. <b>XX2600F X271</b>	

NO.	DATE	REVISION	APP.



**GENERAL NOTES:**

- A. THIS DRAWING IS PROVIDED TO ILLUSTRATE THE NEW CHLORINE CONTACT SYSTEM ELECTRICAL BUILDING GROUNDING, LIGHTNING PROTECTION AND UNDER SLAB PROVISIONS.
- B. ELECTRICAL EQUIPMENT, STRUCTURAL STEEL, FOUNDATION REBAR AND DUCT BANK SYSTEM SHALL ALL BE CONNECTED TO THE GROUND RING.

**KEYED NOTES:**

- ① 4/0 COPPER GROUND RING AT 24" MINIMUM BELOW GRADE.
- ② 3/4"X20" GROUND ROD WITH EXOTHERMIC CONNECTIONS TO GROUND RING.
- ③ EXOTHERMICALLY WELDED CONNECTION, SEE SPECIFICATIONS FOR REQUIREMENTS.
- ④ PROVIDE ONE 1" PVC CONDUIT ON THE EXTERIOR WALL OF THE PROPOSED BUILDING, FROM 12" BELOW TOP OF THE WALL TO GROUND RING FOR LIGHTNING PROTECTION DOWN LEAD.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

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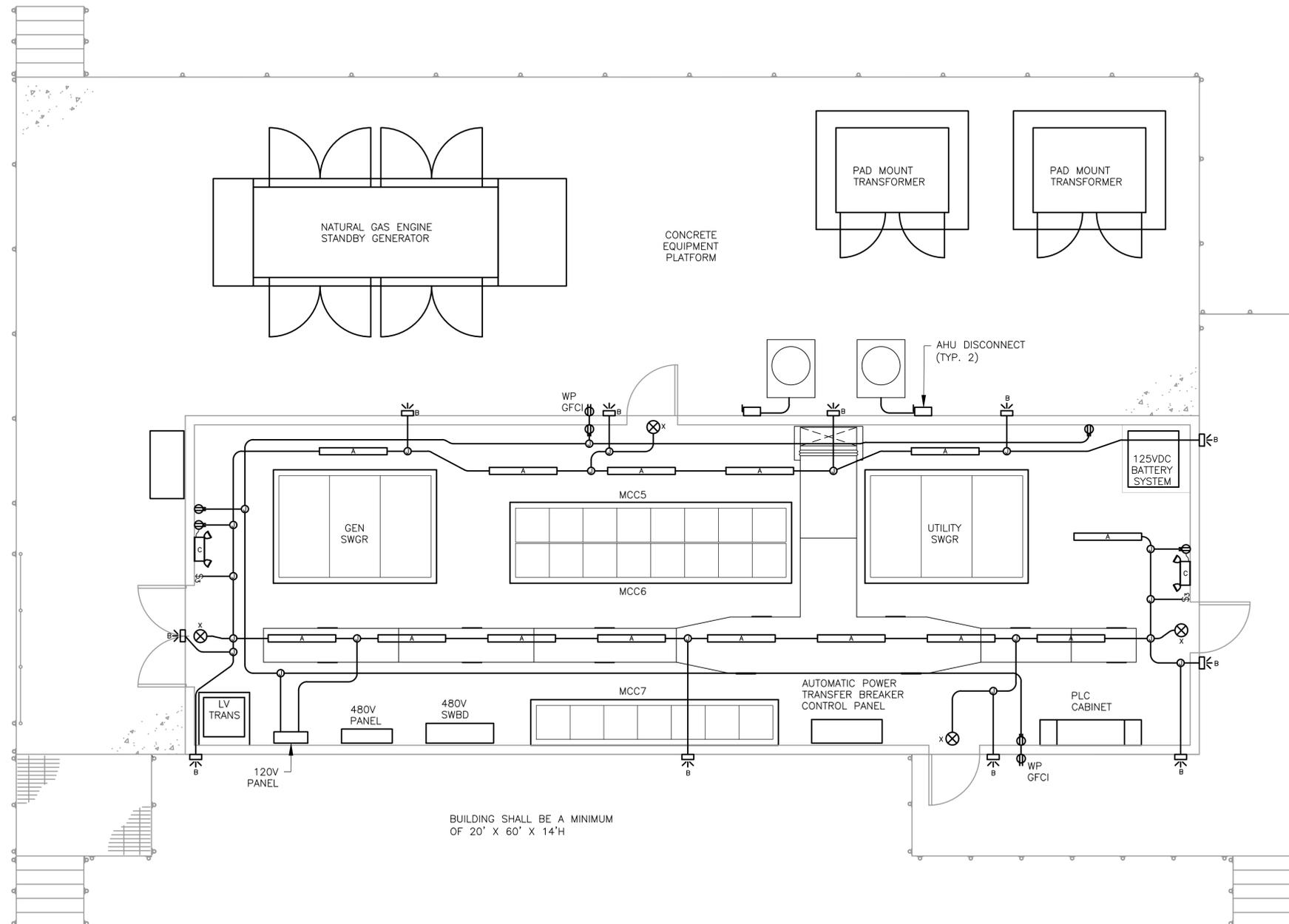
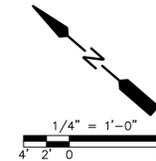
**CITY OF HOUSTON**  
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED ELECTRICAL BUILDING 3 GROUNDING PLAN**  
ELECTRICAL

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AS SHOWN		
CITY OF HOUSTON PM		
TAHA LOTIA		
SHEET NO. XX2610F X271		

PROPOSED ELECTRICAL BUILDING 3 GROUNDING  
**PLAN**  
1/4" = 1'-0"

NO.	DATE	REVISION	APP.



BUILDING SHALL BE A MINIMUM OF 20' X 60' X 14'H

**GENERAL NOTES:**

- A. ROUTE CONDUITS UNDERGROUND IF POSSIBLE. IF CONDUITS MUST BE ROUTED OVERHEAD, ROUTE CONDUITS ON STRUT, ATTACHED TO STRUCTURE OR ON TRAPEZE TYPE HANGERS.
- B. ALL ANCHORS, STRUT, STRUT FITTINGS, STRAPS AND HARDWARE SHALL BE 316 STAINLESS STEEL.
- C. PROVIDE NEMA 4X, 316SS ENCLOSED, FUSED DISCONNECTS FOR THE A/C UNITS. COORDINATE EXACT FUSE SIZE WITH PROPOSED EQUIPMENT. A/C UNIT FEEDERS MAY BE ROUTED UNDER THE SLAB.
- D. PROVIDE CONDUIT AND PULL STRING FOR HVAC THERMOSTATS, COORDINATE LOCATIONS WITH HVAC.
- E. SEE LIGHT FIXTURE SCHEDULE FOR LIGHT FIXTURE CATALOG NUMBERS, FIXTURE DESCRIPTIONS AND INSTALLATION INSTRUCTIONS. SEE E-XX-XXX FOR LIGHTING CONTROL PANEL REQUIREMENTS.
- F. ROUTE CONDUIT SUCH THAT THERE ARE NO CONNECTIONS IN CONDUIT FITTINGS. IF CONNECTIONS ARE REQUIRED A BOX SIZED ACCORDINGLY SHALL BE PROVIDED.
- G. PROVIDE RED DOT "CODE KEEPER TYPE (OR APPROVED EQUAL) METALLIC "IN-USE" GFCI COVER, INSTALLED AT 2'-0" FINISHED FLOOR.
- H. INSTALL RECEPTACLES 2'-0" ABOVE FINISHED FLOOR OR FINISHED GRADE. INSTALL LIGHT SWITCHES 3'-6" ABOVE FINISHED FLOOR.

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

<p> <b>KGI</b>  <b>Kalluri Group, Inc.</b>  <small>TBPE Registration No. F-665          16300 Katy Freeway, Suite 172          Houston, Texas 77094          Phone: (713)-365-9288          PROJECT 4264</small> </p>	<p>THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF RAMESH KALLURI LICENSE NO. 68078 NOVEMBER 2025 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.</p>
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CITY OF HOUSTON

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

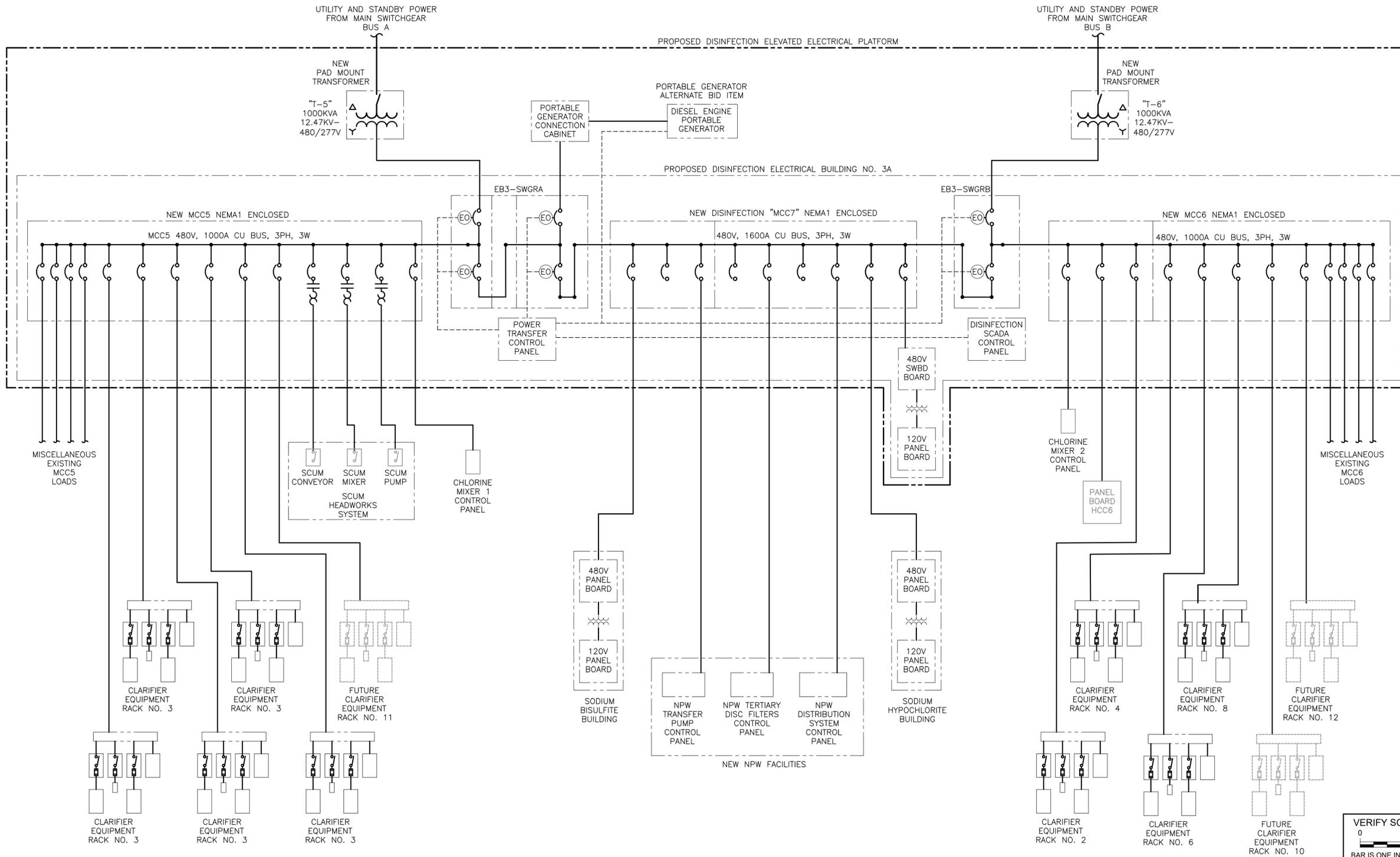
PROPOSED ELECTRICAL BUILDING 3 LIGHTING PLAN

ELECTRICAL

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST THE SCALE.	<b>WBS NUMBER</b> R-000265-0154-4	FOR CITY OF HOUSTON USE ONLY
	<b>DRAWING SCALE</b> AS SHOWN	
<b>DWG NO</b> E-57-12	<b>CITY OF HOUSTON PM</b> TAHA LOTIA	
<b>SHEET NO.</b> XX2620F X271		

**PROPOSED ELECTRICAL BUILDING 3 LIGHTING PLAN**  
 1/4" = 1'-0"

C:\Users\Howard\Kalluri Group, Inc\KGI - Documents\4264-COH (Sims South WWTP Pkg3)\Drawings\E-57-20 Proposed Electrical Building 3 Simplified One Line Diagram.dwg, 12/5/2025 9:09:53 AM



PROPOSED ELECTRICAL BUILDING 3 SIMPLIFIED ONE LINE

**DIAGRAM**  
NTS

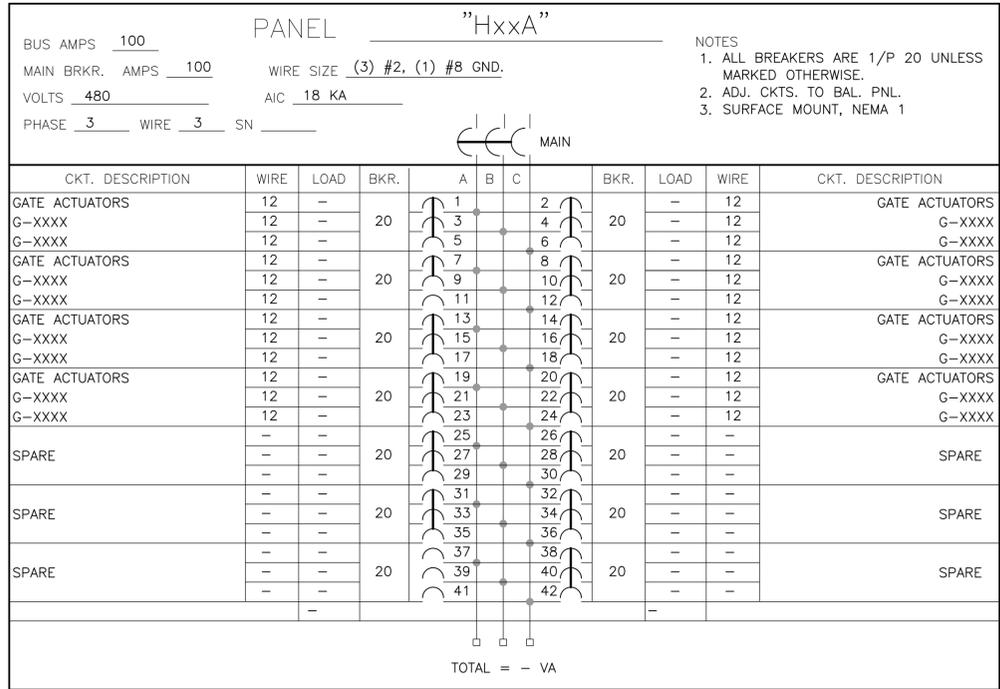
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DWG NO  
**E-57-20**

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CITY OF HOUSTON PM	TAHA LOTIA	
SHEET NO.	XX2630F X274	

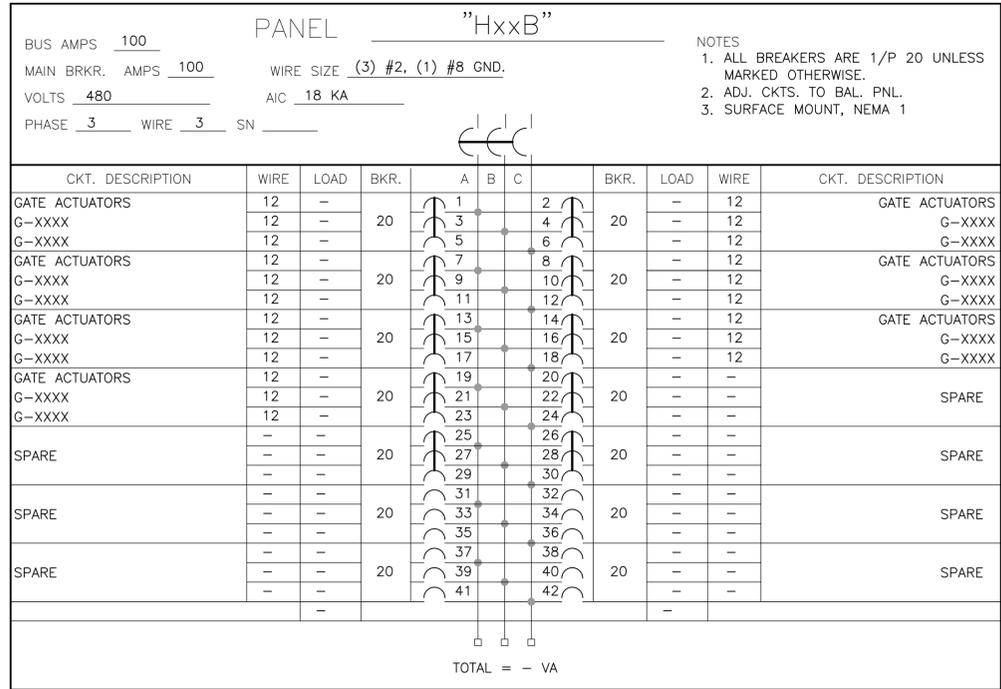
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DESIGNED BY: RK, SJ	DRAWN BY: HW
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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
**PROPOSED ELECTRICAL BUILDING 3 SIMPLIFIED ONE LINE DIAGRAM**  
ELECTRICAL

NO.	DATE	REVISION	APP.



-- VA = -- AMPS AT 480 VOLTS  
 THE PANEL IS FED BY (3) #2 AND IS ADEQUATE FOR THE CONNECTED LOAD.



-- VA = -- AMPS AT 480 VOLTS  
 THE PANEL IS FED BY (3) #2 AND IS ADEQUATE FOR THE CONNECTED LOAD.

GENERAL NOTES:  
 A. REFERENCE SHEETS:  
 A.A. E-10-01 ELECTRICAL EXISTING OVERALL SITE PLAN.  
 A.B. E-10-02 ELECTRICAL PROPOSED OVERALL SITE PLAN.

APPROVED: HP	DATE: 10/28/25
DESIGNED BY: DKH	DRAWN BY: DKH
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SIMS BAYOU SOUTH WWTP  
 IMPROVEMENTS PACKAGE 3

**PANEL SCHEDULES**

ELECTRICAL

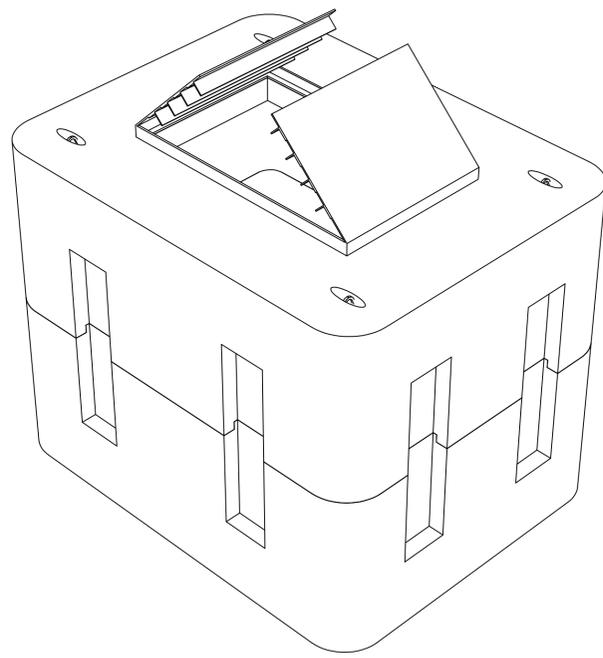
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	R-000265-0154-4	
DWG NO <b>E-60-01</b>	DRAWING SCALE	
	AS SHOWN	
	CITY OF HOUSTON PM	
	TAHA LOTA	
	SHEET NO. 264 OF 271	

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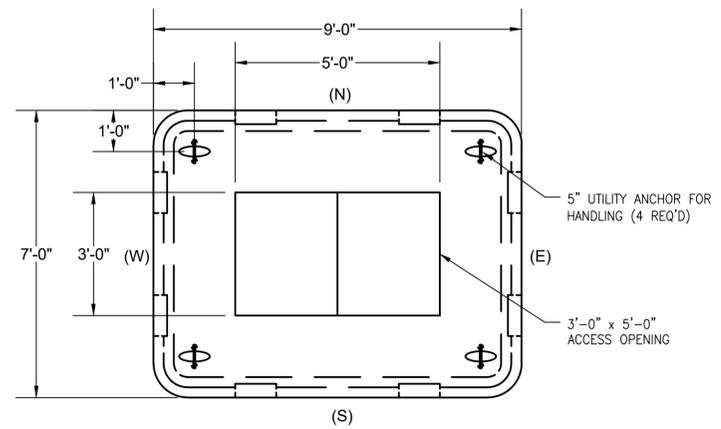
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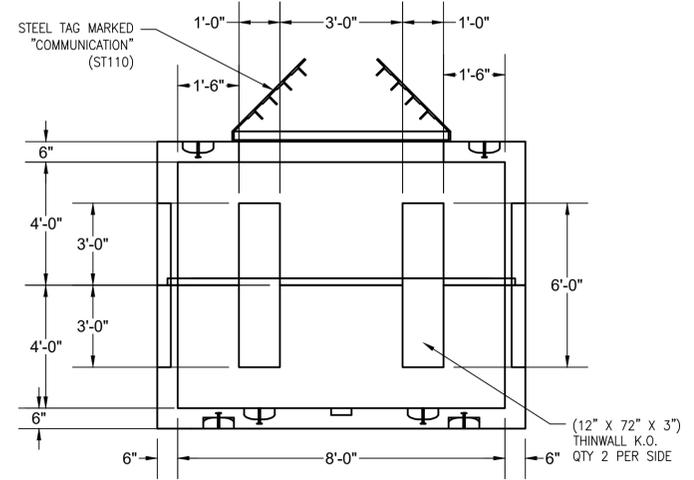
NO.	DATE	REVISION	APP.



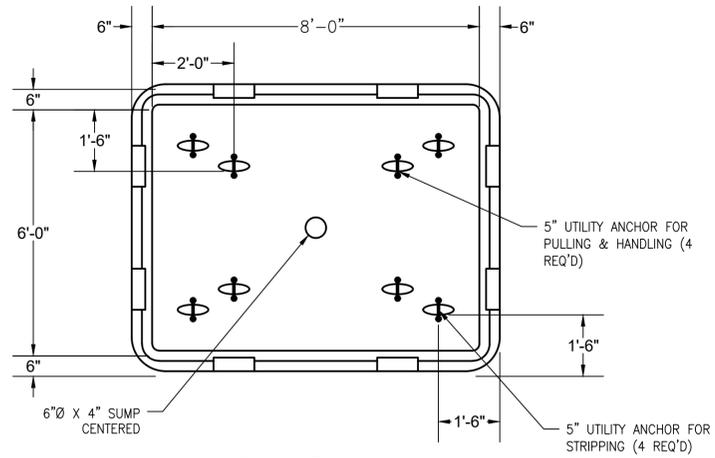
ISOMETRIC VIEW



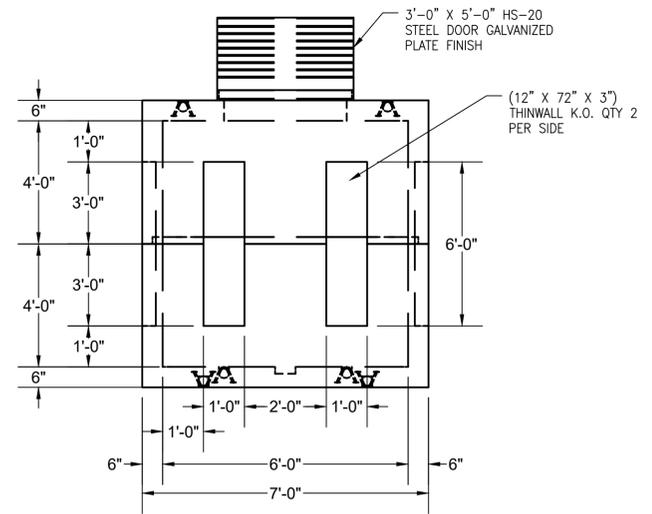
PLAN VIEW  
(TOP BASE)



VIEW LOOKING NORTH  
ELEVATION VIEW



PLAN VIEW  
(BASE BASE)



VIEW LOOKING WEST  
ELEVATION VIEW

MEDIUM VOLTAGE UNDERGROUND PULLBOX – TYPE E6

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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Phone: (713)-365-9288  
PROJECT 4264

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**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

DETAILS SHEET 1

ELECTRICAL

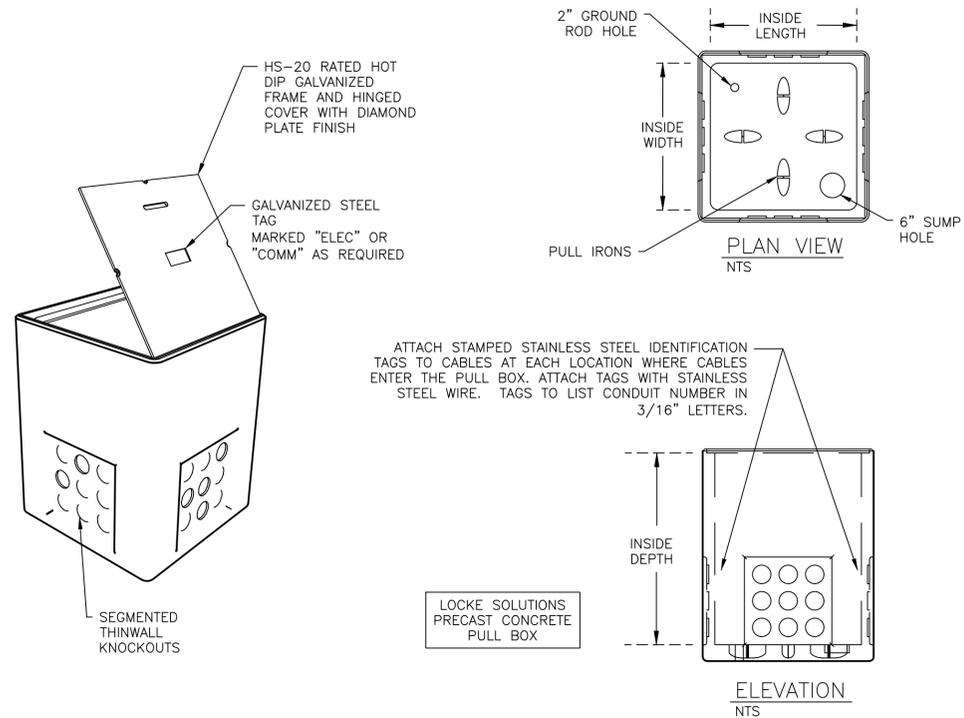
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DWG NO  
**E-99-01**

WBS NUMBER	R-000265-0154-4
DRAWING SCALE	
CITY OF HOUSTON PM	TAHA LOTIA
SHEET NO.	XX2660F X271

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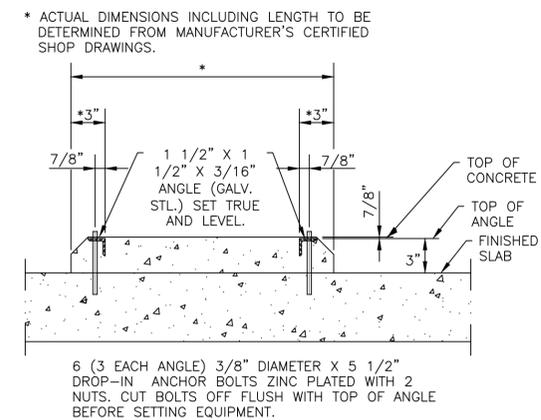


TYPICAL UNDERGROUND PULL BOX

PULL BOX SIZES			
DESIGNATION	INSIDE WIDTH (W)	INSIDE LENGTH (L)	INSIDE DEPTH (D)
E1	12"	24"	22"
E2	24"	24"	42"
E3	36"	36"	48"
E4	48"	48"	48"
E6	72"	96"	72"
I1	12"	24"	22"
I2	24"	24"	42"
I3	36"	36"	48"
I4	48"	48"	48"

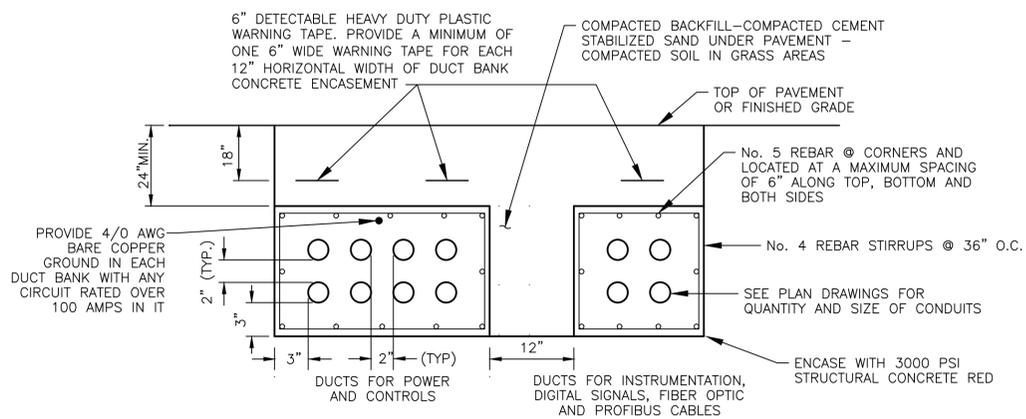
NOTES:

1. PRECAST CONCRETE PULL BOX DESIGNED FOR HS-20 LOADING.
2. COVERS FOR ALL PULL BOXES TO BE HOT-DIP GALVANIZED AND DESIGNED FOR AASHTO HS-20 LOADING.
3. "E" PULL BOXES TO HAVE "ELECTRICAL" TAG ON THE COVER.
4. "I" PULL BOXES TO HAVE "INSTRUMENT" TAG ON THE COVER.

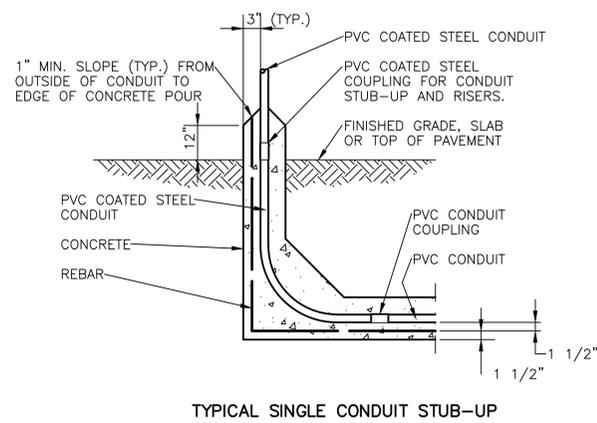


MEDIUM VOLTAGE EQUIPMENT PAD

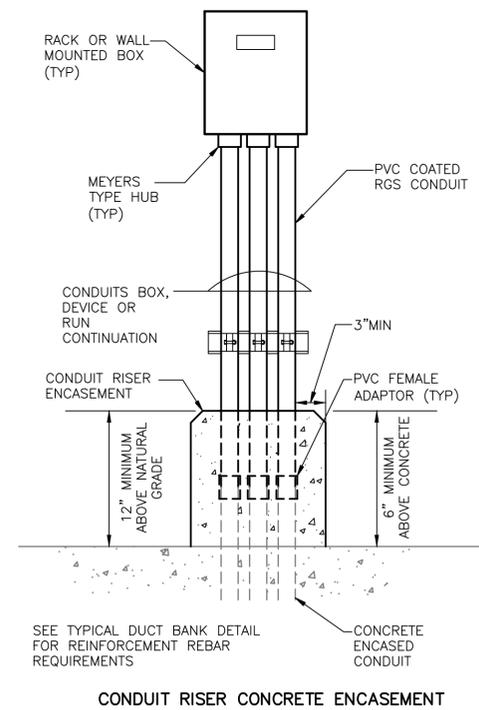
DUCT BANK CONCRETE ENCASEMENT SHALL BE CONTINUOUS AND DUCT BANK REINFORCEMENT REBAR SHALL BE CONNECTED TO THE DESTINATION. FOR PULL BOX ENTRY OR RISING NEXT TO A STRUCTURE DRILL BOX OR STRUCTURE AND PROVIDE #5 DOWELS 4 INCHES DEEP. FOR ENTRY TO STRUCTURE SLAB OR FOUNDATIONS CONNECT BOTH REINFORCEMENT REBAR SYSTEMS WITH 6 INCH OVERLAP DOUBLE TIED.



TYPICAL DUCT BANK INSTALLATION



TYPICAL SINGLE CONDUIT STUB-UP



CONDUIT RISER CONCRETE ENCASEMENT

APPROVED: DESIGNED BY: RK, SJ DATE: DRAWN BY: HW

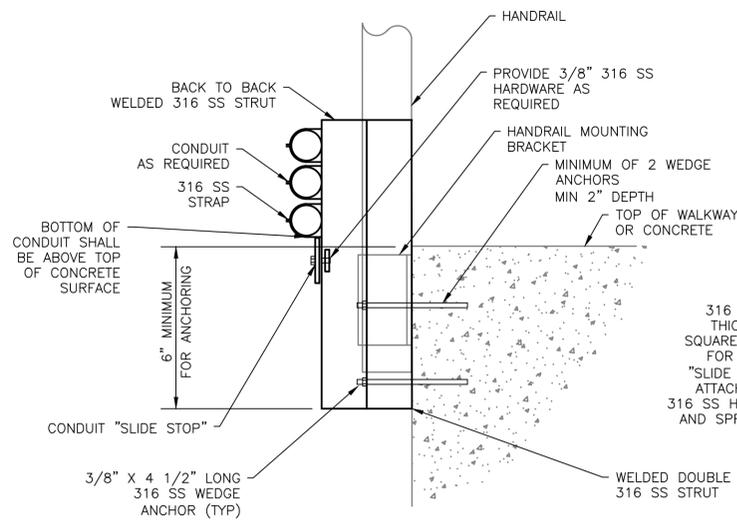
**KGI**  
Kalluri Group, Inc.  
TBPE Registration No. F-665  
16300 Katy Freeway, Suite 172  
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HOUSTON PUBLIC WORKS  
SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3  
DETAILS SHEET 2  
ELECTRICAL

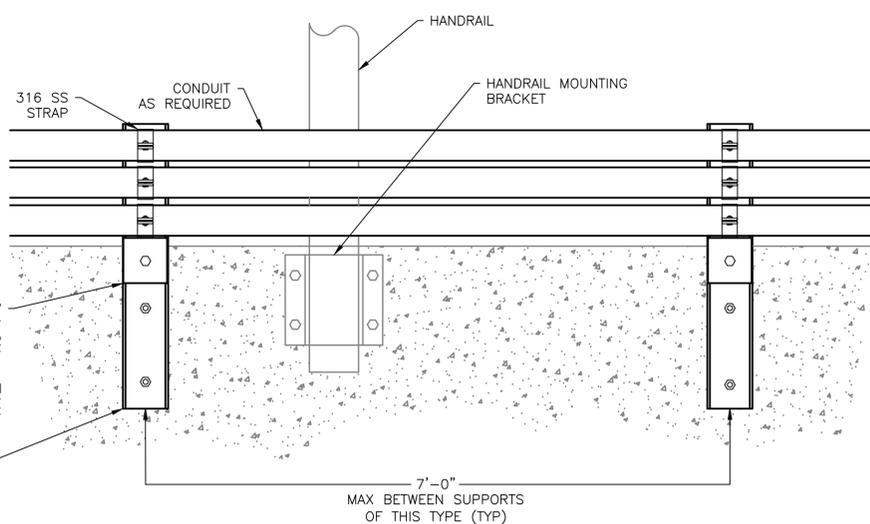
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	CITY OF HOUSTON PM TAHA LOTIA	
	SHEET NO. XX2670F X2X1	

NO.	DATE	REVISION	APP.



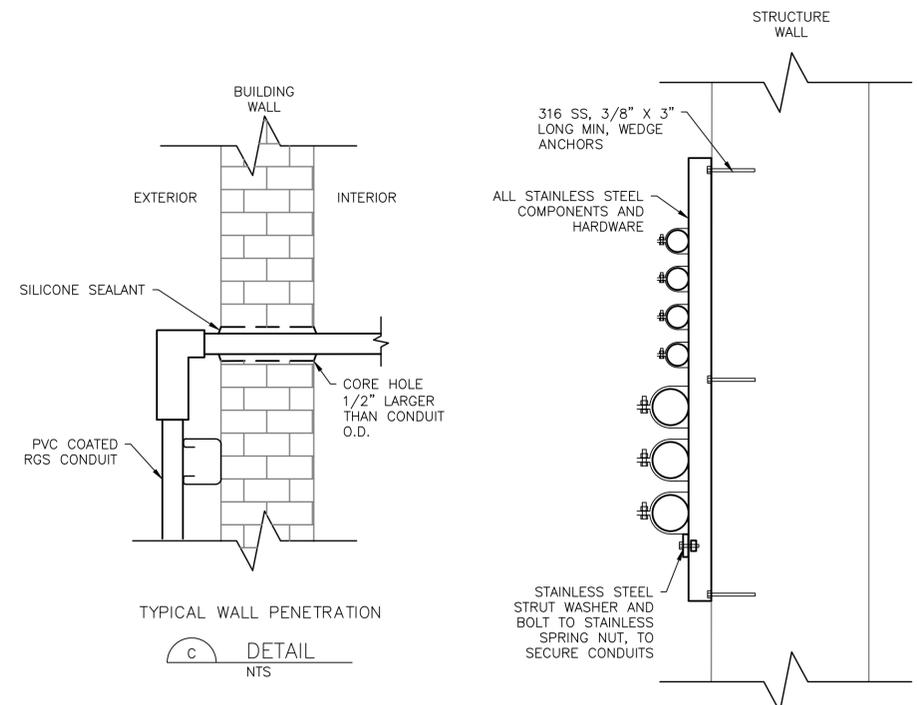
SIDE VIEW  
EDGE OF STRUCTURE CONDUIT SUPPORT

A  
DETAIL  
NTS



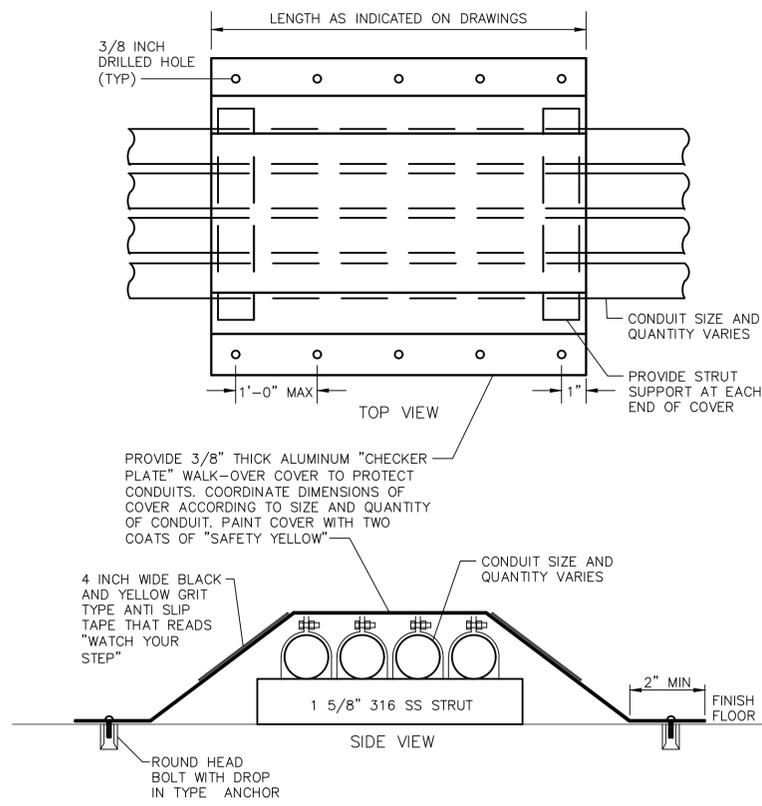
ELEVATION  
EDGE OF STRUCTURE CONDUIT SUPPORT

B  
DETAIL  
NTS

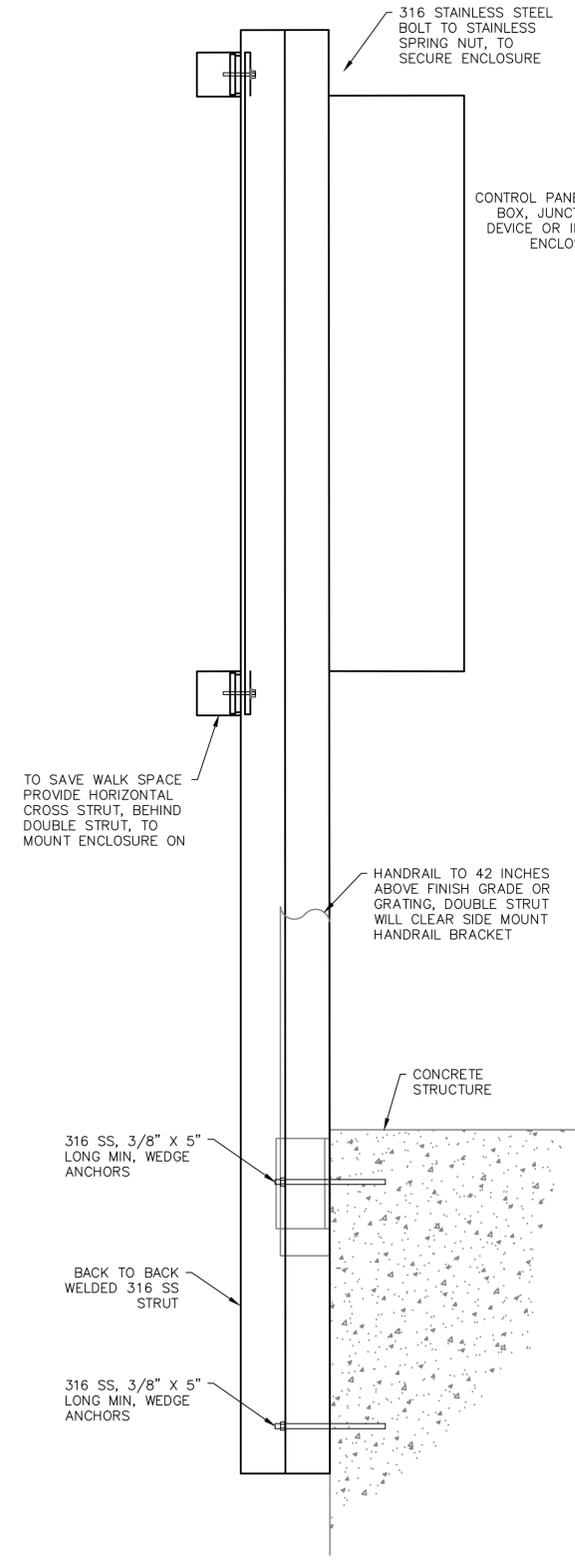


TYPICAL WALL PENETRATION  
C  
DETAIL  
NTS

TYPICAL VERTICAL WALL RACK  
D  
DETAIL  
NTS



TYPICAL WALK-OVER TREAD PLATE  
E  
DETAIL  
NTS



EDGE OF STRUCTURE PANEL SUPPORT  
F  
DETAIL  
NTS

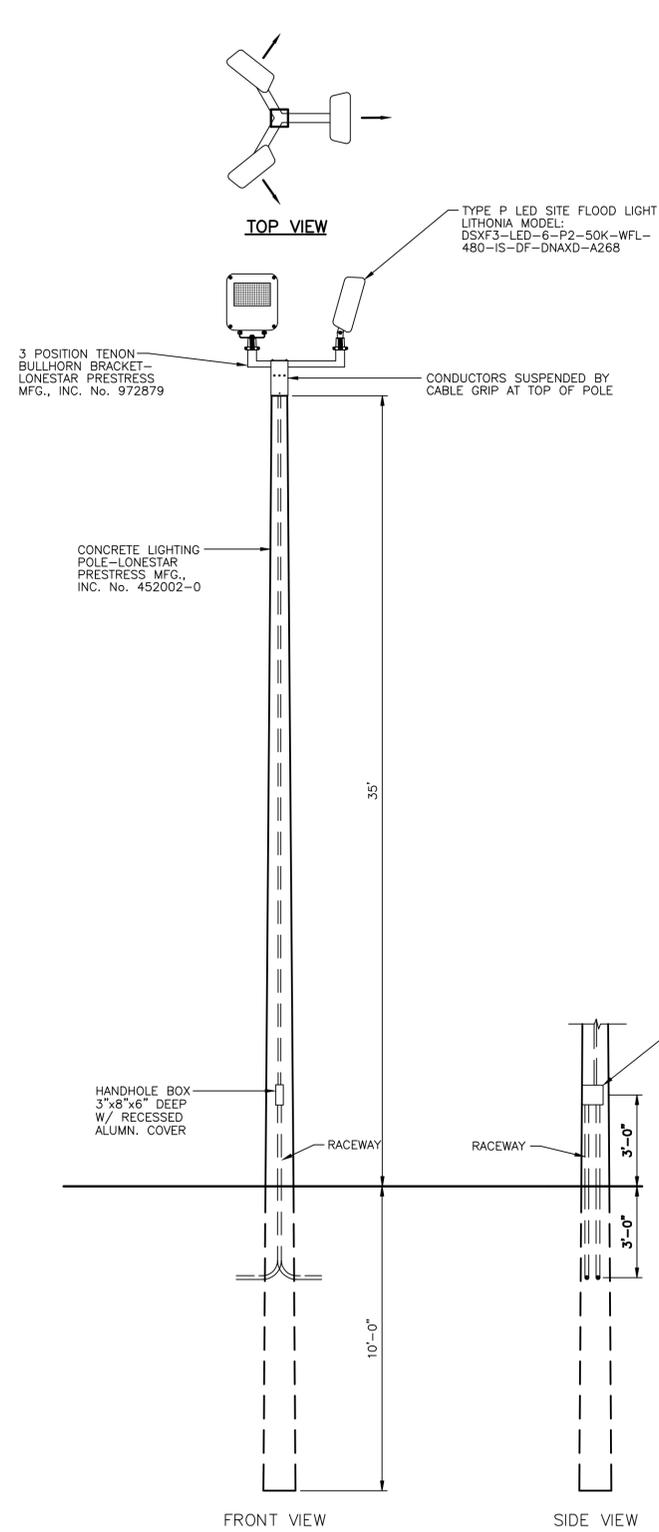
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**E-99-03**

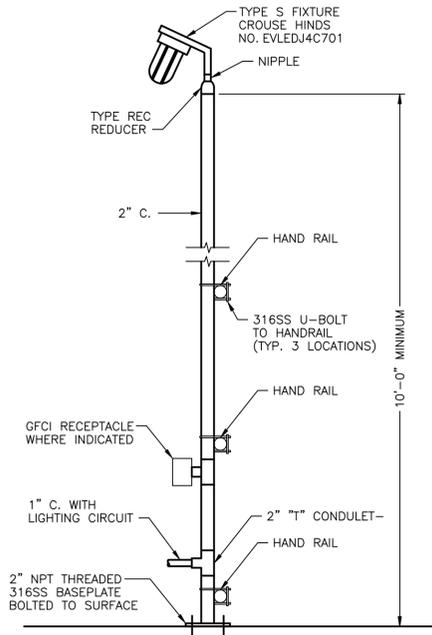
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CITY OF HOUSTON PM	
TAHA LOTIA	
SHEET NO. XX2680F X271	

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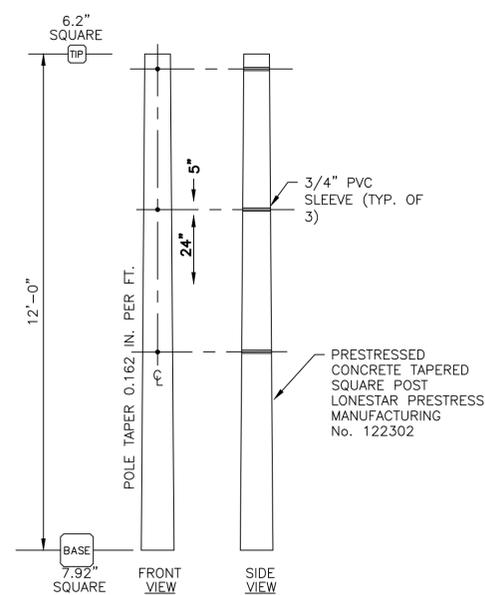
NO.	DATE	REVISION	APP.



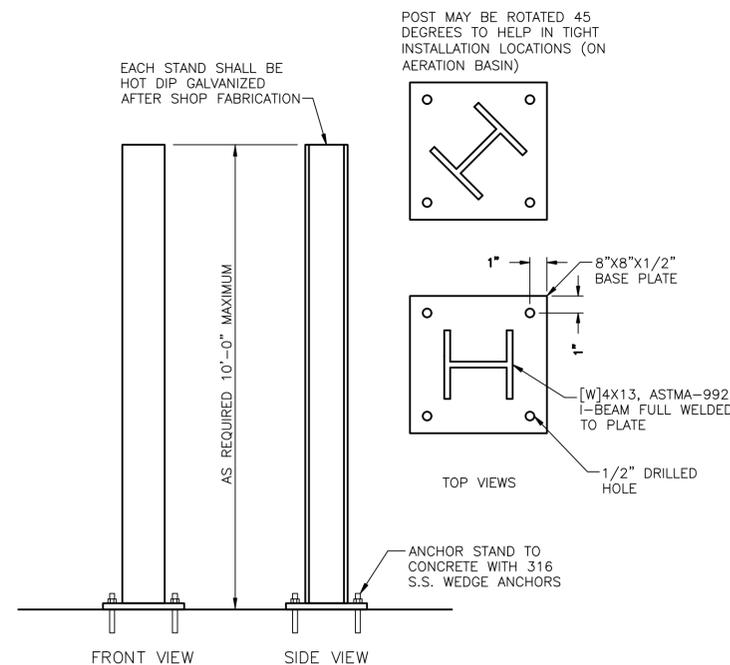
**A** DETAIL  
NTS



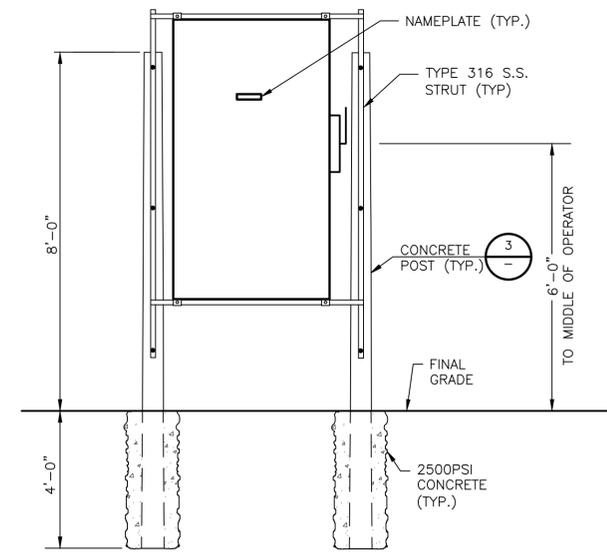
CONDUIT MOUNTED STANCHION LIGHT FIXTURE  
**B** DETAIL  
NTS



CONCRETE POST DETAIL  
**C** DETAIL  
NTS



VERTICAL SUPPORT  
**D** DETAIL  
NTS



MOBILE GENERATOR CONNECTION CABINET SUPPORT  
**E** DETAIL  
NTS

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

--	--

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Kalluri Group, Inc.

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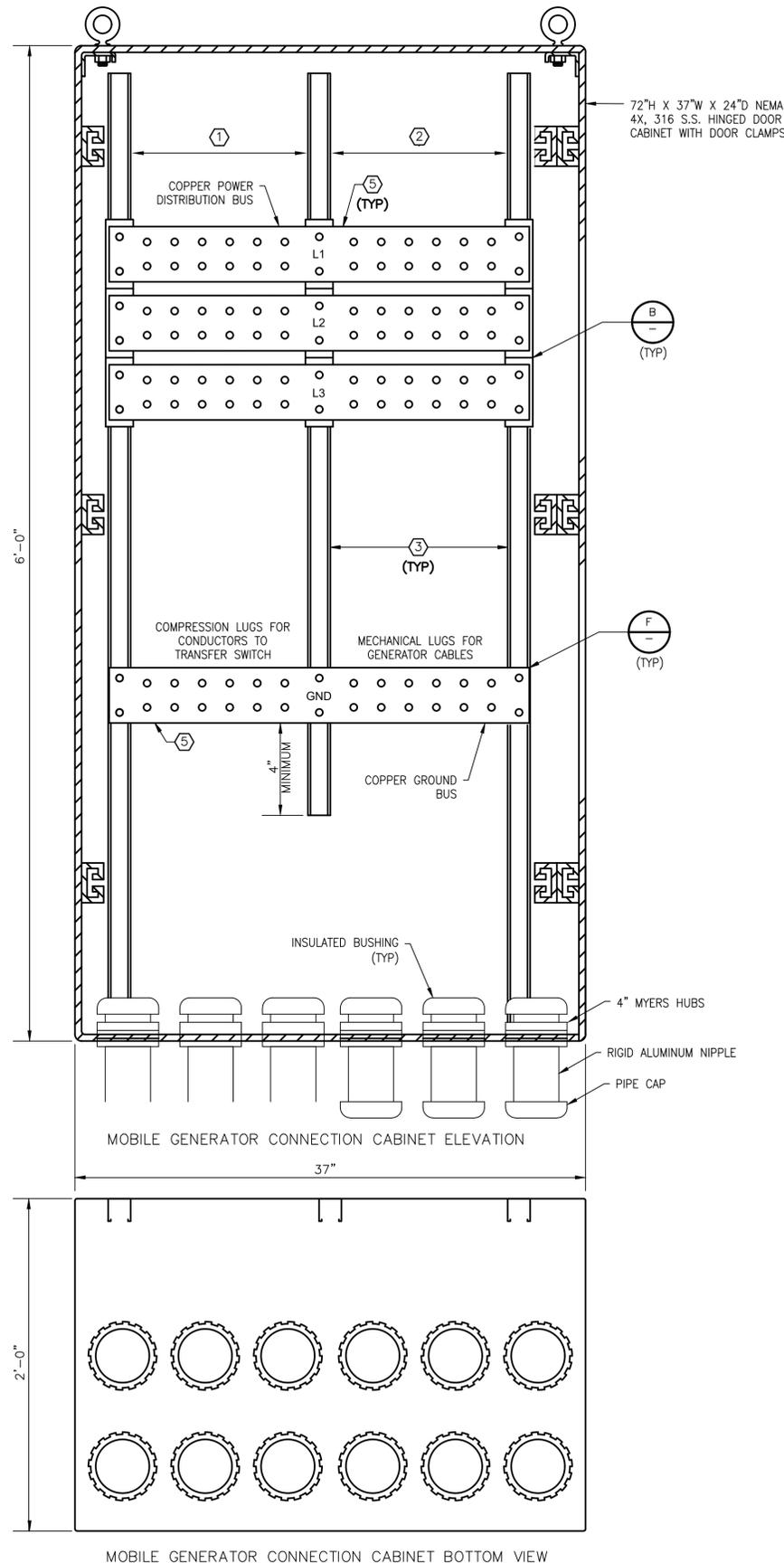
SIMS BAYOU SOUTH WWTP  
IMPROVEMENTS PACKAGE 3

**DETAILS SHEET 4**

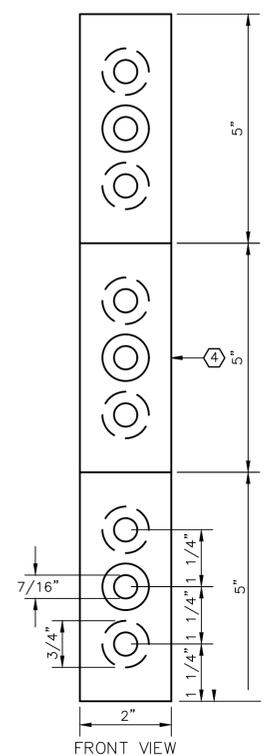
ELECTRICAL

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E-99-04	TAHA LOTIA	
	SHEET NO. XX2690F X271	

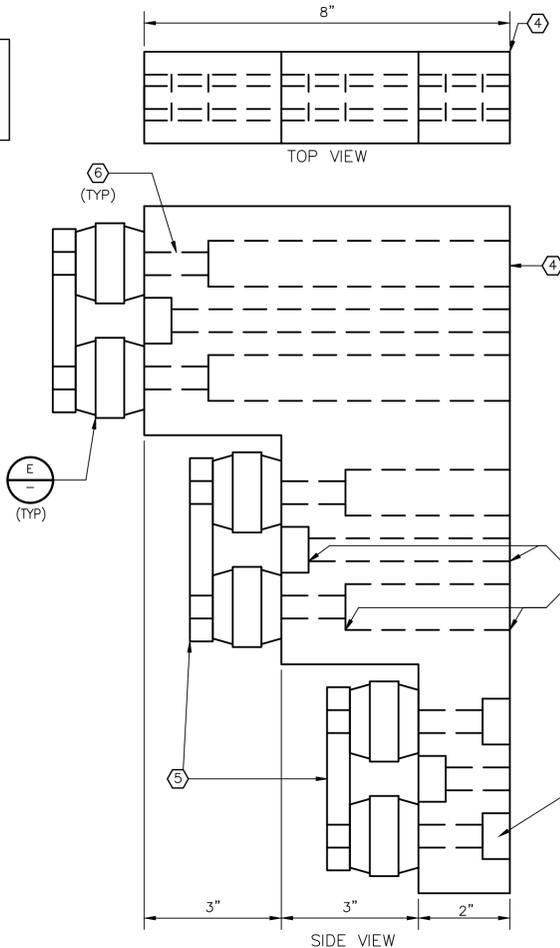
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CONTRACTOR SHALL PROVIDE A SHOP DRAWING FOR THE GENERATOR CONNECTION CABINET.

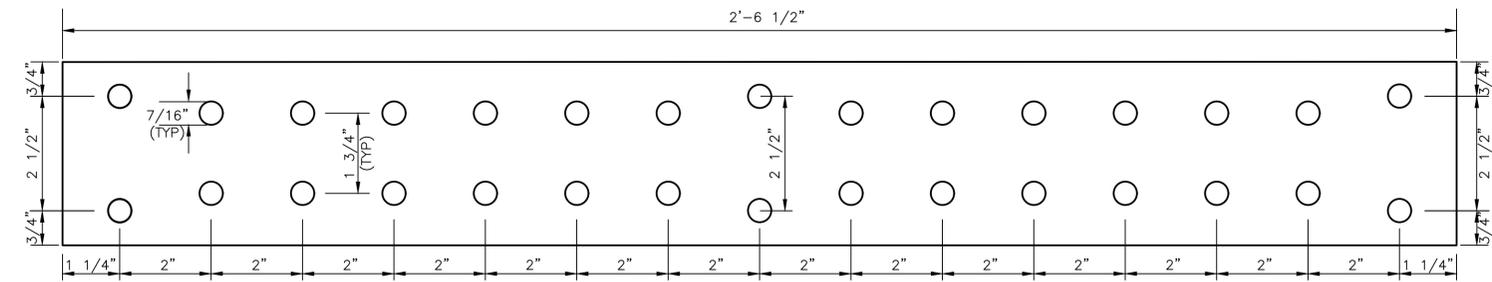


PHASE BUS INSULATED SUPPORT  
B  
DETAIL  
NTS

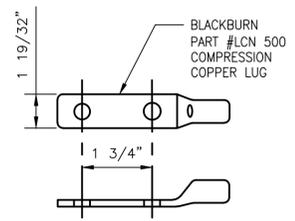


3/8" 316 STAINLESS HARDWARE, FLAT WASHER, SPLIT LOCK WASHER AND BOLT. TYPICAL OF ALL CONNECTIONS. NOT ALL HARDWARE IS SHOWN, FOR CLARITY.

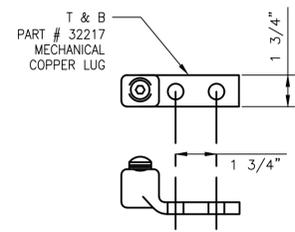
LENGTH OF BOLT TO BE COORDINATED WITH MACHINING DEPTH



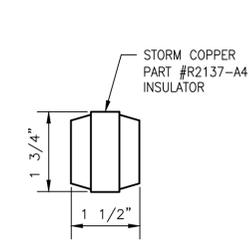
TYPICAL BUS HOLE LAYOUT  
C  
DETAIL  
NTS



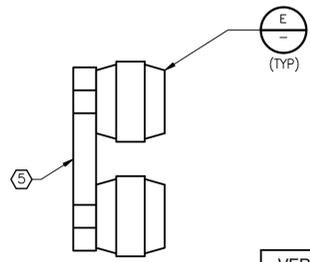
LUGS FOR CABLES TO TRANSFER SWITCH  
D  
DETAIL  
NTS



LUGS FOR CABLES TO PORTABLE GENERATOR  
E  
DETAIL  
NTS



INSULATOR  
F  
DETAIL  
NTS



G  
DETAIL  
NTS

- NOTES:
- ① CABLES CONNECTED TO TRANSFER SWITCH.
  - ② PROVISIONS TO CONNECT PORTABLE GENERATOR CABLES.
  - ③ TYPE 316 STAINLESS STEEL 1 5/8" 12 GAUGE STRUT.
  - ④ 2" THICK MICARTA INSULATING BOARD.
  - ⑤ 1/2" X 4" COPPER BAR.
  - ⑥ TYPE 316 STAINLESS STEEL BOLTS.

APPROVED: DESIGNED BY: RK, SJ DATE: DRAWN BY: HW

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HOUSTON PUBLIC WORKS

SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

DETAILS SHEET 5

ELECTRICAL

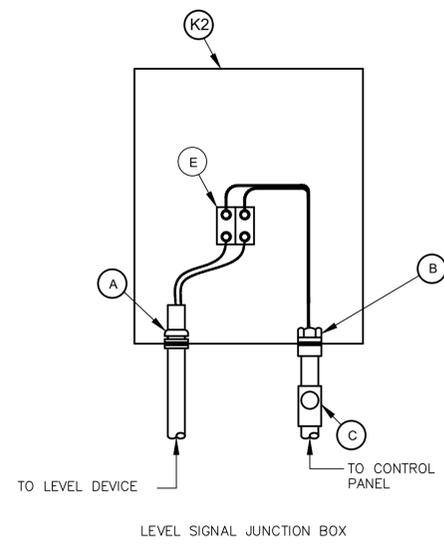
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TAHA LOTIA  
SHEET NO. XX2700F X2X1

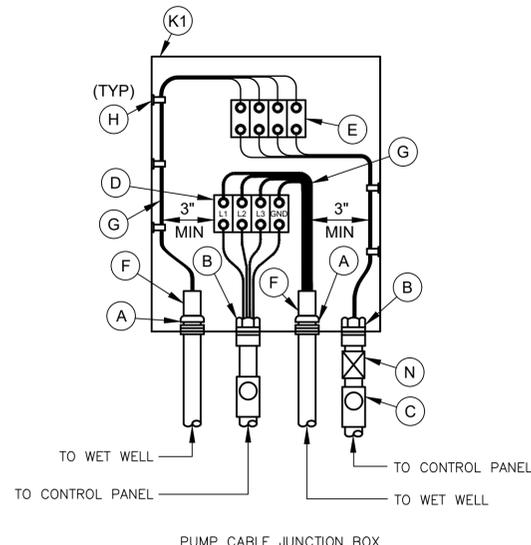
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LEVEL SIGNAL JUNCTION BOX  
A  
DETAIL  
NTS



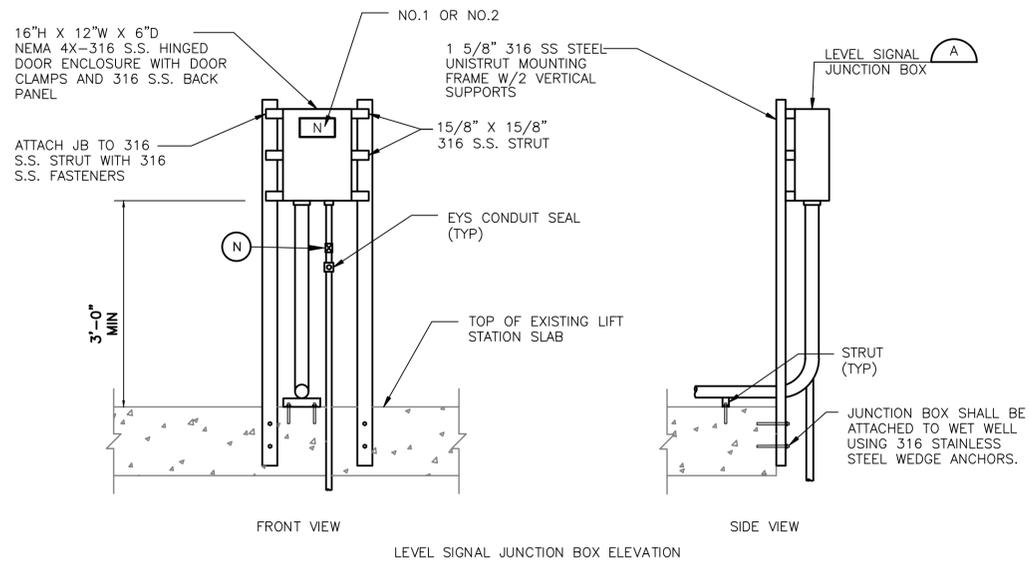
PUMP CABLE JUNCTION BOX  
B  
DETAIL  
NTS

**JUNCTION BOX EQUIPMENT SCHEDULE**

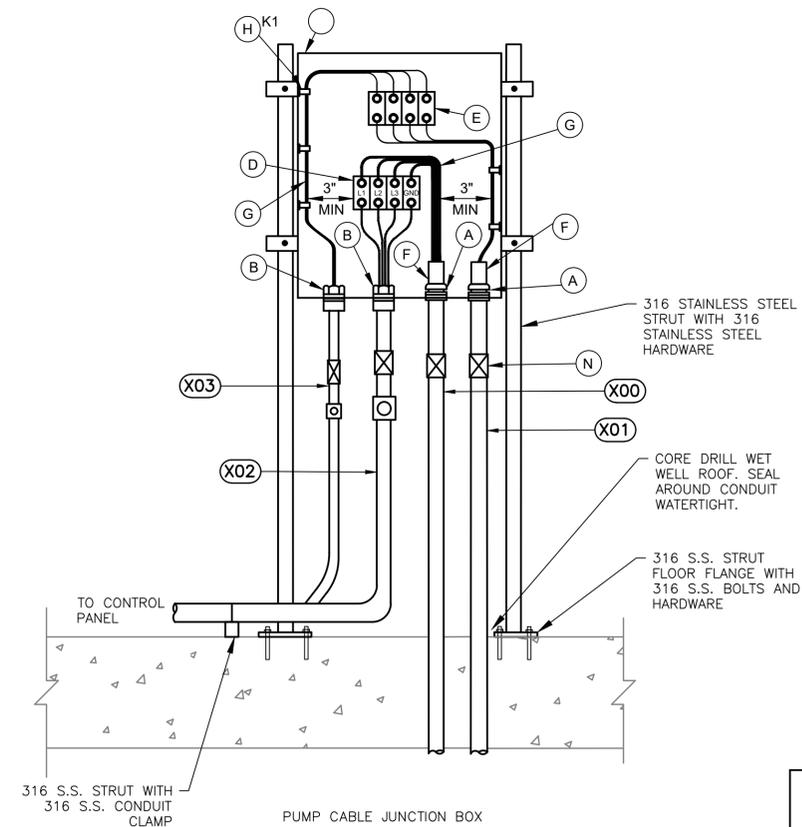
- A - 02 GEDNEY CSBE SEAL WITH 316 S.S. PRESSURE PLATES AND HARDWARE
- B - WATERTIGHT CONDUIT HUB WITH INSULATED BUSHING
- C - CLASS I, DIV 1, EXLOSION PROOF SEAL INSTALLED PER NEC DIV 501
- D - POWER TERMINAL BLOCK W/SCREW DOWN BOX LUGS
- E - CONTROL TERM BLOCK W/SCREW DOWN BOX LUGS
- F - MULTI-CONDUCTOR CABLE, REMOVE OUTER JACKET AS SHOWN
- G - WIRING AS SCHEDULED
- H - WIRING HARNESS PERMANENTLY AFFIXED
- I - PUMP CONTROL WIRING FROM PUMPS 2; 2 & 3; 4; OR D2, AS APPLICABLE
- J - 1 1/2" PVC COATED CONDUIT NIPPLE
- K1 - NEMA 4X 316 STAINLESS STEEL JUNCTION BOX WITH GASKETED FRONT COVER, SINGLE QUARTER TURN, OIL-TIGHT LATCH AND PADLOCKING PROVISIONS, HOFFMAN A24H2010SS6LP OR EQUAL. MINIMUM SIZE: 20"W X 24"H X 10"D
- K2 - NEMA 4X 316 STAINLESS STEEL JUNCTION BOX WITH GASKETED FRONT COVER, SINGLE QUARTER TURN, OIL-TIGHT LATCH AND PADLOCKING PROVISIONS, HOFFMAN A16H1206SS6LP OR EQUAL. MINIMUM SIZE: 12"W X 16"H X 6"D
- L - NAMEPLATE, 3/8" HIGH LETTERS IN WHITE ON BLACK BAKELIGHT (SEE NAMEPLATE SCHEDULE)
- M - TRANSDUCER BREATHER PERMANENTLY AFFIXED
- N - EXPANSION JOINT/SLEEVES

**GENERAL NOTES:**

- A. NAMEPLATES SHALL BE MOUNTED TO JUNCTION BOXES USING 316 STAINLESS STEEL HARDWARE.
- B. MAINTAIN MINIMUM SEPARATION REQUIRED UNDER NEC ARTICLE 504, BETWEEN INTRINSICALLY SAFE CONTROL WIRING AND NON-INTRINSICALLY SAFE MOTOR FEEDER WIRING.
- D. UNLESS OTHERWISE NOTED, ALL EXPOSED CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL.
- E. UNLESS OTHERWISE NOTED, ALL NUTS, BOLTS, SCREWS WASHERS, ETC SHALL BE TYPE 316 STAINLESS STEEL.
- F. ALL UNDERGROUND CONDUITS TO BE ENCASED IN REINFORCED CONCRETE DUCT BANK.
- G. PROVIDE ANTI-CORROSIVE SPRAY ON ANY BARE METAL PARTS OR EXPOSED WIRE.



LEVEL SIGNAL JUNCTION BOX ELEVATION  
C  
DETAIL  
NTS



PUMP CABLE JUNCTION BOX  
D  
DETAIL  
NTS

APPROVED:	DATE:
DESIGNED BY: RK, SJ	DRAWN BY: HW

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SIMS BAYOU SOUTH WWTP IMPROVEMENTS PACKAGE 3

DETAILS SHEET 6

ELECTRICAL

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E-99-06	TAHA LOTIA	
	SHEET NO. XX2710F X271	