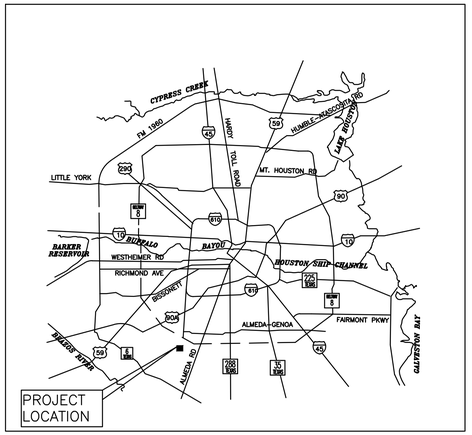
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CAPITAL PROJECTS

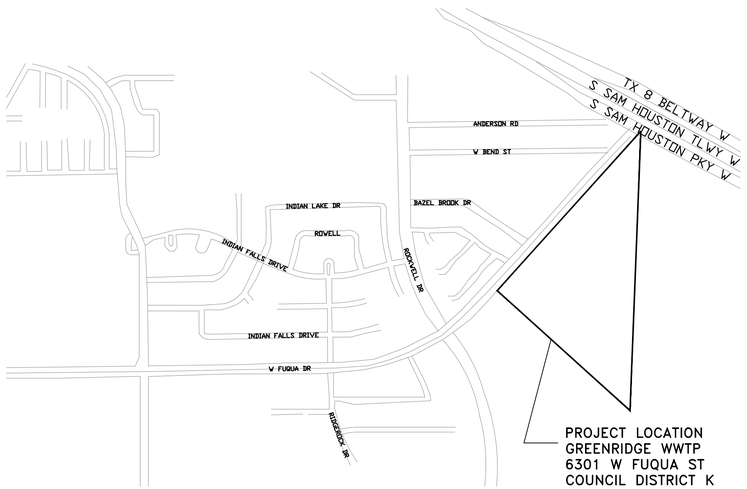
GREENRIDGE WASTEWATER TREATMENT PLANT IMPROVEMENTS



LOCATION MAP

WBS NO. R-000265-0162-4

90% SUBMITTAL



VICINITY MAP
KEY MAP NO 571-X
GIMS MAP NO 5150-A

TDLR EABPR _____

MAYOR
JOHN WHITMIRE

CONTROLLER
CHRIS HOLLINS

DISTRICT
COUNCIL MEMBERS

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

COUNCIL MEMBERS
AT–LARGE

JULIAN RAMIREZ — POSITION 1
WILLIE DAVIS — POSITION 2
TWILA CARTER — POSITION 3
LETITIA PLUMMER — POSITION 4
SALLIE ALCORN — POSITION 5

STATE OF TEXAS
MARK ROETZEL
57660
LICENSED
PROFESSIONAL ENGINEER
12-29-25

NO.	DATE	REVISION	APP.

PARSONS
1 RIVERWAY DRIVE, SUITE 1100
HOUSTON, TEXAS 77056
(713) 871–7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. ######

PARKS–FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

FOR CITY OF HOUSTON USE ONLY

G–01

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NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

STATE OF TEXAS
MARK ROETZEL
57660
LICENSED
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12-29-25

90% SUBMITTAL NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SHEET INDEX

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
G-02	SHEET NO. 02 OF 256

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\G-02 SHEET INDEX.dwg Jan 06, 2026 - 5:15am User: p005609F

40 20 0 40 80

SCALE: 1"=40'-0"
D SIZE DRAWING

THIS PROJECT SITE IS IN UNSHADED ZONE X, AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO F.I.R.M. MAP PANEL 48201C1005L, DATED JUNE 18, 2007.
500 YEAR FLOOD ELEVATION IS 60.10
THIS PROJECT IS IN THE SIMS BAYOU WATERSHED.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

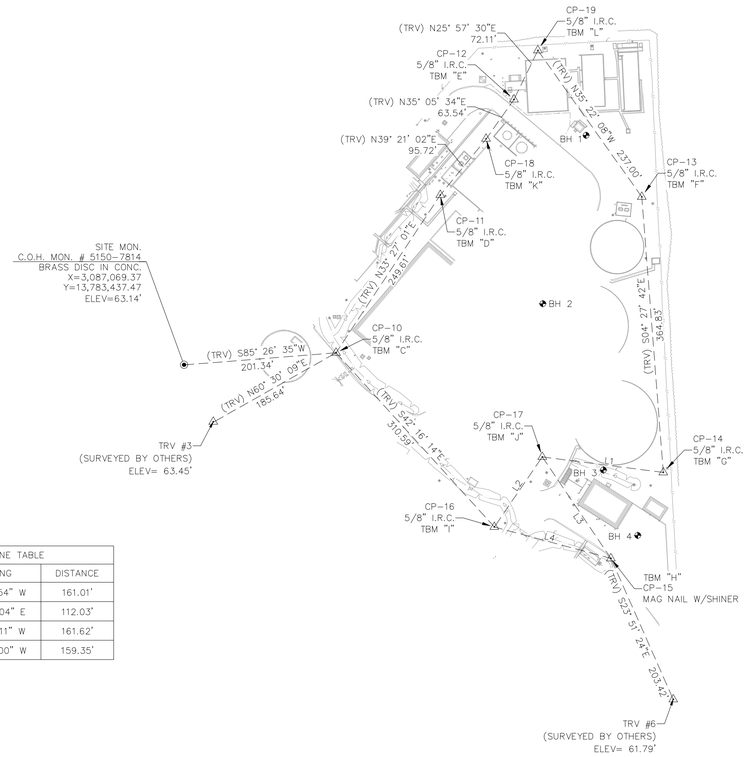
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
OVERALL SITE LAYOUT EXISTING CONDITIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
G-03	SHEET NO. 03 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\G-03 OVERALL SITE LAYOUT EXISTING CONDITIONS.dwg Jan 06, 2026 - 2:10am User: p005609F



TRAVERSE LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 82°41'54" W	161.01'
L2	N 34°25'04" E	112.03'
L3	N 34°04'11" W	161.62'
L4	N 74°55'00" W	159.35'

TSARP CONVERSION REFERENCE MONUMENT

(TSARP) HARRIS COUNTY FLOODPLAIN REFERENCE MARK NUMBER 030425
FLOOD PLAIN REFERENCE MARK, BRASS DISC, STAMPED 030425.
FROM THE INTERSECTION OF SOUTH POST OAK ROAD AND BELTWAY 8, TRAVEL NORTHWEST ON BELTWAY 8 FEEDER ROAD 0.47 MILE TO A CULVERT. MONUMENT IS LOCATED ON THE NORTH HEADWALL.
PUBLISHED ELEV= 58.07' (NAVD 1988, 2001 ADJUSTMENT)
OBSERVED ELEV= 57.99' (NAVD 1988, (CORS '96) COMPUTED USING GEOID 12B)

TBM LIST:

TBM 'A', CP- 1, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.61'

TBM 'B', CP- 2, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=65.01'

TBM 'C', CP-10, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.29'

TBM 'D', CP-11, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=64.72'

TBM 'E', CP-12, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.39'

TBM 'F', CP-13, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.10'

TBM 'G', CP-14, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.42'

TBM 'H', CP-15, MAG NAIL W/SHINER (SEE RECOVERY SKETCH)
ELEV=62.30'

TBM 'I', CP-16, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.09'

TBM 'J', CP-17, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=63.29'

TBM 'K', CP-18, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=64.24'

TBM 'L', CP-19, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=62.71'

TBM 'M', CP-20, 5/8-INCH IRON ROD WITH CAP. (SEE RECOVERY SKETCH)
ELEV=62.80'

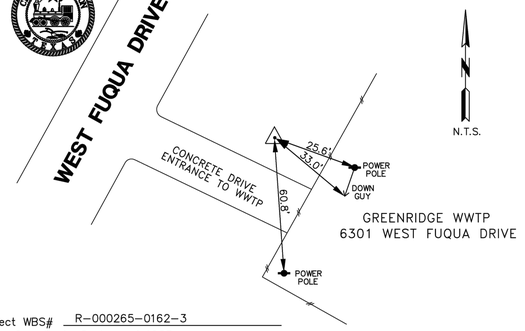
TBM 'N', CP-21, X-CUT IN CONCRETE. (SEE RECOVERY SKETCH)
ELEV=62.66'

HORIZONTAL AND VERTICAL TRAVERSE TABLE				
POINT #	GRID NORTHING	GRID EASTING	ELEVATION	DESCRIPTION
3	13,783,362.42'	3,087,107.99'	63.45'	FND. X-CUT
6	13,782,996.10'	3,087,714.98'	61.79'	FND. 60D NAIL
10	13,783,453.38'	3,087,269.99'	63.29'	SET 5/8" I.R.C.
11	13,783,661.61'	3,087,407.56'	64.72'	SET 5/8" I.R.C.
12	13,783,787.60'	3,087,504.76'	63.39'	SET 5/8" I.R.C.
13	13,783,659.20'	3,087,673.49'	63.10'	SET 5/8" I.R.C.
14	13,783,295.52'	3,087,701.87'	63.42'	SET 5/8" I.R.C.
15	13,783,182.11'	3,087,632.72'	62.30'	SET MAG NAIL W/SHINER
16	13,783,223.57'	3,087,478.88'	63.09'	SET 5/8" I.R.C.
17	13,783,315.98'	3,087,542.19'	63.29'	SET 5/8" I.R.C.
18	13,783,735.81'	3,087,467.97'	64.24'	SET 5/8" I.R.C.
19	13,783,852.43'	3,087,536.33'	62.71'	SET 5/8" I.R.C.
20	13,783,358.74'	3,087,165.25'	62.80'	SET 5/8" I.R.C.
21	13,783,180.29'	3,087,411.33'	62.66'	SET X-CUT

BOREHOLE TABLE				
POINT #	GRID NORTHING	GRID EASTING	ELEVATION	DESCRIPTION
25000	13,783,740.38'	3,087,599.98'	63.69'	BH 1
25001	13,783,518.14'	3,087,542.82'	64.41'	BH 2
25002	13,783,298.66'	3,087,622.85'	62.85'	BH 3
25003	13,783,212.40'	3,087,668.15'	62.84'	BH 4

CITY OF HOUSTON

CITY SURVEY 5150-7814
SITE CONTROL MONUMENT



GREENRIDGE WWTP
6301 WEST FUQUA DRIVE

Project WBS# R-000265-0162-3
Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet
X= 3,087,069.37
Y= 13,783,437.47

Lat.= N 29°36'08.90"
Lon.= W 95°28'45.85"

Keymap Page: 571 X
Orthometric Elevation = 63.14
Ellipsoid Height= -26.13
Geoid: GEOID 12B
Datum Source & Adjustment:
NAD '83 (CORS '96)

Reference Frame Used: ITRF (EPOCH: 2010.0000)
Vertical Adjustment used: NAVD '88 (CORS '96)
General Location: EAST OF W. FUQUA DR. 26' NORTH CONC. DRIVE ENTR. TO GREENRIDGE WWTP
Date Set: 04-17-2014 Type of Mark: BRASS DISK IN CONC.

3 Nearest project control points (bearings and distances stated below):
TO CP-1, 5/8" IRON ROD W/CAP, S 44° 05' 30" W ~ 52.20'
TO CP-2, 5/8" IRON ROD W/CAP, N 80° 38' 41" W ~ 261.66'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor = 0.999875595957 Grid
3. Surface= S.F.

United Engineers, Inc.
10375 RICHMOND AVE., SUITE 1325
HOUSTON, TEXAS 77042
ENGINEERING FIRM # F-00142
TEL (713) 271-2900
FAX (713) 271-2905
SURVEY FIRM # 101178-00

Revised: July 7, 2025
City of Houston, Harris County, Texas

100 0 50 100 200
SCALE: 1" = 100'

LEGEND:
- HCAD PROPERTY LINE
- ~10' U.E. EASEMENT
- RIGHT-OF-WAY PROPERTY LINE
- (TRV.) N 00° 00' 00" E TRAVERSE LINE
- (BL.) N 00° 00' 00" E BASELINE
- 69869 CONTROL MONUMENTS

GENERAL NOTES:
CP= Indicates Traverse Point
BP# indicates Baseline Point
(TRV.) indicates Traverse Line
(BL) indicates Baseline Line
CM indicates Control Monument
Fnd. indicates Found
RT indicates Right
LT indicates Left
XC indicates 'X' Cut
I.P. indicates Iron Pipe
I.R. indicates Iron Rod
I.R.C. indicates Iron Rod w/Cap
P.I.P. indicates Pinch Iron Pipe
MAG indicates MAG Nail
U.T.S. indicates unable to set
PC indicates Point of Curve
PCC indicates Point of Compound Curvature
PT indicates Point of Tangent
TBM indicates Temporary Benchmark
#XXXX indicates Address
W.L.E. indicates Water Line Easement
U.E. indicates Utility Easement
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H.C.C.F. indicates Harris County Clerk's File
O.P.R.R.P.H.C., TX. indicates Official Public Records Real Property Harris County, Texas

NOTES:
1. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE TIED TO THE NSRS AND EXPRESSED IN THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE 4204, NAD 83' (2011), ITRF (EPOCH 2010.0000), NAVD '88 (GD 12B).
2. ALL DISTANCES SHOWN HEREON ARE SURFACE VALUES. ALL COORDINATES SHOWN HEREON ARE GRID VALUES UNLESS OTHERWISE NOTED. TO CONVERT SURFACE VALUES TO GRID VALUES MULTIPLY BY THE SCALE FACTOR OF 0.999875595957.
3. THE RIGHT OF WAY SHOWN HEREON IS BASED ON THE BEST AVAILABLE EVIDENCE FOUND IN THE FIELD AT THE TIME OF THE SURVEY COUPLED WITH THE DOCUMENTS OF RECORD IN THE COUNTY CLERK'S OFFICE PROVIDED BY COURTHOUSE SPECIALISTS.
4. TO CONVERT ELEVATIONS FROM NAVD 88' (GD 12B) DATUM TO NAVD 88' (GD 99) ADD 0.29 FEET. HELD TSARP 030425 FOR CONVERSION FACTOR.
5. THE TRACTS OF LAND SHOWN ON THIS ALIGNMENT MAP LIE WITHIN ZONE X (UNSHADED) AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE MAP, ACCORDING TO PANEL #305 OF 575, FIRM MAP NUMBER 48157C0305M FOR FORT BEND COUNTY, TEXAS, AND INCORPORATED AREAS. REVISED JANUARY 29, 2021.

NO.	DATE	REVISION	APP.

PARSONS
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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
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SURVEYED BY: UNITED ENGINEERS, INC
FIRM NO. 101178-00
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SURVEY CONTROL MAP
SHEET 1 OF 1

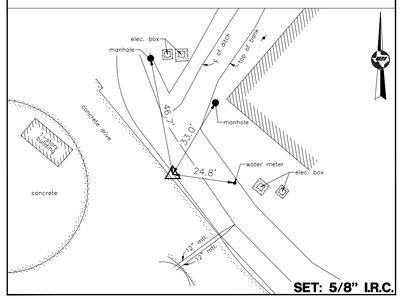
WBS NUMBER
R-000265-0162-3
DRAWING SCALE
1" = 100'
CITY OF HOUSTON PM
SHAN LEI, P.E.
SHEET NO. OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

INTERIM REVIEW ONLY
Document incomplete: Not intended for permit or construction.
Surveyor Christin M. Norris
TX R.P.L.S. No. 6207
Date: 08/29/2025

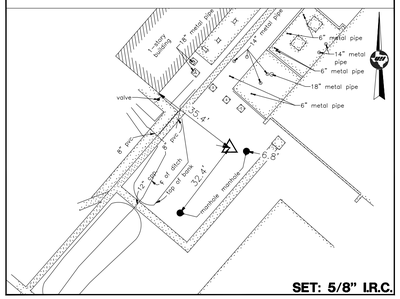
K:\DIV\224-082 - Greenridge WWTP\Survey\Dwg\SURVEY CONTROL MAP\224-082 SCM MASTER.dwg Sep 30, 2025

CONTROL PT. #10



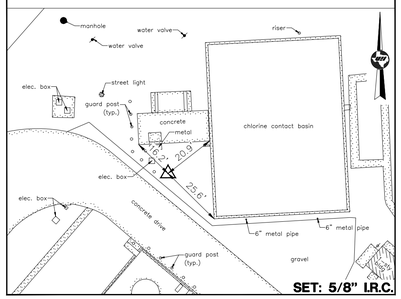
SET: 5/8" I.R.C.

CONTROL PT. #11



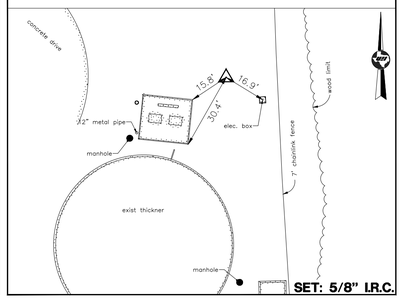
SET: 5/8" I.R.C.

CONTROL PT. #12



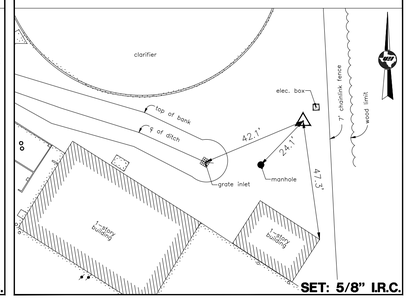
SET: 5/8" I.R.C.

CONTROL PT. #13



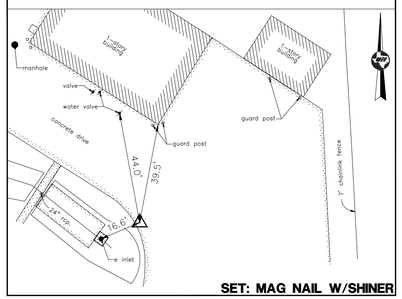
SET: 5/8" I.R.C.

CONTROL PT. #14



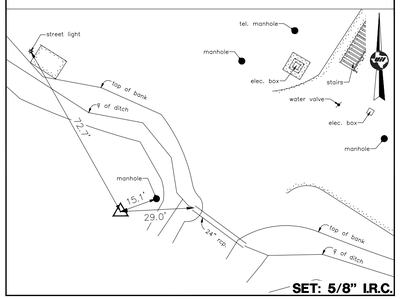
SET: 5/8" I.R.C.

CONTROL PT. #15



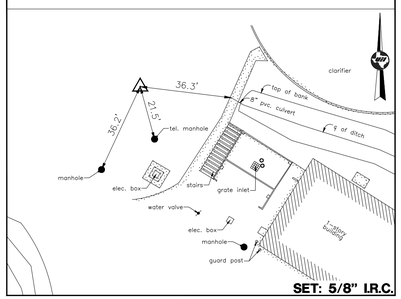
SET: MAG NAIL W/SHINER

CONTROL PT. #16



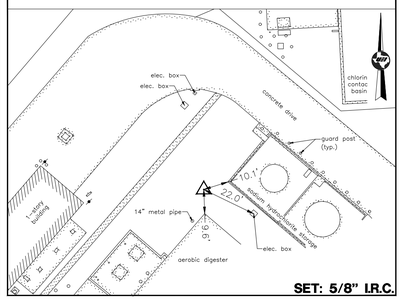
SET: 5/8" I.R.C.

CONTROL PT. #17



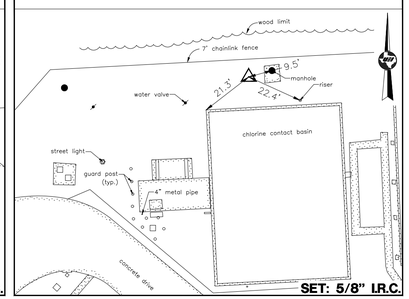
SET: 5/8" I.R.C.

CONTROL PT. #18



SET: 5/8" I.R.C.

CONTROL PT. #19



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- RIGHT-OF-WAY PROPERTY LINE
- (TRV.) N 00° 00' 00" E — TRAVERSE LINE
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NO.	DATE	REVISION	APP.

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SUITE 1100
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SURVEYED BY: UNITED ENGINEERS, INC
FIRM NO. 101178-00
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

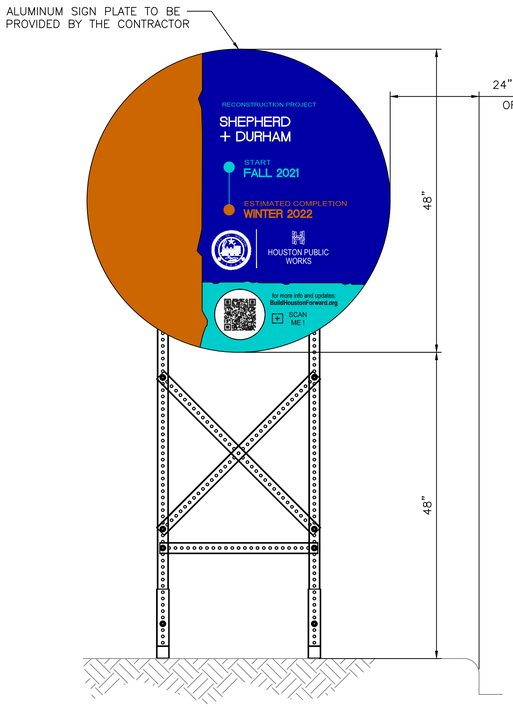
SWINGTIES
SHEET 1 OF 1

WBS NUMBER
R-000265-0162-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
SHAN LEI, P.E.
SHEET NO. OF 254

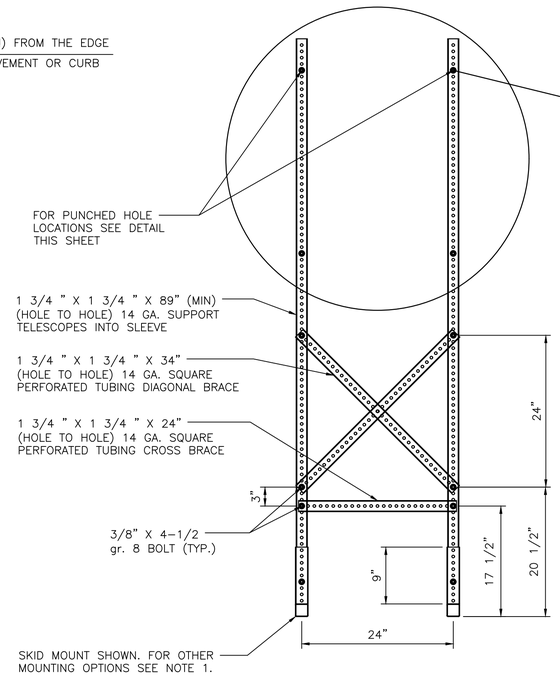
90% SUBMITTAL NOT FOR CONSTRUCTION

INTERIM REVIEW ONLY
Document incomplete: Not intended for permit or construction.
Surveyor Christin M. Norris
TX R.P.L.S. No. 6207
Date: 08/29/2025

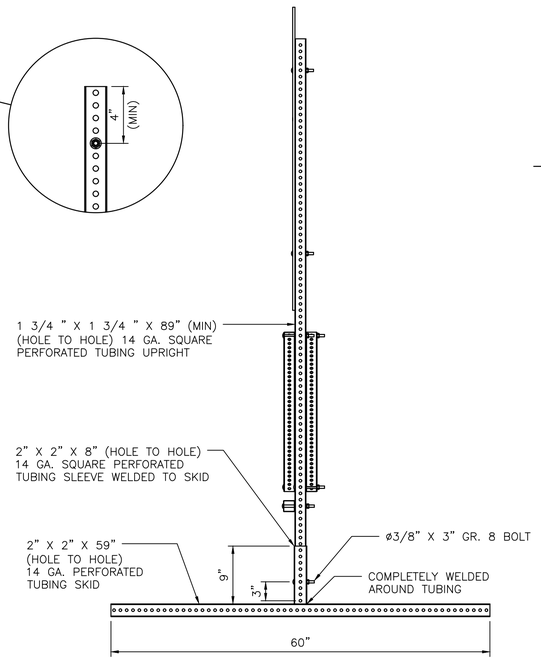
K:\CIV\224-082 - Greenridge WWTP\Survey\Dwg\SURVEY CONTROL MAP\224-082 SCM SWINGTIE MASTER.dwg Aug 28 2025



FRONT VIEW



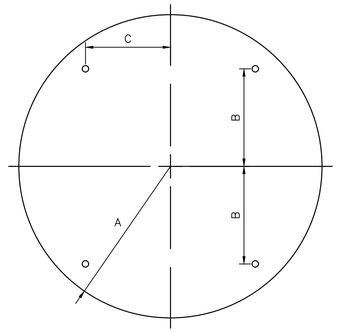
FRONT VIEW



SIDE VIEW

PROJECT SIGN – 48"

SKID MOUNTED SUPPORTS FOR 48" PROJECT SIGN



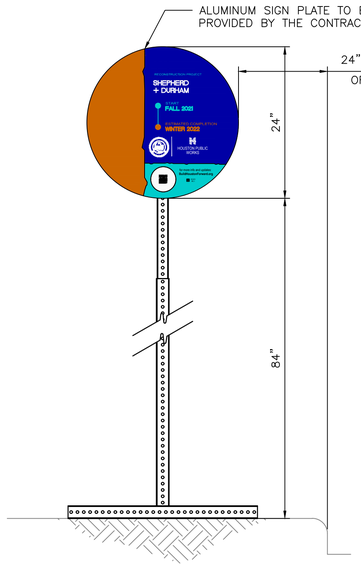
CIRCLE

A	B	C	T
24"	15"	12"	0.080"

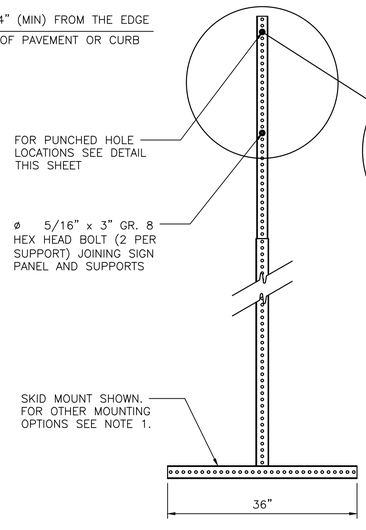
48" SIGN PLATE HOLE DETAIL

NOTES:

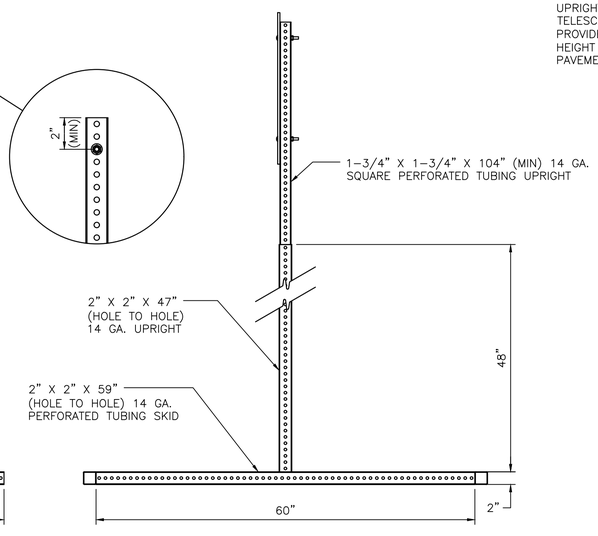
1. ALLOWABLE POST INSTALLATION METHODS ARE: CONCRETE FOOTING, SURFACE MOUNTING, SKID MOUNTING AND PILE DRIVEN POSTS.
2. FOR POST INSTALLATION WITH CONCRETE FOOTING, REFER TO DETAIL 01554–01.
3. FOR SURFACE MOUNTED POST INSTALLATION, REFER TO DETAIL 01554–02.
4. FOR SKID MOUNTING REQUIREMENTS REFER TO 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 TUBING, AND SIGN FASTENERS SHALL BE GALVANIZED STEEL PER SPECIFICATION 01582.
8. CONTRACTOR TO PLACE PROJECT SIGN BY CONSTRUCTION PERMIT BOARD ALONG WITH SWPPP



FRONT VIEW



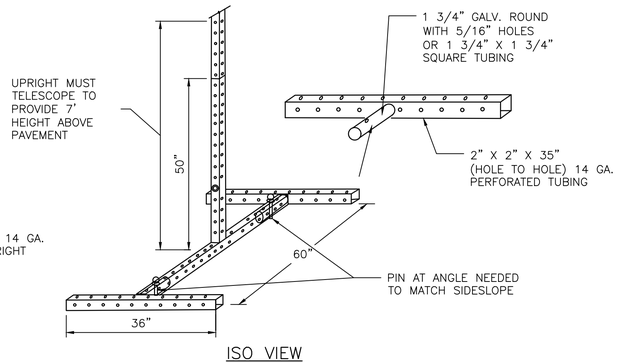
FRONT VIEW



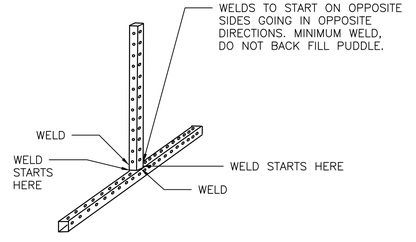
SIDE VIEW

PROJECT SIGN – 24"

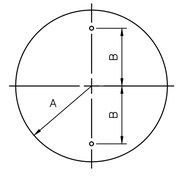
SKID MOUNTED SUPPORTS FOR 24" PROJECT SIGN



ISO VIEW



ISO VIEW



A	B	C
12"	8"	0.080"

24" SIGN PLATE HOLE DETAIL

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PROJECT SIGN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
G-07	SHEET NO. 07 OF 256

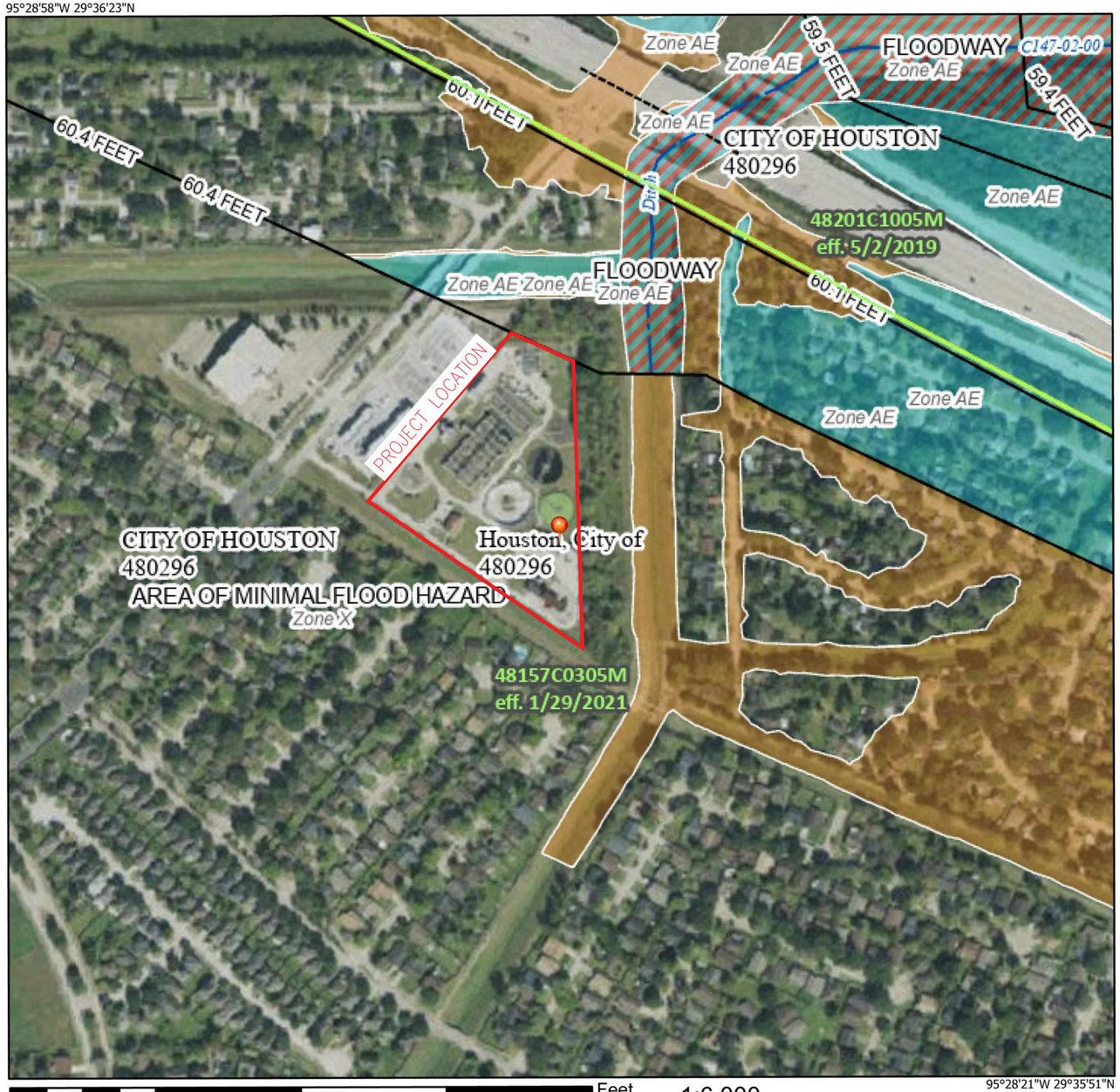
90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\G-07 PROJECT SIGN.dwg Jan 06, 2026 - 2:19pm User: p005609F

National Flood Hazard Layer FIRMette

FEMA

95°28'58"W 29°36'23"N



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 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*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary (1)
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/17/2025 at 8:02 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOTE:
1. FULL FIRM NOT SHOWN DUE TO COUNTY DIVISION BETWEEN HARRIS AND FORT BEND COUNTY NEAR PROJECT LOCATION

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

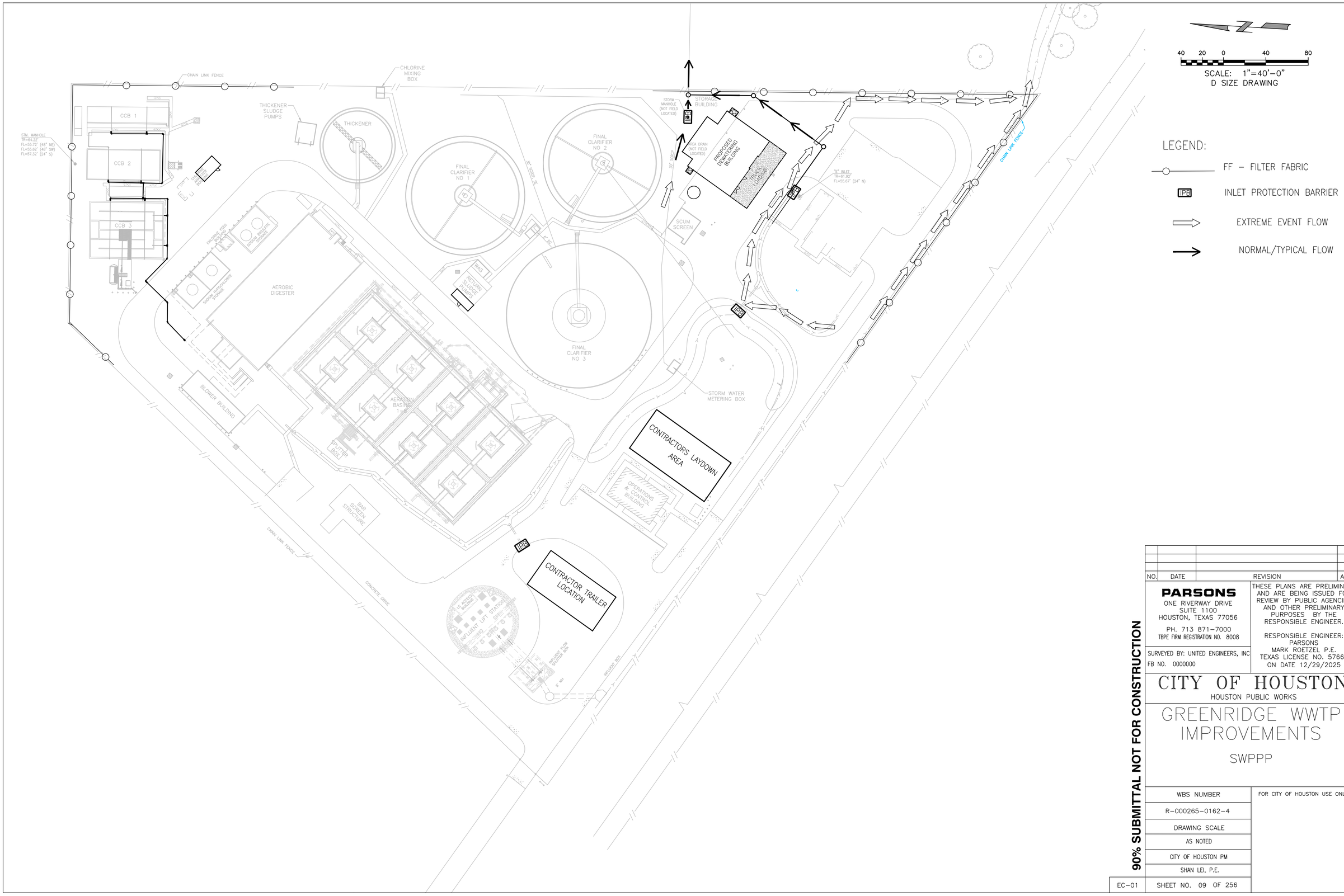
GREENRIDGE WWTP IMPROVEMENTS

FEMA MAP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
G-08	SHEET NO. 08 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\G-08 FEMA.dwg Jan 06, 2026 - 2:24am User: p005609F



J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\EC-01 SWPPP.dwg Jan 05, 2026 - 8:14pm User: p005609F

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL P.E.
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
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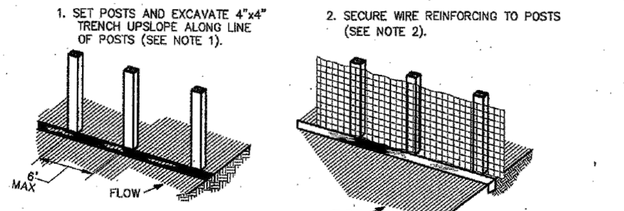
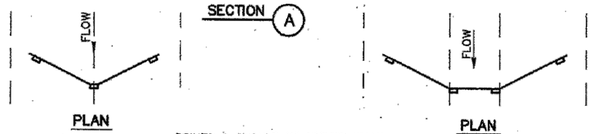
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SWPPP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
EC-01	SHEET NO. 09 OF 256





"V-DITCH" SECTION/ELEVATION

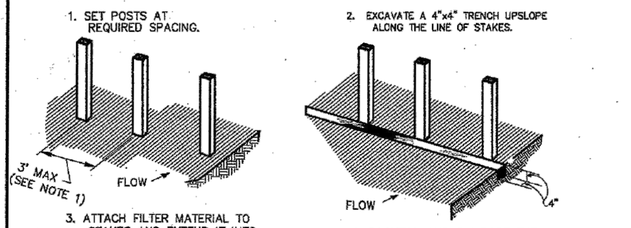
TRAPEZOIDAL SECTION/ELEVATION

CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

X—(RFB)—X
SYMBOL

REINFORCED FILTER FABRIC BARRIER

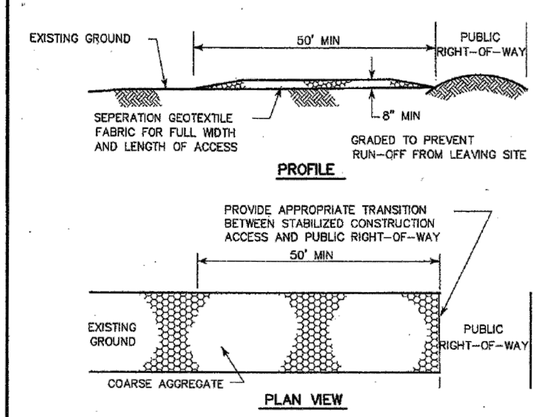


CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

X—(FF)—X
SYMBOL

FILTER FABRIC BARRIER

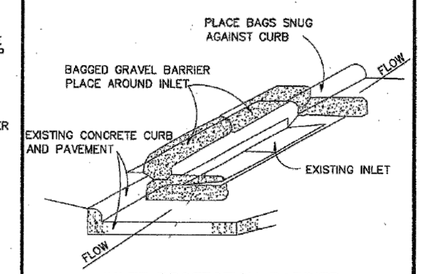


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

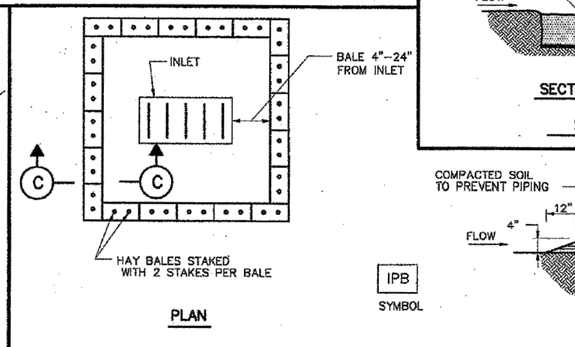
(SC)
SYMBOL

STABILIZED CONSTRUCTION ACCESS

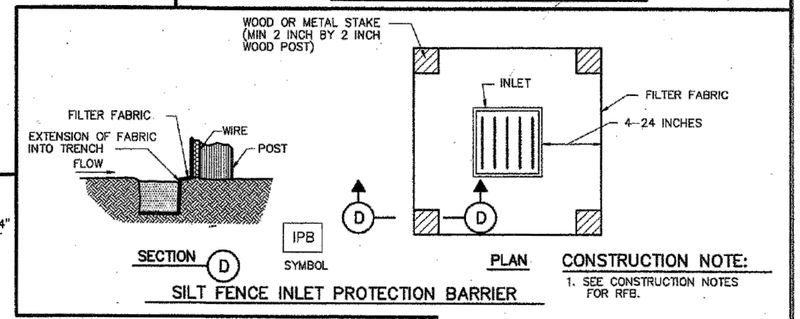


INLET PROTECTION BARRIER

(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER



HAY BALE INLET PROTECTION BARRIER



SILT FENCE INLET PROTECTION BARRIER

CONSTRUCTION NOTE:

1. SEE CONSTRUCTION NOTES FOR RFB.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED	APPROVED
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 01571-01

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SWPPP DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

EC-02 | SHEET NO. 10 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\EC-02 SWPPP DETAILS.dwg Jan 06, 2026 - 2:01am User: p005609F

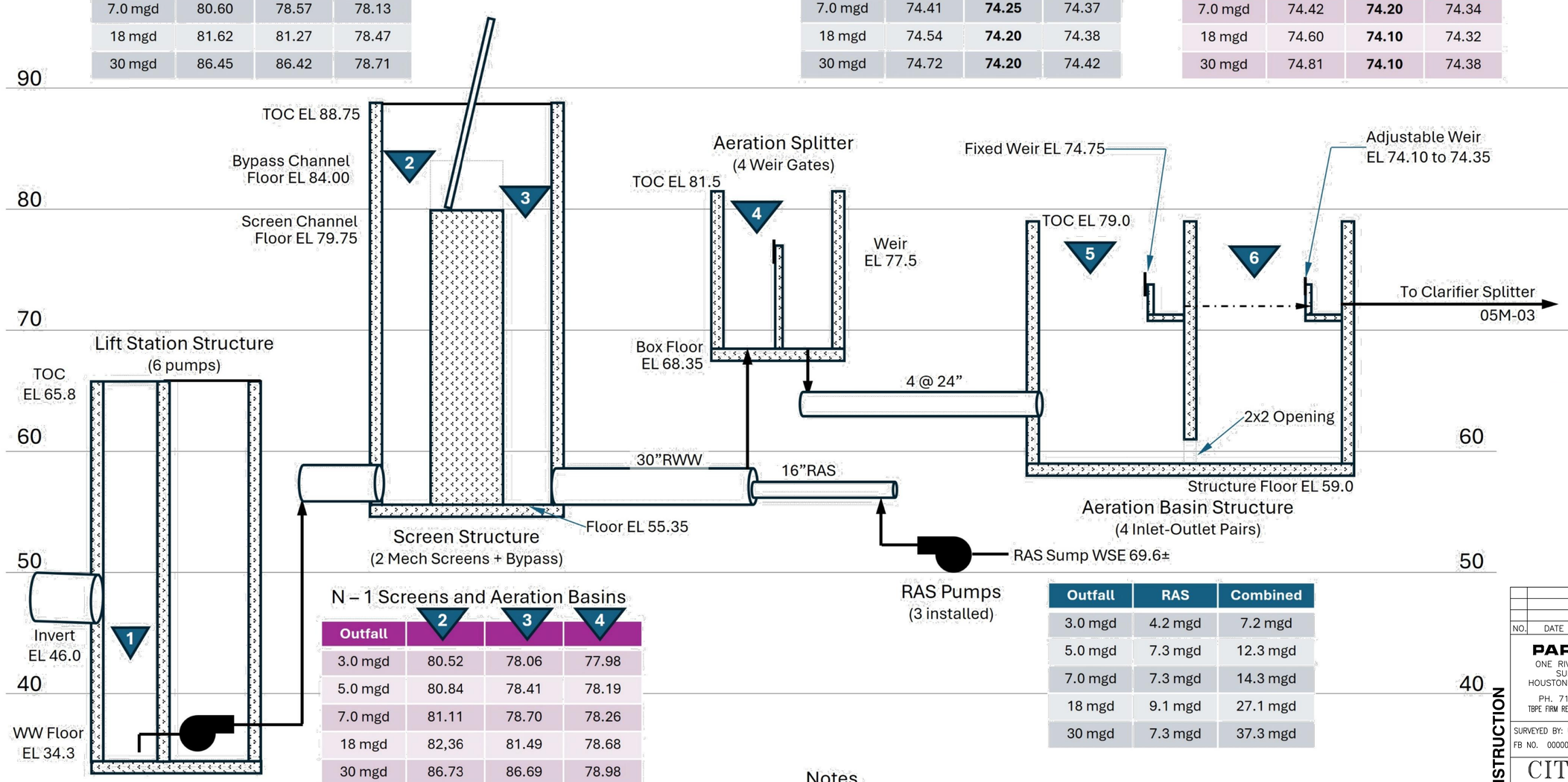
Outfall	2	3	4
3.0 mgd	80.24	77.98	77.89
5.0 mgd	80.43	78.29	78.06
7.0 mgd	80.60	78.57	78.13
18 mgd	81.62	81.27	78.47
30 mgd	86.45	86.42	78.71

All Aeration Basins

Outfall	5	Weir	6
3.0 mgd	74.33	**74.25**	74.32
5.0 mgd	74.39	**74.25**	74.35
7.0 mgd	74.41	**74.25**	74.37
18 mgd	74.54	**74.20**	74.38
30 mgd	74.72	**74.20**	74.42

N – 1 Aeration Basins

Outfall	5	Weir	6
3.0 mgd	74.31	**74.20**	74.29
5.0 mgd	74.39	**74.20**	74.33
7.0 mgd	74.42	**74.20**	74.34
18 mgd	74.60	**74.10**	74.32
30 mgd	74.81	**74.10**	74.38



N – 1 Screens and Aeration Basins

Outfall	2	3	4
3.0 mgd	80.52	78.06	77.98
5.0 mgd	80.84	78.41	78.19
7.0 mgd	81.11	78.70	78.26
18 mgd	82,36	81.49	78.68
30 mgd	86.73	86.69	78.98

Outfall	RAS	Combined
3.0 mgd	4.2 mgd	7.2 mgd
5.0 mgd	7.3 mgd	12.3 mgd
7.0 mgd	7.3 mgd	14.3 mgd
18 mgd	9.1 mgd	27.1 mgd
30 mgd	7.3 mgd	37.3 mgd

Wet Well key levels	1	1 pump	2 pumps	3 pumps	4 pumps
Lag 3 Start	50.05			26.8 mgd	30.5 mgd
Lag 2 Start, Lag 3 Stop	45.05		19.0 mgd	22.4 mgd	26.8 mgd
Lag 1 Start, Lag 2 Stop	44.05	9.8 mgd	17.4 mgd	21.5 mgd	
Lead Start, Lag 1 Stop	42.80	9.0 mgd	15.4 mgd		
Lead Stop	41.55	8.2 mgd			

Notes

1. Elevations, structural dimensions, and pipe sizes used to calculate the hydraulic profile are taken from record drawings furnished by the City of Houston without field verification.
2. The outfall flow rate measured in the meter vault by CCB-1 is used to characterize wastewater flow through all treatment structures in the profile.
3. Start-stop operation of influent lift station pumps with constant speed motors delivers wastewater intermittently to the screen structure when hourly average of the metered flow rate is less than 8.2 mgd.
4. Observed water surface elevation (WSE) at any point in the treatment process will only conform with the hydraulic profile when averaged over a period greater than 60 minutes with anticipated divergence greater than 0.5-ft in the screen structure when average hourly flow is less than 5.0 mgd.
5. Hydraulic profile assumes plant will run single RAS pump when metered flow <5.0 mgd, two RAS pumps when metered flow between 5.0 and 9.0 mgd or >20 mgd, and three RAS pumps when metered flow between 9 and 20 mgd.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

PLANT HYDRAULIC PROFILE 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 11 OF 256	

P–01

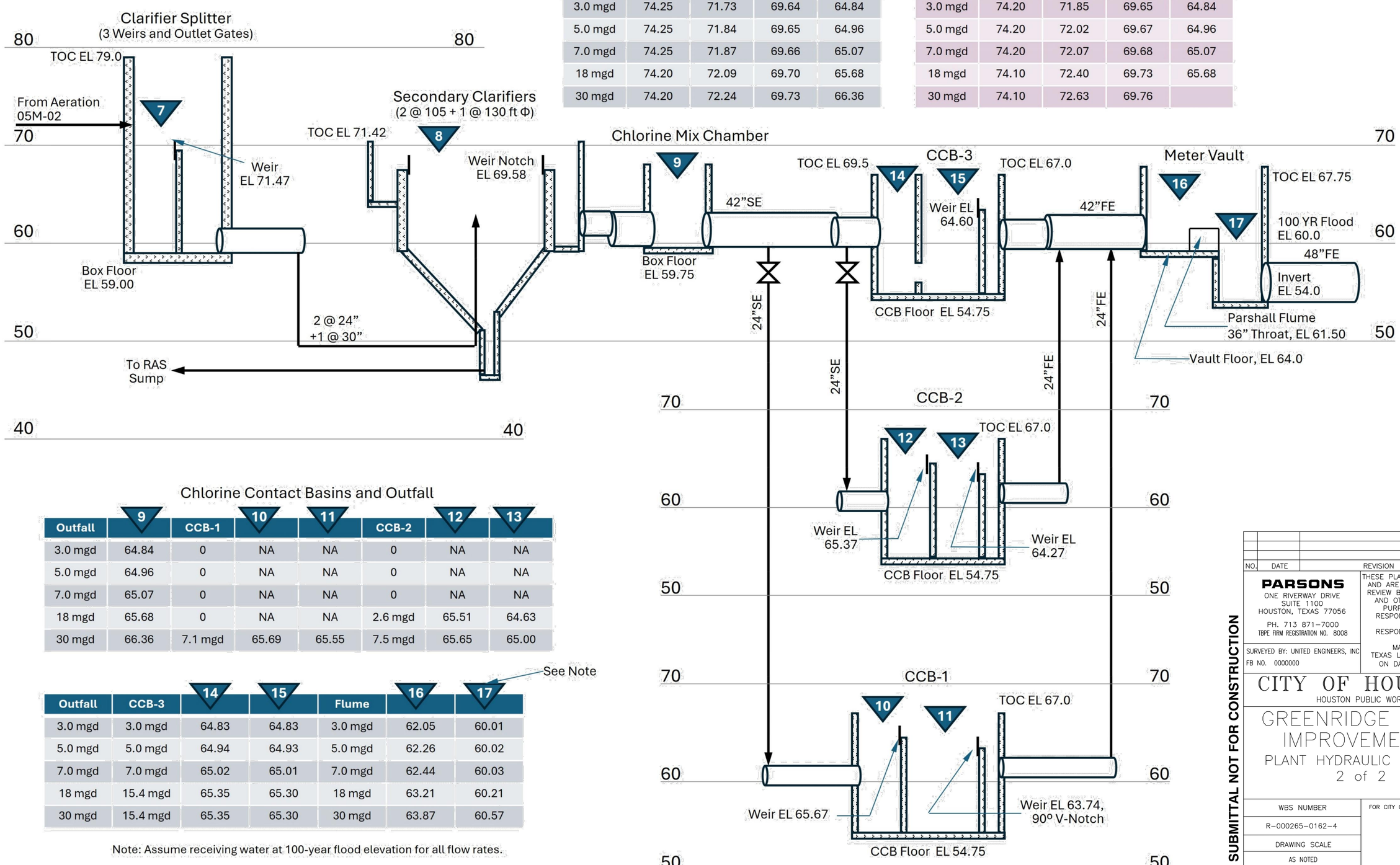
J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\P–01 Plant Hydraulic Profile 1 of 2.dwg Jan 06, 2026 – 2:45am User: p005609F

All Secondary Clarifiers

Outfall	AB Weir	7	8	9
3.0 mgd	74.25	71.73	69.64	64.84
5.0 mgd	74.25	71.84	69.65	64.96
7.0 mgd	74.25	71.87	69.66	65.07
18 mgd	74.20	72.09	69.70	65.68
30 mgd	74.20	72.24	69.73	66.36

N – 1 Secondary Clarifiers

Outfall	AB Weir	7	8	9
3.0 mgd	74.20	71.85	69.65	64.84
5.0 mgd	74.20	72.02	69.67	64.96
7.0 mgd	74.20	72.07	69.68	65.07
18 mgd	74.10	72.40	69.73	65.68
30 mgd	74.10	72.63	69.76	



Chlorine Contact Basins and Outfall

Outfall	9	CCB-1	10	11	CCB-2	12	13
3.0 mgd	64.84	0	NA	NA	0	NA	NA
5.0 mgd	64.96	0	NA	NA	0	NA	NA
7.0 mgd	65.07	0	NA	NA	0	NA	NA
18 mgd	65.68	0	NA	NA	2.6 mgd	65.51	64.63
30 mgd	66.36	7.1 mgd	65.69	65.55	7.5 mgd	65.65	65.00

See Note

Outfall	CCB-3	14	15	Flume	16	17
3.0 mgd	3.0 mgd	64.83	64.83	3.0 mgd	62.05	60.01
5.0 mgd	5.0 mgd	64.94	64.93	5.0 mgd	62.26	60.02
7.0 mgd	7.0 mgd	65.02	65.01	7.0 mgd	62.44	60.03
18 mgd	15.4 mgd	65.35	65.30	18 mgd	63.21	60.21
30 mgd	15.4 mgd	65.35	65.30	30 mgd	63.87	60.57

Note: Assume receiving water at 100-year flood elevation for all flow rates.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

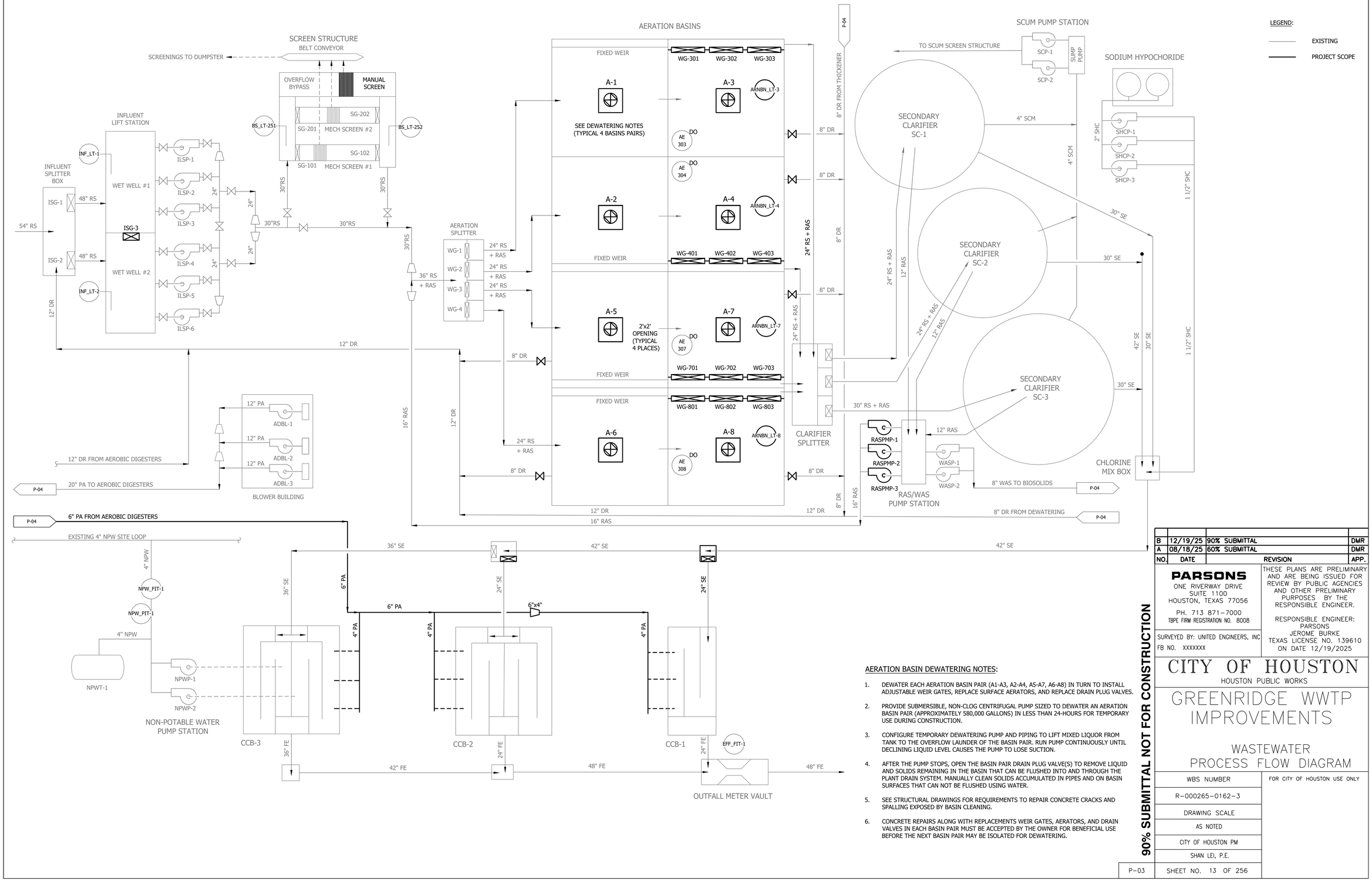
PLANT HYDRAULIC PROFILE 2 of 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
P–02	SHEET NO. 12 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\P-02 Plant Hydraulic Profile 2 of 2.dwg Jan 06, 2026 – 2:43pm User: p005609F

\\cobok09fs01\General\Temp\DMR\Parsons outside Boko\Houston Greenridge WW Treatment Plt\CAD\Process\P-03_Rev B.dwg Dec 15, 2025 - 11:53am User: p0014076



AERATION BASIN DEWATERING NOTES:

1. DEWATER EACH AERATION BASIN PAIR (A1-A3, A2-A4, A5-A7, A6-A8) IN TURN TO INSTALL ADJUSTABLE WEIR GATES, REPLACE SURFACE AERATORS, AND REPLACE DRAIN PLUG VALVES.
2. PROVIDE SUBMERSIBLE, NON-CLOG CENTRIFUGAL PUMP SIZED TO DEWATER AN AERATION BASIN PAIR (APPROXIMATELY 580,000 GALLONS) IN LESS THAN 24-HOURS FOR TEMPORARY USE DURING CONSTRUCTION.
3. CONFIGURE TEMPORARY DEWATERING PUMP AND PIPING TO LIFT MIXED LIQUOR FROM TANK TO THE OVERFLOW LAUNDER OF THE BASIN PAIR. RUN PUMP CONTINUOUSLY UNTIL DECLINING LIQUID LEVEL CAUSES THE PUMP TO LOSE SUCTION.
4. AFTER THE PUMP STOPS, OPEN THE BASIN PAIR DRAIN PLUG VALVE(S) TO REMOVE LIQUID AND SOLIDS REMAINING IN THE BASIN THAT CAN BE FLUSHED INTO AND THROUGH THE PLANT DRAIN SYSTEM. MANUALLY CLEAN SOLIDS ACCUMULATED IN PIPES AND ON BASIN SURFACES THAT CAN NOT BE FLUSHED USING WATER.
5. SEE STRUCTURAL DRAWINGS FOR REQUIREMENTS TO REPAIR CONCRETE CRACKS AND SPALLING EXPOSED BY BASIN CLEANING.
6. CONCRETE REPAIRS ALONG WITH REPLACEMENTS WEIR GATES, AERATORS, AND DRAIN VALVES IN EACH BASIN PAIR MUST BE ACCEPTED BY THE OWNER FOR BENEFICIAL USE BEFORE THE NEXT BASIN PAIR MAY BE ISOLATED FOR DEWATERING.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

90% SUBMITTAL NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

WASTEWATER PROCESS FLOW DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
P-03	SHEET NO. 13 OF 256

LEGEND:

EXISTING

PROJECT SCOPE

FUTURE LINE

NORMALLY OPEN VALVE

NORMALLY CLOSED VALVE

CONTROL VALVE

2" PW
POTABLE WATER SUPPLY

1 1/2" PLY

PLY_FIT-1

DIG_FIT-1

FE

POLYMER MAKE-UP
PMU-101/102
INCLUDING
POLYMER TOTES

6" GOOSENECK
VENT

SGLTK_LT-1

24"
MW

6"

4"

TK-101
SLUDGE
HOLDING
TANK

24"
MW

4" DR

8"x4"

DEWATERED
CAKE

BELT PRESS
BFP-101

4" DS

BELT PRESS
BFP-102

1 1/2" PLY

4" DS

FE

4" DS

6" DS

8"x4"

8"x6"

6" DS

DEWATERED
FEED PUMPS
DWP-101/102

COLLECTION CONVEYOR
CNV-101

INCLINED CONVEYOR
CNV-102

BWP-101

BWP-102

2" NPW

HAUL-AWAY

6" DS

8" DR
OVERFLOW TO
PLANT DRAIN

P-03

FILTRATE

PLANT DRAIN

8" DR

2 1/2" NPW

4" NPW (EXIST SITE LOOP)

GRAVITY
THICKENER

8" DR
OVERFLOW

PLANT DRAIN

16" PA (EXIST)

6" TS

TSP-101/102

NPW_FIT-1

3" NPW

4" TS

ABANDONED
4"SC

DIGBN_AE-1
DO

AEROBIC DIGESTER BASIN 1

8" WAS

8" WAS

6" TS

P-03
TO CCB-1/2/3

6" PA

24" WAS + DS

16"

DIGBN_AE-2
DO

AEROBIC DIGESTER BASIN 2

8" WAS

ABANDONED
4"SC

4" TS

P-03
FROM EXIST
BLOWER BUILDING

20" PA

NC

DSP-101/102

DIG_FIT-1

6" DS

RAS/WAS
SUMP

WASP-1/2

WAS_FIT-1

8" WAS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

BIOSOLIDS PROCESS FLOW DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
P-04 SHEET NO. 14 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION

\\cobok09fs01\General\Temp\DMR\Parsons outside Boko\Houston Greenridge WW Treatment Plt\CAD\Process\P-04_Rev B.dwg Dec 15, 2025 - 11:55am User: p0014O7c

PRIVATE UTILITY NOTES:

AT&T TEXAS/ SWBT FACILITIES:

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES:

CAUTION: UNDERGROUND GAS FACILITIES

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
   -WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713-945-8036 OR 713-945-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
   -WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
   -WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
   -FOR EMERGENCIES REGARDING GAS LINES CALL 713-659-3552 OR 713-207-4200
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES:

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
   -ANY ACTIVITY WHERE PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
   -OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.
2. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT 713-207-2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

1. NO APPROVAL TO USE, CROSS, OR OCCUPY NO CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING AND RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769

STANDARD NOTES FOR CONSTRUCTION DRAWINGS (HCFCD):

1. OBTAIN AND COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL PERMITS AND APPROVALS, WITH ASSISTANCE FROM ENGINEER, IF NECESSARY. OBTAIN PERMIT (CERTIFICATION) FROM HARRIS COUNTY ENGINEER TO ENTER HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.
2. NOTIFY THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT IN WRITING AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. SUBMIT THE HCFCD 48 HOUR PRE-CONSTRUCTION NOTIFICATION FORM, A COPY OF THE APPROVED CONSTRUCTION DRAWINGS, AND A COPY OF THE CORPS OF ENGINEERS INDIVIDUAL SECTION 404 PERMIT, IF APPLICABLE, TO HCFCD, 9900 NORTHWEST FREEWAY, HOUSTON, TEXAS 77092, ATTN: PROPERTY MANAGEMENT DEPT. BY HAND DELIVERY, OR FAX TO 713-684-4129 (FAX NUMBER).
3. ENGINEER SHALL SUBMIT CERTIFICATION LETTER AND RECORD DRAWINGS TO THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT REQUESTING INSPECTION OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY. PRIOR TO REQUESTING INSPECTION, THE DRAINAGE RIGHT-OF-WAY AND/OR EASEMENTS SHALL BE STAKED AND FLAGGED.
4. PROTECT, MAINTAIN, AND RESTORE EXISTING BACKSLOPE DRAINAGE SYSTEMS.
5. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.
6. ESTABLISH TURF GRASS ON ALL DISTURBED AREAS WITHIN THE CHANNEL OR DETENTION RIGHT-OF-WAY, EXCEPT THE CHANNEL BOTTOM AND WHERE STRUCTURAL EROSION MEASURES ARE USED. MINIMUM ACCEPTANCE CRITERIA ARE 75% COVERAGE OF LIVE BERMUDA GRASS AND NO EROSION OR RILLS DEEPER THAN 4".
7. BACKFILL IN ACCORDANCE WITH THE HARRIS COUNTY FLOOD CONTROL DISTRICT STANDARD SPECIFICATION, SECTION 02315 - EXCAVATING AND BACKFILLING, OR EQUIVALENT.
8. EXCAVATE CHANNEL FLOWLINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSTREAM, AS NECESSARY, TO ENSURE NO WATER REMAINS IN THE FACILITY (STORM SEWER, LATERAL CHANNEL, OR DRY BOTTOM DETENTION BASIN) DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL, SO THE FACILITY WILL FUNCTION AS INTENDED. FOR WET BOTTOM DETENTION BASINS, ENSURE NO WATER IS ABOVE THE DESIGN LEVEL IN THE WET BOTTOM DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL.
9. MAINTAIN FLOW IN CHANNEL DURING CONSTRUCTION AND RESTORE CHANNEL TO ORIGINAL CONDITION.
10. REMOVE ALL EXCAVATED MATERIAL FROM THE HARRIS COUNTY FLOOD CONTROL DISTRICT OR DRAINAGE RIGHT-OF-WAY. NO FILL IS TO BE PLACED WITHIN A DESIGNATED FLOOD PLAIN AREA WITHOUT FIRST OBTAINING A FILL PERMIT FROM THE APPROPRIATE JURISDICTIONAL AUTHORITY.

GENERAL NOTES – METRO:

1. CONTRACTOR SHALL NOTIFY METRO AT 713-615-6195 TWO WEEKS PRIOR TO DISTURBING EXISTING BUS STOPS.
1. CONTRACTOR SHALL COORDINATE WITH METRO TO REMOVE EXISTING AMENITIES.
2. BUS STOPS SHALL CONSTRUCTED PER CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL AND MEET CURRENT ADA REQUIREMENTS

GENERAL NOTES:

1. NO WORK ALLOWED IN PUBLIC RIGHT-OF-WAYS
2. REFERENCE TO STANDARD SPECIFICATIONS MANUALS OR CODES OF A TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION, OR TO LAWS OR REGULATIONS OF A GOVERNING AUTHORITY, WHETHER SPECIFIC OR IMPLIED, MEAN THE LATEST EDITING IN EFFECT AS OF THE BID DATE, EXCEPT AS MAY BE OTHERWISE STATED IN THE CONTRACT DOCUMENTS.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

CIVIL NOTES

90% SUBMITTAL NOT FOR CONSTRUCTION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-01	SHEET NO. 15 OF 256

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-01 CIVIL NOTES.dwg Jan 05, 2026 - 8:12pm User: p005609F

40 20 0 40 80

SCALE: 1"=40'-0"
D SIZE DRAWING

TASKS:

1. FACILITY IMPROVMENTS
2. LIFT STATION (LS) IMROVEMENTS
3. INFLUENT/PRIMARY TREATMENT AREA IMPROVEMENTS
4. SLUDGE DEWATERING
5. AERATION BASIN IMPROVEMENTS
6. RAS PUMPS
7. DISINFECTION IMPROVEMENTS
8. SITE DRAINAGE IMPROVEMENTS
9. ELECTRICAL IMPROVEMENTS

THIS PROJECT SITE IS IN UNSHADED ZONE X, AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO F.I.R.M. MAP PANEL 48201C1005L, DATED JUNE 18, 2007.
500 YEAR FLOOD ELEVATION IS 60.10
THIS PROJECT IS IN THE SIMS BAYOU WATERSHED.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

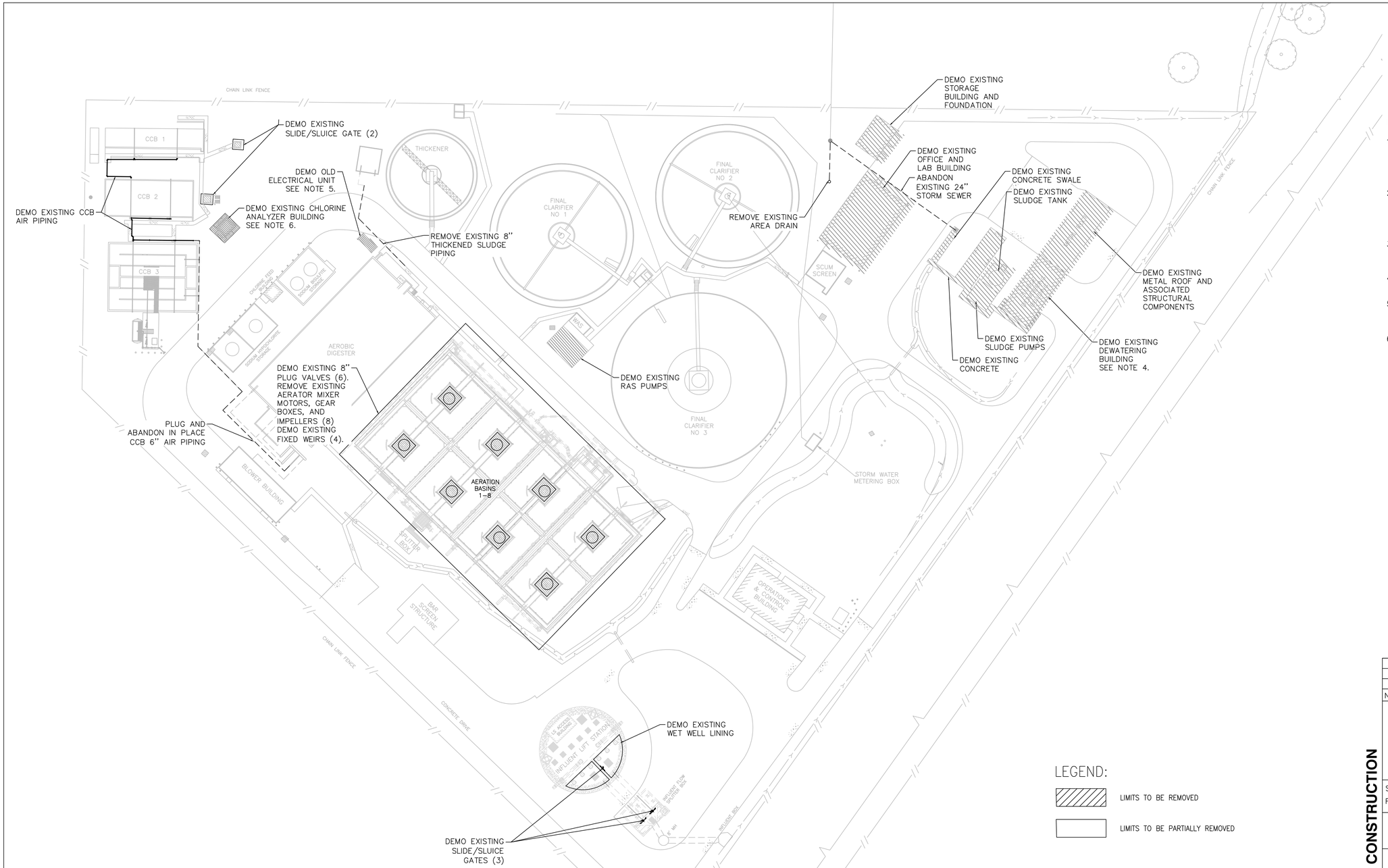
GREENRIDGE WWTP IMPROVEMENTS

EXISTING CIVIL SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-02	SHEET NO. 16 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-02 EXISTING CIVIL SITE PLAN.dwg Jan 06, 2026 - 3:00am User: p005609F



40 20 0 40 80

SCALE: 1"=40'-0"
D SIZE DRAWING

NOTE:

1. UNDERGROUND UTILITY LOCATIONS ARE BASED ON PREVIOUS PLANS AND MAY BE INCOMPLETE OR INACCURATE. CONTRACTOR MUST VERIFY ALL UTILITIES, INCLUDING NOT SHOWN ONES NEAR THE WORK AREA, AND NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE COMMENCING WORK.
2. CITY OF HOUSTON SHALL HAVE FIRST RIGHT OF REFUSAL FOR DEMOLITION BY-PRODUCTS. ALL REMOVED OR DEMOLISHED EQUIPMENT SHALL BE PROPERLY DISPOSED OF PER CITY OF HOUSTON REQUIREMENTS. SALVAGEABLE ITEMS MUST BE RETURNED TO THE CITY. COORDINATE WITH THE CITY PRIOR TO DISPOSAL.
3. ANY WORK THAT MAY DISRUPT PLANT OR OFF-SITE OPERATIONS MUST BE COORDINATED WITH THE PLANT SUPERVISOR VIA THE CONSTRUCTION MANAGER.
4. EXISTING DEWATERING BUILDING SHALL REMAIN IN SERVICE UNTIL THE NEW DEWATERING BUILDING IS FULLY OPERATIONAL.
5. SOME, BUT NOT ALL, ELECTRICAL DEMOLITION IS SHOWN. REFER TO ASSOCIATED SHEETS FOR COMPLETE ELECTRICAL DEMOLITION DETAILS.
6. DO DO NOT DAMAGE EXISTING UNDERGROUND 2" SCH 80 PVC CHLORINE SAMPLING LINES. THESE LINES MUST BE PROTECTED DURING DEMOLITION AND EXTENDED TO THE NEW ANALYZER BUILDING AS REQUIRED.

LEGEND:

LIMITS TO BE REMOVED

LIMITS TO BE PARTIALLY REMOVED

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

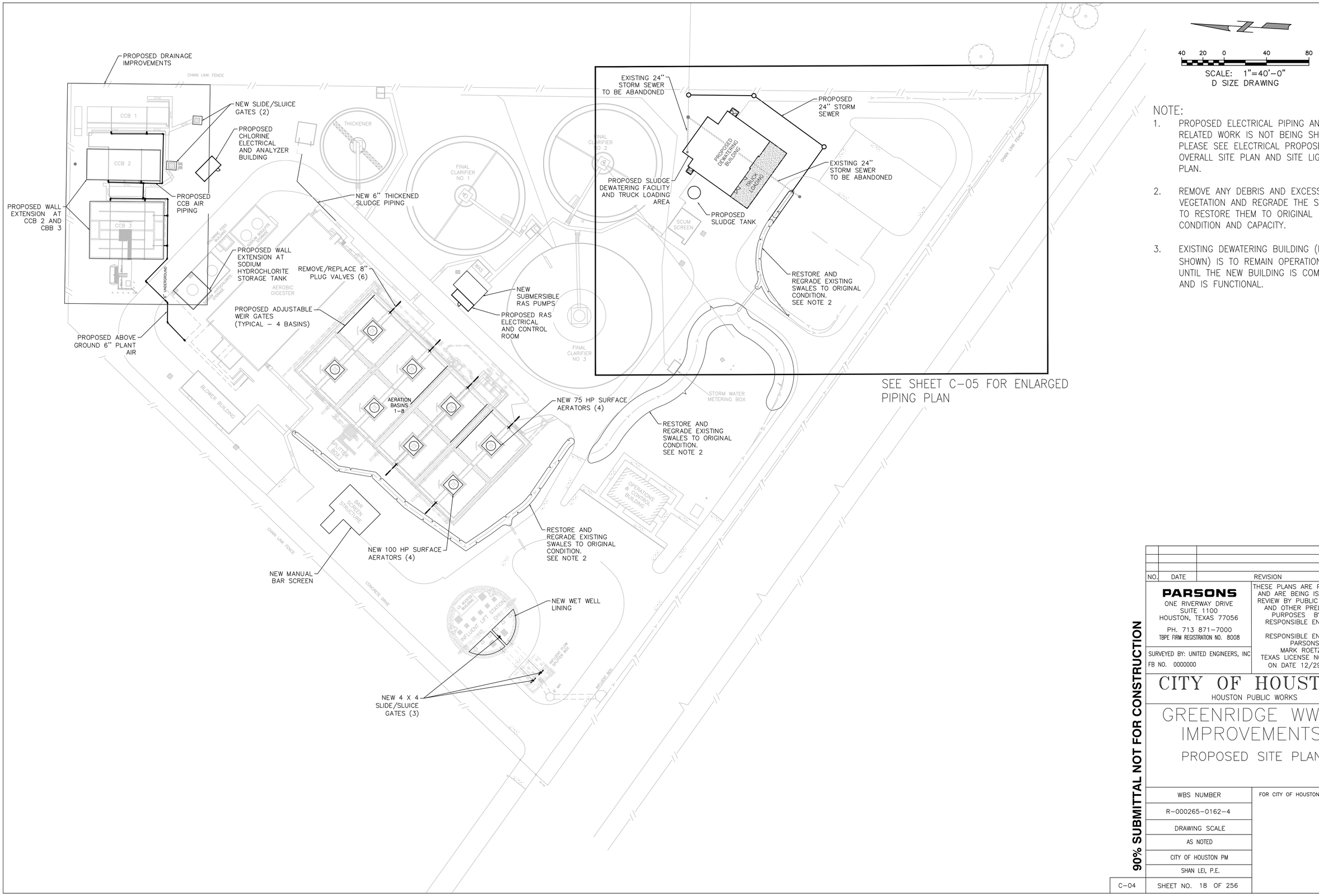
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEMOLITION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-03	SHEET NO. 17 OF 256

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-03 DEMO PLAN.dwg Jan 06, 2026 - 1:29pm User: p005609F



40 20 0 40 80

SCALE: 1"=40'-0"
D SIZE DRAWING

NOTE:

1. PROPOSED ELECTRICAL PIPING AND OTHER RELATED WORK IS NOT BEING SHOWN. PLEASE SEE ELECTRICAL PROPOSED OVERALL SITE PLAN AND SITE LIGHTING PLAN.
2. REMOVE ANY DEBRIS AND EXCESS VEGETATION AND REGRADE THE SWALES TO RESTORE THEM TO ORIGINAL CONDITION AND CAPACITY.
3. EXISTING DEWATERING BUILDING (NOT SHOWN) IS TO REMAIN OPERATIONAL UNTIL THE NEW BUILDING IS COMPLETED AND IS FUNCTIONAL.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PROPOSED SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-04	SHEET NO. 18 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-04 PROPOSED.dwg Jan 05, 2026 - 6:26pm User: p005609F

EXISTING 24 INCH STORM SEWER

61.5 LF 24 INCH DUAL–WALL HDPE STORM SEWER @ 0.15% (NOTE 1)

PROPOSED 48 INCH MANHOLE
RIM: 63.0
INV IN(S): 55.36
INV THRU: 55.36
CONNECT TO EXISTING STORM SEWER
(NOTE 2)

PROPOSED 48 INCH MANHOLE
RIM: 63.0
INV IN(S): 55.46
INV OUT(N): 55.45

EXISTING 24 INCH STORM SEWER TO REMAIN

PROPOSED AREA DRAIN
T/G: 61.5
INV: (55.40)

63.50 FG

63.50 FG

81.9 LF 24 INCH DUAL–WALL HDPE STORM SEWER @ 0.13%
(NOTE 1)

EXISTING 24 INCH STORM SEWER TO BE ABANDONED

EXISTING 24 INCH STORM SEWER TO BE ABANDONED

EXISTING 24 INCH STORM SEWER AND DRAIN INLET TO BE REMOVED AS NEEDED

62.59 FG

(62.40) EG

PROPOSED 48 INCH MANHOLE
RIM: 63.0
INV IN (W): 55.58
INV OUT (N): 55.56

63.50 FG

EX. 30" SCRCP

FINAL CLARIFIER NO 2

INV OUT: 55.67

4.4 LF 6" PVC SEWER @ 1.0%

PROPOSED DEWATERING BUILDING FFE:=64.0

48 INCH MANHOLE
RIM: 62.5
6" INV(N): 55.23
8" INV(W): 55.06

PROPOSED 2.5 INCH NON–POTABLE WATER LINE

REMOVE EXISTING 24 INCH STORM SEWER AS NEEDED AT NEW SEWER CROSSING

58.3 LF 8" PVC SEWER @ 0.5%

51.7 LF 24 INCH DUAL–WALL HDPE STORM SEWER @ 0.15%
(NOTE 1)

PROPOSED 6 INCH SEWER

PROPOSED 22.5°, 6 INCH ELBOW W/BLIND FLANGE PLATE

(62.30) EG

CONNECT TO EXISTING AREA DRAIN
TG: 62.5
INV: (55.66)

PROPOSED SLUDGE TANK

62.59 FG

INV OUT: 55.06

29.4 LF 8" PVC SEWER @ 1.0%

(62.40) EG

EXISTING 2 INCH NON–POTABLE WATER LINE

48 INCH MANHOLE
RIM: 62.4
8" INV(W): 54.67
8" INV(N): 54.77
8" INV(E): 54.77

SCUM SCREEN

16 LF 8" PVC SEWER @ 0.5%

ABANDONED 4 INCH WATER LINE

EXISTING MANHOLE
RIM: (62.4)
12" INV(N): (54.49)
12" INV(S): (54.59)
12" INV(E): (54.24)

PROPOSED 6 INCH SLUDGE LINE

EXISTING NON–POTABLE WATER LINE

PROPOSED 90°, 6 INCH ELBOW W/BLIND FLANGE GATE

PROPOSED 2 INCH WATER LINE

EXISTING SANITARY SEWER LINE

CONNECT TO EXISTING 2.5 INCH NON–POTABLE WATER LINE

TIE INTO EXISTING 6" SLUDGE LINE. ABANDON REMAINING LINE TOWARD EXISTING SLUDGE TANK

EXISTING 6 INCH SEWER

EXISTING 6 INCH SLUDGE LINE

EXISTING 2 INCH POTABLE WATER LINE

CONNECT TO EXISTING 2 INCH WATER LINE

10 5 0 10 20

SCALE: 1"=10'–0"
D SIZE DRAWING

NOTES:

1. 24–IN SD SHALL BE ADS HP STORM, DUAL–WALL PIPE (ASTM–2881/AASHTO–M330, OR APPROVED EQUAL.
2. FIELD VERIFY EX. 24–IN RCP INVERT ELEVATION AT NEW STORM DRAIN CONNECTION MANHOLE PRIOR TO NEW STORM DRAIN CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCY FROM PLAN INVERT ELEVATION.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

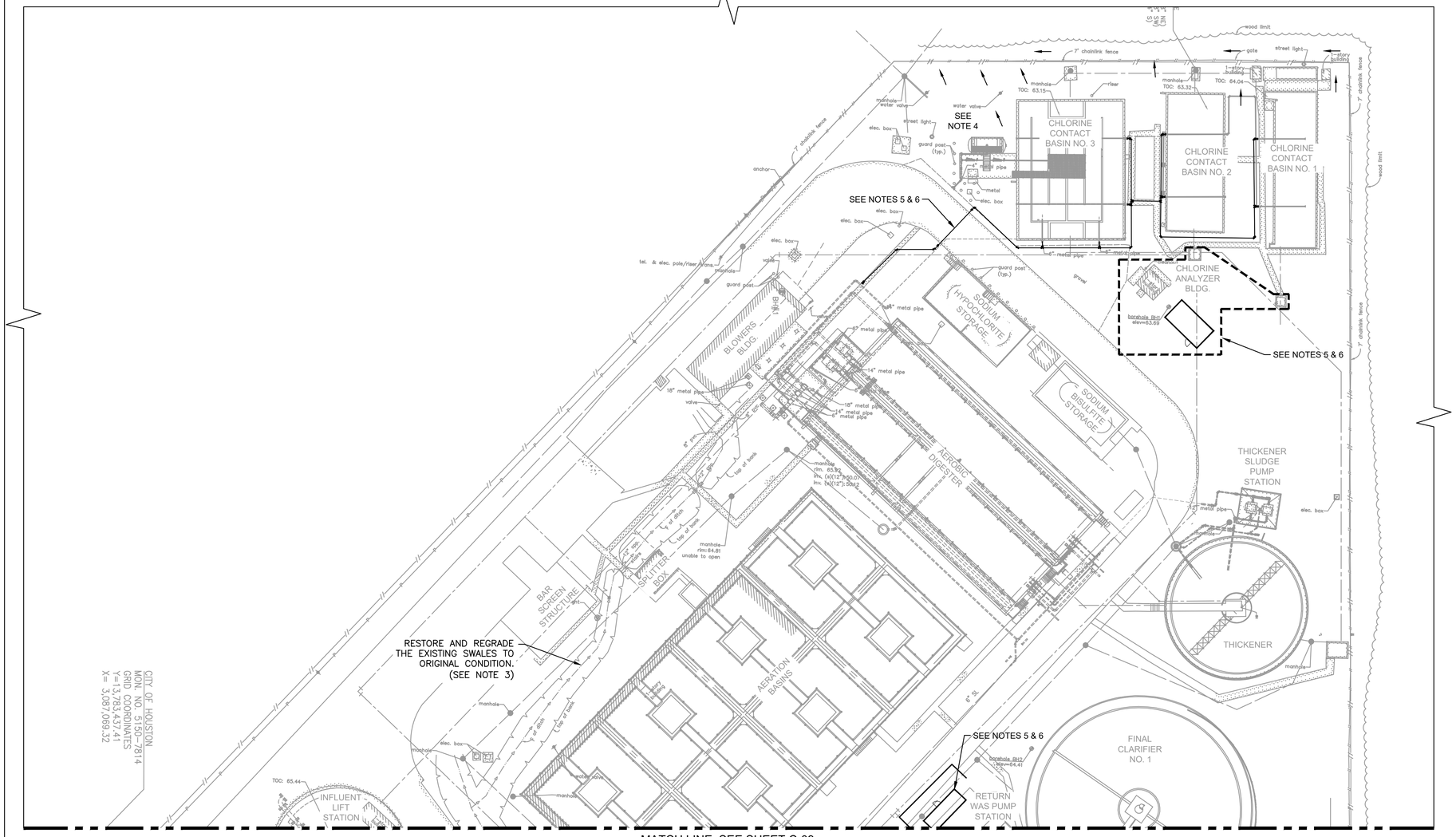
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ENLARGED PIPING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C–05	SHEET NO. 19 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C–05 ENLARGED PIPING PLAN.dwg Jan 06, 2026 – 1:17am User: p005609F



30' 15' 0 30' 60'

HORIZONTAL SCALE 1" = 30'-0"

NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
3. REMOVE ANY DEBRIS AND EXCESS VEGETATION AND REGRADE THE SWALES TO RESTORE THEM TO ORIGINAL CONDITION AND CAPACITY
4. PROVIDE FILL GRADE THE AREA AROUND THE CHLORINE CONTACT BASINS TO DRAIN AWAY FROM CHLORINE CONTACT BASINS.
5. SEE DWG C-03 FOR LIMITS OF DEMOLITION
6. SEE DWG C-04 FOR SITE PLAN.

IMPERVIOUS AREA AND DETENTION STORAGE CALCULATIONS:

EXISTING IMPERVIOUS SURFACE TO BE REMOVED	
AREA	IMPERVIOUS COVER (SF)
DEMO EXISTING DE-WATERING BUILDING & METAL ROOF	2,649
DEMO EXISTING STORAGE BUILDING	565
DEMO EXISTING OLD OFFICE	2,452
DEMO EXISTING ELECTRICAL PAD	90
DEMO EXISTING DISINFECTION / ANALYZER BUILDING	123
DEMO CONCRETE	1,473
DEMO SLUDGE TANK AND PUMPS	618
TOTAL	7,970

PROPOSED IMPERVIOUS SURFACE ADDED	
AREA	IMPERVIOUS COVER (SF)
PROPOSED DISINFECTION / ANALYZER BUILDING	264
PROPOSED RAS ELECTRICAL AND CONTROLS BUILDING	175
PROPOSED DE-WATERING BUILDING INCREASE	1,262
TOTAL	1,701

TOTAL SITE AREA	= 352,579 SF
TOTAL EXISTING IMPERVIOUS AREA	= 172,654 SF
TOTAL EXISTING IMPERVIOUS AREA TO BE REMOVED	= 7,970 SF
TOTAL IMPERVIOUS AREA PROPOSED	= 1,701 SF
MINIMUM DETENTION RATE	= 0.80 AC/FT PER AC
CREDIT FOR REMOVING IMPERVIOUS COVER	= 0.40 AC/FT PER AC
NET DETENTION STORAGE REQUIRED	= -1827 SF

SEE DWG C-03 FOR LIMITS OF DEMOLITION

SINCE THE REQUIRED NET DETENTIONS STORAGE IS NEGATIVE, NO IMPROVEMENTS ARE NEEDED TO INCREASE THE OVERALL DETENTION CAPACITY OF THE SITE.

CIVITAS ENGINEERING GROUP
2000 W. Sam Houston Pkwy S., Suite 1400
Houston, Texas 77042
Phone: (713) 783-8700
TBPE Firm Registration No. F-4991

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
FOR REVIEW ONLY.
KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SITE DRAINAGE IMPROVEMENTS SHEET I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-08	SHEET NO. 22 OF 256

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R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.3 Civil\357-2401 GR MC1 Yard Piping.dwg Dec 12, 2025 - 11:24am User: OMarcelo

MATCH LINE, SEE DWG C-08

30' 15' 0 30' 60'

HORIZONTAL SCALE 1" = 30'-0"

INFLUENT LIFT STATION

AERATION BASINS

FINAL CLARIFIER NO. 1

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

INFLUENT FLOW SPLITTER BOX

INFLUENT JUNCTION BOX

OPERATIONS & CONTROL BLDG.

OFFICE & LAB BLDG.

STORAGE BLDG.

PROPOSED DEWATERING BUILDING

TRUCK LOADING

SLUDGE DEWATERING BLDG.

METAL ROOF

RESTORE AND REGRADE THE EXISTING SWALES TO ORIGINAL CONDITION. (SEE NOTE 3)

SEE NOTES 4 & 5

TRV #3 (SURVEYED BY OTHERS) ELEV.: 63.45

TRV #6 (SURVEYED BY OTHERS) ELE: 61.79

NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
3. REMOVE ANY DEBRIS AND EXCESS VEGETATION AND REGRADE THE SWALES TO RESTORE THEM TO ORIGINAL CONDITION AND CAPACITY
4. SEE DWG C-03 FOR LIMITS OF DEMOLITION
5. SEE DWG C-04 FOR SITE PLAN.

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FB NO. XXXXXXX

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KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SITE DRAINAGE IMPROVEMENTS SHEET II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-09	SHEET NO. 23 OF 256

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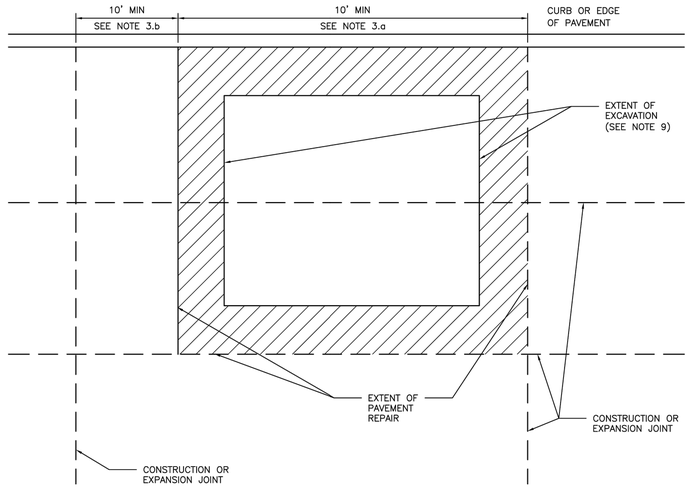


NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. WIDTH:
   REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. LENGTH:
   a. MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
   b. IF EXTENT OF PAVEMENT REPAIR IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, EXTEND PAVEMENT REPAIR TO EXISTING JOINT.
4. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION) IF REINFORCING IS BROKEN OFF OR DOES NOT EXIST.
5. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
6. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
7. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
8. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
9. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

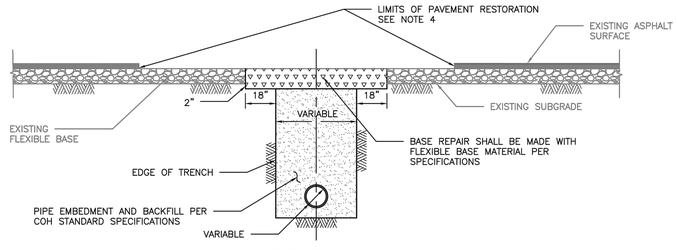
CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT > 5YRS
(SCALE: NOT TO SCALE)

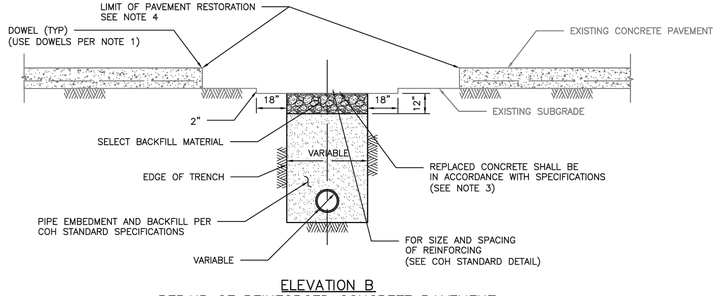
APPROVED BY:

DocuSigned by: Sulail Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–02



ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT



ELEVATION B
REPAIR OF REINFORCED CONCRETE PAVEMENT

NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C–C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751–01 FOR REINFORCING STEEL REQUIREMENTS.
4. REFER TO STANDARD DETAIL 02951–01 THROUGH 03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT REPAIR DETAIL FOR STREET CUTS
(FLEX–BASE PAVEMENT & CONCRETE PAVEMENT)
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sulail Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–04

NO.	DATE	REVISION	APP.

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SUITE 1100
HOUSTON, TEXAS 77056
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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
CITY OF HOUSTON STANDARD DETAILS 1 OF 4

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R–000265–0162–4	
DRAWING SCALE	
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CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C–11	SHEET NO. 25 OF 256

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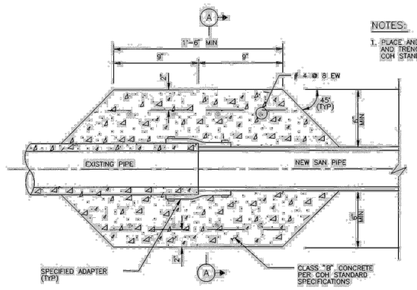
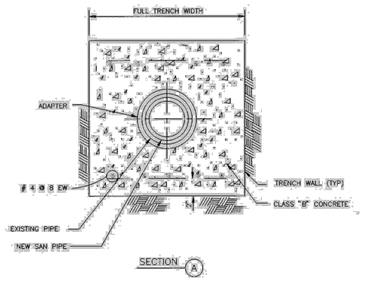
J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-12 COH STANDARD DETAILS 2 .dwg Jan 06, 2026 - 1:41am User: p005609F



NOTES:
1. PLACE AND COMPACT EMBEDMENT AND TRENCH ZONE BACKFILL PER COH STANDARD SPECIFICATIONS.

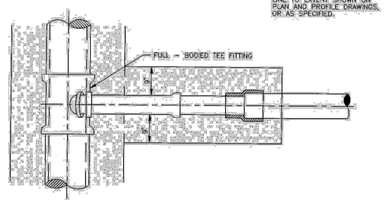
LONGITUDINAL SECTION



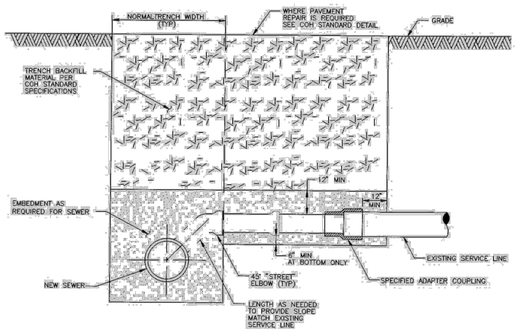
SECTION A

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER PIPE TRANSITION FOR 36" SEWER AND SMALLER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02531-04

NOTE:
1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.



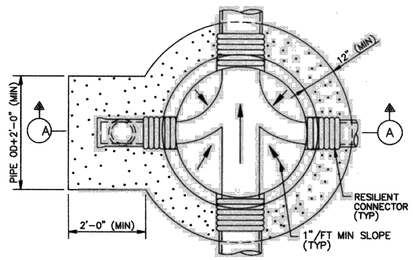
PLAN



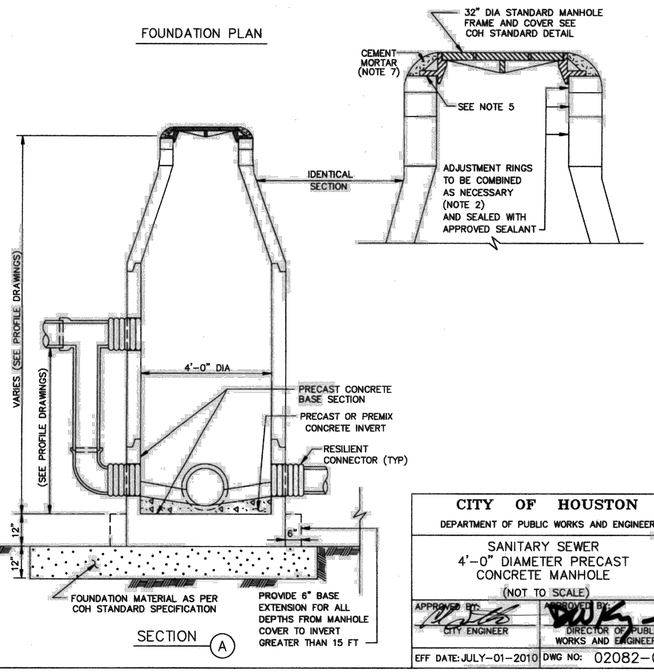
CROSS-SECTION OF SEWER AT SERVICE CONNECTION

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02534-04

NOTES:
1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-8".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.



FOUNDATION PLAN

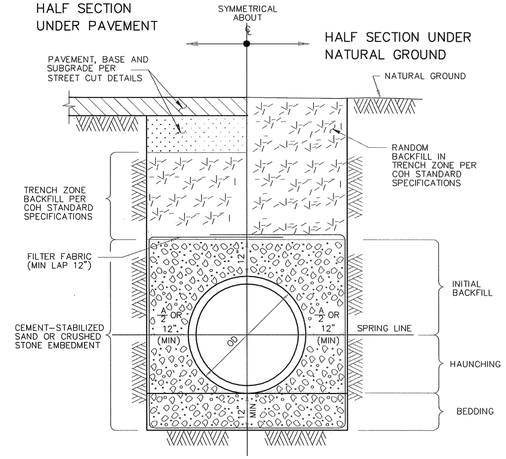


SECTION A

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-02

HALF SECTION UNDER PAVEMENT

HALF SECTION UNDER NATURAL GROUND

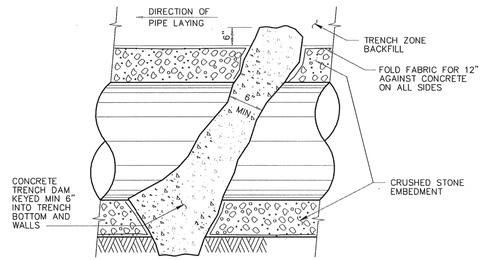


TYPICAL CROSS-SECTION

NOTES:
1. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

2. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
3. TRENCH DAM MAY BE FORMED OR UNFORMED.ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
4. TRENCH DAM SHALL BE PLACED AT LEAST 5 FT AWAY FROM ANY PIPELINE STRUCTURE.SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
5. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
6. CEMENT-STABILIZED SAND IS PREFERRED FOR EMBEDMENT, BUT CRUSHED STONE MAY BE USED ONLY WHEN SPECIFIED ON THE PLANS.



LONGITUDINAL SECTION ALONG PIPE ℄ AT EMBEDMENT TRENCH DAM

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER EMBEDMENT AND TRENCH ZONE BACKFILL FOR DRY OR WET STABLE TRENCH (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02317-01

NO.	DATE	REVISION	APP.

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
CITY OF HOUSTON STANDARD DETAILS 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 26 OF 256	

C-12

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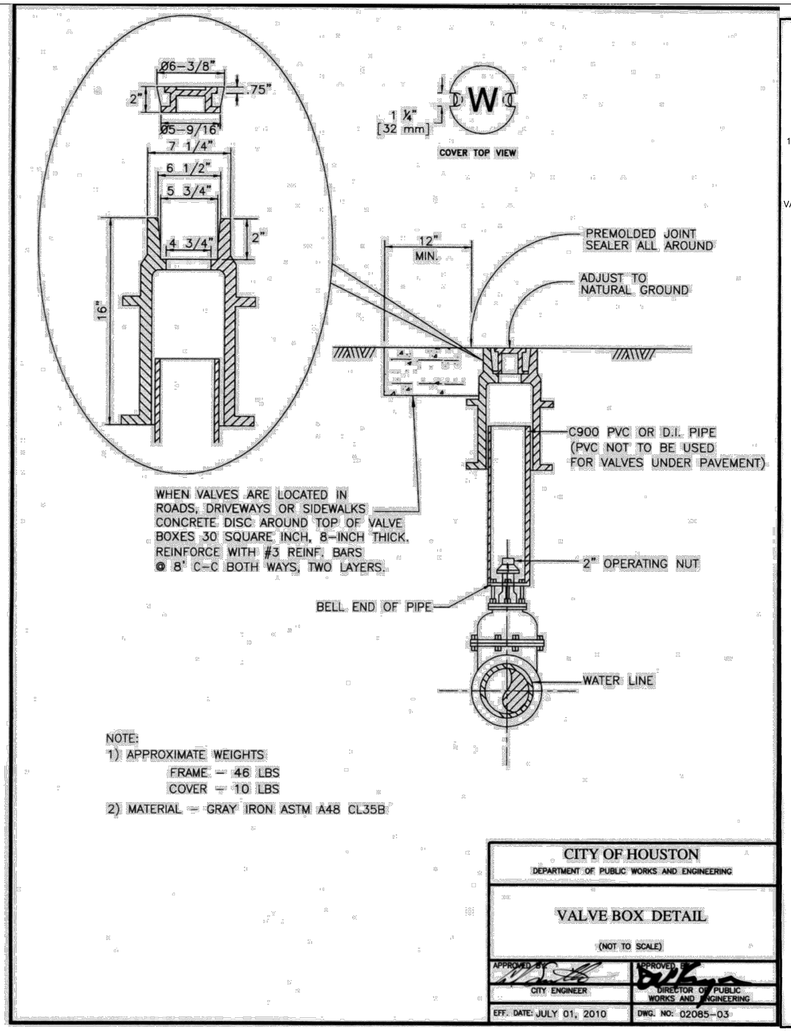
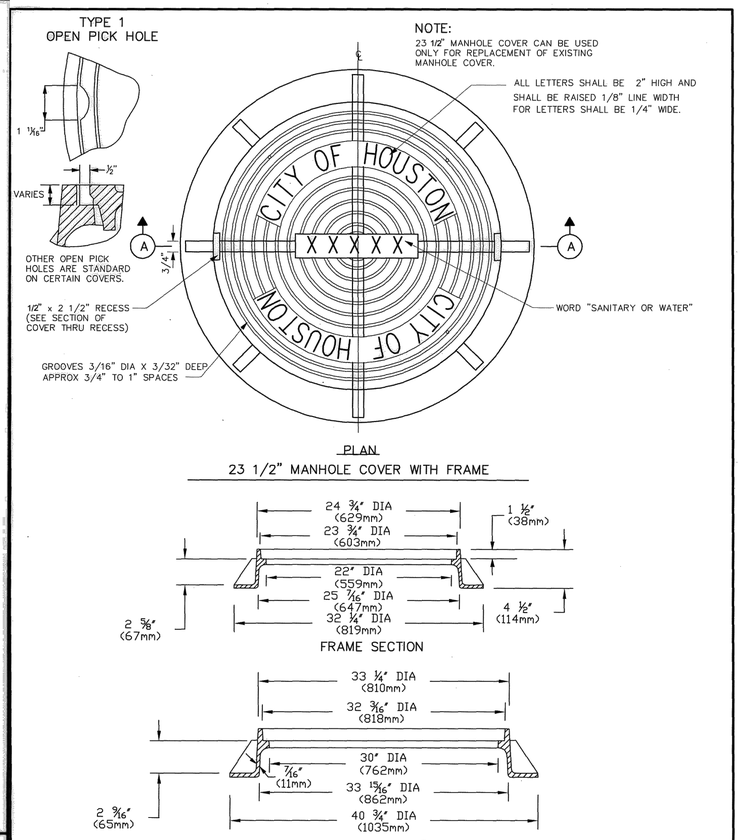


NOTE:
1) APPROXIMATE WEIGHTS
FRAME – 46 LBS
COVER – 10 LBS
2) MATERIAL – GRAY IRON ASTM A48 CL35B

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
VALVE BOX DETAIL	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY 01, 2010	DWG. NO: 02085-03



1) NOTE: APPROXIMATE WEIGHTS.
FRAME- 170 LBS 77 kg
COVER- 270 LBS 123 kg
UNIT- 440 LBS 200 kg
2) MATERIAL- GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) MODEL V-14240 ASY OR APPROVED EQUAL

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER AND WATER MANHOLE FRAME AND COVER	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02090-01

NO.	DATE	REVISION	APP.

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HOUSTON, TEXAS 77056
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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
CITY OF HOUSTON STANDARD DETAILS 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-13	SHEET NO. 26 OF 256

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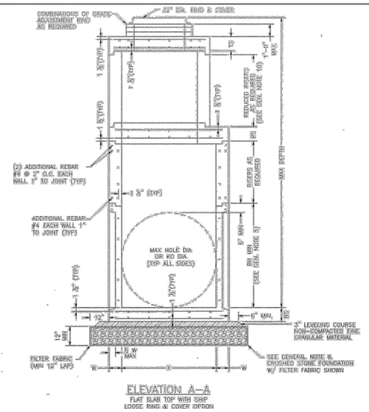
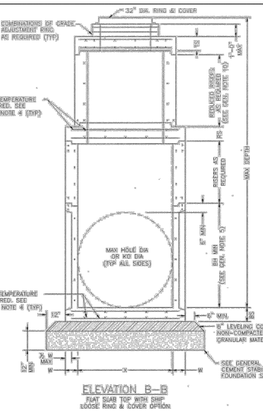
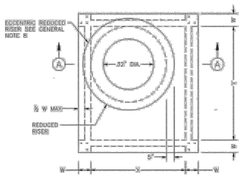


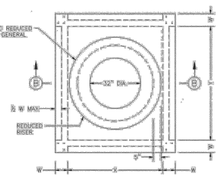
ELEVATION A–A
FLAT SLAB TOP WITH SWP
LOOSE RING & COVER OPTION



ELEVATION B–B
FLAT SLAB TOP WITH SWP
LOOSE RING & COVER OPTION



PLAN VIEW A
COVER NOT SHOWN



PLAN VIEW B
COVER NOT SHOWN

ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

CONCENTRIC MANHOLE
(ALTERNATIVE CONFIGURATION)

PIPE CONNECTION DETAIL
CONNECT PIPES WITHIN 7° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN THIS LIMIT.

TABLE 1
PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24" RC TO 78" RC INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT (SEE GEN. NOTE 5)	MAX HOLE DIA (SEE FAB. NOTE 11)	MAX KO DIA (SEE FAB. NOTE 11)
	X & Y	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA	KO DIA
	FT.	IN.	IN.	FT.*	IN.	IN.	FT.	FT.	IN.	IN.
PBM	3X3	6	6	N/A	N/A	9	25	3.50	36	36
	4X4	6	6	N/A	N/A	9	25	4.50	48	48
	3X5	6	6	N/A	N/A	9	25	3.50	36/60	36/60
	4X5	6	6	48 IN.	9	9	25	4.50	48/60	48/60
	5X5	6	6	48 IN.	9	9	25	5.50	60	60
	3X6	8	8	48 IN.	9	9	25	3.50	60/72	60/72
	6X6	8	8	48 IN.	9	9	25	6.50	72	72
	6X8	9	10	48 IN.	12	9	25	6.50	96	96

TABLE 1 NOTES:
1. (*) ROUND MANHOLES ARE PREFERRED FOR THESE SIZES.
2. (**) UNLESS OTHERWISE INDICATED.
3. TABLE IS VALID FOR UP TO 25 FT OF INSTALLATION DEPTH.

FABRICATION NOTES:
1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION, ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWF. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. PROVIDE TYPICAL MINIMUM CONCRETE CLEAR COVER OF 1 ½" TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/FT EACH WAY.
5. MANUFACTURED BASE AND RISERS TO NEAREST 3" INCREMENT.
6. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM GROOT DEPTH IS ¾".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER; UNLESS NOTED OTHERWISE ELSEWHERE ON THE PLANS.
9. MINIMUM THICKNESS OF REINFORCEMENT IS 4".
10. AT MANUFACTURER'S OPTION, PROVIDE CAST OR EORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE ALLOWED. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED. REFER TO 02082-12 FOR OPTIONS.
12. BASES AND RISERS MAY HAVE CAST, CUT OR THIN WALL PANEL (KO) THAT ARE ROUND AND DO NOT EXTEND INTO THE FLOOR, INTO WALLS, OR WITHIN 6" OF THE JOINT ABOVE OR BELOW.

INSTALLATION NOTES:
1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO MANHOLE. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN ½" BETWEEN EACH SECTION, OR ¾ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. FOR RIGID PIPE, CUT HOLE IN THIN WALL PANEL (KO) 4" MAX, 2" MIN LARGER THAN PIPE OD.
5. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE AND HOLE SIZE. CENTER PIPE IN HOLE AND INSTALL BOOT/SEAL PER MANUFACTURER'S SPECIFICATION.
6. FINAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'-0" MAX AS SHOWN.
7. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'-6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'-6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'-0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:
1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD SHALL PROVIDE DESIGN FOR THE BASE AND RISER ASSEMBLY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478 AND/OR ASTM C913.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02065 "PRECAST CONCRETE MANHOLES.
4. PRECAST BASE CONSISTS OF BASE SLAB, BASE UNIT, RISERS (AS REQUIRED), REDUCING SLAB (AS REQUIRED), AND REDUCED RISERS (AS REQUIRED).
5. MIN HEIGHT SHOWN FOR STOCK BASE UNITS. USE STOCK BASE UNITS WHENEVER PRACTICAL. SMALLER HEIGHT BASE UNITS CAN BE USED IN SPECIAL INSTALLATION CIRCUMSTANCES, WHEN NOTED ELSEWHERE IN THE PLANS. ABSOLUTE MINIMUM HEIGHT OF BASE UNITS IS 2'-6".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED BASE MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO BOX MANHOLES LARGER THAN 8'-FOOT BY 8'-FOOT.
10. REFER TO STORM SEWER TYPE 'G' PRECAST ROUND MANHOLE DETAIL (02082-12) FOR REDUCED RISER DESIGN REQUIREMENTS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
PRECAST BOX MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-13

02081–05

COH IS PHASING OUT BRICK. NEW DETAILS TO BE POSTED END OF 2019

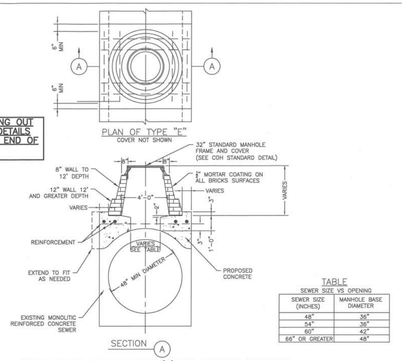
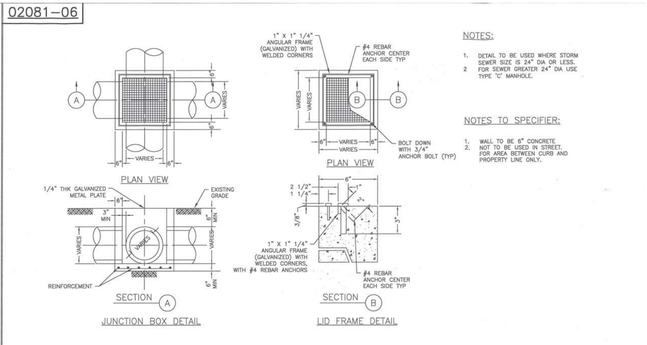


TABLE
SEWER SIZE VS OPENING

SEWER SIZE (INCHES)	MANHOLE BASE DIAMETER
48"	36"
54"	36"
60"	42"
66" OR GREATER	48"

STORM SEWER MANHOLE TYPE "C" FOR EXISTING MONOLITIC REINFORCED CONCRETE 48" DIAMETER AND GREATER
NTS

02081–06

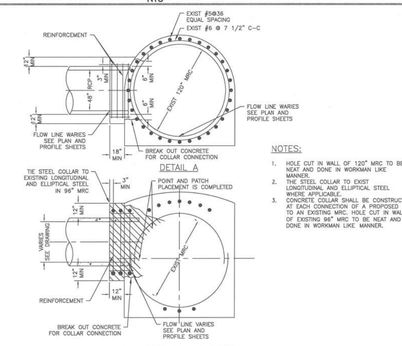


NOTES:
1. DETAIL TO BE USED WHERE STORM SEWER SIZE IS 24" DIA OR LESS.
2. FOR SEWER GREATER 24" DIA USE TYPE "C" MANHOLE.

NOTES TO SPECIFIER:
1. WALL TO BE 6" CONCRETE.
2. NOT TO BE USED IN STREET. FOR AREA BETWEEN CURB AND PROPERTY LINE ONLY.

STORM SEWER
JUNCTION BOX WITH LID OR GRATE TOP
FOR MAXIMUM OF 24" DIAMETER STORM SEWE4R5
NTS

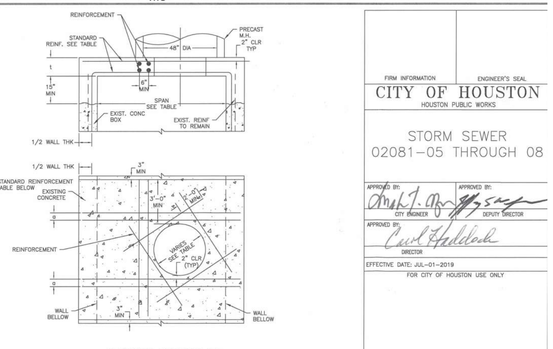
02081–07



NOTES:
1. HOLE CUT IN WALL OF 120" MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.
2. TIE STEEL COLLAR TO EXIST LONGITUDINAL AND ELLIPTICAL STEEL (WHERE APPLICABLE).
3. CONCRETE COLLAR SHALL BE CONSTRUCTED AT EACH CONNECTION OF A PROPOSED RCP TO AN EXISTING MRC. HOLE CUT IN WALL OF EXISTING 96" MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.

LATERAL CONNECTION TO EXISTING MONOLITHIC REINFORCED CONCRETE STORM SEWER
NTS

02081–08



NTS

FIRM INFORMATION	ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

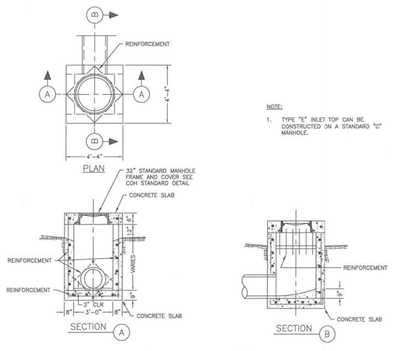
STORM SEWER
02081–05 THROUGH 08

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	

EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

02632–09

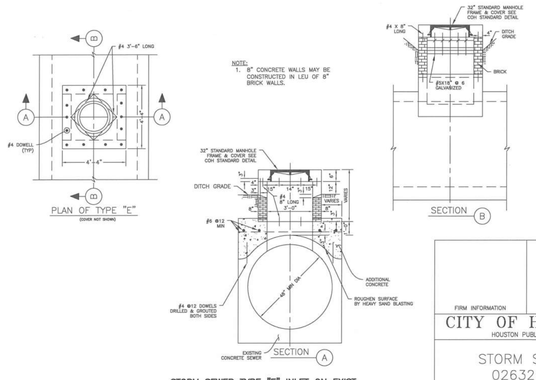


NOTE:
1. TYPE "E" INLET TOP CAN BE CONSTRUCTED ON A STANDARD "C" MANHOLE.

STORM SEWER TYPE "E" INLET
NTS

02632–10

COH IS PHASING OUT BRICK. NEW DETAILS TO BE POSTED END OF 2019



STORM SEWER TYPE "E" INLET ON EXIST MONOLITHIC CONC SEWERS OF 48" DIA & GREATER
NTS

FIRM INFORMATION	ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632–09
AND 02632–10

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	

EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

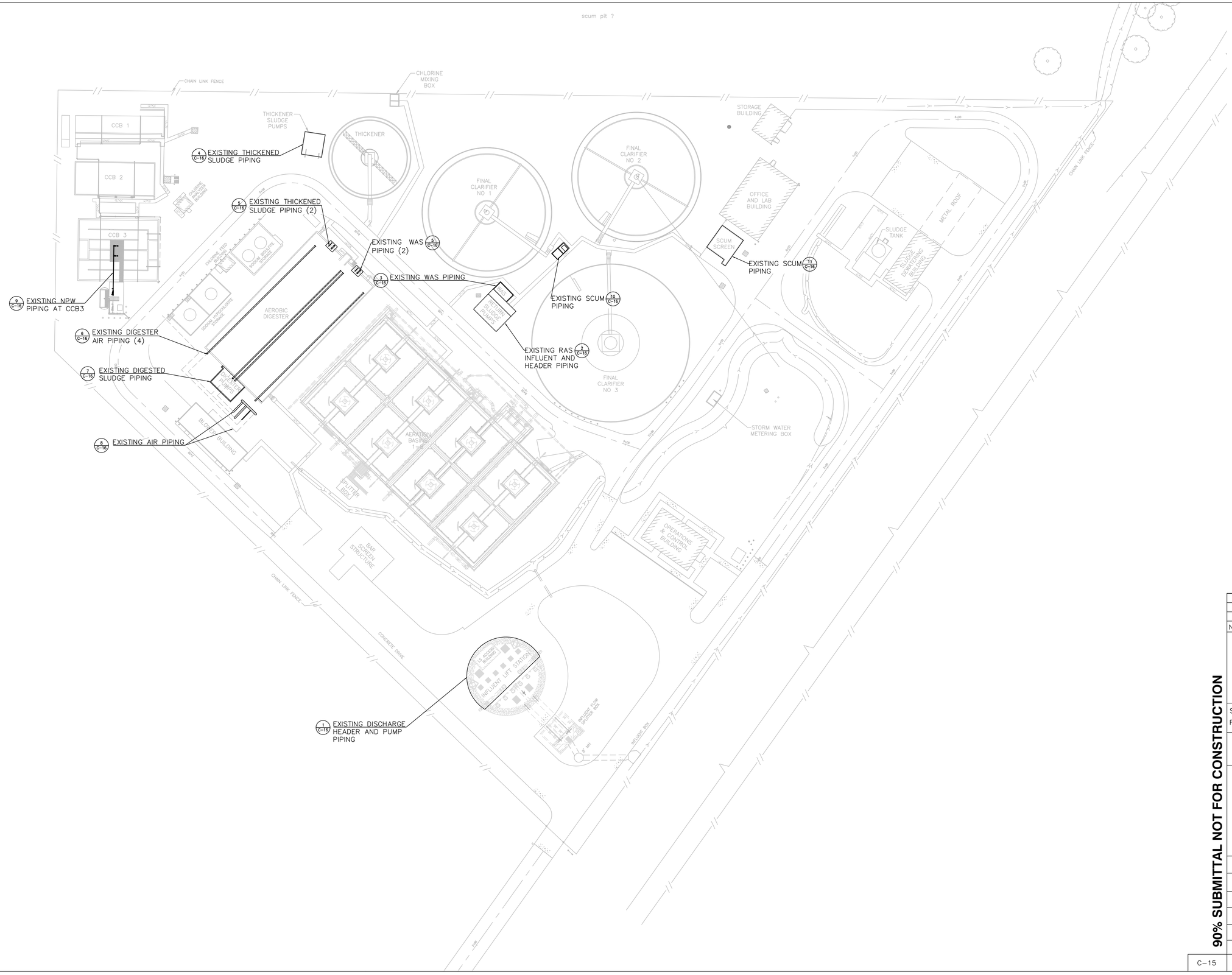
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

CITY OF HOUSTON STANDARD DETAILS 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C–14	SHEET NO. 28 OF 256

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-14 COH STANDARD DETAILS 4.dwg Jan 06, 2026 - 1:40am User: p005609F



40 20 0 40 80

SCALE: 1"=40'-0"
D SIZE DRAWING

NOTE:

1. CONTRACTOR TO FIELD VERIFY, CLEAN/BLAST COAT, AND COLOR CODE ALL ABOVEGROUND PIPING PER SPEC 09901.
2. SEE SHEET C-16 FOR PIPING PAINTING SCHEDULE AND DETAILS.

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

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RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PIPING PAINTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-15 SHEET NO. 29 OF 256	

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J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-15 PIPING PAINTING PLAN.dwg Jan 06, 2026 - 3:07am User: p005609F

1 C-15 LIFT STATION – PUMP ROOM (1A)

1 C-15 LIFT STATION – MOTOR ROOM (1B)

2 C-15 RAS STATION (2)

3 C-15 WAS STATION (3)

4 C-15 SLUDGE THICKENER STATION (4)

5 C-15 DIGESTER – THICKENED SLUDGE PIPING (5A)/ WAS PIPING (5B)

6 C-15 DIGESTER – AIR PIPING (6)

7 C-15 DIGESTER PUMP STATION (7)

	PIPING PAINTING SCHEDULE *					
	SITE LOCATION	FLUID TYPE	LABEL	PIPE DIAMETER (in)	LENGTH (ft)**	REQUIREMENT
(1A)	LIFT STATION - PUMP ROOM	RAW INFLUENT	RAW SEWAGE	18,24	112	COATING, PAINTING, AND IDENTIFICATION NOT IN COMPLIANCE; MISSING FLOW ARROWS.
(1B)	LIFT STATION - MOTOR ROOM	RAW INFLUENT	RAW SEWAGE	24	46	COATING, PAINTING, AND IDENTIFICATION NOT IN COMPLIANCE; MISSING FLOW ARROWS.
(2)	RAS STATION	RAS	RETURN SLUDGE	14, 12	42	COATING, PAINTING, AND IDENTIFICATION NOT IN COMPLIANCE; MISSING FLOW ARROWS.
(3)	WAS STATION	WAS	WASTE SLUDGE	6	42	COATING, PAINTING, AND IDENTIFICATION NOT IN COMPLIANCE; MISSING FLOW ARROWS.
(4)	SLUDGE THICKENER STATION	WAS	THICKENED SLUDGE	6	50	COATING AND PAINTING NOT IN COMPLIANCE; MISSING FLOW ARROWS AND IDENTIFICATION LABELS.
(5A)	DIGESTER	THICKENED SLUDGE	THICKENED SLUDGE	4	14	COATING AND PAINTING NOT IN COMPLIANCE; MISSING FLOW ARROWS AND IDENTIFICATION LABELS.
(5B)	DIGESTER	WAS	WASTE SLUDGE	8	44	COATING AND PAINTING NOT IN COMPLIANCE; MISSING FLOW ARROWS AND IDENTIFICATION LABELS.
(6)	DIGESTER	PLANT AIR	PLANT AIR	10,14	570	COATING AND PAINTING NOT IN COMPLIANCE; MISSING FLOW ARROWS AND IDENTIFICATION LABELS; INCORRECT PIPE COLOR.
(7)	DIGESTER PUMP STATION	WAS	DIGESTED SLUDGE	6	UNKNOWN	MISSING IDENTIFICATION LABEL.
(8)	AIR HEADER	PLANT AIR	PLANT AIR	12, 16, 20	31	COATING AND PAINTING NOT IN COMPLIANCE; MISSING FLOW ARROWS AND IDENTIFICATION LABELS; INCORRECT PIPE COLOR.
(9)	CCB #3	NPW	NPW	4	UNKNOWN	MISSING IDENTIFICATION LABEL.
(10)	SCUM PIT	SCUM	SCUM	4	UNKNOWN	CLEAN PIPING; MISSING FLOW ARROWS AND IDENTIFICATION LABELS.
(11)	SCUM SEPARATION FACILITY	SCUM	SCUM	4	UNKNOWN	CLEAN PIPING; MISSING FLOW ARROWS AND IDENTIFICATION LABELS; DETERIORATED FLANGED JOINT.
	PLANT WIDE	NPW	NPW	4	UNKNOWN	MISSING IDENTIFICATION LABEL.

*CONDITION BASED ON THE ASSESSMENT CONDUCTED IN JUNE 2024. CONTRACTOR TO FIELD VERIFY COAT, AND COLOR CODE ABOVEGROUND PIPING PER SPEC 09901

** LENGTH ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY

NOTE:

1. CONTRACTOR TO FIELD VERIFY, COAT AND COLOR CODE ALL ABOVEGROUND PIPING PER SPEC 09901.
2. PIPE LENGTHS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY.
3. PIPES BEING REPLACED PER OTHER SCOPE NOT INCLUDED IN SCHEDULE.
4. CONTRACTOR TO CONTACT CITY IF DURING BLASTING, CLEANING ACTIVITES IDENTIFIES DAMAGED PIPES/FITTINGS. USE EXTRA UNIT PRICES TO REPAIR/REPLACE.

8 C-15 AIR HEADER (8)

9 C-15 CCB 3 – NPW PIPING (9)

10 C-15 SCUM PIT (10)

11 C-15 SCUM SEPARATION FACILITY (11)

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PIPING PAINTING SCHEDULE AND DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 30 OF 256	

C-16

90% SUBMITTAL NOT FOR CONSTRUCTION

PLOTTED: 1/6/2026 3:10 AM
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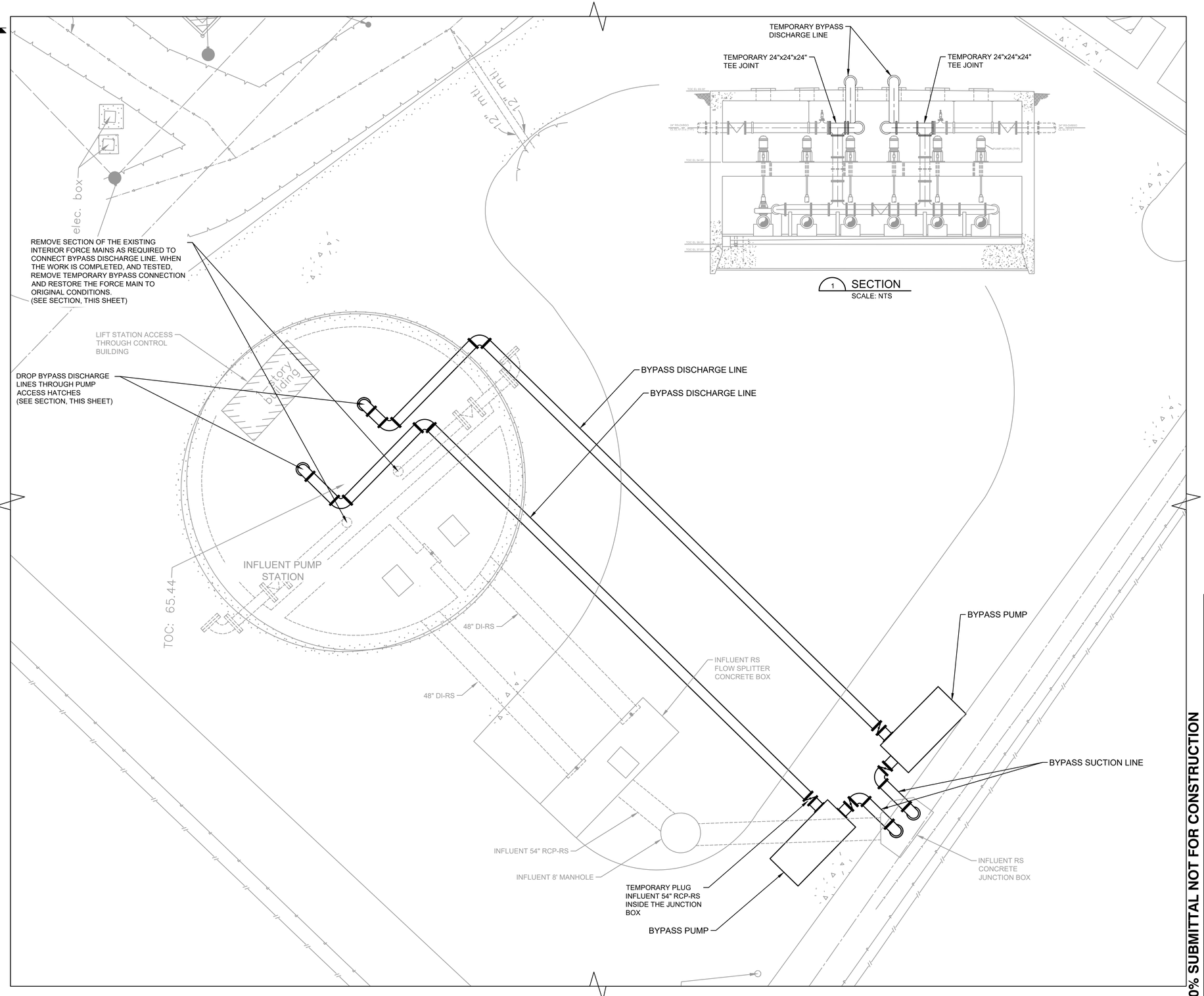
User: p00569
3:10am
FILE: P:\265397\6-Design\6g-Permitting\Exhibits\Exhibits.dgn



1 SECTION
SCALE: NTS

1 PLAN VIEW
SCALE: 1" = 10'-0"

10' 0 10' 20'
HORIZONTAL SCALE 1" = 10'-0"

NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
3. CONTRACTOR SHALL NOTE SIZE OF EXISTING HATCHES AS REQUIRED FOR ENTRY WITHIN WET WELL TO PERFORM WORK. SHOULD A LARGE OPENING BE REQUIRED TO INSTALL GATE, CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO ROOF SLAB AS NECESSARY.
4. CONTRACTOR SHALL MAINTAIN WWTP IN OPERATION AT ALL TIMES. THE PLANT IS RATED FOR 7.05 MGD ADF /30 MGD 2Hr PEAK AND MUST MAINTAIN THIS CAPACITY WITH BYPASS PUMPING IF LIFT STATION IS OUT OF SERVICE.
5. CONTRACTOR IS RESPONSIBLE FOR MANAGING SANITARY WASTE IN FORCE MAIN PIPING TO PREVENT SPILLS.
6. CONTRACTOR IS RESPONSIBLE FOR CHOOSING AND SECURING THE LOCATION FOR PLACING BYPASS PUMP SKIDS.

CIVITAS ENGINEERING GROUP
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Houston, Texas 77042
Phone: (713) 783-8700
TBPE Firm Registration No. F-4991

PARSONS
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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. FOR REVIEW ONLY.
KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc. Consulting Engineers
Firm Registration No. F-4991

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

LIFT STATION TEMPORARY BYPASS SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-19	SHEET NO. 33 OF 256

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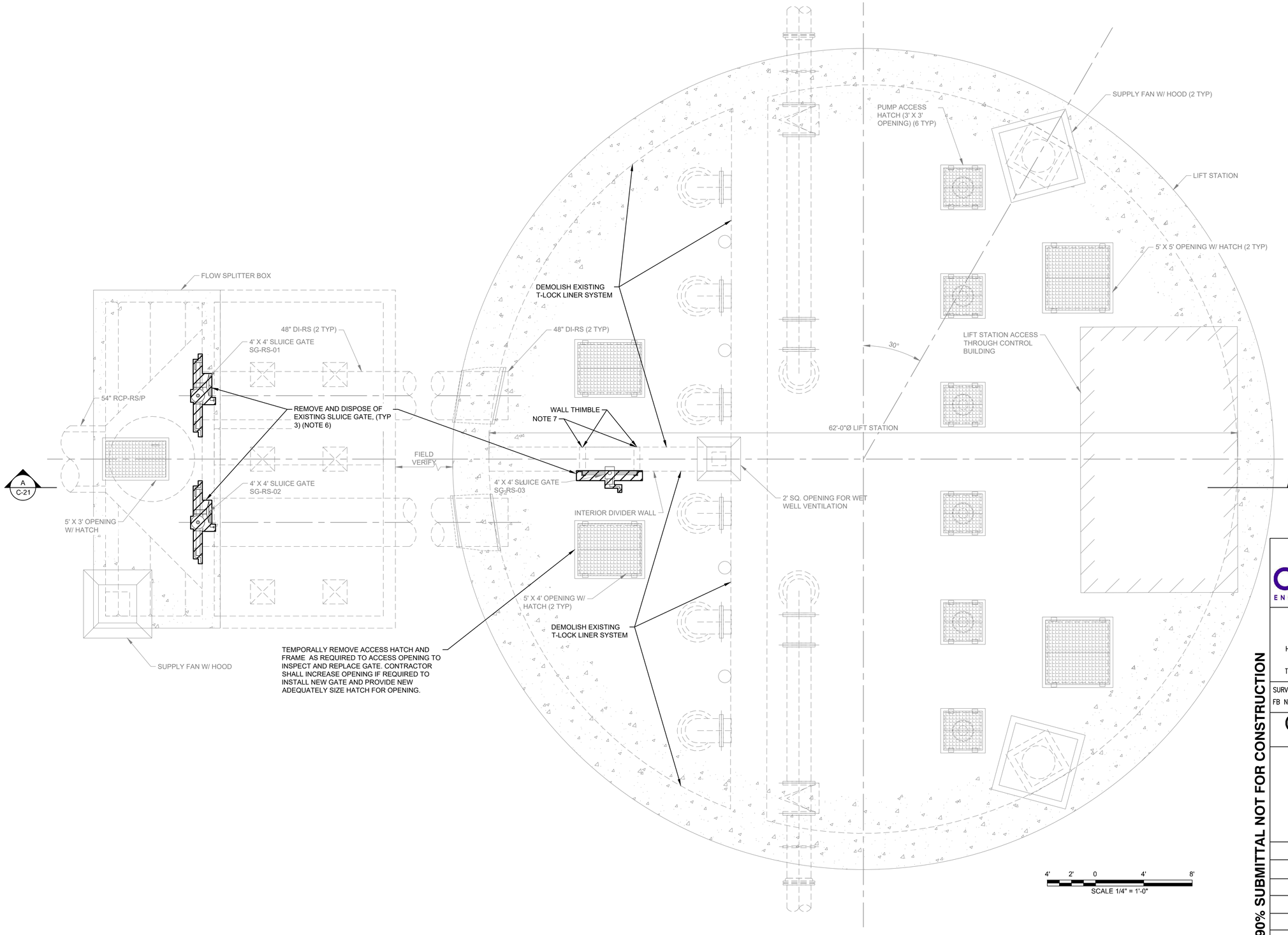
R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.3 Civil\357-2401 GR MC1 Yard Piping.dwg Dec 12, 2025 - 11:24am User: OMarcelo



1 FLOW SPLITTER & LIFT STATION DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. CONTRACTOR SHALL NOTE SIZE OF EXISTING HATCHES AS REQUIRED FOR ENTRY WITHIN WET WELL TO PERFORM WORK. SHOULD A LARGE OPENING BE REQUIRED TO INSTALL GATE, CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO ROOF SLAB AS NECESSARY.
5. CONTRACTOR SHALL MAINTAIN WWTP IN OPERATION AT ALL TIMES. THE PLANT IS RATED FOR 7.05 MGD ADF/30 MGD 2Hr PEAK AND MUST MAINTAIN THIS CAPACITY WITH BYPASS PUMPING IF LIFT STATION IS OUT OF SERVICE.
6. CONTRACTOR SHALL SCHEDULE SHORT DURATION SHUTDOWN AS REQUIRED TO INVESTIGATE CONDITION OF EXISTING GATES, WALL THIMBLES ARE EXPECTED TO BE IN POOR CONDITIONS. CONTRACTOR SHALL COORDINATE WITH THE CITY AND DETERMINE THE DIMENSIONS AND CONFIGURATIONS OF PROPOSED GATES AND REHABILITATION OR REPLACEMENT OF WALL THIMBLES. INITIAL INVESTIGATION PHASE SHALL PRECEDE THE LIFT STATION REPAIR PHASE.
7. FOR BIDDING PURPOSES, IT IS ASSUMED THE WALL THIMBLE SHALL BE IN POOR CONDITION AND NOT REUSABLE. GRIND WALL THIMBLE TO BE FLUSH WITH CONCRETE WALL FOR INSTALLATION OF NEW GATE ON EXITING WALL. A 5' X 5' GATE SHALL BE INSTALLED ON THE CONCRETE WALL. IF WALL THIMBLE IS FOUND TO BE IN GOOD CONDITION, THEM IT CAN BE REUSED WITH THE NEW 4' X 4' TO MATCH EXISTING GATE SIZE.

DEMOLITION LEGEND

DEMOLITION

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Houston, Texas 77042
Phone: (713) 783-8700
TBPE Firm Registration No. F-4991

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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
FOR REVIEW ONLY.
KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

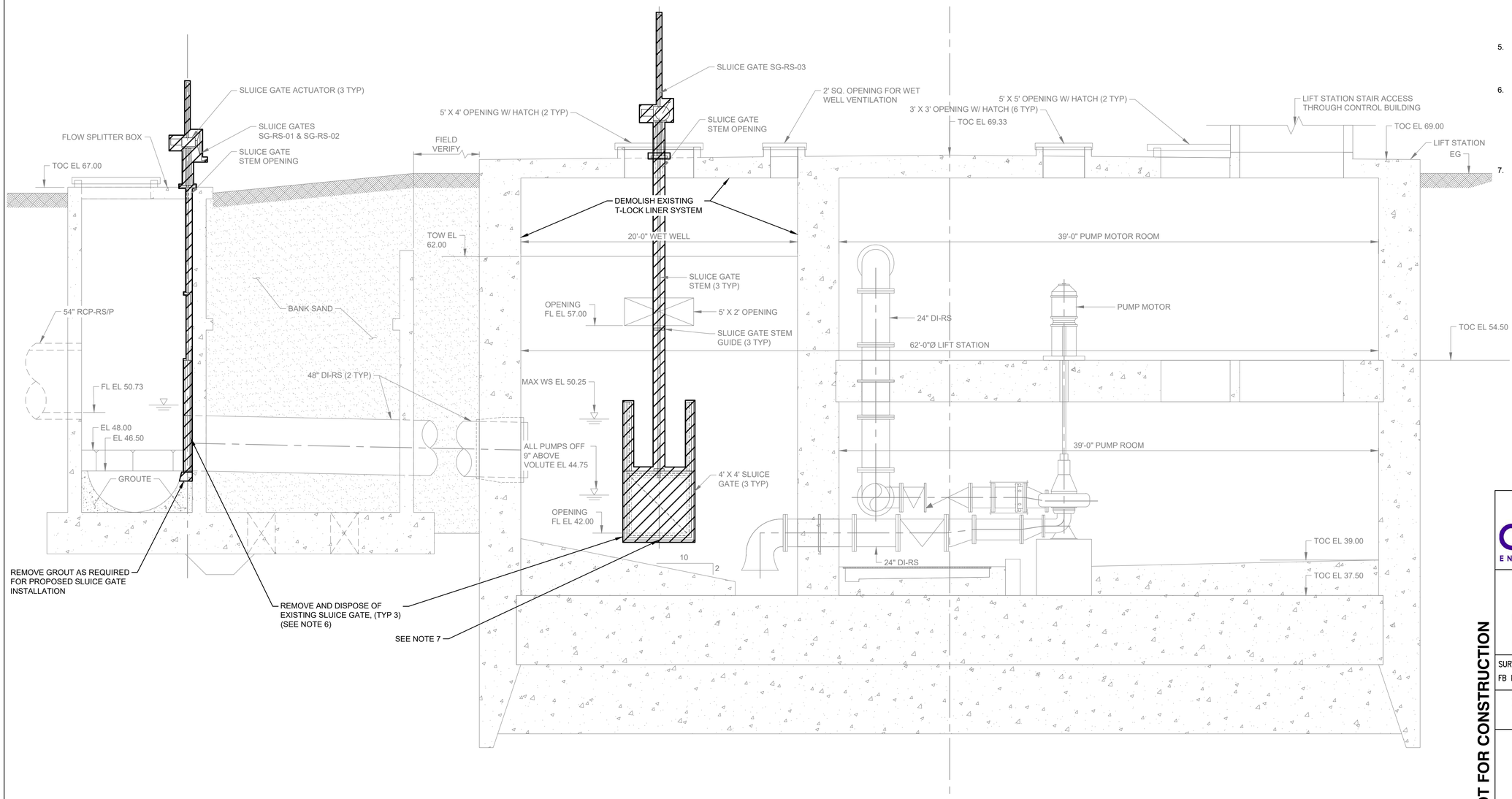
GREENRIDGE WWTP IMPROVEMENTS

FLOW SPLITTER BOX & LIFT STATION SLUICE GATES DEMOLITION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-20	SHEET NO. 34 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.7 Mech\357-2401 LS 4X4 SG-RS-03 REPLCMT.dwg Dec 12, 2025 - 11:24am User: OMarcelo



A C-20 FLOW SPLITTER BOX & LIFT STATION DEMOLITION SECTION
SCALE: 1/4" = 1'-0"

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

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. CONTRACTOR SHALL NOTE SIZE OF EXISTING HATCHES AS REQUIRED FOR ENTRY WITHIN WET WELL TO PERFORM WORK. SHOULD A LARGE OPENING BE REQUIRED TO INSTALL GATE, CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO ROOF SLAB AS NECESSARY.
5. CONTRACTOR SHALL MAINTAIN WWTP IN OPERATION AT ALL TIMES. THE PLANT IS RATED FOR 7.05 MGD AND MUST MAINTAIN THIS CAPACITY WITH BYPASS PUMPING IF LIFT STATION IS OUT OF SERVICE.
6. CONTRACTOR SHALL SCHEDULE SHORT DURATION SHUTDOWN AS REQUIRED TO INVESTIGATE CONDITION OF EXISTING GATES, WALL THIMBLES ARE EXPECTED TO BE IN POOR CONDITIONS. CONTRACTOR SHALL COORDINATE WITH THE CITY AND DETERMINE THE DIMENSIONS AND CONFIGURATIONS OF PROPOSED GATES AND REHABILITATION OR REPLACEMENT OF WALL THIMBLES.
7. FOR BIDDING PURPOSES, IT IS ASSUMED THE WALL THIMBLE SHALL BE IN POOR CONDITION AND NOT REUSABLE. GRIND WALL THIMBLE TO BE FLUSH WITH CONCRETE WALL FOR INSTALLATION OF NEW GATE ON EXITING WALL. A 5' X 5' GATE SHALL BE INSTALLED ON THE CONCRETE WALL. IF WALL THIMBLE IS FOUND TO BE IN GOOD CONDITION, THEM IT CAN BE REUSED WITH THE NEW 4' X 4' TO MATCH EXISTING GATE SIZE.

DEMOLITION LEGEND

DEMOLITION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

FLOW SPLITTER BOX & LIFT STATION SLUICE GATES DEMOLITION SECTION

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R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-21	SHEET NO. 35 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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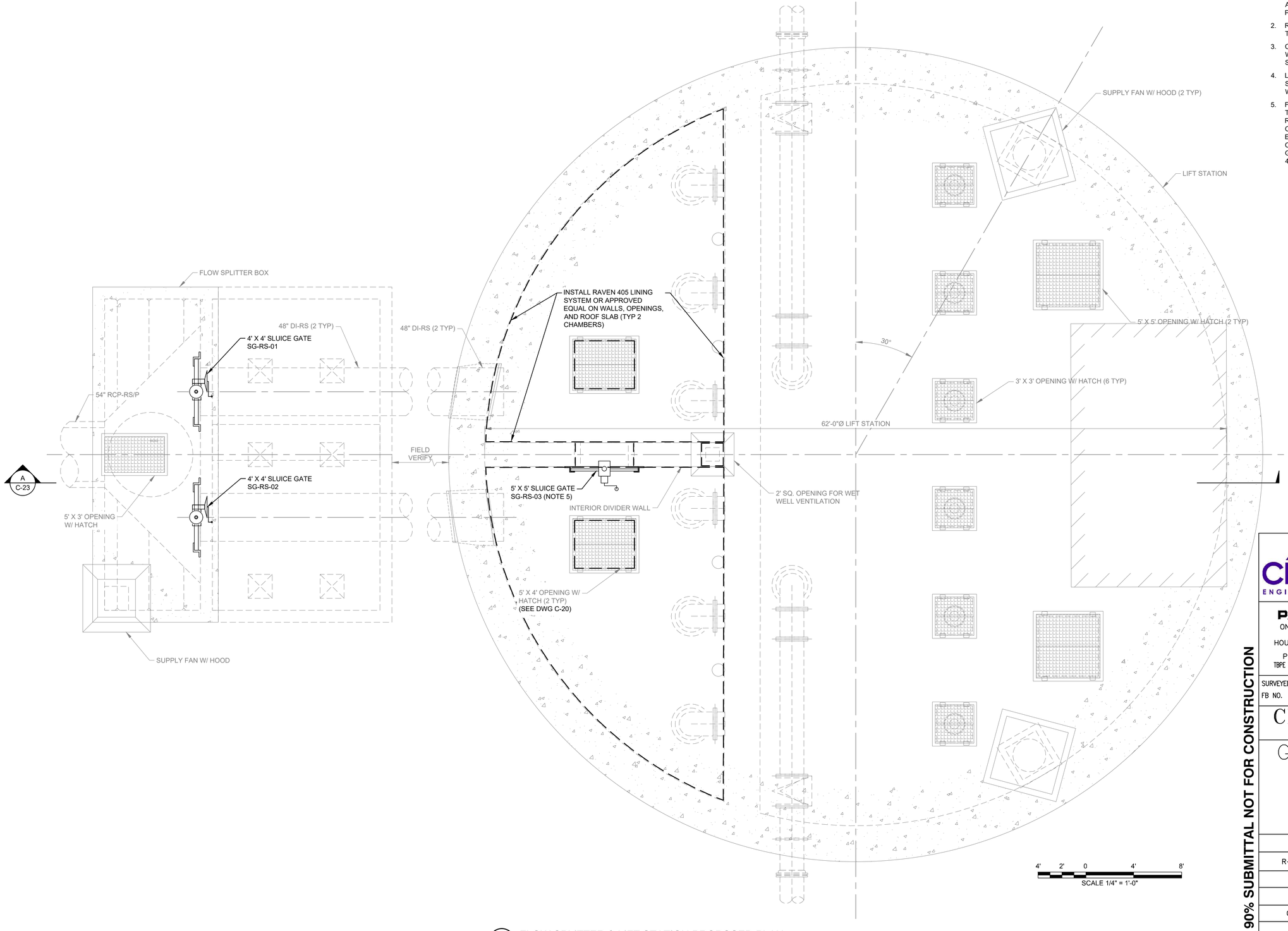

1 FLOW SPLITTER & LIFT STATION PROPOSED PLAN
SCALE: 1/4" = 1'-0"

CONSTRUCTION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. LIFT STATION & FLOW SPLITTER BOX WALLS AND ROOF SLAB SHALL BE PREPARED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09910.
5. FOR BIDDING PURPOSES, IT IS ASSUMED THE WALL THIMBLE SHALL BE IN POOR CONDITION AND NOT REUSABLE. GRIND WALL THIMBLE TO BE FLUSH WITH CONCRETE WALL FOR INSTALLATION OF NEW GATE ON EXITING WALL. A 5' X 5' GATE SHALL BE INSTALLED ON THE CONCRETE WALL. IF WALL THIMBLE IS FOUND TO BE IN GOOD CONDITION, THEM IT CAN BE REUSED WITH THE NEW 4' X 4' TO MATCH EXISTING GATE SIZE.

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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KEITH O'CONNOR, P.E. 98334
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Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

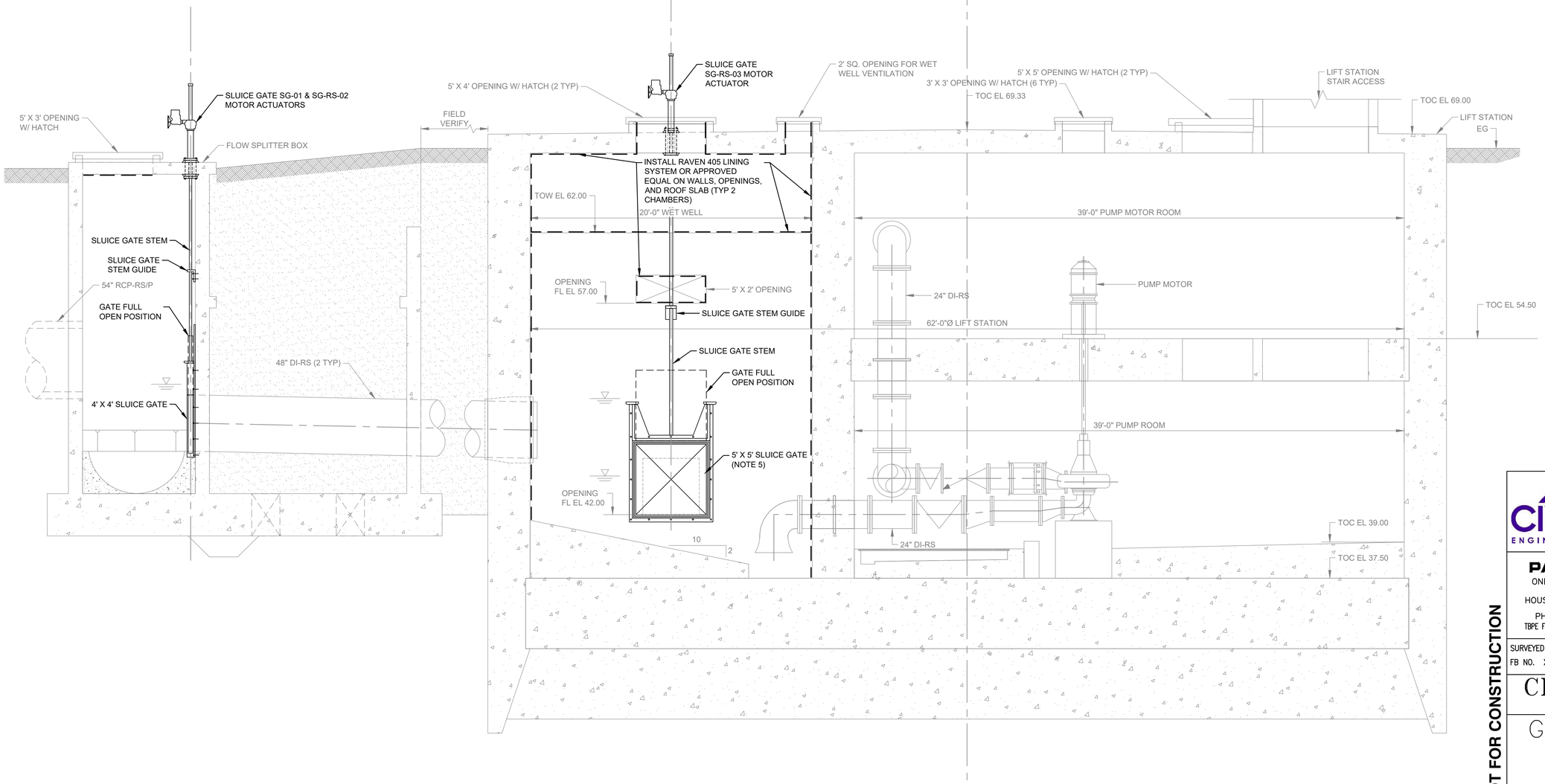
FLOW SPLITTER BOX & LIFT STATION SLUICE GATES PROPOSED PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-22	SHEET NO. 36 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

CONSTRUCTION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. LIFT STATION & FLOW SPLITTER BOX WALLS AND ROOF SLAB SHALL BE PREPARED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09910.
5. FOR BIDDING PURPOSES, IT IS ASSUMED THE WALL THIMBLE SHALL BE IN POOR CONDITION AND NOT REUSABLE. GRIND WALL THIMBLE TO BE FLUSH WITH CONCRETE WALL FOR INSTALLATION OF NEW GATE ON EXITING WALL. A 5' X 5' GATE SHALL BE INSTALLED ON THE CONCRETE WALL. IF WALL THIMBLE IS FOUND TO BE IN GOOD CONDITION, THEM IT CAN BE REUSED WITH THE NEW 4' X 4' TO MATCH EXISTING GATE SIZE.



A C-22 FLOW SPLITTER BOX & LIFT STATION PROPOSED SECTION
SCALE: 1/4" = 1'-0"

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

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FB NO. XXXXXXX

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

FLOW SPLITTER BOX & LIFT STATION SLUICE GATES PROPOSED SECTION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

C-23 SHEET NO. 37 OF 256

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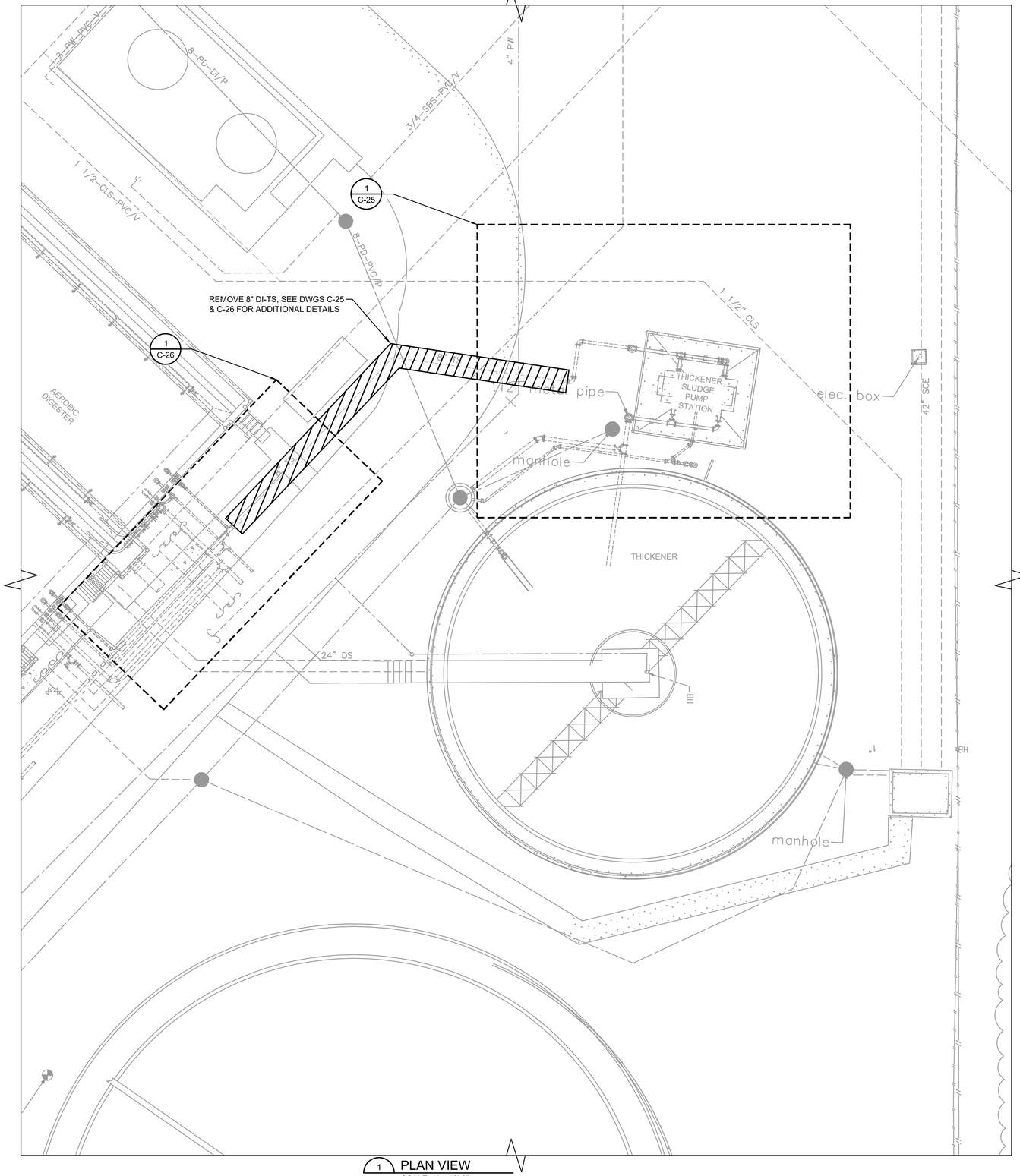

1 PLAN VIEW
SCALE: 1" = 10'-0"

10' 0 10' 20'
HORIZONTAL SCALE 1" = 10'-0"

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL DISCONNECT AND LOCK-OUT ALL UTILITIES SERVING BUILDING AND EQUIPMENT PRIOR TO DEMOLITION.
3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

LEGEND

DEMOLITION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

THICKENED SLUDGE PIPING DEMOLITION SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-24	SHEET NO. 38 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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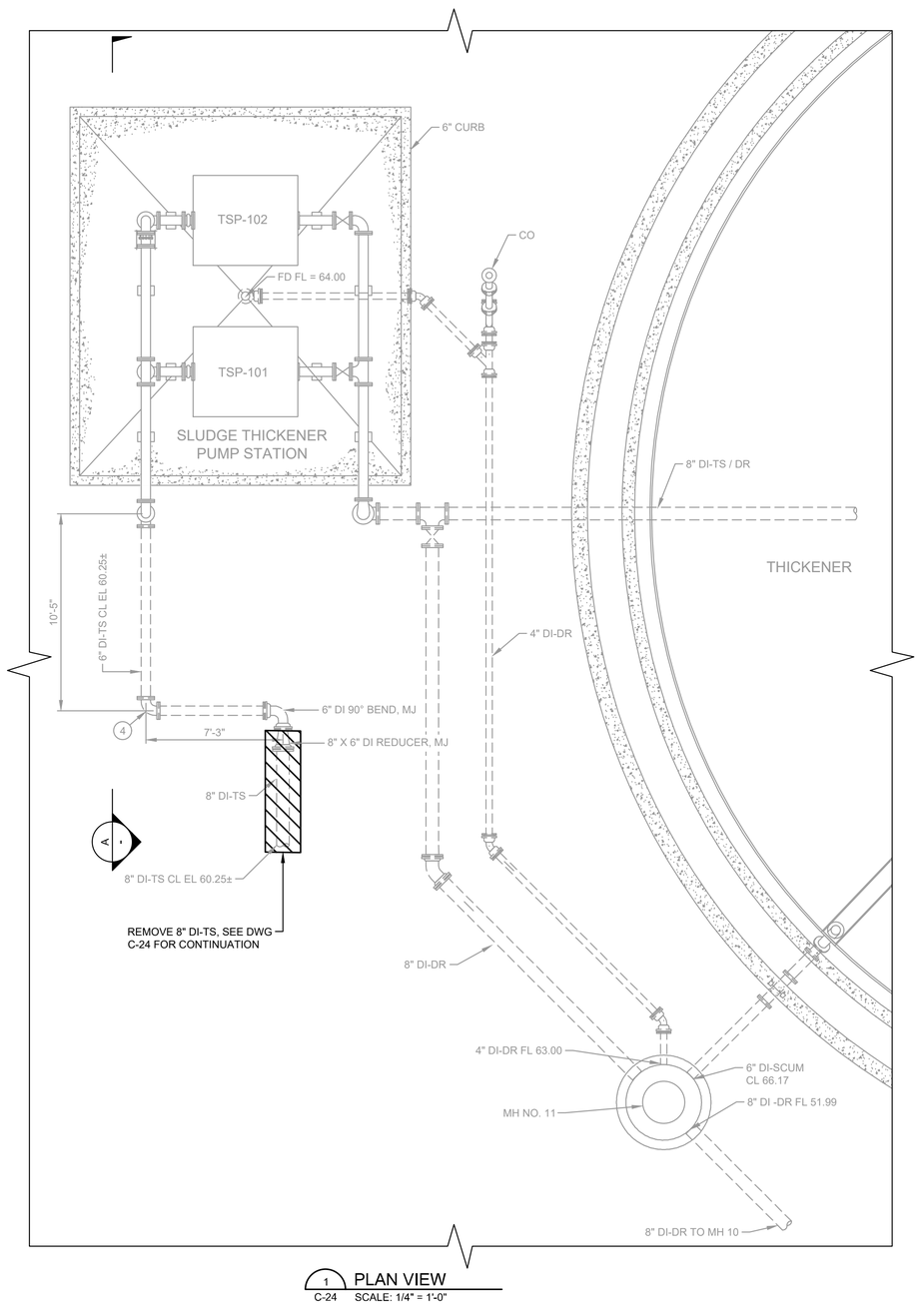
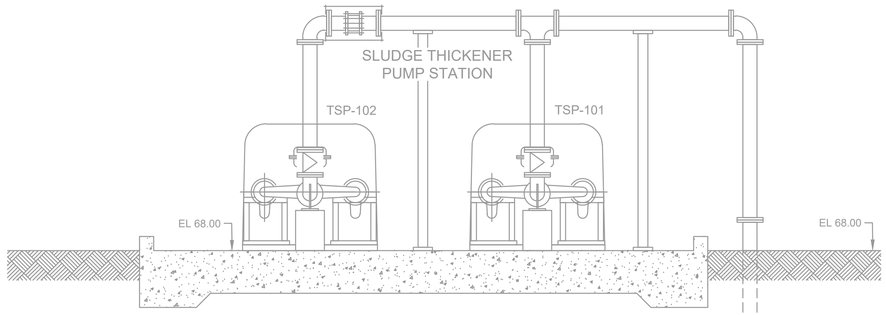


1 PLAN VIEW
C-24 SCALE: 1/4" = 1'-0"



A SECTION VIEW
- SCALE: 3/8" = 1'-0"

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
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3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

LEGEND

DEMOLITION

CIVITAS ENGINEERING GROUP
2000 W. Sam Houston Pkwy S., Suite 1400
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Phone: (713) 783-8700
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PARSONS
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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

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KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

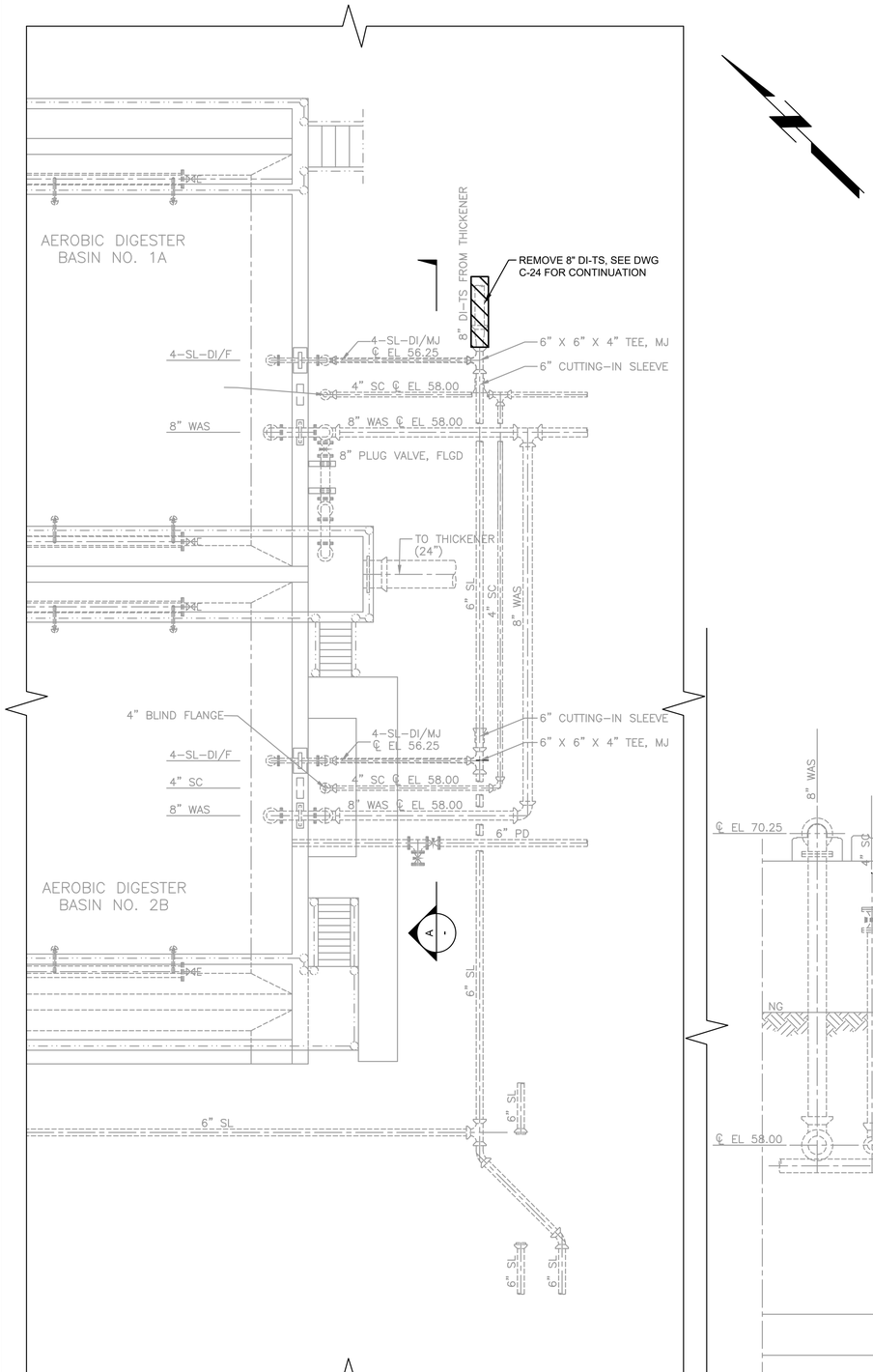
GREENRIDGE WWTP IMPROVEMENTS

THICKENED SLUDGE PIPING DEMOLITION PLAN & SECTION I

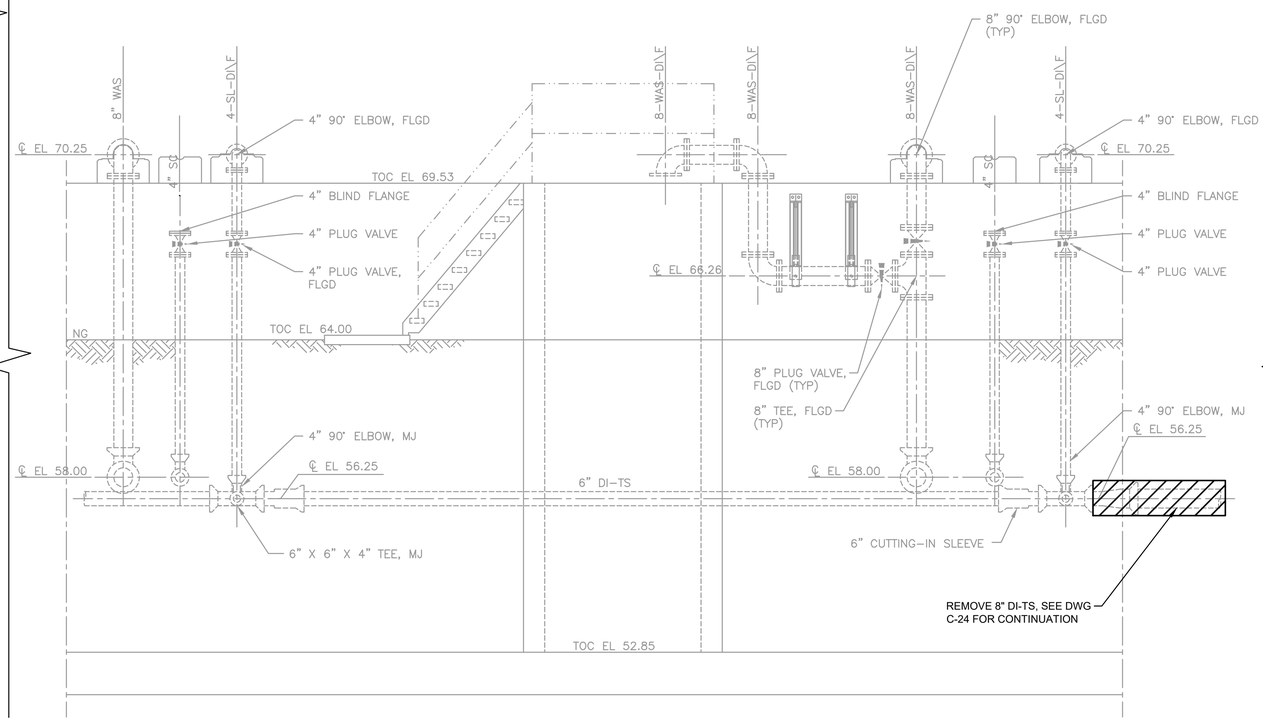
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-25	SHEET NO. 39 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

R:_357 Parson_2401 Greenridge WWTP_PROD_3.2 CAD_3.2.7 Mech_357-2401THICKENER SL PUMPS.dwg Dec 12, 2025 - 11:25am User: OMarcelo



1 PLAN VIEW
C-24 SCALE: 3/16" = 1'-0"



A SECTION VIEW
- SCALE: 3/8" = 1'-0"

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
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3. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
4. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

LEGEND

DEMOLITION

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2000 W. Sam Houston Pkwy S., Suite 1400
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PARSONS
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SUITE 1100
HOUSTON, TEXAS 77056
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

THICKENED SLUDGE PIPING DEMOLITION PLAN & SECTION II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-26	SHEET NO. 40 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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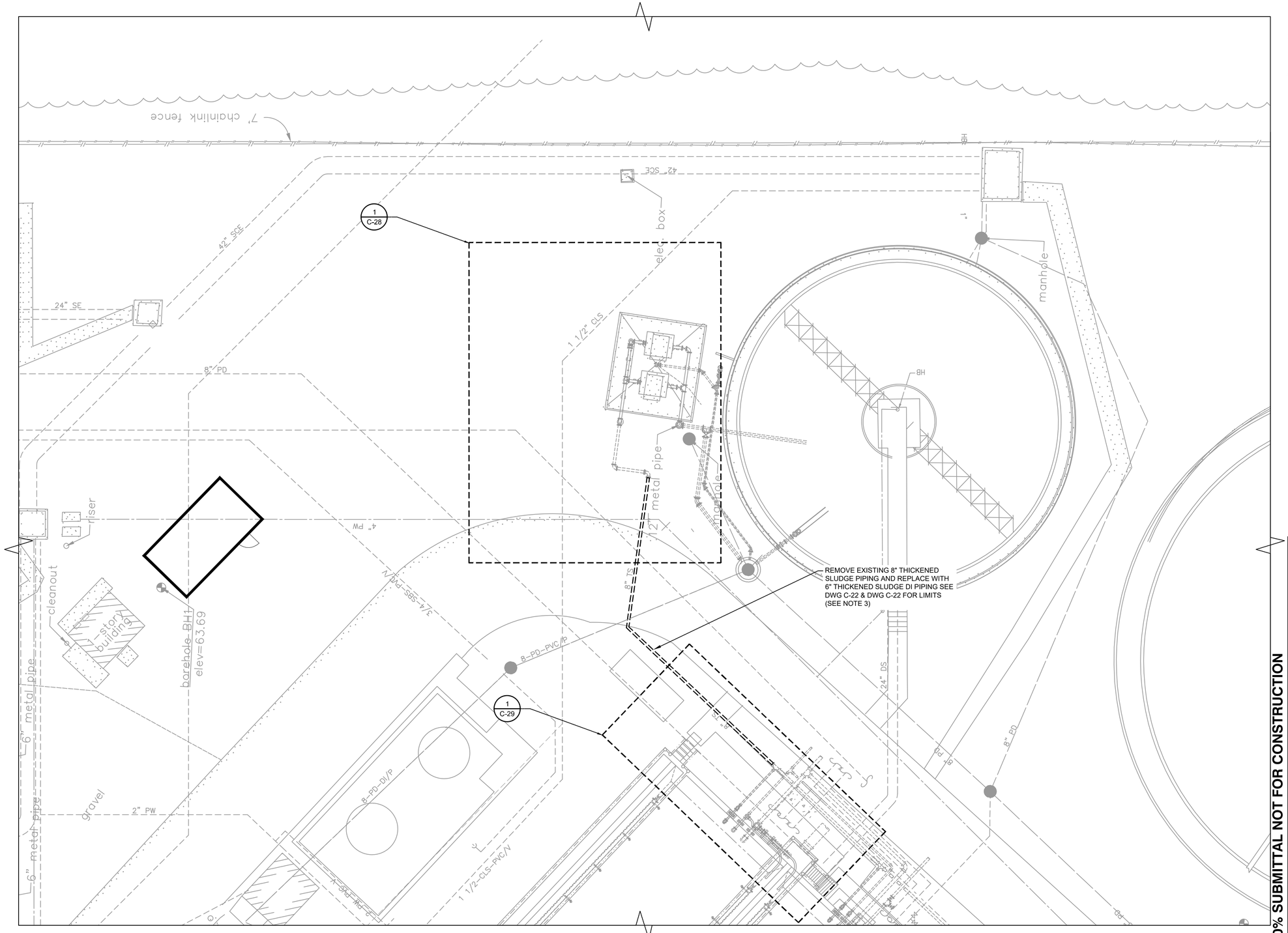

1 PLAN VIEW
SCALE: 1" = 10'-0"

10' 0 10' 20'
HORIZONTAL SCALE 1" = 10'-0"

NOTES:

1. EXISTING 8" TS IS APPROXIMATELY 6'-8" DEEP (FIELD VERIFY) PER RECORD DRAWINGS AND SHALL BE REMOVED AND REPLACED IN KIND.
2. THICKENED SLUDGE PUMP STATION SHALL REMAIN OPERATIONAL AT ALL TIMES. CONTRACTOR SHALL PROVIDE TEMPORARY PIPING AS NEEDED TO MAINTAIN THICKENED SLUDGE PUMP OPERATIONS.
3. DEMOLISH AND RECONSTRUCT UPON COMPLETION W/ SAME CHARACTERISTICS ROAD AND SIDEWALKS PAVEMENT AS REQUIRED TO REMOVE EXISTING 8" DI-TS AND INSTALL 6" DI-TS.
4. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

THICKENED SLUDGE PIPING PROPOSED SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-27	SHEET NO. 41 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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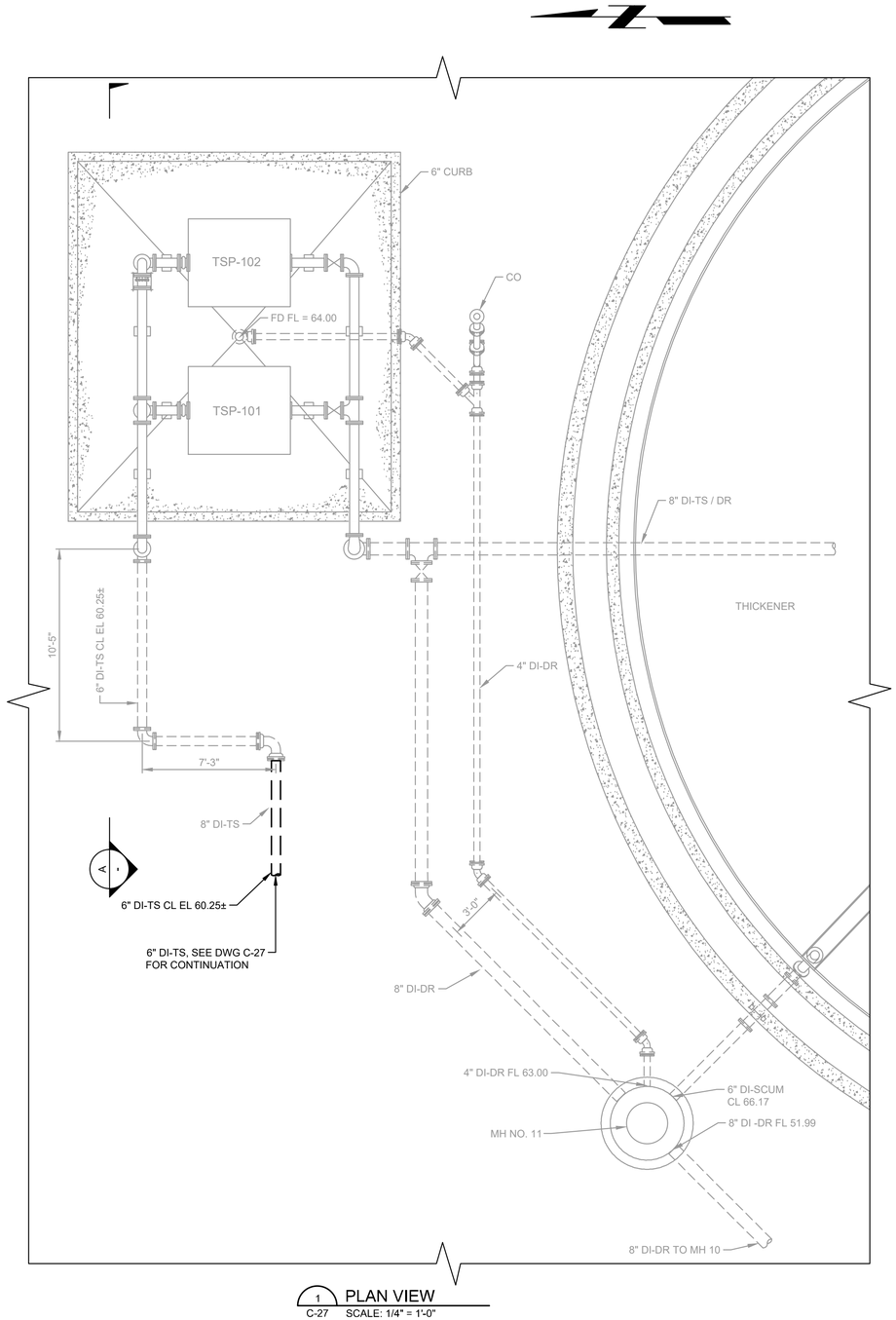
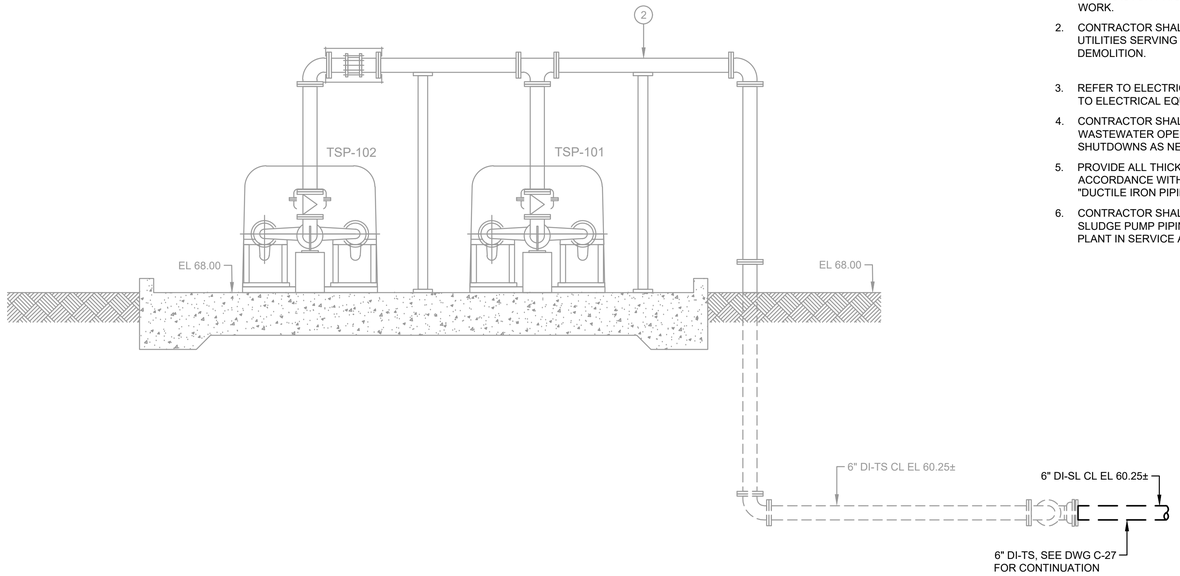


1 C-27 PLAN VIEW
SCALE: 1/4" = 1'-0"



A - SECTION VIEW
SCALE: 3/8" = 1'-0"

NOTES:

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2. CONTRACTOR SHALL DISCONNECT AND LOCK-OUT ALL UTILITIES SERVING BUILDING AND EQUIPMENT PRIOR TO DEMOLITION.
3. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
4. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
5. PROVIDE ALL THICKENED SLUDGE (TS) PIPING IN ACCORDANCE WITH SPECIFICATION SECTION 02501 - "DUCTILE IRON PIPING AND FITTINGS".
6. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

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90% SUBMITTAL NOT FOR CONSTRUCTION

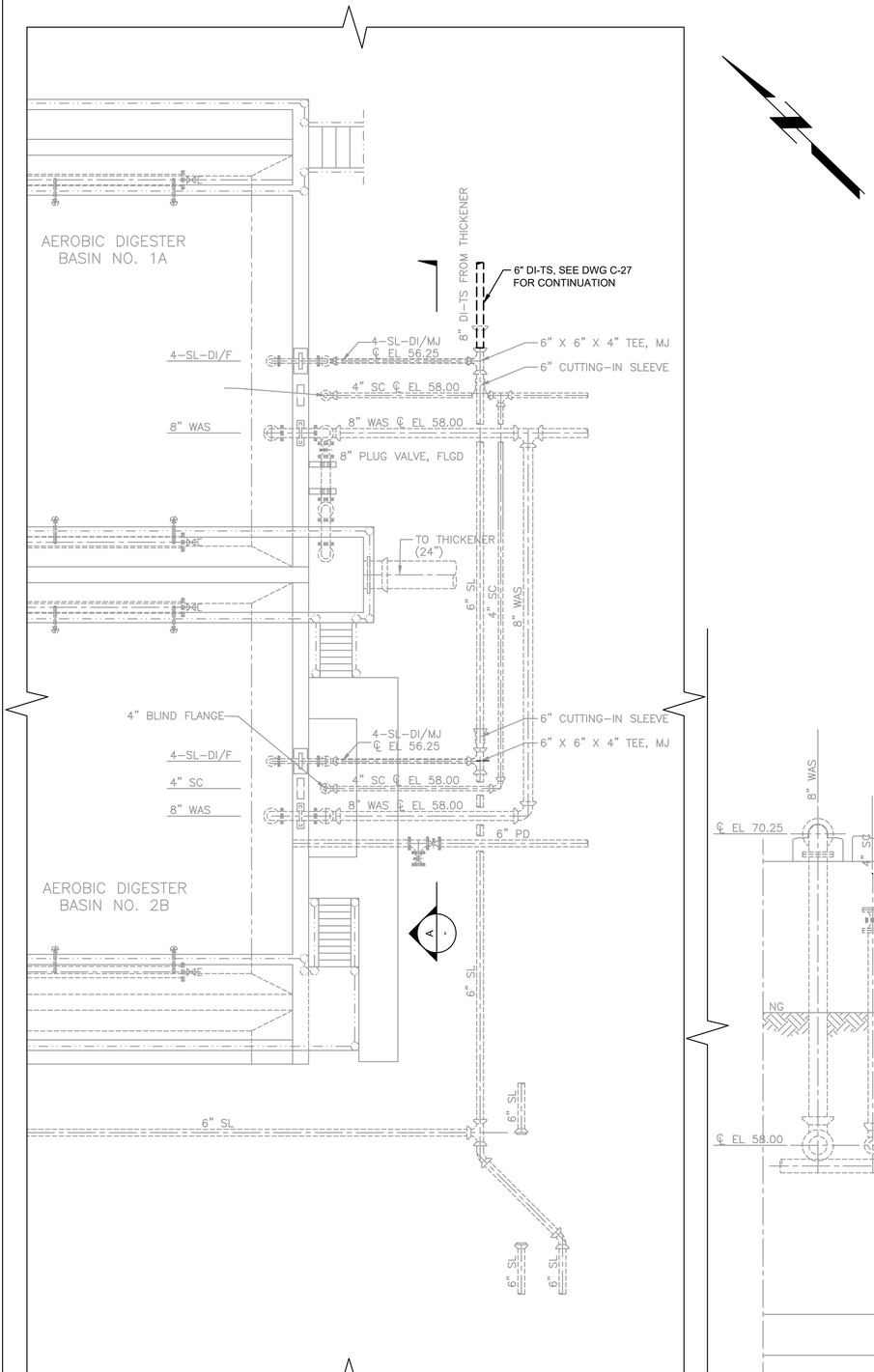
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

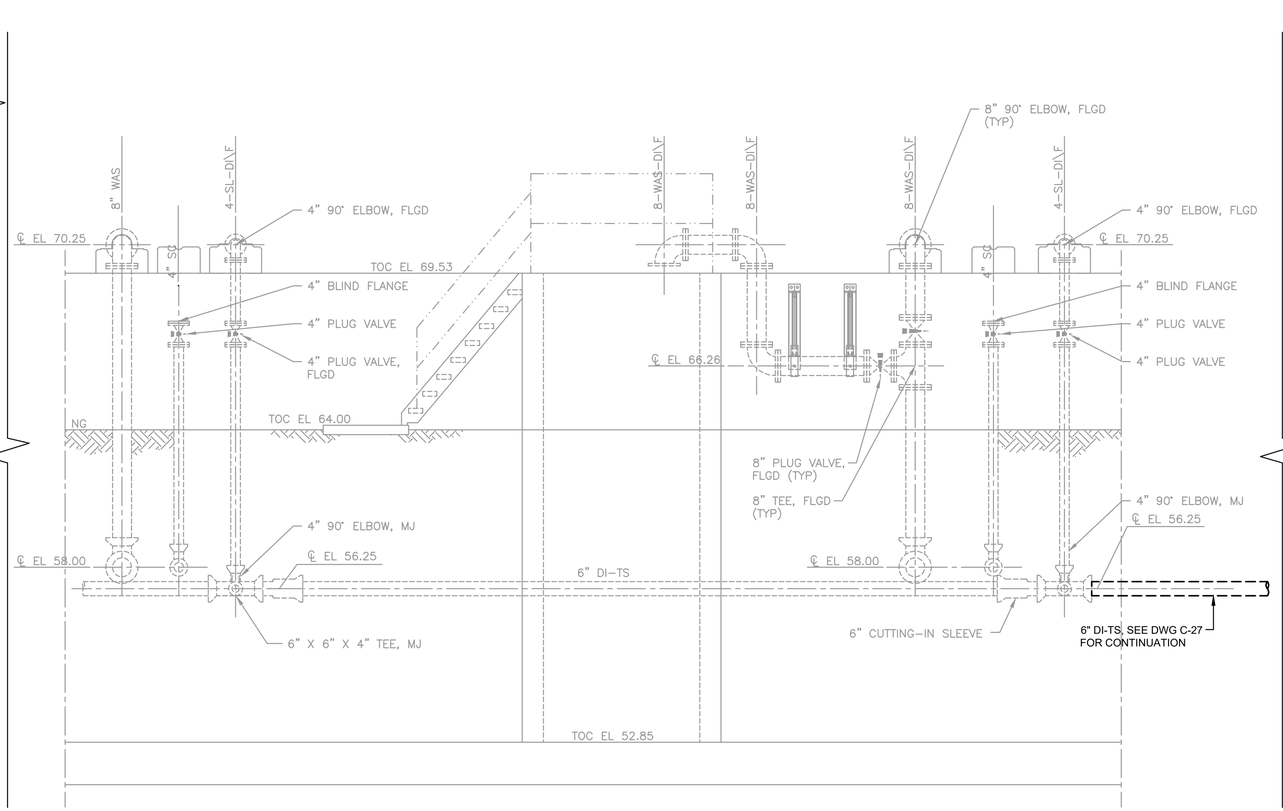
THICKENED SLUDGE PIPING PROPOSED PLAN & SECTION I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-28	SHEET NO. 42 OF 256

R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.7 Mech\357-2401THICKENER SL PUMPS.dwg Dec 12, 2025 - 11:25am User: OMarcelo



1 PLAN VIEW
C-27 SCALE: 3/16" = 1'-0"



A SECTION VIEW
- SCALE: 3/8" = 1'-0"

NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL DISCONNECT AND LOCK-OUT ALL UTILITIES SERVING BUILDING AND EQUIPMENT PRIOR TO DEMOLITION.
3. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
4. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
5. PROVIDE ALL THICKENED SLUDGE (TS) PIPING IN ACCORDANCE WITH SPECIFICATION SECTION 02501 - "DUCTILE IRON PIPING AND FITTINGS".
6. CONTRACTOR SHALL PROVIDE TEMPORARY THICKENED SLUDGE PUMP PIPING AS NECESSARY TO MAINTAIN PLANT IN SERVICE AT ALL TIMES.

90% SUBMITTAL NOT FOR CONSTRUCTION

CIVITAS ENGINEERING GROUP
2000 W. Sam Houston Pkwy S., Suite 1400
Houston, Texas 77042
Phone: (713) 783-8700
TBPE Firm Registration No. F-4991

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
FOR REVIEW ONLY.
KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

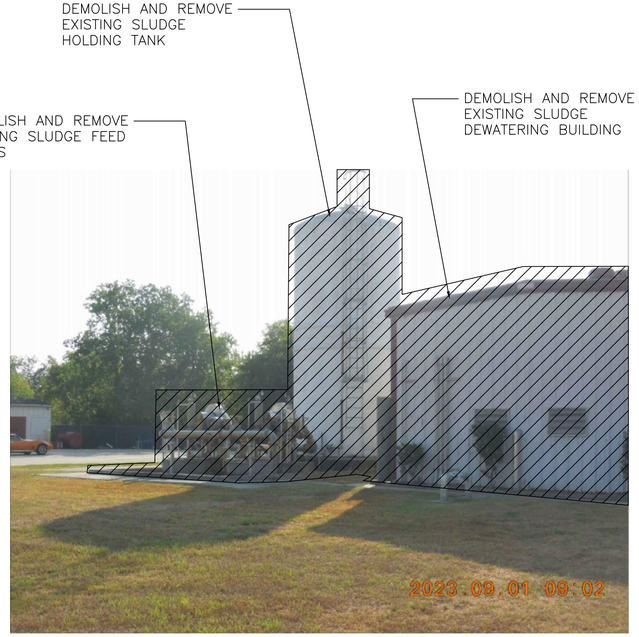
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

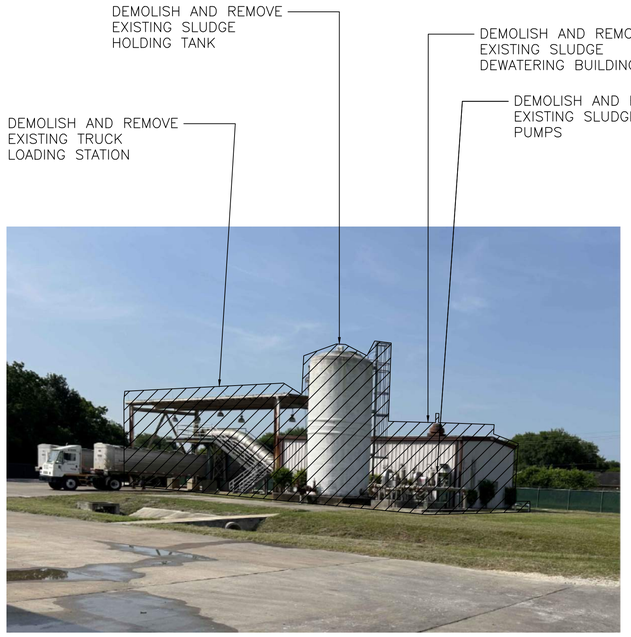
THICKENED SLUDGE PIPING PROPOSED PLAN & SECTION II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-29	SHEET NO. 43 OF 256

R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.7 Mech\357-2401 AerDigester.dwg Dec 12, 2025 - 11:25am User: OMarcelo



1 C-22 DEWATERING BUILDING
SCALE: NTS



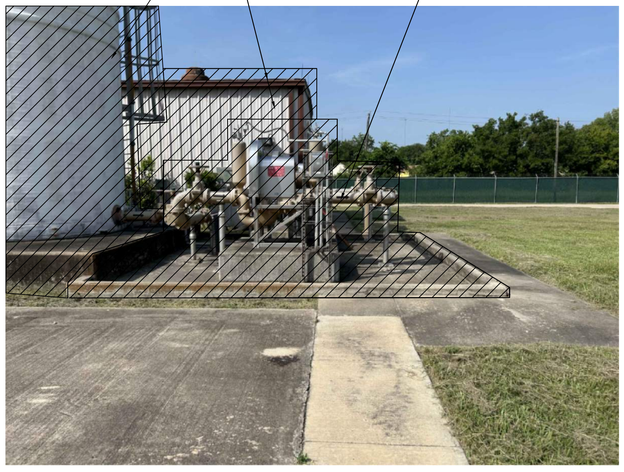
2 C-22 DEWATERING BUILDING
SCALE: NTS

3 C-22 TRUCK LOADING STATION
SCALE: NTS

NOTE:

1. SEE DRAWING C-27 FOR PROPOSED SLUDGE PROCESSING PLAN
2. CONTRACTOR TO CONFIRM WITH CITY WHAT EQUIPMENT TO SALVAGE AND WHERE TO STORE

4 C-22 DEWATERING BUILDING
SCALE: NTS



5 C-22 DEWATERING BUILDING
SCALE: NTS

6 C-22 TRUCK LOADING STATION
SCALE: NTS

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

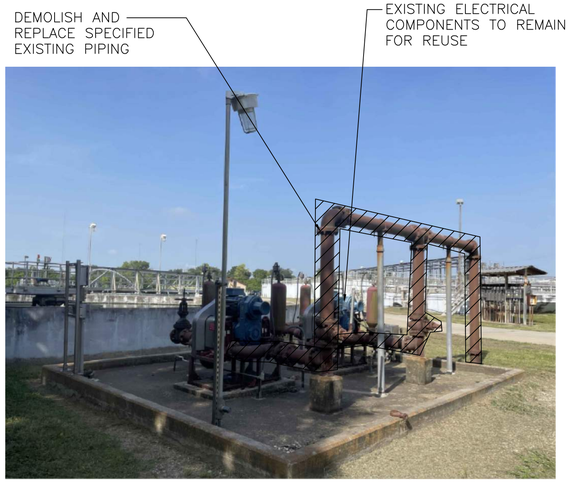
RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

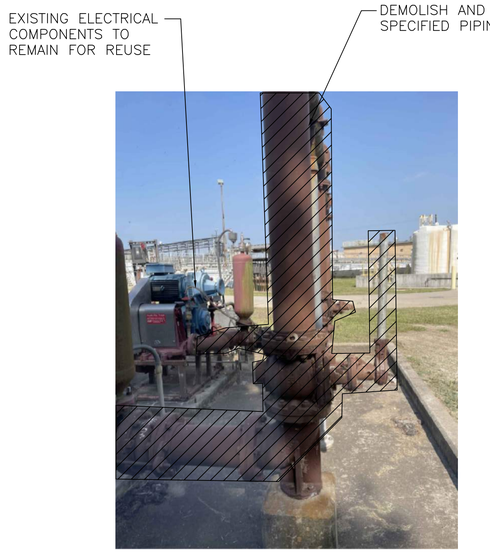
GREENRIDGE WWTP IMPROVEMENTS
EXISTING SLUDGE PROCESSING DEMOLITION PLAN SHEET 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
C-32	SHEET NO. 46 OF 256

J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-32 EXISTING SLUDGE PROCESSING DEMOLITION PLAN SHEET 1.dwg Jan 06, 2026 - 3:19am User: p005609F

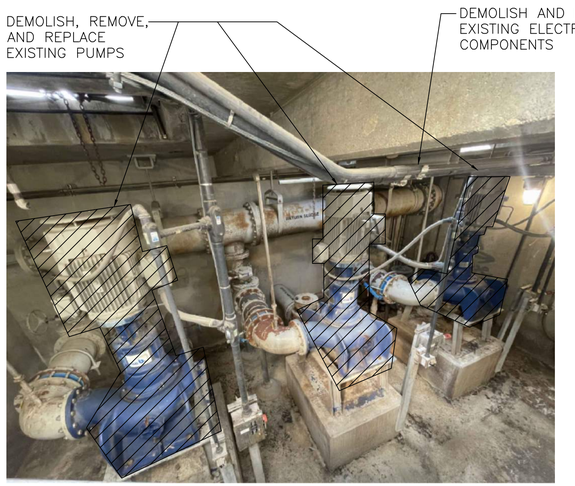


1 C-23 THICKENER PUMPS
SCALE: NTS

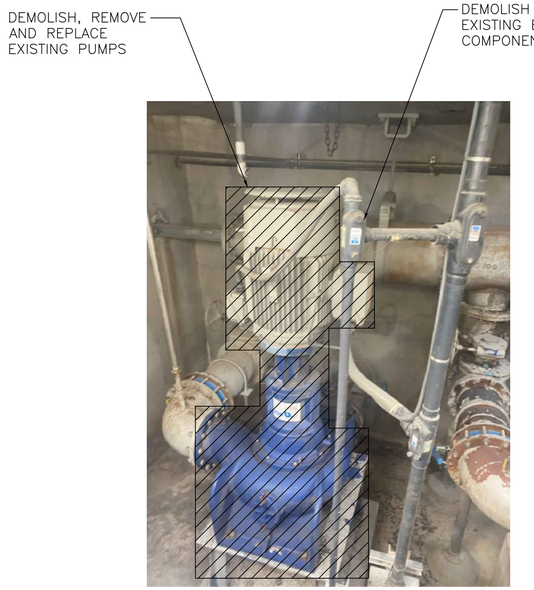


2 C-23 THICKENER PUMPS
SCALE: NTS

NOTES:
1. SEE DRAWING C-21 FOR OVERALL SLUDGE PROCESSING PLAN
2. SEE DRAWING C-19 FOR PROPOSED THICKENER PIPING PLAN
3. SEE DRAWING E-21 FOR RAS ENLARGED SITE PLAN



3 C-23 RAS PUMPS
SCALE: NTS



4 C-23 RAS PUMPS
SCALE: NTS

NO.	DATE	REVISION	APP.

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
MARK ROETZEL
TEXAS LICENSE NO. 57660
ON DATE 12/29/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
EXISTING SLUDGE PROCESSING DEMOLITION PLAN SHEET 2

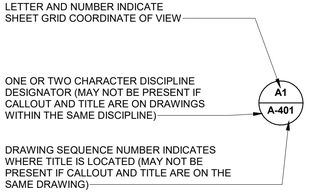
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 47 OF 256	

C-33

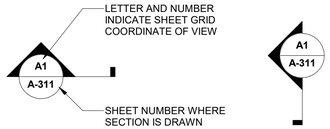
J:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\CIVIL\Sheets\C-33 EXISTING SLUDGE PROCESSING DEMOLITION PLAN SHEET 2.dwg Jan 06, 2026 - 3:20am User: p005609F

CALL OUT IDENTIFICATION

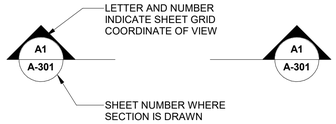
SECTION, DETAIL, AND ELEVATION SYMBOL IDENTIFIERS:



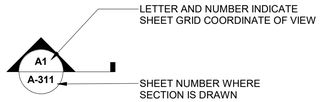
WALL SECTION CALLOUT EXAMPLE:



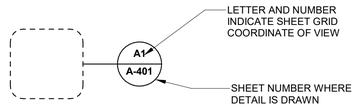
BUILDING SECTION CALLOUT EXAMPLE:



VIEW REFERENCE EXAMPLE:

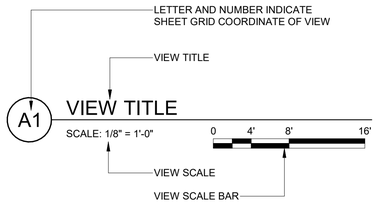


DETAIL CALLOUT EXAMPLE:

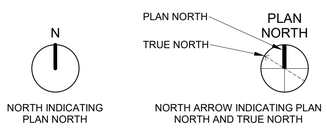


ELEVATION CALLOUT EXAMPLE:

SECTION, DETAIL, AND ELEVATION TITLE EXAMPLE:



NORTH ARROW EXAMPLE:



PLAN LEGEND

NEW DOOR

EXISTING WALL

NEW WALL (RE: PARTITION TYPE)

ROOM NAME
101
ROOM NAME
ROOM NUMBER

22
PARTITION TYPE

101A
DOOR NUMBER

E
WINDOW TYPE

SF01
WINDOW WALL TYPE (STOREFRONT)

CW01
CURTAIN WALL TYPE

00
GLAZING TYPE

1
GRID BUBBLE AND LINE

A01
TOILET ACCESSORY TAG

C1
FURNITURE SYSTEM TAG

9' - 0"
CEILING HEIGHT ABOVE FINISH FLOOR

XXX
SIGNAGE TAG

W1.01
MATERIAL/FINISH TAG

2.23.00
KEYED NOTE TAG

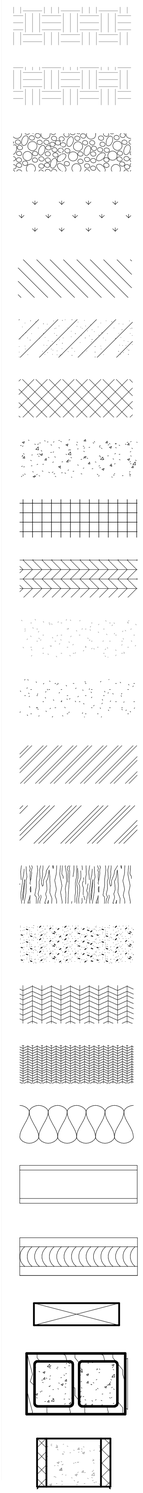
LV-1
LOUVER TAG

BREAKLINE

1
KEYNOTES

A
DEMOLITION NOTES

MATERIAL SYMBOLS


UNDISTURBED EARTH

COMPACTED FILL

GRAVEL

GRASS

FACE BRICK

EXISTING MASONRY

12" FULLY GROUTED CONCRETE MASONRY UNIT

CONCRETE

RIGID INSULATION

SHEATHING

GROUT OR GYPSUM BOARD

SAND, PLASTER, OR PORTLAND CEMENT

STEEL OR FERROUS METALS

ALUMINUM OR NON-FERROUS METALS

FINISHED WOOD

PARTICLE BOARD

GLUED-LAMINATED WOOD

PLASTIC LAMINATE

BATT INSULATION

METAL STUD WALL

BACKER ROD AND SEALANT

DIMENSION LUMBER

12" FULLY GROUTED CONCRETE MASONRY UNIT - PLAN

12" FULLY GROUTED CONCRETE MASONRY UNIT - SECTION

ABBREVIATIONS

A	----------
A LABEL	CLASS A DOOR
A/C	AIR CONDITIONING
A/C UNIT	AIR CONDITIONING UNIT
A/E	ARCHITECT/ENGINEER
AB	ANCHOR BOLT
ABA	ARCHITECTURAL BARRIERS ACT
ACC	ACCESSIBLE
ACS	AUTOMATIC CONTROL SYSTEM
ACS DR	ACCESS DOOR
ACS PNL	ACCESS PANEL
ACT	ACOUSTICAL CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
ADMIN	ADMINISTRATION
AFC	ABOVE FINISHED COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFS	ABOVE FINISHED SLAB
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
AIB	AIR INFILTRATION BARRIER
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZE
APC	ACOUSTICAL PANEL CEILING
APPROX	APPROXIMATE
AR	AS REQUIRED
ARCH	ARCHITECT
ASC	ABOVE SUSPENDED CEILING
ASSY	ASSEMBLY
ATC	ACOUSTICAL TILE CEILING
AVG	AVERAGE
AW	ARCHITECTURAL WOODWORK
AWT	ACOUSTICAL WALL TREATMENT
B	----------
B LABEL	CLASS B DOOR
BALC	BALCONY
BB	BASEBOARD
BC	BOOKCASE
BD	BOARD
BDRY	BOUNDARY
BFF	BELOW FINISH FLOOR
BHMA	BUILDER'S HARDWARE MANUFACTURER'S ASSOCIATION
BLDG	BUILDING
BLKG	BLOCKING
BLT IN	BUILT-IN
BN	BULLNOSE
BO	BOTTOM OF
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BP	BUILDING PAPER
BRKT	BRACKET
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT-UP ROOFING
C	----------
C CONC	CAST CONCRETE
C LABEL	CLASS C DOOR
CAB	CABINET
CATW	CATWALK
CAV	CAVITY
CBB	CEMENTITIOUS (BACKER) BOARD
CD	CONSTRUCTION DOCUMENTS
CDW	CHILLED DRINKING WATER
CEM PLAS	CEMENT PLASTER
CER	CERAMIC
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CFLG	COUNTERFLASHING
CFM	CUBIC FEET PER MINUTE
CFMF	COLD-FORMED METAL FRAMING
CFS	CUBIC FEET PER SECOND
CG	CORNER GUARD
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLG ACS DR	CEILING ACCESS DOOR
CLG DIFF	CEILING DIFFUSER
CLG HT	CEILING HEIGHT
CLL	COLUMN LINE
CLO	CLOSET
CLR	COLOR
CLRM	CLASSROOM
CMU	CONCRETE MASONRY UNIT
CNDS	CONDENSATE
CDR	CARD READER
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONC FLR	CONCRETE FLOOR
CONF	CONFERENCE
CONT	CONTINUE
COORD	COORDINATE
COR	CONTRACTING OFFICER
CORR	CORRIDOR
CP	CONCRETE PIPE
CPT	CARPET
CR	CONTROL ROOM
CS	CAST STONE
CSWK	CASEWORK
CT	CERAMIC TILE
CTB	CERAMIC TILE BASE
CTF	CERAMIC TILE FLOOR
CTR	CENTER
CU FT	CUBIC FEET
CW	CASEMENT WINDOW
D	----------
D	DEPTH
D LABEL	CLASS D DOOR
DBL	DOUBLE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIR	DIRECTION
DIST	DISTANCE
DOC	DOCUMENT
DR	DOOR
DS	DOWNSPOUT
E	----------
E LABEL	CLASS E DOOR
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
ES	EACH SIDE
EL	ELEVATION
ELEV	ELEVATOR
ENTR	ENTRANCE
EPS (INSULATION)	EXPANDED POLYSTYRENE BOARD
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXP	EXPOSED
EXT	EXTERIOR
EXT	EXTINGUISHER
EXT GR	EXTERIOR GRADE
F	----------
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAS BD	FASCIA BOARD
FC BRK	FACE BRICK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FED	FEDERAL
FF	FINISH FACE
FF EL	FINISH FLOOR ELEVATION
FF INSUL	FOIL BACKED INSULATION
FGL	FIBERGLASS
FH	FIRE HOSE
FHP	FULL HEIGHT PARTITION
FIN	FINISH
FIN BS	FINISH BOTH SIDES
FIN FLR	FINISH FLOOR
FIN GR	FINISH GRADE
FIXT	FIXTURE
FLDG	FOLDING
FLEX	FLEXIBLE
FLG	FLOORING
FLMT	FLUSH MOUNT
FLR	FLOOR
FM	FACTORY MUTUAL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FR	FIRE RESISTANT
FRG	FIBER REINFORCED GYPSUM
FRMG	FRAMING
FRP	FIBERGLASS REINFORCED PLASTIC
FRTW	FIRE RETARDANT TREATED WOOD
FS	FEDERAL SPECIFICATION
FSTNR	FASTENER
FT	FEET
FTG	FOOTING
FWC	FABRIC WALLCOVERING
G	----------
G	NATURAL GAS
GALV	GALVANIZED
GB	GRAB BAR
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFGI	GOVERNMENT INSTALLED GOVERNMENT INSTALLED
GFRG	GLASS-FIBER-REINFORCED GYPSUM
GLZ	GLAZING
GR FL	GROUND FLOOR
GUT	GUTTER
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
H	----------
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HDWD	HARDWOOD
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)
HH	HEXAGONAL HEAD
HM	HOLLOW METAL
HMD	HOLLOW METAL DOOR
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HVLS	HIGH VOLUME LOW SPEED
HYDR	HYDRAULIC
I	----------
IBC	INTERNATIONAL BUILDING CODE
INSUL	INSULATION
INT	INTERIOR
ILO	IN LIEU OF
IMP	INSULATED METAL PANEL
J	----------
JAN	JANITOR
K	----------
KIT	KITCHEN
KPD	KEYPAD
KPL	KICKPLATE
L	----------
LAM	LAMINATE
LAV	LAVATORY
LBR	LUMBER
LBS	POUND
LDG	LANDING
LF	LINEAR FEET (FOOT)
LIB	LIBRARY
LIN	LINEAR
LKR	LOCKER
LOC	LOCATION
LP	LOW POINT
LT	LIGHT
LVDR	LOUVER DOOR
LVR	LOUVER
M	----------
MACH RM	MACHINE ROOM
MATL	MATERIAL
MAX	MAXIMUM
MC	MOISTURE CONTENT
MD	METAL DECK
MECH	MECHANICAL
MECH RM	MECHANICAL ROOM
MEMB	MEMBRANE
MF	MILL FINISH
MFR	MANUFACTURER
MID	MIDDLE
MIL STD	MILITARY STANDARD
MIN	MINIMUM, MINUTE
MIRR	MIRROR
MISC	MISCELLANEOUS
MLDG	MOLDING (MOULDING)
MO	MASONRY OPENING
MOD	MODIFY
MB	MOISTURE BARRIER
MTG	MOUNTING
MTL	METAL
MVBL	MOVABLE
MWP	MEMBRANE WATERPROOFING
N	----------
N	NORTH
NA	NOT APPLICABLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NP	NO PAINT
NRC	NOISE REDUCTION
O	----------
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OFF	OFFICE
OGL	OBSCURE GLASS
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPQ	OPAQUE
OWSJ	OPEN WEB STEEL JOIST
OPR	OPERABLE
ORD	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
P	----------
PA	PUBLIC ADDRESS
PAR	PARAPET
PAT	PATTERN
PB	PULL BOX
PBD	PARTICLEBOARD
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCT	PERCENT
PERF	PERFORATED
PERIM	PERIMETER
PH	PHASE
PIL	PILASTER
PL	PROPERTY LINE
PL GL	PLATE GLASS
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
PLG	PILING
PLYWD	PLYWOOD
PNL	PANEL
PP PL	PUSH/PULL PLATE
PR	PAIR
PRCST	PRECAST
PRKG	PARKING
PS CONC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAPER TOWEL DISPENSER
PTDR	PAPER TOWEL DISPENSER AND RECEPTACLE
PTN	PARTITION
PWR	POWER
Q	----------
QT	QUARRY TILE
QTY	QUANTITY
R	----------
RB	RESILIENT BASE
RBM	REINFORCED BRICK MASONRY
RBR	RUBBER
RC	REINFORCED CONCRETE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDG INS	RIGID INSULATION, SOLID
RE	REGISTERED ENGINEER
REC	RECESSED
REC ROOM	RECREATION ROOM
REF	REFERENCE
REM	REMOVABLE
REP	REPAIR
REPL	REPLACE
REQ	REQUIRE
REQD	REQUIRED
RESIL	RESILIENT
REST	RESTROOM
RF	RESILIENT FLOORING
RFG	ROOFING
RH	ROOF HATCH
RHR	RIGHT HAND REVERSE
RL	ROOF LEADER
RLG	RAILING
RM	ROOM
RO	ROUGH OPENING
RSD	ROLLING STEEL DOOR
RV	ROOF VENT
RVL	REVEAL
S	----------
SB	SPLASH BLOCK
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SF	SQUARE FOOT (FEET)
SFTWD	SOFTWOOD
SGL	SINGLE
SHT MTL	SHEET METAL (FLASHING)
SHTHG	SHEATHING
SHV	SHELVING
SIM	SIMILAR
SJ	SCORED JOINT
SKLT	SKYLIGHT
SLNT	SEALANT
SMK	SMOKE
SMLS	SEAMLESS
SP EL	SPOT ELEVATION
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	STAINLESS STEEL
ST	STAIRS
STD	STANDARD
STL JST	STEEL JOIST
STL RF DK	STEEL ROOF DECK
STOR	STORAGE
STR	STRINGERS
STRB/HRN	STROBE/HORN
SUB FL	SUBFLOOR
SV	SHEET VINYL
SW	SIDEWALK
T	----------
T	TREAD
T/S	TUB/SHOWER
TC	TERRA COTTA
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRAZZO
TFF	TOP OF FINISH FLOOR
THK	THICKNESS
TK BD	TACKBOARD
TMPD GL	TEMPERED GLASS
TN	TRUE NORTH
TOF	TOP OF FOOTING
TO	TOP OF
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB
TR	TELECOM-ROOM
TRANS	TRANSOM
TRTD	TREATED
TV	TELEVISION
U	----------
UNO	UNLESS NOTED OTHERWISE

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
Author

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

LEGEND, SYMBOLS, AND ABBREVIATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 48 OF 256	

A-01

APPLICABLE CODES

1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION - CURRENT EDITION
2. AMERICAN WELDING SOCIETY (AWS), STRUCTURAL WELDING CODE - CURRENT EDITION
3. INTERNATION BUILDING CODE (IBC) - 2021 EDITION
4. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE - CURRENT EDITION
5. CONCRETE STEEL REINFORCEMENT INSTITUTE (CSRI) 315, MANUAL OF STANDARD PRACTICE - CURRENT EDITION
6. NFPA 70, NATIONAL ELECTRIC CODE (NEC) - CURRENT EDITION
7. AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM), AS REQUIRED
8. STATE CODES RELATED TO EROSION AND SEDIMENT CONTROL
9. AMERICAN SOCIETY OF CIVIL ENGENEERS (ASCE), ASCE 7, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

DRAWING GENERAL NOTES

1. THE DRAWINGS IN THIS DOCUMENT SET REPRESENT THE CURRENT UNDERSTANDING BASED ON THE REVIEW OF AS-BUILT INFORMATION AND SITE PHOTOS. IN SOME CASES, SPECIFIC INFORMATION EITHER COULD NOT BE FOUND OR WAS VAGUE FOR THE EXISTING STRUCTURE. WHEN INFORMATION COULD NOT BE FOUND, ASSUMPTIONS WERE MADE ON HOW THE CONSTRUCTION COMPONENTS IN SPECIFIC DETAILS MAY BE ARRANGED.
2. DIMENSIONS SHALL GOVERN. DETAILS SHALL GOVERN OVER PLANS AND ELEVATIONS. LARGE SCALE DETAILS OR PLANS SHALL GOVERN OVER SMALL SCALE DETAILS OR PLANS. DO NOT SCALE DRAWINGS.
3. ALL OPENING DIMENSIONS ARE NOMINAL. THE CONTRACTOR SHALL FIELD MEASURE ALL OPENINGS AND COORDINATE WITH THE APPROPRIATE SUPPLIER FOR ALL DOORS AND WINDOWS.
4. DRAWINGS CONTAINED IN THIS SET SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS. COPIES OF THESE DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE REJECTED AND RETURNED TO THE CONTRACTOR.
5. "TYPICAL" (TYP) AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITIONS OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
6. FOR ARCHITECTURAL MATERIAL LEGEND, AND ABBREVIATIONS REFER TO A-01 SHEET.
7. SEE SHEET A-03 FOR ABA/ADA DIMENSION REQUIREMENTS.
8. REFERENCE LIFE SAFETY DRAWINGS FOR FIRE RATED WALL LOCATIONS. ALL FIRE RATED WALLS AND SMOKE PARTITIONS ARE CONTINUOUS ACROSS ALL DOOR OPENINGS.
9. FOR PARTITION TYPES CONSTRUCTION AND DESCRIPTION REFER TO PARTITION TYPES SHEET.
10. FOR DIMENSIONS OR ADDITIONAL INFORMATION NOT ILLUSTRATED, REFER TO LARGER SCALE DRAWINGS.
11. REFER TO FINISH SCHEDULE AND FINISH PLANS FOR ADDITIONAL FINISH INFORMATION. ALL FLOOR FINISHES TO BE CONTINUOUS UNDER MILLWORK AND EQUIPMENT UNLESS NOTED OTHERWISE.
12. REFERENCE CIVIL DRAWINGS FOR EXTERIOR BOLLARD AND SPLASH BLOCK DETAILS.
13. REFERENCE THE REFLECTED CEILING PLANS FOR CEILING HEIGHTS.
14. ALL DIMENSIONS ARE FROM: COLUMN GRID LINE, FACE OF CMU WALL, FINISH FACE OF METAL STUD WALL, AND FACE OF CONCRETE WALL PANEL, UNLESS NOTED OTHERWISE.
15. THE FIRST FLOOR FINISHED FLOOR ELEVATION IS 0'-0" UNLESS NOTED OTHERWISE.
16. ELEVATIONS SHOWN ON THESE PLANS ARE ASSUMED. SEE CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.

PROJECT GENERAL NOTES

1. DETERMINE ALL APPLICABLE PERMITS SUCH AS ANY LOCAL ENVIRONMENTAL REQUIREMENTS AND SECURE ALL REQUIRED PERMITS PRIOR TO THE START OF CONSTRUCTION.
2. SUBMIT SITE SPECIFIC RISK MANAGEMENT PLAN (RMP) PRIOR TO THE START OF ANY ON-SITE CONSTRUCTION ACTIVITIES.
3. ALL ON-SITE SAFETY DEVICES, JOB SAFETY CONDITIONS, SAFETY OF ALL ON-SITE PERSONNEL AND PROPERTY WILL BE MAINTAINED DURING THE COURSE OF CONSTRUCTION AND WILL COMPLY WITH LOCAL, STATE AND FDERAL STANDARDS, LAWS AND REQULATIONS.
4. ALL DIMENSIONS (INCLUDING ELEVATIONS) OF EXISTING FEATURES MUST BE FIELD VERIFIED BEFORE CONSTRUCTION OF NEW WORK. ANY DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES BETWEEN THE DRAWINGS/ SPECIFICATIONS AND THE SITE CONDITION MUST BE REPORTED IMMEDIATELY, IN WRITING, TO THE RE. ANY WORK DONE BEFORE ANY DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES BETWEEN THE DRAWINGS/ SPECIFICATIONS AND THE SITE CONDITIONS ARE RESOLVED IN WRITING WILL BE DONE AT THE RISK OF NONPAYMENT FOR THE UNAUTHORIZED WORK, UNPAID DEMOLITION OF THE UNAUTHORIZED WORK AND REWORK AS PER THE WRITTEN RESOLUTION OF THE DEISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES PROVIDED BY THE RE.
5. ANY MONUMENTS AND/OR BENCHMARKS DAMAGED DURING THE COURSE OF CONSTRUCTION MUST BE REFERENCED AND REPLACED, AT NO COST TO THE CLIENT, BY A LICENSED LAND SURVEYOR.
6. MAINTAIN THE EXISTING TRAFFIC/PARKING ACCESS IN SERVICE DURING CONSTRUCTION.
7. CONSTRUCTION FOR THIS PROJECT MUST NOT EXCEED THE PERIMETER DEFINED BY THE PERMANENT FENCE. ONSITE STAGING AREA, CONSTRUCTION, TRAILER LOCATION AND CONSTRUCTION PARKING TO BE FINALIZED WITH THE RE.
8. CONTAIN AND REMEDIATE ANY SPILLS FROM VEHICLES AND/OR EQUIPMENT THAT OCCURS DURING CONSTRUCTION.
9. PROTECT ANY ARTIFACTS OR PROTECTED SPECIES DISCOVERED ON-SITE.
10. HANDLE ALL HAZARDOUS WASTE ACCORDING TO ALL APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS FROM THE MANAGEMENT, STORAGE AND DISPOSAL HAZARDOUS WASTE.
11. ANY VEHICLE OR EQUIPMENT DEEMED BY THE RE TO BE TOO NOISY, LEAKING FLUIDS OR PRODUCING TOO MUCH EXHAUST MUST BE REMOVED FROM THE PROJECT SITE IMMEDIATELY.
12. ALL TRAFFIC LAWS MUST BE OBEYED AND COMPLIED WITH DURING THE COURSE OF CONSTRUCTION.
13. REPAIR ANY EROSION OR OTHER DAMAGE DONE DURING THE COURSE OF CONSTRUCTION.
14. ALLOW RE INSPECTIONS AT ANY TIME.
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL EXIT SIGNS, EMERGENCY LIGHTING SYSTEMS, ALARM SYSTEMS AND AUTOMATIC SPRINKLER SYSTEMS AS REQUIRED BY APPLICABLE CODES AND STANDARDS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
16. ANY MANUFACTURER'S OR BRAND NAME PRODUCTS INDICATED OR SPECIFIED ARE DONE SO TO ESTABLISH A MINIMUM LEVEL OF QUALITY.
17. ALL CONSTRUCTION SHALL MEET OR EXCEED LOCAL INDUSTRY STANDARDS. DETAILS ARE PROVIDED TO INDICATE MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF A CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A SIMILAR DETAIL FOR GUIDANCE AND APPROVAL.
18. PROVIDE PRESERVATIVE-TREATED WOOD AT ALL LOCATIONS WHERE WOOD IS IN DIRECT CONTACT WITH CONCRETE OR MASONRY.
19. PROVIDE 3/4" FIRE-RETARDANT TREATED PLYWOOD BACKING AT ALL ELECTRICAL, PHONE, AND SECURITY SYSTEM PANELS.
20. PROVIDE FIRE-RESISTANT TREATED WOOD BLOCKING FOR SECURE ANCHORAGE OF ALL SHELVES, RUNNING TRIM, RAILINGS, SUSPENDED ITEMS, DOOR-STOPS, GRAB-BARS, AND OTHER SIMILAR WOODWORK, HARDWARE, SPECIALTIES, ACCESSORIES, FIXTURES, OR EQUIPMENT.
21. PROVIDE CEMENT BOARD SHEATHING AT ALL AREAS WHERE A TILE SURFACE IS TO BE INSTALLED ON METAL STUD WALLS.
22. PROVIDE WATER-RESISTANT GYPSUM BOARD AT ALL WET OR UNCONDITIONED AREAS INCLUDING, BUT NOT LIMITED TO, PARTITIONS BEHIND SINKS. CONTRACTOR TO INSURE THAT FIRE RATING IS MAINTAINED.
23. PAINT, STAIN, OR COAT ALL EXPOSED SURFACES OF CONSTRUCTION UNLESS NOTED OTHERWISE OR IF SURFACES ARE PRE-FINISHED.
24. ALL CONDUITS, PLUMBING, PIPING, DUCTWORK, AND OTHER EQUIPMENT EXPOSED TO VIEW SHALL BE LOCATED PARALLEL OR PERPENDICULAR TO THE STRUCTURAL FRAMING SYSTEM.
25. PROVIDE GALVANIC PROTECTION BETWEEN DISSIMILAR MATERIALS, WHERE OCCURRING.
26. FIBER REINFORCED PLASTIC TO BE INSTALLED UP TO 4'-0" ABOVE FINISH FLOOR AND 1'-0" TO EITHER SIDE AT ALL MOP SINK LOCATIONS. EXTENT OF PANEL VARIES BY LOCATION.
27. DESIGN DETAILS ARE APPLICABLE WHERE INDICATED BY SECTION CUT, BY NOTE, OR BY DETAIL TITLE. INCORPORATE SIMILAR DETAILS AT SIMILAR CONDITIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR MAY REQUEST A CLARIFICATION IF REQUIRED, OTHERWISE THE MORE STRINGENT REQUIREMENTS SHALL CONTROL.
28. PROVIDE AN APPROVED PENETRATION FIRESTOP SYSTEM FOR PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479 WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE A FIRE RATING OF NOT LESS THAN THE REQUIRED FIRE RESISTANCE RATING OF THE WALL PENETRATED.
29. SEAL ALL EXTERIOR BUILDING JOINTS AT BOTH THE EXTERIOR AND INTERIOR SURFACES AGAINST MOISTURE AND AIR INFILTRATION.
30. SEAL AROUND ALL DOOR AND WINDOW FRAMES, COUNTERTOPS, WALL-MOUNTED FIXTURES AND EQUIPMENT TO ADJACENT WALL SURFACES.
31. THE CONTRACTOR SHALL REVIEW THE DIMENSIONS OF ALL EQUIPMENT IN THE PROJECT REGARDLESS OF THE SOURCE AND COORDINATE ACCESS TO THE SPACE AND VERIFY CLEAR FLOOR SPACE IS PROVIDED AS REQUIRED TO ENSURE EASE OF INSTALLATION.
32. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL PENETRATIONS IN THE STRUCTURE FOR THE PROPER INSTALLATION OF THE WORK. REFER TO STRUCTURAL DRAWINGS FOR SECONDARY FRAMING AND OR REINFORCING REQUIRED AT PENETRATIONS IN STEEL, CONCRETE OR MASONRY.
33. THE CONTRACTOR SHALL PROVIDE ACCESS DOORS OR PANELS AS REQUIRED FOR SERVICING OF PIPING, DUCTWORK, CABLE TRAYS, FIRE DAMPERS AND SIMILAR APPLICATIONS. ALL PROPOSED ACCESS DOOR LOCATIONS TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.
34. PROVIDE ALL HVAC, PLUMBING, GAS OR ELECTRIC SERVICE CONNECTIONS TO CASEWORK, FIXTURES, SIGNAGE, OR EQUIPMENT INDICATED (WHETHER UNITS ARE INSTALLED BY CONTRACTOR OR BY OTHERS).
35. BRACE PARTITIONS, SUSPENDED CEILINGS, SOFFITS, SUSPENDED ITEMS, ETC. ONLY TO STRUCTURAL ELEMENTS ABOVE. DO NOT ANCHOR TO ROOF DECK, PLUMBING / SPRINKLER PIPES, DUCTWORK, ELECTRICAL CONDUIT OR SIMILAR ELEMENTS.
36. EXTEND ALL FLOORING AND WALL-BASE COMPLETELY INTO RECESSES, UNDER OPEN COUNTERTOPS, AND BEHIND ALL EQUIPMENT.
37. CONTROL JOINTS (CJ) SHALL BE INSTALLED AT ALL PARTITIONS. CJ AT GYPSUM PARTITIONS SHALL BE MAXIMUM 30'-0" O.C., CJ AT CONCRETE MASONRY UNIT PARTITIONS SHALL BE MAXIMUM 20'-0" O.C., UNLESS OTHERWISE NOTED ON DRAWINGS. REFER TO ELEVATION DRAWINGS FOR EXTERIOR CONTROL JOINT LOCATIONS.
38. NON-BEARING PARTITIONS SHALL BE ISOLATED FROM THE BUILDING STRUCTURE TO PREVENT TRANSFER OF BUILDING LOADS FROM THE STRUCTURE TO THE PARTITIONS.
39. PRIOR TO BEGINNING ANY WORK, NOTIFY RE OF ANY EXISTING MATERIALS OBSERVED TO POSSIBLY CONTAIN ASBESTOS.
40. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXTENT, NATURE, AND SCOPE OF WORK DESCRIBED IN THE CONTRACT DOCUMENTS AND COORDINATING WITH THE RE OR HIS/HER REPRESENTATIVE THE INTERFACING OF THE EXISTING BUILDING AND THE WORK SHOWN AND DESCRIBED IN THESE CONTRACT DOCUMENTS.
41. CONTRACTOR SHALL COORDINATE AND PROVIDE ALL MILLWORK TRIM AND INFILL PANELS AT ALL UNDERCOUNTER / CABINET LOCATIONS.
42. PROVIDE 18GA METAL PLATE OR FIRE TREATED WOOD BLOCKING IN WALL FOR TOILET FIXTURES, ACCESSORIES, EQUIPMENT, FLOOR AND WALL MOUNTED TOILET PARTITIONS, AND COUNTERTOP MOUNTING SUPPORTS.
43. PROVIDE GYPSUM BOARD HEADER ABOVE ALL CASED OPENINGS, REFERENCE REFLECTED CEILING PLANS.
44. REFERENCE FURNITURE PLANS FOR LOCATIONS OF WALL ACCESSORIES AND VISUAL DISPLAY EQUIPMENT. PROVIDE CONCEALED BLOCKING AS REQUIRED
45. ALL DELIGATED DESIGN ITEMS MUST BE DESIGNED BY THE CONTRACTOR; CONTRACTOR MUST SUBMIT SHOP DRAWINGS AND CALCULATIONS, SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF TEXAS. DELIGATED DESIGNS MUST BE IN CONFORMANCE WITH RELATED SPECIFICATIONS AND THE CURRENT IBC AND ASCE 7.

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NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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SURVEYED BY: UNITED ENGINEERS, INC
Author

RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

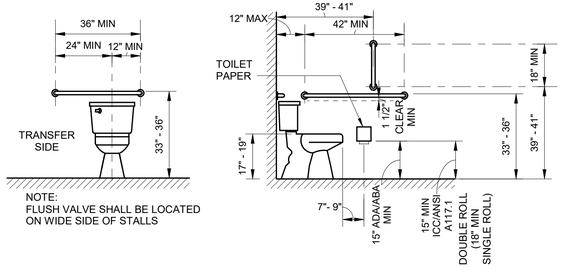
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

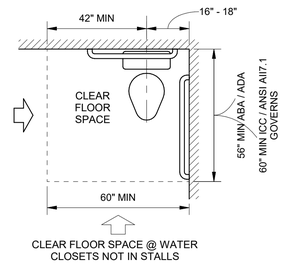
GENERAL NOTES AND APPLICABLE CODES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/8" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 49 OF 256	

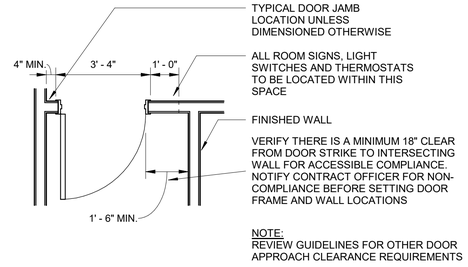
A-02



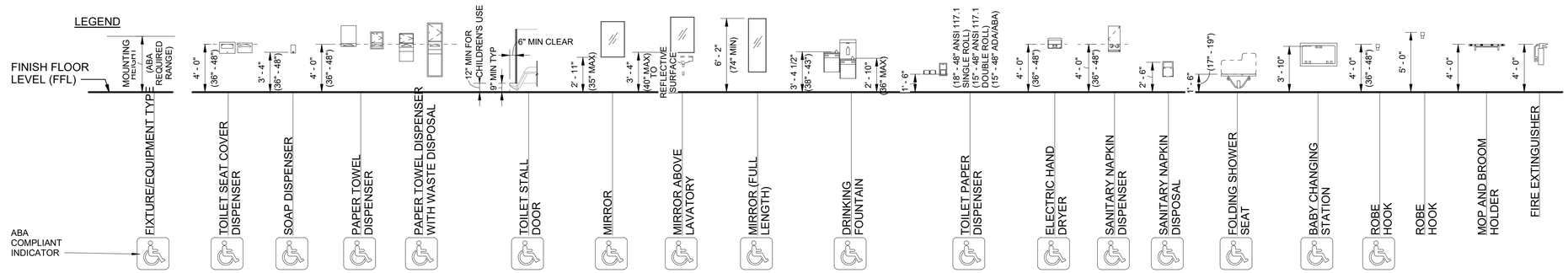
1 GRAB BARS
SCALE 3/8" = 1'-0"



2 WATER CLOSET
SCALE 3/8" = 1'-0"



3 WALL CLEARANCE
SCALE 3/8" = 1'-0"



4 MOUNTING HEIGHTS
SCALE 3/16" = 1'-0"

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NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
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PH. 713 871-7000
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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

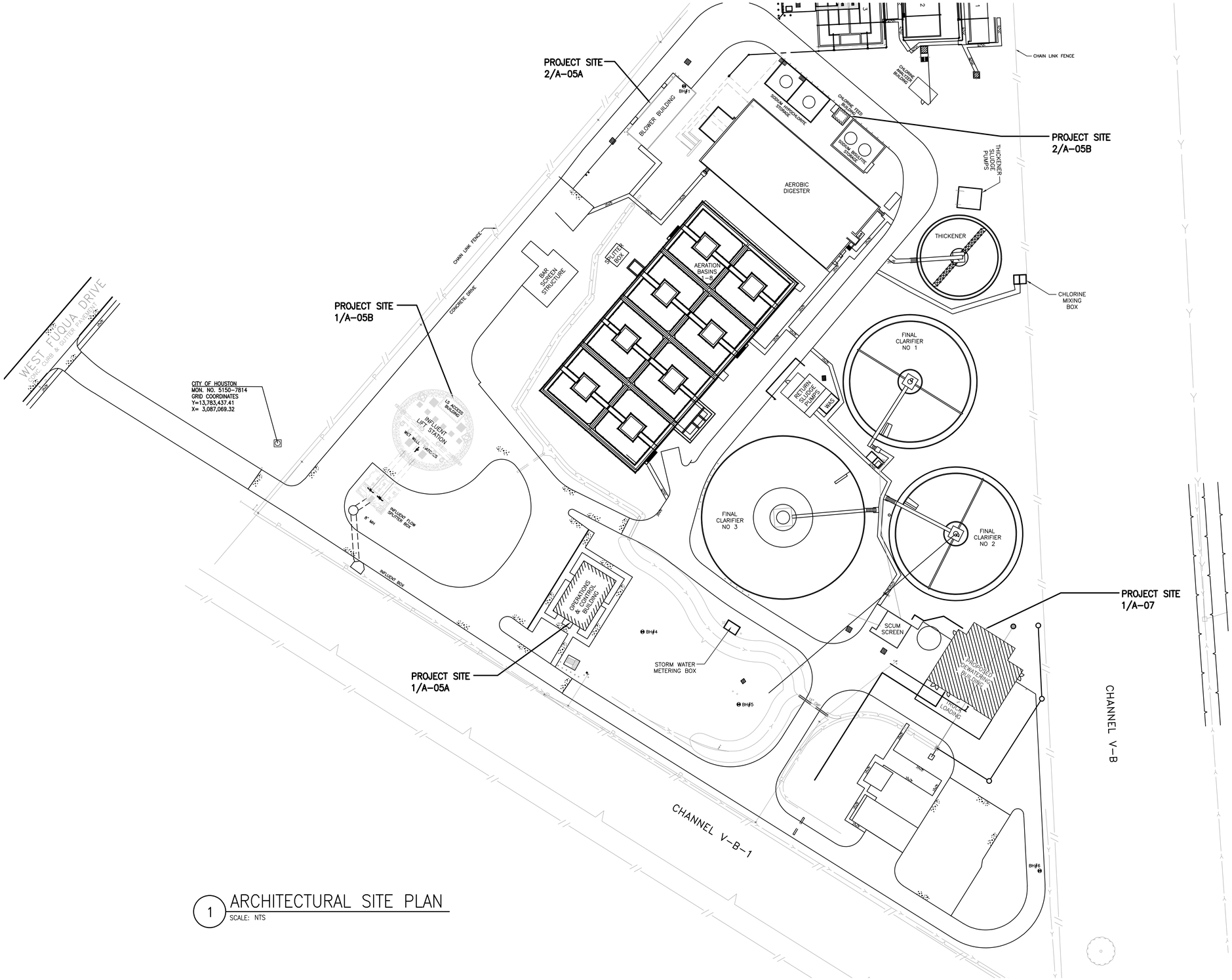
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ACCESSIBILITY INFORMATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 50 OF 256	

A-03



1 ARCHITECTURAL SITE PLAN
SCALE: NTS

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
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RESPONSIBLE
ROLANDO DE LA ROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/2026

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ARCHITECTURAL SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 51 OF 256	

A-04

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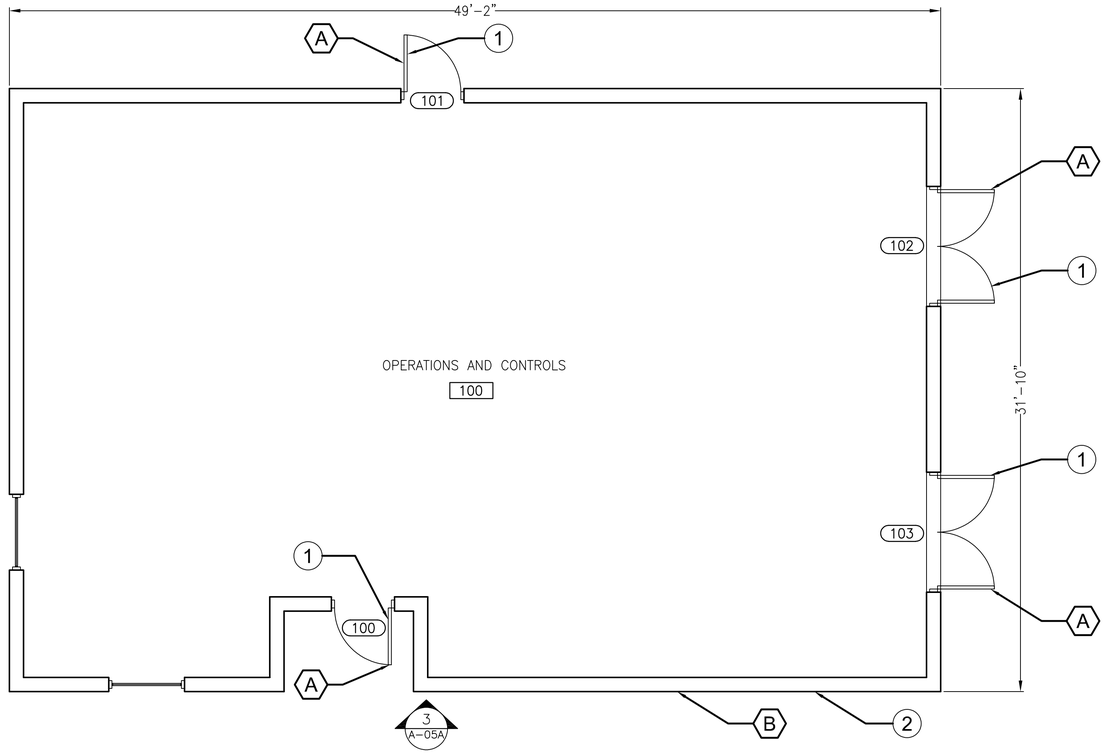


1 OPERATIONS AND CONTROLS BUILDING FLOOR PLAN
SCALE: 1/4" = 1'-0"

3 OPERATIONS AND CONTROLS BUILDING IMAGE
SCALE: NTS

ASBESTOS MATERIAL NOTES:

1. DOOR AND FRAMES MATERIALS CONTAINING ASBESTOS CONTAMINATE MATERIAL (ACM) MUST BE ABATED PRIOR TO DEMOLITION OF THE MATERIAL. FOLLOW ALL CODES AND REGULATIONS IN PERFORMANCE OF THIS WORK.

2. DOOR AND FRAMES MATERIALS NOT CONTAINING ACM MAY BE DEMOLISHED AS GENERAL CONSTRUCTION DEBRIS, UNLESS A REGULATION OR CODE REQUIRES OTHERWISE.

DEMOLITION KEYNOTES:

A DEMOLISH EXISTING DOOR AND FRAME AND ALL ASSOCIATED ACCESSORIES.

B CLEAN AND PRIME EXTERIOR WALLS FOR PAINTING. PATCH AND REPAIR WALLS AS REQUIRED.

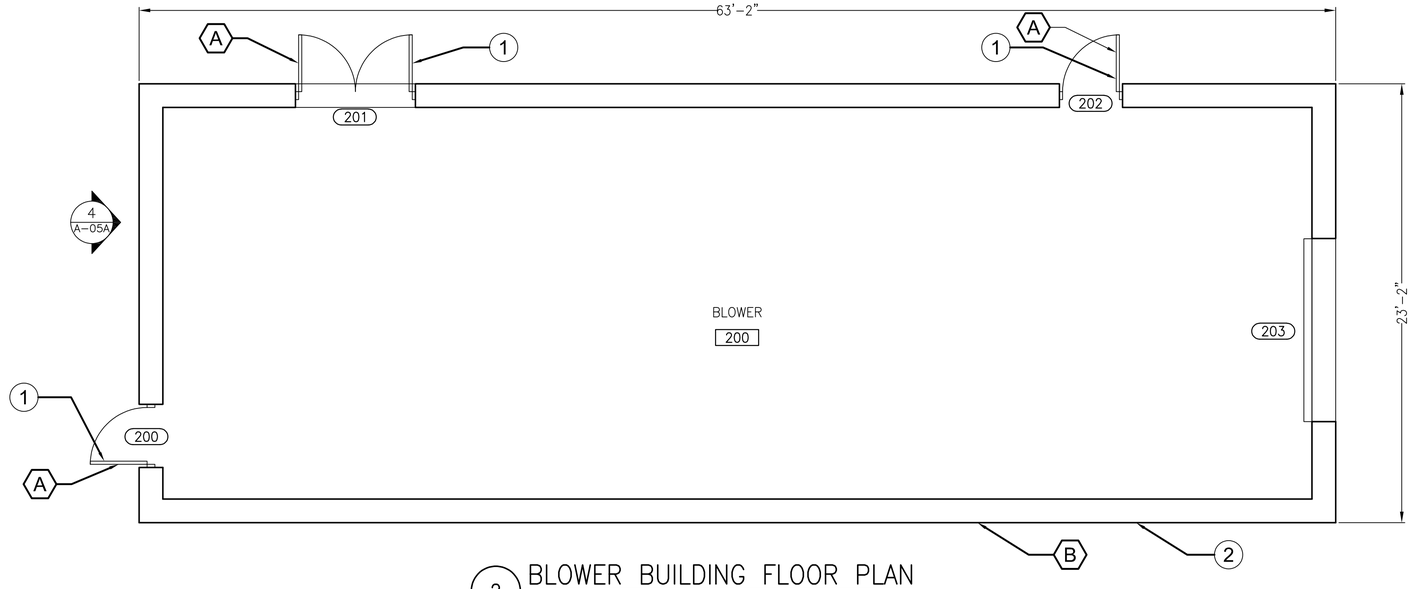
NEW CONSTRUCTION KEYNOTES:

ALL ITEMS IDENTIFIED IN THE FLOOR DRAWING ARE SHOWN STRICTLY FOR INFORMATION ONLY. NO WORK IS INTENDED TO BE DONE UNLESS DESIGNATE BY A KEYNOTE. REFER TO THE KEYNOTES ON THIS SHEET FOR WORK TO BE ACCOMPLISHED FOR THIS PROJECT. IF THE KEYNOTES ARE NOT SHOWN ON THIS SHEET, THEN NOT WORK INTENDED.

NEW CONSTRUCTION KEYNOTES:

1 INSTALL NEW STAINLESS DOOR AND FRAME WITH NEW DOOR HARDWARE. REFER TO DOOR AND FRAME SCHEDULE.

2 PAINT EXTERIOR OF BUILDING. REFER TO PAINT SCHEDULE.



2 BLOWER BUILDING FLOOR PLAN
SCALE: 1/4" = 1'-0"

4 BLOWER BUILDING IMAGE
SCALE: NTS

PLAN NORTH

0' 4' 8' 12'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
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ROLANDO DE LA ROSA
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

OPERATIONS/CONTROLS AND BLOWER BUILDING FLOOR PLANS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 52 OF 256	

A-05A

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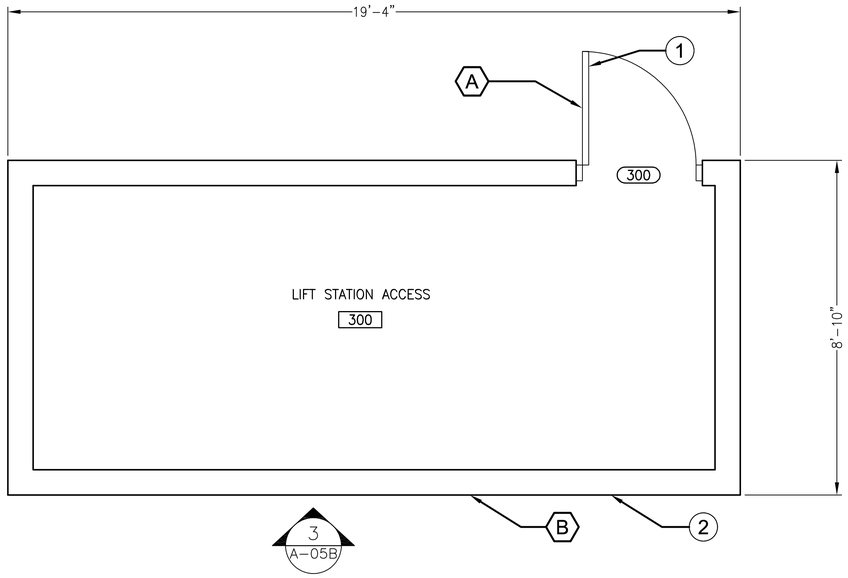
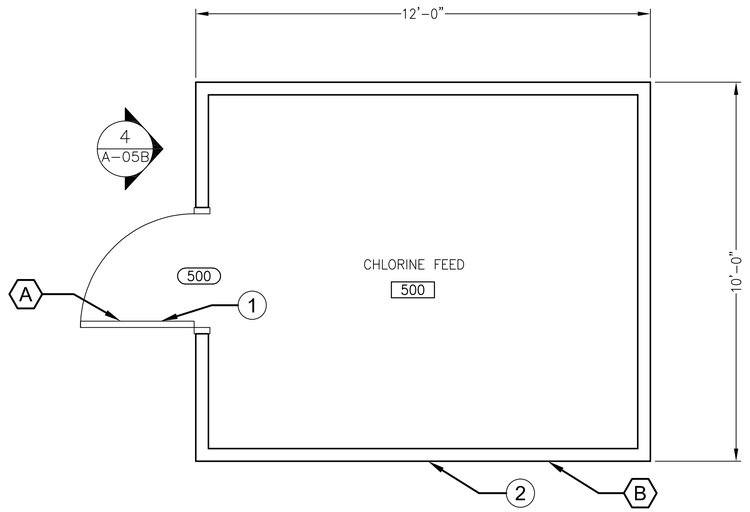


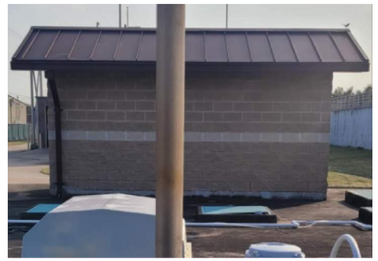
1 LIFT STATION ACCESS FLOOR PLAN

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



2 CHLORINE FEED FLOOR PLAN

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



3 LIFT STATION ACCESS BULDING IMAGE

SCALE: NTS

4 CHLORINE FEED BUILDING IMAGE

SCALE: NTS

ASBESTOS MATERIAL NOTES:

1. DOOR AND FRAMES MATERIALS CONTAINING ASBESTOS CONTAMINATE MATERIAL (ACM) MUST BE ABATED PRIOR TO DEMOLITION OF THE MATERIAL. FOLLOW ALL CODES AND REGULATIONS IN PERFORMANCE OF THIS WORK.

2. DOOR AND FRAMES MATERIALS NOT CONTAINING ACM MAY BE DEMOLISHED AS GENERAL CONSTRUCTION DEBRIS, UNLESS A REGULATION OR CODE REQUIRES OTHERWISE.

DEMOLITION KEYNOTES:

A DEMOLISH EXISTING DOOR AND FRAME AND ALL ASSOCIATED ACCESSORIES.

B CLEAN AND PRIME EXTERIOR WALLS FOR PAINTING. PATCH AND REPAIR WALLS AS REQUIRED.

NEW CONSTRUCTION NOTES:

ALL ITEMS IDENTIFIED IN THE FLOOR DRAWING ARE SHOWN STRICTLY FOR INFORMATION ONLY. NO WORK IS INTENDED TO BE DONE UNLESS DESIGNATE BY A KEYNOTE. REFER TO THE KEYNOTES ON THIS SHEET FOR WORK TO BE ACCOMPLISHED FOR THIS PROJECT. IF THE KEYNOTES ARE NOT SHOWN ON THIS SHEET, THEN NOT WORK INTENDED.

NEW CONSTRUCTION KEYNOTES:

1 INSTALL NEW STAINLESS DOOR AND FRAME. REFER TO DOOR AND FRAME SCHEDULE.

2 PAINT EXTERIOR OF BUILDING. REFER TO PAINT SCHEDULE.

PLAN NORTH

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TEXAS LICENSE NO. 15131
ON DATE 03/31/2026

SURVEYED BY: UNITED ENGINEERS, INC.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

LIFT STATION ACCESS AND CHLORINE FEED FLOOR PLANS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
A-05B	SHEET NO. 53 OF 256

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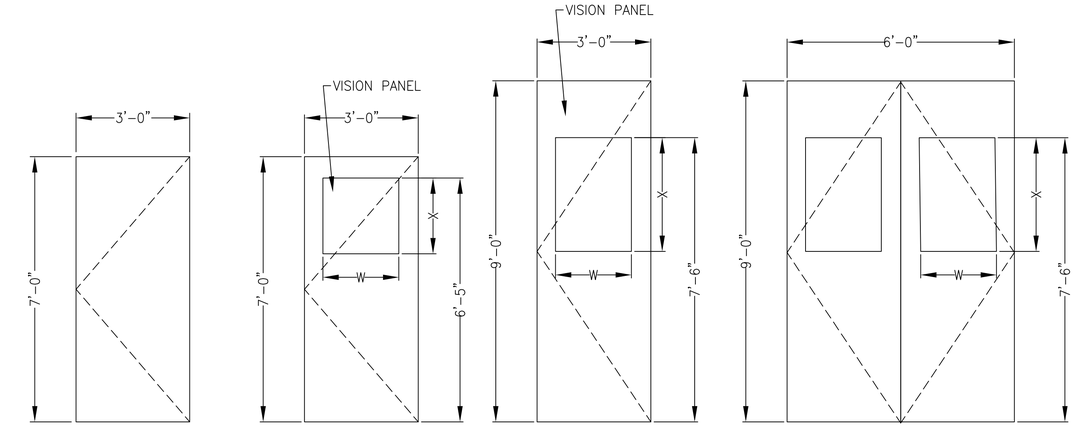
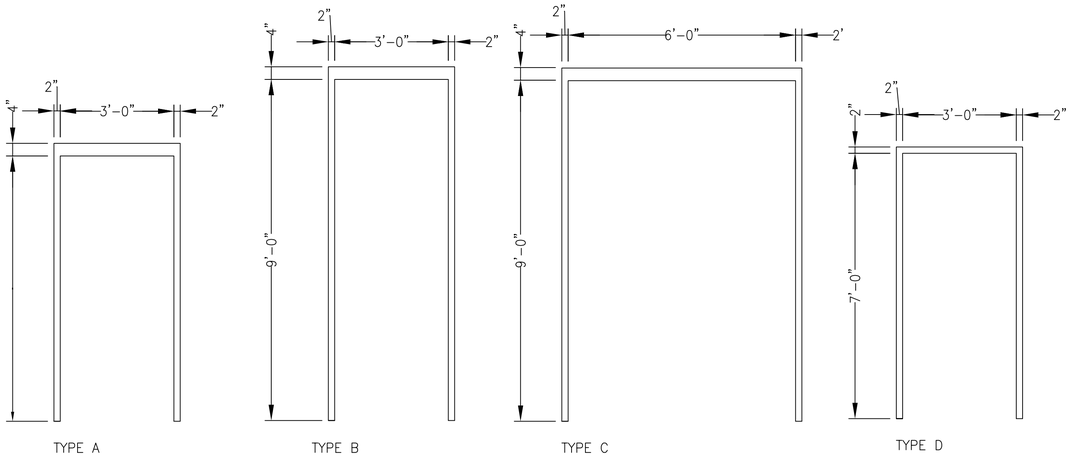


TYPE 1 | TYPE 2 WITH VISION LITE – SAFETY WIRE GLASS | TYPE 3 WITH VISION LITE – SAFETY WIRE GLASS | TYPE 4 WITH VISION LITE – SAFETY WIRE GLASS

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



TYPE A | TYPE B | TYPE C | TYPE D

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

EXTERIOR PAINT SCHEDULE						
BUILDING	BLDG NUMBER	WALL TYPE	ROOF TYPE	WALL AREA (SF)	ROOF AREA (SF)	REMARKS
OPERATIONS AND CONTROL BUILDING	100	CMU	STANDING SEAM METAL	2,102	2,180	WALLS TO BE PAINTED USING SILICONE RESIN EMULSION PAINT KLASS COATINGS SI–PRIME PRIMER METAL ROOF PAINT OPTIONS: OIL BASED, POLYUETHANE ENAMEL, ACYRYLIC LATEX, AND ACRYLIC ANMEL BY AMERCOAT, CARBOLINE AND SHERWIN WILLIAMS
BLOWER BUILDING	200	CMU	MEMBRANE OVER HOLLOW CORE CONCRETE ROOF	3,684	–	WALLS TO BE PAINTED USING SILICONE RESIN EMULSION PAINT KLASS COATINGS SI–PRIME PRIMER FASCIA PAINT – SAME AS METAL ROOF OPTIONS
LIFT STATION ACCESS BUILDING	300	CMU	STANDING SEAM METAL	486	322	WALLS TO BE PAINTED USING SILICONE RESIN EMULSION PAINT KLASS COATINGS SI–PRIME PRIMER METAL ROOF PAINT OPTIONS: OIL BASED, POLYUETHANE ENAMEL, ACYRYLIC LATEX, AND ACRYLIC ANMEL BY AMERCOAT, CARBOLINE AND SHERWIN WILLIAMS
BAR SCREEN STRUCTURE	400	PRECAST CONCRETE EXPOSED AGGREGATE	CONCRETE	740	190	CLEAN/SEAL
CHLORINE FEED BUILDING	500	PRECAST CONCRETE EXPOSED AGGREGATE	CONCRETE	462	155	WALLS TO BE PAINTED USING SILICONE RESIN EMULSION PAINT KLASS COATINGS SI–PRIME PRIMER

NOTES:
– SF – SQUARE INCHES

HARDWARE SCHEDULE			
HARDWARE NUMBER	EXIT DEVICE	DOOR TRIM, HARDWARE	REMARKS
1	X	THR, WSP, DC, HN, LS, DS	SS FINISH
2	X	THR, WSP, DC, FB, HN, LS, DS	SS FINISH

ABBREVIATIONS					
AFB	AUTOMATIC FLUSH BOLTS	HN	SS HINGE (3 PER DOOR LEAF)	PP	PUSH PLATE
DC	DOOR CLOSER	KPL	KICK PLATE	PS	PERIMETER SEAL
DH	DOOR HOLDER	LP	LOCK PROTECTOR	THR	THRESHOLD
DS	DOOR STOPS	LS	LATCH SET	WSP	WEATHERSTRIP PKG
FB	FLUSH BOLT	PL	PRIVACY LOCK		

DOOR SCHEDULE											
BUILDING	DOOR NUMBER	DOOR			FRAME MATERIAL	FRAME TYPE	HARDWARE SET	DETAILS			REMARKS
		TYPE	SIZE	MATERIAL				HEAD	JAMB	THRSHLD	PROVIDE 24"x36" VISION PANEL
OPS	100	3	3'–0"x9'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	B	1	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"x36" VISION PANEL
	101	3	3'–0"x9'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	B	1	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"x36" VISION PANEL
	102	4	6'–0"x9'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	C	2	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"X36" VISION PANEL, PAIR SWING EXT DOORS
	103	4	6'–0"x9'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	C	2	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"X36" VISION PANEL, PAIR SWING EXT DOORS
BLOWER	200	2	3'–0"x7'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	A	1	4/A–05D	3/A–05D	2/A–05D	PROVIDE 14"x14" VISION PANEL
	201	4	6'–0"x9'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	C	2	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"X36" VISION PANEL, PAIR SWING EXT DOORS
	202	2	3'–0"x7'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	A	1	4/A–05D	3/A–05D	2/A–05D	PROVIDE 14"x14" VISION PANEL
	203		NOT IN SCOPE OF WORK								
LIFT STATION ACCESS	300	2	3'–0"x7'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	A	1	4/A–05D	3/A–05D	2/A–05D	PROVIDE 24"x24" VISION PANEL
CL FEED	500	1	3'–0"x7'–0"x1 3/4"	SS W/ HONEYCOMB CORE	SS	D	1	1/A–05D	3/A–05D	2/A–05D	–

NOTES:
– SINGLE AND DOUBLE QUOTATION MARKS REPRESENT FEET AND INCHES
– REFER TO SHEET A–05D FOR DETAILS
– MATCH EXISTING DOORS FIRE RATING
– VERIFY DOOR SIZES IN THE FIELD PRIOR TO ORDERING

0' 1' 2' 4'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
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RESPONSIBLE
ROLANDO DE LA ROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DOOR SCHEDULE AND FINISH SCHEDULE

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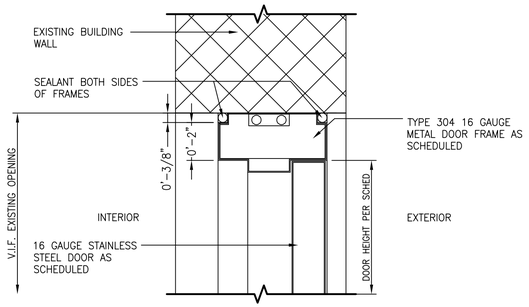
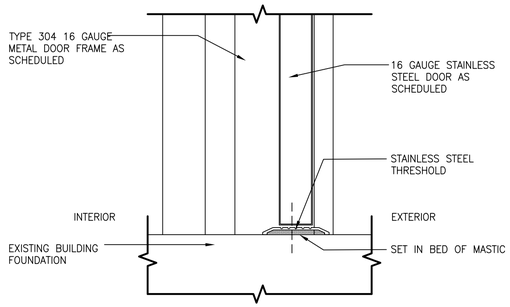
A–05C

NOTE:

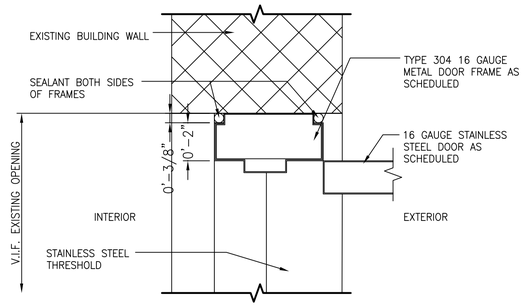
1. REPAIR EXISTING WALL OPENING AS NEEDED TO SET NEW DOOR FRAMES.



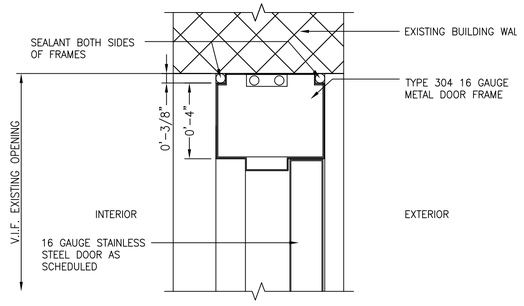
1 DOOR HEAD DETAIL
SCALE: 3" = 1'-0"



2 DOOR THRESHOLD DETAIL
SCALE: 3" = 1'-0"



3 DOOR JAMB DETAIL
SCALE: 3" = 1'-0"



4 DOOR HEAD DETAIL
SCALE: 3" = 1'-0"

3" 0 3" 6"
SCALE: 3" = 1'-0"

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RESPONSIBLE
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TEXAS LICENSE NO. 15131
ON DATE 03/31/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DOOR DETAILS

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R-000265-0162-3	
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CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 55 OF 256	

A-05D

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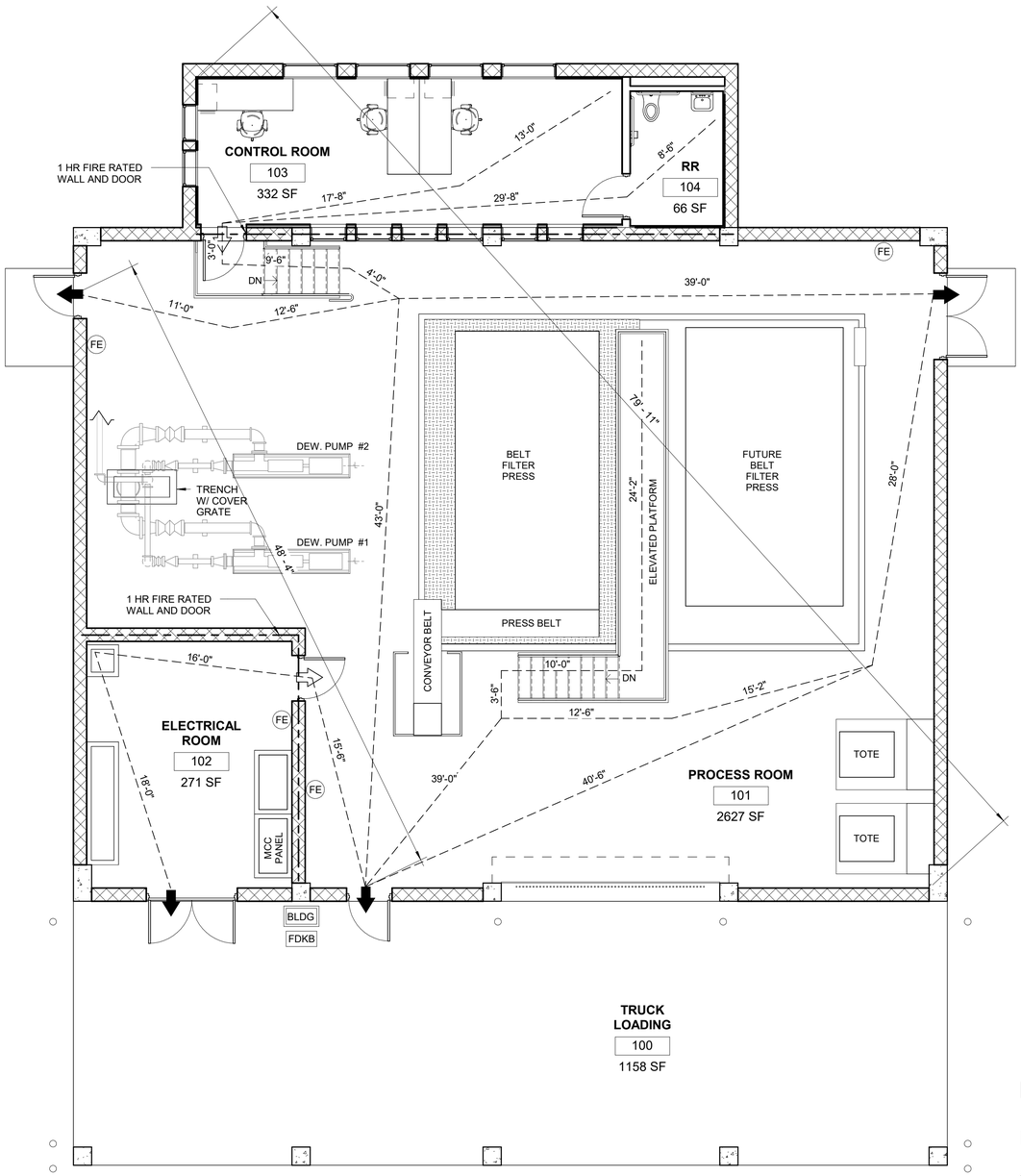


1 GROUND FLOOR - LIFE SAFETY PLAN
SCALE 3/16" = 1'-0"

BUILDING CODE SUMMARY

OWNER: CITY OF HOUSTON	DATE: DECEMBER 2025
PROJECT NAME: GREENRIDGE WASTEWATER TREATMENT PLANT IMPROVEMENTS	PROJECT NO: R-000265-0162-3
PROJECT LOCATION: MISSOURI CITY, TEXAS	ARCHITECT: ROLANDO DE LA ROSA, RA, NCARB
AREA/BUILDING: DEWATERING FACILITY	LICENSE NO: 15131

CODE OF RECORD

BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE (IBC 2021)	ENERGY CODE: 2021 INTERNATIONAL ENERGY CONSERVATION CODE CONSERVATION CODE
FIRE CODE: 2021 INTERNATIONAL FIRE CODE (IFC 2021)	FUEL GAS CODE: 2021 INTERNATIONAL FIRE GAS CODE (IFGC 2021)
MECHANICAL CODE: 2021 INTERNATIONAL MECHANICAL CODE (IMC 2021)	PLUMBING CODE: 2021 INTERNATIONAL PLUMBING CODE (IPC 2021)

IBC CHAPTER 3, SECTION 306 USE AND OCCUPANCY CLASSIFICATION — **IBC CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS, IBC CHAPTER 5 - TABLE 504.3 - ALLOWABLE BUILDING HEIGHT**

OCCUPANCY GROUP AND DESCRIPTION	ALLOWABLE HEIGHT	ALLOWABLE AREA	AUTOMATIC SPRINKLER INCREASE	ACTUAL AREA	ACTUAL AREA / ALLOWABLE AREA RATIO	AREA MODIFICATION FRONTAGE INCREASE	AREA MODIFICATION FRONTAGE INCREASE
GROUP F-1	55 FT, 3 STORY	15,500 SF	N/A	3,650 SF	0.159	N/A	N/A

IBC CHAPTER 5, TABLE 508.4 - REQUIRED SEPARATION OF OCCUPANCIES, OCCUPANCY SEPARATION — **IBC CHAPTER 6, - TYPES OF CONSTRUCTION, TABLE 601 - FIRE-RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS, STRUCTURAL ELEMENTS (HOURS)**

OCCUPANCIES	CONSTRUCTION TYPE	IBC CHAPTER 5, TABLE 509 - INCIDENTAL USE AREAS		STRUCTURAL FRAME	BEARING WALLS EXTERIOR	BEARING WALLS INTERIOR	FLOOR CONSTRUCTION	ROOF CONSTRUCTION	TABLE 602 - FIRE-RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE - EXT WALLS BASED ON SEPARATION DISTANCE	
		ROOM OR AREA	SEPARATION PROTECTION						SEPARATION DISTANCE	RATING
GROUP F-1	TYPE IIB	N/A	N/A	0	0	0	0	0	N/A	0

IBC CHAPTER 9 - FIRE PROTECTION SYSTEMS

FIRE EXTINGUISHERS: 75' MAX DISTANCE	AUTOMATIC FIRE PROTECTION SYSTEM: N/A

IBC CHAPTER 9, SECTION 903.2.4, GROUP F-1

AN AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED WHERE ONE OF THE FOLLOWING CONDITIONS EXISTS:
- A GROUP F-1 FIRE AREA EXCEEDS 12,000 SQUARE FEET.
- A GROUP F-1 FIRE AREA IS LOCATED MORE THAN THREE STORIES ABOVE GRADE PLANE
- THE COMBINED AREA OF ALL GROUP F-1 FIRE AREAS ON ALL FLOORS, INCLUDING ANY MEZZANINES, EXCEEDS 24,000 SQUARE FEET.
- A GROUP F-1 OCCUPANCY USED FOR THE MANUFACTURE OF UPHOLSTERED FURNITURE OR MATTRESSES EXCEEDS 2,500 SQUARE FEET.

N/A. NONE OF THESE CONDITIONS EXIST.

NFPA 70 NATIONAL ELECTRICAL CODE 2017

DETECTION, ALARM, AND COMMUTATION
A MANUAL FIRE ALARM SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IS ACCORDANCE WITH SECTION 907.5 SHALL BE INSTALLED IN GROUP F OCCUPANCIES WHERE BOTH OF THE FOLLOWING CONDITIONS EXIST:
- THE GROUP F OCCUPANCY IS TWO OR MORE STORIES IN HEIGHT
- THE GROUP F OCCUPANCY HAS A COMBINED OCCUPANT LOAD OF 500 OR MORE ABOVE OR BELOW THE LOWEST LEVEL OF EXIT DISCHARGE.
  - EXCEPTION: MANUAL FIRE ALARM BOXES ARE NOT REQUIRED WHERE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 AND THE
  - OCCUPANT NOTIFICATION APPLIANCES WILL ACTIVATE THROUGHOUT THE NOTIFICATION ZONES UPON SPRINKLER WATER FLOW.

IBC CHAPTER 10 - MEANS OF EGRESS

ROOM NAME	FUNCTION OF SPACE	MAX FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD	COMMON PATH OF TRAVEL DISTANCE (FT)	EXITS REQ'D	EXITS PROVIDED	MAXIMUM COMMON PATH OF TRAVEL EGRESS DISTANCES	CORRIDOR FIRE-RESIST RATING	STAIRWAYS FIRE-RESIST RATED	OPEN STAIRWAYS
DEWATERING	INDUSTRIAL	100	31	39	1	3	75	0	N/A	N/A
ELECTICAL/ CONTROL ROOM	INDUSTRIAL	100	7	46	1	1	75	0	N/A	N/A

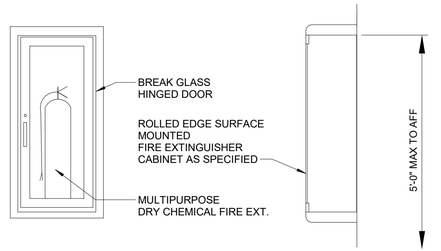
FACTORY AREAS :
(CLASSIFIED AS USE GROUP F = 200 PEOPLE), USED FOR DOOR AND CORRIDOR SIZING ONLY 3,650 SF / 100 SF PER PERSON ACTUAL HEADCOUNT BASED ON USE = 0 PEOPLE, UTILIZED FOR DETERMINING PLUMBING FIXTURE REQUIREMENTS
1005.3.2 MINIMUM EGRESS WIDTH/PERSON = .2" PER PERSON; .2" X 85 PERSONS = 17" REQ'D DOOR CAPACITY (BASED ON .2" PER PERSONS; NUMBERS SHOWN IN DOOR TAGS ON PLAN) 4 DOORS, EACH 32" CLEAR WIDTH, TOTAL = 132". EXCEEDS MINIMUM REQUIREMENT.
1011.12 BUILDING LESS THAN 4 STORIES -NO STAIRWAY TO ROOF REQ'D. LADDERS PROVIDED FOR MAINTENANCE.
1626.1 EXCEPTION -LOUVER DESIGN SHALL COMPLY WITH ASCE 7 AND AIR PRESSURE TESTING AS PER TAS 202/3 AND AMCA 540.

NFPA 70 - NATIONAL ELECTRICAL CODE 2017

NFPA 10, T6.2.1.1 TRAVEL DISTANCE TO FIRE EXTINGUISHERS SHALL BE LESS THAN 75 FT.
NFPA 70 NATIONAL ELECTRICAL CODE 2017 SECT 450: WALLS AROUND TRANSFORMER VAULTS SHALL BE 1 HR FIRE RATED.
NFPA 70 NATIONAL ELECTRICAL CODE ARTICLE 110.26(C)(2) LARGE EQUIPMENT: RATED 1200 AMPERES OR MORE, AN ENTRANCE AND EGRESS PATH MEASURING AT LEAST 24 INCHES WIDE AND 6.5 FEET HIGH MUST BE PROVIDED AT EACH END OF THE WORKING SPACE. LARGE EQUIPMENT RATED 800 AMPERES OR MORE, PUSH-BAR PANIC DOOR HARDWARE AND DOORSWING IN THE EGRESS DIRECTION MUST BE PROVIDED AT EACH DOOR.
NOTE: THIS STRUCTURE IS UNOCCUPIED. NO MORE THAN 5 SERVICE/MAINTENANCE PERSONNEL INSIDE AT ANY ONE TIME.

LIFE SAFETY PLAN LEGEND:

- EXIT
- EXIT ACCESS DORRWAY
- (FE) SURFACE MOUNTED FIRE EXTINGUISHER
- [BLDG] BUILDING IDENTIFICAITON SIGN. MOUNT BUILDING SIGN ON EXTERIOR SIDE OF ALL GROUND FLOOR DOORS ONLY. MOUNT SIGN CENTERED ON DOOR LEAF AT 5'-0" A.F.F.
- [ROOM] ROOM IDENTIFICATION SIGN
- (CPSS) CHEMICAL AND PROCESS AREA SAFETY SIGN
- X'-X" EGRESS TRAVEL DISTANCE
- EGRESS PATH OF TRAVEL
- 1-HOUR FIRE RATED WALL
- [FDKB] FIRE DEPARTMENT KNOX BOX



TYPICAL SURFACE MOUNTED FIRE EXTINGUISHER CABINET FRONT ELEVATION

SURFACE MOUNTED FIRE EXTINGUISHER CABINET SECTION AT METAL STUD WALL

2 EXTIGUISHER DETAIL
SCALE 1 1/2" = 1'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
RM, JJG, HM

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILIDNG LIFE SAFETY PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
A-06	SHEET NO. 56 OF 256

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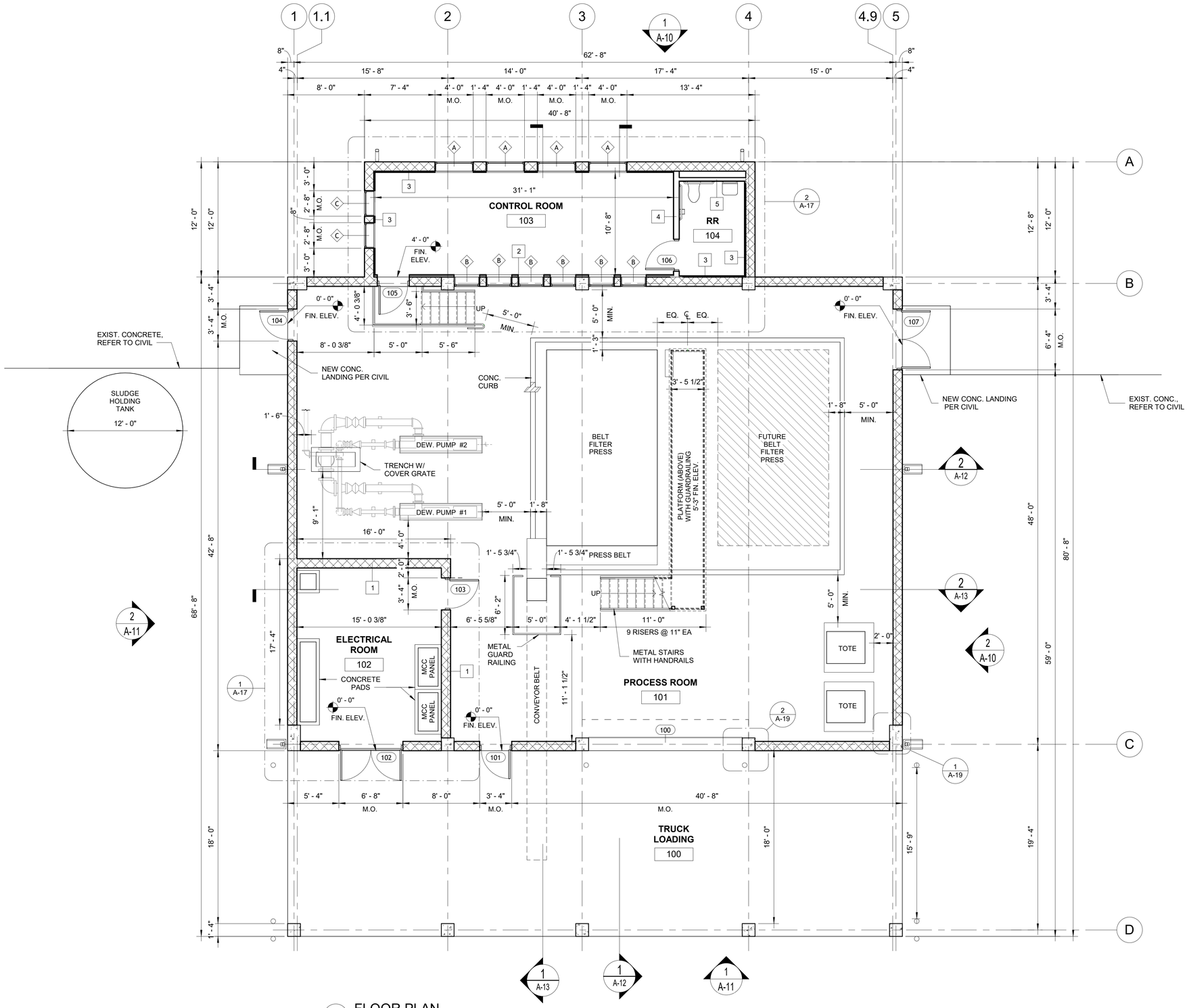

1 FLOOR PLAN
SCALE 3/16" = 1'-0"

FLOOR PLAN GENERAL NOTES:

1. FOR TYPICAL ARCHITECTURAL DETAILS SEE SHEETS A-05E, AND A-19 - A-24.
2. REFER TO STRUCTURAL DRAWINGS FOR LADDER AND RAILING DETAILS.
3. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

PLAN NORTH

0' 4' 8' 12'
GRAPHIC SCALE

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DEWATERING BUILDING FLOOR PLAN

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CITY OF HOUSTON PM	
Sam Kenu, P.E.	
A-07	SHEET NO. 57 OF 256

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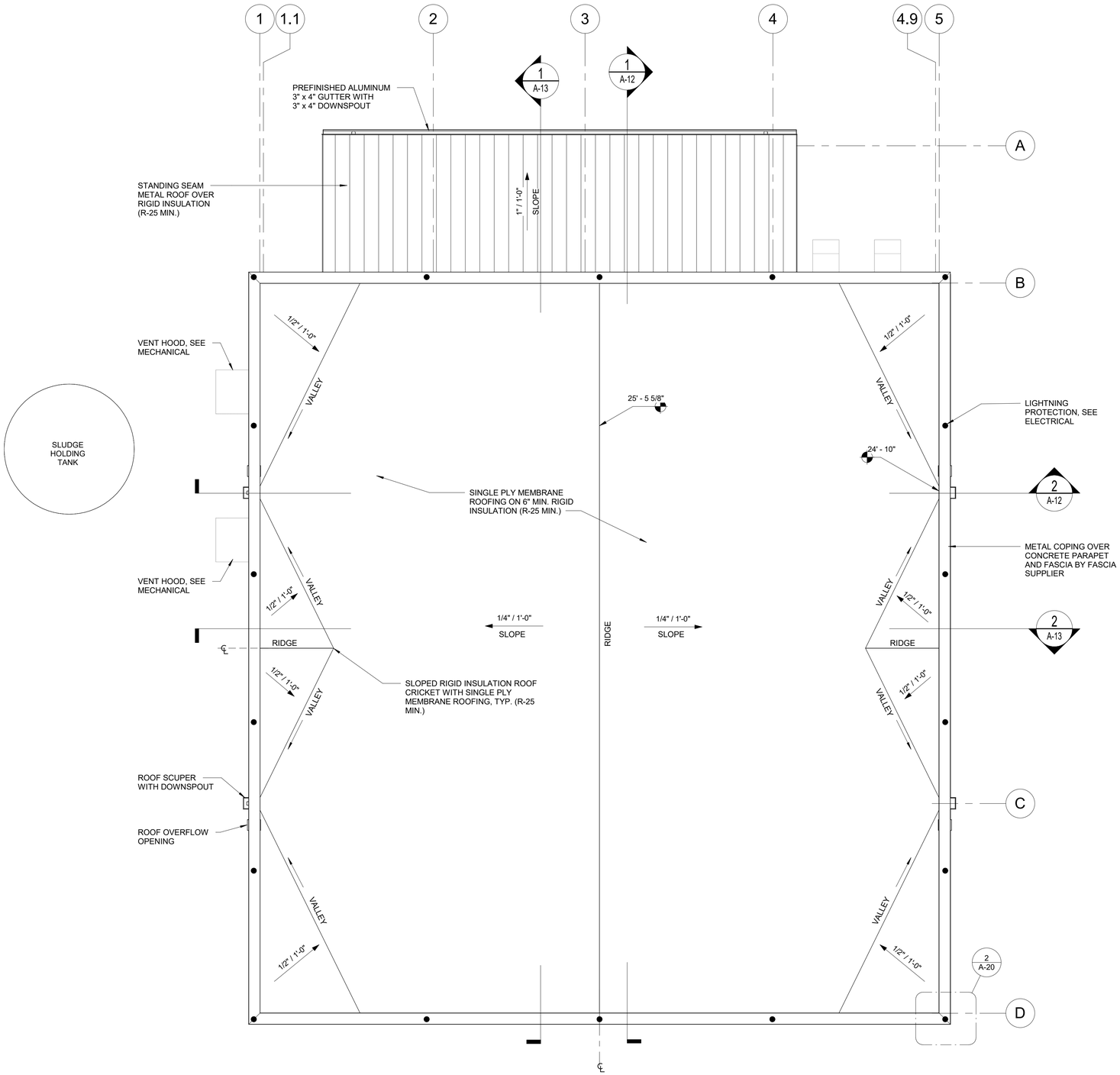

1 ROOF PLAN
SCALE 3/16" = 1'-0"

ROOF GENERAL NOTES:

1. FOR TYPICAL ARCHITECTURAL DETAILS SEE SHEETS A-05E, AND A-19 - A-24.
2. ——► INDICATES SLOPE
3. REFER TO STRUCTURAL DRAWINGS FOR STAIR AND LADDER DETAILS
4. CONTRACTOR SHALL PROVIDE PRECAST CONCRETE PLASH BLOCKS EACH DOWNSPOUT TERMINATION AT FINISH GRADE

PLAN NORTH

0' 4' 8' 12'
GRAPHIC SCALE

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DEWATERING BUILDING ROOF PLAN

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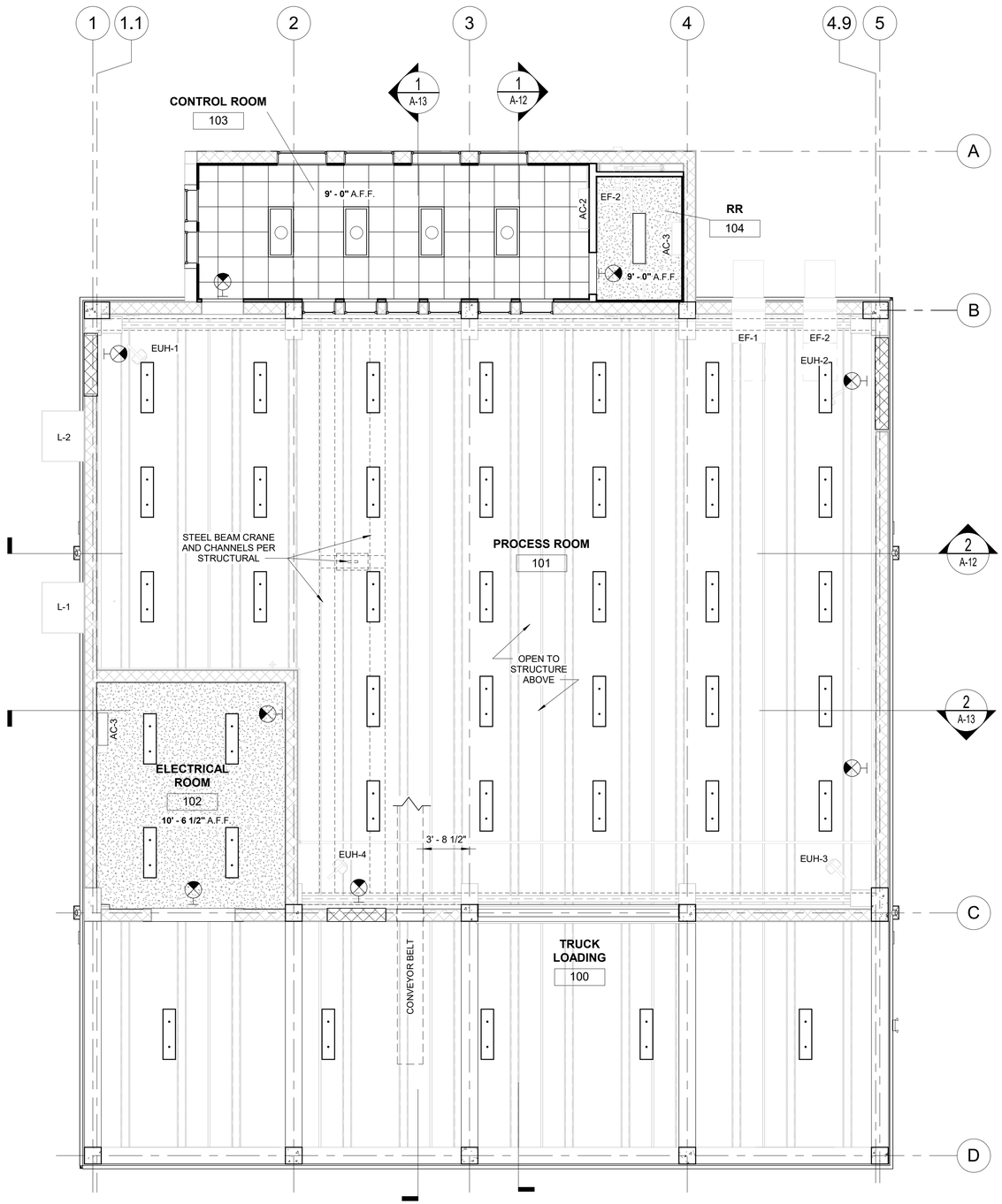


1 REFLECTED CEILING PLAN
SCALE 3/16" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- PRE-FINISHED SOFFIT PANELS
- 2X4 ACT CEILING
- 2X2 CEILING GRID
- GWB CEILING
- RECESSED CAN LIGHTING FIXTURE
- SMOKE DETECTOR (REFER TO ELEC DWGS)
- EXIT SIGN LOCATION (REFER TO ELEC DWGS)
- EXIT SIGN (REFER TO ELEC DWGS)
- 2' X 2' DOWNLIGHT
- 2' X 2' DOWNLIGHT (EMERGENCY PWR)
- 1' X 4' WALL MOUNTED LIGHT FIXTURE
- 1' X 4' RECESSED LIGHT FIXTURE
- 1' X 4' LIGHT FIXTURE
- 1' X 4' LIGHT FIXTURE (EMERGENCY PWR)
- 2' x 4' RECESSED LIGHT FIXTURE
- 2' x 4' RECESSED LIGHT FIXTURE (EMERGENCY PWR)
- DIFFUSER
- RETURN
- **1'-0"** A.F.F. CEILING HEIGHT, ABOVE FINISH FLOOR
- CCTV CAMERA (REFER TO ELEC DWGS)
- EXTERIOR WALL SCONCE

REFLECTED CEILING GENERAL NOTES:

1. CENTER ACOUSTICAL CEILING TILE AND GRID IN ROOM/AREA, U.N.O.
2. ALL LIGHTS TO BE CENTERED AND DISTRIBUTED EVENLY IN ROOM U.N.O.
3. FIXTURES ARE SHOWN FOR POSITIONING IN CEILING REFERENCE ELECTRICAL AND MECHANICAL DRAWINGS FOR FIXTURE TYPES. FIELD VERIFICATION BE REQUIRED PRIOR TO LIGHT FIXTURE INSTALLATION TO AVOID CONFLICT BETWEEN MECHANICAL AND ELECTRICAL EQUIPMENT.
4. ALL EXPOSED STRUCTURE SHALL BE PAINTED. SEE SPECIFICATIONS
5. ALL SMOKE SEALED & FIRE RATED CEILINGS TO BE SEALED ALONG PERIMETER CONNECTIONS TO WALL AND AT ALL PENETRATIONS
6. PROVIDE MOISTURE / MILDEW RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS.
7. REFER TO LIGHTING PLANS FOR EXIT SIGN LOCATIONS.
8. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL LIGHTING INFORMATION

PLAN NORTH

0' 4' 8' 12'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
RM, JJG, HM

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

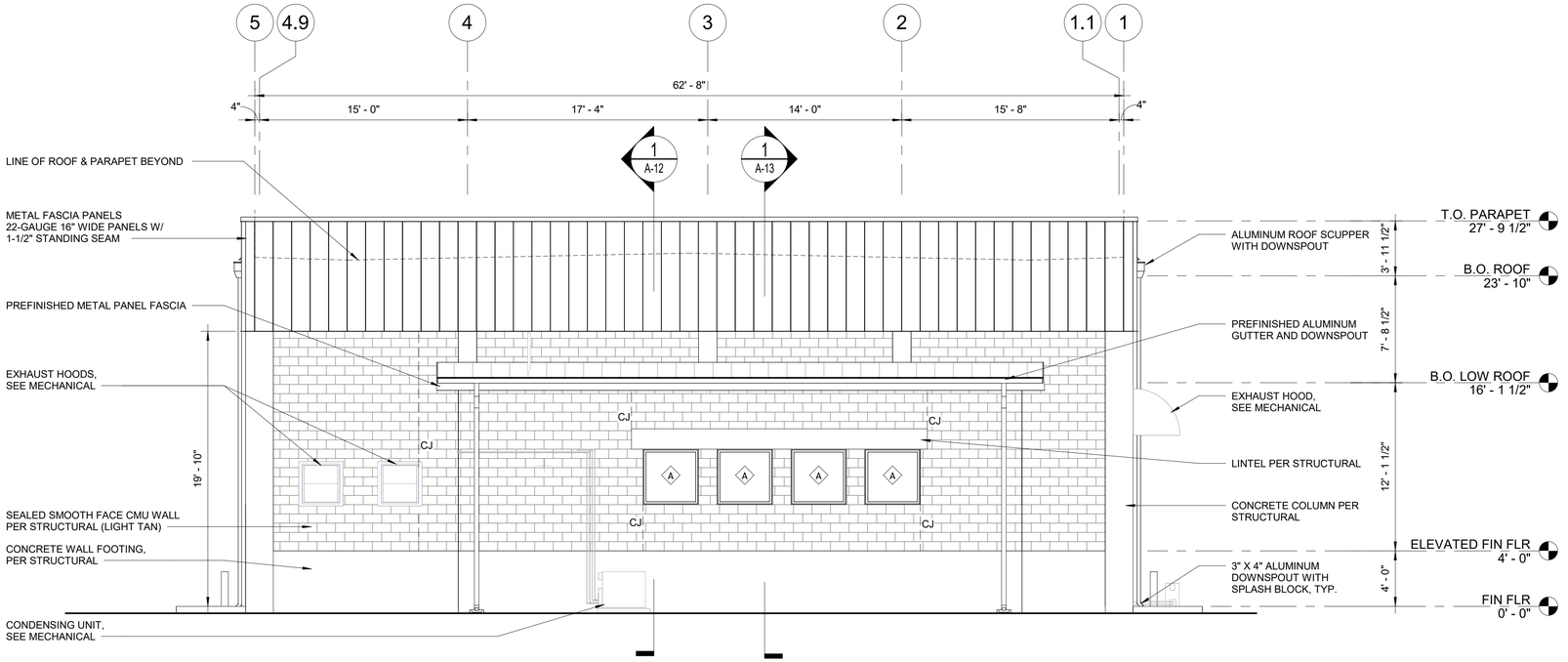
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING RCP

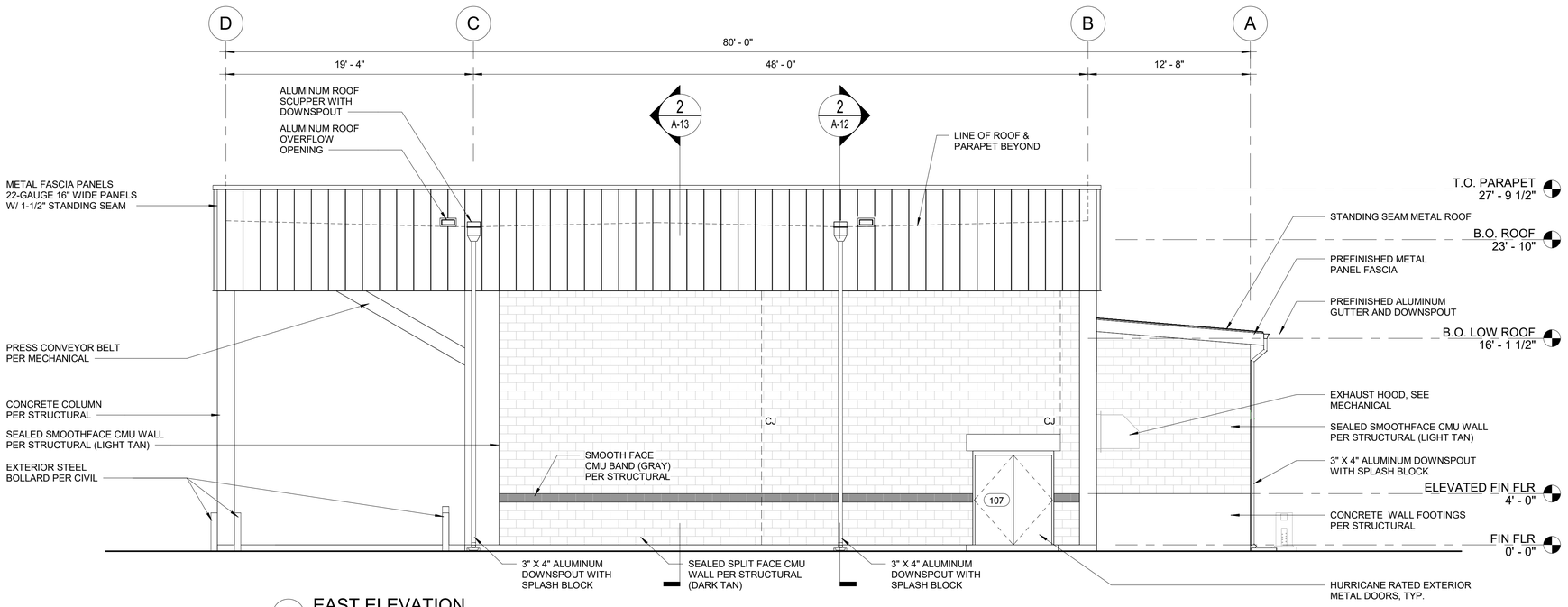
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 59 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION

A-09



1 NORTH ELEVATION
SCALE 3/16" = 1'-0"



2 EAST ELEVATION
SCALE 3/16" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 4' 8' 12'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
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ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

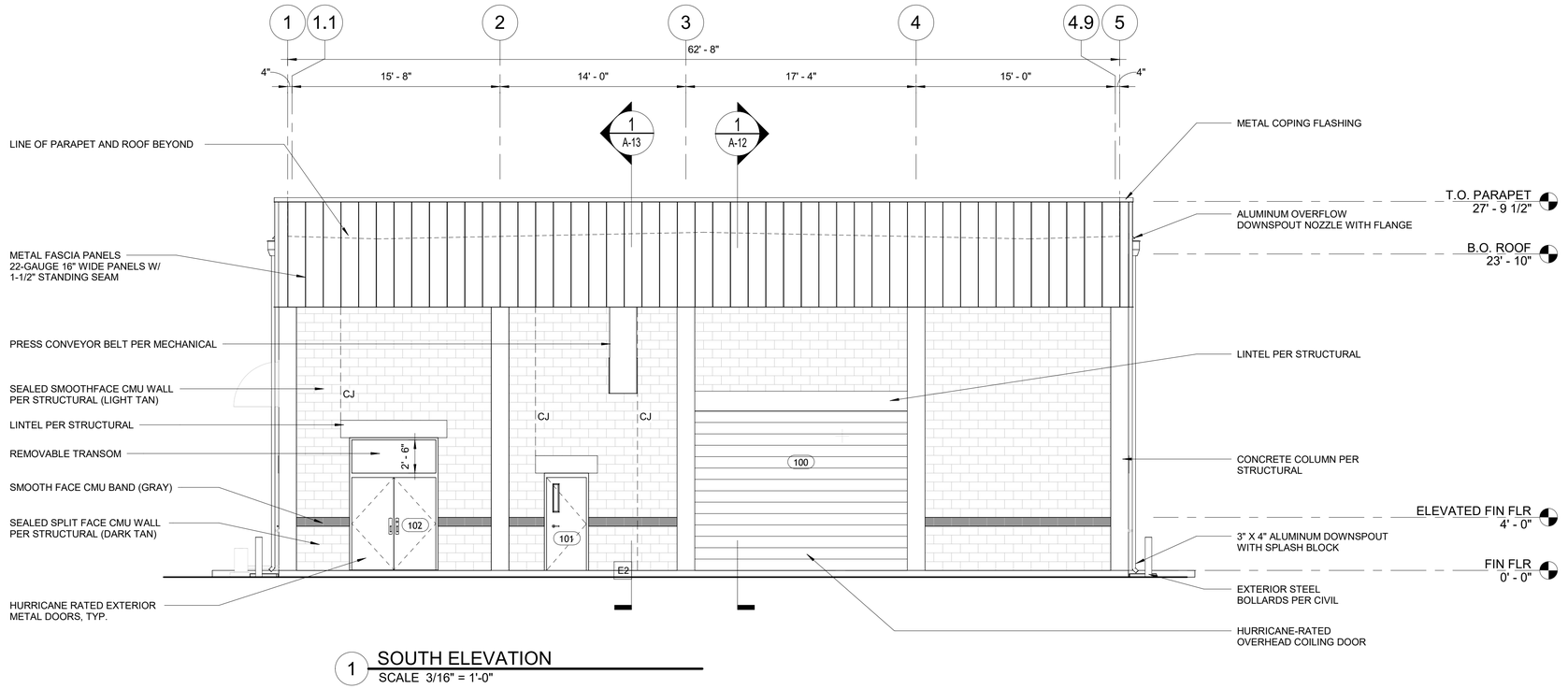
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING ELEVATIONS

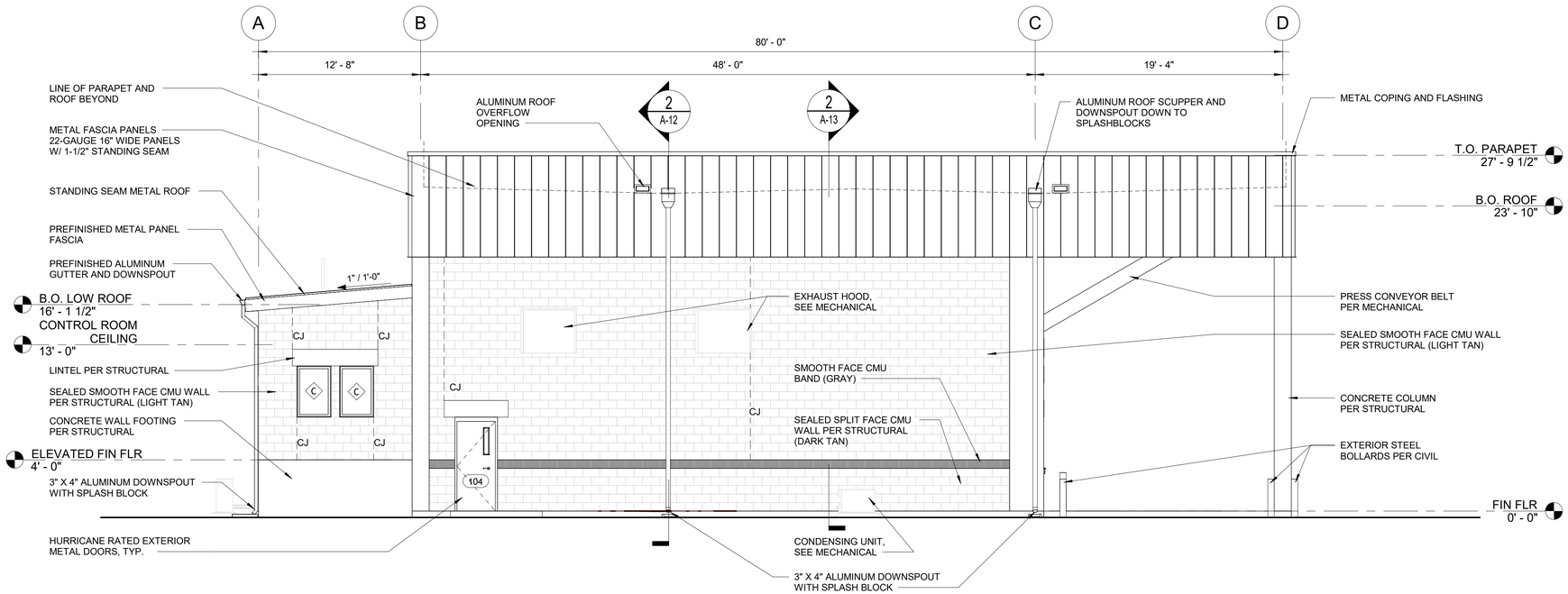
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
3/16" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 60 OF 256	

A-10

90% SUBMITTAL NOT FOR CONSTRUCTION



1 SOUTH ELEVATION
SCALE 3/16" = 1'-0"



2 WEST ELEVATION
SCALE 3/16" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 4' 8' 12'

GRAPHIC SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

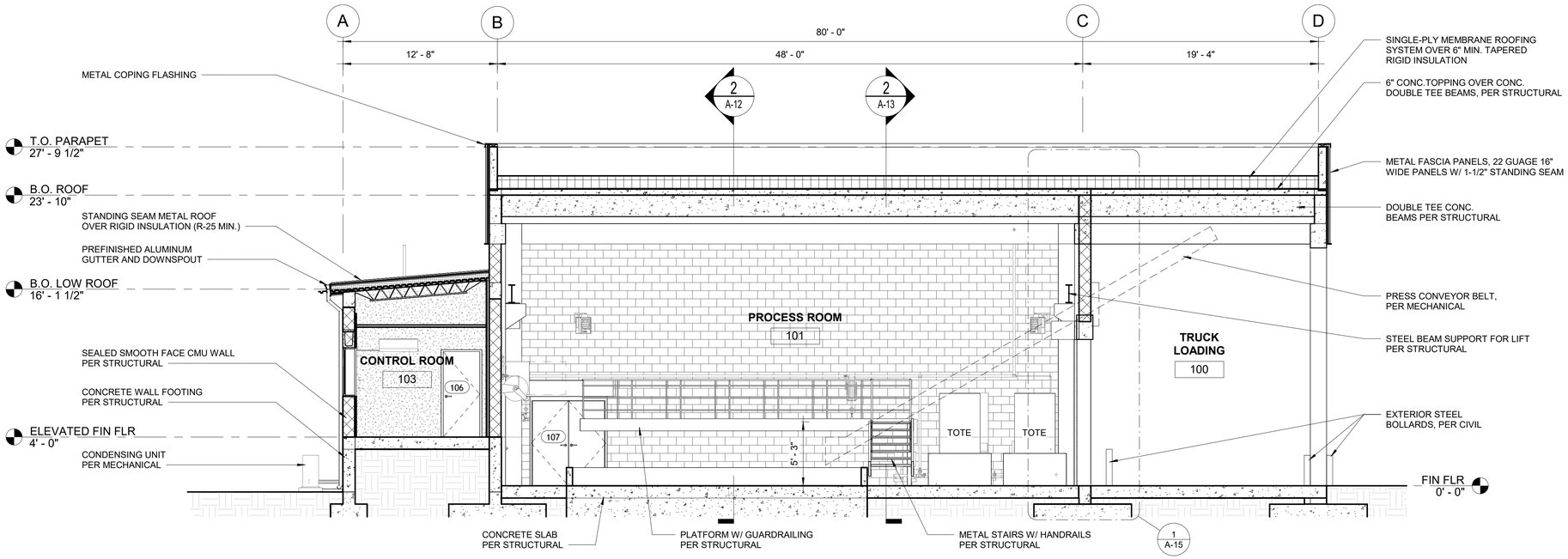
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING ELEVATIONS

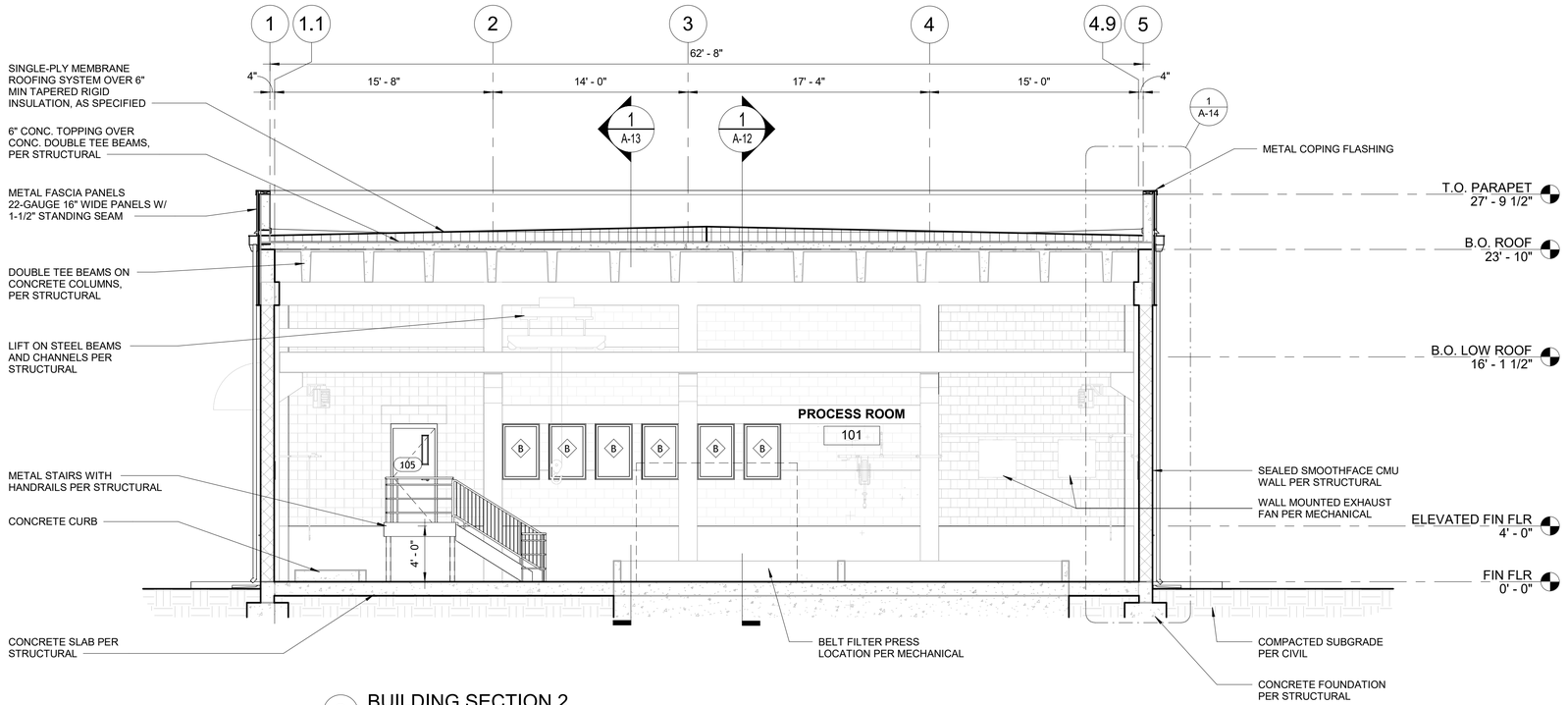
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
3/16" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 61 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION

A-11



1 BUILDING SECTION 1
SCALE 3/16" = 1'-0"



2 BUILDING SECTION 2
SCALE 3/16" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 4' 8' 12'

GRAPHIC SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

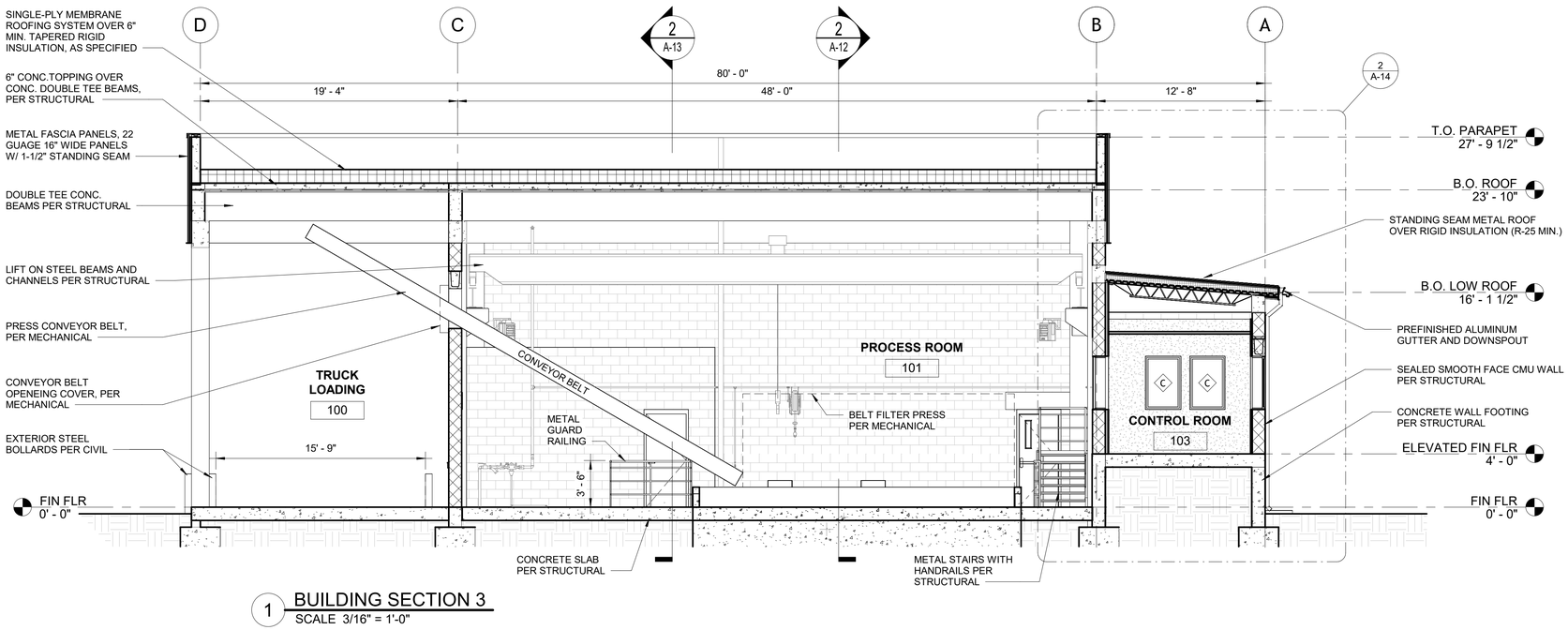
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING SECTIONS

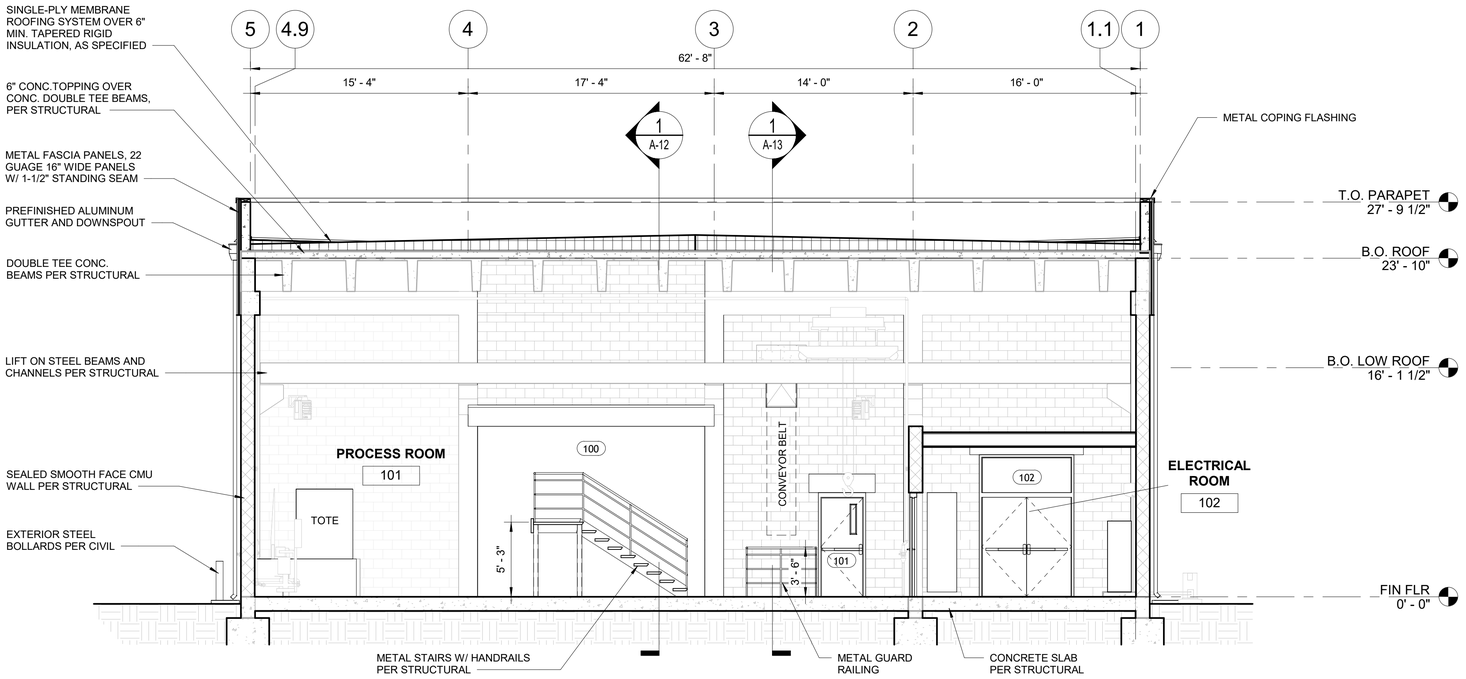
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
3/16" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 62 OF 256	

A-12

90% SUBMITTAL NOT FOR CONSTRUCTION



1 BUILDING SECTION 3
SCALE 3/16" = 1'-0"



2 BUILDING SECTION 4
SCALE 3/16" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 4' 8' 12'
GRAPHIC SCALE

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RM, JJG, HM

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TEXAS LICENSE NO. 15131
ON DATE 03/31/26

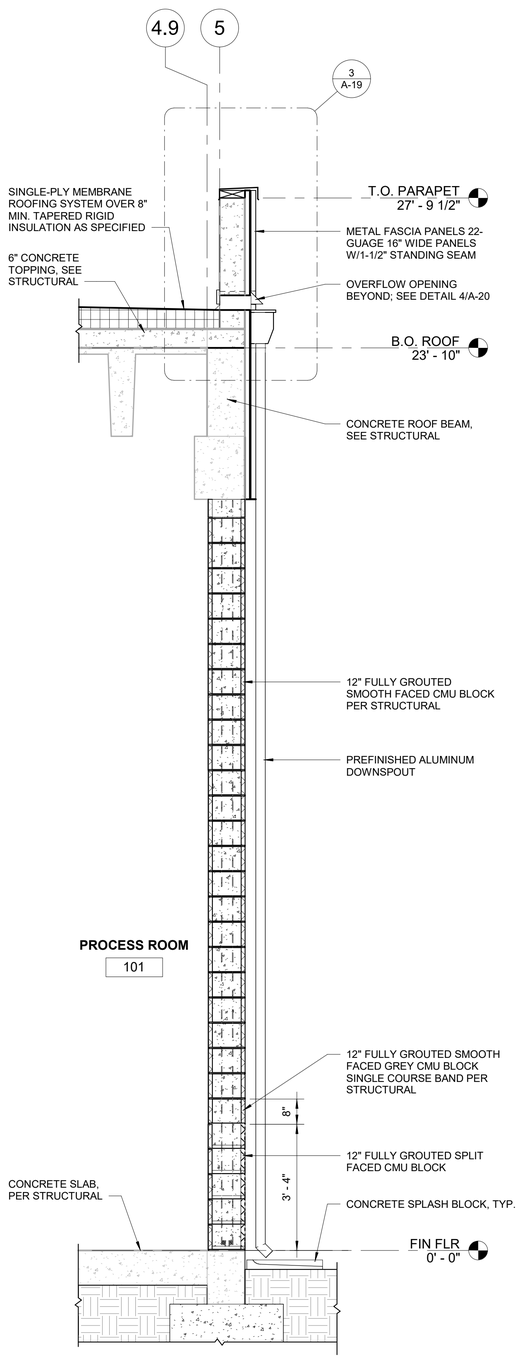
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

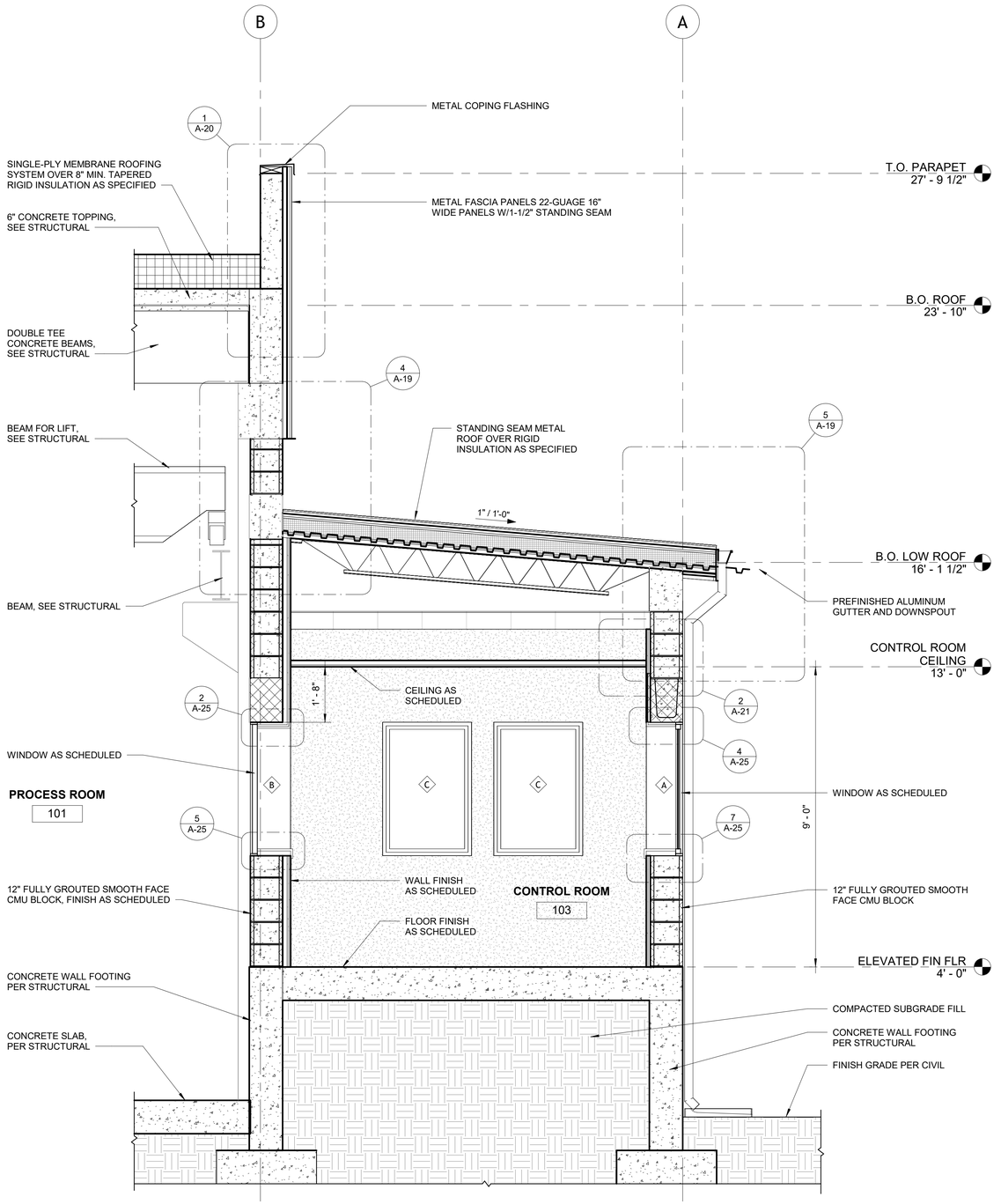
DEWATERING BUILDING SECTIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
3/16" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
A-13	SHEET NO. 63 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION



1 WALL SECTION 1
SCALE 1/2" = 1'-0"



2 WALL SECTION 2
SCALE 1/2" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 1' 2' 4'

GRAPHIC SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING WALL SECTIONS

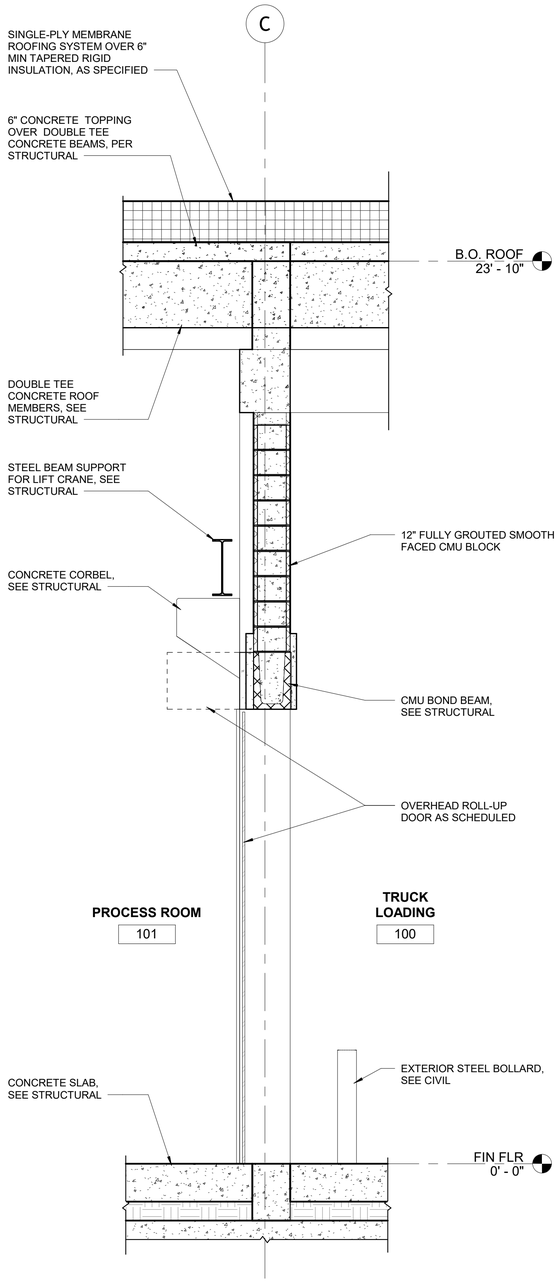
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/2" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 64 OF 256	

A-14

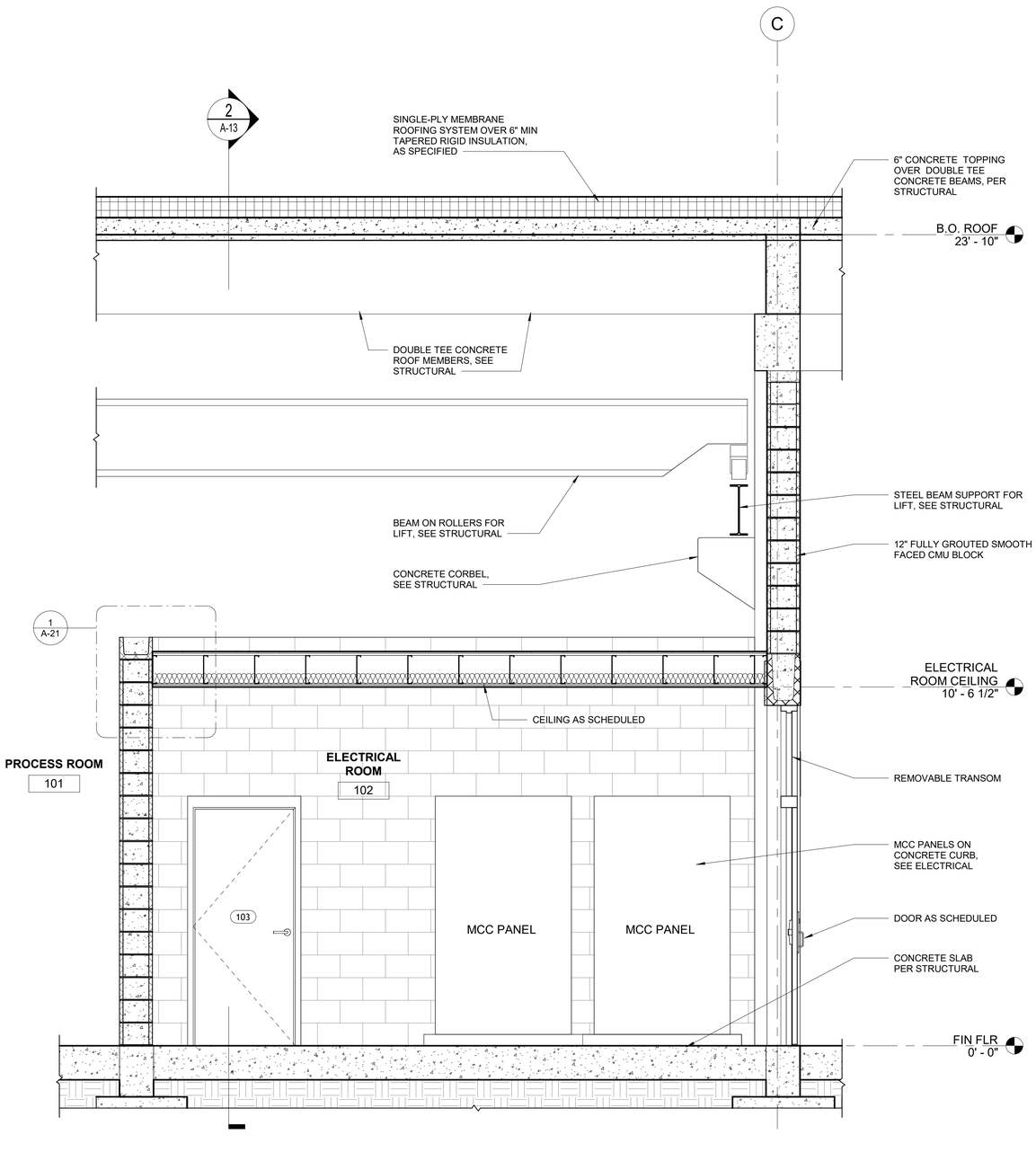
90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.



1 WALL SECTION
SCALE 1/2" = 1'-0"



2 WALL SECTION @ ELECTRICAL ROOM
SCALE 1/2" = 1'-0"

0' 1' 2' 4'

GRAPHIC SCALE

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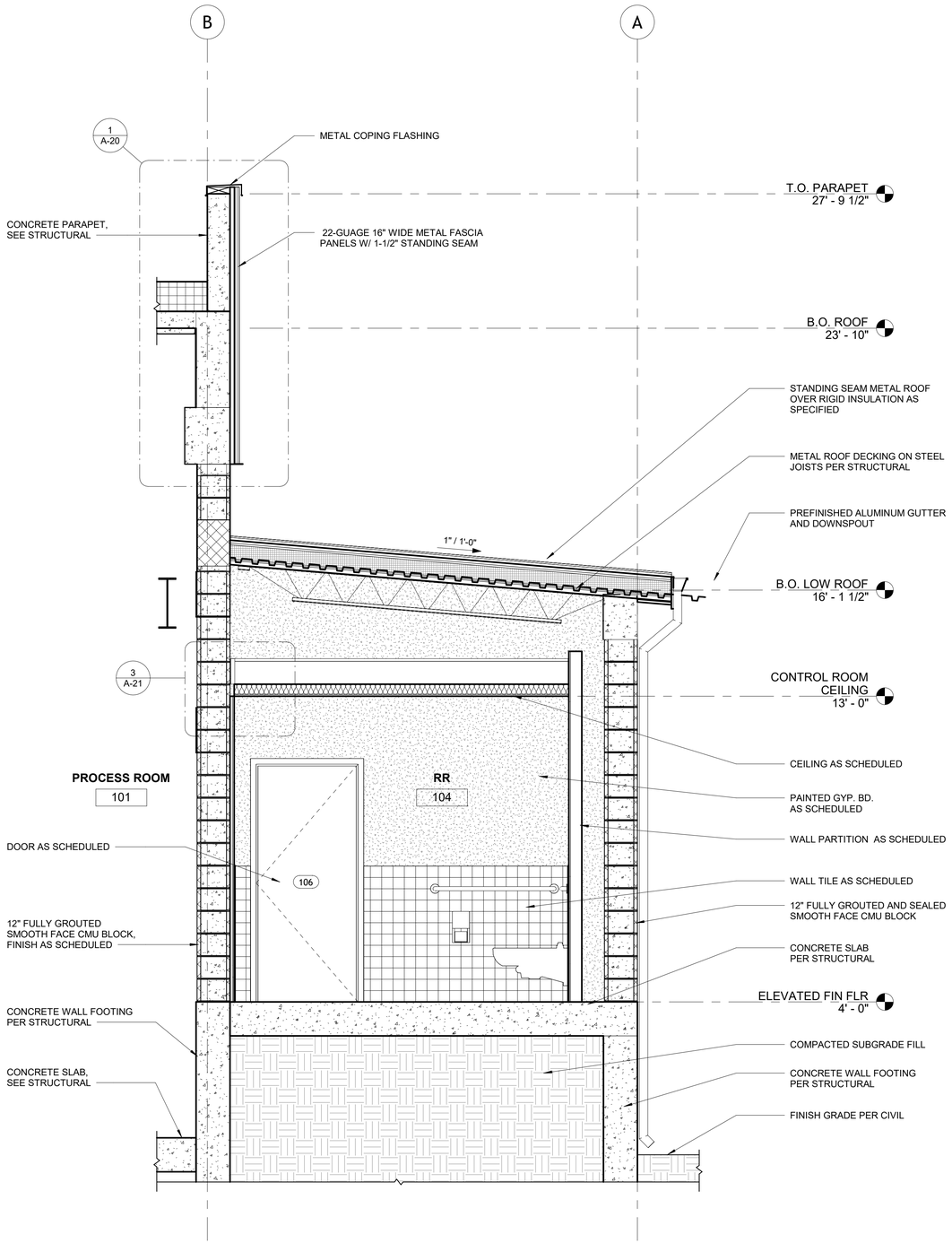
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING WALL SECTIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/2" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
A-15	SHEET NO. 65 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION



1 RESTROOM SECTION
SCALE 1/2" = 1'-0"

GENERAL NOTES:

1. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 1' 2' 4'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING WALL SECTIONS

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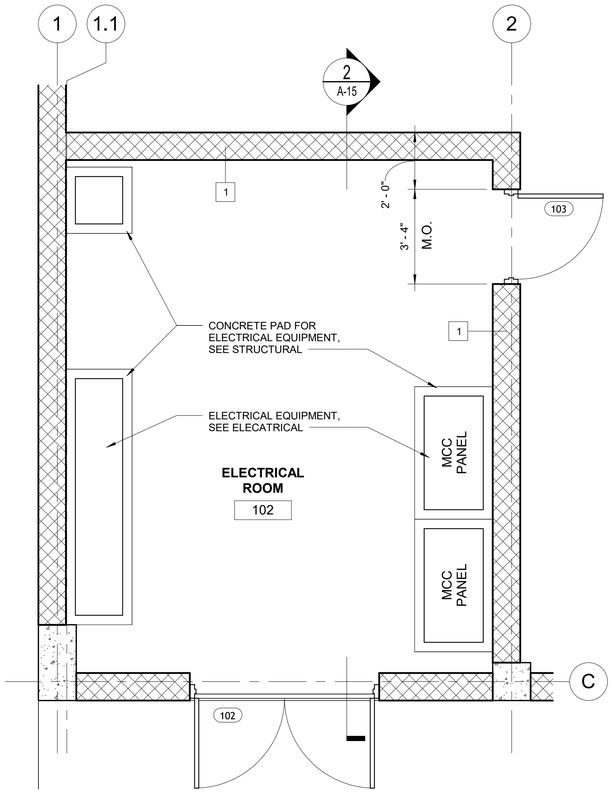
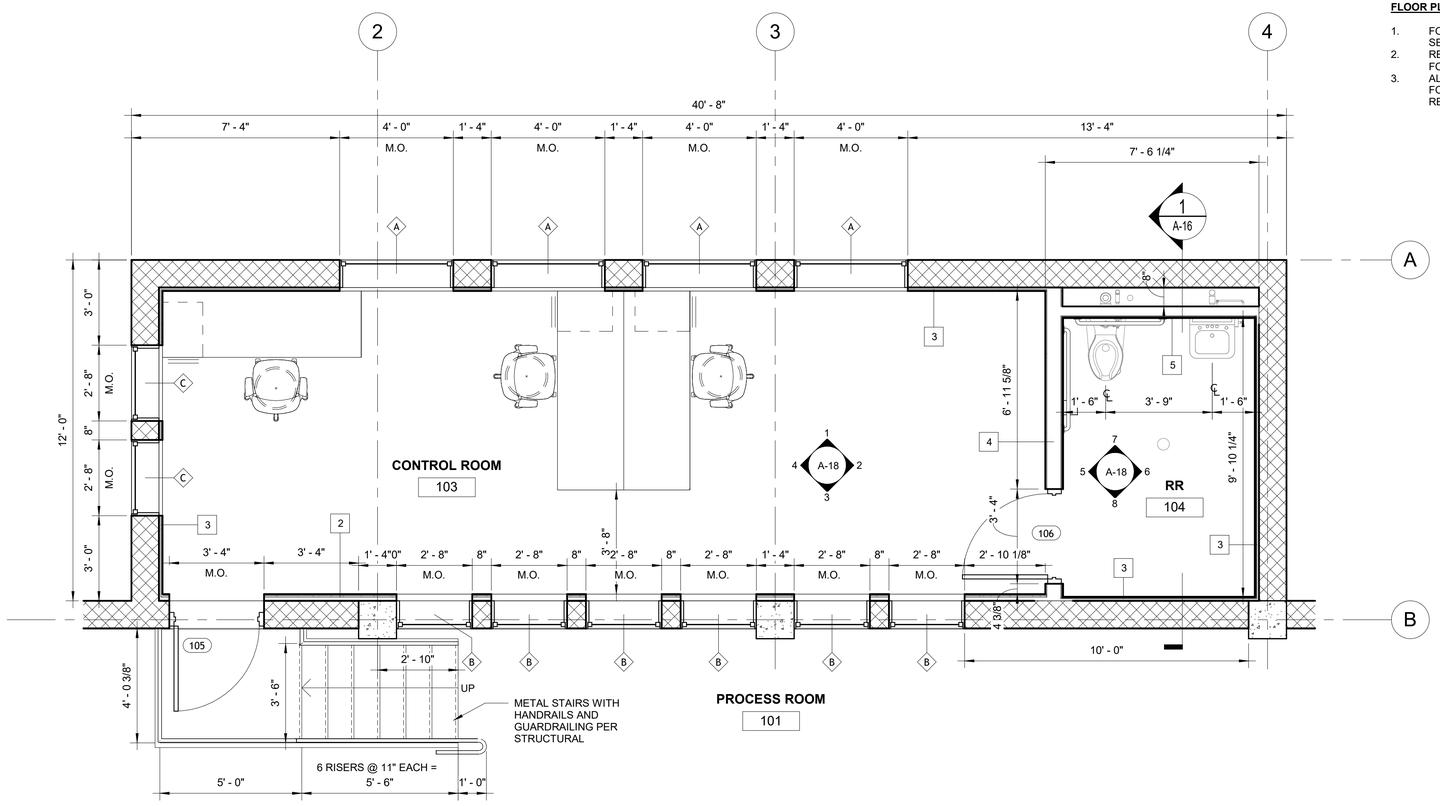
1/2" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 66 OF 256	

A-16

90% SUBMITTAL NOT FOR CONSTRUCTION



1 ENLARGED ELECTRICAL ROOM PLAN
SCALE 3/8" = 1'-0"



2 ENLARGED CONTROL ROOM & RR PLAN
SCALE 3/8" = 1'-0"

FLOOR PLAN GENERAL NOTES:

1. FOR TYPICAL ARCHITECTURAL DETAILS SEE SHEETS A-05E, AND A-19 - A-24.
2. REFER TO STRUCTURAL DRAWINGS FOR LADDER AND RAILING DETAILS.
3. ALL GROUND ELEVATIONS ARE SET TO 0'-0". FOR MEAN ELEVATION AND BUILDING LOCATION, REFER TO CIVIL DRAWINGS.

0' 2' 4' 6'

GRAPHIC SCALE

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ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

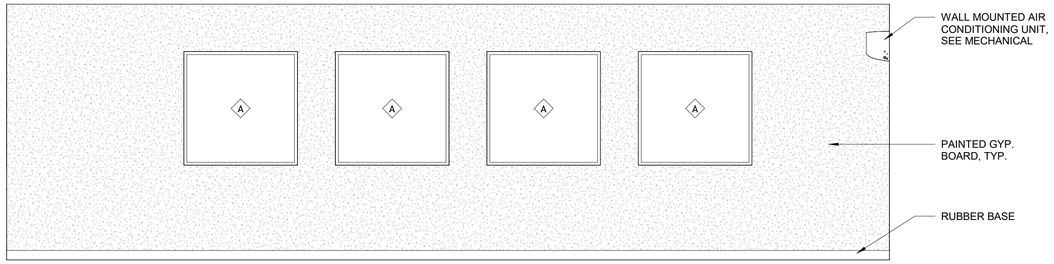
GREENRIDGE WWTP
IMPROVEMENTS

DEWATERING BUILDING
ENLARGED FLOOR PLANS

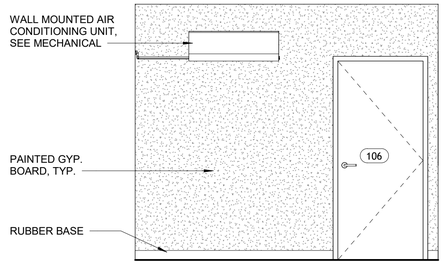
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
3/8" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 67 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION

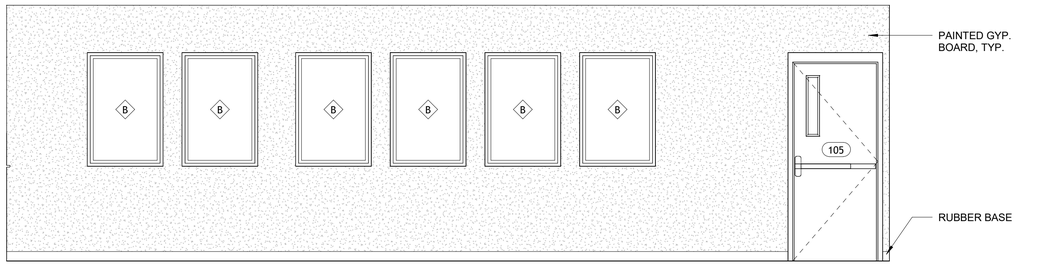
A-17



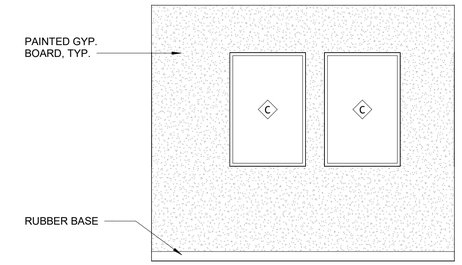
1 CONTROL ROOM INTERIOR ELEV. NORTH
SCALE 3/8" = 1'-0"



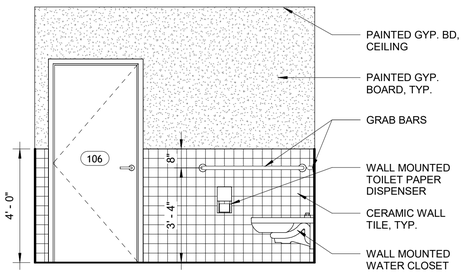
2 CONTROL ROOM INTERIOR ELEV. EAST
SCALE 3/8" = 1'-0"



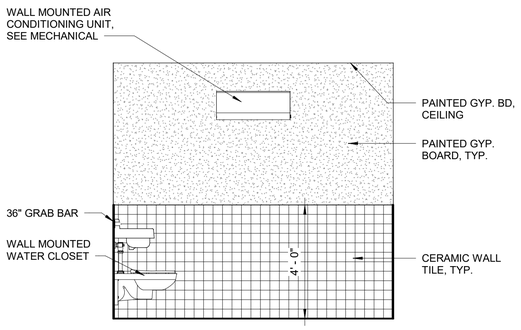
3 CONTROL ROOM INTERIOR ELEV. SOUTH
SCALE 3/8" = 1'-0"



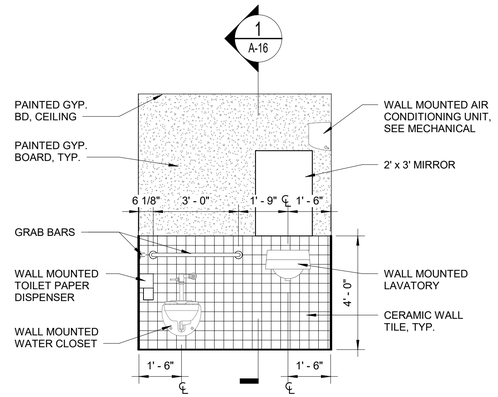
4 CONTROL ROOM INTERIOR ELEV. WEST
SCALE 3/8" = 1'-0"



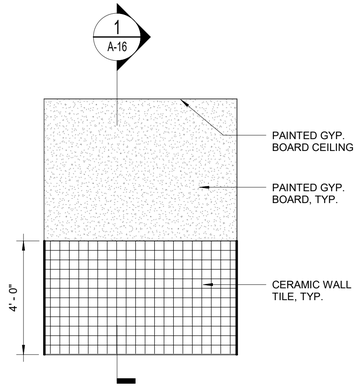
5 RESTROOM INTERIOR ELEV. WEST
SCALE 3/8" = 1'-0"



6 RESTROOM INTERIOR ELEVATION EAST
SCALE 3/8" = 1'-0"



7 RESTROOM INTERIOR ELEV. NORTH
SCALE 3/8" = 1'-0"



8 RESTROOM INTERIOR ELEV. SOUTH
SCALE 3/8" = 1'-0"

0' 2' 4' 6'

GRAPHIC SCALE

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TEXAS LICENSE NO. 15131
ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
RM, JJG, HM

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING INTERIOR ELEVATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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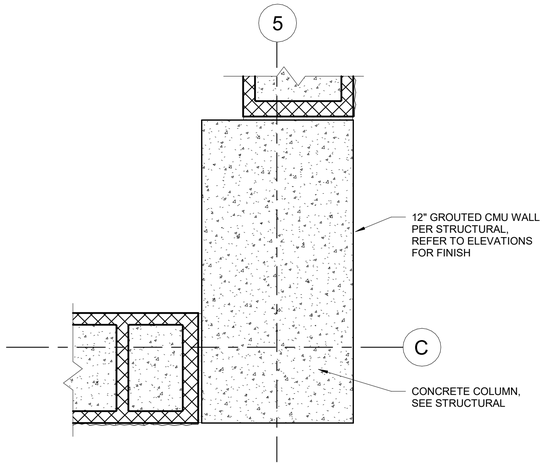
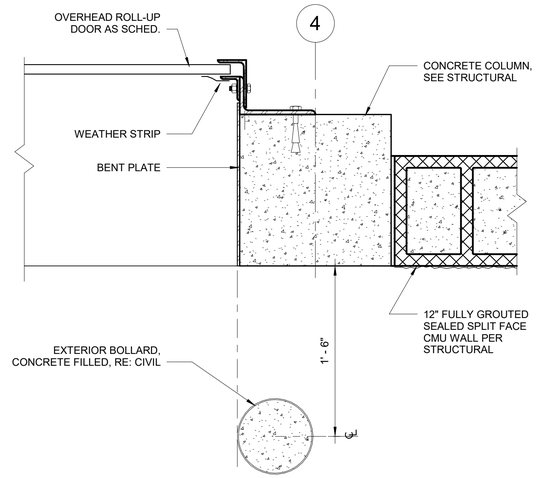
DRAWING SCALE	
3/8" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 68 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION



1 PLAN DETAIL 1
SCALE 1 1/2" = 1'-0"



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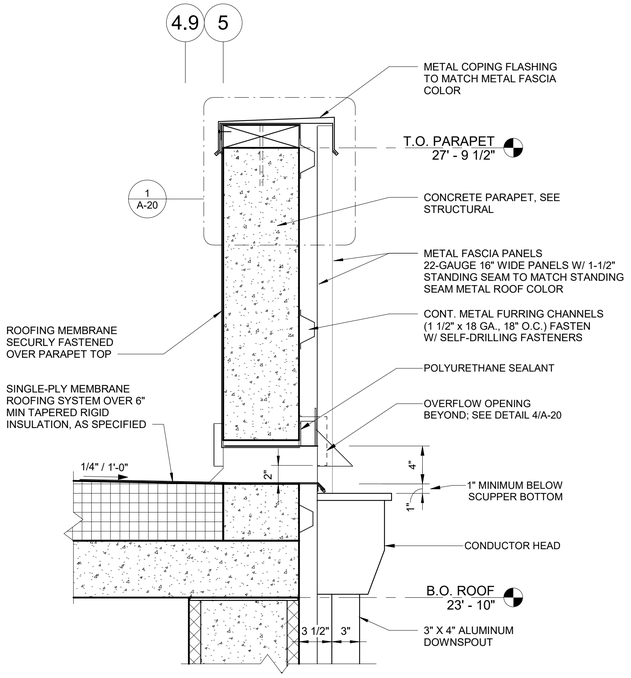
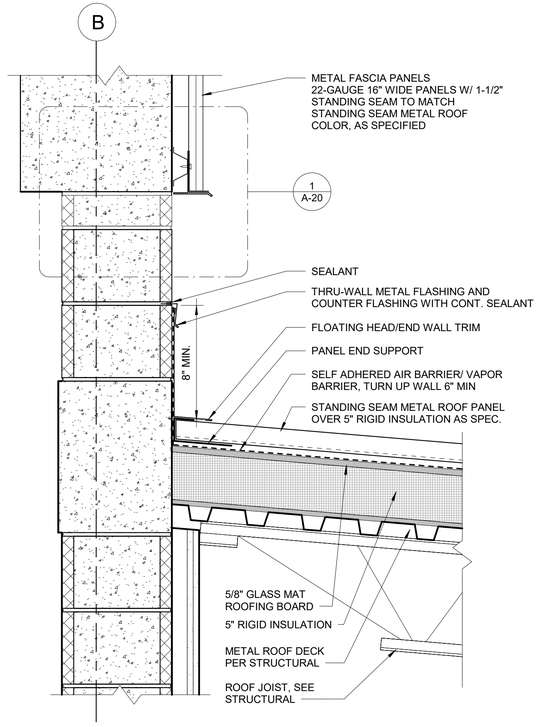
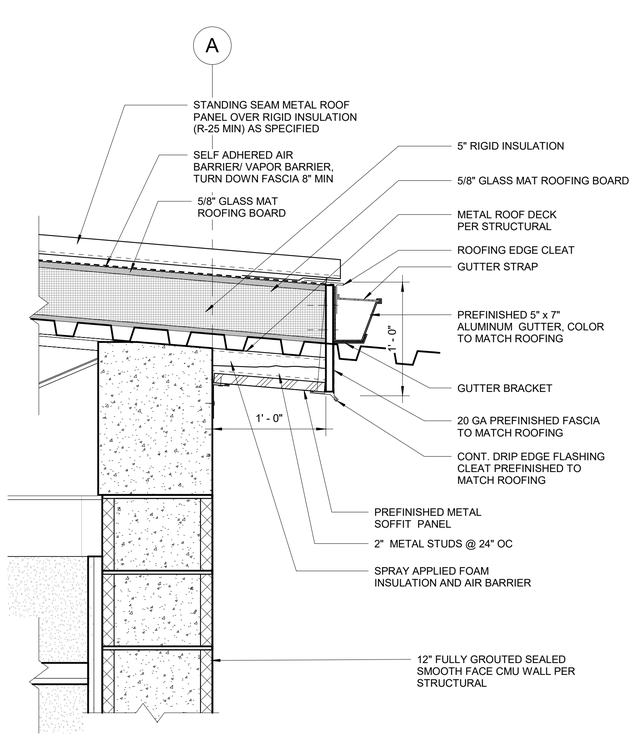
SCALE 1 1/2" = 1'-0"



3 WALL DETAIL 1
SCALE 1 1/2" = 1'-0"



4 WALL DETAIL 2
SCALE 1 1/2" = 1'-0"



5 WALL DETAIL 3
SCALE 1 1/2" = 1'-0"

0' 4" 8" 1'-4"

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
SB, JJG

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

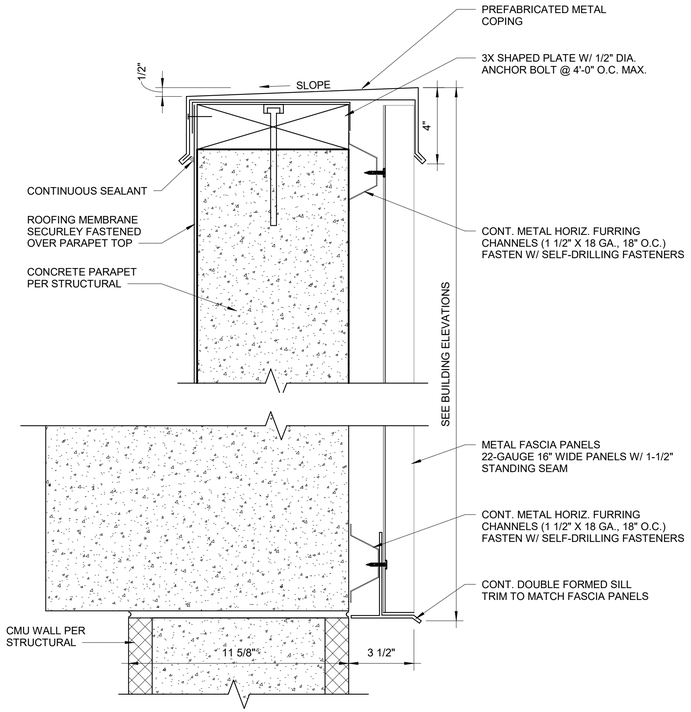
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING DETAILS

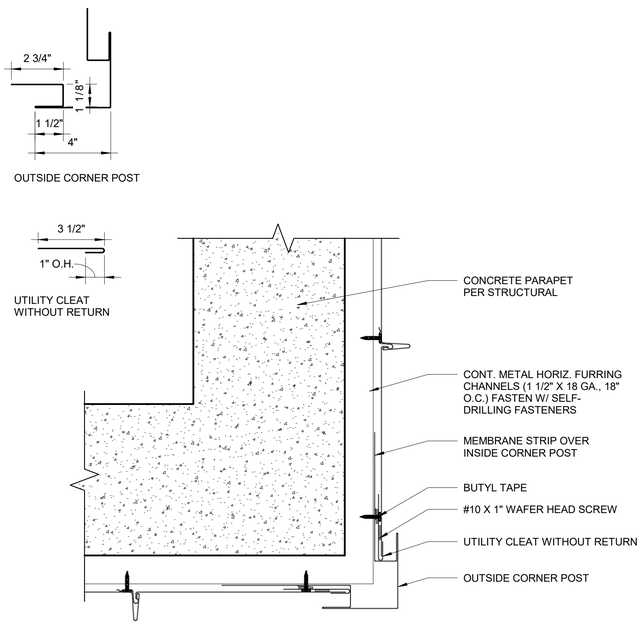
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1 1/2" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 69 OF 256	

A-19

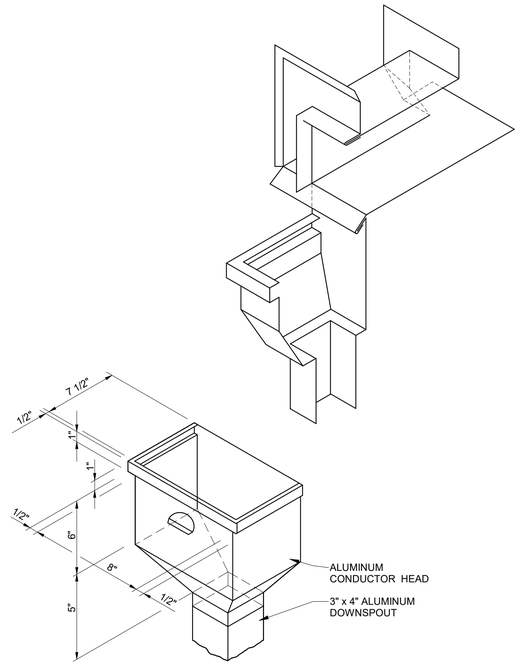
90% SUBMITTAL NOT FOR CONSTRUCTION



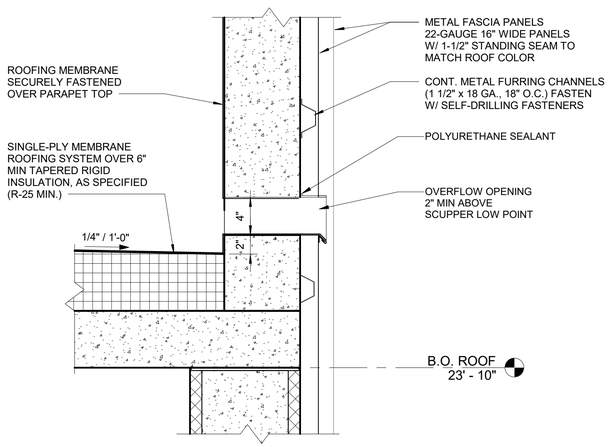
1 PARAPET METAL PANEL FASCIA DETAIL
SCALE 3" = 1'-0"



2 PARAPET PLAN DETAIL
SCALE 3" = 1'-0"



3 SCUPPER AND CONDUCTOR HEAD DETAIL
SCALE 1" = 1'-0"



4 ROOF OVERFLOW DETAIL
SCALE 1 1/2" = 1'-0"

0" 1/2" 1" 3"
0' 3" 6" 9"
GRAPHIC SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING DETAILS

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R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 70 OF 256	

A-20

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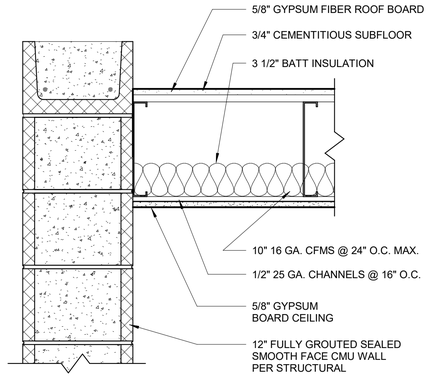
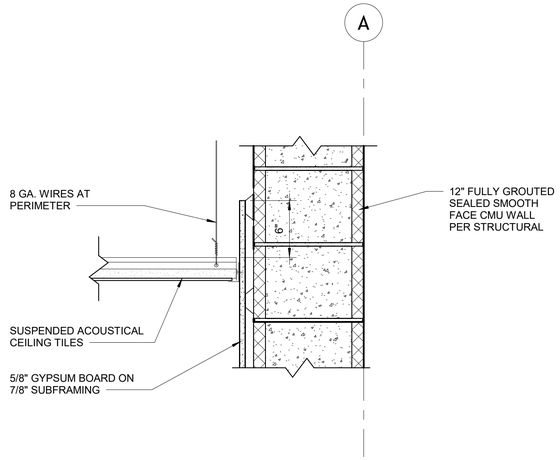
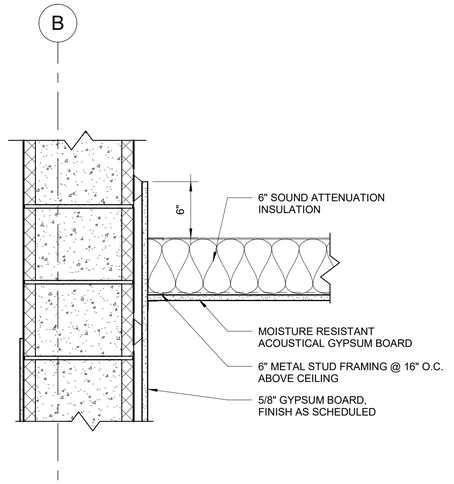


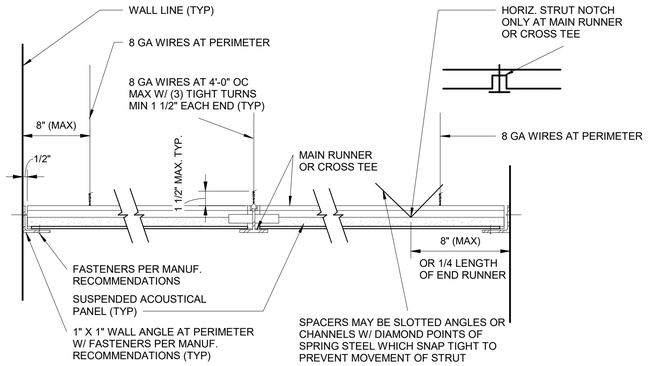
1 CEILING DETAIL - ELEC. ROOM
SCALE 1 1/2" = 1'-0"



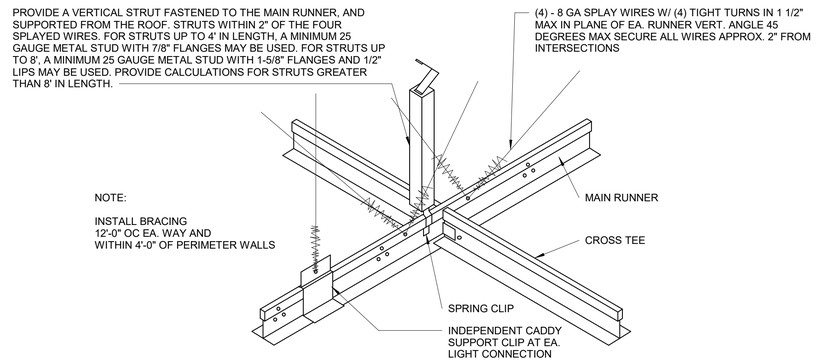
2 CEILING DETAIL - CONTROL ROOM
SCALE 1 1/2" = 1'-0"



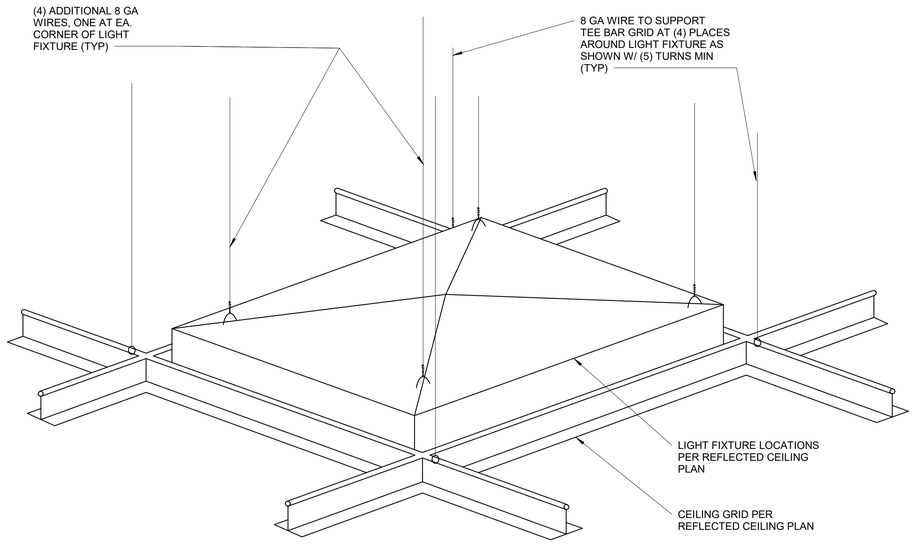
3 CEILING DETAIL - RESTROOM
SCALE 1 1/2" = 1'-0"



4 CEILING GRID DETAIL 1
SCALE 1 1/2" = 1'-0"



5 CEILING GRID DETAIL 2
SCALE 1 1/2" = 1'-0"



6 CEILING GRID LIGHT DETAIL
SCALE 1 1/2" = 1'-0"

0' 4" 8" 1'-4"

GRAPHIC SCALE

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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
SB, JJG

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RESPONSIBLE
ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING CEILING DETAILS

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R-000265-0162-3	
DRAWING SCALE	
1 1/2" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 71 OF 256	

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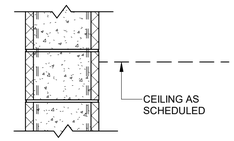
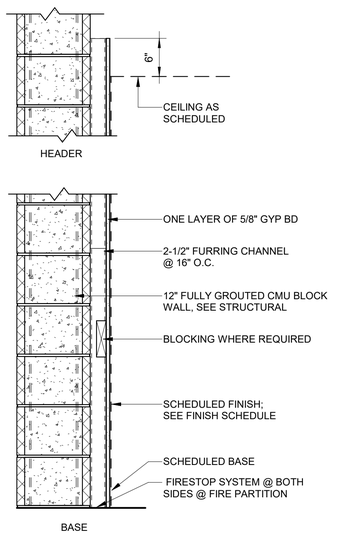


1 **12" CMU WALL WITH 7/8" FURRING AND ONE LAYER OF 5/8" GYP BD**

- 1 HOUR RATED MIN - UL DESIGN NO. U906-2 HOUR FIRE RATED

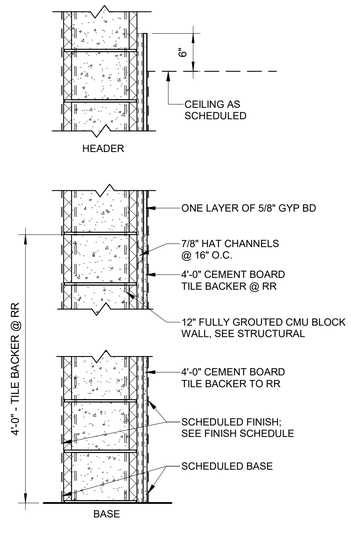
FIRE AND SMOKE PARTITION
NOTE: PROTECT ALL PENETRATIONS THROUGH FIRE-RESISTANCE RATED WALL ASSEMBLIES WITH AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM



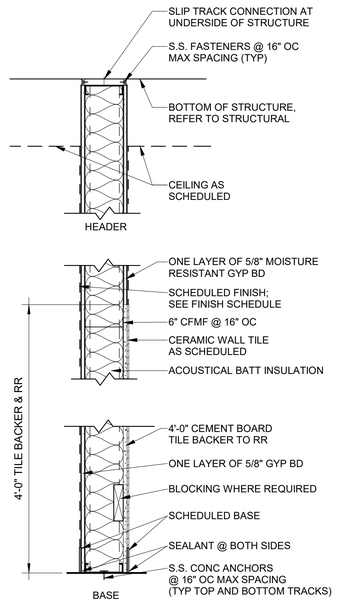
2 **12" CMU WALL WITH 2-1/2" FURRING AND ONE LAYER OF 5/8" GYP BD**

- 1 HOUR RATED MIN - UL DESIGN NO. U906-2 HOUR FIRE RATED

FIRE AND SMOKE PARTITION
NOTE: PROTECT ALL PENETRATIONS THROUGH FIRE-RESISTANCE RATED WALL ASSEMBLIES WITH AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM

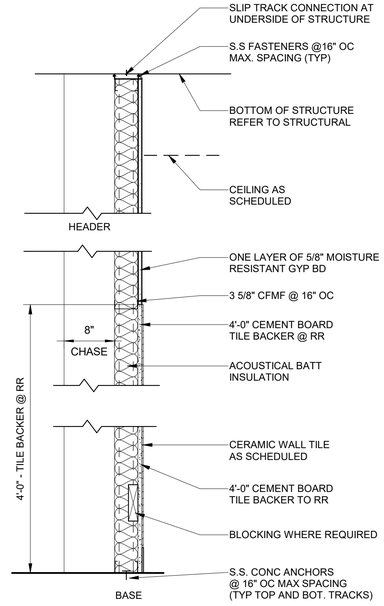


3 **12" CMU WALL WITH 7/8" FURRING AND ONE LAYER OF 5/8" GYP BD**



4 **PARTITION - 6" METAL STUD**

SOUND RATED PARTITION
NOTE: PROVIDE ACOUSTIC SEALANT AT ALL PENETRATIONS THROUGH RATED ASSEMBLY



5 **PLUMBING CHASE WALL - 3 5/8" METAL STUD**

GENERAL NOTES:

1. PROVIDE METAL BACKING AS REQUIRED FOR ALL EQUIPMENT AND CASEWORK SUPPORT. SEE PLAN FOR PLACEMENT OF WALL MOUNTED/SUPPORT EQUIPMENT AND CASEWORK.
2. WHERE STC RATINGS OF 40 OR GREATER ARE REQUIRED, SOUND INSULATION BATTS SHALL BE PROVIDED AT CEILING TO MINIMUM OF 4'-0" TO EACH SIDE OF THE PARTITION.
3. ALL PENETRATIONS IN SOUND CONTROL WALLS SHALL BE SEALED TO MAINTAIN THE REQUIRED CRITERIA. TREAT ALL INTERSECTIONS AND TERMINATIONS TO PREVENT SOUND TRANSMISSION.
4. PROVIDE PENETRATION FIRESTOPPING AND JOINT FIRESTOPPING AT ALL RATED WALL PENETRATIONS WITH UL APPROVED MATERIALS AND ASSEMBLIES. SUBMIT CUT SHEETS FOR APPROVAL PRIOR TO INSTALLATION.
5. PROVIDE MOISTURE/MILDEW RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS. REFER TO SPECIFICATIONS.
6. ALL OUTLET OR DEVICE BOXES IN ACOUSTICAL WALLS WITH AN STC OF 45 OR GREATER SHALL BE WRAPPED WITH ACOUSTIC BACKER PADS. REFER TO SPECIFICATIONS.
7. ALL METAL STUD WALLS TO CONTAIN SOUND ATTENUATION BATTS.
8. WALLS DESIGNATED AS STC-RATED SHALL BE CONSTRUCTED IN ACCORDINANCE WITH SYSTEMS TESTED UL, GYPSUM ASSOCIATION, OR OTHER ACCEPTABLE TESTING AGENCY FOR STC RATING OF 45 OR GREATER.
9. REFER TO PARTITION TYPES FOR STC RATINGS, REFER TO THE FLOOR PLANS FOR PARTITION TYPE LOCATIONS.
10. REFER TO LIFE SAFETY PLANS FOR RATED PARTITION AND SMOKE PARTITION LOCATIONS.

1 PARTITION TYPE 1
SCALE 1" = 1'-0"

2 PARTITION TYPE 2
SCALE 1" = 1'-0"

3 PARTITION TYPE 3
SCALE 1" = 1'-0"

4 PARTITION TYPE 4
SCALE 1" = 1'-0"

5 PARTITION TYPE 5
SCALE 1" = 1'-0"

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TEXAS LICENSE NO. 15131
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SURVEYED BY: UNITED ENGINEERS, INC
RM, JJG, HM

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING PARTITION TYPES

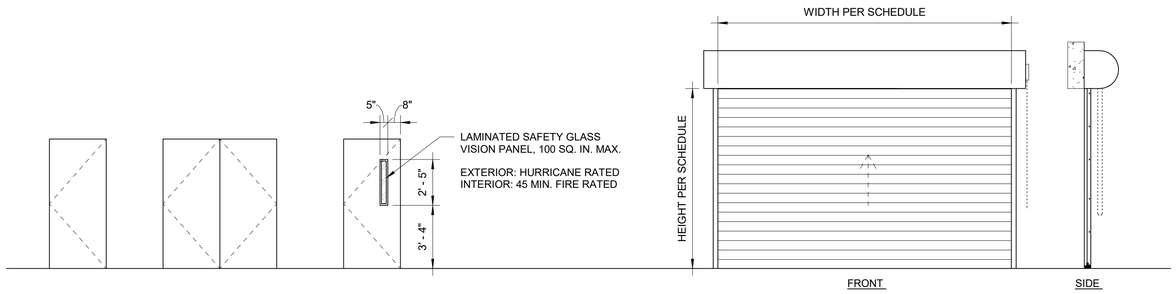
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1" = 1'-0"	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	

A-22 SHEET NO. OF 256

DOOR SCHEDULE

DOOR NO.	DOOR TYPE	WIDTH	HEIGHT	THICKNESS	DOOR MATERIAL	FINISH	FIRE RATING	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	HEAD	JAMB	SILL	COMMENTS
100	CRU	16' - 0"	12' - 0"	0' - 1"	INSULATED STEEL	STAINLESS STEEL			SS	SS	1/A-24	5/A-24	9/A-24	EXTERIOR, INSULATED
101	N	3' - 0"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL		C	HM	SS	4/A-24	8/A-24	12/A-24	EXTERIOR, INSULATED, PUSH BAR EXIT DEVICE
102	F/F	6' - 4"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL		CCC	HM	SS	4/A-24	8/A-24	12/A-24	PUSH BAR EXIT DEVICE
103	F	3' - 0"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL	45 MIN	C	HM	SS	4/A-24	8/A-24	12/A-24	EXTERIOR, INSULATED, 45 MIN FIRE RATED HARDWARE
104	N	3' - 0"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL		C	HM	SS	4/A-24	8/A-24	12/A-24	EXTERIOR, INSULATED, PUSH BAR EXIT DEVICE
105	N	3' - 0"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL	45 MIN	C	HM	SS	3/A-24	7/A-24	11/A-24	PUSH BAR EXIT DEVICE, 45 MIN FIRE RATED HARDWARE
106	F	3' - 0"	7' - 0"	0' - 1 3/4"	WOOD	PRE FINISHED		D	HM	PRE FINISHED	2/A-24	6/A-24	10/A-24	
107	F/F	6' - 0"	7' - 0"	0' - 1 3/4"	SS W/ HONEYCOMB CORE	STAINLESS STEEL		CC	HM	SS	4/A-24	8/A-24	12/A-24	EXTERIOR, INSULATED, PUSH BAR EXIT DEVICE

DOOR SCHEDULE NOTE: ALL EXTERIOR DOOR ASSEMBLIES SHALL BE HURRICANE RATED.



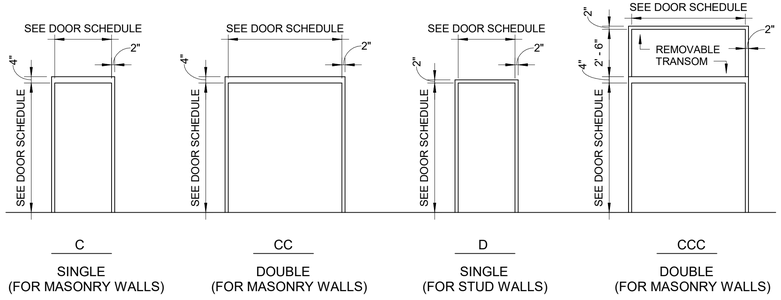
F — FLUSH

F/F — DOUBLE FLUSH

N — NARROW VISION GLASS

CRU — HURRICANE RATED INSULATED OVERHEAD COILING DOOR

1 DOOR TYPES
SCALE 1/4" = 1'-0"



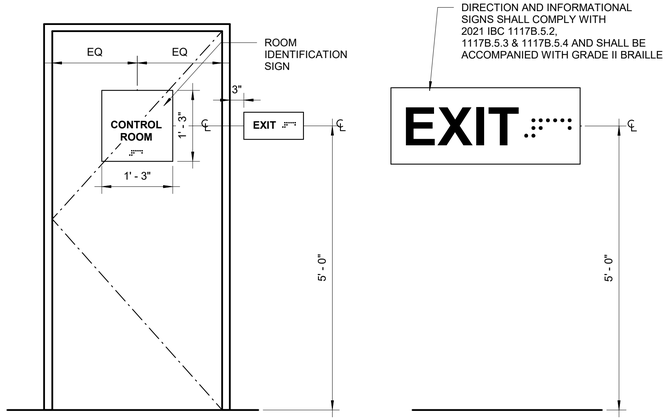
C — SINGLE (FOR MASONRY WALLS)

CC — DOUBLE (FOR MASONRY WALLS)

D — SINGLE (FOR STUD WALLS)

CCC — DOUBLE (FOR MASONRY WALLS)

2 DOOR FRAME TYPES
SCALE 1/4" = 1'-0"



3 DOOR SIGNAGE DETAILS
SCALE 3/4" = 1'-0"

DOOR NOTES:

1. LOCKS SHALL BE KEY OPERATED FROM THE OUTSIDE, AND OPERATED FROM THE INSIDE USING A DEVICE NOT PROHIBITED BY I.B.C.
2. TYPE OF LOCK OR LATCH EXIT DOORS SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. ALL EXTERIOR DOORS CONSISTING OF A SINGLE DOOR OR PAIR OF DOORS SHALL HAVE A READILY VISIBLE, DURABLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS." THE SIGN SHALL BE IN LETTERS NOT LESS THAN 1" HIGH ON A CONTRASTING BACKGROUND.
3. PIN TYPE HINGES ACCESSIBLE FROM THE EXTERIOR SHALL HAVE NON-REMOVABLE PINS.
4. EXITS SHALL BE ILLUMINATED AT ANY TIME BUILDING IS OCCUPIED, WITH LIGHT HAVING AN INTENSITY OF NOT LESS THAN 1 FOOT CANDLE AT FLOOR LEVEL.
5. ALL FIRE-RATED DOORS SHALL HAVE COMPLETE EQUALLY-RATED ASSEMBLIES INCLUDING FRAMES, SMOKE SEALS, CLOSERS, ETC.
6. LOCATE HINGE SIDE OF ROUGH DOOR OPENING 4" FROM ADJACENT PERPENDICULAR WALL FRAMING UNLESS DIMENSIONED OTHERWISE.
7. ALL HARDWARE SHALL BE LEVER TYPE EXCEPT MAIN ENTRANCE PROPERLY LABELED, OR WHERE PANIC HARDWARE OCCURS.
8. DOOR AND DOOR FRAME FINISH SHALL BE AS SPECIFIED.
9. DOOR MANUFACTURER SHALL FIELD MEASURE DOOR ROUGH OPENINGS IN THE CMU AND STUD WALLS PRIOR TO FABRICATION OF DOORS AND FRAMES.
10. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS OR ANY OTHER TYPE OF DEVICE THAT MAY BE USED TO CLOSE OR RESTRAIN THE DOOR OTHER THAN BY OPERATION OF THE LOCKING DEVICE SHALL NOT BE USED. WHERE EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOOR KNOB OR SURFACE MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION.
(EXCEPTION: WHERE A PAIR OF DOORS SERVING A ROOM NOT NORMALLY OCCUPIED IS NEEDED FOR THE MOVEMENT OF EQUIPMENT, MANUALLY OPERATED EDGE OR SURFACE MOUNTED BOLTS MAY BE USED.
2021 IBC, 1003.3.1.8)
11. DOOR MANUFACTURER SHALL PREPARE DOOR HARDWARE SCHEDULE FOR ARCHITECT'S AND OWNER'S APPROVAL PRIOR TO FABRICATION AND INSTALLATION OF HARDWARE.
12. DOORS EQUIPPED WITH PANIC HARDWARE SHALL BE OPENABLE WITH A MAXIMUM FORCE OF 15 LBS. AS APPLIED IN THE DIRECTION OF EGRESS TO THE BAR.
13. ALL LEGAL EXIT DOORS SHALL BE OPENABLE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT AND SHALL SWING IN THE DIRECTION OF EGRESS. SPECIAL LOCKING DEVICES SHALL BE AN APPROVED TYPE. NO DEAD BOLTS OR SLIDING BOLTS ALLOWED.

1117B.5.2 FINISH AND CONTRAST. CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.

1117B.5.3 PROPORTIONS. CHARACTERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 AND 1:10.

1117B.5.4. CHARACTER HEIGHT. CHARACTERS AND NUMBERS ON SIGNS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE FROM WHICH THEY ARE TO BE READ. THE MINIMUM HEIGHT IS MEASURED USING AN UPPERCASE X. LOWERCASE CHARACTERS ARE PERMITTED. FOR SIGNS SUSPENDED OR PROJECTED ABOVE THE FINISH FLOOR COMPLIANCE WITH SECTION 1133B.8.6, THE MIMIMUM CHARACTER HEIGHT SHALL BE 3 INCHES (76 MM).

1117B.5.6. BRAILLE. CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHENEVER BRAILLE IS REQUIRED IN OTHER PORTIONS OF THESE STANDARDS, DOTS SHALL BE 1/10 INCH (2.54 MM) ON CENTERS IN EACH CELL WITH 2/10-INCH (5.08 MM) SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL. DOTS SHALL BE RAISED A MINIMUM OF 1/40 INCH (0.635 MM) ABOVE THE BACKGROUND. BRAILLE DOTS SHALL BE DOMED OR ROUNDED.

1117B.5.7. MOUNTING LOCATION AND HEIGHT. WHERE PERMANENT IDENTIFICATION SIGNS ARE PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR.

WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PERFERABLY ON THE RIGHT. WHERE PERMANENT IDENTIFICATION SIGNAGE IS PROVIDED FOR ROOMS AND SPACES THEY SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE ENTERS THE ROOM OR SPACE. SIGNS TAHT IDENTIFY EXITS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE EXITS THE ROOM OR SPACE.

MOUNTING HEIGHT SHALL BE 60 INCHES (1524 MM) ABOVE FINISH FLOOR TO THE CENTER OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3 INCHES (76 MM) OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITH IN THE SWING OF A DOOR. SEE ALSO SECTION 1115B.6 FOR ADDITIONAL SIGNAGE REQUIREMENTS APPLICABLE TO SANITARY FACILITIES.

SIGNAGE NOTES:

GENERAL ROOM SIGNAGE

1. PROVIDE 15" X 15" WITH SQUARE CORNERS, UNFRAMED. COLORED BACKGROUND WITH WHITE LETTERING. PROVIDE ONE SIGN FOR EACH OF THE FOLLOWINGS ROOMS IN THE DEWATERING BUILDING: LOCATE ON ENTRY DOOR INTO ROOM INTO ALL ROOMS ELECTRICAL ROOMS (2),CONTROL ROOM, TRUCK LOADING OBSERVATION ROOM.

GENERAL SAFETY AND HAZARDOUS MATERIAL SIGNAGE

1. SAFETY SIGNS SHALL BE FORMED FROM RIGID POLYSTYRENE OR POLYETHYLENE PLASTIC. LETTERS SHALL BE 2-INCH HIGH UPPER CASE LETTERS AND 1-INCH HIGH LOWER CASE LETTERS. ALL HAZARDOUS CHEMICALLS SHALL HAVE IDENTIFICATION SIGNAGE.

DOOR NOTES:

1. WIDTH & HEIGHT DIMENSIONS LISTED ARE FOR FINSHED OPENING SIZES. REFER TO DOOR DETAILS FOR ROUGH OPENING SIZES.
2. ALL MASONRY DOOR FRAME HEAD WIDTH DIMENSIONS SHALL BE 4". ALL OTHER DOOR FRAME HEAD WIDTH DIMENSIONS SHALL BE 2". REFER TO DOOR SCHEDULE AND DOOR DETAILS FOR MASONRY OPENING DOOR FRAMES.
3. DESIGNATED FRP DOORS SHALL BE MIN. 45 STC AND DOOR LITES SHALL BE MIN. 42 STC RATING. REFER TO DOOR SCHEDULE.
4. REFER TO SPECIFICATION 08800 GLAZING FOR DOOR VISION PANEL GLAZING TYPES.

0' 1' 2' 3'
0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
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A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB. NO. 000000

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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING
DOOR SCHEDULE AND TYPES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 72 OF 256	

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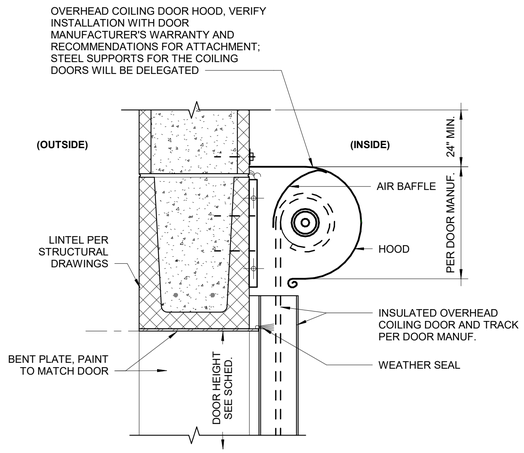
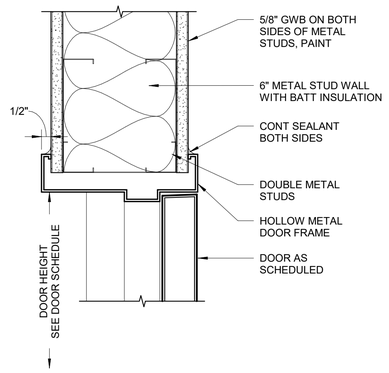
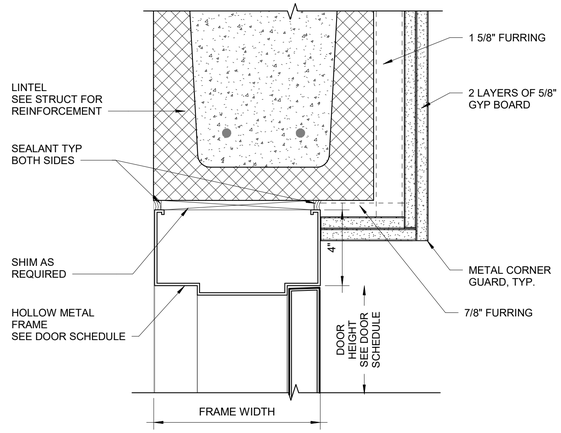
A-23



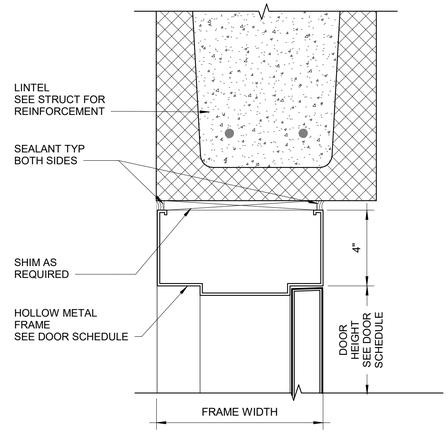
1 OVERHEAD DOOR HEAD DETAIL
SCALE 1 1/2" = 1'-0"



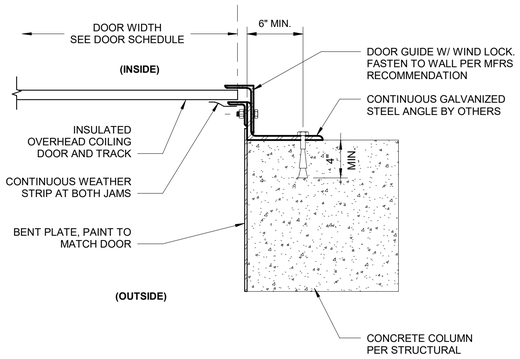
2 DOOR HEAD DETAIL 1
SCALE 3" = 1'-0"



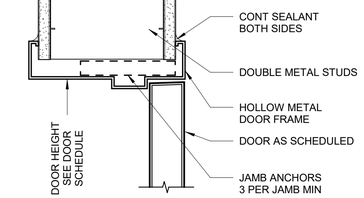
3 DOOR HEAD DETAIL 2
SCALE 3" = 1'-0"



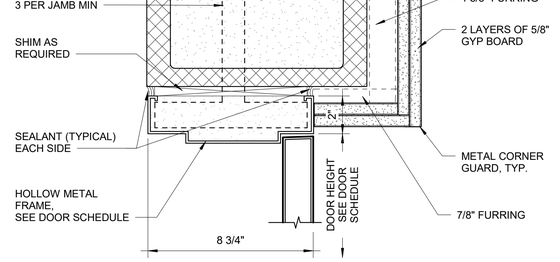
4 DOOR HEAD DETAIL 3
SCALE 3" = 1'-0"



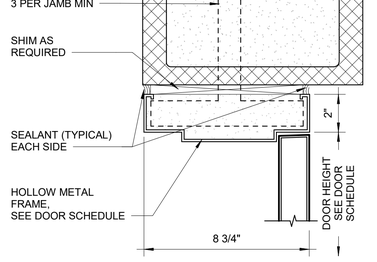
5 OVERHEAD DOOR JAMB DETAIL
SCALE 1 1/2" = 1'-0"



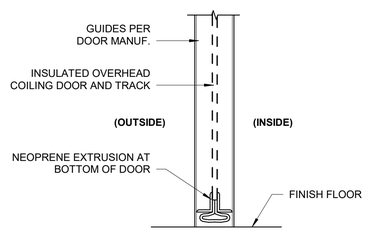
6 DOOR JAMB DETAIL1
SCALE 3" = 1'-0"



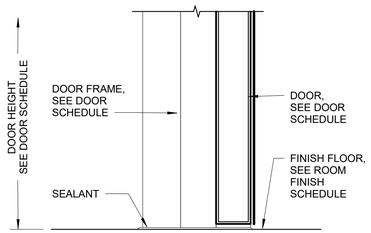
7 DOOR JAMB DETAIL 2
SCALE 3" = 1'-0"



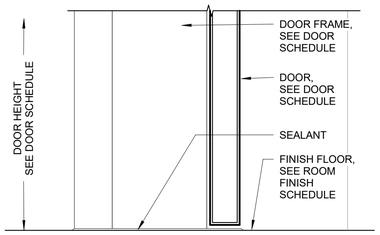
8 DOOR JAMB DETAIL 3
SCALE 3" = 1'-0"



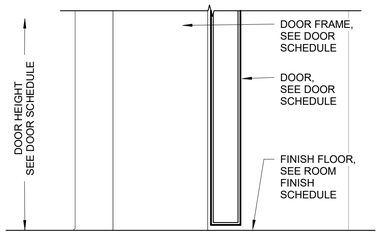
9 OVERHEAD DOOR SILL DETAIL
SCALE 1 1/2" = 1'-0"



10 DOOR SILL DETAIL 1
SCALE 3" = 1'-0"



11 DOOR SILL DETAIL 2
SCALE 3" = 1'-0"



12 DOOR SILL DETAIL 3
SCALE 3" = 1'-0"

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SUITE 1100
HOUSTON, TEXAS 77056
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TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
Author

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

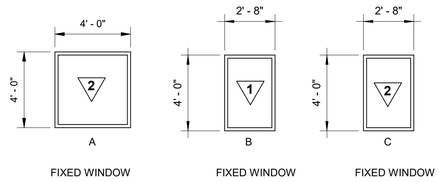
GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING DOOR DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
A-24	SHEET NO. 73 OF 256

WINDOW SCHEDULE

MARK	COUNT	R.O. WIDTH	R.O. HEIGHT	TYPE	FRAME FINISH	FRAME MATERIAL	GLAZING TYPE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	HEAD HIGHT	COMMENTS
A	4	4' - 0"	4' - 0"	Fixed	PREFINISHED	ALUMINUM	LOW-E DOUBLE PANE GLASS	4/A-25	6/A-25	7/A-25	11' - 4"	EXTERIOR, HURRICANE RATED
B	6	2' - 8"	4' - 0"	Fixed	PREFINISHED	ALUMINUM	LAMINATED GLASS	2/A-25	3/A-25	5/A-25	11' - 4"	45 MIN. FIRE RATED GLAZING AND FRAME
C	2	2' - 8"	4' - 0"	Fixed	PREFINISHED	ALUMINUM	LOW-E DOUBLE PANE GLASS	4/A-25	6/A-25	7/A-25	11' - 4"	EXTERIOR, HURRICANE RATED



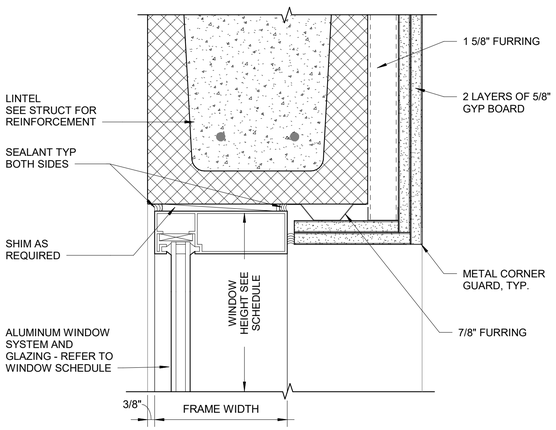
GLASS OR PANEL INFILL TYPES:

REFERENCE SPECIFICATION FOR GLASS TYPES

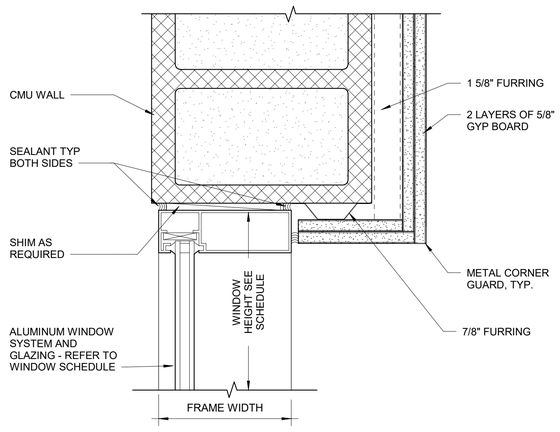
1 CLEAR LAMINATED (1/4")

2 INSULATED LOW E LAMINATED (1")

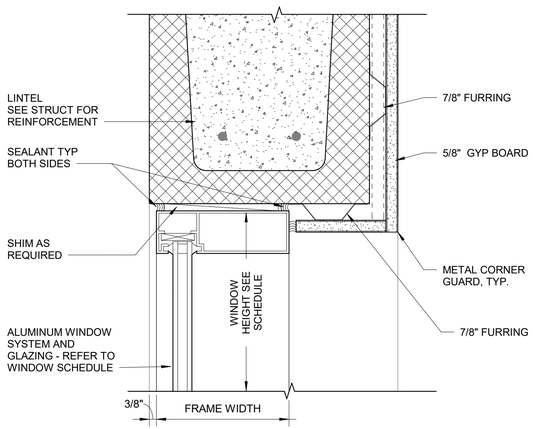
1 WINDOW TYPES
SCALE 1/4" = 1'-0"



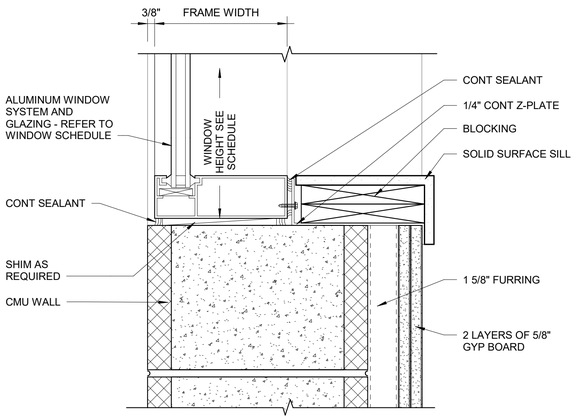
2 INTERIOR WINDOW HEAD DETAIL
SCALE 3" = 1'-0"



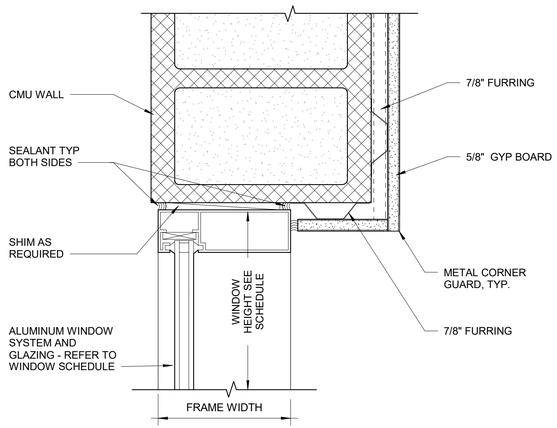
3 INTERIOR WINDOW JAMB DETAIL
SCALE 3" = 1'-0"



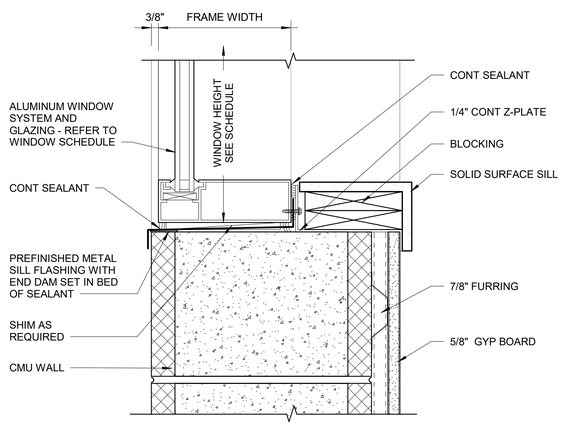
4 EXTERIOR WINDOW HEAD DETAIL
SCALE 3" = 1'-0"



5 INTERIOR WINDOW SILL DETAIL
SCALE 3" = 1'-0"



6 EXTERIOR WINDOW JAMB DETAIL
SCALE 3" = 1'-0"



7 EXTERIOR WINDOW SILL DETAIL
SCALE 3" = 1'-0"

0' 3" 6" 9"

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA TEXAS LICENSE NO. 15131 ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
Author

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING WINDOW SCHED. AND DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. 74 OF 256	

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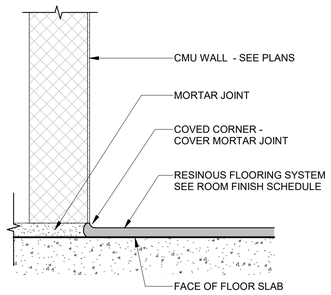
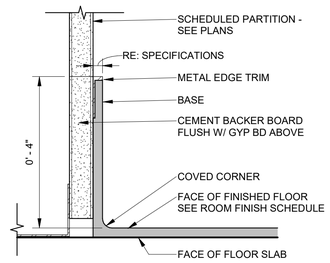
A-25

FINISH SCHEDULE

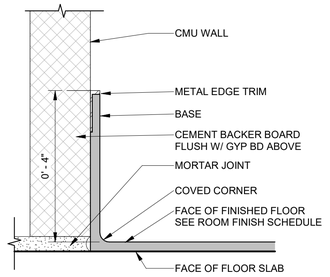
ROOM NO	ROOM NAME	WALL FINISH				BASE FINISH				FLOOR	CEILING	CEILING HEIGHT	DETAILS
		NORTH	EAST	SOUTH	WEST	NORTH	EAST	SOUTH	WEST	MATERIAL	FINISH		
100	TRUCK LOADING	CMU								CONCRETE	EXPOSED STRUCTURE		
101	PROCESS ROOM	CMU	CMU	CMU	CMU					SEALED CONC.	EXPOSED STRUCTURE		1/A-26
102	ELECTRICAL ROOM	CMU	PTD. GYP.	CMU	CMU					SEALED CONC.	PTD. GYP.	10' - 6 1/2"	1/A-26
103	CONTROL ROOM	PTD. GYP.	PTD. GYP.	CMU	PTD. GYP.	RUBBER	RUBBER	RUBBER	RUBBER	VCT	ACOUSTICAL TILE	9' - 0"	2/A-26, 3/A-26
104	RR	PTD. GYP. \ TILE	PTD. GYP. \ TILE	PTD. GYP. \ TILE	PTD. GYP. \ TILE	TILE	TILE	TILE	TILE	CERAMIC TILE	PTD. GYP.	9' - 0"	4/A-26, 6/A-26, 7/A-26



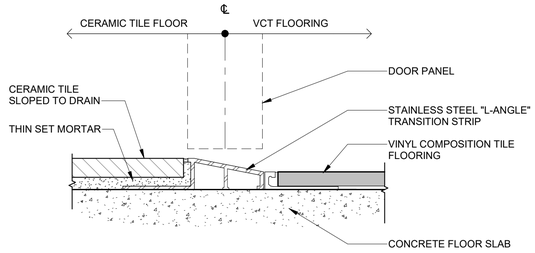
1 BASE DETAIL - RESINOUS FLOORING TO CMU WALL
SCALE 6" = 1'-0"



2 BASE DETAIL - VCT TO STUD WALL
SCALE 6" = 1'-0"



3 BASE DETAIL - VCT TO CMU WALL
SCALE 6" = 1'-0"



4 FLOOR TRANSITION - TILE TO VCT
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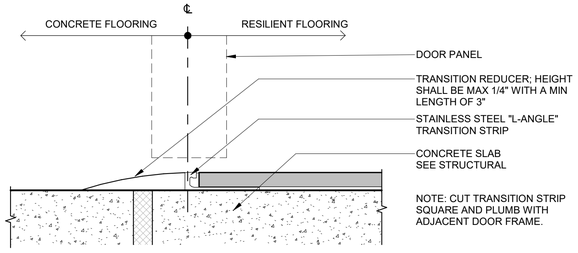

5 FLOOR TRANSITION - VCT TO CONCRETE
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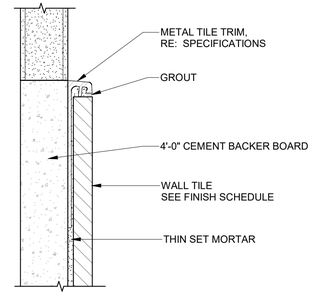
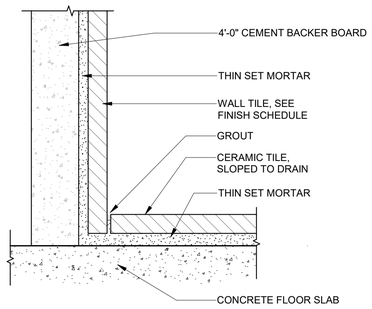


6 WALL TRANSITION - TILE TO GYP. BOARD
SCALE 12" = 1'-0"



7 BASE DETAIL - TILE TO TILE
SCALE 12" = 1'-0"

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SUITE 1100
HOUSTON, TEXAS 77056
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RESPONSIBLE ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

SURVEYED BY: UNITED ENGINEERS, INC
Author

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILDING ROOM FINISH SCHEDULE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	

A-26 SHEET NO. 75 OF 256

1 DEWATERING BUILDING - RENDERING 1
SCALE N.T.S.

2 DEWATERING BUILDING - RENDERING 2
SCALE N.T.S.

3 DEWATERING BUILDING - RENDERING 3
SCALE N.T.S.

4 DEWATERING BUILDING - RENDERING 4
SCALE N.T.S.

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SURVEYED BY: UNITED ENGINEERS, INC
RM, JJG, HM

RESPONSIBLE
ARCHITECT: ROLANDO DELAROSA
TEXAS LICENSE NO. 15131
ON DATE 03/31/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

DEWATERING BUILIDNG EXTERIOR RENDERINGS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
Sam Kenu, P.E.	
SHEET NO. OF 256	

A-27

GENERAL STRUCTURAL NOTES:

G-1 THESE NOTES ARE GENERAL AND SUPPLEMENT THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

G-2 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE 2021INTERNATIONAL BUILDING CODE WITH HOUSTON AMENDMENTS. THE DESIGN LOADS AND OTHER DESIGN VALUES GIVEN IN NOTE G-3 WERE USED FOR DESIGN OF STRUCTURES UNLESS NOTED OTHERWISE ON THE DRAWINGS.

G-3 LIVE LOADS:
ELECTRICAL ROOMS: 300 PSF
PROCESS AREAS: 300 PSF
CONTROL ROOM: 150 PSF
STAIRWAYS, WALKWAYS AND PLATFORMS: 150 PSF
SLAB-ON-GRADE (NOT SUBJECT TO TRAFFIC): 300 PSF
SLAB-ON-GRADE (SUBJECT TO TRAFFIC): AASHTO HL-93 DESIGN TRUCK LOAD
HATCHES AND GRATINGS: SAME AS ADJACENT FLOOR LOAD (200 PSF MIN)
ROOF LIVE LOAD: 20 PSF
BRIDGE CRANE RATED CAPACITY: 10 TONS
FIXED LADDERS AND RUNGS: 300 LB CONCENTRATED LOAD APPLIED AT ANY POINT TO PRODUCE MAXIMUM LOAD EFFECT; 300 LB CONCENTRADED LOAD EVERY 10 FT OF LADDER HEIGHT
HANDRAILS, GUARD RAILS AND POST: 200 LB CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT TO PRODUCE MAXIMUM LOAD EFFECT; 50 LB/FT APPLIED IN ANY DIRECTION ALONG HANDRAIL OR TOP RAIL

DEAD LOADS:
ROOFS (EXCLUDING DEAD/SELF WEIGHT OF MATERIALS): 15 PSF
SUPERIMPOSED

WIND LOADS: (IN ACCORDANCE WITH ASCE 7)
ULTIMATE DESIGN WIND SPEED: VULT = 148 MPH U.N.O.
NOMINAL DESIGN WIND SPEED: VASD = 115 MPH U.N.O.
RISK CATEGORY: IV U.N.O.
WIND EXPOSURE: C
ENCLOSURE CATEGORY: ENCLOSED; GCPi = +/- 0.18 U.N.O.
TRUCK BAY - OPEN; GCPi = 0.00
BUILDING APPURTENANCES, COMPONENTS AND EQUIPMENT SHALL BE DESIGNED FOR CONDITIONS SPECIFIED IN ASCE 7 WITH THE PARAMETERS SPECIFIED HEREIN. EQUIPMENT AND PRODUCT VENDORS SHALL COMPLY WITH THE DESIGN PARAMETERS ABOVE FOR OUTDOOR EQUIPMENT AND TANKS.

SEISMIC LOADS:
RISK CATEGORY:IV
SITE CLASS = D
SEISMIC DESIGN CATEGORY = A
IMPORTANCE FACTOR Ie = 1.00
SPECTRAL RESPONSE ACCELERATIONS: Ss = 0.066, S1 = 0.038
DESIGN SPECTRAL RESPONSE ACCELERATIONS: SDS = 0.07, SD1 = 0.0061
SEISMIC FORCE-RESISTING SYSTEM: ORDINARY REINFORCED MASONRY SHEAR WALLS
RESPONSE MODIFICATION COEFFICIENT FOR FLAT-BOTTOM GROUND-SUPPORTED TANKS, MECHANICALLY ANCHORED.
R = 3.000
Cs = 0.025
DESIGN BASE SHEAR = 59 KIPS
RESPONSE MODIFICATION COEFFICIENT FOR INTERMEDIATE PRE-CAST SHEAR WALL.
R = 4.000
Cs = 0.027
DESIGN BASE SHEAR = 2,200 LBS.
RESPONSE MODIFICATION FACTOR FOR MECHANICAL & ELECTRICAL COMPONENTS. ENGINE, TURBINE, PUMPS, COMPRESSORS AND PRESSURE VESSELS NOT SUPPORTED ON SKIRTS.
R = 1.000
Cs = 0.020
DESIGN BASE SHEAR = 500 LBS.
RESPONSE MODIFICATION FACTOR FOR SLUDGE PROCESSING BUILDING.
R = 2.000
Cs = 0.035
DESIGN BASE SHEAR = 197,000 LBS.

ANALYSIS METHOD: EQUIVALENT LATERAL FORCE PROCEDURE

FROST DEPTH = 1'-0"

RAIN LOAD: 100-YR, 1-HR RAINFALL: 6.26 INCHES

FLOOD LOADS:
FEMA BASE FLOOD ELEVATION

G-4 ALL DIMENSIONS INDICATED (") SHALL BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE COORDINATED WITH OTHER DISCIPLINES OR VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.

G-5 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD

G-6 IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED.

G-7 EQUIPMENT ANCHOR BOLT SIZES, TYPES, EMBEDMENT AND PATTERNS SHALL BE DESIGNED BY THE MANUFACTURER AND VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.

G-8 STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.

G-9 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING AND PROVIDING SUPPLEMENTAL BRACING AND TEMPORARY SUPPORTS WHERE REQUIRED TO MAINTAIN STABILITY OF THE STRUCTURE. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED. CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE PROJECT STATE TO DESIGN TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.

G-10 NO BACKFILL SHALL BE PLACED AGAINST ANY SUBSTRUCTURE WALLS UNLESS ALL ADJACENT SUPPORTING ELEMENTS HAVE ACHIEVED DESIGN STRENGTH, OR WALLS HAVE BEEN PROPERLY BRACED, AND IN ANY CASE NOT SOONER THAN 28 DAYS AFTER THE PLACING OF CONCRETE UNLESS APPROVED BY THE ENGINEER. SUPPORTING ELEMENTS SHALL INCLUDE ADJACENT WALLS, SLABS, BEAMS AND COLUMNS.

G-11 EXCAVATED MATERIAL STORED ON SITE SHALL BE STOCK-PILED AT LEAST 20 FEET FROM ANY STRUCTURE OR EXCAVATION.

G-12 THE ELEVATIONS SHOWN HEREON ARE BASED UPON THE NATIONAL GEODATIC VERTICAL DATUM OF 29 (NGVD 29) UNO. THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) = NGVD29 – 1.526' FOR THIS LOCATION.

G-13 STANDARD DETAILS S-N9999-501 THRU S-N9999-506 ARE APPLICABLE UNLESS OTHERWISE NOTED INCLUDING, BUT NOT LIMITED TO, ADDITIONAL REINFORCING AT OPENINGS, EXPANSION JOINTS, CONSTRUCTION JOINTS, WALL AND BASE INTERSECTION DETAILING, HAND RAILS, ETC.

G-14 THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT ANY TIME.

G-15 ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

G-16 CENTERLINES OF COLUMNS AND FOUNDATIONS ALIGN WITH GRID LINE INTERSECTIONS, UON.

G-17 CENTERLINES OF GRADE BEAMS AND WALLS ALIGN WITH CENTERLINES OF FOUNDATIONS, UON.

G-18 CENTERLINES OF FRAMING MEMBERS ALIGN WITH COLUMN CENTERLINES, UON.

G-19 THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. STRUCTURAL DRAWINGS MAY NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS. REQUIRED OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER.

EXISTING CONDITIONS:

EC-1 ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON EXISTING DESIGN DRAWINGS OR FIELD INVESTIGATIONS. ALL DIMENSIONS, LOCATIONS, SIZES AND INTERFACES WITH NEW STRUCTURAL ELEMENTS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL DISCREPANCIES, INTERFERENCES AND EXCEPTIONS BEFORE PROCEEDING WITH THE WORK.

EC-2 ALL STRUCTURAL WORK SHOWN IS NEW UNLESS NOTED AS EXISTING.

EC-3 IF EXISTING STRUCTURAL ELEMENTS, EQUIPMENT, CONDUITS, PIPES, ETC ARE REQUIRED TO BE MODIFIED, DISCONNECTED OR RELOCATED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND RECEIVE APPROVAL PRIOR TO PERFORMING THOSE ACTIVITIES. THE CONTRACTOR SHALL ALSO COORDINATE WITH THE OWNER TO ENSURE STRUCTURES, SYSTEMS AND EQUIPMENT HAVE BEEN PLACED IN A SAFE CONDITION PRIOR TO CONSTRUCTION ACTIVITIES AFFECTING THOSE ITEMS.

EC-4 PRIOR TO CORING EXISTING CONCRETE WALLS AND SLABS FOR NEW PENETRATIONS OR OPENINGS, CONTRACTOR SHALL LOCATE EXISTING REINFORCING IN CONCRETE USING A NON- DESTRUCTIVE METHOD. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF REINFORCING EXISTS WITHIN THE NEW PENETRATION LOCATION. DO NOT CUT EXISTING REINFORCING WITHOUT PRIOR APPROVAL BY THE ENGINEER.

EC-5 THE CONTRACTOR SHALL SAFELY SHORE EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW THE INSTALLATION OF THE NEW WORK. ALL SHORING METHODS AND SEQUENCING OF DEMOLITION SHALL BE SPECIFIED BY A STRUCTURAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED IN THE PROJECT STATE.

EC-6 THE CONTRACTOR SHALL PERFORM THE WORK WITH A MINIMUM OF INCONVENIENCE TO THE OWNER AND SO AS NOT TO INTERRUPT THE DAY TO DAY WORK OPERATIONS. THE CONTRACTOR SHALL ENSURE SAFE PASSAGE OF PERSONS AROUND AREAS OF CONSTRUCTION AND SHALL CONDUCT OPERATIONS TO PREVENT DAMAGE OR HARM TO THE FACILITIES AND PEOPLE. COORDINATE ALL OPERATIONS WITH THE OWNER OR THE OWNER'S AGENT.

EC-7 THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FOUNDATIONS BEFORE STARTING ANY EXCAVATION WORK. SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO OR DESTABILIZATION OF EXISTING FOUNDATIONS LOCATED NEAR THE AREA OF EXCAVATION.

GENERAL METALS:

M-1 DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-16.

M-2 STEEL MATERIAL:

A) STRUCTURAL TUBING:	ASTM A1085 (50 KSI)
B) STRUCTURAL PIPE:	ASTM A53, TYPE E OR S, GRADE B (35 KSI)
C) PLATES AND BARS:	ASTM A36 UNO (36 KSI)
D) STRUCTURAL W SHAPES:	ASTM A992 (50 KSI)
E) STRUCTURAL S, M, C,& L SHAPES:	ASTM A36 (36 KSI)
F) STRUCTURAL HP SHAPES:	ASTM A 572, GRADE 50 (50 KSI)

M-3 PROVIDE MINIMUM 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH SNUG TIGHT TYPE X CONNECTIONS FOR STRUCTURAL STEEL UNLESS NOTED OTHERWISE.

M-4 PROVIDE TYPICAL STEEL BEAM CONNECTIONS FOR A CAPACITY OF NOT LESS THAN THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN THE AISC TABLES FOR ALLOWABLE LOADS OF BEAMS UNLESS NOTED OTHERWISE.

M-5 DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ARE TO BE ENCASED IN CONCRETE.

M-6 ALL STAINLESS STEEL FABRICATIONS SHALL BE TYPE 316, UNLESS NOTED OTHERWISE. STAINLESS STEEL SUBJECTED TO HEAT OF WELDING SHALL HAVE THE L DESIGNATION.

M-7 ALL BOLTS, ANCHOR BOLTS, AND CONCRETE ANCHORS CONNECTING ALUMINUM SHALL BE TYPE 316 STAINLESS STEEL.

M-8 ALL GROOVE AND BUTT WELDS SHALL BE FULL PENETRATION.

M-9 FILLET WELD SIZES SHALL BE THE MINIMUM SIZE REQUIRED BY AISC CODE FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH, BUT NOT LESS THAN 3/16".

M-10 BOTTOM SURFACES OF BASE PLATES SHALL BE GROUTED TO INSURE FULL BEARING CONTACT WITH CONCRETE SLAB.

M-11 WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 0.25 OF FASTENER SPACING FROM EACH END BUT SHALL NOT BE LESS THAN 1 BOLT DIAMETER NOR 1".

FOUNDATIONS, EXCAVATION AND SUBSURFACE PREPARATION:

F-1 THE FOUNDATION DESIGN IS BASED ON HISTORICAL GEOTECHNICAL INVESTIGATION, CITY OF HOUSTON GREENRIDGE WWTP IMPROVEMENTS WBS NO. R-000265-0079-3 BY AVILES ENGINEERING CORPORATION, OCTOBER 2014.

F-2 FOUNDATIONS HAVE BEEN PRELIMINARY DESIGNED BASED ON THE FOLLOWING DESIGN VALUES FROM THE GEOTECHNICAL INVESTIGATION REPORT:
PASSIVE RESISTANCE: 100 PSF
ALLOWABLE FRICTION:130 PSF

F-3 PER THE GEOTECHNICAL REPORT, REMOVE ALL TOPSOIL ORGANICS, AND OTHER DELETERIOUS MATERIAL FROM WITHIN THE TOP 6 FEET OF THE PROPOSED CONSTRUCTION AREA FOOTPRINT. ON-SITE FILL SOILS MAY BE REUSED PROVIDED THEY ARE FREE OF ORGANICS AND DEBRIS. THE FILL SOILS SHALL BE PLACED ON PREPARED SURFACES IN LIFTS NOT TO EXCEED 8 INCHES LOOSE MEASURE WITH COMPACTED THICKNESSES NOT TO EXCEED 6 INCHES. FILL SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD EFFORT (ASTM D698) MAXIMUM DRY DENSITY. DESIGN VALUES SHALL BE FIELD VERIFIED BY QUALIFIED GEOTECHNICAL CONSULTANT RETAINED BY THE OWNER. REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL COMPACTION REQUIREMENTS.

F-4 CONSTRUCTION AREAS SHALL BE STRIPPED OF EXISTING PAVEMENTS (INCLUDING CRUSHED STONE MATERIALS) AND OTHER DEBRIS/UNSUITABLE MATERIALS. SPECIAL CARE SHALL BE EXERCISED WHEN DEMOLISHING AND/OR REMOVING ANY EXISTING FOUNDATIONS, PAVEMENTS, UTILITIES, AND BURIED STRUCTURES TO HELP REDUCE THE DISTURBANCE OF THE SUBGRADE AND POTENTIAL DETRIMENTAL EFFECTS ON CONSTRUCTION OF THE SITE. ALL UTILITIES AND ASSOCIATED BEDDING MATERIAL THAT ARE PLANNED TO BE ABANDONED SHALL BE COMPLETELY REMOVED FROM WITHIN THE AREAS OF THE NEW FOUNDATIONS OR PROPERLY PRESSURE GROUTED TO COMPLETELY FILL THE UTILITY. REFERENCE THE GEOTECHNICAL REPORT FOR ADDITIONAL DEMOLITION CONSIDERATIONS.

F-5 ALL EXCAVATIONS RESULTING FROM THE UTILITIES OR OTHER BURIED STRUCTURES SHALL BE BACKFILLED IN ACCORDANCE WITH RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.

F-6 A MINIMUM OF A 24 INCH THICK PAD OF PROPERLY PLACED AND COMPACTED SELECT FILL MATERIAL IDENTIFIED IN THE GEOTECHNICAL REPORT SHALL BE CONSTRUCTED IMMEDIATELY BENEATH THE SLUDGE HOLDING TANK FLOOR AND EXTEND 3 FT OUT FROM THE EDGE OF THE TANK. SELECT FILL SHALL ALSO BE USED FOR ANY GRADE ADJUSTMENTS WITHIN THE TANK AREA.

F-7 PROPER SITE DRAINAGE SHALL BE MAINTAINED DURING CONSTRUCTION SO THAT PONDING OF SURFACE RUNOFF DOES NOT OCCUR. ALL GRADING MUST PROVIDE EFFECTIVE DRAINAGE AWAY FROM PROPOSED STRUCTURES DURING AND AFTER CONSTRUCTION. EXPOSED GROUND SHALL BE SLOPED AWAY FROM STRUCTURES FOR AT LEAST 10 FEET BEYOND THE PERIMETER OF THE STRUCTURE.

F-8 WATER SHALL NOT BE ALLOWED TO ACCUMULATE AT THE BOTTOM OF THE FOUNDATION EXCAVATIONS. TO REDUCE THE POTENTIAL FOR GROUNDWATER SEEPAGE IT IS RECOMMENDED THAT CONCRETE BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATIONS ARE COMPLETED AND PROPERLY CLEANED. REFERENCE GEOTECHNICAL REPORT FOR ADDITIONAL DESIGN CONSIDERATIONS.

F-9 EXCAVATIONS FOR SHALLOW FOUNDATIONS SHALL BE PERFORMED WITH EQUIPMENT CAPABLE OF PROVIDING A RELATIVELY CLEAN BEARING AREA. THE BOTTOM 6 INCHES OF EXCAVATION SHALL BE PERFORMED USING A SMOOTH-MOUTHED EXCAVATION BUCKET OR BY HAND LABOR AND SHALL BE NEATLY EXCAVATED AND PROPERLY FORMED. SOFT ZONES OBSERVED DURING CONSTRUCTION SHALL BE OVER-EXCAVATED TO A FIRM AND UNDISTURBED SOIL LAYER AND ALL LOSE MATERIAL IN THE EXCAVATION BOTTOM SHALL BE REMOVED BEFORE PLACEMENT OF CONCRETE.

F-10 STRUCTURAL FILL MATERIAL SHALL MEET CRITERIA AND STANDARDS GIVEN IN THE GEOTECHNICAL REPORT.

F-11 THE CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION. WHERE NECESSARY, SHEET AND SHORE THE EXCAVATION WITH ALL REQUIRED TIEBACKS AND BRACING AS DETERMINED BY CONTRACTOR STRUCTURAL ENGINEER.

F-12 NO EXCAVATION, FOR ANY PURPOSE, SHALL EXTEND WITHIN 1 FOOT OF THE ANGLE OF REPOSE OF ANY SOIL BEARING FOOTING OR FOUNDATION UNLESS SUCH FOOTING OR FOUNDATION IS FIRST PROPERLY UNDERPINNED OR PROTECTED AGAINST SETTLEMENT.

F-13 NO BACKFILL SHALL BE PLACED AGAINST ANY SUBSTRUCTURE WALLS UNLESS ALL ADJACENT SUPPORTING ELEMENTS HAVE ACHIEVED DESIGN STRENGTH, OR WALLS HAVE BEEN PROPERLY BRACED, AND IN ANY CASE NOT SOONER THAN ATTAINING 28 DAY COMPRESSIVE STRENGTH UNLESS APPROVED BY THE ENGINEER. SUPPORTING ELEMENTS SHALL INCLUDE ADJACENT WALLS, SLABS, BEAMS AND COLUMNS.

F-14 EXCAVATED MATERIAL STORED ON SITE SHALL BE STOCK-PILED AT LEAST 10 FEET FROM ANY STRUCTURE OR EXCAVATION.

F-15 HYDRO-TESTING SHALL BE PERFORMED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER TO MONITOR SOIL DEFORMATION PER PROCEDURE PROVIDED IN THE GEOTECHNICAL REPORT.

F-16 SHALLOW FOUNDATIONS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE IN ACCORDANCE WITH HISTORICAL GEOTECHNICAL INVESTIGATION CITY OF HOUSTON GREENRIDGE WWTP IMPROVEMENTS WBS NO. R-000265-0079-3 BY AVILES ENGINEERING CORPORATION, OCTOBER 2014.

F-17 FILL SUPPORTING CONCRETE FLOOR SLABS SHALL BE COMPACTED UNDER THE SUPERVISION OF A SPECIAL INSPECTOR TO A MINIMUM OF 98% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR ALL LAYERS, AS VERIFIED BY FIELD DENSITY TEST, ASTM D1557, AS SPECIFIED IN THE FBC SECTION 1804.6.

F-18 ALL FILL PLACED UNDER SLABS SHALL BE CLEAN SAND OR ROCK, FREE OF DEBRIS AND OTHER DELETERIOUS MATERIAL. THE MAXIMUM SIZE ROCK WITHIN 12 INCHES BELOW THE SLAB IN COMPACTED FILL SHALL BE 3 INCHES IN DIAMETER. WHERE FILL MATERIAL INCLUDES ROCK, LARGE ROCKS SHALL NOT BE ALLOWED TO NEST AND ALL VOIDS SHALL BE CAREFULLY FILLED WITH SMALL STONES AND SAND, AND PROPERLY COMPACTED.

F-19 UNTIL PROVISIONS FOR PERMANENT SUPPORT HAVE BEEN MADE, ALL EXCAVATIONS SHALL BE PROPERLY GUARDED AND PROTECTED SO AS TO PREVENT THEM FROM BECOMING DANGEROUS TO LIFE AND PROPERTY AND SHALL BE SHEET PILES, BRACED AND/OR SHORED, WHERE NECESSARY, TO PREVENT THE ADJOINING EARTH FROM CAVING IN; SUCH PROTECTION TO BE PROVIDED BY THE PERSON CAUSING EXCAVATION TO BE MADE. ALL EXCAVATION SHALL COMPLY WITH THE MINIMUM REQUIREMENTS OF CFR 1926-650 (P) "OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY ACT." NO EXCAVATION, FOR ANY PURPOSE, SHALL EXTEND WITHIN 1 FOOT OF THE ANGLE OF REPOSE OF ANY SOIL BEARING FOOTING OR FOUNDATION UNLESS SUCH FOOTING OR FOUNDATION IS FIRST PROPERLY UNDERPINNED OR PROTECTED AGAINST SETTLEMENT.

F-20 FOR GRADE AND CONCRETE PAD ELEVATIONS, SEE CIVIL AND MECH PLANS.

F-21 SEE PROJECT SPECIFICATIONS FOR COMPLETE INFORMATION OF COMPACTED BACKFILL, SOIL COMPACTION OF STRUCTURAL FILL, AND OTHER NECESSARY PREPARATION OF SOIL.

DEEP FOUNDATIONS (PILES):

FP-1 PILE SUPPORTED STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT NOTED IN F-1.

FP-2 MINIMUM ALLOWABLE COMPRESSION CAPACITY: 24 TON (UNO)

FP-3 MINIMUM ALLOWABLE TENSION CAPACITY: 10 TON (UNO)

FP-4 MINIMUM ALLOWABLE LATERAL CAPACITY: 5 TON (UNO)

FP-5 THE TOPS OF PILES SHALL BE EMBEDDED NOT LESS THAN 3 INCHES INTO PILE CAPS AND CAPS SHALL EXTEND AT LEAST 4 INCHES BEYOND EDGES OF THE ELEMENTS. THE TOPS OF ELEMENTS SHALL BE CUT OR CHIPPED BACK TO SOUND MATERIAL BEFORE CAPPING.

FP-6 MINIMUM PILE LENGTH SHALL BE 25 FEET.

FP-7 UNO PILE REINFORCING SHALL BE SIX (6) FULL LENGTH #7 LONGITUDINAL BARS EQUALLY SPACED WITH #3 SPIRAL TIES AT A 5 INCH PITCH.

CONCRETE (CAST-IN-PLACE):

C-1 DESIGN OF CONCRETE ELEMENTS INCLUDING CONCRETE FOUNDATION/FOOTINGS WALLS, FORMED SLABS, BEAMS, AND COLUMNS IS IN ACCORDANCE WITH ACI 318-19 (CODE REQUIREMENTS FOR STRUCTURAL CONCRETE).

C-2 FOR CONCRETE MIX DESIGN SEE SPECIFICATION SECTION 033100. PRIOR TO PLACEMENT OF CONCRETE, THE CONTRACTOR SHALL SUBMIT PROPOSED MIX DESIGN AND ADMIXTURE SPECIFICATIONS TO THE ENGINEER FRO APPROVAL.

C-3 CONCRETE STRENGTH CLASSES (28-DAY COMPRESSIVE STRENGTH):

(4,000 PSI) SHALL BE USED AT ALL STRUCTURES

OCTAGONAL, MAT FOUNDATIONS, RETAINING WALLS AND PILASTERS:	4,000 PSI
DRILLED PIERS:	2,500 PSI

C-4 THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE-CONTAINING AGENTS IS PROHIBITED.

C-5 CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS NOT SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER PRIOR TO SUBMITTING REBAR SHOP DRAWINGS. VERTICAL CONSTRUCTION JOINTS IN WALLS AND HORIZONTAL JOINTS IN SLABS SHALL BE PROVIDED AT A SPACING NOT GREATER THAN 45 FEET ON CENTER. FOR EXPOSED WALLS WITH FLUID OR EARTH ON THE OPPOSITE SIDE, THE SPACING BETWEEN VERTICAL JOINTS SHALL BE A MAXIMUM OF 25 FEET. JOINT SPACING GREATER THAN SPECIFIED HEREIN MAY REQUIRE MODIFICATION TO REINFORCING. SUCH MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST. ALL MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER.

C-6 WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, THEY SHALL BE TERMINATED AT A VERTICAL CONSTRUCTION JOINT APPROVED BY THE ENGINEER.

C-7 ALL JOINTS WHICH ARE IN MEMBERS IN CONTACT WITH LIQUID OR BELOW GRADE SHALL HAVE A WATERSTOP. CONSTRUCTION JOINTS SHALL HAVE A 6" PVC RIBBED WATERSTOP. EXPANSION JOINTS SHALL HAVE A 9" PVC CENTERBULB RIBBED WATERSTOP. IN VERTICAL JOINTS, WATERSTOPS SHALL TERMINATE NO LESS THAN 18" ABOVE THE MAXIMUM WATER SURFACE OR EL. 18.2 FT, WHICHEVER IS HIGHER.

C-8 SLABS WITH SLOPING SURFACES SHALL HAVE THE INDICATED SLAB THICKNESS MAINTAINED AS THE MINIMUM. SLAB BOTTOMS CAN EITHER SLOPE WITH THE TOP SURFACE OR BE LEVEL. REINFORCEMENT IN SLABS WITH SLOPING SURFACES SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE SLAB SURFACE.

C-9 ALL EXPOSED CORNERS SHALL HAVE A 3/4" CHAMFER OR A 1/2" RADIUS TOOLED CORNER UNO.

C-10 EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED FOR APPROVAL PRIOR TO PLACING CONCRETE.

C-11 DOWELS, ANCHOR BOLTS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.

C-12 CONDUITS AND OTHER SIMILAR ITEMS EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2" CLEAR. WHEN SUCH ITEMS ARE EMBEDDED IN WALLS OR SLABS, THEY SHALL NOT OCCUPY MORE THAN MIDDLE THIRD OF THE MEMBER THICKNESS.

C-13 AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY IN DRILLED HOLES AS SPECIFIED. DOWELS LOCATED CLOSER THAN 3" FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.

C-14 DRILLED ADHESIVE DOWELS (WHERE DOWELS ARE SHOWN TO BE PLACED INTO HARDENED CONCRETE):
A) THE HOLE DIAMETER SHALL BE NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE REINFORCING BAR AT THE DEFORMATIONS.
B) THE DEPTH OF EMBEDMENT SHALL BE 20 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
C) ADJUST THE DOWEL LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER. CONTRACTOR SHALL USE NON-DESTRUCTIVE MEANS TO FIELD LOCATE REINFORCEMENT PRIOR TO DRILLING HOLES FOR DOWELS.

C-15 CLEAR DISTANCE FROM ANCHOR BOLTS TO ANY CONCRETE EDGE SHALL BE 4" MINIMUM UNLESS NOTED OTHERWISE.

C-16 EXTERIOR CONCRETE PADS SHALL BE 10" THICK AND REINFORCED WITH #5 BARS, @12" OC. TOP AND BOTTOM, EACH WAY, UNLESS NOTED OTHERWISE

C-21 COORDINATE SIZE AND LOCATION OF EQUIPMENT HOUSEKEEPING PADS WITH MEP DRAWINGS AND APPROVED EQUIPMENT SUBMITTAL DRAWINGS. SUBMIT HOUSEKEEPING PAD SHOP DRAWINGS FOR APPROVAL.

C-22 HOUSEKEEPING PADS SHALL BE SIZED TO PROVIDE REQUIRED EDGE DISTANCE FOR EQUIPMENT ANCHORS. COORDINATE WITH EQUIPMENT ANCHOR DESIGNER.

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

GENERAL STRUCTURAL NOTES I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S–01	SHEET NO. 75 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-01.dwg Dec 19, 2025 - 8:21am User: p0014356

CONCRETE REINFORCEMENT:

CR-1 ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS VERIFY WITH THE STRUCTURAL ENGINEER.

CR-2 REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UON:
- DEFORMED BARS: ASTM A615 GRADE 60
- WELDABLE DEFORMED BARS: ASTM A706
- WELDED WIRE REINFORCEMENT ASTM A185

CR-3 DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS AND ACI-318, UON.

CR-4 WHERE A 90-DEG, 135-DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE ACI STANDARD HOOKS PROVIDED IN TABLE BELOW, UON.

CR-5 DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT, UON.

CR-6 REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE PROTECTION (CLEAR COVER), UON ON THE DRAWINGS.

CONCRETE EXPOSED TO EARTH, LIQUID OR WEATHER	
SLABS:	2"
BEAMS AND COLUMNS (TO MAIN REINFORCEMENT):	2 1/2"
BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS):	2"
WALLS:	2"
FOOTINGS & BASE SLABS:	2"
CONCRETE DEPOSITED DIRECTLY AGAINST SOIL:	3"
CONCRETE EXPOSED TO WEATHER (#5 OR SMALLER):	1 1/2"
CONCRETE EXPOSED TO WEATHER (#6 OR LARGER):	2"
CONCRETE NOT EXPOSED TO WEATHER:	
SLABS:	1"
BEAMS AND COLUMNS (TO MAIN REINFORCEMENT):	2"
BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS):	1 1/2"
WALLS 12" OR MORE:	2"
WALLS LESS THAN 12" (#5 OR SMALLER):	1 1/2"
WALLS LESS THAN 12" (#6 OR LARGER):	2"
OTHER CONDITIONS	
SLABS AND WALLS (#11 OR SMALLER):	3/4"
SLABS AND WALLS (#14 OR LARGER):	1 1/2"
BEAMS AND COLUMNS (TO MAIN REINFORCEMENT):	2"
BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS):	1 1/2"

CR-7 LAP REINFORCEMENT AS SPECIFICALLY DETAILED ON THE DRAWINGS. ALL LAP SPLICES ARE TO BE CLASS B TENSION LAP SPLICES PER LAP SPLICE SCHEDULE, UON.

Bar Size	Hook Bar Development	Straight Bar Development	Straight Bar Development (Bottom Bar)	Lap Splice	Lap Splice (Bottom Bar)
4	10 in	25 in	19 in	33 in	25 in
5	12 in	31 in	24 in	41 in	31 in
6	15 in	37 in	29 in	49 in	37 in
7	17 in	54 in	42 in	71 in	54 in
8	19 in	62 in	48 in	81 in	62 in

* A REDUCTION FACTOR OF 0.7 MAY BE USED IF CLEAR COVER OF HOOK IS GREATER THAN 2"

CR-8 REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY METAL PIPE, PIPE FLANGE, METAL CONDUIT, OR OTHER METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" SHALL BE PROVIDED.

CR-9 CONDUITS AND OTHER SIMILAR ITEMS EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2" CLEAR. WHEN SUCH ITEMS ARE EMBEDDED IN WALLS OR SLABS, THEY SHALL NOT OCCUPY MORE THAN MIDDLE THIRD OF THE MEMBER THICKNESS.

CR-10 DOWELS, ANCHOR BOLTS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.

CR-11 TERMINATE ALL DISCONTINUOUS ENDS OF TOP BARS WITH STANDARD ACI HOOKS REFER TO LAP REINFORCEMENT TABLE IN NOTE 7 ABOVE. TURN HOOKS UP OR DOWN INTO SUPPORT STRUCTURE.

STRUCTURAL STEEL:

SS-1 DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-10.

SS-2 STEEL MATERIAL:

A. STRUCTURAL TUBING:	ASTM A500 GRADE C (50 KSI) RECTANGULAR TUBES ASTM A500 GRADE B (46 KSI) ROUND TUBES
B. STRUCTURAL PIPE:	ASTM A53, TYPE E OR S, GRADE B (35 KSI)
C. PLATES AND BARS:	ASTM A36 UNO (36 KSI)
D. STRUCTURAL W SHAPES:	ASTM A992 (50 KSI)
E. STRUCTURAL S, M, C,& L SHAPES:	ASTM A36 (36 KSI)
F. STRUCTURAL HP SHAPES:	ASTM A 572, GRADE 50 (50 KSI)

SS-3 PROVIDE MINIMUM 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH FULLY TIGHTENED TYPE X CONNECTIONS FOR STRUCTURAL STEEL UNLESS NOTED OTHERWISE.

SS-4 DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ARE TO BE ENCASED IN CONCRETE.

SS-5 FILLET WELD SIZES SHALL BE THE MINIMUM SIZE REQUIRED BY AISC CODE FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH UON, BUT SHALL NOT HAVE LESS THAN 3/16" LEG SIZE.

SS-6 BOTTOM SURFACES OF BASE PLATES SHALL BE GROUTED TO INSURE FULL BEARING CONTACT WITH CONCRETE FOUNDATION.

SS-7 WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 0.25 OF FASTENER SPACING FROM EACH END. BUT SHALL NOT BE LESS THAN 1 BOLT DIAMETER NOR 1".

MASONRY:

M-1 ALL REGULAR MASONRY WALLS USED AS FILLER BETWEEN CONCRETE FRAMED STRUCTURE AND/OR MASONRY LOAD BEARING WALLS WITH REINFORCING SHALL BE TWO CELL LOAD BEARING TYPE CMU WITH COMPRESSIVE STRENGTH OF MASONRY UNIT f'C, CMU = 2,000 PSI AND A NET COMPRESSIVE STRENGTH OF MASONRY f'm = 2,000 P.S.I. (MIN.), UNLESS NOTED OTHERWISE ON THE PLANS.

M-2 MASONRY GROUT SHALL CONFORM TO ASTM C476 AND SHALL BE PLANT-BATCHED PEAGRAVEL WITH 3000 PSI 28 DAY COMPRESSIVE STRENGTH.

M-3 MASONRY MORTAR SHALL BE ASTM C270 TYPE "M" WITH A MIN. COMPRESSIVE STRENGTH OF 2,500 PSI AND MASONRY GROUT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A476.

M-4 MASONRY JOINT REINFORCEMENT SHALL CONFORM TO ASTM A1064/A1064M WITH HOT DIP GALVANIZING COMPLYING WITH ASTM A153/A153M B-2..

M-5 MASONRY REINFORCEMENT BAR SPLICES SHALL BE CONTACT SPLICES. LENGTH OF SPLICE SHALL BE A MINIMUM OF 25 INCHES FOR #4 BARS, 32 INCHES FOR #5 BARS AND 36 INCHES FOR #6 BARS.

M-6 BOND BEAM REINFORCEMENT SHALL BE PROVIDED WITH STD 90 DEGREE HOOKS AT ALL WALL INTERSECTIONS. WHERE BOND BEAM REINFORCEMENT IS INTERRUPTED BY OPENINGS, REINFORCEMENT SHALL BE PROVIDED WITH STD 180 DEGREE HOOKS AT ENDS.

MASONRY LINTELS:

L-1 MASONRY LINTELS SHALL BE EITHER PRECAST CONCRETE "U" SECTIONS OR CONCRETE MASONRY "U" BLOCKS UNLESS SHOWN OTHERWISE. REFER TO THE PLANS AND MASONRY LINTEL SCHEDULE ON S-N2800-601 WHERE NOT SPECIFICALLY PROVIDED FOLLOW BELOW GUIDANCE.

L-2 PRECAST LINTELS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE EOR PRIOR TO INSTALLATION. LINTELS SHALL HAVE A MIAMI-DADE PRODUCT APPROVAL (NOA) AND SHALL EXCEED THE SAFE LOADS INDICATE IN THE LINTEL SCHEDULE ON S-N2800-601.

L-3 NOMINAL DEPTH OF "U" SECTIONS BE 8" AND WIDTH SHALL MATCH CONCRETE MASONRY WALL.

L-4 PRECAST CONCRETE "U" SECTIONS SHALL BE REINFORCED WITH (2) #3 TOP AND (2) #5 BOTTOM. ADDITIONAL FIELD ADDED REINFORCEMENT AND TOTAL NOMINAL DEPTH SHALL BE AS FOLLOWS:

SPAN	TOTAL NOMINAL LINTEL DEPTH (IN)	FIELD ADDED REINFORCEMENT
UP TO 4'	8	NONE
UP TO 8'	8	1 #5 BOTTOM, 1 #5 TOP
UP TO 12'	16	1 #5 BOTTOM, 2 #5 TOP

ADDITIONAL LINTEL DEPTH SHALL BE 8" DEEP CONCRETE MASONRY BLOCK

L-5 CONCRETE MASONRY "U" BLOCK LINTELS SHALL HAVE THE FOLLOWING REINFORCEMENT AND TOTAL NOMINAL DEPTH:

SPAN	TOTAL NOMINAL LINTEL DEPTH (IN)	FIELD ADDED REINFORCEMENT
UP TO 4'	8	2 #5 BOTTOM
UP TO 8'	16	2 #5 BOTTOM
UP TO 12'	24	2 #5 BOTTOM

ADDITIONAL LINTEL DEPTH SHALL BE 8" DEEP CONCRETE MASONRY BLOCK

L-6 LINTELS SHALL BE GROUTED SOLID

L-7 EXTEND LINTELS (MIN) 8" BEYOND OPENING

L-8 WHEN FRAMING LINTEL AGAINST A CONCRETE COLUMN, PROVIDE SHEAR KEY AT COLUMN FACE AND DOWELS FROM COLUMN TO MATCH MASONRY LINTEL REINFORCEMENT. KEY DIMENSION SHALL BE 1"x8"x8". MINIMUM REINFORCEMENT LAP SHALL BE 32 BAR DIAMETERS CONTRACTOR MAY USE REBAR COUPLES TO ANCHOR LINTEL REINFORCEMENT TO COLUMN.

PRECAST CONCRETE:

PC-1 CONCRETE FOR PRESTRESSED PRECAST HOLLOW CORE PLANKS AND DOUBLE TEES SHALL BE DESIGNED TO ATTAIN A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF f'c = 7000 PSI.

PC-2 FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

PC-3 ALL SHOP DRAWINGS FOR PRECAST STRUCTURAL MEMBERS SHALL INCLUDE COMPLETEDESIGN CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.

PC-4 ALL SHOP DRAWINGS FOR PRESTRESSED PRECAST CONCRETE STRUCTURAL MEMBERS SHALL AT A MINIMUM SHOW THE LAYOUT, SIZE, BEARING DISTANCES, OPENINGS, INSERTS, ETC AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.

PC-5 SEE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.

WATERSTOPS/JOINTS:

WS-1 ALL JOINTS BELOW GRADE LEVEL AND IN WATER BEARING STRUCTURES SHALL HAVE A WATERSTOP AS DESCRIBED BELOW, U.N.O:
A) CONSTRUCTION JOINTS: 6" X 3/8" THICK - FLAT RIBBED PVC.
B) EXPANSION JOINTS: CENTERBULB TYPE, 9" WIDE x 3/8" THICK - SERRATED

METAL FLOOR GRATING, CHECKERED PLATES AND HATCHES:

MG-1 FLOOR GRATING SHALL BE IN ACCORDANCE WITH SECTION 055000. "MISCELLANEOUS METALS" AND THE MATERIAL MUST BE AS SPECIFIED ON DRAWINGS.

MG-2 GRATING SHALL BE A MINIMUM DEPTH AS SPECIFIED ON THE DRAWING. SEE PROJECT SPECIFICATIONS FOR COMPLETE INFORMATION.

FRP GRATING AND FLOOR GRATING SYSTEM:

FRP-1 FRP GRATING AND FLOOR SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION 066100 (REF DWG. S-N0000-002-GENERAL NOTES)

ALUMINUM ALLOY SHAPES:

AA-1 ALL ALUMINUM SHAPES SHALL HAVE STRENGTH OF 6061-T6 ALLOY UNLESS NOTED OTHERWISE.

AA-2 ALUMINUM DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL, ADM.

AA-3 ALUMINUM STRUCTURES, FABRICATION, INSTALLATION, ERECTION AND DETAILING SHALL CONFORM TO "THE ALUMINUM ASSOCIATION, INCORPORATED" SPECIFICATIONS FOR ALUMINUM STRUCTURES AND THE ALUMINUM DESIGN MANUAL.

AA-4 ALUMINUM AND GALVANIZED STEEL SHALL BE ISOLATED FROM CONTACT WITH CONCRETE, GROUT, MASONRY AND DISSIMILAR METALS.

COATINGS:

CO-1 SEE SPECIFICATION SECTION 099000 FOR PAINTS AND COATINGS.

MECHANICAL AND ELECTRICAL EQUIPMENT:

ME-1 CONTRACTOR SHALL CONSULT WITH MANUFACTURER'S CERTIFIED SHOP DRAWINGS FOR PLACEMENT AND INSTALLATION OF ALL EQUIPMENT, LOCATION, QUANTITY AND SIZES OF ANCHOR BOLTS AND SOLE PLATES, IF ANY, TO STRUCTURES.

GR-1 GRADE ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE AND ARE INTENDED TO SHOW MINIMUM COVER OVER FOOTINGS / FOUNDATIONS. FOR EXACT FINAL GRADE ELEVATIONS, SEE CIVIL DRAWINGS.

DEFERRED SUBMITTALS:

DS-1 DESIGN RESPONSIBILITY FOR DEFERRED ENGINEERED SYSTEMS AND COMPONENTS IS DELEGATED TO A QUALIFIED SPECIALTY ENGINEER LICENSED IN THE PROJECT STATE.

DS-2 DEFERRED SUBMITTALS SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND ALL APPLICABLE STANDARDS AND DESIGN CRITERIA ESTABLISHED BY THE CONTRACT DOCUMENTS.

DS-3 DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO START OF CONSTRUCTION.

DS-4 THE FOLLOWING ENGINEERED SYSTEMS AND COMPONENTS ARE CONSIDERED DEFERRED SUBMITTALS BY THE STRUCTURAL ENGINEER:

A) MECHANICAL AND ELECTRICAL EQUIPMENT ANCHORAGE.
B) SHORING DESIGN FOR DEEP EXCAVATIONS.
C) PRECAST CONCRETE MEMBERS INCLUDING, BUT NOT LIMITED TO, DOUBLE TEES, COMPOSITE JOISTS, HOLLOW-CORE SLABS, AND PRECAST LINTELS.
D) IMPACT RATED FENESTRATIONS, INCLUDING BUT NOT LIMITED TO, DOORS, WINDOWS AND LOUVERS.
E) BRIDGE CRANE AND RUNWAY BEAM
F) METAL STAIRS AND PLATFORMS
G) FRP APPURTENANCES
H) PIPE SUPPORTS AND ANCHORAGE
I) HANDRAILS, GUARD RAILS AND LADDERS
J) PLATFORM JIB OR DAVIT CRANE

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

GENERAL STRUCTURAL NOTES II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 76 OF 256	

S-02

90% SUBMITTAL NOT FOR CONSTRUCTION

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STRUCTURAL ABBREVIATIONS

A

ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AHR	ANCHOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
AROD	ANCHOR ROD
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
AWG	AMERICAN WIRE GAUGE

B

BFE	BASE FLOOD ELEVATION
BLDG	BUILDING
BM	BENCHMARK, BEAM
BO	BOTTOM OF
BOT	BOTTOM
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN

C

C	CAMBER
CANTIL	CANTILEVER
CHKD	CHECKERED
CHKDPL	CHECKERED PLATE
CIP	CAST-IN-PLACE
CJ	CONTRACTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION, CONTROL
COORD	COORDINATE
COV	COVER
CRNR	CORNER
CSJ	CONSTRUCTION JOINT
CTRS	CENTERS

D

db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWA	DEFORMED WIRE ANCHOR
DWG	DRAWING
DWL	DOWEL

E

E	EAST
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EMBED	EMBEDMENT
EMER	EMERGENCY
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F

FAB	FABRICATE
f'c	28 DAY CONCRETE STRENGTH =
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH(ED)
FLR	FLOOR
FS	FAR SIDE
FT	FOOT
FTG	FOOTING
FUT	FUTURE
FV	FIELD VERIFY
Fy	STRUCTURAL STEEL YIELD STRENGTH =
fy	REINFORCING STEEL YIELD STRENGTH =

G

GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GR	GRADE

H

H	HORIZONTAL REACTION
HC	HOLLOW CORE
HEX	HEXAGONAL
HGR	HANGER
HK	HOUSEKEEPING
HORIZ	HORIZONTAL
HP	HIGH POINT
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION

I

ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCHES
INT	INTERIOR, INTERNAL
INV	INVERT

J

JT	JOINT

K

K	KIPS (1000 LBS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH

L

LAB	LABORATORY
LB	POUND
ld	DEVELOPMENT LENGTH
LIN	LINES
LLBB	LONG LEG BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LP	LOW POINT
LSLT	LONG SLOTTED HOLE TRANSVERSE
LSH	LONG SIDE HORIZONTAL
LSHP	LONG SLOTTED HOLE PARALLEL
LSV	LONG SIDE VERTICAL
LWC	LIGHTWEIGHT CONCRETE

M

M	MOMENT
MAS	MASONRY
MAX	MAXIMUM
MATL	MATERIAL
MC	MOMENT CONNECTION, MECHANICAL COUPLING
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL

N

N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE

O

OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPER	OPERATING
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OVS	OVERSIZED HOLE
OZ	OUNCE

P

P	AXIAL LOAD
PAF	POWDER ACTUATED FASTENER
PAR	PARALLEL
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PL	PLATE
PLCS	PLACES
PLF	POUNDS PER LINEAR FOOT
PJP	PARTIAL JOINT PENETRATION
PR	PAIR
PRELIM	PRELIMINARY
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSIONED

Q

QTY	QUANTITY

R

R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCEMENT
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING

S

S	SOUTH
SC	SLIP CRITICAL, SHEAR CONNECTOR
SCHED	SCHEDULE
SDS	SELF DRILLING SCREW
SECT	SECTION
SH	SHEET
SIM	SIMILAR
SJ	SAW JOINT
SLBB	SHORT LEG BACK TO BACK
SPA	SPACING
SPEC	SPECIFICATION
SPRT	SUPPORT
SQ	SQUARE
SSHP	SHORT SLOTTED HOLE PARALLEL
SSHT	SHORT SLOTTED HOLE TRANSVERSE
STD	STANDARD
STIF	STIFFENER
STIR	STIRRUP
STL	STEEL
STR	STRUCTURE, STRUCTURAL
SYM	SYMMETRICAL

T

T	TREAD, SCHEDULED PLATE THICKNESS
T&B	TOP & BOTTOM
TAN	TANGENT
TEMP	TEMPERATURE
THK	THICK, THICKNESS
THD	THREADED
TO	TOP OF
T/	TOP OF
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL, TOP OF SLAB
TOW	TOP OF WALL
TYP	TYPICAL

U

UNO	UNLESS NOTED OTHERWISE
USGS	UNITED STATES GEOLOGICAL SURVEY

V

VERT	VERTICAL
VNR	VENEER

W

W	WEST
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WS	WATERSTOP
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT

X

x	BY, TIMES
XS	EXTRA STRONG
XXS	DOUBLE EXTRA STRONG

Y

Not Used

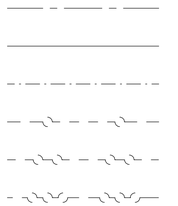
Z

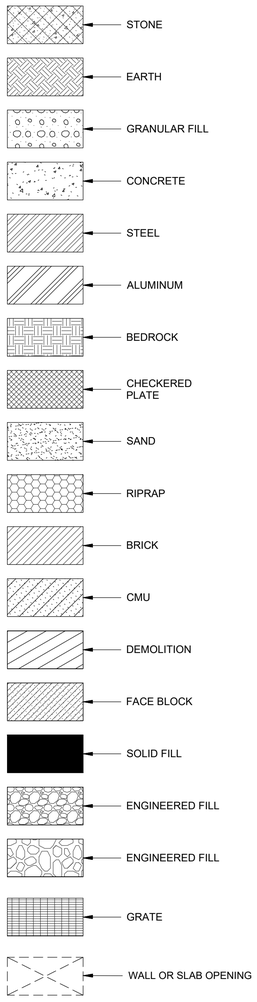
ZD	ZONE DAMPER

SPECIAL CHARACTERS

@	AT
&	AND
⌀	DIAMETER
#	NUMBER
%	PERCENT

SYMBOLS AND LEGENDS





STRUCTURAL TAG LEGEND

Cxx	CAST-IN-PLACE CONCRETE COLUMN
Fxx	ISOLATED SPREAD FOOTING
WFxx	CONTINUOUS WALL FOOTING
Bxxx	CAST-IN-PLACE CONCRETE BEAM
BBxxx	MASONRY BOND BEAM
TCxx	TIE COLUMN
Wxx	WALL
Lxx	LINTEL

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

STRUCTURAL LEGENDS & ABBREVIATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-03	SHEET NO. 77 OF 256

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NOTES:

1. THE INSPECTION SERVICES PLAN AND STATEMENT IS IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE WITH HOUSTON AMENDMENTS.

INSPECTIONS AND DOCUMENTATION:

1. PERFORM INSPECTIONS AND DOCUMENTATION AND SUBMIT A RECORD SHOWING RESULTS ON AN "AS OCCURRED" BASIS UNLESS OTHERWISE INDICATED.
2. INSPECTORS SHALL KEEP DETAILED INSPECTION RECORDS, INCLUDING ALL INSPECTIONS, TESTS, SIMILAR SERVICES, AND ANY DISCREPANCIES AND CORRECTIONS. ANY DISCREPANCIES AND CORRECTIONS SHALL BE REPORTED TO THE BUILDING OFFICIAL AND THE ENGINEER IN ALL REQUIRED REPORTS, UNLESS OTHERWISE REQUIRED BY THE BUILDING OFFICIAL. THE RECORDS SHALL INCLUDE THE DATES OF THE COMPLETED INSPECTION IN ACCORDANCE WITH THE REFERENCED SCHEDULE ON THIS STRUCTURAL INSPECTION PLAN.
3. THE INSPECTOR SHALL SUBMIT WEEKLY PROGRESS REPORTS TO THE BUILDING OFFICIAL AND THE ENGINEER DOCUMENTING REQUIRED INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES, AND A CODE COMPLIANCE OPINION OF THE RESIDENT ENGINEER.
4. THE INSPECTOR SHALL BE A PERSON QUALIFIED UNDER 2021 INTERNATIONAL BUILDING CODE.
5. THE INSPECTOR, UPON COMPLETION OF THE BUILDING AND PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, FILE A SIGNED AND SEALED STATEMENT WITH THE ENFORCEMENT AGENCY IN SUBSTANTIALLY THE FOLLOWING FORM: "TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE ABOVE DESCRIBED CONSTRUCTION OF ALL STRUCTURAL LOAD-BEARING COMPONENTS COMPLIES WITH THE PERMITTED DOCUMENTS SUBMITTED TO THE ENFORCEMENT AGENCY.

OBSERVATIONS:

1. OBSERVATION IS THE VISUAL OBSERVATION OF THE CONSTRUCTION BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION. THESE OBSERVATIONS DO NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTION AS DEFINED BY SPECIAL INSPECTION.
2. THE OBSERVER IS NOT INSPECTING FOR OSHA COMPLIANCE AND TEMPORARY CONSTRUCTION, SUCH AS BRACING, SHORING, MEANS AND METHODS, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE FACILITIES FOR THE OBSERVER.
3. THE OBSERVER IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES TO THE CONTRACT DOCUMENTS. IF CONTRACTOR WISHES TO QUESTION THE OBSERVER'S INTERPRETATION OF THE CONTRACT DOCUMENTS, THIS MAY BE DONE WITH THE APPROPRIATE MEASURES LISTED IN THE CONTRACT DOCUMENTS. THE OBSERVER IS NOT AUTHORIZED TO STOP OR DELAY THE WORK. IF THE CONTRACTOR ELECTS TO CONTINUE WITH THE CERTAIN WORK AFTER BEING NOTIFIED BY THE OBSERVER THAT SUCH WORK IS UNACCEPTABLE, HE DOES SO AT HIS OWN RESPONSIBILITY AND RISK.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY OBSERVATION PROVIDED BY OTHERS DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY. DEFICIENCIES SHALL BE REPORTED BY THE OBSERVER IN WRITING TO THE OWNER.
5. DEVIATIONS FROM THE CONTRACT DOCUMENTS FOUND AT A LATER DATE AND ARE DECLARED TO BE SIGNIFICANT BY THE ENGINEER SHALL BE CORRECTED BY THE CONTRACTOR IMMEDIATELY AT THEIR OWN COST.

STATEMENT OF SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS ARE REQUIRED FOR THE ENTIRE PROJECT WHICH INCLUDES, BUT IS NOT LIMITED TO THE B22 SWITCHGEAR BUILDING, TRANSFORMER FOUNDATION AND EXTERIOR SWITCHGEAR FOUNDATION.
2. SPECIAL INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE.
3. SPECIAL INSPECTIONS FOR MASONRY STRUCTURES ARE REQUIRED IN ACCORDANCE WITH TMS 402/602-16. CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH A QUALITY ASSURANCE PROGRAM LEVEL B PER TMS 402 1.19.2. THE OWNER SHALL ENGAGE THE SERVICES OF A QUALIFIED SPECIAL INSPECTOR AS NECESSARY TO SATISFY THE REQUIREMENTS OF TMS 402/602-16 SPECIAL INSPECTIONS.
4. SPECIAL INSPECTIONS ITEMS AND FREQUENCY SHALL BE PER THE SCHEDULE ON SHEET S-03 & S-04.
5. FABRICATED ITEMS OF STRUCTURAL, LOAD-BEARING OR LATERAL LOAD-RESISTING MEMBERS OR ASSEMBLIES BEING CONDUCTED ON THE PREMISES OF A FABRICATOR'S SHOP, SPECIAL INSPECTIONS OF THE FABRICATED ITEMS SHALL BE PERFORMED DURING FABRICATION, EXCEPT WHERE THE FABRICATOR HAS BEEN APPROVED TO PERFORM WORK WITHOUT SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 2021 1704.2.5.1.
6. SPECIAL INSPECTION FOR THE MAIN WIND FORCE RESISTING SYSTEMS (ORDINARY REINFORCED MASONRY SHEAR WALLS) AND STRUCTURAL COMPONENTS FOR THE TRANSFORMER AND EXTERIOR SWITCHGEAR FOUNDATIONS SHALL BE AS FOLLOWS:
   A. THE CONSTRUCTION OF REINFORCED MASONRY.
   B. CONCRETE REINFORCEMENT PER IBC 2021 INSPECTION REQUIREMENTS.
   C. COMPACTION OF FILL UNDER FOUNDATIONS.
   D. STRUCTURAL STEEL CONNECTIONS - WELDING.
   E. ROOFING INCLUDING METAL DECK AND OPEN WEB JOISTS.

REINFORCING BAR SPLICE LENGTHS (ACI SPLICE):

BAR	3000 psi CONCRETE		5000 psi CONCRETE	
	BASIC L	TOP BAR L*	BASIC L	TOP BAR L*
#3	1'-5"	1'-10"	1'-1"	1'-5"
#4	1'-10"	2'-5"	1'-5"	2'-0"
#5	2'-4"	3'-0"	2'-0"	2'-6"
#6	2'-9"	3'-7"	2'-2"	2'-7"
#7	4'-0"	5'-3"	3'-1"	4'-1"
#8	4'-7	6'-0"	3'-7"	4'-7"
#9	5'-2"	6'-9"	4'-0"	5'-3"
#10	5'-10"	7'-7"	4'-6"	5'-10"
#11	6'-6"	8'-5"	5'-0"	6'-6"

CLASS "B" LAP SPLICE - fy = 60 KSI

BAR	3000 psi CONCRETE		5000 psi CONCRETE	
	BASIC L	TOP BAR L*	BASIC L	TOP BAR L*
#3	1'-10"	2'-4"	1'-5"	1'-10"
#4	2'-5"	3'-2"	1'-10"	2'-5"
#5	3'-0"	3'-11"	2'-4"	3'-0"
#6	3'-7"	4'-8"	2'-9"	3'-7"
#7	5'-3"	6'-8"	4'-1"	5'-3"
#8	6'-0"	7'-9"	4'-7"	6'-0"
#9	6'-9"	8'-9"	5'-3"	6'-9"
#10	7'-7"	9'-10"	5'-10"	7'-7"
#11	8'-5"	10'-11"	6'-6"	8'-5"

*HORIZONTAL BAR WITH MORE THAN 12" OF CONCRETE BELOW

WELDED DEFORMED WIRE DEVELOPEMENT AND SPLICE LENGTH - fy = 60 KSI, f'c = 4000 psi (MIN)

WIRE SIZE	spacing (in.)	Dev. Length	Splice Length (when sum of overhang is:)			
		ld	0"	6"	8"	12"
D4	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D5	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D6	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D7	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D8	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D9	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D10	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"
D12	4	8"	8"	8"	10"	14"
	6	8"	8"	8"	10"	14"
	12	8"	8"	8"	10"	14"

BAR SIZE	HOOK BAR DEVELOPMENT	STRAIGHT BAR DEVELOPMENT	STRAIGHT BAR DEVELOPMENT (BOTTOM BAR)
4	9 IN (6 IN*)	23 IN	17 IN
5	11 IN (8 IN*)	28 IN	22 IN
6	13 IN (9 IN*)	34 IN	26 IN
7	15 IN (11 IN*)	49 IN	38 IN
8	17 IN (12 IN*)	56 IN	43 IN
9	20 IN (14 IN*)	63 IN	48 IN
10	22 IN (15 IN*)	69 IN	54 IN
11	24 IN (17 IN*)	76 IN	59 IN

*THE REDUCED HOOK DEVELOPMENT LENGTH SHOWN IN PARENTHESIS MAY BE USED IF SIDE COVER (NORMAL TO PLANE OF HOOK) IS GREATER THAN 2.5" AND COVER ON BAR EXTENSION BEYOND HOOK IS GREATER THAN 2"

SPECIAL INSPECTION SCHEDULE

A. STRUCTURAL - STEEL – WELDING SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

STEEL INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table C-N5.4-1, AISC 341-16: Table J6.1		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify that the welding procedures specification (WPS) is available	**PERFORM**	
2. Verify manufacturer certifications for welding consumables are available	**PERFORM**	
3. Verify material identification	OBSERVE	Type and grade.
4. Welder Identification System	OBSERVE	The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
5. Fit-up of groove welds (including joint geometry)	**PERFORM/** OBSERVE[2]	• Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)
6. Configuration and finish of access holes	OBSERVE	
7. Fit-up of fillet welds	**PERFORM/** OBSERVE[2]	• Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)
8. Check welding equipment	OBSERVE	
STEEL INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table C-N5.4-2, AISC 341-16: Table J6.2		
TASK	INSPECTION TYPE	DESCRIPTION
9. Use of qualified welders	**PERFORM**	Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements.
10. Control and handling of welding consumables	OBSERVE	• Packaging • Electrode atmospheric exposure control
11. No welding over cracked tack welds	OBSERVE	
12. Environmental conditions	OBSERVE	• Wind speed within limits • Precipitation and temperature
13. Welding Procedures Specification followed	OBSERVE	• Settings on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min./max.) • Proper position (F, V, H, OH) • Intermix of filler metals avoided
14. Welding techniques	OBSERVE	• Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements
15. Placement and installation	**PERFORM**	
STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table C-N5.4-3, AISC 341-16: Table J6.3		
TASK	INSPECTION TYPE[1]	DESCRIPTION
16. Welds cleaned	OBSERVE	
17. Size, length, and location of all welds	**PERFORM**	Size, length, and location of all welds conform to the requirements of the detail drawings.
18. Welds meet visual acceptance criteria	**PERFORM AND DOCUMENT**	• Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity
19. Arc strikes	**PERFORM**	
20. k-area	**PERFORM AND DOCUMENT**	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks.
21. Backing removed, weld tabs removed and finished, and fillet welds added where required	**PERFORM AND DOCUMENT**	
22. Repair activities	**PERFORM AND DOCUMENT**	
23. Document acceptance or rejection of welded joint or member	**PERFORM**	
24. No prohibited welds have been added without approval of the EOR	OBSERVE	

END SECTION

[1] PERFORM: Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

[2] **PERFORM/ OBSERVE:** Per AISC 341-16, following performance of this inspection task for ten welds to be made by a given welder, with the welder demonstrating understanding of requirements and possession of skills and tools to verify these items, the PERFORM designation of this task shall be reduced to OBSERVE, and the welder shall perform this task. Should the inspector determine that the welder has discontinued performance of this task, the task shall be returned to PERFORM until such time as the inspector has re-established adequate assurance that the welder will perform the inspection task listed.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

B. STRUCTURAL - STEEL – OTHER INSPECTIONS
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 341-16: Tables J8.1		
TASK	INSPECTION TYPE[2]	DESCRIPTION
1. Anchor rods and other embedments supporting structural steel	**PERFORM AND DOCUMENT**	Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
2. Fabricated steel or erected steel frame	**PERFORM**	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.
3. Reduced beam sections (RBS) where/if occurs	**PERFORM AND DOCUMENT**	• Contour and finish • Dimensional tolerances
4. Protected zones	**PERFORM AND DOCUMENT**	No holes or unapproved attachments made by fabricator or erector

END SECTION

[1] See Concrete Construction Section for all concrete related inspection of composite steel construction.

[2] PERFORM: Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

C. STRUCTURAL - COLD-FORMED METAL DECK - PLACEMENT SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

METAL DECK INSPECTION PRIOR TO DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2011, Appendix 1, Table 1.1		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness	**PERFORM**	
2. Document acceptance or rejection of deck and deck accessories	**PERFORM AND DOCUMENT**	
METAL DECK INSPECTION AFTER DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2011, Appendix 1, Table 1.2		
TASK	INSPECTION TYPE[1]	DESCRIPTION
3. Verify compliance of deck and all deck accessories installation with construction documents	**PERFORM**	
4. Verify deck materials are represented by the mill certifications that comply with the construction documents	**PERFORM**	
5. Document acceptance or rejection of installation of deck and deck accessories	**PERFORM AND DOCUMENT**	
METAL DECK INSPECTION PRIOR DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2011, Appendix 1, Table 1.3		
TASK	INSPECTION TYPE[1]	DESCRIPTION
6. Welding procedure specification (WPS) available	**PERFORM**	
7. Manufactures certifications for welding consumables available	OBSERVE	
8. Material identification (type/grade)	OBSERVE	
9. Check welding equipment	OBSERVE	

END SECTION

[1] PERFORM: Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

STRUCTURAL SPECIAL INSPECTION SCHEDULE I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 78 OF 256	

S-04

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SPECIAL INSPECTION SCHEDULE - CONTINUED

D. STRUCTURAL - COLD-FORMED METAL DECK – WELDING SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

METAL DECK INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2011, Appendix 1, Table 1.4		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Use of qualified welders	OBSERVE	
2. Control and handling of welding consumables	OBSERVE	
3. Environmental conditions (wind speed, moisture, temperature)	OBSERVE	
4. WPS followed	OBSERVE	
METAL DECK INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2011, Appendix 1, Table 1.5		
TASK	INSPECTION TYPE[1]	DESCRIPTION
5. Verify size and location of welds, including support, sidelap, and perimeter welds.	**PERFORM**	
6. Welds meet visual acceptance criteria	**PERFORM**	
7. Verify repair activities	**PERFORM**	
8. Document acceptance or rejection of welds	**PERFORM AND DOCUMENT**	

END SECTION

[1] PERFORM: Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

E. STRUCTURAL - CONCRETE CONSTRUCTION SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC TABLE 1705.3 (SEE ACI 318 REFERENCES NOTED IN IBC TABLE)		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Inspect reinforcement, including prestressing tendons, and verify placement.	PERIODIC	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
2. Reinforcing bar welding	PERIODIC	• Verify weldability of reinforcing bars other than ASTM A 706 • Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4
3. All other welding	**CONTINUOUS**	Visually inspect all welds in accordance with AWS D1.4
4. Cast in place anchors and post installed drilled anchors (downward inclined)	PERIODIC	Verify prior to placing concrete that cast in place anchors and post installed drilled anchors have proper embedment, spacing and edge distance.
5. Post-installed adhesive anchors in horizontal or upward inclined orientations	**CONTINUOUS AND DOCUMENT**	• Inspect as required per approved ICC-ES report • Verify that installer is certified for installation of horizontal and overhead installation applications • Inspect proof loading as required by the contract documents
6. Verify use of required mix design	PERIODIC	Verify that all mixes used comply with the approved construction documents
7. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	**CONTINUOUS**	At the time fresh concrete is sampled to fabricate specimens for strength test verify these tests are performed by qualified technicians.
8. Inspect concrete and/or shotcrete placement for proper application techniques	**CONTINUOUS**	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
9. Verify maintenance of specified curing temperature and technique	PERIODIC	Inspect curing, cold weather protection, and hot weather protection procedures.
10. Pre-stressed concrete	**CONTINUOUS**	Verify application of prestressing forces and grouting of bonded prestressing tendons.
11. For precast concrete diaphram connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E or F, inspect such connections and reinforcement in the field for: a. Installation of the embedded parts b. Completion of the continuity of reinforcement across joints c. Completion of connections in the field	**CONTINUOUS**	
12. Inspect installation tolerances of precast concrete diaphram connections for compliance with ACI 550.5.	PERIODIC	
13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	PERIODIC	
14. Inspect formwork for shape, location and dimensions of the concrete member being formed.	PERIODIC	

END SECTION

CONTINUOUS: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed at all times.

PERIODIC: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where work has been or is being performed and at the completion of the work.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

[1]

F. STRUCTURAL - MASONRY CONSTRUCTION SECTION (ALL RISK CATEGORIES)
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE AT START OF CONSTRUCTION 2021 IBC 1705.4 (TMS 402/602-16, TABLE 4)		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Compliance with approved submittals prior to start	PERIODIC	
2. Proportions of site-prepared mortar.	PERIODIC	
3. Construction of motar joints.	PERIODIC	
4. Location of Reinforcement, connectors, and anchorages.	PERIODIC	
5. Properties of thin bed mortar for AAC masonry	**CONTINUOUS/** PERIODIC[2]	
MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE PRIOR TO GROUTING IBC 1705.4 (TMS 402/602-16, TABLE 4)		
TASK	INSPECTION TYPE[1]	DESCRIPTION
6. Grout space	PERIODIC	
7. Grade, type, and size of reinforcement and anchor bolts	PERIODIC	
8. Placement of Reinforcement, connectors, and anchorages.	PERIODIC	
9. Proportions of site-prepared grout	PERIODIC	
10. Construction of motar joints.	PERIODIC	
MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE DURING CONSTRUCTION IBC 1705.4 (TMS 402/602-16, TABLE 4)		
TASK	INSPECTION TYPE[1]	DESCRIPTION
11. Size and location of structural elements is in compliance	PERIODIC	
12. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	PERIODIC	
13. Welding of reinforcement	**CONTINUOUS**	
14. Preparation, construction, and protection of masonry during cold weather (temperature below 40oF (4.4oc) or hot weather (temp above 90oF (32.2oC))	PERIODIC	
15. Placement of AAC masonry units and construction of thin bed mortar joints	**CONTINUOUS/** PERIODIC[2]	
16. Observe preparation of grout specimens, mortar specimens, and/or prisms	PERIODIC	

END SECTION

1 CONTINUOUS: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed at all times.

PERIODIC: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where work has been or is being performed and at the completion of the work.

2 CONTINUOUS/ PERIODIC: Continuous required for the first 5000 square feet of AAC masonry, PERIODIC required after first 5000 square feet of ACC masonry.

G. GEOTECHNICAL - SOILS INSPECTION SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

SOILS INSPECTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.6		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Materials below shallow foundations are adequate to achieve the design bearing capacity.	PERIODIC	
2. Excavations are extended to proper depth and have reached proper material	PERIODIC	
3. Perform classification and testing of compacted fill materials	PERIODIC	
4. Verify use of proper materials, and procedures in accordance with the provisions of the approved geothechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.	**CONTINUOUS**	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	PERIODIC	During fill placement, the special inspector shall verify that proper materials and procedures are used in accordance with the provisions of the approved geotechnical report

END SECTION

[1] **CONTINUOUS:** The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed at all times.

PERIODIC: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where work has been or is being performed and at the completion of the work.

K. GEOTECHNICAL - CAST IN PLACE DEEP FOUNDATION ELEMENTS SECTION
ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

CAST IN PLACE DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.8		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Inspect drilling operations and maintain complete and accurate records for each element.	**CONTINUOUS**	
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	**CONTINUOUS**	For concrete elements, perform additional special inspections in accordance with the Concrete section in this schedule
3. For concrete elements, perform tests, and additional special inspections in accordance with Section 1705.3		

END SECTION

1 CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

STRUCTURAL SPECIAL INSPECTION SCHEDULE II

WBS NUMBER
R-000265-0162-3

FOR CITY OF HOUSTON USE ONLY

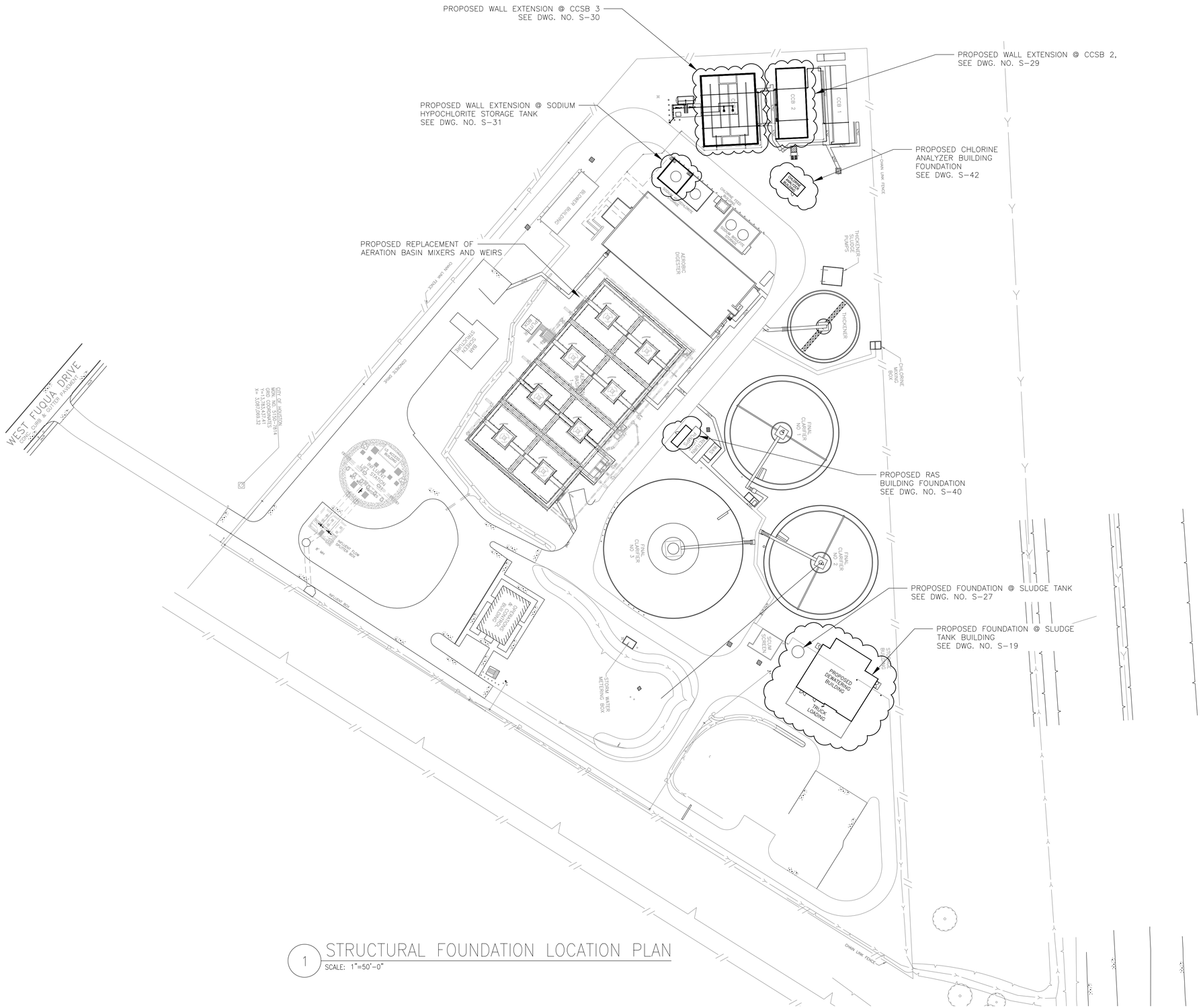
DRAWING SCALE
AS NOTED

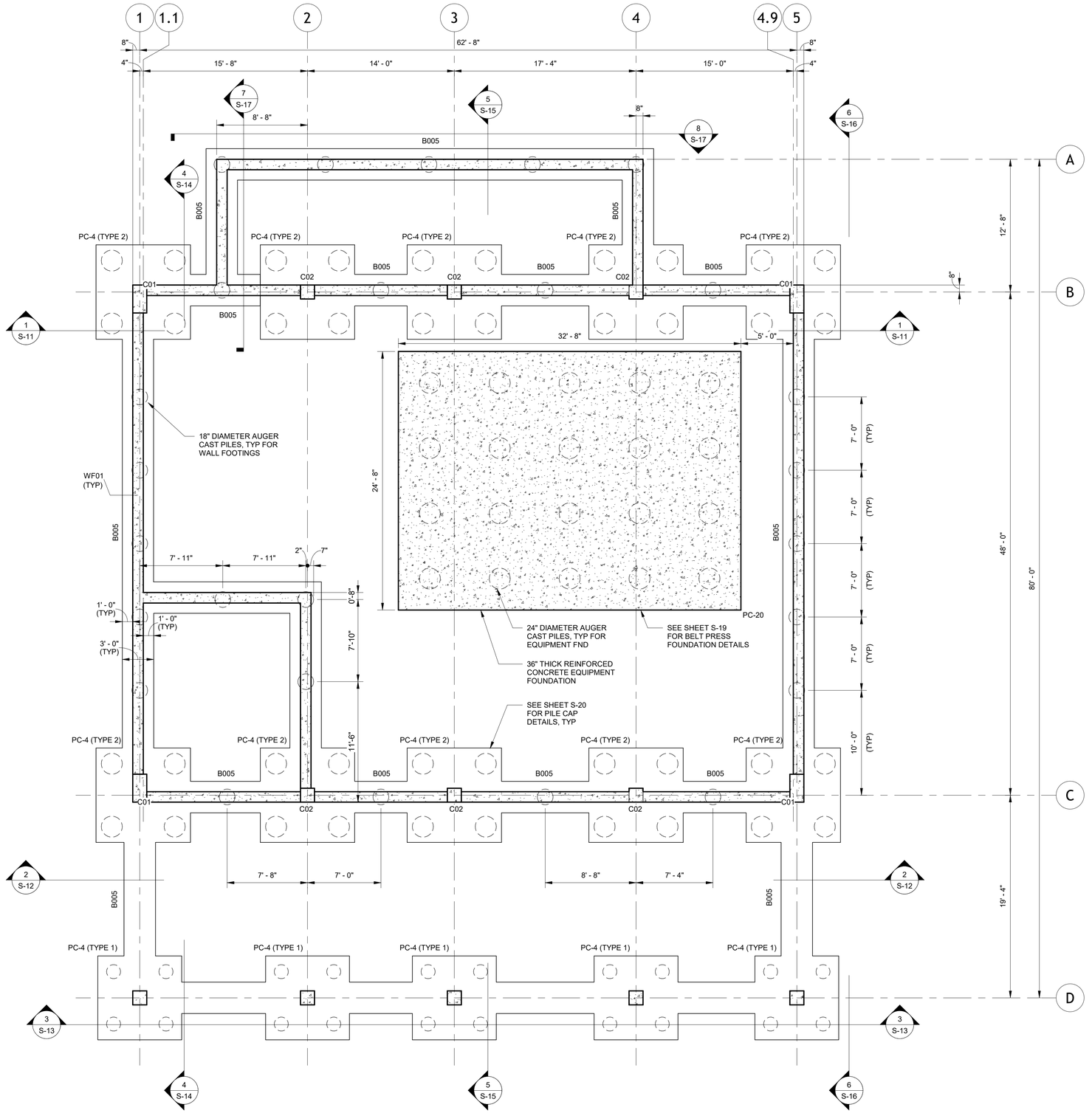
CITY OF HOUSTON PM
SHAN LEI, P.E.

S-05 SHEET NO. 79 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-05.dwg Dec 19, 2025 - 8:26am User: p001435c


PROPOSED WALL EXTENSION @ CCSB 3
SEE DWG. NO. S-30
PROPOSED WALL EXTENSION @ CCSB 2,
SEE DWG. NO. S-29
PROPOSED WALL EXTENSION @ SODIUM
HYPOCHLORITE STORAGE TANK
SEE DWG. NO. S-31
PROPOSED CHLORINE
ANALYZER BUILDING
FOUNDATION
SEE DWG. S-42
PROPOSED REPLACEMENT OF
AERATION BASIN MIXERS AND WEIRS
PROPOSED RAS
BUILDING FOUNDATION
SEE DWG. NO. S-40
PROPOSED FOUNDATION @ SLUDGE TANK
SEE DWG. NO. S-27
PROPOSED FOUNDATION @ SLUDGE
TANK BUILDING
SEE DWG. NO. S-19
WEST FUQUA DRIVE
CCSB 1
CCSB 2
AERATION BASIN
AERATION BASIN
AERATION BASIN



FOUNDATION PLAN

3/16" = 1'-0"

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 24 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 24" DIAMETER PILE, AND THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 18 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 18" DIAMETER PILE.
4. FOR WALL, LINTEL, BEAM AND COLUMN SCHEDULE REFER TO S-27 AND S-28 .
5. GRADE BEAMS ARE CENTERED ON COLUMN LINES OR PILES LOCATED IN PLAN, UNO.
6. COORDINATE WALL AND FLOOR PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. SEE CONCRETE DETAILS SHEET FOR TYPICAL REINFORCEMENT AROUND CONCRETE OPENINGS.
7. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

PLAN NORTH

0' 4' 8' 12'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

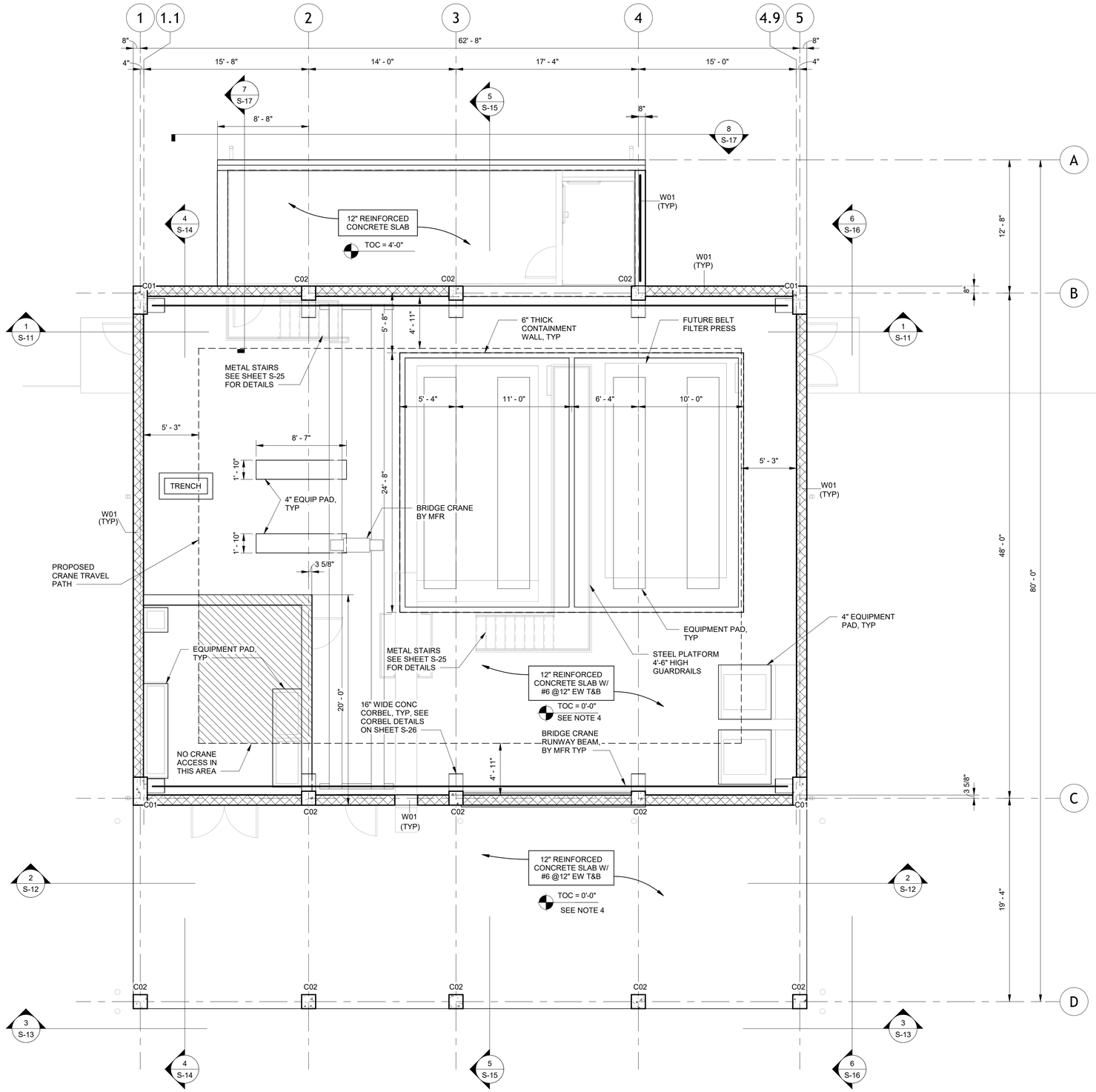
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING FOUNDATION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-07	SHEET NO. 82 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



FIRST FLOOR PLAN

3/16" = 1'-0"

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. FOR WALL, LINTEL, BEAM AND COLUMN SCHEDULE REFER TO S-27 AND S-28 .
4. RELATIVE ELEVATION OF 0'-0" FOR FINISH FLOOR IS USED FOR STRUCTURAL DRAWINGS AND ALL OTHER ELEVATIONS SHOWN ON STRUCTURAL SHEETS ARE BASED ON A 0'-0" FINISHED FLOOR. REFER TO CIVIL FOR ACTUAL FINISHED FLOOR ELEVATION.
5. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

PLAN NORTH

0' 4' 8' 12'

GRAPHIC SCALE

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SUITE 1100
HOUSTON, TEXAS 77056
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TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

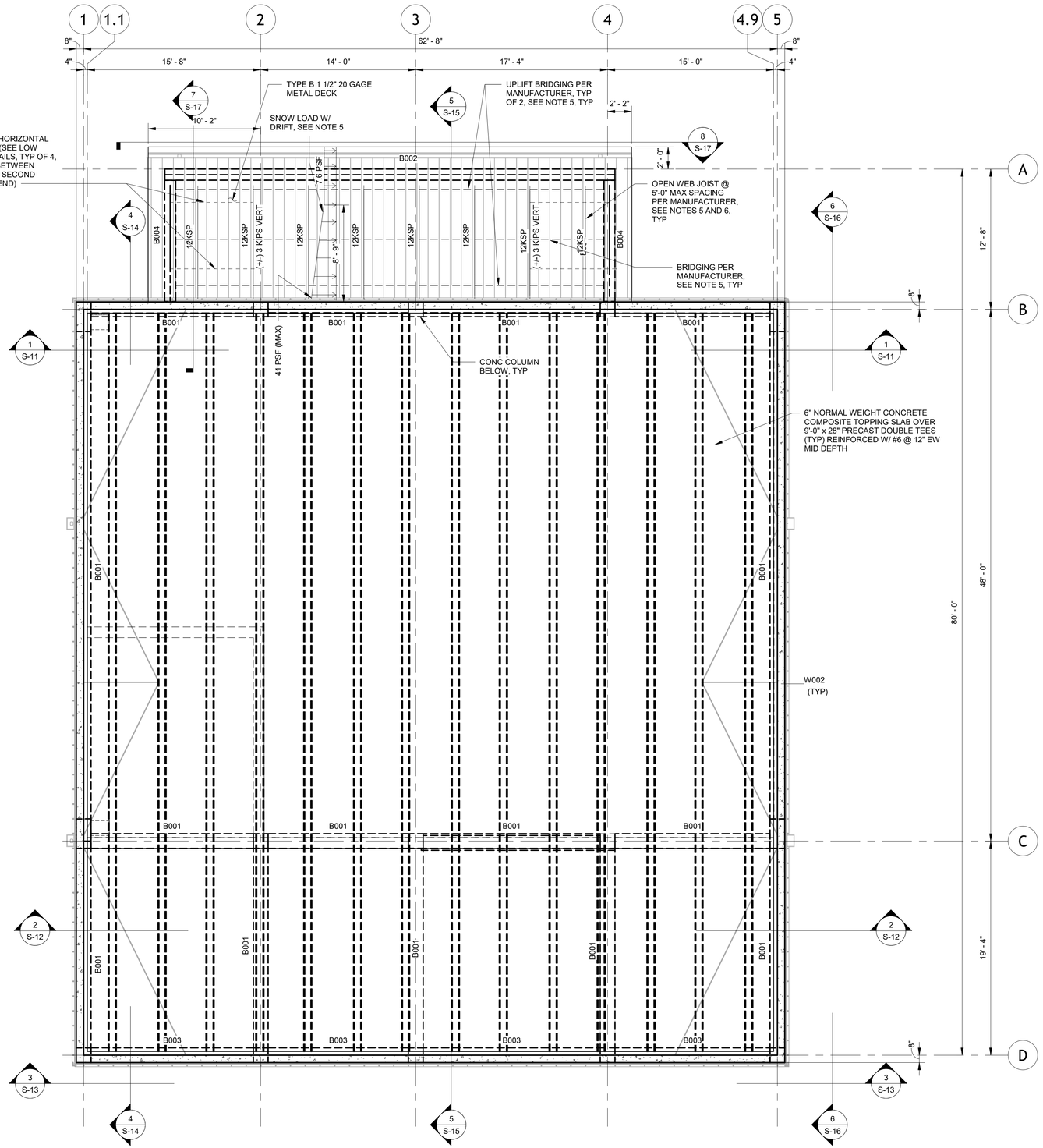
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING FIRST FLOOR PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-08	SHEET NO. 83 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



ROOF FRAMING PLAN

3/16" = 1'-0"

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. FOR WALL, LINTEL, BEAM AND COLUMN SCHEDULE REFER TO S-27 AND S-28 .
4. OPEN WEB JOISTS & PRECAST ROOF PANEL SIZES ARE PROVIDED FOR RECOMMENDATION PURPOSES ONLY. FINAL DESIGN AND ARRANGEMENT IS PER THE MANUFACTURER REQUIREMENTS.
5. UNFACTORED LOW ROOF LOADS:
   - DEAD: 10 PSF (SELF WEIGHT OF JOIST NOT INCLUDED)
   - DEAD (COLLATERAL): 20 PSF
   - ROOF LIVE: 20 PSF
   - SNOW: 41 PSF MAX/7.6 PSF MIN (SEE DIAGRAM ON PLAN)
   - WIND (GROSS UPLIFT): 48 PSF
   - WIND (NET UPLIFT 0.6D + 0.6W): 25 PSF
6. THE OPEN WEB JOIST TOP CHORD SHOULD EXTEND 12 INCHES PAST THE EXTERIOR FACE OF THE ROOF BEAM PER ROOF DETAILS ON S-23. ALL BRIDGING IS TO BE DESIGNED BY AND PROVIDED PER STEEL JOIST INSTITUTE (SJI). SEE SPECIFICATION 052100 FOR STEEL JOIST FRAMING.
7. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

0' 4' 8' 12'

GRAPHIC SCALE

PLAN NORTH

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

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ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BLDG ROOF FRAMING PLAN I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-09	SHEET NO. 84 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

COMPONENT AND CLADDING DESIGN HIGH ROOF WIND PRESSURES (ULTIMATE)			
ZONE	EFFECTIVE WIND AREA (SF)	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
1'	10	23	-51
	20	21	-51
	50	20	-51
	100	18	-51
	200	18	-50
	≥ 500	18	-36
1	10	23	-89
	20	21	-84
	50	20	-75
	100	18	-70
	200	18	-65
	≥ 500	18	-56
2	10	23	-118
	20	21	-112
	50	20	-102
	100	18	-94
	200	18	-85
	≥ 500	18	-75
3	10	23	-161
	20	21	-143
	50	20	-118
	100	18	-112
	200	18	-95
	≥ 500	18	-75

COMPONENT AND CLADDING DESIGN WIND HIGH ROOF WALL PRESSURES (ULTIMATE)			
ZONE	EFFECTIVE WIND AREA (SF)	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
4	10	51	-56
	20	49	-53
	50	46	-50
	100	44	-48
	200	42	-46
	≥ 500	39	-43
5	10	51	-68
	20	49	-64
	50	46	-58
	100	44	-53
	200	42	-49
	≥ 500	39	-43

NOTE: THE DELEGATE SHALL USE AN EFFECTIVE WIND AREA OF L2/3 FOR ALL PRECAST MEMBERS. ALL ROOFING MATERIAL SHALL HAVE AN EFFECTIVE WIND AREA OF 10 PSF.

COMPONENT AND CLADDING DESING WALL & ROOF - HIGH ROOF

COMPONENT AND CLADDING DESIGN LOW ROOF WIND PRESSURES (ULTIMATE)			
ZONE	EFFECTIVE WIND AREA (SF)	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
1'	10	21	-47
	20	20	-47
	50	18	-47
	100	17	-47
	200	17	-47
	≥ 500	17	-33
1	10	21	-83
	20	20	-78
	50	18	-69
	100	17	-65
	200	17	-60
	≥ 500	17	-52
2	10	21	-109
	20	20	-103
	50	18	-94
	100	17	-87
	200	17	-79
	≥ 500	17	-69
3	10	21	-148
	20	20	-132
	50	18	-109
	100	17	-103
	200	17	-87
	≥ 500	17	-69

COMPONENT AND CLADDING DESIGN WIND LOW ROOF WALL PRESSURES (ULTIMATE)			
ZONE	EFFECTIVE WIND AREA (SF)	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
4	10	47	-51
	20	45	-49
	50	43	-47
	100	40	-44
	200	38	-42
	≥ 500	36	-40
5	10	47	-63
	20	45	-59
	50	43	-53
	100	40	-49
	200	38	-45
	≥ 500	36	-40

NOTE: THE DELEGATE SHALL USE AN EFFECTIVE WIND AREA OF L2/3 FOR ALL PRECAST MEMBERS. ALL ROOFING MATERIAL SHALL HAVE AN EFFECTIVE WIND AREA OF 10 PSF.

COMPONENT AND CLADDING DESING WALL & ROOF - LOW ROOF

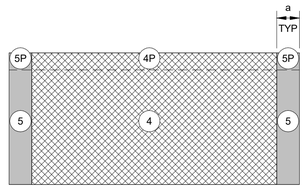
GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 24 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 24" DIAMETER PILE, AND THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 18 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 18" DIAMETER PILE.
4. FOR WALL, LINTEL, BEAM AND COLUMN SCHEDULE REFER TO S-27 AND S-28 .
5. GRADE BEAMS ARE CENTERED ON COLUMN LINES OR PILES LOCATED IN PLAN, UNO.
6. COORDINATE WALL AND FLOOR PENETRATION SIZE AND LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. SEE CONCRETE DETAILS SHEET FOR TYPICAL REINFORCEMENT AROUND CONCRETE OPENINGS.
7. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

COMPONENT AND CLADDING DESIGN OPEN ROOF WIND PRESSURES (ULTIMATE)			
ZONE	EFFECTIVE WIND AREA (SF)	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
1A	10	49	-44
	20	49	-44
	≥ 40	49	-44
2A	10	73	-69
	20	73	-69
	≥ 40	49	-44
3A	10	100	-133
	20	73	-69
	≥ 40	49	-44

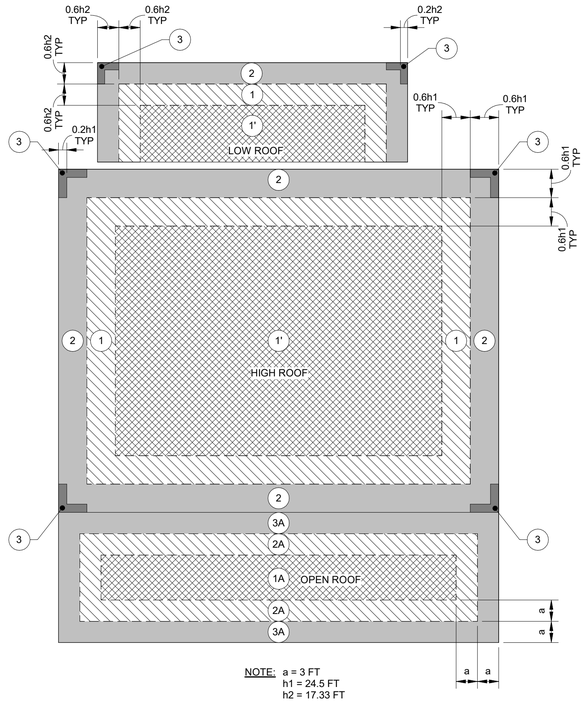
NOTE: THE DELEGATE SHALL USE AN EFFECTIVE WIND AREA OF L2/3 FOR ALL PRECAST MEMBERS. ALL ROOFING MATERIAL SHALL HAVE AN EFFECTIVE WIND AREA OF 10 PSF.

COMPONENT AND CLADDING DESING WALL & ROOF - OPEN ROOF



NOTE: a = 4.9 FT

C&C WIND PRESSURE WALL ZONES - ELEVATION



NOTE: a = 3 FT
h1 = 24.5 FT
h2 = 17.33 FT

C&C WIND PRESSURE ROOF ZONES - PLAN

PLAN NORTH

0' 4' 8' 12'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

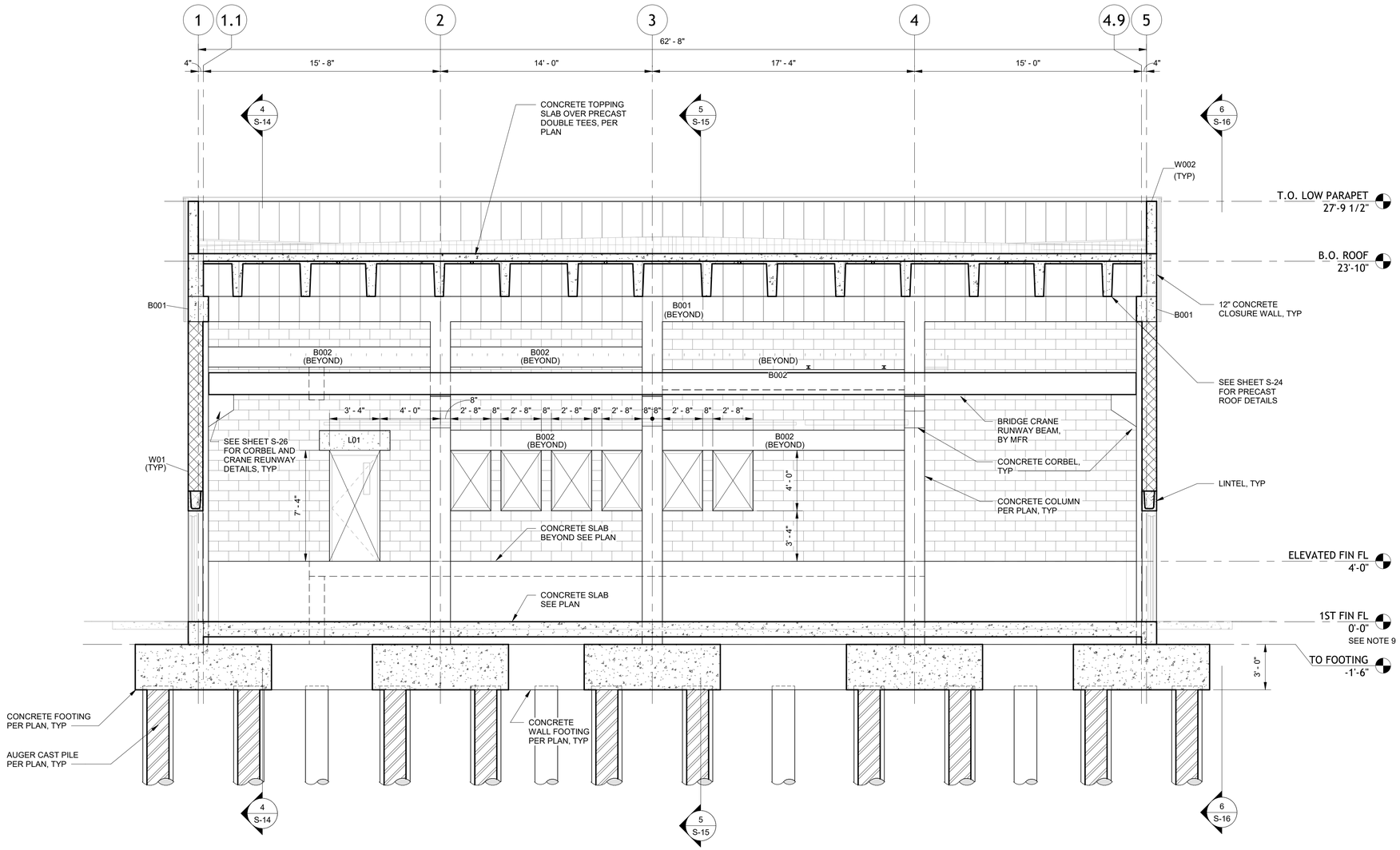
SLUDGE PROCESSING BLDG ROOF FRAMING PLAN II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-10	SHEET NO. OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 24 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 24" DIAMETER PILE, AND THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 18 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 18" DIAMETER PILE.
4. HOOK ALL DISCONTINUOUS SLAB AND CAP REINFORCEMENT TOP BARS, TYPICAL.
5. WHERE SLOPE IS INDICATED THE SLAB THICKNESS SHOWN ARE MINIMUM, AND SLAB BOTTOM SHALL REMAIN LEVEL/FLAT.
6. COORDINATE PIPE PENETRATION SIZE, LOCATION, AND SEAL DETAIL WITH MECHANICAL.
7. COORDINATE STANDARD MASONRY WALL OPENING SIZE AND LOCATION WITH ARCHITECTURAL.
8. SLOPE TOP OF 12" CLOSURE WALL TO THE SAME ELEVATION OF TOPPING SLAB PER PLAN.
9. RELATIVE ELEVATION OF 0'-0" FOR FINISH FLOOR IS USED FOR STRUCTURAL DRAWINGS AND ALL OTHER ELEVATIONS SHOWN ON STRUCTURAL SHEETS ARE BASED ON A 0'-0" FINISHED FLOOR. REFER TO CIVIL FOR ACTUAL FINISHED FLOOR ELEVATION.
10. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.



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

0' 2' 4' 8'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER: PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING SECTIONS I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 85 OF 252	

S-11

90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
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4. HOOK ALL DISCONTINUOUS SLAB AND CAP REINFORCEMENT TOP BARS, TYPICAL.
5. WHERE SLOPE IS INDICATED THE SLAB THICKNESS SHOWN ARE MINIMUM, AND SLAB BOTTOM SHALL REMAIN LEVEL/FLAT.
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7. COORDINATE STANDARD MASONRY WALL OPENING SIZE AND LOCATION WITH ARCHITECTURAL.
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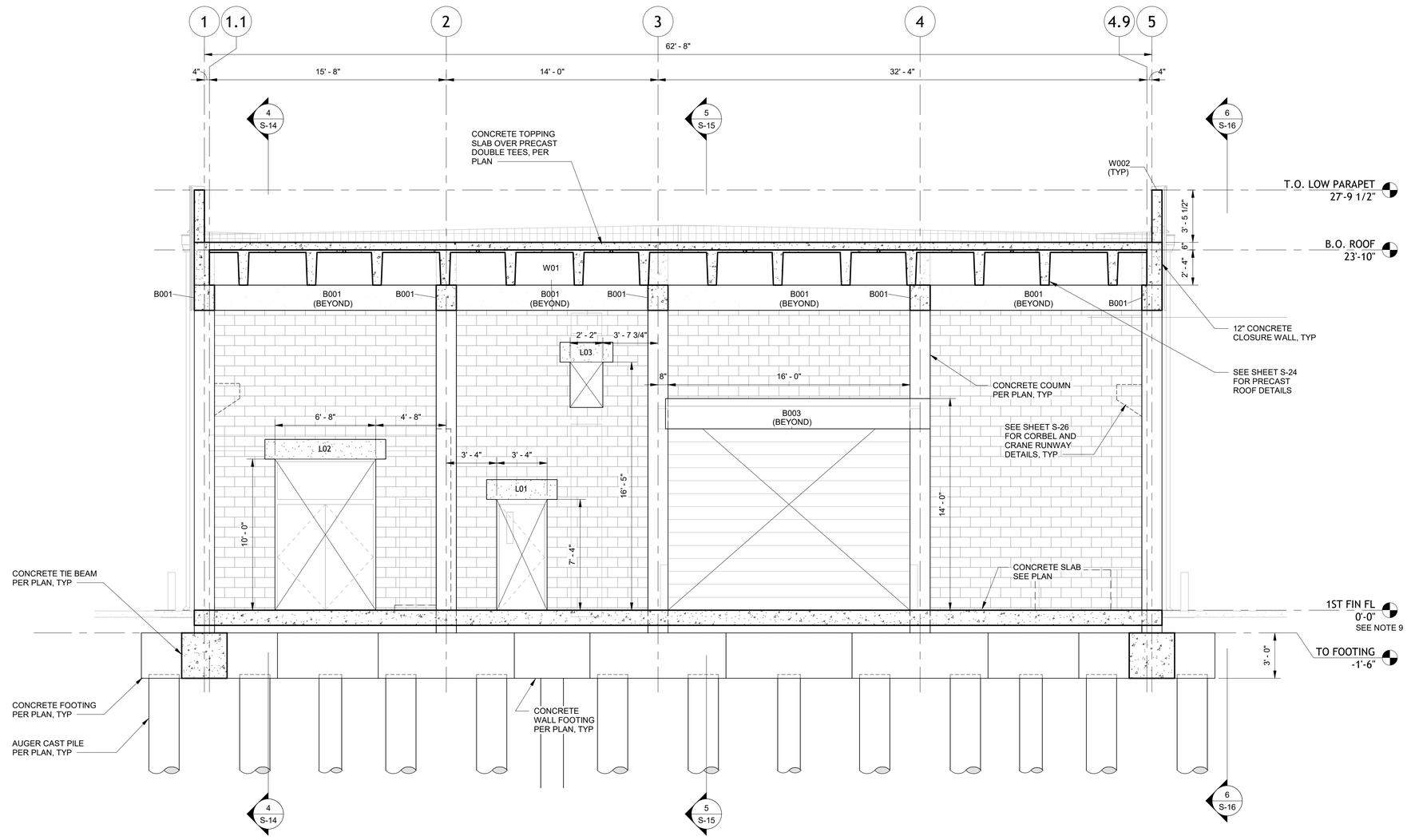

2 SECTON
1/4" = 1'-0"

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SECTIONS II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

S-12 SHEET NO. 86 OF 252

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
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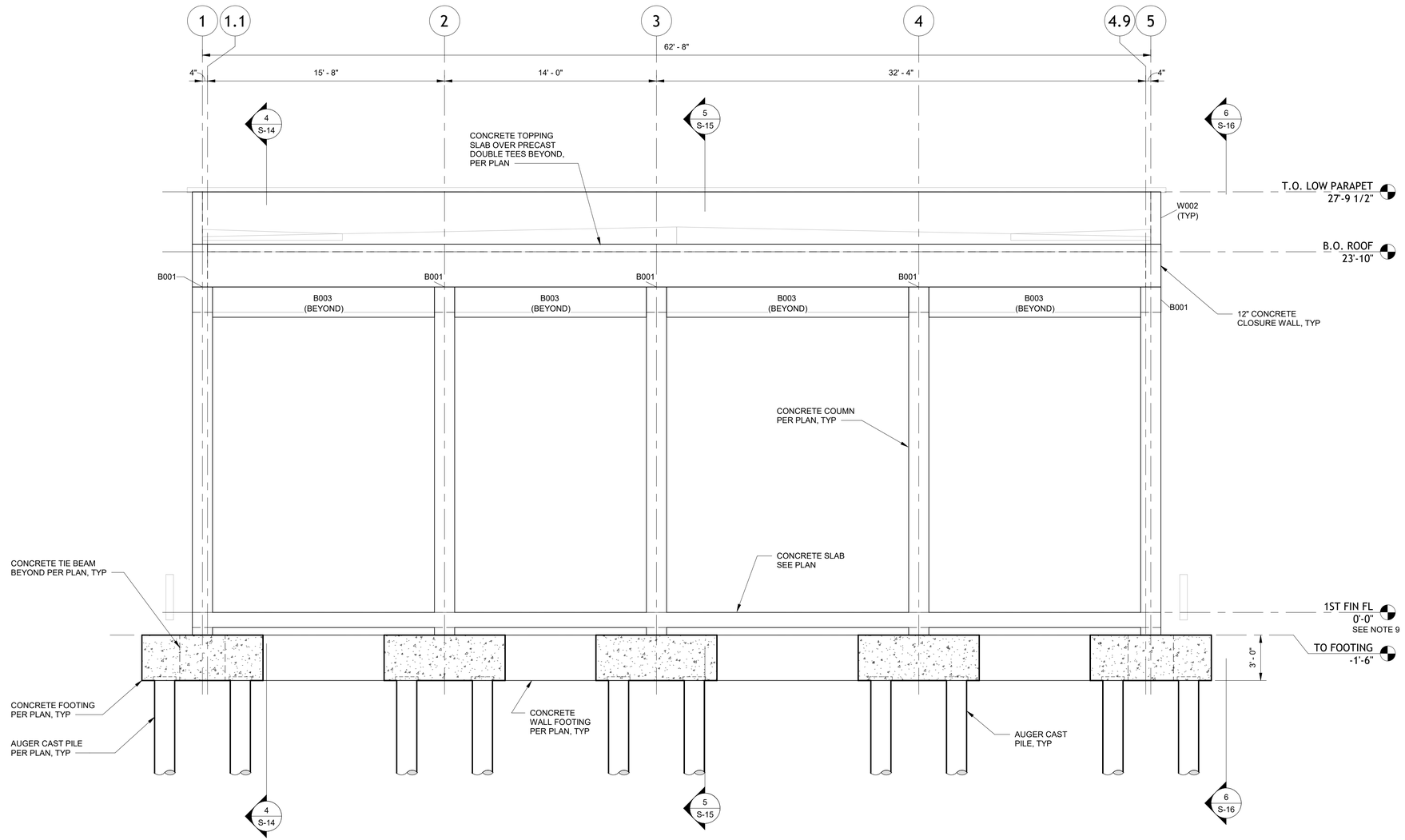

3 SECTON
1/4" = 1'-0"

0' 2' 4' 8'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

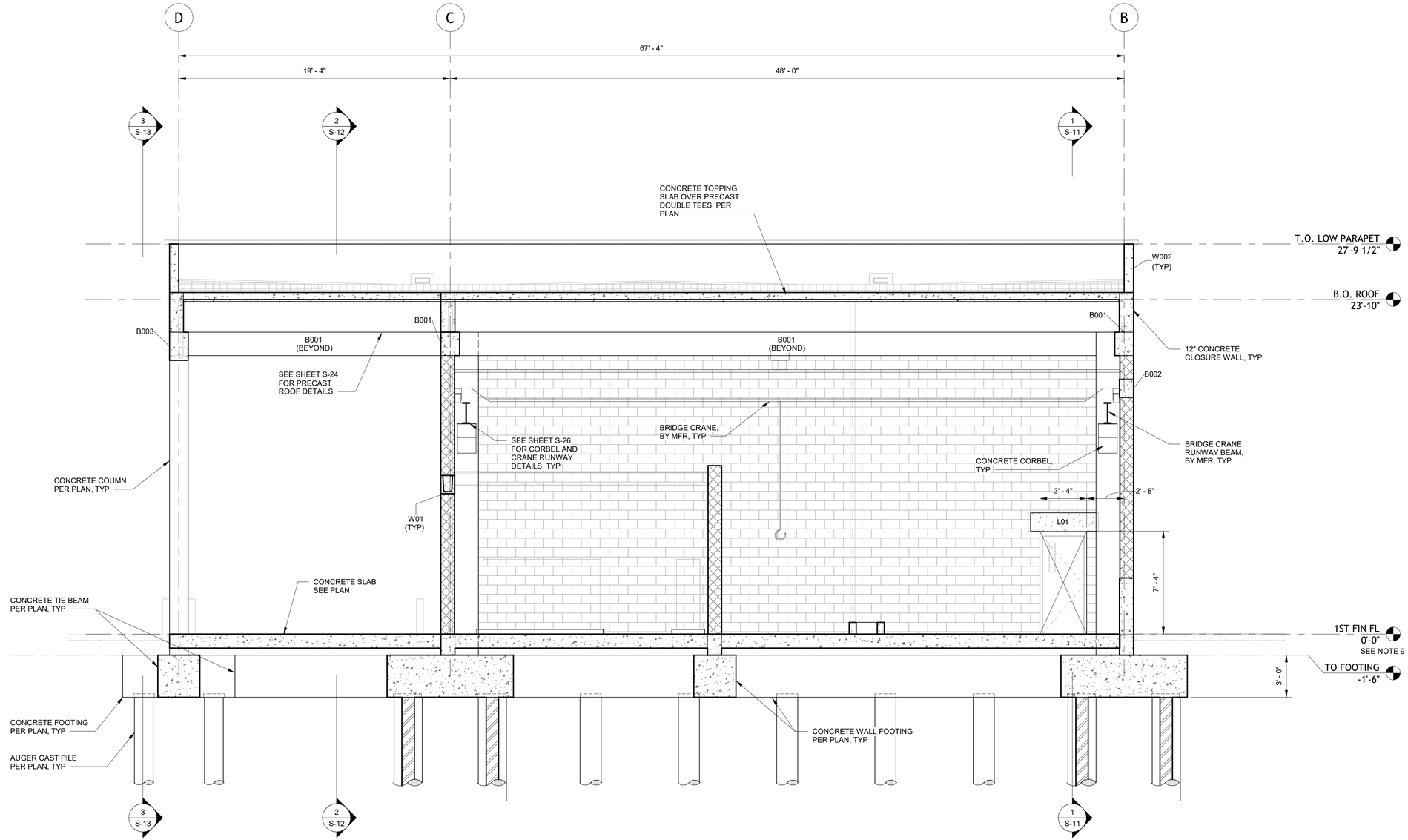
GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SECTIONS III

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

S-13 SHEET NO. 87 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



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

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 24 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 24" DIAMETER PILE, AND THE ALLOWABLE PILE CAPACITY IS REQUIRED TO BE 18 TON MIN COMPRESSIVE CAPACITY AND 5 TON MIN SHEAR CAPACITY FOR A 18" DIAMETER PILE.
4. HOOK ALL DISCONTINUOUS SLAB AND CAP REINFORCEMENT TOP BARS, TYPICAL.
5. WHERE SLOPE IS INDICATED THE SLAB THICKNESS SHOWN ARE MINIMUM, AND SLAB BOTTOM SHALL REMAIN LEVEL/FLAT.
6. COORDINATE PIPE PENETRATION SIZE, LOCATION, AND SEAL DETAIL WITH MECHANICAL.
7. COORDINATE STANDARD MASONRY WALL OPENING SIZE AND LOCATION WITH ARCHITECTURAL.
8. SLOPE TOP OF 12" CLOSURE WALL TO THE SAME ELEVATION OF TOPPING SLAB PER PLAN.
9. RELATIVE ELEVATION OF 0'-0" FOR FINISH FLOOR IS USED FOR STRUCTURAL DRAWINGS AND ALL OTHER ELEVATIONS SHOWN ON STRUCTURAL SHEETS ARE BASED ON A 0'-0" FINISHED FLOOR. REFER TO CIVIL FOR ACTUAL FINISHED FLOOR ELEVATION.
10. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SECTIONS IV

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-14	SHEET NO. 88 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
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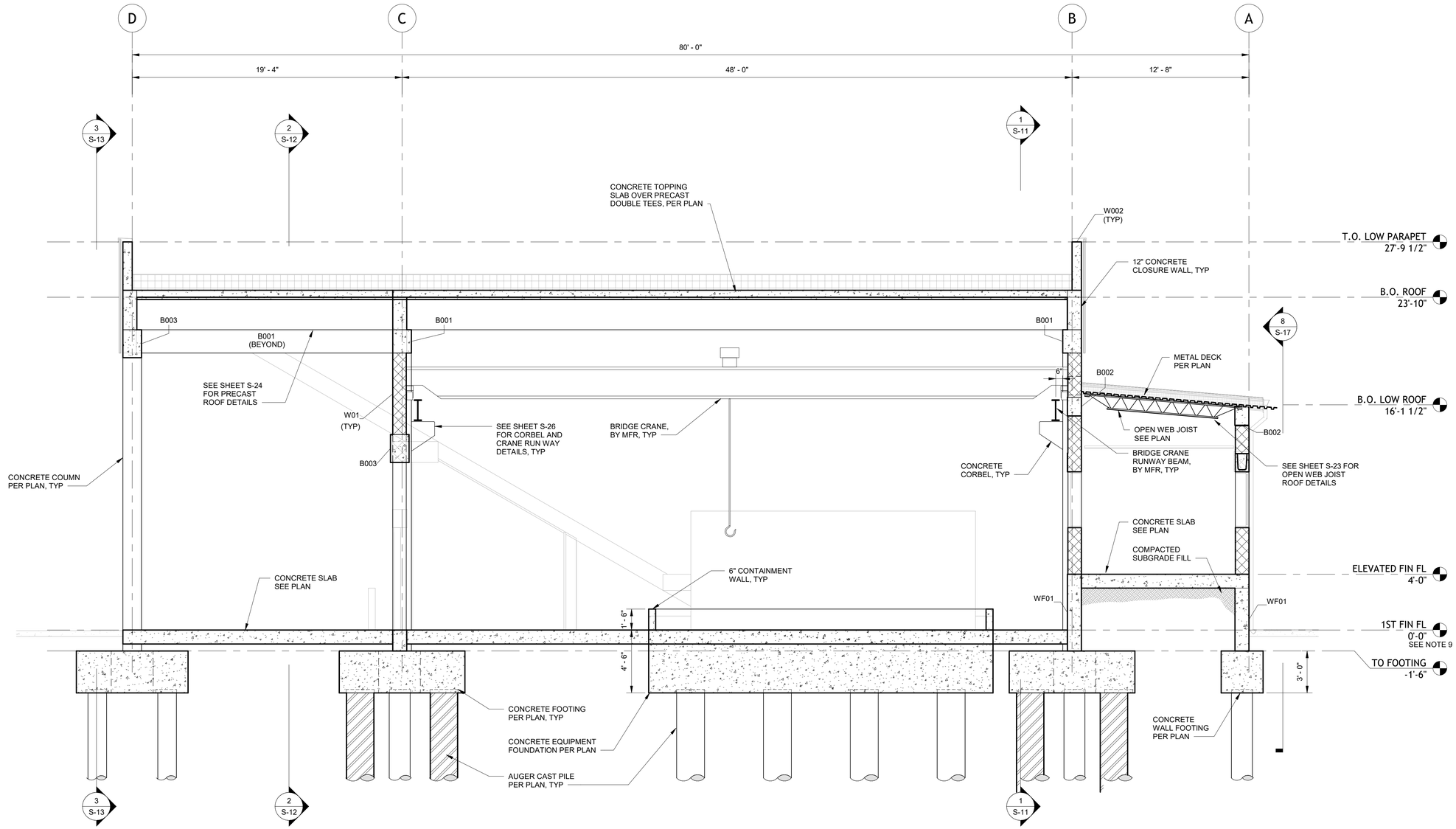

5 SECTION
1/4" = 1'-0"

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING SECTIONS V

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-15	SHEET NO. 89 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
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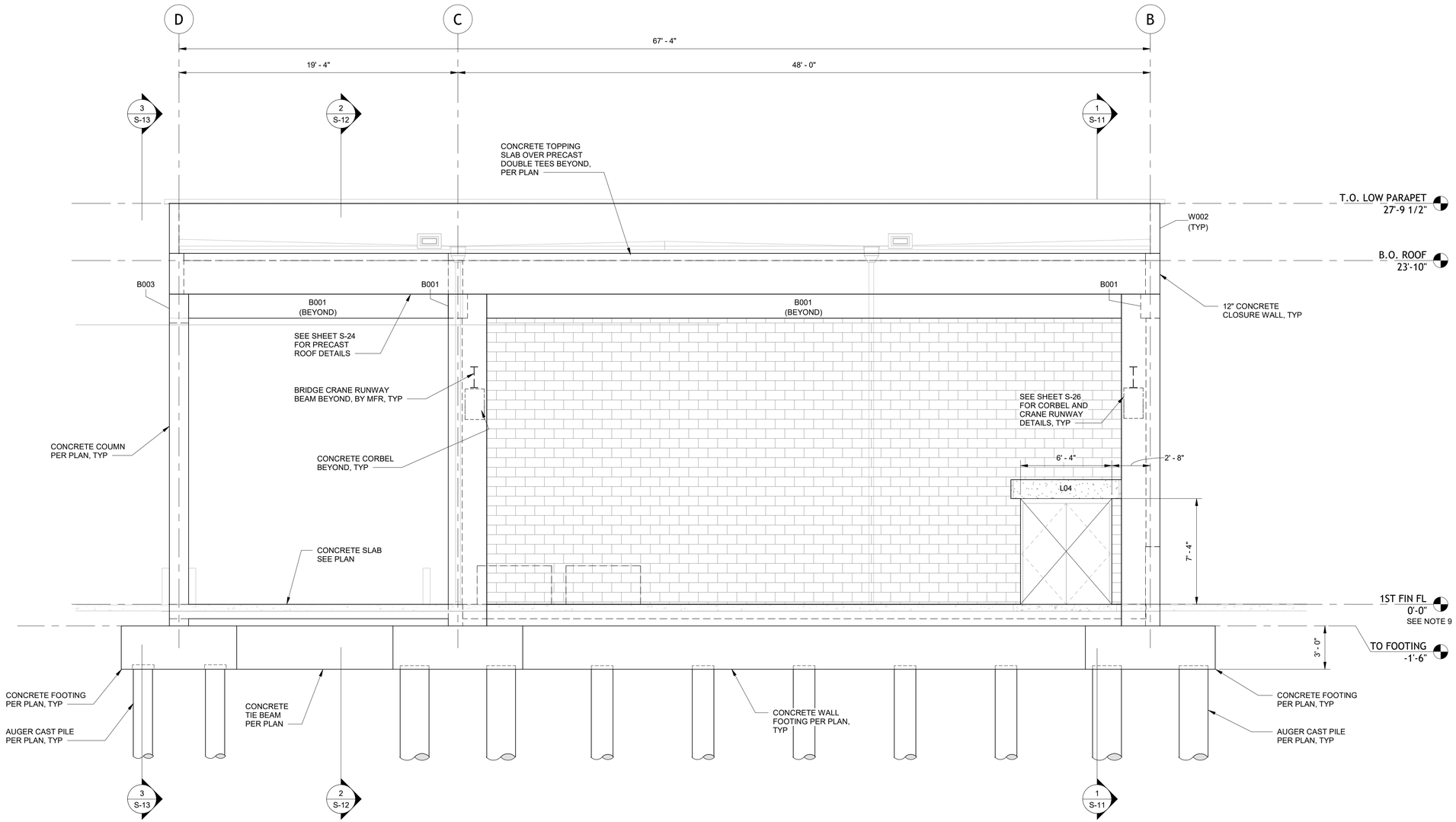

6 SECTION
1/4" = 1'-0"

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SECTIONS VI

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-16	SHEET NO. 90 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
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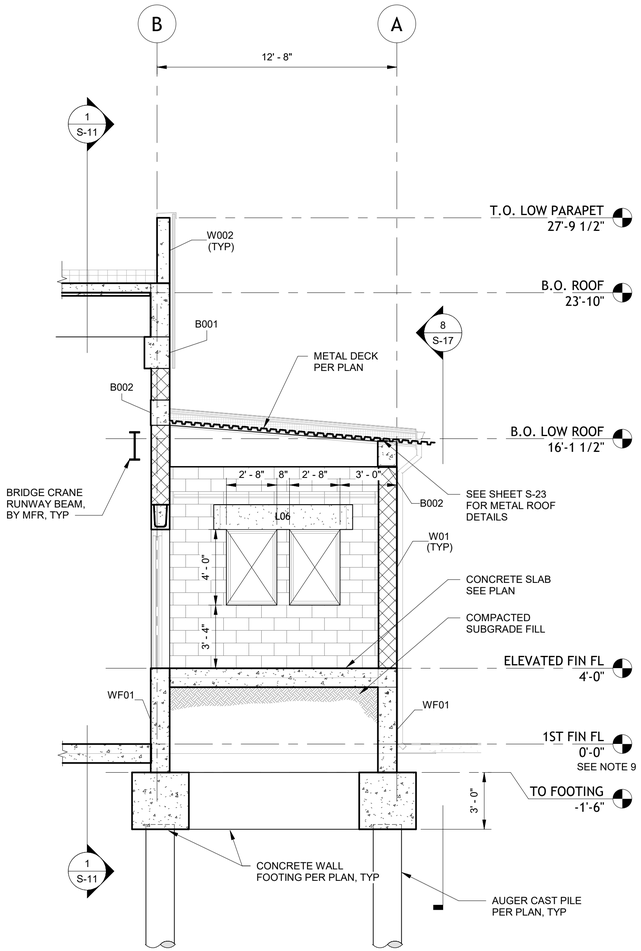
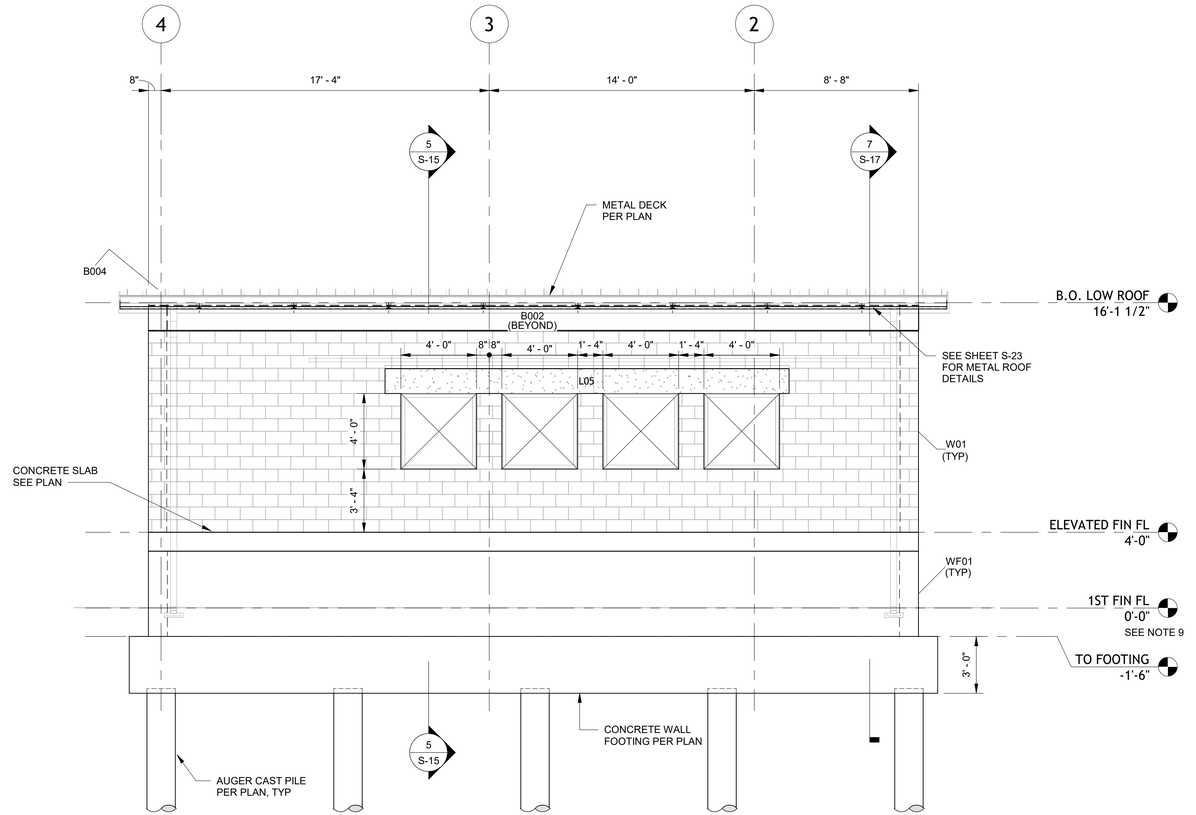


7 SECTION
1/4" = 1'-0"



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

0' 2' 4' 8'

GRAPHIC SCALE

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 000000

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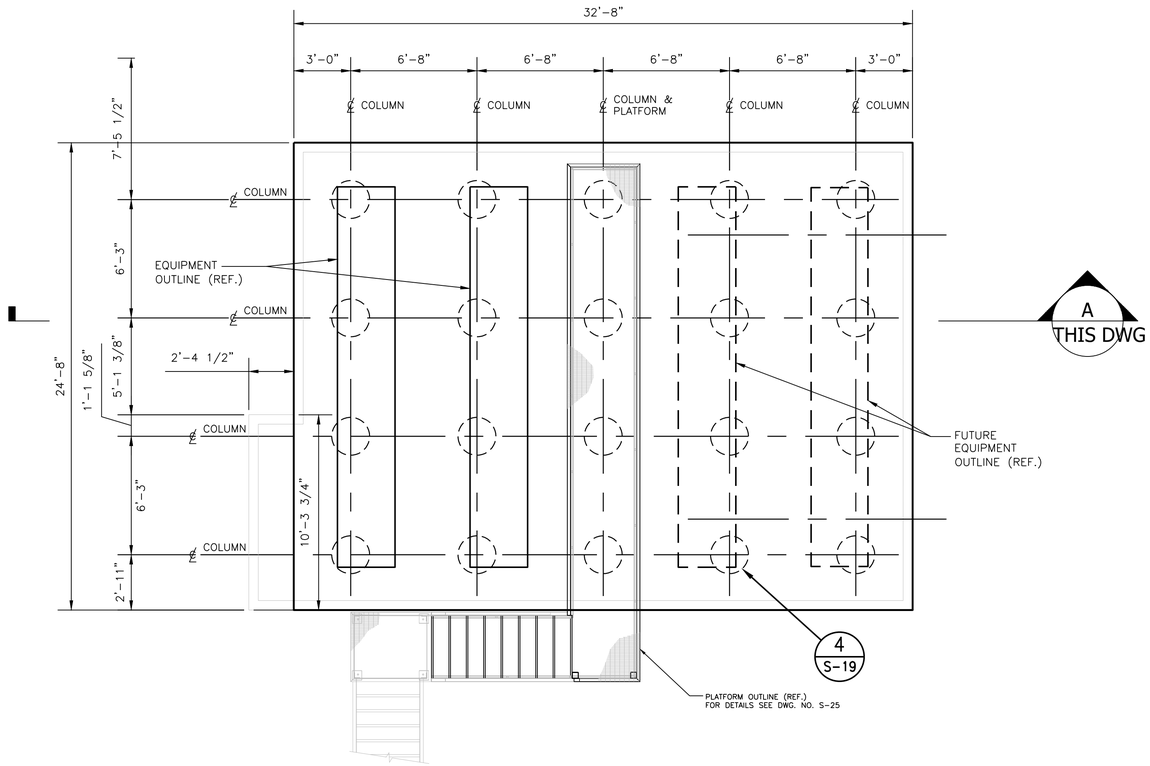
RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

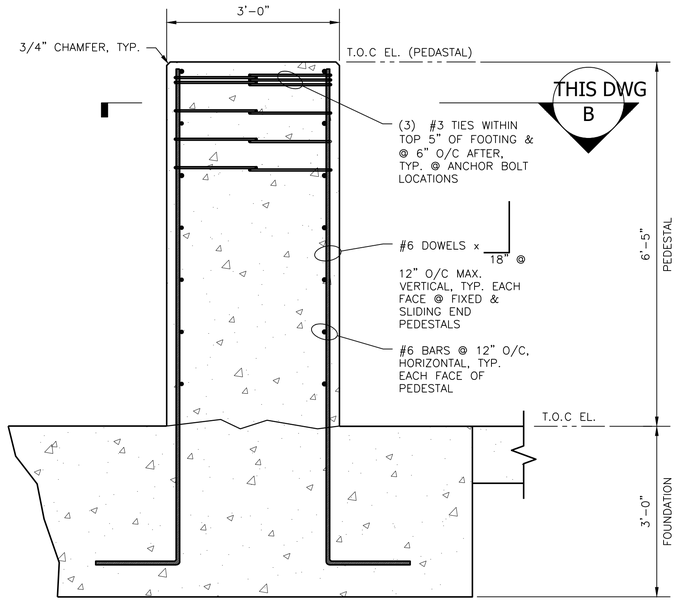
GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING SECTIONS VII

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-17	SHEET NO. 91 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



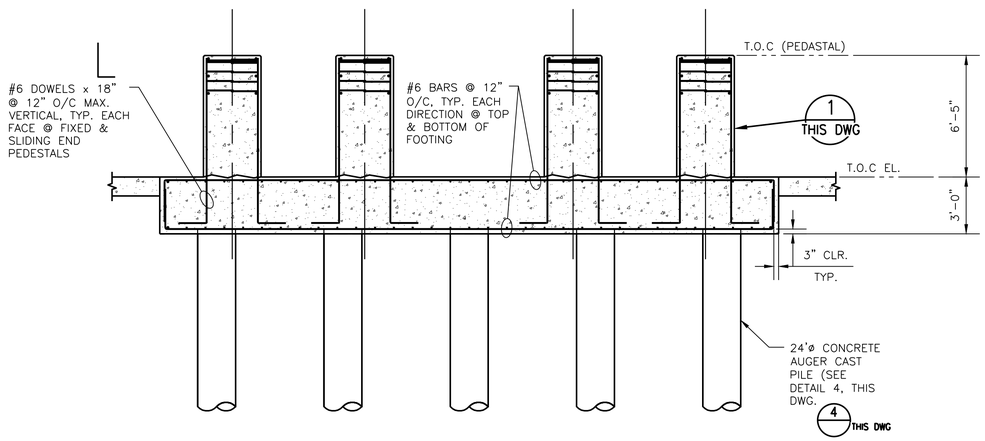
1 BELT PRESS FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



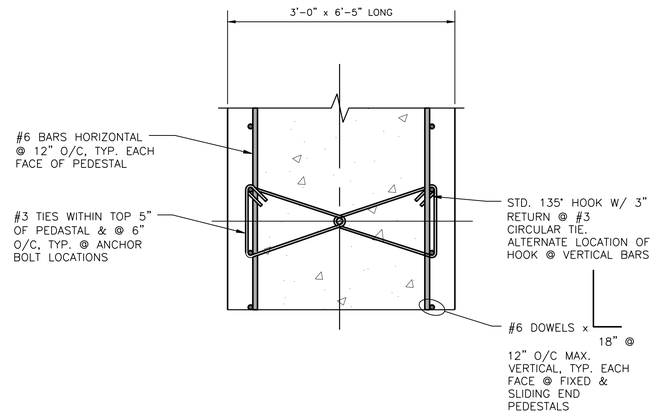
1 PEDESTAL DETAIL
SCALE: 3/4"=1'-0"

NOTES:

1. FOUNDATION ORIENTATION, LOCATION AND ELEVATION CONTROLS ARE TO BE IN ACCORDANCE WITH THE GENERAL PLOT PLANS, DWG. S-07.
2. ALL WORK SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2021 EDITION.
3. ONE (1) FOUNDATION INSTALLATION IS REQUIRED FOR THIS PROJECT.
4. THIS PLAN IS FOR THE STRUCTURAL DESIGN OF THE FOUNDATION ONLY. ALL DETAILS NOT SPECIFICALLY SHOWN SHALL BE BY OTHERS.
5. FOR GENERAL STRUCTURAL NOTES AND MATERIAL SPECIFICATIONS, REFER TO DWG. S-01.
6. FOUNDATIONS SHALL BEAR 12" MINIMUM INTO NATURAL OR FINISHED GRADE, WHICHEVER IS LOWER. FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED NATURAL GRADE OR BEAR ON CERTIFIED, COMPACTED FILL. THE GRADE AROUND THE FOUNDATION SHALL SLOPE DOWN AND AWAY AT 2% SLOPE, MIN., FOR 5 FEET, MIN.
7. CONTRACTOR SHALL VERIFY THE FOLLOWING AT THE SITE PRIOR TO START OF CONSTRUCTION:
   A. EQUIPMENT LOCATION
   B. FINISH GRADE AND TOP OF CONCRETE ELEVATIONS
   C. NOZZLE CLEARANCES AND TIE-IN POINT LOCATIONS AND ELEVATIONS
8. CONTRACTOR SHALL ALSO BRING ANY AND ALL PHYSICAL INTERFERENCES NOTED DURING FIELD VERIFICATIONS TO THE OWNER'S ATTENTION PRIOR TO THE START OF CONSTRUCTION.
9. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO LOCATE ALL EXISTING ABOVE AND UNDER GROUND PIPELINES, CONDUIT, UTILITIES, ETC., AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA, STATE AND LOCAL SAFETY REGULATIONS AND ALL OWNER SAFE PRACTICES DURING ALL PHASES OF THIS WORK.
10. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN WITH ACTUAL TANK CONSTRUCTION. SHOULD CONDITIONS EXIST CONTRARY TO THOSE SHOWN, CONTRACTOR SHALL NOTIFY THE OWNER / ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITIES, BURIED PIPELINES & CONDUIT, ETC., AND SHALL PROTECT THEM FROM DAMAGE. CONTRACTOR SHALL BRING ANY AND ALL INTERFERENCES NOTED DURING FIELD CONSTRUCTION TO THE COMPANY'S / ENGINEER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
12. THE CONTRACTOR SHALL BE EXTRA CAUTIOUS WORKING IN THE VICINITY OF EXISTING CHANNEL. FOR THE PURPOSE OF SOIL COMPACTION, THE CONTRACTOR SHALL USE HAND HELD EQUIPMENT WHEN WORKING ADJACENT TO THE EXISTING CHANNEL IN ORDER NOT TO CAUSE ANY STRUCTURAL DAMAGE TO THE EXISTING CHANNEL. IN THE EVENT THAT DAMAGES ARE IDENTIFIED, IMMEDIATE REPLACEMENTS OR REPAIRS TO THE SATISFACTION OF LACDPW'S WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.



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



B SECTION (TIES @ ANCHORAGE)
SCALE: 1"=1'-0"

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

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

0 4' 8' 12'
SCALE: 3/16" = 1'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER: PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

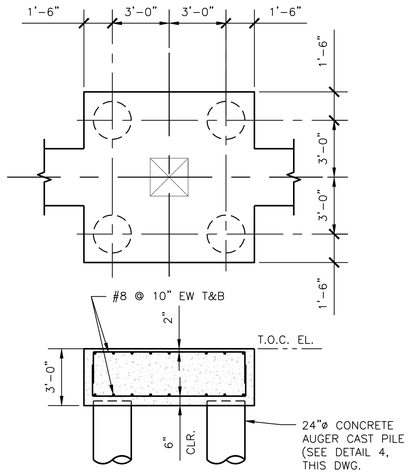
GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING FOUNDATION DETAILS I

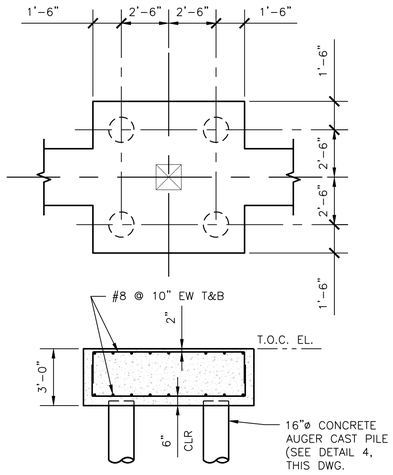
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-18	SHEET NO. 101 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

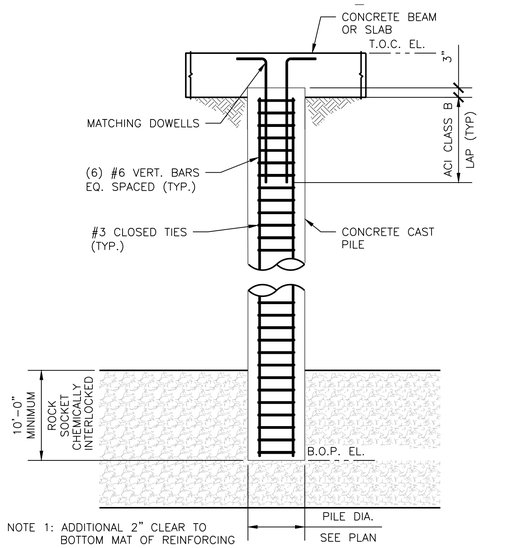
U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-19.dwg Dec 19, 2025 - 2:30pm User: p001435c



2 CAST PILE DETAIL 1
SCALE: 1/4" = 1'-0"

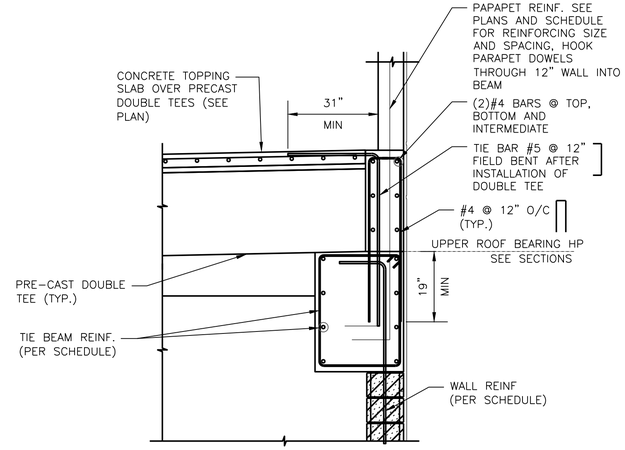


3 CAST PILE DETAIL 2
SCALE: 1/4" = 1'-0"

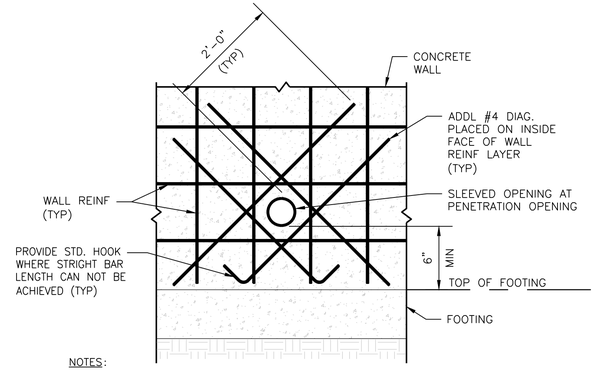


NOTE 1: ADDITIONAL 2" CLEAR TO BOTTOM MAT OF REINFORCING

4 TYPICAL AUGER CAST PILE DETAIL
SCALE: 1/2" = 1'-0"



5 CONCRETE CLOSURE WALL DETAIL
SCALE: 1/2" = 1'-0"

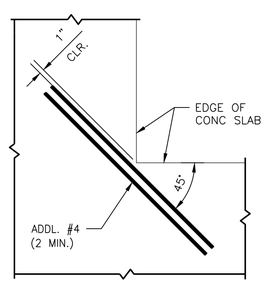


NOTES:

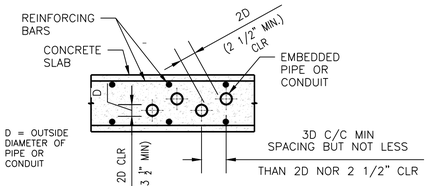
1. THIS DETAIL APPLIES TO WALL PENETRATIONS HAVING AN OUTSIDE DIMENSION NO GREATER THAN THE WALL REINFORCEMENT SPACING MINUS 2". PROVIDE 1" MIN. CLEAR SPACE BETWEEN SLEEVE AND REINFORCING BARS.

2. WALL REINFORCEMENT SHALL NOT BE INTERRUPTED. SHIFT REINFORCEMENT AND/OR PENETRATION WITHIN STANDARD TOLERANCES TO AVOID INTERRUPTING WALL REINFORCEMENT. WALL REINFORCEMENT MAY BE SHIFTED +/- 3" PER ACI 117.

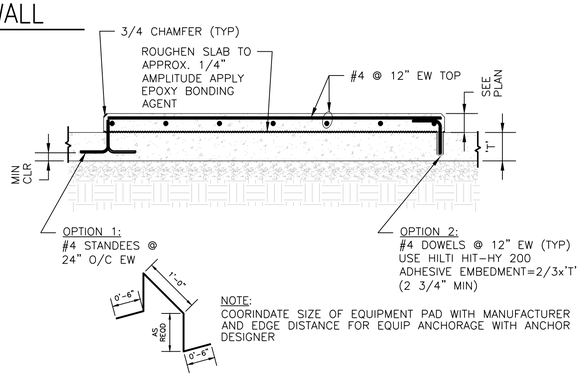
6 TYP. UTILITY PENETRATION IN CONC. FDN. WALL
SCALE: 3/4" = 1'-0"



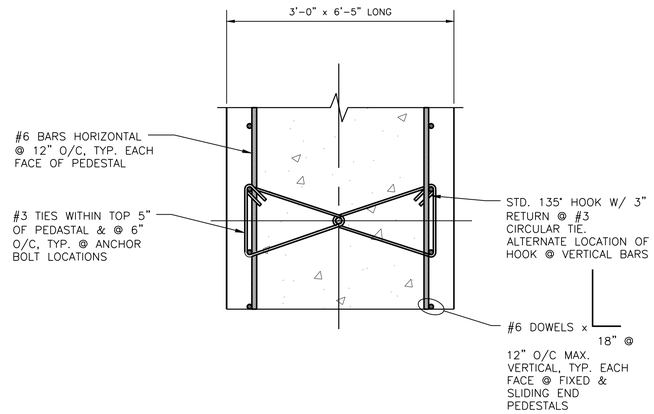
7 TYP. SLAB RE-ENTRANT CNR. REINF.
SCALE: 3/4" = 1'-0"



8 EMBEDED PIPE OR CONDUIT IN SLAB
SCALE: 3/4" = 1'-0"



9 TYP. EQUIP. HOUSEKEEPING PAD
SCALE: 3/4" = 1'-0"



C SECTION (TIES @ ANCHORAGE)
SCALE: 1"=1'-0"

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

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TEXAS LICENSE NO. 83416
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

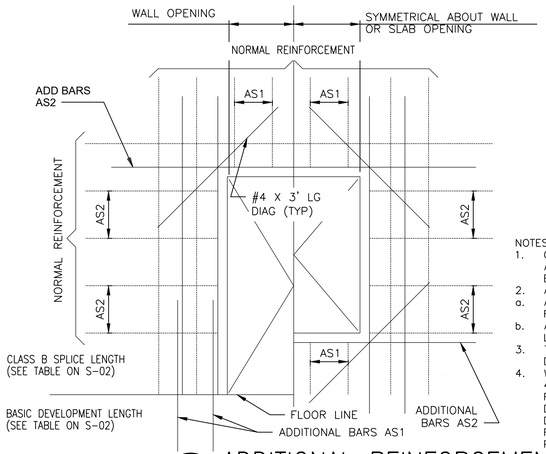
GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING FOUNDATION DETAILS II

WBS NUMBER	R-000265-0162-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	SHAN LEI, P.E.
SHEET NO. 101 OF 256	

FOR CITY OF HOUSTON USE ONLY

S-19

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-18-19.dwg Dec 19, 2025 - 4:42pm User: p001435c

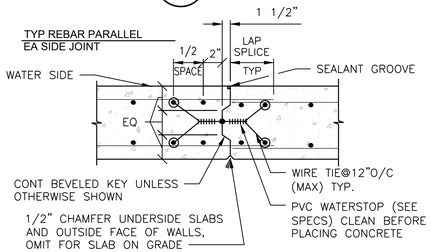


AS = AREA OF REINFORCEMENT

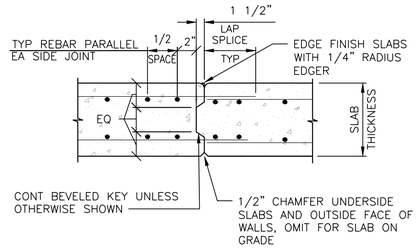
BAR SIZE	DEV. LENGTH f'C = 5,000 PSI
#4	17"
#5	22"
#6	26"
#7	38"
#8	43"
#9	48"
#10	69"

NOTES:
1. CUT NORMAL REINFORCEMENT AT OPENINGS. AS1 AND AS2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING.
2. ADDITIONAL BARS AS1 AND AS2 TO BE PLACED:
   a. AT C OF WALLS OR SLABS WHERE ONE LAYER OF L REINFORCEMENT IS PROVIDED.
   b. AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
3. THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS.
4. WHERE INVERT OF OPENING IN WALL IS CLOSER THAN 44 BAR DIAMETERS FROM TOP OF SLAB, EXTRA REINFORCEMENT ON EACH SIDE SHALL INCLUDE DOWELS EMBEDDED INTO SLAB WITH STANDARD 90 DEGREE HOOKS TO SPLICE WITH EXTRA VERTICAL REINFORCEMENT. DOWELS SHALL ALSO STILL BE PROVIDED BELOW OPENING.

10 ADDITIONAL REINFORCEMENT
SCALE: 3/4" = 1'-0"



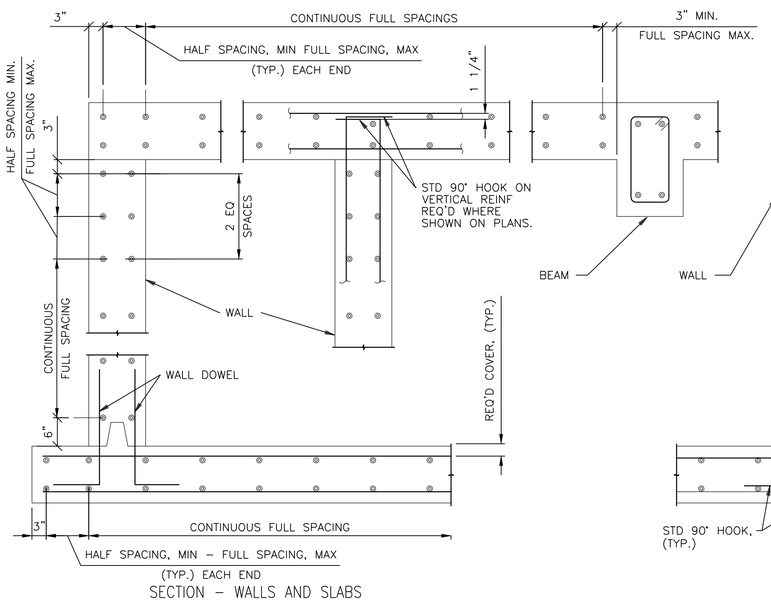
WATER BEARING WALL OR SLAB
& WALL OR SLAB IN CONTACT WITH GROUNDWATER



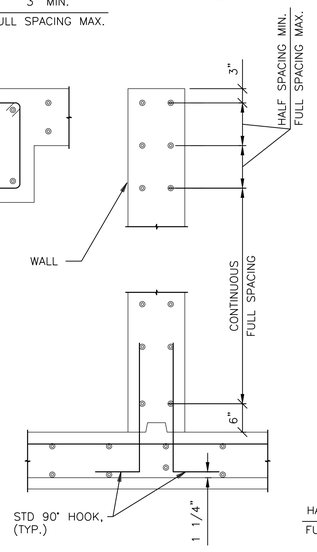
NON WATER BEARING WALL OR SLAB

NOTES:
1. SEE SPECIFICATIONS AND STRUCTURAL GENERAL NOTES FOR LOCATION OF CONSTRUCTION JOINTS.
2. CLEAN JOINT AND REINFORCING PRIOR TO PLACING ADJOINING CONCRETE.

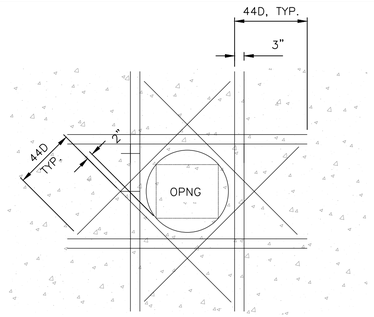
13 TYPICAL CONSTRUCTION JOINT
SCALE: 1 1/2" = 1'-0"



SECTION – WALLS AND SLABS



16 TYPICAL BAR PLACEMENT
SCALE: 3/4" = 1'-0"



NOTES:
1. THIS DETAIL APPLIES FOR OPENINGS 8" DIA AND LARGER FOR SMALLER OPENINGS, BEND BARS OR ADJUST SPACING OF REINFORCEMENT TO AVOID OPENING.
2. PLACE EXTRA BARS OF THE SAME SIZE AS THE INTERRUPTED BARS AT EACH SIDE OF OPENING. QUANTITY OF EXTRA BARS AT EACH SIDE SHALL EQUAL HALF THE QUANTITY OF INTERRUPTED BARS EXCEPT WHERE NOTED OTHERWISE.
3. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING WITH SIZE EQUAL TO MAIN REINFORCEMENT, TYPICAL EACH FACE.
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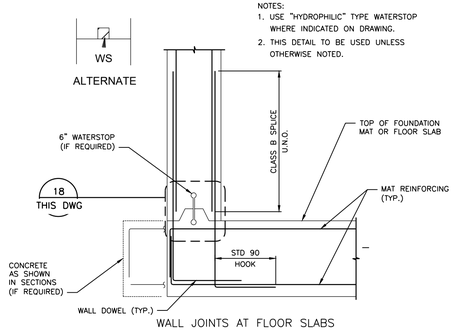
5. WHERE INVERT OF OPENING IN WALL OR SLAB IS CLOSER THAN 44 BAR DIAMETERS TO EDGE OF SLAB OR BOTTOM OF WALL, EXTRA DIAGONAL BARS MAY BE TERMINATED TWO INCHES FROM EDGE OF SLAB OR BOTTOM OF WALL. DOWELS DO NOT HAVE TO BE PROVIDED TO SPLICE WITH DIAGONAL BARS.

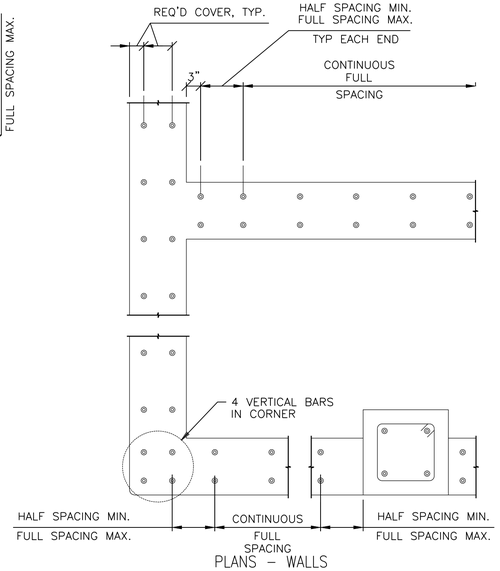
11 TYPICAL REINF AT OPENINGS
SCALE: 1/2" = 1'-0"



WALL JOINTS AT FLOOR SLABS

SECTION

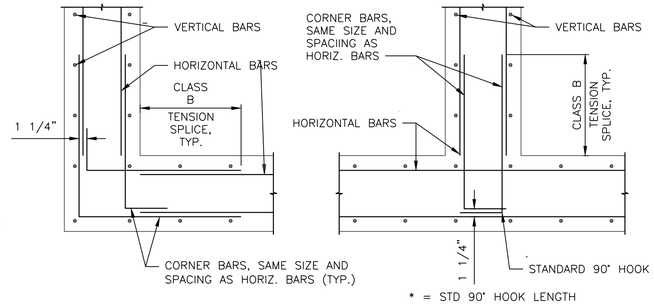
14 TYPICAL WALL TO SLAB/FDN CONSTRUCTION JOINT
SCALE: 1 1/2" = 1'-0"



PLANS – WALLS

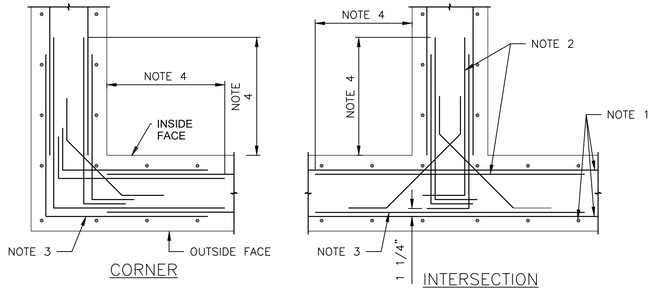
NOTES:
1. ORIENTATION OF OUTSIDE AND INSIDE LAYERS OF REINF SHALL BE AS SHOWN ON PLANS.
2. "FULL SPACING" IS BAR SPACING CALLED OUT ON PLANS.

ADDITIONAL DIAGONAL BARS, REQUIRED IN LIQUID RETAINING WALLS ONLY (TRENCHES, ETC), ALTERNATE WITH HORIZONTAL BARS AND SIZE PER CHART.



CORNER INTERSECTION

12 TYPICAL WALL REINFORCING
SCALE: 1" = 1'-0"



CORNER INTERSECTION

NOTES: (WALL REINFORCING)
1. BASIC WALL REINF. AS SHOWN IN WALL SCHEDULES.
2. ADDITIONAL INSIDE REINFORCING BARS AT CORNERS AND WALL INTERSECTIONS. SEE DESIGN DRAWINGS FOR BAR SIZE, SPACING, AND LENGTH. ALTERNATE WITH BASIC reinf.
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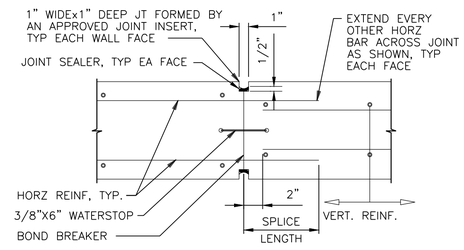
4. 1/4 THE CLEAR DISTANCE TO OPPOSITE WALL FOR THE SHORTER WALL PANEL. U.O.N. ON PLANS.

15 TYPICAL ADDED REINFORCEMENT AT WALL INTERSECTIONS
SCALE: 1" = 1'-0"



17 TYPICAL WALL CONTROL JOINT
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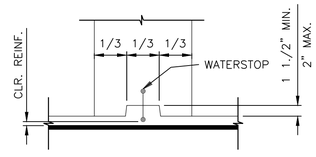


18 TYPICAL KEYWAY
SCALE: 1 1/2" = 1'-0"

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

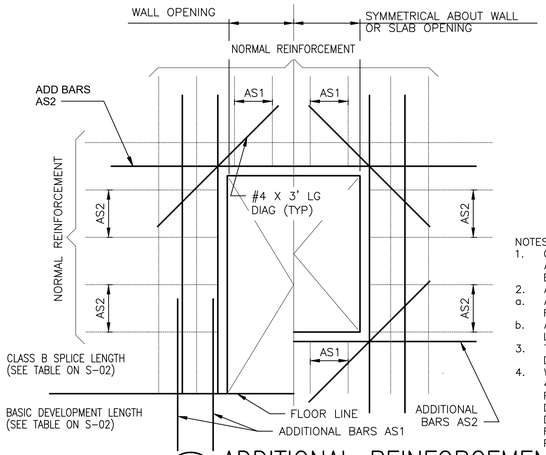
GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING CONCRETE DETAILS I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-20	SHEET NO. 103 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-20.dwg Dec 19, 2025 - 2:37pm User: p001435c



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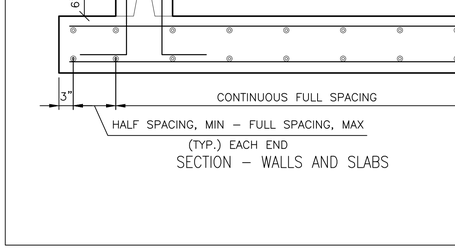
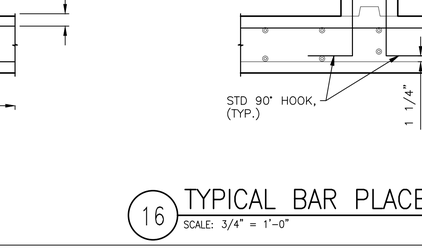


WATER BEARING WALL OR SLAB
& WALL OR SLAB IN CONTACT WITH GROUNDWATER



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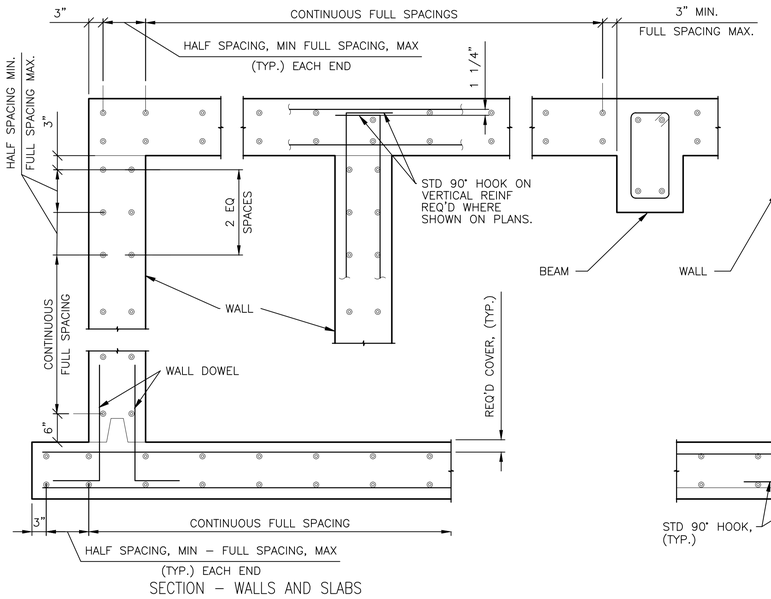
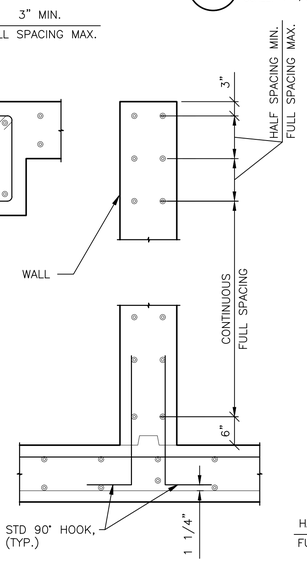


SECTION – WALLS AND SLABS



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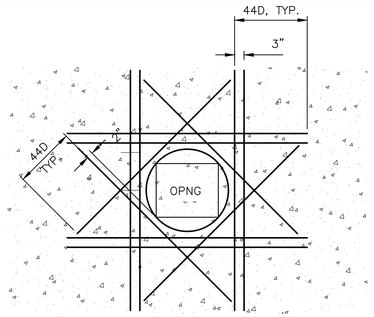

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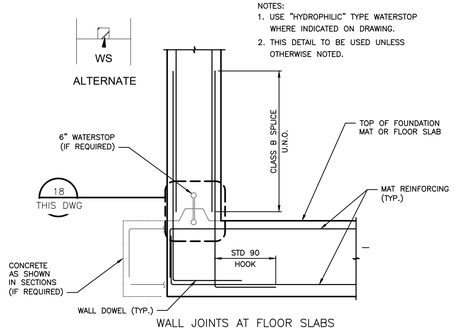

WALL JOINTS AT FLOOR SLABS

SECTION

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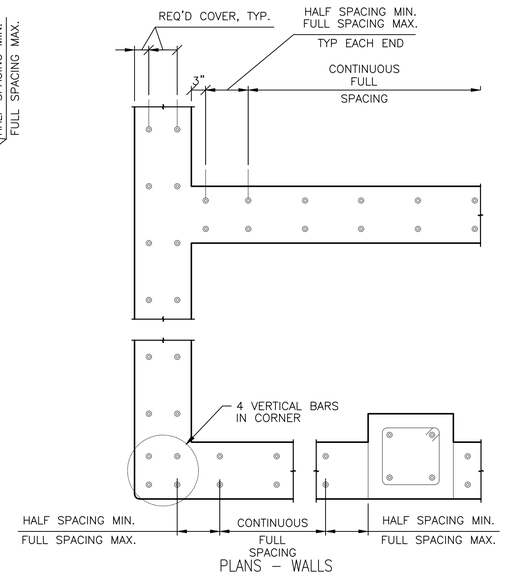

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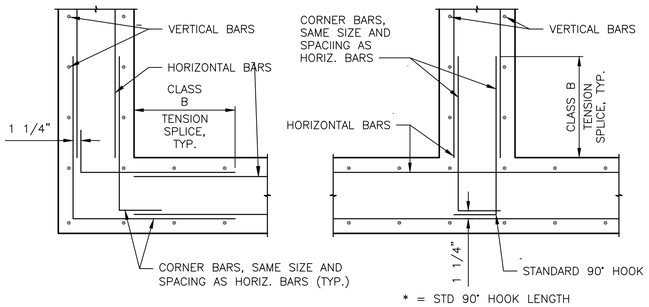
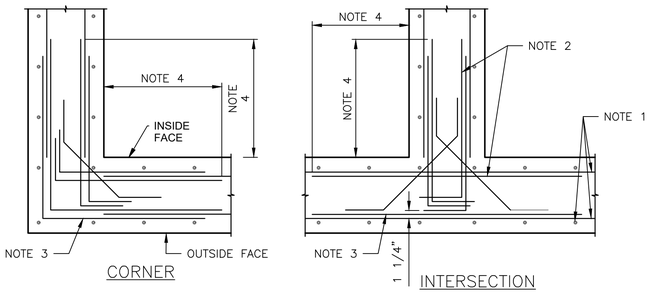


CORNER INTERSECTION

12 TYPICAL WALL REINFORCING
SCALE: 1" = 1'-0"



CORNER INTERSECTION

NOTES: (WALL REINFORCING)
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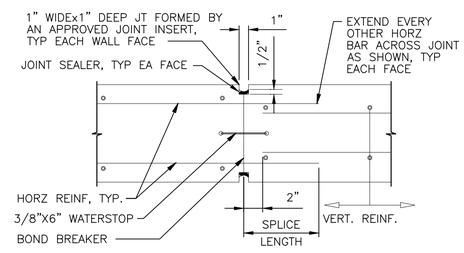
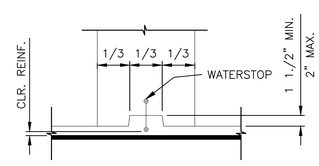
SCALE: 1" = 1'-0"



17 TYPICAL WALL CONTROL JOINT
SCALE: 1 1/2" = 1'-0"



18 TYPICAL KEYWAY
SCALE: 1 1/2" = 1'-0"

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER: PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

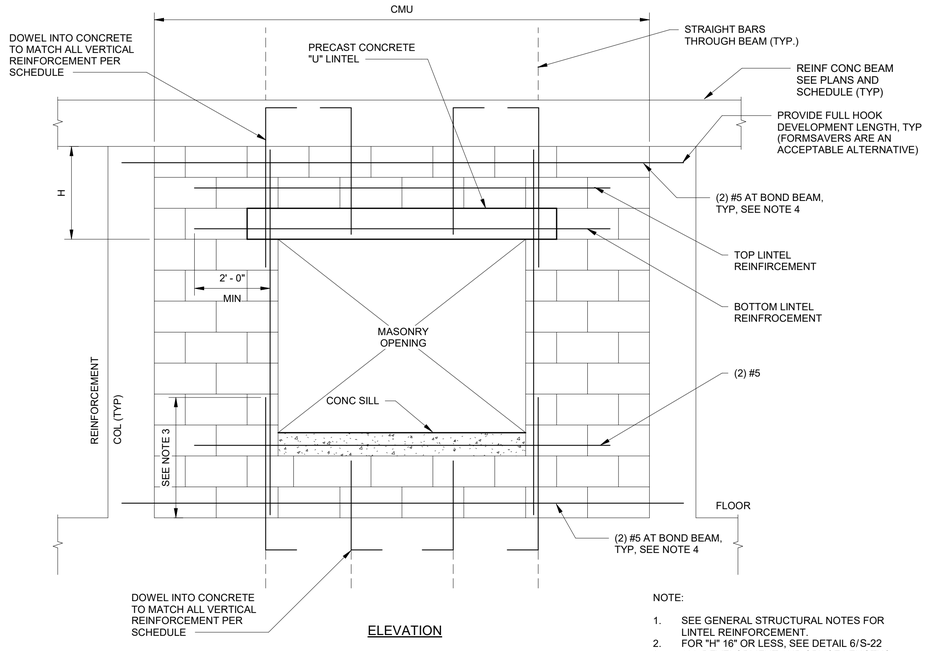
GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING CONCRETE DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-21	SHEET NO. 103 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

\\TXSAN10FS01\Jobs_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-21.dwg Dec 19, 2025 - 12:34pm User: p0088140



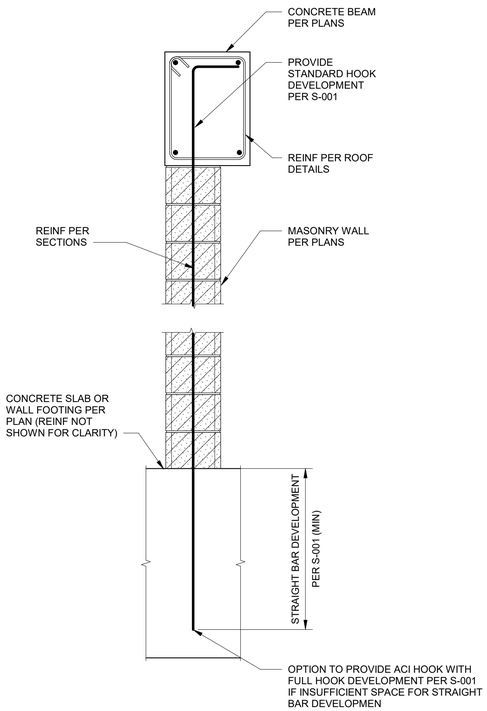
ELEVATION

NOTE:

1. SEE GENERAL STRUCTURAL NOTES FOR LINTEL REINFORCEMENT.
2. FOR "H" 16" OR LESS, SEE DETAIL 6/S-22
3. ALL DEVELOPMENT AND SPLICE LENGTHS SHALL CONFORM WITH TABLE ON S-003
4. PROVIDE CONCRETE BOND BEAMS WHERE NOTED ON DRAWINGS, AT TOP OF WALLS AND AT ALL ROOF AND FLOOR LEVELS.

1 TYPICAL MASONRY REINFORCEMENT AROUND OPENINGS

NTS



4 CMU TO BEAM

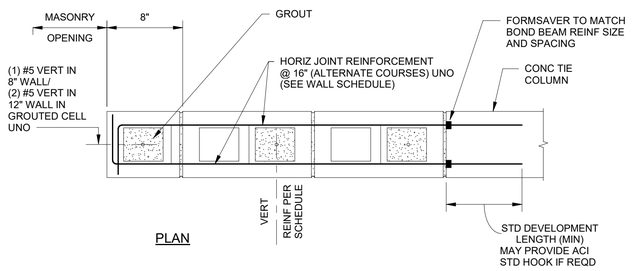
3/4" = 1'-0"

BARS CENTERED IN WALL (SINGLE REINFORCING)						
BAR SIZE	6" CMU	8" CMU	10" CMU	12" CMU	14" CMU	16" CMU
#3	18	18	18	18	18	18
#4	24	24	24	24	24	24
#5	-	30	30	30	30	30
#6	-	36	36	36	36	36

DEVELOPMENT & LAP SPLICE LENGTHS FOR MASONRY WALLS (INCHES)

5 CMU DEVELOPMENT LENGTH TABLE

12" = 1'-0"

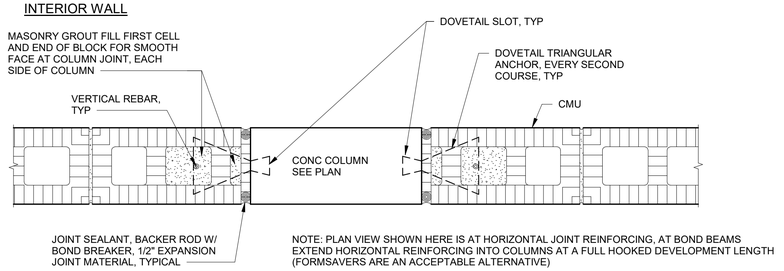


PLAN

7 TYPICAL MASONRY OPENING AND TIE COLUMN

NTS

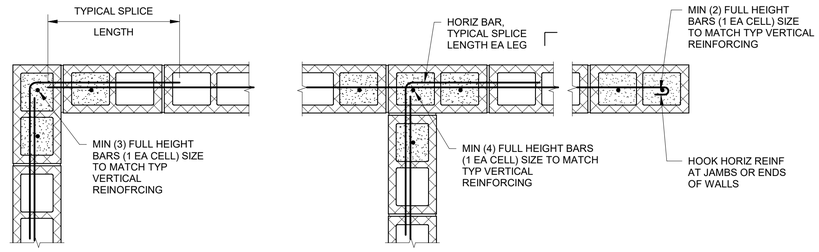
INTERIOR WALL



EXTERIOR WALL

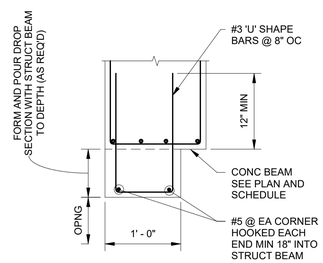
2 TYPICAL MASONRY TIE-IN AT COLUMN

NTS



3 HORIZONTAL REINFORCING AT CMU WALL INTERSECTIONS

NTS



SECTION

6 DETAIL

NTS

PLAN NORTH

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
PB

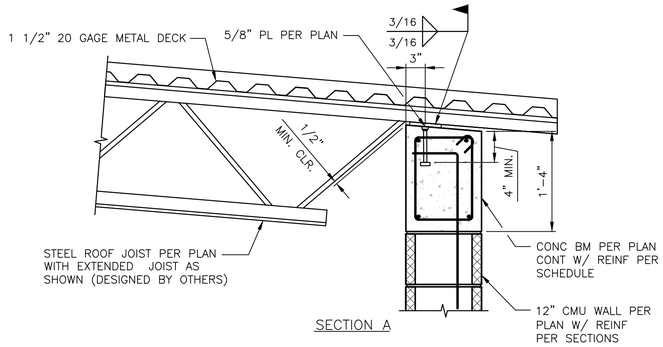
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

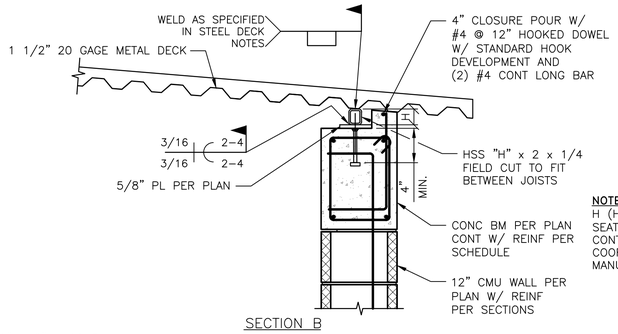
SLUDGE PROCESSING BUILDING CMU DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As Noted	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-22	SHEET NO. OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

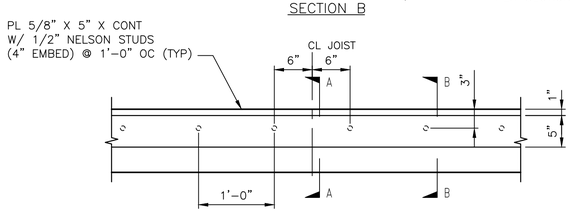


SECTION A



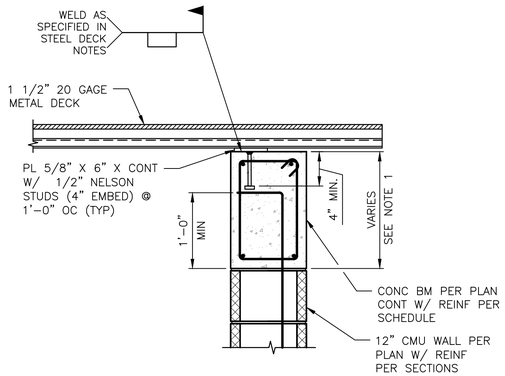
NOTE:
H (HEIGHT) TO MATCH SEAT DEPTH OF JOIST, CONTRACTOR TO COORDINATE WITH MANUFACTURER

SECTION B

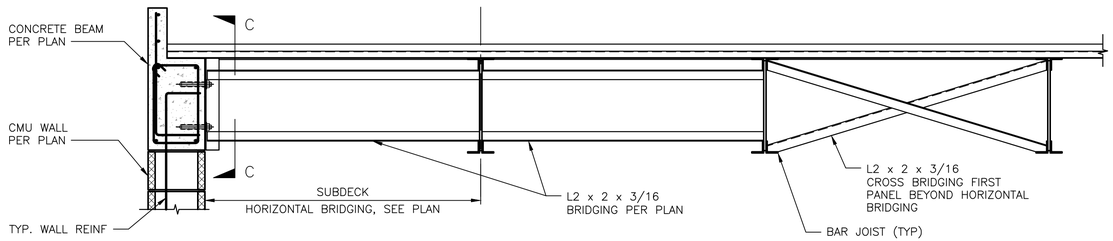


PLAN

1 ROOF DETAIL
SCALE: 1" = 1'-0"



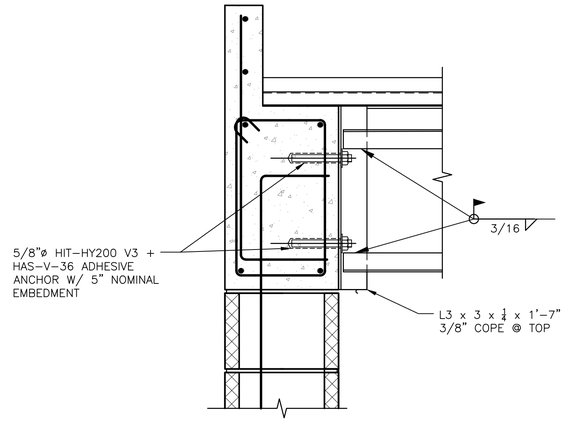
2 ROOF DETAIL
SCALE: 1" = 1'-0"



NOTE:

PROVIDE 3/16" FILLET FIELD WELDS ALONG ALL CONTACT LINES BETWEEN BRIDGING MEMBERS AND BAR JOISTS

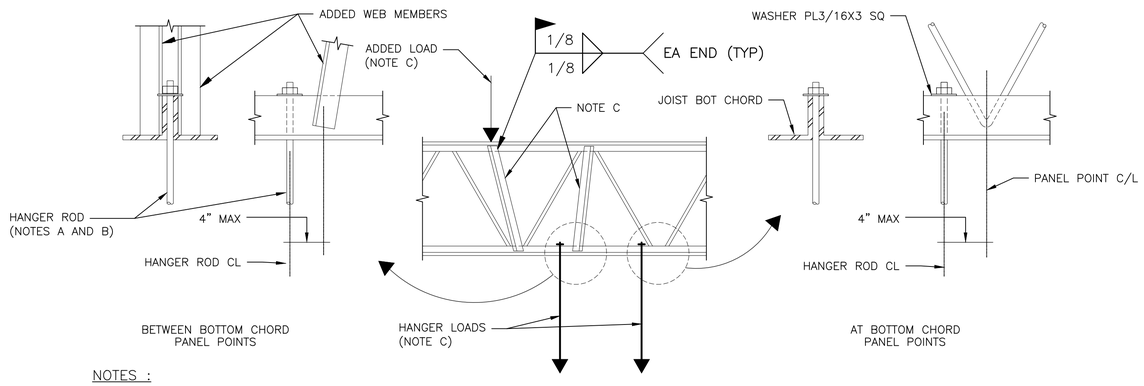
3 SUB DECK BRIDGING DETAIL
SCALE: 1" = 1'-0"



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

NOTE:

1. HEIGHT OF TAPERED BEAM SHALL BE COORDINATED BY THE CONTRACTOR. MINIMUM HEIGHT OF BEAM SHALL MATCH THE HEIGHT OF B002 + "H" - 5/8" THICK BEARING PLATE (FROM DETAIL 1) TO SUPPORT THE ROOF DECK AT THE ENDS OF BUILDING SHOWN ON DETAIL 2. TAPERED BEAM SHALL INCREASE UNIFORMLY FROM THE MINIMUM HEIGHT ABOVE ALONG THE SLOPE OF ROOF.



NOTES :

A. HANGER RODS - REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
B. POSITION HANGER RODS ON JOIST CENTERLINES BETWEEN BOTTOM CHORD JOIST MEMBERS. DO NOT USE C-CLAMPS TO CHORD ANGLE LEGS.
C. WHERE A SINGLE OR THE SUM OF MULTIPLE CONCENTRATED LOADS APPLIED BETWEEN PANEL POINTS EXCEEDS P1, SEE TYPICAL JOIST REINFORCING DETAIL.

4 JOIST SUPPORTING ARCH, MECH, ELEC, OR FIRE PROTECTION HANGING LOADS DETAIL
SCALE: 1" = 1'-0"

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

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RESPONSIBLE ENGINEER: PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING ROOF DETAILS I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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S-23	SHEET NO. 103 OF 256

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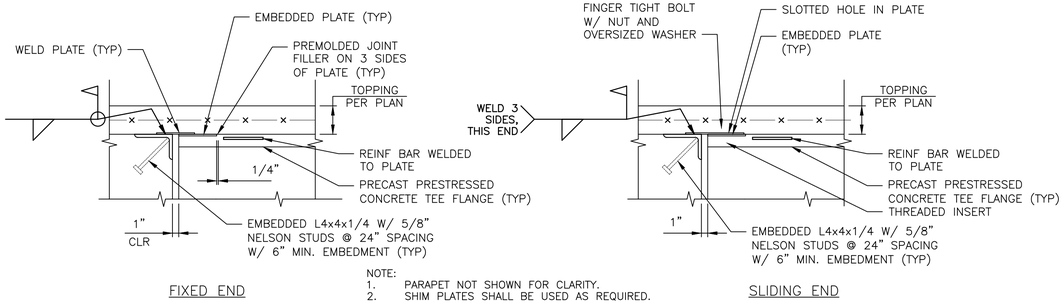
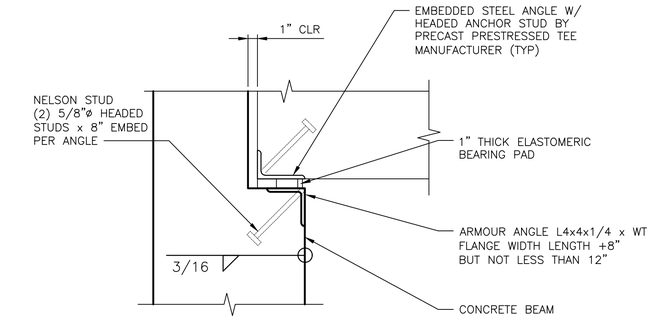
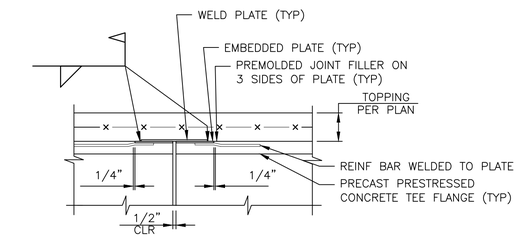


NOTE:
1. PARAPET NOT SHOWN FOR CLARITY.
2. SHIM PLATES SHALL BE USED AS REQUIRED.

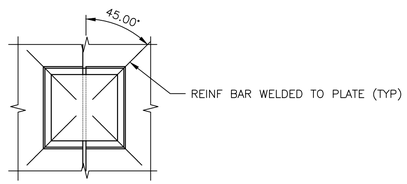
5 DOUBLE TEE CONNECTION DETAIL A
SCALE: 1" = 1'-0"



6 DOUBLE TEE CONNECTION DETAIL B
SCALE: 1 1/2" = 1'-0"

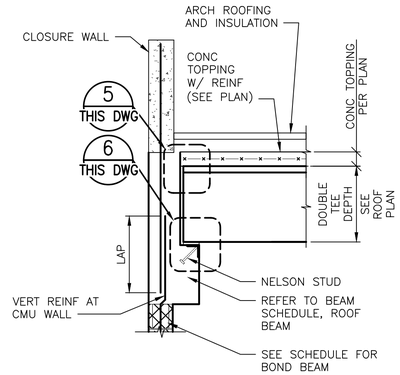


SECTION

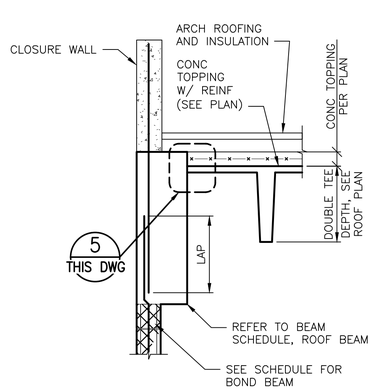


PLAN

NOTE:
MAX SPACING OF WELD PLATES SHALL BE 10'-0" OC (MINIMUM 2 PER ROOF TEE JOINT)

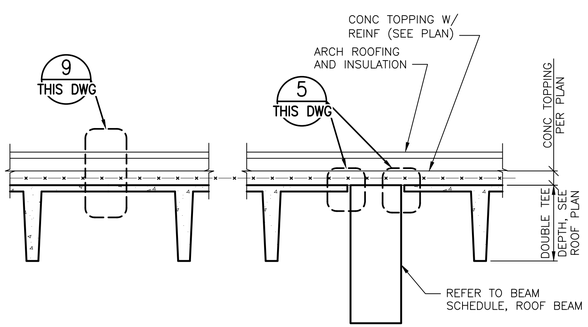


7 DOUBLE TEE CONNECTION AT END
SCALE: 1/2" = 1'-0"



8 DOUBLE TEE CONNECTION AT SIDE
SCALE: 1/2" = 1'-0"

9 DOUBLE TEE FLANGE CONNECTION
SCALE: 1" = 1'-0"



10 DOUBLE TEE CONNECTION AT BEAM
SCALE: 1/2" = 1'-0"

NO.	DATE	REVISION	APP.
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ONE RIVERWAY DRIVE
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SURVEYED BY: UNITED ENGINEERS, INC
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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SLUDGE PROCESSING BUILDING ROOF DEATILS II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-24	SHEET NO. 103 OF 256

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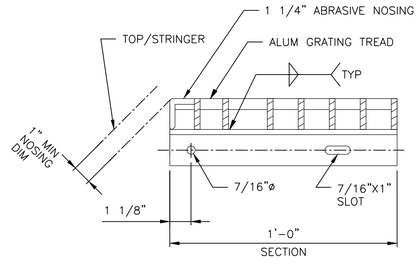
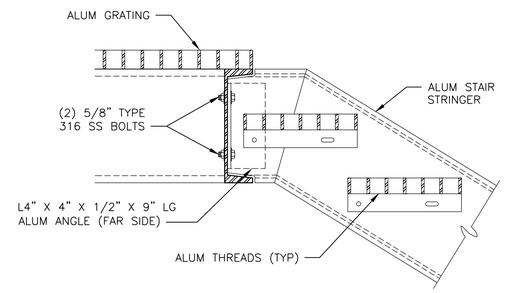
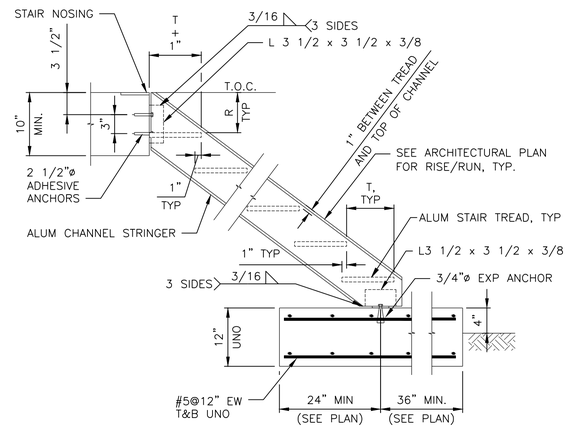


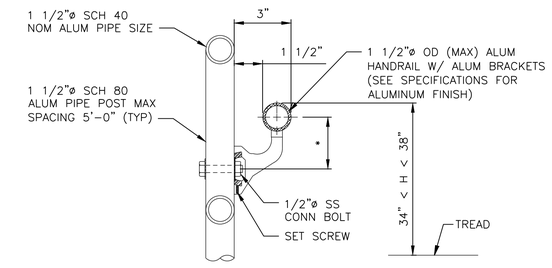
11 TYPICAL METAL STAIR TREAD DETAIL
SCALE: 3" = 1'-0"



12 DETAIL
SCALE: 3" = 1'-0"

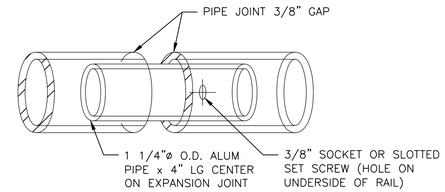


13 TYPICAL METAL STAIRS
SCALE: 1" = 1'-0"

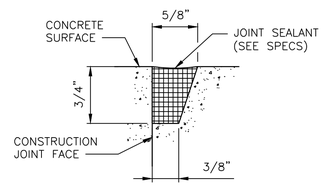


* DIMENSION PER MANUFACTURER 2 1/2" (MIN.)

14 HANDRAIL ATTACHMENT
SCALE: 3" = 1'-0"



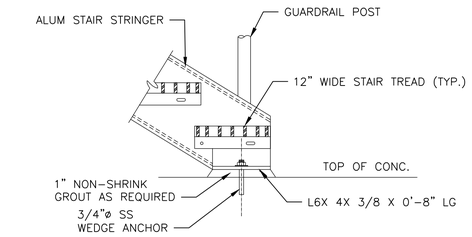
18 RAILING EXPANSION JOINT
SCALE: 1" = 1'-0"



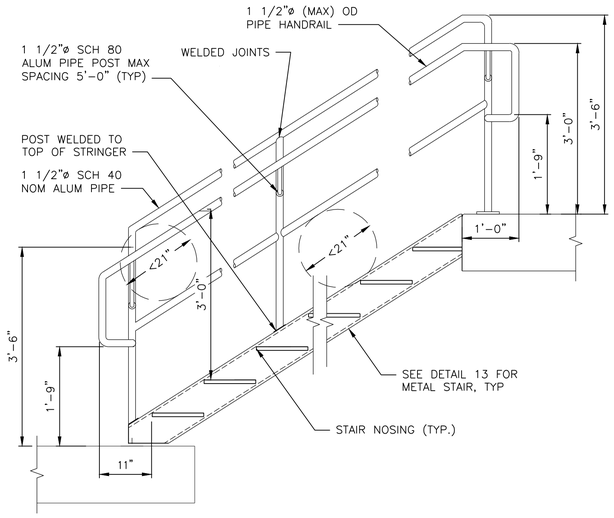
NOTES:

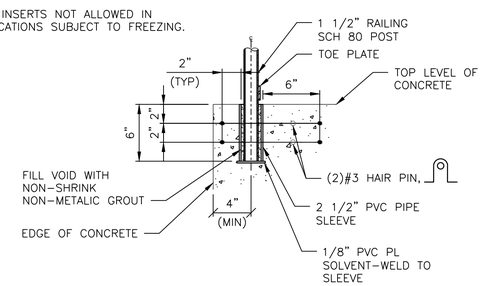
1. ALL FLOOR JOINTS OF HYDRAULIC STRUCTURES (MEMBERS COVERED WITH WATER) SHALL HAVE A SEALANT GROOVE.
2. SANDBLASTING REQUIRED PRIOR TO APPLICATION OF PRIMER.
3. WHERE FACE OF JOINTS TO BE COATED WITH BOND BREAKER AVOID COATING SEALANT GROOVE.

19 SEALANT GROOVE
SCALE: 6" = 1'-0"



15 SECTION
SCALE: 1" = 1'-0"

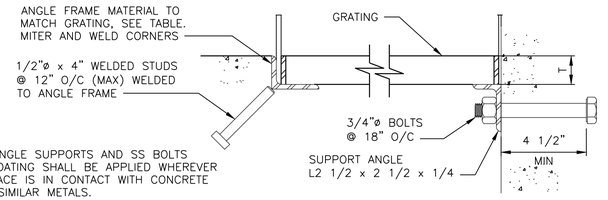




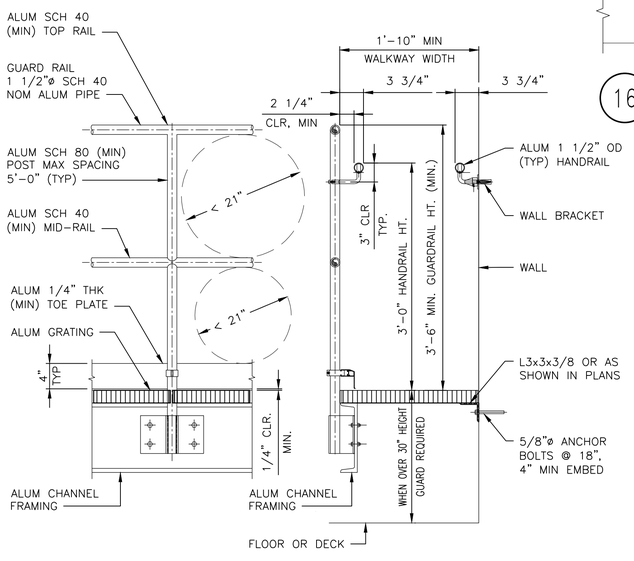
17 TOP MOUNTED REMOVABLE POST INSERT IN CONCRETE
SCALE: 1 1/2" = 1'-0"

GRATING FRAME TABLE (BASED ON LIVE LOAD OF 100 PSF)			
TYPE	GRATING DEPTH T	FRAME ANGLE	SPAN
1	1"	1 3/4 x 1 1/4 x 1/4	1'-0" TO 2'-6"
2	1 1/4"	1 3/4 x 1 1/4 x 1/4	2'-6" TO 3'-0"
3	1 1/2"	1 3/4 x 1 1/4 x 1/4	1'-0" TO 2'-6"
4	1 3/4"	1 3/4 x 1 1/4 x 1/4	2'-6" TO 3'-0"
5	2"	1 3/4 x 1 1/4 x 1/4	1'-0" TO 2'-6"
6	2 1/4"	1 3/4 x 1 1/4 x 1/4	2'-6" TO 3'-0"
7	2 1/2"	1 3/4 x 1 1/4 x 1/4	1'-0" TO 2'-6"

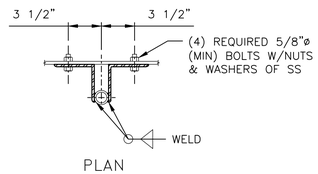
GRATING OF DEPTH T AS NOTED ON DRAWINGS SHALL BE AS SPECIFIED HEREIN ALL ENDS AND OPENINGS SHALL BE BANDED ALL GRATINGS SHALL BE SECURED IN PLACE WITH REMOVABLE FASTENERS, WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS

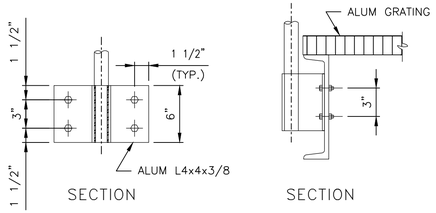


22 ALUMINUM GRATING
SCALE: 3" = 1'-0"



16 GUARDRAIL WITH HANDRAIL AT STAIRS
SCALE: 3/4" = 1'-0"





20 STANDARD HANDRAIL / GUARDRAIL TOP MOUNTED TO METAL WALKWAY
SCALE: 1" = 1'-0"

21 CONNECTION DETAILS
SCALE: 1 1/2" = 1'-0"

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING STAIR & RAILINGS DETAILS

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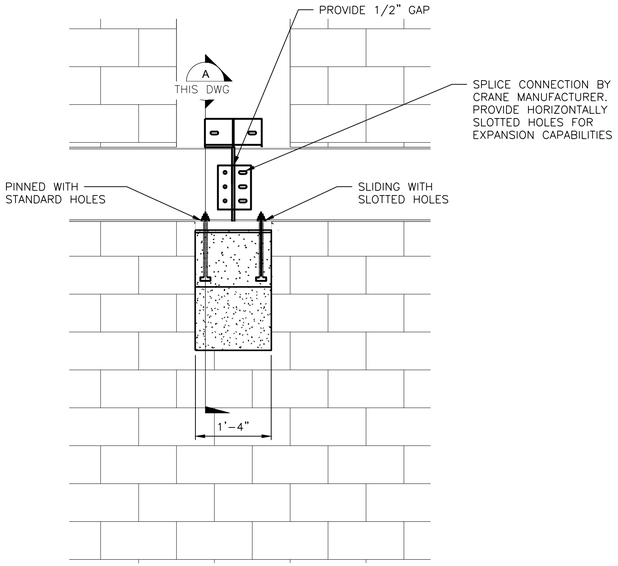
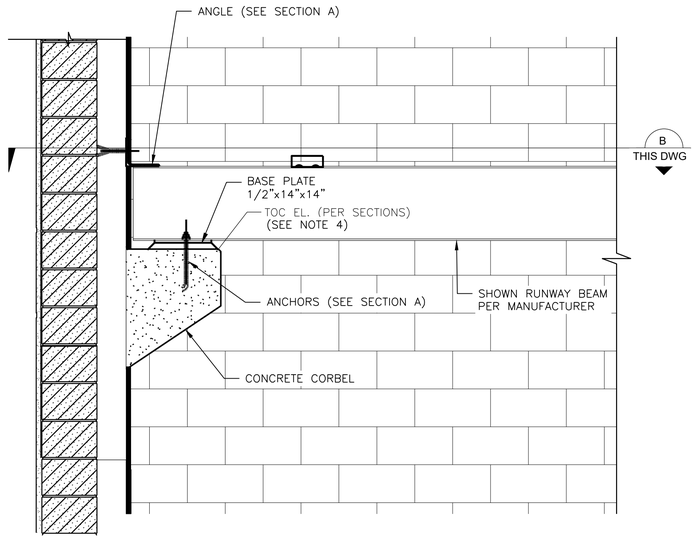


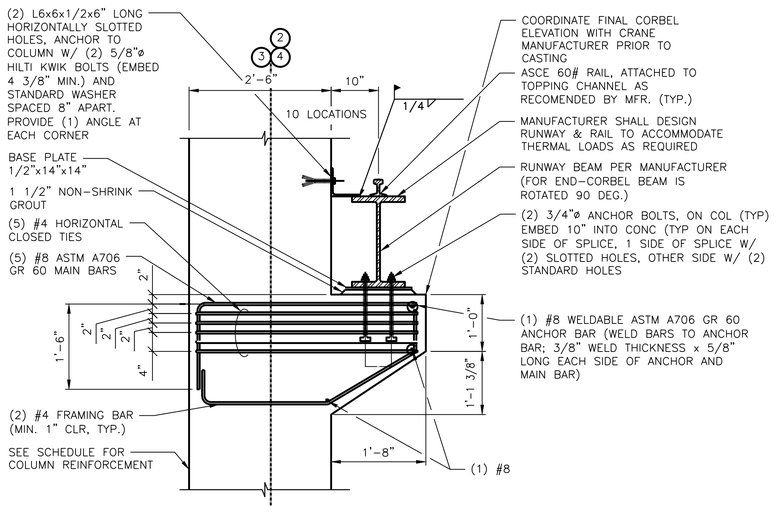
23 RUNWAY BEAM CORBEL DETAIL
SCALE: 3/4" = 1'-0"



24 RUNWAY BEAM END-CORBEL DETAIL
SCALE: 3/4" = 1'-0"

GENERAL SHEET NOTES:

1. FOR STRUCTURAL DESIGN CRITERIA AND NOTES REFER TO S-01 THRU S-04.
2. FOR STANDARD DETAILS REFER TO S-19 THRU S-25.
3. FOR WALL, LINTEL, BEAM AND COLUMN SCHEDULE REFER TO S-27 THRU S-28.
4. CONFIRM FINAL ELEVATION OF BOTTOM OF CRANE RUNWAY BEAM WITH MECHANICAL.

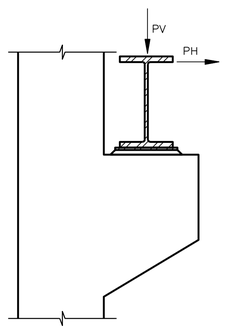


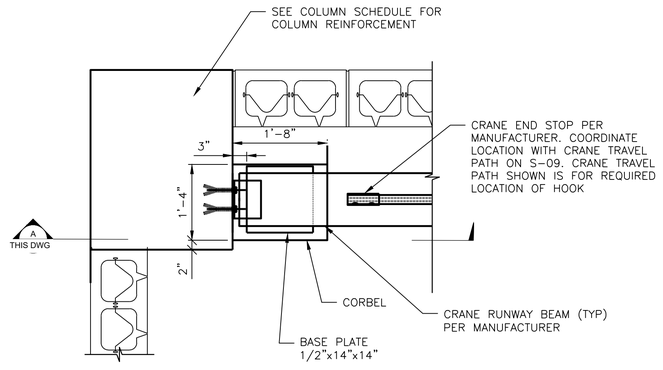
NOTE:
CONNECTIONS, CLIP ANGLES, RUNWAY BEAM AND RAIL SHOWN ARE FOR RECOMMENDATION PURPOSES ONLY. FINAL DESIGN AND ARRANGEMENT IS PER THE MANUFACTURER REQUIREMENTS.

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

LOADS ON CORBELS	
	11 TON CRANE
MAX RUNWAY SPAN	17'-4"
END TRUCK WHEEL BASE	8'-2 3/8"
END TRUCK TO HOOK DIST.	3'-9"
RATED LIVE LOAD CAPCITY	11 TONS
HOIST AND TROLLEY WEIGHT	1,400 LBS
BRIDGE CRANE WEIGHT	8,660 LBS
EDGE TRUCK WEIGHT	2,000 LBS
RUNWAY AND CAP WEIGHT	480 LBS
LIVE LOAD TOTAL (NOMINAL)	33,130 LBS
DEAD LOAD (NOMINAL)	8,615 LBS
IMPACT (25% +10% OVERLOAD)	14,450 LBS
VERTICAL LOAD (PV, ULT)	86,450 LBS
HORIZONTAL LOAD (PH, ULT)	8,650 LBS

* VERTICAL ULTIMATE LOAD INCLUDES IMPACT LOAD, OVERLOAD FACTOR, 1.2 DEAD LOAD FACTOR AND 1.6 LIVE LOAD FACTOR.
** IMPACT LOAD INCLUDES HOIST, TROLLEY, BRIDGE, TRUCK AND RATED LOADS.





NOTE:
SEE SECTION A PRIMARILY FOR CORBEL REINFORCEMENT. GENERAL RECOMMENDATIONS FOR CONNECTIONS, CLIP ANGLES, RUNWAY BEAM AND RAIL IS ALSO PROVIDED. NOTE THAT THE RUNWAY BEAM ORIENTATION IS ROTATED 90 DEGREES, HOWEVER THE GENERAL CONCEPT WILL BE SIMILAR.

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

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER: PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING TYPICAL CORBEL & CRANE RUNWAY DETAILS

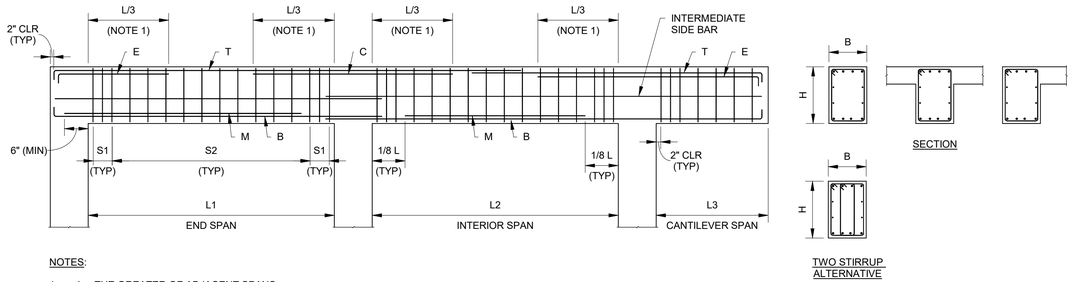
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-26	SHEET NO. 103 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-26.dwg Dec 19, 2025 - 2:58pm User: p001435c

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. SEE SHEETS S-18 AND S-19 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.



NOTES:

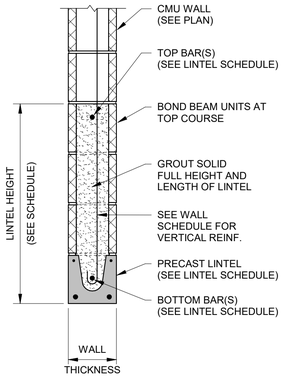
1. L = THE GREATER OF ADJACENT SPANS.
2. SPLICE 'T' BARS WITHIN MIDDLE THIRD OF SPAN. PROVIDE CLASS B SPLICES.
3. HOOKS SHALL BE STANDARD ACI 90 DEGREE HOOKS, 2 INCH CLEAR FROM EDGE BUT NOT LESS THAN MINIMUM HOOK BAR DEVELOPMENT LENGTH.
4. BOTTOM 'B' BARS AND INTERMEDIATE SIDE BAR SPLICES SHALL BE CENTERED OVER SUPPORTS OR AT CONSTRUCTION JOINTS. PROVIDE CLASS B SPLICES.
5. CONTRACTOR MAY PROVIDE BEAM DROP DOWN AS SHOWN IN DETAIL Y ON S-N9999-503 TO ALLOW FOR ADEQUATE FITUP TO THE ADJACENT CMU WALLS FOR PROPER COURSING.
6. S1 LENGTH WHERE ADDITIONAL TIES ARE REQUIRED PER CONCRETE BEAM SCHEDULE SHALL BE OVER A DISTANCE OF BEAM HEIGHT "H"/2, REFER TO CONCRETE BEAM SCHEDULE FOR "H" AND WHERE S1 APPLIES.

TYPICAL CONCRETE BEAM REINFORCEMENT

NO SCALE

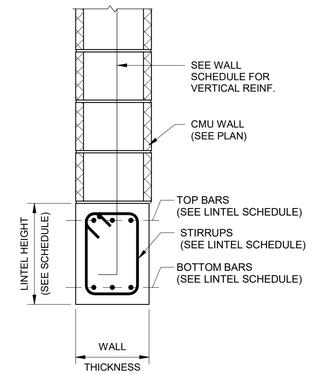
CONCRETE BEAM SCHEDULE

Type Mark	SIZE B x H	MAIN REINFORCEMENT T	MAIN REINFORCEMENT B	ADDITIONAL REINFORCEMENT M	ADDITIONAL REINFORCEMENT C	ADDITIONAL REINFORCEMENT E	INTERM. SIDE BARS	STIRRUPS SIZE	STIRRUPS S1	STIRRUPS S2	REMARKS
B001	20 x 16 CONC BM	(3) #6	(3) #6				(2) #5 EF	#4	6"	12"	
B002	16 x 12 CONC BM	(2) #6	(2) #6				#5 EF	#4	6"	12"	
B003	24 x 16 CONC BM	(3) #6	(3) #6				(2) #5 EF	#4	6"	10"	
B004	Tapered Beam	(2) #6	(2) #6				(2) #5 EF	#4	6"	12"	TAPERED BEAM, HEIGHT COORDINATED BY CONTRACTOR PER LOW ROOF DETAILS
B005	36 x 36	(4) #10	(4) #10				(2) #5 EF	#4	6"	12"	FOUNDATION TIE BEAMS, USE TWO STIRRUPS PER ALTERNATIVE SECTION ABOVE



LINTEL TYPE A

NO SCALE



LINTEL TYPE B

NO SCALE

MASONRY LINTEL SCHEDULE

Mark	NOMINAL THICKNESS	CLEAR SPAN	BEARING LENGTH	LINTEL HEIGHT	BOTTOM REINF.	TOP REINF.	STIRRUPS	LINTEL TYPE	REMARKS	COUNT	NOTES
L01	12"	3'-4"	8	16"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 4,000 PLF	3	OVER EXTERIOR STANDARD DOORS
L02	12"	6'-8"	8"	16"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 2,000 PLF	1	OVER EXTERIOR DOUBLE DOORS W/ OVERHEAD WINDOW
L03	12"	2'-2"	8"	8"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 3,500 PLF	1	OVER 2'-2" WIDE OPENING
L04	12"	6'-4"	8"	16"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 1,600 PLF	1	OVER EXTERIOR DOUBLE DOORS
L05	12"	4'-0"	8"	16"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 1,300 PLF	1	OVER 4' WIDE WINDOWS
L06	12"	2'-8"	8"	16"	(2) #5			A	PRECAST LINTEL MIN. REQ'D SAFEL LOAD = 2,500 PLF	1	OVER 2'-8" WIDE WINDOWS

WALL SCHEDULE

Type Mark	WALL TYPE	REINFORCEMENT	REMARKS
W01	12" CMU	#5 @ 32" VERTICAL CENTERED, HORIZONTAL JOINT REINF @ 16"	TYP 12" PARTIALLY GROUTED WITH 12" X 8" BOND BEAMS AT 48" O/C W/ 2 #5'S CONTINUOUS (SEE NOTE BELOW)
W002	8" CIP CONCRETE	#6 @ 10" EW CENTERED	TYP PARAPET WALL
WF01	12" CIP CONCRETE	#6 @ 12" VERTICAL EF, #6 @ 12" HORIZONTAL EF	CONCRETE WALL FOOTING

PLAN NORTH

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
PB

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RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

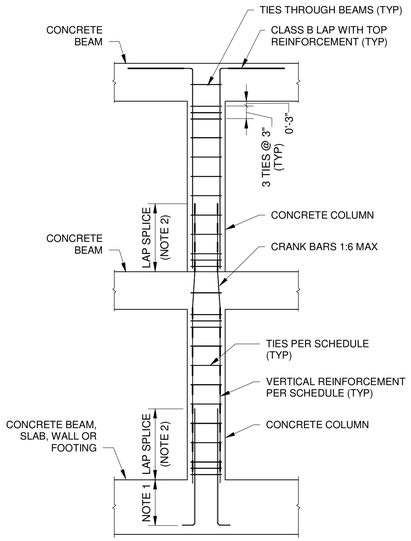
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SCHEDULE I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As Noted	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. S-27 OF 252	

90% SUBMITTAL NOT FOR CONSTRUCTION



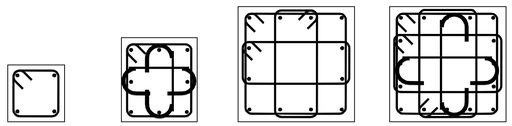
NOTES:

1. MINIMUM BAR EMBEDMENT – Ldh. EXTEND TO BOTTOM REINFORCMENT LAYER OF BEAMS, SLABS OR FOOTINGS.
2. REFER TO STANDARD LAP SPLICE DETAILS. PROVIDE CLASS B SPLICES.
3. CONTRACTOR MAY PROVIDE POPOUT DETAILED AS REQUIRED TO ALLOW FOR ADEQUATE FITUP TO THE ADJACENT CMU WALLS FOR PROPER COURSING.

TYPICAL CONCRETE COLUMN DETAILS

NO SCALE

CONCRETE COLUMN SCHEDULE				
		REINFORCEMENT		
Type Mark	SIZE	VERTICAL	TIES	REMARKS
C01	32 x 16	(8) #8	#4 @ 16"	
C02	16 x 16	(4) #8	#4 @ 14"	#4 TIES @ 6" FROM 2 FT BELOW CORBEL TO 2FT ABOVE CORBEL



TYPE 1
4 BARS

TYPE 2
8 BARS

TYPE 3
12 BARS

TYPE 4
16 BARS

COLUMN CONFIGURATIONS

TYPICAL CONCRETE COLUMN CONFIGURATIONS

NO SCALE

	B-1	B-2	B-3	B-4	B-4.9	C-1	C-2	C-3	C-4	C-4.9	D-1	D-2	D-3	D-4	D-5	
T.O. LOW PARAPET																T.O. LOW PARAPET
27'-9 1/2" B.O. ROOF																27'-9 1/2" B.O. ROOF
23'-10" B.O. LOW ROOF																23'-10" B.O. LOW ROOF
16'-1 1/2" ELEVATED FIN FL																16'-1 1/2" ELEVATED FIN FL
4'-0" 1ST FIN FL																4'-0" 1ST FIN FL
0'-0"																0'-0"
Column Locations																

GENERAL SHEET NOTES:

1. SEE SHEET S-01 THRU S-03 FOR SYMBOL & LEGENDS, ABBREVIATIONS AND GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-04 AND S-05 FOR SPECIAL INSPECTION SCHEDULE.
3. SEE SHEETS S-19 AND S-20 FOR FOUNDATION DETAILS. SEE SHEETS S-20 AND S-21 FOR CONCRETE DETAILS. SEE SHEET S-22 FOR MASONRY DETAILS. SEE SHEET S-23 FOR LOW ROOF DETAILS AND S-24 FOR HIGH ROOF DETAILS. SEE S-25 FOR STAIR AND RAILING DETAILS AND S-26 FOR CORBEL AND CRANE RUNWAY DETAILS.

PLAN NORTH

NO.	DATE	REVISION	APP.
A	08/18/25	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
PB

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JOHN HANNA
TEXAS LICENSE NO. 15131
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE PROCESSING BUILDING SCHEDULE II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As Noted	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

S-28 SHEET NO. OF 252

PIC "C"

(2) EXISTING SUPPORTS SEE NOTE:2

CCB-1

PIPELINE, SEE NOTE 1 AND PIC "C"

OUTLINE OF EXISTING HANDRAILS (REF. ONLY)

PROPOSED WALL EXTENSION 9" HIGH AROUND PERIMETER OF BASIN AS SHOWN

PIC "D"

PIPELINE, SEE NOTE 1 AND PIC "D"

B

69'-6"

29'-2"

SEE PIC "E"

EFFLUENT 24"

4'-6" TYP. (REF)

CCB-3

PLAN

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

PIPELINE, SEE NOTE 1 AND PIC "B"

PIC "E"

PIC "B"

C

OUTLINE OF EXISTING HANDRAILS (REF. ONLY)

3'-7"

9"

TOW EL 67.00'

MAX WL EL 65.78' @ 7.62 MGD

MAX WL EL 65.78' @ 7.62 MGD

CONCRETE WEIR WALL

CMU BAFFLE WALL

24" INF

24" INF

TOC EL 54.75'

SECTION

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

A

OUTLINE OF EXISTING HANDRAILS (REF. ONLY)

TOW EL 67.00'

TOW EL 65.00'

TOC EL 54.75'

SECTION

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

B

RAISED PIPELINE WITH U-BOLT

ANGULAR SUPPORT

BOLTED PLATE TO EXTENDED WALL

T.O.C. EL (N)

0'-9"

T.O.C. EL (E)

EXTENDED WALL

EXISTING WALL

DETAIL

MODIFIED SUPPORT

1 1/2" = 1'-0"

1

CCB-1

FRONT

24" INF

A

EXISTING TOE PLATE TO REMOVED PRIOR TO FORMING AND POURING OF CONCRETE. SEE PIC "A"

PIC "A"

EXISTING HANDRAILS (REF.)

10 GAUGE WIRE MESH AS SHOWN (TO BE CUT & WELDED @ INTERSECTION OF HANDRAIL COLUMNS

T.O.C. EL (N)

0'-9"

T.O.C. EL (E)

SELF-EXPANDING BUTYL STRIP WATERSTOP

EPOXY & GROUT #5 DOWEL BARS @ 12" O.C. AROUND PERIMETER OF EXISTING WALL (EMBED 4" MIN.)

EXISTING WALL

SECTION

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

C

NOTES:

1. ALL ABOVE-GROUND PIPING, CONDUIT ON WALL MUST BE REMOVED AND RAISED/EXTENDED ONTO NEW WALLS OF CCB-2. REFER TO MECHANICAL PIPING PLANS.
2. TWO (2) EXISTING SUPPORTS ON WALL TO BE REMOVED BEFORE CONSTRUCTION OF WALL EXTENSION AND TO BE REPLACED WITH NEW SUPPORTS SEE DETAIL 1.
3. THIS PLAN IS FOR THE WALL EXTENSION AT SPECIFIED BASIN WALLS ONLY. ALL PORTIONS NOT SPECIFICALLY DETAILED SHALL BE BY OTHERS.
4. CONTRACTOR SHALL VERIFY THE FOLLOWING AT THE SITE PRIOR TO START OF CONSTRUCTION:
   A. PIPING LOCATION
   B. FINISH GRADE AND TOP OF CONCRETE ELEVATIONS
   C. NOZZLE CLEARANCES AND TIE-IN POINT LOCATIONS AND ELEVATIONS
   D. CONTRACTOR SHALL ALSO BRING ANY AND ALL PHYSICAL INTERFERENCES NOTED DURING FIELD VERIFICATIONS TO OWNER'S ATTENTION PRIOR TO THE START OF CONSTRUCTION.
5. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO LOCATE ALL EXISTING ABOVE AND UNDER GROUND PIPELINES, CONDUIT, UTILITIES, ETC., AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA, STATE AND LOCAL SAFETY REGULATIONS AND ALL CITY OF HOUSTON SAFE PRACTICES DURING ALL PHASES OF THIS WORK.
6. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. SPEC. A-615, GRADE 60 STEEL.
7. CONTRACTOR SHALL BE RESPONSIBLE TO REFER TO THE LATEST/MECHANICAL PIPING DRAWINGS PRIOR TO INSTALLATION OF THE WALL EXTENSIONS.

0 2' 4' 8'

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

0 1' 2' 4' 6'

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

0 6" 1' 1'-6"

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

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER: PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

WALL EXTENSION AT CHLORINE CONTACT BASIN (CCB) NO.2

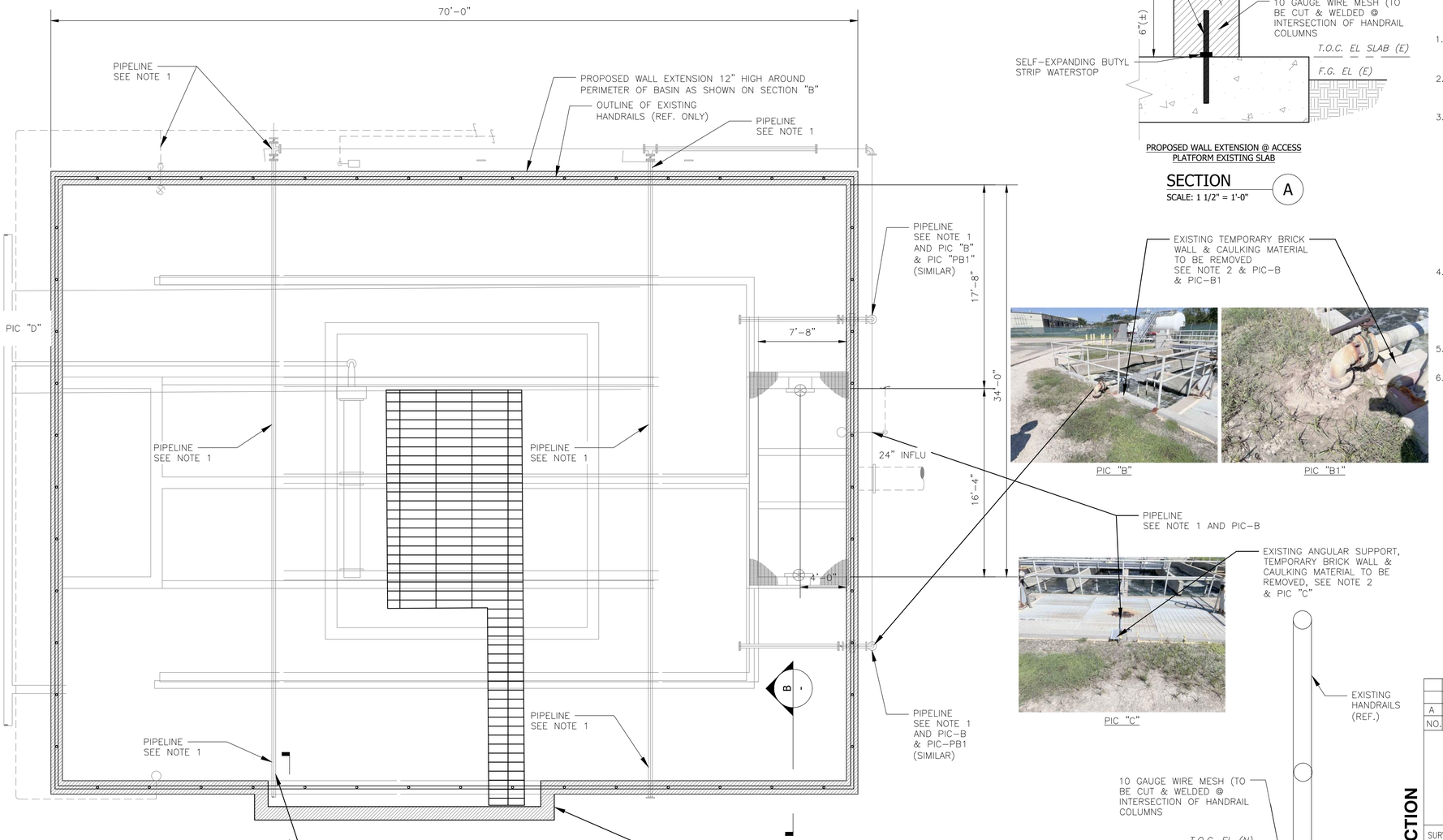
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-29	SHEET NO. 103 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-29.dwg Dec 19, 2025 - 8:38am User: p001435c

PIC "D"

PIC "D1"

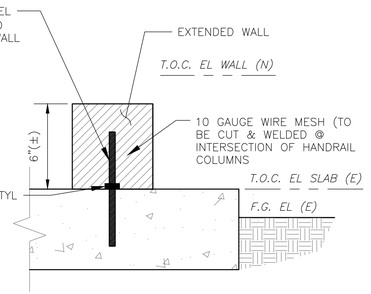


PIC "A1"

PIC "A"

PLAN

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



PROPOSED WALL EXTENSION @ ACCESS PLATFORM EXISTING SLAB

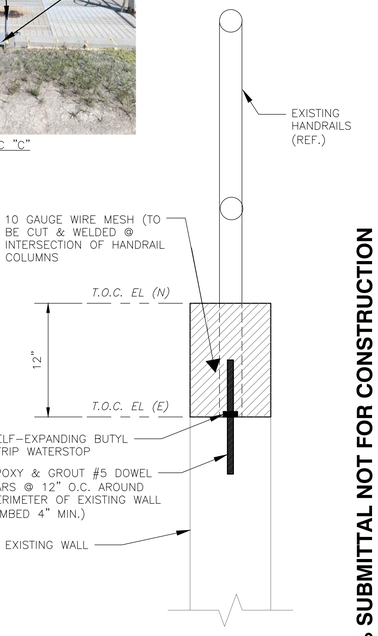
SECTION A

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

PIC "B"

PIC "B1"

PIC "C"



SECTION B

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

NOTES:

1. ALL ABOVE-GROUND PIPING, CONDUIT ON WALL MUST BE REMOVED AND RAISED/EXTENDED ONTO NEW WALLS OF CCB-2.
2. THIS PLAN IS FOR THE WALL EXTENSION AT SPECIFIED BASIN WALLS ONLY. ALL PORTIONS NOT SPECIFICALLY DETAILED SHALL BE BY OTHERS.
3. CONTRACTOR SHALL VERIFY THE FOLLOWING AT THE SITE PRIOR TO START OF CONSTRUCTION:
   A. EQUIPMENT LOCATION
   B. FINISH GRADE AND TOP OF CONCRETE ELEVATIONS
   C. NOZZLE CLEARANCES AND TIE-IN POINT LOCATIONS AND ELEVATIONS
   D. CONTRACTOR SHALL ALSO BRING ANY AND ALL PHYSICALINTERFERENCES NOTED DURING FIELD VERIFICATIONS TO OWNER'S ATTENTION PRIOR TO THE START OF CONSTRUCTION.
4. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO LOCATE ALL EXISTING ABOVE AND UNDER GROUND PIPELINES, CONDUIT, UTILITIES, ETC., AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA, STATE AND LOCAL SAFETY REGULATIONS AND ALL GREENRIDGE SAFE PRACTICES DURING ALL PHASES OF THIS WORK.
5. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. SPEC. A-615, GRADE 60 STEEL.
6. CONTRACTOR SHALL BE RESPONSIBLE TO REFER TO THE LATEST/CERTIFIED APPROVED VENDOR DRAWINGS PRIOR TO INSTALLATION OF THE EQUIPMENT.

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

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

0 6" 1' 1'-6"
SCALE: 1-1/2" = 1'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

WALL EXTENSION AT CHLORINE CONTACT BASIN (CCB) NO.3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-30	SHEET NO. 104 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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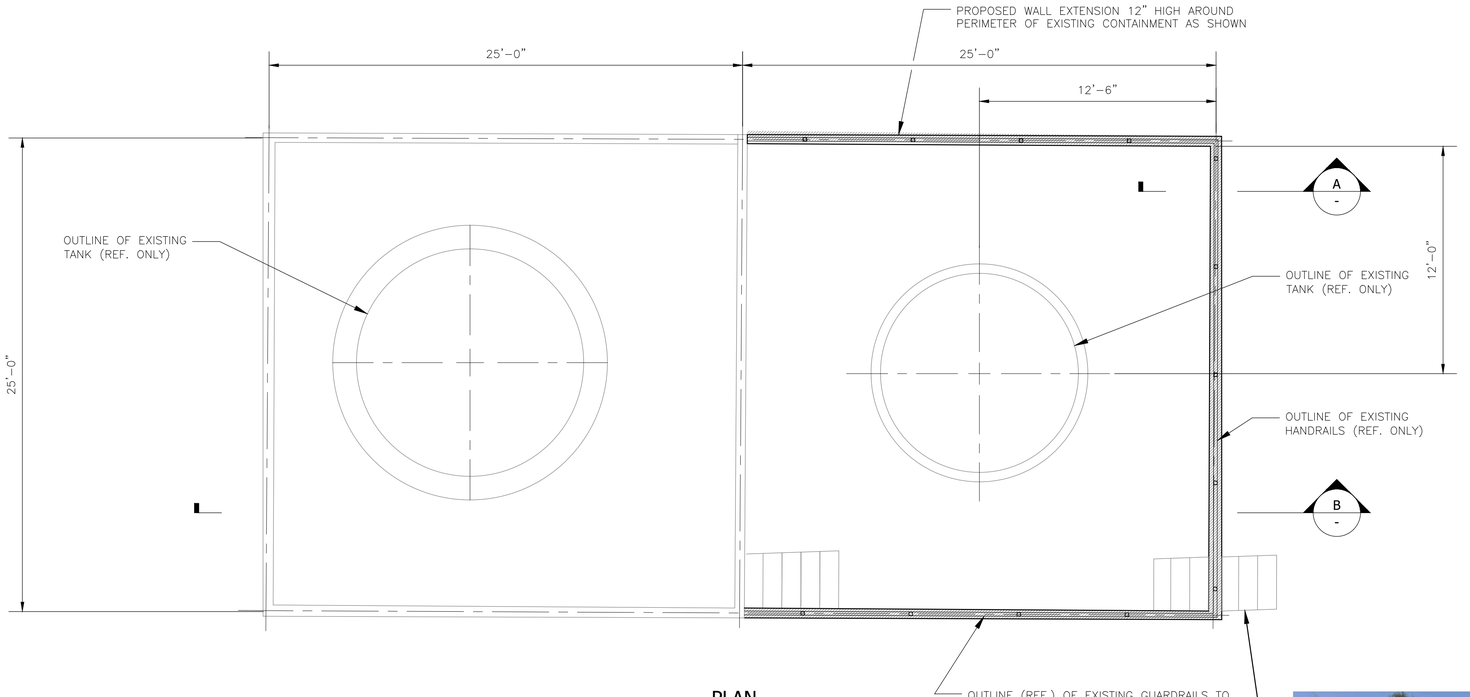
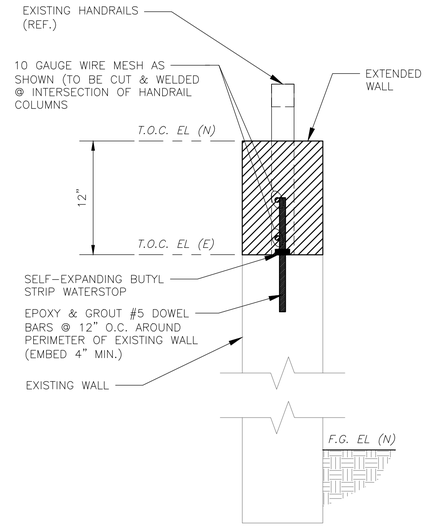


PLAN
SCALE: 1/4"=1'-0"



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

NOTES:

1. CONTACT SURFACE BETWEEN EXISTING CONCRETE SLAB AND NEW CONCRETE SHALL BE ROUGHENED AND THOROUGHLY CLEANED, SPRAY WASHED PRIOR TO FORMING AND POURING OF CONCRETE.
2. CONTRACTOR SHALL VERIFY THE FOLLOWING AT THE SITE PRIOR TO START OF CONSTRUCTION:
   A. EQUIPMENT LOCATION
   B. FINISH GRADE AND TOP OF CONCRETE ELEVATIONS
   C. NOZZLE CLEARANCES AND TIE-IN POINT LOCATIONS AND ELEVATIONS
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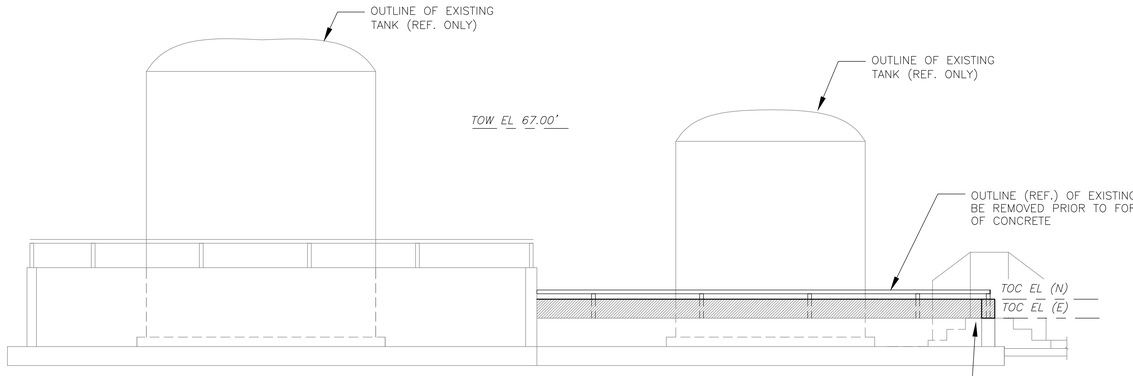
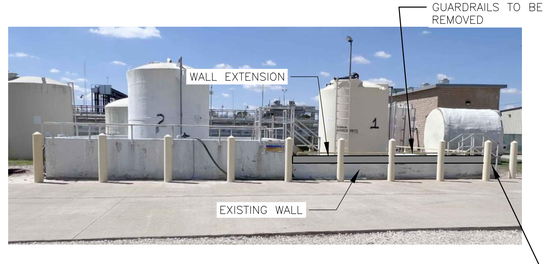


SECTION B
SCALE: 1/4" = 1'-0"

PIC "A"



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

0 6" 1' 1'-6"
SCALE: 1-1/2" = 1'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

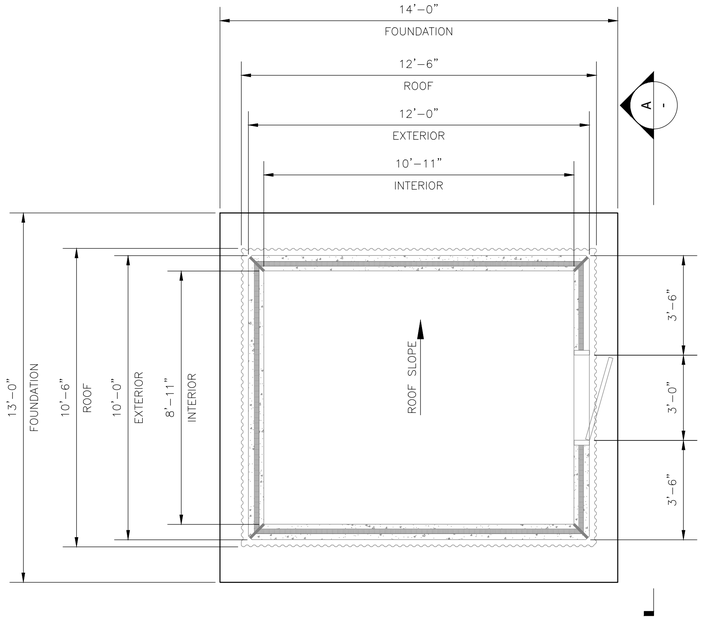
GREENRIDGE WWTP IMPROVEMENTS

WALL EXTENSION AT SODIUM HYPOCHLORITE STORAGE TANK

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-31	SHEET NO. 105 OF 256

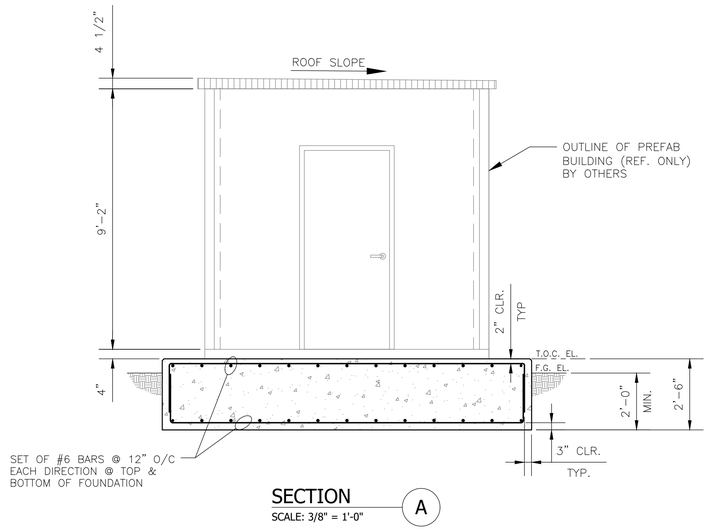
90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-31.dwg Dec 19, 2025 - 3:48pm User: p0014356



FOUNDATION PLAN

10'x12'x9' RAS ELECTRICAL BUILDING
SCALE: 3/8"=1'-0"



SECTION

SCALE: 3/8" = 1'-0" — A

NOTES:

1. FOUNDATION ORIENTATION, LOCATION AND ELEVATION CONTROLS ARE TO BE IN ACCORDANCE WITH THE GENERAL PLOT PLANS, DWG. S-07.
2. ALL WORK SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2021 EDITION.
3. ONE (1) FOUNDATION INSTALLATION IS REQUIRED FOR THIS PROJECT.
4. THIS PLAN IS FOR THE STRUCTURAL DESIGN OF THE FOUNDATION ONLY. ALL DETAILS NOT SPECIFICALLY SHOWN SHALL BE BY OTHERS.
5. FOR GENERAL STRUCTURAL NOTES AND MATERIAL SPECIFICATIONS, REFER TO DWG. S-01.
6. FOUNDATIONS SHALL BEAR 12" MINIMUM INTO NATURAL OR FINISHED GRADE, WHICHEVER IS LOWER. FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED NATURAL GRADE OR BEAR ON CERTIFIED, COMPACTED FILL. THE GRADE AROUND THE FOUNDATION SHALL SLOPE DOWN AND AWAY AT 2% SLOPE, MIN., FOR 5 FEET, MIN.
7. CONTRACTOR SHALL VERIFY THE FOLLOWING AT THE SITE PRIOR TO START OF CONSTRUCTION:
   A. EQUIPMENT LOCATION
   B. FINISH GRADE AND TOP OF CONCRETE ELEVATIONS
   C. NOZZLE CLEARANCES AND TIE-IN POINT LOCATIONS AND ELEVATIONS
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0 1' 2' 4' 6'
SCALE: 3/8" = 1'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

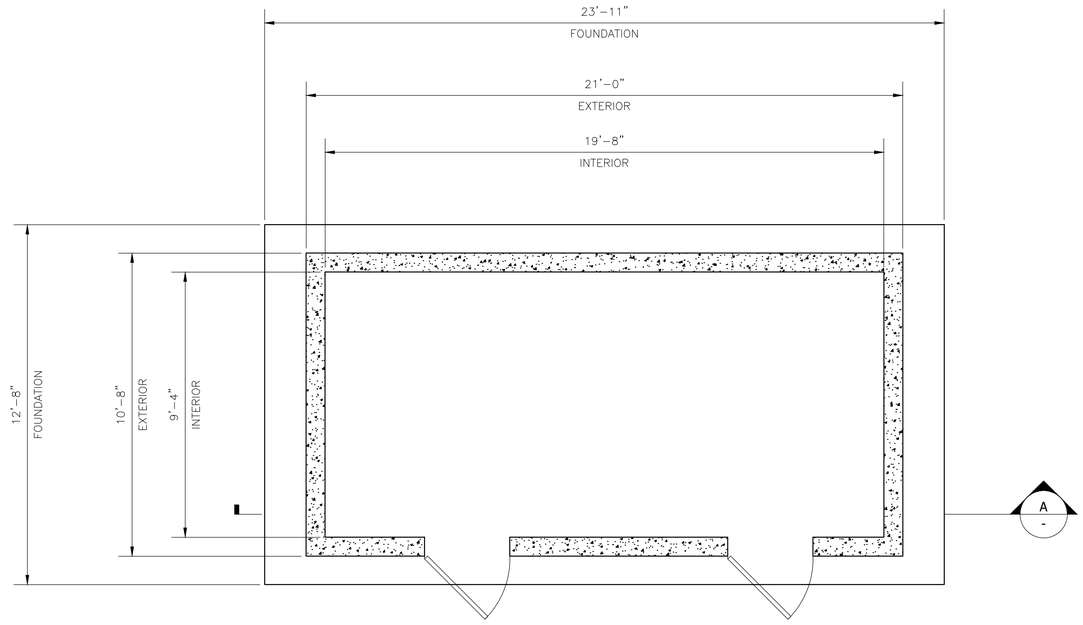
GREENRIDGE WWTP IMPROVEMENTS

RAS ELECTRICAL BUILDING FOUNDATION DETAILS I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-40	SHEET NO. 114 OF 256

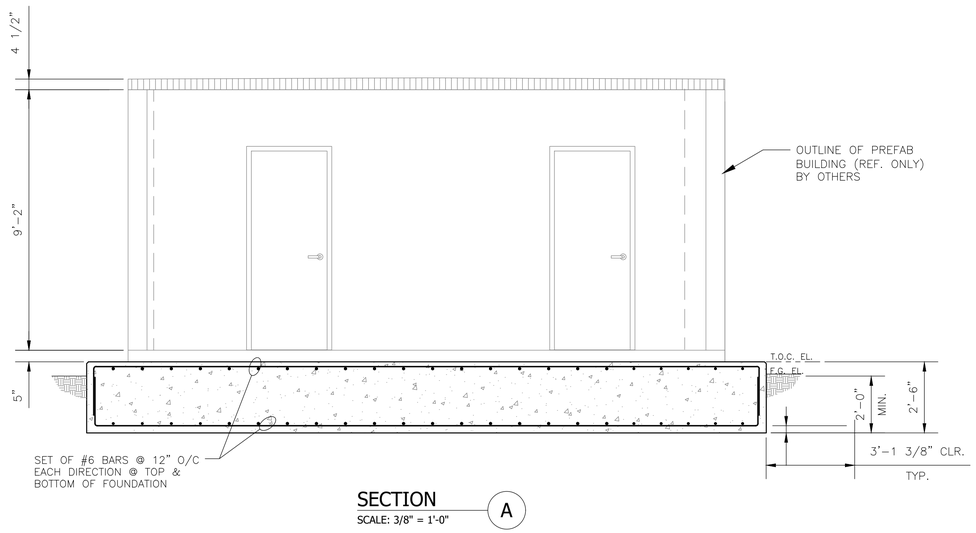
90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-40.dwg Dec 19, 2025 - 3:40pm User: p001435c



FOUNDATION PLAN

22'x11'-4" NEW CHLORINE ANALYZER BUILDING
SCALE: 3/8"=1'-0"



SECTION

SCALE: 3/8" = 1'-0" — A

NOTES:

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

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

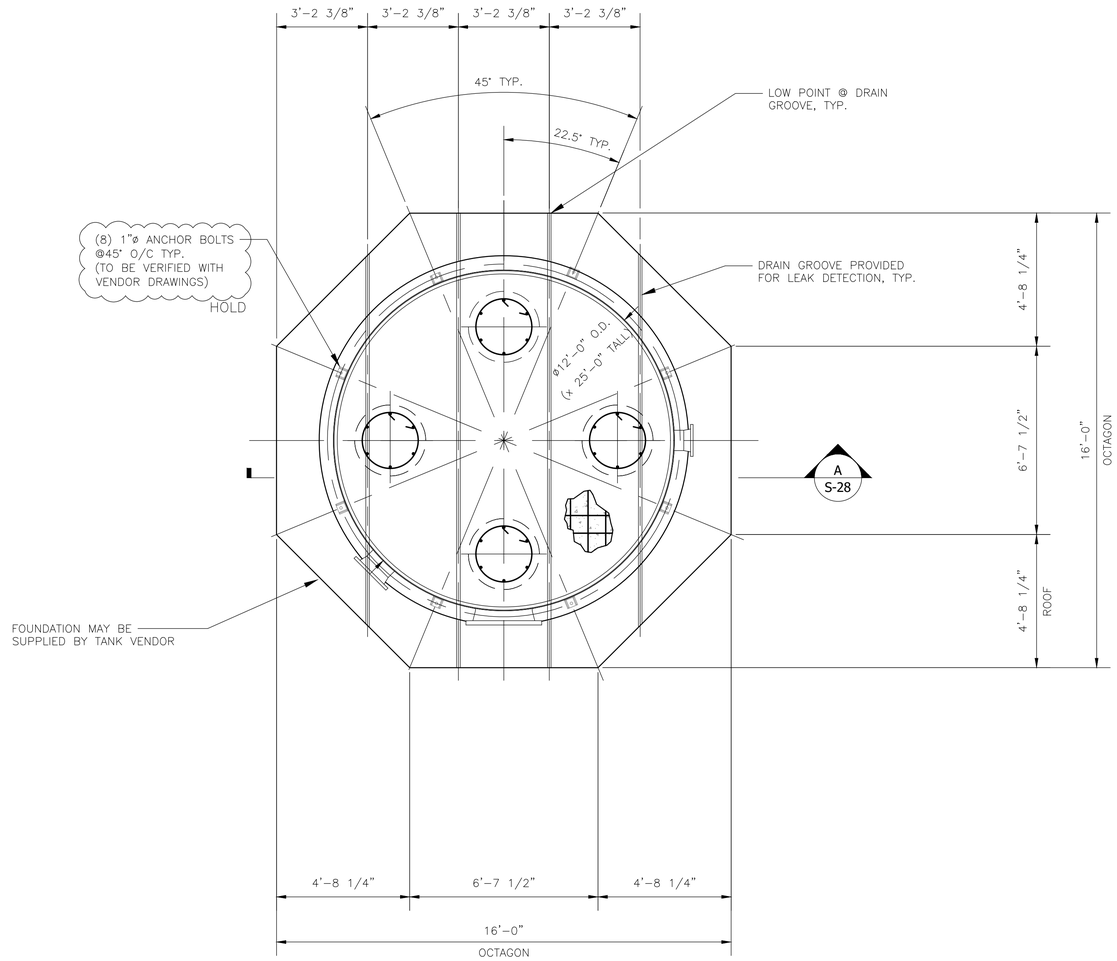
GREENRIDGE WWTP IMPROVEMENTS

NEW CHLORINE ANALYZER BUILDING FOUNDATION DETAILS I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-42 SHEET NO. 116 OF 256	

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-42.dwg Dec 19, 2025 - 3:39pm User: p001435c



FOUNDATION PLAN

SLUDGE HANDLING TANK
SCALE: 3/8"=1'-0"

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

PLAN NORTH

NO.	DATE	REVISION	APP.
A	12/19/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. 0000000

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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

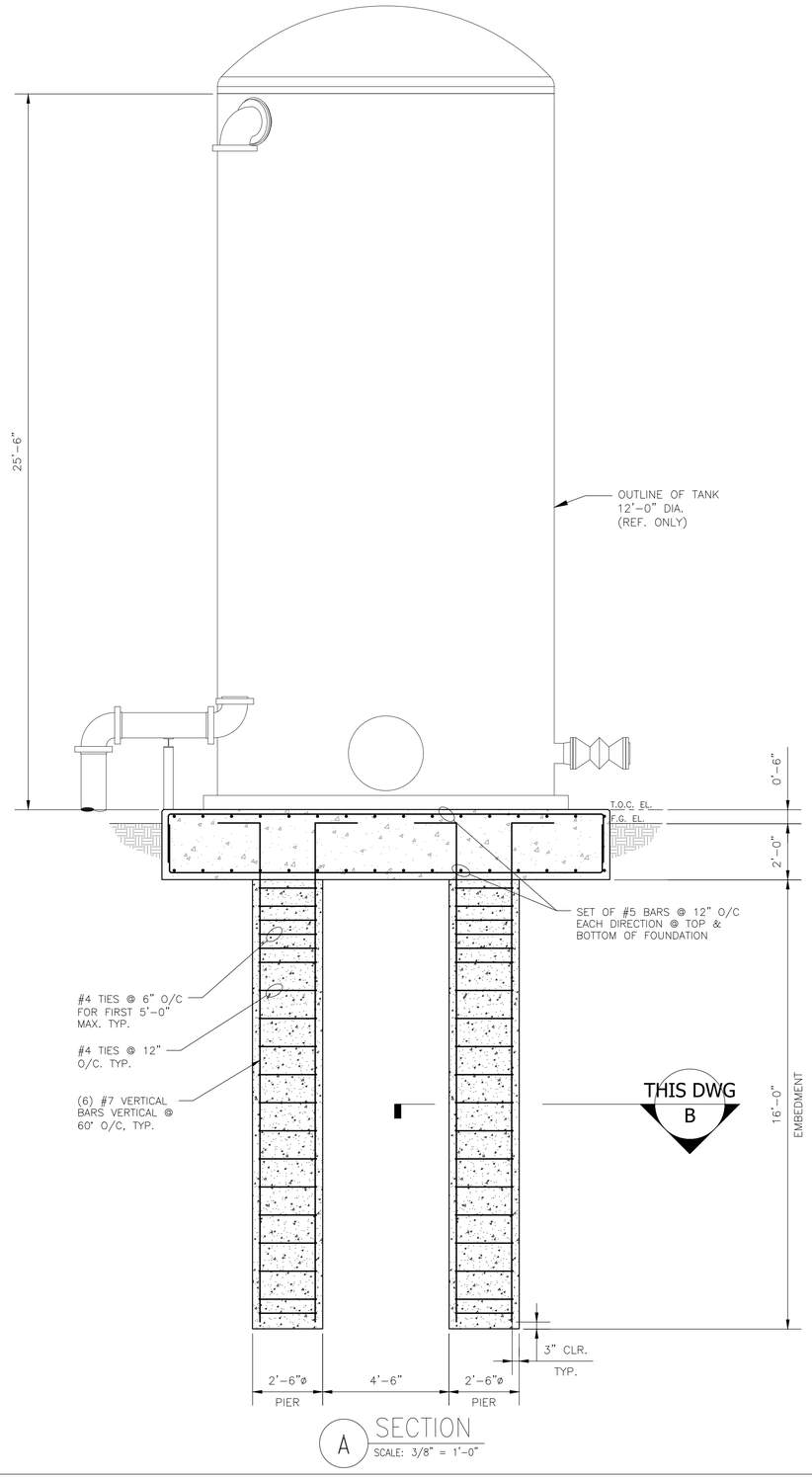
GREENRIDGE WWTP IMPROVEMENTS

SLUDGE TANK FOUNDATION PLAN

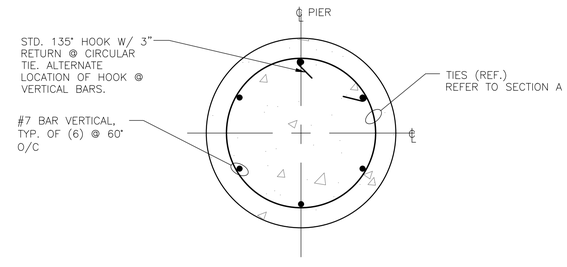
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-44	SHEET NO. 101 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-44.dwg Dec 19, 2025 - 3:32pm User: p0014435c



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



B SECTION
SCALE: 1" = 1'-0"

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

NO.	DATE	REVISION	APP.
A	12/18/25	90% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
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RESPONSIBLE ENGINEER:
PARSONS
ROBERT P. THORNBER
TEXAS LICENSE NO. 83416
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

SLUDGE TANK SECTIONS & DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
S-45	SHEET NO. 102 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

U:_453976 Greenridge Dewatering Facility\Production\CAD\AutoCAD\Structural\Dwg Files\S-45.dwg Dec 19, 2025 - 3:34pm User: p001435c

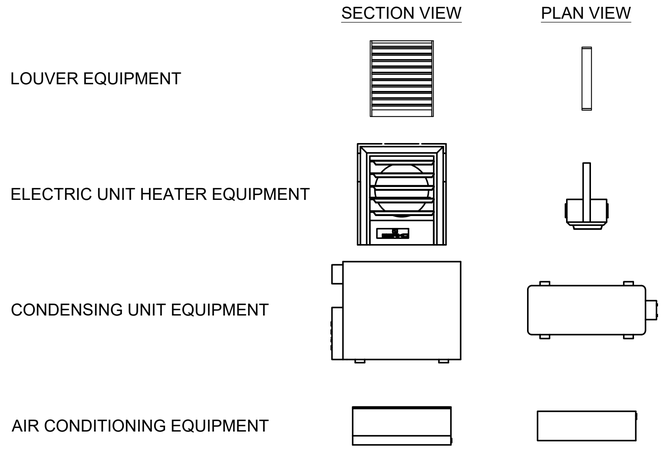
HVAC ABBREVIATIONS

A	AMPERES
ABV	ABOVE
ABBV	ABBREVIATIONS
AC	AIR CONDITIONER
ACH	AIR CHANGES PER HOUR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR CONDITIONING ENGINEERS
BEL	BELOW
BDD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
BTU/H	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CD	CEILING DIFFUSER
CD	CONDENSATE DRAIN
CENT	CENTRIFUGAL
CFM	CUBIC FEET PER MINUTE (AIRFLOW)
CLG	COOLING
COP	COEFFICIENT OF PERFORMANCE
CONC	CONCRETE
COR	CONTRACTING OFFICERS REPRESENTATIVE
CU	CONDENSING UNIT
CV	CONSTANT VOLUME
D	DRAIN
DB	DRY BULB OR DECIBEL
DCW	DOMESTIC COLD WATER (POTABLE)
DEMO	DEMOLISH
(E)	EXISTING
EA	EXHAUST AIR
EAD	EXHAUST AIR DUCT
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
ENT	ENTERING
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EQ	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
F	FAHRENHEIT
FC	FAN COIL
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FRPM	FAN REVOLUTIONS PER MINUTE
FT	FEET
GA	GAUGE
H	HUMIDISTAT/HEIGHT
HC	HEATING COIL
HP	HORSEPOWER
HTG	HEATING
HTR	HEATER
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HZ	HERTZ
IN	INCHES
IN WC	INCH WATER COLUMN
KW	KILOWATT
KWH	KILOWATT HOUR
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LxWxH	LENGTH x WIDTH x HEIGHT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MD	MOTORIZED DAMPER
MFR	MANUFACTURER
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MVD	MANUAL VOLUME DAMPER
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NFPA	NATIONAL FIRE PROTECTION AGENCY
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DUCT
OBD	OPPOSED BLADE DAMPER
OPNG	OPENING
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PI	PRESSURE INDICATOR
POC	POINT OF CONNECTION
POD	POINT OF DISCONNECTION
PRV	PRESSURE REDUCING VALVE
PTAC	PACKAGED TERMINAL AIR CONDITION.
QTY	QUANTITY
RA	RETURN AIR
RAD	RETURN AIR DUCT
REG	REGISTER
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID LINE
RLA	RATED/RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION LINE
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAD	SUPPLY AIR DUCT
SAN	SANITARY SEWER
SCCR	SHORT CIRCUIT CURRENT RATING
SD	DUCT SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
T	THERMOSTAT
TA	TRANSFER AIR
TAD	TRANSFER AIR DUCT
TC	TOTAL CAPACITY
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
THRU	THROUGH
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	UNDERCUT
UTR	UP THRU ROOF
V	VOLTS OR VENT
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WIDTH
WB	WET BULB
WG	WATER GAUGE
ø	DIAMETER

HVAC GENERAL NOTES

1. ALL EQUIPMENT, MATERIALS, ACCESSORIES, AND ARTICLES MUST BE NEW AND OF COMPARABLE QUALITY AS SPECIFIED. ALL WORKMANSHIP MUST BE FIRST-CLASS AND PERFORMED BY MECHANICS SKILLED AND REGULARLY EMPLOYED IN THEIR RESPECTIVE TRADES.
2. ALL WORK MUST BE COORDINATED WITH ALL AFFECTED TRADES PRIOR TO STARTING WORK. RE-WORK REQUIRED DUE TO MISS-COORDINATION MUST BE DONE BY THE INSTALLING CONTRACTOR WITHOUT INCREASED COST TO THE CITY OF HOUSTON.
3. THESE DRAWINGS ARE GENERAL IN NATURE. ALTHOUGH EVERY ATTEMPT HAS BEEN MADE TO INDICATE THE EXACT ROUTING AND LOCATION OF PROPOSED SYSTEMS, NOT ALL OFFSETS, REQUIRED FITTINGS, AND/OR CONDITIONS CAN BE SHOWN. THE CONTRACTOR MUST COORDINATE WORK AND MAKE REQUIRED CHANGES TO THE ROUTING IN ORDER TO AVOID CONFLICTS WITHOUT ANY INCREASED COST TO THE CITY OF HOUSTON.
4. ALL REFRIGERATION PIPING MUST BE TYPE ACR, K, OR L COPPER. TYPE M COPPER IS NOT ALLOWED TO BE INSTALLED FOR ANY PIPING WITHIN THE CONTRACT.
5. ALL REFRIGERATION PIPING MUST BE INSULATED AS SPECIFIED WITH ELASTOMERIC INSULATION OR AN APPROVED EQUAL.
6. STRUCTURAL COMPONENTS MUST NOT BE CUT, DRILLED, OR MODIFIED IN ANY MANNER WITHOUT A STRUCTURAL ENGINEER'S REVIEW AND APPROVAL.
7. SEAL ALL NEW WALL PENETRATIONS WITHIN TO MAINTAIN INTEGRITY OF LISTED ASSEMBLY, PROVIDE SLEEVES AND SEAL WEATHER TIGHT.
8. FURNISH ANY MISCELLANEOUS ITEMS NORMALLY USED, SPECIFICALLY MENTIONED OR NOT, TO RENDER A COMPLETE INSTALLATION.
9. MANUFACTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS. SUBMIT LITERATURE FOR ALL EQUIPMENT AND MATERIALS TO THE ENGINEER OF RECORD FOR APPROVAL.
10. REVIEW ALL APPLICABLE MANUFACTURERS' INSTALLATION AND MAINTENANCE DOCUMENTS/REQUIREMENTS PRIOR TO STARTING WORK. ALL WORK MUST ADHERE TO THE MANUFACTURERS' REQUIREMENTS. IF A CONFLICT EXISTS BETWEEN THE DESIGN DOCUMENTS AND MANUFACTURER'S REQUIREMENTS, THEN NOTIFY THE ENGINEER PRIOR TO STARTING WORK.
11. EQUIPMENT MUST BE ANCHORED TO MEET THE LOCAL SEISMIC/WIND REQUIREMENTS AND CODES.
12. THE WORD "PROVIDE" CALLED OUT WITHIN THESE CONTRACT DOCUMENTS IS IMPLIED TO MEAN "FURNISH AND INSTALL".
13. INSTALL ALL EQUIPMENT PLUMB AND LEVEL.
14. EQUIPMENT MUST BE LABELED IN ACCORDANCE WITH THE PLANS.
15. A DIELECTRIC UNION MUST BE USED TO JOIN ANY DISSIMILAR MATERIALS.
16. COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL DRAWINGS AND FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN HEREIN.
17. COORDINATE WORK WITH THAT OF ALL OTHER TRADES INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, MECHANICAL, PLUMBING, STRUCTURAL, CIVIL, AND GENERAL ARCHITECTURE. THIS MUST INCLUDE PROVIDING SUFFICIENT SPACE TO MEET ALL OTHER TRADE CLEARANCE REQUIREMENTS.
18. PROVIDE AND INSTALL THERMOSTATS WHERE INDICATED ON PLANS AT 4'-0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
19. PROVIDE AND INSTALL ALL REQUIRED CONTROL WIRING AND CONDUIT.
20. EXHAUST FAN EF-1 WAS SIZED FOR 6 AIR CHANGES PER HOUR.

LEGEND



90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/2025	90% SUBMITTAL	
A	08/18/2025	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

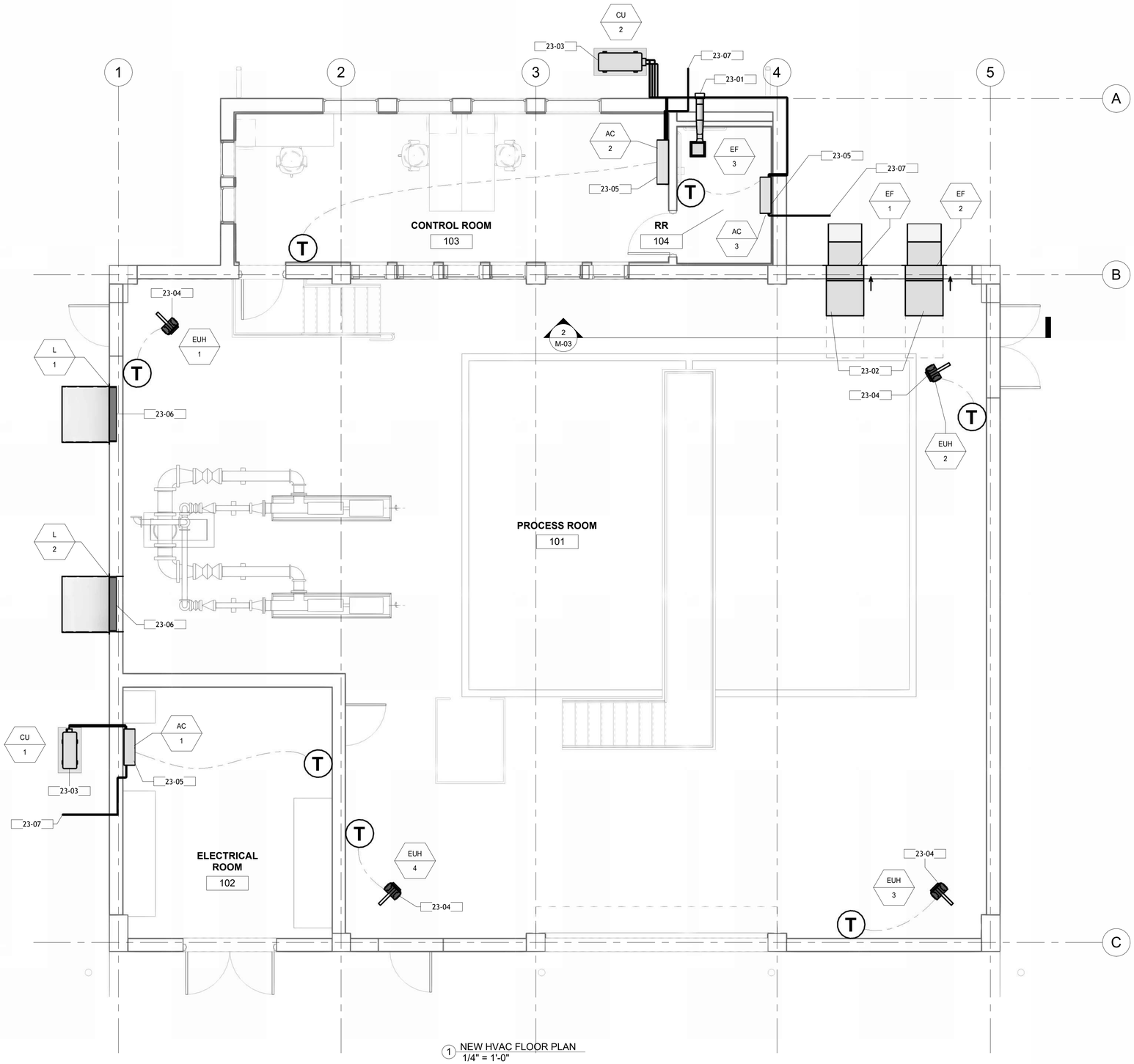
RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS PLUMBING SYMBOLS, ABBREVIATIONS, GENERAL NOTES, AND CALCULATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	

M-01



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

KEYNOTES	
Key Value	Keynote Text
23-01	PROVIDE AND INSTALL NEW GREENHECK WC-6 WALL CAP OR APPROVED EQUAL AND CONNECT TO NEW EXHAUST FAN EF-2.
23-02	PROVIDE AND INSTALL NEW EXHAUST FAN AT APPROXIMATELY 7.5 FEET AFF AS SCHEDULED, SPECIFIED, PER DETAILS ON SHEET M-05, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL FACTORY OR PRE-FABRICATED EXTERIOR 90 DEGREE WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. COORDINATE WITH PLUMBING CONTRACTOR FOR INSTALLATION OF OVERHEAD DOMESTIC WATER LINE AND MAINTAIN ALL SERVICE CLEARANCES ACCORDING TO THE IMC. PROVIDE AND INSTALL A HAND/OFF/AUTO SWITCH. IN AUTO MODE BOTH FANS MUST ENERGIZE WHEN ANY BELT PRESS STARTS. A SINGLE FAN MUST ALWAYS BE ENERGIZED AND IN OPERATION AT ANY GIVEN TIME. BOTH FANS MUST BE CAPABLE OF BEING OVERRIDDEN OFF OR ON MANUALLY USING THE HOA SWITCH.
23-03	PROVIDE AND INSTALL NEW CONDENSING UNIT, INSULATED LINE SET, AND ALL ACCESSORIES AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL NEW 4 INCH COMPOSITE OR CONCRETE SUPPORT PAD THAT IS AT LEAST 4 INCHES LARGER THAN EQUIPMENT IN ALL DIRECTIONS. CONNECT PROPERLY SIZED INSULATED LINE SET TO INDOOR EVAPORATOR UNIT. EVACUATE AND CHARGE SYSTEM ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. ENSURE SYSTEM IS 100% OPERATIONAL.
23-04	PROVIDE AND INSTALL NEW ELECTRIC RESISTANCE UNIT HEATER AT APPROXIMATELY 12.5 AFF AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. COORDINATE WITH ELECTRICAL ON POWER ROUTING AND EXACT INSTALLATION LOCATION. COORDINATE WITH CRANE HOIST INSTALLATION CONTRACTOR FOR FINAL INSTALLATION LOCATION OF ALL UNIT HEATERS AND DO NOT ENCROACH ON HOIST PATHWAY(S) OR BELT PRESS ELEVATOR AND MAINTAIN ALL SERVICE CLEARANCES PER THE IMC.
23-05	PROVIDE AND INSTALL NEW INDOOR EVAPORATOR UNIT AT APPROXIMATELY 7 FEET AFF AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL NEW WALL MOUNTED THERMOSTAT. CONNECT TO OUTDOOR CONDENSING UNIT. EVACUATE, CHARGE, AND ENSURE SPLIT SYSTEM HEAT PUMP IS 100% OPERATIONAL.
23-06	PROVIDE AND INSTALL NEW LOUVER AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS AT APPROXIMATELY 12 FEET, 4 INCHES AFF OR OUT OF WAY OF DOMESTIC WATER AND PROCESS PIPING. COORDINATE WITH PLUMBING AND MECHANICAL PIPING CONTRACTOR FOR FINAL LOCATION AND ELEVATION. MAINTAIN ALL SERVICE CLEARANCES PER THE IMC. PROVIDE AND INSTALL NEW 90 DEGREE EXTERIOR, STAINLESS STEEL OR ALUMINUM WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. ENSURE SYSTEM IS 100% OPERATIONAL AND WEATHER TIGHT.
23-07	PROVIDE, INSTALL, AND CONNECT NEW CONDENSATE DRAIN TO INDOOR EVAPORATOR COOLING UNIT. PLUMB AND ROUTE TO EXTERIOR OF BUILDING AND GROUND LEVEL AND TERMINATE 3 FEET OF ANY BUILDING WALL, FOUNDATION, OR EQUIPMENT PAD. SLOPE AT 1/4 INCH PER FOOT MINIMUM.

PLAN NORTH

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
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RESPONSIBLE ENGINEER
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

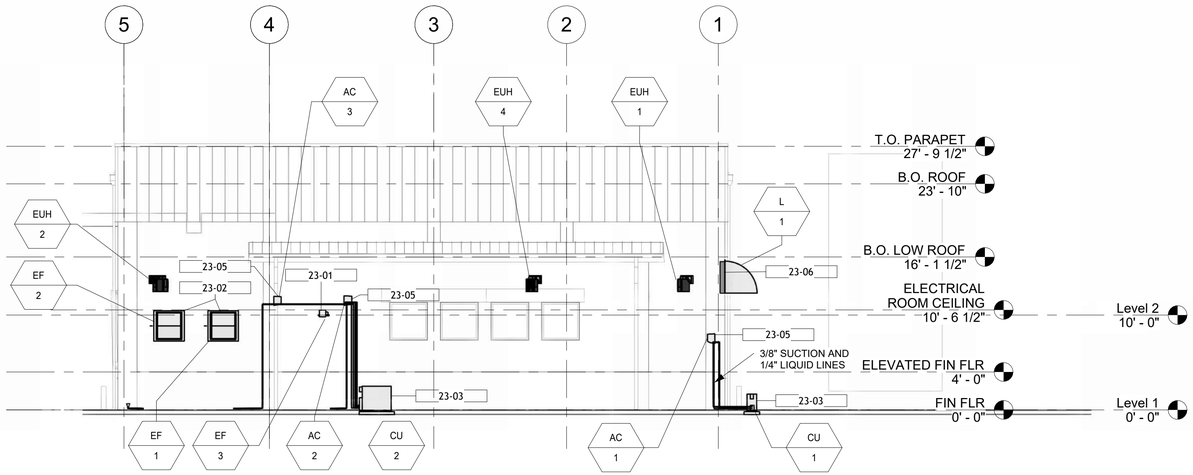
GREENRIDGE WWT PLANT IMPROVEMENTS

DEWATERING BUILDING NEW HVAC FLOOR PLAN

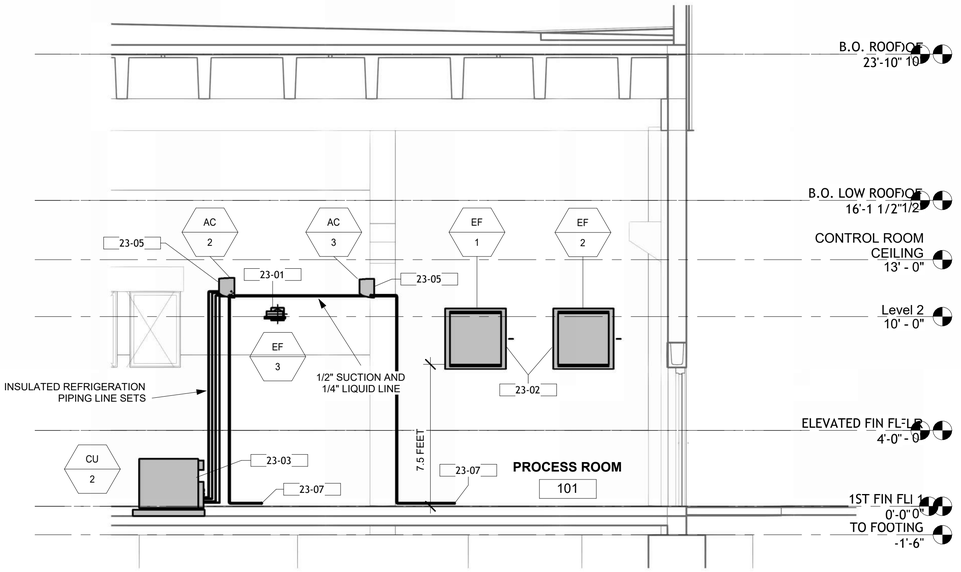
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/4" = 1'-0"	
CITY OF HOUSTON PM	

M-02 SHEET NO. 122 OF 252

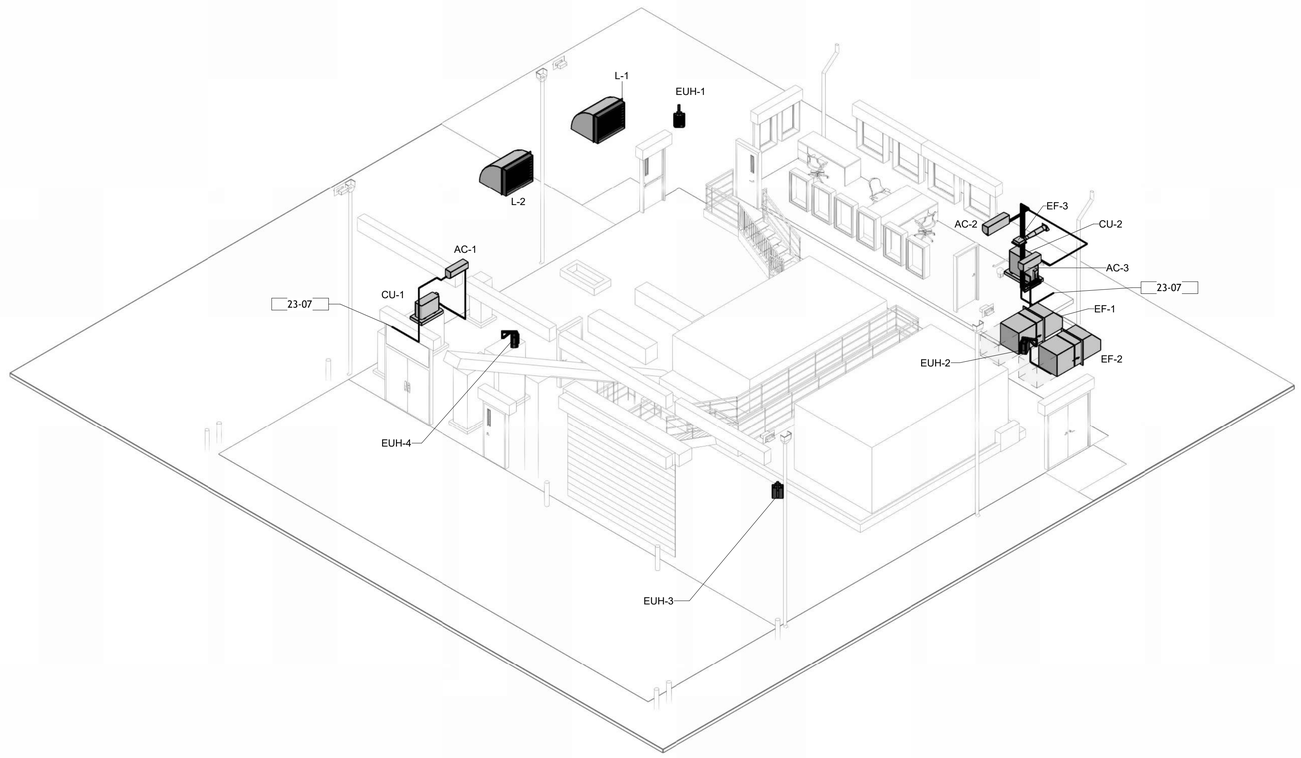
90% SUBMITTAL NOT FOR CONSTRUCTION



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



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



3 HVAC ISOMETRIC VIEW (NTS)

KEYNOTES	
Key Value	Keynote Text
23-01	PROVIDE AND INSTALL NEW GREENHECK WC-6 WALL CAP OR APPROVED EQUAL AND CONNECT TO NEW EXHAUST FAN EF-2.
23-02	PROVIDE AND INSTALL NEW EXHAUST FAN AT APPROXIMATELY 7.5 FEET AFF AS SCHEDULED, SPECIFIED, PER DETAILS ON SHEET M-05, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL FACTORY OR PRE-FABRICATED EXTERIOR 90 DEGREE WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. COORDINATE WITH PLUMBING CONTRACTOR FOR INSTALLATION OF OVERHEAD DOMESTIC WATER LINE AND MAINTAIN ALL SERVICE CLEARANCES ACCORDING TO THE IMC. PROVIDE AND INSTALL A HAND/OFF/AUTO SWITCH. IN AUTO MODE BOTH FANS MUST ENERGIZE WHEN ANY BELT PRESS STARTS. A SINGLE FAN MUST ALWAYS BE ENERGIZED AND IN OPERATION AT ANY GIVEN TIME. BOTH FANS MUST BE CAPABLE OF BEING OVERRIDDEN OFF OR ON MANUALLY USING THE HOA SWITCH.
23-03	PROVIDE AND INSTALL NEW CONDENSING UNIT, INSULATED LINE SET, AND ALL ACCESSORIES AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL NEW 4 INCH COMPOSITE OR CONCRETE SUPPORT PAD THAT IS AT LEAST 4 INCHES LARGER THAN EQUIPMENT IN ALL DIRECTIONS. CONNECT PROPERLY SIZED INSULATED LINE SET TO INDOOR EVAPORATOR UNIT. EVACUATE AND CHARGE SYSTEM ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. ENSURE SYSTEM IS 100% OPERATIONAL.
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23-06	PROVIDE AND INSTALL NEW LOUVER AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS AT APPROXIMATELY 12 FEET, 4 INCHES AFF OR OUT OF WAY OF DOMESTIC WATER AND PROCESS PIPING. COORDINATE WITH PLUMBING AND MECHANICAL PIPING CONTRACTOR FOR FINAL LOCATION AND ELEVATION. MAINTAIN ALL SERVICE CLEARANCES PER THE IMC. PROVIDE AND INSTALL NEW 90 DEGREE EXTERIOR, STAINLESS STEEL OR ALUMINUM WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. ENSURE SYSTEM IS 100% OPERATIONAL AND WEATHER TIGHT.
23-07	PROVIDE, INSTALL, AND CONNECT NEW CONDENSATE DRAIN TO INDOOR EVAPORATOR COOLING UNIT. PLUMB AND ROUTE TO EXTERIOR OF BUILDING AND GROUND LEVEL AND TERMINATE 3 FEET OF ANY BUILDING WALL, FOUNDATION, OR EQUIPMENT PAD. SLOPE AT 1/4 INCH PER FOOT MINIMUM.

0' 4' 8' 16'
0' 2' 4' 8'
GRAPHIC SCALE

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
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PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT
PLANT IMPROVEMENTS

DEWATERING BUILDING HVAC SECTS. & ISOMETRIC VIEWS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
As indicated	
CITY OF HOUSTON PM	

90% SUBMITTAL NOT FOR CONSTRUCTION

ELECTRIC UNIT HEATER SCHEDULE

TAG	SERVICE	MAKE	MODEL	POWER	ELECTRICAL	FLA (A)	MOTOR SPD	FLOW	THROW	HEAT RISE	DIMENSIONS (IN)	WEIGHT	NOTES
EUH-1	MECH. PROCESS RM.	BERKO	HUHAA3048	30 KW	480V/60HZ/3PH	36 AMP	1600 RPM	2100 CFM	50 FT	45 DEG. F.	27W X 30H X 14D	91 LBS	1,2,3
EUH-2	MECH. PROCESS RM.	BERKO	HUHAA3048	30 KW	480V/60HZ/3PH	36 AMP	1600 RPM	2100 CFM	50 FT	45 DEG. F.	27W X 30H X 14D	91 LBS	1,2,3
EUH-3	MECH. PROCESS RM.	BERKO	HUHAA3048	30 KW	480V/60HZ/3PH	36 AMP	1600 RPM	2100 CFM	50 FT	45 DEG. F.	27W X 30H X 14D	91 LBS	1,2,3
EUH-4	MECH. PROCESS RM.	BERKO	HUHAA3048	30 KW	480V/60HZ/3PH	36 AMP	1600 RPM	2100 CFM	50 FT	45 DEG. F.	27W X 30H X 14D	91 LBS	1,2,3

NOTES:

1. MODEL SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURES MAY BE ACCEPTED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL FACTORY DISCONNECT AND WALL MOUNTED CONTROL TRANSFORMER WITH LINE VOLTAGE THERMOSTAT WITH SETPOINT ADJUSTMENT.
3. PROVIDE AND INSTALL FACTORY MOUNTING HARDWARE.

INDOOR AIR CONDITIONING EVAPORATOR FAN UNIT

TAG	SERVICE	MAKE	MODEL	COOLING					HEATING CAPACITY	ELECTRICAL				DIMENSIONS (WXHXD)	WEIGHT	NOTES
				CAPACITY	REFRIGERANT	SUCTION LINE / LIQUID LINE SIZE	FAN SPEED	MAX AIR FLOW		VOLTS/HZ/PHASE	MCA	MOPD	EER2			
AC-1	ELECTRICAL RM	BOSCH	BMS500-AAU012-1AHWXD	1 TON	R-454B	3/8" & 1/4"	VARIABLE	440 CFM	8.4 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	13	31" X 12" X 9.5"	30 LBS	1,2
AC-2	CONTROL RM	BOSCH	BMS500-AAU018-1AHWXD	1.5 TON	R-454B	1/2" & 1/4"	VARIABLE	635 CFM	12.8 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	12.7	38" X 13" X 10"	30 LBS	1,3
AC-3	RESTROOM	BOSCH	BMS500-AAU006-1AHWXD	0.5 TON	R-454B	3/8" & 1/4"	VARIABLE	440 CFM	8.3 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	18	31" X 12" X 9.5"	30 LBS	1,3

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. UNIT DESIGNED AND SELECTED FOR A SINGLE ZONE SYSTEM. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH TO SINGLE ZONE OUTDOOR UNIT.
3. UNIT DESIGNED AND SELECTED FOR A MULTI-ZONE SYSTEM. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH TO MULIT-ZONE OUTDOOR UNIT.

LOUVER SCHEDULE

TAG	MAKE	MODEL	SERVES	TYPE	FLOW (CFM)	TSP (IN WC)	SIZE (IN)	DEPTH (IN)	VELOCITY (FPM)	FREE AREA (FT^2)	MATERIAL	WEIGHT	NOTES
L-1	GREENHECK	ESD-635DE-40X48	MECHANICAL PROCESS RM	INTAKE, HURRICANE RAIN RESISTANT LOUVER	6,500	0.11	40 X 48	6	841	7.7	ALUMINUM	60 LBS.	1,2,3
L-2	GREENHECK	ESD-635DE-40X48	MECHANICAL PROCESS RM	INTAKE, HURRICANE RAIN RESISTANT LOUVER	6,500	0.11	40 X 48	6	841	7.7	ALUMINUM	60 LBS.	1,2,3

NOTES:

1. MANUFACTURE SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURES MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL 90 DEGREE EXTERIOR WALL HOOD AS SPECIFIED AND PER DRAWINGS.
3. PROVIDE AND INSTALL LOUVER THAT IS AMCA 500 CERTIFIED FOR HURRICANE RATED CONDITIONS AND TO MINIMIZE MOISTURE ENTRY.

CONDENSING UNIT SCHEDULE WITH AIR SOURCE HEAT PUMP

TAG	SERVICE	MAKE	MODEL	COOLING					HEATING CAPACITY	ELECTRICAL				DIMENSIONS (WXHXD)	WEIGHT	NOTES
				CAPACITY	REFRIGERANT	SUCTION LINE / LIQUID LINE SIZE	FACTORY UNIT CHARGE	COMPRESSOR		VOLTS/HZ/PHASE	MCA	MOPD	EER2			
CU-1	ELECTRICAL RM	BOSCH	BMS500-AAS012-1CSXRD	1 TON	R-454B	3/8" & 1/4"	32 OZ	ROTARY	8.4 MBH @ 5 F.	208-230V/60HZ/1PH	12	20	13	33" X 22" X 12.5"	70 LBS	1,2,3,4
CU-2	CONTROL RM & RESTROOM	BOSCH	BMS500-AAM027-1CSXRD	2 TONS	R-454B	3/8",1/2" & 1/4"	85 OZ	ROTARY	19 MBH @ 5 F	208-230V/60HZ/1PH	23	25	13	41" X 32" X 16.5"	150 LBS	1,2,3,4

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL AIR SOURCE HEAT PUMP UNIT WITH INVERTER SCROLL OR ROTARY COMPRESSOR, VARIABLE SPEED CONDENSER FAN AND/OR WITH LOW AMBIENT CONTROL FOR COOLING AND HEATING CAPABILITY TO 0 DEG. F. OUTDOOR AIR TEMPERATURE.
3. FIELD VERIFY EXACT REFRIGERANT PIPE ROUTING AND VERIFY WITH FINAL APPROVED MANUFACTURER FOR LINE SIZES AND REFRIGERANT QUANTITIES.
4. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH.

EXHAUST FAN SCHEDULE

TAG	MAKE	MODEL	SERVES	TYPE	FLOW (CFM)	TSP (IN WC)	SPEED	SIZE (HP)	ELECTRICAL	FLA (A)	MCA (A)	MOPD (A)	DIMENSIONS (IN)	WEIGHT	NOTES
EF-1	GREENHECK	AER-24-03-0614	MECHANICAL PROCESS RM	WALL MOUNT, DIRECT DRIVE, PROPELLER	6,525	0.5	1,800 RPM	1.5	230V/60HZ/1PH	10	12.5	20	32X32, 24" DIAM.	100 LBS.	1,2
EF-2	GREENHECK	AER-24-03-0614	MECHANICAL PROCESS RM	WALL MOUNT, DIRECT DRIVE, PROPELLER	6,525	0.5	1,800 RPM	1.5	230V/60HZ/1PH	10	12.5	20	32X32, 24" DIAM.	100 LBS.	1,2
EF-3	GREENHECK	SP-LP0511-1	RESTROOM	CEILING MOUNT, DIRECT DRIVE, CENTRIFUGAL	110	0.06	900 RPM	1/100	115V/60HZ/1PH	0.29	0.4	15	10 X 10 X 4	10 LBS.	1,3,4

NOTES:

1. MANUFACTURE SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURES MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL BACK DRAFT DAMPER AND 90 DEGREE EXTERIOR WALL HOOD AS SPECIFIED AND PER DRAWINGS.
3. PROVIDE AND INSTALL FACTORY 4 INCH WALL TERMINATION CAP MODEL WC-4 (OR APPROVED EQUAL) ON EXTERIOR OF BUILDING AND ALL CONNECTED DUCTWORK PER PLANS AND SPECS.
4. PROVIDE AND INSTALL ON/OFF WALL SWITCH. COORDINATE WITH ELECTRICAL FOR INSTALLATION.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/2025	90% SUBMITTAL	
A	08/18/2025	60% SUBMITTAL	

PARSONS
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SURVEYED BY: UNITED ENGINEERS, INC

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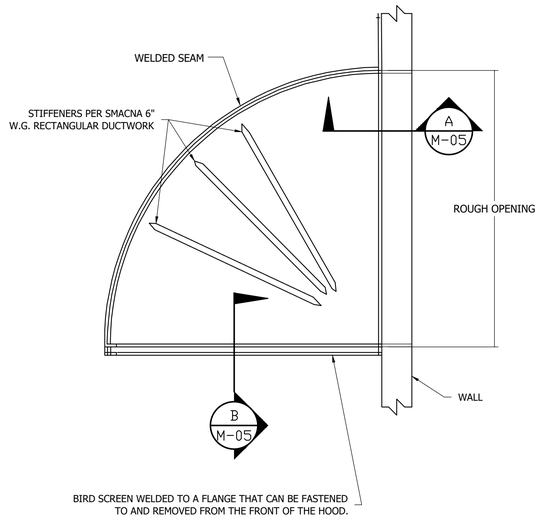
RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

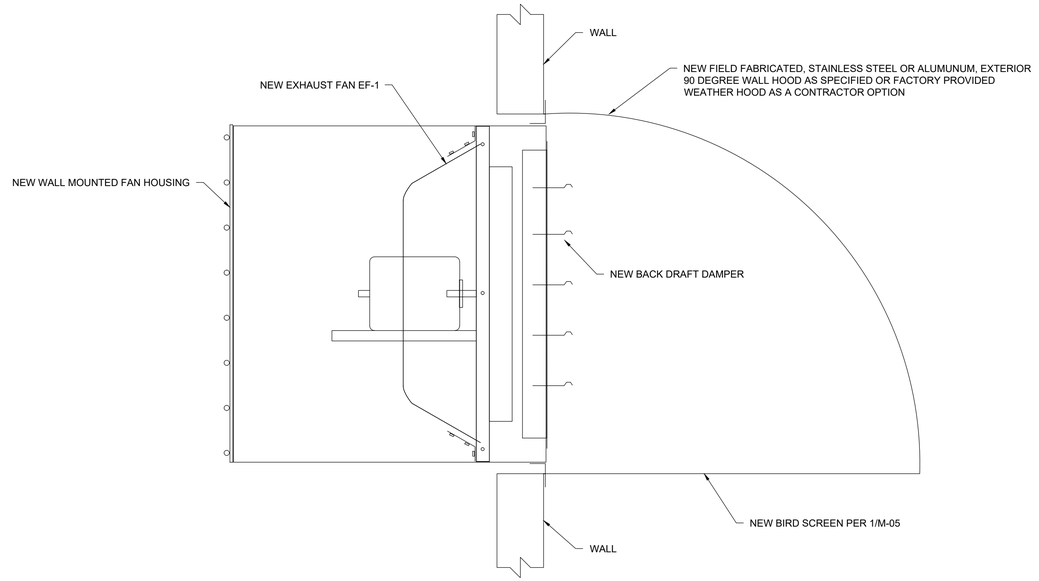
GREENRIDGE WWT PLANT IMPROVEMENTS

DEWATERING BUILDING HVAC SCHEDULES

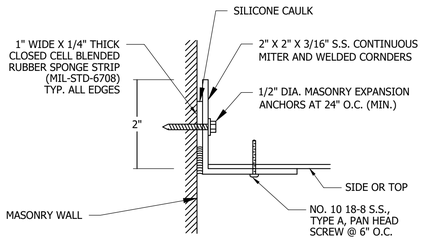
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	



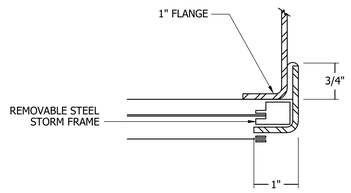
1 M-05 **90 DEGREE EXTERIOR WALL HOOD DETAIL**
SCALE: NOT TO SCALE



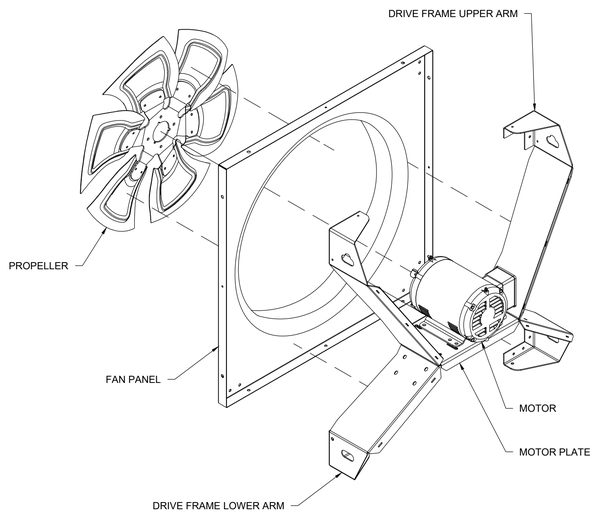
2 M-05 **WALL MOUNTED EXHAUST FAN HOUSING INSTALLATION DETAIL**
SCALE: NOT TO SCALE



A M-05 **EXTERIOR WALL HOOD SECTION**
SCALE: NOT TO SCALE



B M-05 **INSECT & BIRD SCREEN SECTION**
SCALE: NOT TO SCALE



3 M-05 **WALL MOUNTED EXHAUST FAN ISOMETRIC EXPLODED VIEW**
SCALE: NOT TO SCALE

90% SUBMITTAL NOT FOR CONSTRUCTION

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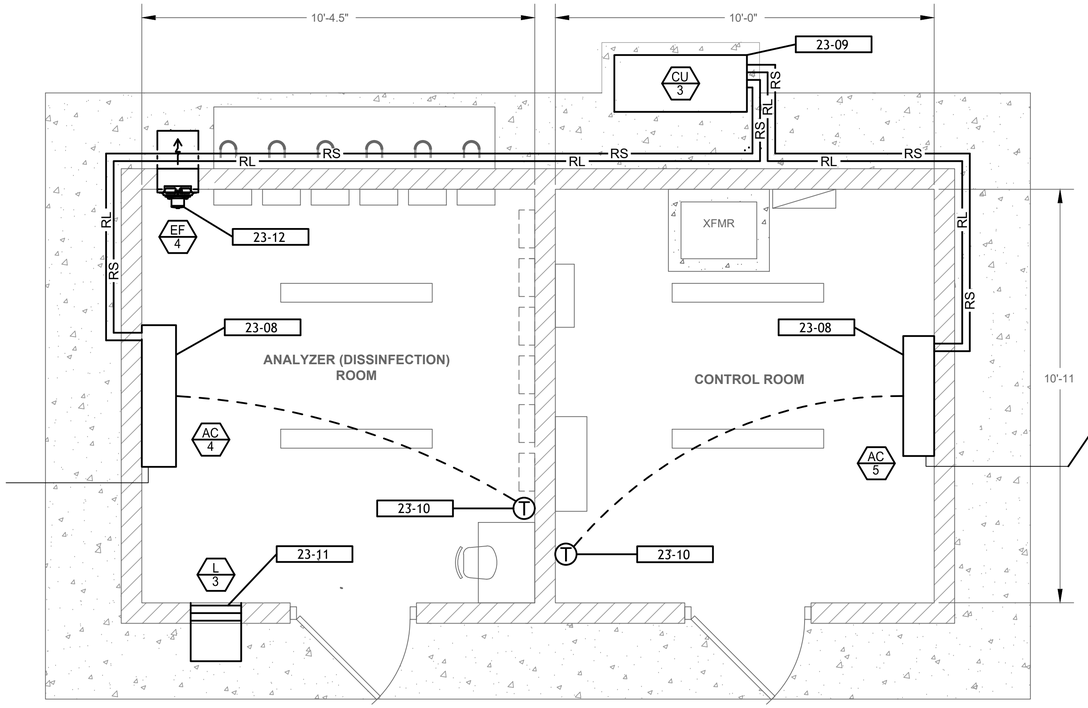
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS

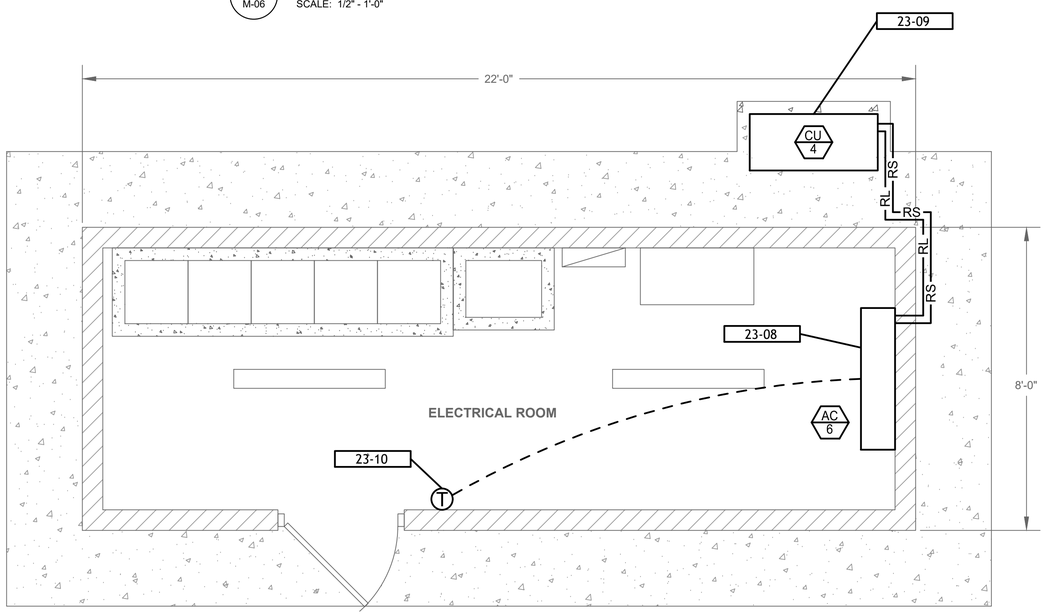
DEWATERING BUILDING HVAC DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	
M-05	SHEET NO. 125 OF 252



1 DISINFECTION BUILDING HVAC PLAN

M-06 SCALE: 1/2" - 1'-0"



2 ELECTRICAL RAS/WAS BUILDING HVAC PLAN

M-06 SCALE: 1/2" - 1'-0"

KEYNOTES	
Key Value	Keynote Text
23-08	PROVIDE AND INSTALL NEW INDOOR EVAPORATOR UNIT AT APPROXIMATELY 7 FEET AFF AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL NEW WALL MOUNTED THERMOSTAT. PLUMB LINE SET, POWER, AND CONTROLS TO OUTDOOR HEAT PUMP UNIT. EVACUATE, CHARGE, AND ENSURE SPLIT SYSTEM HEAT PUMP IS 100% OPERATIONAL.
23-09	PROVIDE AND INSTALL NEW OUTDOOR HEAT PUMP UNIT, INSULATED LINE SET, AND ALL ACCESSORIES AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL NEW 4 INCH CONCRETE SUPPORT PAD AND ENSURE PAD IS 4 INCHES LARGER THAN EQUIPMENT IN ALL DIRECTIONS. CONNECT PROPERLY SIZED INSULATED LINE SET TO INDOOR EVAPORATOR UNIT. EVACUATE AND CHARGE SYSTEM ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. ENSURE ENTIRE HEAT PUMP SYSTEM IS 100% OPERATIONAL.
23-10	PROVIDE AND INSTALL NEW HEAT PUMP THERMOSTAT THAT IS COMPATIBLE WITH NEW HEAT PUMP MINI SPLIT EQUIPMENT AT 48 INCHES AFF AND ACCORDING TO THE MANUFACTURER WRITTEN INSTRUCTIONS.
23-11	PROVIDE AND INSTALL NEW LOUVER L-3 AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS AT APPROXIMATELY 7 FEET AFF. PROVIDE AND INSTALL NEW 90 DEGREE EXTERIOR, STAINLESS STEEL OR ALUMINUM WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. ENSURE SYSTEM IS 100% OPERATIONAL AND WEATHER TIGHT.
23-12	PROVIDE AND INSTALL NEW EXHAUST FAN EF-4 AT APPROXIMATELY 1 FOOT AFF AS SCHEDULED, SPECIFIED, PER DETAILS ON SHEET M-05, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE AND INSTALL FACTORY OR PRE-FABRICATED EXTERIOR 90 DEGREE WALL HOOD AS SPECIFIED AND ACCORDING TO DETAIL 1/M-05. EXHAUST FAN IS TO RUN CONTINUOUSLY. ENSURE EXHAUST SYSTEM IS 100% OPERATIONAL AND WEATHER TIGHT.
23-13	PROVIDE, INSTALL, AND CONNECT NEW CONDENSATE DRAIN TO INDOOR EVAPORATOR COOLING UNIT. PLUMB AND ROUTE TO EXTERIOR OF BUILDING AND GROUND LEVEL AND TERMINATE 3 FEET OF ANY BUILDING WALL, FOUNDATION, OR EQUIPMENT PAD. SLOPE AT 1/4 INCH PER FOOT MINIMUM.

INDOOR AIR CONDITIONING HEAT PUMP UNIT SCHEDULE

TAG	SERVICE	MAKE	MODEL	COOLING					HEATING CAPACITY	ELECTRICAL				DIMENSIONS (WXHXD)	WEIGHT	NOTES
				CAPACITY	REFRIGERANT	SUCTION LINE / LIQUID LINE SIZE	FAN SPEED	MAX AIR FLOW		VOLTS/HZ/PHASE	MCA	MOPD	EER2			
AC-4	ANALYZER RM	BOSCH	BMS500-AAU018-1AHWXD	1.5 TON	R-454B	1/2" & 1/4"	VARIABLE	635 CFM	12.8 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	12.7	38" X 13" X 10"	30 LBS	1,3
AC-5	CONTROL RM	BOSCH	BMS500-AAU024-1AHWXD	2 TON	R-454B	3/8" & 5/8"	VARIABLE	812 CFM	19.6 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	14	45" X 15" X 11"	60 LBS	1,3
AC-6	ELECTRICAL RM	BOSCH	BMS500-AAU024-1AHWXD	2 TON	R-454B	3/8" & 5/8"	VARIABLE	812 CFM	19.6 MBH @ 5 F.	208-230V/60HZ/1PH	3	15	14	45" X 15" X 11"	60 LBS	1,2

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. UNIT DESIGNED AND SELECTED FOR A SINGLE ZONE SYSTEM. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH TO SINGLE ZONE OUTDOOR UNIT.
3. UNIT DESIGNED AND SELECTED FOR A MULTI-ZONE SYSTEM. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH TO MULIT-ZONE OUTDOOR UNIT.

LOUVER SCHEDULE

TAG	MAKE	MODEL	SERVES	TYPE	FLOW (CFM)	TSP (IN WC)	SIZE (IN)	DEPTH (IN)	VELOCITY (FPM)	FREE AREA (FT^2)	MATERIAL	WEIGHT	NOTES
L-3	GREENHECK	EVH-501D-16X12	ANALYZER RM.	INTAKE, HURRICANE RAIN RESISTANT LOUVER	200	0.06	16 X 12	5	590	0.3	ALUMINUM	10 LBS.	1,2,3

NOTES:

1. MANUFACTURE SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURES MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL 90 DEGREE EXTERIOR WALL HOOD AS SPECIFIED AND PER DRAWINGS.
3. PROVIDE AND INSTALL LOUVER THAT IS AMCA 500 CERTIFIED FOR HURRICANE RATED CONDITIONS AND TO MINIMIZE MOISTURE ENTRY.

CONDENSING UNIT AIR SOURCE HEAT PUMP SCHEDULE

TAG	CU-3	CU-34
MAKE	BOSCH	BOSCH
MODEL	BMS500-AAS036-1CSXHD	BMS500-AAS024-1CSXRD
SERVES	DISSINFECTION BUILDING	ELECTRICAL WAS/RAS BUILDING
CAPACITY	3 TON	2 TON
REFRIGERANT	R-454B	R-454B
LIQUID/SUCTION LINE SIZE	5X1/4 INCH, 3X3/8 INCH & 2X1/2 INCH	3/8 INCH & 5/8 INCH
FACTORY CHARGE	134 OUNCES	70 OUNCES
COMPRESSOR	TWIN ROTARY	ROTARY
HEATING CAPACITY	36 MBH @ 5 DEG. F.	19.6 MBH @ 5 DEG. F.
ELECTRICAL	208-230 VOLTS / 60 HZ / 1 PHASE	208-230 VOLTS / 60 HZ / 1 PHASE
MCA	37 AMPERES	24 AMPERES
MOPD	40 AMPERES	25 AMPERES
EER2	13	14
DIMENSIONS	42 IN WIDE X 38.5 IN HIGH X 18 IN DEEP	40 IN WIDE X 32 IN HIGH X 16 IN DEEP
NOTES	1, 2, 3	1, 2, 3

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEE THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL AIR SOURCE HEAT PUMP UNIT WITH INVERTER SCROLL OR ROTARY COMPRESSOR, VARIABLE SPEED CONDENSER FAN AND/OR WITH LOW AMBIENT CONTROL FOR COOLING AND HEATING CAPABILITY DOWN TO 0 DEG. F. OUTDOOR AIR TEMPERATURE.
3. FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CHARGING AND ADD PROPER AMOUNT OF REFRIGERANT CHARGE TO FACTORY CHARGE IF REQUIRED.
4. PROVIDE, INSTALL, AND CONNECT INSULATED LINE SET OF PROPER SIZE AND LENGTH FOR EACH INDOOR UNIT.

EXHAUST FAN SCHEDULE

TAG	EF-4
MAKE	GREENHECK
MODEL	SE1-8-440-VG
SERVES	ANALYZER RM
TYPE	WALL, DIRECT DRIVE, PROP.
FLOW	175 CFM
TSP	0.3 IN WC
SPEED	1,678 RPM
SIZE	30 WATTS
ELECTRICAL	115 VOLT / 60 HZ / 1 PHASE
SCCR	5 KA
DIMENSIONS	13 X 13 IN, 8 IN DIAMETER
WEIGHT	20
NOTES	1, 2, 3

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL BACK DRAFT DAMPER AND 90 DEGREE EXTERIOR WALL HOOD AS SPECIFIED AND PER DRAWINGS.
3. PROVIDE AND INSTALL ON/OFF WALL SWITCH. COORDINATE WITH ELECTRICAL FOR INSTALLATION.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/2025	90% SUBMITTAL	
A	08/18/2025	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS

DISSINFECTION & RAS/WAS BUILDING HVAC PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/2" = 1'-0"	
CITY OF HOUSTON PM	
M-06	SHEET NO. 124 OF 301

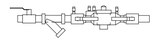
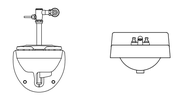
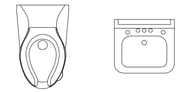
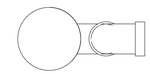
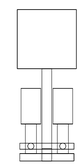
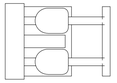
PLUMBING ABBREVIATIONS

A	AMPERES
ABV	ABOVE
ABBV	ABBREVIATIONS
AC	AIR CONDITIONER
ACH	AIR CHANGES PER OUR
ADA	AMERICAN DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
AMP(S)	AMPERE OR AMPERES
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION & AIR CONDITIONING ENGINEERS
BEL	BELOW
BP	BOOSTER PUMP
BTU	BRITISH THERMAL UNIT
BTU/H	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CAV	CONSTANT AIR VOLUME
CD	CONDENSATE DRAIN
CENT	CENTRIFUGAL
CFM	CUBIC FEET PER MINUTE (AIRFLOW)
CLG	COOLING
CO	CLEAN OUT
CONC	CONCRETE
COR	CONTRACTING OFFICERS REPRESENTATIVE
CU	CONDENSING UNIT
CV	CONSTANT VOLUME
D	DRAIN OR DEPTH
DB	DRY BULB OR DECIBEL
DCW	DOMESTIC COLD WATER (POTABLE)
DEG	DEGREE
DEMO	DEMOLISH
DHW	DOMESTIC HOT WATER
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EQ	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WATER HEATER
F	FAHRENHEIT
FD	FLOOR DRAIN
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FEET
GA	GAUGE
GPM	GALLONS PER MINUTE
H	HUMIDISTAT OR HEIGHT
HC	HEATING COIL
HP	HORSEPOWER
HR	HOSE REEL
HTG	HEATING
HTR	HEATER
HZ	HERTZ
IN	INCHES
IN WC	INCH WATER COLUMN
KW	KILOWATT
KWH	KILOWATT HOUR
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LxWxH	LENGTH x WIDTH x HEIGHT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
MOPD	MAXIMUM OVERCURRENT PROTECTION DEVICE
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NOM	NOMINAL
NFPA	NATIONAL FIRE PROTECTION AGENCY
NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DUCT
OBD	OPPOSED BLADE DAMPER
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
RA	RETURN AIR
RAD	RETURN AIR DUCT
REG	REGISTER
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID LINE
RLA	RATED/RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE (BACKFLOW PREVENTION ASSEMBLY)
RS	REFRIGERANT SUCTION LINE
RTU	ROOF TOP UNIT
S	SINK
SA	SUPPLY AIR
SAD	SUPPLY AIR DUCT
SAN	SANITARY SEWER
SCCR	SHORT CIRCUIT CURRENT RATING
SD	DUCT SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
T	THERMOSTAT
TA	TRANSFER AIR
TAD	TRANSFER AIR DUCT
TC	TOTAL CAPACITY
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
THRU	THROUGH
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	UNDERCUT
UTR	UP THRU ROOF
V	VOLTS OR VENT
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WIDTH OR WASTE
WB	WET BULB
WC	WATER CLOSET
WG	WATER GAUGE
WH	WALL HYDRANT
YCO	YARD CLEAN OUT (EXTERIOR)
ϕ	DIAMETER

PLUMBING GENERAL NOTES

1. SLOPE ALL BUILDING SANITARY SEWER PIPE AT 1/2" PER FOOT (4.2%), SEE DRAINAGE CALCULATION THIS SHEET.
2. ALL EQUIPMENT, MATERIALS, ACCESSORIES, AND ARTICLES MUST BE NEW AND OF COMPARABLE QUALITY AS SPECIFIED. ALL WORKMANSHIP MUST BE FIRST-CLASS AND PERFORMED BY MECHANICS SKILLED AND REGULARLY EMPLOYED IN THEIR RESPECTIVE TRADES.
3. ALL WORK MUST BE COORDINATED WITH ALL AFFECTED TRADES PRIOR TO STARTING WORK. RE-WORK REQUIRED DUE TO MISS-COORDINATION MUST BE DONE BY THE INSTALLING CONTRACTOR WITHOUT INCREASED COST TO THE CITY OF HOUSTON.
4. THESE DRAWINGS ARE GENERAL IN NATURE. ALTHOUGH EVERY ATTEMPT HAS BEEN MADE TO INDICATE THE EXACT ROUTING AND LOCATION OF PROPOSED SYSTEMS, NOT ALL OFFSETS, REQUIRED FITTINGS, AND/OR CONDITIONS CAN BE SHOWN. THE CONTRACTOR MUST COORDINATE WORK AND MAKE REQUIRED CHANGES TO THE ROUTING IN ORDER TO AVOID CONFLICTS WITHOUT ANY INCREASED COST TO THE CITY OF HOUSTON.
5. ALL DOMESTIC WATER PIPING MUST BE TYPE K OR L HARD DRAWN COPPER AS SPECIFIED. TYPE M COPPER IS NOT ALLOWED TO BE INSTALLED FOR ANY PIPING WITHIN THE CONTRACT.
6. ALL DOMESTIC WATER PIPING MUST BE INSULATED AS SPECIFIED. ANY ALTERNATIVE INSULATION MUST BE APPROVED BY THE EOR.
7. ALL WASTE AND VENT PIPING MUST BE SCHEDULE 40 PVC AS SPECIFIED AT A MINIMUM.
8. STRUCTURAL COMPONENTS MUST NOT BE CUT, DRILLED, OR MODIFIED IN ANY MANNER WITHOUT A STRUCTURAL ENGINEER'S REVIEW AND APPROVAL.
9. SEAL ALL NEW WALL PENETRATIONS WITHIN TO MAINTAIN INTEGRITY OF LISTED ASSEMBLY, PROVIDE SLEEVES AND SEAL WEATHER TIGHT.
10. ALL PIPING MUST BE SUPPORTED FROM THE BUILDING STRUCTURE ONLY. NO PIPING MAY BE SUPPORTED FROM OTHER PIPING, DUCTWORK, EQUIPMENT, OR CEILINGS.
11. FURNISH ANY MISCELLANEOUS ITEMS NORMALLY USED, SPECIFICALLY MENTIONED OR NOT, TO RENDER A COMPLETE INSTALLATION.
12. MANUFACTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS. SUBMIT LITERATURE FOR ALL EQUIPMENT AND MATERIALS TO THE ENGINEER OF RECORD FOR APPROVAL.
13. REVIEW ALL APPLICABLE MANUFACTURERS' INSTALLATION AND MAINTENANCE DOCUMENTS/REQUIREMENTS PRIOR TO STARTING WORK. ALL WORK MUST ADHERE TO THE MANUFACTURERS' REQUIREMENTS. IF A CONFLICT EXISTS BETWEEN THE DESIGN DOCUMENTS AND MANUFACTURER'S REQUIREMENTS, THEN NOTIFY THE ENGINEER PRIOR TO STARTING WORK.
14. EQUIPMENT MUST BE ANCHORED TO MEET THE LOCAL SEISMIC/WIND REQUIREMENTS AND CODES.
15. THE WORD "PROVIDE" CALLED OUT WITHIN THESE CONTRACT DOCUMENTS IS IMPLIED TO MEAN "FURNISH AND INSTALL".
16. INSTALL ALL EQUIPMENT PLUMB AND LEVEL.
17. EQUIPMENT MUST BE LABELED IN ACCORDANCE WITH THE PLANS.
18. A DIELECTRIC UNION MUST BE USED TO JOIN ANY DISSIMILAR MATERIALS.
19. COORDINATE WORK WITH THAT OF ALL OTHER TRADES INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, MECHANICAL, PLUMBING, STRUCTURAL, CIVIL, AND GENERAL ARCHITECTURE. THIS MUST INCLUDE PROVIDING SUFFICIENT SPACE TO MEET ALL OTHER TRADE CLEARANCE REQUIREMENTS.
20. PROVIDE AND INSTALL ALL REQUIRED CONTROL WIRING AND CONDUIT.

PLUMBING LEGEND

	SECTION VIEW	PLAN VIEW
REDUCED PRESSURE ZONE BACKFLOW PREVENTION ASSEMBLY		
PLUMBING FIXTURE EQUIPMENT		
FLOOR SINK FIXTURE		
FLOOR DRAIN FIXTURE		
SHEET KEYNOTE	23-05	23-01
HOSE REEL EQUIPMENT		
BOOSTER PUMP EQUIPMENT		

DOMESTIC WATER CALCULATIONS

DEWATERING BUILDING DOMESTIC WATER FLOWS (POTABLE WATER ONLY), PER IPC TABLE 103.3(2)							
FIXTURE	QUANTITY	SUPPLY FIXTURE UNITS EACH			SUPPLY FIXTURE UNITS TOTAL		
		TOTAL	COLD	HOT	TOTAL	COLD	HOT
PUBLIC FLUSH VALVE WATER CLOSETS	1	10	10	0	10	10	0
PUBLIC LAVATORY	1	2	1.5	1.5	2	1.5	1.5
WALL HYRDRANTS	4	3.5	3.5	0	14	14	0
HOSE BIBBS	3	3.5	3.5	0	10.5	10.5	0
				TOTALS	36.5	36	1.5

DEMAND LOAD PER IPC TABLE E103.3(3)				
TOTAL FIXTURE UNITS	36.5	===>	44.6	GPM
TOTAL COLD FIXTURE UNITS	36	===>	44.4	GPM
TOTAL HOT FIXTURE UNITS	1.5	===>	4	GPM

PROCESS DESIGN FLOWS	TOTAL COLD WATER FLOW AND PRESSURE
POLYMER MAKE-UP UNIT #1	30 GPM @ 60 PSI
POLYMER MAKE-UP UNIT #2	30 GPM @ 60 PSI

TOTAL ENGINEERING DESIGN FLOWS	TOTAL	104.6	GPM
	COLD	104.4	GPM
	HOT	4	GPM

BUILDING DESIGN INCOMING PIPE SIZE PER IPC TABLE E103.3(6) FOR FAIRLY ROUGH PIPE
FOR 100 GPM @ 10 FEET PER SECOND FLOW = 2 INCH LINE SIZE

SANITARY SEWER CALCULATIONS

DEWATERING BUILDING DRAINAGE CALCULATION PER IPC TABLE 709.1					
FIXTURE	QUANTITY	DFU/EA	TOTAL DFU	TOTAL GPM	
PUBLIC WATER CLOSET	1	4	4	2	
PUBLIC LAVATORY	1	1	1	0.5	
FLOOR SINK	1	2	2	1	
FLOOR DRAIN	3	2	6	3	
(BELT PRESS) PROCESS LOAD	2	460	920	460	
		TOTAL DFU	933	466.5	TOTAL GPM

DEWATERING BLDG. SANITARY SEWER MAIN PIPE SIZE PER IPC TABLE 710.1(1)
A 6 INCH MAIN SLOPED AT 1/2" PER FOOT (4.2%) WILL DRAIN 1,000 DFU OR 500 GPM

SEWER VENT CALCULATIONS

DEWATERING BUILDING PROCESS VENT MAIN PIPE SIZE PER IPC TABLE 906.1
MAXIMUM DEVELOPED LENGTH OF LONGEST FLOOR SINK VENT BRANCH MAIN IS 95 FEET.
A 4 INCH VENT SERVING A 6 INCH SEWER MAIN CAN RUN 100 FEET OF DEVELOPED LENGTH AND HANDLE 1,100 DFU OR 550 GPM.

DEWATERING BUILDING BATHROOM VENT MAIN PIPE SIZE PER IPC TABLE 906.1
MAXIMUM DEVELOPED LENGTH OF TOILET VENT BRANCH MAIN IS 30 FEET.
A 2 INCH VENT SERVING A 4 INCH BRANCH SEWER CAN RUN 35 FEET OF DEVELOPED LENGTH AND HANDLE 43 DFU OR 21.5 GPM.

NO.	DATE	REVISION	APP.
B	12/19/2025	90% SUBMITTAL	
A	08/18/2025	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

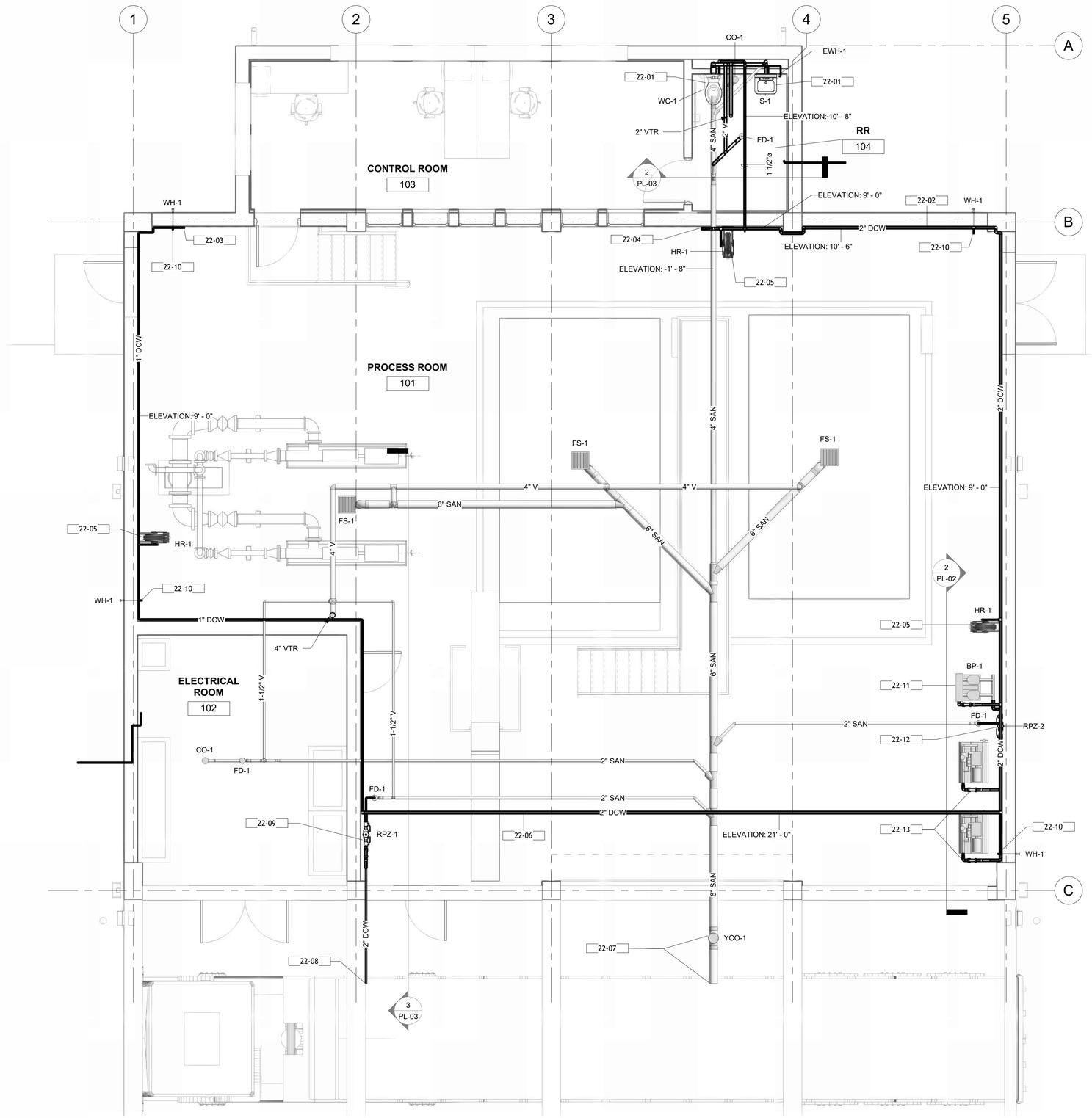
RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

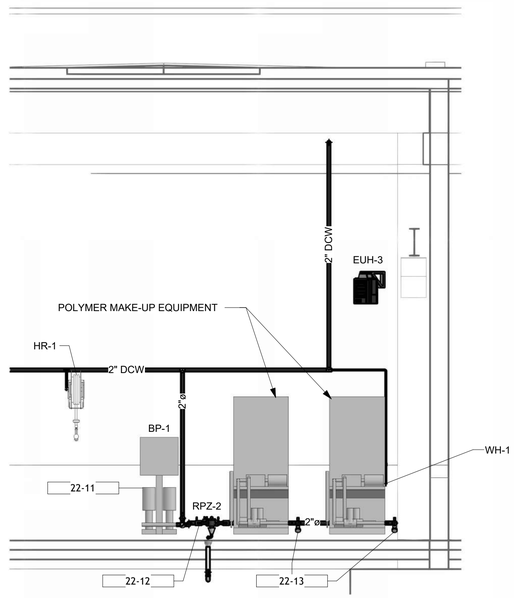
GREENRIDGE WWT PLANT IMPROVEMENTS PLUMBING SYMBOLS, ABBREVIATIONS, GENERAL NOTES, AND CALCULATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	
PL-01	SHEET NO. 127 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



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



2 BOOSTER PUMP SECTION VIEW
1/4" = 1'-0"

KEYNOTES	
Key Value	Keynote Text
22-01	PROVIDE AND INSTALL NEW PLUMBING FIXTURE AS SCHEDULED, DETAILED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER WRITTEN INSTRUCTIONS.
22-02	ROUTE AND INSTALL NEW 2 INCH DCW PIPING AROUND AND ABOVE NEW EXHAUST FAN EF-1. COORDINATE CLOSELY WITH HVAC CONTRACTOR DURING INSTALLATION AND MAINTAIN ALL SERVICE CLEARANCES PER THE IMC.
22-03	PROVIDE AND INSTALL NEW 1 INCH DCW ISOLATION VALVE AND CAPPED LINE FOR FUTURE AT APPROXIMATELY 8 FEET AFF.
22-04	PROVIDE AND INSTALL NEW 2 INCH DCW ISOLATION VALVE AND CAPPED LINE FOR FUTURE AT APPROXIMATELY 9 FEET AFF.
22-05	PROVIDE AND INSTALL NEW HOSE REEL SYSTEM AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS AT APPROXIMATELY 9 FEET AFF TO TOP OF UNIT OR SO THAT SPRAY NOZZLE IS ACCESSIBLE AT APPROXIMATE HEIGHT OF 6 FEET AFF.
22-06	PROVIDE AND INSTALL NEW 2 INCH DOMESTIC WATER LINE AS SPECIFIED AT APPROXIMATELY 21 FEET AFF OR ABOVE NEW CRANE HOIST RAIL SYSTEM. COORDINATE WITH HOIST INSTALLING CONTRACTOR IN ORDER TO ROUTE THE NEW DCW LINE ACCORDINGLY AND SO AS TO MAINTAIN ALL REQUIRED WORKING AND SERVICE CLEARANCES.
22-07	PROVIDE AND INSTALL NEW 6 INCH SEWER MAIN AT AN INVERT ELEVATION OF 96.5 FEET, 5 FOOT OUTSIDE THE BUILDING, AND TIE INTO NEW 8 INCH SEWER MAIN. PROVIDE AND INSTALL NEW 2 WAY YARD CLEAN OUT AS SCHEDULED AND SPECIFIED. COORDINATE CLOSELY WITH THE SITE UTILITY INSTALLING CONTRACTOR AND FINAL INVERT ELEVATION REQUIRED TO TIE TO NEW 8 INCH SEWER MAIN.
22-08	PROVIDE AND INSTALL NEW 2 INCH DOMESTIC COLD POTABLE WATER MAIN AT APPROXIMATELY 4 FEET BELOW FINISHED GRADE AND TIE INTO NEW WATER MAIN WITHIN 5 FEET ON THE EXTERIOR OF THE BUILDING. COORDINATE WITH SITE UTILITY INSTALLING CONTRACTOR FOR FINAL TIE IN AND EXACT ELEVATION.
22-09	PROVIDE AND INSTALL NEW 2 INCH REDUCED PRESSURE ZONE ASSEMBLY RPZ-1 WITH ISOLATION VALVES AND STRAINER AT APPROXIMATELY 3 FEET AFF, AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PIPE RELIEF VALVE OUTLET TO NEW FLOOR DRAIN AND MAINTAIN PROPER AIR GAP PER THE IPC.
22-10	PROVIDE AND INSTALL NEW FREEZE PROOF WALL HYDRANT AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE A 3/4" ISOLATION VALVE FOR EACH NEW WALL HYDRANT PER THE IPC.
22-11	PROVIDE AND INSTALL NEW DOMESTIC WATER BOOSTER PUMP BP-1 AND ALL ACCESSORIES AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PLUMB NEW 2 INCH DOMESTIC WATER MAIN TO NEW BOOSTER PUMP. PLUMB AND CONNECT A NEW 2 INCH, POTABLE, DCW SUPPLY TO NEW RPZ-2 AND EACH POLYMER MAKEUP UNIT, SET BOOST PRESSURE TO 60 PSI TO BE MAINTAINED AT INLET OF EACH POLYMER MAKE UP UNIT AT ALL TIMES.
22-12	PROVIDE AND INSTALL NEW 2 INCH REDUCED PRESSURE ZONE ASSEMBLY RPZ-2 WITH ISOLATION VALVES AT APPROXIMATELY 1 FOOT AFF, AS SCHEDULED, SPECIFIED, AND ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS. PIPE RELIEF VALVE OUTLET TO NEW FLOOR DRAIN AND MAINTAIN PROPER AIR GAP PER THE IPC.
22-13	PROVIDE, INSTALL, AND CONNECT NEW 2 INCH POTABLE DOMESTIC WATER MAIN TO EACH NEW POLYMER MAKE-UP UNIT. PROVIDE AND INSTALL A 2 INCHE WYE STRAINER AND ISOLATION VALVE ON INLET SUPPLY PIPE CONNECTION OF EACH POLYMER MAKE-UP UNIT.

PLAN NORTH

0' 2' 4' 8'
GRAPHIC SCALE

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/25

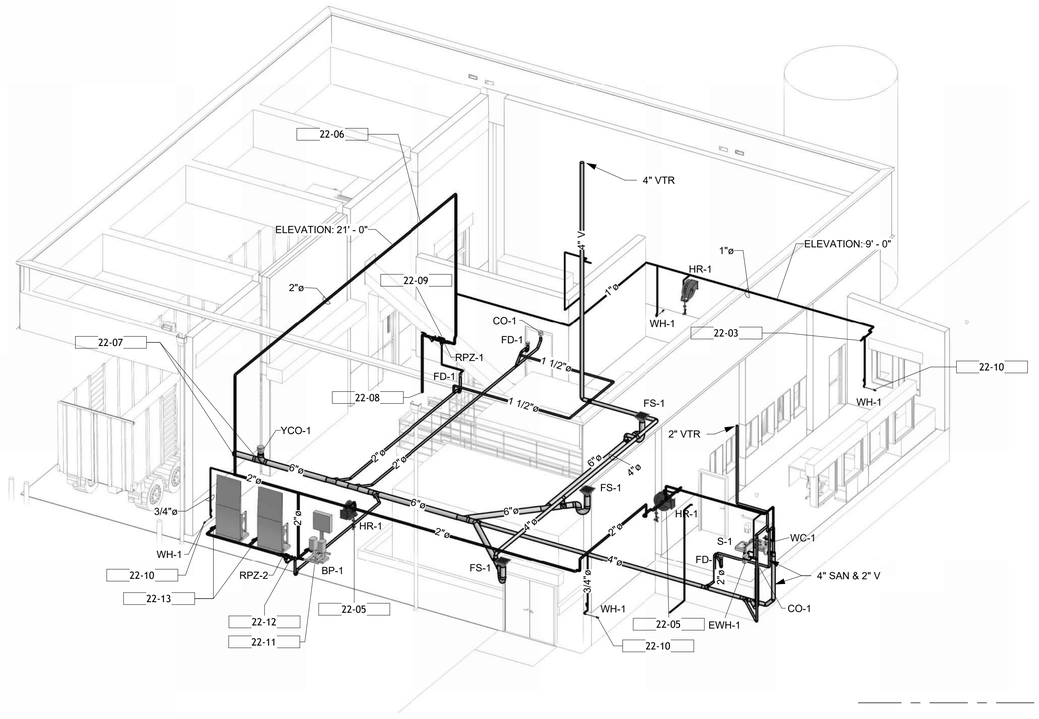
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS

DEWATERING BUILDING NEW PLUMBING FLOOR PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/4" = 1'-0"	
CITY OF HOUSTON PM	
PL-02	SHEET NO.128 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION



1 SOUTHEAST ISOMETRIC VIEW (NTS)

KEYNOTES	
Key Value	Keynote Text
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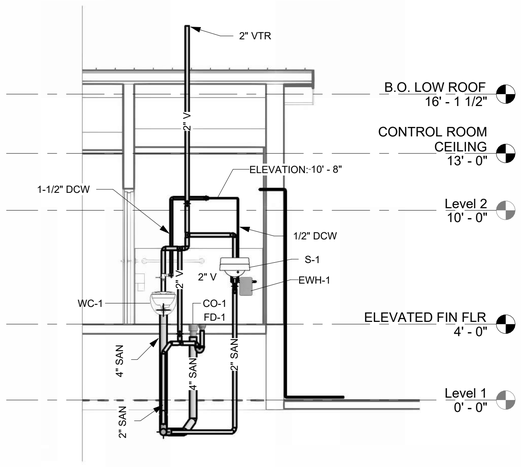
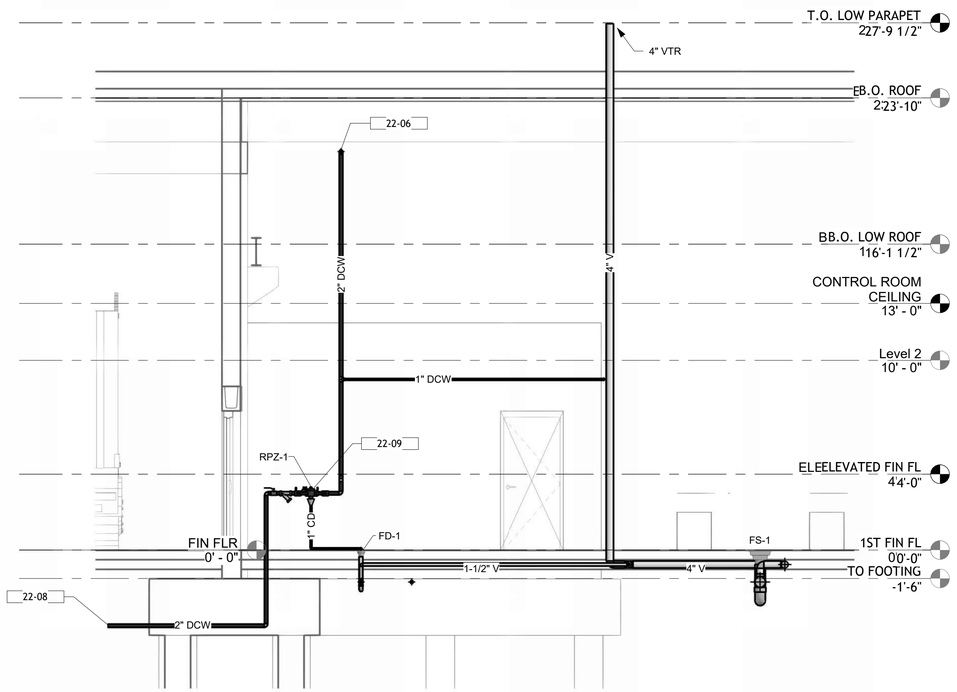


2 BATHROOM SECTION VIEW
1/4" = 1'-0"



REDUCED PRESSURE ZONE ASSEMBLY
3 SECTION VIEW
1/4" = 1'-0"

0' 2' 4' 8'

GRAPHIC SCALE

PLAN NORTH

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RESPONSIBLE ENGINEER
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS

DEWATERING BLDG. PLUMB. SECTS. & ISOMETRIC VIEWS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
1/4" = 1'-0"	
CITY OF HOUSTON PM	
PL-03	SHEET NO.129 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

KEYNOTES	
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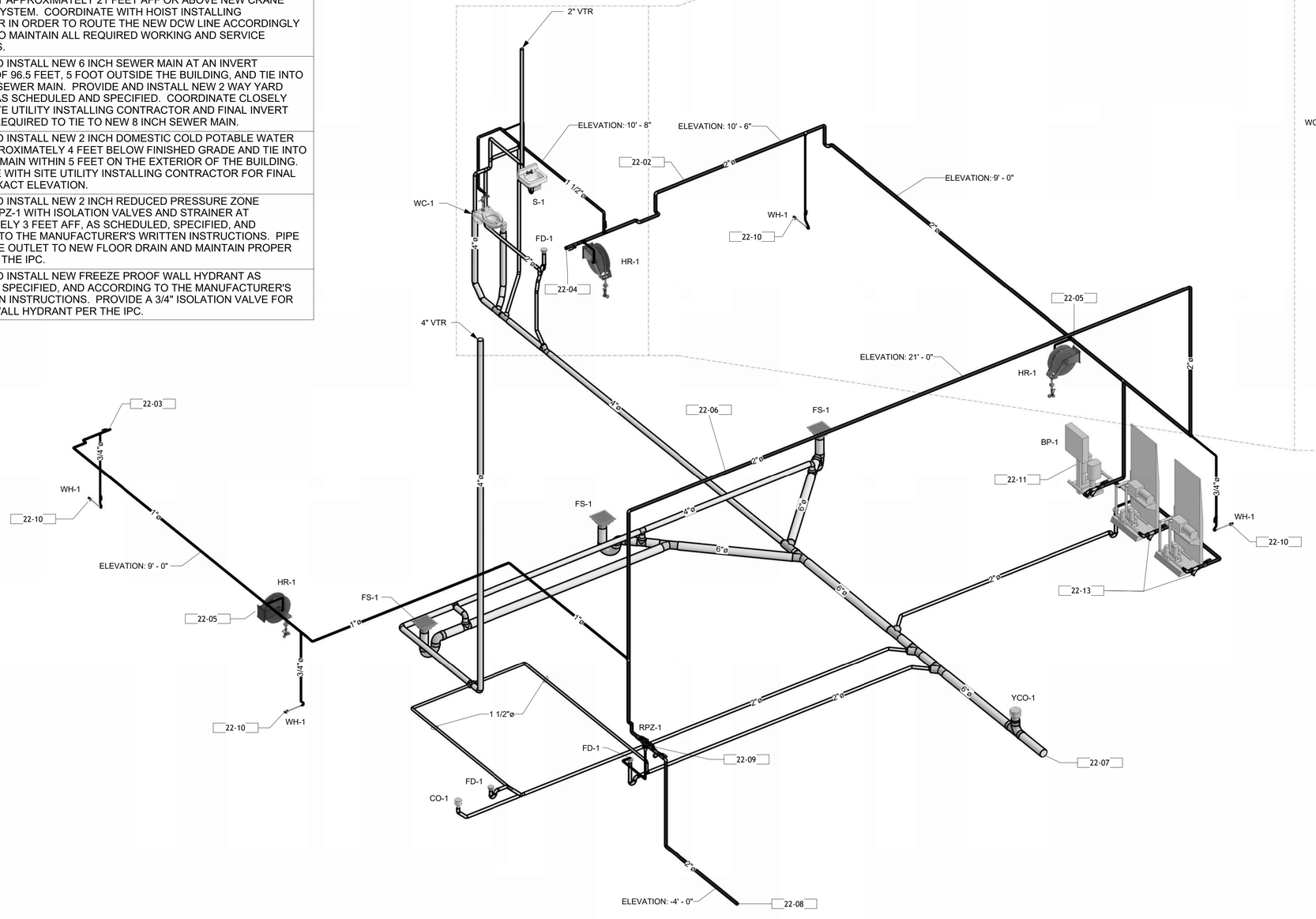
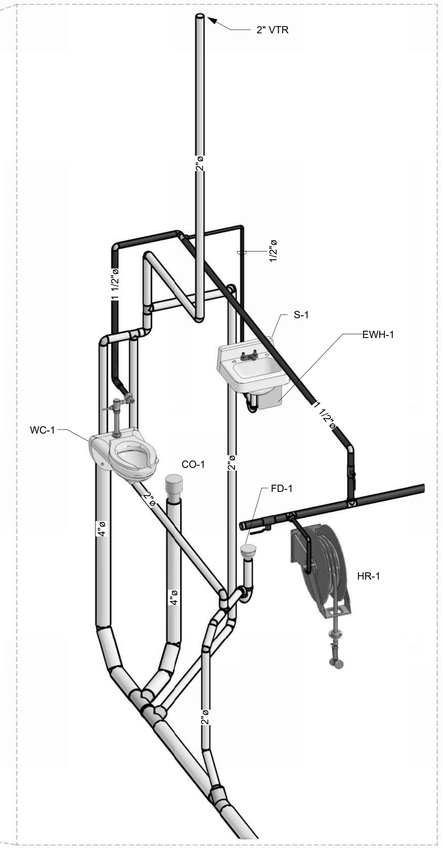


1 PLUMBING RISER



2 ENLARGED BATHROOM PLUMBING RISER

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/2025	90% REVIEW	
A	08/18/2025	60% REVIEW	

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RESPONSIBLE ENGINEER
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/25

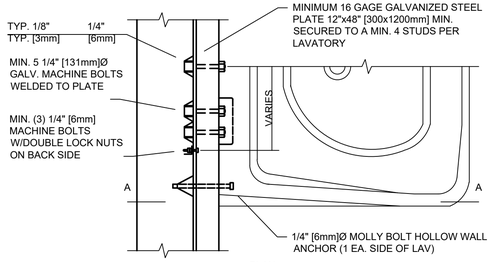
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT PLANT IMPROVEMENTS

DEWATERING BUILDING PLUMBING RISER

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	
PL-04	SHEET NO.130 OF 252

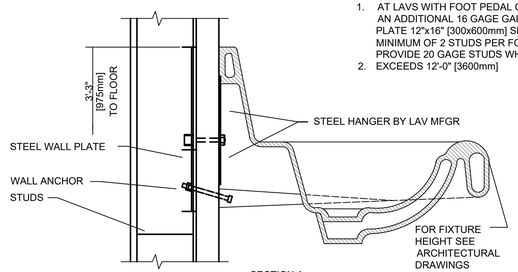
90% SUBMITTAL NOT FOR CONSTRUCTION



PLAN

NOTE:

1. AT LAVS WITH FOOT PEDAL CONTROLS PROVIDE AN ADDITIONAL 16 GAGE GALVANIZED STEEL PLATE 12"x16" [300x600mm] SECURED TO A MINIMUM OF 2 STUDS PER FOOT PEDAL. PROVIDE 20 GAGE STUDS WHEN HEIGHT EXCEEDS 12'-0" [3600mm]

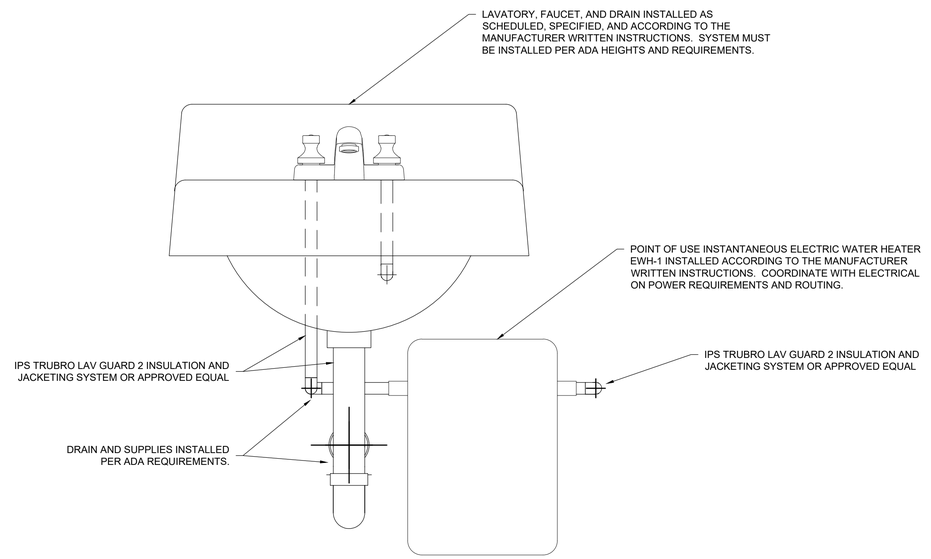


SECTION A

1 LAVATORY MOUNTING DETAIL

PL-05

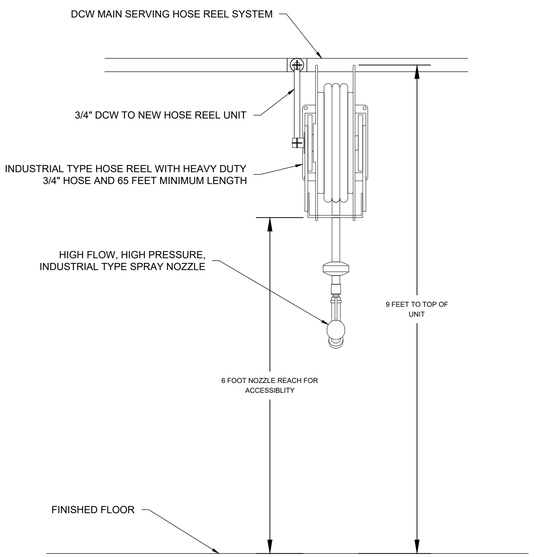
SCALE: NOT TO SCALE



2 LAVATORY INSTALLATION DETAIL

PL-05

SCALE: NOT TO SCALE



3 HOSE REEL INSTALLATION DETAIL

PL-05

SCALE: NOT TO SCALE

DOMESTIC (POTABLE) WATER DUPLEX BOOSTER PUMP SCHEDULE

TAG	LOCATION	MAKE	SERIES	MODEL	PUMP				FLUID						ELECTRICAL							DIMENSIONS (WXHXD)	WEIGHT	NOTES
					TYPE	QTY	ARRANGEMENT	SPEED	TOTAL FLOW	FLOW EACH	BOOST PRESSURE	NPSHR	EST. MIN. SUCTION PRESS.	WORKING	VOLTS/HZ/PHASE	NOM. PWR EACH	NOM. PWR TOTAL	FLA EACH	MCA	MOPD	SCCR			
BP-1	PUMP/PRESS RM 101	ARMSTRONG	DESIGN ENVELOPE	NPS-205050-09D-3 HP	VERTICAL SKID/CENTRIFUGAL	2	PARALLEL	VARIABLE VFD	60 GPM	30 GPM	60 PSI	3.78 PSI	15 PSI	40 DEG. F. DOMESTIC COLD WATER	460V/60HZ/3PH	3 HP	6 HP	4.8 AMPS	12 AMPS	15 AMPS	5 KA	24" X 61.5" X 26"	400 LBS	1,2,3,4

NOTES:

1. MANUFACTURER SHOWN FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURERS MAY BE ALLOWED THAT MEET THE DRAWINGS, SPECIFICATIONS, AND DESIGN INTENT.
2. PROVIDE AND INSTALL FACTORY VARIABLE SPEED PUMP OPTION, SUCTION AND DISCHARGE PRESSURE GAUGES, AND DISCHARGE PRESSURE SENSOR TO CONTROL VFD PUMP SPEED.
3. PROVIDE FACTORY DISCONNECT OR DISCONNECT INTEGRAL TO VFD.
4. PUMP, COMPONENTS, AND SKID MUST LEAD FREE AND SUITABLE FOR POTABLE WATER USE.

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MAKE/SERIES	MODEL	UTILITY CONNECTIONS (INCHES)				REMARKS	NOTES
				DCW	DHW	W	V		
CO-1	NICKEL BRONZE FINISHED FLOOR CLEAN OUT	JR SMITH	4025	-	-	2 & 4	-	5.75 INCH NICKEL BRONZE, ROUND, FINISHED FLOOR CLEAN OUT WITH CAST IRON BODY.	1
EWH-1	POINT OF USE ELECTRIC WATER HEATER	ECOSMART	ECO 8	1/2	1/2	-	-	TANKLESS, POINT OF USE, ELECTRIC WATER HEATER. STAINLESS STEEL CONSTRUCTION. ELECTRICAL DEMAND 240V, SINGLE PHASE, 33 AMPS, REQUIRES (1) 40 AMP DOUBLE POLE BREAKER.	1
FD-1	FLOOR DRAIN	JR SMITH	2010/2015	-	-	2	1-1/2	FLOOR DRAIN WITH ADJUSTABLE STRAINER HEAD WITH BRONZE BODY, FLASHING COLLAR, AND NICKEL BRONZE, ADA GRATE/STRAINER.	1
FS-1	FLOOR SINK	JR SMITH	2295	-	-	6	4	HEAVY DUTY FLOOR SINK WITH DUCO CAST IRON BODY, FLASHING COLLAR, STAINLESS STEEL SEDIMENT BUCKET, AND NICKEL BRONZE TOP.	1
HR-1	WATER WASH DOWN INDUSTRIAL HOSE REEL	BLUEBIRD AG-LITE	ALWRDA3465	3/4	-	-	-	HEAVY DUTY 18 GAUGE HOSE REEL SYSTEM WITH 3/4" X 65 FEET RUBBER WATER HOSE WITH SPRAY NOZZLE. PROVIDE XL DUAL ARM ASSEMBLY WITH 6 FOOT LEAD IN HOSE, 3/4 MALE AND FEMALE GHT FITTING SET.	1
RPZ-1	REDUCED PRESSURE ZONE ASSEMBLY	WATTS	009	2	-	2	-	2 INCH REDUCED PRESSURE ZONE BACK FLOW PREVENTION SYSTEM WITH INTEGRAL SHUT OFF VALVES, STRAINER, AND STAINLESS STEEL VALVE HANDLES. PIPE TO NEAREST FLOOR DRAIN AND PROVIDE PROPER AIR GAP PER CODE.	1
S-1	WALL-MOUNT BATHROOM SINK	KOHLER HUDSON	K-2861	1/2	1/2	2	1-1/2	ADA COMPLIANT, WHITE VITREOUS CHINA, WALL-MOUNT WITH 4 INCH CENTERS. PROVIDE SUPPLIES, STOPS, P-TRAP, IPS TRUEBRO LAV GUARD 2 INSULATION AND JACKETING SYSTEM ON ALL PIPING. PROVIDE KOHLER FAUCET TRITON BOWE SERIES MODEL K-400T20-5ANL AND DRAIN MODEL K-7129-A OR APPROVED EQUAL.	1
WC-1	WALL MOUNTED, ELONGATED, TOP SPUD SIPHON JET, FLUSH VALVE, WATER CLOSET	KOHLER ULTRA	K-84325-L	1-1/2	-	4	2	ADA COMPLIANT, ELONGATED, WHITE VITREOUS CHINA. PROVIDE SUPPLIES, STOPS, AND QUIET CLOSE SEAT. PROVIDE PRIMME FLUSHOMETER VALVE MODEL K-76322, 1.6 GPF OR APPROVED EQUAL.	1
WH-1	LEAD FREE FROST PROOF WALL HYDRANT	WATTS	LFFHB-1	1/2	-	-	-	LEAD FREE, BRASS WALL HYDRANT WITH VACUUM BREAKER WITH 3/4 INCH HOSE CONNECTION AND 14 INCH LENGTH OR LONG ENOUGH TO PENETRATE THROUGH EXTERIOR BUILDING WALL FOR POTABLE WATER CONNECTION POINT.	1
YCO-2	GALVANIZED CAST IRON 2 WAY YARD CLEAN OUT	JR SMITH	4233	-	-	6	-	8.5 INCH ROUND, GALVANIZED CAST IRON, 2 WAY YARD CLEAN OUT. PROVIDE PROPER SPEEDI-SET OUTLET FOR 6 INCH PVC PIPE.	1

NOTES:

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

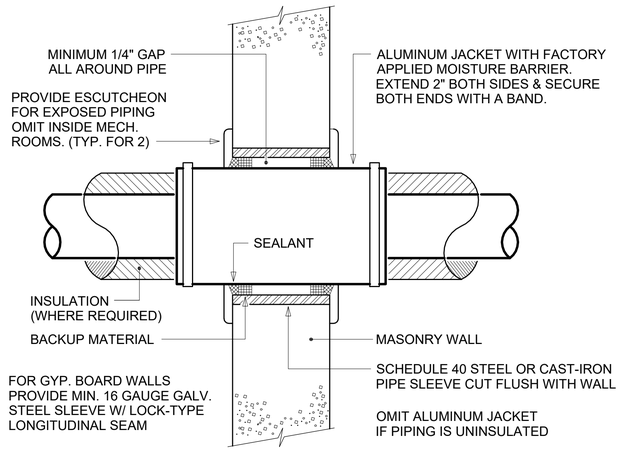
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT
PLANT IMPROVEMENTS

DEWATERING BUILDING
PLUMBING SCHEDULES AND DETAILS

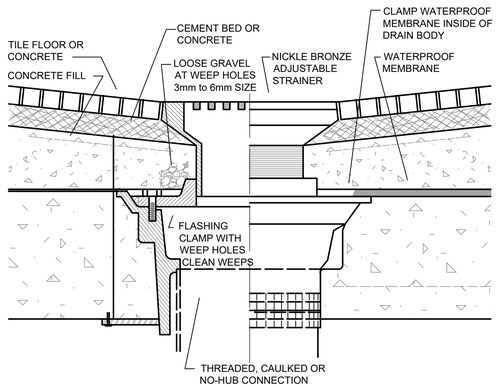
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	
PL-05	SHEET NO. 131 OF 252

90% SUBMITTAL NOT FOR CONSTRUCTION

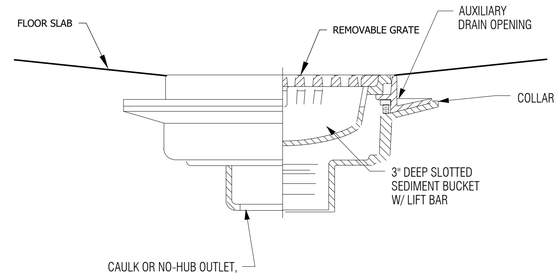


NOTE: PROVIDE FIRE SEAL AROUND ALL RATED WALLS

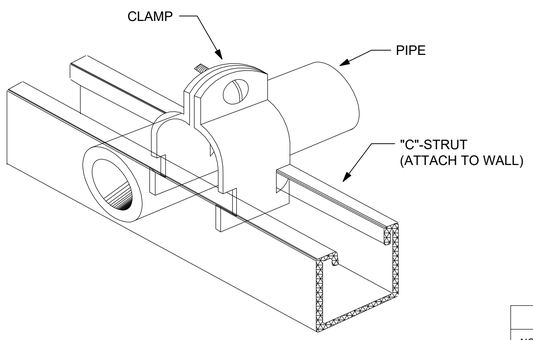
1 PL-06 PIPE THROUGH WALL PENETRATION DETAIL
SCALE: NOT TO SCALE



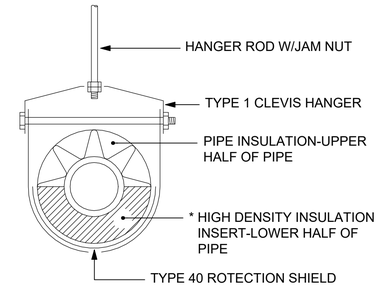
2 PL-06 FINISHED FLOOR DRAIN DETAIL
SCALE: NOT TO SCALE



3 PL-06 UNFINISHED FLOOR SINK DETAIL
SCALE: NOT TO SCALE



4 PL-06 WALL PIPE SUPPORT DETAIL
SCALE: NOT TO SCALE

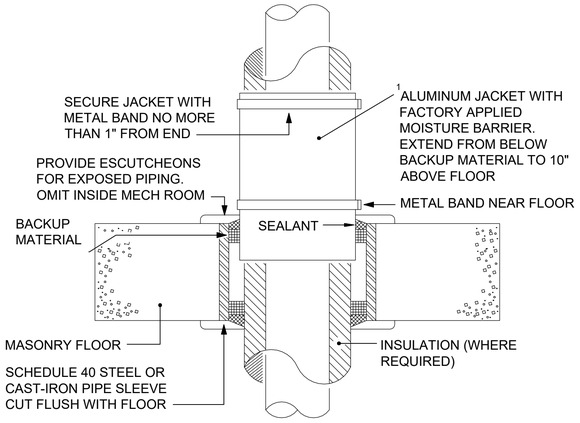


* HOT PIPE - UNDER 4" DIA.
COLD PIPE - ALL SIZES

MAXIMUM PIPE/TUBING SUPPORT SPACING

NOM. SIZE	IN. [mm]	THRU 3/4 THRU [20]	1 [25]	1 1/4 [32]	1 1/2 [40]	2 [50]	2 1/2 [65]	3 [75]	4 [100]	5 [125]	6 [150]	8 [200]	10 [250]	12 [300]	14 [350]	16 [400]	18 [450]	20 [500]	24 [600]
PIPE	FT. [mm]	7 [2100]	7 [2100]	7 [2100]	9 [2700]	10 [3000]	11 [3400]	12 [3700]	14 [4100]	16 [4900]	17 [5200]	19 [5800]	22 [6700]	23 [7000]	25 [7600]	27 [8200]	28 [8500]	30 [9100]	32 [9600]
TUBING	FT. [mm]	5 FT [1500]	6 [1800]	7 [2100]	8 [2400]	8 [2400]	9 [2700]	10 [3000]	12 [3700]	13 [4000]	14 [4100]	16 [4900]	- -	- -	- -	- -	- -	- -	- -	- -

5 PL-06 PIPE HANGER DETAIL
SCALE: NOT TO SCALE



NOTE:
1. OMIT ALUMINUM JACKET IF PIPING IS UNINSULATED.

6 PL-06 FLOOR PIPE PENETRATION DETAIL
SCALE: NOT TO SCALE

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/2025	90% SUBMITTAL	
A	08/18/2025	60% SUBMITTAL	

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 08/18/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWT
PLANT IMPROVEMENTS

DEWATERING BUILDING
PLUMBING DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
NONE	
CITY OF HOUSTON PM	
PL-06	SHEET NO. 132 OF 301

CONSTRUCTION NOTES – MECHANICAL

CONSTRUCTION SPECIFICATIONS

WHEN PROVIDED, REFER TO SPECIFICATION SECTION OF CONSTRUCTION DOCUMENTS FOR MORE DETAILED/COMPLETE REQUIREMENTS.

1. THE FOLLOWING ARE DEFINITIONS OF THE PARTIES REFERENCED HEREIN:
   1.1. "COMPANY" IS CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
   1.2. "CONTRACTOR" IS THE FABRICATION AND/OR INSTALLATION CONTRACTOR AWARDED THE PROJECT WORK.
   1.3. "ENGINEER' IS THE ENGINEER OF RECORD (i.e. CA LICENSED PROFESSIONAL ENGINEER WHO STAMPED AND SIGNED DRAWINGS)

2. DESIGN, FABRICATION, AND INSTALLATION OF PIPING SYSTEMS SHALL COMPLY WITH: LOCAL AND STATE CODES

   (2) THE DESIGN, FABRICATION, AND ASSEMBLY OF PIPING SYSTEMS INSTALLED ON OR AFTER JULY 26, 2006, AND THE TESTING, INSPECTION, AND REPAIR OF ALL PIPING SYSTEMS SHALL COMPLY WITH TITLE 8, SUBCHAPTER , 7, ARTICLE 146 OF THE GENERAL INDUSTRIAL SAFETY ORDERS, AND ASME B31.1 – 2014, POWER PIPING, B31.3 – 2002, PROCESS PIPING, ASME B31.4 – 2002, PIPELINE TRANSPORTATION SYSTEMS FOR LIQUID HYDROCARBONS AND OTHER LIQUIDS, ASME B31.8 – 2003, GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, OR AP1 1104, NINETEENTH EDITION, SEPTEMBER 1999, WELDING OF PIPELINES AND RELATED FACILITIES (INCLUDING THE OCTOBER 31, 2001 ERRATA), AWWA (C110), AWWA C110–12 DUCTILE–IRON AND GRAY–IRON FITTINGS, AWWA C–150–14 THICKNESS DESIGN OF DUCTILE–IRON PIPE AS APPLICABLE, WHICH ARE HEREBY INCORPORATED BY REFERENCE.

3. ALL WORK SHALL BE PERFORMED BY QUALIFIED PERSONNEL IN A QUALITY, WORKMANSHIP–LIKE MANNER.

4. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO ASSURE THAT ALL EXCAVATIONS, WALLS, FRAMING, PIPING, ETC., SHALL BE ADEQUATELY BRACED AND SHORED DURING ALL PHASES OF CONSTRUCTION.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN WITH THOSE ON THE JOB. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN, THEN CONTRACTOR SHALL NOTIFY THE ENGINEER AND COMPANY REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.

6. NO STRUCTURAL MEMBER SHALL BE CUT FOR DUCTS, PIPES, ETC., UNLESS SPECIFICALLY DETAILED.

7. MISCELLANEOUS STRUCTURAL STEEL SHALL CONFORM TO ASTM A–36 (Fy=36 KSI, MIN.), UNLESS NOTED OTHERWISE.

8. BOLTS SHALL CONFORM TO ASTM A–193 GRADE B7, UNLESS NOTED OTHERWISE. BOLTS SHALL BE THREADED TO ANSI B1.1, CLASS 2A, NUTS SHALL BE AMERICAN STANDARD, HEAVY, SEMI–FINISHED HEXAGON, THREADED TO ANSI B1.1 CLASS 2B. REFER TO NOTE B.7. HEREIN FOR FLANGE BOLTING REQUIREMENTS.

9. FASTENERS AT STRUCTURAL STEEL MEMBERS – BOLTS, NUTS, AND WASHERS SHALL BE MECHANICALLY DEPOSITED GALVANIZED OR CADMIUM PLATED, STAINLESS STEEL, OR EQUIVALENT RESISTANCE TO CORROSION.

10. ALL ELECTRICAL AND STRUCTURAL WORK SHALL BE PER APPROVED PLANS AND ARE NOT PART OF THIS WORK. ELECTRICAL AND STRUCTURAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE STATE AND LOCAL CODES

11. THESE DRAWINGS ARE FOR MECHANICAL WORK ONLY. ALL MECHANICAL WORK NOT SPECIFICALLY SHOWN SHALL BE BY OTHERS.

12. WHERE THE REQUIREMENTS OF INSPECTION ARE INDICATED, THE INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL AND COMPANY. THE INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DESIGN DRAWINGS & SPECIFICATIONS.

13. CONTRACTOR SHALL REFER TO SPECIFICATIONS (WHEN PROVIDED) FOR ADDITIONAL REQUIREMENTS. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED PROJECT AND DO NOT INDICATE THE METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIRECTION AND SUPERVISION OF WORK AND SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, ETC. USED TO ACHIEVE THE COMPLETED WORK.

14. WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE COMPANY SPECIFICATIONS:
   14.1. SS(PLANT AIR) (B31.3 – 304L STAINLESS STEEL), PIP PN01SA0S01.
   14.2. DI (WASTEWATER, NON–POTABLE WATER BURIED BIO–SOLIDS),(AWWA C110 AND C150 – DUCTILE IRON FITTINGS AND PIPE).
   14.3. PVC SCH.80 (NON–POTABLE WATER ABOVE GROUND, POLYMER (ASME B31.3 – PVC), PIP PN01PV0C01.

B. PIPING FABRICATION AND TESTING

1. ALL PIPING MATERIALS, FABRICATION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE ASME CODE (B31.1 OR B31.3, AWWA C110, AND C150).
2. CONTRACTOR SHALL SUPPLY QUALIFIED WELDING PROCEDURES MEETING THE REQUIREMENTS OF ASME BOILER AND PRESSURE VESSEL CODE SECTION IX, AS MODIFIED BY APPLICABLE ASME CODE (B31.1 OR B31.3).
3. CONTRACTOR SHALL SUPPLY WELDERS QUALIFIED TO THE PROJECT WELDING PROCEDURES MEETING THE REQUIREMENTS OF ASME BOILER AND PRESSURE VESSEL CODE SECTION IX, AS MODIFIED BY APPLICABLE ASME CODE (B31.1 OR B31.3). QUALIFICATION TESTS MUST BE IN THE 6G POSITION.
4. WELDS SHALL BE RANDOMLY RADIOGRAPHED PER APPLICABLE ASME CODE (B31.1 OR B31.3). INTERPRETATION SHALL BE IN ACCORDANCE WITH NORMAL FLUID SERVICE. COMPANY MAY RADIOGRAPH ANY AND ALL WELDS.
5. CONTRACTOR SHALL MAINTAIN AN ACCURATE WELD MAP, X–RAY LOG, RED–LINE DRAWINGS AND HYDROTEST RECORDS DURING CONSTRUCTION.
6. WHERE REQUIRED, PIPE BENDS AND MITER JOINTS SHALL BE ALLOWED IF DETAILED IN THESE DRAWINGS, OR BY SPECIFIC PERMISSION OF THE COMPANY CONSTRUCTION REPRESENTATIVE. CONSTRUCTION OF PIPE BENDS AND MITER JOINTS TO BE IN STRICT ACCORDANCE WITH APPLICABLE ASME CODE (B31.1 OR B31.3).
7. FLANGE STUD BOLTS TO BE MADE UP WITH AT LEAST TWO THREADS EXPOSED BEYOND NUTS ON BOTH ENDS OF STUD. UNLESS OTHERWISE NOTED, STUDS SHALL BE XYLAN COATED ASTM A193 GR B7 AND NUTS SHALL BE ASTM A194 GR 2H HEAVY HEX NUTS. GASKETS SHALL BE SPIRAL WOUND METALLIC WITH STAINLESS 316 STEEL INNER AND CARBON STEEL OUTER RINGS, STAINLESS STEEL WINDINGS AND NON–ASBESTOS FILLER.
8. COLD SPRING OF CARBON STEEL, ALLOY STEEL, OR STAINLESS STEEL PIPING IS NOT ALLOWED.
9. CARBON STEEL, ALLOY STEEL, OR STAINLESS STEEL THREADED PIPE CONNECTIONS FOR PIPING OPERATING UNDER 300 DEG F SHALL BE SEALED WITH TEFLON THREAD SEALANT. PIPING OPERATING AT 300 DEG F OR HIGHER SHALL BE SEALED WITH KOPR KOTE SEALANT. TEFLON TAPE SEALANT SHALL NOT BE USED IN INSTRUMENT AIR SERVICE.
10. CONTRACTOR SHALL HYDROTEST ALL PIPING IN STRICT ACCORDANCE WITH APPLICABLE ASME CODE (B31.1/B31.3) AND APPROPRIATE COMPANY SPECIFICATIONS. CONTRACTOR SHALL SUBMIT HYDROTEST PLAN TO COMPANY REPRESENTATIVE FOR APPROVAL BEFORE PERFORMING ANY TESTS. PRESSURE TEST CHART RECORDINGS WILL BE REQUIRED FOR ALL TESTS. ANY CONNECTIONS THAT CANNOT BE HYDROTESTED SHALL BE RADIOGRAPHED AND INTERPRETED IN ACCORDANCE WITH APPLICABLE ASME CODE (B31.1 OR B31.3), FOR SEVERE CYCLIC CONDITIONS. IF ADDITIONAL HIGH POINT VENTS AND DRAINS ARE REQUIRED FOR HYDROTEST, THE MECHANICAL INSTALLATION CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE AUTHORIZED CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING REPRESENTATIVE.

C. SAFETY REGULATIONS AND GUIDELINES

1. LOCAL AND STATE CODES ARE APPLICABLE TO THE CONSTRUCTION OF THIS PROJECT AND PROVISIONS THEREOF SHALL BE FOLLOWED. PARSONS CORPORATION IS NOT RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION, NOR FOR THE SAFETY ON THE JOBSITE. THESE RESPONSIBILITIES ARE INTENDED TO BE AND SHALL REMAIN SOLELY THOSE OF CONTRACTOR.
2. CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH COMPANY SAFETY GUIDELINES, AS A MINIMUM REQUIREMENT.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND CONFIRMATION OF ALL UNDERGROUND AND ON–SITE UTILITIES AND SUBSTRUCTURES PRIOR TO EXCAVATION. CONTRACTOR SHALL EXERCISE PROPER CARE DURING EXCAVATION.
4. WHERE UTILIZED, ALL EQUIPMENT ACCESS, LADDERS, PLATFORMS, RAILINGS, ETC., SHALL CONFORM TO LOCAL AND STATE CODES.
5. PARSONS CORPORATION CANNOT CONFIRM MANY ASPECTS OF THE CONSTRUCTION AND INSTALLATION DETAILS, AND RELIES ON THE CONSTRUCTION CONTRACTOR'S JOBSITE VERIFICATION, PROJECT RESEARCH, AND SAFETY PRACTICES TO ENSURE THE APPROPRIATE TIE–IN IS PERFORMED. USE ALL APPLICABLE INDUSTRY STANDARD SAFETY PRECAUTIONS AND PRACTICES, INCLUDING A COMPANY–APPROVED JOB SAFETY PLAN, TO VERIFY LINE TIE–IN SUITABILITY PRIOR TO ACTUAL CONSTRUCTION COMMENCEMENT. SAFETY IS #1 PRIORITY.

D. SUPPORTS AND ANCHORS

1. CONTRACTOR SHALL FABRICATE AND INSTALL ALL PIPE SUPPORTS, ANCHORS, GUIDES, SHOES, ETC. AS PER THE PROJECT DRAWINGS..
2. ALL SUPPORTS MUST BE STEEL MEMBERS SET IN CONCRETE WITH REBAR, PER THE CONSTRUCTION DRAWINGS.
3. SUPPORT AND ANCHOR SPACING MAXIMUM SPAN SHALL BE AS STATED IN THE PROJECT DRAWINGS, AND SHALL NOT BE EXCEEDED.
4. CONTRACTOR SHALL FABRICATE AND INSTALL STATIONARY GUARD POSTS IN ACCORDANCE WITH THE PROJECT DRAWINGS. QUANTITIES AND LOCATIONS OF GUARD POSTS SHALL BE SPECIFIED BY COMPANY REPRESENTATIVE PRIOR TO THE CONCLUSION OF CONSTRUCTION.
5. CONTRACTOR SHALL ENSURE THAT ALL SHARP EDGES ARE GROUND SMOOTH AND DO NOT POSE A SAFETY HAZARD.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
MECHANICAL CONSTRUCTION NOTES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP–01	SHEET NO. 132 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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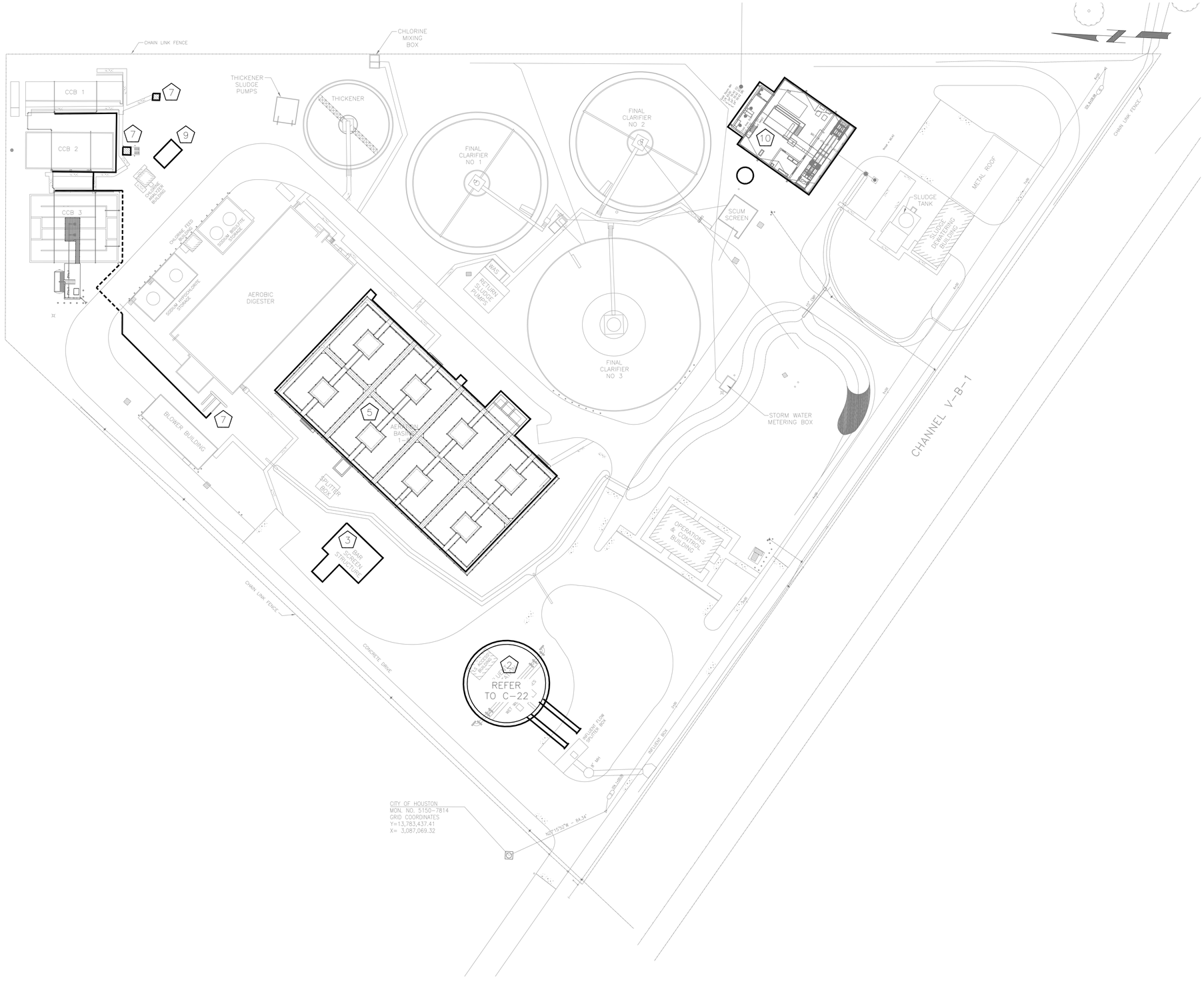
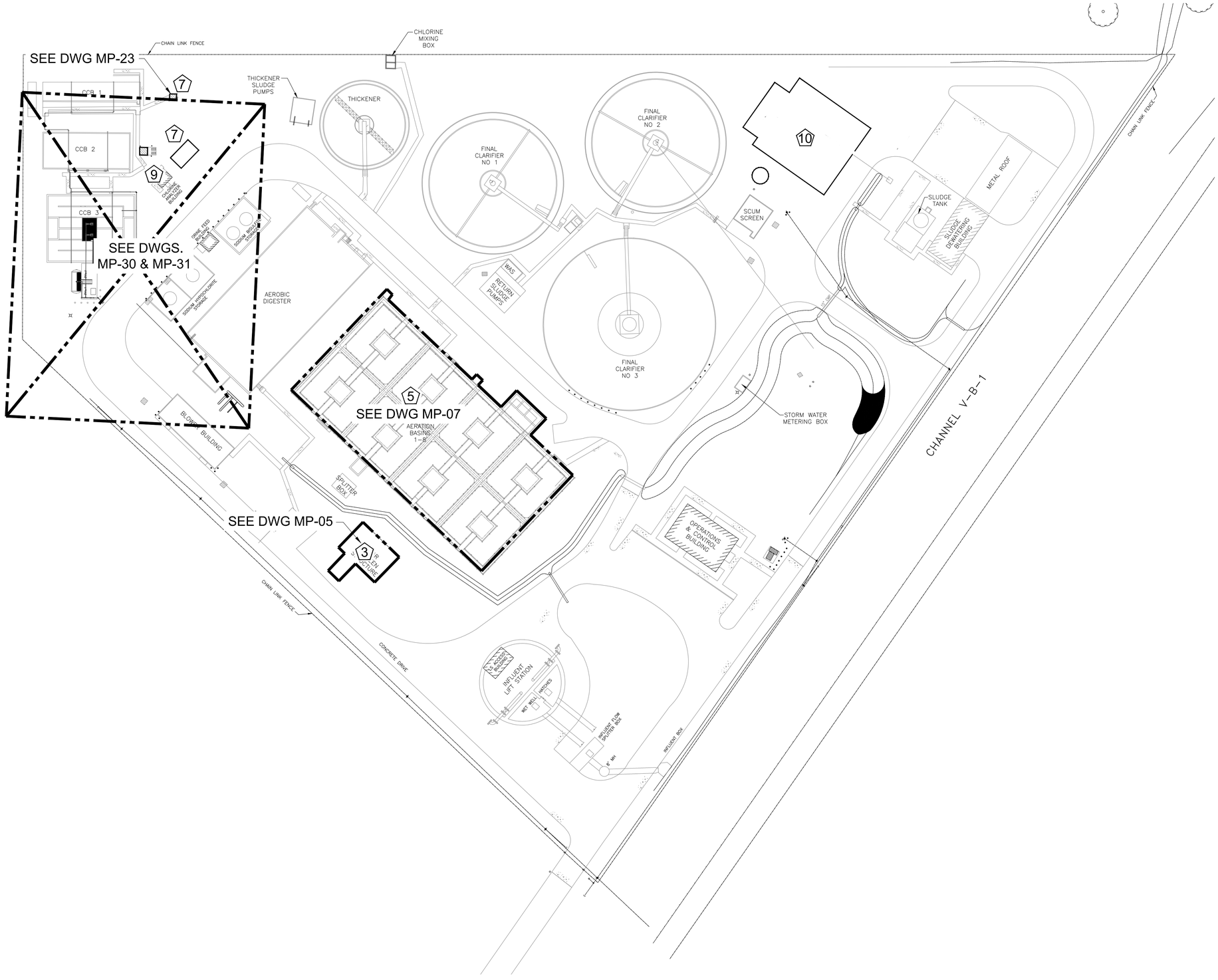

CHAIN LINK FENCE
CHLORINE MIXING BOX
THICKENER SLUDGE PUMPS
THICKENER
FINAL CLARIFIER NO. 1
FINAL CLARIFIER NO. 2
FINAL CLARIFIER NO. 3
CCB 1
CCB 2
CCB 3
CHLORINE ANALYZER BUILDING
CHLORINE FEED BUILDING
SODIUM BISULFITE STORAGE
SODIUM HYPOCHLORITE STORAGE
AERATION BASIN
AERATION BASIN
AERATION BASIN



TASKS:

3 BAR SCREEN REPLACEMENT

5 AERATION BASIN IMPROVEMENTS

7 DISINFECTION SYSTEM IMPROVEMENTS

9 CHLORINE ANALYER BLDG REPLACEMENT

10 SLUDGE

40' 20' 0' 40' 80'

SCALE: 1"=40'-0"

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SYSTEM IMPROVEMENTS
MECHANICAL
DEMO PIPING AREA KEY PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 134 OF 256	

MP-03

90% SUBMITTAL NOT FOR CONSTRUCTION

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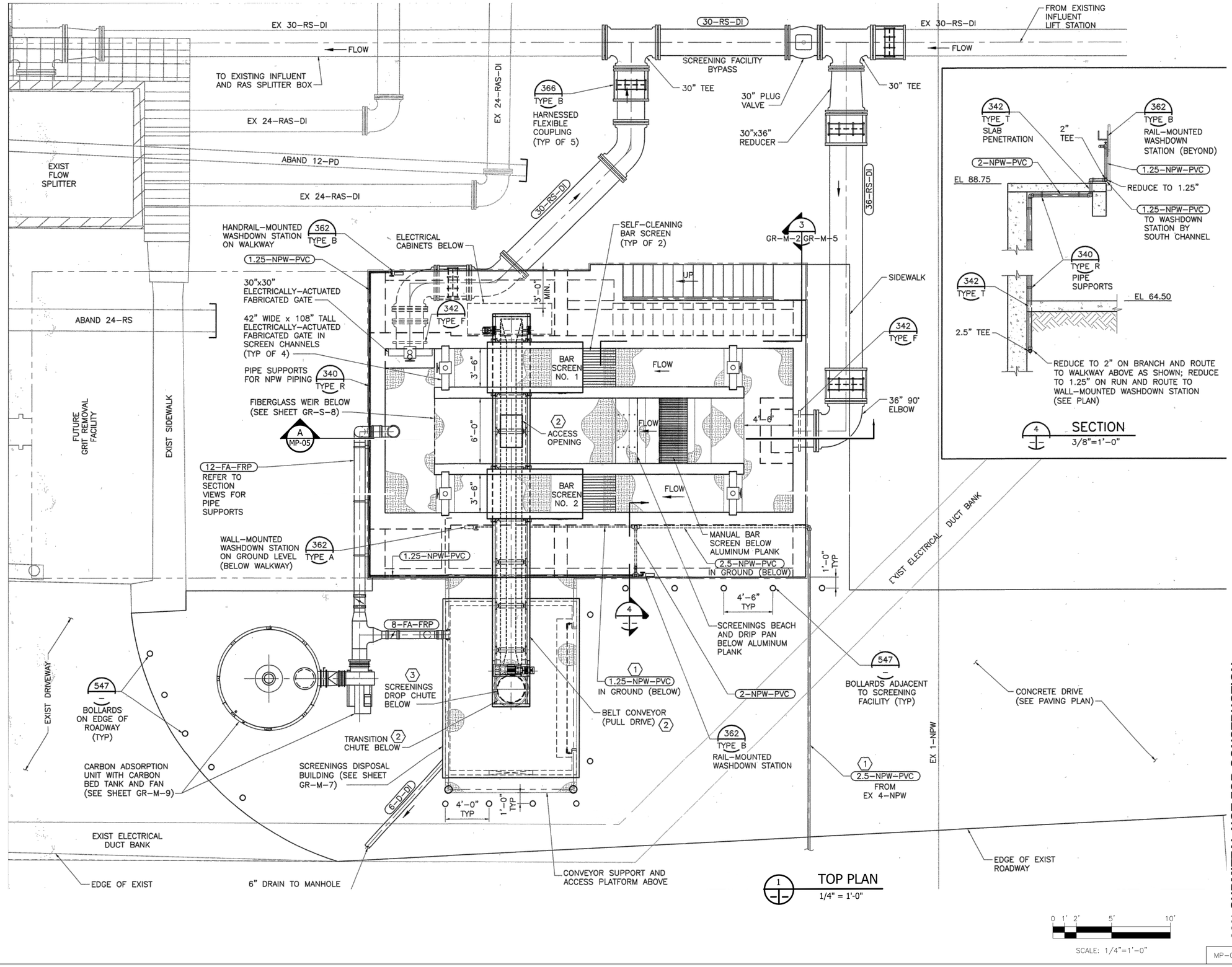

LEGEND:

EXISTING

PROJECT SCOPE

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

MECHANICAL SCREENING FACILITY PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-04	SHEET NO. 135 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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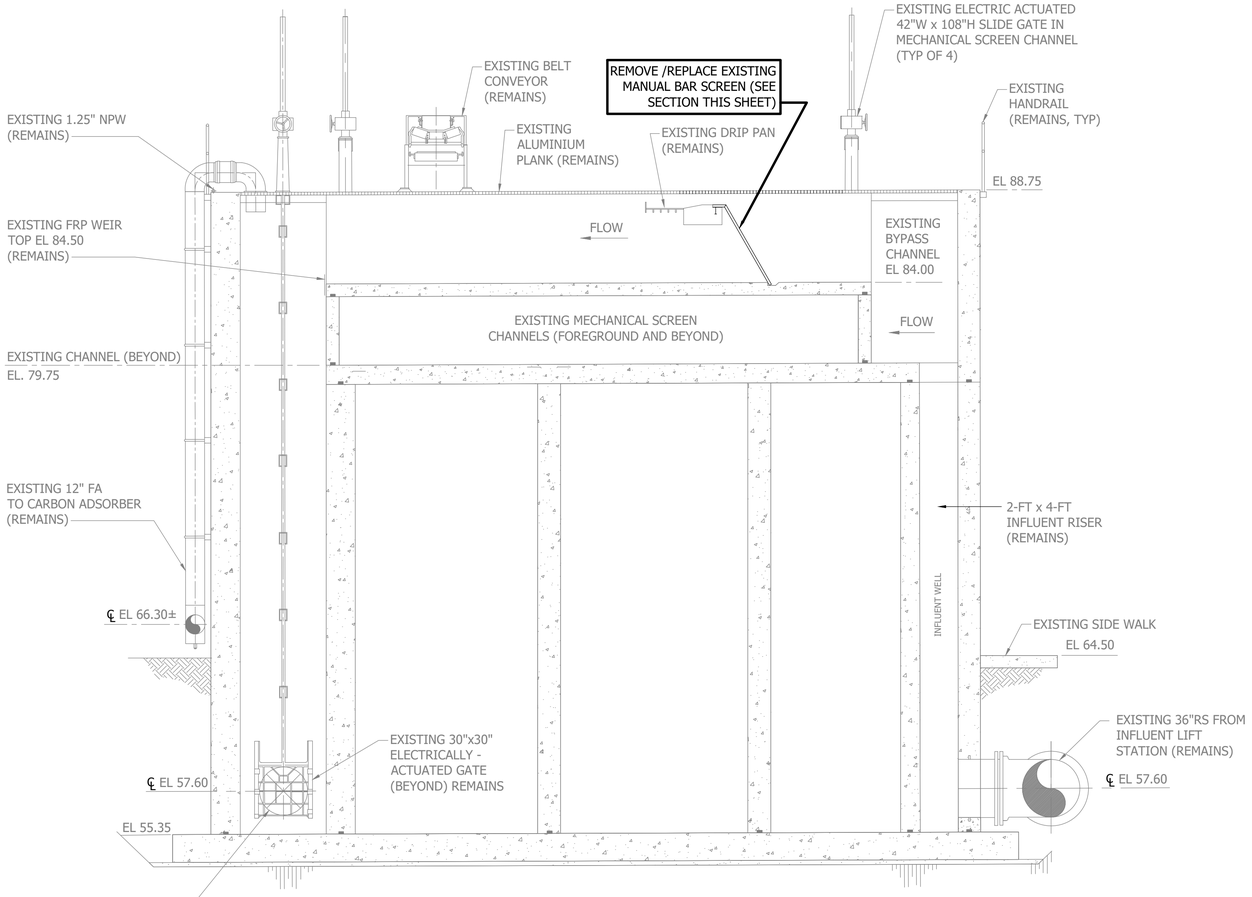
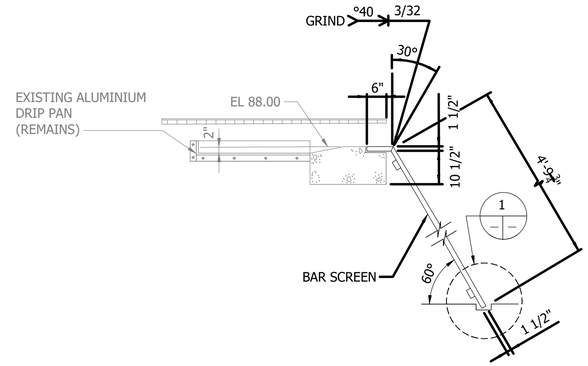


SCREENING FACILITY SECTION (A / MP-01)

1/4" = 1'-0"



BAR SCREEN LANDING AND DRIP PAN SECTION

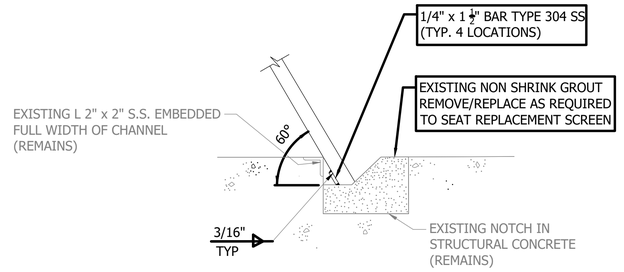
1/2" = 1'-0"

NOTES:

1. THIS DRAWING SHOWS THE WORK REQUIRED TO REMOVE AND REPLACE THE EXISTING BAR SCREEN ON THE BYPASS CHANNEL IN THE SCREEN STRUCTURE.

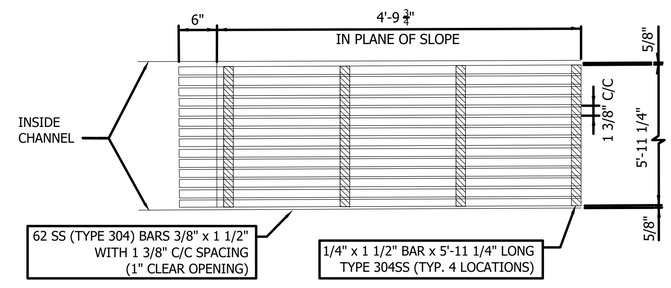
BAR SCREEN LANDING AND DRIP PAN PLAN

1 1/2" = 1'-0"



MANUAL BAR SCREEN DETAIL

1 — 1/2" = 1'-0"



REPLACEMENT BAR SCREEN PLAN

1" = 1'-0"

LEGEND:

EXISTING

PROJECT SCOPE

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

0 6" 1' 2'
1" = 1'-0"

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

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

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
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HOUSTON, TEXAS 77056
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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

BYPASS SCREEN REPLACEMENT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 136 OF 256	

MP-05

90% SUBMITTAL NOT FOR CONSTRUCTION

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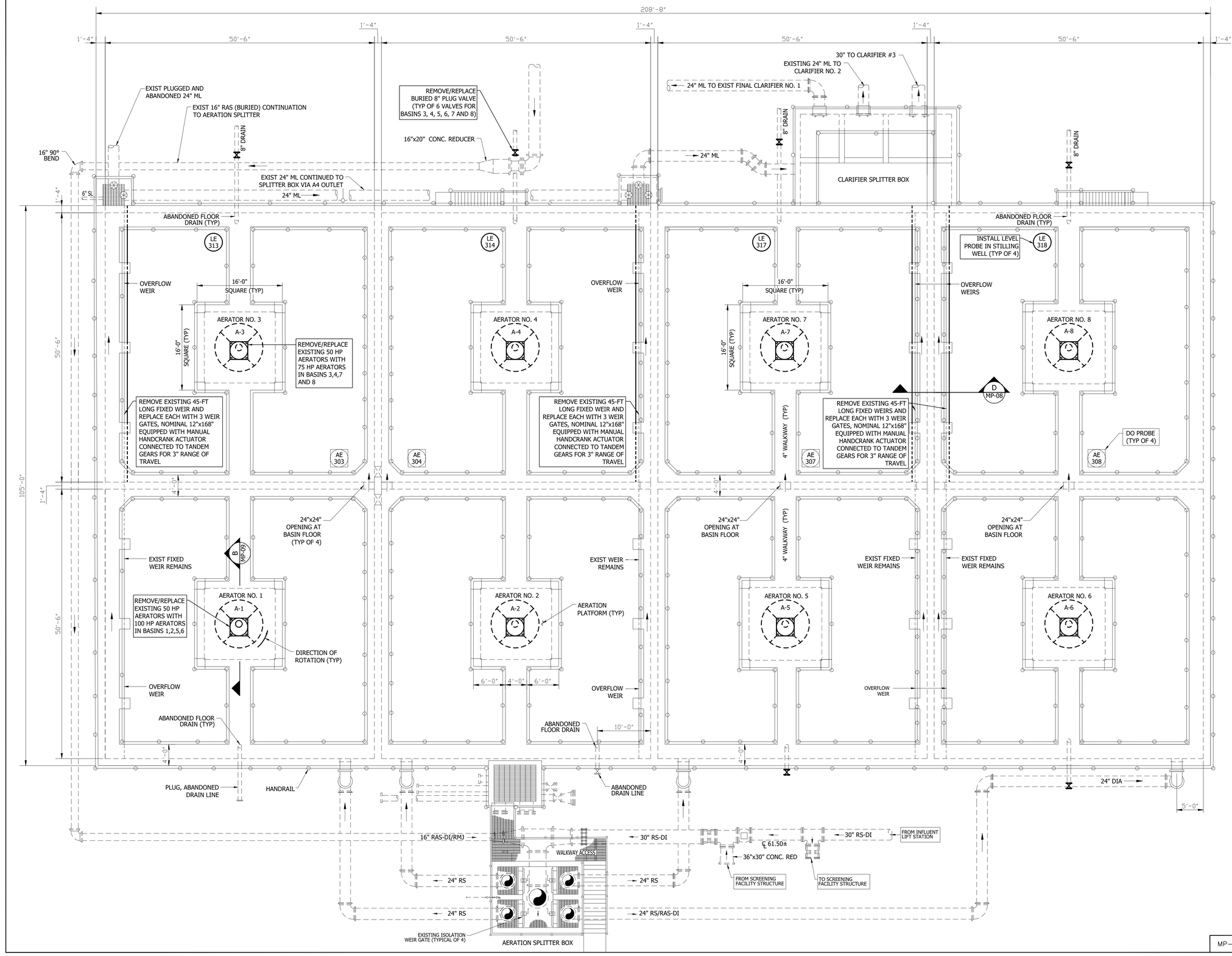

LEGEND:

EXISTING

PROJECT SCOPE

0 8' 16' 32'

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

PLAN NORTH

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

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JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
AERATION BASINS
MECHANICAL OVERVIEW PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-06	SHEET NO. 137 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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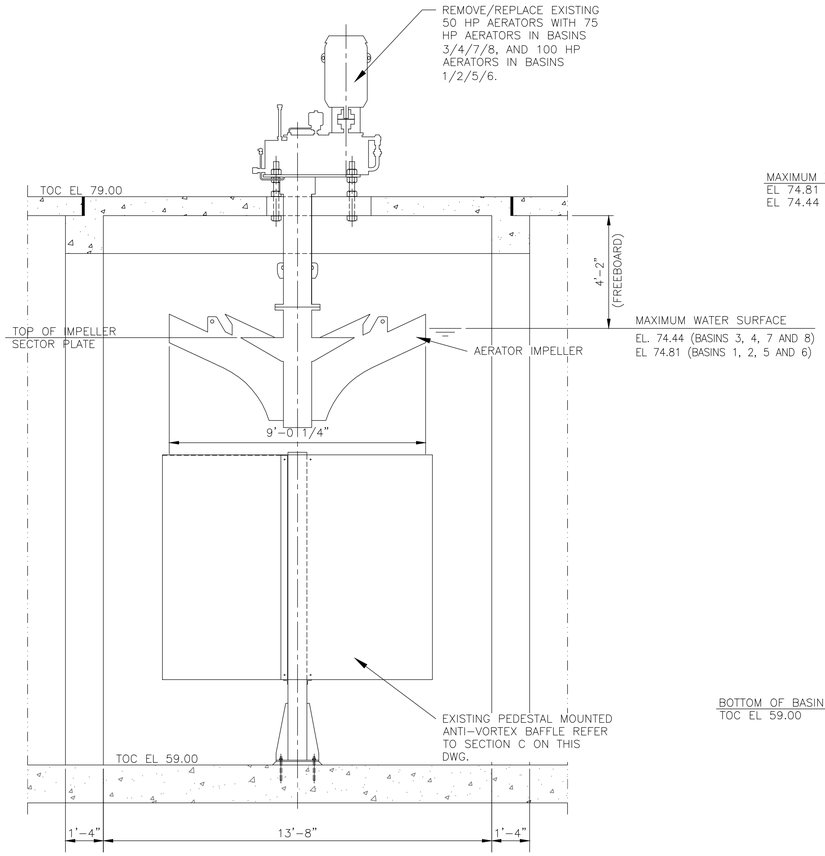
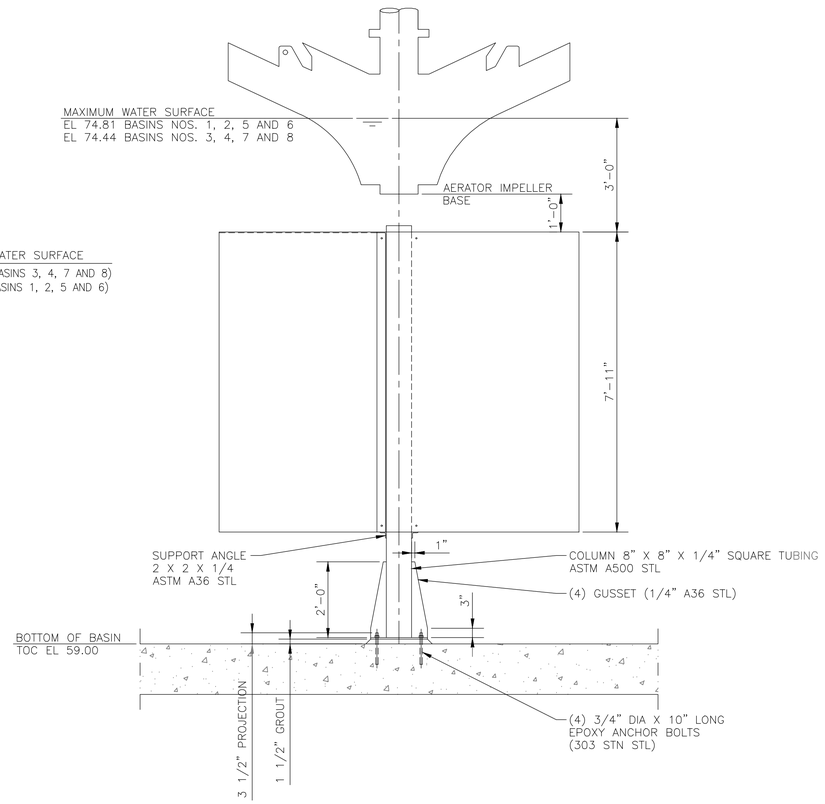


SECTION B
SCALE 3/8" = 1'-0"
MP-06



SECTION C
SCALE 1/2" = 1'-0"
MP-06

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	DMR
A	08/18/25	60% SUBMITTAL	DMR

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

AERATION BASIN AERATOR DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-09	SHEET NO. 140 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

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L:\Temp\DMR\Parsons outside Bako\Houston Greenridge WW Treatment Plt\CAD\PIP\Working\MP-24.dwg Dec 15, 2025 - 11:47am User: p0014O7c

REPLACE SAMPLE PUMP SP-02 RAISE PVC PIPING 1'-0" TO CLEAR NEW CONTAINMENT WALL. SEE DEMO DWG. MP-31 FOR WELL SCREEN REMOVAL

REPLACE SAMPLE PUMP SP-03 RAISE PVC PIPING 1'-0" TO CLEAR NEW CONTAINMENT WALL. SEE DEMO DWG. MP-31 FOR WELL SCREEN REMOVAL

REPLACE SAMPLE PUMP SP-01 AND RAISE PVC PIPING 1'-0" TO CLEAR NEW CONTAINMENT WALL. SEE DEMO DWG. MP-31 FOR WELL SCREEN REMOVAL

CCB 3

CCB 2

CCB 1

6" BUTTERFLY VALVE

6"x4" RED. TEE (TYP.)

6"-PA(SS)

4"-PA(SS)

EXIST.

NEW

PS

45° ELL

DETAIL ROAD CROSSING — MP-26

DETAIL SLEEPER SUPPORT — 3/MP-27

DETAIL AIR PIPE HEADER — 1/MP-26

ROAD

REPLACE EXISTING 2' x 2' WALL THIMBLE/SLUICE GATES WITH 3' x 3' STAINLESS STEEL SLIDE GATES, FLANGES,SURFACE-MOUNTED STAINLESS STEEL STEMS AND STEM GUIDE BRACKETS, AND MANUAL ACTUATORS.

CHLORINE ANALYZER BUILDING

RECOMMEND POTHOLING IN THIS AREA TO FIND CHLORINE LINES TO ROUTE INTO NEW CHLORINE ANALYZER BUILDING

FROM SP-01

FROM SP-02/SP-03

TO OUTFALL STRUCTURE

DRAIN LINE FROM FLOOR TO CCB DIVERSION BOX #2

NEW CHLORINE ANALYZER BUILDING

REPLACE EXISTING 2' x 2' WALL THIMBLE/SLUICE GATES WITH 3' x 3' STAINLESS STEEL SLIDE GATES, FLANGES,SURFACE-MOUNTED STAINLESS STEEL STEMS AND STEM GUIDE BRACKETS, AND MANUAL ACTUATORS.

SODIUM HYPOCHLORITE STORAGE

CHLORINE FEED BUILDING

SODIUM BISULFITE STORAGE

BH#1 BLOWER

NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATES BEFORE CONSTRUCTION. ALL INTERFERENCES SHALL BE BROUGHT TO THE ATTENTION OF CONSTRUCTION REPRESENTATIVE.
2. PARSONS CANNOT CONFIRM MANY ASPECTS OF CONSTRUCTION INSTALLATION, AND RELIES ON THE CONTRACTOR'S JOB SITE VERIFICATION, PROJECT RESEARCH, AND SAFETY PRACTICES TO ENSURE THE APPROPRIATE TIE-IN IS PERFORMED. CONTRACTOR SHALL USE ALL APPLICABLE INDUSTRY STANDARD SAFETY PRECAUTIONS AND PRACTICES, INCLUDING THE APPROVED JOB SAFETY PLAN, TO VERIFY LINE TIE-IN SUITABILITY PRIOR TO COMMENCING CONSTRUCTION.
3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE SPECIFICATIONS. NEW FACILITIES AND MODIFICATIONS TO EXISTING FACILITIES SHALL MEET THE SAFETY REQUIREMENTS OF GREENRIDGE WWTP SAFETY MANUAL, APPROVED SAFETY PLAN, AND SAFE PRACTICES GUIDELINES.

PLAN NORTH

GRAPHIC SCALE

0 5' 10' 20' 40'

(IN FEET)
1"=10'-0"

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

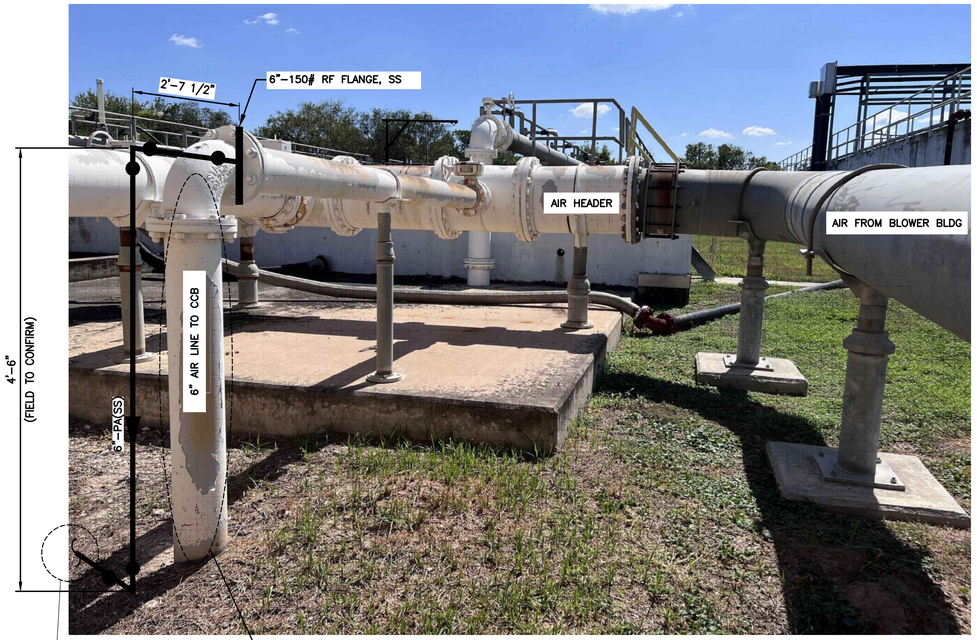
SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
DISINFECTION SYSTEM IMPROVEMENTS
GENERAL ROUTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-24	SHEET NO. 155 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION



DETAIL 2 – AIR PIPING CONT.

DETAIL 1 MP-24 – AIR PIPING TIE-POINT
SCALE: NONE

DETAIL 2 – AIR PIPING
VIEW LOOKING SOUTH
SCALE: NONE

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
DISINFECTION SYSTEM IMPROVEMENTS
TIE-IN DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

MP-25 | SHEET NO. 156 OF 256

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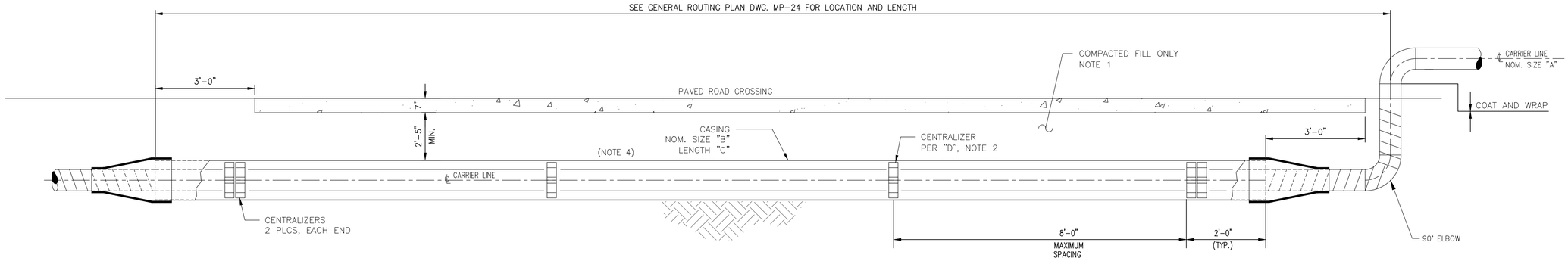
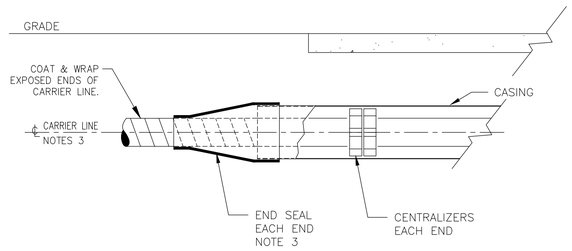


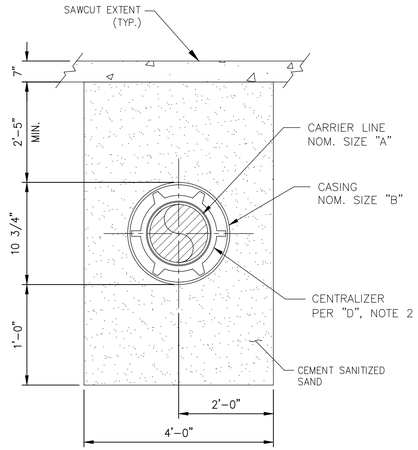
ELEVATION

SCALE: NONE



DETAIL 1

SCALE: NONE



SECTION A MP-24

7" SAWCUT EXTENT

SCALE: NONE

CARRIER LINE NOM. SIZE	CASING NOM.SIZE	CASING LENGTH	CENTRALIZER MODEL AND SIZE NOTE 2
A	B	C	D
6"	10" STD WT CS	31'-0"	GPT "HT", 6 x 10

GENERAL NOTES:

1. COMPACTED FILL SHALL BE PLACED IN ACCORDANCE WITH SITE-SPECIFIC GEOTECHNICAL REPORT. CONTRACTOR TO ENSURE FILL IS PROPERLY PLACED BELOW CASING.
2. CARRIER/CASING CENTRALIZERS SHALL BE GPT INDUSTRIES (GPT) NON-METALLIC MODEL HT CASING SPACERS (FOR STANDARD POSITION), OR COMPANY-APPROVED EQUAL.
3. PIPELINES THAT MAY BE EXPOSED TO SOIL SHALL BE INSTALLED WITH CASING/CARRIER END SEALS. END SEALS SHALL BE GPT MODEL W WRAP AROUND END SEAL, OR COMPANY-APPROVED EQUAL.
4. PIPELINE CASINGS SHOULD BE SLOPED 1% MIN FOR DRAINAGE.

PAVED ROAD CROSSING - WITH CASING

FOR PIPELINE ROUTING PLAN, SEE DWG. MP-24

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
DISINFECTION SYSTEM IMPROVEMENTS
ROAD CROSSING DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 157 OF 256	

MP-26

90% SUBMITTAL NOT FOR CONSTRUCTION

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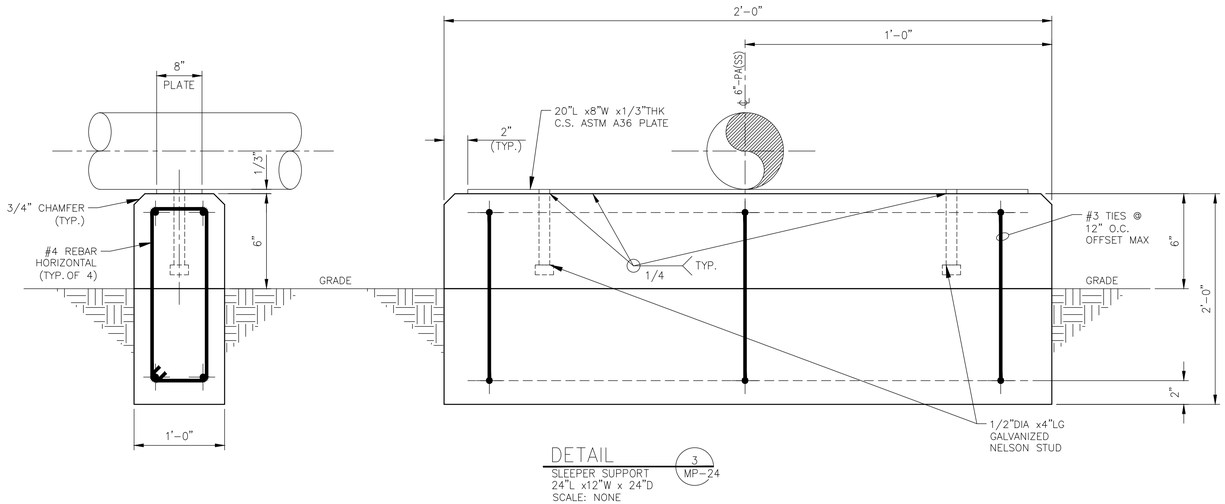

DETAIL 3 MP-24

SLEEPER SUPPORT
24"L x12"W x 24"D
SCALE: NONE

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
DISINFECTION SYSTEM IMPROVEMENTS
PIPE SUPPORT DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 158 OF 256	

MP-27

90% SUBMITTAL NOT FOR CONSTRUCTION

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DRAWING LIMITS

CUT EXISTING ANALYZER SAMPLE LINES FROM SP-01, SP-02 & SP-03 AT RISER AND EXTEND AND RE-INSTALL OVER TOP OF NEW WALL. REMOVE SS WELL SCREENS AT SAMPLE PUMPS (TYP 3 PLACES ON CCB 3)

DETAIL 2 MP-31
SAMPLE LINES TO CCB 3 (TYP 3 PLACES)

CCB 3

CCB 2

CCB 1

EXIST AIR LINE
DEMO AN REMOVE

EXIST AIR LINE
DEMO AN REMOVE

EXIST AIR LINE
DEMO

EXIST AIR LINE
DEMO

EXISTING LINE TO BE CAPPED AND PLUGGED. LINE TO BE ABANDONED IN PLACE.

4-EXISTING 1½" SAMPLE LINES

DEMO
MINIMUM
ABANDON IN PLACE
REMAIN / DEMO
MINIMUM

EXIST AIR LINE
ABANDON IN PLACE

POT-HOLE IN THIS AREA TO LOCATE EXISTING SAMPLE LINES TO DETERMINE EXTENT OF DEMOLITION

DEMO

REMOVE EXISTING 2' x 2' WALL THIMBLE SLUICE GATES. CUT AND GRIND THIMBLE FLUSH WITH CONCRETE AND REPAIR CONCRETE AS NEEDED.

EXIST 6" PD. LINE

CUT EXIST 6"PD TOP 90° ELL AND RE-ORIENT 180° TO TIE IN-TO NEW BLDG.

CHLORINE ANALYZER BUILDING

DETAIL 1 MP-31
CHLO. BLDG. DEMO

DETAIL 3 MP-31
EXIST AIR PIPE HEADER

BH#1 BLOWER

EXIST 6" AIR LINE
ABANDON IN PLACE

EXISTING U/G DUCT BANK

SODIUM HYPOCHLORITE STORAGE

CHLORINE FEED BUILDING

SODIUM BISULFITE STORAGE

DETAIL 4 MP-31
EXIST AIR LINE DEMO

AT EXISTING 6" AIR LINE RISER, DEMOLISH ELBOW AND FLANGE AND AT APPROXIMATLY 1'-6" BELOW GRADE, CUT & CAP RISER. THE LINE BELOW GRADE SHALL REMAIN, ABANDONED IN PLACE.

DRAWING LIMITS

DRAWING LIMITS

DRAWING LIMITS

GRAPHIC SCALE
0 5' 10' 20' 40'
(IN FEET)
1"=10'-0"

PLAN NORTH

NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATES BEFORE CONSTRUCTION. ALL INTERFERENCES SHALL BE BROUGHT TO THE ATTENTION OF CONSTRUCTION REPRESENTATIVE.
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NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	JFV
A	08/18/25	60% SUBMITTAL	JFV

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/09/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
SYSTEM IMPROVEMENTS
PIPING DEMO PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 161 OF 256	

MP-30

90% SUBMITTAL NOT FOR CONSTRUCTION

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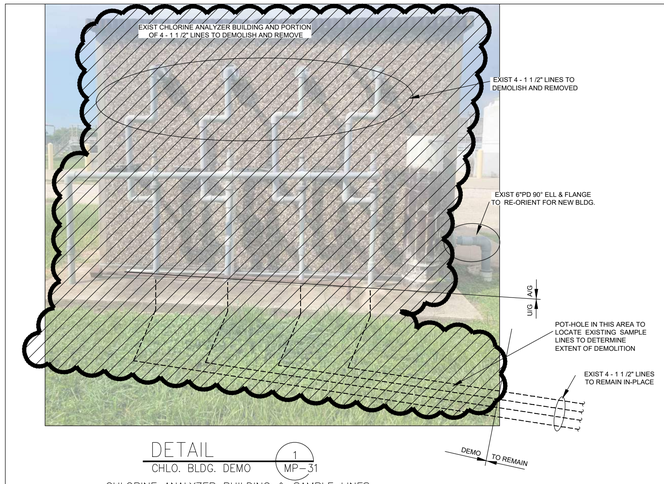
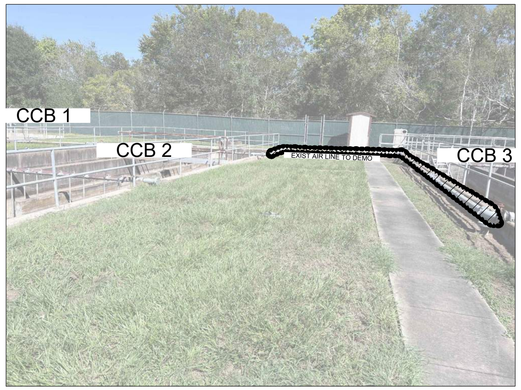
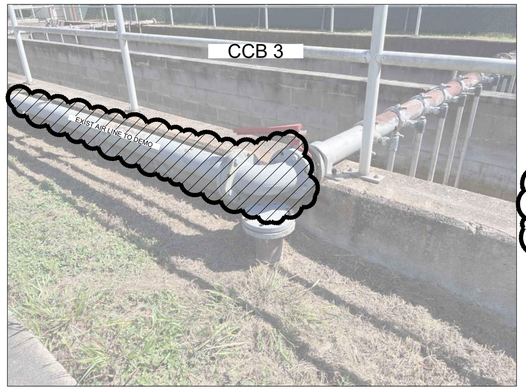
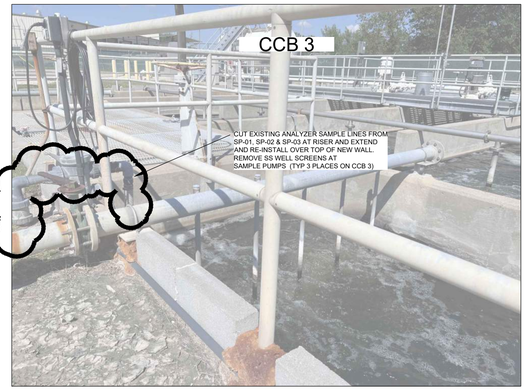


DETAIL 1 MP–31
CHLO. BLDG. DEMO
CHLORINE ANALYZER BUILDING & SAMPLE LINES
(REFERENCE DWG MP–30)

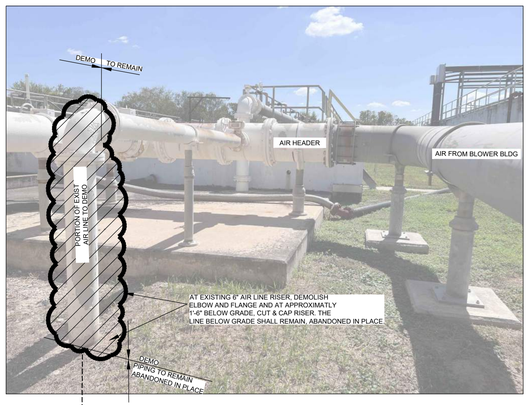




DETAIL 3 MP–31
SAMPLE LINES CCB 3
EXISTING AIR PIPE HEADER TO DEMOLISH
(REFERENCE DWG MP–30)



DETAIL 2 MP–31
SAMPLE LINES CCB 3
CHLORINE CONTACT BASIN 3 SAMPLE LINE
(REFERENCE DWG MP–30)



DETAIL 4 MP–31
6" AIR LINE DEMO
EXISTING AIR PIPE HEADER TO DEMOLISH
(REFERENCE DWG MP–30)

NOTES:

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NO.	DATE	REVISION	APP.
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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871–7000
TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
PARSONS
JEROME BURKE
TEXAS LICENSE NO. 139610
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

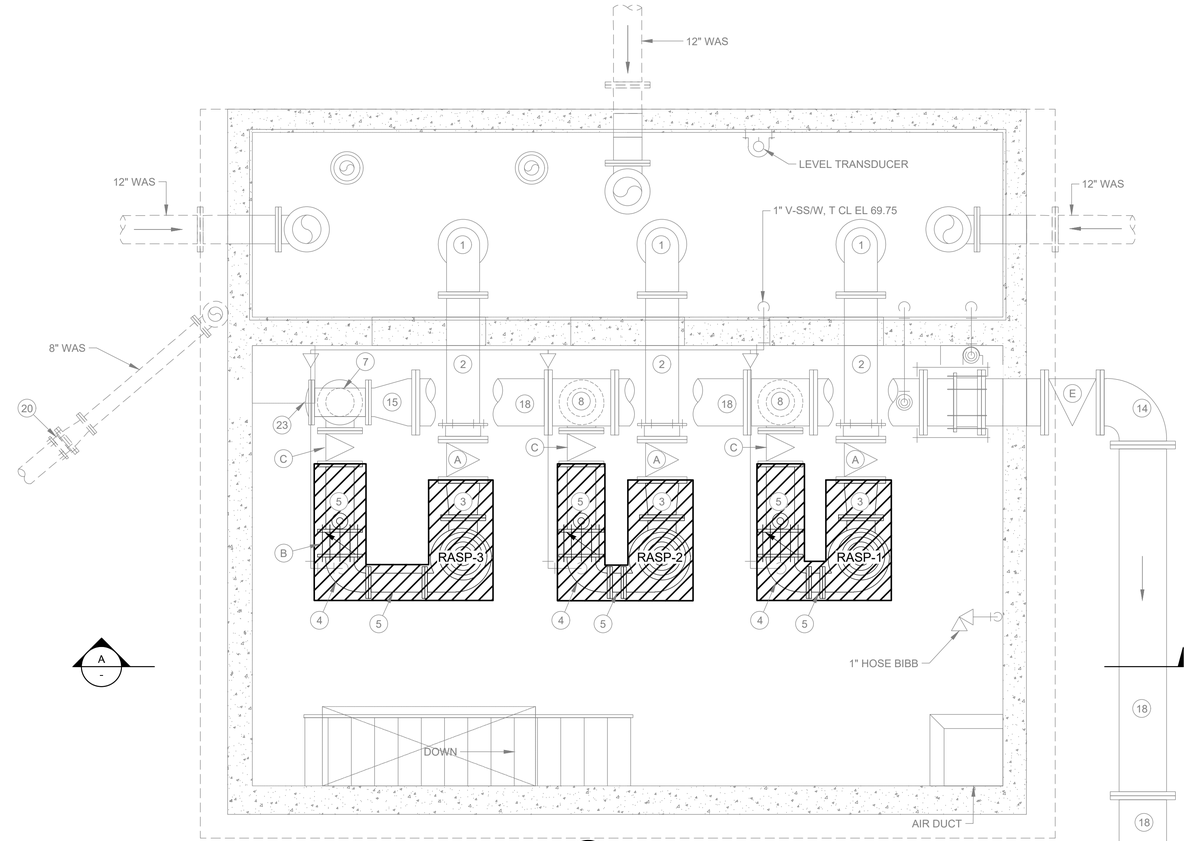
GREENRIDGE WWTP IMPROVEMENTS

SYSTEM IMPROVEMENTS
BLOWER HEADER CCB1, CCB2, CCB3 PIPING DEMO DETAILS

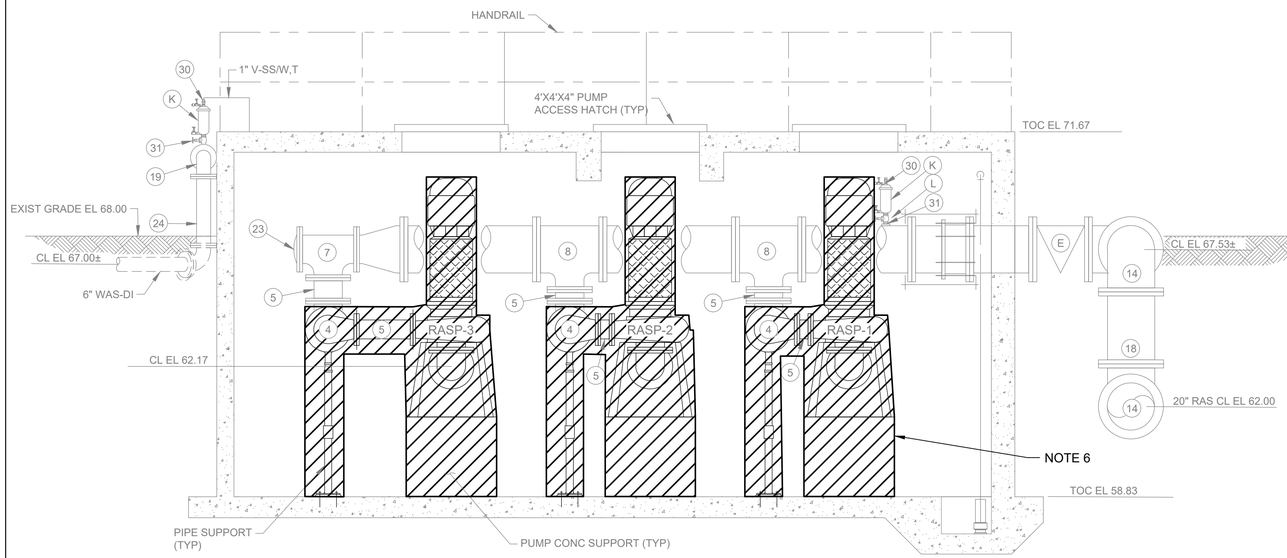
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP–31	SHEET NO. 162 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

L:\Temp\DMR\Parsons outside Boko\Houston Greenridge WW Treatment PH\CAD\PIP\Working\MP–31.dwg Dec 15, 2025 – 11:52am User: p001407c



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



A DEMOLITION SECTION
SCALE: 3/8" = 1'-0"

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
HORIZONTAL SCALE 3/8" = 1'-0"

DEMOLITION NOTES:

1. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
2. CONTRACTOR SHALL DISCONNECT AND LOCK-OUT ALL UTILITIES SERVING BUILDING AND EQUIPMENT PRIOR TO DEMOLITION.
3. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
4. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
5. CONTRACTOR SHALL MAINTAIN RAS PUMP STATION IN OPERATION AT ALL TIMES. ONLY ONE PUMP MAY BE REPLACED AT A TIME.
6. CONTRACTOR SHALL TAKE MEASUREMENTS OF EXISTING PIPE SUPPORT AND MODIFY AS REQUIRED FOR APPROVED PUMP MANUFACTURER INCLUDING MODIFYING CONCRETE AND/OR INSTALLING PIPE STAND AS REQUIRED.

DEMOLITION LEGEND

DEMOLITION

(#) EXISTING PIPE AND FITTING SCHEDULE KEY NOTES:

1. 14" DI LONG RADIUS 90° FLARED BEND, FJ
2. 14" DI SPOOL PIECE, FJ
3. 14" X 12" DI ECCENTRIC REDUCER, FJ, FLAT SIDE UP
4. 12" 90° DI BEND, FJ
5. 12" DI SPOOL PIECE, FJ
6. 12" 90° DI BASE BEND, FJ
7. 12" DI TEE, FJ
8. 20" X 12" DI TEE, FJ
9. 10" DI SPOOL PIECE, FJ
10. 10" X 6" DI REDUCER, FJ
11. 2" DI SPOOL PIECE, FJ
12. 8" 90° DI BEND, FJ
13. 8" DI SPOOL PIECE, FJ
14. 20" 90° DI BEND, FJ
15. 12" X 20" DI REDUCER, FJ
16. 12" X 8" DI REDUCER, FJ
17. 8" DI 45° BEND, FJ
18. 20" DI SPOOL PIECE, FJ
19. 6" DI 90° BEND, FJ
20. 8" X 6" DI REDUCER, FJ
21. 6" DI TEE, FJ
22. 14" DI FLANGE COUPLING ADAPTOR
23. 12" DI BLIND FLANGE
24. 6" DI SPOOL PIECE
25. 6" X 4" DI ECCENTRIC REDUCER, FJ
26. 4" DI SPOOL PIECE, FJ
27. 6" X 4" DI 90° REDUCING BEND, FJ
28. 6" DI FLARE, FJ
29. 6" DI BLIND FLANGE
30. 1" UNION
31. 2" SS PIPE
32. 14" X 10" DI ECCENTRIC REDUCER, FJ (FLAT SIDE UP)
33. 12" X 8" DI 90° REDUCING BEND, FJ

(X) EXISTING EQUIPMENT SCHEDULE KEY NOTES:

A. 14" PLUG VALVE W/ WORM GEAR & HAND WHEEL OPERATOR, FJ
B. 12" WAFER SWING CHECK VALVE, FJ
C. 12" PLUG VALVE W/ WORM GEAR & HAND WHEEL OPERATOR, FJ
D. 8" CHECK VALVE, FJ
E. 20" PLUG VALVE W/ WORM GEAR & HAND WHEEL OPERATOR, FJ
F. 8" PLUG VALVE W/ WORM GEAR & HAND WHEEL OPERATOR, FJ
G. 8" FLOW METER
H. 20" FLOW METER
I. 6" CHECK VALVE
J. 6" PLUG VALVE
K. 2" AIR RELEASE VALVE
L. 2" GATE VALVE
M. 1.5" SS OPW MALE QUICK COUPLING W/ DUST CAP
N. 6" CLOW FLANGE SLUDGE SHOE

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TBPE FIRM REGISTRATION NO. 8008

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KEITH O'CONNOR, P.E. 98334
DATE: 07/31/2025
Civitas Engineering Group, Inc.
Consulting Engineers
Firm Registration No. F-4991

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

RETURN ACTIVATED SLUDGE PUMP STATION DEMOLITION PLANS SECTIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-32	SHEET NO. 163 OF 256

90% SUBMITTAL NOT FOR CONSTRUCTION

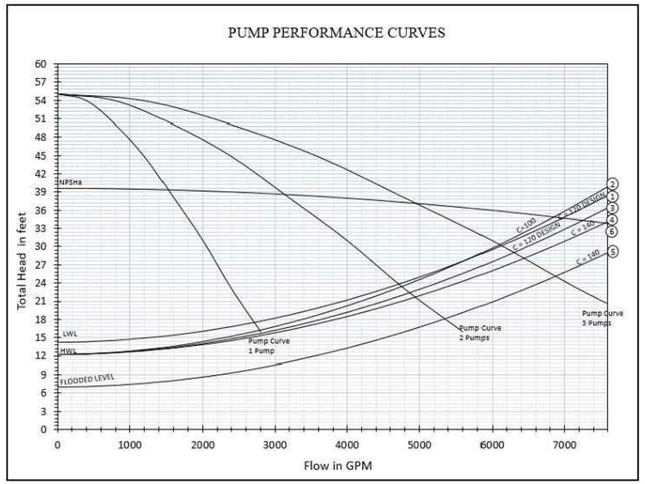
R:\357 Parson\2401 Greenridge WWTP\PROD\3.2 CAD\3.2.7 Mech\357-2401 RAS PUMPS.dwg Dec 12, 2025 - 11:25am User: OMarcelo

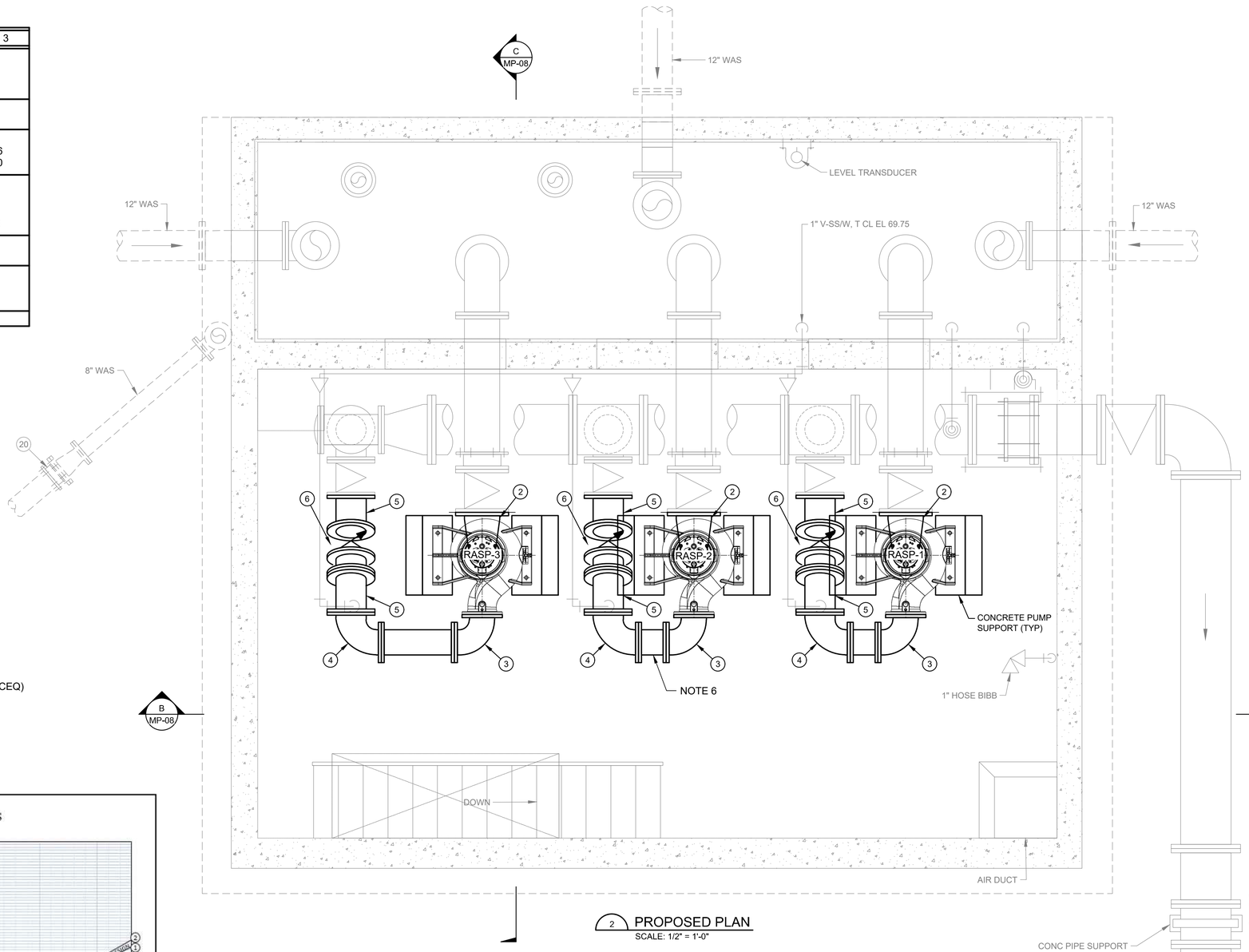
PUMP CHARACTERISTICS	PUMP 1	PUMP 2	PUMP 3
MOTOR DATA			
RATED SIZE (HP)	30	30	30
NOMINAL SPEED (RPM)	890	890	890
SOLIDS PASSAGE			
MIN SPHERE (IN)	3	3	3
CAPACITY (GPM)			
DESIGN	2,106	2,106	2,106
RUNOUT	3,650	3,650	3,650
DISCHARGE HEAD (FT)			
DESIGN	29	29	29
RUNOUT	16	16	16
SHUT OFF	35.5	35.5	35.5
EFFICIENCY (%)			
DESIGN	74	74	74
NPSHR (FT)			
DESIGN	4.9	4.9	4.9
RUNOUT	11	11	11
PUMP CYCLE TIME	6	6	6

*PUMP DATA BASED ON KSB KRT D-MAX 250-402308XFG2-DV

PUMP CURVE NOTES:

1. LOW NORMAL OPERATING LEVEL C=120 - DESIGN
2. HIGH NORMAL OPERATING LEVEL C=100 - INFORMATION ONLY (TCEQ)
3. HIGH NORMAL OPERATING LEVEL C=120 - DESIGN
4. HIGH NORMAL OPERATING LEVEL C=140 - MAXIMUM DISCHARGE
5. EMERGENCY FLOODED OPERATING LEVEL C-140 - MAXIMUM DISCHARGE
6. NET POSITIVE SUCTION HEAD REQUIRED (NPSHR) BASED ON NORMAL OPERATING WATER LEVEL
7. PUMP CURVES ARE MODIFIED FOR STATION LOSSES





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

12" 6" 0 1' 2' 3' 4' 5'
HORIZONTAL SCALE 1/2" = 1'-0"

NOTES:

1. RAS PUMP AND PIPE TIE-INS ARE BASED ON PUMPS AS MANUFACTURED BY KSB KRT D-MAX 250-402/228XFG2-DV. IF OTHER PUMPS ARE SUBMTTED AND APPROVED, CONTRACTOR SHALL ADAPT PIPING AND EQUIPMENT TO SUITE APPROVED PUMPS.
2. IF OTHER PUMPS ARE SUBMTTED AND APPROVED, CONTRACTOR SHALL CONFIRM THEM WITH EXISTING ACCESS HATCH DIMENSIONS AND LOCATIONS.
3. EXISTING STRUCTURE, EQUIPMENT, ELEVATIONS, AND DETAILS SHOWN ARE NOT GUARANTEDD TO BE ACCURATE AND ALL INCLUSIVE. EXISTING INFORMATION SHOWN IS APPROXIMATE AND SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK.
4. REFER TO ELECTRICAL DRAWINGS FOR SCOPE RELATED TO ELECTRICAL EQUIPMENT.
5. CONTRACTOR SHALL COORDINATE WITH CITY WASTEWATER OPERATIONS STAFF TO COORDINATE SHUTDOWNS AS NEEDED.
6. CONTRACTOR SHALL COORDINATE PIPING ARRANGEMENT WITH APPROVED PUMP MANUFACTURER.
7. CONTRACTOR SHALL TAKE MEASUREMENTS OF EXISTING PIPE SUPPORT AND MODIFY AS REQUIRED FOR APPROVED PUMP MANUFACTURER INCLUDING MODIFYING CONCRETE AND/OR INSTALLING PIPE STAND AS REQUIRED.

STATION OPERATION TABLE		
RISING LEVEL CYCLE		
WATER LEVEL OPERATION	ACTION	PUMP(S) IN OPERATION
64.50	ALL PUMPS OFF	
66.50	LEAD PUMP ON	LEAD PUMP IS ON
68.50	LAG 1 PUMP ON	LEAD AND LAG 1 ARE ON
70.50	HIGH LEVEL ALARM AND LAG 2 PUMP ON	ALL PUMPS ARE ON
FALLING LEVEL CYCLE		
68.50	HIGH LEVEL ALARM TURNS OFF	LEAD AND LAG 1 PUMPS ARE ON
66.50	NO ACTION	LEAD AND LAG 1 PUMPS ARE ON
64.50	ALL PUMPS TURN OFF - LAG 2 PUMP BECOMES LEAD, LEAD PUMP BECOMES LAG 1 AND LAG 1 PUMP BECOMES LAG 2	ALL PUMPS ARE OFF
63.50	LOW LEVEL ALARM TURNS ON	ALL PUMPS ARE OFF

PROPOSED PIPE FITTING AND EQUIPMENT SCHEDULE KEY NOTES:

(#)
1. PUMP PER MANUFACTURER
2. 14" X 12" FABRICATED REDUCING BEND
3. 12" DI 90° BEND, FJ
4. 12" DI 90° BEND, FJ
5. 12" DI 22.5° BEND, FJ
6. 12" DI SWING CHECK VALVE (WAFER TYPE)
7. ADJUSTABLE PIPE SUPPORT (FLANGE TYPE)

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HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

RETURN ACTIVATED SLUDGE PUMP STATION PROPOSED PLAN

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R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
MP-33	SHEET NO. 164 OF 256

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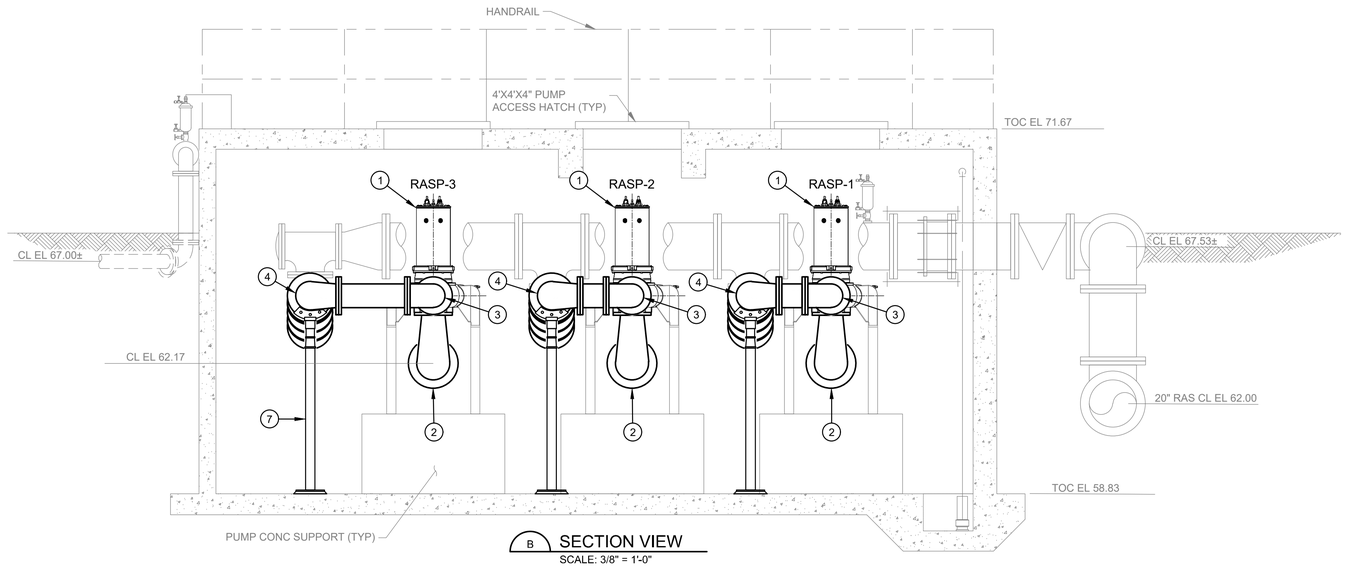
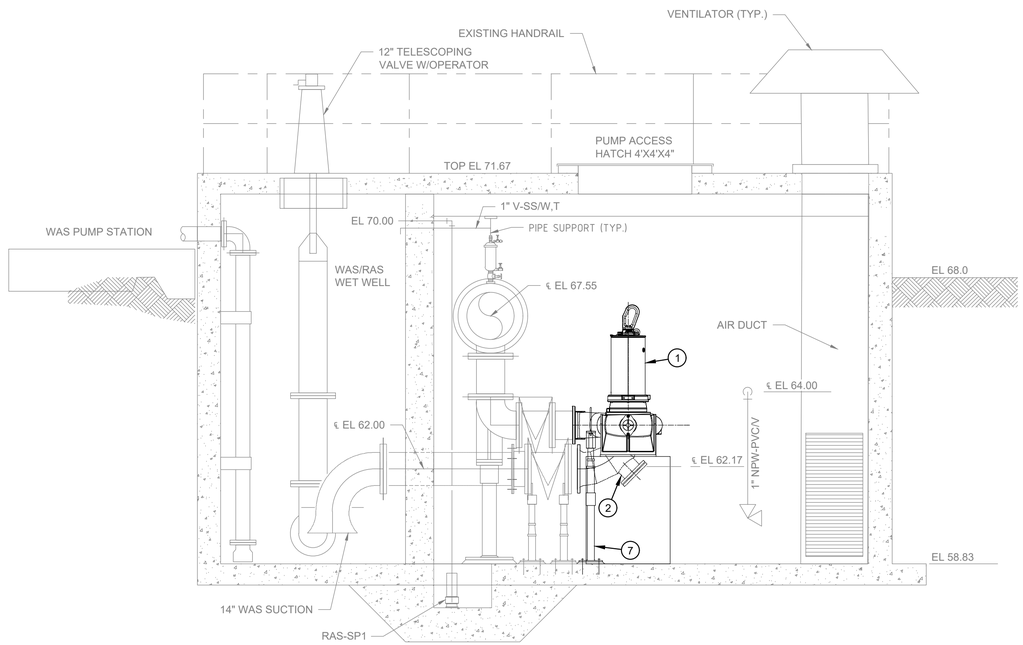
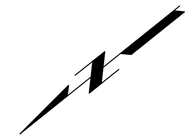


B SECTION VIEW
SCALE: 3/8" = 1'-0"



C SECTION VIEW
SCALE: 3/8" = 1'-0"



12" 6" 0 1' 2' 3' 4' 5' 6' 7'
HORIZONTAL SCALE 3/8" = 1'-0"

NOTES:

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RETURN ACTIVATED SLUDGE PUMP STATION PROPOSED SECTIONS

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SYMBOLS	DESCRIPTION
52 CS	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER CS-CONTROL SWITCH
(E.O.) FRAME TRIP	LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED. LSIG IF NOTED MCP IF NOTED ERMS IF NOTED
✳ OR	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
✳ OR	NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE ✳ AMPERE RATING NOTED IF OTHER THAN 30A
✳ ✱ OR F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED: ✳ AMPERE RATING NOTED IF OTHER THAN 30A ✱ FUSE RATING
MIS OR I	MOTOR ISOLATION SWITCH, HORSEPOWER RATED
	DRAWOUT TYPE EQUIPMENT OR DEVICE
	MEDIUM VOLTAGE CABLE TERMINATION
	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH
	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER
30KVA 480V-120/208Y K-*	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
✳ A:5	CURRENT TRANSFORMER: ✳ QUANTITY A= PRIMARY AMPERES
✳ PV-SV	POTENTIAL TRANSFORMER: ✳ QUANTITY PV= PRIMARY VOLTAGE SV= SECONDARY VOLTAGE
	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
100A ATS-1 N S	TRANSFER SWITCH AUTOMATIC TRANSFER SWITCH (EG ATS-1) MANUAL TRANSFER SWITCH (EG MTS-1) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE 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
	VACUUM CONTACTOR
5KW OR E	UNIT HEATER - ELECTRIC HEATING COIL AND FAN
5KW OR U	UNIT HEATER - STEAM OR WATER HEATING COIL AND FAN
M	MOTOR, NUMERAL INDICATES HORSEPOWER
SPD	SURGE PROTECTION DEVICE
VFD	VARIABLE FREQUENCY DRIVE

SYMBOLS	DESCRIPTION
VM ✳	VOLTMETER (WITH SWITCH IF 3-PHASE)
AM ✳	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 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 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 INCLUDING INDUCTIVE LINK AS NEEDED
	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	PUSH BUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
E-STOP	EMERGENCY STOP PUSH BUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
✳ N	STOP PUSH BUTTON WITH RED HEAD OPERATOR (MAINTAINED CONTACT) WITH LOCKABLE OPTION ✳: E-STOP ✳: STOP
START STOP	START-STOP PUSH BUTTON CONTROL STATION (MOMENTARY CONTACT) "L" DENOTES LOCKOUT TYPE
START STOP	START-STOP PUSH BUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
OFF ON	OFF/ON SELECTOR SWITCH
A B C ✳ (XOO) (OOX)	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED

POSITION	TOP CONTACT	MIDDLE CONTACT	BOTTOM CONTACT
A	X	O	O
B	0	0	O
C	0	O	X

✳ NAMEPLATE (A/B/C)
HOA- HAND/OFF/AUTO
HOR- HAND/OFF/REMOTE
LOR- LOCAL/OFF/REMOTE
RSL- RAISE/STOP/LOWER
TOA- TEST/OFF/AUTO

NOTE: 2 POSITION MULTI-CONTACT SWITCH FOLLOWS SAME CONVENTION

M #	MOTOR STARTER COIL, NUMBER AS INDICATED
CR #	CONTROL RELAY COIL, NUMBER AS INDICATED
	RVSS: REDUCED VOLTAGE STATIC SOLID SOFT STARTER

SYMBOLS	DESCRIPTION
*	PILOT LIGHT, COLOR AS NOTED ✳ R- RED G- GREEN B- BLUE W- WHITE A- AMBER
* PTT	PILOT LIGHT, PUSH-TO-TEST TYPE, COLOR AS NOTED ABOVE.
TD	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.
OR ⊗	LIQUID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSES ON RISING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL NORMALLY OPEN, CLOSES ON DROPPING LEVEL NORMALLY CLOSED, OPENS ON DROPPING LEVEL
OR ⊗	PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSES ON RISING PRESSURE NORMALLY CLOSED, OPENS ON RISING PRESSURE NORMALLY OPEN, CLOSES ON DROPPING PRESSURE NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
OR ⊗	TEMPERATURE SWITCH OR THERMOSTAT NORMALLY OPEN, CLOSES ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
OR ⊗	FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSES ON INCREASED FLOW NORMALLY OPEN, CLOSES ON DROPPING FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW NORMALLY CLOSED, OPENS ON DROPPING FLOW
OR ⊗	POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN - HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN
OR ⊗	TORQUE SWITCH NORMALLY CLOSED, OPENS ON HIGH TORQUE
	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
	CONDUCTORS ELECTRICALLY CONNECTED
FAN	SUPPLY/EXHAUST FAN

SYMBOLS	DESCRIPTION
LA SC	LIGHTNING ARRESTER/SURGE CAPACITOR
OR	GROUND ROD GROUND ROD WELL
30A	FUSE, AMPERE RATING AS NOTED
OR HTR	HEATER
	INDUCTOR
TG	TACHOMETER GENERATOR
	CONTACT, NORMALLY OPEN (NO)
	CONTACT, NORMALLY CLOSED (NC)
	OVERLOAD RELAY HEATER
K	KEY INTERLOCK
TB	TERMINAL OR TEST BLOCK
RTD	RESISTANCE TEMPERATURE DETECTOR
VE	VIBRATION DETECTOR
DM	DAMPER MOTOR
ETM OR	ELAPSED TIME METER
MOV	MOTOR OPERATED VALVE
	PUSH BUTTON STATION, REFER TO ELECTRICAL SCHEMATIC FOR NUMBER OF DEVICES.
J	JUNCTION BOX
JP	POWER JUNCTION BOX
JI	4-20mA SIGNAL JUNCTION BOX
JC	CONTROL JUNCTION BOX
PB	PULL BOX
TC	TERMINATION CABINET
	REMOTE DEVICES
5	MOV WITHOUT INTEGRATED DISCONNECT
J 5	MOV WITH INTEGRATED DISCONNECT
	INDICATES LIMITS OF EQUIPMENT OR WIRING ENCLOSURE
MPR	(MPR) MOTOR PROTECTION RELAY

GENERAL NOTE

THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL LEGENDS & SYMBOLS - I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
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SHAN LEI, P.E.	
E-01	SHEET NO. 163 OF 254

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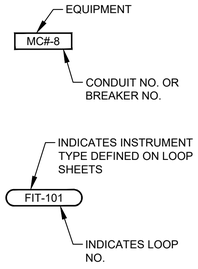
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-01.dwg Dec 17, 2025 - 4:15pm User: CVoldez

SYMBOLS	DESCRIPTION
LA-3 (A, b)	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE FIXTURE: "A"- FIXTURE TYPE "b"- CONTROLLED BY SWITCH "b" "LA-3"- CIRCUIT 3 FROM PANEL LA
b; A; LA-3	REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE FIXTURE, NOTATIONS SAME AS ABOVE
LA-3; A; LA-3 OR LA-3; A; NS	INDICATES LIGHT FIXTURES WHICH ARE NONSWITCHED, NOTATIONS SAME AS ABOVE "NS" - NONSWITCHED
LA-3; A; b	WALL MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
LA-3; A; b	POLE MOUNTED LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A; LA-3	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE
A	REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS, NOTATIONS SAME AS ABOVE
A; LA-3	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE
A; LA-3	WALL OUTLET EXIT SIGN. ARROW INDICATES DIRECTION OF EGRESS, NOTATIONS SAME AS ABOVE
	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
2(3#3/0+1#2G, 3"C)	DENOTES A QUANTITY OF 2 SETS OF THREE (3) NO.3/0 AWG CONDUCTORS AND 1 NO.AWG GROUND CONDUCTOR EACH INSTALLED IN 3" CONDUIT.
2(2/C#16TS)	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CONSISTS OF TWO NO.16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
3(4"C)	DENOTES A QUANTITY OF THREE 4-INCH CONDUITS.
	FLEXIBLE METAL CONDUIT "WHIP" (2#12, #12G, 3/4"C UNLESS OTHERWISE NOTED) FOR RECESSED LIGHTING FIXTURES AND LIQUID TIGHT MOTOR CONNECTIONS
LP#-1,3	HOMERUN, CIRCUITS 1 AND 3 RUN TO PANEL LP-1
$b	SINGLE POLE SWITCH "b"- INDICATES SWITCH LEG SHALL CONTROL LIGHT FIXTURES WITH "b" DESIGNATION
$x b	MULTI POLE SWITCH "x"- INDICATES NUMBER OF POLE "b"- NOTATIONS SAME AS ABOVE
$P b	SINGLE POLE SWITCH AND PILOT LIGHT, "b"- NOTATIONS SAME AS ABOVE
$D b	DIMMER LIGHTING CONTROL SWITCH, "b"- NOTATIONS SAME AS ABOVE
$TM b	TIME SWITCH, "b"-NOTATIONS SAME AS ABOVE
$M	MANUAL MOTOR STARTER /DISCONNECT
$OS	SINGLE POLE SWITCH WITH OCCUPANCY SENSOR
$DM	SINGLE POLE DIMMER SWITCH
$x b xx	SWITCH ENCLOSURE "x"- NOTATIONS SAME AS ABOVE "b"- NOTATIONS SAME AS ABOVE "xx"- INDICATES ENCLOSURE TYPE
LC-1	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED

SYMBOLS	DESCRIPTION
L*-##; OR; L*-##	LIGHTING PANELBOARD (TYPICAL 120V/240V OR 120V/208V)
H*-##; OR; H*-##	DISTRIBUTION PANELBOARD (TYPICAL 277V/480V)
LA-3	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
D *	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
OS	OCCUPANCY SENSOR CAPABLE OF VACANCY
PC	PHOTOCELL
	QUICK CONNECT TERMINALS

TAGGING		
EQUIPMENT	EQUIPMENT TAG	CONDUIT TAG
MOTOR CONTROL CENTER	MCC-1	MC1-XX
SWITCHBOARD	SWBD-1	SB1-XX
SWITCHGEAR	SWGR-1	SG1-XX
PROGRAMMABLE LOGIC CABINET	PLC-1	PL1-XX
VARIABLE FREQUENCY DRIVE	VFD-1	VF1-P
LOW VOLTAGE TRANSFORMER	TX-LX OR TX-HX	TXLX-P OR TXHX-P
SERVICE TRANSFORMER	TX-1	TX1-P
GENERATOR	GEN-1	GN1-X
LIGHTING/POWER PANELBOARD	LP/PP-XX	XX-XX
AUTOMATIC TRANSFER SWITCH	ATS-1	AT1-XX
TYPICAL TAG FOR CONDUIT FROM THIS EQUIPMENT TO DOWN STREAM LOAD FOR EXAMPLE.		

EXAMPLE LEGEND:



SYMBOLS	DESCRIPTION
COMMUNICATIONS SYSTEMS	
	TELEPHONE OUTLET
	DATA OUTLET
P	DATA INPUT/OUTPUT CABLE OUTLET. "P" DENOTES PROCESS COMPUTER SYSTEM
	VOICE/DATA OUTLET
S	PAGING SPEAKER HORN
S	PAGING SPEAKER BI-DIRECTIONAL
S	PAGING SPEAKER, CEILING MOUNTED TYPE
S	PAGING SPEAKER, WALL MOUNTED TYPE
SECURITY SYSTEMS	
SAP	SECURITY ALARM PANEL
DS	SECURITY ALARM DOOR SWITCH
KP	SECURITY ALARM KEY PAD
CR	SECURITY SYSTEM CARD ACCESS READER
WS	SECURITY ALARM WINDOW SWITCH
MD	SECURITY ALARM MOTION DETECTOR
*	SECURITY CAMERA * CCTV- CLOSED CIRCUIT TV CAMERA PTZ- PAN, TILT, ZOOM CAMERA LENS CONTROLS
GB	GLASS BREAK DETECTOR
ACP	ACCESS CONTROL PANEL
FIRE ALARM SYSTEMS	
FACP	FIRE ALARM CONTROL PANEL
SD *	SMOKE DETECTOR *: D- DENOTES DUCT SMOKE DETECTOR R- DENOTES FIXED TEMPERATURE RATE-OF-RISE TYPE.
F	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

ABBREVIATIONS	
AC	ALTERNATING CURRENT
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AG	ABOVE GRADE
ALUM	ALUMINUM
AMP/A	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DOOR INTERLOCK
DN	DOWN
DWG	DRAWING
EHH	ELECTRICAL HANDHOLE
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
EO	ELECTRICALLY OPERATED
ERMS	ENERGY-REDUCING MAINTENANCE SWITCH
FBO	FURNISHED BY OTHERS
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED POLYESTER
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
G, GRD	GROUND
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GO	GATE OPERATOR
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
	CONTINUED ABOVE RIGHT

	CONTINUED BELOW LEFT
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
MTG	MOUNTING
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OL	OVERLOAD
OLX	OVERLOAD CONTROL RELAY
PB	PUSH BUTTON OR PULL BOX
PCC	PUMP CONTROL CONSOLE
PPR	PHASE PROTECTIVE RELAY
PPU	PERPETUAL POWER UNIT
PFR	PHASE FAILURE RELAY
PH	PHASE
PNLBD	PANELBOARD
PR	PAIR
PT	POTENTIAL TRANSFORMER
PTT	PUSH TO TEST TYPE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RCP	RELAY CONTROL PANEL
RECP	RECEPTACLES
RVSS	REDUCED VOLTAGE SOFT STARTER
SC	SURGE CAPACITOR
SCH	SCHEMATIC
SCCR	SHORT CIRCUIT CURRENT RATING
SEC	SECONDS OR SECONDARY
SH	SHIELDED OR SHEET
SHT	SHEET
SM	MOTOR RATED SWITCH
SN	SOLID NEUTRAL
SS	STAINLESS STEEL
ST	STARTER
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TERMINATION CABINET
TEL	TELEPHONE
TO	TIME DELAY ON OPENING
TS	TEMPERATURE SWITCH
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TSW	TWISTED SHIELDED WIRE
TYP	TYPICAL
UG	UNDERGROUND
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VO	VALVE OPERATOR
W	WIRE
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER

GENERAL NOTE

THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL LEGENDS & SYMBOLS – II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-02	SHEET NO. 164 OF 254

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O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-02.dwg Dec 17, 2025 - 4:15pm User: CVoldez

LUMINAIRE SCHEDULE

FIXTURE TYPE	VOLTAGE	LAMP TYPE	TOTAL INPUT WATTS	TOTAL OUTPUT LUMENS	MOUNT	DESCRIPTION	MAKE/MODEL
A	120/277V UNIVERSAL DRIVER	LED	62	6000	SUSPENDED	LINEAR LED LUMINAIRE, UV-STABILIZED, INJECTION-MOLDED, IMPACT-RESISTANT, FROSTED POLYCARBONATE HOUSING, -29°C TO 40°C OPERATING TEMPERATURE, 4000K COLOR TEMPERATURE, 80CRI, UV-STABILIZED, INJECTION-MOLDED, IMPACT-RESISTANT CLEAR POLYCARBONATE LENS, UL 1598 WET LOCATION LISTED.	LITHONIA ARCHWAY VAP LED SERIES VAP-4000L-PCL-WD-MVOLT-40K-80CRI-VAPCMB DAY-BRITE CFI VAPORLUME LED V2 V2WPB70L840-4-UNV TBK OR WBK ACESSORY & FKR-126
B	120/277V UNIVERSAL DRIVER	LED	42	4000	SUSPENDED/ SURFACE	LINEAR LED LUMINAIRE, UV-STABILIZED, INJECTION-MOLDED, IMPACT-RESISTANT, FROSTED POLYCARBONATE HOUSING, -29°C TO 40°C OPERATING TEMPERATURE, 4000K COLOR TEMPERATURE, 80CRI, UV-STABILIZED, INJECTION-MOLDED, IMPACT-RESISTANT CLEAR POLYCARBONATE LENS, UL 1598 WET LOCATION LISTED.	LITHONIA ARCHWAY VAP LED SERIES VAP-4000L-PCL-WD-MVOLT-40K-80CRI-VAPCMB DAY-BRITE CFI VAPORLUME LED V2 V2WPB70L840-4-UNV TBK OR WBK ACESSORY & FKR-126
C	120/277V UNIVERSAL DRIVER WITH EMERGENCY BATTERY PACK WITH PHOTO CELL	LED	68	7900	WALL	POWDER COATED DIE-CAST ALUMINUM HOUSING, NATURAL ALUMINUM FINISH, -30°C TO 40°C OPERATING TEMPERATURE, 5000K COLOR TEMPERATURE, 67CRI, GASKETED LENS, IESNA, TYPE III DISTRIBUTION, NEMA 4X RATED, WET LOCATION RATED, WITH EMERGENCY BATTERY PACK.	LITHONIA LIGHTING TWR2 LED 1 50K MVOLT DDB
D	120/277V UNIVERSAL DRIVER WITH EMERGENCY BATTERY PACK	LED	30	-	STANCHION MOUNT	BODY MOUNTING MODULES AND GUARD-COPPER-FREE AL WITH DORRO-FREE EPOXY POWDER COAT. SUITABLE FOR CLASS I, DIVISION I HAZARDOUS LACTATIONS.	CROUSE-HINDS EV LED J4C701
E	120/277V UNIVERSAL DRIVER WITH EMERGENCY BATTERY PACK	LED	10.6	1100	WALL 8-FT ABOVE FLOOR	LED STANDBY EMERGENCY LUMINARIE, WHITE ENGINEERING GRADE THERMOPLASTIC HOUSING, 16°C TO 32°C OPERATING TEMPERATURE, IMPACT RESISTANT, CORROSION-PROOF, DAMP LOCATION RATED. EMERGENCY BATTERY PACK INCLUDED.	LITHONIA ELM6 LED SERIES ELM6L-UVOLT-LTP-SDRT
X	120/277V UNIVERSAL DRIVER WITH EMERGENCY BATTERY PACK	LED	18.2		UNIVERSAL	EMERGENCY EXIT SIGN, CAST-ALUMINUM, NEMA-4X, CLEAR UV-STABLE POLYCARBONATE COVER, SINGLE WHITE POLYCARBONATE, FACEPLATE WITH DIRECTIONAL CHEVRON KNOCKOUTS. WHITE HOUSING, UNIVERSAL MOUNT, SEALED MAINTENANCE-FREE NICKEL CADMIUM BATTERY WITH 90 MINUTE CAPACITY.	LITHONIA LIGHTING LV EL N LED SERIES LV-S-W-2-G-120/277-EL N-UM-4X
F	MVOLT (120/277 UNIVERSAL DRIVER)	LED	138	21,005	POLE MOUNT	LED FLOODLIGHTS, POWER COATED DIE-CAST ALUMINUM HOUSING, -29°C TO 40°C OPERATING TEMPERATURE, 4000K COLOR TEMPERATURE, UL 1598 WET LOCATION LISTED.	LITHONIA LIGHTING D-SERIES DSXF3 LED 6 P2 40K 70CR1 WFL MVOLT IS DDBXD
G	MVOLT (120/277 UNIVERSAL DRIVER)	LED	62	-	POLE MOUNT	HIGH-EFFICIENCY LED UNIT WITH PRISMATIC BOROSILICATE GLASS; UL LISTED FOR WET LOCATION USE WITH 120VAC PHOTO CELL	HUBBELL SERIES EML EMLC-50W-30D4-WITH PHOTO CELL OR EQUAL
TPA	N/A	N/A	N/A	N/A	BASE MOUNTED POLE	ROUND STRAIGHT ALUMINUM POLE, 4" DIAMETER WITH 2-3/8" TENON, 12' POLE WITH LOW PROFILE BASE COVER, HANDHOLE WITH RECESSED COVER. RATED FOR 150 MPH. MATCH TENON TO LUMINAIRE TYPE.	LITHONIA LIGHTING FLORIDA RATED POLE RSALP 12 4C T20 VD DDXD
TPB	N/A	N/A	N/A	N/A	BASE MOUNTED POLE	SQUARE STRAIGHT ALUMINUM POLE, 6" WIDTH, 30' POLE WITH LOW PROFILE BASE COVER, HANDHOLE WITH RECESSED COVER. RATED FOR 150 MPH.	LITHONIA LIGHTING FLORIDA RATED POLE SSA 30 6J DM19 VD DNA

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL LIGHTING FIXTURE SCHEDULE

WBS NUMBER
R-000265-0162-3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
AS NOTED

CITY OF HOUSTON PM
SHAN LEI, P.E.

E-03

SHEET NO. 165 OF 254

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ELECTRICAL GENERAL NOTES

1. THE NOTES CONTAINED ON THIS SHEET ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR WHEN WORKING IN THE FIELD, AND CONTAIN EXCERPTS FROM THE SPECIFICATION SECTIONS. HOWEVER THE CONTRACTOR IS HEREBY ADVISED THAT THE CONTRACT DOCUMENTS CONSIST OF BOTH THE DRAWINGS AND THE SPECIFICATIONS, AND THAT THE CONTRACTOR MUST COMPLY FULLY WITH BOTH THE BOUND DRAWINGS AND THE BOUND SPECIFICATIONS.

2. ALL EQUIPMENT WIRING, RACEWAYS, ETC. SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, 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 SPECIFIC REQUIREMENTS.

3. 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.

4. CONDUITS SHALL BE TERMINATED IN A NEAT MANNER AND STRICTLY IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWING DETAILS.

5. 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.

6. 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.

7. NO CONDUIT SMALLER THAN 3/4", NOR WIRE SMALLER THAN NO. 12 AWG, SHALL BE USED UNLESS SPECIFICALLY NOTED.

8. ALL UNDERGROUND SINGLE CONDUITS AND DUCTBANKS OF MULTIPLE CONDUITS SHALL BE RIGID PVC CONDUIT ENCASED IN REINFORCED RED CONCRETE. CONCRETE DYED RED BEFORE PLACEMENT. MINIMUM SIZE IS 2 INCH. 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.

9. 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.

10. 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.

11. 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.

12. ALL JUNCTION BOXES, PULL BOXES AND TERMINATION BOXES IN NEMA 12 AREAS SHALL BE ALUMINUM. FOR NEMA 4X AREAS SEE SPECIFICATIONS FOR BOX DETAILS AND SPECIFICATIONS.

13. SEAL ALL RACEWAYS ENTERING JUNCTION BOXES OR CONTROL PANELS CONTAINING ELECTRICAL OR INSTRUMENTATION EQUIPMENT WITH WATERTIGHT SEALANT. REFER TO THE SPECIFICATIONS FOR DETAILS.

14. ALL 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.

15. ALL 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.

16. 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.

17. THE LOCATION OF ALL ELECTRICAL EQUIPMENT AND ROUTING OF CABLES AND CONDUITS SHALL BE COORDINATED AND APPROVED BY THE OWNER.

18. THE DUCTBANK ROUTING AS SHOWN ON THE DRAWING IS APPROXIMATE. FIELD VERIFY THE EXACT DUCTBANK ROUTING, CABLE LENGTH AND CONDUIT LENGTH.

19. PROVIDE CONDUIT SEALS FOR CONDUIT PENETRATIONS AS PER NEC AND NFPA820.

20. COORDINATE ALL WORK WITH THE OWNER.

21. LOCATE ALL UNDERGROUND UTILITIES BEFORE DIGGING. COORDINATE THE EFFORT WITH THE OWNER.

22. 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.

23. 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.

24. CONDUIT AND WIRE FOR THE HVAC EQUIPMENT AND MISCELLANEOUS DEVICES SHALL BE:

    A. 3/4" (MIN) RIGID ALUMINUM.

    B. NO.14 XHHW CU. WIRE XHHW (MIN.).

    C. IN ACCORDANCE WITH ALL ELECTRICAL AND HVAC SPECIFICATIONS REQUIREMENTS.

25. 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.

26. 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.

27. ALL UNDERGROUND GROUNDING CONDUCTORS SHALL BE BARE TIN-PLATED COPPER, ALL GROUND RODS SHALL BE 3/4" BY 10' LONG. ALL EXPOSED COPPER GROUND CABLES SHALL BE GREEN INSULATED CONDUCTORS. PROVIDE XHHW INSULATION.

28. WHERE NOTES ON THE DRAWING INDICATE THAT THE CONTRACTOR SHALL FIELD-VERIFY, THE INTENT IS FOR THE CONTRACTOR TO INVESTIGATE TO THE EXTENT NECESSARY TO PROVIDE THE WORK AND MATERIALS PRIOR TO BIDDING AND INCLUDE ALL COSTS IN THE BID PRICE. THE CONTRACT PRICE SHALL NOT BE INCREASED WHEN THE CONTRACTOR HAS NOT INVESTIGATED PER THE NOTES DIRECTING THAT BE DONE.

29. REFER TO SPECIFICATION SECTION 16110 RACEWAYS BOXES ENCLOSURES AND FITTINGS FOR INSTALLATION REQUIREMENTS.

TYPICAL ENCLOSURE TYPES BY AREA

	BOXES & ENCLOSURES					
NON-HAZARDOUS AREAS	1	3R	4X	4X*	12	
OUTDOOR; GENERAL AREAS		X	X			
OUTDOOR; CHEMICAL AREAS				X		
INDOOR; CHEMICAL ROOM				X		
INDOOR; CONDITIONED SPACE					X	
INDOOR; NON-CONDITIONED SHOP SPACE					X	
INDOOR; NON-CONDITIONED PROCESS AREA			X			
INDOOR, ADMIN BUILDING	X					
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:

- EQUIPMENT SUCH AS MOTOR CONTROL CENTER, SWITCHGEAR, VFDS, AND OTHER STAND-ALONE MOTOR STARTERS ARE TO BE SPECIFIED UNIQUELY.
- NEMA 1 ENCLOSURES ARE TO BE NEMA 1 GASKETED.
- NEMA 4X* ENCLOSURES ARE TO BE NON-METALLIC (ie PVC) NEMA 4X
- OUTDOOR GENERAL AREAS COULD BE 3R OR 4X DEPENDING ON OWNER PREFERENCE AND WHETHER WTP OR WWTP - REFER TO DRAWINGS.

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 40 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. ENCASED IN RED DYED REINFORCED CONCRETE. (AS WHERE SPECIFIED)
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 BUILDINGS.

*REFER TO DESIGN GUIDE LINE SPECIFICATIONS.

DEMOLITION NOTES

1. COORDINATE THE DEMOLITION 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.

2. PROVIDE TEMPORARY WIRE AND CONDUIT FOR THE EQUIPMENT WHICH MAY BE AFFECTED BY THE DEMOLITION BUT TO REMAIN IN SERVICE.

3. RELOCATE AND RECONNECT POWER AND CONTROL RACEWAYS AND CONDUCTORS TO EQUIPMENT AFFECTED BY DEMOLITION WORK.

4. ALL CONDUCTORS BEING DEMOLISHED 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.

5. ALL SURFACES WHERE DEMOLISHED EQUIPMENT OR CONDUIT IS REMOVED SHALL BE CLEANED, PATCHED AND PAINTED TO MATCH THE SURROUNDING SURFACE.

6. CHECK THE FUNCTION OF EACH CONDUCTOR BEFORE REMOVING OR DISCONNECTING.

7. IF A CONDUCTOR WHICH HAS TO STAY IN SERVICE (NOT BEING DEMOLISHED) IS INSTALLED IN A COMMON CONDUIT WITH CONDUCTORS WHICH ARE BEING DEMOLISHED, 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.

8. 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.

9. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER/ENGINEER TO FLAG EXISTING UNDERGROUND CONDUITS BEFORE DIGGING.

10. 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.

11. DO NOT MAKE ANY MODIFICATIONS TO THE EXISTING ELECTRICAL EQUIPMENT UNTIL THE FOLLOWING HAS BEEN DONE:

    A. THE OWNER/CONTRACTOR SHALL WITNESS AND RECORD THE CONDITION OF THE EXISTING EQUIPMENT, THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.

    B. THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.

    C. A WRITTEN AND PHOTOGRAPHIC 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.

    D. A FORM SHALL BE GENERATED BY THE CONTRACTOR TO RECORD THE OBSERVATIONS. BOTH PARTIES SHALL SIGN ON THE FORM.

    E. REPLACE ALL MATERIAL OR EQUIPMENT DAMAGED DURING THE COURSE OF WORK.

    F. AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO DEMONSTRATE THAT IT FUNCTIONS CORRECTLY.

    G. 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.

MCC, CONTROL PANELS, PANELBOARDS

THESE NOTES APPLY TO CONTROL PANELS, MCC ETC WHICH HAS TO BE REFURBISHED, MODIFIED, DISCONNECTED & RECONNECTED OR REWORKED. SEE SPECIFICATION SECTION 16060 ELECTRICAL DEMOLITION:

THE CONTRACTOR SHALL NOT MAKE ANY MODIFICATION UNTIL THE FOLLOWING HAS BEEN DONE:

A. THE OWNER/CONTRACTOR SHALL WITNESS THE CONDITION OF THE EXISTING EQUIPMENT, THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCY.

B. THE OWNER SHALL OPERATE THE EQUIPMENT TO DEMONSTRATE THE CURRENT CONDITIONS. THE CONTRACTOR SHALL NOTE DOWN ANY DEFECTS OR DEFICIENCIES.

C. 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.

D. A FORM SHALL BE GENERATED BY THE CONTRACTOR TO RECORD THE OBSERVATIONS. BOTH PARTIES SHALL SIGN ON THE FORM.

E. REPLACE ALL MATERIAL OR EQUIPMENT DAMAGED DURING THE COURSE OF WORK.

F. AFTER THE CHANGES ARE MADE, THE EQUIPMENT SHALL BE INSPECTED AND RE-TESTED TO DEMONSTRATE THAT IT FUNCTIONS CORRECTLY.

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL GENERAL NOTES

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R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-04	SHEET NO. 166 OF 254

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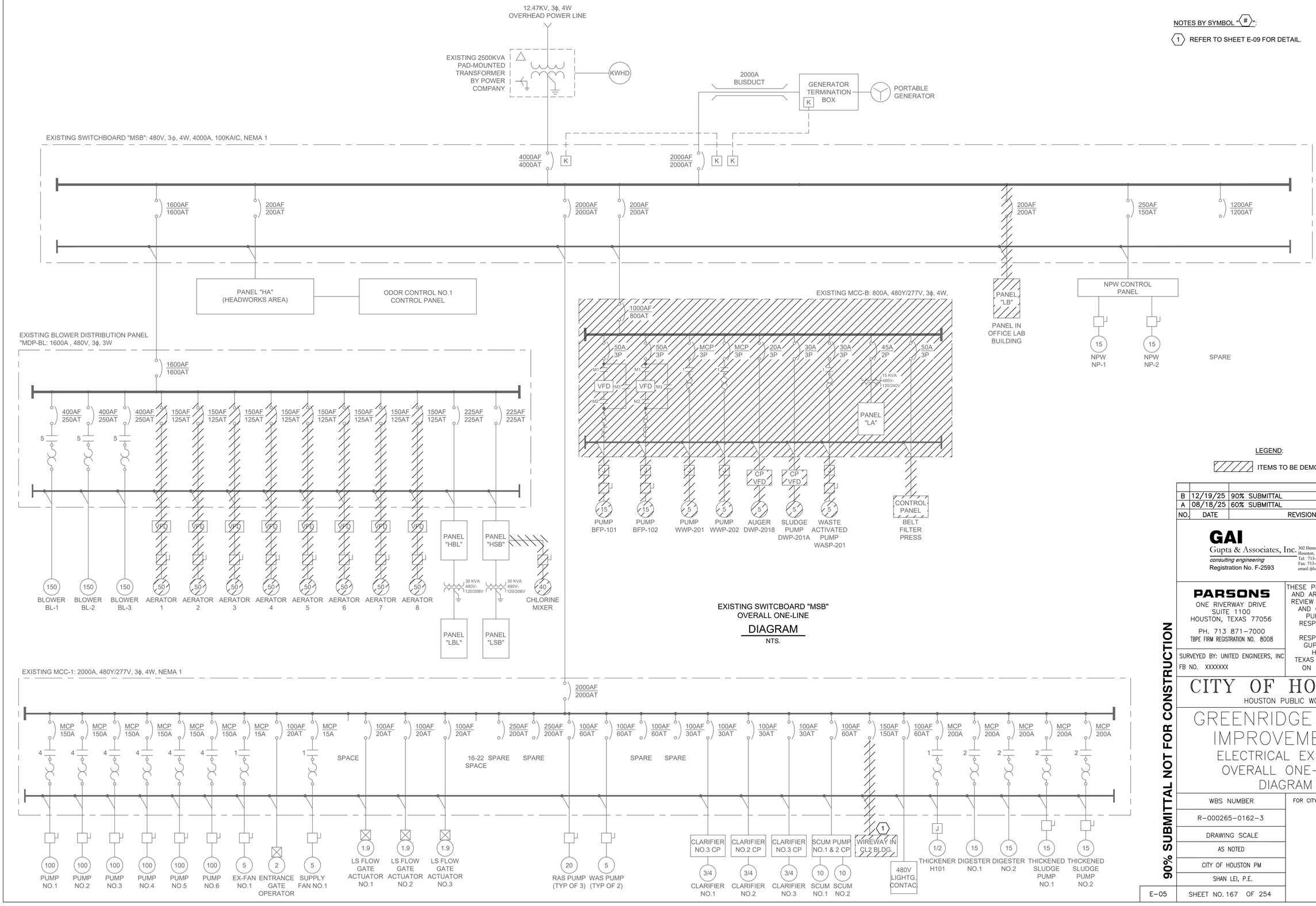

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO SHEET E-09 FOR DETAIL.

LEGEND:

▨ ITEMS TO BE DEMOLISHED.

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GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL EXISTING OVERALL ONE-LINE DIAGRAM

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E-05	SHEET NO. 167 OF 254

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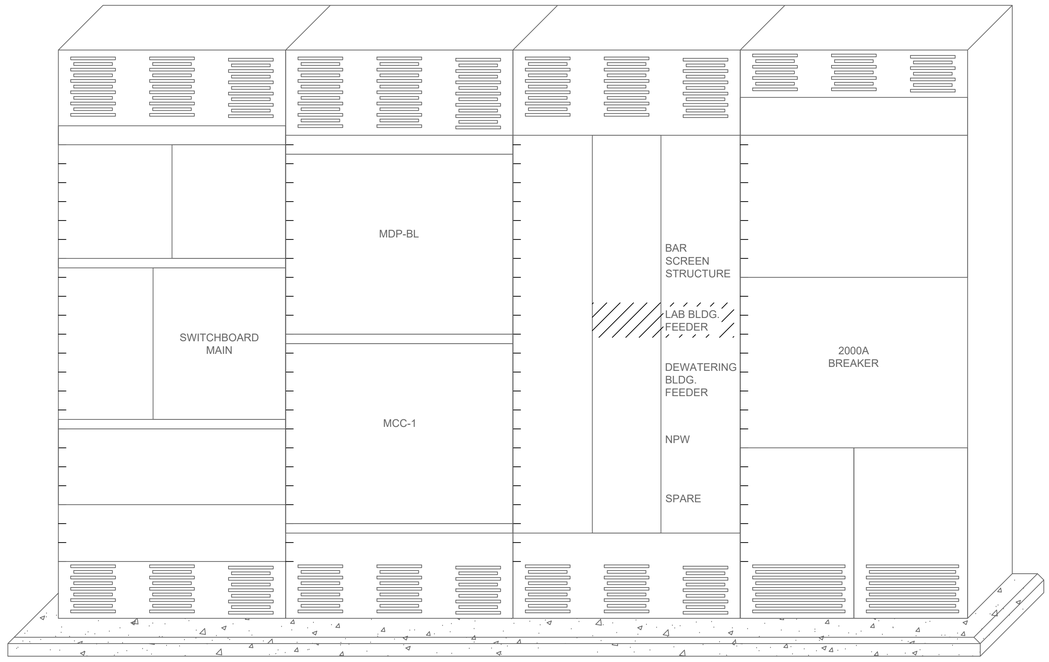


EXISTING SWITCHBOARD "MSB"

ELEVATION

NTS.

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ EXISTING WIREWAY AND ASSOCIATED CONDUITS AND WIRES IN LAB BUILDING TO BE DEMOLISHED AND REMOVED.

⟨2⟩ EXISTING DISCONNECTS AND ASSOCIATED CONDUITS AND WIRES IN LAB BUILDING TO BE DEMOLISHED AND REMOVED.

⟨3⟩ EXISTING PANELS "CHL1" & "CHL2" AND ASSOCIATED CONDUITS AND WIRES IN LAB BUILDING TO BE DEMOLISHED AND REMOVED.

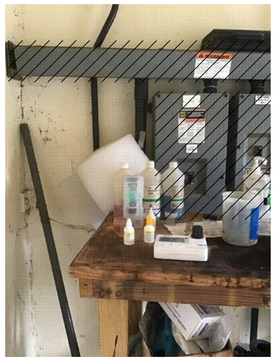
⟨4⟩ EXISTING 50KVA TRANSFORMER AND ASSOCIATED CONDUITS AND WIRES OUTSIDE LAB BUILDING TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

EXISTING SWITCHBOARD "MSB"

PHOTOGRAPH A — NTS. — E-06



WIREWAY IN LAB BUILDING

PHOTOGRAPH B — NTS. — E-06 — ⟨1⟩

DISCONNECTS IN LAB BUILDING

PHOTOGRAPH C — NTS. — E-06 — ⟨2⟩

"CHL1" & "CHL2" PANELS IN LAB BUILDING

PHOTOGRAPH D — NTS. — E-06 — ⟨3⟩

50KVA TRANSFORMER OUTSIDE LAB BUILDING

PHOTOGRAPH E — NTS. — E-06 — ⟨4⟩

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GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL EXISTING SWITCHBOARD "MSB" ELEVATION

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E-06

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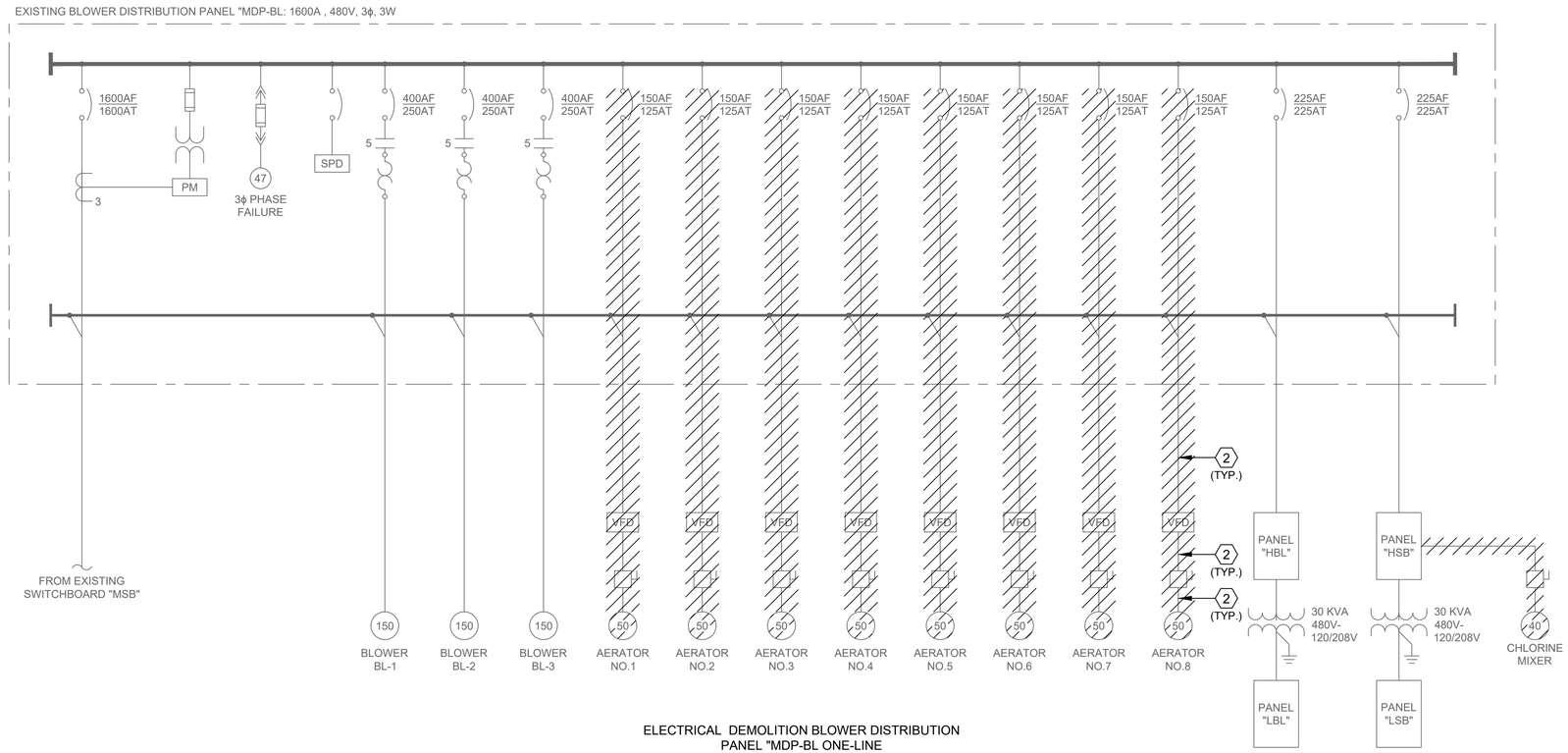
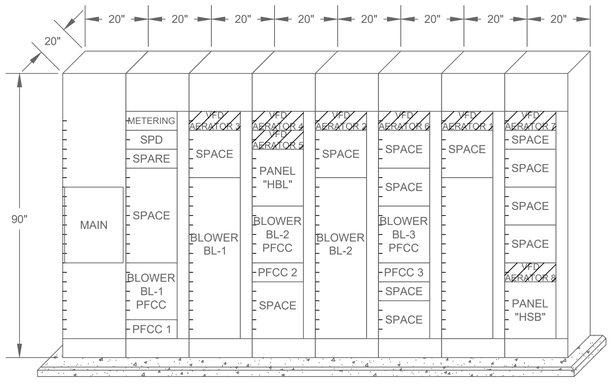
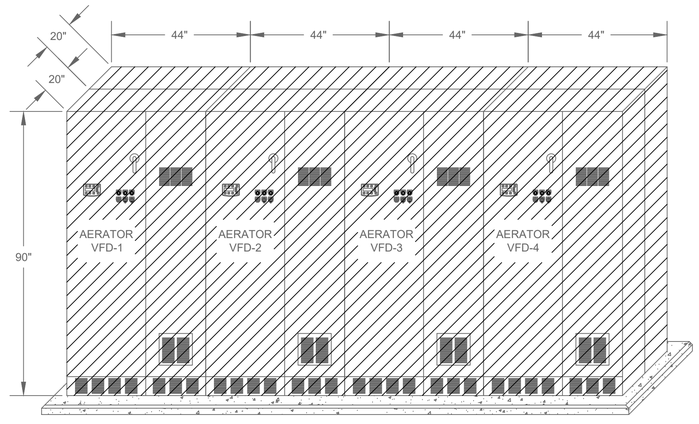


ELECTRICAL DEMOLITION BLOWER DISTRIBUTION PANEL "MDP-BL ONE-LINE DIAGRAM
NTS.



DEMOLITION BLOWER DISTRIBUTION PANEL "MDP-BL"
ELEVATION 1
NTS.



DEMOLITION AERATOR VFD'S
ELEVATION 3
NTS.

EXISTING BLOWER DISTRIBUTION PANEL "MDP-BL
PHOTOGRAPH A E-07 1
NTS.

AERATOR VFD'S
PHOTOGRAPH B E-07 3
NTS.

NOTES BY SYMBOL "#":

1. EXISTING AERATION BREAKERS NO.1 THRU NO.8. TO BE DEMOLISHED AND REMOVED.
2. EXISTING CONDUIT AND WIRES TO BE DEMOLISHED AND REMOVED.
3. EXISTING AERATION VFD'S NO.1 THRU NO.8. TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

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GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL DEMOLITION "MDP-BL" ONE-LINE DIAGRAM & ELEVATION

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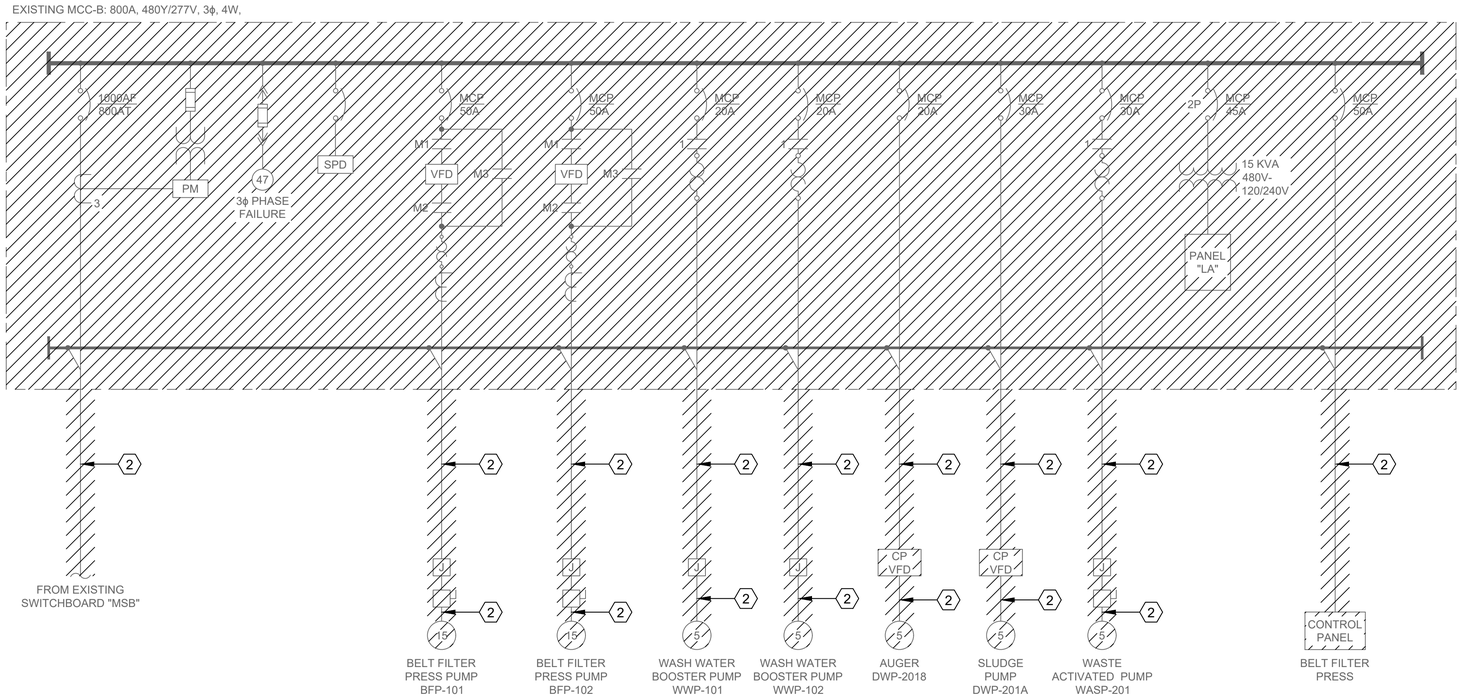
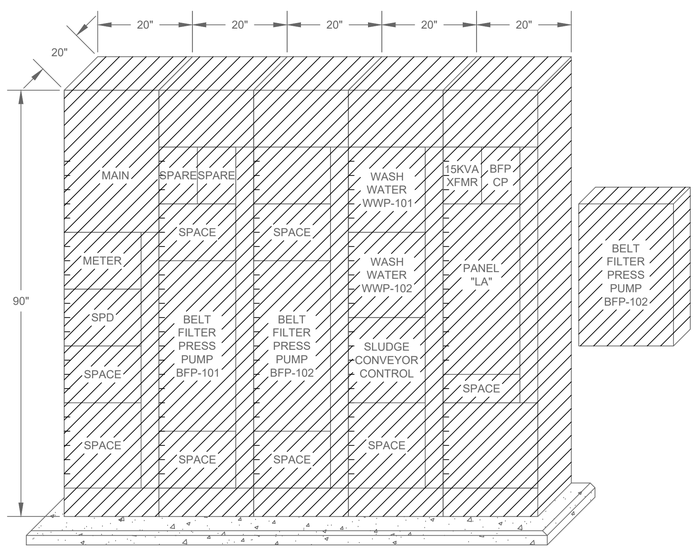


ELECTRICAL DEMOLITION
"MCC-B" ONE-LINE
DIAGRAM
NTS.



ELECTRICAL DEMOLITION
"MCC-B"
ELEVATION 1
NTS.

EXISTING
"MCC-B"
PHOTOGRAPH A 1
NTS. E-08

NOTES BY SYMBOL "#":

1. EXISTING MCC-B TO BE DEMOLISHED AND REMOVED.
2. EXISTING CONDUIT AND WIRES TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

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E-08

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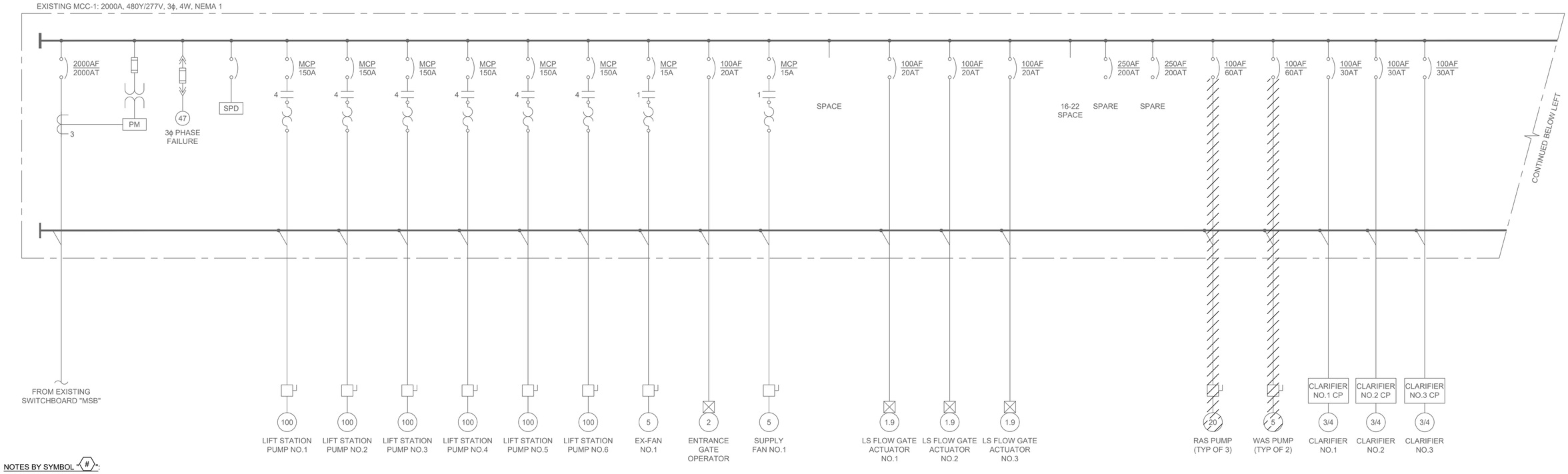
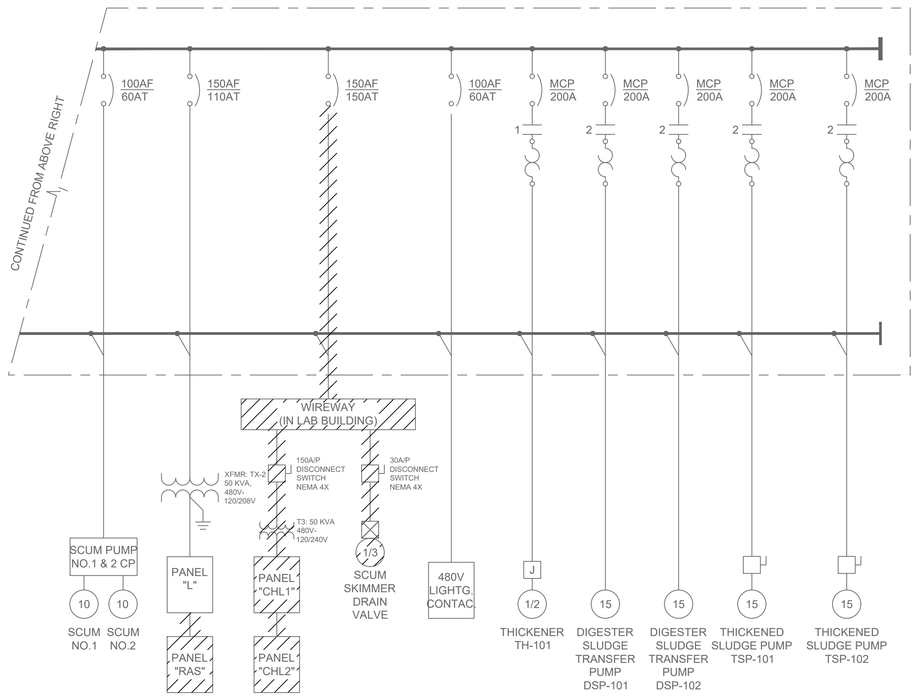


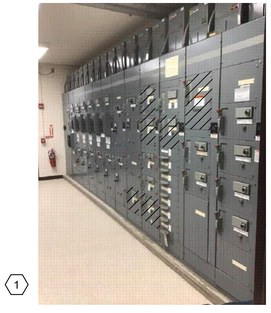
NOTES BY SYMBOL "⟨#⟩":

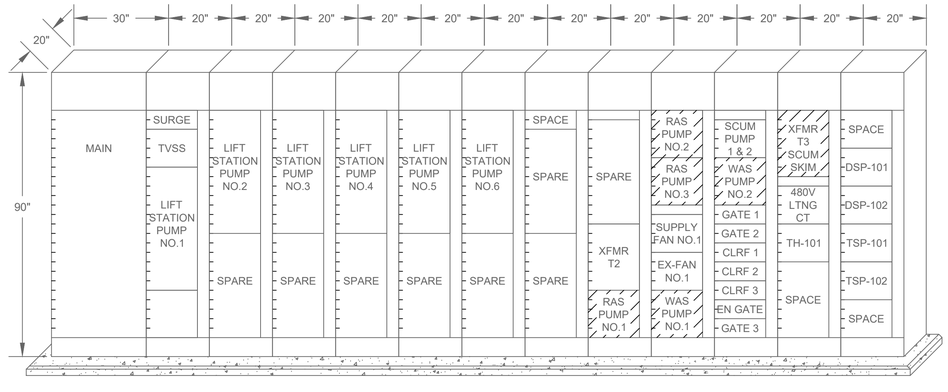
⟨1⟩ EXISTING CONDUIT AND WIRES FOR RAS/WAS PUMP TO BE DEMOLISHED AND REMOVED.

ELECTRICAL DEMOLITION
"MCC-1" ONE-LINE
DIAGRAM
NTS.



EXISTING "MCC-1"
PHOTOGRAPH ⟨A⟩ E-09 ⟨1⟩
NTS.





ELECTRICAL DEMOLITION"MCC-1"
ELEVATION ⟨1⟩
NTS.

LEGEND:

▨ ITEMS TO BE DEMOLISHED.

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GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL DEMOLITION "MCC-1" ONE-LINE DIAGRAM & ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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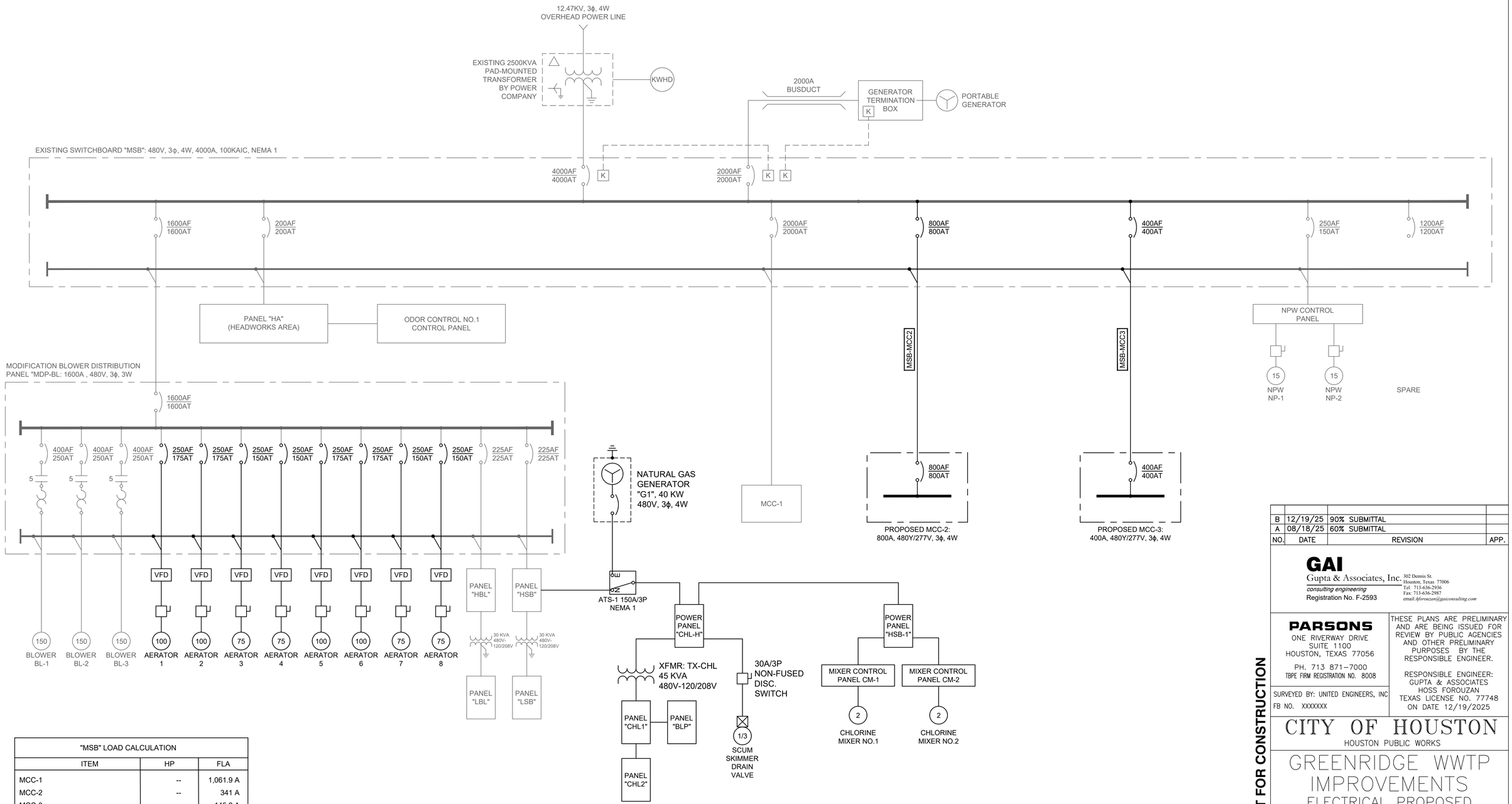
E-09	SHEET NO. 171 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-09.dwg Dec 17, 2025 - 4:15pm User: CVoldez



"MSB" LOAD CALCULATION		
ITEM	HP	FLA
MCC-1	--	1,061.9 A
MCC-2	--	341 A
MCC-3	--	145.2 A
NPW CONTROL PANEL	--	110 A
PANEL "HA"	--	180 A
PANEL "MDP-BL"	--	1465 A
SUBTOTAL		3303.1 A
25% OF LARGEST MOTOR LOAD		45 A
MINIMUM AMPACITY @ 4160V/3ϕ		3348.1 A

* BASED ON SELECTED PUMP MFG DATA

PROPOSED SWITCBOARD "MSB"
OVERALL ONE-LINE
DIAGRAM
NTS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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email: hforouzan@gaiconsulting.com

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

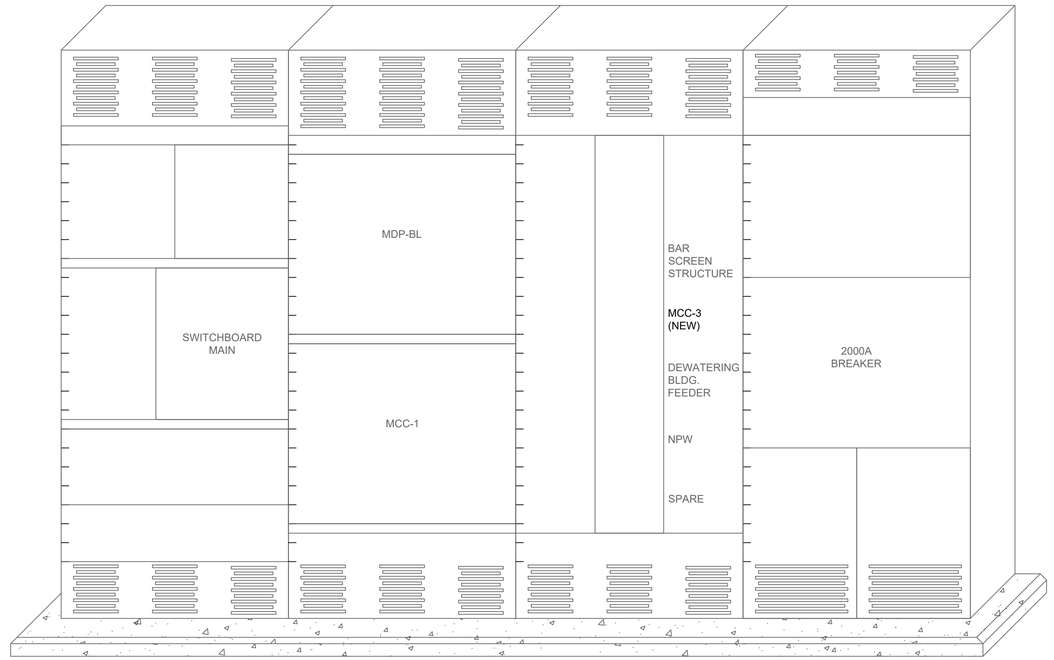
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED "MSB" OVERALL ONE-LINE DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-10	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-10.dwg Dec 17, 2025 - 4:16pm User: CValdez



EXISTING SWITCHBOARD "MSB"

ELEVATION

NTS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

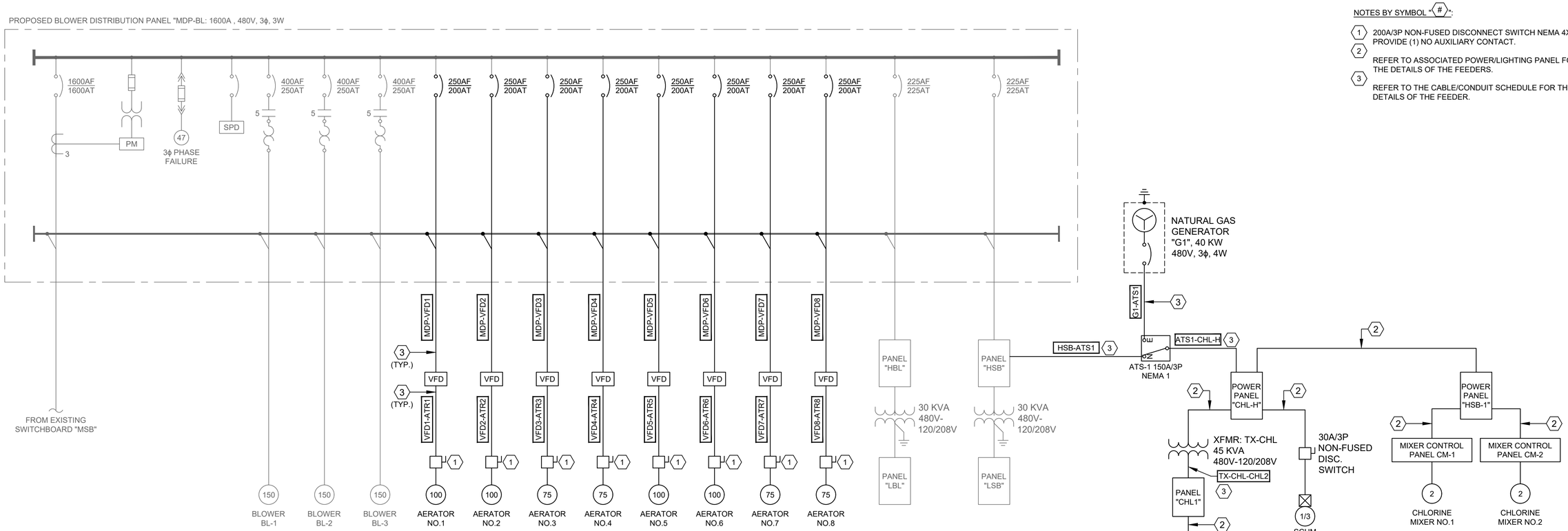
ELECTRICAL PROPOSED SWITCHBOARD "MSB" ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 173 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-11

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-11.dwg Dec 17, 2025 - 4:16pm User: CValdez



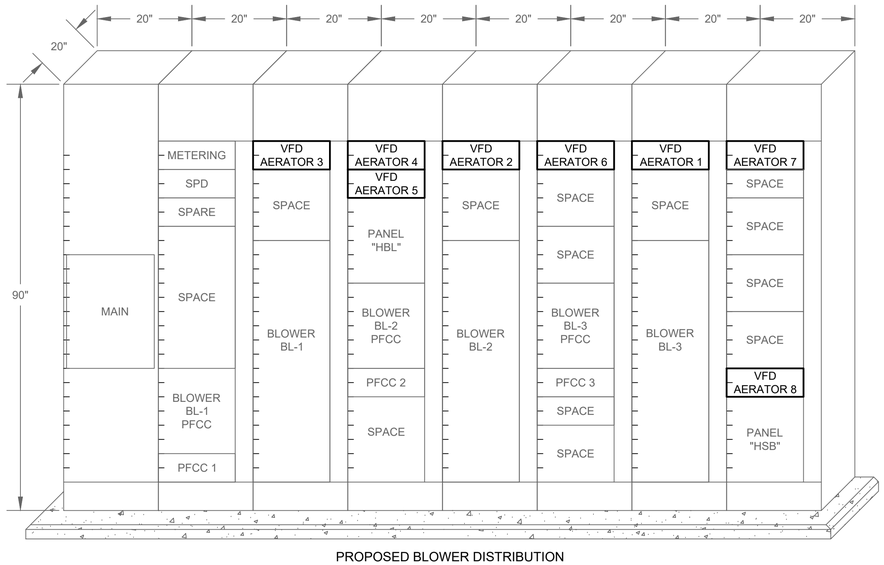
ELECTRICAL PROPOSED BLOWER DISTRIBUTION
PANEL "MDP-BL ONE-LINE

DIAGRAM

NTS.

NOTES BY SYMBOL "#":

1. 200A/3P NON-FUSED DISCONNECT SWITCH NEMA 4X SS. PROVIDE (1) NO AUXILIARY CONTACT.
2. REFER TO ASSOCIATED POWER/LIGHTING PANEL FOR THE DETAILS OF THE FEEDERS.
3. REFER TO THE CABLE/CONDUIT SCHEDULE FOR THE DETAILS OF THE FEEDER.



PROPOSED BLOWER DISTRIBUTION
PANEL "MDP-BL"

ELEVATION

NTS.

"MDP-BL" LOAD CALCULATION

ITEM	HP	FLA
BLOWER BL-1	150 HP	180 A
BLOWER BL-2 (STANDBY)	- HP	- A
BLOWER BL-3 (STANDBY)	- HP	- A
AERATOR 1	100 HP	124 A
AERATOR 2	100 HP	124 A
AERATOR 3	75 HP	96 A
AERATOR 4	75 HP	96 A
AERATOR 5	100 HP	124 A
AERATOR 6	100 HP	124 A
AERATOR 7	75 HP	96 A
AERATOR 8	75 HP	96 A
PANEL "HBL"	-- HP	180 A
PANEL "HSB"	-- HP	180 A
SUBTOTAL		1420 A
25% OF LARGEST MOTOR LOAD		45 A
MINIMUM AMPACITY @ 4160V/3ϕ		1465 A

* BASED ON SELECTED PUMP MFG DATA

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL PROPOSED "MDP-BL" ONE-LINE DIAGRAM & ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-12	SHEET NO. 174 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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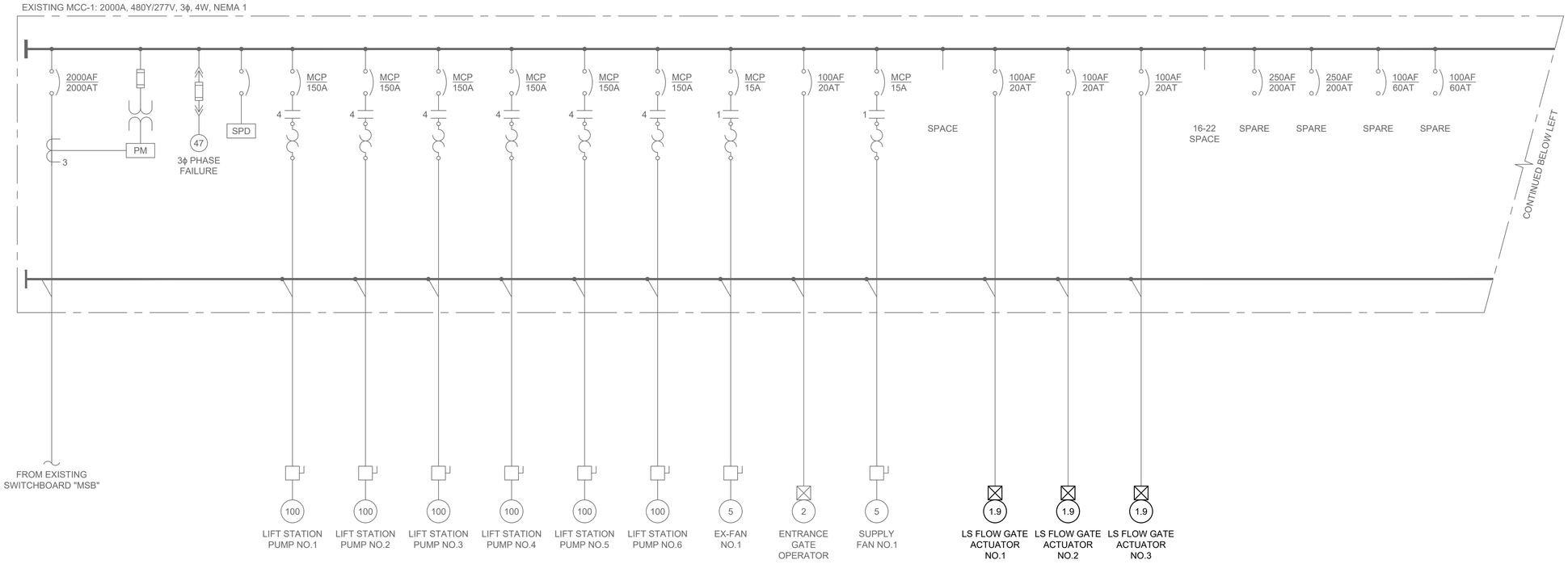
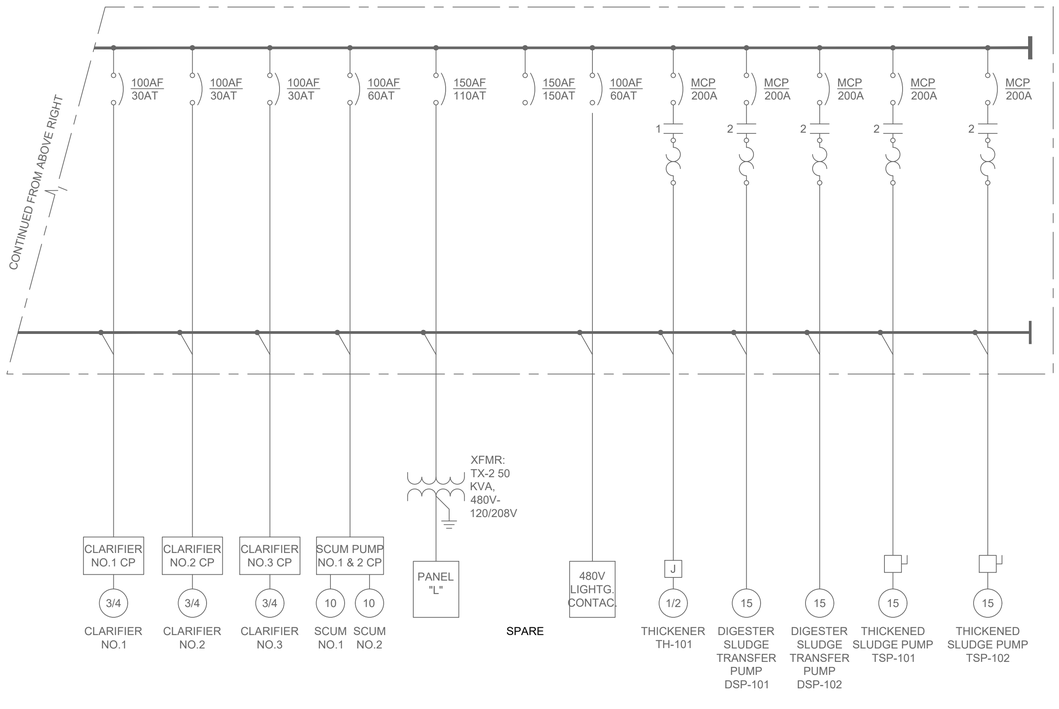


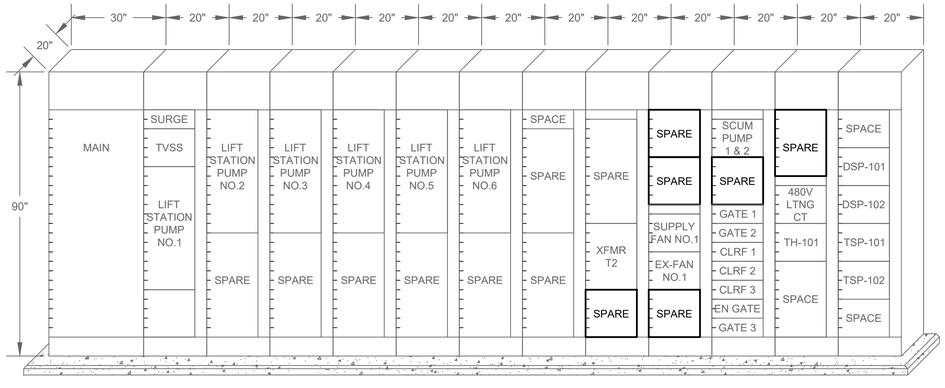
"MCC-1" LOAD CALCULATION		
ITEM	HP	FLA
PUMP NO.1	100 HP	124 A
PUMP NO.2	100 HP	124 A
PUMP NO.3	100 HP	124 A
PUMP NO.4	100 HP	124 A
PUMP NO.5	100 HP	124 A
PUMP NO.6	100 HP	124 A
EX FAN NO.1	5 HP	7.6 A
ENTRANCE GATE OPERATOR	2 HP	3.4 A
SUPPLY FAN NO.1	5 HP	7.6 A
LS FLOW GATE ACTUATOR NO.1	1.9 HP	3.4 A
LS FLOW GATE ACTUATOR NO.2	1.9 HP	3.4 A
LS FLOW GATE ACTUATOR NO.3	1.9 HP	3.4 A
CLARIFIER NO.1	--	15 A
CLARIFIER NO.2	--	15 A
CLARIFIER NO.3	--	15 A
SCUM NO.1	--	14 A
SCUM NO.2	--	14 A
50 KVA TRANSFORMER	--	60 A
THICKENER H101	1/2 HP	1.1 A
DIGESTER NO.1	15 HP	21 A
DIGESTER NO.2	15 HP	21 A
THICKENED SLUDGE PUMP NO.1	15 HP	21 A
THICKENED SLUDGE PUMP NO.2	15 HP	21 A
480V PANEL FOR LIGHTING	--	40 A
SUBTOTAL		1,030.9 A
25% OF LARGEST MOTOR LOAD		31 A
MINIMUM AMPACITY @ 480V/3ϕ		1,061.9 A

* BASED ON SELECTED PUMP MFG DATA

ELECTRICAL MODIFIED "MCC-1" ONE-LINE DIAGRAM

NTS.





ELECTRICAL MODIFIED "MCC-1" ELEVATION

NTS.

90% SUBMITTAL NOT FOR CONSTRUCTION

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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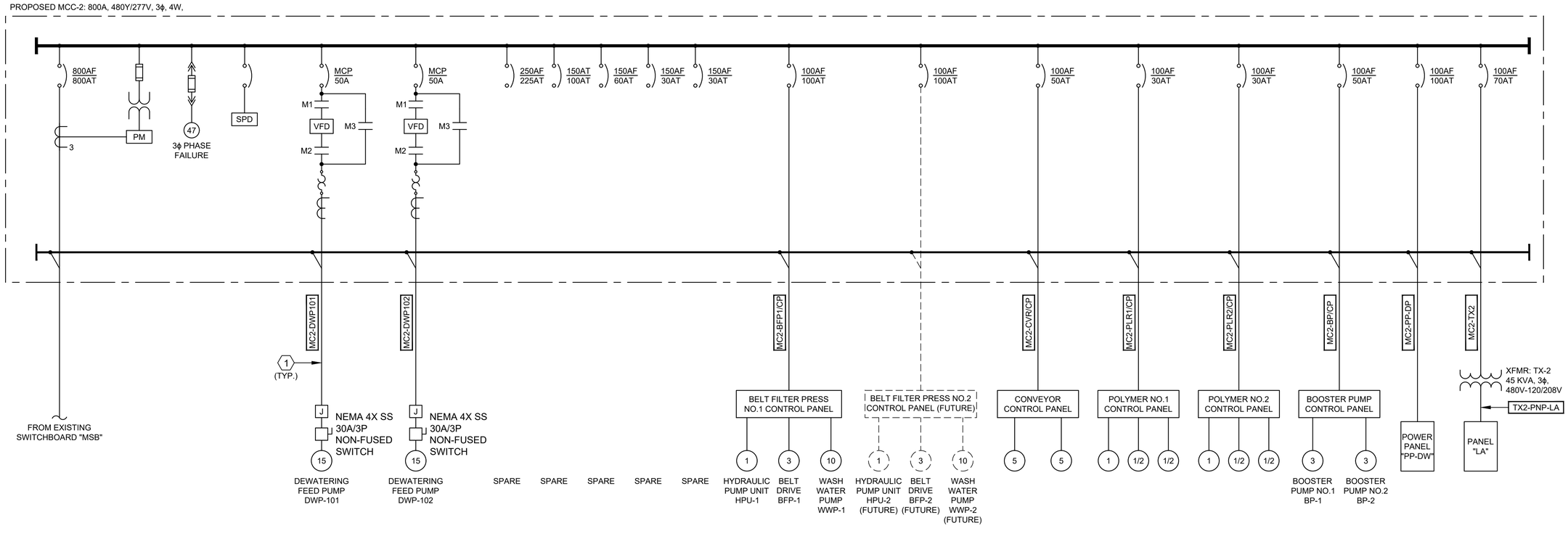
RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED "MCC-1" ONE-LINE DIAGRAM & ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-13	SHEET NO. 175 OF 254

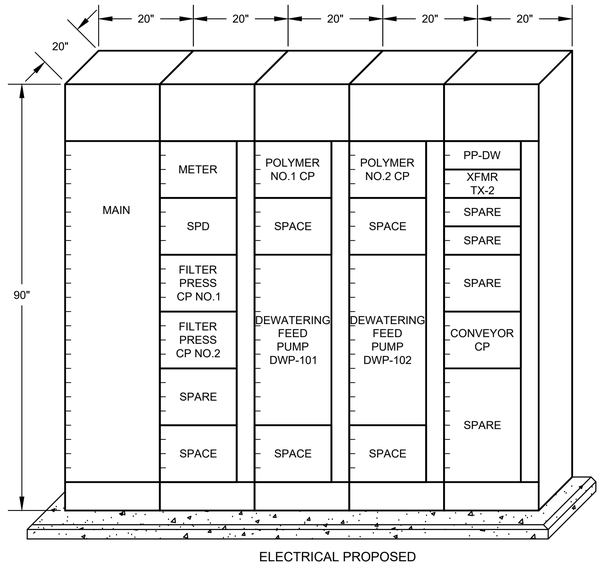
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-13.dwg Dec 17, 2025 - 4:16pm User: CVoldez



ELECTRICAL PROPOSED
"MCC-2" ONE-LINE
DIAGRAM
NTS.

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO THE CABLE/CONDUIT SCHEDULE FOR THE DETAILS OF THE FEEDER.



ELECTRICAL PROPOSED
"MCC-2"
ELEVATION
NTS.

"MCC-2" LOAD CALCULATION

ITEM	HP	FLA
PUMP DWP-101	15HP	21 A
PUMP DWP-102	15HP	21 A
BELT FILTER CP NO.1	---	30 A
BELT FILTER CP NO.2 (FUTURE)	---	30 A
CONVEYOR CONTROL PANEL	---	30 A
POLYMER NO.1 CONTROL PANEL	---	20 A
POLYMER NO.2 CONTROL PANEL	---	20 A
BOOSTER PUMP CONTROL PANEL	---	15 A
POWER PANEL "PP-DW"	---	100 A
45 KVA TRANSFORMER	---	54 A
SUBTOTAL		341 A
25% OF LARGEST MOTOR LOAD		5.3 A
MINIMUM AMPACITY @ 480V/3ϕ		346.3 A

* BASED ON SELECTED PUMP MFG DATA

NO.	DATE	REVISION	APP.
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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

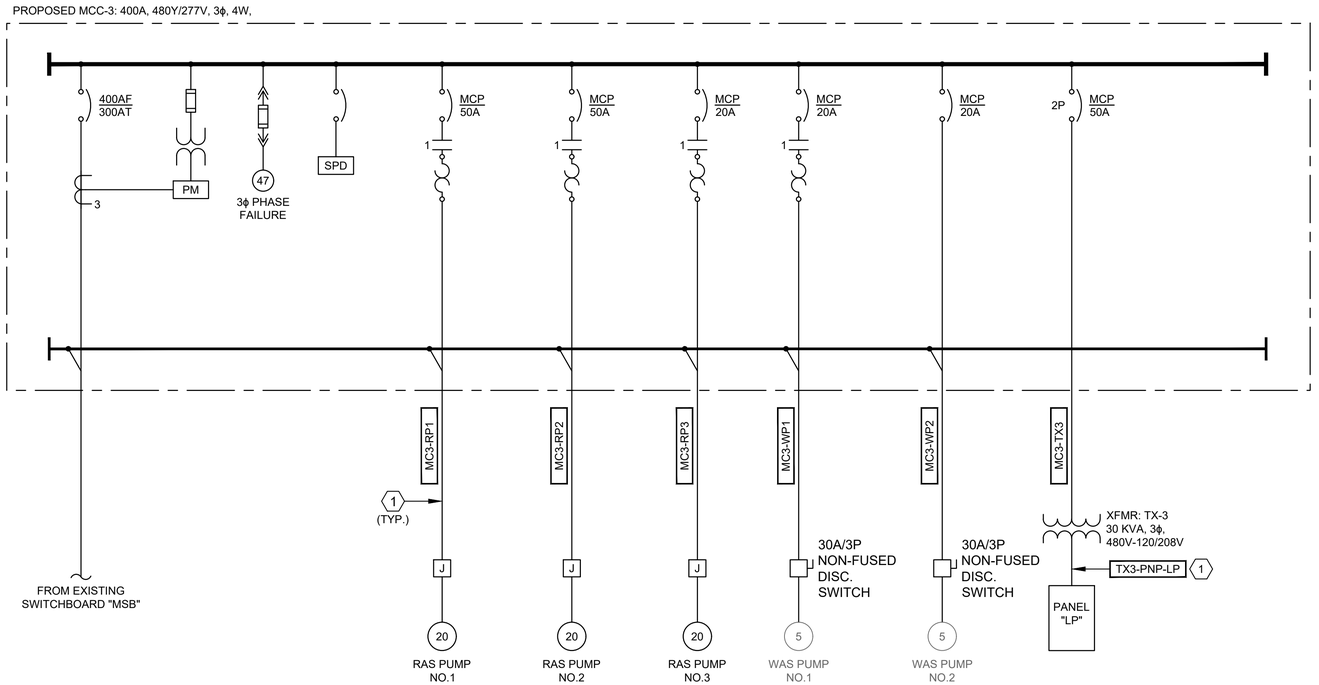
GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED "MCC-2" ONE-LINE DIAGRAM & ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 176 OF 254	

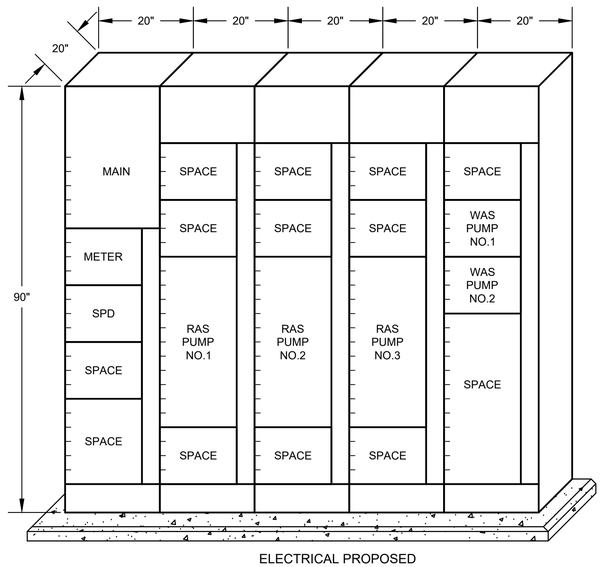
90% SUBMITTAL NOT FOR CONSTRUCTION

E-14

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-14.dwg Dec 17, 2025 - 4:16pm User: CValdez



ELECTRICAL PROPOSED
"MCC-3" ONE-LINE
DIAGRAM
NTS.



ELECTRICAL PROPOSED
"MCC-3"
ELEVATION
NTS.

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO THE CABLE/CONDUIT SCHEDULE FOR THE DETAILS OF THE FEEDER.

"MCC-3" LOAD CALCULATION

ITEM	HP	FLA
RAS PUMP NO.1	20HP	27 A
RAS PUMP NO.2	20HP	27 A
RAS PUMP NO.3	20HP	27 A
WAS PUMP NO.1	5HP	7.6 A
WAS PUMP NO.2	5HP	7.6 A
RAS/WAS CONTROL PANEL	5HP	7.6 A
30 KVA TRANSFORMER	---	36.1 A
SUBTOTAL		139.9 A
25% OF LARGEST MOTOR LOAD		5.3 A
MINIMUM AMPACITY @ 480V/3ϕ		145.2 A

* BASED ON SELECTED PUMP MFG DATA

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

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HOUSTON PUBLIC WORKS

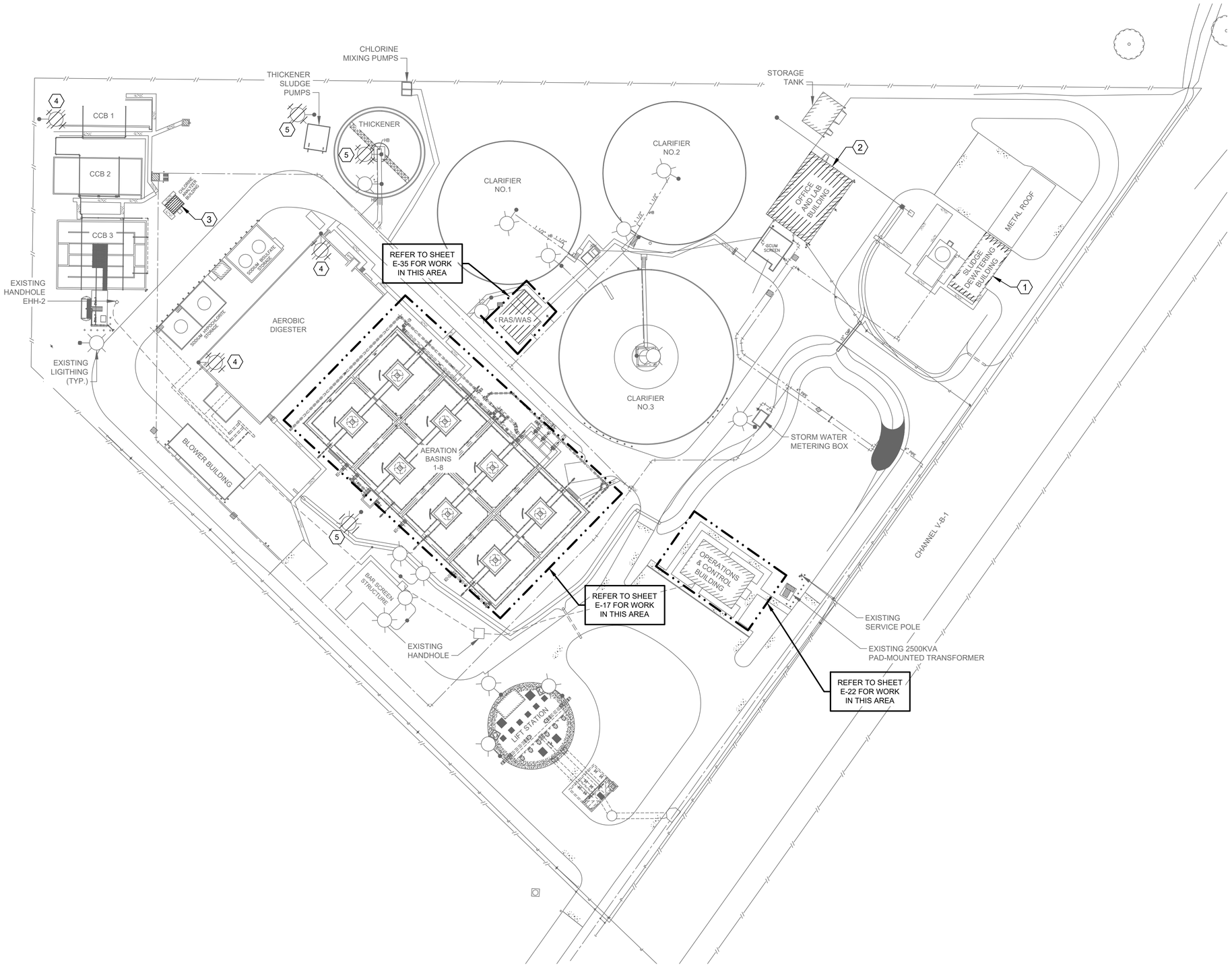
GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED "MCC-3" ONE-LINE DIAGRAM & ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 177 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-15

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-15.dwg Dec 17, 2025 - 4:16pm User: CValdez



ELECTRICAL DEMOLITION OVERALL SITE PLAN

1" = 40'-0"

20 0 20 40

SCALE: 1" = 40'

NOTES BY SYMBOL "#":

1. DEMOLISH AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES AND COMPONENTS IN THE EXISTING SLUDGE DEWATERING BUILDING.
2. DEMOLISH AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES AND COMPONENTS IN THE EXISTING OFFICE AND LAB BUILDING.
3. DEMOLISH AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES AND COMPONENTS IN THE EXISTING CHLORINE ANALYZER BUILDING.
4. EXISTING SITE LIGHTING INCLUDING POLE FIXTURES, CONDUITS AND WIRES TO BE DEMOLISHED AND REMOVED.
5. EXISTING SITE LIGHTING FIXTURE TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL DEMOLITION OVERALL SITE PLAN

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AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-16 SHEET NO. 178 OF 254

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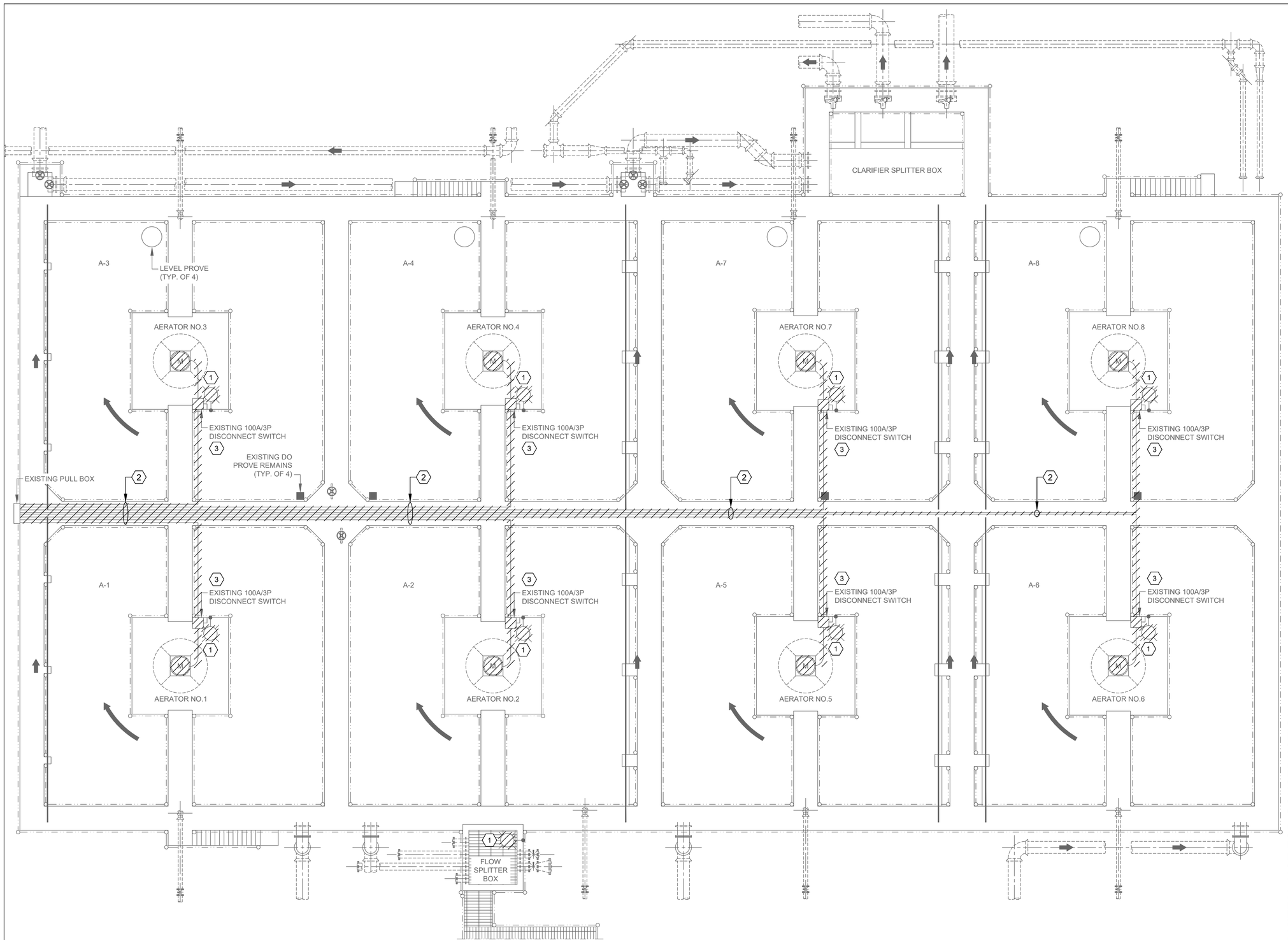

ELECTRICAL AERATOR DEMOLITION LIGHTING PLAN

DIAGRAM

1/8" = 1'-0"

4 0 4 8 12

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

NOTES BY SYMBOL "#":

1. EXISTING LIGHTING FIXTURE TO BE DEMOLISHED AND REMOVED.
2. EXISTING CONDUIT AND WIRES TO BE DEMOLISHED AND REMOVED.
3. EXISTING DISCONNECT SWITCH, CONDUIT AND WIRES TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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ELECTRICAL AERATOR DEMOLITION LIGHTING PLAN

WBS NUMBER
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DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
SHAN LEI, P.E.

FOR CITY OF HOUSTON USE ONLY

E-17

SHEET NO. 179 OF 254

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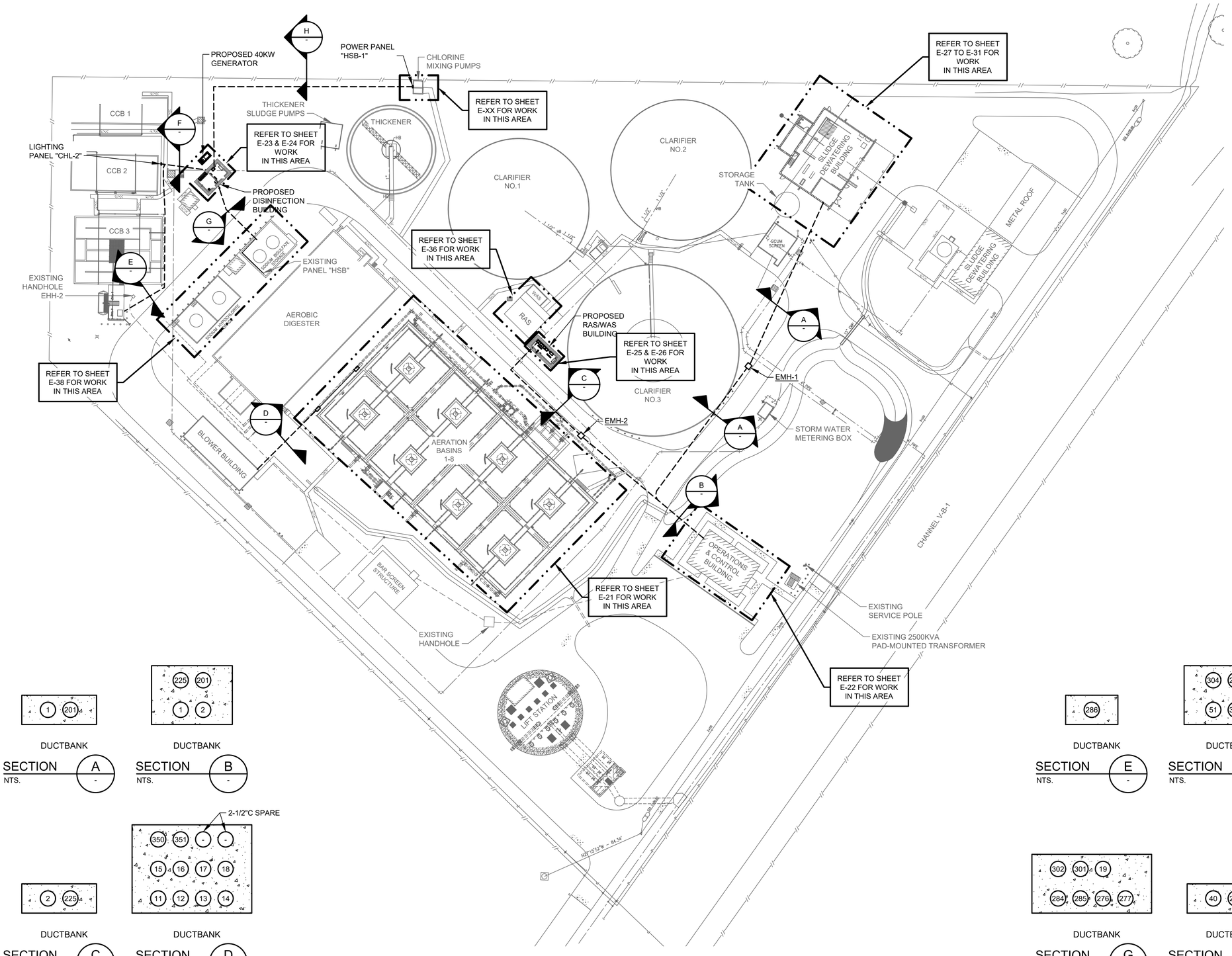
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-17.dwg Dec 17, 2025 - 4:16pm User: CValdez



ELECTRICAL PROPOSED OVERALL SITE PLAN
1" = 40'-0"

DUCTBANK SECTION A
NTS.
1 201

DUCTBANK SECTION B
NTS.
225 201
1 2

DUCTBANK SECTION C
NTS.
2 225

DUCTBANK SECTION D
NTS.
2-1/2"C SPARE
350 351 - -
15 16 17 18
11 12 13 14

DUCTBANK SECTION E
NTS.
286

DUCTBANK SECTION F
NTS.
304 286
51 305

DUCTBANK SECTION G
NTS.
302 301 19
284 285 276 277

DUCTBANK SECTION H
NTS.
40 293

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

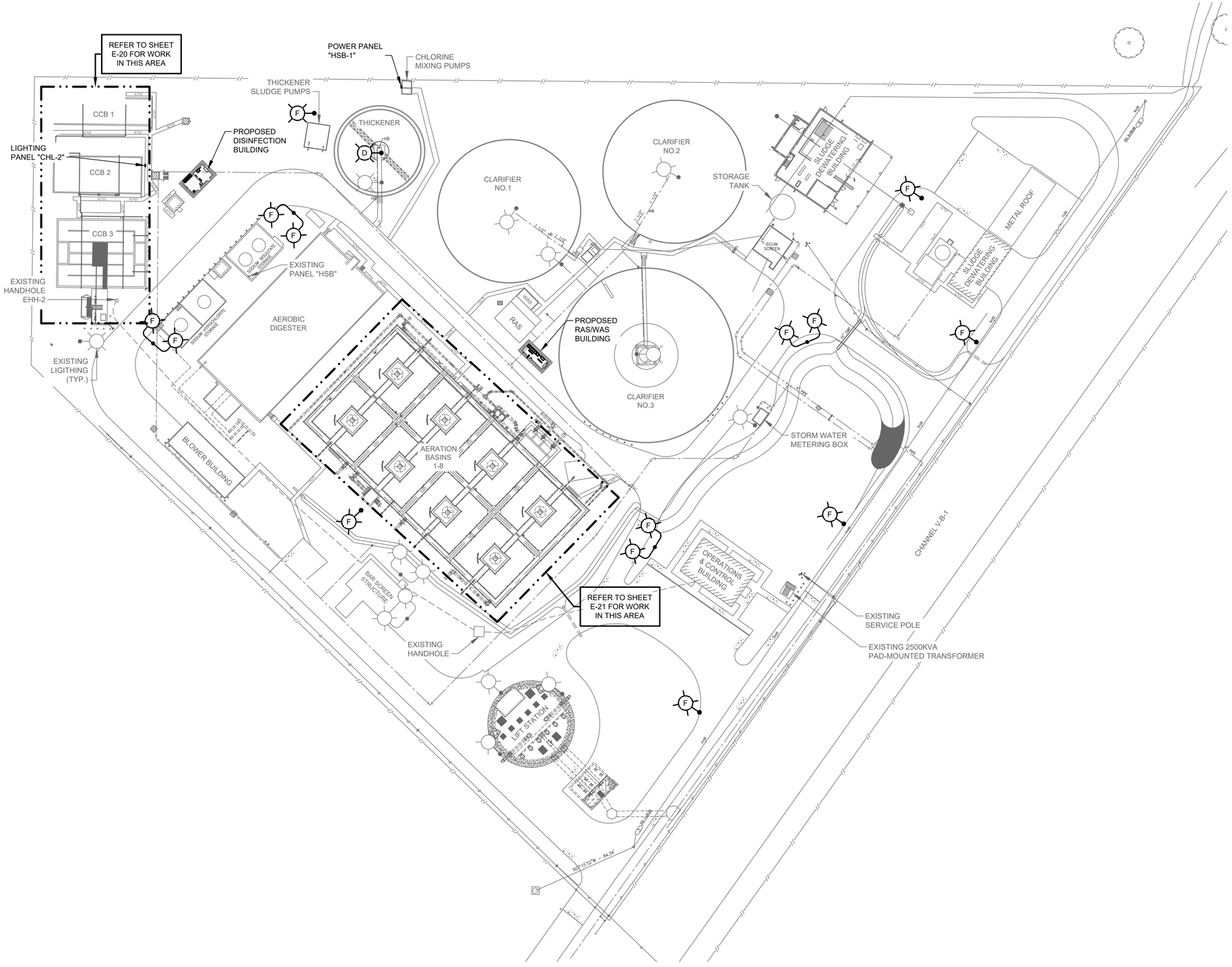
ELECTRICAL PROPOSED OVERALL SITE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 180 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-18

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-18.dwg Dec 17, 2025 - 4:16pm User: CValdez



ELECTRICAL PROPOSED SITE LIGHTING PLAN
1" = 40'-0"

NOTES BY SYMBOL "#":

1. INSTALL NEW LIGHT FIXTURES, CONDUITS AND WIRES.
2. CONNECT NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUIT.
3. CONTRACTOR TO REPLACE AND INSTALL NEW LIGHTING POLE TYPE "TPB" FOR TYPE "F" LIGHTING FIXTURES.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

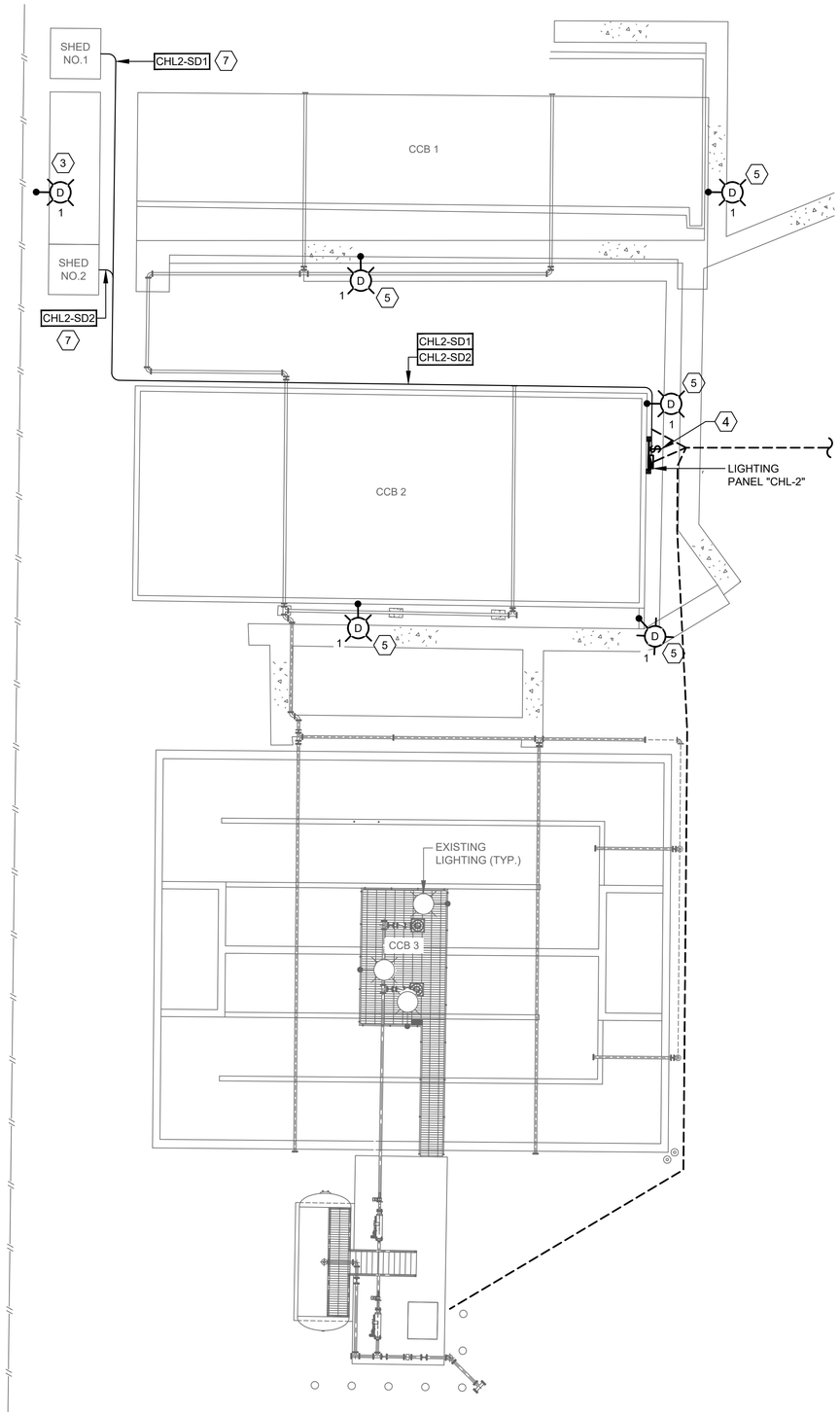
ELECTRICAL PROPOSED SITE LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-19 | SHEET NO. 181 OF 254

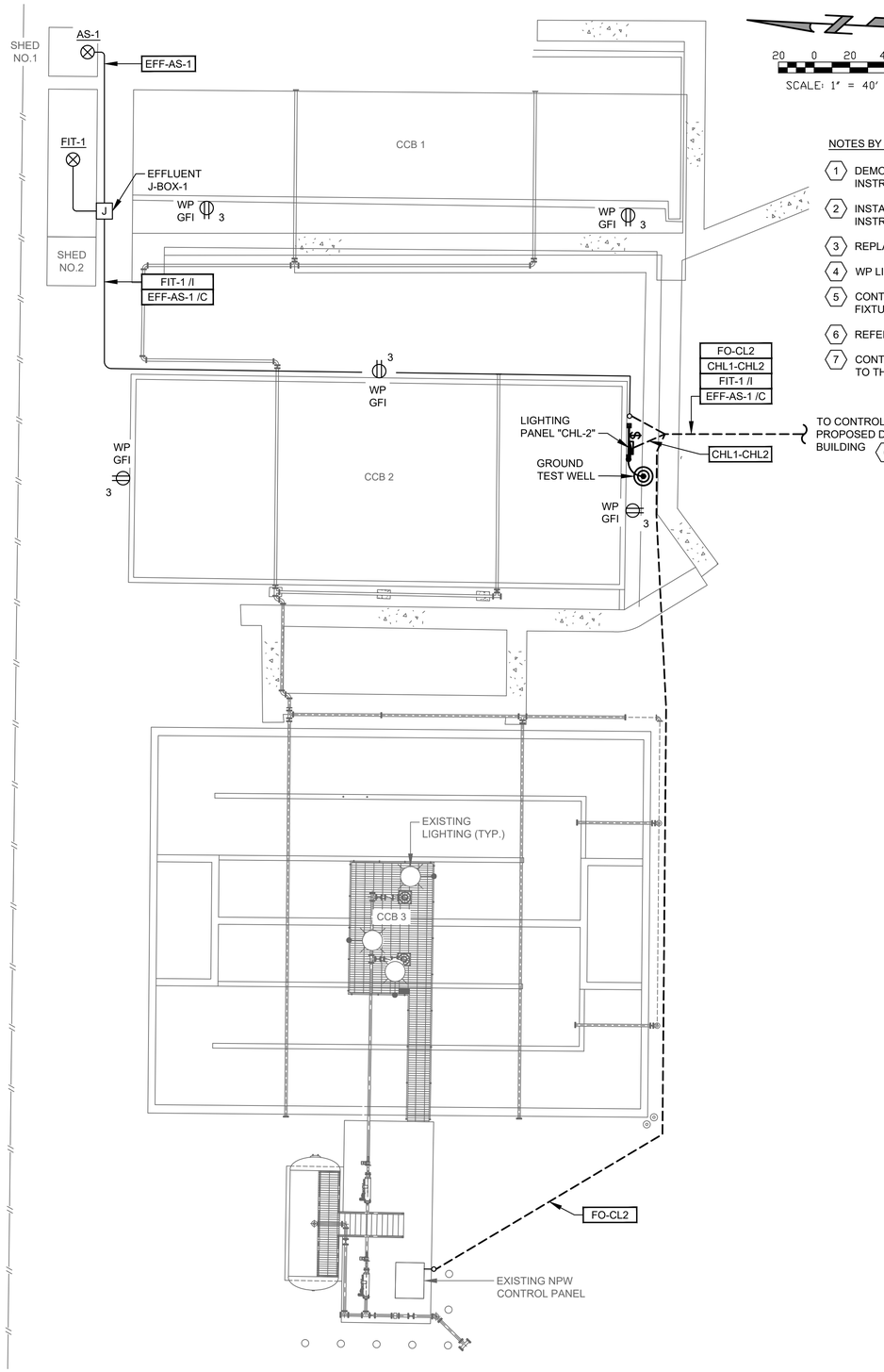
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-19.dwg Dec 17, 2025 - 4:16pm User: CVoldez



ELECTRICAL CHLORINE CONTACT BASIN PROPOSED LIGHTING PLAN

PLAN 1" = 10'-0" 1 2



ELECTRICAL CHLORINE CONTACT BASIN PROPOSED POWER PLAN

PLAN 1" = 10'-0" 1 2

20 0 20 40

SCALE: 1" = 40'

NOTES BY SYMBOL "#":

1. DEMOLISH THE EXISTING ELECTRICAL CONDUITS FOR LIGHTING, RECEPTACLES AND INSTRUMENTS IN THE AREA.
2. INSTALL NEW ELECTRICAL CONDUITS FOR LIGHTING, RECEPTACLES AND INSTRUMENTS IN THE AREA.
3. REPLACE THE EXISTING LIGHTING FIXTURE WITH TYPE "D" FIXTURE.
4. WP LIGHT SWITCH COMBINED WITH PHOTO-CELL.
5. CONTRACTOR TO INSTALL NEW STANCHION MOUNT POLE FOR TYPE "D" LIGHTING FIXTURES.
6. REFER TO SHEET E-18 FOR CONTINUATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR INCOMING 120V AC POWER CONNECTED TO THE EXISTING ELECTRICAL LOADS IN THE SHED.

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

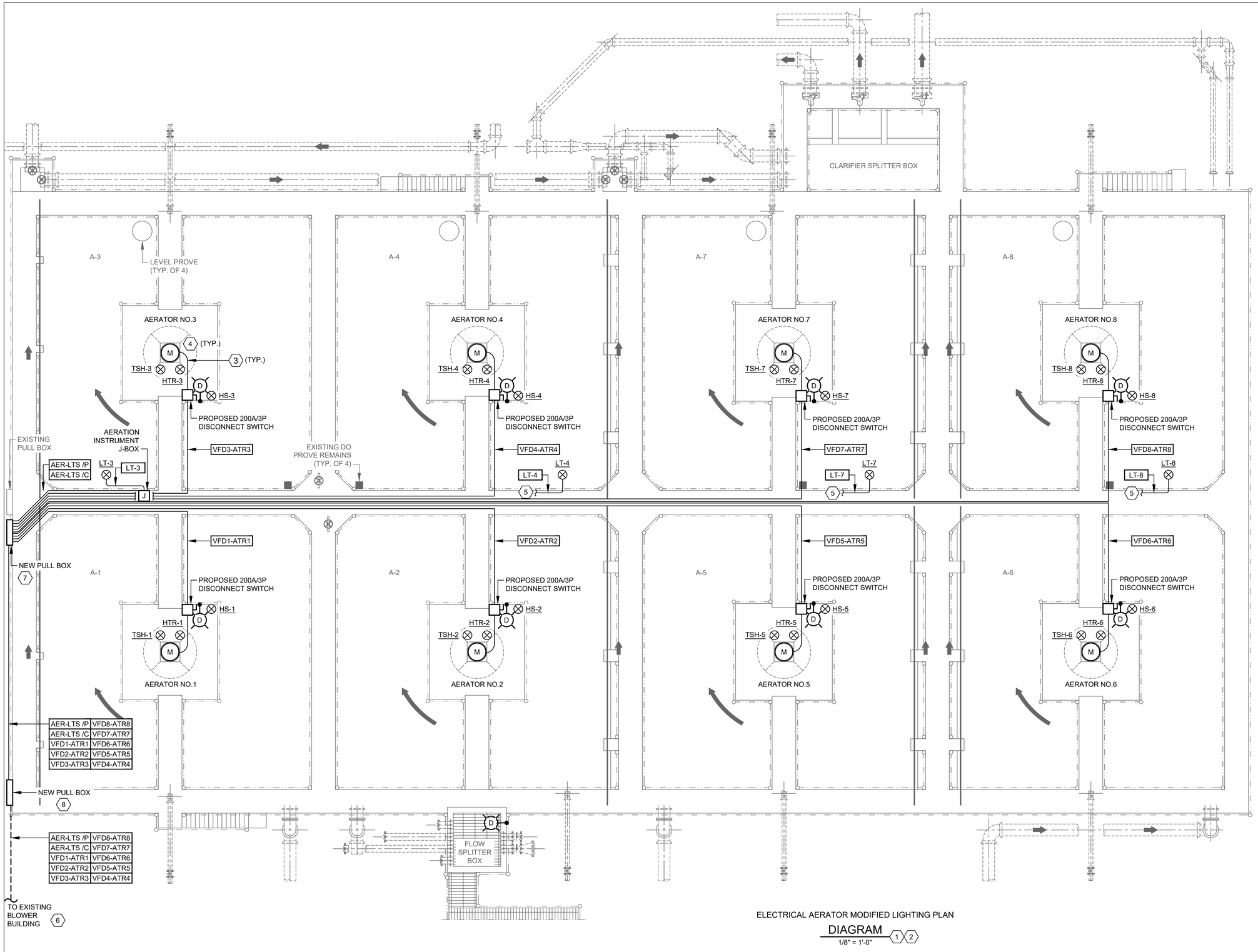
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED CHLORINE CONTACT BASIN LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-20	SHEET NO. 182 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-20.dwg Dec 17, 2025 - 4:16pm User: CValdez



ELECTRICAL AERATOR MODIFIED LIGHTING PLAN

DIAGRAM (1) (2)

1/8" = 1'-0"

4 0 4 8 12

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

NOTES BY SYMBOL "(#)":

(1) INSTALL NEW LIGHT FIXTURES.

(2) CONNECT NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUIT.

(3) CONTRACTOR SHALL INSTALL NEW CONDUITS AND WIRES FROM DISCONNECT SWITCH TO DRIVE MOTOR OF AERATOR. THE WIRE AND CONDUIT SIZE ARE SAME AS LINE SIDE OF DISCONNECT SWITCH.

(4) THE DRIVE MOTOR OF AERATOR SHALL BE BONDED TO EXISTING GROUNDING SYSTEM.

(5) CONDUIT TO AERATOR INSTRUMENT J-BOX.

(6) REFER TO E-18 FOR CONTINUATION.

(7) NEW NEMA 4X 316 SS PULL BOX, SIZE PER NEC CODE REQUIREMENTS. A SUPPORTING RACK SHALL BE PROVIDED FOR MOUNTING THE NEW PULL BOX.

(8) NEW NEMA 4X 316 SS PULL BOX, SIZE PER NEC CODE REQUIREMENTS. THIS NEW PULL BOX TO BE MOUNTED ON THE CONCRETE WALL OF THE EXISTING AERATOR BASIN AT 5'-0" ABOVE GRADE.

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

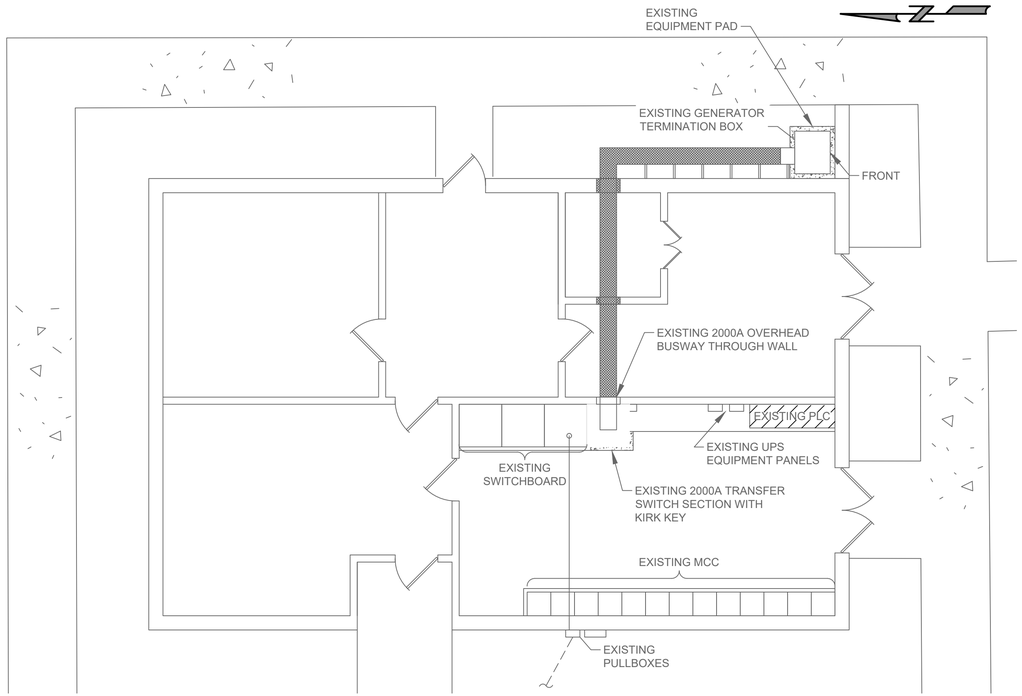
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL AERATOR MODIFIED LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-21	SHEET NO. 183 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

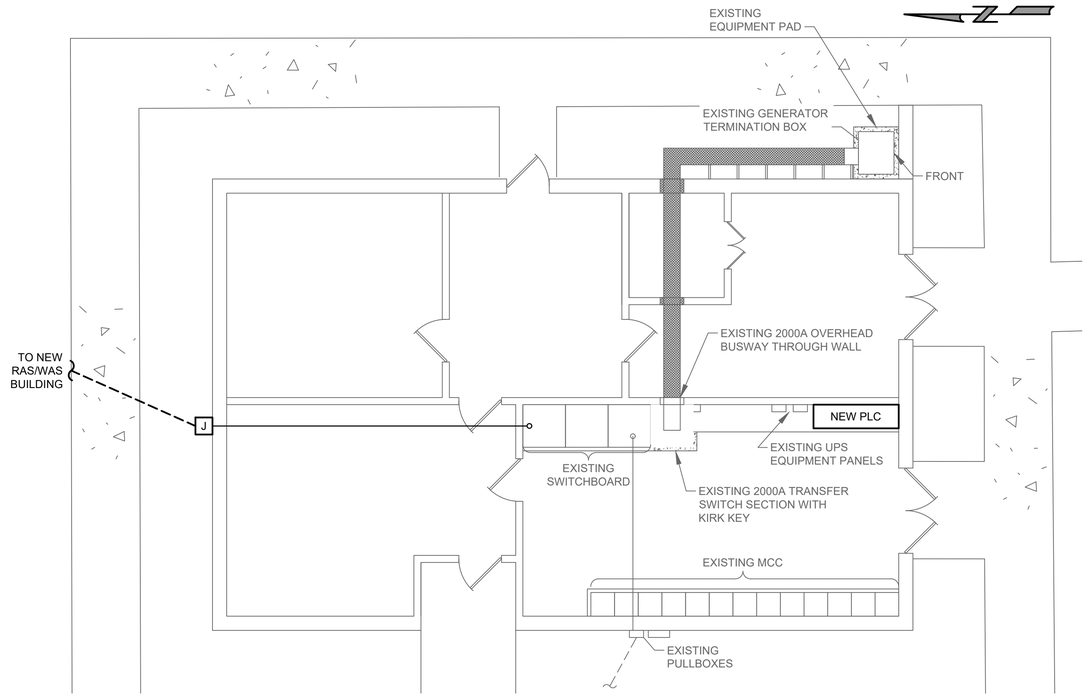
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-21.dwg Dec 17, 2025 - 4:17pm User: CVoldez



EXISTING OPERATIONS & CONTROL BUILDING

PLAN

3/16" = 1'-0"



EXISTING OPERATIONS & CONTROL BUILDING MODIFICATION

PLAN

3/16" = 1'-0"

LEGEND:

ITEMS TO BE DEMOLISHED.

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ XXX

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A	08/18/25	60% SUBMITTAL	

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL
OPERATIONS CONTROL BUILDING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 184 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-22

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-22.dwg Dec 17, 2025 - 4:17pm User: CVoldez

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ MAIN BURIED GROUND LOOP, #4/0 BARE COPPER CONDUCTOR.

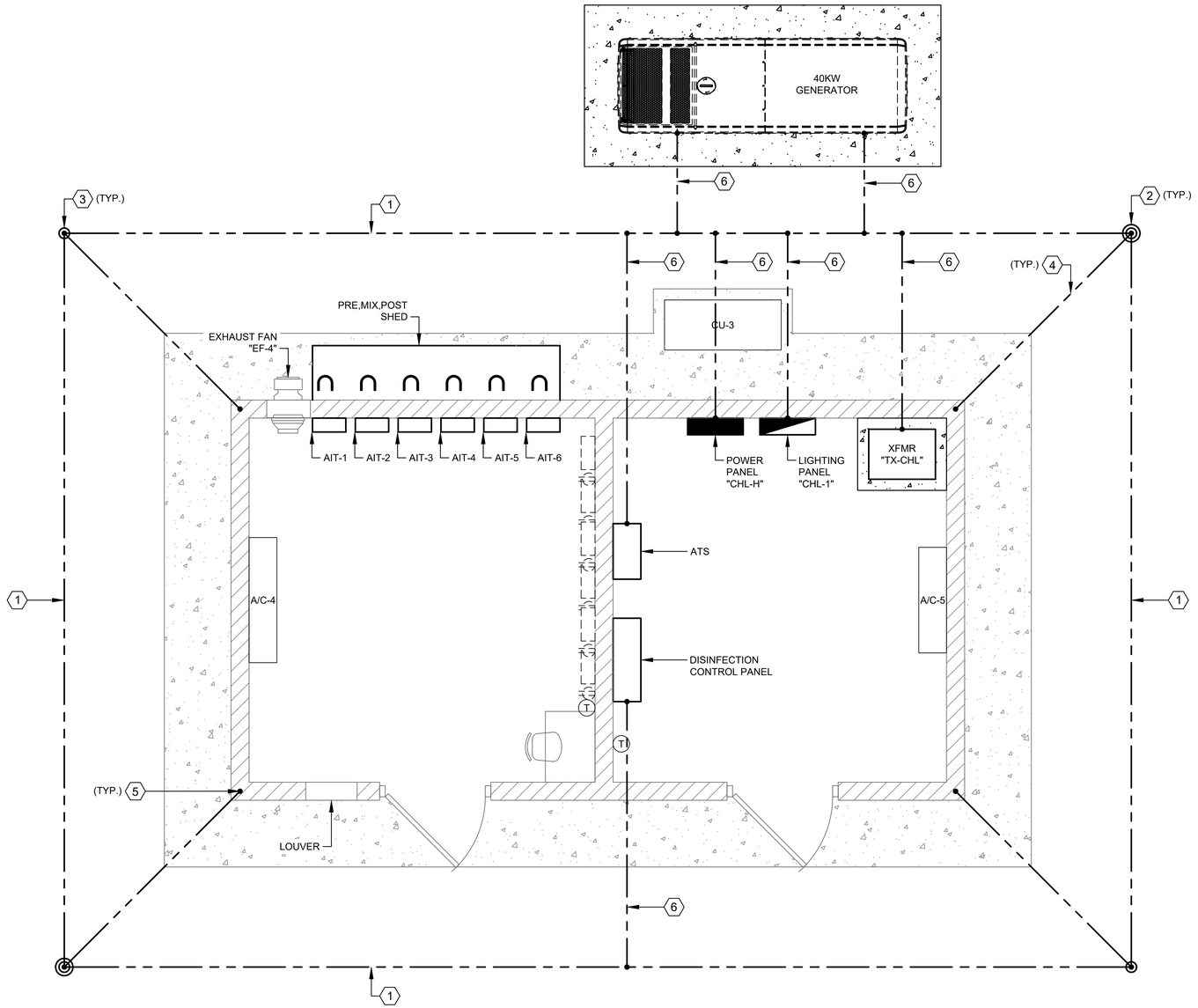
⟨2⟩ GROUND TEST WELL.

⟨3⟩ GROUND ROD.

⟨4⟩ #4/0 BARE COPPER BONDING CONDUCTOR.

⟨5⟩ BOND REBAR IN CONCRETE FOOTER OR SLAB TO MAIN BURIED GROUND LOOP.

⟨6⟩ #6 GREEN GROUND.



DISSINFECTION ANALYZER ROOM

PLAN

1/2" = 1'-0"

DISSINFECTION CONTROL ROOM

PLAN

1/2" = 1'-0"

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER:
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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL PROPOSED DISINFECTION AREA BUILDING GROUNDING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 185 OF 254	

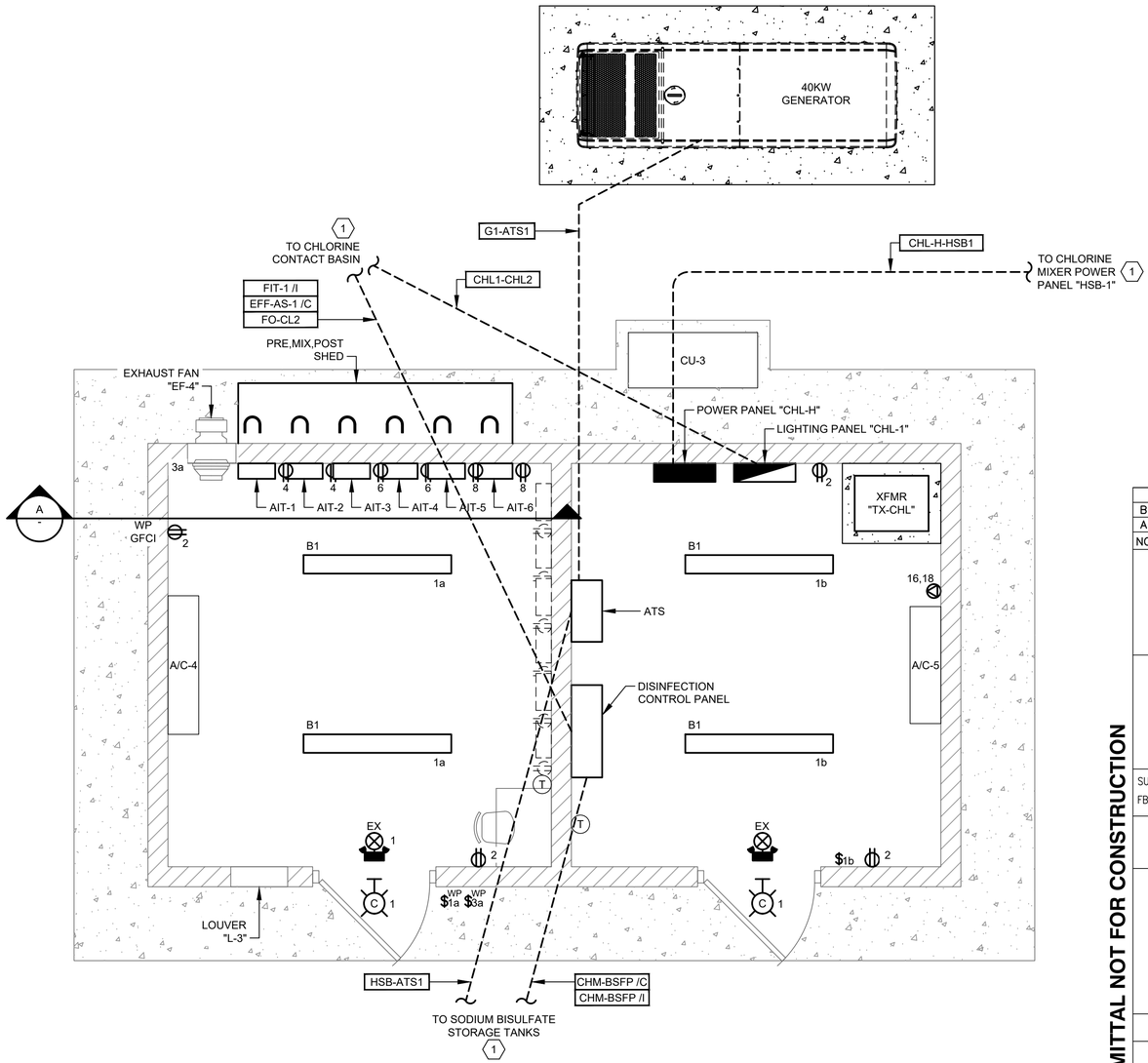
E-23

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-23.dwg Dec 17, 2025 - 4:17pm User: CVoldez

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO SHEET E-18 FOR CONTINUATION.



DISSINFECTION ANALYZER ROOM

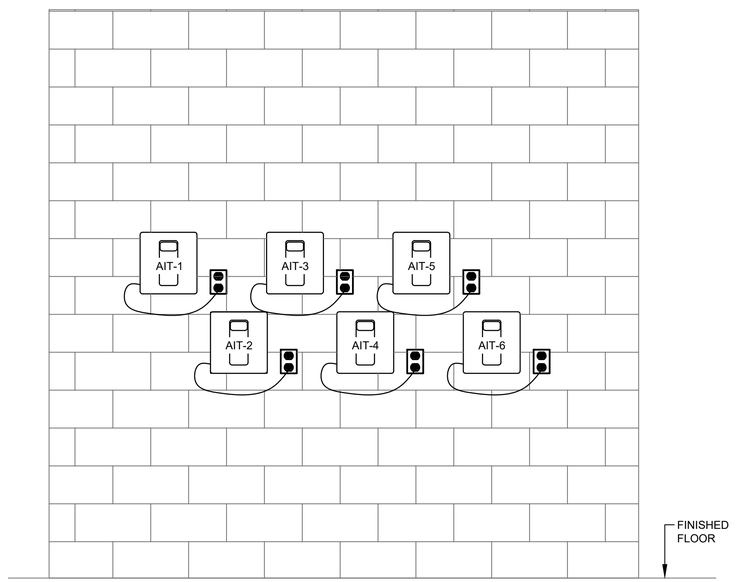
PLAN

1/2" = 1'-0"

DISSINFECTION CONTROL ROOM

PLAN

1/2" = 1'-0"



DISINFECTION
ANALYZER ROOM

DETAIL A

NTS. -

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

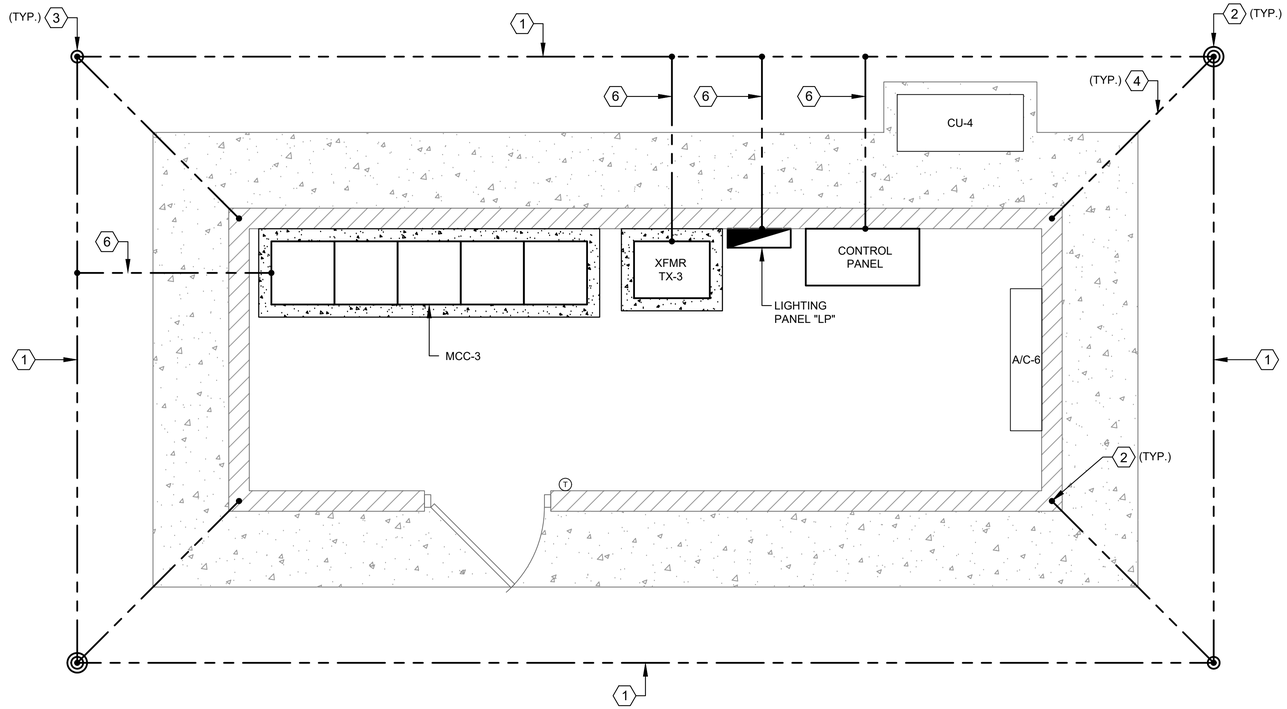
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED DISINFECTION AREA BUILDING POWER AND LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-24	SHEET NO. 186 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-24.dwg Dec 17, 2025 - 4:17pm User: CValdez



PROPOSED ELECTRICAL RAS/WAS GROUNDING

PLAN

1/2" = 1'-0"

NOTES BY SYMBOL "⟨#⟩":

1. MAIN BURIED GROUND LOOP, #4/0 BARE COPPER CONDUCTOR.
2. GROUND TEST WELL.
3. GROUND ROD.
4. #4/0 BARE COPPER BONDING CONDUCTOR.
5. BOND REBAR IN CONCRETE FOOTER OR SLAB TO MAIN BURIED GROUND LOOP.
6. #6 GREEN GROUND.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED RAS/WAS BUILDING GROUNDING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

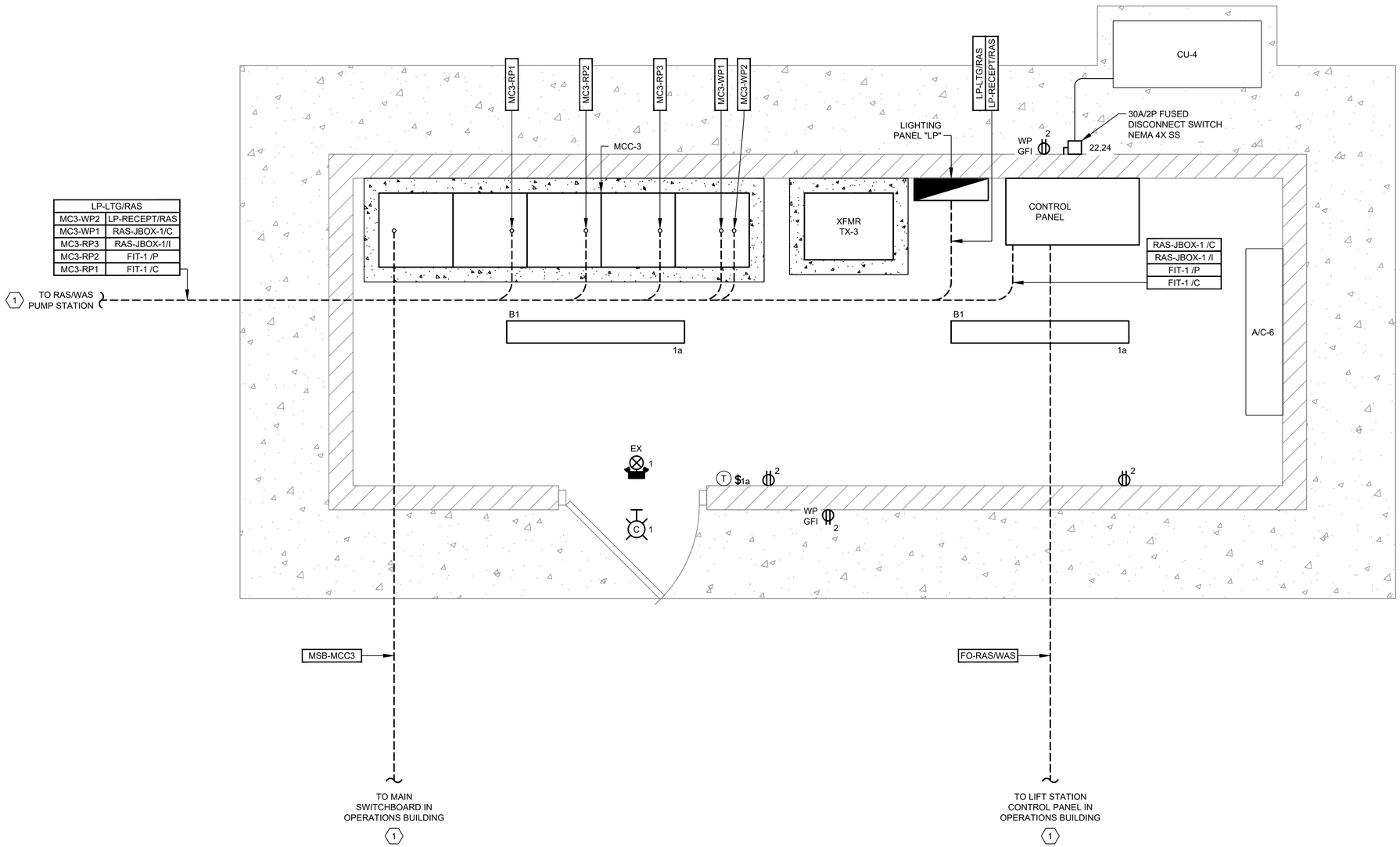
E-25 | SHEET NO. 187 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-25.dwg Dec 17, 2025 - 4:17pm User: CValdez

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO SHEET E-18 FOR CONTINUATION.



ELECTRICAL RAS/WAS BUILDING POWER & LIGHTING

PLAN

3/4" = 1'-0"

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED RAS/WAS BUILDING POWER & LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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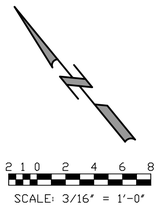
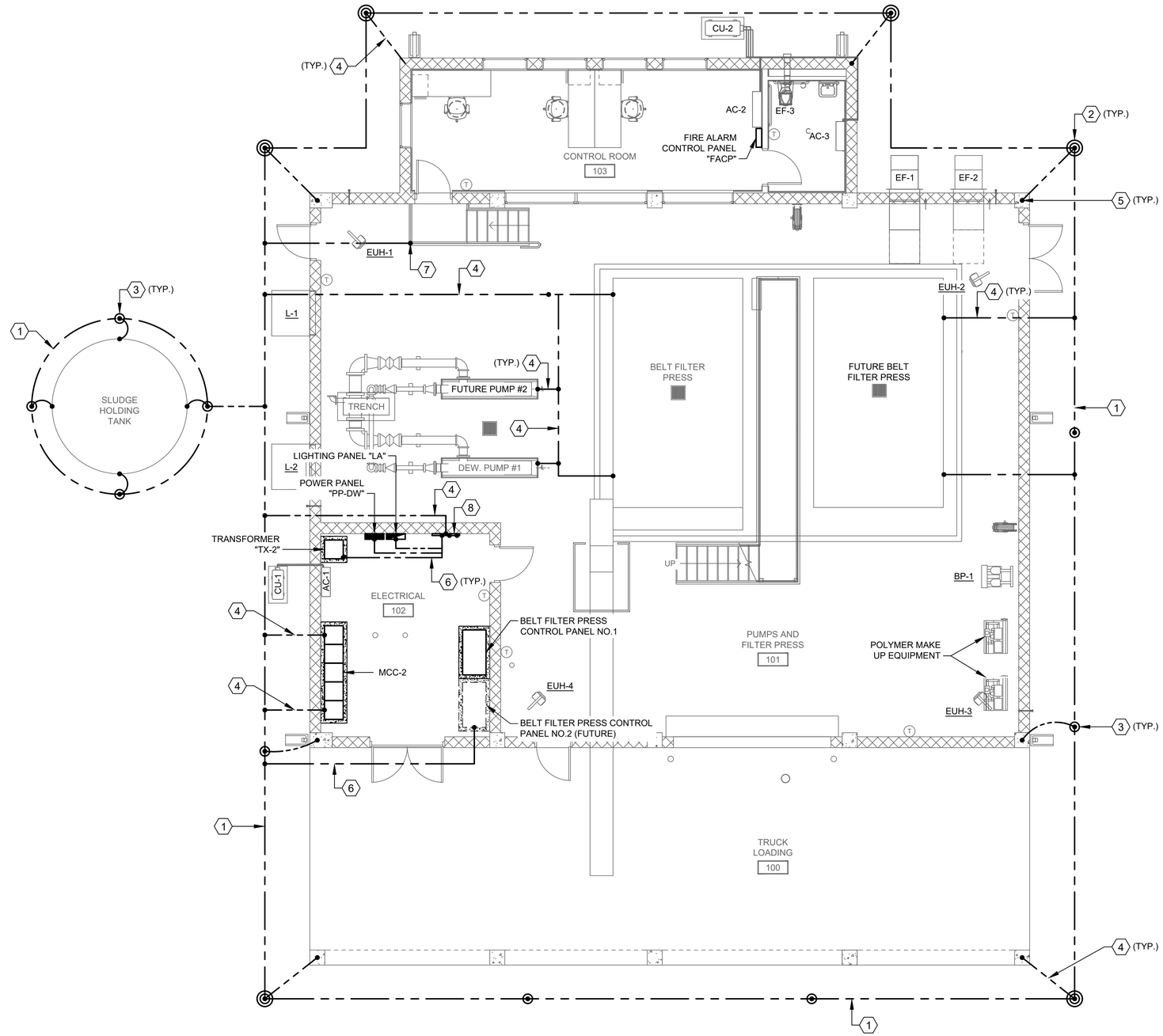
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 188 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-26

O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\HB113_E-26.dwg Dec 17, 2025 - 4:17pm User: CVoldez





ELECTRICAL DEWATERING BUILDING GROUNDING PLAN

PLAN

3/16" = 1'-0"

NOTES BY SYMBOL "⟨#⟩":

1. MAIN BURIED GROUND LOOP, #4/0 BARE COPPER CONDUCTOR.
2. GROUND TEST WELL.
3. GROUND ROD.
4. #4/0 BARE COPPER BONDING CONDUCTOR.
5. BOND REBAR IN CONCRETE FOOTER OR SLAB TO MAIN BURIED GROUND LOOP.
6. #1/0 BARE COPPER BONDING CONDUCTOR.
7. BOND HANDRAIL TO MAIN BURIED GROUND LOOP.
8. 1/4"(D) X 4"(H) X 16"(L) COPPER GROUNDING BUSBAR.

NO.	DATE	REVISION	APP.
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PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

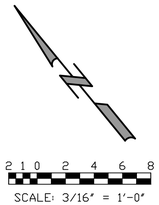
GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED DEWATERING BUILDING GROUNDING PLAN

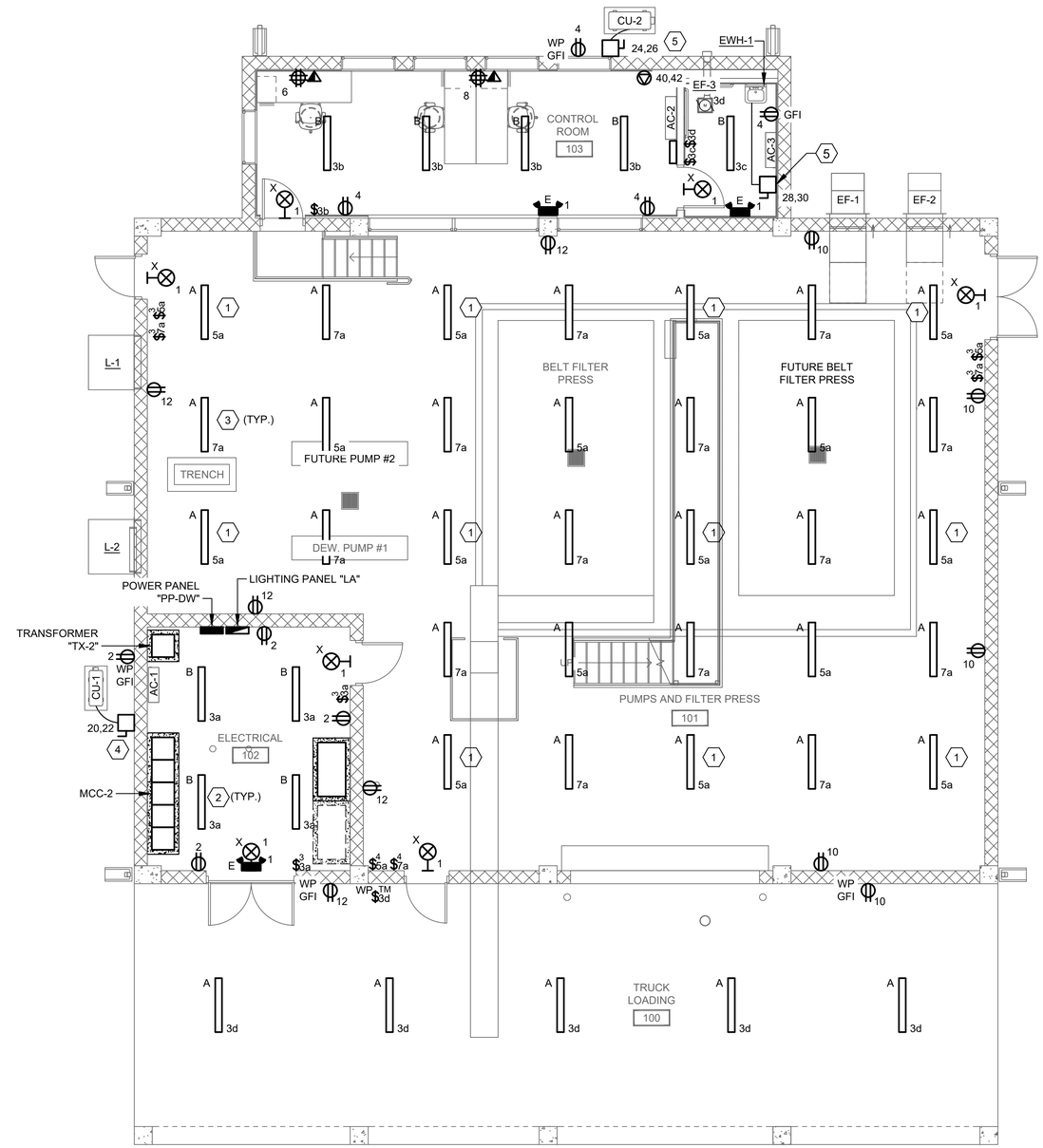
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-27 SHEET NO. 189 OF 254

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-27.dwg Dec 17, 2025 - 4:17pm User: CValdez





ELECTRICAL DEWATERING BUILDING LIGHTING PLAN

PLAN

3/16" = 1'-0"

NOTES BY SYMBOL "⟨#⟩":

1. PROVIDE WITH BATTERY BACKUP FOR THE FIXTURE.
2. LIGHTING FIXTURE "B" MOUNTING HEIGHT SHALL BE 10'-0" AFF.
3. LIGHTING FIXTURE "A" MOUNTING HEIGHT SHALL BE 20'-0" AFF.
4. 240V, 30A/2P NEMA 4X 316 SS NON-FUSIBLE DISCONNECT SWITCH.
5. 240V, 60A/2P NEMA 4X 316 SS NON-FUSIBLE DISCONNECT SWITCH.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

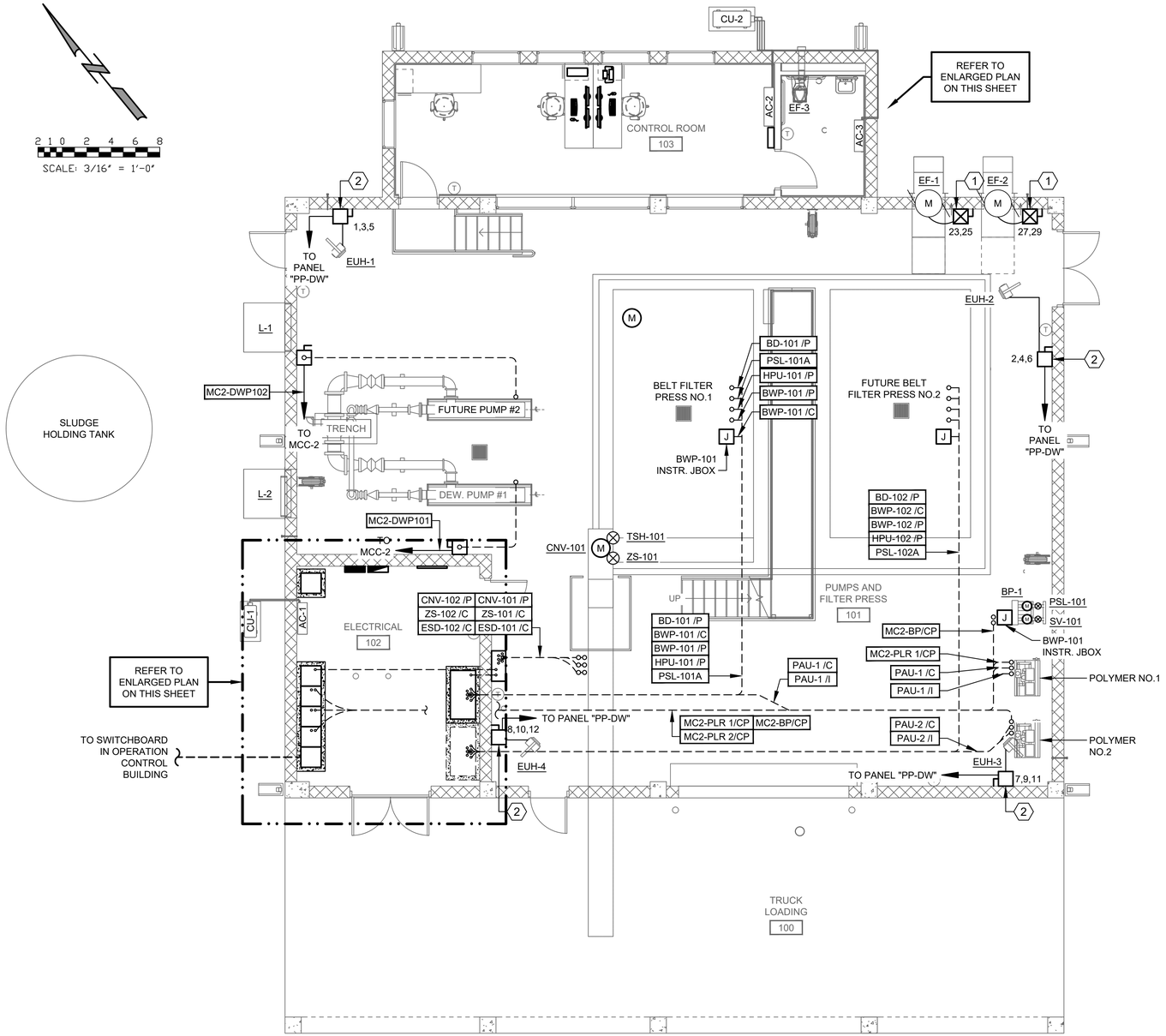
GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED DEWATERING BUILDING LIGHTING & RECEPTACLE PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-28 | SHEET NO. 190 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

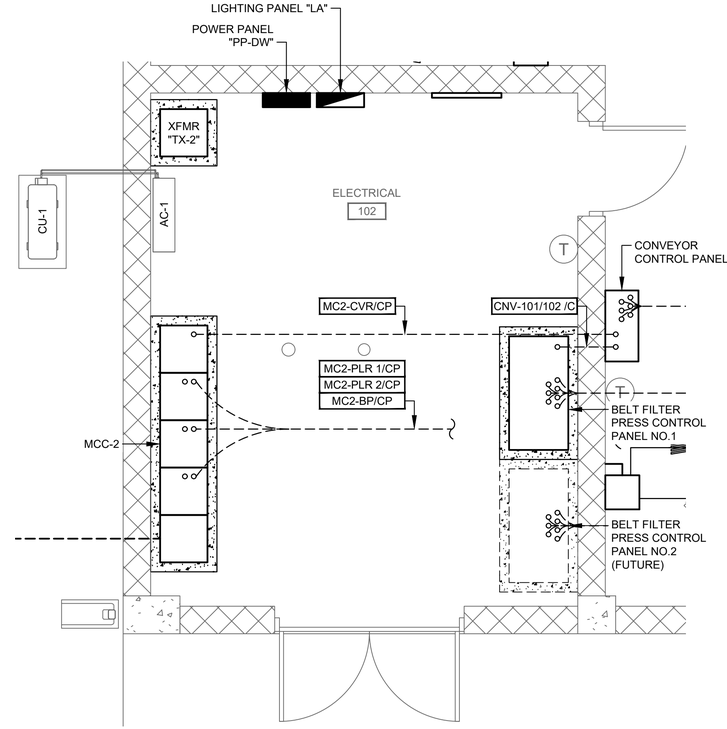
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-28.dwg Dec 17, 2025 - 4:17pm User: CValdez



ELECTRICAL DEWATERING BUILDING LIGHTING PLAN

PLAN

3/16" = 1'-0"



ELECTRICAL ROOM IN DEWATERING BUILDING

PLAN

3/8" = 1'-0"

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ 30A/3P COMBINATION MOTOR CIRCUIT PROTECTION AND NEMA SIZE 1 MAGNETIC MOTOR STARTER, FULL-VOLTAGE NON-REVERSING WITH NEAM 4X SS ENCLOSURE.

⟨2⟩ 60A/3P NON-FUSIBLE DISCONNECT SWITCH, NEMA 4X SS.

⟨3⟩ 30A/2P NON-FUSIBLE DISCONNECT SWITCH, NEMA 4X SS.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

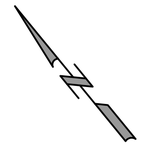
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL PROPOSED DEWATERING BUILDING POWER PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-29	SHEET NO. 191 OF 254

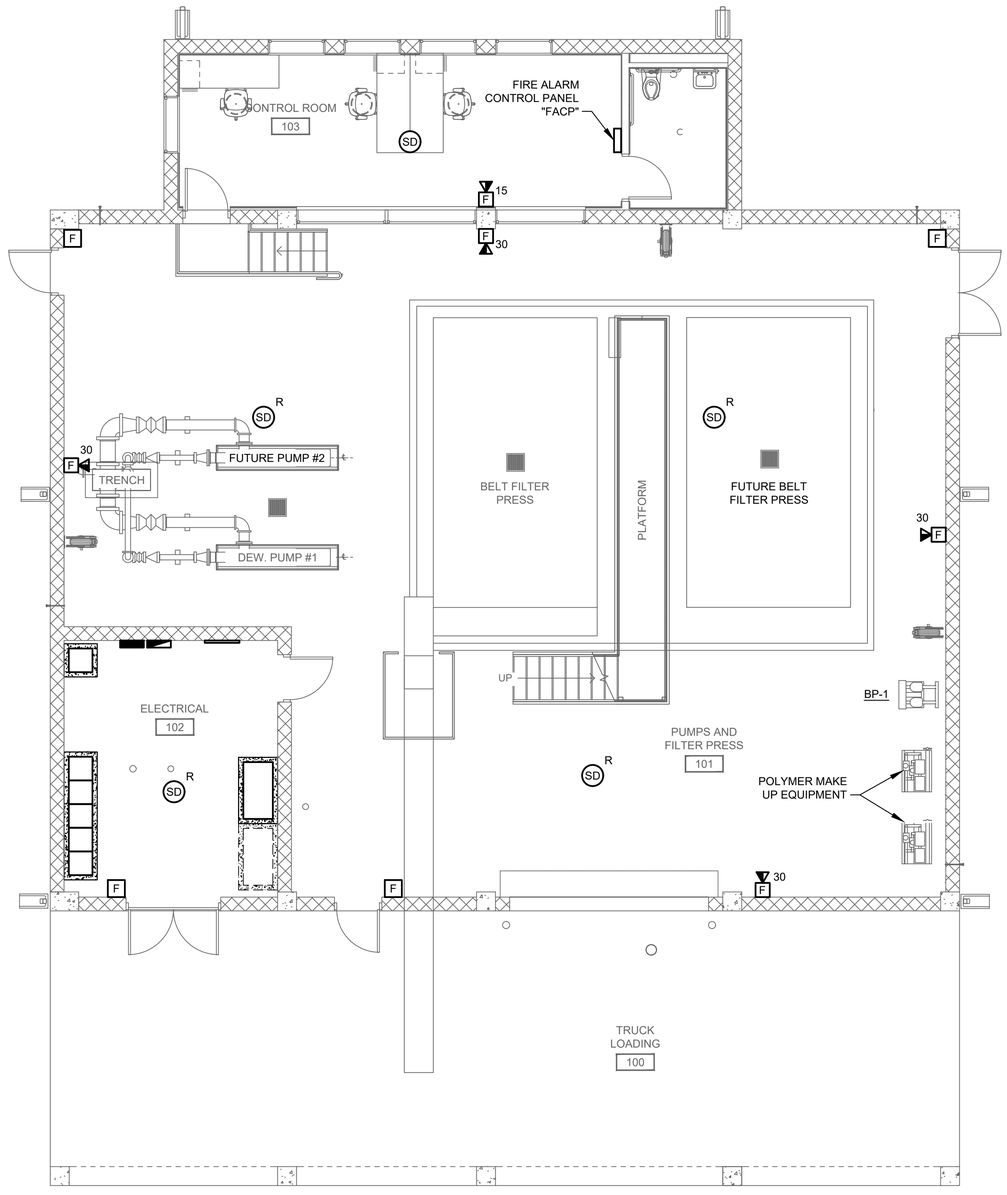
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-29.dwg Dec 17, 2025 - 4:17pm User: CValdez



2 1 0 2 4 6 8

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



ELECTRICAL DEWATERING BUILDING FIRE ALARM PLAN

PLAN

3/16" = 1'-0"

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

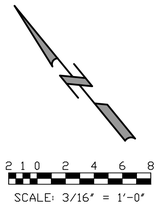
ELECTRICAL PROPOSED DEWATERING BUILDING FIRE ALARM PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 192 OF 254	

E-30

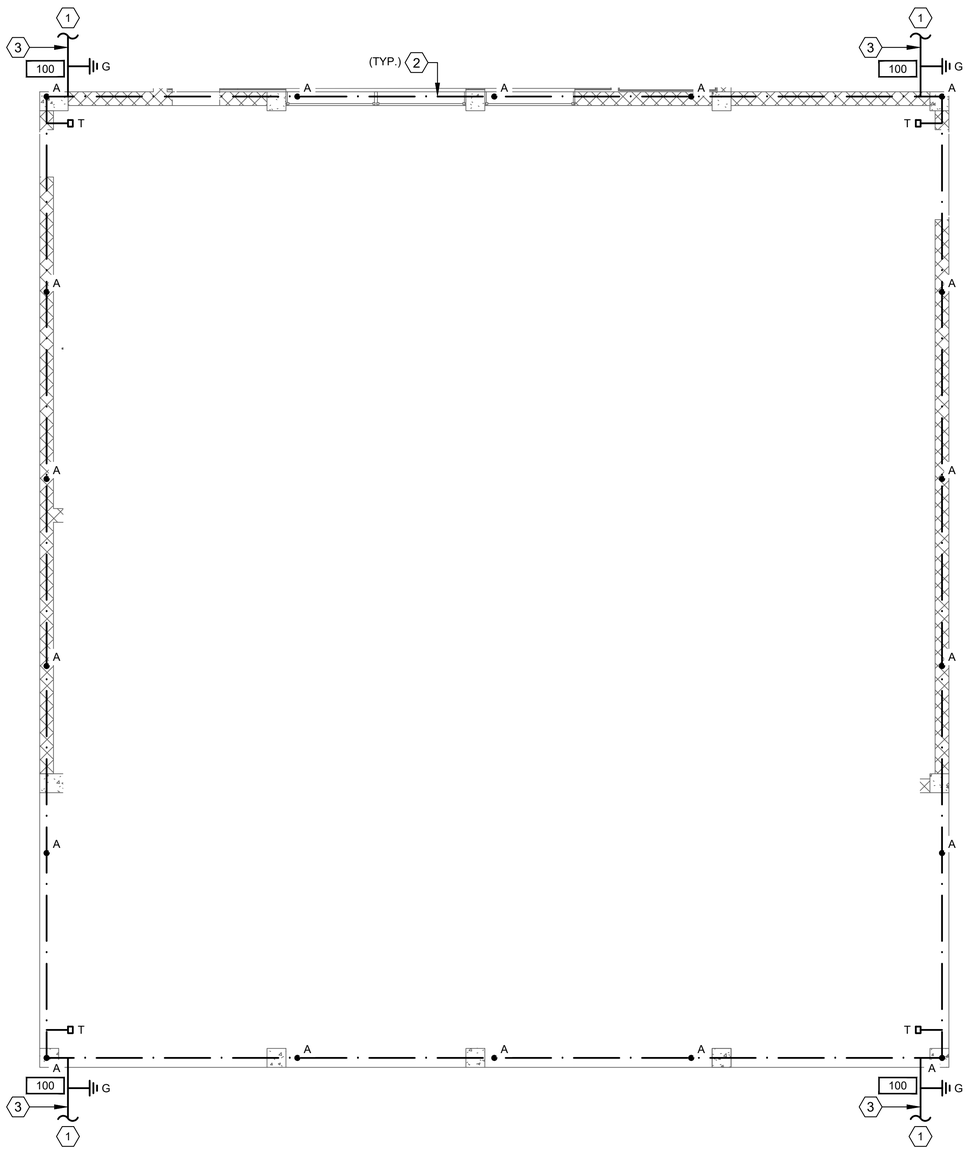
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\HB113_E-30.dwg Dec 17, 2025 - 4:17pm User: CValdez



2 1 0 2 4 6 8

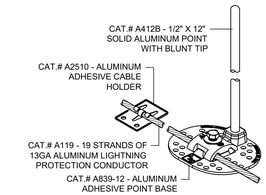
SCALE: 3/16" = 1'-0"



ELECTRICAL DEWATERING BUILDING LIGHTNING PROTECTION PLAN

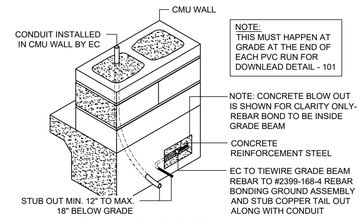
PLAN

3/16" = 1'-0"

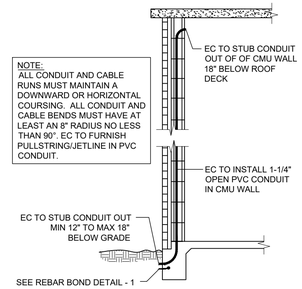


DETAIL - A ●A

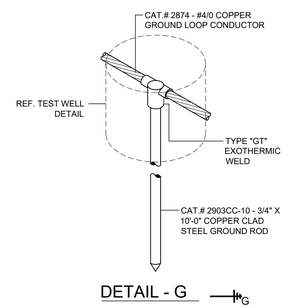
NOTE:
ADHERE TO ROOF WITH APPROVED ADHESIVE THAT SHALL BE COORDINATED IN THE FIELD.



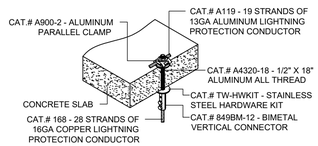
REBAR BOND DETAIL - 1



DOWNLEAD DETAIL - 100



DETAIL - G



DETAIL - T

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ BOND TO BUILDING GROUND LOOP.

⟨2⟩ CLASS I LIGHTNING PROTECTION CONDUCTOR: COPPER, 28-STRAND, 16 GAUGE, ROPE LAY.

⟨3⟩ GROUND CONDUCTOR, BARE COPPER, #4/0 AWG, 19-STRAND.

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TBPE FIRM REGISTRATION NO. 8008

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FB NO. XXXXXXX

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL PROPOSED DEWATERING BUILDING LIGHTNING PROTECTION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
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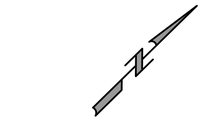
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 193 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

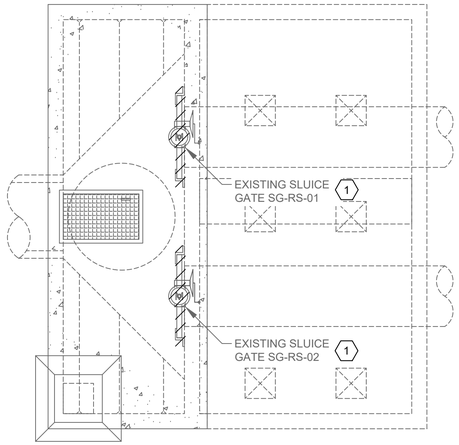
E-31

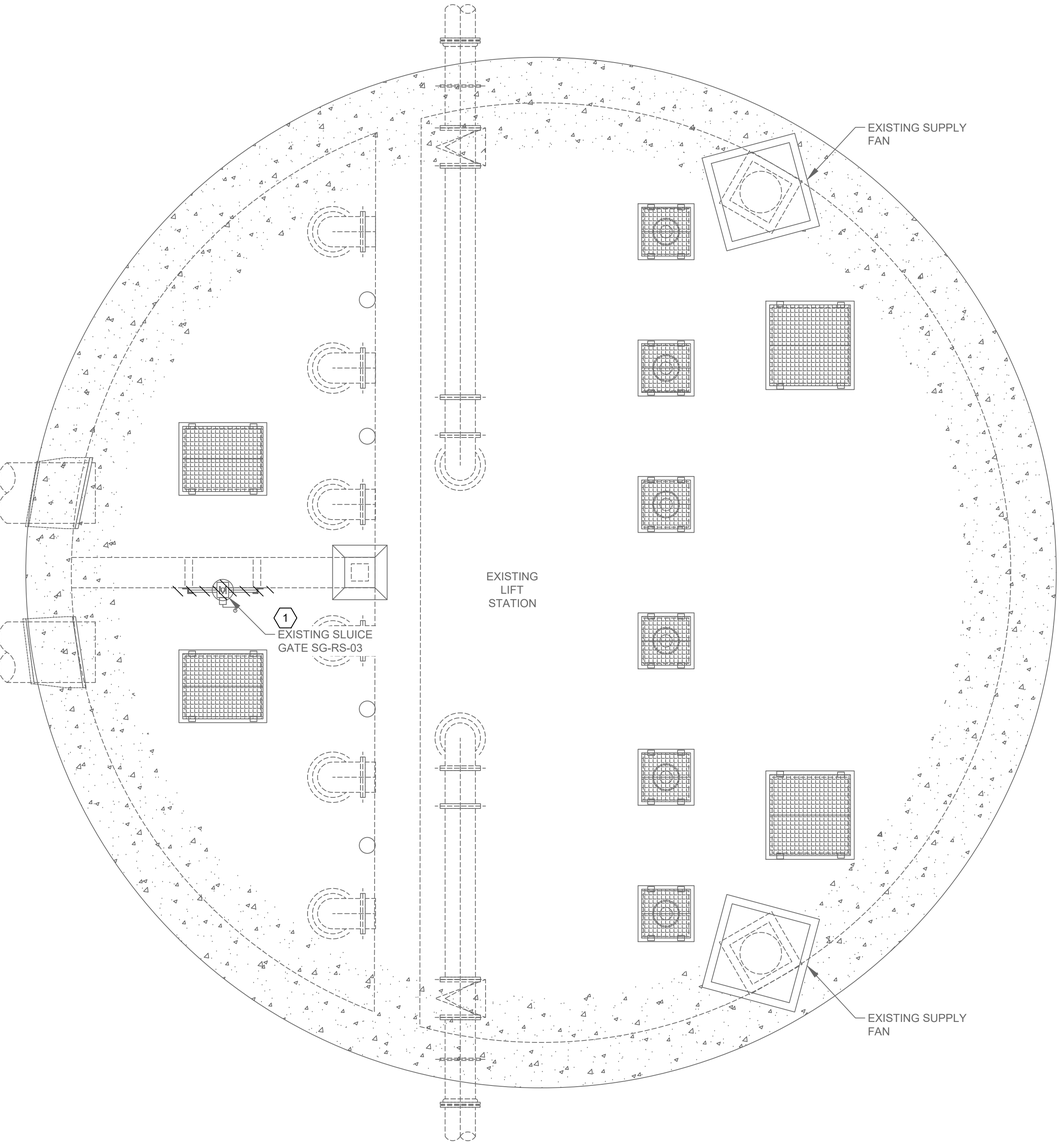
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-31.dwg Dec 17, 2025 - 4:18pm User: CValdez



5' 3' 0 5' 10'

SCALE 1/4" = 1'-0"





LIFT STATION ELECTRICAL DEMOLITION SITE

PLAN

1" = 5'-0"

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ EXISTING SLUICE GATES TO BE DEMOLISHED AND REMOVED.

LEGEND:

ITEMS TO BE DEMOLISHED.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
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ON DATE 12/19/2025

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

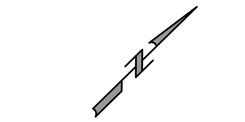
LIFT STATION ELECTRICAL DEMOLITION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 194 OF 254	

E-32

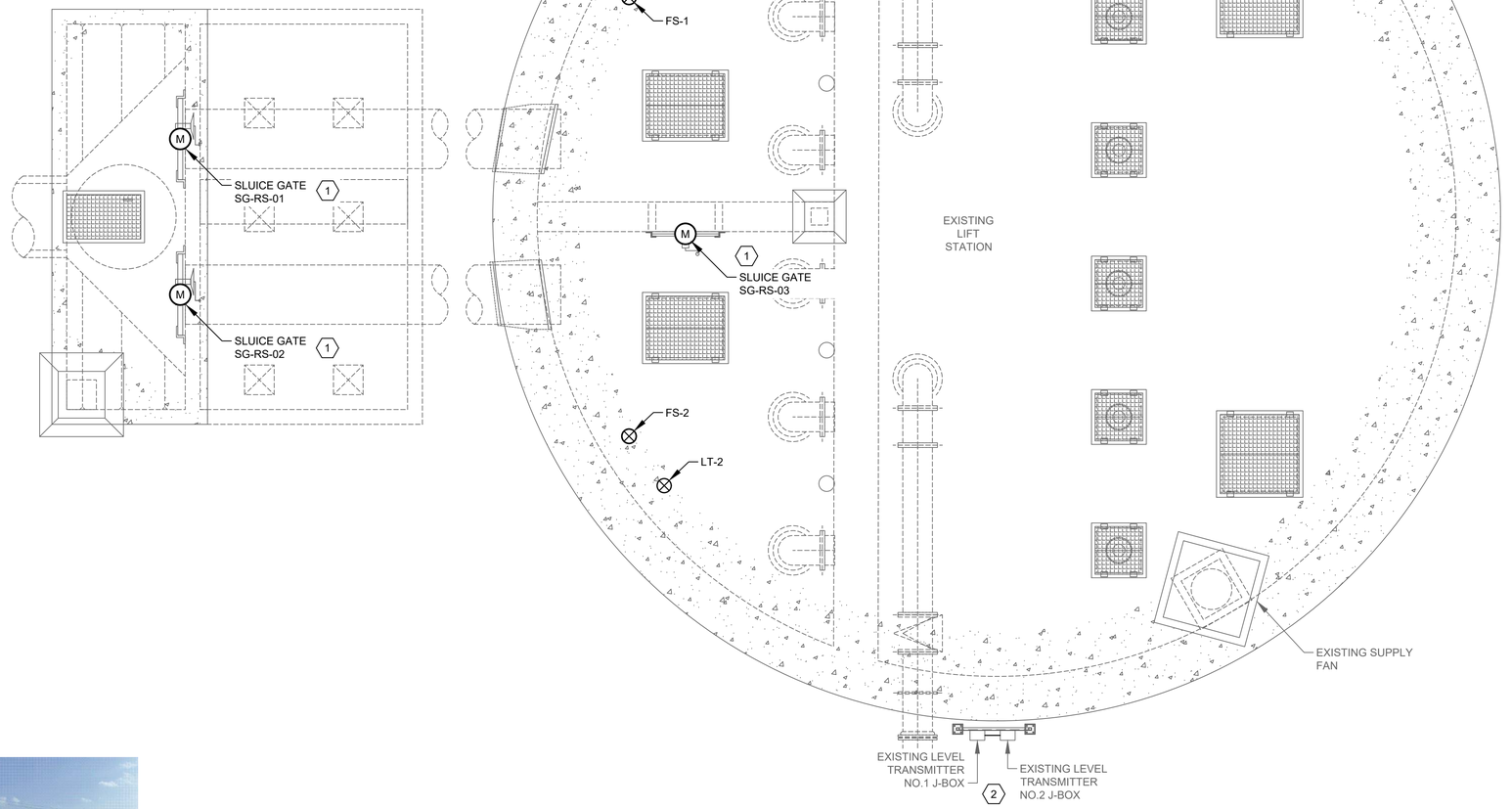
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-32.dwg Dec 17, 2025 - 4:18pm User: CValdez



5' 3' 0 5' 10'

SCALE 1/4" = 1'-0"



LIFT STATION ELECTRICAL
PROPOSED SITE

PLAN

1' = 5'-0"

EXISTING LEVEL NO.1 & NO.2
TRANSMITTER J-BOX

PHOTOGRAPH A (2)
NTS. E-33

NOTES BY SYMBOL "(#)":

(1) CONTRACTOR TO RE-CONNECT EXISTING WIRES TO NEW SLUICE GATES.

(2) EXISTING J-BOXES AND CONDUITS TO BE RE-USED. REPLACE THE EXISTING TERMINAL BLOCKS WITH NEW ONES. CONTRACTOR TO INSTALL INSTRUMENT WIRES AND CONDUITS PER INSTRUMENTS SHEET I-51.

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

LIFT STATION ELECTRICAL PROPOSED PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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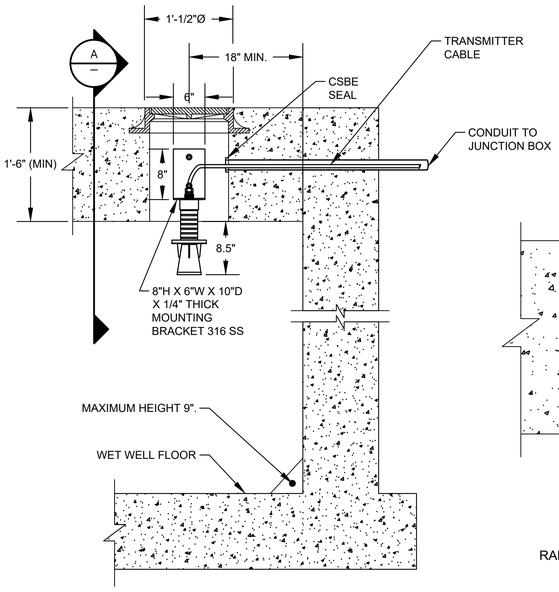
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

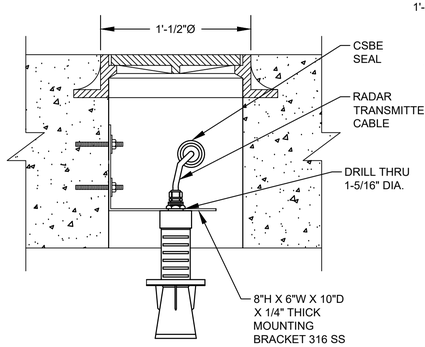
E-33 SHEET NO. 195 OF 254

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-33.dwg Dec 17, 2025 - 4:18pm User: CVoldez



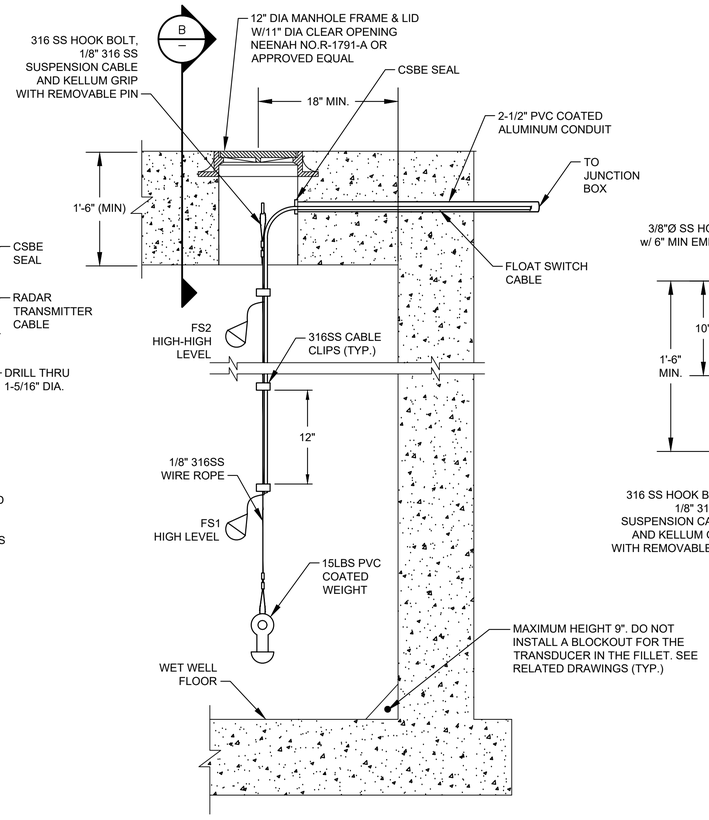
RADAR LEVEL TRANSMITTER MOUNTING
(TYP. LT-1, LT-2)

DETAIL 1
NTS
(SEE NOTE 1, 2, 4 & 5)



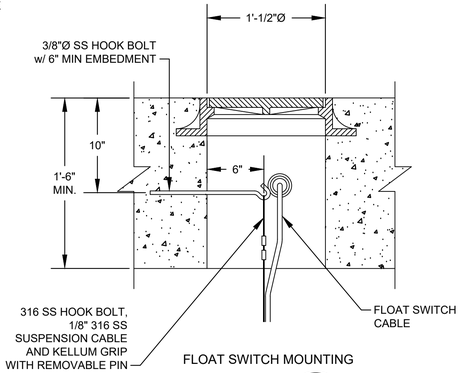
RADAR LEVEL TRANSMITTER MOUNTING
TYP. LT-1 & LT-2

SECTION A
NTS
(SEE NOTE 1, 2, 4 & 5)



FLOAT SWITCH MOUNTING

DETAIL 2
NTS
(SEE NOTES 3, 4 & 5)

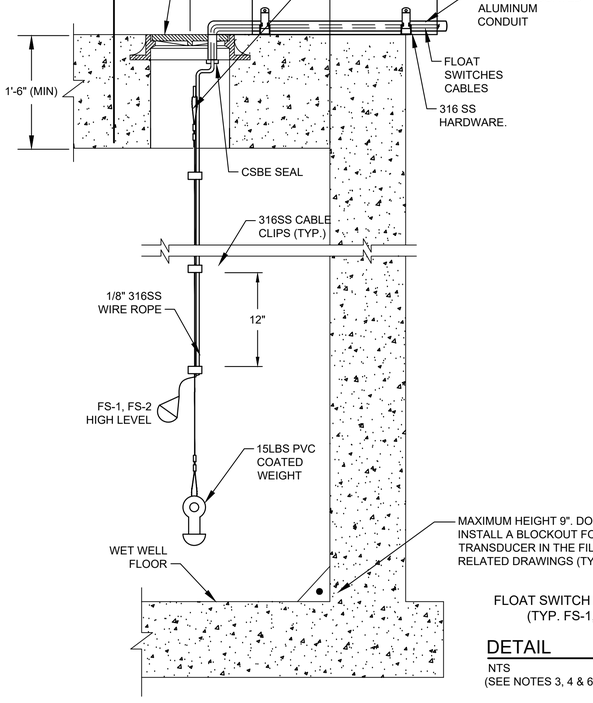


FLOAT SWITCH MOUNTING

SECTION B
NTS
(SEE NOTES 3, 4 & 5)

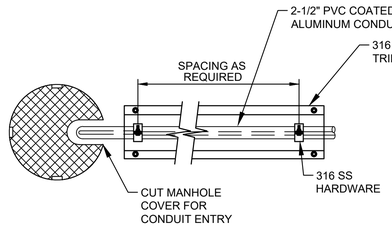
GENERAL NOTES:

1. NEW RADAR LEVEL TRANSMITTERS FOR LT-1, LT-2.
2. NEW MANHOLES FOR RADAR LEVEL TRANSMITTERS LT-1, LT-2.
3. NEW MANHOLE FOR FLOAT SWITCHES.
4. PAINT MANHOLE LIDS AND HATCHES HUNTER GREEN.
5. NEW MANHOLE INSTALLATION.
6. RETROFIT MANHOLE INSTALLATION.
7. INSIDE WET WELL IS CLASSIFIED AS CLASS I, DIVISION 1. OUTSIDE WET WELL WITHIN 5 FEET OF WET WELL OPENINGS ARE CLASSIFIED AS CLASS I, DIVISION 2.



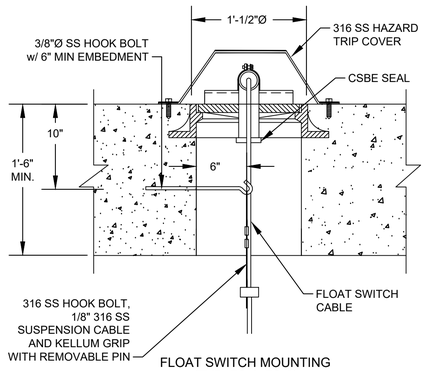
FLOAT SWITCH MOUNTING
(TYP. FS-1, FS-2)

DETAIL 3
NTS
(SEE NOTES 3, 4 & 6)



FLOAT SWITCH MOUNTING TOP VIEW
(TYP. FS-1, FS-2)

DETAIL 4
NTS
(SEE NOTES 3, 4 & 6)



FLOAT SWITCH MOUNTING
(TYP. FS-1, FS-2)

SECTION C
NTS
(SEE NOTES 3, 4 & 6)

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

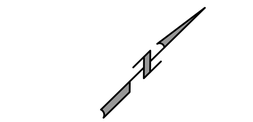
GREENRIDGE WWTP IMPROVEMENTS
RADAR LEVEL TRANSMITTER GAUGING SYSTEM INSTALLATION & DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 196 OF 254	

E-34

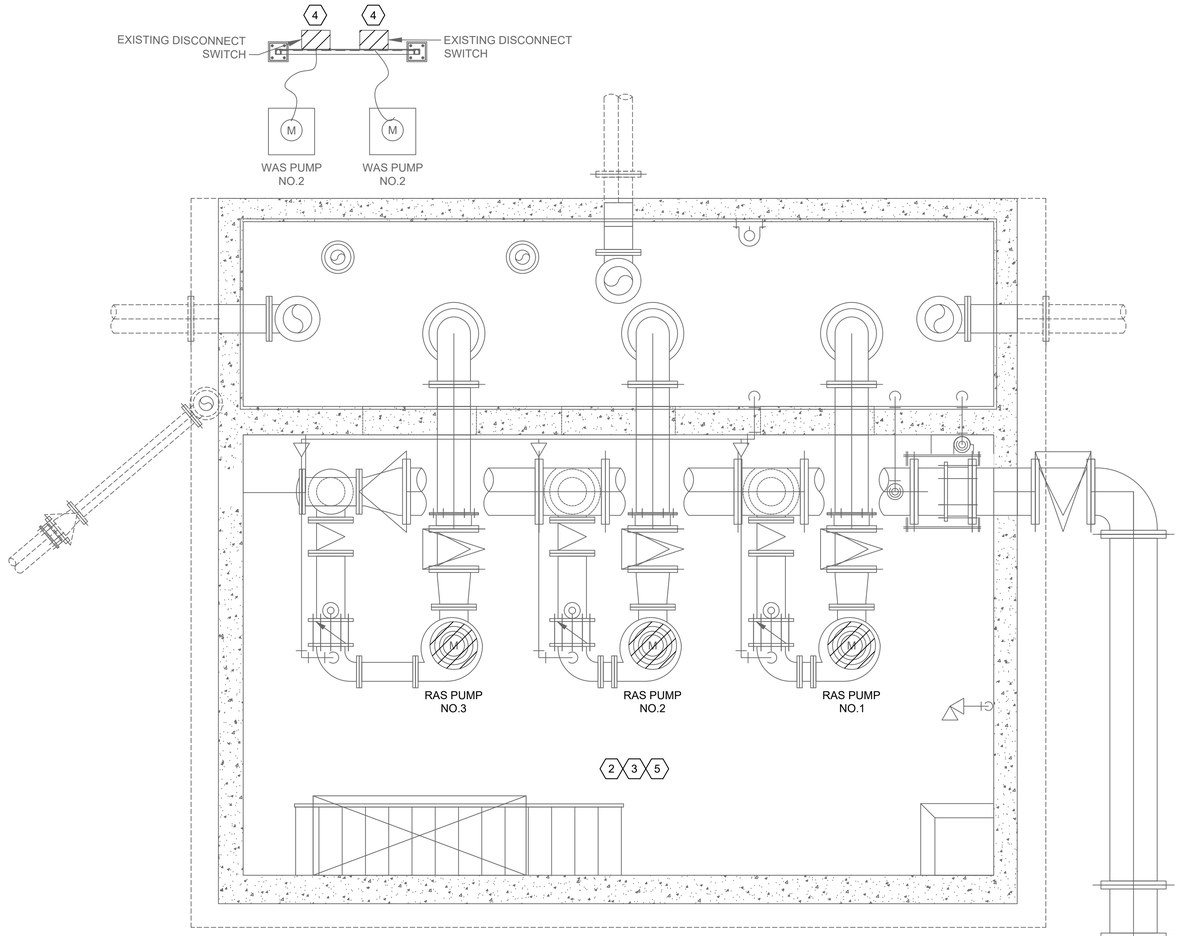
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-34.dwg Dec 17, 2025 - 4:18pm User: CVoldez



12" 6" 0 1' 2' 3' 4' 5' 6' 7'

SCALE 3/8" = 1'-0"



RAS PUMP ELECTRICAL DEMOLITION SITE

PLAN

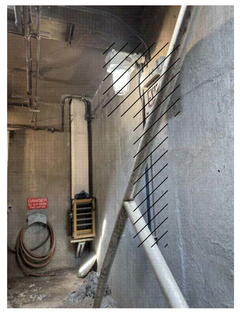
3/8" = 1'-0" (1)

NOTES BY SYMBOL "(#)":

1. DEMOLISH AND REMOVE EXISTING CONDUIT AND WIRES FOR ALL RAS PUMPS.
2. DEMOLISH AND REMOVE THE EXISTING WIRES AND CONDUITS FOR EXISTING LIGHTS AND RECEPTACLES IN THE DRY PIT.
3. EXISTING LIGHTS IN THE DRY PIT TO BE REPLACED WITH TYPE "C" AND "X" FIXTURES.
4. EXISTING DISCONNECT SWITCH SHALL BE REPLACED WITH NEW ONE PER SHEET "E-15".
5. DEMOLISH AND REMOVE THE EXISTING LIGHTING PANEL "RAS" AND ASSOCIATED CONDUITS/WIRES IN THE DRY PIT.

LEGEND:

ITEMS TO BE DEMOLISHED.



EXISTING LIGHTS CONDUITS IN DRY PIT

PHOTOGRAPH A NTS. — E-35 — (2) (3)

EXISTING WAS PUMPS DISCONNECT SWITCH

PHOTOGRAPH B NTS. — E-35 — (4)

EXISTING LIGHTING PANEL "RAS" IN DRY PIT

PHOTOGRAPH C NTS. — E-35 — (5)

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

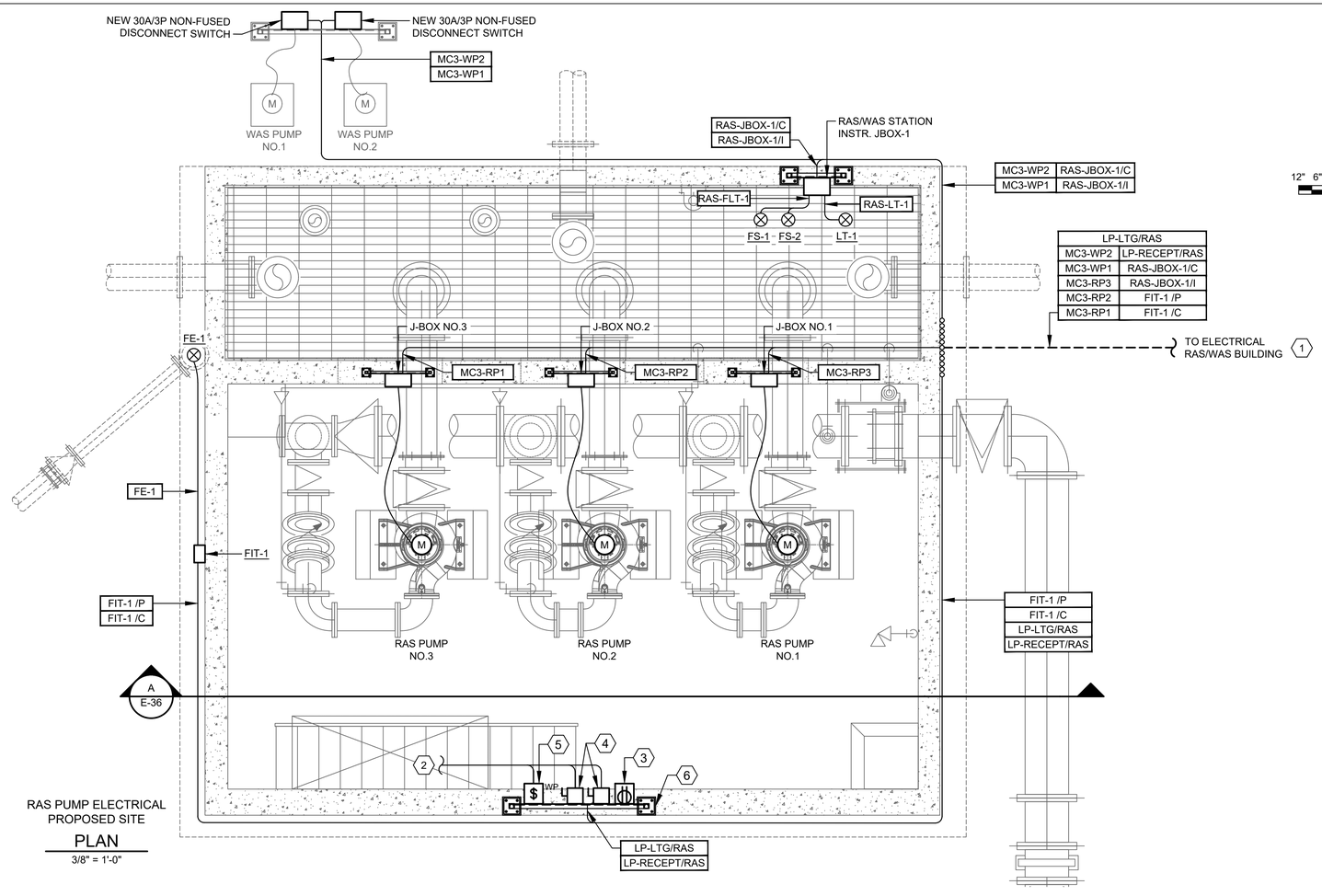
RAS/WAS ELECTRICAL DEMOLITION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 197 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-35

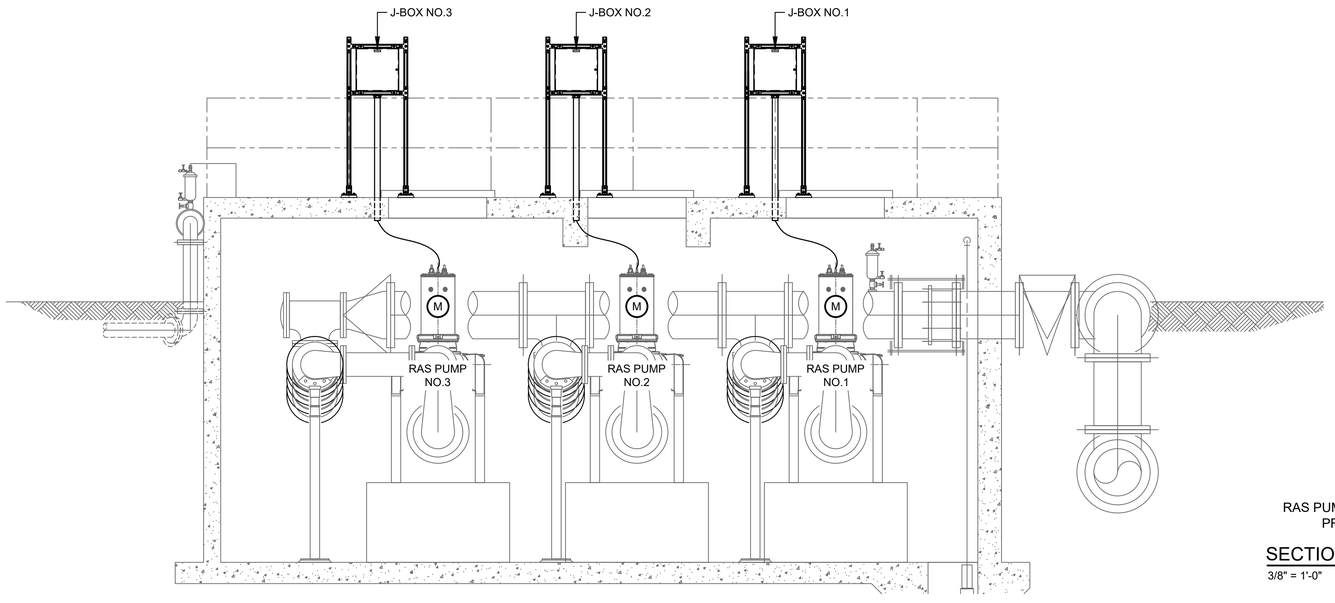
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-35.dwg Dec 17, 2025 - 4:18pm User: CVoldez



RAS PUMP ELECTRICAL PROPOSED SITE

PLAN

3/8" = 1'-0"



RAS PUMP ELECTRICAL PROPOSED

SECTION A/E-36

3/8" = 1'-0"

12" 6" 0 1' 2' 3' 4' 5' 6' 7'

SCALE 3/8" = 1'-0"

NOTES BY SYMBOL "#":

1. REFER TO SHEET E-18 FOR CONTINUATION.
2. CONDUITS DOWN TO LIGHTS AND SUMP PUMPS IN DRY PIT.
3. 20A WP GFI DUPLEX RECEPTACLE.
4. 30A/1P NEMA 4X SS DISCONNECT SWITCH FOR SUMP PUMP.
5. WP LIGHT SWITCHES FOR FAN AND LIGHTS IN DRY PIT.
6. STAINLESS STEEL RACK WITH ALUMINUM MOUNTING PANEL TO BE MOUNT ON TOP OF CONCRETE SLAB AND BONDED TO THE EXISTING GROUND SYSTEM.

NO.	DATE	REVISION	APP.
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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

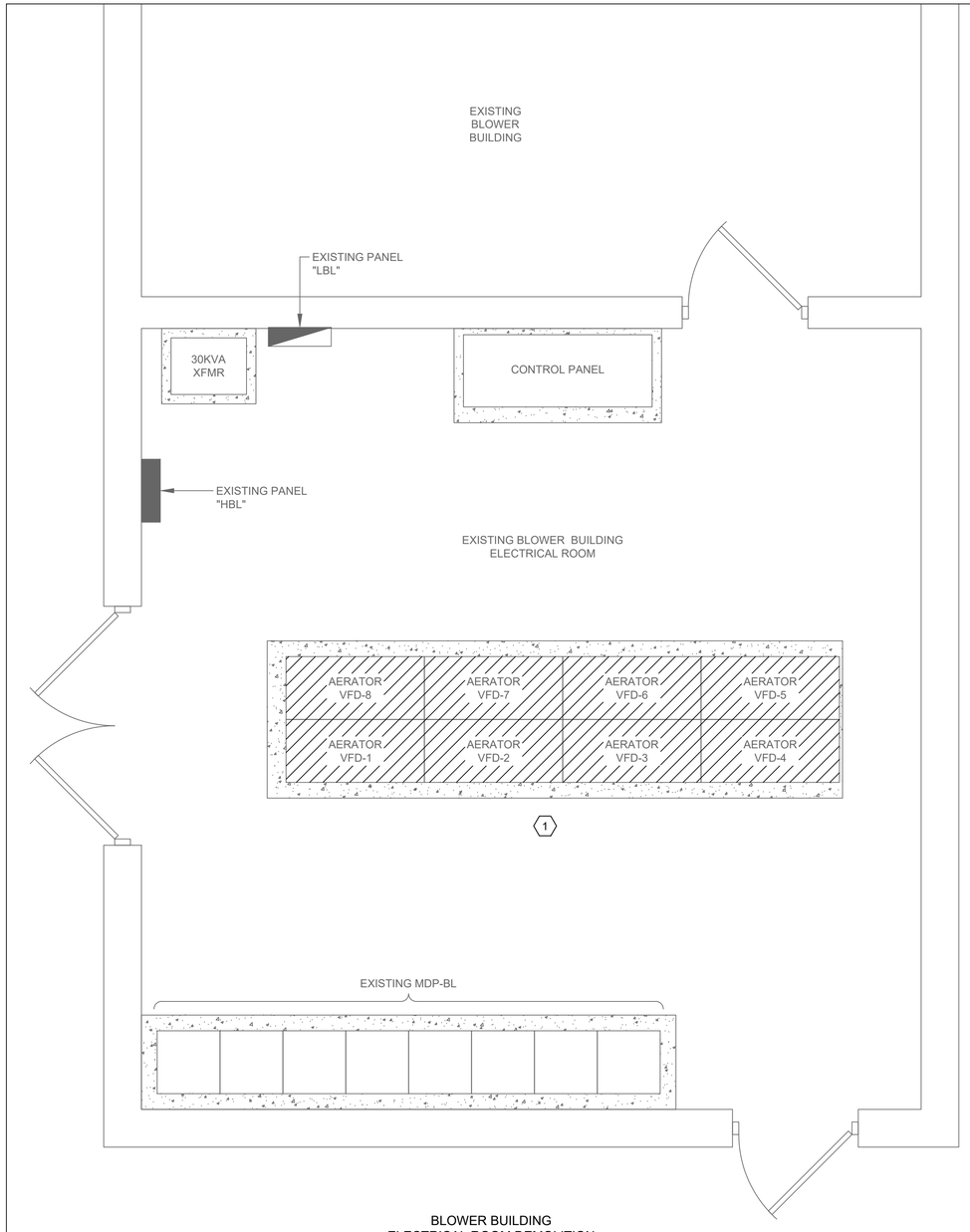
RAS/WAS ELECTRICAL PROPOSED PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 198 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-36

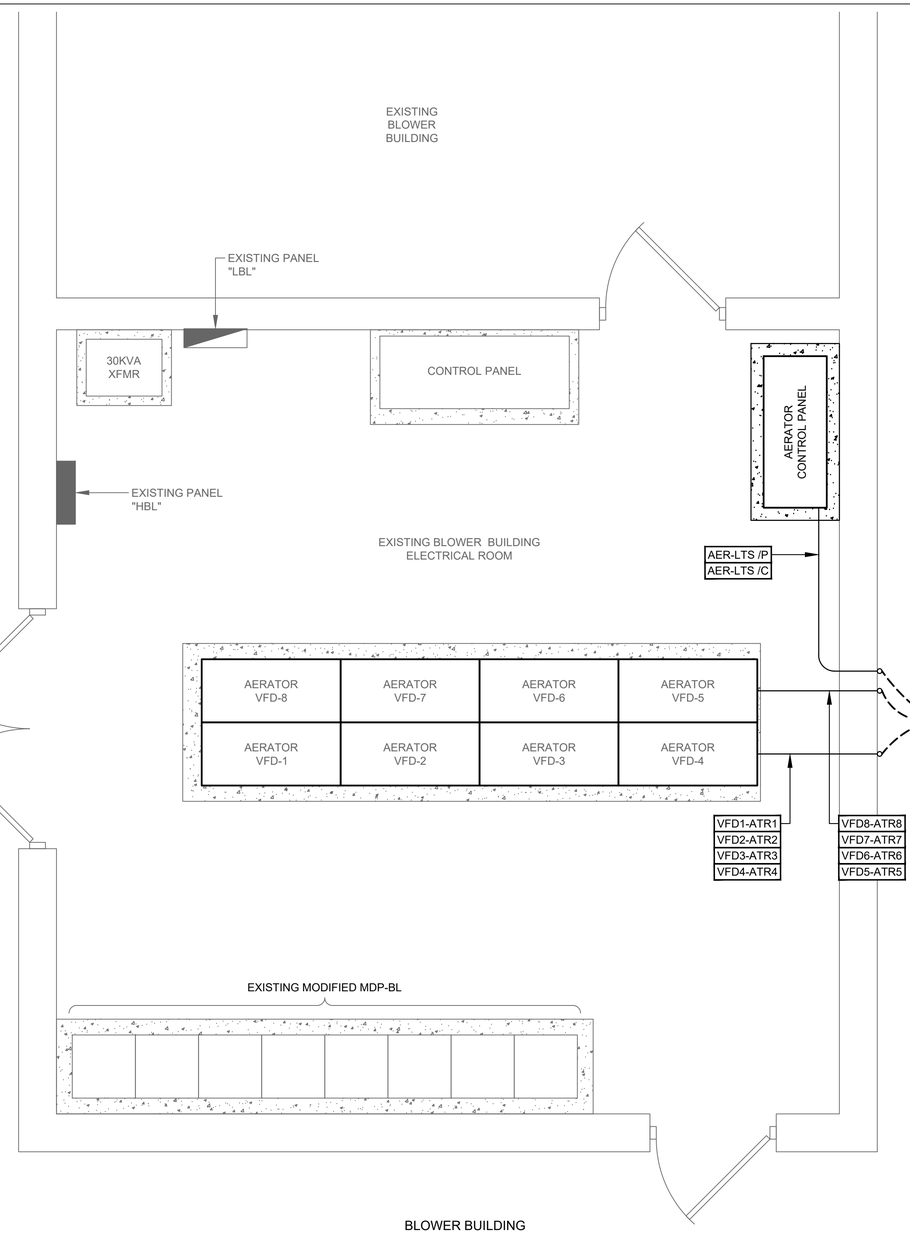
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-36.dwg Dec 17, 2025 - 4:18pm User: CVoldez



BLOWER BUILDING
ELECTRICAL ROOM DEMOLITION

PLAN

1/2" = 1'-0"



BLOWER BUILDING
ELECTRICAL ROOM PROPOSED

PLAN 3

1/2" = 1'-0"

NOTES BY SYMBOL "⟨#⟩":

1. DEMOLISH AND REMOVE EXISTING VFD, AND ASSOCIATED CONDUIT AND WIRES.
2. REFER TO SHEET E-18 FOR CONTINUATION.
3. CONTRACTOR TO INSTALL CONTROL WIRES AND ASSOCIATED CONDUITS PER THE RELATED INSTRUMENT DRAWINGS.

LEGEND:

ITEMS TO BE DEMOLISHED.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
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GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

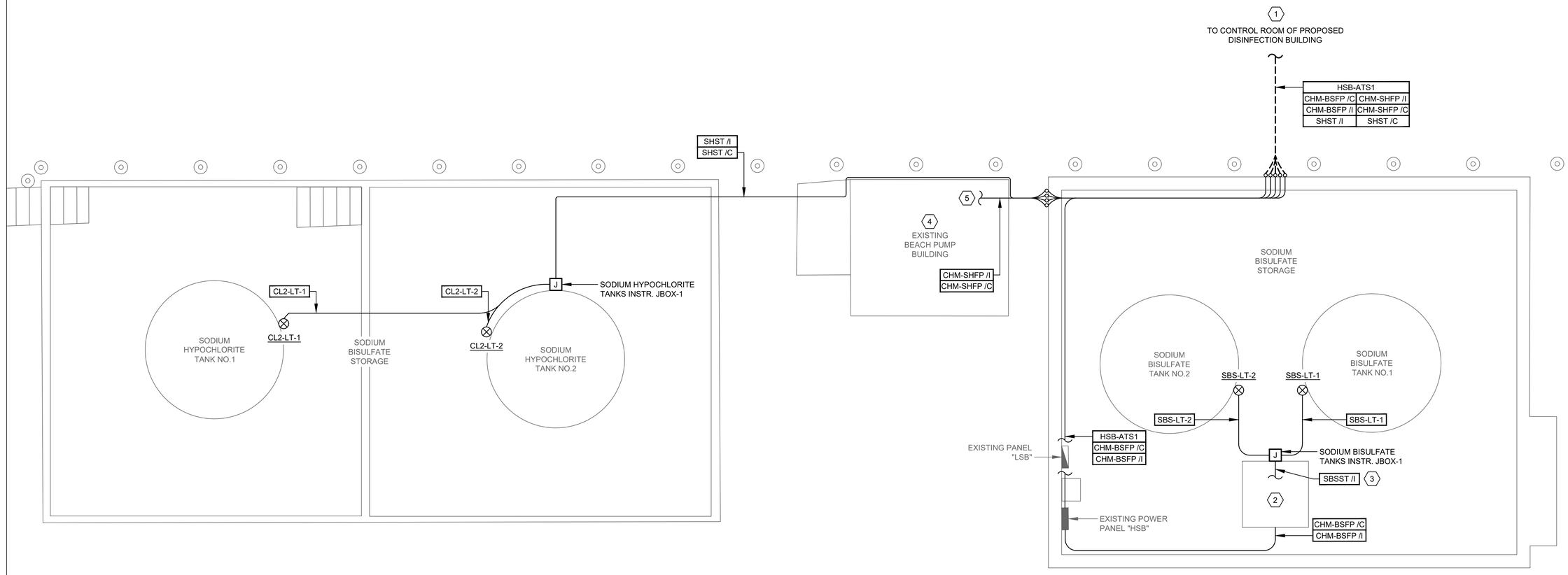
BLOWER BUILDING ELECTRICAL ROOM DEMOLITION & PROPOSED PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 197 OF 254	

E-37

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-37.dwg Dec 17, 2025 - 4:18pm User: CVoldez



EXISTING SODIUM HYPOCHLORITE STORAGE TANKS ELECTRICAL

PLAN

1/4" = 1'-0"

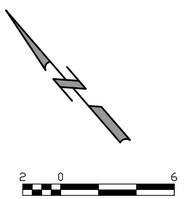
EXISTING SODIUM BISULFATE STORAGE TANKS ELECTRICAL

PLAN

1/4" = 1'-0"

NOTES BY SYMBOL "(#)":

1. REFER TO SHEET E-18 FOR CONTINUATION.
2. CONTRACTOR TO INSTALL JUNCTION BOX, WIRES AND CONDUITS INSIDE BUILDING PER INSTRUMENT SHEET I-54.
3. CONDUIT TO SODIUM BISULFATE FEED PUMP JBOX-1.
4. CONTRACTOR TO INSTALL JUNCTION BOX, WIRES AND CONDUITS INSIDE BUILDING PER INSTRUMENT SHEET I-53.
5. CONDUITS TO SODIUM HYPOCHLORITE FEED PUMP J-BOX.



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A	08/18/25	60% SUBMITTAL	

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GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

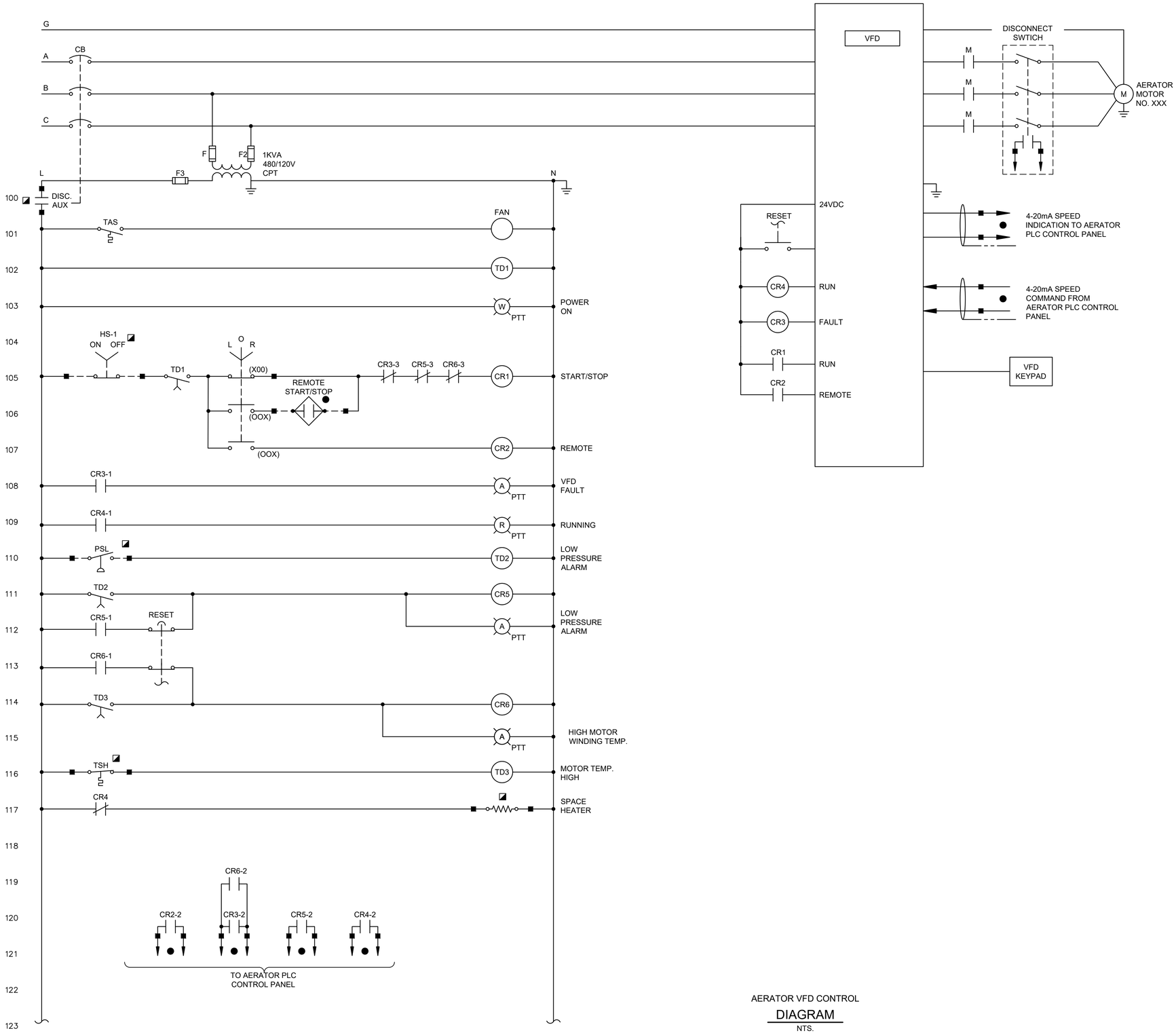
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
EXISTING SODIUM BISULFATE STORAGE TANKS ELECTRICAL PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-38	SHEET NO. 197 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\HB113_E-38.dwg Dec 17, 2025 - 4:18pm User: CVoldez



LEGEND:

- ◪ DEVICE LOCATED IN THE FIELD.
- ● LOCATED AT PLC INPUT AND OUTPUT.
- ■ TERMINAL IN VFD FOR FIELD WIRING.
- • CONNECTION IN VFD.

PTT: PRESS TO TEST INDICATOR.

AERATOR VFD CONTROL
DIAGRAM
NTS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL AERATOR VFD CONTROL DIAGRAM

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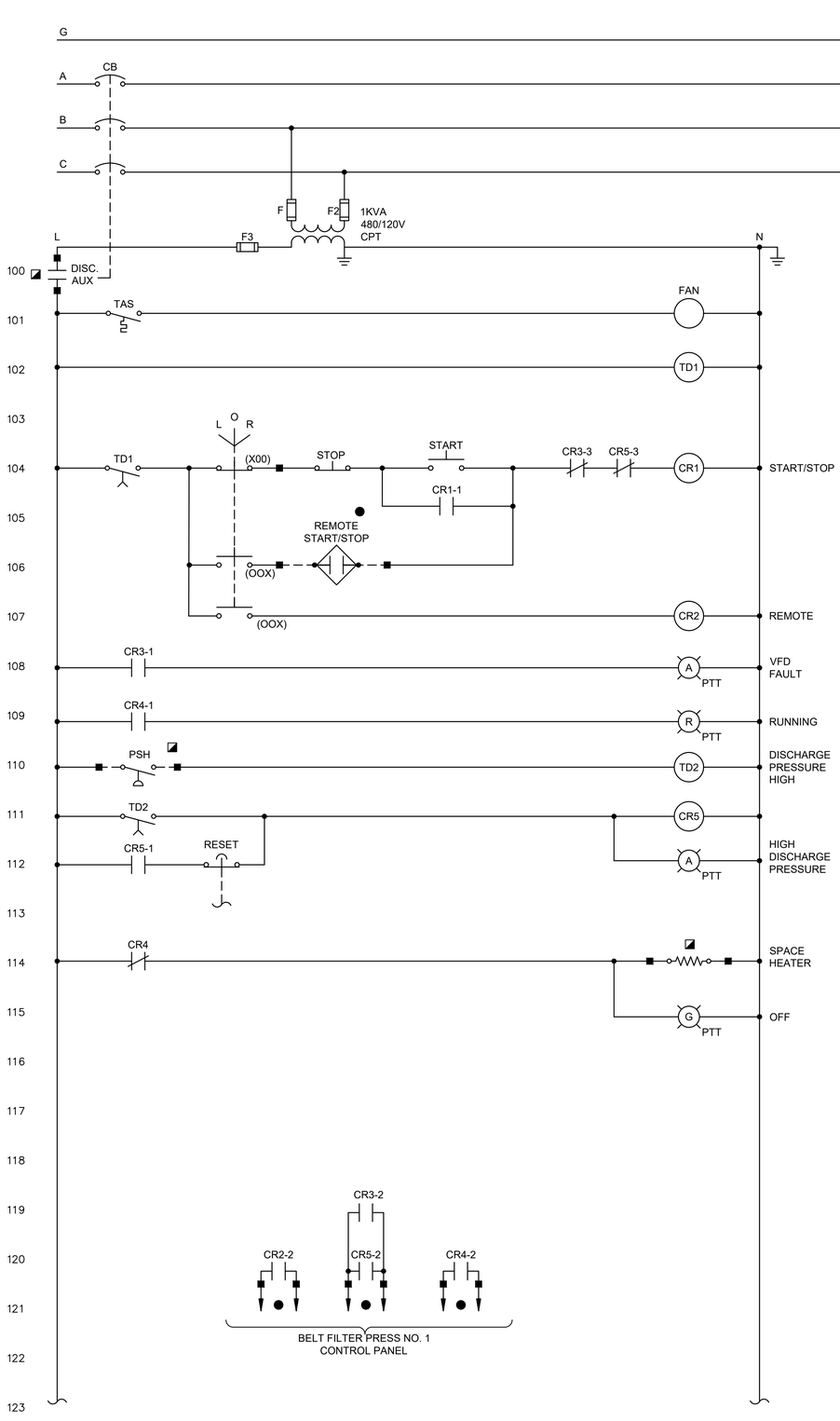
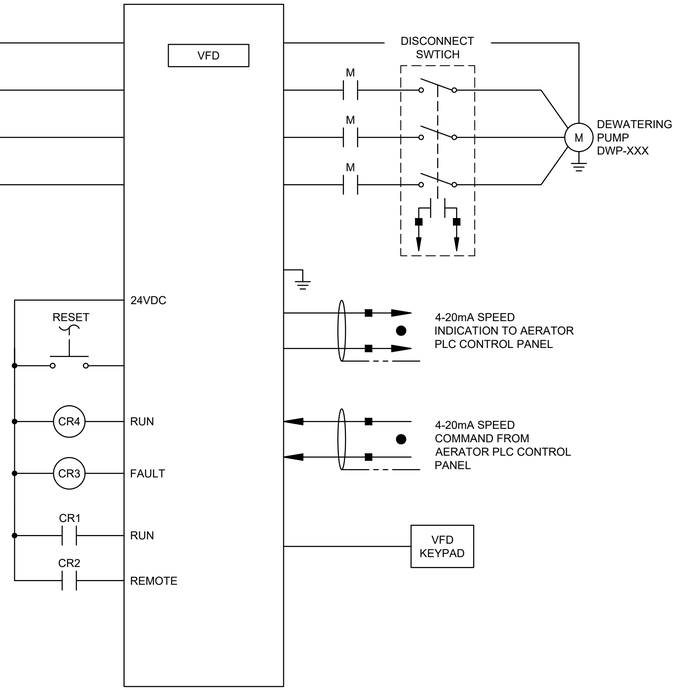
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

E-39 SHEET NO. 172 OF 254

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-39.dwg Dec 17, 2025 - 4:18pm User: CValdez





LEGEND:

- ◪ DEVICE LOCATED IN THE FIELD.
- ● LOCATED AT PLC INPUT AND OUTPUT.
- ■ TERMINAL IN VFD FOR FIELD WIRING.
- • CONNECTION IN VFD.

PTT: PRESS TO TEST INDICATOR.

DEWATERING SLUDGE FEED
PUMP(DWP) VFD CONTROL
DIAGRAM
NTS.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
ELECTRICAL DEWATERING SLUDGE FEED PUMP VFD CONTROL DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-40	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-40.dwg Dec 17, 2025 - 4:19pm User: CValdez

PANEL "HSB" (EXISTING)

VOLTAGE: 480
PHASE: 3 PHASE
WIRE: 4 WIRE

MOUNTING: SURFACE
LOCATION: BISULFATE AREA
FED FROM: MDP-BL

BUSS: 225A
MAINS: 225A MCB
AIC RATING: 65K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 4X SS

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
	1				14.4	35.8			21.4				2	
	3	CHLORINE MIXING BOX PUMP (40HP)	90	3	14.4		35.8		21.4	3	125	POWER PANEL "CHL-H" (VIA ATS-1)	4	1
	5				14.4			35.8	21.4				6	
	7	SPACE				0.0						SPACE	8	
	9	SPACE					0.0					SPACE	10	
	11	SPACE						0.0				SPACE	12	
	13	SPACE				0.0						SPACE	14	
	15	SPACE					0.0					SPACE	16	
	17	SPACE						0.0				SPACE	18	
	19				4.0	4.0						SPACE	20	
	21	30KVA TRANSFOMER "TLSB"	50	3	4.0		4.0					SPACE	22	
	23				4.0			4.0				SPACE	24	

	KVA	AMPS
CONNECTED LOAD: 39.8 | 39.8 | 39.8	= 119.4	143.6
TOTAL LOAD	= 119.4	143.6

NOTE:

Notes:	
1	4-#1/0 AWG., #6 GND., 2"C. TAG NO. HSB-ATS1

PANEL "CHL1"

VOLTAGE: 120/208V
PHASE: 3 PHASE
WIRE: 4 WIRE

MOUNTING: SURFACE
LOCATION: DISIN. BLDG.
FED FROM: XFMR "TX-CHL"

BUSS: 125A
MAINS: 125A MCB
AIC RATING: 10K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 1

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1	1	LIGHTING - CONTROL/ANALYZER RM.	20	1	0.3	1.1			0.8	1	20	RECEPTACLES - CONTROL ROOM	2	1
1	3	EXHAUST FAN "EF-1"	20	1	0.4		1.2		0.8	1	20	RECEPTACLES - AIT-1 AND AIT-2	4	1
1	5	DISINFECTION CONTROL PANEL	20	1	1.0			1.8	0.8	1	20	RECEPTACLES - AIT-3 AND AIT-4	6	1
	7	SPARE	20	1		0.8			0.8	1	20	RECEPTACLES - AIT-5 AND AIT-6	8	1
	9	SPARE	20	1			0.0			1	20	SPARE	10	
	11	SPARE	20	1				0.0		1	20	SPARE	12	
	13	SPARE	20	1		0.0				1	20	SPARE	14	
	15	SPARE	20	1			0.0			1	20	SPARE	16	
	17	SPARE	20	1				0.0		2	20	SPARE	18	
	19					0.0							20	
	21	SPARE	20	3			2.5		2.5	2	30	A/C OUTDOOR UNIT, CU-3	22	2
	23							2.5	2.5				24	
	25				1.7	3.1			1.4				26	
3	27	PANEL "BLP"	50	3	1.9		2.3		0.4	3	50	PANEL "CHL2"	28	4
	29				2.3			3.7	1.4				30	

	KVA	AMPS
CONNECTED LOAD: 5.0 | 6.0 | 8.0	= 19.0	52.7
TOTAL LOAD	= 19.0	52.7

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

Notes:	
1	2-#12 AWG., #12 GND., 3/4"C.
2	2-#10 AWG., #10 GND., 3/4"C.
3	4-#4 AWG., #6 GND., 1-1/2"C. TAG NO. CHL1-BLP
4	4-#4 AWG., #6 GND., 1-1/2"C. TAG NO. CHL1-CHL2

PANEL "HSB-1"

VOLTAGE: 480
PHASE: 3 PHASE
WIRE: 4 WIRE

MOUNTING: SURFACE
LOCATION: CHLORINE MIXER
FED FROM: CHL-H

BUSS: 100A
MAINS: 80A MCB
AIC RATING: 22K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 4X 316 SS

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
	1				3.0	6.0			3.0				2	
1	3	MIXER CONTROL PANEL "CM-1"	30	3	3.0		6.0		3.0	3	30	MIXER CONTROL PANEL "CM-2"	4	2
	5				3.0			6.0	3.0				6	
	7					0.0							8	
	9	SPACE		3			0.0			3		SPACE	10	
	11							0.0					12	
	13					0.0							14	
	15	SPACE		3			0.0			3		SPACE	16	
	17							0.0					18	

	KVA	AMPS
CONNECTED LOAD: 6.0 | 6.0 | 6.0	= 18.0	21.7
TOTAL LOAD	= 18.0	21.7

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

Notes:	
1	3-#10 AWG., #10 GND., 1"C. TAG NO. HSB1-TX-CM1
2	3-#10 AWG., #10 GND., 1"C. TAG NO. HSB1-TX-CM2

PANEL "CHL-H"

VOLTAGE: 480
PHASE: 3 PHASE
WIRE: 4 WIRE

MOUNTING: SURFACE
LOCATION: DISIN. BLDG.
FED FROM: HSB

BUSS: 225A
MAINS: 125A MCB
AIC RATING: 45K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 1

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
	1				15.0	15.4			0.4				2	
1	3	XFMR "TX-CHL"	70	3	15.0		15.4		0.4	3	20	SCUM SKIMER DRAIN VALVE	4	2
	5				15.0			15.4	0.4				6	
	7				6.0	6.0							8	
3	9	POWER PANEL "HSB-1"	80	3	6.0		6.0			3		SPACE	10	
	11				6.0			6.0					12	
	13					0.0							14	
	15	SPACE		3			0.0			3		SPACE	16	
	17							0.0					18	

	KVA	AMPS
CONNECTED LOAD: 21.4 | 21.4 | 21.4	= 64.2	77.2
TOTAL LOAD	= 64.2	77.2

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

Notes:	
1	3-#4 AWG., #8 GND., 1-1/2"C. TAG NO. CHL-H-TX-CHL
2	3-#10 AWG., #10 GND., 1"C. TAG NO. CHL-H-TX-SCUM
3	4-#3 AWG., #6 GND., 1-1/2"C. TAG NO. CHL-H-HSB1

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS. FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
PANEL SCHEDULE-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-41	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-41.dwg Dec 17, 2025 - 4:19pm User: CVoldez

PANEL "CHL2"

VOLTAGE: 120/208V
PHASE: 3 PHASE
WIRE: 4 WIRE

BUSS: 100A
MAINS: 50A MCB
MOUNTING: SURFACE
LOCATION: CCB 2
FED FROM: CHL1
AIC RATING: 10K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 4X, 316 SS

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1	1	LIGHTING - CCB 1 & CCB 2 AREA		1		0.4			0.4	1	20	LIGHTING - SHED NO.1	2	
1	3	RECEPT. - CCB 1 & CCB 2 AREA		1			0.2		0.2	1	20	RECEPTACLE - SHED NO.1	4	2
	5	SPARE		1				1.0	1.0	1	20	AUTO SAMPLER - SHED NO.1	6	
	7	SPARE		1		1.0			1.0	1	20	AUTO SAMPLER - SHED NO.2	8	
	9	SPARE		1			0.2		0.2	1	20	RECEPTACLE - SHED NO.2	10	3
	11	SPARE		1				0.4	0.4	1	20	LIGHTING - SHED NO.2	12	
	13	SPARE		1		0.0				1	20	SPARE	14	
	15	SPARE		1			0.0			1	20	SPARE	16	
	17	SPARE		1				0.0		1	20	SPARE	18	

KVA AMPS

CONNECTED LOAD: 1.4 | 0.4 | 1.4 = 3.2 8.9

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

TOTAL LOAD = 3.2 8.9

Notes:		Notes:	
1	2-#12 AWG., #12 GND., 3/4"C.		
2	6-#12 AWG., #12 GND., 1"C. TAG NO. CHL2- SD1		
3	6-#12 AWG., #12 GND., 1"C. TAG NO. CHL2- SD2		

PANEL "BLP"

VOLTAGE: 120/208V
PHASE: 3 PHASE
WIRE: 4 WIRE

BUSS: 100A
MAINS: 50A MCB
MOUNTING: SURFACE
LOCATION: BLEACH P. BLDG.
FED FROM: PNL-CHL1
AIC RATING: 10K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 4X, 316 SS

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1,2	1	LIGHTING - LIGHTS INSIDE	20	1	0.4	0.8			0.4	1	20	LIGHTING - SHED NO.1	2	1,2
1,2	3	LIGHTING - LIGHTS OUTSIDE	20	1	0.8		1.0		0.2				4	
	5	RECEPTACLES - BUILDING	20	1	0.4			1.4	1.0	1	20	BUILDING EXHAUST FAN	6	1,2
	7	RECEPT. - METERING PUMP NO.1	20	1	0.9	0.9				1	20	SPARE	8	
	9	RECEPT. - METERING PUMP NO.2	20	1	0.9		0.9			1	20	SPARE	10	
	11	RECEPT. - METERING PUMP NO.3	20	1	0.9			0.9		1	20	SPARE	12	
	13	SPARE	20	1		0.0				1	20	SPARE	14	
	15	SPARE	20	1			0.0			1	20	SPARE	16	
	17	SPARE	20	1				0.0		1	20	SPARE	18	

KVA AMPS

CONNECTED LOAD: 1.7 | 1.9 | 2.3 = 5.9 16.4

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

TOTAL LOAD = 5.9 16.4

Notes:		Notes:	
1	REMOVE THE EXISTING INCOMING POWER WIRES. FIELD VERIFY		
2	INSTALL NEW WIRES, SIZE MATCH EXISTING.		

PANEL "LP"

VOLTAGE: 120/208V
PHASE: 3 PHASE
WIRE: 4 WIRE

BUSS: 125A
MAINS: 125A MCB
MOUNTING: SURFACE
LOCATION: RAS/WAS BLDG.
FED FROM: XFMR "TX-3".
AIC RATING: 10K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 1

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1	1	LIGHTING - BUILDING LIGHTS	20	1	0.2	0.4			0.2	1	20	RECEPTACLES - BUILDING	2	1
2	3	LIGHTING - EXIT LIGHT IN RAS PUMP PI	20	1	0.1		1.1		1.0	1	20	SUMP PUMP NO.1 IN RAS PUMP PIT	4	3
	5	LIGHTING - RAS PUMP PIT	20	1	0.3			1.3	1.0	1	20	SUMP PUMP NO.2 IN RAS PUMP PIT	6	
	7	EXHAUST FAN IN RAS PUMP PIT	20	1	0.5	1.5			1.0	1	20	RECEPTACLES - RAS PUMP AREA	8	
	9	SPARE	20	1			0.0			1	20	SPARE	10	
	11	SPARE	20	1				0.0		1	20	SPARE	12	
	13	SPARE	20	1		0.0				1	20	SPARE	14	
	15	SPARE	20	1			0.0			1	20	SPARE	16	
	17	SPARE	20	1						2	20	SPARE	18	
	19	SPACE				0.0							20	
	21	SPACE					2.5	2.5	2	30	A/C OUTDOOR UNIT, CU-4		22	4
	23	SPACE						2.5	2.5				24	

KVA AMPS

CONNECTED LOAD: 1.9 | 3.6 | 3.8 = 9.3 25.8

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

TOTAL LOAD = 9.3 25.8

Notes:		Notes:	
1	2-#12 AWG., #12 GND., 3/4"C.		
2	6-#12 AWG., #12 GND., 1"C. TAG NO. LP-LTG/RAS		
3	6-#12 AWG., #12 GND., 1"C. TAG NO. LP-RECEPT/RAS		
4	2-#10 AWG., #10 GND., 3/4"C.		

PANEL "PP-DW"

VOLTAGE: 480
PHASE: 3 PHASE
WIRE: 4 WIRE

BUSS: 225A
MAINS: 200A MCB
MOUNTING: SURFACE
LOCATION: DEWATERING BLD
FED FROM: MCC-2
AIC RATING: 45K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 1

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1	1				10.0	20.0			10.0				2	
1	3	SPACE HEATER "EUH-1"	50	3	10.0		20.0		10.0	3	50	SPACE HEATER "EUH-2"	4	2
1	5				10.0			20.0	10.0				6	
3	7				10.0	20.0			10.0				8	
3	9	SPACE HEATER "EUH-3"	50	3	10.0		20.0		10.0	3	50	SPACE HEATER "EUH-4"	10	4
3	11				10.0			20.0	10.0				12	
	13					0.0							14	
	15	SPACE		3			0.0			3		SPACE	16	
	17							0.0					18	
	19					0.0							20	
	21	SPACE		3			0.0			3		SPACE	22	
	23							0.0					24	
	25	SPACE		1		0.0				1		SPACE	26	
	27	SPACE		1			0.0			1		SPACE	28	
	29	SPACE		1				0.0		1		SPACE	30	

KVA AMPS

CONNECTED LOAD: 40.0 | 40.0 | 40.0 = 120.0 144.3

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

TOTAL LOAD = 120.0 144.3

Notes:		Notes:	
1	3-#6 AWG., #8 GND., 1"C. TAG NO. PPDW-EUH1		
2	3-#6 AWG., #8 GND., 1"C. TAG NO. PPDW-EUH2		
3	3-#6 AWG., #8 GND., 1"C. TAG NO. PPDW-EUH3		
4	3-#6 AWG., #8 GND., 1"C. TAG NO. PPDW-EUH4		

PANEL "LA"

VOLTAGE: 120/208V
PHASE: 3 PHASE
WIRE: 4 WIRE

BUSS: 225A
MAINS: 150A MCB
MOUNTING: SURFACE
LOCATION: DEWATERING BLD
FED FROM: XFMR "TX-2".
AIC RATING: 10K
LUGS: FEED THRU
C/B TYPE: BOLT-ON
NEMA: 1

NOTES	CKT. NO.	LOAD DESCRIPTION	C/B TRIP	C/B POLE	LOAD KVA	LOAD ØA	LOAD ØB	LOAD ØC	LOAD KVA	C/B POLE	C/B TRIP	LOAD DESCRIPTION	CKT. NO.	NOTES
1	1	LIGHTING - EXIT AND EMER. LIGHTS	20	1	0.3	0.9			0.6	1	20	RECEPT. - ELECTRICAL ROOM	2	1
1	3	LIGHTING - ELE. RM./CONTROL RM.	20	1	0.6		1.2		0.6	1	20	RECEPT. - CONTROL ROOM	4	1
1	5	LIGHTING - BELT PRESS ROOM	20	1	1.0			1.8	0.8	1	20	RECEPT. - CONTROL ROOM	6	1
1	7	LIGHTING - BELT PRESS ROOM	20	1	1.0	1.8			0.8	1	20	RECEPT. - CONTROL ROOM	8	1
	9	SPARE	20	1			1.0		1.0	1	20	RECEPT. - BELT PRESS ROOM	10	1
	11	SPARE	20	1				1.0	1.0	1	20	RECEPT. - BELT PRESS ROOM	12	1
	13	SPARE	20	1		0.0				1	20	SPARE	14	
	15	SPARE	20	1			0.0			1	20	SPARE	16	
	17	SPARE	20	1						1	20	SPARE	18	
	19	SPARE	20	1		2.5			2.5	2	30	A/C UNIT FOR ELE. RM., CU-1	20	2
	21	SPARE	20	1			2.5		2.5				22	
5	23	EF-1	20	1	1.1			4.6	3.5	2	45	A/C UNIT FOR CONTROL RM., CU-2	24	3
	25			1	1.1	4.6			3.5				26	
6	27	EF-2	20	1	1.1		4.6		3.5	2	45	WATER HEATER EWH-1	28	4
	29			1	1.1			4.6	3.5				30	

KVA AMPS

CONNECTED LOAD: 9.8 | 9.3 | 12.0 = 31.1 86.3

NOTE:
PROVIDE SURGE PROTECTION DEVICE (SPD) FOR THE PANEL.

TOTAL LOAD = 31.1 86.3

Notes:		Notes:	
1	2_#12 AWG, #12 GND., 3/4"C.	6	2-#10 AWG., #10 GND., 3/4"C. TAG NO. LA-EF2
2	2-#10 AWG., #10 GND., 3/4"C. TAG NO. LA-CU1		
3	2-#6 AWG., #8 GND., 1"C. TAG NO. LA-CU2		
4	2-#6 AWG., #8 GND., 1"C. TAG NO. LA-EWH1		
5	2-#10 AWG., #10 GND., 3/4"C. TAG NO. LA-EF1		

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS. FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL PANEL SCHEDULE-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-42	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-42.dwg Dec 17, 2025 - 4:19pm User: CValdez

CONDUIT AND CABLE SCHEDULE

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
1	MSB-MCC2	3	4"	1/C	3-#600 KCMIL, #1/0 NEUT., #1/0 GND.	480V	EXISTING SWITCHBOARD "MSB"	NEW MCC-2	POWER CABLES
2	MSB-MCC3	2	3.5"	1/C	3-#350 KCMIL, #2 NEUT., #2 GND.	480KV	EXISTING SWITCHBOARD "MSB"	NEW MCC-3	POWER CABLES
3	MDP-VFD1	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.1	POWER CABLES
4	MDP-VFD2	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.2	POWER CABLES
5	MDP-VFD3	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.3	POWER CABLES
6	MDP-VFD4	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.4	POWER CABLES
7	MDP-VFD5	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.5	POWER CABLES
8	MDP-VFD6	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.6	POWER CABLES
9	MDP-VFD7	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.7	POWER CABLES
10	MDP-VFD8	1	2"	1/C	3-#4/0 AWG, #4 GND.	480V	MDP-BL	AERATOR VFD NO.8	POWER CABLES
11	VFD1-ATR1	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.1	AERATOR NO.1 DISCONNECT	POWER / CONTROL CABLES
12	VFD1-ATR2	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.2	AERATOR NO.2 DISCONNECT	POWER / CONTROL CABLES
13	VFD1-ATR3	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.3	AERATOR NO.3 DISCONNECT	POWER / CONTROL CABLES
14	VFD1-ATR4	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.4	AERATOR NO.4 DISCONNECT	POWER / CONTROL CABLES
15	VFD1-ATR5	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.5	AERATOR NO.5 DISCONNECT	POWER / CONTROL CABLES
16	VFD1-ATR6	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.6	AERATOR NO.6 DISCONNECT	POWER / CONTROL CABLES
17	VFD1-ATR7	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.7	AERATOR NO.7 DISCONNECT	POWER / CONTROL CABLES
18	VFD1-ATR8	1	2-1/2"	1/C	3-#4/0 AWG, 10-#14 AWG., #4 GND.	480V	AERATOR VFD NO.8	AERATOR NO.8 DISCONNECT	POWER / CONTROL CABLES
19	HSB-ATS1	1	2-1/2"	1/C	3-#2/0 AWG, #4 NEUT., #4 GND.	480V	EXISTING PANEL "HSB"	NEW ATS-1	POWER CABLE
20	G1-ATS1	1	2-1/2"	1/C	3-#2/0 AWG, #4 NEUT., #4 GND.	480V	GENERATO "G1"	NEW ATS-1	POWER CABLE
21	ATS1-CHL-H	1	2-1/2"	1/C	3-#2/0 AWG, #4 NEUT., #4 GND.	480V	NEW ATS-1	NEW POWR PANEL "CHL-H"	POWER CABLE
22	MC2-DWP101	1	1"	1/C	3-#8 AWG,4-#14 AWG., #10 GND.	480V	NEW MCC-2	DISC. FOR DEWATERING FEED PUMP DWP-101	POWER CABLE
23	*MC2-DWP102*	1	1"	1/C	3-#8 AWG,4-#14 AWG., #10 GND.	480V	NEW MCC-2	DISC. FOR DEWATERING FEED PUMP DWP-102	POWER CABLE
24	MC2-BFP1/CP	1	1-1/2"	1/C	3-#3 AWG, #6 GND.	480V	NEW MCC-2	BELT FILTER PRESS NO.1 CONTROL PANEL	POWER CABLE
25	MC2-BFP2/CP	1	*1-1/2"*	-	-	480V	*NEW MCC-2*	*BELT FILTER PRESS NO.2 CONTROL PANEL*	CONDUIT ONLY
26	MC2-CVR/CP	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-2	CONVEYOR CONTROL PANEL	POWER CABLE
27	MC2-PLR1/CP	1	1"	1/C	3-#8 AWG, #10 GND.	480V	NEW MCC-2	POLYMER NO.1 CONTROL PANEL	POWER CABLE
28	MC2-PLR2/CP	1	1"	1/C	3-#8 AWG, #10 GND.	480V	NEW MCC-2	POLYMER NO.2 CONTROL PANEL	POWER CABLE
29	MC2-BP/CP	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-2	BOOSTER PUMP CONTROL PANEL	POWER CABLE
30	MC2-PP-DW	1	1-1/2"	1/C	3-#3 AWG, #6 NEUT., #6 GND.	480V	NEW MCC-2	NEW POWER PANEL "PP-DW"	POWER CABLE
31	MC2-TX2	1	1"	1/C	3-#4 AWG, #8 GND.	480V	NEW MCC-2	LIGHTING TRANSFORMER "TX-2"	POWER CABLE
32	TX2-PNP--LA	1	2"	1/C	4-#2 AWG, #6 GND.	208V	LIGHTING TRANSFORMER "TX-2"	NEW LIGHTING PANEL "LA"	POWER CABLE
33	MC3-RP1	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-3	J-BOX FOR RAS PUMP NO.1	POWER CABLE
34	MC3-RP2	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-3	J-BOX FOR RAS PUMP NO.2	POWER CABLE
35	MC3-RP3	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-3	J-BOX FOR RAS PUMP NO.3	POWER CABLE
36	MC3-WP1	1	1"	1/C	3-#10 AWG, #10 GND.	480V	NEW MCC-3	WAS PUMP NO.1 DISCONNECT	POWER CABLE
37	MC3-WP2	1	1"	1/C	3-#10 AWG, #10 GND.	480V	NEW MCC-3	WAS PUMP NO.2 DISCONNECT	POWER CABLE
38	MC3-TX3	1	1"	1/C	3-#6 AWG, #8 GND.	480V	NEW MCC-3	LIGHTING TRANSFORMER "TX-3"	POWER CABLE
39	TX3-PNP-LP	1	2"	1/C	4-#2 AWG, #6 GND.	480V	LIGHTING TRANSFORMER "TX-3"	NEW LIGHTING PANEL "LP"	POWER CABLE
40									
41									
42									
43									
44									
45									
46									
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48									
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50									

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

GAI
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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
CONDUIT SCHEDULE-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-43	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\HB113_E-43.dwg Dec 17, 2025 - 4:19pm User: CValdez

CONDUIT AND CABLE SCHEDULE

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
200	FO-BCR	1	2"	12/C	12 STRANDS SINGLE MODE FIBER OPTIC CABLE	24V	LIFT STATION CONTROL PANEL	BARSCREEN FIBER OPTIC ENCLOSURE	FIBER OPTIC ETHERNET COMMUNICATION
201	FO-BFP	1	2"	12/C	12 STRANDS SINGLE MODE FIBER OPTIC CABLE	24V		BELT FILTER PRESSS NO. 1 CONTROL PANEL	FIBER OPTIC ETHERNET COMMUNICATION
202	LT-1	1	1"	1 PR	#16 AWG	24V	LT-1 RADAR LEVEL TRANSMITTER	EXISTING LIFT STATION CHAMBER NO.1 J-BOX	MANUFACTURER TRANSMITTERS CONTINUOUS CABLES TO LIFT STATION PLC CONTROL PANEL
203	LT-2	1	1"	1 PR	#16 AWG	24V	LT-2 RADAR LEVEL TRANSMITTER	EXISTING LIFT STATION CHAMBER NO.2 J-BOX	MANUFACTURER CABLE ROUTE TO EXISING LS CHAMBER NO. 1 J-BOX TO LIFT STATION CONTROL PANEL
204	FLT-1	1	1"	4/C	#14 AWG, W/#14 GND.	120V	FLOAT SWITCHES	EXISTING LIFT STATION CHAMBER NO.1 J-BOX	ROUTE FLT-1 TO EXISTING ls CHAMBER NO. 2 J-BOX
205	FLT-2	1	1"	4/C	#14 AWG, W/#14 GND.	120V	FLOAT SWITCHES	EXISTING LIFT STATION CHAMBER NO.2 J-BOX	
206	LS-FLT /C	1	1"	9/C	#14 AWG, W/#14 GND.	24V	EXISTING LIFT STATION CHAMBER NO. 1 J-BOX	LIFT STATION PLC CONTROL PANEL	
207	LS--INST /I	1	1"	2 PR	#16 AWG	24V	EXISTING LIFT STATION CHAMBER NO. 2 J-BOX		
208	LSP-1 /C	1	1-1/2"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 1, MCC-1	LIFT STATION PLC CONTROL PANEL	
209	LSP-1 /I	1	1"	1 PR	#16 AWG	24V			
210	LSP-2 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 2, MCC-1	LIFT STATION PLC CONTROL PANEL	
211	LSP-2 /I	1	1"	1 PR	#16 AWG	24V			
212	LSP-3 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 3, MCC-1	LIFT STATION PLC CONTROL PANEL	
213	LSP-3 /I	1	1"	1 PR	#16 AWG	24V			
214	LSP-4 /C	1	1-1/2"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 4, MCC-1	LIFT STATION PLC CONTROL PANEL	
215	LSP-4 /I	1	1"	1 PR	#16 AWG	24V			
216	LSP-5 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 5 , MCC-1	LIFT STATION PLC CONTROL PANEL	
217	LSP-5 /I	1	1"	1 PR	#16 AWG	24V			
218	LSP-6 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	EXISITNG PUMP NO. 6 , MCC-1	LIFT STATION PLC CONTROL PANEL	
219	LSP-6 /I	1	1"	1 PR	#16 AWG	24V			
220	ETH_PM-1	1	1"	CAT6	#23 AWG	24V	EXISITNG POWER MONITOR PM-1, ON SWITCHBOARD	LIFT STATION PLC CONTROL PANEL	COPPER ETHERET CABLE
221	JE-100D	1	1"	4/C	#14 AWG, W/#14 GND.	120V	EXISTING PHASE MONITOR JD-100D MCC-1		
222	ALRM-YI-2/C	1	1"	3/C	#14 AWG, W/#14 GND.	120V	EXISTING LIFT STATION BUILDING EXTERIOR ALARM LIGHT		
223	INSTR. YA-1 /C	1	1"	5/C	#14 AWG, W/#14 GND.	120V	EXISTING LIFT STATION BUILDING DOOR MOTION SWITCH		
224	ETH-INF_LS	1	1"	CAT6	#23 AWG	24V	LIFT STATION CONTROL PANEL	OPERATION ROOM NETWORK	COPPER ETHERET CABLE
225	FO-RAS/WAS	1	2"	12/C	12 STRANDS SINGLE MODE FIBER OPTIC CABLE	24V	LIFT STATION CONTROL PANEL	RAS/WAS CONTROL PANEL	FIBER OPTIC ETHERNET COMMUNICATION
226	THKNR-101/C	1	1-1/2"	10/C	#14 AWG, W/#14 GND.	120V	EXISTING MCC-1, SLUDGE THICKENER PUMP NO. 101 (TSP-101)	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
227	THKNR-102/C	1	1-1/2"	10/C	#14 AWG, W/#14 GND.	120V	EXISTING MCC-1, SLUDGE THICKENER PUMP NO. 102 (TSP-102)		
228	CLR-1 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING CLARIFIER NO. 1 CONTROL PANEL	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
229	CLR-2 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING CLARIFIER NO. 2 CONTROL PANEL	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
230	CLR-3/C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING CLARIFIER NO. 3 CONTROL PANEL	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
231	SCMP-1/2 /C	1	1"	10/C	#14 AWG, W/#14 GND.	120V	EXISTING SCUM PUMP NO. 1 & NO. 2 CONTROL PANEL	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
232	BS1_INLVLV /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BARSCREEN NO. 1 INLET VALVE	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
233	BS1_EFFVLV /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BARSCREEN NO. 1 EFFLUENT VALVE	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
234	BS2_INLVLV /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BARSCREEN NO. 2 INLET VALVE	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
235	BS2_EFFVLV /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BARSCREEN NO. 2 EFFLUENT VALVE	LIFT STATION CONTROL PANEL	EXTEND EXISTING CONDUIT TO NEW LIFT STATION AS REQUIRED
236					NOT USED				
237					NOT USED				
238					NOT USED				
239					NOT USED				
240					NOT USED				

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
CONDUIT SCHEDULE-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-44 | SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-44.dwg Dec 17, 2025 - 4:20pm User: CValdez

CONDUIT AND CABLE SCHEDULE

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
241	RAS-LT-1	1	1"	1 PR	#16 AWG	24V	RAS-LT-1 RADAR LEVEL TRANSMITTER	RAS/WAS INSTR. JBOX-1	MANUFACTURER TRANSMITTERS CONTINUOUS CABLES TO RAS/WAS PLC CONTROL PANEL
242	RAS-FLT-1	1	1"	4/C	#14 AWG, W/#14 GND.	120V	FLOAT SWITCHES		ROUT LT-2 VIA PULL BOX
243	RAS-JBOX-1 /C	1	1"	5/C	#14 AWG, W/#14 GND.	24V	RAS/WAS STATION INSTR. JBOX-1	RAS/WAS PUMPS PLC CONTROL PANEL	
244	RAS--JBOX-1 /I	1	1"	1 PR	#16 AWG	24V			
245	RAS-1 /C	1	1-1/2"	17/C	#14 AWG, W/#14 GND.	120V	RAS PUMP NO. 1, MCC-1	RAS/WAS PUMPS PLC CONTROL PANEL	
246	RAS-1 /I	1	1"	2 PR	#16 AWG	24V			
247	RAS-CTRL-1 /C	1	1"	12/C	#14 AWG, W/#14 GND.	120V	RAS PUMP LSP-1 J-BOX	PUMP LSP-2 J-BOX	
248	RAS-2 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	RAS PUMP NO. 2, MCC-1	RAS/WAS PUMPS PLC CONTROL PANEL	
249	RAS-2 /I	1	1"	2 PR	#16 AWG	24V			
250	RAS-CTRL-2 /C	1	1"	5/C	#14 AWG, W/#14 GND.	120V	RAS PUMP LSP-2 J-BOX	PUMP LSP-3 J-BOX	
251	RAS-3 /C	1	1"	17/C	#14 AWG, W/#14 GND.	120V	RAS PUMP NO. 3, MCC-1	RAS/WAS PUMPS PLC CONTROL PANEL	
252	RAS-3 /I	1	1"	2 PR	#16 AWG	24V			
253	RAS-203	1	1"	19/C	#14 AWG, W/#14 GND.	120V	RAS PUMP LSP-1 J-BOX	RAS/WAS PUMPS PLC CONTROL PANEL	
254	WAS-1 /P	1	2"	1/C	3 #8 AWG, W/#8 GND.	480V	WAS PUMP NO. 1 DIS-CONNECT	WAS PUMP NO. 1 MCC-3	
				5/C	2 #12 AWG, 2#14 AWG, W/#14 GND.	120V			
255	WAS-1 /C	1	1-1/2"	17/C	#14 AWG, W/#14 GND.	120V	WAS PUMP NO. 1, MCC-3	RAS/WAS PUMPS PLC CONTROL PANEL	
256	WAS-1 /I	1	1"	2 PR	#16 AWG	24V			
257	WAS-2 /P	1	2"	1/C	3 #8 AWG, W/#8 GND.	480V	WAS PUMP NO. 2 DIS-CONNECT	WAS PUMP NO. 2 MCC-3	
				5/C	2#12 AWG, 2#14 AWG, W/#14 GND.	120V			
258	RAS-ETH_PM-1	1	1"	CAT6	#23 AWG	24V	POWER MONITOR PM-1, MCC-3	RAS/WAS PUMPS PLC CONTROL PANEL	COPPER ETHERET CABLE
259	JE-100D	1	1"	4/C	#14 AWG, W/#14 GND.	120V	PHASE MONITOR JD-100D MCC-3		
260	FE-1	1	1"	1 PR	#16 AWG	24V	FE-1 FLOW METER SENSOR	FIT-1 FLOW TRANSMITTER	MANUFACTURER CABLE
261	FIT-1	1	1"	3/C	2 #12 AWG, W/#12 GND.	120V	FIT-1 FLOW TRANSMITTER	RAS/WAS PLC CONTROL PANEL	
				1 PR	#16 AWG	24V			
262	AE-1	1	1"	1 PR	#16 AWG	24V	AE-1 EFFLUENT CHLORINE ANALYZER SENSOR	AIT-1 CHLORINE ANALYZER TRANSMITTER	MANUFACTURER CABLE
263	AIT-1 /I	1	1"	1 PR	#16 AWG	24V	AIT-1 EFFLUENT CHLORINE ANALYZER TRANSMITTER	AIT INSTR. JBOX-1	
264	AE-2	1	1"	1 PR	#16 AWG	24V	AE-2 EFFLUENT CHLORINE ANALYZER SENSOR	AIT-2 CHLORINE ANALYZER TRANSMITTER	MANUFACTURER CABAE
265	AIT-2 /I	1	1"	1 PR	#16 AWG	24V	AIT-2 EFFLUENT CHLORINE ANALYZER TRANSMITTER	AIT INSTR. JBOX-1	
266	AE-3	1	1"	1 PR	#16 AWG	24V	AE-3 EFFLUENT CHLORINE ANALYZER SENSOR	AIT-3 CHLORINE ANALYZER TRANSMITTER	MANUFACTURER CABAE
267	AIT-3 /I	1	1"	1 PR	#16 AWG	24V	AIT-3 EFFLUENT CHLORINE ANALYZER TRANSMITTER	AIT INSTR. JBOX-1	
268	AE-4	1	1"	1 PR	#16 AWG	24V	AE-4 EFFLUENT CHLORINE ANALYZER SENSOR	AIT-4 CHLORINE ANALYZER TRANSMITTER	MANUFACTURER CABAE
269	AIT-4 /I	1	1"	1 PR	#16 AWG	24V	AIT-4 EFFLUENT CHLORINE ANALYZER TRANSMITTER	AIT INSTR. JBOX-1	
270	AE-5	1	1"	1 PR	#16 AWG	24V	AE-5 EFFLUENT CHLORINE ANALYZER SENSOR	AIT-5 CHLORINE ANALYZER TRANSMITTER	MANUFACTURER CABAE
271	AIT-5 /I	1	1"	1 PR	#16 AWG	24V	AIT-5 EFFLUENT CHLORINE ANALYZER TRANSMITTER	AIT INSTR. JBOX-1	
272	AIT-INSTR. /I	1	1"	5 PR	#16 AWG	24V	AIT INSTR. JBOX-1	DISINFECTION PLC CONTROL PANEL	
273	AIT-INSTR. /C	1	1"		SPARE	24V	AIT INSTR. JBOX-1		
274	CL2-LT-1	1	1"	1 PR	#16 AWG	24V	CL2-LT-1 TANK LEVEL TRANSMITTER	SODIUM HYPOCHLORITE TANKS INSTR. J-BOX-1	
275	CL2-LT-2	1	1"	1 PR	#16 AWG	24V	CL2-LT-2 TANK LEVEL TRANSMITTER		
276	SHST /C	1	1"	6/C	#14 AWG, W/#14 GND.		SODIUM HYPOCHLORITE TANKS INSTR. JBOX-1	DISINFECTION PLC CONTROL PANEL	
277	SHST /I	1	1"	2 PR	#16 AWG	24V			
278	SHFP-1 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPCHLORITE FEED PUMP NO. 1, SHFP-1	SODIUM HYPOCHLORITE FEED PUMP J-BOX	
279	SHFP-1 /I	1	1"	2 PR	#16 AWG	24V			
280	SHFP-2 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPCHLORITE FEED PUMP NO. 2, SHFP-2	SODIUM HYPOCHLORITE FEED PUMP J-BOX	
281	SHFP-2 /I	1	1"	2 PR	#16 AWG	24V			
282	SHFP-3 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPCHLORITE FEED PUMP NO. 3, SHFP-3	SODIUM HYPOCHLORITE FEED PUMP J-BOX	
283	SHFP-3 /I	1	1"	2 PR	#16 AWG	24V			
284	CHM-SHFP /C	1	1"	20/C	#14 AWG, W/#14 GND.	120V	SODIUM HYPOCHLORITE FEED PUMP J-BOX	DISINFECTION PLC CONTROL PANEL	
285	CHM-SHFP /I	1	1"	6 PR	#16 AWG	24V			
286	FO-CL2	1	2"	12/C	12 STRANDS SINGLE MODE FIBER OPTIC CABLE	24V	DISINFECTION CONTROL PANEL	EXSTING NPW CONTROL PANEL	FIBER OPTIC ETHERNET COMMUNICATION
287					NOT USED				
288					NOT USED				
289					NOT USED				
290					NOT USED				

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
CONDUIT SCHEDULE-III

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-45 | SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-45.dwg Dec 17, 2025 - 4:20pm User: CValdez

CONDUIT AND CABLE SCHEDULE

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
291	MXR-1 /C	1	1"	10/C	#14 AWG, W/#14 GND.	120V	480VAC CHLORINE MIXER STARTER CONTROL PANEL CM-1	MIXER CONTROL J-BOX	
292	MXR-2 /C	1	1"	10/C	#14 AWG, W/#14 GND.	120V	480VAC CHLORINE MIXER STARTER CONTROL PANEL CM-1	MIXER CONTROL J-BOX	
293	MEXRS /C	1	1	20C	#14 AWG, W/#14 GND.	24V	MIXERS CONTROL J-BOX	DISINFECTION PLC CONTROL PANEL	
294	SBS-LT-1	1	1"	1 PR	#16 AWG	24V	SODIUM BISULFITE TANK LEVEL TRANSMITTER SBS-LT-1	SODIUM BISULFITE FEED PUMP J-BOX-1	EXISTING LEVEL TRANSMITERS CONTRACTOR TO PROVIDE NEW CONDUITS AND WIRES
295	SBS-LT-2	1	1"	1 PR	#16 AWG	24V	SODIUM BISULFITE TANK LEVEL TRANSMITTER SBS-LT-2		
296	SBSST /I	1	1"	2 PR	#16 AWG	24V	SODIUM BISULFITE TANKS INSTR. JBOX-1	SODIUM BISULFITE FEED PUMP J-BOX-1	
297	BSFP-1 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	SODIUM BISULFITE PUMP CONTROLLER BOARD SBSFP-1	SODIUM BISULFITE FEED PUMP J-BOX-1	
298	BSFP-1 /I	1	1"	2 PR	#16 AWG	24V			
299	BSFP-2 /C	1	1"	6/C	#14 AWG, W/#14 GND.	120V	SODIUM BISULFITE PUMP CONTROLLER BOARD SBSFP-2	SODIUM BISULFITE FEED PUMP J-BOX-1	
300	BSFP-2 /I	1	1"	2 PR	#16 AWG	24V			
301	CHM-BSFP /C	1	1-1/2"	13/C	#14 AWG, W/#14 GND.	120V	SODIUM BISULFITE FEED PUMP J-BOX-1	DISINFECTION PLC CONTROL PANEL	
302	CHM-BSFP /I	1	1"	4PR	#16 AWG	24V			
303	FIT-1	1	1"	1 PR	#16 AWG	24V	FIT-1 EFFLUENT FLOW METER	EFFLUENT J-BOX-1	FIT-1 RE-USE EXISTING CONDUIT, CONTRACTOR TO EXTEND CONDUIT TO DISINFECTION PLC CONTROL PANEL
304	FIT-1 /I	1	1"	1 PR	#16 AWG	24V	EFFLUENT J-BOX-1	DISINFECTION PLC CONTROL PANEL	
305	EFF-AS-1 /C	1	1"	3/C	#12 AWG, W/#12 GND.	120V			ROUTE WIRES TO EFFLUENT AUTO SAMPLER
306	EFF-AS-1	1	1"	3/C	#12 AWG, W/#12 GND.	120V	EFFLUENT AUTO SAMPLER AS-1	EFFLUENT J-BOX-1	
307	LIT-1	1	1"	1 PR	#16 AWG	24V	LT-1 RADAR LEVEL TRANSMITTER	BELT FILTER PRESS NO. 1 CONTROL PANEL	MANUFACTURER CABLE
308	FE-1	1	1"	1 PR	#16 AWG	24V	FE-1 FLOW TRANSMITTER SENSOR	FIT-1 FLOW TRANSMITTER	MANUFACTURER CABLE
309	FIT-1 /C	1	1"	1 PR	#16 AWG	24V	FIT-1 FLOW TRANSMITTER	BELT FILTER PRESS NO. 1 CONTROL PANEL & LIGHTING PANEL	
				3 /C	#12 AWG, W/#12 GND.	120V			120VAC ROUTE TO LIGHT PANEL
310	DWP-101 /C	1	1"	12/C	#14 AWG, W/#14 GND.	120V	DEWATERING SLUDGE FEED PUMP DWP-101 MCC-2	BELT FILTER PRESS NO. 1 CONTROL PANEL	
311	DWP-101 /I	1	1"	2 PR	#16 AWG	120V			
312	PSH-101	1	3/4"	3/C	#14 AWG, W/#14 GND.	24V	PSH-101 PRESSURE SWITCH	BWP-101 INSTR. JBOX	
313	BD-101 /P	1	1"	1/C	3#12 AWG, W/#12 GND.	480V	BELT DRIVE BD-101 MOTOR	BELT FILTER PRESS NO. 1 CONTROL PANEL	
314	TSH-101			3/C	#12 AWG, W/#12 GND.	120V			
315	XS-101A /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	XS-101A BELT PRESS ALARMS	BWP-101 INSTR. JBOX	
316	ESD-101 /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	ESD-101 AND TC-101 EMERGENCY SHUTDOWN	BWP-101 INSTR. JBOX	
317	TC-101			3/C	#14 AWG, W/#14 GND.	120V		BWP-101 INSTR. JBOX	
318	BWP-101 /P	1	1"	1/C	3#12 AWG, W/#12 GND.	480V	BWP-101 BOOSTER PUMP WASH WATER	BELT FILTER PRESS NO. 1 CONTROL PANEL	
319	PSL-101	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	PSL-101 LOW PRESSURE SWITCH	BWP-101 INSTR. JBOX	
320	SV-101	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	SV-101 SOLENOID VALVE		
321	BWP-101 /C	1	1"	22/C	#14 AWG, W/#14 GND.	120V	BWP-101 BOOSTER PUMP WASH WATER	BELT FILTER PRESS NO. 1 CONTROL PANEL	
322	HPU-101 /P	1	1"	1/C	3 #12 AWG, W/#12 GND.	480V	HYDRAULIC POWER UNIT HPU-101 MOTOR		
323	HTR-1O1A			3/C	#12 AWG, W/#12 GND.	120V			HYDRAULIC MOTOR SPACE HEATER
324	TSH-101A			2/C	#14 AWG	120V			HYDRAULIC MOTOR TEMP. SW.
325	PSL-101A	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	PSL-101A LOW PRESSURE SWITCH		HYDRAULIC LOW PRESSURE
326	PAU-101 /I	1	1"	3 PR	#16 AWG	24V	LCP-101 POLYMER SYSTEM LOCAL CONTROL PANEL	BELT FILTER PRESS NO. 1 CONTROL PANEL	
327	PAU-101 /C	1	1-1/2"	14/C	#14 AWG, W/#14 GND.	120V			
328	CNV-101 /P	1	1"	1/C	3 #12 AWG, W/#12 GND.	480V	HORIZONTAL CONVEYOR SC-101 MOTOR	HORIZONTAL AND INCLINE CONVEYORS CONTROL PANEL	
329	TSH-101			3/C	#12 AWG, W/#12 GND.	120V			
330	ZE-101	1	3/4"	1 PR	#16 AWG	24V	ZS-101	ZS-101 MILTRONIC MFA-4P MOTION DETECTION	MANUFACTURER CABLE
331	ZS-101 /C	1	1"	5/C	#14 AWG, W/#14 GND.	120V	ZS-101 MILTRONIC MFA-4P MOTION DETECION	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	
				1/C	3 #12 AWG, W/#12 GND.	120V			
332	ESD-101 /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	ESD-101 AND TC-101 EMERGENCY SHUTDOWN	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	
333	TC-101			3/C	#14 AWG, W/#14 GND.	120V			
334	CNV-102 /P	1	1"	1/C	3 #12 AWG, W/#12 GND.	480V	HORIZONTAL CONVEYOR SC-102 MOTOR	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	
335	TSH-102			3/C	#12 AWG, W/#12 GND.	120V			
336	ZE-102	1	3/4"	1 PR	#16 AWG	24V	ZS-102	ZS-102 MILTRONIC MFA-4P MOTION DETECTION	MANUFACTURER CABLE
337	ZS-102 /C	1	1"	5/C	#14 AWG, W/#14 GND.	120V	ZS-102 MILTRONIC MFA-4P MOTION DETECION	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	
				1/C	3 #12 AWG, W/#12 GND.	120V			
338	ESD-102 /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	ESD-102 AND TC-102 EMERGENCY SHUTDOWN	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	
339	TC-102			3/C	#14 AWG, W/#14 GND.	120V			
340	CNV-101/102 /C	1	1"	25/C	#14 AWG, W/#14 GND.	120V	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	BELT FILTER PRESS NO. 1 CONTROL PANEL	
341	ETH-BFP-2	1	1"	CAT6	#23 AWG	24V	BELT FITLER PRESS NO. 1 CONTROL PANEL (FUTURE)	BELT FILTER PRESSS NO. 2 CONTROL PANEL (FUTURE)	COPPER ETHERET CABLE
342	FIT-2 /C	1	1"	1 PR	#16 AWG	24V	FIT-2 FLOW TRANSMITTER	BELT FILTER PRESS NO. 1 CONTROL PANEL & LIGHTING PANEL	
				3 /C	#12 AWG, W/#12 GND.	120V			ROUTE 120VAC TO LIGHT PANEL
343					NOT USED				
344					NOT USED				

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
CONDUIT SCHEDULE-IV

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-46	SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-46.dwg Dec 17, 2025 - 4:20pm User: CValdez

CONDUIT AND CABLE SCHEDULE

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
346	LT-3	1	1"	1 PR	#16 AWG	24V	LT-3 LEVEL TRANSMITTER	AERATOR PLC CONTROL PANEL	MANUFACTURER CABLE
347	LT-4	1	1"	1 PR	#16 AWG	24V	LT-4 LEVEL TRANSMITTER		MANUFACTURER CABLE
348	LT-7	1	1"	1 PR	#16 AWG	24V	LT-7 LEVEL TRANSMITTER		MANUFACTURER CABLE
349	LT-8	1	1"	1 PR	#16 AWG	24V	LT-8 LEVEL TRANSMITTER		MANUFACTURER CABLE
350	AER-LTS /C	1	2"	8 PR	#16 AWG	24V	AERATOR INSTRUMENT J-BOX		
351	AER-LTS /P	1	2"	1/C	12 #12 AWG, W/#12 GND.	120V	AERATOR INSTRUMENT J-BOX	LIGTING PANEL HBL	
352	AER-1 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 1 VFD	AERATOR PLC CONTROL PANEL	
353	AER-1 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 1 VFD		
354	AER-2 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 2 VFD		
355	AER-2 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 2 VFD		
356	AER-3 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 3 VFD		
357	AER-3 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 3 VFD		
358	AER-4 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 4 VFD		
359	AER-4 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 4 VFD		
360	AER-5 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 5 VFD		
361	AER-5 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 5 VFD		
362	AER-6 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 6 VFD		
363	AER-6 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 6 VFD		
364	AER-7 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 7 VFD		
365	AER-7 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 7 VFD		
366	AER-8 /C	1	1"	14/C	#14 AWG, W/#14 GND.	120V	AERATOR NO. 8 VFD		
367	AER-8 /I	1	1"	2 PR	#16 AWG	24V	AERATOR NO. 8 VFD		
368	ETH-AER	1	1"	CAT6	#23 AWG	24V	AERATOR PLC CONTROL PANEL	EXISTING BLOWER CONTROL PANEL	COPPER ETHERET CABLE
369					NOT USED				
370					NOT USED				
371					NOT USED				
371					NOT USED				
372					NOT USED				
373					NOT USED				
374					NOT USED				
375					NOT USED				
376					NOT USED				
377					NOT USED				
378					NOT USED				
379					NOT USED				
380					NOT USED				

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A	08/18/25	60% SUBMITTAL	

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
CONDUIT SCHEDULE-V

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-47

SHEET NO. 172 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-47.dwg Dec 17, 2025 - 4:20pm User: CValdez

CONDUIT AND CABLE SCHEDULE (FUTURE BELT FILTER PRESS NO. 2)

ITEM NO.	CIRCUIT TAG.	CONDUIT QUANTITY	CONDUIT SIZE	# CONDS PAIRS/TRIADS	CONDUCTOR SIZE	VOLTAGE LEVEL	FROM	TO	REMARKS
381	DWP-102 /C	1	1"	12/C	#14 AWG, W/#14 GND.	120V	DEWATERING SLUDGE FEED PUMP DWP-102 MCC-2	BELT FILTER PRESS NO. 2 CONTROL PANEL	
382	DWP-102 /I	1	1"	2 PR	#16 AWG	24V			
383	PSH-102	1	3/4"	3/C	#14 AWG, W/#14 GND.	24V	PSH-102 PRESSURE SWITCH		
384	BD-102 /P	1	1"	1/C	3#12 AWG, W/#12 GND.	480V	BELT DRIVE BD-102 MOTOR	BELT FILTER PRESS NO. 1 CONTROL PANEL	
385	TSH-102			3/C	#12 AWG, W/#12 GND.	120V			
386	XS-102A /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	XS-102A BELT PRESS ALARMS	BWP-102 INSTR. JBOX	
387	ESD-102 /C	1	3/4"	8/C	#14 AWG, W/#14 GND.	120V	ESD-102 AND TC-102 EMERGENCY SHUTDOWN	BWP-102 INSTR. JBOX	
388	TC-102			3/C	#14 AWG, W/#14 GND.	120V		BWP-102 INSTR. JBOX	
389	BWP-102 /P	1	1"	1/C	3#12 AWG, W/#12 GND.	480V	BWP-102 BOOSTER PUMP WASH WATER	BELT FILTER PRESS NO. 1 CONTROL PANEL	
390	PSL-102	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	PSL-102 LOW PRESSURE SWITCH	BWP-102 INSTR. JBOX	
391	SV-102	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	SV-102 SOLENOID VALVE		
392	BWP-102 /C	1	1"	22/C	#14 AWG, W/#14 GND.	120V	BWP-102 BOOSTER PUMP WASH WATER		
393	HPU-102 /P	1	1"	1/C	3 #12 AWG, W/#12 GND.	480V	HYDRAULIC POWER UNIT HPU-102 MOTOR	BELT FILTER PRESS NO. 1 CONTROL PANEL	
394	HTR-1O1A			3/C	#12 AWG, W/#12 GND.	120V			HYDRAULIC MOTOR SPACE HEATER
395	TSH-102A			2/C	#14 AWG	120V			HYDRAULIC MOTOR TEMP. SW.
396	PSL-102A	1	3/4"	3/C	#14 AWG, W/#14 GND.	120V	PSL-102A LOW PRESSURE SWITCH		HYDRAULIC LOW PRESSURE
397	PAU-102 /I	1	1"	3 PR	#16 AWG	24V	LCP-102 POLYMER SYSTEM LOCAL CONTROL PANEL	BELT FILTER PRESS NO. 2 CONTROL PANEL	
398	PAU-102 /C	1	1-1/2"	14/C	#14 AWG, W/#14 GND.	120V			
399	BFP2_CNV /C	1	1"	25/C	#14 AWG, W/#14 GND.	120V	HORIZONTAL AND INCLINE CONVERORS CONTROL PANEL	BELT FILTER PRESS NO. 2 CONTROL PANEL	
400					NOT USED				
401					NOT USED				
402					NOT USED				
403					NOT USED				
404					NOT USED				
405					NOT USED				
406					NOT USED				
407					NOT USED				
408					NOT USED				
409					NOT USED				
410					NOT USED				
411					NOT USED				
412					NOT USED				
413					NOT USED				
414					NOT USED				
415					NOT USED				

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A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

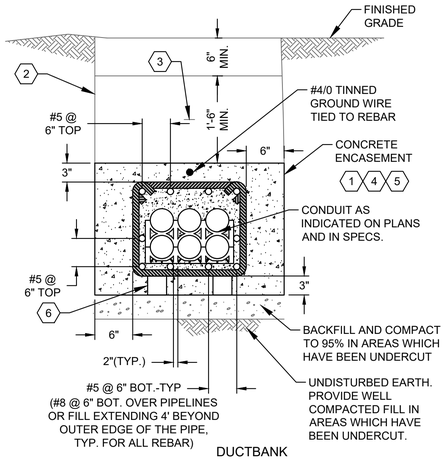
ELECTRICAL
CONDUIT SCHEDULE-VI

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

E-48 | SHEET NO. 172 OF 254

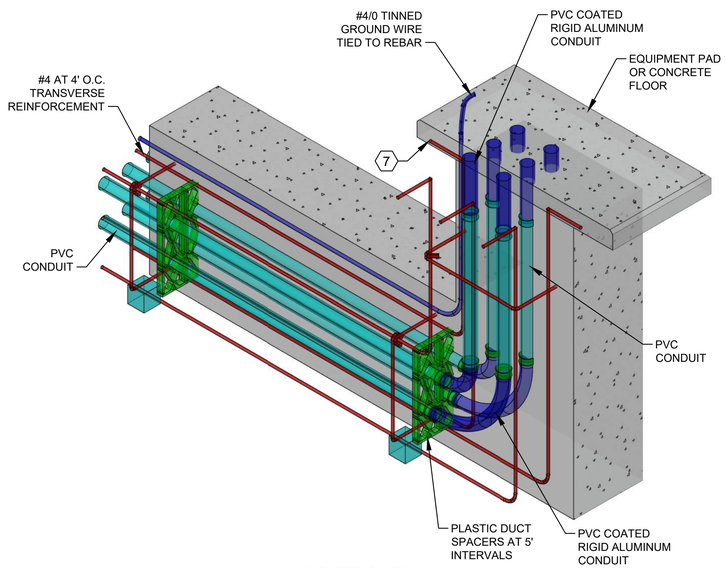
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-48.dwg Dec 17, 2025 - 4:20pm User: CValdez



DUCTBANK

SECTION 1 / NOT TO SCALE / -



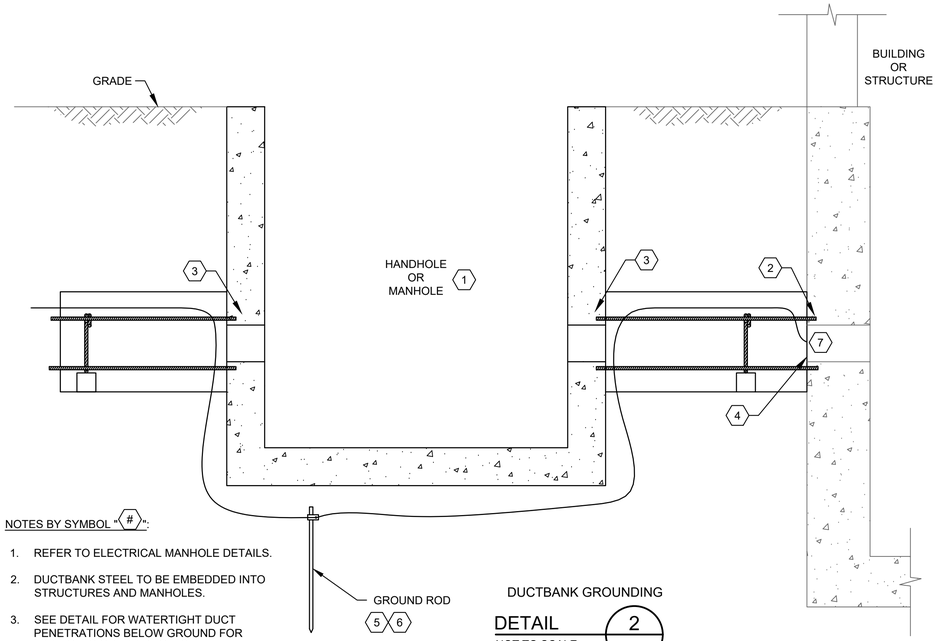
ISOMETRIC VIEW

NOTES BY SYMBOL "(#)":

1. PROVIDE MIN. 3 INCHES CONCRETE COVER OVER AND UNDER REINFORCEMENT CAGE AND 6 INCHES ON EACH SIDE.
2. NATIVE FILL TO A MINIMUM OF 18". ABOVE DUCTBANK TOP 6" TO BE TOPSOIL. NATIVE FILL SHALL BE CLEARED OF ALL DEBRIS AND ROCKS LARGER THAN 2". COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 90 PERCENT OF STANDARD PROCTOR (ASTM D 698) DENSITY, UNLESS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES. IF DUCT BANK IS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES, COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
3. PLACE RED WARNING TAPE ABOVE DUCTBANK HALF-WAY BETWEEN CONCRETE AND GRADE LEVEL. REFER TO SPEC SECTION 16600 [26 05 43] FOR ADDITIONAL REQUIREMENTS.
4. REFER TO CONCRETE SPECIFICATIONS FOR MIX DESIGN.
5. RED DYE TO BE MIXED IN CONCRETE BEFORE PLACEMENT.
6. 3"X3"X3" CONCRETE BLOCK TWO ON EACH SIDE MINIMUM TO SUPPORT REBAR CASE PLACED 5'-0" ON CENTER.
7. REBAR EMBEDDED IN EQUIPMENT PAD OR CONCRETE FLOOR MINIMUM OF 6".

REINFORCED CONCRETE ENCASED CONDUIT DUCTBANK

DETAIL 1 / NOT TO SCALE / -

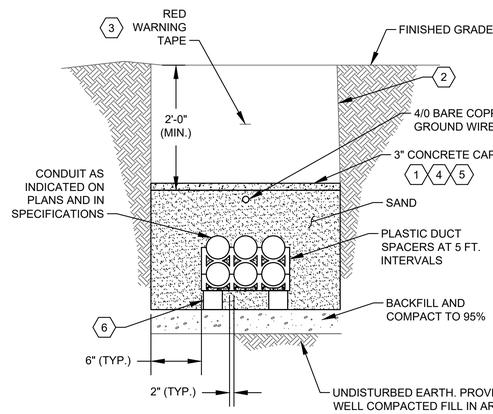


NOTES BY SYMBOL "(#)":

1. REFER TO ELECTRICAL MANHOLE DETAILS.
2. DUCTBANK STEEL TO BE EMBEDDED INTO STRUCTURES AND MANHOLES.
3. SEE DETAIL FOR WATERTIGHT DUCT PENETRATIONS BELOW GROUND FOR MANHOLES OR HANDHOLES.
4. SEE DETAIL FOR WATERTIGHT DUCT PENETRATIONS BELOW GRADE FOR STRUCTURES OTHER MANHOLES OR HANDHOLES.
5. BOND TO MANHOLE/HANDHOLE COVER RING GROUND WIRE IF PRESENT.
6. TIE TO GROUND RING WHERE AVAILABLE.
7. TIE TO SWITCHGEAR, MCC, PANELBOARD, ETC. GROUNDING

DUCTBANK GROUNDING

DETAIL 2 / NOT TO SCALE / -

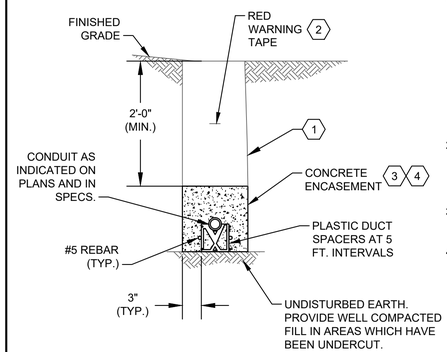


CONCRETE CAP CONDUIT DUCTBANK (SAND ENCASE)

DETAIL 3 / NOT TO SCALE / -

NOTES BY SYMBOL "(#)":

1. PROVIDE MIN. 3 INCHES CONCRETE COVER OVER THE CONDUIT.
2. SELECT FILL TO A MINIMUM OF 2 FT. ABOVE DUCT BANK. COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 90 PERCENT OF STANDARD PROCTOR (ASTM D 698) DENSITY, UNLESS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES. IF DUCT BANK IS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES, COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
3. PLACE RED WARNING TAPE ABOVE DUCTBANK HALF-WAY BETWEEN CONCRETE AND GRADE LEVEL. REFER TO SPEC SECTION 16600 [26 05 43] FOR ADDITIONAL REQUIREMENTS.
4. REFER TO CONCRETE SPECS (03000s) FOR MIX DESIGN.
5. RED DYE TO BE MIXED IN CONCRETE BEFORE PLACEMENT.\
6. 3"X3" CMU BLOCK TWO ON EACH SIDE MINIMUM TO SUPPORT CONDUIT CHAIRS PLACED 5'-0" ON CENTER.

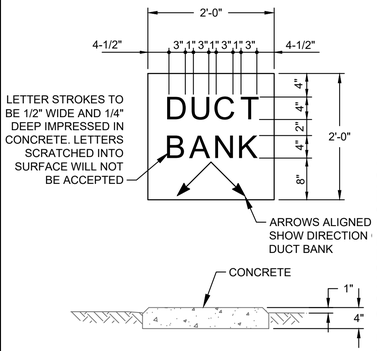


REINFORCED CONCRETE ENCASED CONDUIT DUCTBANK FOR LIGHTING

DETAIL 4 / NOT TO SCALE / -

NOTES BY SYMBOL "(#)":

1. SELECT FILL TO A MINIMUM OF 2 FT. ABOVE DUCT BANK. COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 90 PERCENT OF STANDARD PROCTOR (ASTM D 698) DENSITY, UNLESS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES. IF DUCT BANK IS UNDER EXISTING OR PROPOSED PAVEMENT, OTHER UNDERGROUND UTILITIES, OR STRUCTURES, COMPACT ALL BACKFILL IN 8 IN. LIFTS TO 95 PERCENT OF STANDARD PROCTOR DENSITY.
2. PLACE RED WARNING TAPE ABOVE DUCTBANK HALF-WAY BETWEEN CONCRETE AND GRADE LEVEL. REFER TO SPEC SECTION 16600 [26 05 43] FOR ADDITIONAL REQUIREMENTS.
3. REFER TO CONCRETE SPECS (03000s) FOR MIX DESIGN.
4. RED DYE TO BE MIXED IN CONCRETE BEFORE PLACEMENT.



DUCTBANK MARKER DETAIL LOW VOLTAGE CONDUCTORS

DETAIL 5 / NOT TO SCALE / -

NOTES BY SYMBOL "(#)":

1. INSTALL AT 90' INTERVALS MAXIMUM OR ONE MARKER BETWEEN EACH MANHOLE OR HAND HOLE.

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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL STANDARD DETAILS-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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E-49

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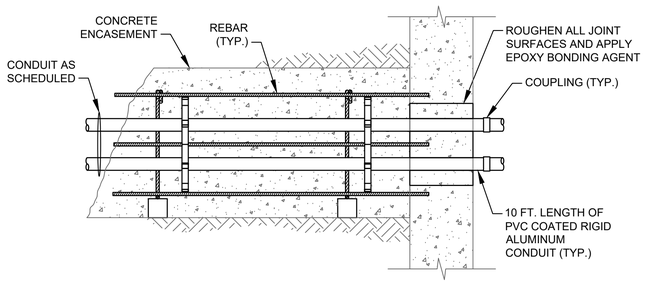
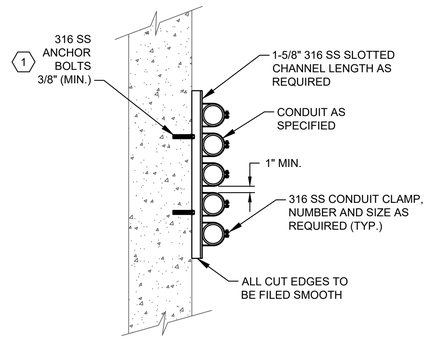
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\H8113_E-49.dwg Dec 17, 2025 - 4:21pm User: CValdez



WATERTIGHT DUCT PENETRATION
BELOW GRADE STRUCTURES

DETAIL 6 / NOT TO SCALE / -

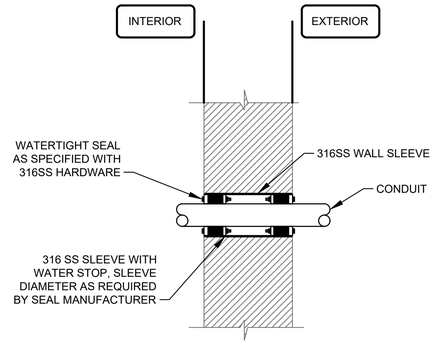


WALL - EXPOSED
CONDUIT INSTALLATION

DETAIL 7 / NOT TO SCALE / -

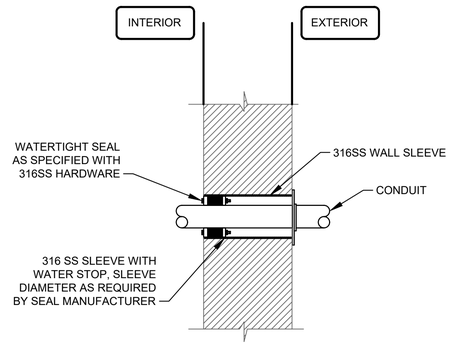
NOTES BY SYMBOL "⟨#⟩":

1. PROVIDE THE CORRECT SIZE ANCHOR BOLTS BASED ON LOAD.



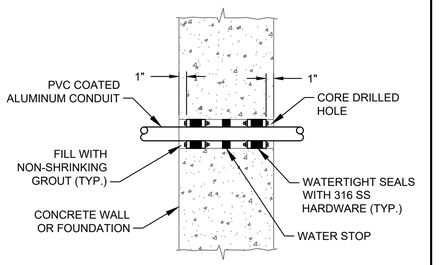
NEW CONSTRUCTION MASONRY, CMU, OR
CONCRETE BELOW GRADE - WATERTIGHT CONDUIT PENETRATION

DETAIL 8 / NOT TO SCALE / -



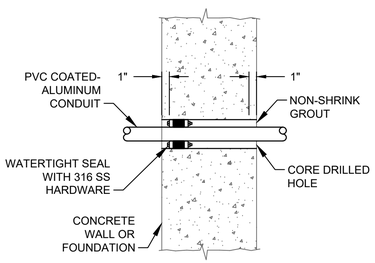
NEW CONSTRUCTION MASONRY, CMU, OR
CONCRETE ABOVE GRADE - WATERTIGHT CONDUIT PENETRATION

DETAIL 9 / NOT TO SCALE / -



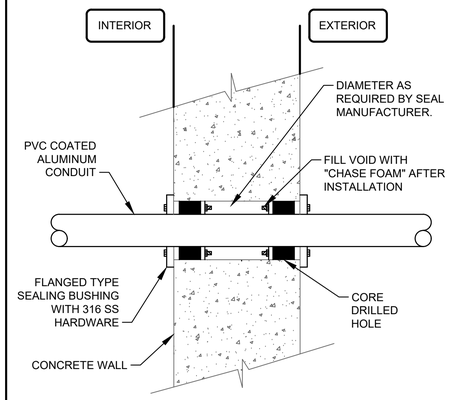
EXISTING CONCRETE STRUCTURE BELOW GRADE
WATERTIGHT SINGLE CONDUIT PENETRATION

DETAIL 10 / NOT TO SCALE / -



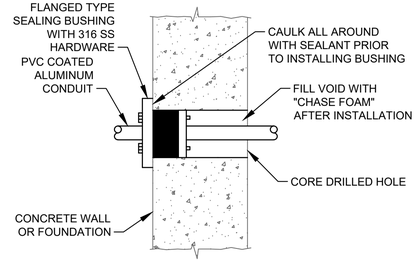
EXISTING CONCRETE STRUCTURE ABOVE GRADE -
WATERTIGHT SINGLE CONDUIT PENETRATION

DETAIL 14 / NOT TO SCALE / -



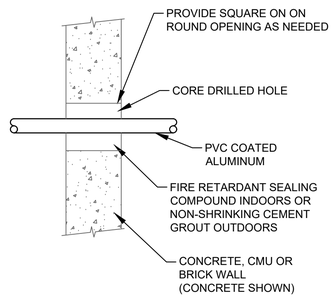
EXISTING MASONRY WALL BELOW GRADE -
SINGLE CONDUIT PENETRATION

DETAIL 11 / NOT TO SCALE / -



EXISTING MASONRY WALL ABOVE GRADE -
WATERTIGHT SINGLE CONDUIT PENETRATION

DETAIL 12 / NOT TO SCALE / -



EXISTING BLOCK OR CONCRETE WALL -
INTERIOR CONDUIT PENETRATION

DETAIL 13 / NOT TO SCALE / -

NOTES BY SYMBOL "⟨#⟩":

1. LEAVE REBAR INTACT WHEN BREAKING OUT EXISTING WALLS.

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CITY OF HOUSTON
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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL
STANDARD DETAILS-II

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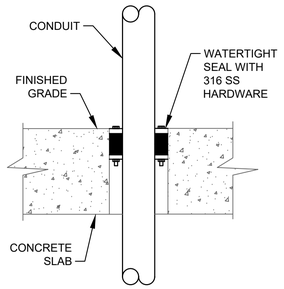
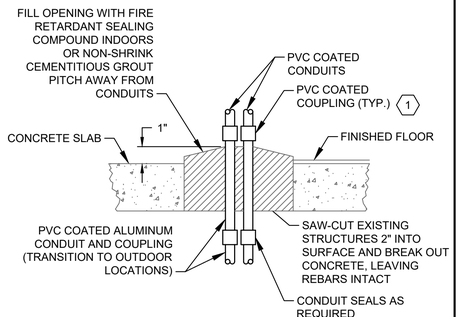


EXISTING CONCRETE SLAB -
WATERTIGHT SINGLE CONDUIT PENETRATION

DETAIL 15 - NOT TO SCALE

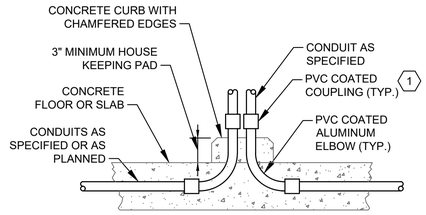


EXISTING CONCRETE SLAB-WET LOCATIONS -
WATERTIGHT MULTIPLE CONDUIT PENETRATION

DETAIL 16 - NOT TO SCALE

NOTES BY SYMBOL "⟨#⟩":

1. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

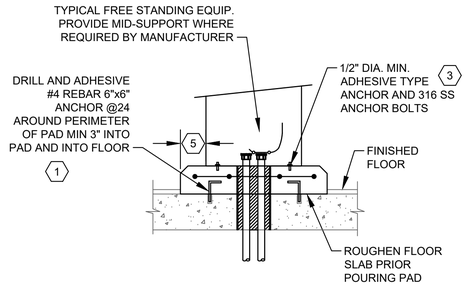


INTERIOR OR EXTERIOR -
CONCEALED CONDUIT INSTALLATION CONCRETE SLAB

DETAIL 17 - NOT TO SCALE

NOTES BY SYMBOL "⟨#⟩":

1. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

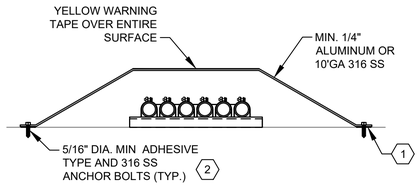


ELECTRICAL EQUIPMENT
FLOOR MOUNTING

DETAIL 18 - NOT TO SCALE

NOTES BY SYMBOL "⟨#⟩":

1. ALSO SEE STRUCTURAL DETAILS FOR FURTHER INFORMATION.
2. PROVIDE FINAL INSTALLATION LEVEL.
3. PROVIDE THE CORRECT SIZE ANCHOR BASED ON LOAD.
4. COORDINATE CONDUIT PENETRATION THROUGH FLOOR AND EQUIPMENT PAD WITH STRUCTURAL DESIGN.
5. EQUIPMENT PAD SHALL BE 3" MORE IN LENGTH AND WIDTH THAN THE EQUIPMENT TO BE PLACED. IF EQUIPMENT IS PLACED UP AGAINST THE WALL, THERE SHALL NOT BE A 3" GAP BETWEEN THE EQUIPMENT AND WALL. REFER TO PLAN VIEWS FOR ADDITIONAL INFORMATION.

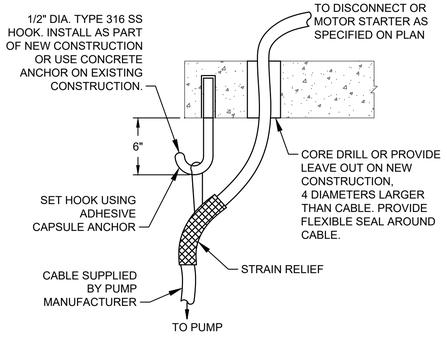


CONDUIT COVER

DETAIL 20 - NOT TO SCALE

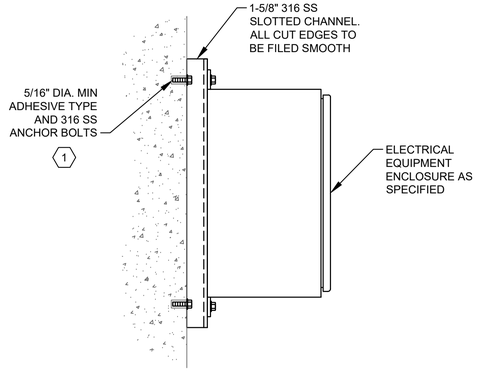
NOTES BY SYMBOL "⟨#⟩":

1. PROVIDE 1/8" NEOPRENE GASKET WHERE ALUMINUM IS SELECTED. DO NOT ALLOW ALUMINUM TO COME INTO DIRECT CONTACT WITH CONCRETE.
2. PROVIDE THE CORRECT SIZE ANCHOR BOLTS BASED ON LOAD.



SUBMERSIBLE CABLE APPLICATION

DETAIL 21 - NOT TO SCALE

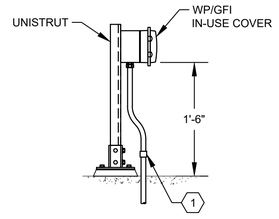


ELECTRICAL EQUIPMENT
WALL MOUNTING

DETAIL 19 - NOT TO SCALE

NOTES BY SYMBOL "⟨#⟩":

1. PROVIDE THE CORRECT SIZE ANCHOR BOLTS BASED ON LOAD



120V RECEPTACLE

DETAIL 22 - NOT TO SCALE

NOTES BY SYMBOL "⟨#⟩":

1. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

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ON DATE 12/19/2025

CITY OF HOUSTON
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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL STANDARD DETAILS-III

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CITY OF HOUSTON PM	
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E-51	SHEET NO. 172 OF 254

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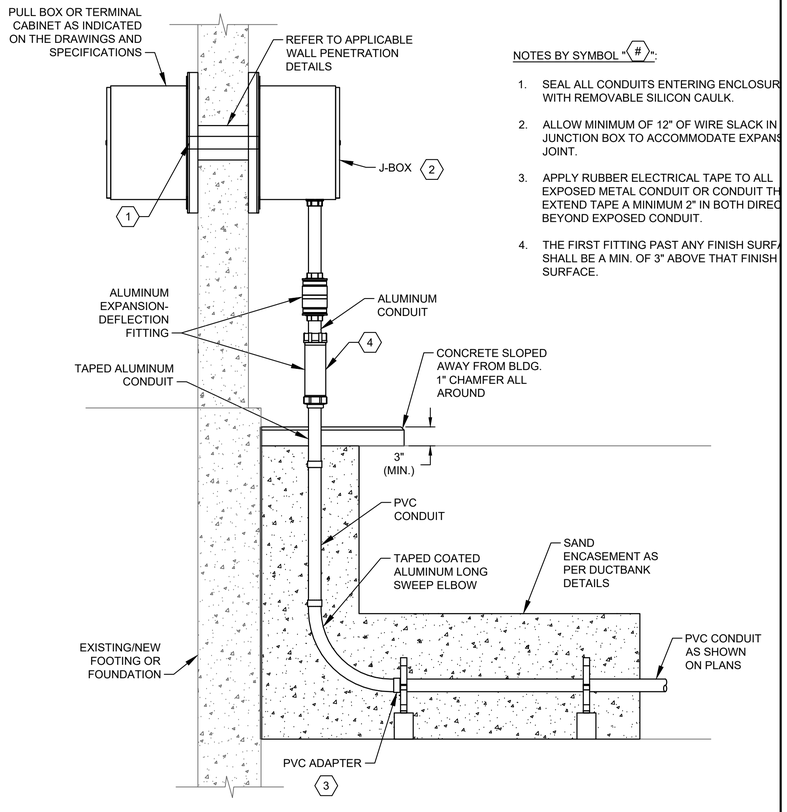
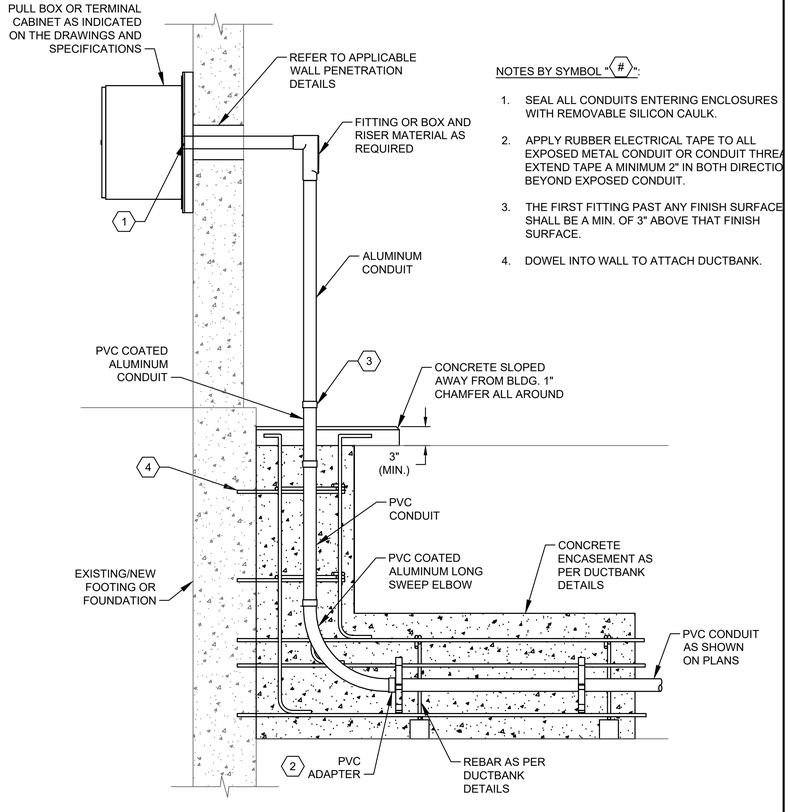


NOTES BY SYMBOL "#":

1. SEAL ALL CONDUITS ENTERING ENCLOSUR WITH REMOVABLE SILICON CAULK.
2. ALLOW MINIMUM OF 12" OF WIRE SLACK IN JUNCTION BOX TO ACCOMMODATE EXPANS JOINT.
3. APPLY RUBBER ELECTRICAL TAPE TO ALL EXPOSED METAL CONDUIT OR CONDUIT TH EXTEND TAPE A MINIMUM 2" IN BOTH DIREC BEYOND EXPOSED CONDUIT.
4. THE FIRST FITTING PAST ANY FINISH SURF SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

ABOVE GRADE CONDUIT TERMINATION

DETAIL 23 — NOT TO SCALE

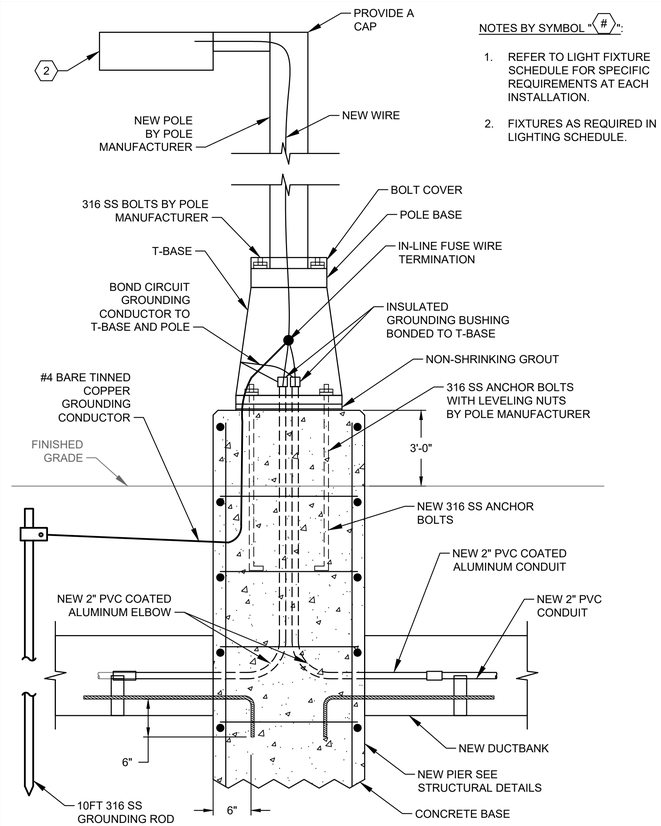


NOTES BY SYMBOL "#":

1. SEAL ALL CONDUITS ENTERING ENCLOSURES WITH REMOVABLE SILICON CAULK.
2. APPLY RUBBER ELECTRICAL TAPE TO ALL EXPOSED METAL CONDUIT OR CONDUIT THREA EXTEND TAPE A MINIMUM 2" IN BOTH DIRECTIO BEYOND EXPOSED CONDUIT.
3. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.
4. DOWEL INTO WALL TO ATTACH DUCTBANK.

ABOVE GRADE CONDUIT TERMINATION

DETAIL 24 — NOT TO SCALE

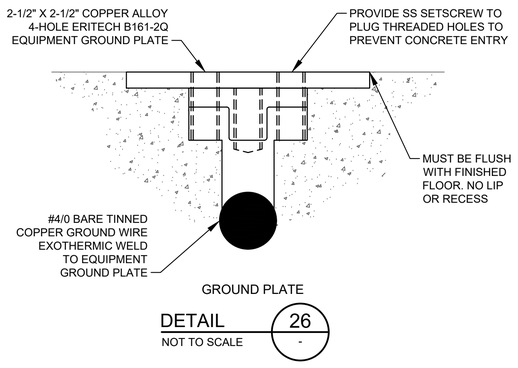


NOTES BY SYMBOL "#":

1. REFER TO LIGHT FIXTURE SCHEDULE FOR SPECIFIC REQUIREMENTS AT EACH INSTALLATION.
2. FIXTURES AS REQUIRED IN LIGHTING SCHEDULE.

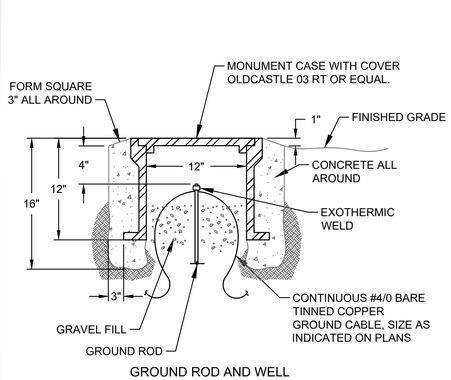
LIGHTING STANDARD BASE

DETAIL 25 — NOT TO SCALE



GROUND PLATE

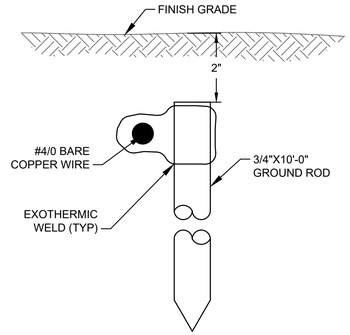
DETAIL 26 — NOT TO SCALE



GROUND ROD AND WELL

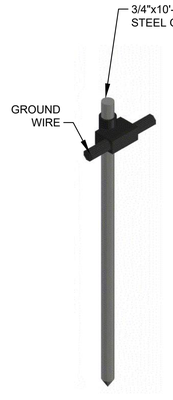
DETAIL 27 — NOT TO SCALE

ISOMETRIC VIEW



GROUND BUS CONNECTION TO GROUND ROD

DETAIL 28 — NOT TO SCALE



ISOMETRIC VIEW

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ELECTRICAL STANDARD DETAILS-IV

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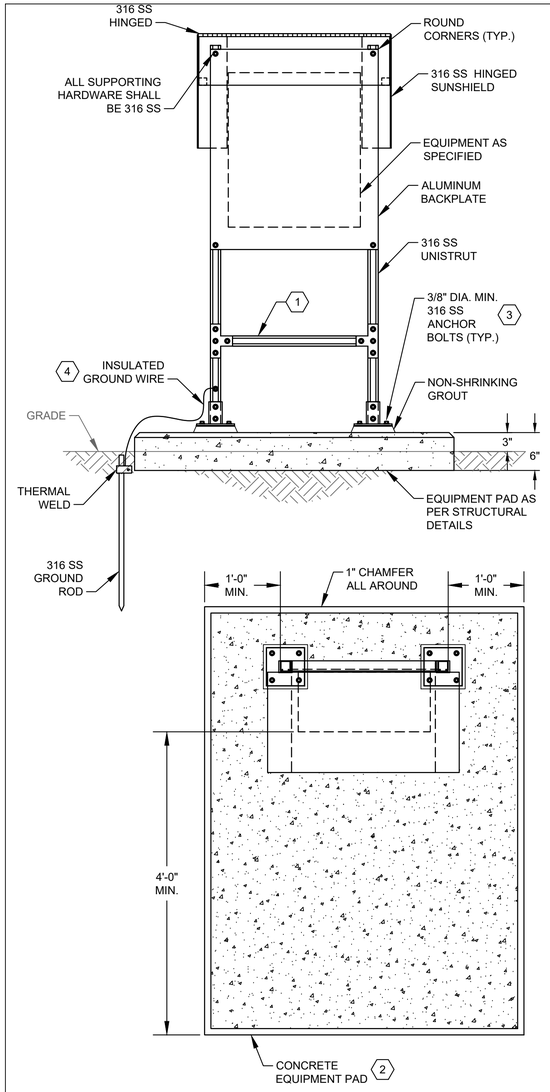


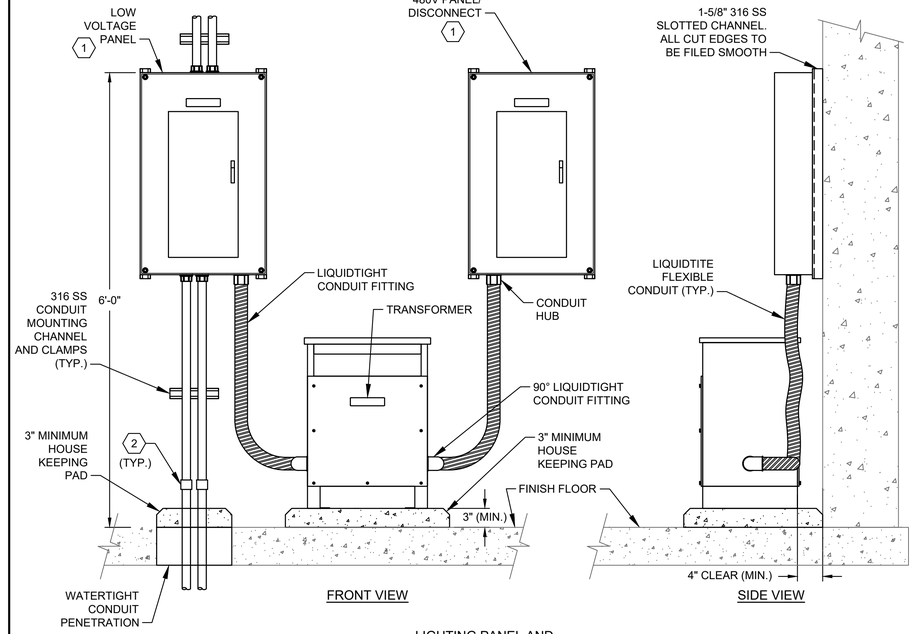
TOP VIEW

NOTES BY SYMBOL "#":

1. INSTALL STRUT CHANNEL AS REQUIRED TO PROVIDE FOR RIGIDITY.
2. PROVIDE CONCRETE PAD IN UNPAVED AREAS. SEE STRUCTURAL PLANS FOR DETAILS.
3. PROVIDE THE CORRECT SIZE ANCHOR BOLTS ON LOAD. (TYPICAL)
4. SECURE GROUND WIRE TO EQUIPMENT RACK LEG. BOLT GROUND WIRE TO BACKPLATE WITH APPROVED GROUND LUGS.

OUTDOOR MOUNTED EQUIPMENT (UNPAVED AREA)

DETAIL 29 / NOT TO SCALE -



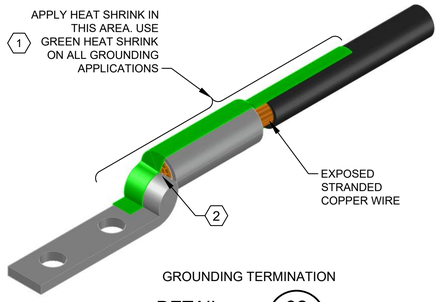
FRONT VIEW SIDE VIEW

LIGHTING PANEL AND TRANSFORMER INSTALLATION

DETAIL 30 / NOT TO SCALE -

NOTES BY SYMBOL "#":

1. LOCATION OF THE TWO PANELS MAY BE INTERCHANGED AS INDICATED ON THE DRAWING PLANS.
2. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

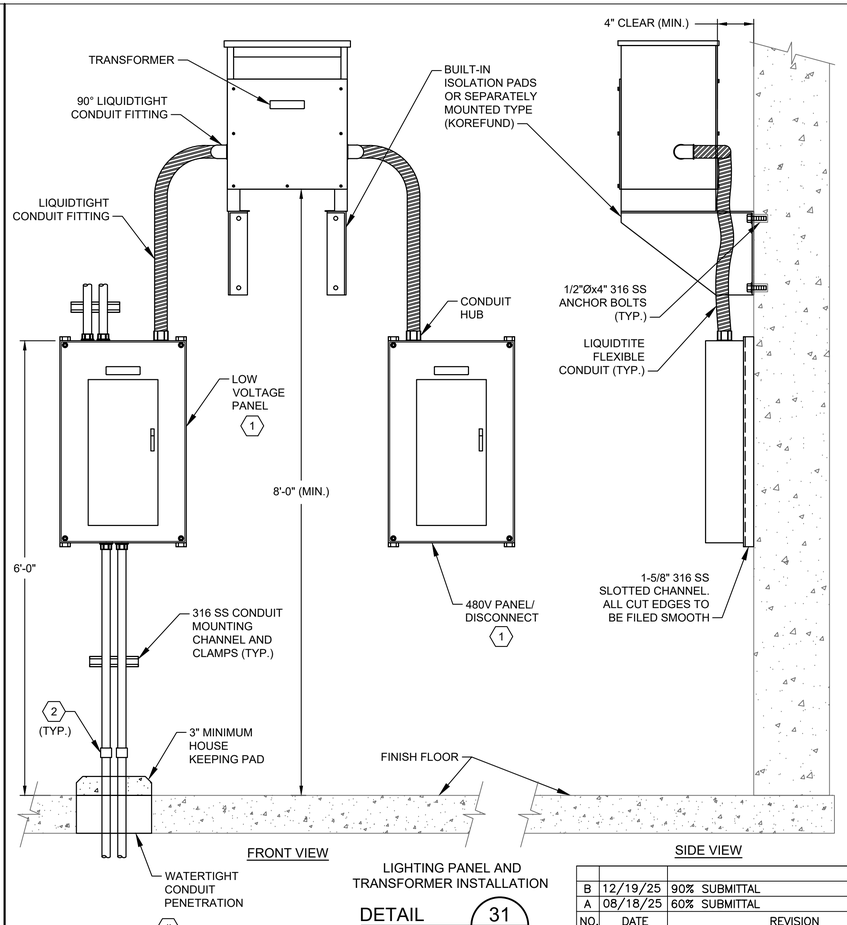


GROUNDING TERMINATION

DETAIL 32 / NOT TO SCALE -

NOTES BY SYMBOL "#":

1. CUTAWAY OF HEAT SHRINK IS SHOWN FOR DESCRIPTIVE CLARITY.
2. HEAT SHRINK TO COVER THE OPENING.



FRONT VIEW SIDE VIEW

LIGHTING PANEL AND TRANSFORMER INSTALLATION

DETAIL 31 / NOT TO SCALE -

NOTES BY SYMBOL "#":

1. LOCATION OF THE TWO PANELS MAY BE INTERCHANGED AS INDICATED ON THE DRAWING PLANS.
2. THE FIRST FITTING PAST ANY FINISH SURFACE SHALL BE A MIN. OF 3" ABOVE THAT FINISH SURFACE.

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GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL STANDARD DETAILS-V

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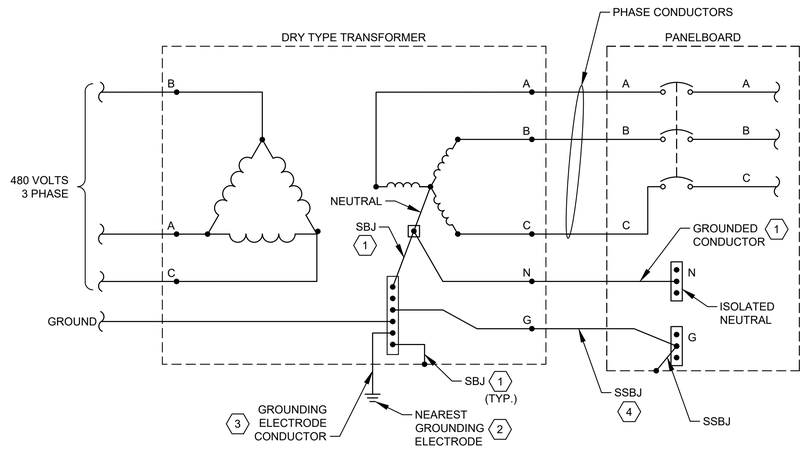


LEGEND:

MBJ: MAIN BONDING JUMPER.

SBJ: SYSTEM BONDING JUMPER.

SSBJ: SUPPLY SIDE BONDING JUMPER.

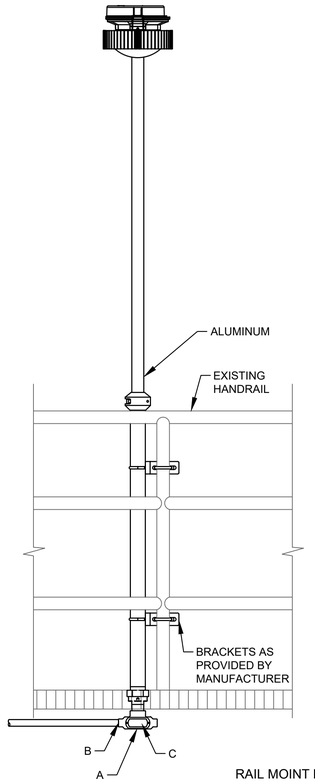
NOTES BY SYMBOL "⟨#⟩":

1. NEC TABLE 250.102(C)(1)
2. NEC ART. 250.30(A)(4)
3. NEC ART. 250.66
4. NEC ART. 250.30(A)(2)

SEPARATELY DERIVED SYSTEM WIRING

SCHEMATIC 1 -

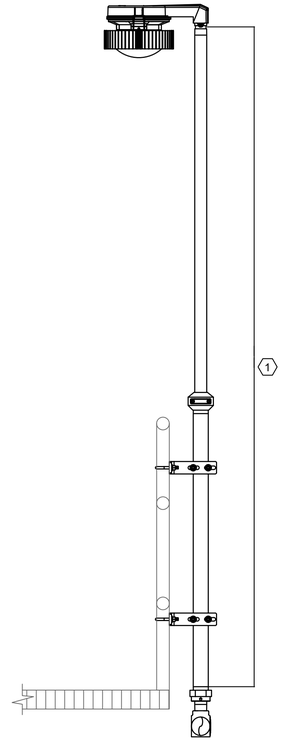
(INDOORS SAME ROOM DIFFERENT ENCLOSURES SYSTEM GROUNDING AT THE SOURCE)



RAIL MOINT LIGHT POLE

DETAIL 33 -

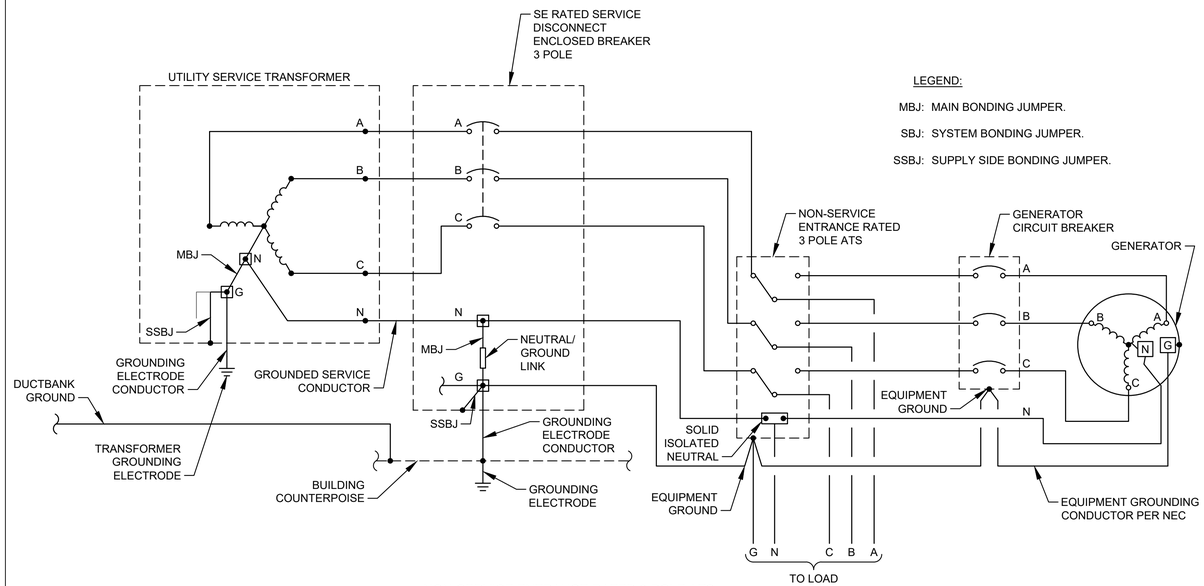
NOT TO SCALE



NOTES:

1. POLE HEIGHT SHALL BE LIMITED TO A MAXIMUM OF 108" OR AS RECOMMENDED BY THE MANUFACTURER.
2. CONTRACTOR SHALL SUBMIT FOR ENGINEERS REVIEW ANCHORAGE OF ALL LIGHT POLES TO CONCRETE SLABS SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS. THE CALCULATIONS SHALL CONFORM TO THE CONTRACT DRAWINGS , SPECIFICATIONS AND ACI 318 APPENDIX D.

CROUSE HINDS FITTINGS OR EQUAL		
ITEM NO.	SIZE	MANUFACTURER CATALOG NO.
A	1-1/2" T	T57
B	1-1/2" TO 3/4"	RE52
C	1-1/2" COVER	570G



LEGEND:

MBJ: MAIN BONDING JUMPER.

SBJ: SYSTEM BONDING JUMPER.

SSBJ: SUPPLY SIDE BONDING JUMPER.

NON-SERVICE ENTRANCE RATED 3-POLE ATS WITH 4-WIRE LOADS

SCHEMATIC 2 -

*IF CONNECTING GENERATOR NEUTRAL TO SOLID NEUTRAL ATS, MUST REMOVE N-G BOND AT GENERATOR

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

ELECTRICAL STANDARD DETAILS-VI

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
E-54	SHEET NO. 172 OF 254

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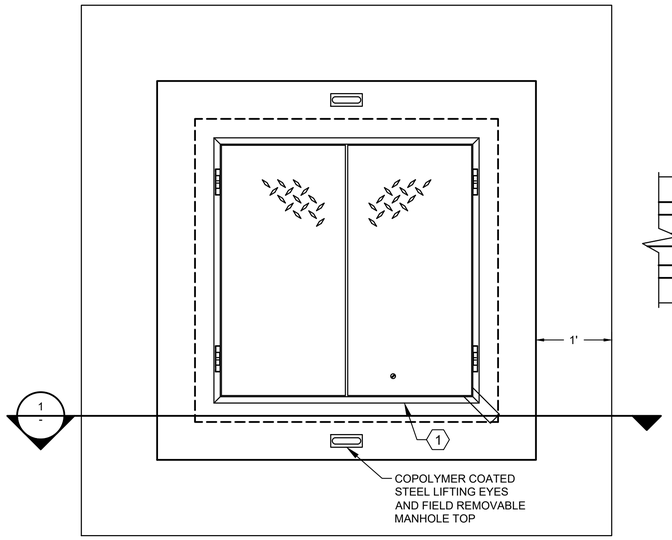
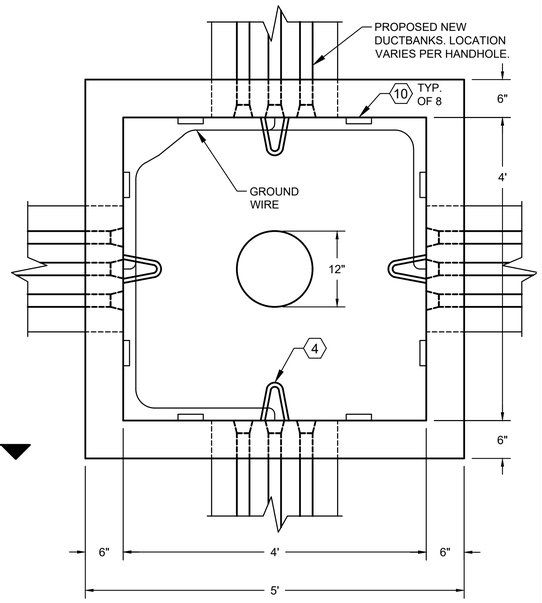
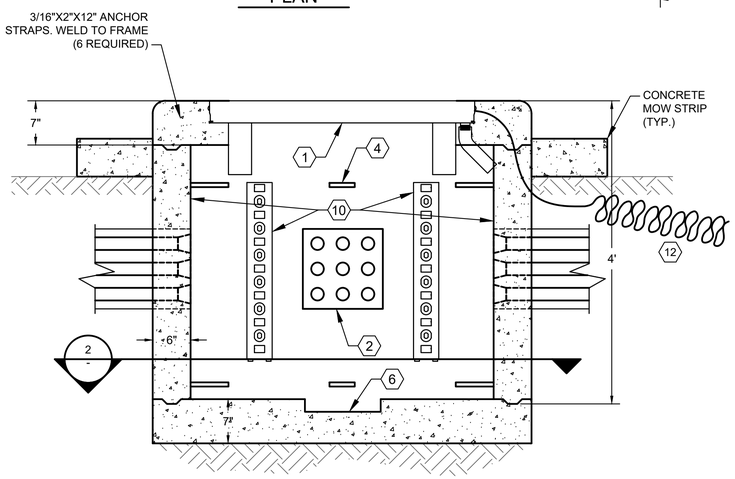
O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Electrical\Working\HB113_E-54.dwg Dec 17, 2025 - 4:23pm User: CVoldez



PLAN



SECTION 2 - NTS



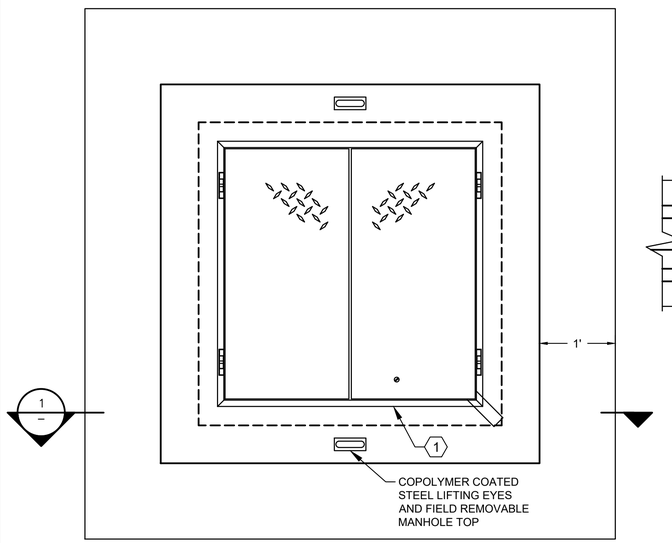
SECTION 1 - NTS

(NON-ROADWAY) ELECTRICAL HANDHOLE (EMH)

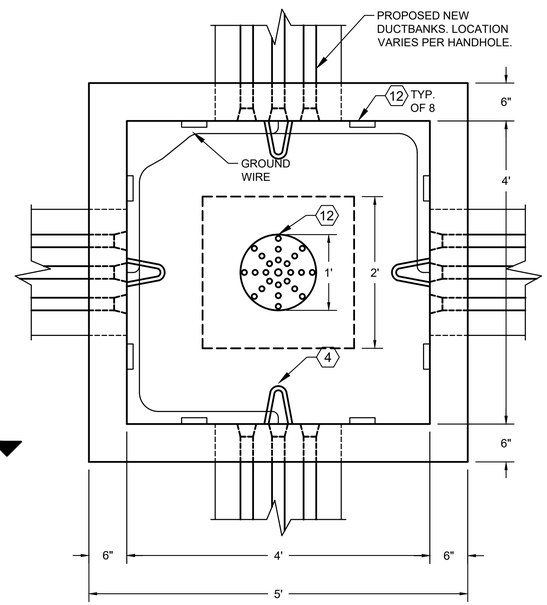
DETAIL A - NTS (3, 7, 8, 9, 11)

NOTES BY SYMBOL "#":

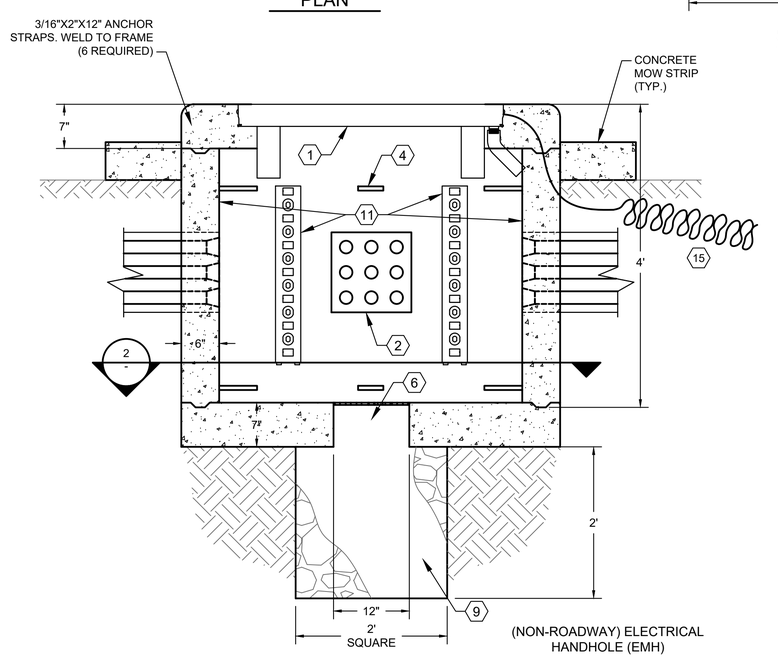
1. HANDHOLE COVER SHALL BE AS SPECIFIED, AND SHALL BE STAMPED ELECTRICAL OR COMMUNICATION AS REQUIRED BY CONTRACTOR.
2. ALL CONDUITS SHALL BE TERMINATED IN HANDHOLE WITH BELL ENDS AND CENTER ON THE ENTERING WALL.
3. REFER TO RELATED SPECIFICATIONS AND DETAILS REGARDING GROUNDING.
4. PROVIDE PULLING IRONS AS SPECIFIED.
5. #4/0 BARE STRANDED TINNED COPPER CONDUCTOR TO MAIN GROUND GRID.
6. HANDHOLES SHALL BE EQUIPPED WITH 12" DEPRESSION.
7. HANDHOLE EXTENSIONS SHALL BE USED WHENEVER BOX IS BELOW EXISTING GRADE.
8. ANCHORS SHALL BE 316 SS OR FIBERGLASS AS SPECIFIED.
9. HANDHOLE SHALL BE 12" ABOVE GRADE WHEN LOCATED IN GRASSY AREAS, CONTRACTOR SHALL PROVIDE A 12" MOW STRIP 6" TALL AROUND HANDHOLE.
10. MOUNTING RACKS SHALL BE AS SPECIFIED.
11. REFER TO SPECIFICATION 16600 "UNDERGROUND SYSTEM" FOR ADDITIONAL INFORMATION.
12. FASTEN A 4/0 GREEN INSULATED GROUND CABLE TO MANHOLE RING AND EXTEND OUT OF CONCRETE, LEAVING 4' COILED SPARE CABLE.



PLAN



SECTION 2 - NTS



SECTION 1 - NTS

(NON-ROADWAY) ELECTRICAL HANDHOLE (EMH)

DETAIL A - NTS (3, 7, 8, 10, 13, 14)

NOTES BY SYMBOL "#":

1. HANDHOLE COVER SHALL BE AS SPECIFIED, AND SHALL BE STAMPED ELECTRICAL OR COMMUNICATION AS REQUIRED BY CONTRACTOR.
2. ALL CONDUITS SHALL BE TERMINATED IN HANDHOLE WITH BELL ENDS AND CENTER ON THE ENTERING WALL.
3. REFER TO RELATED SPECIFICATIONS AND DETAILS REGARDING GROUNDING.
4. PROVIDE PULLING IRONS AS SPECIFIED.
5. #4/0 BARE STRANDED TINNED COPPER CONDUCTOR TO MAIN GROUND GRID.
6. HANDHOLES SHALL BE EQUIPPED WITH 12" SUMP OPENING.
7. HANDHOLE EXTENSIONS SHALL BE USED WHENEVER BOX IS BELOW EXISTING GRADE.
8. ANCHORS SHALL BE 316 SS OR FIBERGLASS AS SPECIFIED.
9. TO BE FILLED WITH PEA GRAVEL.
10. HANDHOLE SHALL BE 12" ABOVE GRADE WHEN LOCATED IN GRASSY AREAS, CONTRACTOR SHALL PROVIDE A 12" MOW STRIP 6" TALL AROUND HANDHOLE.
11. MOUNTING RACKS SHALL BE AS SPECIFIED.
12. SHALL BE PLASTIC GRATE.
13. HANDHOLES SHALL BE EQUIPPED WITH SUMP.
14. REFER TO SPECIFICATION 16600 "UNDERGROUND SYSTEM" FOR ADDITIONAL INFORMATION.
15. FASTEN A 4/0 GREEN INSULATED GROUND CABLE TO MANHOLE RING AND EXTEND OUT OF CONCRETE, LEAVING 4' COILED SPARE CABLE.

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PRIMARY FLOW ELEMENTS

	MAGNETIC FLOW METER
	ULTRASONIC DOPPLER FLOW METER
	ULTRASONIC TIME TRANSIT FLOW METER
	VORTEX FLOW METER
	VENTURI TUBE
	TURBINE OR PROPELLER TYPE METER
	ROTAMETER
	PITOT TUBE
	WEIR FLOW METER
	PARSHALL FLUME OR TRAPEZOIDAL FLUME
	ORIFICE PLATE
	THERMAL MASS FLOWMETER

PRIMARY LEVEL ELEMENTS

	ULTRASONIC LEVEL TRANSDUCER
	RADAR LEVEL TRANSDUCER
	PRIMARY ELEMENT PRESSURE PROBE LEVEL TRANSMITTER
	BUBBLER LEVEL TUBE ELEMENT
	CONDUCTIVE LEVEL PROBE
	FLOAT SWITCH

VALVES

	VALVE - OTHER IN-LINE TYPE NOT OTHERWISE IDENTIFIED
	THREE-WAY VALVE
	BALL VALVE
	GLOBE VALVE
	PINCH VALVE
	GATE VALVE
	NEEDLE VALVE
	DIAPHRAGM VALVE
	BUTTERFLY VALVE
	CHECK VALVE WITH FLOW DIRECTION
	PLUG VALVE
	PRESSURE-REDUCING REGULATOR INTERNAL PRESSURE TAP
	BACK PRESSURE REGULATOR INTERNAL PRESSURE TAP
	PRESSURE-REDUCING REGULATOR EXTERNAL PRESSURE TAP
	BACK PRESSURE REGULATOR EXTERNAL PRESSURE TAP
	ECCENTRIC PLUG

VALVES

S	SOLENOID ACTUATED VALVE
X	"X" = P: AIR CYLINDER; O: OIL CYLINDER; H: HYDRAULIC CYLINDER; E: ELECTRIC MOTOR; S: SOLENOID VALVE
OR NO SYMBOL	MANUAL VALVE

MISC PROCESS SYMBOLS

	ANNULAR TYPE SEAL
	CHEMICAL INJECTION POINT
	STRAINER
	DRAIN
	NORMAL OPERATING LEVEL
	UV CHAMBER
	FLOW STRAIGHTENER
	LOAD CELL
	SPRAY NOZZLE
	BLIND FLANGE
	FLANGE
	DIAPHRAGM SEAL
	PRESSURE RELIEF (OUT)
	VACUUM RELIEF (IN)

GATES

	SLUICE/SLIDE GATE
	FLOW CONTROL GATE

MOTORS

M	VARIABLE SPEED MOTOR
M	CONSTANT SPEED MOTOR

PUMPS, BLOWERS AND MISC EQUIPMENT

	CENTRIFUGAL BLOWER
	CENTRIFUGAL PUMP
	DIAPHRAGM PUMP AND MOTOR
	PROGRESSIVE CAVITY PUMP
	SUBMERSIBLE PUMP
	POSITIVE DISPLACEMENT BLOWER

PUMPS, BLOWERS AND MISC EQUIPMENT

	MIXER/FLOCCULATOR/AERATOR
	VERTICAL PUMP-1 USED WHEN DISCHARGE LINE IS IN WETWELL
	VERTICAL PUMP-2 USED WHEN DISCHARGE LINE IS EXPOSED.
	VERTICAL PUMP SHAFT USED WHEN INTAKE OF PUMP IS ENCASED.
	SUBMERSIBLE MIXER
	COMPRESSOR
	HEAT EXCHANGER
	FEED PUMP
	GRINDER/MACERATOR
	METERING PUMP
	PLUNGER PUMP
	PERISTALTIC METERING PUMP
	CENTRIFUGE
	PULSATION DAMPENER
	TURBO BLOWER

PUMPS, BLOWERS AND MISC EQUIPMENT

	ROTARY SCREEN

CONTROL ENCLOSURE, INSTRUMENTS AND SCADA

XXX / P AAA YY / BBB CCC D / ZZZ	DIGITAL/ANALOG INSTRUMENT AAA: ISA TAG (REFER TO TABLE) BBB: LOOP NUMBER CCC: LOOP NUMBER SUB D: DIVISION NUMBER P: POWER REQUIREMENT XXX: DESCRIPTION (USED ON PANEL INSTRUMENTS) YY: CHEMICAL ZZZ: LOCATION DIGITAL/ANALOG INSTRUMENT -LOCATED IN THE FIELD -NOT INSIDE OF PANEL -VISIBLE AT FIELD LOCATION -NORMALLY OPERATOR ACCESSIBLE
XXX / P AAA YY / BBB CCC D / ZZZ	DIGITAL/ANALOG INSTRUMENT -LOCATED ON PANEL -VISIBLE TO OPERATOR -NORMALLY OPERATOR ACCESSIBLE
XXX / P AAA YY / BBB CCC D / ZZZ	DIGITAL/ANALOG INSTRUMENT -LOCATED INSIDE PANEL -NOT VISIBLE TO OPERATOR -NORMALLY NOT ACCESSIBLE
XXX / AAA / BBB CCC	DISPLAY (INDICATION/CONTROLLER) AAA: ISA TAG (REFER TO TABLE) BBB: LOOP NUMBER CCC: LOOP NUMBER SUB XXX: DESCRIPTION DISPLAY (INDICATION/CONTROLLER) -LOCATED IN THE FIELD -NOT INSIDE OF PANEL -VISIBLE AT FIELD LOCATION -NORMALLY OPERATOR ACCESSIBLE
XXX / AAA / BBB CCC	DISPLAY (INDICATION/CONTROLLER) -LOCATED ON PANEL -VISIBLE TO OPERATOR -NORMALLY OPERATOR ACCESSIBLE
XXX / AAA / BBB CCC	DISPLAY (INDICATION/CONTROLLER) -LOCATED INSIDE PANEL -NOT VISIBLE TO OPERATOR -NORMALLY NOT ACCESSIBLE
-	INTERLOCKING RELAY

CONTROL ENCLOSURE AND SCADA

	DIGITAL INPUT
	DIGITAL OUTPUT
	ANALOG INPUT
	ANALOG OUTPUT
	SURGE SUPPRESSOR
	OPTO ISOLATOR
/	SIGNAL CONVERTER/ ISOLATOR */* - (INPUT/OUTPUT) * DEFINED AS FOLLOWS: E - VOLTAGE I - CURRENT P - PNEUMATIC PD - PULSE DURATION H - HYDRAULIC O - ELECTROMAGNETIC, SONIC R - RESISTANCE (ELECTRIC)

CONTROL ENCLOSURE, INSTRUMENTS AND SCADA

F(X)	PLC/RTU LOGIC FUNCTION SYMBOLS AND ABBREVIATIONS K PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPUT) - K REVERSE PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPUT) Σ SUMMING Σ/n AVERAGING Δ SUBTRACTING √‾ EXTRACT SQUARE ROOT ÷ DIVIDE X MULTIPLY S INTEGRATE + BIAS POSITIVE - BIAS NEGATIVE F(x) NONLINEAR OR UNSPECIFIED FUNCTION > HIGH SELECT < LOW SELECT Þ HIGH LIMIT Ì LOW LIMIT

INSTRUMENT (COMMON HOUSING)	INSTRUMENT (SEPERATOR HOUSING)	INSTRUMENT (PART OF MAJOR EQUIPMENT)

GENERAL NOTES:

1. THIS IS A GENERAL LEGEND SHEET, SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPLY TO THIS SPECIFIC PROJECT.
2. THIS LEGEND APPLIES TO INSTRUMENTATION DIAGRAMS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
3. IN GENERAL THIS LEGEND SHEET AND THE INSTRUMENTATION DIAGRAMS ARE BASED ON INTERNATIONAL SOCIETY OF AUTOMATION, STANDARDS FOR PRACTICES FOR INSTRUMENTATION, STANDARD S5.1 SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
4. SOME PROCESS ITEMS, SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION AND CONTROL FUNCTIONS ARE NOT SHOWN ON THE INSTRUMENTATION SHEETS.
5. SEE ELECTRICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS FOR EQUIPMENT NOT SHOWN OR NOT PROVIDED BY THE INSTRUMENTATION SUPPLIER.
6. IN THE EVENT OF DISCREPANCY BETWEEN THE PROCESS & INSTRUMENTATION DIAGRAMS AND THE LOOP DIAGRAMS, THE INFORMATION FROM THE LOOP DIAGRAMS SHALL BE USED.

HAND SWITCH ABBREVIATIONS:

HOA	HAND/OFF/AUTO
HOR	HAND/OFF/REMOTE
LOC	LOCAL/OFF/COMPUTER
LOR	LOCAL/OFF/REMOTE
LOS	LOCKOUT STOP
OSC	OPEN/STOP/CLOSE
RSL	RAISE/STOP/LOWER
L/C	LOCAL/COMPUTER
L/R	LOCAL/REMOTE
O/C	OPEN/CLOSE
S/S	START/STOP
A/M	AUTO/MANUAL
H/C	HAND/COMPUTER
PB	PUSHBUTTON

GENERAL NOTE

THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

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B	12/19/25	90% SUBMITTAL	
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INSTRUMENTATION LEGENDS & SYMBOLS - I

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I-01

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LINE SYMBOLS

	MAJOR PROCESS LINE
	MINOR PROCESS LINE
	FUTURE PROCESS LINE
	EXISTING PROCESS LINE
	HARDWIRED SIGNAL
	SOFT LINK
	HYDRAULIC LINK
	PNEUMATIC LINK
	CAPILLARY TUBE OR FILLED SYSTEM SIGNAL
	ELECTROMAGNET OR SONIC SIGNAL (GUIDED)
DESCRIPTION X SHEET# Y	(USED WHEN REFERRING TO A SHEET IN THE DESIGN SET) DESCRIPTION - WHERE FLOW IS GOING SHEET# - WHAT SHEET PROCESS CONTINUES ON X - USED WHEN TWO OR MORE ARROWS ARE REFERING TO THE SAME SHEET. Y - USED WHEN TWO OR MORE ARROWS ARE REFERRING TO THE SAME SHEET.
DESCRIPTION	(USED WHEN REFERRING TO A SHEET NOT IN THE DESIGN SET) DESCRIPTION - WHERE FLOW IS GOING
CAT5e — CAT5e	CAT-5e ETHERNET CABLE
CAT6 — CAT6	CAT-6 ETHERNET CABLE
- -	MODBUS PLUS CABLE
--	RS-485 CABLE
RS-232 — RS-232	RS-232 CABLE
POE — POE	POWER OVER ETHERNET CABLE
T1 — T1	T1 FIBER CONNECTION
FO — FO	NON-SPECIFIC FIBER OPTIC CABLE
100 — 100	FIBER 100BASE-FX
1000 — 1000	FIBER 1000BASE-FX
	SIGNAL CROSSING
	PROCESS LINE CROSSING
	PROCESS LINE/ HARDWIRE SIGNAL CROSSING

EQUIPMENT/LOOP TAGGING

X	EQUIPMENT TAG USED TO IDENTIFY NON-INSTRUMENT EQUIPMENT
X	LOOP TAG USED TO TIE THE PROCESS FLOW DIAGRAM TO A LOOP DIAGRAM

STANDARD VALVE AND PIPING USAGE

PDIT 1	BLOCK/BLEED VALVE ARRANGEMENT
PI 1	INSTRUMENTS WITH VALVE ONLY
PI 1	INSTRUMENTS WITH DIAPHRAGM SEAL
PI 1	INSTRUMENTS WITH ANNULAR SEAL

PANEL DETAIL SYMBOLS

RUN	INDICATING LIGHT -R RED (ACTIVE EQUIPMENT) -G GREEN (EQUIPMENT OFF) -W WHITE (POWER) -B BLUE (CONDITION IE BACKWASH IN PROGRESS) -A AMBER (ALARM CONDITION)
H/O/A	SWITCH -L/R (LOCAL - REMOTE) -L/O/A (LOCAL - OFF - AUTO) -L/O/R (LOCAL - OFF - REMOTE) -H/O/A (HAND - OFF - AUTO) -H/O/R (HAND - OFF - REMOTE)
START	PUSHBUTTON
START	PUSHBUTTON
	HORN
	BEACON
OIT	OPERATOR INTERFACE TERMINAL

SECURITY SYSTEM SYMBOLS

CCTV	CLOSED CIRCUIT TELEVISION CAMERA
PTZ	PAN, TILT, ZOOM CAMERA

GENERAL ABBREVIATIONS

AI	ANALOG INPUT
AL	ALARM PILOT LIGHT
AO	ANALOG OUTPUT
AS	AIR SUPPLY
ASP	APPLICATION SERVICE PROVIDER
BFV	BUTTERFLY VALVE
CCTV	CLOSED CIRCUIT TELEVISION
CH4	METHANE
CL2	CHLORINE
COND	CONDUCTIVITY
COMP	COMPUTER
CP	CONTROL PANEL
CPU	CENTRAL PROCESSING UNIT
CRC	CONTROL ROOM CONSOLE
CTU	CENTRAL TELEMETRY UNIT
DCU	DISTRIBUTED CONTROL UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DISSOLVED OXYGEN OR DIGITAL OUTPUT
DPU	DISTRIBUTED PROCESSING UNIT
EPP	ETHERNET PATCH PANEL
ES	EMERGENCY STOP
ESW	ETHERNET SWITCH
ETM	ELAPSED TIME METER
FC	FAIL CLOSED
FCP	FIELD CONTROL PANEL
FCS	FILTER CONTROL STATION
FCV	FLOW CONTROL VALVE
FLP	FAIL LAST POSITION
FO	FAIL OPEN
FOPP	FIBER OPTIC PATCH PANEL
FPR	FEEDER PROTECTION RELAY
H2S	HYDROGEN SULFIDE
HMI	HUMAN MACHINE INTERFACE
JB	JUNCTION BOX
IO	INPUT/OUTPUT
IR	INFARED
LAS	LIQUID AMMONIA SULFATE
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LT	LEVEL TRANSMITTER
LPU	LOCAL PROCESSING UNIT
LTS	LOCAL TERMINAL SYSTEM
MC	MOTOR CONTROLLER
NAOCL	SODIUM HYPOCHLORIDE
NC	NORMALLY CLOSED
NH3	AMMONIA
NIM	NETWORK INTERFACE MODULE
NO	NORMALLY OPEN
MCC	MOTOR CONTROL CENTER
MM	MULTI MODE FIBER OPTIC CABLE
MPR	MOTOR PROTECTION RELAY
OIT	OPERATIONS INTERFACE TERMINAL
OL	OVERLOAD
OWS	OPERATOR WORKSTATION
PB	PUSH BUTTON
PCSI	PROCESS CONTROL SYSTEM INTEGRATOR
pH	HYDROGEN ION
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMCS	PROCESS MONITORING CONTROL SYSTEM
POLY	POLYMER
PQM	POWER QUALITY METER
PS	POWER SUPPLY
PSU	POWER SUPPLY UNIT
PV	PINCH VALVE
RBC	REMOTE BASE CONTROLLER
RIO	REMOTE INPUT OUTPUT
RTU	REMOTE TERMINAL UNIT
SCADA	SUPERVISORY CONTROL AND DATA AQUISITION
SM	SINGLE MODE FIBER OPTIC CABLE
SO2	SULFUR DIOXIDE
SOL	SOLENOID
SPD	SURGE PROTECTION DEVICE
UPS	UNINTERRUPTIBLE POWER SUPPLY
TC	TERMINATION CABINET
TURB	TURBIDITY
VIB	VIBRATION
VFD	VARIABLE FREQUENCY DRIVE
VLV	VALVE

MEANINGS OF IDENTIFICATION LETTERS

THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS.

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS/ANALYTICAL		ALARM		
B	BURNER, COMBUSTION			CLOSE, STOP, DECREASE (1)	
C	CONDUCTIVITY			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL		OPEN START, INCREASE (1)	
E	VOLTAGE (EMF)		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAIL (1)
G	GAUGING (DIMENSIONAL)		GLASS VIEWING DEVICE		
H	HAND				HIGH OR OPEN
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE	TIME RATE OR CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW OR CLOSED
M	MOISTURE, HUMIDITY, MOTOR, MOTION	MOMENTARY		MOTOR (1)	MIDDLE OR INTERMEDIATE
N	USERS CHOICE		USER'S CHOICE		ON OR OPERATE (1)
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OVERLOAD (1)
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)	PUMP (1)	
Q	QUANTITY (2)	INTEGRATE OR TOTALIZE			
R	RADIATION		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (2)		MULTIFUNCTION (2)	MULTIFUNCTION (2)	MULTIFUNCTION (2)
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		UNCLASSIFIED (2)
X	UNCLASSIFIED (2)	X AXIS	UNCLASSIFIED (2)	UNCLASSIFIED (2)	UNCLASSIFIED (2)
Y	EVENT, STATE, PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

COMMON HMI/INSTRUMENT ISA TAGGING

ABBREVIATION	MEANING
AIT	ANALYTICAL INDICATING TRANSMITTER
AE	ANALYTICAL ELEMENT
AI	CHEMICAL RESIDUAL/INDICATION
CT	CYCLE TIMER
FIT	FLOW INDICATING TRANSMITTER
FE	FLOW ELEMENT
FI	FLOW INDICATION
FS	FLOAT SWITCH
HS	HAND SWITCH
JAL	POWER ALARM LOW
II	CURRENT INDICATION
LIT	LEVEL INDICATING TRANSMITTER
LE	LEVEL ELEMENT
LI	LEVEL INDICATION
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LAL	LEVEL ALARM LOW
LAH	LEVEL ALARM HIGH
PIT	PRESSURE INDICATING TRANSMITTER
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATION
PPU	PERPETUAL POWER UNIT
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
SI	SPEED INDICATION
SIC	SPEED INDICATING CONTROLLER
TIT	TEMPERATURE INDICATING TRANSMITTER
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATION
TSH	TEMPERATURE SWITCH HIGH
WIT	WEIGHT INDICATING TRANSMITTER
WE	WEIGHT ELEMENT
WI	WEIGHT INDICATION
XA	FAULT ANNUNCIATION
YL	MISC. EVENT LIGHT (IN REMOTE)

COMMON HMI/INSTRUMENT ISA TAGGING

ABBREVIATION	MEANING
ZCH	OPEN GATE/VALVE
ZCL	CLOSE GATE/VALVE
ZSH	POSITION SWITCH HIGH
ZSL	POSITION SWITCH LOW
ZLH	VALVE/GATE OPEN
ZLL	VALVE/GATE CLOSED
ZIT	POSITION INDICATING TRANSMITTER

GENERAL NOTE

THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

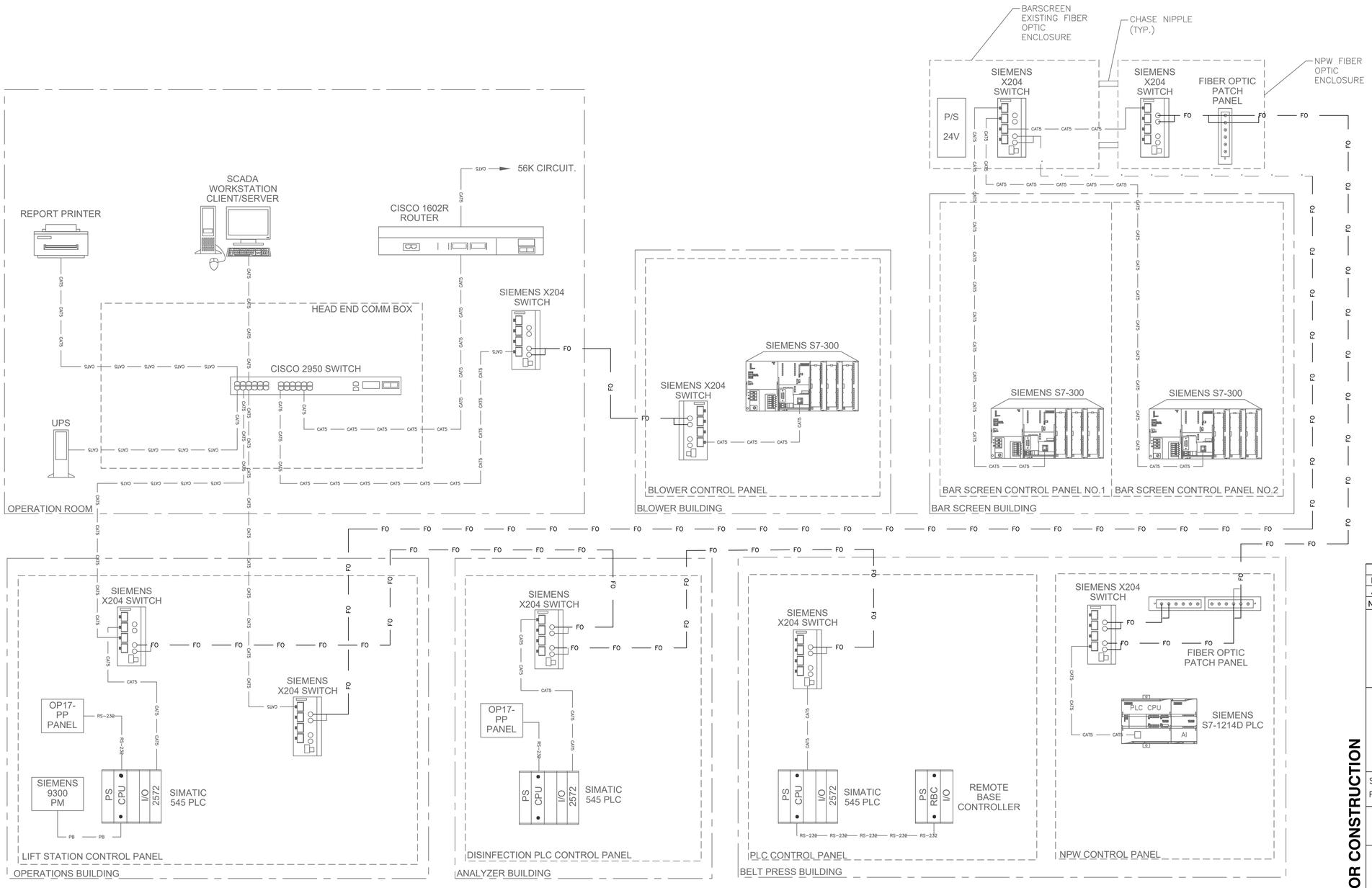
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION LEGENDS & SYMBOLS - II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-02	SHEET NO. 200 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-02.dwg Dec 17, 2025 - 3:21pm User: dkwong



NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS, I/O DATABASE AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

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FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION EXISTING OVERALL NETWORK DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-03	SHEET NO. 201 OF 254

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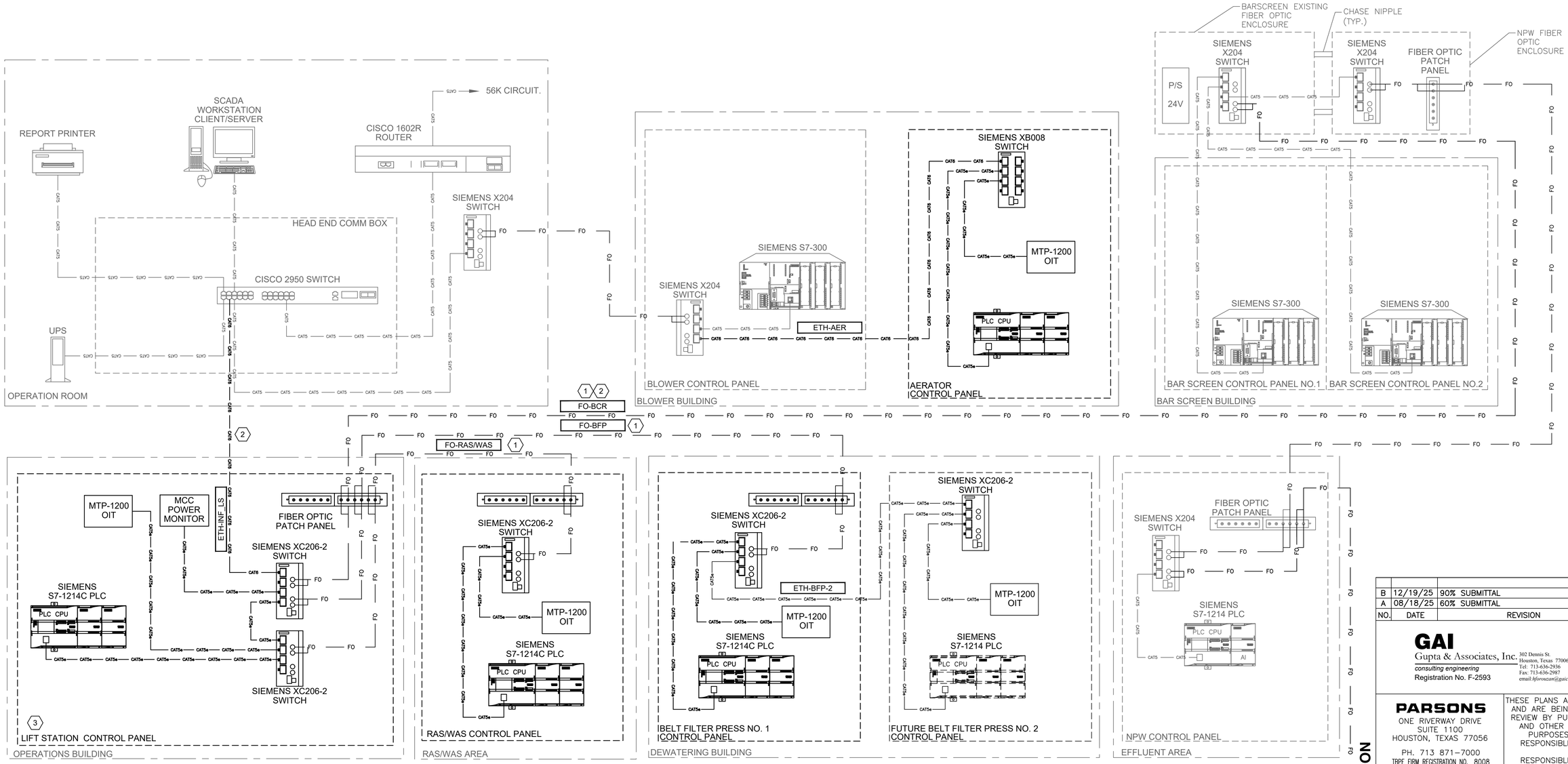

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ 12 STRANDS SINGLE MODE FIBER OPTIC CABLE.

⟨2⟩ NEW CABLES IN EXISTING CONDUIT, EXTEND CONDUIT AS REQUIRED.

⟨3⟩ EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS, I/O DATABASE AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION PROPOSED OVERALL NETWORK DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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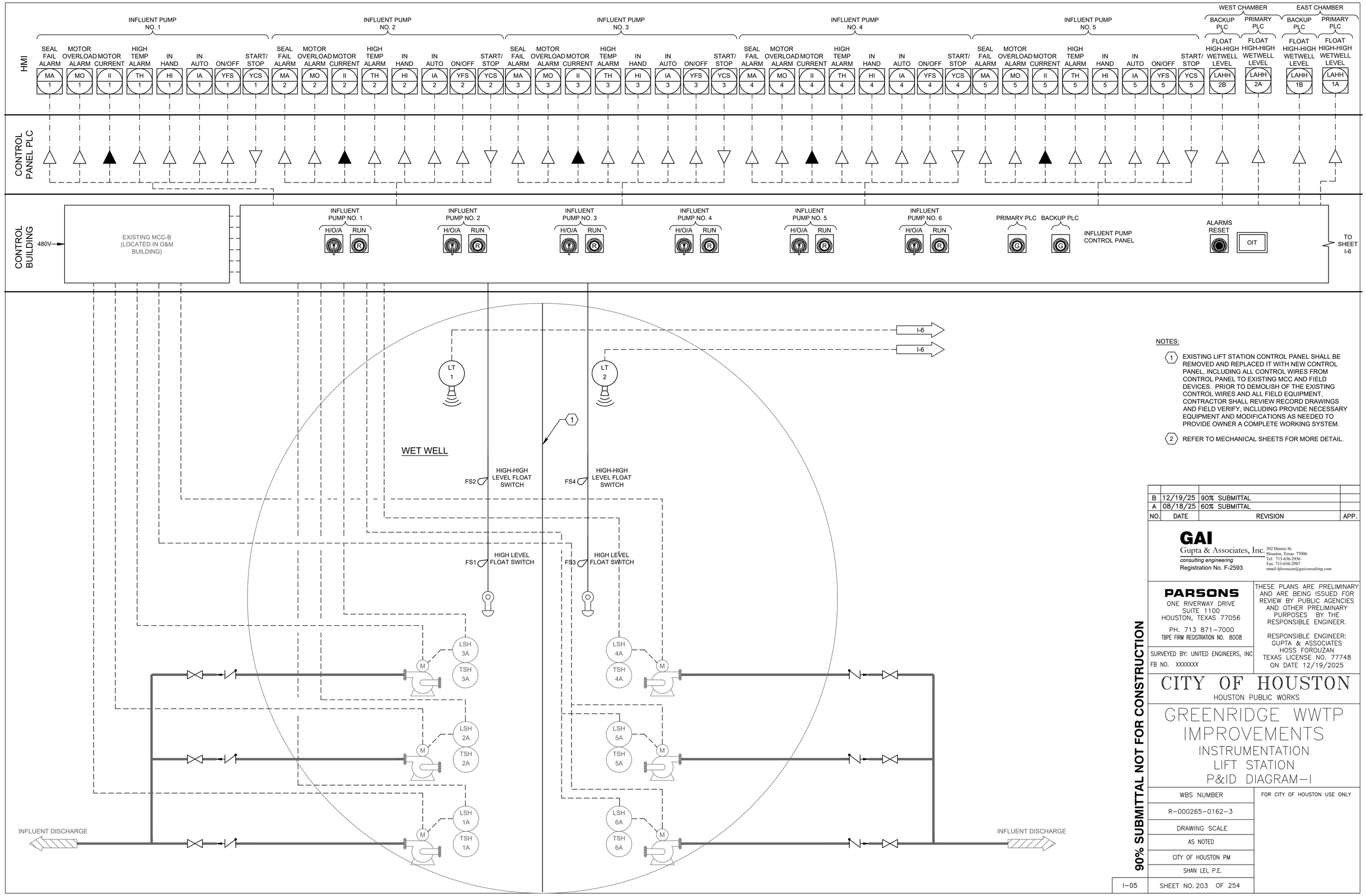
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-04	SHEET NO. 202 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-04.dwg Dec 17, 2025 - 3:21pm User: dkwong



NOTES:

1. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.
2. REFER TO MECHANICAL SHEETS FOR MORE DETAIL.

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION
P&ID DIAGRAM-I

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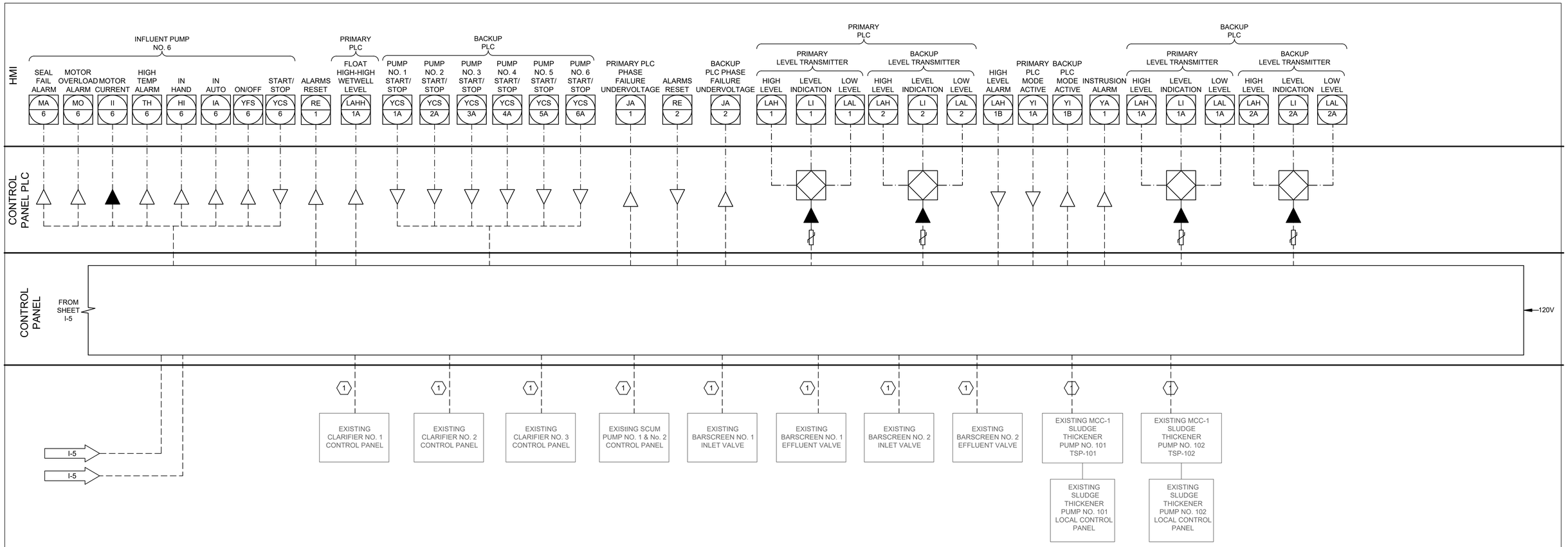

NOTES BY SYMBOL "⟨#⟩":

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION
P&ID DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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SHEET NO. 204 OF 254	

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I-06

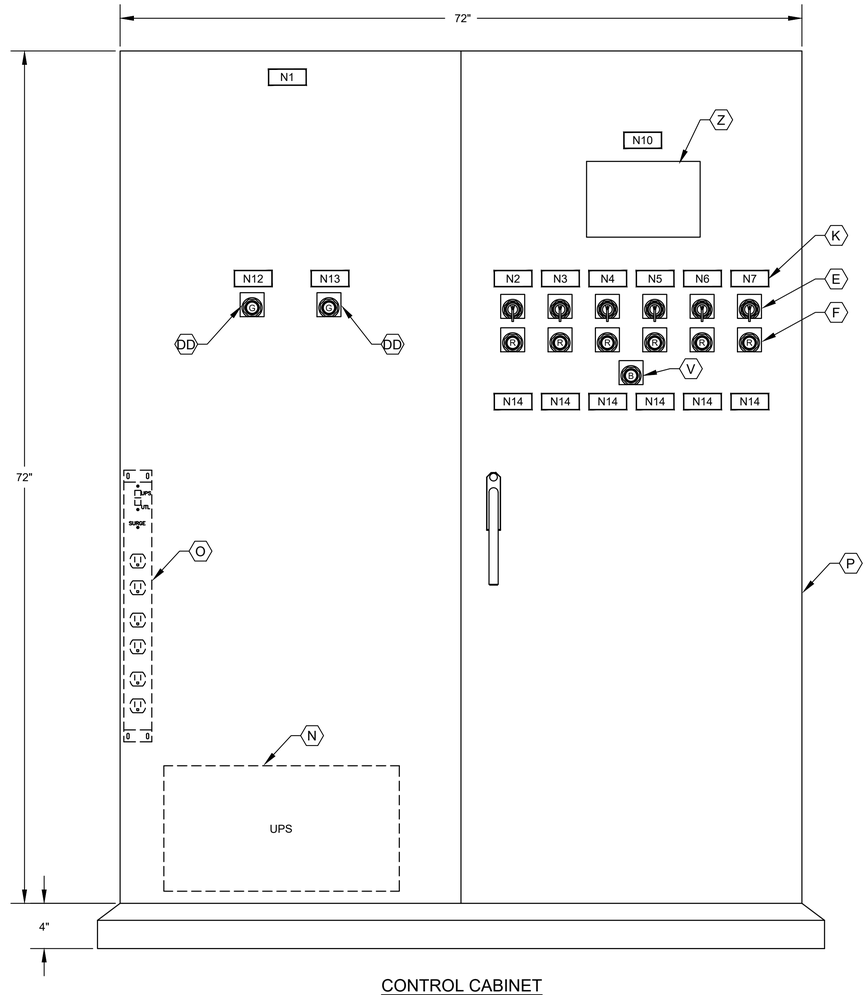
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-06.dwg Dec 17, 2025 - 3:21pm User: dkwong

EQUIPMENT AND DEVICE SCHEDULE		
ITEM	QUANTITY	DESCRIPTION
A	2	SINGLE CHANNEL INTRINSICALLY SAFE RELAY
B	2	ANALOG SIGNAL ISOLATOR
C	6	PUMP PROTECTION MODULE
D	*	NOT USED
E	6	HAND-OFF-AUTO SWITCH, 3 POSITION, HEAVY-DUTY OIL TIGHT WITH 2 SETS OF CONTACT BLOCKS (PUMP CONTROL)
F	6	INDICATING LIGHT, HEAVY DUTY, OILTIGHT, RED, 24 VDC, LED, WITH "RUN" LEGEND
G	-	NOT USED
H	1	SWITCH FOR CABINET LIGHT, 120V, 20A, SPST
I	2	DUPLEX RECEPTACLE, 120V, 20A, 2 WIRE, GROUNDED, GFCI TYPE
J	1	24" LED STRIP LIGHT 120V SUITABLE FOR ZERO DEGREE OPERATION.
K	*	NAMEPLATES, SEE SPECIFICATIONS (SEE NAMEPLATE SCHEDULE)
L	2	PROGRAMMABLE LOGIC CONTROLLER WITH EXPANSION UNIT
M	*	CONTROL RELAY 24VDC OR 120VAC RELAY WITH THREE FORM C CONTACTS AND 11 PIN SOCKET BASE
N	1	1.5KVA TOWER UPS W/RELAY OUT PUT CARD, EATON OR APPROVED EQUAL
O	1	MAINTENANCE BYPASS SWITCH FOR UPS, LOWELL MFG. CO. P/N UPS-XBDM-20RCD
P	1	NEMA 12 GASKETED STEEL ENCLOSURES WITHOUT VENTS 72" H X 20" D X WIDTH AS REQUIRED
Q	*	TERMINAL BLOCK
R	1	WIRE DUCT 2" WIDE X 2" DEEP MINIMUM
S	1	GROUND BUS
T	2	COMMUNICATION ETHERNET SWITCH
U	9	CARTRIDGE
V	1	PUSHBUTTON, BLACK WITH RESET LEGEND
W	1	ET 200SP IM155 REMOTE I/O WITH EXPANSION UNIT
X	*	FUSED TERMINAL BLOCKS
Y	1	POWER SURGE PROTECTOR - CONTROL POWER
Z	1	PROGRAMMING SCREEN (OIT)
AA	*	120VAC SYSTEM FUSES
BB	1	120VAC - 24VDC POWER SUPPLY, 5A
CC	*	NOT USED
DD	2	INDICATING LIGHT, HEAVY DUTY, OILTIGHT, GREEN, 24VDC, LED WITH "BACKUP PLC" & "PRIMARY PLC" LEGEND
EE	2	ANALOG I/O SURGE SUPPRESSOR
FF	-	NOT USED

* - AS SCHEDULED

NAMEPLATE SCHEDULE

DESIGNATION	ENGRAVED
N1	PUMP STATION DESIGNATION
N2	PUMP NO. 1
N3	PUMP NO. 2
N4	PUMP NO. 3
N5	PUMP NO. 4
N6	PUMP NO. 5
N7	PUMP NO. 6
N8	NOT USED.
N9	NOT USED.
N10	PROGRAMMING SCREEN
N11	NOT USED.
N12	PRIMARY PLC
N13	BACKUP PLC
N14	MOTOR DATA HORSEPOWER (OUTPUT) ---------- RPM AT FULL LOAD ---------- TIME RATING ---------- FREQUENCY ---------- NUMBER OF PHASES ---------- MODEL NUMBER ---------- RATED VOLTAGE ---------- SERVICE FACTOR ---------- FULL LOAD AMPS ---------- INSULATION CLAS ---------- NEMA DESIGN LETTER ---------- TEMPERATURE RISE ---------- NEMA FRAME SIZE ---------- DATE OF MANUFACTURE ---------- THERMO PROTECTION (IF REQUIRED) -- MOISTURE PROTECTION (IF REQUIRED)-



CONTROL CABINET
FRONT DOOR ELEVATION

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL EQUIP. LAYOUT & SCHD.

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 205 OF 254	

I-07

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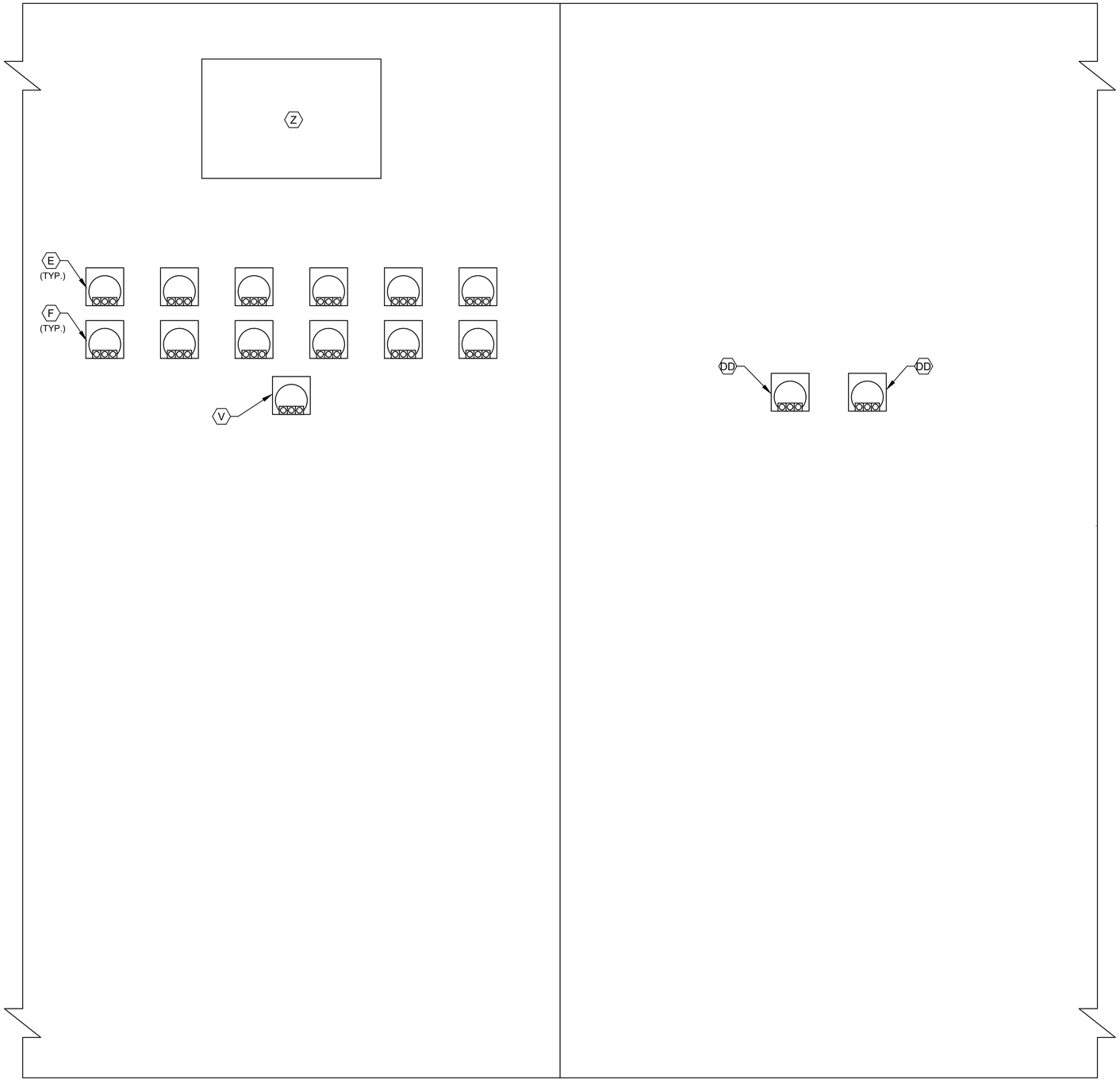

CONTROL CABINET
BACK DOOR ELEVATION

NOTES:

1. SEE SHEET I-7 FOR EQUIPMENT SCHEDULE.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL BACK DOOR ELEVATION

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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SHEET NO. 206 OF 254	

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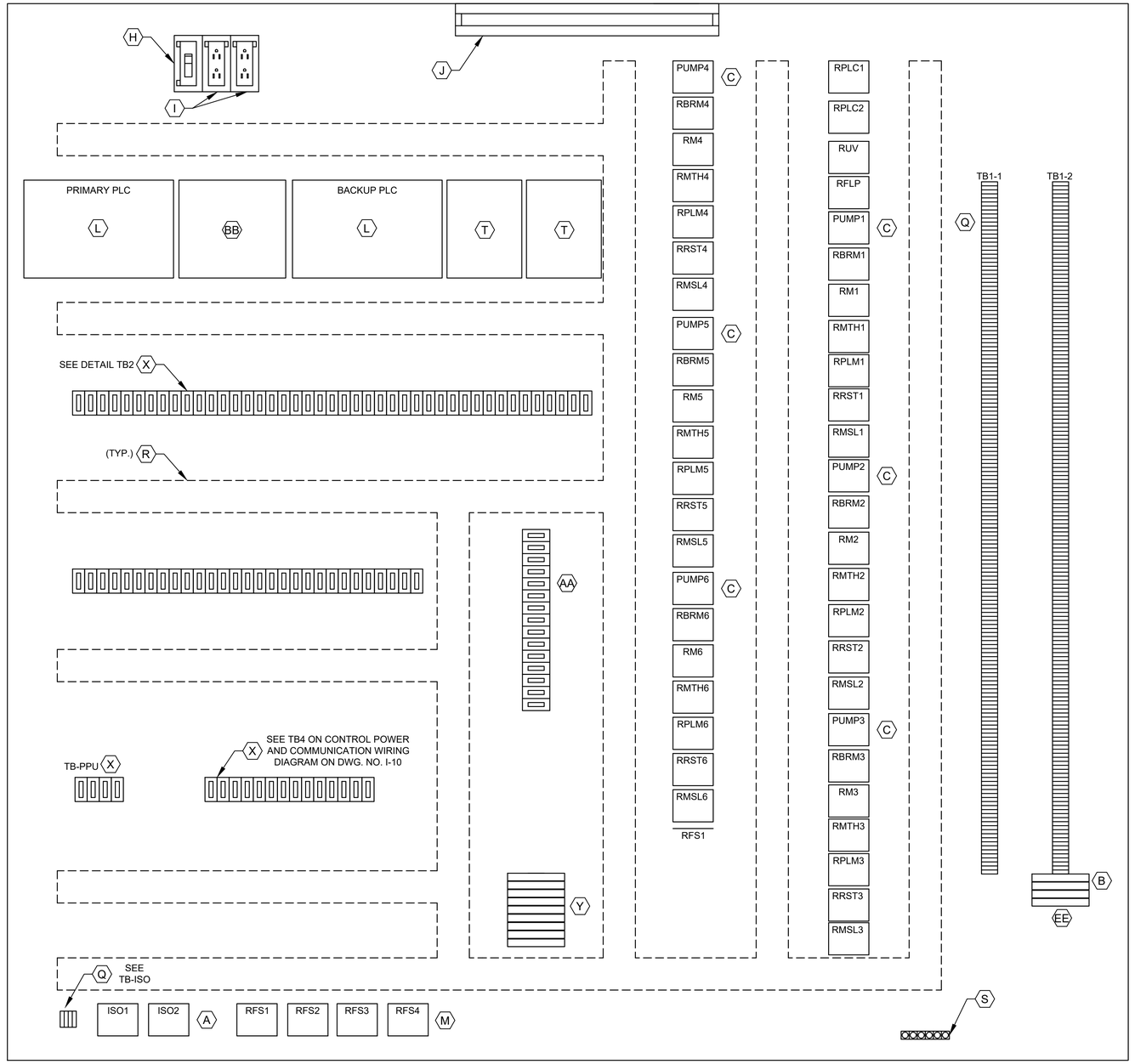
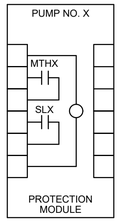
I-08

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-08.dwg Dec 17, 2025 - 3:21pm User: dkwong



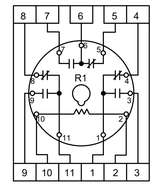
CONTROL PANEL ELEVATION

LEGEND	
TAG	DESCRIPTION
RMTH	MOTOR HIGH TEMPERATURE ALARM RELAY
RPLMP	PLC PUMP RUN RELAY
RRST	PUMP RESET AUX RELAY
RPLC	PLC MODE AUX RELAY
RM	PUMP RUN AUX RELAY
RUV	UNDER VOLTAGE RELAY
RBRM	BACKUP SYSTEM RUN RELAY
ISO	INTRINSICALLY SAFE RELAY
RFS	PUMP RUN FLOAT SWITCH RELAY
RMSL	MOTOR SEAL LEAK ALARM RELAY
RFLP	FLOAT LOCKOUT PUMP RELAY



PUMP PROTECTION MODULE DETAIL, ITEM C

NOTE: REPLACE "X" WITH APPROPRIATE PUMP NO.



RELAY DETAIL ITEM M

NOTES:

1. SEE SHEET I-7 FOR EQUIPMENT SCHEDULE.

DETAIL TB-ISO
1500
1501
1503
1504

DETAIL TB1-1
L1A
L1N
SPARE
3
3N
SPARE
49
50
51
52
53
54
1004
1
24V-
24V-
SPARE
1002
2
11
1001
1001A
12
1003
1003A
34
3N
19
20
102
103
3P1
109
110
112
116
117
120
121
122
123
124
125
126
127
SPARE
SPARE
202
203
3P2
209
210
212
216
217
220
221
222
223
224
225
226
227

DETAIL TB1-2
SPARE
SPARE
302
303
3P3
309
310
312
316
317
320
321
322
323
324
325
326
327
SPARE
SPARE
402
403
3P4
409
410
412
416
417
420
421
422
423
424
425
426
427
SPARE
SPARE

DETAIL TB1-2
502
503
3P5
509
510
512
516
517
520
521
522
523
524
525
526
527
SPARE
SPARE
602
603
3P6
609
610
612
616
617
620
621
622
623
624
625
626
627

DETAIL TB2
36A
37A
50
52
54
52A
52A
54A
L+
M
35B
38B
41B
44B
SPARE
SPARE
47B
50B
53B
13B
13AB
B
L+
M
14B
14AB
14GB
119
SPARE
L+
M
13
13A
13G
14
14A
14G
1M
2M
1L
3
30
32
34
37
38
41
33B
45
18B
SPARE

DETAIL TB2
100
112
113
114
115
117
118
119
120
121
SPARE
200
212
213
214
215
217
218
219
220
221
SPARE
300
312
313
314
315
317
318
319
320
321
SPARE
400
412
413
414
415
417
418
419
420
421
SPARE

DETAIL TB2
500
512
513
514
515
517
518
519
520
521
SPARE
600
612
613
614
615
617
618
619
620
621
SPARE

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL LAYOUT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-09	SHEET NO. 207 OF 254

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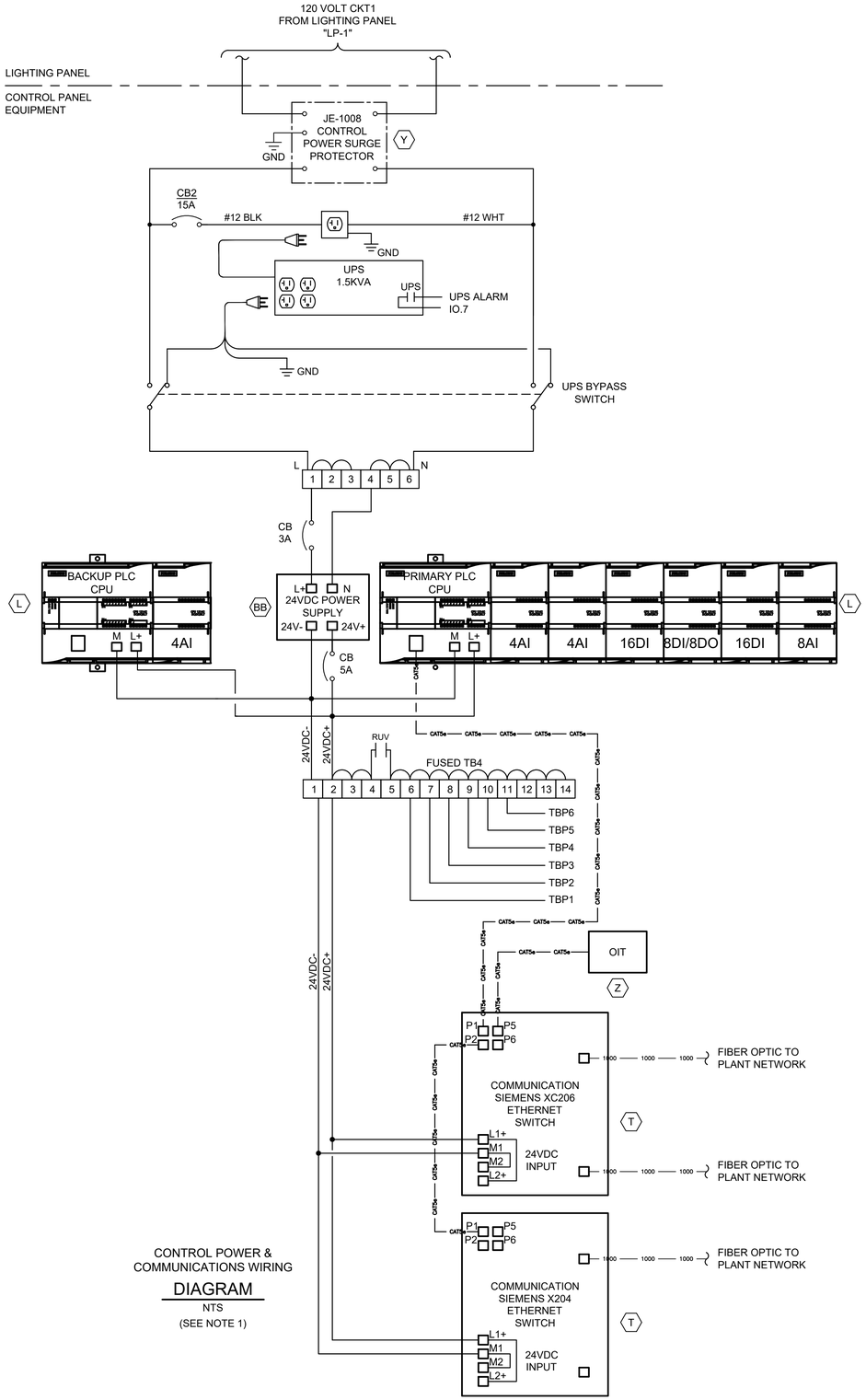
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-09.dwg Dec 17, 2025 - 3:21pm User: dkwong



CONTROL POWER &
COMMUNICATIONS WIRING

DIAGRAM

NTS

(SEE NOTE 1)

NOTES:

1. REFER TO SPEC SECTION 16120 FOR CONDUCTOR COLOR CODE.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION SYSTEM
COMMUNICATION DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 208 OF 254	

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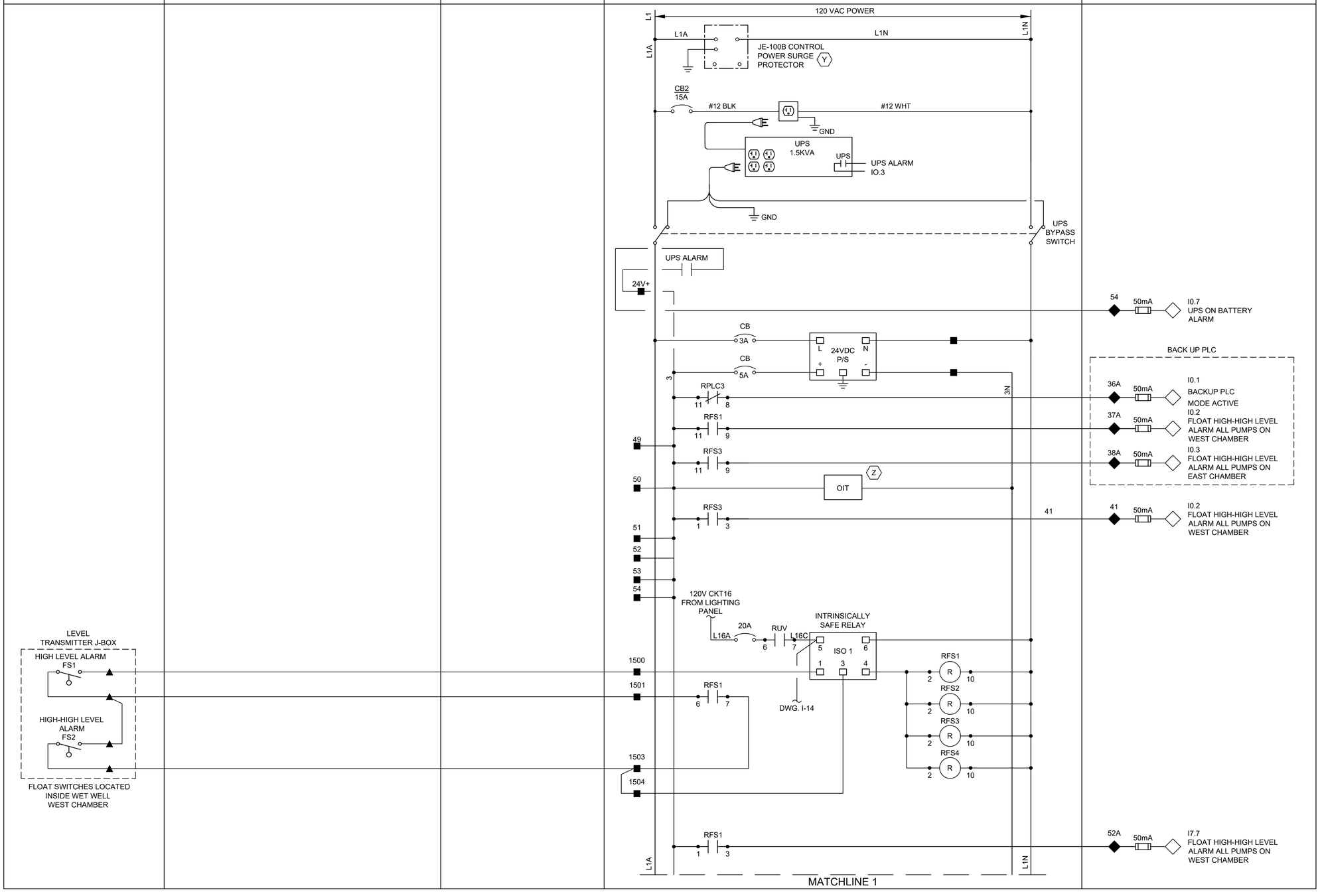
I-10

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-10.dwg Dec 17, 2025 - 3:21pm User: dkwong

FIELD		CONTROL PANEL		
		DOOR	INTERIOR PANEL	PLC



LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NOTES:

1. PROVIDE MANUAL TRANSFER SWITCH DRY CONTACT.
2. DRY/WET PIT APPLICATION ONLY.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.

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RESPONSIBLE ENGINEER:
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ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

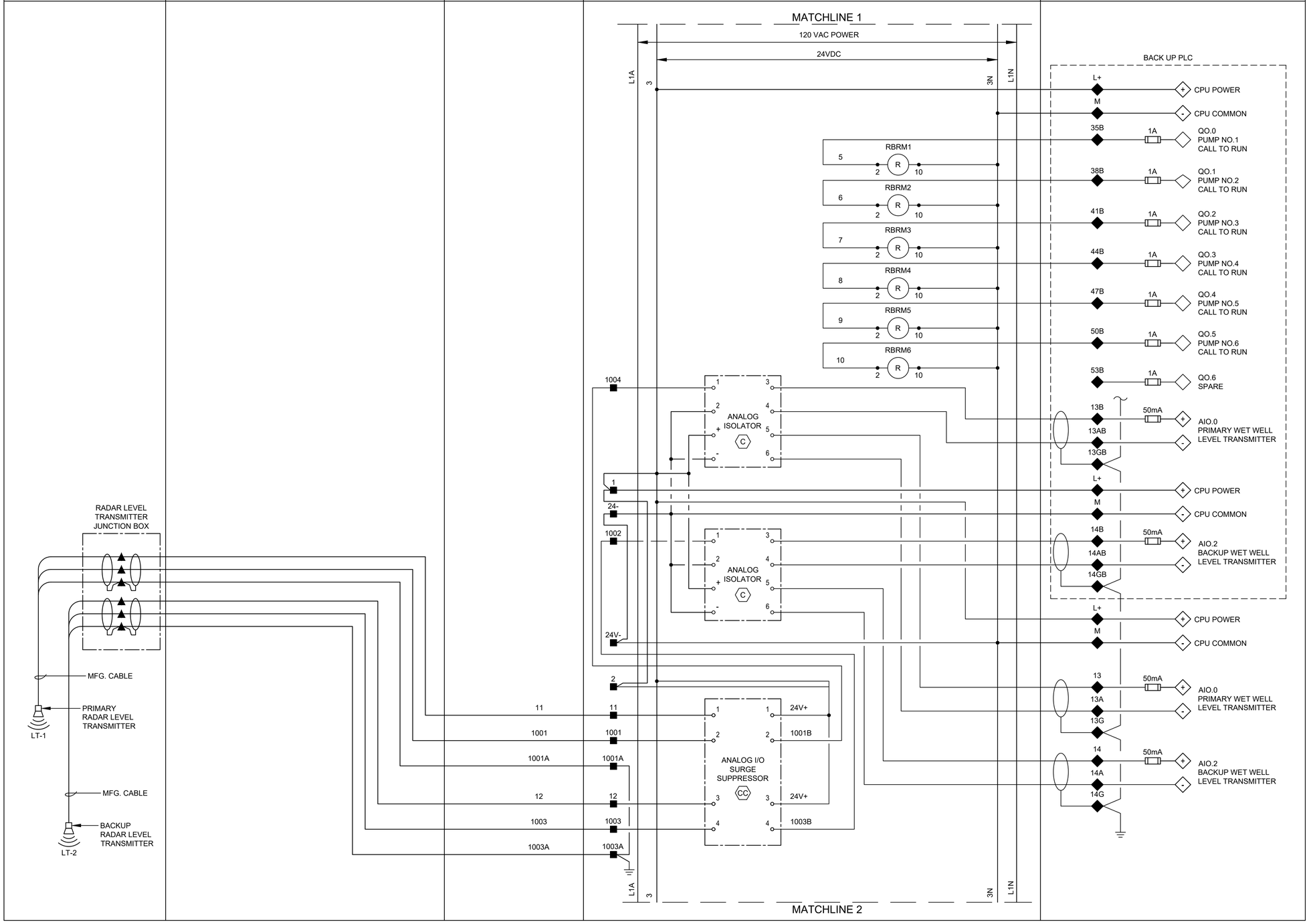
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL CONTROL WIRING DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-11	SHEET NO. 209 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-11.dwg Dec 17, 2025 - 3:21pm User: dkwong

FIELD	EXISTING MOTOR CONTROL CENTER	CONTROL PANEL	
		DOOR	INTERIOR PANEL



LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL CONTROL WIRING DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-12	SHEET NO. 210 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-12.dwg Dec 17, 2025 - 3:21pm User: dkwong

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-13.dwg Dec 17, 2025 - 3:21pm User: dkwong

FIELD | EXISTING MOTOR CONTROL CENTER | CONTROL PANEL: DOOR | INTERIOR PANEL | PLC

MATCHLINE 2

120 VAC POWER

24VDC

L1A | 24+ | 24- | L1N

LEVEL TRANSMITTER J-BOX
HIGH LEVEL ALARM FS3
HIGH-HIGH LEVEL ALARM FS4
FLOAT SWITCHES LOCATED INSIDE WET WELL EAST CHAMBER

1505 1506 1507 1508

DWG. I-12
L16C
INTRINSICALLY SAFE RELAY
ISO 2 (5 6 / 1 3 4)

RFS3 (R) 2 10
RFS4 (R) 2 10
RFS3 6 7

M1 M2 M3 M4 M5 9 10

19 20

RFLP (R) 2 10

L1
N
MS

1L DO POWER
3 DO POWER

30 1A Q0.0 SPARE
32 50mA I0.0 PLC INTRUSION ALARM
34 50mA I0.1 PHASE FAILURE UNDER VOLTAGE
38 50mA Q0.1 PLC MODE ACTIVE
1M DI COMMON
2M AI COMMON

34 34

RUV (R) 2 10
RPLC1 (R) 2 10
RPLC2 (R) 2 10
RPLC3 (R) 2 10

YI-1 (G) PRIMARY PLC
YI-2 (G) BACKUP PLC
RPLC3 6 5

ØA ØB ØC
JE-100D PHASE MONITOR
7 8 9 10 11 12
N/C

BACK UP PLC
33B 50mA Q0.6 SPARE

YI-2 BUILDING EXTERIOR ALARM LIGHT (R)

45 50mA Q0.2 HIGH LEVEL ALARM

BACK UP PLC
18B 50mA I0.0 PHASE FAILURE UNDER VOLTAGE

RUV 11 9

L1A | 24+ | 24- | L1N

MATCHLINE 3

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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RESPONSIBLE ENGINEER:
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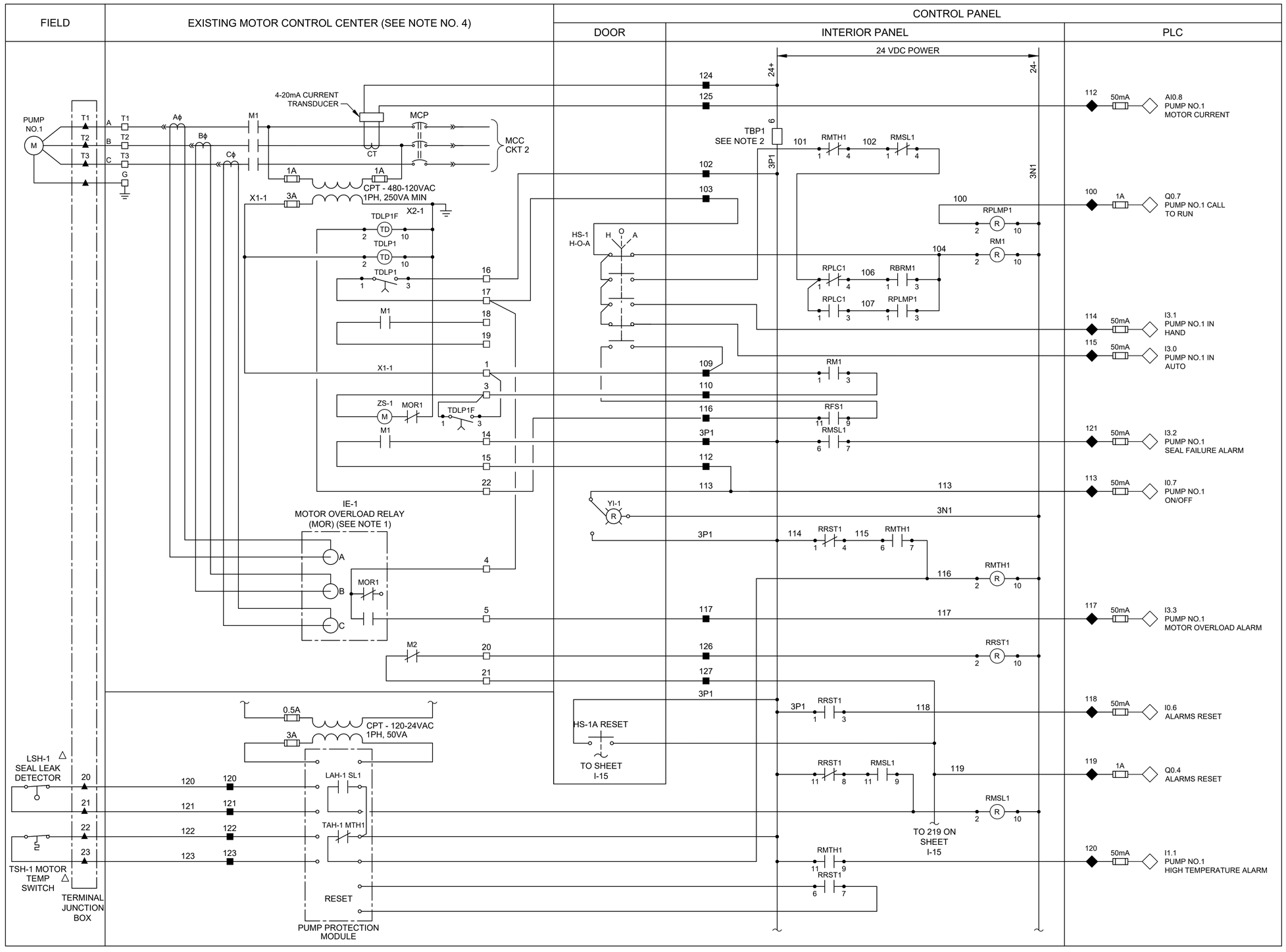
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL CONTROL WIRING DIAGRAM-III

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-13	SHEET NO. 211 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION



NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-10.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.
4. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

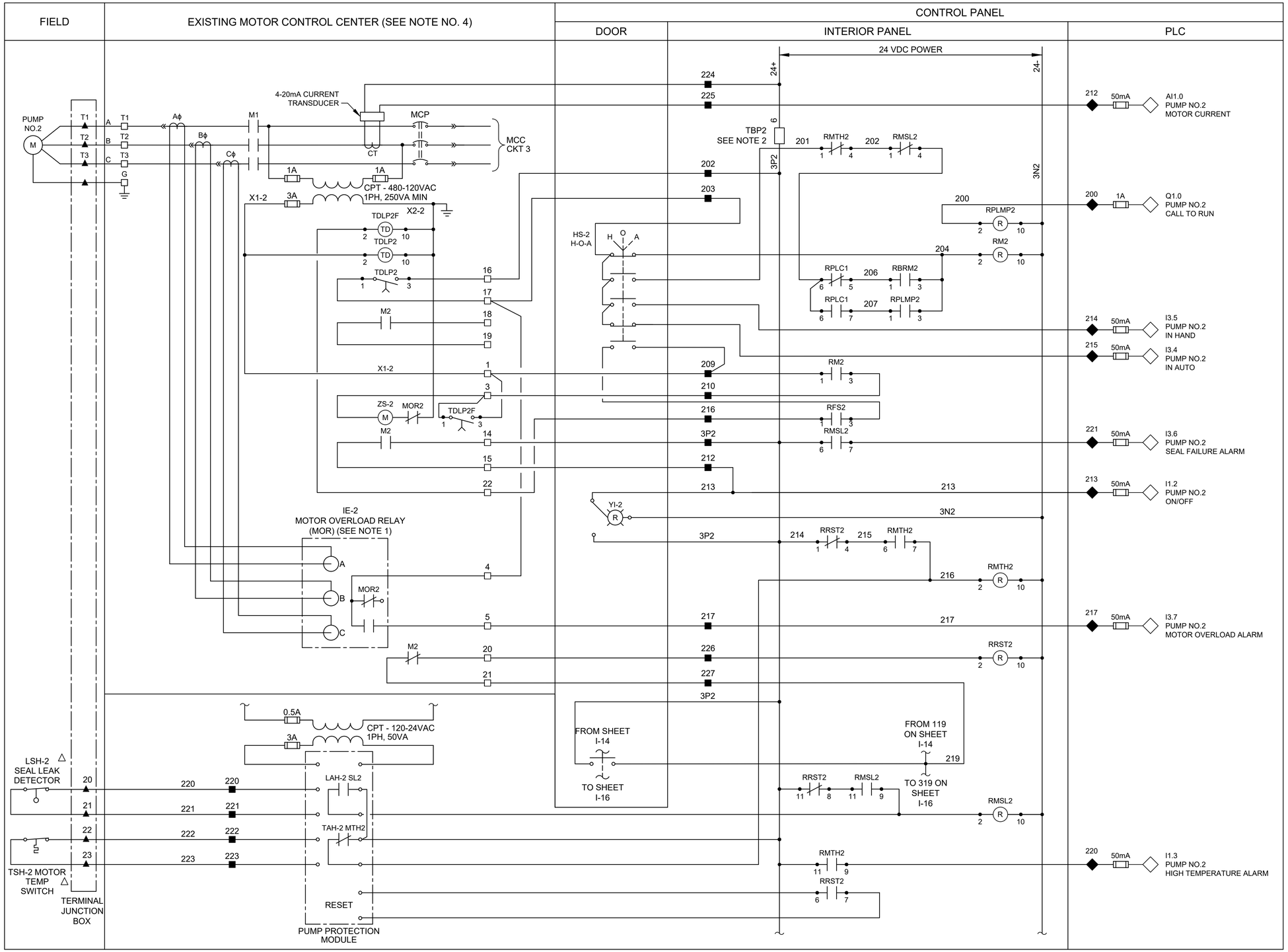
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.1 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-14	SHEET NO. 212 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-14.dwg Dec 17, 2025 - 3:21pm User: dkwong



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- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
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- ◆ PLC INTERFACE TERMINAL

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2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-10.
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4. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

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TBPE FIRM REGISTRATION NO. 8008

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.2 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-15	SHEET NO. 213 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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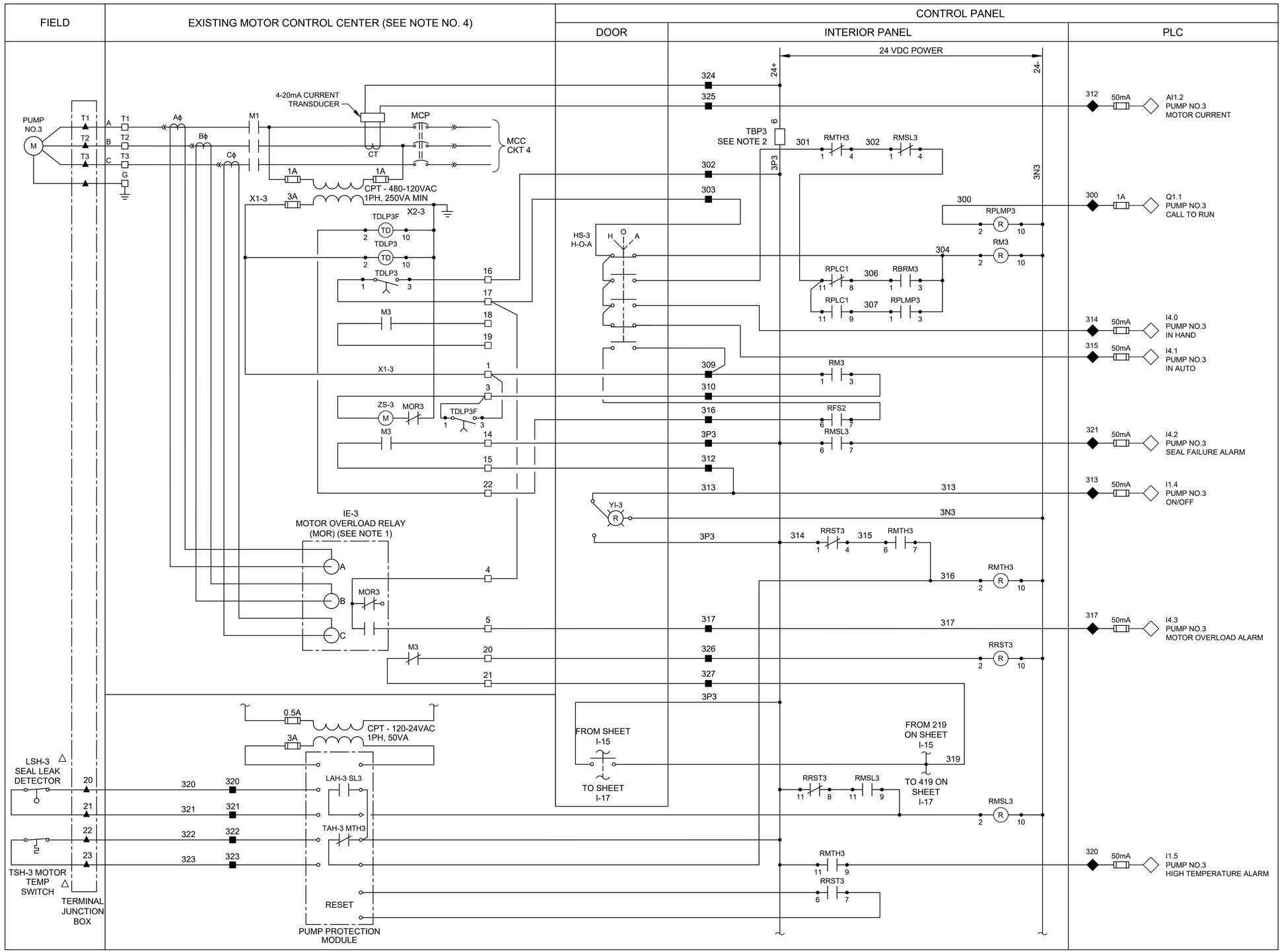

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-10.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.
4. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.3 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-16	SHEET NO. 214 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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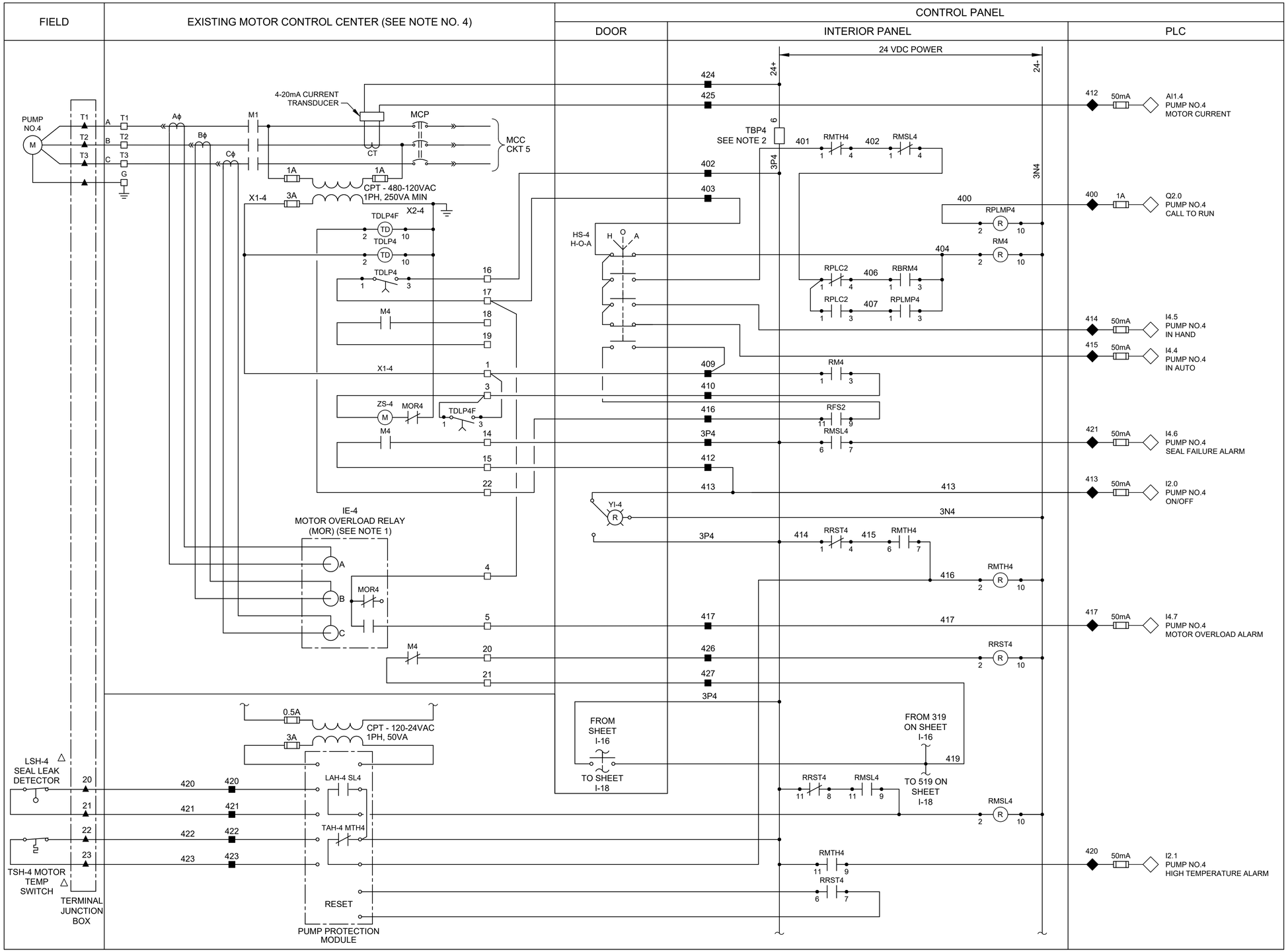

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LEGEND

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- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
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- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

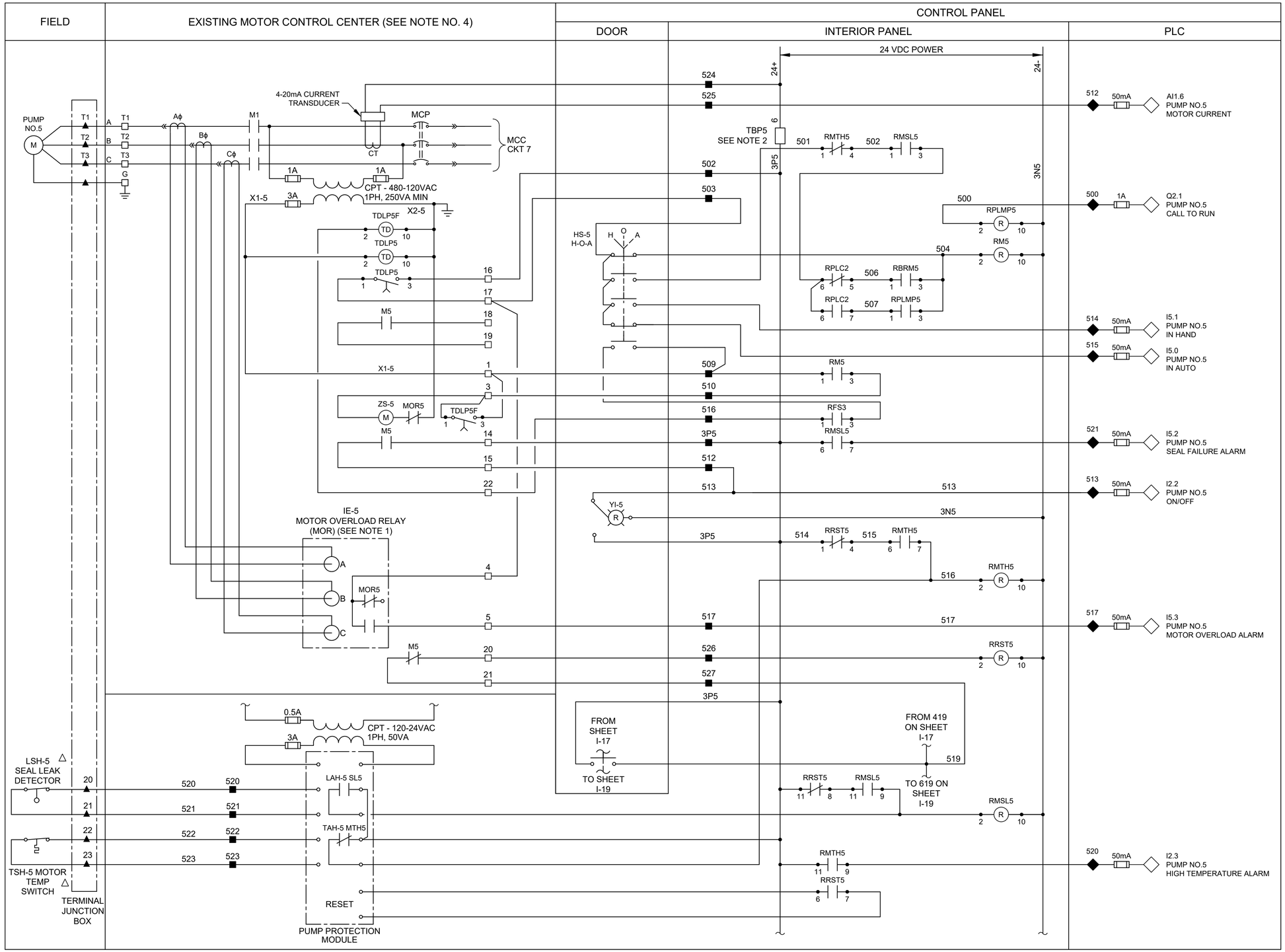
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.4 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-17	SHEET NO. 215 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-17.dwg Dec 17, 2025 - 3:21pm User: dkwong



NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-10.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.
4. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.5 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-18	SHEET NO. 216 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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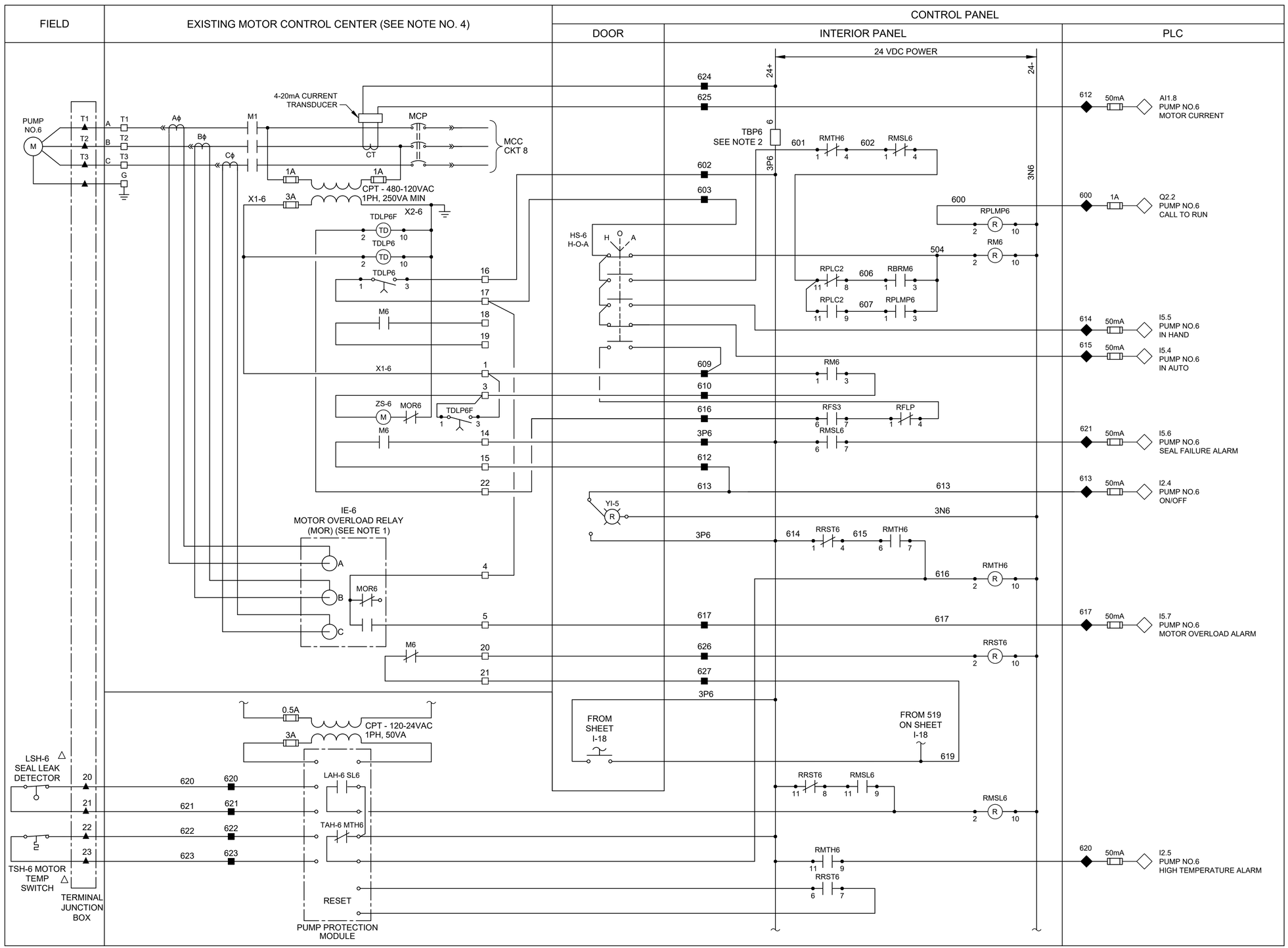

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- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION PUMP NO.6
CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-19	SHEET NO. 217 OF 254

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O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-19.dwg Dec 17, 2025 - 3:21pm User: dkwong

WAS PUMP NO. 1 | WAS PUMP NO. 2 | RAS PUMP NO. 1 | RAS PUMP NO. 2 | RAS PUMP NO. 3

	WAS PUMP NO. 1								WAS PUMP NO. 2								RAS PUMP NO. 1								RAS PUMP NO. 2								RAS PUMP NO. 3											
	SEAL FAIL ALARM	MOTOR OVERLOAD ALARM	MOTOR CURRENT	HIGH TEMP ALARM	IN HAND	IN AUTO	ON/OFF	START/ STOP	SEAL FAIL ALARM	MOTOR OVERLOAD ALARM	MOTOR CURRENT	HIGH TEMP ALARM	IN HAND	IN AUTO	ON/OFF	START/ STOP	SEAL FAIL ALARM	MOTOR OVERLOAD ALARM	MOTOR CURRENT	HIGH TEMP ALARM	IN HAND	IN AUTO	ON/OFF	START/ STOP	SEAL FAIL ALARM	MOTOR OVERLOAD ALARM	MOTOR CURRENT	HIGH TEMP ALARM	IN HAND	IN AUTO	ON/OFF	START/ STOP	SEAL FAIL ALARM	MOTOR OVERLOAD ALARM	MOTOR CURRENT	HIGH TEMP ALARM	IN HAND	IN AUTO	ON/OFF	START/ STOP	WAS FLOW IND.	WAS FLOW TOTALIZER	HIGH LEVEL	LEVEL IND.	LOW LEVEL
	MA 1A	MO 1A	II 1A	TH 1A	HI 1A	IA 1A	YFS 1A	YCS 1A	MA 2A	MO 2A	II 2A	TH 2A	HI 2A	IA 2A	YFS 2A	YCS 2A	MA 1	MO 1	II 1	TH 1	HI 1	IA 1	YFS 1	YCS 1	MA 2	MO 2	II 2	TH 2	HI 2	IA 2	YFS 2	YCS 2	MA 3	MO 3	II 3	TH 3	HI 3	IA 3	YFS 3	YCS 3	FI 1	FQR 1	LAHH 1	LI 1	LAL 1

FLOAT HIGH-HIGH LEVEL: LAHH 1

SLUDGE LEVEL TRANSMITTER

HMI

SCADA

WAS PUMP NO. 1 H/O/A RUN

WAS PUMP NO. 2 H/O/A RUN

RAS/WAS PUMPS STATION PLC CONTROL PANEL

RAS PUMP NO. 1 H/O/A RUN

RAS PUMP NO. 2 H/O/A RUN

RAS PUMP NO. 3 H/O/A RUN

OIT

RESET

RAS/WAS PUMPS STATION PLC CONTROL PANEL

RAS/WAS MCC

WAS PUMP NO.1 MCC STARTER BUCKET

WAS PUMP NO.2 MCC STARTER BUCKET

RAS PUMP NO.1 MCC STARTER BUCKET

RAS PUMP NO.2 MCC STARTER BUCKET

RAS PUMP NO.3 MCC STARTER BUCKET

RAS/WAS AREA

120VAC

FIT 1

FE 1

TO GRAVITY THICKENERS

WAS_FIT-1

WAS PUMP NO.1

WAS PUMP NO.2

RAS/WAS PUMP SPLITTER BOX

LT 1

LE 1

RADAR LEVEL TRANSMITTER LT-101

FS2 HIGH-HIGH LEVEL FLOAT SWITCH

FS1 HIGH LEVEL FLOAT SWITCH

RAS PUMP NO.3

RAS PUMP NO.2

RAS PUMP NO.1

TO AERATION BASINS

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

INSTRUMENTATION
RAS/WAS P&ID DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-20	SHEET NO. 218 OF 254

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-20.dwg Dec 17, 2025 - 3:21pm User: dkwong

EQUIPMENT AND DEVICE SCHEDULE		
ITEM	QUANTITY	DESCRIPTION
A	1	SINGLE CHANNEL INTRINSICALLY SAFE RELAY
B	2	ANALOG SIGNAL ISOLATOR
C	*	PUMP PROTECTION MODULE
D	*	NOT USED
E	6	HAND-OFF-AUTO SWITCH, 3 POSITION, HEAVY-DUTY OIL TIGHT WITH 2 SETS OF CONTACT BLOCKS (PUMP CONTROL)
F	6	INDICATING LIGHT, HEAVY DUTY, OILTIGHT, RED, 24 VDC, LED, WITH "RUN" LEGEND
G	*	NOT USED.
H	1	SWITCH FOR CABINET LIGHT, 120V, 20A, SPST
I	2	DUPLEX RECEPTACLE, 120V, 20A, 2 WIRE, GROUNDED, GFCI TYPE
J	1	24" LED STRIP LIGHT 120V SUITABLE FOR ZERO DEGREE OPERATION.
K	*	NAMEPLATES, SEE SPECIFICATIONS (SEE NAMEPLATE SCHEDULE) (1)
L	1	PROGRAMMABLE LOGIC CONTROLLER WITH EXPANSION UNIT
M	*	CONTROL RELAY 24VDC RELAY WITH THREE FORM C CONTACTS AND 11 PIN SOCKET BASE
N	-	NOT USED
O	1	FIBER OPTIC PATCH PANEL
P	1	NEMA 12 GASKETED STEEL ENCLOSURES WITHOUT VENTS 72" H X 20" D X 60" W
Q	*	TERMINAL BLOCK
R	1	WIRE DUCT 2" WIDE X 2" DEEP MINIMUM
S	1	GROUND BUS
T	1	COMMUNICATION ETHERNET SWITCH
U	9	CARTRIDGE
V	*	PUSHBUTTON, BLACK WITH RESET LEGEND
W	-	NOT USED
X	*	FUSED TERMINAL BLOCKS
Y	1	POWER SURGE PROTECTOR - CONTROL POWER
Z	1	PROGRAMMING SCREEN (OIT)
AA	*	120VAC SYSTEM FUSES
BB	1	120VAC - 24VDC POWER SUPPLY, 5A
CC	*	NOT USED
DD	2	INDICATING LIGHT, HEAVY DUTY, OILTIGHT, GREEN, 24VDC, LED WITH "BACKUP PLC" & "PRIMARY PLC" LEGEND
EE	4	ANALOG I/O SURGE SUPPRESSOR
FF	-	NOT USED

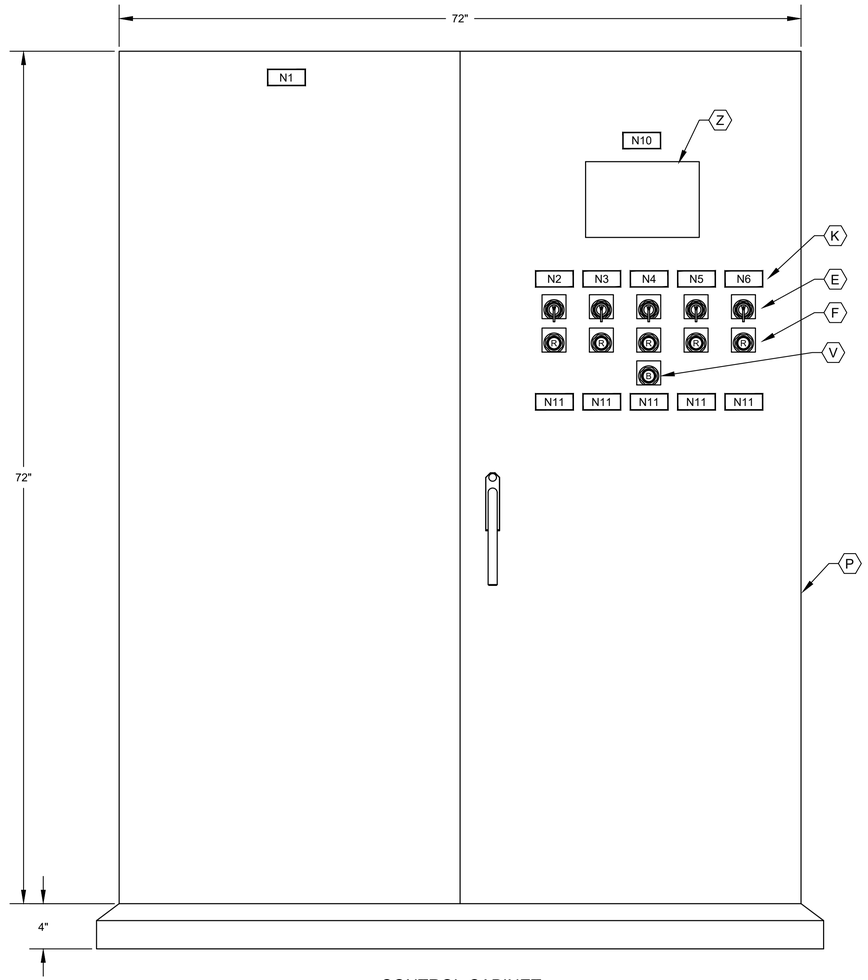
* - AS SCHEDULED

NAMEPLATE SCHEDULE

DESIGNATION	ENGRAVED
N1	RAS/WAS PUMP STATION
N2	RAS PUMP NO. 1
N3	RAS PUMP NO. 2
N4	RAS PUMP NO. 3
N5	WAS PUMP NO. 1
N6	WAS PUMP NO. 2
N7	NOT USED
N8	NOT USED.
N9	NOT USED.
N10	PROGRAMMING SCREEN
N11	MOTOR DATA HORSEPOWER (OUTPUT) ---------- RPM AT FULL LOAD ---------- TIME RATING ---------- FREQUENCY ---------- NUMBER OF PHASES ---------- MODEL NUMBER ---------- RATED VOLTAGE ---------- SERVICE FACTOR ---------- FULL LOAD AMPS ---------- INSULATION CLAS ---------- NEMA DESIGN LETTER ---------- TEMPERATURE RISE ---------- NEMA FRAME SIZE ---------- DATE OF MANUFACTURE ---------- THERMO PROTECTION (IF REQUIRED) -- MOISTURE PROTECTION (IF REQUIRED)-

NOTES:

1. NAMEPLATES SHALL BE MOUNTED TO PANELS USING STAINLESS STEEL HARDWARE.
2. REFER SPECIFICATIONS FOR ALL PANEL COMPONENTS.



CONTROL CABINET
FRONT DOOR ELEVATION

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

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FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS/WAS CONTROL PANEL EQUIP. LAYOUT & SCHEDULE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

I-21

SHEET NO. 219 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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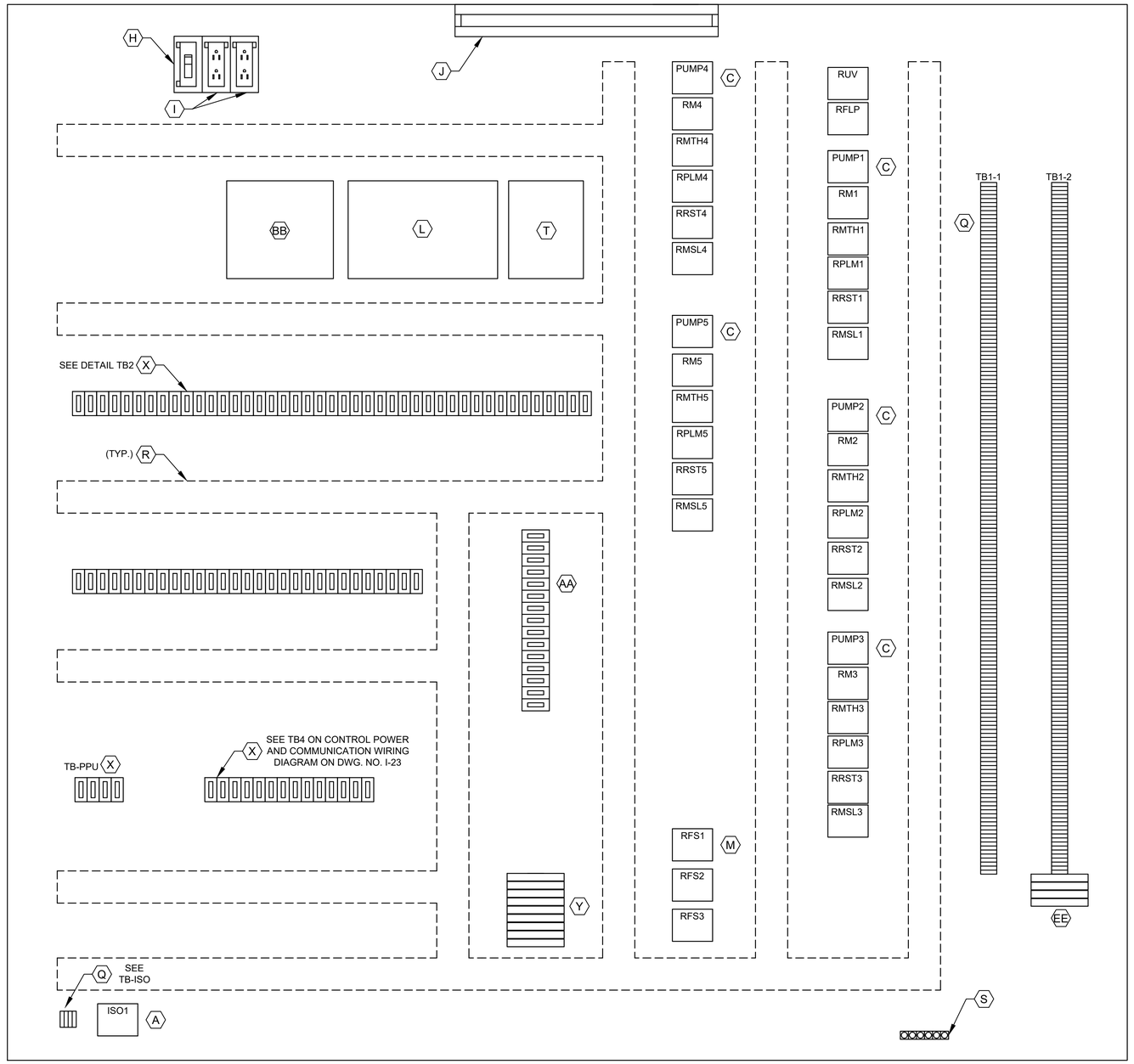
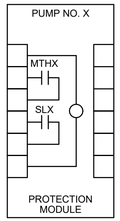


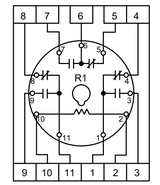
CONTROL PANEL ELEVATION

LEGEND	
TAG	DESCRIPTION
RMTH	MOTOR HIGH TEMPERATURE ALARM RELAY
RPLMP	PLC PUMP RUN RELAY
RRST	PUMP RESET AUX RELAY
RPLC	PLC MODE AUX RELAY
RM	PUMP RUN AUX RELAY
RUV	UNDER VOLTAGE RELAY
ISO	INTRINSICALLY SAFE RELAY
RFS	PUMP RUN FLOAT SWITCH RELAY
RMSL	MOTOR SEAL LEAK ALARM RELAY
RFLP	FLOAT LOCKOUT PUMP RELAY



PUMP PROTECTION MODULE DETAIL, ITEM C

NOTE: REPLACE "X" WITH APPROPRIATE PUMP NO.



RELAY DETAIL ITEM M

NOTES:

1. SEE SHEET I-21 FOR EQUIPMENT SCHEDULE.

DETAIL TB-ISO
1500
1501
1503
1504

DETAIL TB1-1
L1A
L1N
SPARE
3
3N
SPARE
49
50
51
52
53
54
1004
1
24V-
24V-
SPARE
1002
2
11
1001
1001A
12
1003
1003A
34
3N
19
20
102
103
3P1
109
110
112
116
117
120
121
122
123
124
125
126
127
SPARE
SPARE
202
203
3P2
209
210
212
216
217
220
221
222
223
224
225
226
227

DETAIL TB1-2
SPARE
SPARE
302
303
3P3
309
310
312
316
317
320
321
322
323
324
325
326
327
SPARE
SPARE
402
403
3P4
409
410
412
416
417
420
421
422
423
424
425
426
427
SPARE
SPARE

DETAIL TB1-2
502
503
3P5
509
510
512
516
517
520
521
522
523
524
525
526
527
SPARE
SPARE
602
603
3P6
609
610
612
616
617
620
621
622
623
624
625
626
627

DETAIL TB2
36A
37A
50
52
54
52A
52A
54A
L+
M
35B
38B
41B
44B
SPARE
SPARE
47B
50B
53B
13B
13AB
B
L+
M
14B
14AB
14GB
119
SPARE
L+
M
13
13A
13G
14
14A
14G
1M
2M
1L
3
30
32
34
37
38
41
33B
45
18B
SPARE

DETAIL TB2
100
112
113
114
115
117
118
119
120
121
SPARE
200
212
213
214
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221
SPARE
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321
SPARE
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412
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415
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419
420
421
SPARE

DETAIL TB2
500
512
513
514
515
517
518
519
520
521
SPARE
600
612
613
614
615
617
618
619
620
621
SPARE

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GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS/WAS CONTROL PANEL EQUIPMENT LAYOUT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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SHAN LEI, P.E.	
I-22	SHEET NO. 220 OF 254

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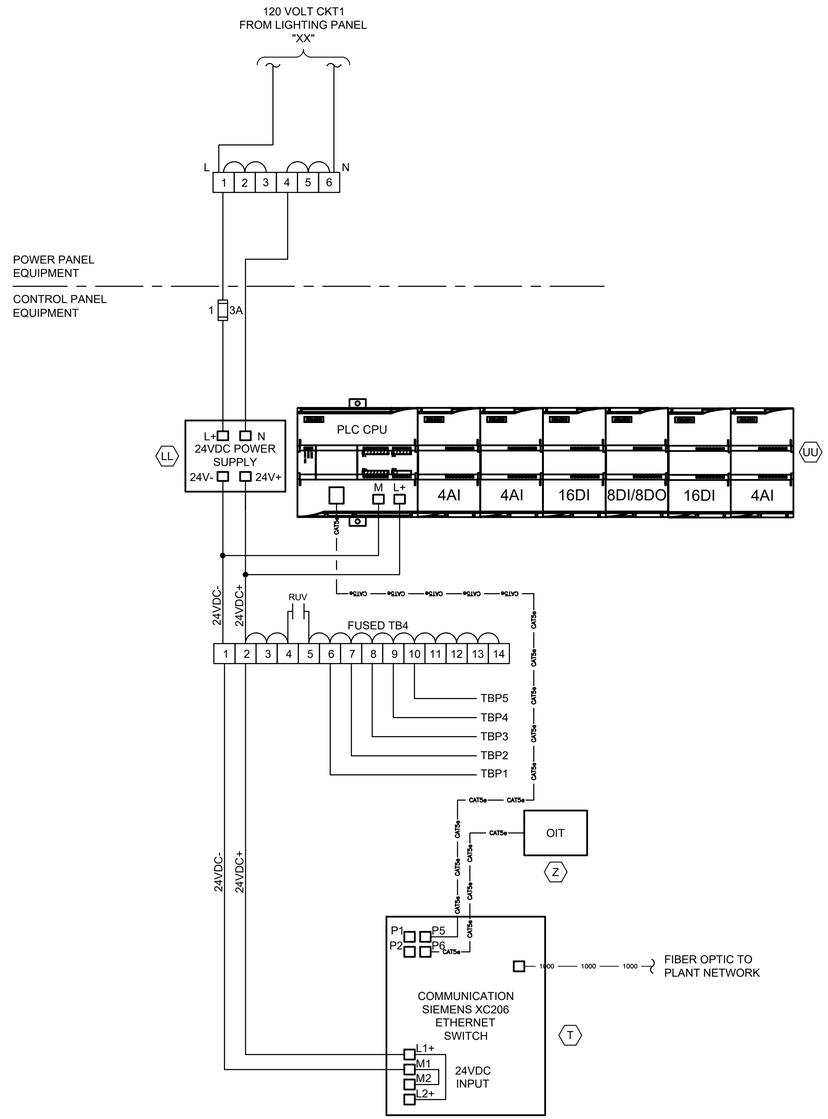

CONTROL POWER &
COMMUNICATIONS WIRING

DIAGRAM

NTS

(SEE NOTE 1)

NOTES:

1. REFER TO SPEC SECTION 16120 FOR CONDUCTOR COLOR CODE.

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GREENRIDGE WWTP IMPROVEMENTS
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RAS/WAS SYSTEM COMMUNICATION DIAGRAM

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I-23 | SHEET NO. 221 OF 254

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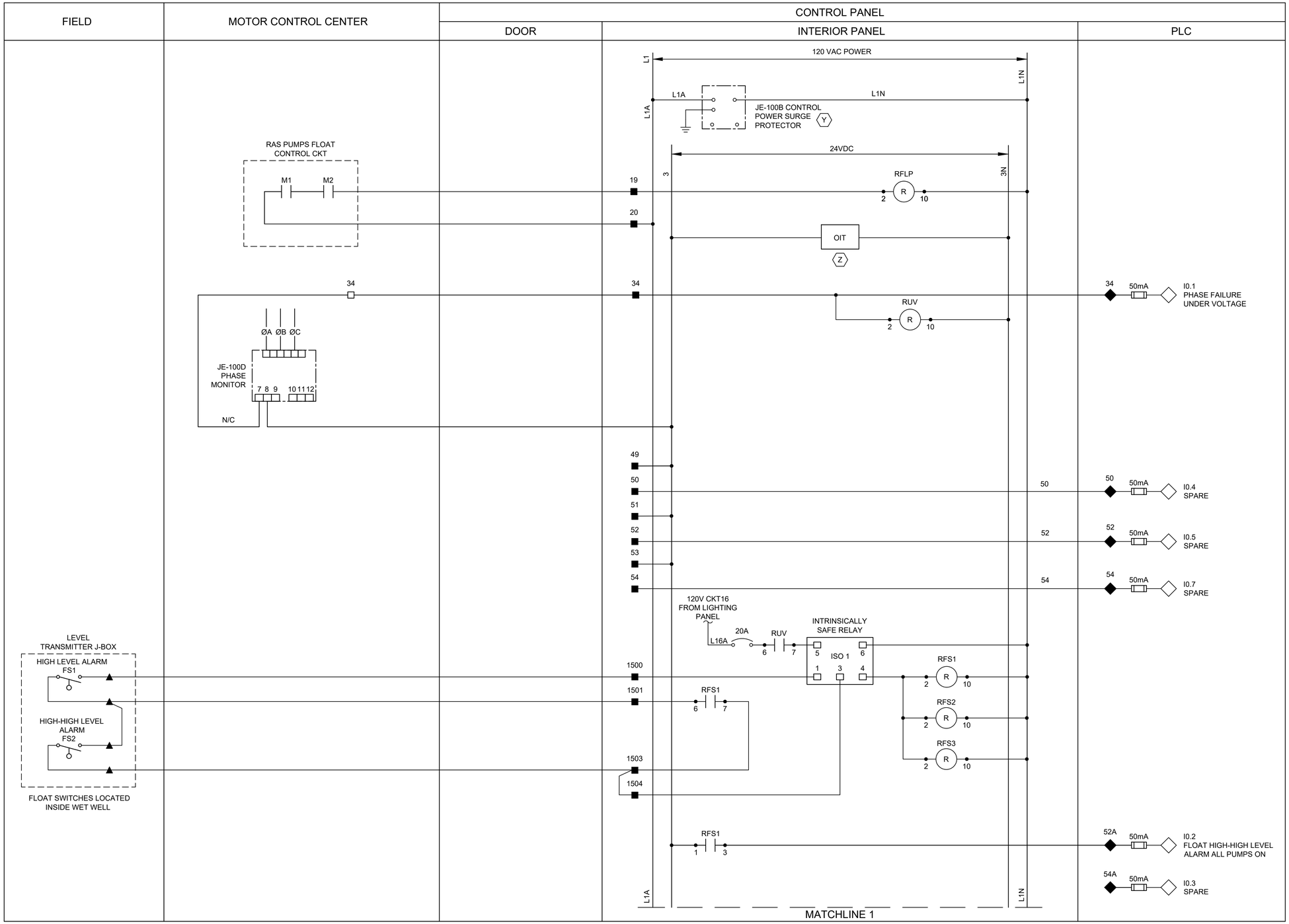

LEGEND

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- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
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- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NOTES:

1. PROVIDE MANUAL TRANSFER SWITCH DRY CONTACT.
2. DRY/WET PIT APPLICATION ONLY.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

GAI
Gupta & Associates, Inc.
consulting engineering
Registration No. F-2593
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PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

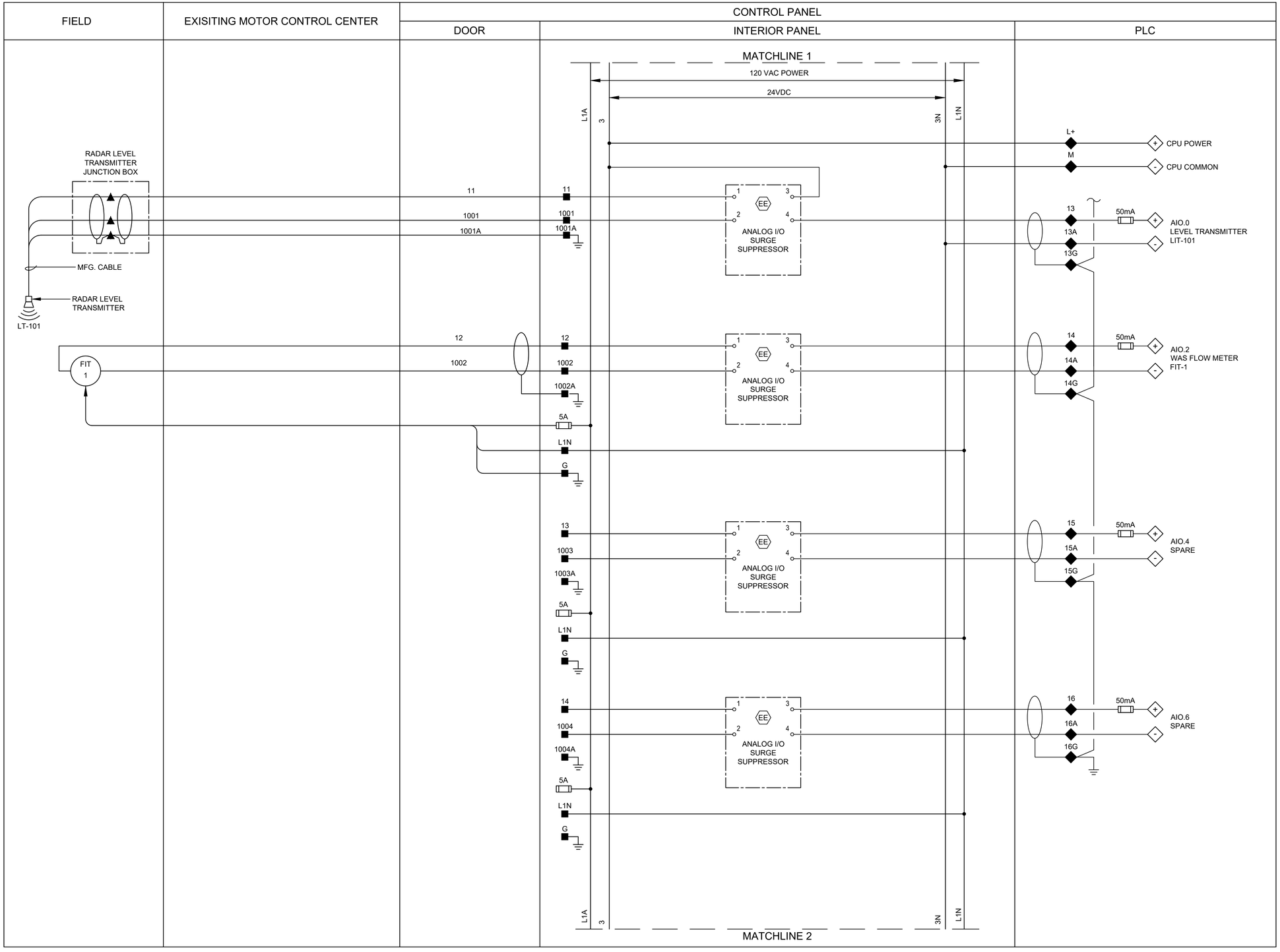
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS/WAS CONTROL PANEL CONTROL WIRING DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 222 OF 254	

I-24

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-24.dwg Dec 17, 2025 - 3:22pm User: dkwong



LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS/WAS CONTROL PANEL CONTROL WIRING DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-25	SHEET NO. 223 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-25.dwg Dec 17, 2025 - 3:22pm User: dkwong

FIELD | MOTOR CONTROL CENTER | CONTROL PANEL (DOOR | INTERIOR PANEL | PLC)

RAS PUMP NO. 1
M
T1 T2 T3 G
A B C
Aϕ Bϕ Cϕ
M1
4-20mA CURRENT TRANSDUCER
MCP
CT
MCC CKT 2
1A 1A
CPT - 480-120VAC 1PH, 250VA MIN
X1-1 3A X2-1
TDLP1F TD 2 10
TDLP1 TD 2 10
TDLP1 1 3
M1
X1-1
ZS-1 M MOR1
TDLP1F 1 3
M1
IE-RAS1 MOTOR OVERLOAD RELAY (MOR) (SEE NOTE 1)
A B C MOR1
0.5A 3A CPT - 120-24VAC 1PH, 50VA
LSH-1 SEAL LEAK DETECTOR
TSH-1 MOTOR TEMP SWITCH
TERMINAL JUNCTION BOX
LAH-1 SL1
TAH-1 MTH1
RESET
PUMP PROTECTION MODULE

24 VDC POWER 24+ 24-
TBP1 SEE NOTE 2
3P1 3N1
HS-W1 H-O-A H O A
HS-1A RESET
TO SHEET I-27
RPLMP1 R 2 10
RMTH1 1 4
RMSL1 1 4
RM1 R 2 10
RPLMP1 1 3
RM1 1 3
RFS1 11 9
RMSL1 6 7
YI-1 R
RRST1 1 4
RMTH1 6 7
RMTH1 R 2 10
RRST1 R 2 10
RRST1 1 3
RRST1 11 8
RMSL1 11 9
RMSL1 R 2 10
TO 219 ON SHEET I-27
RMTH1 11 9
RRST1 6 7

	PLC
112 50mA	AI0.8 RAS PUMP NO. 1 MOTOR CURRENT
100 1A	Q0.7 RAS PUMP NO. 1 CALL TO RUN
114 50mA	I3.1 RAS PUMP NO. 1 IN HAND
115 50mA	I3.0 RAS PUMP NO. 1 IN AUTO
121 50mA	I3.2 RAS PUMP NO. 1 SEAL FAILURE ALARM
113 50mA	I0.7 RAS PUMP NO. 1 ON/OFF
117 50mA	I3.3 RAS PUMP NO. 1 MOTOR OVERLOAD ALARM
118 50mA	I0.6 ALARMS RESET
119 1A	Q0.4 ALARMS RESET
120 50mA	I1.1 RAS PUMP NO. 1 HIGH TEMPERATURE ALARM

NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-23.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS CONTROL PANEL PUMP NO.1 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-26	SHEET NO. 224 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-26.dwg Dec 17, 2025 - 3:22pm User: dkwong

FIELD | MOTOR CONTROL CENTER | CONTROL PANEL: DOOR | INTERIOR PANEL | PLC

RAS PUMP NO. 2
M
T1 T2 T3 G
A B C
M1
Aϕ Bϕ Cϕ
4-20mA CURRENT TRANSDUCER
MCP
CT
MCC CKT 3
1A 1A
CPT - 480-120VAC 1PH, 250VA MIN
X1-2 3A X2-2
TDLP2F TD 2 10
TDLP2 TD 2 10
TDLP2 1 3
M2
X1-2
ZS-2 M MOR2
TDLP2F 1 3
M2
IE-RAS2 MOTOR OVERLOAD RELAY (MOR) (SEE NOTE 1)
A B C
MOR2
M2
0.5A
3A
CPT - 120-24VAC 1PH, 50VA
LSH-RAS2 SEAL LEAK DETECTOR
TSH-RAS2 MOTOR TEMP SWITCH
TERMINAL JUNCTION BOX
LAH-2 SL2
TAH-2 MTH2
RESET
PUMP PROTECTION MODULE

24 VDC POWER
24+ 24-
224 225 202 203 3P2 3N2
TBP2 SEE NOTE 2
HS-2 H-O-A H O A
RPLMP2 R 2 10
RMTH2 1 4
RMSL2 1 4
RM2 R 2 10
RPLMP2 1 3
RM2 1 3
RFS2 1 3
RMSL2 6 7
YI-2 R
RRST2 1 4
RMTH2 6 7
RMTH2 R 2 10
RRST2 R 2 10
RMSL2 R 2 10
RMTH2 11 9
RRST2 6 7
RRST2 11 8
RMSL2 11 9
FROM SHEET I-26
TO SHEET I-28
FROM 119 ON SHEET I-26
TO 319 ON SHEET I-28

212 50mA AI1.0 RAS PUMP NO. 2 MOTOR CURRENT
200 1A Q1.0 RAS PUMP NO. 2 CALL TO RUN
214 50mA I3.5 RAS PUMP NO. 2 IN HAND
215 50mA I3.4 RAS PUMP NO. 2 IN AUTO
221 50mA I3.6 RAS PUMP NO. 2 SEAL FAILURE ALARM
213 50mA I1.2 RAS PUMP NO. 2 ON/OFF
217 50mA I3.7 RAS PUMP NO. 2 MOTOR OVERLOAD ALARM
220 50mA I1.3 RAS PUMP NO. 2 HIGH TEMPERATURE ALARM

△ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
□ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
■ FIELD TERMINAL LOCATED AT CONTROL PANEL
▲ REMOTE TERMINAL
● DEVICE TERMINAL NO.
◆ PLC INTERFACE TERMINAL

NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-23.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS CONTROL PANEL PUMP NO.2 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-27	SHEET NO. 225 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-27.dwg Dec 17, 2025 - 3:22pm User: dkwong

FIELD | MOTOR CONTROL CENTER | CONTROL PANEL — DOOR | INTERIOR PANEL | PLC

RAS PUMP NO. 3
M
T1 T2 T3 G
A B C
T1 T2 T3
Aϕ Bϕ Cϕ
M1
4-20mA CURRENT TRANSDUCER
MCP
CT
MCC CKT 4
1A 1A
CPT - 480-120VAC 1PH, 250VA MIN
X1-3 3A X2-3
TDLP3F TD 2 10
TDLP3 TD 2 10
TDLP3 1 3
M3
ZS-3 M
MOR3
TDLP3F 1 3
M3
IE-RAS3
MOTOR OVERLOAD RELAY
(MOR) (SEE NOTE 1)
A B C
MOR3
M3
0.5A 3A
CPT - 120-24VAC 1PH, 50VA
LSH-RAS3 SEAL LEAK DETECTOR
TSH-RAS3 MOTOR TEMP SWITCH
TERMINAL JUNCTION BOX
LAH-3 SL3
TAH-3 MTH3
RESET
PUMP PROTECTION MODULE

16 17 18 19 1 3 14 15 22 4 5 20 21 20 21 22 23

320 321 322 323 320 321 322 323

24 VDC POWER
24+ 24-
324 325 302 303 3P3 3N3
TBP3 SEE NOTE 2
6
HS-3 H-O-A H O A
RPLMP3 R 2 10
RMTH3 1 4
RMSL3 1 4
RM3 R 2 10
RPLMP3 1 3
RM3 1 3
RFS2 6 7
RMSL3 6 7
RRST3 R 2 10
RRST3 1 4
RMTH3 6 7
RMTH3 R 2 10
RRST3 R 2 10
RRST3 11 8
RMSL3 11 9
RMSL3 R 2 10
RMTH3 11 9
RRST3 6 7
YI-3 R
FROM SHEET I-27
TO SHEET I-29
FROM 219 ON SHEET I-27
TO 419 ON SHEET I-29

300 301 307 302 304 309 310 316 3P3 312 313 314 315 316 317 326 327 3P3 319

312 313 317 320 321 314 315 300

50mA
AI1.2 RAS PUMP NO. 3 MOTOR CURRENT
Q1.1 RAS PUMP NO. 3 CALL TO RUN
I4.0 RAS PUMP NO. 3 IN HAND
I4.1 RAS PUMP NO. 3 IN AUTO
I4.2 RAS PUMP NO. 3 SEAL FAILURE ALARM
I1.4 RAS PUMP NO. 3 ON/OFF
I4.3 RAS PUMP NO. 3 MOTOR OVERLOAD ALARM
I1.5 RAS PUMP NO. 3 HIGH TEMPERATURE ALARM

NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-23.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.

LEGEND

△ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
□ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER
■ PANEL FIELD TERMINAL LOCATED AT CONTROL PANEL
▲ REMOTE TERMINAL
● DEVICE TERMINAL NO.
◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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FB NO. XXXXXXX

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

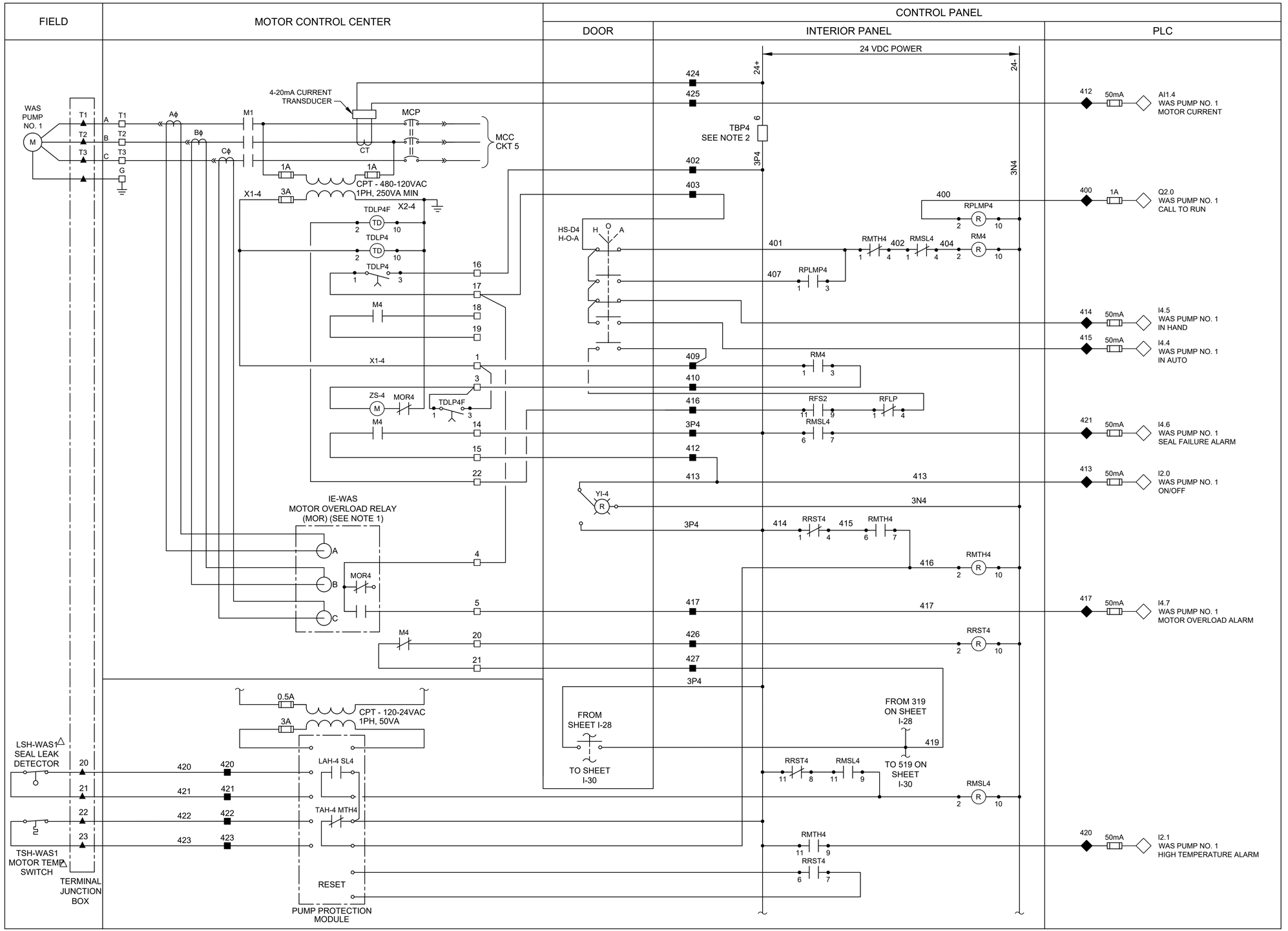
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS CONTROL PANEL PUMP NO.3 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-28	SHEET NO. 226 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-28.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-23.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.
4. SEAL FAILURE AND HIGH TEMPERATURE ALARMS WHERE APPLICABLE.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

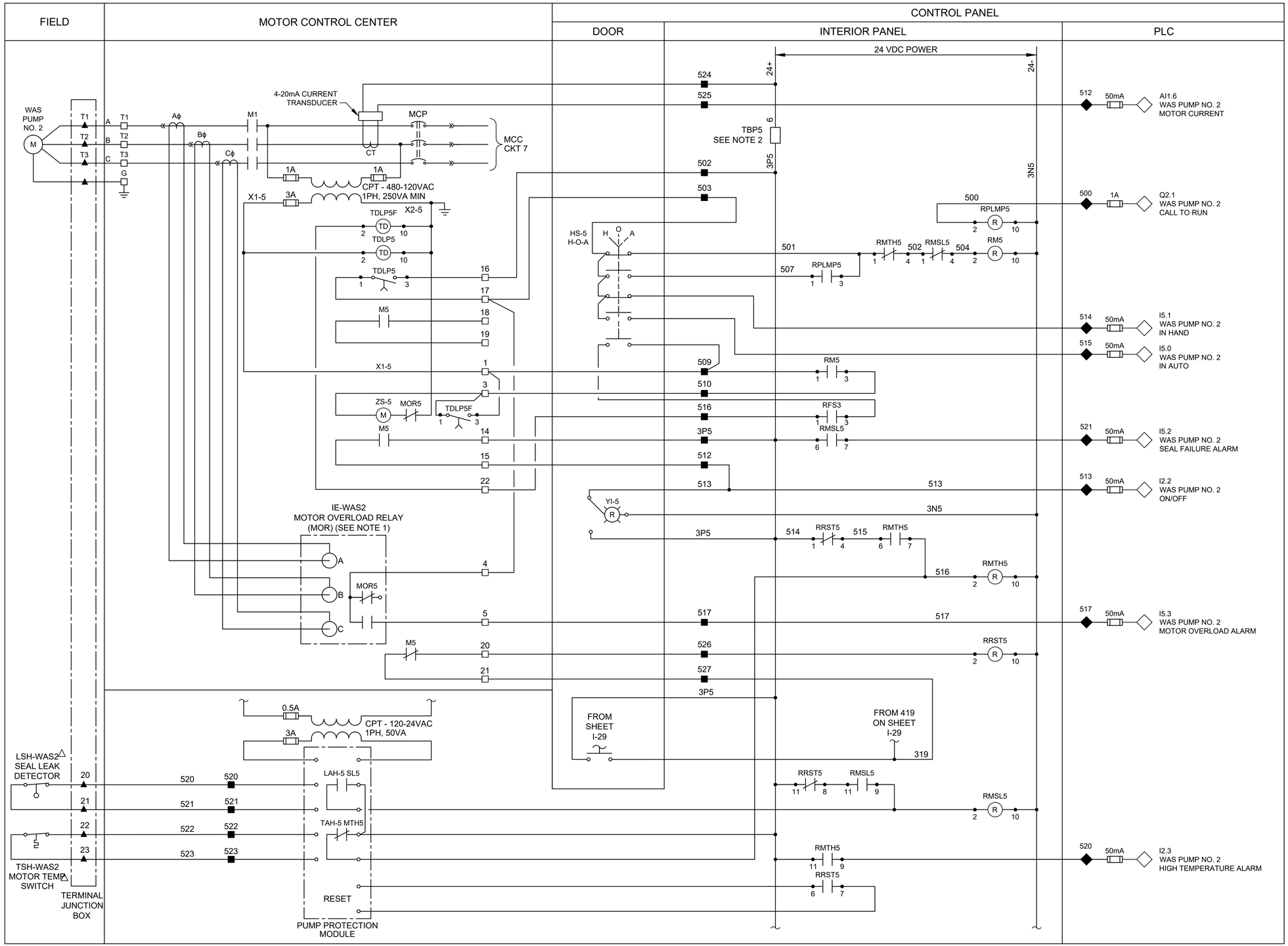
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
WAS CONTROL PANEL PUMP NO.1 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-29	SHEET NO. 227 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-29.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

1. MOTOR OVERLOAD RELAY OUTPUT CONTACT SHOWN NORMALLY CLOSED WHEN RELAY IS DE-ENERGIZED, OPEN WHEN ENERGIZED, AND CLOSED WHEN IN ALARM. VERIFY OPERATION OF RELAY PROVIDED AND ADJUST CONNECTION OF RMOR AUXILIARY RELAYS.
2. FUSED TERMINAL ON TERMINAL BLOCK TB4 SEE CONTROL POWER AND COMMUNICATION WIRING DIAGRAM DRAWING NO. I-23.
3. ALL FLOAT CONTROL CIRCUIT WIRES COLOR SHALL BE YELLOW.
4. SEAL FAILURE AND HIGH TEMPERATURE ALARMS WHERE APPLICABLE.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

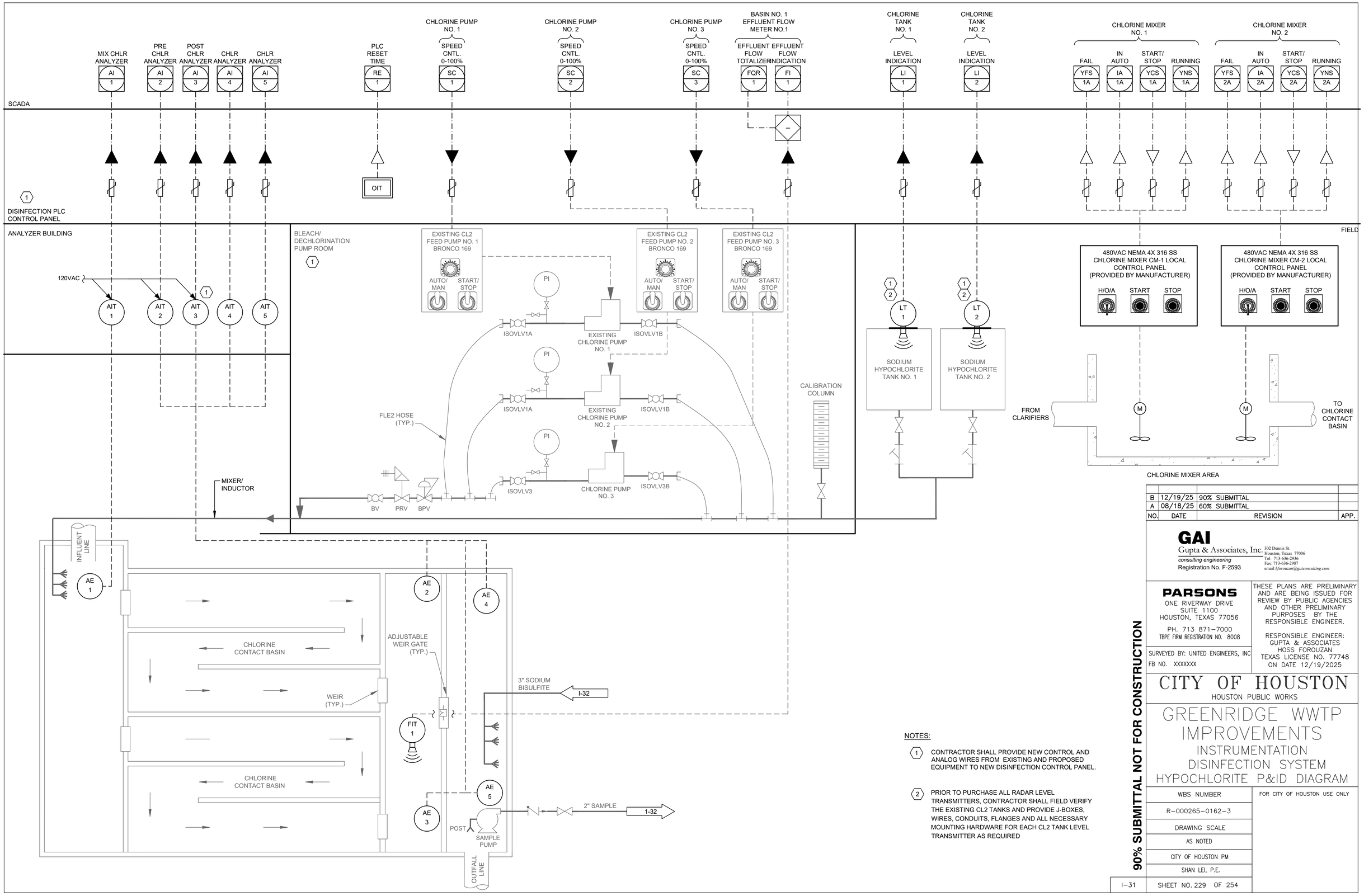
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
WAS CONTROL PANEL PUMP NO.2 CONTROL WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-30	SHEET NO. 228 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-30.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

1. CONTRACTOR SHALL PROVIDE NEW CONTROL AND ANALOG WIRES FROM EXISTING AND PROPOSED EQUIPMENT TO NEW DISINFECTION CONTROL PANEL.
2. PRIOR TO PURCHASE ALL RADAR LEVEL TRANSMITTERS, CONTRACTOR SHALL FIELD VERIFY THE EXISTING CL2 TANKS AND PROVIDE J-BOXES, WIRES, CONDUITS, FLANGES AND ALL NECESSARY MOUNTING HARDWARE FOR EACH CL2 TANK LEVEL TRANSMITTER AS REQUIRED

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

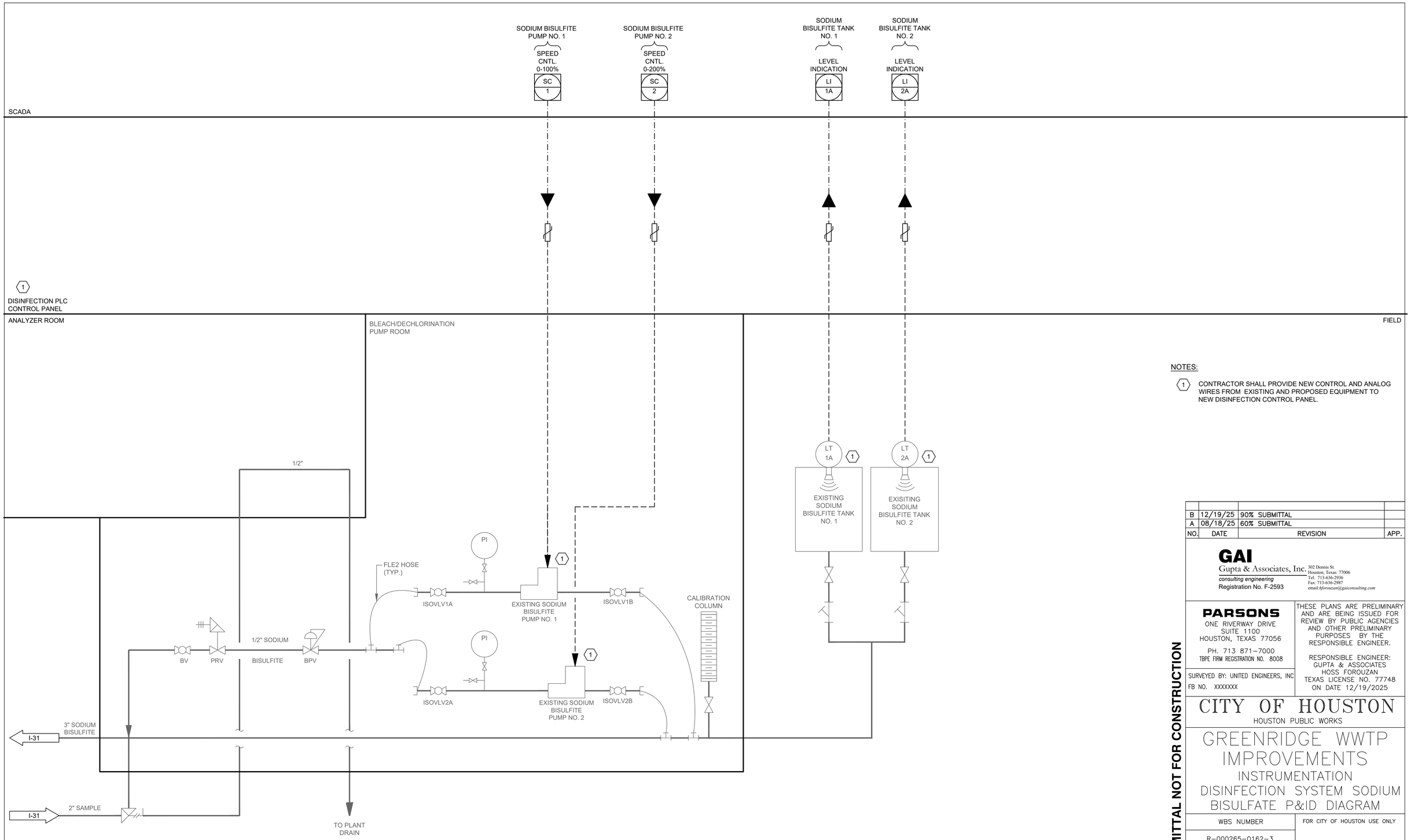
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM
HYPOCHLORITE P&ID DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-31	SHEET NO. 229 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-31.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

1. CONTRACTOR SHALL PROVIDE NEW CONTROL AND ANALOG WIRES FROM EXISTING AND PROPOSED EQUIPMENT TO NEW DISINFECTION CONTROL PANEL.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

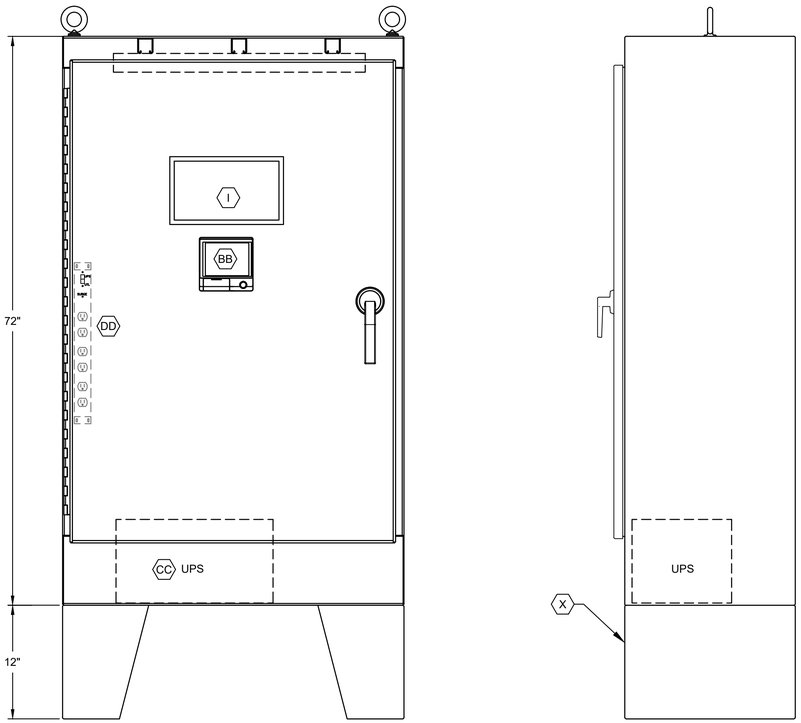
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM SODIUM BISULFATE P&ID DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 230 OF 254	

I-32

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\HB113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\HB113_I-32.dwg Dec 17, 2025 - 3:22pm User: dkwong

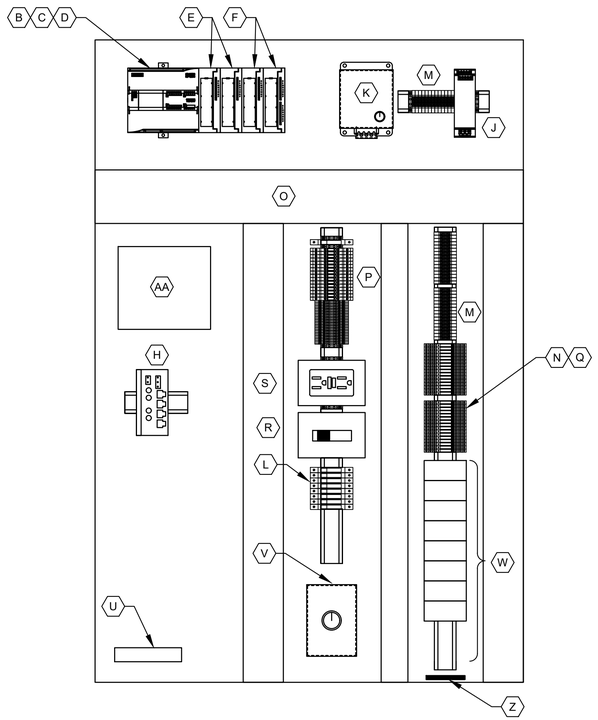


FRONT VIEW

SIDE VIEW

PLC
CABINET ELEVATION

DETAIL A
NTS --



PLC CABINET
INTERIOR LAYOUT

DETAIL B
NTS --

EQUIPMENT & DEVICE SCHEDULE		
ITEM	QUANTITY	DESCRIPTION
A	1	72"x36"x24" SINGLE ACCESS, FREE STANDING, 12 GAUGE NEMA 4X SST ENCLOSURE, WITH 12 GAUGE STEEL BACK PANEL HOFFMAN - A723624SSFSN4.
B	1	19" MOUNTING RAIL - SIEMENS 6ES5710-8MA11
C	1	SIMATIC 1200, CPU-1214C, 14DI, 10DO RELAY, 2AI 24VDC POWER-6ES7214-1HG40-OXBO
D	1	MICRO MEMORY CARD, 4MB-SIEMENS 6ES7954-8LC02-OAAO
E	2	8-POINT ANALOG INPUT MODULE-SIEMENS 6ES7-231-4HF32-0XB0
F	2	4-POINT ANALOG OUTPUT MODULE-SIEMENS 6ES7-232-4HD32-0XB0
G	1	NOT USED
H	1	ETHERNET SWITCH, SCALANCE XC206-2 IND. 4RJ48, 2FO-SIEMENS 6GK5206-2BB00-2AC2
I	1	SIMATIC MTP-1200 COMFORT COLOR PANEL 12" SCREEN, SIEMENS
J	1	120VAC-24VDC LOOP POWER SUPPLY RATED @ 5 AMPS W/ ASSEMBLY ADAPTER FOR S7-300 DIN RAIL PHOENIX CONTACT QUINT-PS100-24AC/24DC/5 (2938581)
K	1	120VAC SURGE PROTECTOR WITH DRY RELAY CONTACTS-SURGE SUPPRESSION INC. SDLA1P1C
L	8	120VAC, 20A, 15A, 5A AND 3A SINGLE POLE CIRCUIT BREAKER
M	LOT	TERMINAL BLOCK
N	LOT	FUSED TERMINAL BLOCK
O	LOT	WIRE DUCT 2" DEEP
P	LOT	ANALOG AND DIGITAL SURGE ARRRESTORS
Q	1	FUSES FOR FUSED TERMINAL BLOCKS - BUSSMANN (24) 63MA, (2) 5A, (24) 250MA
R	1	SWITCH FOR CABINET LIGHT, 120V, 20A, SPST - HUBBELL HBL12211
S	1	DUPLEX RECEPTACLE, 120V, 20A, 2 WIRE, GROUNDED GFCI TYPE - HUBBELL GF5362IA
T	1	30 WATT FLUORESCENT STRIP LIGHT W/ ZERO DEGREE BALLAST - USI COLUMBIA CS2-130-2120
U	1	240VAC 300 WATT STRIP SPACE HEATER (120VAC POWERED) - VULCAN 4E261
V	1	THERMOSTAT - COLUMBUS ELECTRIC 2E158
W	7	3 POLE 24V RELAY/BASE, TURCK
X	1	FLOOR STAND KIT AFK1224SS
Y	1	ETHERNET PATCH CABLE-SIEMENS CBL-CAT5-007
Z	1	GROUND BAR - SQUARE D 1630 PK9GTA
AA	1	12 PORTS FIBER OPTIC PATCH PANEL
BB	1	5.7" TFT DIGITAL CHART RECORDER E+H ECOGRAPH T RSG35, OR EQUAL
CC	1	1.5KVA TOWER UPS W/RELAY OUT PUT CARD, EATON OR APPROVED EQUAL
DD	1	MAINTENANCE BYPASS SWITCH FOR UPS, LOWELL MFG. CO. P/N UPS-XBDM-20RCD

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HOSS FOROUZAN
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ON DATE 12/19/2025

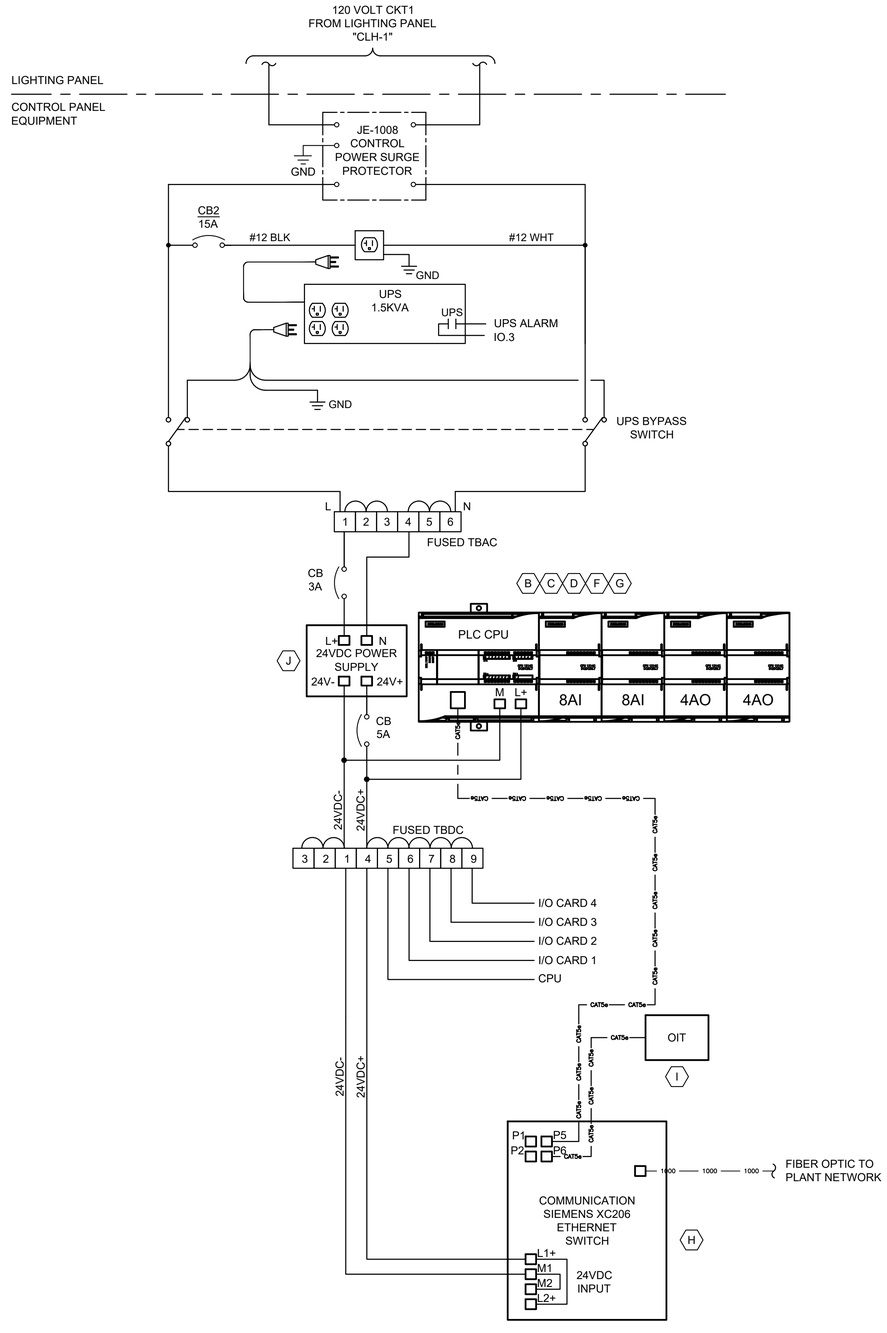
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM
EQUIP. LAYOUT & SCHEDULE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-33	SHEET NO. 231 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-33.dwg Dec 17, 2025 - 3:22pm User: dkwong



CONTROL POWER &
COMMUNICATIONS WIRING

DIAGRAM

NTS

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TEXAS LICENSE NO. 77748
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM
COMMUNICATION DIAGRAM

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R-000265-0162-3	
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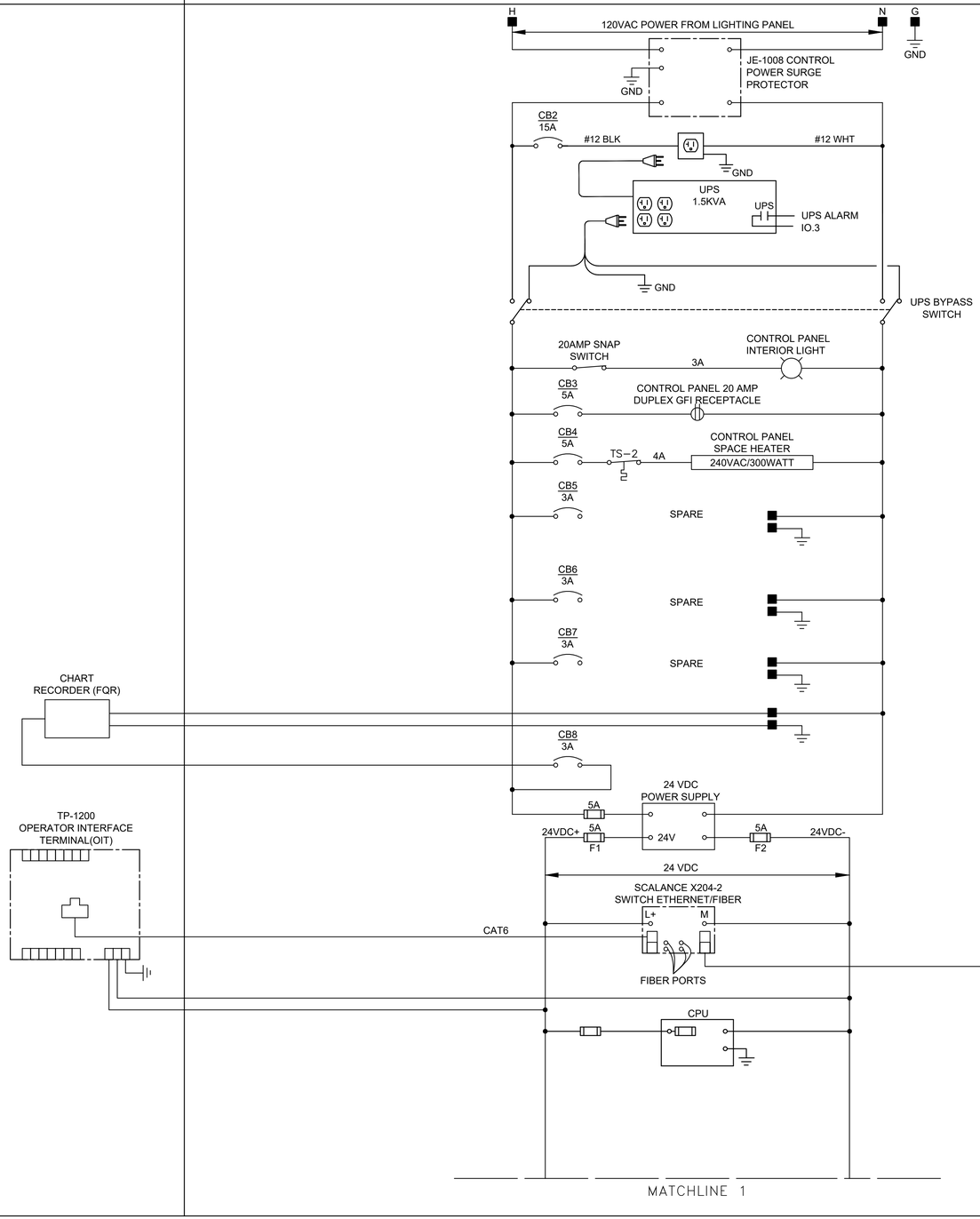
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 232 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-34

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-34.dwg Dec 17, 2025 - 3:22pm User: dkwong

FIELD	CONTROL PANEL		
	DOOR	INTERIOR PANEL	PLC



LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-35	SHEET NO. 233 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

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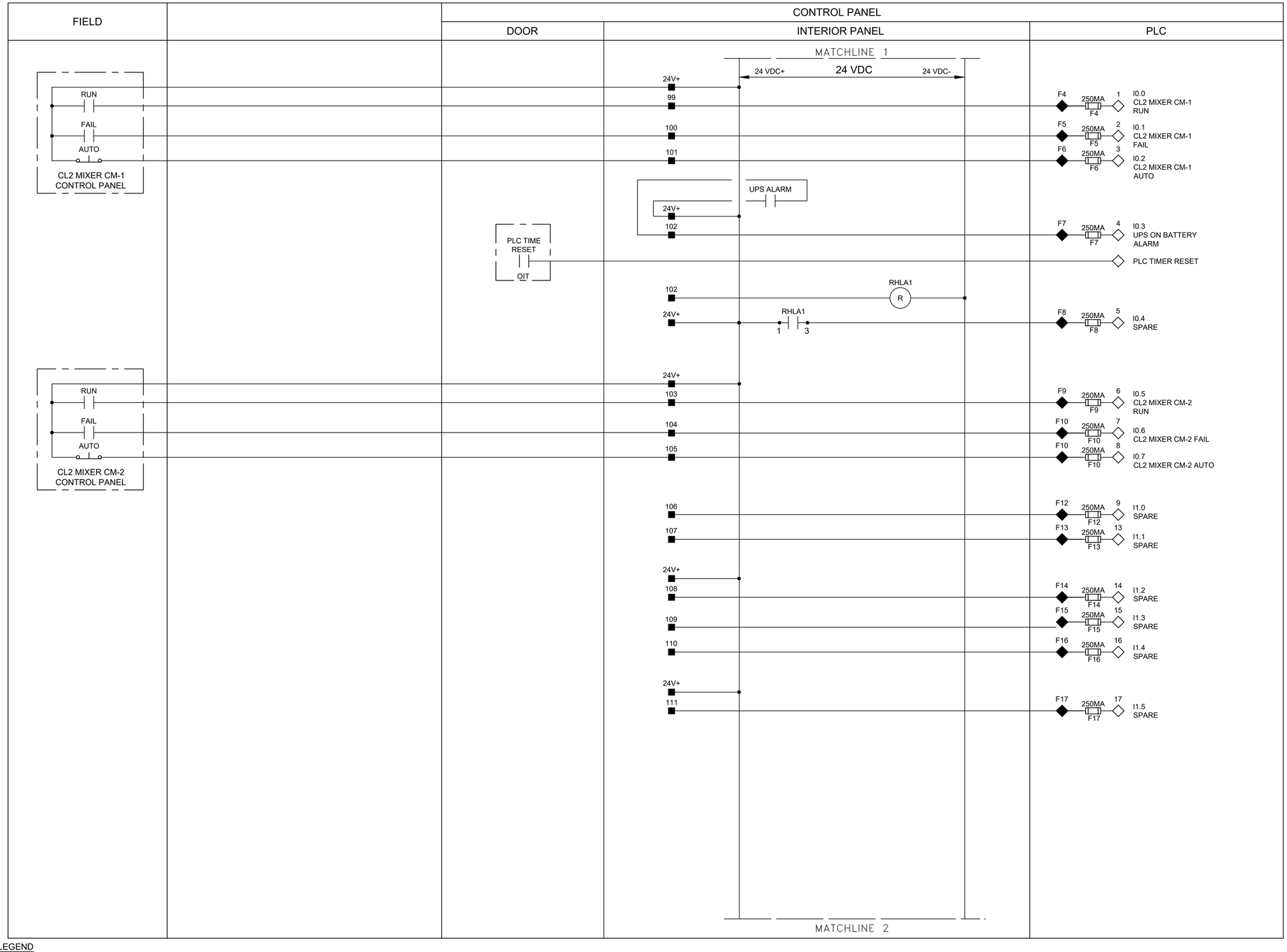

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

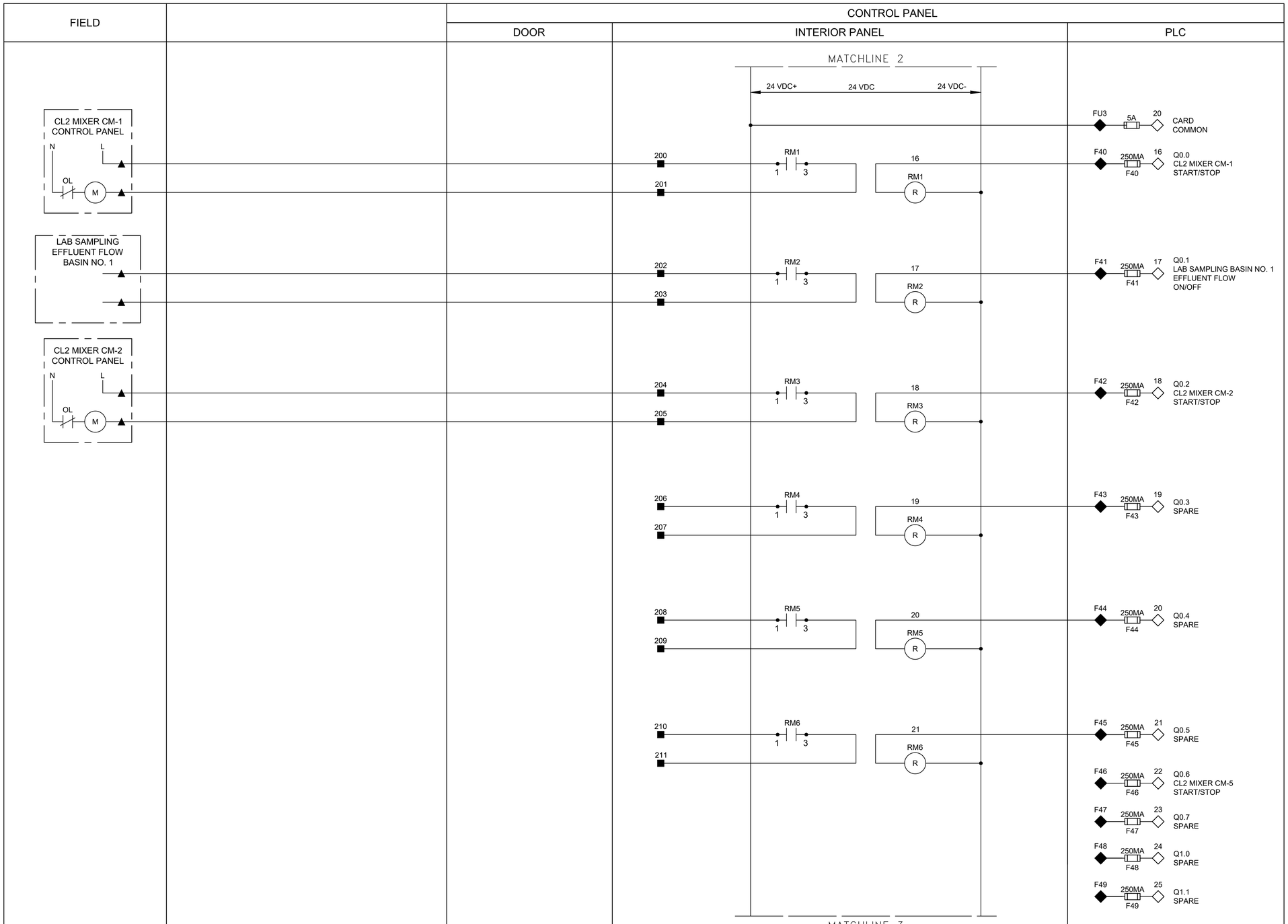
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 234 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-36

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-36.dwg Dec. 17, 2025 - 3:22pm User: dkwong



LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

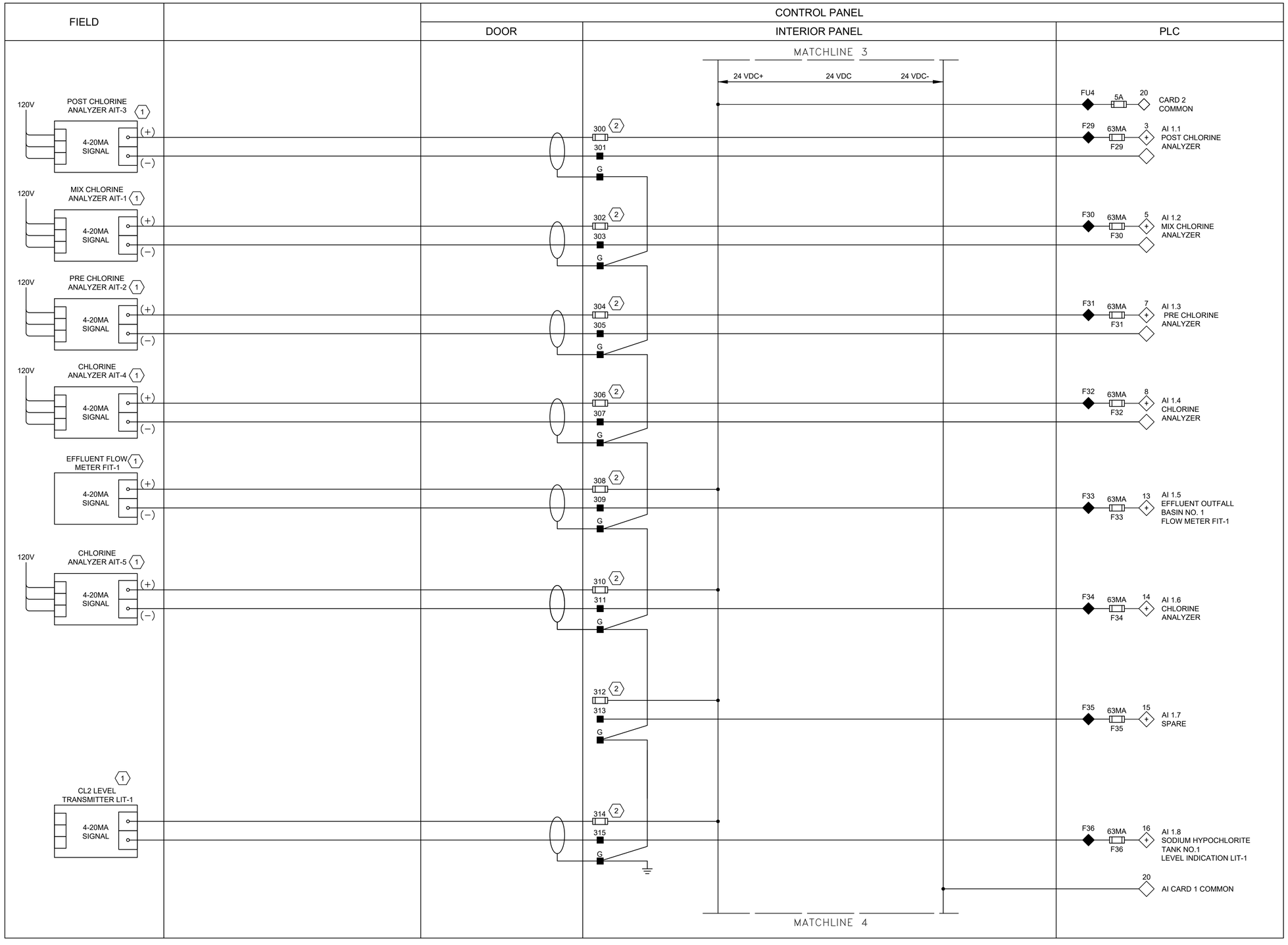
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM-III

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-37	SHEET NO. 235 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-37.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

1. ANALOG SURGE SUPPRESSOR FOR ALL DEVICES INSTALLED ON THE FIELD SIDE.
2. PROTECT ALL THE 4-20MA ANALOG WITH A SURGE SUPPRESSOR INSTALLED INSIDE PLC PANEL.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM-IV

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-38	SHEET NO. 236 OF 254

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O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-38.dwg Dec 17, 2025 - 3:22pm User: dkwong

NOTES:

1. ANALOG SURGE SUPPRESSOR FOR ALL DEVICES INSTALLED ON THE FIELD SIDE.
2. PROTECT ALL THE 4-20MA ANALOG WITH A SURGE SUPPRESSOR INSTALLED INSIDE PLC PANEL.

LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
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- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM-V

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM	
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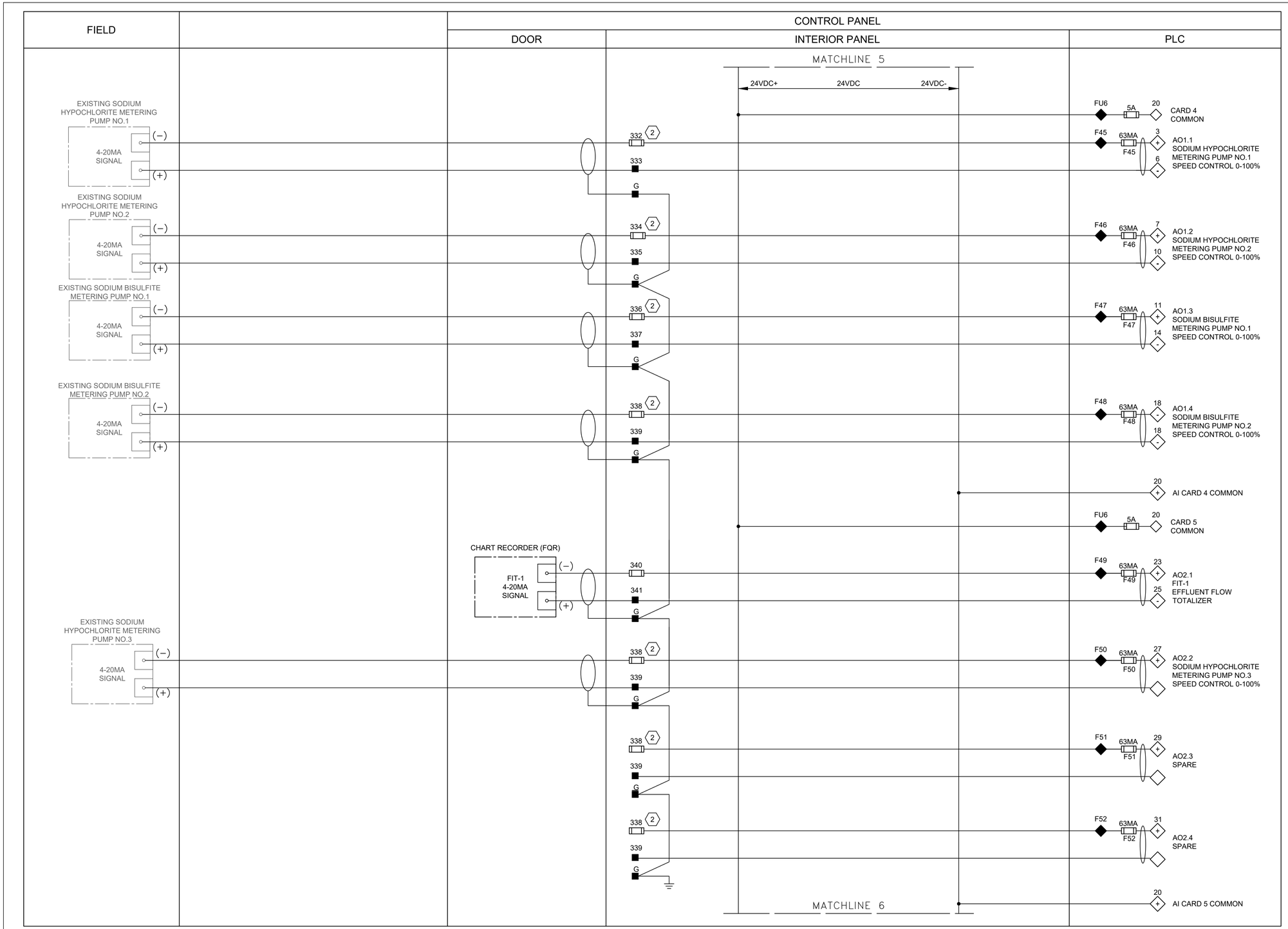
SHEET NO. 237 OF 254	

I-39

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-39.dwg Dec 17, 2025 - 3:22pm User: dkwong



NOTES:

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LEGEND

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RESPONSIBLE ENGINEER: GUPTA & ASSOCIATES HOSS FOROUZAN TEXAS LICENSE NO. 77748 ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION SYSTEM CONTROL PANEL WIRING DIAGRAM–VI

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–000265–0162–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

I–40

SHEET NO. 238 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I–40.dwg Dec 17, 2025 – 3:22pm User: dkwong

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-41.dwg Dec 17, 2025 - 3:22pm User: dkwong

SLUDGE THICKENER PUMP TS-101

START/STOP YCS 101 | FAIL YFS 101 | RUN YNS 101 | REMOTE IR 101

SLUDGE THICKENER PUMP TS-102

START/STOP YCS 102 | FAIL YFS 102 | RUN YNS 102 | REMOTE IR 102

HMI

LIFT STATION PLC CONTROL PANEL

FIELD

EXISTING SLUDGE THICKENER PUMP NO. 102 LOCAL CONTROL PANEL

EXISTING MCC-1 SLUDGE THICKENER PUMP NO. 101

EXISTING MCC-1 SLUDGE THICKENER PUMP NO. 102

EXISTING SLUDGE THICKENER PUMP NO. 102 LOCAL CONTROL PANEL

TSH 101

PI –

PSH 101

TSH 102

PI 102

PSH 102

TO PLANT DRAIN

FROM PUMPS WASP-1/2

8" WAS

EXISTING AEROBIC DIGESTER BASINS

24" WAS + DS

EXISTING GRAVITY THICKENER

SLUDGE THICKENER PUMP TSP-101 THKNPMP-101

SLUDGE THICKENER PUMP TSP-102 THKNPMP-102

TO SLUDGE HOLDING TANK

8" WAS

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B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

GAI
Gupta & Associates, Inc.
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Fax: 713-636-2987
email:hforouzan@gaiconsulting.com

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

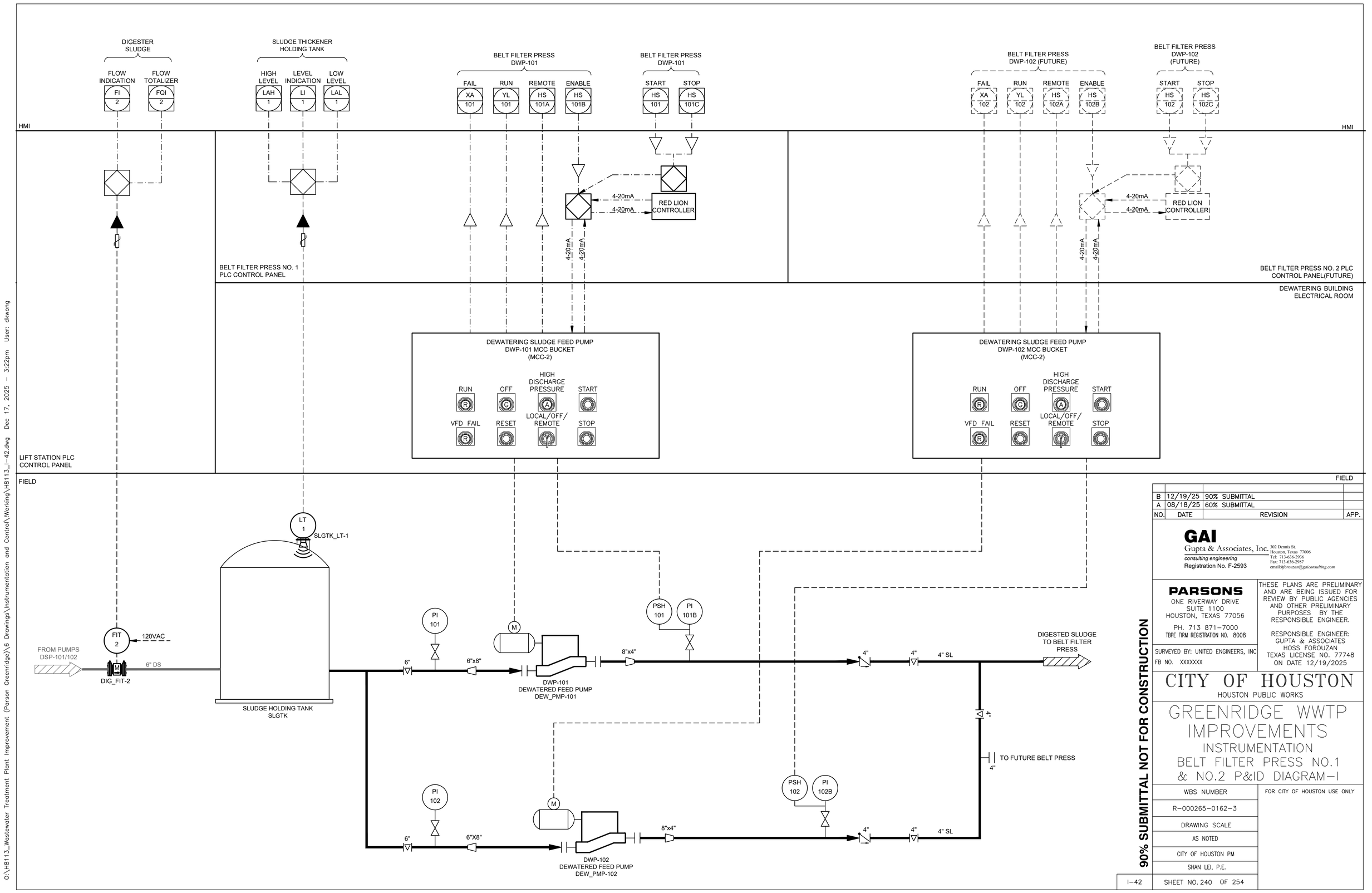
RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS AREA
P&ID DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-41	SHEET NO. 239 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION



NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.1 & NO.2 P&ID DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 240 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-42

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-42.dwg Dec 17, 2025 - 3:22pm User: dkwong

SLUDGE DEWATERING FEED PUMPS

FLOW INDICATION FI 1

FLOW TOTALIZER FQI 1

BELT FILTER PRESS NO. 101

HIGH TEMP. TAH 101

FAIL XA 101

NO CAKE XA 101A

UPPER/LOWER BROKEN XA 101B

LEFT/RIGHT MISALIGNED XA 101C

RUN YL 101

START HS 101

STOP HS 101A

HYDRAULIC PUMP NO. 101

LOW PRESSURE PAL 101

HIGH TEMP TAH 101A

START/STOP HS 101B

RUN YL 101

WASHWATER BOOSTER PUMP BWP-101

LOW PRESSURE PAL 101A

RUN YL 101D

FAIL XA 101E

HMI

HMI

BELT FILTER PRESS NO. 1 PLC CONTROL PANEL

CONTINUED ON I-42

VFD

4-20mA

4-20mA

RED LION CONTROLLER

CONTINUED ON I-45

WASHWATER BOOSTER PUMP WWP-101

START

STOP

BELT FILTER PRESS NO. 1 PLC CONTROL PANEL

BELT FILTER PRESS NO. 1 PLC CONTROL PANEL

FIELD

FIELD

M

PSL 101

TSH 101A

HYDRAULIC POWER UNIT

XS 101A

TSH 101

M

4" SL

4"x6"

POLYMER INJECTION RING AND MIXER

1 1/2"

FIT 1

120VAC

SLUDGE FROM BELT PRESS FEED PUMPS

4" SL

M

SLGTRNSPMP_FIT-1

FROM POLYMER FEED SYSTEM

1 1/2" DILUTED POLYMER

DRAIN TO PLANT DRAIN

FILTRATE

DEWATERED SOLIDS

TO COLLECTION CONVEYOR CNV-101

1 1/2"

S

1/2"

PG 101

1/2"

PSL 101A

1 1/2"

1 1/2"

M

2"

BELT WASH WATER FROM NON-POTABLE WATER DISTRIBUTION SYSTEM

BWP-101
WASH WATER PUMP
WSHWTRPMP-101

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.1
P&ID DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

I-43

SHEET NO. 241 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-43.dwg Dec 17, 2025 - 3:22pm User: dkwong

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-44.dwg Dec 17, 2025 - 3:22pm User: dkwong

SLUDGE DEWATERING FEED PUMPS

FLOW INDICATION FI 2

FLOW TOTALIZER FQI 2

BELT FILTER PRESS NO. 102

HIGH TEMP. TAH 102

FAIL XA 102

NO CAKE XA 102A

UPPER/LOWER BROKEN XA 102B

LEFT/RIGHT MISALIGNED XA 102C

RUN YL 102

START HS 102

STOP HS 102A

HYDRAULIC PUMP NO. 102

LOW PRESSURE PAL 102

HIGH TEMP TAH 102A

START/STOP HS 102B

RUN YL 102

WASHWATER BOOSTER PUMP BWP-102

LOW PRESSURE PAL 102A

RUN YL 102D

FAIL XA 102E

HMI

BELT FILTER PRESS NO. 2 PLC CONTROL PANEL

VFD

4-20mA

4-20mA

RED LION CONTROLLER

CONTINUED ON I-42

CONTINUED ON I-45

WASHWATER BOOSTER PUMP WWP-102

START

STOP

BELT FILTER PRESS NO. 2 PLC CONTROL PANEL

FIELD

PSL 102

TSH 102A

M

HYDRAULIC POWER UNIT

XS 102A

TSH 102

M

4" SL

4"x6"

POLYMER INJECTION RING AND MIXER

1 1/2"

FIT 2

120VAC

SLUDGE FROM BELT PRESS FEED PUMPS

4" SL

FROM POLYMER FEED SYSTEM

1 1/2" DILUTED POLYMER

DRAIN TO PLANT DRAIN

FILTRATE

DEWATERED SOLIDS

TO COLLECTION CONVEYOR CNV-101

1 1/2"

X

S

PG 102

PSL 102A

1 1/2"

1 1/2"

M

2"

BWP-102 WASH WATER PUMP WSHWTRPMP-102

BELT WASH WATER FROM NON-POTABLE WATER DISTRIBUTION SYSTEM

NO.	DATE	REVISION	APP.
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A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

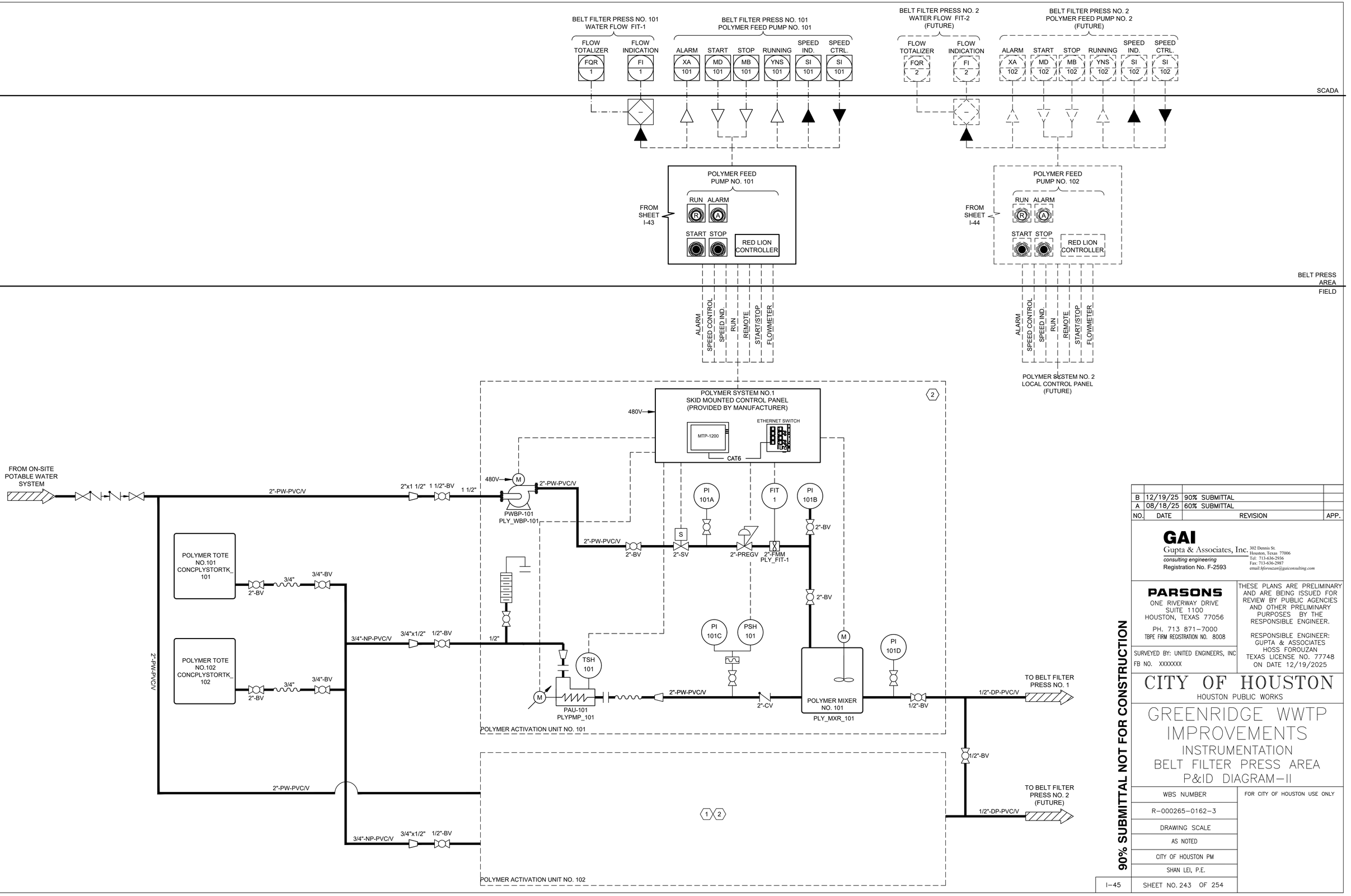
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.2
P&ID DIAGRAM-II (FUTURE)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 242 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-44



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HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

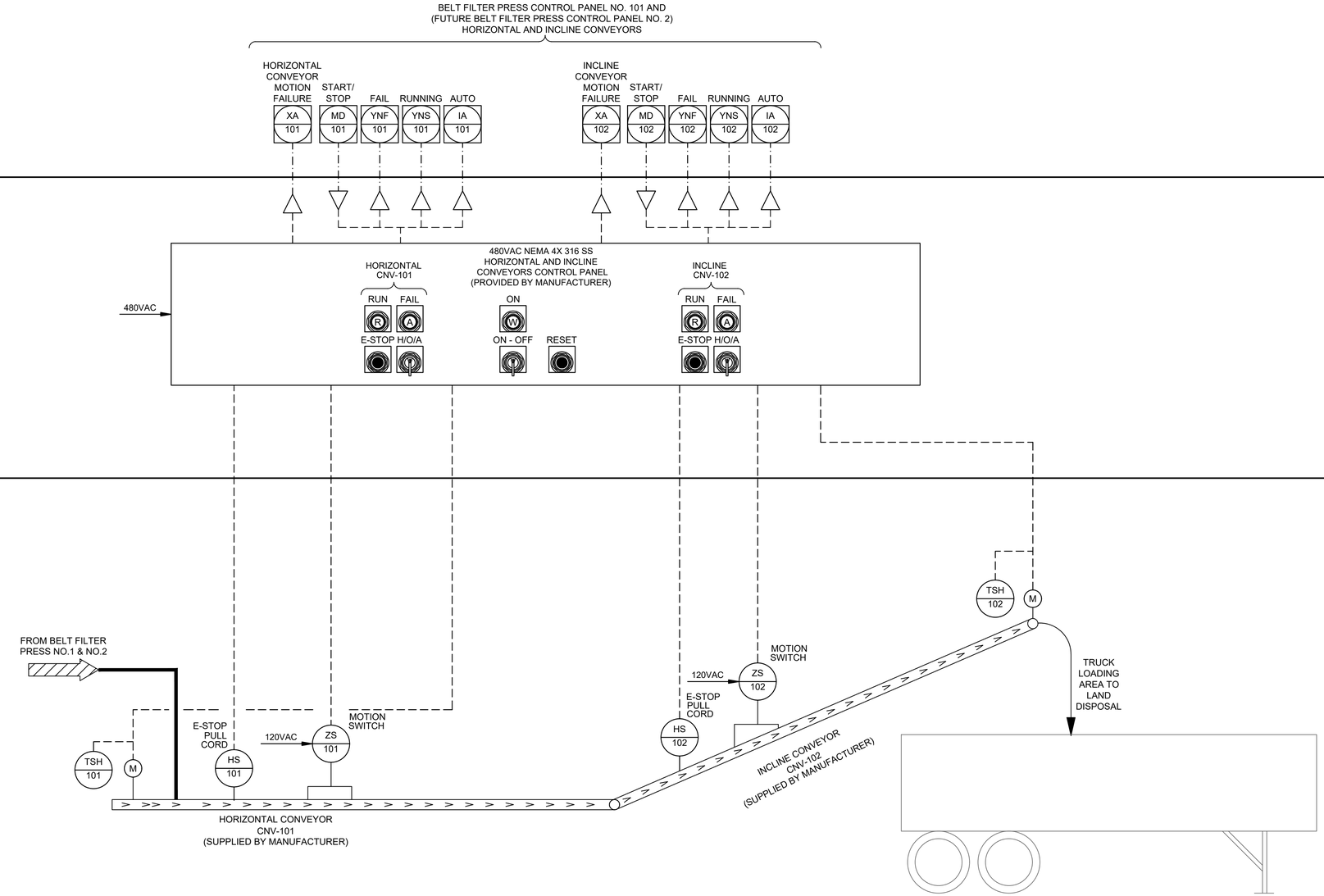
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS AREA
P&ID DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 243 OF 254	

I-45

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-45.dwg Dec 17, 2025 - 3:23pm User: dkwong



O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-46.dwg Dec 17, 2025 - 3:23pm User: dkwong

NO.	DATE	REVISION	APP.
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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

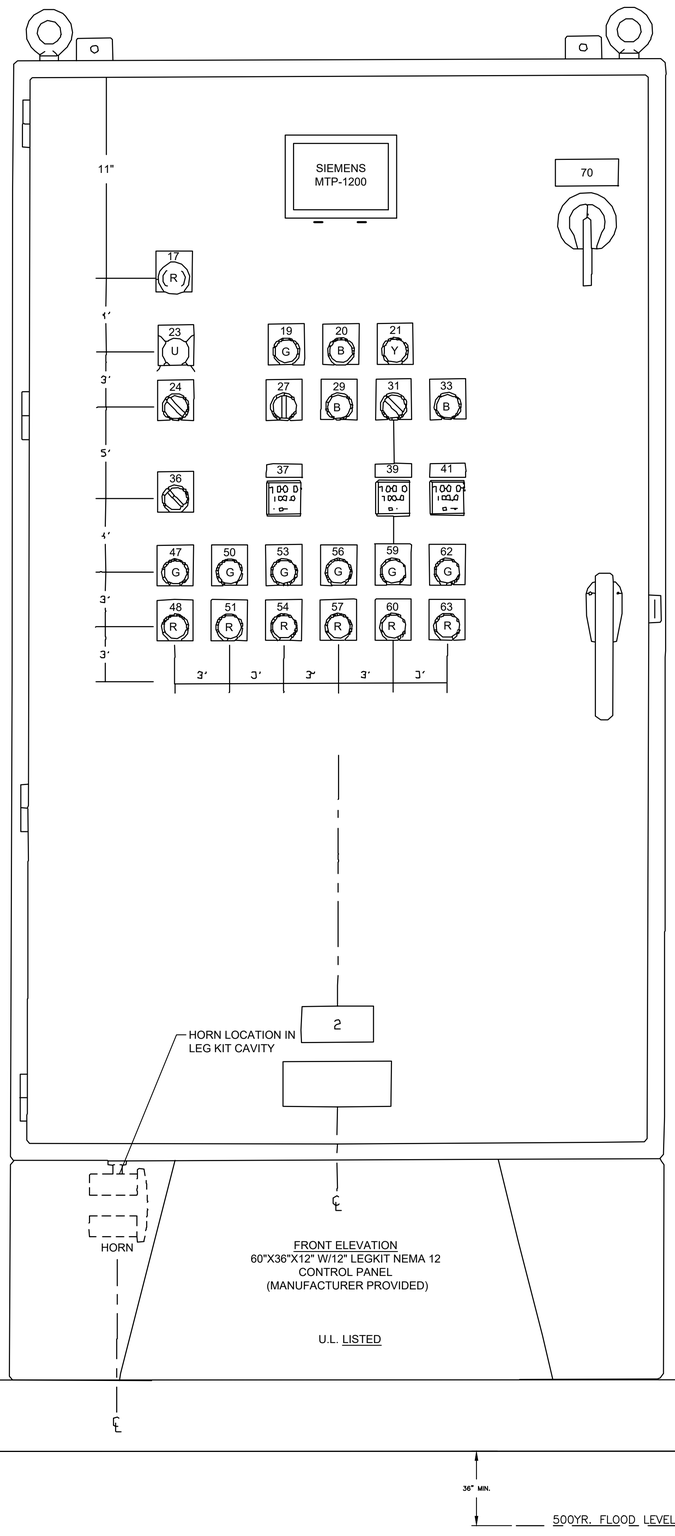
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS AREA
P&ID DIAGRAM-III

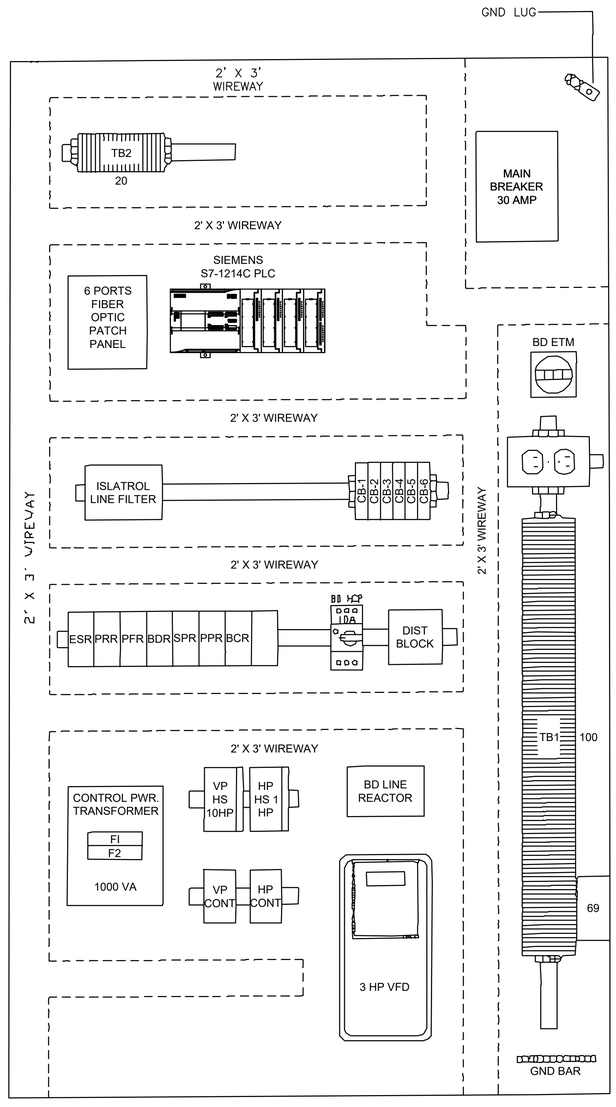
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-46

SHEET NO. 244 OF 254





FRONT ELEVATION
60"X36"X12" W/12" LEGKIT NEMA
4X-304 STAINLESS STEEL

NAMEPLATE LIST

ITEM	COLOR	CHAR LINE	FIRST LINE	SECOND LINE	ITEM	COLOR	CHAR SIZE	FIRST LINE	SECOND LINE
NP1	BLK /WHT				NP36	BLK/ WHT		BELT INSTALLATION	OFF ON
NP2		3/8"	BELT PRESS	CONTROL PANEL	NP37			BELT DRIVE	SPEED/0-100
LP*			BELT DRIVE FAIL		NP38				
LP4					NP39			SLUDGE FEED PUMP	SPEED/0-100
LP*			BELT MISALIGNED		NP40				
LP*			BELT BROKEN		NP41			POLYMER PUMP	SPEED/0-100
LP*			LOW WATER PRESSURE		NP42				
LP*			LOW HYDRAULIC PRESSURE		NP43				
LP*			NO CAKE		LP44				
LP10					LP45				
LP11					LP*			WASHWATER PUMP	RUNNING
LP12					LP47			WASHWATER PUMP	START
LP13					LP48			WASHWATER PUMP	STOP
LP14					LP*			HYDRAULIC PUMP	RUNNING
LP15					LP50			HYDRAULIC PUMP	START
LP16					LP51			HYDRAULIC PUMP	STOP
LP17		1/8"	EMERGENCY STOP		LP*			BELT DRIVE	RUNNING
LP18					LP53			BELT DRIVE	START
LP19			ALARM SILENCE		LP54			BELT DRIVE	STOP
LP20			RESET		LP55			CONVEYOR	RUNNING
LP21			LAMP TEST		LP56			CONVEYOR	START
LP22					LP57			CONVEYOR	STOP
LP23			CONTROL POWER	ON	LP*			SLUDGE FEED PUMP	RUNNING
LP24			CONTROL POWER	ON OFF	LP59			SLUDGE FEED PUMP	START
LP*			HAND		LP60			SLUDGE FEED PUMP	STOP
LP*			AUTO		LP*			POLYMER PUMP	RUNNING
LP27			MODE SELECT	HAND OFF AUTO	LP62			POLYMER PUMP	START
LP*			PRE-WASH CYCLE	ON	LP63			POLYMER PUMP	STOP
LP29			AUTO START		LP64				
LP*			PRESS READY		LP65				
LP31			DEWATERING	ON OFF	LP66				
LP*			WASHDOWN CYCLE	ON	LP67				
LP33			AUTO STOP		LP68				
LP34					NP69	YEL/ BLK	--	MULTI SOURCE	
LP35					NP70	RED/ WHT	--	HAZARD WARNING	

GENERAL NOTES:

1. ALL POWER WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #12 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
2. ALL CONTROL WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #14 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
3. ALL PLC WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #16 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
4. ALL INSTRUMENT WIRING SHALL BE STRANDED COPPER, #18 AWG WITH OVERALL SHIELD, DRAIN WIRE AND OVERALL JACKET. CABLE SHALL BE TWO OR THREE CONDUCTOR AS SHOWN ON DRAWING.
5. CONDUCTORS SHALL BE MARKED AT EACH TERMINATION POINT WITH MACHINE PRINTED ADHESIVE WIRE MARKERS. WIRE MARKERS SHALL HAVE A CLEAR OVERLAY WHICH COVERS THE PRINTED NUMBER WHEN APPLIED.
6. INTERNAL COMPONENTS SHALL BE MARKED WITH MACHINE PRINTED, TAMPER PROOF ADHESIVE LABELS.
7. MOTOR/POWER TERMINALS SHALL BE RATED 600 VOLTS, #8 AWG HIGH DENSITY SPRING CAGE LAMP TYPE.
8. ANALOG AND CONTROL TERMINALS SHALL BE RATED 600 VOLTS #12 AWG HIGH DENISTY SPRING CAGE LAMP TYPE.
9. ALL TERMINALS SHALL BE MARKED WITH DESIGNATIONS INDICATED ON DRAWINGS.
10. INTERIOR RACEWAYS SHALL BE PLASTIC WIRE THROUGH COVERS.
11. DOOR WIRING SHALL BE BUNDLED AND SUPPORTED WITH NYLOR WIRE TIES.
12. LP* DENOTES HMI GRAPHIC DISPLAY.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

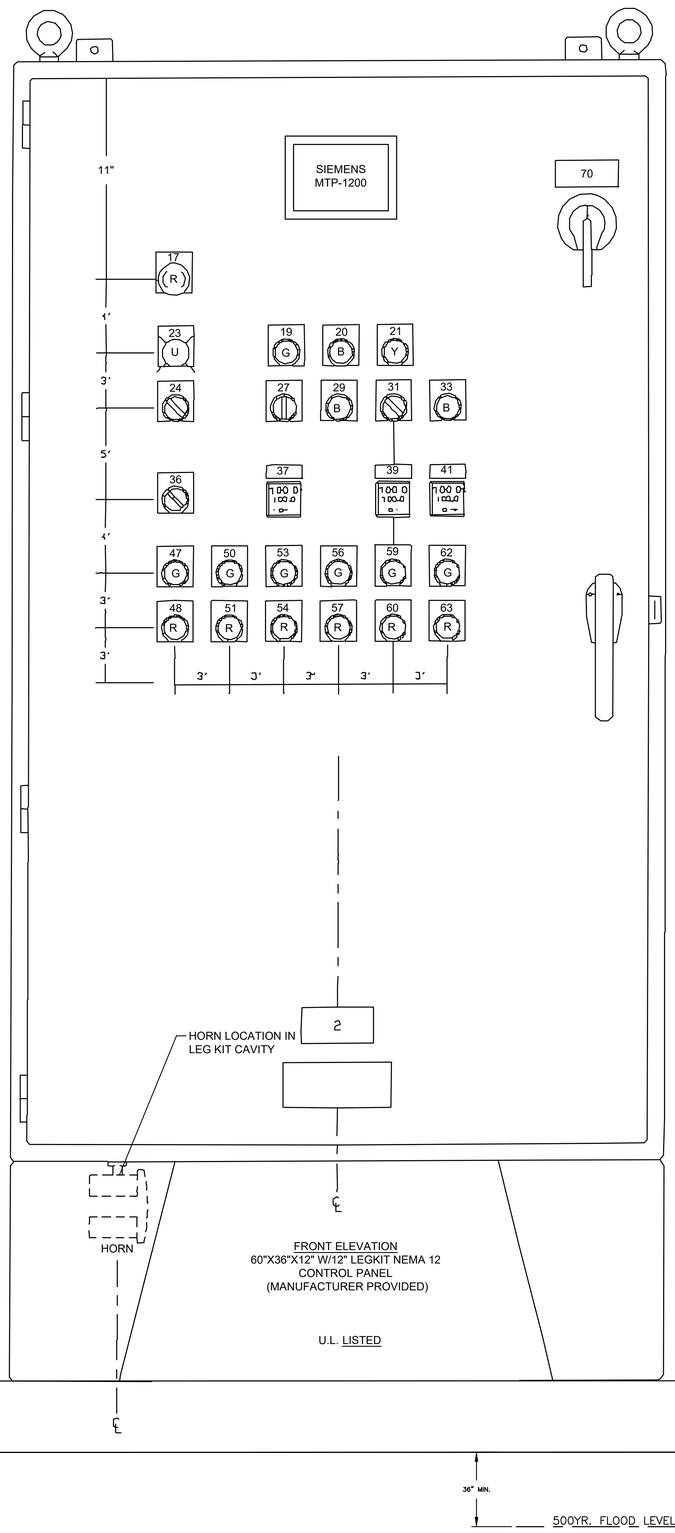
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

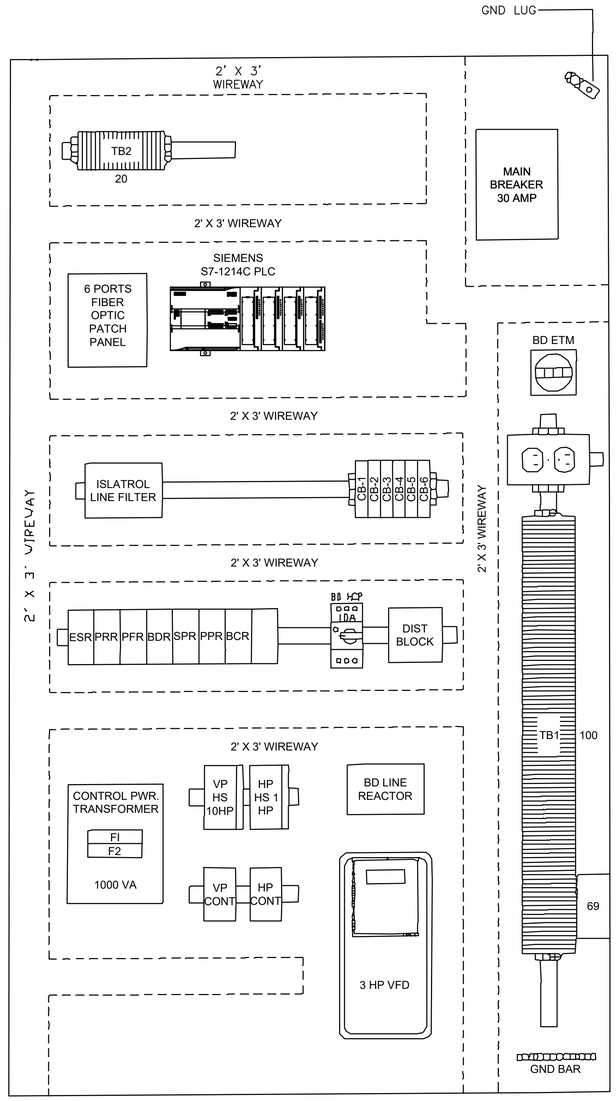
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.1 CONTROL PANEL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-47	SHEET NO. 245 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-47.dwg Dec 17, 2025 - 3:23pm User: dkwong





FRONT ELEVATION
60'X36'X12' W/12' LEGKIT NEMA
4X-304 STAINLESS STEEL

NAMEPLATE LIST

ITEM	COLOR	CHAR LINE	FIRST LINE	SECOND LINE	ITEM	COLOR	CHAR SIZE	FIRST LINE	SECOND LINE
NP1	BLK /WHT				NP36	BLK/ WHT		BELT INSTALLATION	OFF ON
NP2		3/8'	BELT PRESS	CONTROL PANEL	NP37			BELT DRIVE	SPEED/0-100
LP*			BELT DRIVE FAIL		NP38				
LP4					NP39			SLUDGE FEED PUMP	SPEED/0-100
LP*			BELT MISALIGNED		NP40				
LP*			BELT BROKEN		NP41			POLYMER PUMP	SPEED/0-100
LP*			LOW WATER PRESSURE		NP42				
LP*			LOW HYDRAULIC PRESSURE		NP43				
LP*			NO CAKE		LP44				
LP10					LP45				
LP11					LP*			WASHWATER PUMP	RUNNING
LP12					LP47			WASHWATER PUMP	START
LP13					LP48			WASHWATER PUMP	STOP
LP14					LP*			HYDRAULIC PUMP	RUNNING
LP15					LP50			HYDRAULIC PUMP	START
LP16					LP51			HYDRAULIC PUMP	STOP
LP17		1/8'	EMERGENCY STOP		LP*			BELT DRIVE	RUNNING
LP18					LP53			BELT DRIVE	START
LP19			ALARM SILENCE		LP54			BELT DRIVE	STOP
LP20			RESET		LP55			CONVEYOR	RUNNING
LP21			LAMP TEST		LP56			CONVEYOR	START
LP22					LP57			CONVEYOR	STOP
LP23			CONTROL POWER	ON	LP*			SLUDGE FEED PUMP	RUNNING
LP24			CONTROL POWER	ON OFF	LP59			SLUDGE FEED PUMP	START
LP*			HAND		LP60			SLUDGE FEED PUMP	STOP
LP*			AUTO		LP*			POLYMER PUMP	RUNNING
LP27			MODE SELECT	HAND OFF AUTO	LP62			POLYMER PUMP	START
LP*			PRE-WASH CYCLE	ON	LP63			POLYMER PUMP	STOP
LP29			AUTO START		LP64				
LP*			PRESS READY		LP65				
LP31			DEWATERING	ON OFF	LP66				
LP*			WASHDOWN CYCLE	ON	LP67				
LP33			AUTO STOP		LP68				
LP34					NP69	YEL/ BLK	--	MULTI SOURCE	
LP35					NP70	RED/ WHT	--	HAZARD WARNING	

GENERAL NOTES:

1. ALL POWER WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #12 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
2. ALL CONTROL WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #14 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
3. ALL PLC WIRING SHALL BE STRANDED COPPER, 600 VOLT TYPE THHN/THWN, #16 AWG UNLESS OTHERWISE NOTED ON DRAWINGS.
4. ALL INSTRUMENT WIRING SHALL BE STRANDED COPPER, #18 AWG WITH OVERALL SHIELD, DRAIN WIRE AND OVERALL JACKET. CABLE SHALL BE TWO OR THREE CONDUCTOR AS SHOWN ON DRAWING.
5. CONDUCTORS SHALL BE MARKED AT EACH TERMINATION POINT WITH MACHINE PRINTED ADHESIVE WIRE MARKERS. WIRE MARKERS SHALL HAVE A CLEAR OVERLAY WHICH COVERS THE PRINTED NUMBER WHEN APPLIED.
6. INTERNAL COMPONENTS SHALL BE MARKED WITH MACHINE PRINTED, TAMPER PROOF ADHESIVE LABELS.
7. MOTOR/POWER TERMINALS SHALL BE RATED 600 VOLTS, #8 AWG HIGH DENSITY SPRING CAGE LAMP TYPE.
8. ANALOG AND CONTROL TERMINALS SHALL BE RATED 600 VOLTS #12 AWG HIGH DENISTY SPRING CAGE LAMP TYPE.
9. ALL TERMINALS SHALL BE MARKED WITH DESIGNATIONS INDICATED ON DRAWINGS.
10. INTERIOR RACEWAYS SHALL BE PLASTIC WIRE THROUGH COVERS.
11. DOOR WIRING SHALL BE BUNDLED AND SUPPORTED WITH NYLOR WIRE TIES.
12. LP* DENOTES HMI GRAPHIC DISPLAY.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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email:hforouzan@gaiconsulting.com

PARSONS
ONE RIVERWAY DRIVE
SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

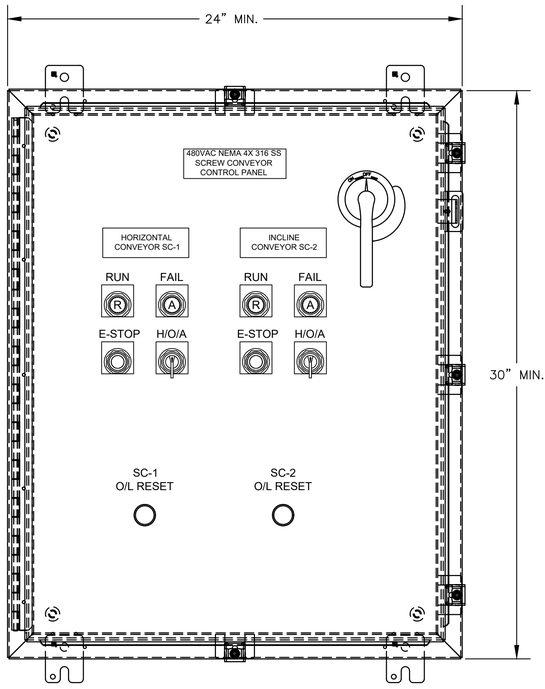
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.2 CONTROL PANEL (FUTURE)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-48	SHEET NO. 246 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-48.dwg Dec 17, 2025 - 3:23pm User: dkwong



NEMA 4X 316 SS SCREW CONVEYOR
CONTROL PANEL (PROVIDED BY MANAUFACTURER)

DETAIL 1 / NTS (1)

NOTES:

(1) PROVIDED BY CONVEYOR MANUFACTURER.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

GAI
Gupta & Associates, Inc.
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PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

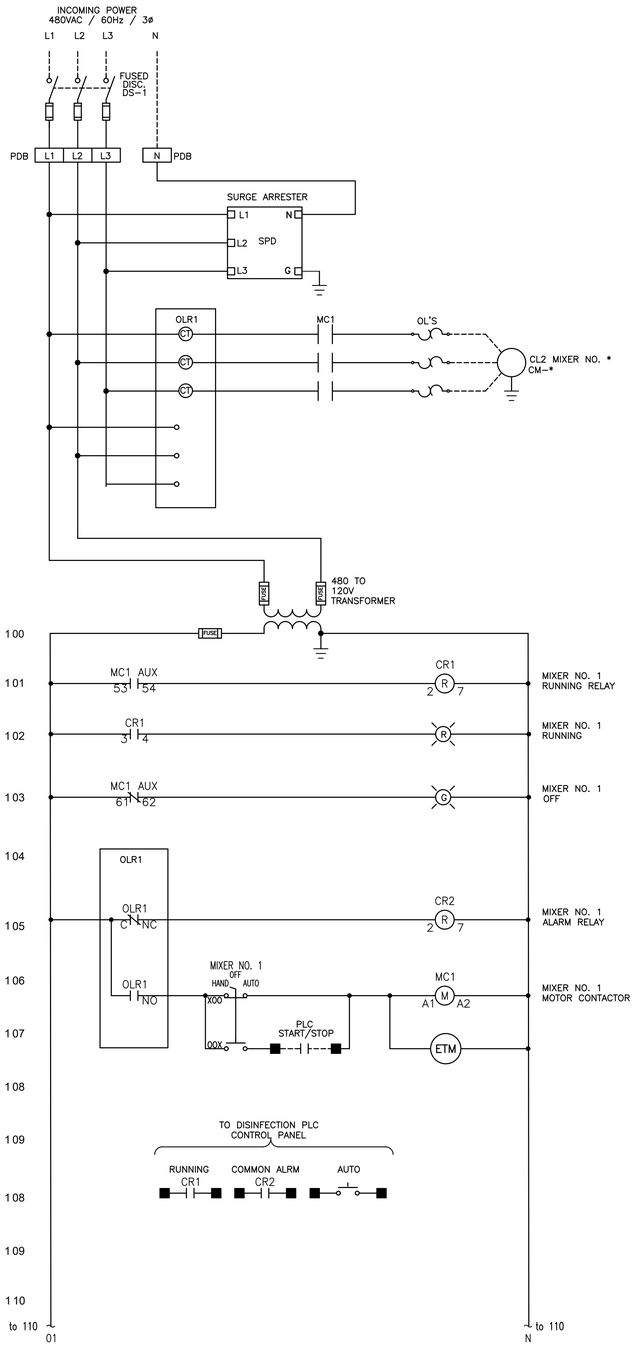
GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
SCREW CONVEYOR CONTROL PANEL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 247 OF 254	

90% SUBMITTAL NOT FOR CONSTRUCTION

I-49

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-49.dwg Dec 17, 2025 - 3:23pm User: dkwong

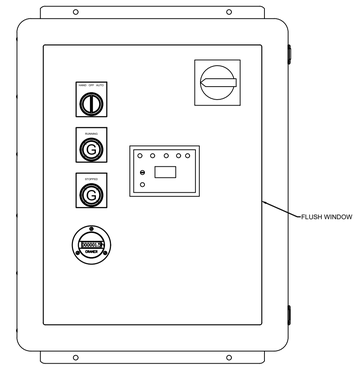


CHLORINE MIXER CONTROL

DIAGRAM

TYPICAL FOR CL2 MIXERS NO. 1 AND NO. 2

1



NEMA 4X MIXER CONTROL PANEL
WITH VIEWING WINDOW

ELEVATION

1

LEGEND:

◪ DEVICE LOCATED IN THE FIELD.

■ TERMINAL IN CONTROL PANEL FOR FIELD WIRING.

NOTES

1. NEMA 4X 480VAC MIXER CONTROL PANELS, TO BE PROVIDED BY MANUFACTURER. TYPICAL FOR MIXERS NO.1 AND NO. 2.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

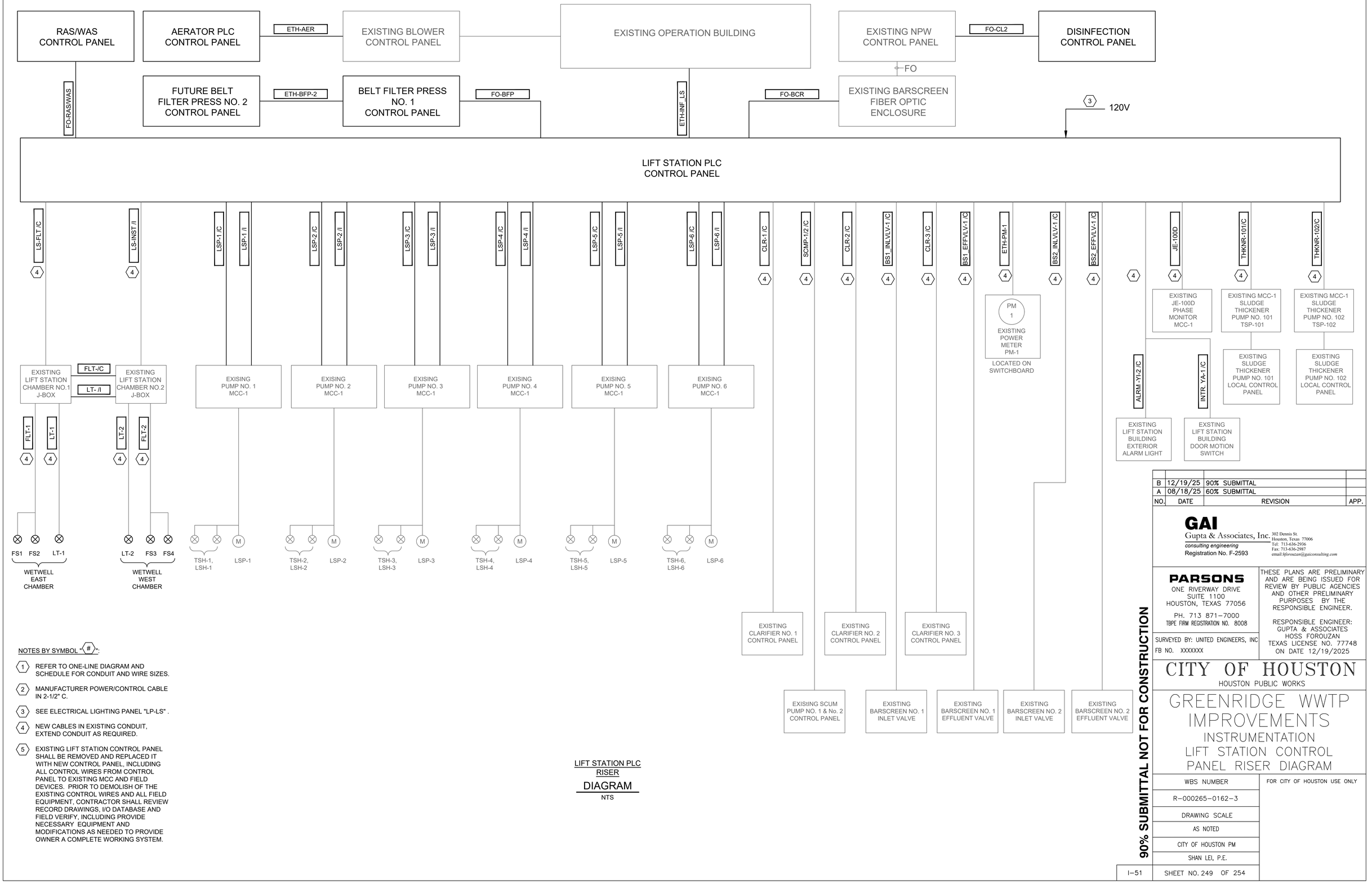
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
CHLR. MIXER CONTROL PANEL NO.1 & NO.2 WIRING DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-50	SHEET NO. 248 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-50.dwg Dec 17, 2025 - 3:23pm User: dkwong



NOTES BY SYMBOL "⟨#⟩":

1. REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.
2. MANUFACTURER POWER/CONTROL CABLE IN 2-1/2" C.
3. SEE ELECTRICAL LIGHTING PANEL "LP-LS" .
4. NEW CABLES IN EXISTING CONDUIT, EXTEND CONDUIT AS REQUIRED.
5. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS, I/O DATABASE AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

LIFT STATION PLC
RISER
DIAGRAM
NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
LIFT STATION CONTROL PANEL RISER DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-51	SHEET NO. 249 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

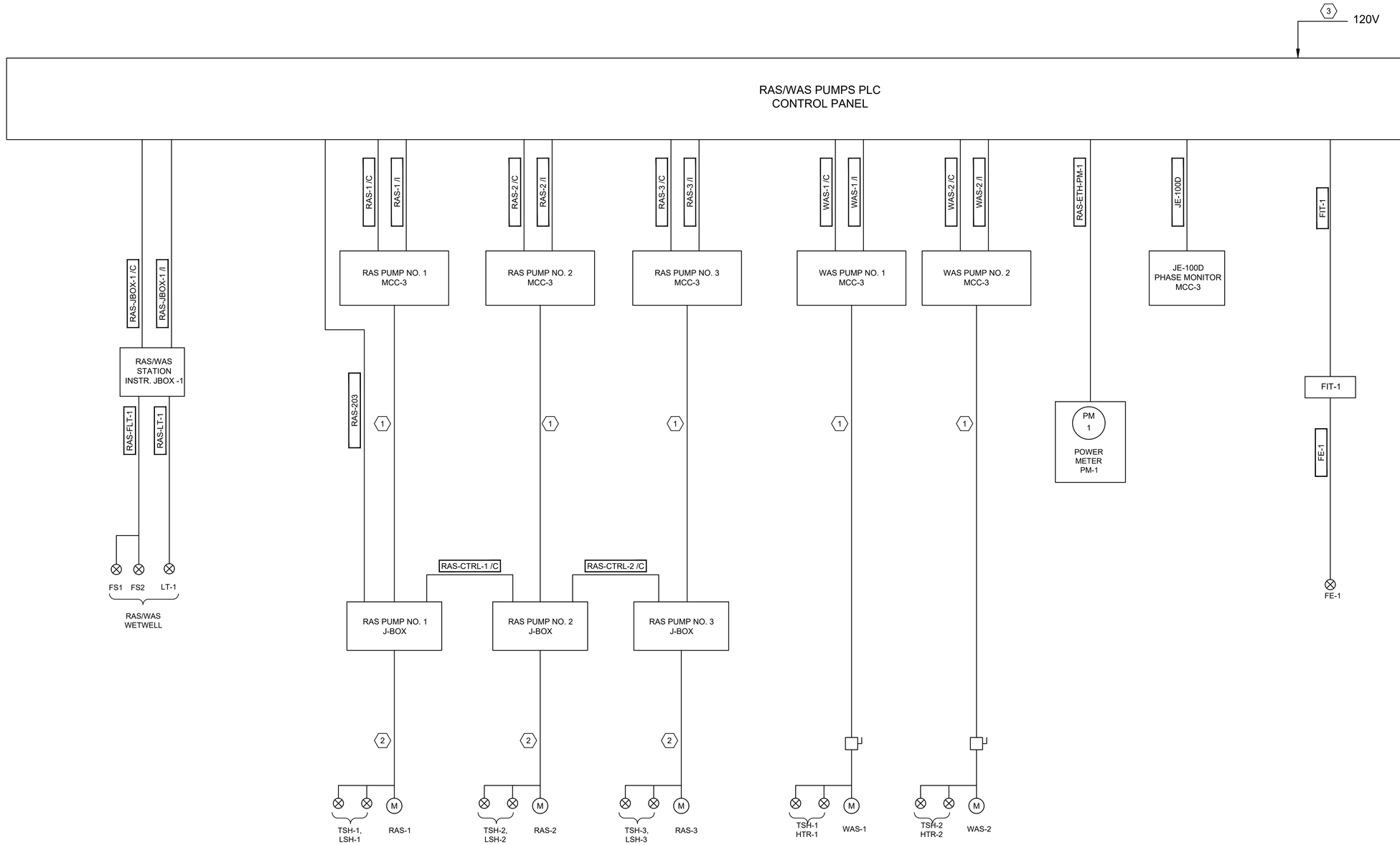
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-51.dwg Dec 17, 2025 - 3:23pm User: dkwong

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.

⟨2⟩ MANUFACTURER POWER/CONTROL CABLE IN 2-1/2" C.

⟨3⟩ SEE ELECTRICAL LIGHTING PANEL "LP-LA" .



RAS/WAS PUMPS STATION PLC
RISER
DIAGRAM
NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
RAS/WAS PUMPS STATION CONTROL PANEL RISER DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-52	SHEET NO. 250 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-52.dwg Dec 17, 2025 - 3:23pm User: dkwong

NOTES BY SYMBOL "(#)":

(1) REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES

(2) MANUFACTURER POWER/CONTROL CABLE IN 2-1/2" C.

(3) SEE ELECTRICAL LIGHTING PANEL "CHL-1" .

EXISTING NPW CONTROL PANEL

FO-CL2

(3) 120V

DISINFECTION PLC CONTROL PANEL

TO I-54

AIT-INSTR. /I

AIT-INSTR. /C

SHST /I

SHST /C

CHM-SHFP /I

CHM-SHFP /C

MIXERS /C

AIT INSTR. JBOX-1

SODIUM HYPOCHLORITE TANKS INSTR. JBOX-1

(3) 120V

SODIUM HYPOCHLORITE FEED PUMP J-BOX

MIXERS CONTROL J-BOX

AIT-1 /I

AIT-2 /I

AIT-3 /I

AIT-4 /I

AIT-5 /I

(3) 120V AIT-1

(3) 120V AIT-2

(3) 120V AIT-3

(3) 120V AIT-4

(3) 120V AIT-5

AE-1

AE-2

AE-3

AE-4

AE-5

AE-1

AE-2

AE-3

AE-4

AE-5

CL2-LT-1

CL2-LT-2

CL2-LT-1

CL2-LT-2

SHFP-1 /I

SHFP-1 /C

SHFP-2 /I

SHFP-2 /C

SHFP-3 /I

SHFP-3 /C

EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPOCHLORITE FEED PUMP NO. 1 SHFP-1

EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPOCHLORITE FEED PUMP NO. 2 SHFP-2

EXISTING BRONCO B169 DC CONTROLLER SODIUM HYPOCHLORITE FEED PUMP NO. 3 SHFP-3

M SHFP-1

M SHFP-2

M SHFP-3

MXR-1 /C

MXR-2 /C

480VAC CHLORINE MIXER STARTER CONTROL PANEL CM-1

(1) POWER PANEL HSB-1

480VAC CHLORINE MIXER STARTER CONTROL PANEL CM-2

(1) POWER PANEL HSB-1

(2)

(2)

M MIXER-1

M MIXER-2

SODIUM HYPOCHLORITE ANALYZER ROOM

EXISTING SODIUM HYPOCHLORITE TANKS CONTAINMENT AREA

EXISTING SODIUM HYPOCHLORITE FEED PUMP ROOM

SODIUM HYPOCHLORITE MIXER AREA

SODIUM HYPOCHLORITE MIXER AREA

DISINFECTION PLC CONTROL PANEL RISER DIAGRAM

NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

THESE PLANS ARE PRELIMINARY AND ARE BEING ISSUED FOR REVIEW BY PUBLIC AGENCIES AND OTHER PRELIMINARY PURPOSES BY THE RESPONSIBLE ENGINEER.

RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION CONTROL PANEL RISER DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 251 OF 254	

I-53

90% SUBMITTAL NOT FOR CONSTRUCTION

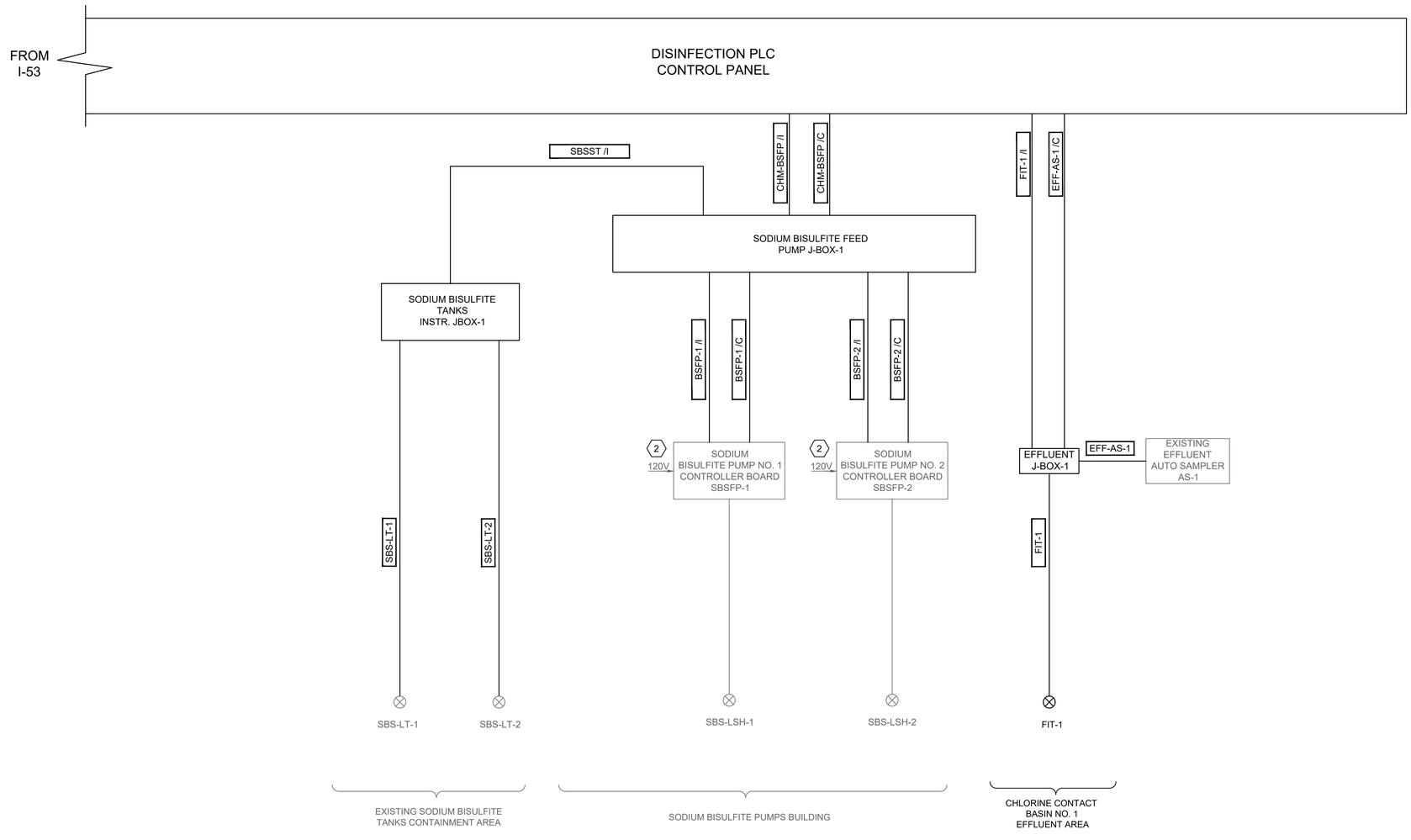
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-53.dwg Dec 17, 2025 - 3:23pm User: dkwong

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.

⟨2⟩ SEE ELECTRICAL LIGHTING PANEL "CHL-1" .

⟨3⟩ NEW CONTROL WIRES IN EXISTING CONDUIT.



DISINFECTION PLC CONTROL PANEL
RISER
DIAGRAM
NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
DISINFECTION CONTROL PANEL RISER DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 252 OF 254	

I-54

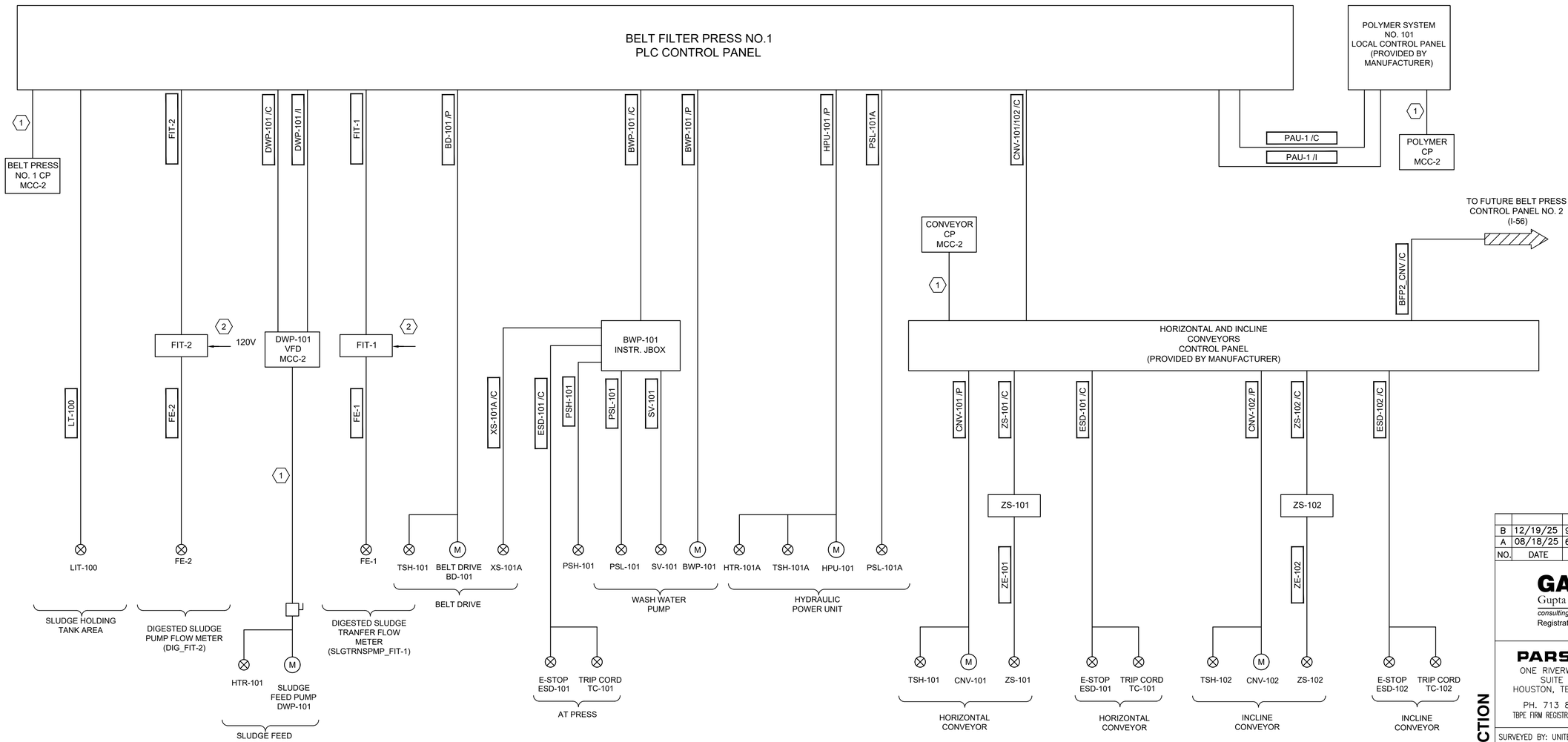
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-54.dwg Dec 17, 2025 - 3:23pm User: dkwong

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.

⟨2⟩ SEE ELECTRICAL LIGHTING PANEL "LA" .



BELT FILTER PRESS NO. 1
RISER
DIAGRAM
NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.1 CONTROL PANEL RISER DIAGRAM

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-55	SHEET NO. 253 OF 254

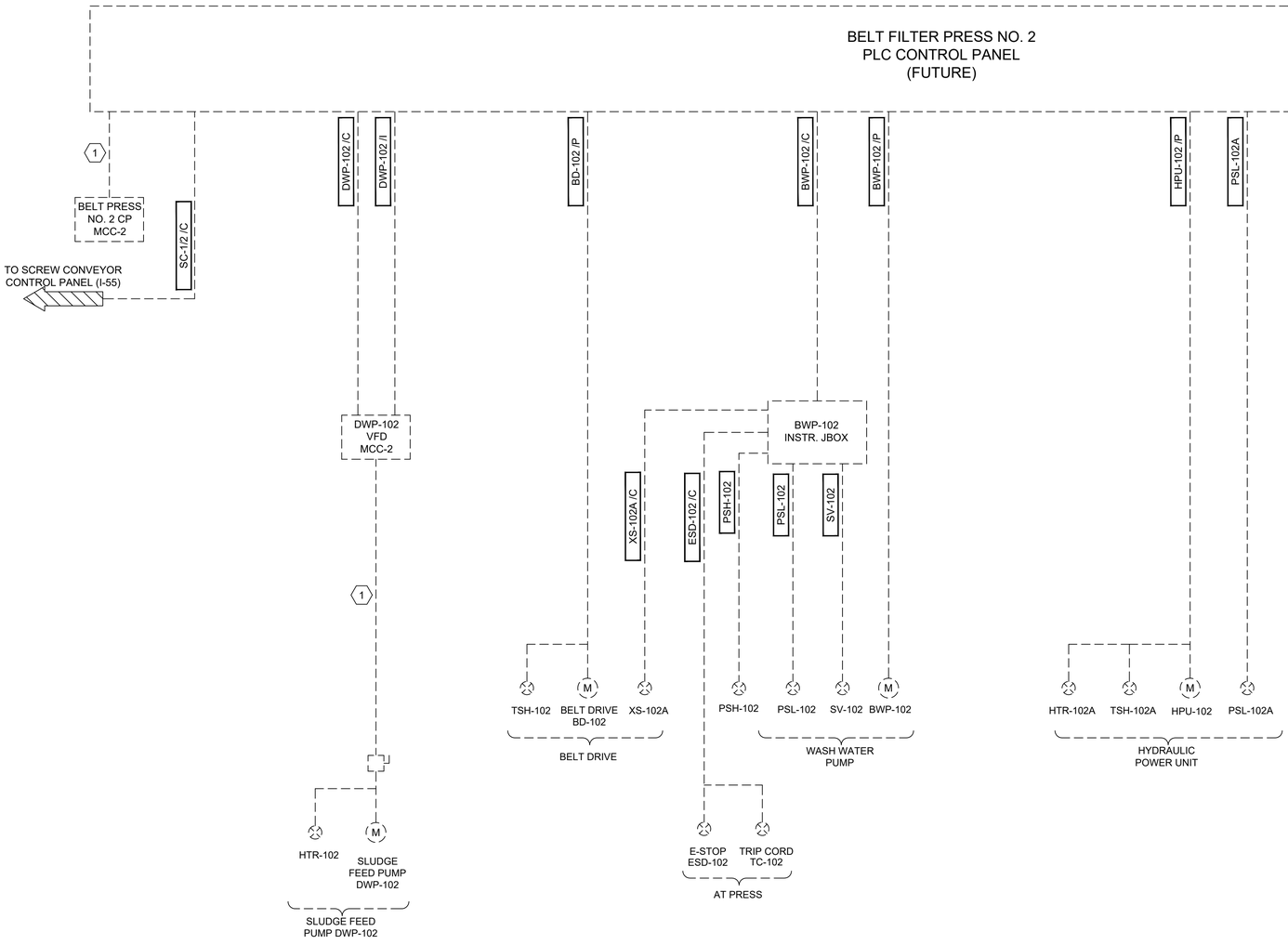
90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-55.dwg Dec 17, 2025 - 3:23pm User: dkwong

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.

⟨2⟩ SEE ELECTRICAL LIGHTING PANEL "LA" .



BELT FILTER PRESS NO. 2
RISER (FUTURE)
DIAGRAM
NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

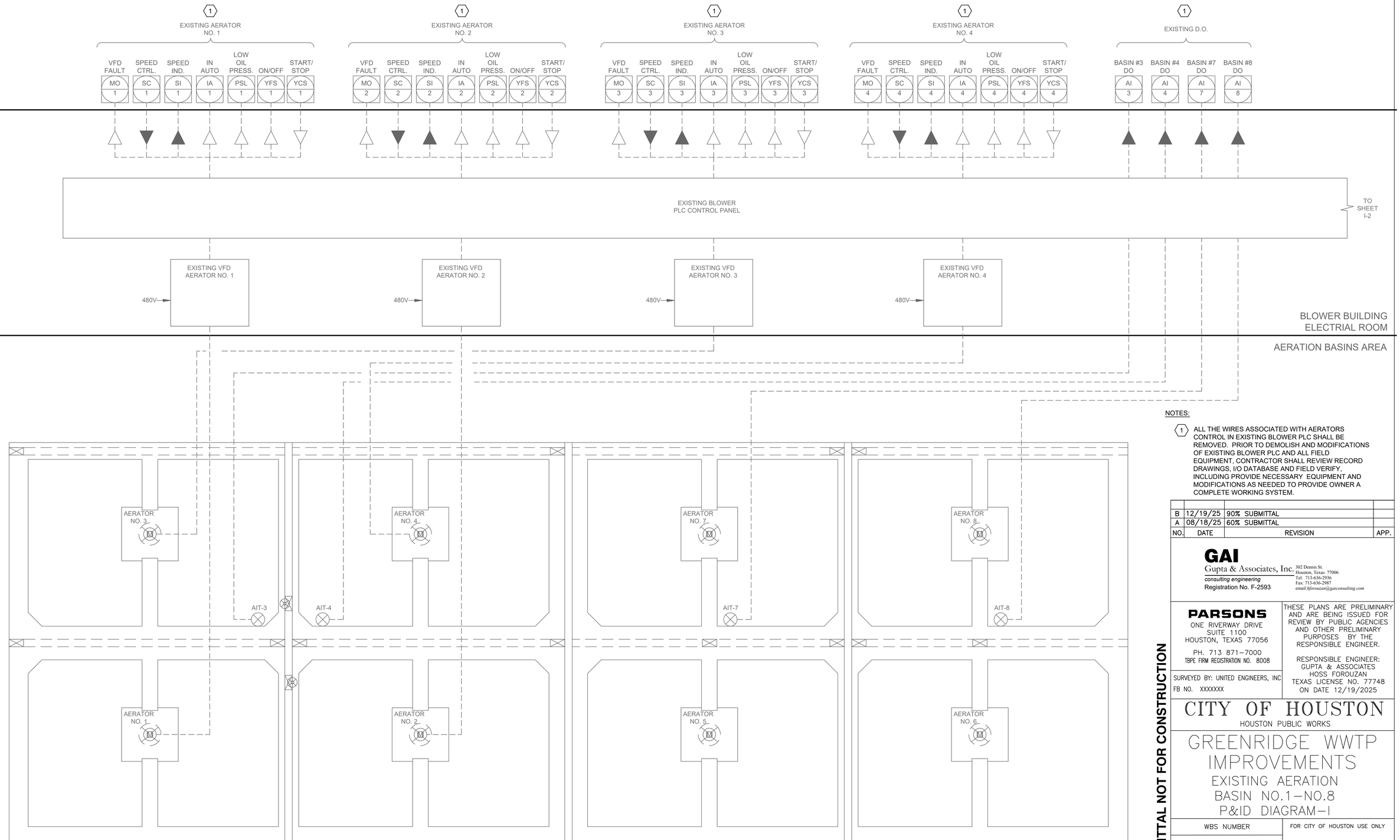
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
BELT FILTER PRESS NO.2 CNTL. PANEL RISER DIAGRAM (FUTURE)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-56	SHEET NO. 254 OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-56.dwg Dec 17, 2025 - 3:23pm User: dkwong



AERATION BASINS

PLAN

NONE

NOTES:

1. ALL THE WIRES ASSOCIATED WITH AERATORS CONTROL IN EXISTING BLOWER PLC SHALL BE REMOVED. PRIOR TO DEMOLISH AND MODIFICATIONS OF EXISTING BLOWER PLC AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS, I/O DATABASE AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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SURVEYED BY: UNITED ENGINEERS, INC
FB NO. XXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

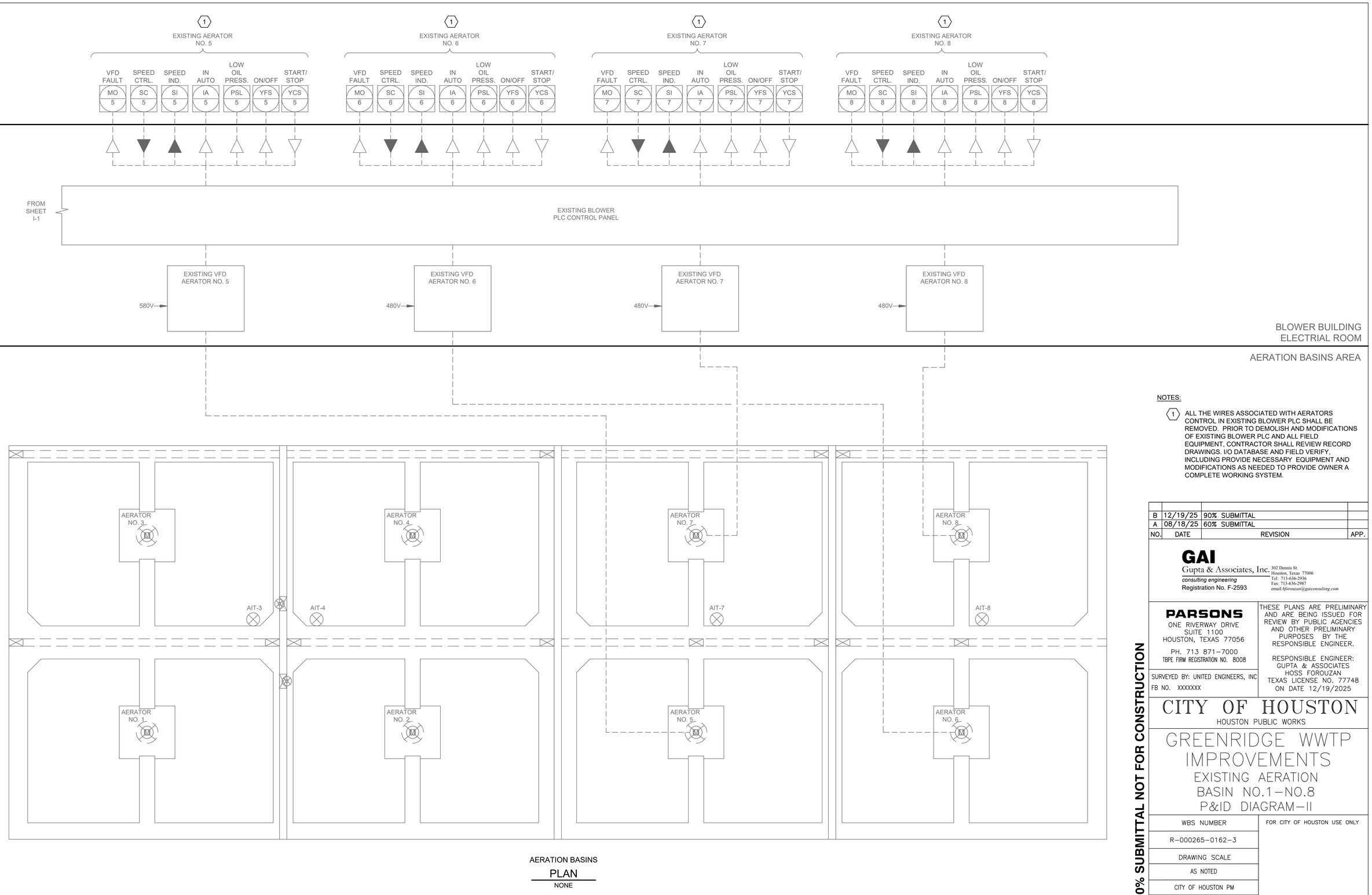
EXISTING AERATION BASIN NO.1-NO.8 P&ID DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. X OF 254	

I-57

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-57.dwg Dec 17, 2025 - 3:23pm User: dkwong



AERATION BASINS

PLAN

NONE

NOTES:

1. ALL THE WIRES ASSOCIATED WITH AERATORS CONTROL IN EXISTING BLOWER PLC SHALL BE REMOVED. PRIOR TO DEMOLISH AND MODIFICATIONS OF EXISTING BLOWER PLC AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS. I/O DATABASE AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

GAI
Gupta & Associates, Inc.
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PARSONS
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SUITE 1100
HOUSTON, TEXAS 77056
PH. 713 871-7000
TBPE FIRM REGISTRATION NO. 8008

SURVEYED BY: UNITED ENGINEERS, INC.
FB NO. XXXXXXX

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

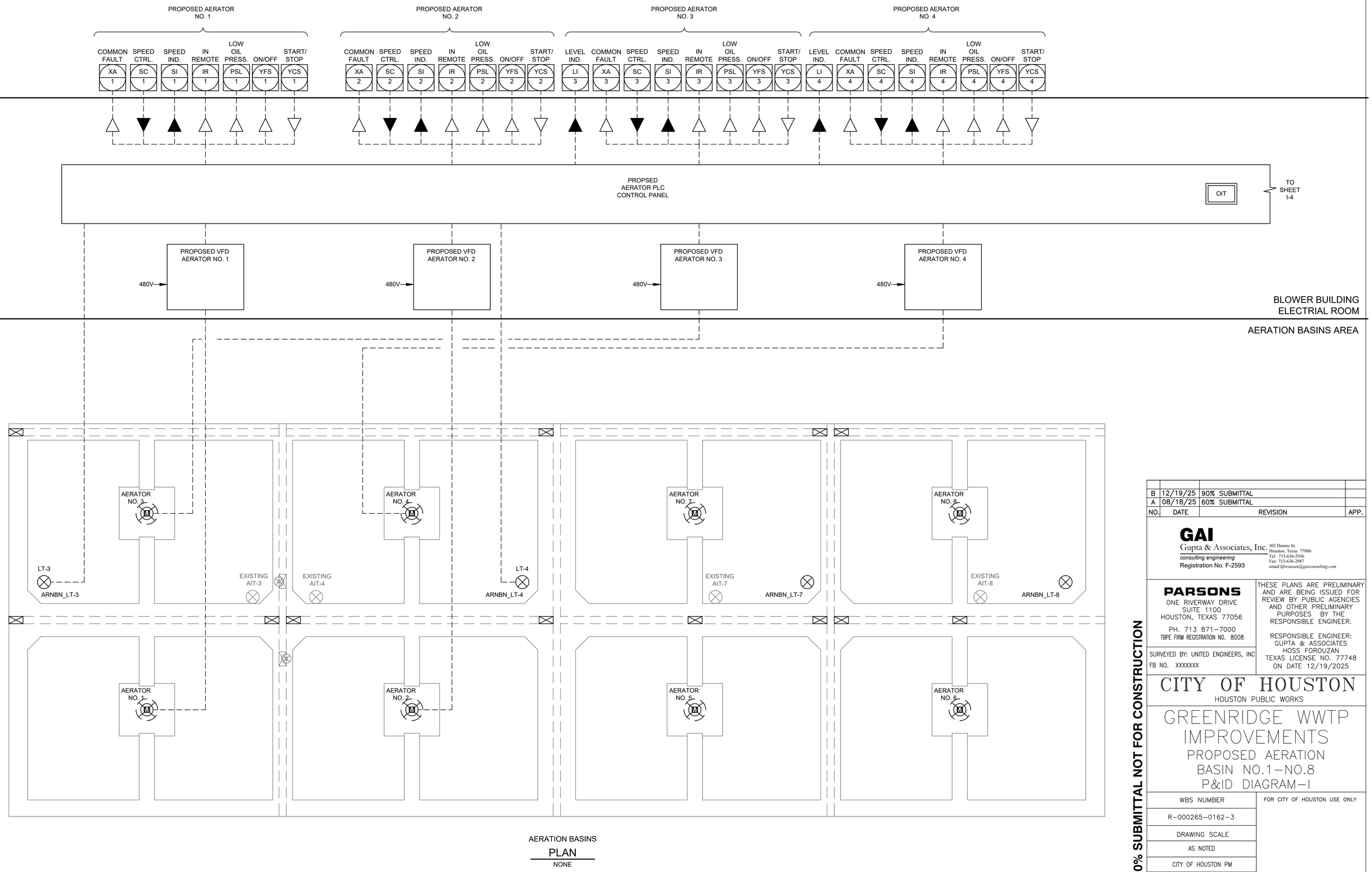
EXISTING AERATION BASIN NO.1-NO.8 P&ID DIAGRAM-II

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. X OF 254	

I-58

90% SUBMITTAL NOT FOR CONSTRUCTION

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-58.dwg Dec 17, 2025 - 3:23pm User: dkwong



AERATION BASINS

PLAN

NONE

90% SUBMITTAL NOT FOR CONSTRUCTION

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PROPOSED AERATION BASIN NO.1-NO.8 P&ID DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-59	SHEET NO. X OF 254

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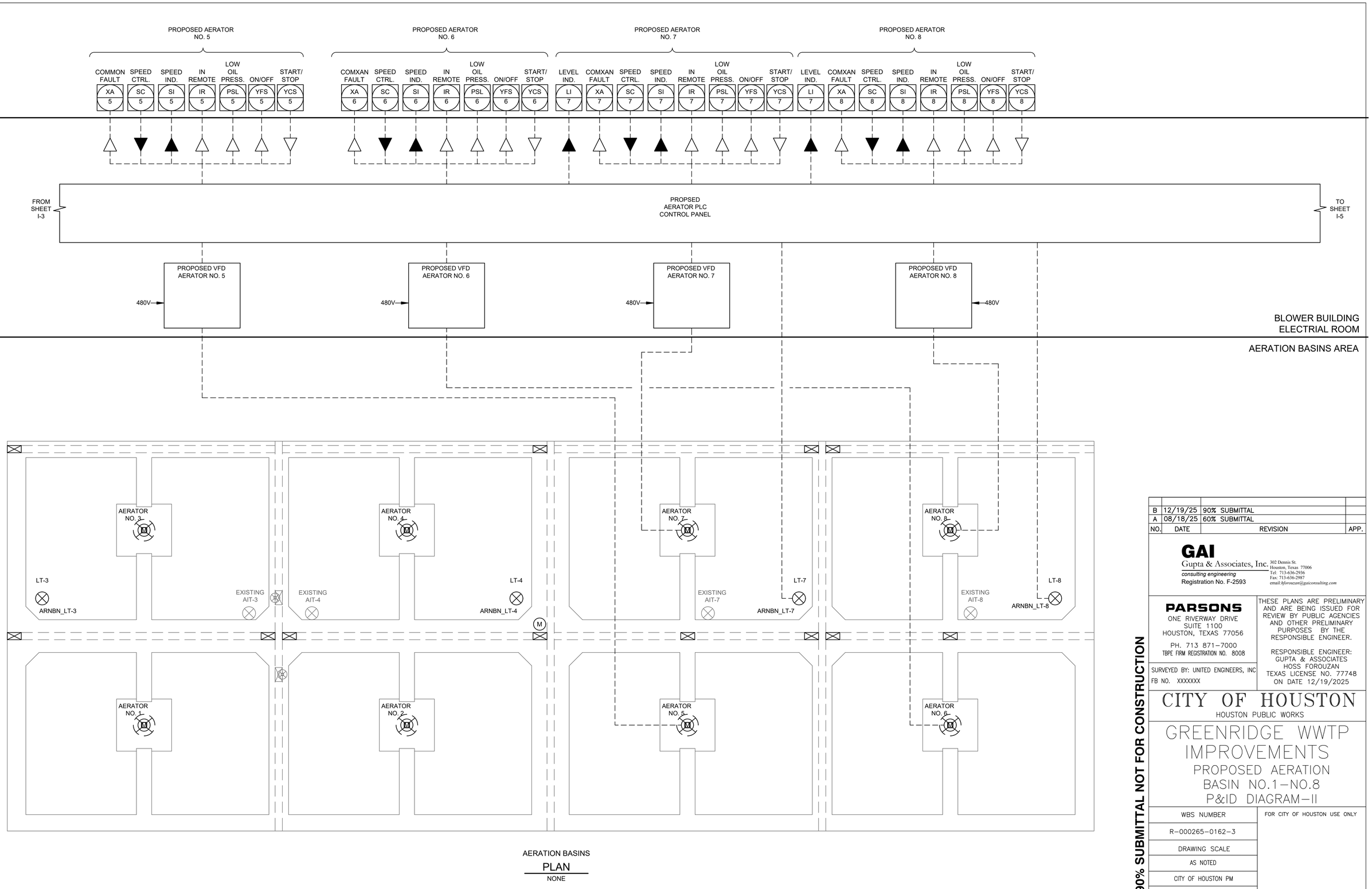

AERATION BASINS

PLAN

NONE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
PROPOSED AERATION BASIN NO.1-NO.8 P&ID DIAGRAM-II

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R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-60 SHEET NO. X OF 254	

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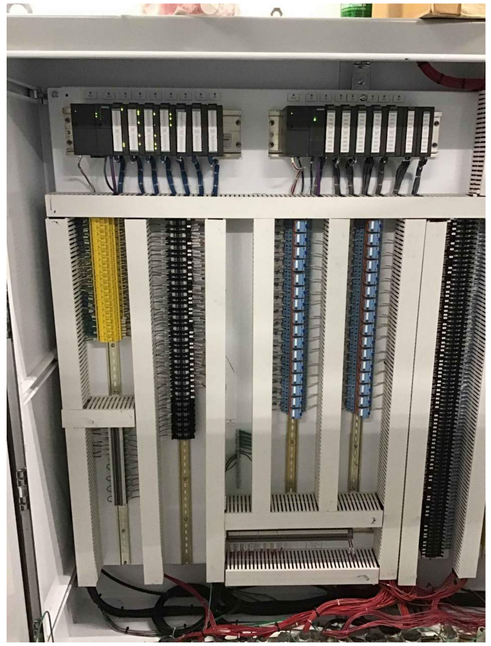
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-60.dwg Dec 17, 2025 - 3:23pm User: dkwong



EXISTING RTU-0240E AERATION BLOWER PLC CONTROL PANEL
TO BE MODIFIED

PHOTOGRAPH A
NTS. -

EXISTING LIFT STATION CONTROL PANEL
TO BE REMOVED AND REPLACED

PHOTOGRAPH B
NTS. -

INSTALL RADAR LEVEL TRANSMITTERS
FOR EXISTING SODIUM HYPOCHLORITE TANKS

PHOTOGRAPH C
NTS. -

NOTES:

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2. EXISTING LIFT STATION CONTROL PANEL SHALL BE REMOVED AND REPLACED IT WITH NEW CONTROL PANEL, INCLUDING ALL CONTROL WIRES FROM CONTROL PANEL TO EXISTING MCC AND FIELD DEVICES. PRIOR TO DEMOLISH OF THE EXISTING CONTROL WIRES AND ALL FIELD EQUIPMENT, CONTRACTOR SHALL REVIEW RECORD DRAWINGS AND FIELD VERIFY, INCLUDING PROVIDE NECESSARY EQUIPMENT AND MODIFICATIONS AS NEEDED TO PROVIDE OWNER A COMPLETE WORKING SYSTEM.

3. PRIOR TO PURCHASE ALL RADAR LEVEL TRANSMITTERS, CONTRACTOR SHALL FIELD VERIFY THE EXISTING CL2 TANKS AND PROVIDE J-BOXES, WIRES, CONDUITS, FLANGES AND ALL NECESSARY MOUNTING HARDWARE FOR EACH CL2 TANK LEVEL TRANSMITTER AS REQUIRED

EXISTING SLUDGE THICKENER PUMPS TSP-101 & TSP-102
LOCAL CONTROL PANELS AREA

PHOTOGRAPH D
NTS. -

EXISTING SLUDGE THICKENER PUMPS TSP-101 & TSP-102
LOCATED IN MCC-1

PHOTOGRAPH E
NTS. -

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CITY OF HOUSTON
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GREENRIDGE WWTP IMPROVEMENTS
EXISTING MISCELLANEOUS CONTROL PANELS AND CL2 TANKS PHOTOS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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CITY OF HOUSTON PM	
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SHEET NO. X OF 254	

I-63

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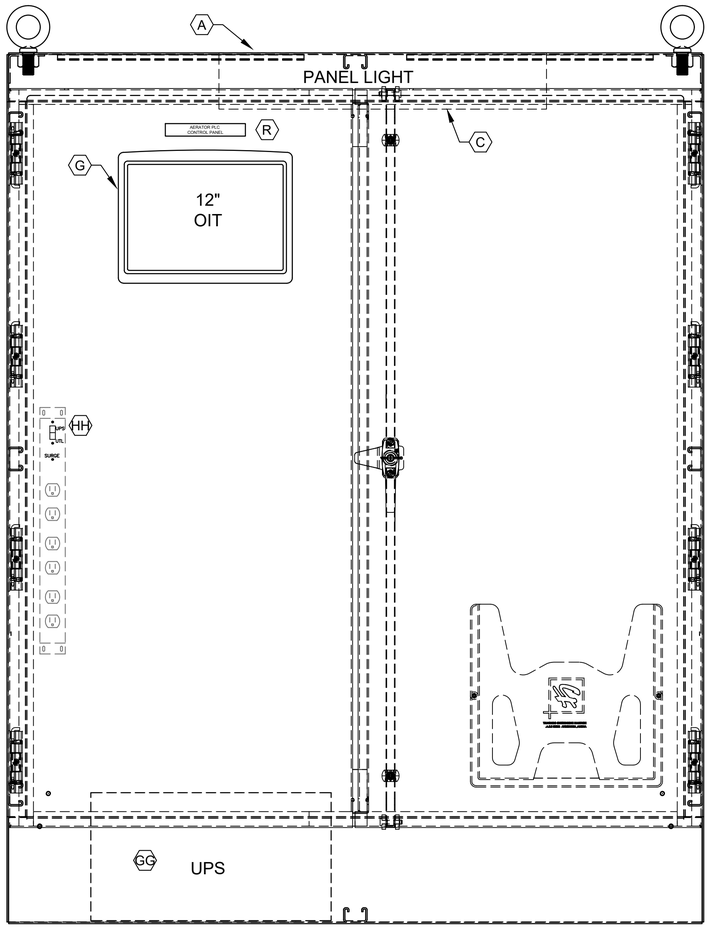
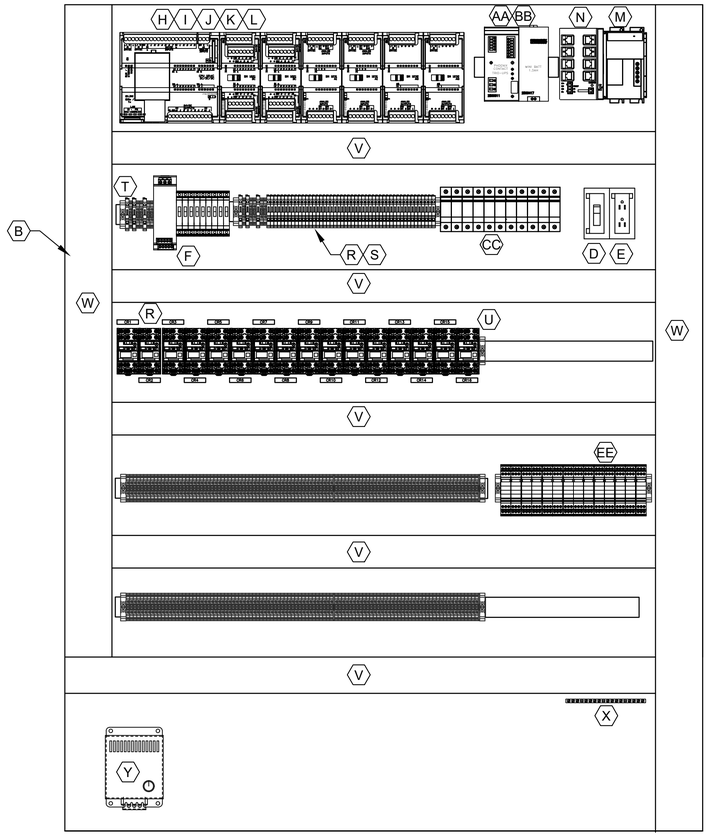
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-61.dwg Dec 17, 2025 - 3:23pm User: dkwong



AERATOR PLC CONTROL PANEL
FRONT VIEW
ELEVATION



AERATOR PLC CONTROL PANEL
INTERIOR VIEW
ELEVATION

AERATOR PLC CONTROL PANEL
EQUIPMENT & DEVICE SCHEDULE

ITEM	QUANTITY	DESCRIPTION
A	1	NEMA 12 3-POINT LATCH ENCLOSURE WITHOUT VENTS, 72"H x 48"W x 18"D, HOFFMAN A72418FSD
B	1	BACK PANEL 60"H x 44"W, PAINTED WHITE, HOFFMAN A72P48
C	1	6500K COOL WHITE, 400 LUMENS, 20" IN LENGTH LED LIGHT
D	1	SWITCH FOR CABINET LIGHT, 120V, 20A, SPST
E	1	DUPLEX RECEPTACLE, 120V, 20A, 2 WIRE, GROUNDED
F	1	SURGE PROTECTOR - 120VAC CONTROL POWER
G	1	12" TOUCH PANEL (OIT) SIEMENS MTP-1200
H	1	SIMATIC 1200, CPU-1214C, 14DI, 10DO RELAY, 2AI 24VDC POWER-6ES7214-1HG40-0XB0
I	1	MICRO MEMORY CARD, 4MB-SIEMENS 6ES7954-8LC02-0AA0
J	2	8-POINT ANALOG INPUT MODULE-SIEMENS 6ES7231-4HF32-0XB0
K	2	4-POINT ANALOG OUTPUT MODULE-SIEMENS 6ES7232-4HD32-0XB0
L	1	SIEMENS 16-POINT DIGITAL INPUT MODULE, 24VDC. SIEMENS 6ES7221-1BH32-0XB0
M	1	5 AMP, 24VDC POWER SUPPLY PHOENIX CONTACT P/N 2866750
N	1	8 PORTS ETHERNET SWITCH RJ45 SIEMENS XB208
P	-	NOT USED
Q	*	TERMINAL BLOCK
R	*	FUSED TERMINAL BLOCKS
S	*	FUSE (SIZE AS SCHEDULED)
T	*	END STOP
U	16	3 POLE CONTROL RELAY, 24 VDC WITH THREE FORM C CONTACTS AND 11 PIN SOCKET BASE
V	*	WIRE DUCT 2" WIDE X 3" DEEP MINIMUM, WITH COVER
W	*	WIRE DUCT 3" WIDE X 3" DEEP MINIMUM, WITH COVER
X	1	GROUND BUS
Y	1	120VAC PANEL HEATER W/BUILT IN T-STAT HOFFMAN MODEL DAH2001A
Z	1	NOT USED
AA	1	TRIO-UPS/1AC/24DC/5 (5 AMP 24 VDC POWER SUPPLY WITH UPS) PHOENIX CONTACT P/N 2866611
BB	1	MINI-BAT/24DC/1.3AH (BATTERY FOR TRIO UPS) PHOENIX CONTACT P/N 32381110
CC	12	SINGLE POLE DIN MOUNTED CIRCUIT BREAKER (2) 15A, (3) 10A, (4) 6A, (2) 2A
DD		
EE	*	ANALOG SIGNAL SURGE ARRESTER, PHOENIX CONTACT
FF	*	DIGITAL SIGNAL SURGE ARRESTER, PHOENIX CONTACT
GG	1	1.5KVA TOWER UPS W/ RELAY OUTPUT CARD, EATON OR APPROVED EQUAL
HH	1	MAINTENANCE BYPASS SWITCH FOR UPS, LOWELL POWER P/N UPS-XBDM-20RCD

* - AS SCHEDULED

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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

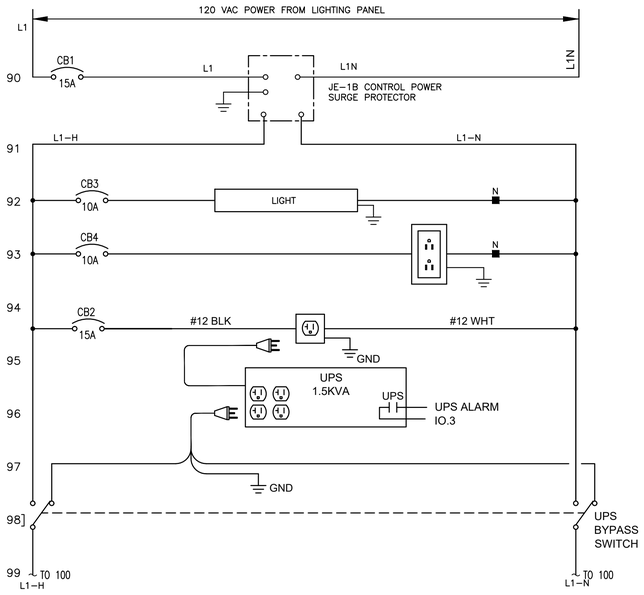
GREENRIDGE WWTP IMPROVEMENTS
AERATOR PLC CONTROL PANEL LAYOUT AND ELEVATION

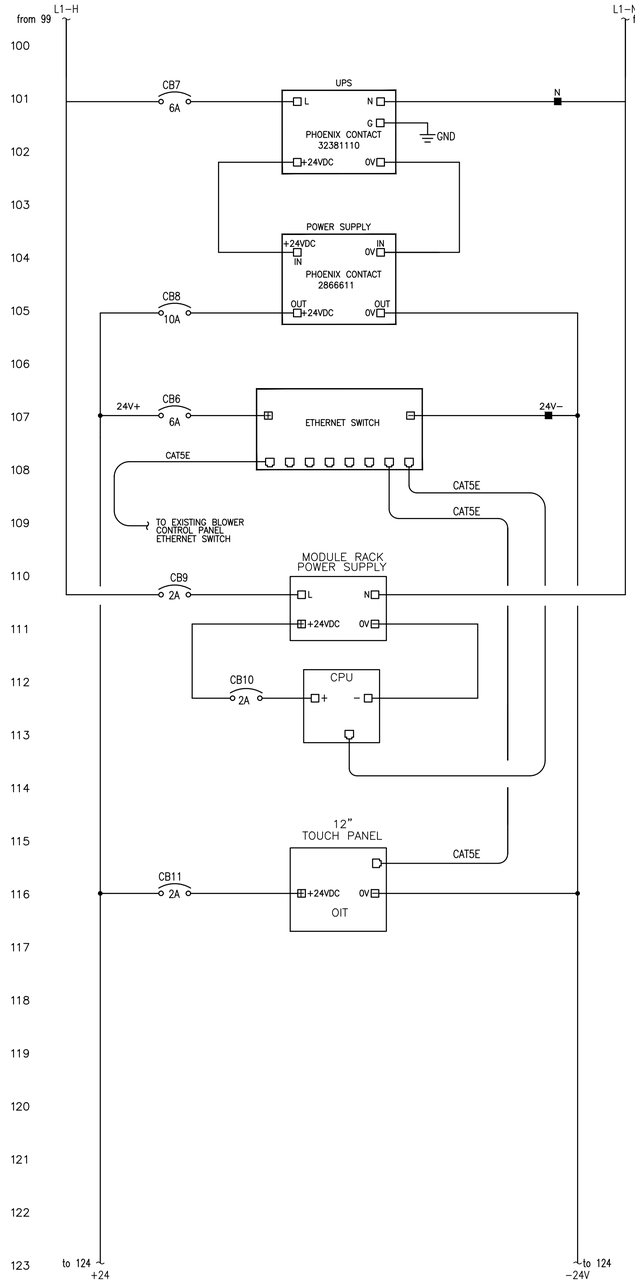
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. X OF 254	

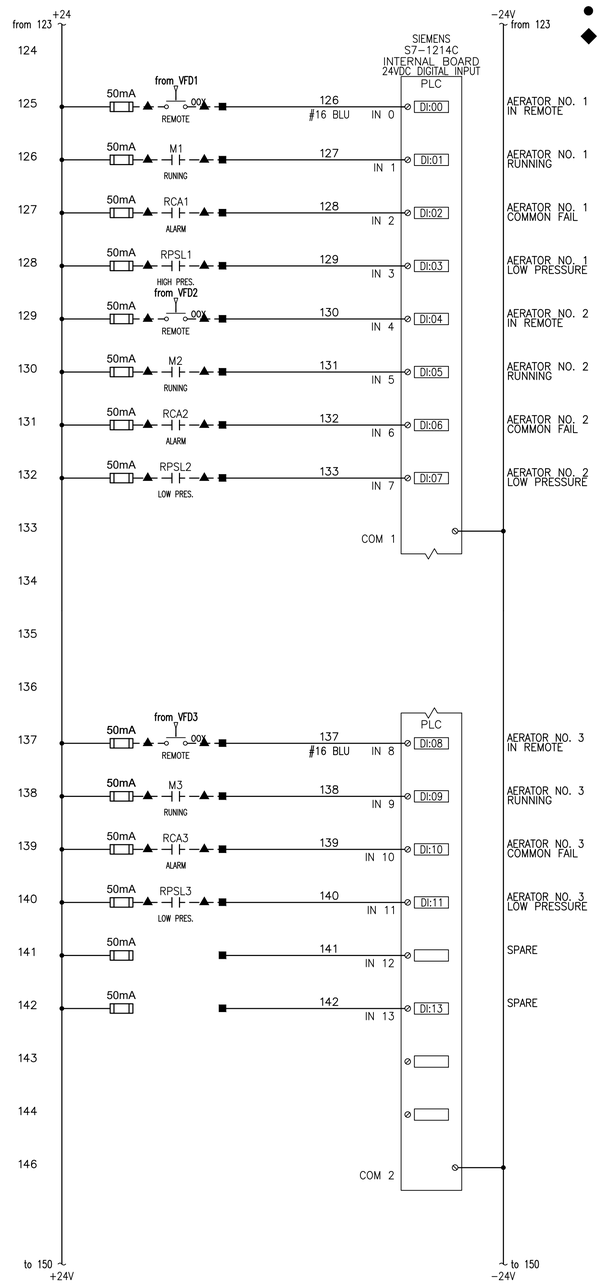
90% SUBMITTAL NOT FOR CONSTRUCTION

I-62

O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-62.dwg Dec 17, 2025 - 3:23pm User: dkwong







LEGEND

- △ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR
- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
- ■ FIELD TERMINAL LOCATED AT CONTROL PANEL
- ▲ REMOTE TERMINAL
- ● DEVICE TERMINAL NO.
- ◆ PLC INTERFACE TERMINAL

NO.	DATE	REVISION	APP.
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TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
AERATOR PLC CONTROL PANEL CONTROL WIRING DIAGRAM-I

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-63	SHEET NO. X OF 254

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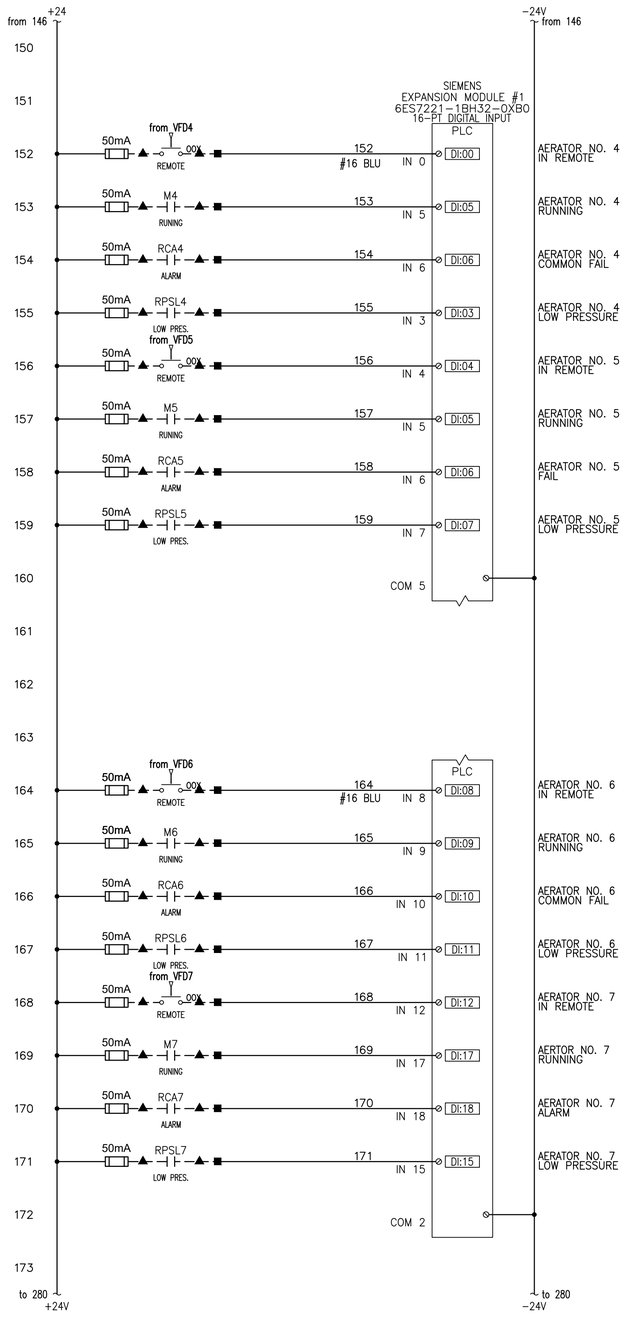

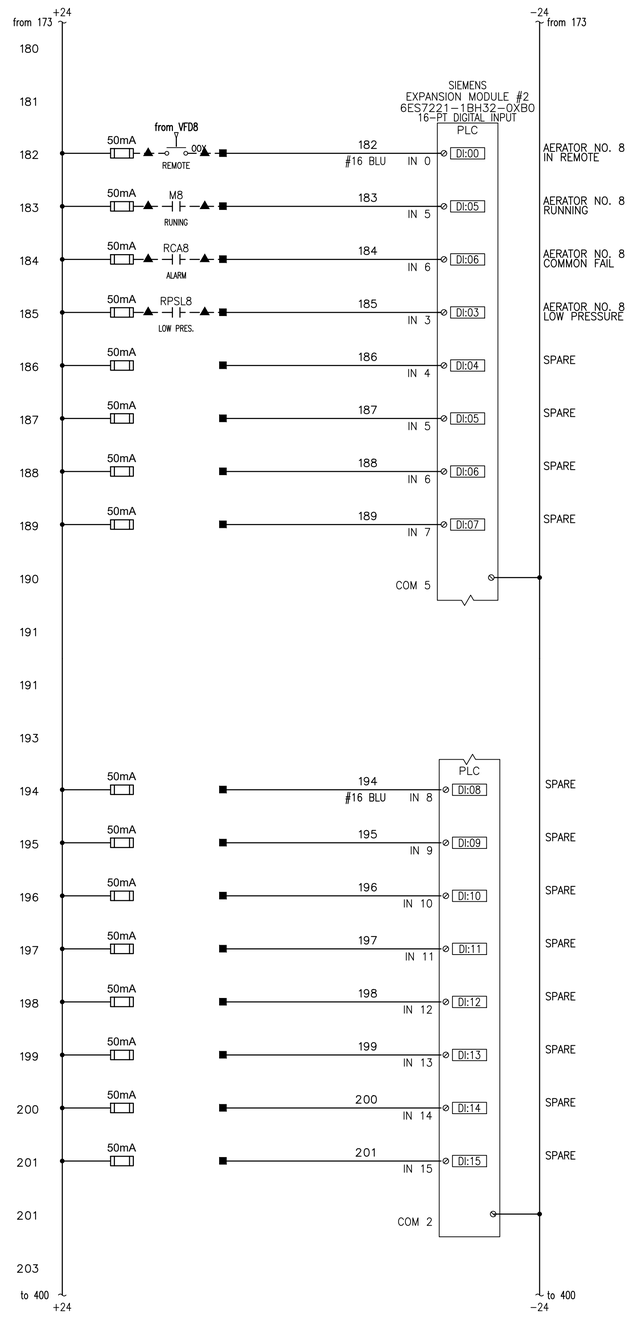

LEGEND

△ DEVICE OR FIELD TERMINAL LOCATED AT MOTOR

✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE

□ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL

■ FIELD TERMINAL LOCATED AT CONTROL PANEL

▲ REMOTE TERMINAL

● DEVICE TERMINAL NO.

◆ PLC INTERFACE TERMINAL

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
AERATOR PLC CONTROL PANEL CONTROL WIRING DIAGRAM-II

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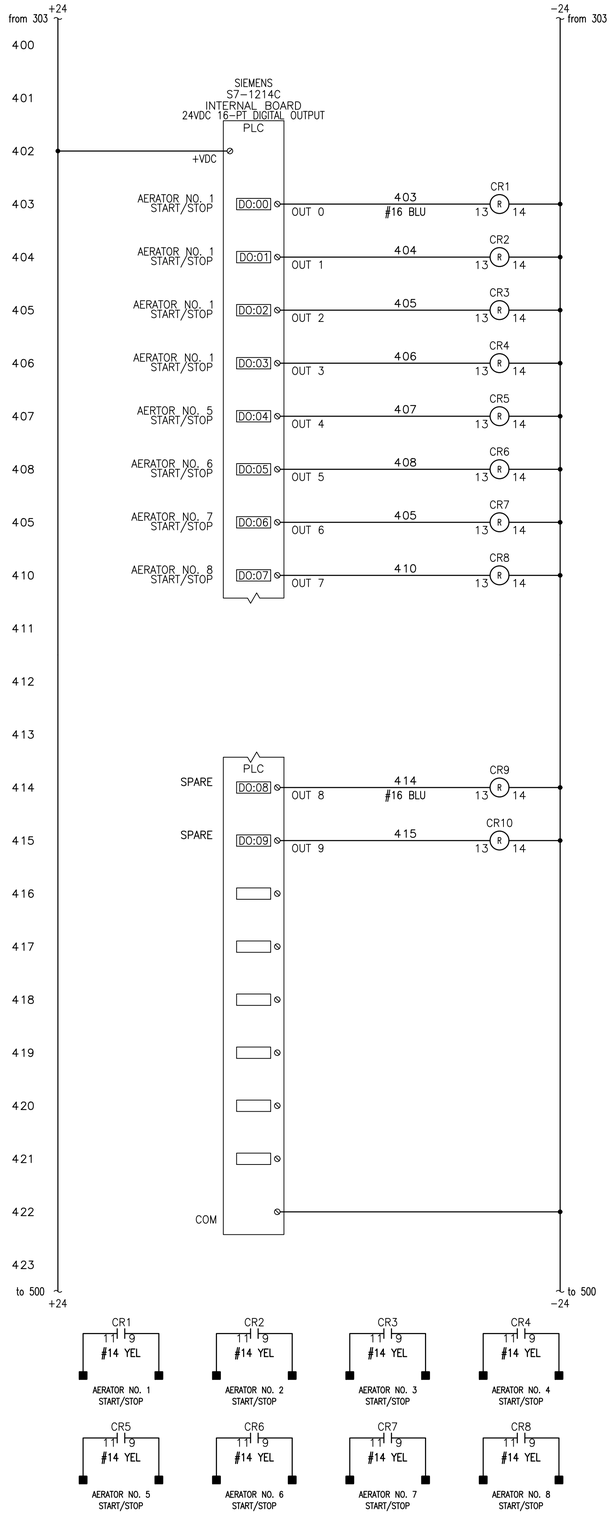

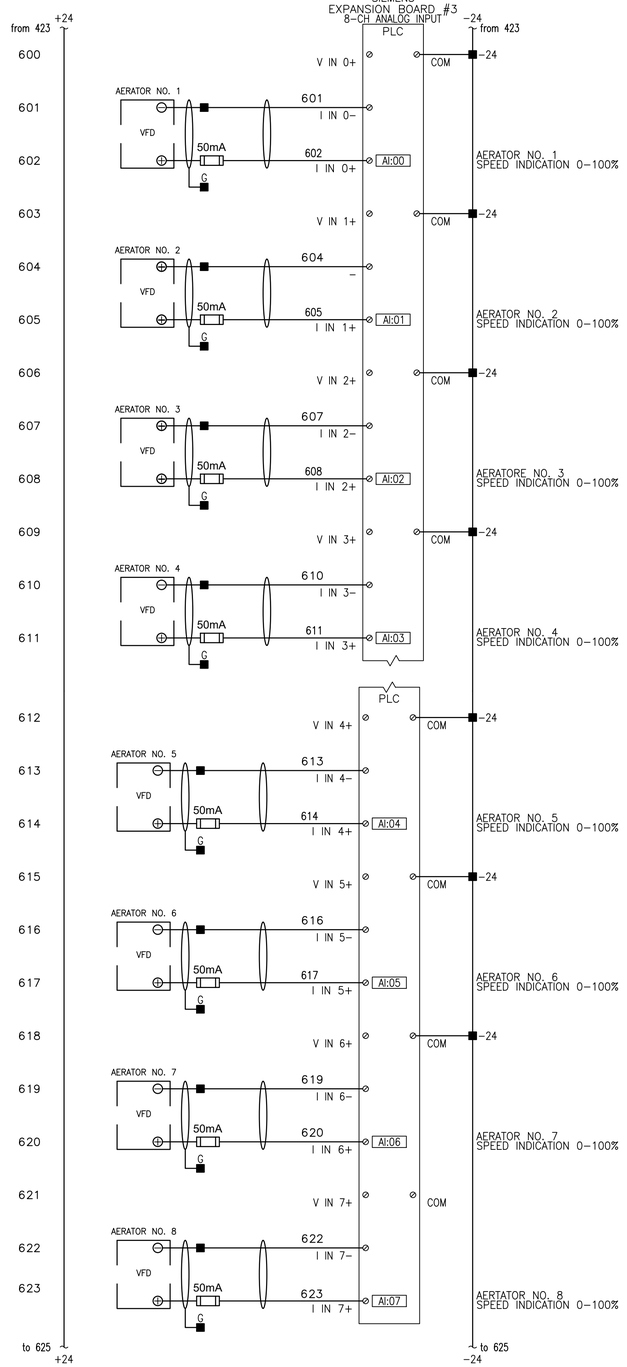

LEGEND

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- ✳ DEVICE OR FIELD TERMINAL LOCATED REMOTE
- □ DEVICE OR FIELD TERMINAL LOCATED AT MCC/POWER PANEL
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GREENRIDGE WWTP IMPROVEMENTS
AERATOR PLC CONTROL PANEL CONTROL WIRING DIAGRAM-III

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I-65

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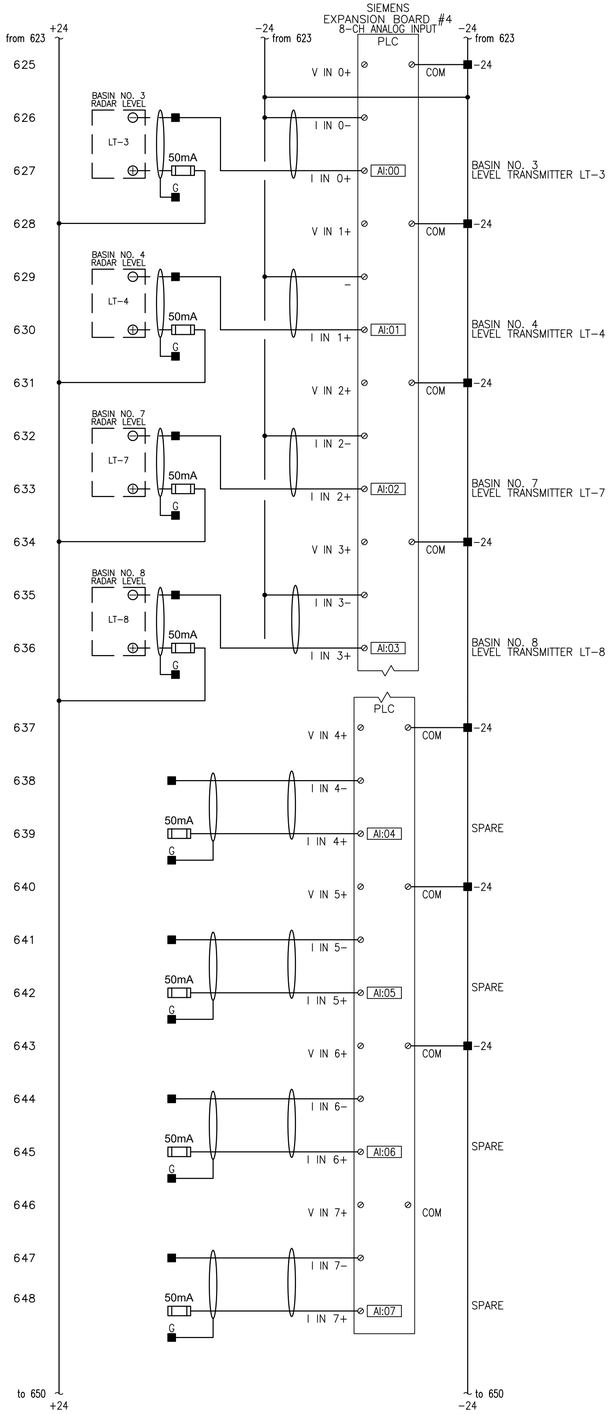

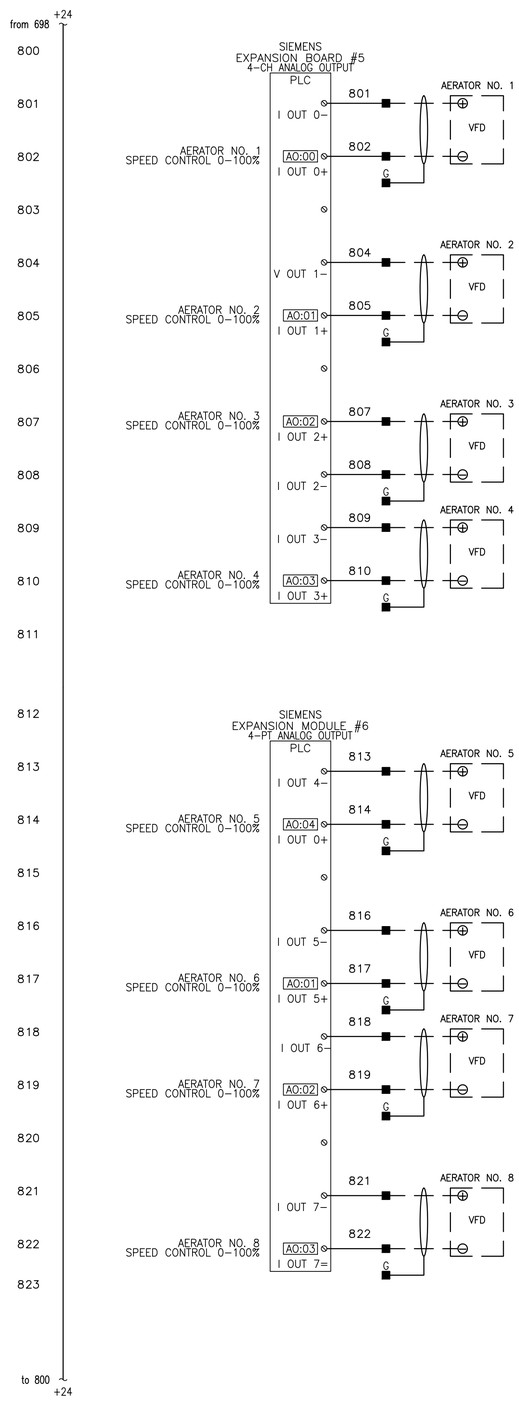

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■ FIELD TERMINAL LOCATED AT CONTROL PANEL

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RESPONSIBLE ENGINEER:
GUPTA & ASSOCIATES
HOSS FOROUZAN
TEXAS LICENSE NO. 77748
ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS

AERATOR PLC CONTROL PANEL CONTROL WIRING DIAGRAM-IV

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
I-66	SHEET NO. X OF 254

90% SUBMITTAL NOT FOR CONSTRUCTION

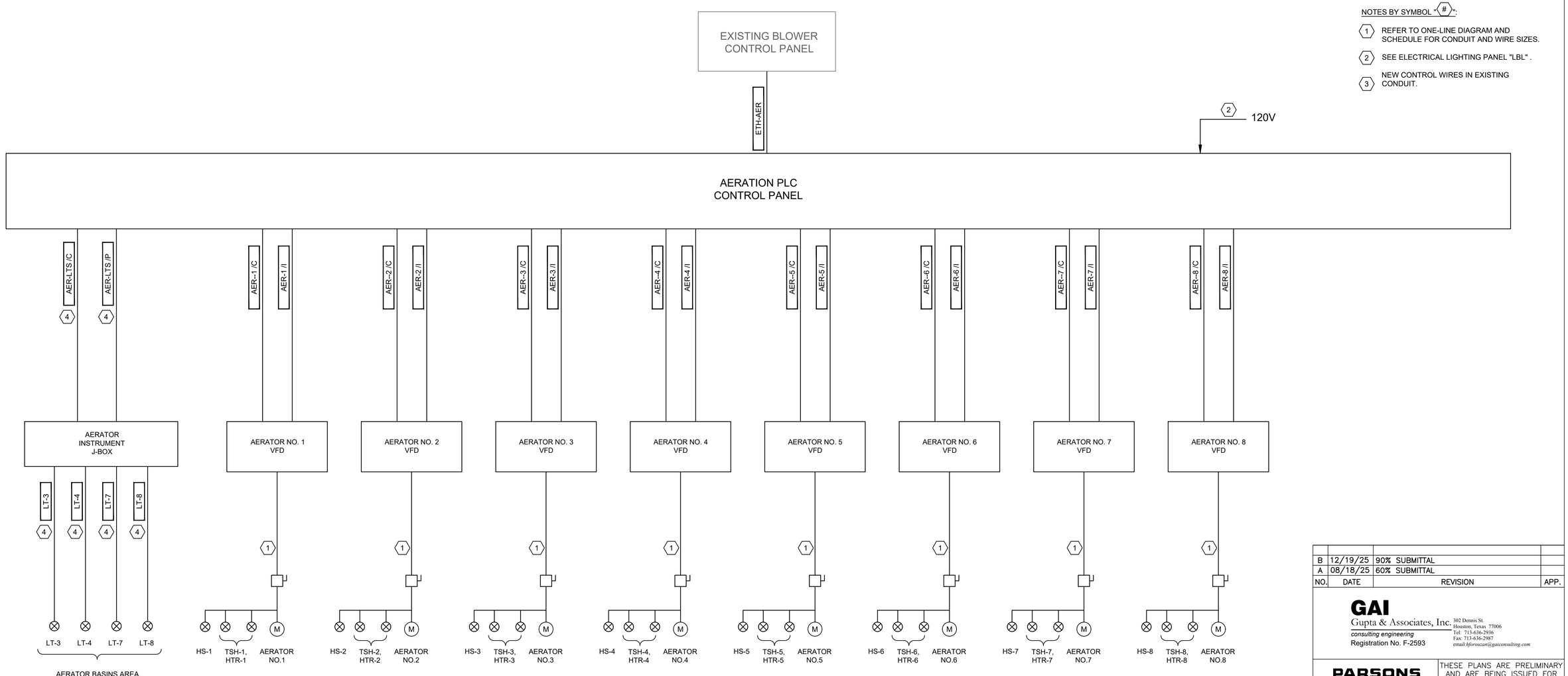
O:\H8113_Wastewater Treatment Plant Improvement (Parson Greenridge)\6 Drawings\Instrumentation and Control\Working\H8113_I-66.dwg Dec 17, 2025 - 3:24pm User: dkwong

NOTES BY SYMBOL "⟨#⟩":

⟨1⟩ REFER TO ONE-LINE DIAGRAM AND SCHEDULE FOR CONDUIT AND WIRE SIZES.

⟨2⟩ SEE ELECTRICAL LIGHTING PANEL "LBL" .

⟨3⟩ NEW CONTROL WIRES IN EXISTING CONDUIT.



AERATION PLC RISER DIAGRAM

NTS

NO.	DATE	REVISION	APP.
B	12/19/25	90% SUBMITTAL	
A	08/18/25	60% SUBMITTAL	

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ON DATE 12/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GREENRIDGE WWTP IMPROVEMENTS
INSTRUMENTATION
AERATION PLC CONTROL PANEL RISER DIAGRAM

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R-000265-0162-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAN LEI, P.E.	
SHEET NO. 249 OF 254	

I-67

90% SUBMITTAL NOT FOR CONSTRUCTION

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